

KSIIC
2013~2014

Scientific Instruments of Korea

Basic Scientific Devices / Audio & Video Educational System
Laboratory Equipments / Machinery and Automobile Education
Electric & Electronic Measuring Device, Automatic Control



Korea Scientific Instruments Industry Cooperative



Greeting



Greeting Address



South Korea has grown up into one of the world's top 10 science technology powerhouses ahead of newly rising countries, for which the driving force ascribes to its passion for science and education. South Korea, where its students of the total population accounts for 35% and more than 25% out of its GDP has been invested into education, has made quite a name for itself around the world as the No. 1 in IT, the second in math literacy and the 15th winner of the World Olympics of Technology. South Korea has prepared not for today but for its future injecting enormous resources into science as well as education.

We should stir up science technology to perpetuate our modern culture despite today's severe depression in the whole world. As a measure to overcome these difficulties we need to expand our investment for science and education, which can improve the quality of lab equipments and devices.



The 21st century has witnessed rapid changes and developments day by day. As one of the countermeasures against these changes, we published this catalogue to help you catch up with them. This brochure shows much more information on South Korea's science devices to those who crave the world's technology development, paving the way for a win-win situation for each other.

This book includes the cutting-edge devices for experiments as well as practices such as audiovisual aids, physical and chemical appliances, vocational training equipments as well as basic science experiment tools. We promise to provide products with better service and high quality.

Sincerely yours,

Yoon Sik Hong

President

Introduction of KSIIC



KSIIC

KSIIC was established in 1984 as a special legal entity under Small and Medium Business Administration of Korean government. Its more than 193 members are manufacturing educational materials, scientific analysis instruments, and technical training equipment.

KSIIC and its members are dedicated to supply quality products to customers in Korea and foreign countries. By supplying newly developed products, KSIIC's member companies are contributing to improvement of education, test and analysis activities of schools, laboratories and relevant industry.

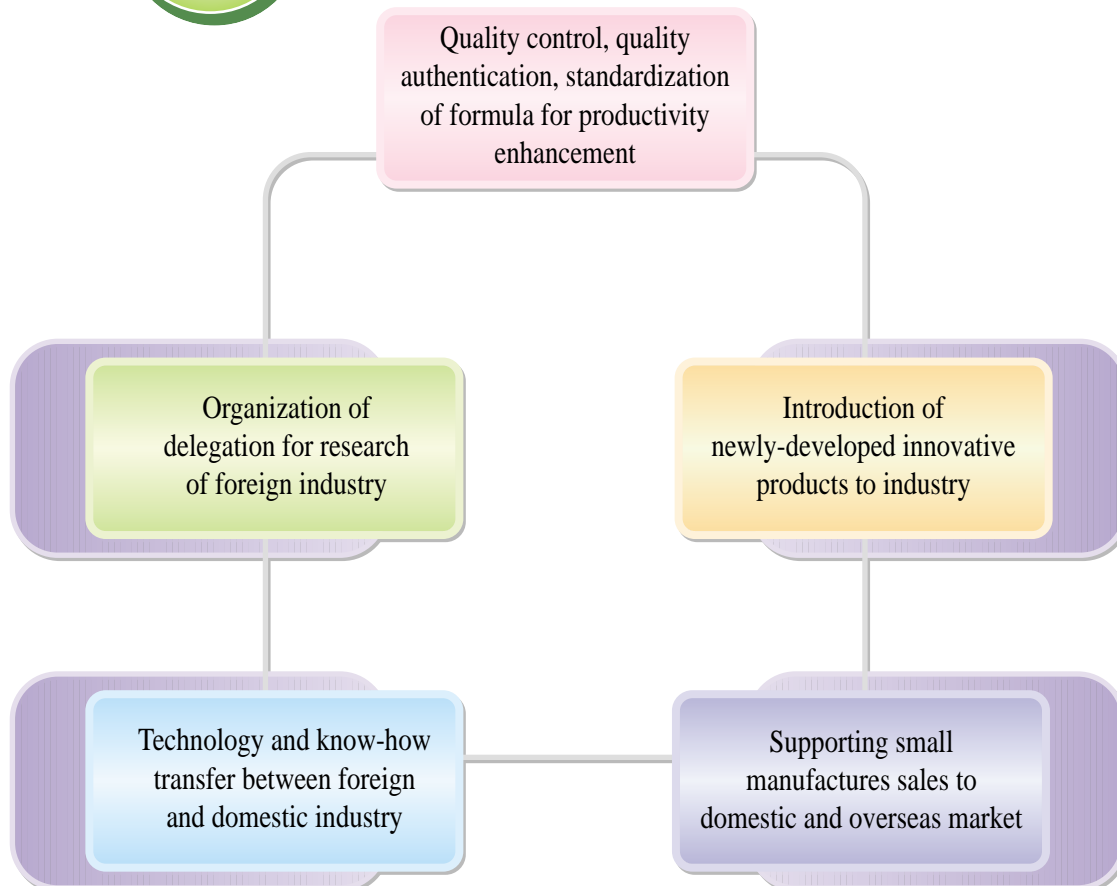
KSIIC is organizing exhibitions in Korea and participating at international exhibitions to promote foreign trading and transfer technology. We also lead trade delegations to visit various places of the world.

KSIIC hopes to join international efforts to enhance human standard of living by means of providing new technology and concept for students, teachers, trainers, and scientists.

We welcome any proposal to exchange creative ideas and information for mutual prosperity.

**Korea Scientific Instruments
Industry Cooperative (KSIIC)**

Business

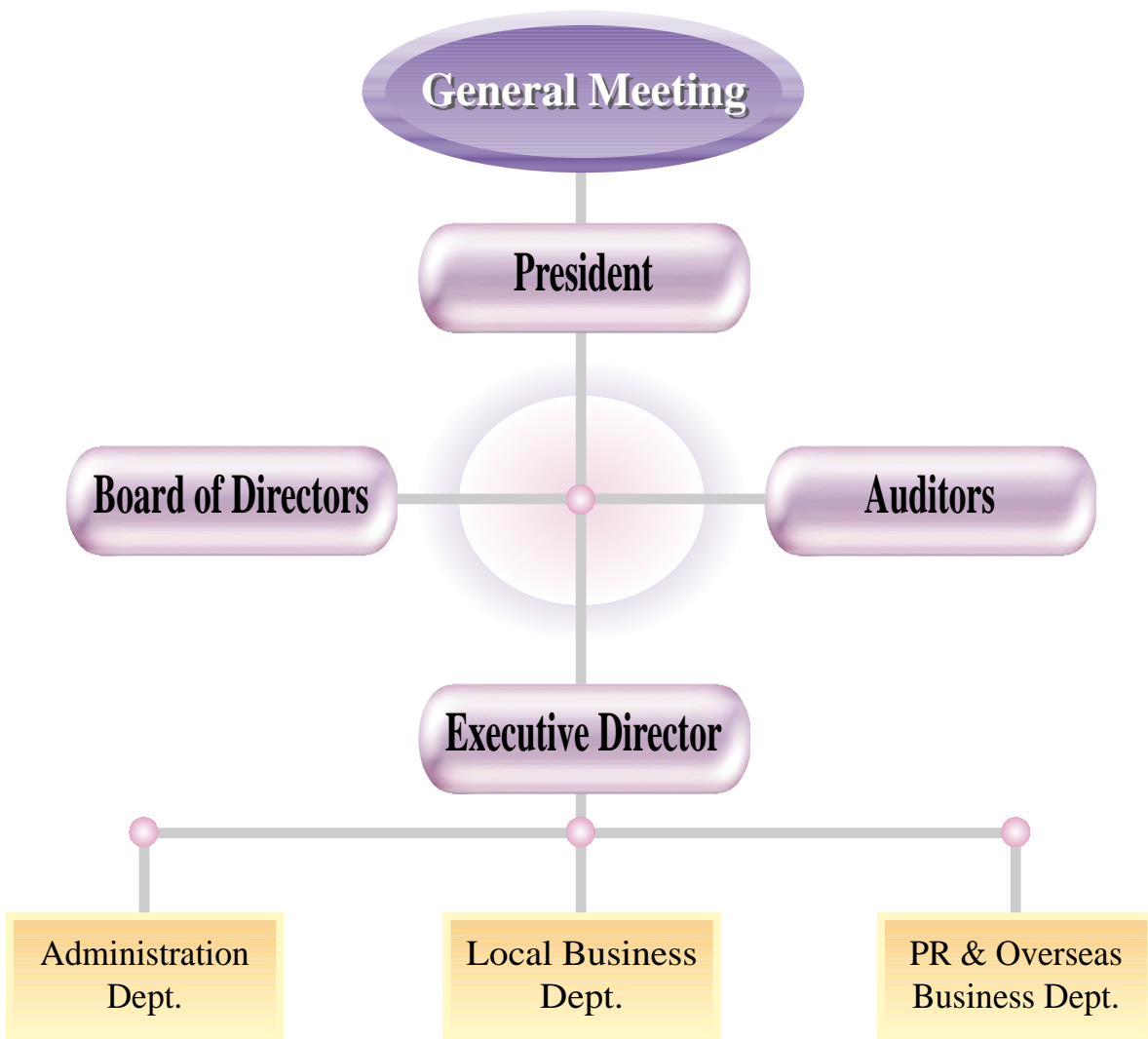


History



- 1984** Establishment of Korea Scientific Instruments Industry Cooperative
- 1987** Appointed as Quality Inspection Institution by Industrial Advancement Administration of Korea
- 1988** Acquired Export-Import License from Seoul City
- 1991** Designated as a supplier of Military Equipment by Korean government
- 1992** Opened the 1st International Scientific Instruments Exhibition at Seoul, Korea.
- 1992** Awarded as the Best Cooperative from Korean the President
- 1998** Established Institute of Scientific Instruments inside KSIIC
- 2004** ISO 9001 Certification Authorized
- 2005** KOSIS 2005 (Korea Scientific Instruments Show 2005) was held in May
- 2007** Strategic Export Market Trade Mission (Thailand and Singapore)
- 2010** Awarded as contribute for science and education development from Ministry of Education, Science technology
- 2011** Business Cooperative with Korea Business Centre (KOTRA) for overseas market development

Organization



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Korea Scientific Instruments Industry Cooperative(KSIIC)

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Korea Scientific Instruments Industry Cooperative



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Basic Scientific Devices

Jhp-1500, 3000

Power Supply



FEATURE

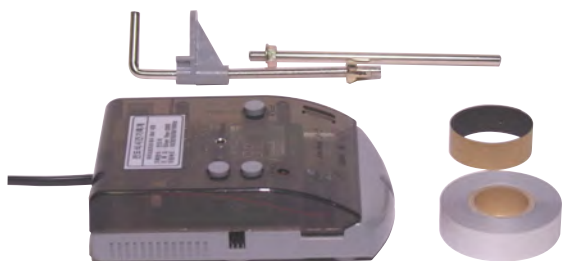
- Equipment that converts general AC electric power into DC electric power
- Installed the circuit of constant voltage and electric current controller to protect over electric current or over load.

Model	Mode	Input	Output
Jhp-1500	Needle indicator V,A meter	AC220V	15V/5A
Jhp-1500A	Digital V,A meter	AC220V	15V/5A
Jhp-3000	Needle indicator V,A meter	AC220V	30V3A
Jhp-3000A	Digital V,A meter	AC220V	30V3A

The equipment could be changed in order to improve performance

Jh-9900, 10000

Time Recorder



FEATURE

- Used for the measurement of acceleration and deceleration of moving objects. This recorder marks with dot on the record paper vibrating regularly. The gap of dot is made by the speed of record paper.
- Conduction 80x135x40mm
- AC 220V 60Hz.
- Record time: 10,20,50,60,100 dots
- Marking dot is clear and there is no noise as it is electric conduction type.
- The time of marking dot is precise as it is set up a standard time by 8-bit micro processor (Class 0.001%).
- Able to select 'Fast movement' or 'Slow movement' by the optional setting of record time.
- Measurement error is minimized, as tape friction is small.
- Easy to taping.
- Able to measure variously with various fix methods.

Model	Record	Dot-marking time	Power	Class	Tape	Type
Jh-9900	Conduction	10,20,50,60,100hz	AC 220V	1/10000	Conduction paper	Micro 8bit
Jh-10000	Dot-marking	60hz	AC 220V	1/60	Self paper	Magnet

The equipment could be changed in order to improve performance

Jh-11000

Digital Stroboscope



FEATURE

- Xetone output 20W, 60~15,120rpm
- Used for taking a picture speedy stop motion like falling motion, uniform motion, and etc. or for measuring the speed of revolution.
- Classified into union set and disunion set.
- Controlled by digital up-down mode and controlled by 16bit micro processor and memorized the times of vibration by memory sector
- Easy to take a multi picture by falling delay system of magnet

Model	Type	Power	Output	Vibration range	Motive output	Magnet control
Jh-11000	Light uniform	AC220V	20W	60-15120/min	4-10Vpp	Control
Jh-11000	ALight dis-uniform	AC220V	20W	60-15120/min	4-10Vpp	Control

The equipment could be changed in order to improve performance

Jh-3008A, 5500

Digital Stop Watch



FEATURE

- 1/1000second(15 memory)
 - Used to measure quick time in the test of velocity, acceleration, and up-down motion gravity acceleration.
 - Able to measure from 0.001 seconds to 60 minutes and has the function of start, stop, lap, and reset.
 - Able to measure the moving time of objects by using light sensor.
- Photo-gate (Micro stop watch parts)
- A parts micro-chronometer and electronic switch which makes 'Start' and 'Stop switch' automatically operate after sensing the objects moving with quick velocity.
 - Able to measure the velocity of up-down motion, uniform velocity motion, and acceleration motion with the error of $\pm 15\mu s$.
 - Installed with verticality, horizontal, and all angle.
 - Installed in the upper and lower sides of falling motion.



The equipment could be changed in order to improve performance

Jh-3008A	Digital stop watch	AC220V, DC9V	0.001sec-60min	15 Memory
Jh-5500	Photo gate	Micro-chronometer power	15us	

Jh-3600

Magnetic Stirrer



FEATURE

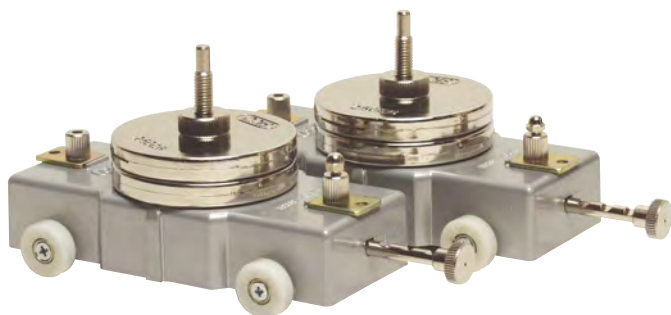
- An instrument which blends more than two mixtures
- Magnetic type which is used to precipitate Magnetic Bar in liquid

Model	Mode	Power	rpm
Jh-3600	Magnetic	AC 85-220V	60-3600

The equipment could be changed in order to improve performance

Jh-1500p

Dynamic Cart



FEATURE

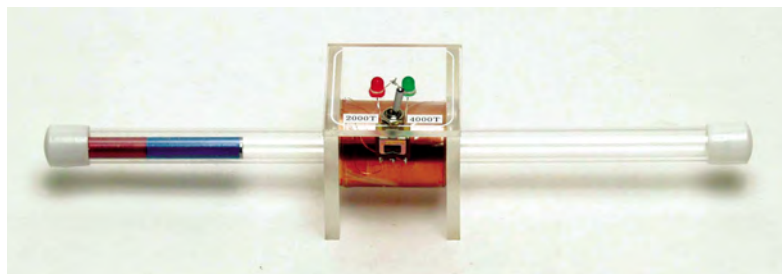
- Used for test of uniform motion, degree of acceleration, variation of mass by acceleration, raw of motion preservation, and stop/ inertia by spring
- Consisted of 1 set(2 carts with same mass)

The equipment could be changed in order to improve performance

Model	Cart weight	Balance weight	Total weight	Consist
Jh-1500p	500g	250g(2 ea(set))	1 kg	2 ea(set)

Jh-4000T

Electric Generator



FEATURE

- An instrument which generates electricity of coil by up-down motion of magnet
- Magnet motion track is installed in the empty core solenoid coil
- Small lamp is lighted with the positive and negative poles separately

Model	Mode	Coil	Display
Jh-4000T	Stick magnetic	2000/4000T	LED(2 ea)

The equipment could be changed in order to improve performance

JHV-1999D, 1999A

Digital Meter



FEATURE

- 3 1/2 digital-meter that measures voltage and electric current.

Model	Product name	Measuring range	Class	Power	Mode
JHV-1999D	DC VOLTMETER	0-199.9V	0.5%	DC 9V	L,C,D
JHV-1999A	AC VOLTMETER	0-300V	0.5%	DC 9V	L,C,D
JHA-1999D	DC AM METER	0-1.999A	0.5%	DC 9V	L,C,D
JHA-1999A	AC AM METER	0-19.99A	0.5%	DC 9V	L,C,D
JHG-1999	GALVANOMETER	0-1999uA	0.5%	DC 9V	L,C,D

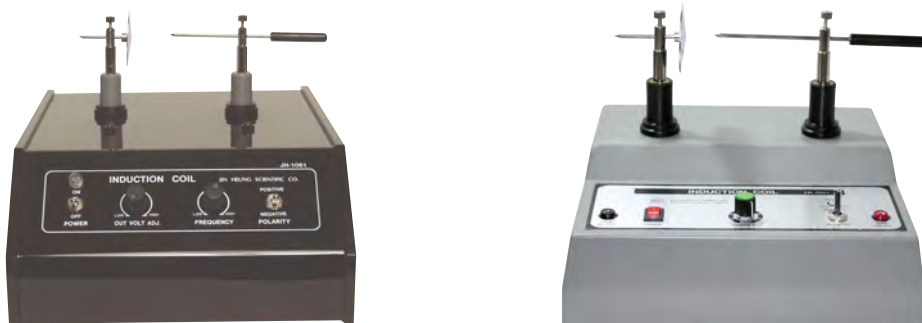
The equipment could be changed in order to improve performance

Jh-1061, 2001

Induction Coil

FEATURE

- Used for the source of electric power, as an instrument, which makes high voltage power. Be suitable for a laboratory use as it is high voltage and low electric current.



Model	Electric power	Frequency	Polarity	Output control	Discharge distance
Jh-1061	AC220V, DC12V	Frequency control	Conversion	Control	120mm
Jh-2001	Involved discharging rod			×	100mm

The equipment could be changed in order to improve performance

Van de graff Generator



FEATURE

It's a belt-type generator for static electricity by collecting the electricity on a metal ball on the top after generating friction on rubber inside a transparent and charged cylinder. The stored electricity is discharged when a small ball with electricity approaches. The instrument is used for attraction and reaction by static electricity, electrification of human, line of electric force and static discharge.

Power : AC220V(50/60Hz)

Type : Vibration, embedding dry light

Dimension : 250x250x600mm

Weight : 5.25kg

Sound Frequency Counter



FEATURE

The instrument consists of frequency gauge and sound source microphone to measure frequency of the source. It's used for measuring frequency of tuning forks and musical instruments.

Power : AC220V, DC9~24V

Frequency : 1Hz to 20KHz

Dimension : 150x160x50mm

The equipment could be changed in order to improve performance

Low Frequency Generator



FEATURE

The instrument is used for sound source in sound wave experiments and for a vibration generator in wave experiment. It can be used for various experiments by connecting it to audio amplifier.

Power : AC220V, DC9~24V

Output Frequency : 1Hz to 100KHz

Output Power : 50mVp-p to 5Vp-p

Temperature for Use : 0°C to + 50°C

Dimension : 150x160x50mm

JHL-2000

He-Ne LASER



FEATURE

It's an instrument to generator He-Ne LASER for educational use.

The laser is used to observe direct motion, refraction, reflection, diffraction of single-color and interference of light.

Model: JHL-2000

Power : AC220V 50/60Hz

Beam Power : 2.0mW(max) 0.58mm

Wavelength : 632.8nm

Beam Divergence : 1.4mrad

He-Ne gas laser org.

JHR-5500

Wheatstone Bridge



FEATURE

It's an instrument to measure resistance precisely and can measure it in a proportional way by embedding standard resistance. If there is no proportion between the embedded resistance and the measured one, the meter gauge moves left and right.

Power : AC220 50/60Hz

Range : 4 Dial

Ammeter : 200uA

Composition : Resistance for measurement

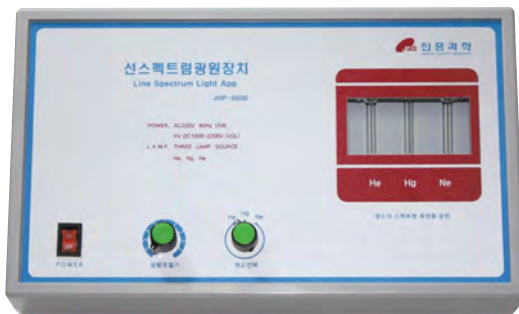
Range : 1-11110Ω

Dimension : 330x160x120mm

The equipment could be changed in order to improve performance

JHP-6600

Light Source for Line Spectrum



FEATURE

It's an instrument to generate line spectrum by embedding high-voltage power in tubes for three different elements. It's possible to adjust proper voltage through voltage adjuster. It consists of standard light source to observe spectrum distribution of an element, spectrometer and samples for direct spectrometer.

Power : AC220V 50/60Hz

Lamp : Neon, helium, argon (3 kinds)

Dimension : 330x160x120mm

The equipment could be changed in order to improve performance

JHS-6060

Stroboscope



FEATURE

It's an instrument to observe motion of an object with optical stop or slow speed by taking advantage of stroboscopic phenomenon by a slit with 12 gaps attached to the generator for adjusting speed.

Power : AC220V 50/60Hz, DC 12V

Velocity : 10-600 rpm

Composition : Digital counter, a sloto with 12 gaps of ϕ 180mm, speed adjuster

The equipment could be changed in order to improve performance

Interface Data logger

ScienceCube® Pro (KDM-1002)



- Size : 160mm x 90mm x 25mm
- Display : 128mm x 64wide graphic mono screen
- Data management : Up to 50,000 data collection and up to 16times experiment stores
- Battery : Rechargeable lithium-polymer battery (1250mAh)
- Sensor input : 3channels simultaneously.
- Sampling time : Real time mode 0.05sec/3channels
0.005sec/ 1channel
Stan-alone mode 0.0001sec/1channel
- Resolution : 12bit A/D
- Digital in/output port : 1 channel
Output : PWM, Sine, Square, Triangle
Sawtooth wave
- Communication port : USB Port, Serial Port

ScienceCube® Lite II (KDM-1001)



- Sensor input port : 3channels at the same time.
- Sampling time : Real time mode 0.05sec/3 channels
0.005sec/1 channel
High-speed mode 0.00001 sec/ 1 channel
- Resolution : 12 bit A/D
- Digital input & output : 1 channel
- Memory : 1MB
- Communication Port : USB 1channel
- Plug & Play system : Automatically identify sensors
- Automatic Firmware upgrade
- Estimate with Digital Strobo timing

MAX Advance (KDS-ADVANCE)



- CPU : SiRF-PRIMA, 600MHz (700 MHz optional)
- LCD : 7inch TFT LCD screen (800°ø480 pxl, 65,000 colors, ~350cd/β≥)
- Keyboard : USB Keyboard and Mouse pad (optional)
- Memory : 128MB mobile DDR RAM (256MB optional)
1GB NAND Flash ROM
- Memory Card : 2GB SD card slot (4 or 8GB : optional)
- USB : 3EA USB 1.1 or 2.0 host ports
1EA USB 1.1 or 2.0 slave port
- VGA : Standard VGA display port
- Network adaptor : 10/100Mbps Ethernet
WiFi dongle (optional)
- Sensor In/Out : Analog (or digital) input 4 port
Each port can connect 2 sensors (Cable optional)
- ADC : 12 bit
- Battery : 4 hours (optionally 8 hours) capacity
- Software : ScienceCube Analysis software
- OS : Window CE, NET 6.0
- ※ Sound level meter is not included in standard package

ScienceCube® MAX V (KDS-MAX V)



Main Specifications	Hardware Peripherals	Hardware Peripherals
Celeron Dual Core T3000 Processor (1.7GHz)	Mini Card with USB interface IEEE 802.11 B/G Antenna support	Mini Card with USB interface IEEE 802.11 B/G Antenna support
1Gb DDR2 Memory 160Gb HDD standard	LAN:10 and 100 Mb/s 3 USB 2.0 interface ports with support for keyboard, mouse, flash memory, etc	LAN:10 and 100 Mb/s 3 USB 2.0 interface ports with support for keyboard, mouse, flash memory, etc
13.3" WXGA LCD monitor (1280 x 800 pixels)	Support for SD/MMC/MS/MS Pro Memory Cards Driver support	Support for SD/MMC/MS/MS Pro Memory Cards Driver support
RTC (real-Time Clock)	New 86 Keys keyboard with Screw fixing	New 86 Keys keyboard with Screw fixing
Dimension: 343 x 245 x 34mm Weight: 2.4kg 6 cells battery	Internal Microphone Support 1.5W built-in audio 2 speakers 3 analogue and 1 digital Sensor ports Standard VGA display port	Internal Microphone Support 1.5W built-in audio 2 speakers 3 analogue and 1 digital Sensor ports Standard VGA display port

Smart MBL



Sensors for Science Education

Code	Sensor	Description
C4DA	Air Temperature	-40 to +125°C
C48A/B/C	Smart Temperature	-40 to ~+125°C
K50A/K51A	Humidity/Temp./Dew point	100%RH, -40 to +123.8°C(H), -40 to +90°C(D)
C23A	Light	65535lux(±1), 22937lux(±0.35), 100487lux(±1.53)
C39A	Color(RGB and C)	65535Counts/channel, 4channels(RGB,C)
C77A	Barometer/Temperature	300 to 1100hPa(P), -40~+125°C(T)
C38A	Triaxial Acceleration	±2g, ±4g, ±8g/channel, 3channels(X,Y, and Z)
K1DA	Force (Dual range)	-80 to +80N
K1FA	Motion	0.15 to 6m
K64A	Magnetic Field	-140 to +140gauss
K60A	Voltage	-18V to +18V
C4FA	Current	-4000 to +4000mA
K62A	Galvanometer	-12.5mA to +12.5mA
K13A	Relative Gas Pressure (A)	-1000 to +3000hPa
K14A	Relative Gas Pressure (B)	-650 to +650hPa
K47A	K-Temperature	-200 to +1200°C
K3AA	Carbon Dioxide	0 to 5000ppm
K3BA	Oxygen	0 to 27%
K31A	pH	0 to 14
K2AA	Stethoscope	
K28A	EKG/ECG	
K25A	Sound/SPL	
K18A	GPS Position	
K90A	Wattmeter/AC Voltage and Current	
K36A	Salinity	
K3CA	Radiation Monitor (G-M Counter)	
K61A	Oscilloscope Probe	



USB-Mentee



Digital I/O Unit and I2C Interface for Science, Engineering and Technology Education

Code	Digital I/O Unit and I2C Interface
K80A/K81A	Wireless Sensor Unit and Dongle
K92A	Waveform Generator
C4AA/C4BA	DC Power Supply
USB-Mentee	VIO Interface (I2C/ADC Data Logger, I2C Digital Control Unit)
Mentor-SDK	SDK(Software Development Kit) for Mentor

4-physical channels



Air Temperature
Humidity/Temperature
Barometer/Temperature



Relative Gas Pressure



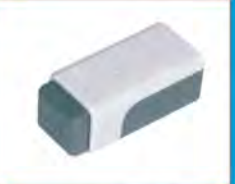
Light
Color (RGB and C)



Voltage
Current
Galvanometer
EKG



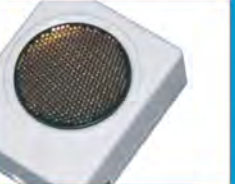
Magnetic Field
Triaxial Acceleration



Temperature (Pt/K/Smart)



Motion (Distance)



Force (Dual range)



Physics Kit

Dual Range Force Sensor II

(KDS-1029)



- Range : $\pm 10N/\pm 80N$
- Resolution : $\pm 0.0056/\pm 0.056$
- Sensor Type: Electrical strain gage

Motion Sensor II

(KDS-1042)



- Range : 0.16 ~ 6m (Max. 10m)
- Resolution : $\pm 1.5mm$
- Gauging principle : Ultra Sonic Transducer
- Beam Angle : Cone, around 15°
- Sampling Rate : (Max. 100samples/s) depends on measuring distance
- Application : non-contact, measure distance to time
- Channels : [CH A] Channel
Channel A is used as the digital channel.

Photogate

(KDS-1023)



Internal Gate

- Infrared source peak wavelength : 880 nm
- Rising time : 2.5 μ s • Falling Time : 3.8 μ s

External Gate

- Infrared source peak wavelength : 880 nm
- Spectrum Sensitivity : 500 ~ 1050 nm
- Rising time : 8 μ s • Falling Time : 10 μ s

Pulley

(KDA-15)



- Effective circumference : 20 cm
- Effective diameter : 64 mm
- Pulse/rotation : 10 • Out diameter : 67 mm

Accelerometer 5

(KDS-1014)



- Full range: $\pm 47m/s^2$
- Available range: $-19.6m/s^2 \sim +19.6m/s^2$
- Resolution : $0.038m/s^2$
- Frequency Response : 0 ~ 100Hz

Accelerometer 25

(KDS-1048)



- Full range: $\pm 245m/s^2$
- Available range: $-98m/s^2 \sim +98m/s^2$
- Resolution : $0.2m/s^2$
- Frequency Response : 0 ~ 100Hz

Video Capture Camera

(KDS-1041)



- Interface : USB 1.1/2.0 compliance
- Resolution : 1.3Mpixel 1280 X 908 Via Software Interpolation
- Color : 24bit True Color (24RGB, 1420)
- Sensor : Advanced CMOS Image Sensor
- Turnable Angle : 360 degrees

Current Probe

(KDS-1010)



- Range : DC $\pm 1.2A$
- Resolution : $\pm 0.6mA$ (12bit)
- Circuit Properties : Sensor is separated and insulated from ground
- Power Consumption : Max. 5W (0.01 Ω)

Differential Voltage Probe

(KDS-1009)



- Input voltage range : $\pm 12.0V$
- Max. input voltage : $\pm 14.5 V$
- Input Impedance (to ground) : 10 M Ω
- Linearity : 0.01%
- Resolution (12bit) : 3.1 mV
- Supply voltage : 5V DC
- Supply current (typical) : 9 mA
- Output voltage range : 0~5 V

Galvanometer

(KDS-1035)



- Range : DC $\pm 12.5mA$, $\pm 1.25mA$, $\pm 0.125mA$
- Resolution : $\pm 0.06\mu A$
- Circuit Properties : Sensor is separated and insulated from ground

Magnetic Field Sensor

(KDS-1007)



- Range : $\pm 50G$
- Resolution : 0.024G (12 bit)
- Sensor depth : 5.0mm
- Sensor type : Radiometric, Linear Hall Effect Sensor
- Strobe Timing : changes according to interface (Max. 0.1ms)

Magnetic Field SensorII(with Scale)

(KDS-1063)



- Range : $\pm 50G$ ($\pm 5mT$)
- Resolution : 0.0244G

Chemistry Kit

Pt Stainless Steel Temperature Probe (KDS-1031)



- Range : -50°C ~ +180°C
- Resolution : ±0.06°C
- Probe Properties :
 - PT temperature element (RTD)
 - Stainless steel covered.
- Reading speed : 10s(90%)
- Chemical Resistance : 15 minutes (1M HCl)

pH Sensor (KDS-1005)



- Range : pH 0 ~ 14
- Resolution : ±0.0036 pH units

Drop Counter (KDS-1072)



- Acid-base Titration
- Conductimetric Titration

Thermocouple Probe (KDS-1002)



- Range : -200°C ~ +1200°C
- Resolution : ±0.6°C
- Sensor properties :
 - Type K Thermocouple
 - Stainless steel covered
- Linearity : 0 ~ 400°C (±3°C),
-200°C ~ 0°C (±2°C)
- Chemical Resistance : 15 minutes (1M HCl)

Gas Pressure Sensor A (KDS-1034)



- Range : 1,000 ~ 3,000hPa
- Resolution : 1.3hPa
- Toleration : -1,000 ~ 3050hPa
- Unit : Differential (Relative) pressure
- Response Time : 0.2ms average

Conductivity Probe (KDS-1038)



Range:

- Low Range: 0 to 200 $\mu\text{S}/\text{cm}$
(0 to 100 mg/L TDS)
- Mid Range: 0 to 2000 $\mu\text{S}/\text{cm}$
(0 to 1000 mg/L TDS)
- High Range: 0 to 20,000 $\mu\text{S}/\text{cm}$
(0 to 10,000 mg/L TDS)

Resolution :

- Low Range: 0.1 $\mu\text{S}/\text{cm}$ (0.05 mg/L TDS)
- Mid Range: 1 $\mu\text{S}/\text{cm}$ (0.5 mg/L TDS)
- High Range: 10 $\mu\text{S}/\text{cm}$ (5 mg/L TDS)

ORP Sensor (KDS-1039)



ORP Electrode

- Type : Sealed, gel-filled, epoxy body, Ag(AgCl) reference
- Storage solution : pH-4/KCl solution (10g KCl in 100mL buffer pH-4 solution)
- Temperature range : 0 ~ 60°C
- Impedance : ~20M Ω at 25°C

Electrode(ORP) Amplifier

- Amplifier input range : -450 mV ~ 1100 mV
- Voltage output range : 0 - 5 V
- Calibration function :
 $V \text{ (mV)} = 466.875 * V_{\text{out}} \text{ (V)} - 559.793$
- Resolution : 0.5 mV

Gas Pressure Sensor B (KDS-1032)



- Range : ± 650hPa
- Resolution : ±0.335hPa
- Toleration : ± 700hPa
- Unit : Differential (Relative) pressure
- Response Time : 0.2ms average

Salinity Sensor (KDS-1055)



- Range: 0~50 ppt
- Resolution: 0.02 ppt

Biology Kit

EKG (ECG) Set
(KDS-1040)



- **EKG**
Range : 0 ~ 5mV
Resolution : 5 μ V
- **Pulse**
Number of Pulse : 47 ~ 250 BPM
Resolution : 1 BPM

Heart Rate Monitor (Hand-Grip type) (KDS-1069)



Heart Rate Monitor
(KDS-1046)



- Range : 0 ~ 250 BPM
- Resolution : 1 BPM



CO₂ Gas Sensor
(KDS-1020)



- Range : 0 ~ 5,000ppm (0 ~ 0.5%)
- Resolution : 2.44ppm using 12 bit 5V AD converter
- Accuracy (at standard 1atm) : ± 100 ppm (0 ~ 1,000ppm) $\pm 10\%$ (1,000 ~ 5,000ppm)

Oxygen Gas Sensor II
(KDS-1047)

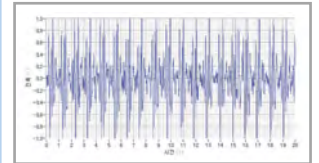


- Range : 0 ~ 27% O₂
- Output voltage range : 0 ~ 4 V in air at 25°C sea level (standard) other range optional.
- Resolution : 0.006%

Stethoscope
(KDS-1051)



You can see your heart beat as graph with the Stethoscope.



Heart Rate Monitor (Ear Clip type) (KDS-1070)



- Range : 0 ~ 250BPM
- Resolution : 1 BPM

Spirometer
(KDS-1049)



- Range : -10~+10L/S

Earth Science Kit(environment)

Dissolved Oxygen Probe
(KDS-1022)



- Range : 0 to 15 mg/L (or ppm)
- Accuracy : ± 0.2 mg/L
- Resolution : 0.007 mg/L
- Response Time : 95% of in 30 seconds, 98% in 45 seconds
- Temperature Compensation : automatic at 5-35°C

Sound Level Meter
(KDS-1013)



- Accuracy : ± 1.5 dB
- Range: 35 ~ 130dB

Relative Humidity Sensor (KDS-1008)



- Range : 0 ~ 100%
- Resolution : 0.1%

Photo diode Light Sensor (KDS-1033)



- Range : 0 ~ 15,000Lux
- Resolution : adjusts according to range setting (12 bit)
- Full range : 0 ~ 15000Lux
General Purpose : 0 ~ 6000Lux
Sensitive range : 0 ~ 600Lux
- Spectral response range : 3300 Å (330nm) ~ 7200 Å (720nm)
- Peak spectral response : 5800 Å (580nm)

Turbidity Sensor
(KDS-1017)



- Range : 0 ~ 200NTU
- Resolution : 0.25NTU

Colorimeter II
(KDS-1044)



- Range : 0 ~ 100%T
- Resolution : 0.035%T
- Wavelength : 430nm, 470nm, 565nm, 635nm

SCS-300

Photosynthesis Experiment Package

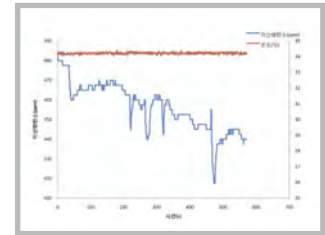


The Photosynthesis Experiment equipment makes it possible to experiment on photosynthesis of green plants (land plant and water plant), respiration and inhaling capacity of germinating seeds with accurate elements and amounts.

Students can measure exact generated amount of carbon dioxide and oxygen with ScienceCube's sensors. This experimental has LED light source as the world's first, which control temperature rise, it makes a precise measurement of the experiment data. You can get more precise data of photosynthesis experiment than an incandescent lamp or a halogen lamp. If the temperature rose up during photosynthesis experiment, the plant would be withered and photosynthesis reaction would be stopped.

COMPOSITION

- Data-logger (Optional)
- Photosynthesis equipment
- CO₂ Gas sensor (Optional)
- O₂ Gas sensor (Optional)
- Temperature sensor (Optional)
- CO₂ -O₂ Tee (Optional)
- Manual



SCS-500

Multi-functional Dynamics System

Low Friction, Diverse Accessories, Various Application

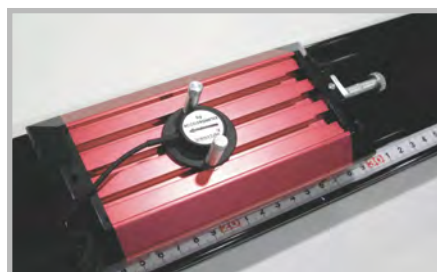


The Dynamics system consists of a 1.2m track, two carts, and related accessories. The system is designed for use in physics and physical scientific experiments. Dynamics system enables more accurate and precise experiment by minimizing friction. Sensors like Motion sensor, Force sensor, Photogate, Accelerometer etc. can be adopted to measure exact data.

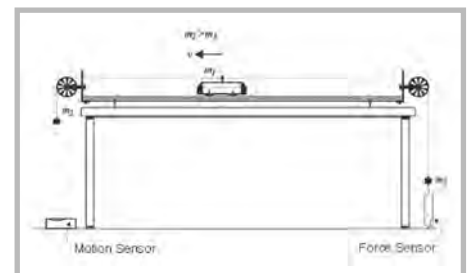
Some typical experiments done with the system and include

- Newton's law
- Conservation of Energy
- Uniform Motion
- Spring Constant
- Motion under constant acceleration
- Inelastic collisions and elastic collision

APPLICATION



Accelerometer on Dynamics cart

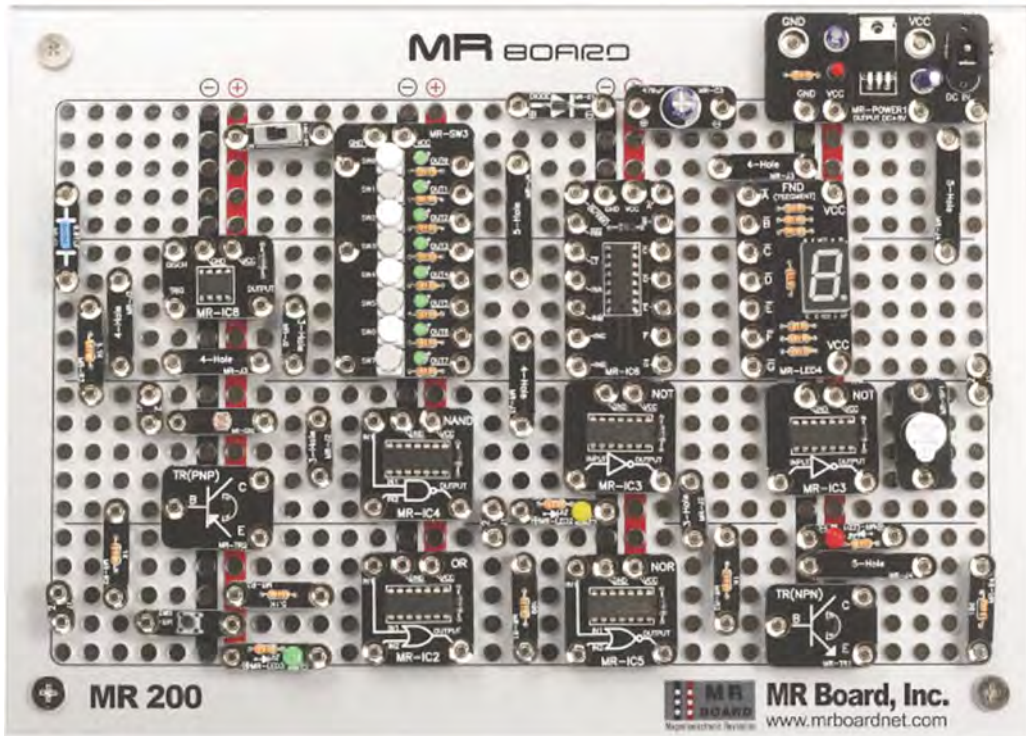


Determination of mass on an incline



Newtons' Second Law

MR BOARD



MR Board Products

Any electrical connections in a circuit board can be constructed by magnetic connectors. Significantly improve understanding of analog and digital concepts

- Make familiar to electronics
- Elimination of soldering
- Safer for students
- Environmentally Friendly
- Easy to construct the circuit
- Easy to follow instructions
- Easy to understand a circuit
- Visual and audible education
- Patent Protected

MR Magnetic Breadboard

The magnetic breadboard will provide logical thought and efficient ways in the construction of electrical circuits.

MR 200 for Digital and Analog Electronics Experiments

MR AVR for Microcontroller Experiments



MR-5V POWER



MR-7447



MR-PS8



MR-FND



MR-7408



MR-7400



MR-7402



MR-7404



MR-7432

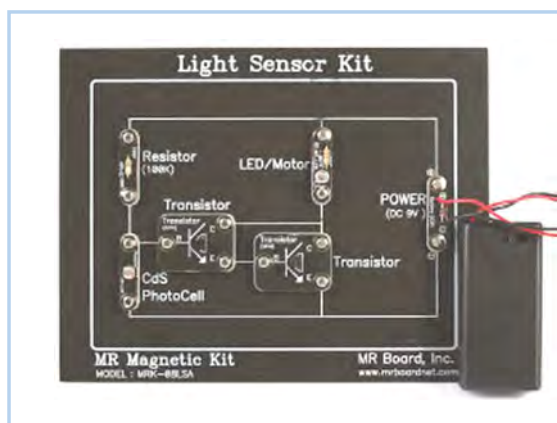


MR-555



MR-C945

MR MAGNETIC KIT



MR Light Sensor Kit (MRK-08LSA)

The Light Sensor Kit can be applicable to elementary or middle school students. The students will learn about current, resistance, voltage, amplification, switch, resistor, transistor, sensor, and LED.



MR Tunable Digital Organ Kit (MRK-08DOA)

MR Tunable Digital Organ Kit can be applicable to elementary or middle school students. The students will understand how it makes sound. This kit makes a student familiar to the scale via adjustment of resistance.

Available Experiments Using MR200

Basic Circuits

Parallel and Series Circuits

Short Circuit

Kirchhoff's Law

Bias Circuits

RC and RL Circuits

Combinational Gates

Boolean Expressions

De Morgan's Theorems

Duality of Logic Function

Binary System

Half Adder

Full Adder

Half Subtractor

Full Subtractor

Magnitude Comparator

Decoder

Encoder

Multiplex

Demultiplex

Clipper

Clamper

Seven Segments

RS Latch

RS Flip-Flops

JK Flip-Flops

D Flip-Flops

Shift Register

Timer

Synchronous Sequential Circuit

Asynchronous Sequential Circuit

Counters

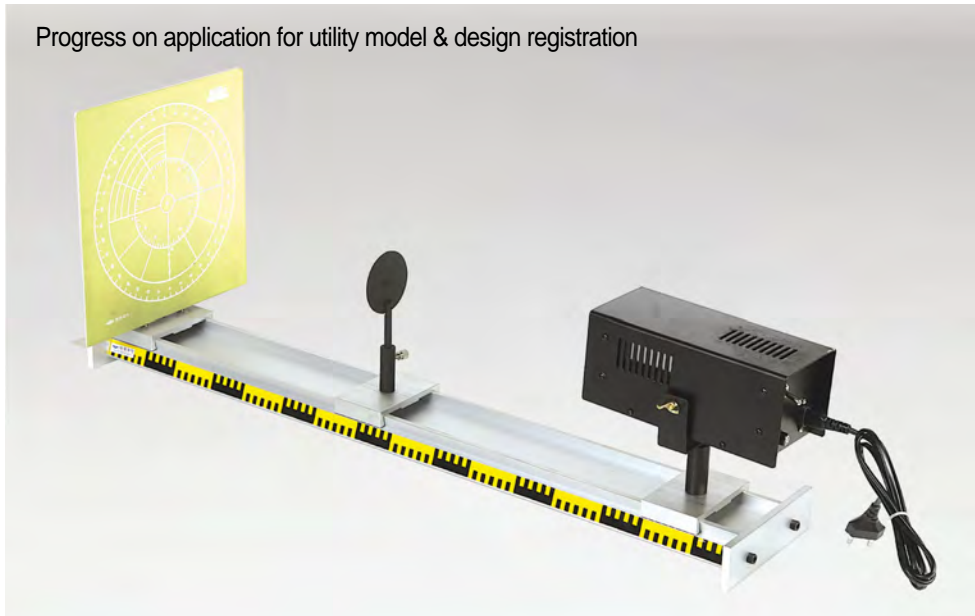
Schmidt Trigger

Multivibrator

MRS 3605

Light and Shadow Experimental Device (for Teacher)

Progress on application for utility model & design registration



It is a device to observe shadows using directions of lights and distance, and also an experimental tester that watch size, brightness, location of shadows using objects of light source.

Size	600mm in length, screen 300 x 300mm, halogen lamp, power: AC 220V
Usage	For elementary and middle schools

MRS 3227

Experimental Device for Boyle's Law, Type A



It is a device that volume of a given mass of gas is inversely proportional to its pressure, if the temperature remains constant.

Features	<ol style="list-style-type: none"> 1. When hot water is put in the container, difference of volume of a given mass of gas and pressure can be recognized according to change in temperate. 2. When cold water is put in the container, difference of volume of a given mass of gas and pressure can be recognized according to change in temperate.
Size	170 x 210 x 230mm
Usage	For middle and high schools

MRS 9843

Experimental Device for Adiabatic Change (Digital A Type)



Progress on application for utility model & design registration

It explains principles of how cloud is created (referred to as occurrence of fog) due to freezing by adiabatic expansion of air, and understands relationship between the adiabatic expansion and relative humidity.

Features	1. As manometer (pressure gauge) is attached, pressure can be checked. 2. As thermometer is attached, change in temperature can be observed.
Size	170 x 210 x 230mm
Usage	For middle and high schools

MRS 9849

Electrolysis Device (All-In-One)



Progress on application for utility model registration

It exactly measures proportion of hydrogen and oxygen collected by electrolysis of water in the proportion of two to one, and it is possible to do combustion experiment of the collected hydrogen and oxygen. New plastic with good intensity was used to make this device. It has no risk, and available for both DC12V and AC220V.

Size	170 x 210 x 320mm
Usage	For middle and high schools

MRS 3718

Experimental Device for Gas' Law (also for Boyle-Charles)



Experiments about Boyle-Charles' Law are carried out semi-quantitatively. With this device, it is possible to see the relationship of 'PV/T= Constant'. It is also possible to do experiment at a short period of time because nicrome wire is used.

Size	Manometer Φ 50mm, scale range 0-0.1 MPa, (0-1kgf · cm), temperature device 100ml · heating element 2 Ω , thermometer 50°C
Usage	For middle and high schools

MRS 7037

Experimental Device for Integrated Laser Optics



It is widely used for application experiments of basic optics such as reflection of law, refraction, inner total reflection, and principles of microscope using straightness of laser lights. A diverse of lenses for optics makes it possible to do different types of experiments. Its durability is excellent because it is made of acrylic. Angle of laser beam is adjustable according to intention of users.

Size	Lenses set for optics (15 groups of pieces). Three sets of slit laser
Usage	For elementary, middle and high schools

MRS 3501

Experimental Device for Pulley



Progress on application for utility model & design registration

It observes energy conversion of objects moving on an inclined plane. As height of wheels gets lower, descending wheels' speed can be observed and recorded.

Size	900 x 200 x 50mm, pulley 1 row with 6, 2 rows with 2, 3 rows with 3, 4 rows with 1, 1 wheel and axle, scale weight on the box 20g x 8100g x 2 (hook included)
Usage	For elementary school

MRS 1860

Laser Optics Experimental Device Set



Laser optic experimental device set measures refraction angle of light with a diverse lenses by directly observing the refraction of light using 3 holes-lasers light. It is useful for learning by group. As strong magnetic are attached to the device, it is easy for teacher to teach the experimental procedures by attaching them to blackboard, and also available on tables or other places in convenient way. Refraction of light of water bottle for optics can be observed without additional preparation of the water bottle.

※ Experiment Contents

1. Refraction of light by concave lens
2. Refraction of light by convex lens
3. Reflection of light against plane mirror
4. Refraction of light by convex mirror
5. Refraction of light by concave mirror
6. Refraction of light of isosceles triangle
7. Water bottle for optics (incidence angle, refraction angle, reflection angle)
8. Offsetting of light by lenses

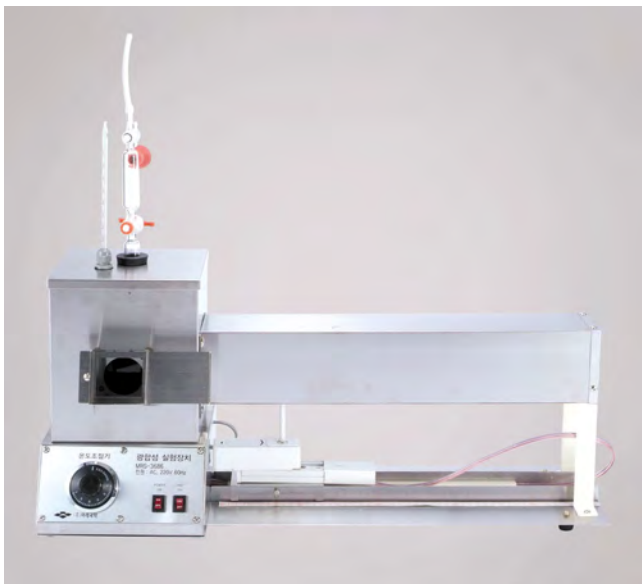
※ Characteristics (Features)

It is available for use of blackboard, and easy to operate because 3 holes, 2 holes, and 1 hole laser switches are attached.

Size	400mm x 300mm x 45mm
Components	Angle board, laser 3 holes, concave lens, convex lens, semi-circle lens, a right-angled prism, water bottle for optics
Usage	For middle and high schools

MRS 3686

Experimental Device for Photosynthesis



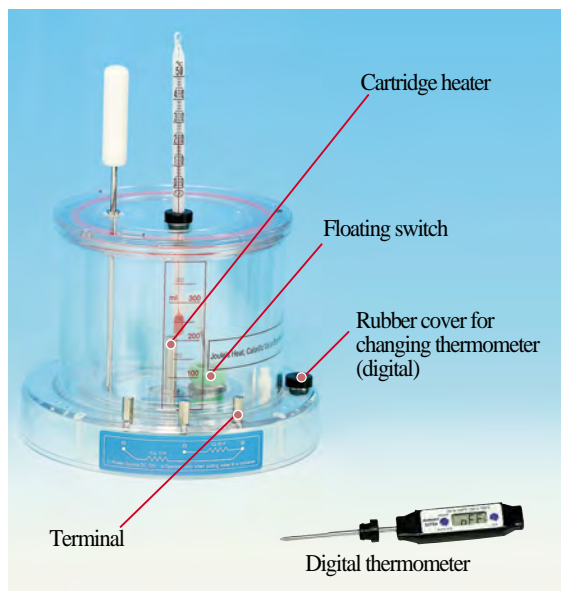
Design registration application number 30-2002-0034697, 30-2002-0036197

- It is a new photosynthesis experimental device developed as a result of research for as many as 15 years in order to supplement imperfection of currently-used photosynthesis device by practicing teachers.
- Grand prize was awarded at educational information exhibition organized by Seoul in 2001. Its superiority and excellence were verified through a numerous experiments for one year.
- It can totally block lights and light intensity is controlled only by light source.
- High level of experiments can be carried out as both qualitative and quantative experiments are possible. It is used for science and general high schools, middle schools, excellent science classes, science teachers, experiment training curriculum, scientific investigation classes and other many sources.
- As this device's operation is relatively easy, diverse levels of students can do the photosynthesis experiment including elementary students.
 - * Measurement of photosynthesis speed by light intensity (manufactured not to be affected by sun light)
 - * Measurement of photosynthesis speed by concentration of carbon dioxide
 - * Measurement of photosynthesis speed by temperature (heater and temperature control device attached)
 - * Aquatic plants fixing device - water plants are easily fixed
 - * Bubble collecting device - easy to determine whether or not bubble contains oxygen.
- As time required for experiment is short, concrete result can be obtained within a given period of time, thereby encouraging students to get interest.
- It is the firstly- developed photosynthesis experiment device in the world.

Features	Block of external light, temperature-control system, water plants-fixing device, bubble-fixing device, thermometer, water tank, rubber tube, plastic tip are included. (colored acrylic plate is selective)	
Size	3502 x 50 x 770mm	Power: AC 220V/60Hz
Usage	For elementary, middle and high schools	

DR-103C

Joule's Heat, Exothermic Reaction Apparatus



Special Features

- When electricity flows and reaches Nichrome wire, it changes to heat energy. This tool is manufactured not to change resistance even in the water by using a cartridge heater, and there is no chance of poor contacting point after long-term usage. Also Wattage(W) was adjusted to meet class hours.
- It is made transparent to observe inside, and is made of double wall(vacuum) to prevent heat transfer.
- At 5V, 5Ω(5W), 10Ω(2.5W), at 6V, 5Ω(7.2W), 10Ω(3.6W). The higher the voltage, the higher the heat.
- Cartridge heater : Installed Nichrome wire heater inside stainless pipe and prevented outside effect.
- Floating switch : Acts as switch only when when there is water upto a certain level for safety reason.

Method of Use

1. Experiment is not performed there is no water for safety reasons.
2. Activates when enough water is poured to cover heater, heater top height and floating switch range are same.
3. Pour enough water upto the scale and perform experiment.
4. Stir stirrer upwards and downwards.
5. Measure temperature after stirring.

- Size : 5Ω(5W), 10Ω(2.5W), Voltage : 5V.

DR-801

Bimetal



FEATURE

Bimetal is made as stuck together with two pieces thin metal, call twin metal. If the metal will be heated, then another metal become longer to bent. Such characteristics able to apply for the fire alarm box or thermo-regulation On the iron.

DR-415

Electromagnetic Wave Generator



Transmission unit, coil

- If we put exclusive coil which is connected to LED light to the main body of device, the LED which is not connected to battery light is lighting. It is possible to transmit the electricity without connection as the magnetic field which is generated from the coil of main body is being received by the coil of reception.
- We can understand how the electricity can be supplied without power pole (telephone pole) in the future.
- Standard : power transmission unit, coil for power receiving
- size : 85x200x35mm

DR-103B

Jule's Heat, Exothermic reaction, apparatus



FEATURES

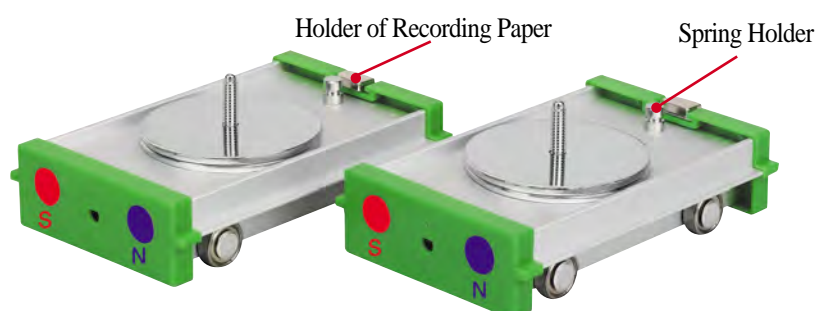
- This equipment shows transaction of energy by changing electric energy into kinetic energy and into heat energy again.
- Students are able to measure data quantitatively from LED indicator. Students can look inside and watch the mill rotating as the bowl is made from transparent plastic. This is a tool that delivers a certain amount of heat by changing dynamic energy transformation to heat energy And it rotates the motor.

How to use

1. An observer may read change in measurement value with about 10 minutes experimental activity. The valves is visualized in digital.
 2. An observer may directly manipulate it and check temperature rise of water by manipulating the motor speed.
 3. It may measure the most approximate value of Theory value (4.2J/cal)
- Size : 350 x 350 x 400mm (M x D x H) • Power source : AC110 ~ 240V 50/60Hz

DR-104

Dynamic Cart



FEATURE

It was made easy to experiment by upgrading the product and by fixing a strong magnetic in fore and back surface

- Size : 115x110x40mm (WxDxH)
- 1 Wagon, weight 100g x 3, spring holder, neonium magnetic x 8, holder of recording paper

DR-105

Brownian Movement (Kinetic Theory of Gas)



How to use

1. Put on Brownian motion demonstrator on the microscope's material plate.
2. Burning perfume in the container
3. Sucking the smoke with injector from the container.
4. Stick the injector to air intake of the container and push in the smoke.
5. Turn on the switch and adjust laser light to be focusing the object lens.
6. Proper magnification is to be magnifying power from 40 to 100.
7. Require prompt observation.

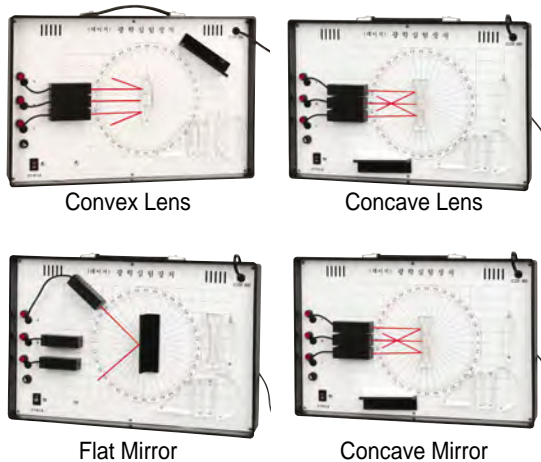
FEATURE

Irregular motion of very small particles which flies inside liquid or gas and moves is called Brown motion. Without movement of an object, small particles which consist the object is having heat movement and do translation while bumped with other small particles. This tool is a tool which allows to see heat movement of gas particles directly, while existing brown motion observation is to observe the pollen above water with a microscope or by putting colored gas to an airtight container. Since it was not an observation of brown motion by a standardized observation tool, it was not only difficult to control variable of the experiment, but also it had a difficulty to observe with sight because it did not show small particles well enough due to shortage of light source. This solved such inconveniences with a simple one unit tool, and allowed to observe easily, conveniently and accurately. Observe with a microscope by inserting perfumed smoke into a brown motion tool and lightening with a laser light.

- Size : 220x45x40mm (WxDxH)
- Power source : AAM battery 1.5V x 2 (3V)

DR-201

Laser Optics Experiment Device



FEATURE

- Composed to be easy to understand for experts and novices. The laser can always maintain bright light taking advantage of AC even when battery is changed. And the screen coated with special material supports the brightness of light. The screen can stay standing or laid due to its magnetic characteristic. Neonium magnet is attached at the back of the screen for the magnetic function.
- Size : 440 × 290 × 70mm (W×D×H)
- Convex Lens (two kinds), Concave Lens (two kinds), Flat mirror, Total reflection prism, Three laser sets
- Power source : AC110 ~ 240V 50/60Hz

DR-202

Lens Set



FEATURE

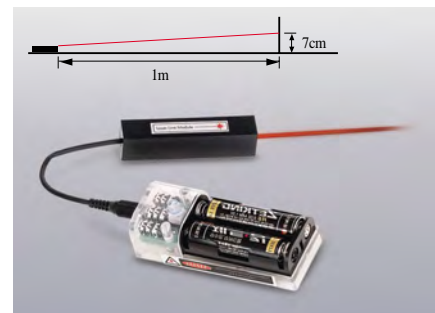
Easily attachable on the metal surface with magnets available for teaching.

And possible various type's experiment with diversity lenses and mirror.

- Size : 10 types 1 set (use for magnetic blackboard) 360 angle board, right angle plane mirror, semi-circle convex lens, triangle prism, double concave lens, convex lens, concave/convex mirror, semi-convex lens, semi-concave lens

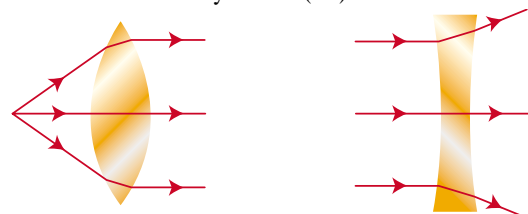
DR-203

Slit Laser Pointer



FEATURE

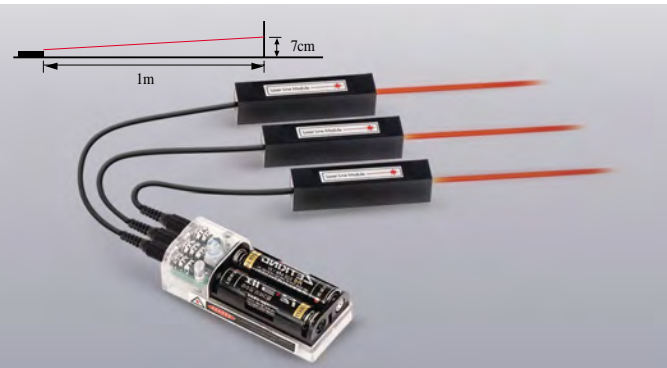
- It's convenient to observe the process of light and conveniently Used for various types of lens, water pail, prism light experiment Due to it was made by slit.
- Also, because it is attached with a magnet, it can be used for a magnetic black board.
- Easily attachable on the metal surface with magnets And available for teaching.
- The light is not to move over 7 cm vertically at the horizontal level.
- Distance of the laser, clearly go out over 1m.
- Output power is to be lower 1m/W as It's can be meet international Standard. But the light is in best level.
- Removed the angle of elevation for the light to be reduced the fatigue of eye.
- Size: 70 x 20 x 22mm (W x D x H), Laser module x 1
- Power source : AA battery 1.5V x 2(3V)



A convex lens gathers the light, and a concave lens spreads the light.

DR-204A

Triple slit laser point

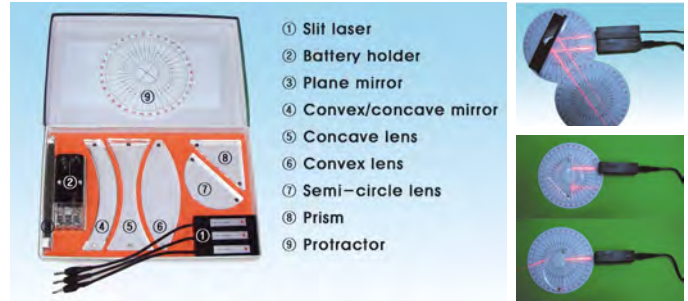


FEATURE

- It's convenient to observe the process of light and conveniently Used for various types of lens, water pail, prism light experiment because it Was made by slit.
- Also, because it is attached with a magnet, it can be used for a magnetic black board.
- Easily attachable on the metal surface with magnets And available for teaching.
- The light is not to move over 7cm vertically at the horizontal level..
- Distance of the laser, clearly go out over 1m.
- Output power is to be lower 1m/W as It's can be meet international Standard. But the light is in best level.
- The lifespan is long as it's attached laser stabilization circuit.
- Size: 70 x 20 x 22mm (W x D x H) Laser module x 3
- Power source: AA battery x 2(3V)

DR-225

Triple Laser Lens Set



By using slit laser and lens set, it helps to understand bending and processing of light. With an attachment of magnet, it can be used in blackboard.

FEATURE

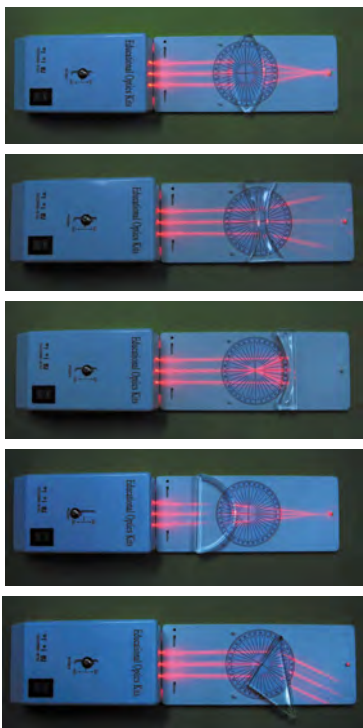
1. Easily attachable on the metal surface with magnets at the backside of laser box and battery holder and lenses.
2. Easy battery change with regular battery.
3. Low power laser for safety.
4. Clearly shows light paths.
5. Made of plastic, little danger of breakage.
6. Sharp corners are trimmed into round curve.
7. Various types of lenses in one set.

Theory

- A laser is a device that emits light (electromagnetic radiation) through a process called stimulated emission. The term laser is an acronym for light amplification by stimulated emission of radiation.
- Laser light is usually spatially coherent, which means that the light either is emitted in a narrow, low-divergence beam, or can be converted into one with the help of optical components such as lenses.
- Typically, lasers are thought of as emitting light with a narrow wavelength spectrum ("monochromatic" light). This is not true of all lasers, however: some emit light with a broad spectrum, while others emit light at multiple distinct wavelengths simultaneously. The coherence of typical laser emission is distinctive.
- Most other light sources emit incoherent light, which has a phase that varies randomly with time and position.

DR-205

Educational Optics Kit



FEATURE

The observer able to see light processing scene through high vending Angle LED, clearly.

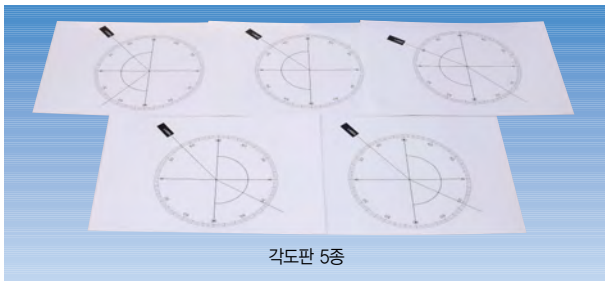
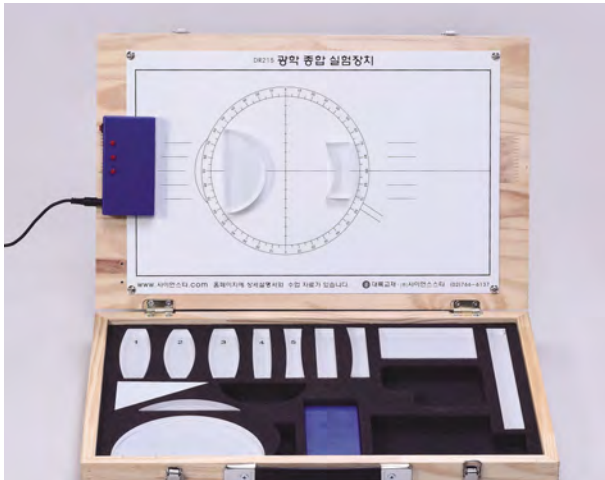
Protractor in screen board rotates for the convenience of students.

- Size : Optics container 130x70x40mm (WxDxH)
Screen : 175x70x7mm (WxDxH) Light Lens 7 types
- Power source : AA battery 1,5V x 2(3V)



DR-226

General Science Experimental Unit



Technical note

- Composition : 5 holes laser (1 mW), adaptor for cell phone, 14 kinds of lens, 5 kinds of angle plate, woden bag

Specification

As many kinds of lens are equipped with (14 kinds), it is possible to do light experiment using lens.

Through this, we can see the role of lens (eyeball) and can proceed experiment using semi-convex lens for light progress course or correction of visual impairment in case of normal eye, short-sightedness, long-sightedness like experiment 2.

5 kinds of angle plate can be used attached like experiment 1.

As magnet is attached to lens, it also can be used to magnetic blackboard. Besides it, let's experiment using many lens for the principle of camera, Galilei telescope, Kepler telescope.

In case of experiment 3, it can be experimented for optics bucket by large convex lens. Output of 5 holes laser optics is less 1mW and it is internationally certified product (IEC, IECEE). In case of laser, it is possible to convert through switch from 1 hole to 5 holes.

It can be used around 6 hours after charging 10 minutes.

example of experiment

- Geometric optics, apparatus set, magnet attach type (it can be attached on magnet blackboard)
- As screen white paint is made on lens, we can see the light proceeding line. It can be used around 6 hours after charging 10 minutes.



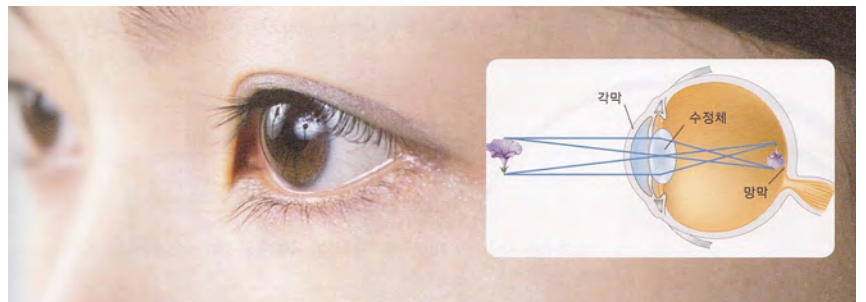
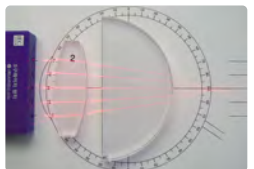
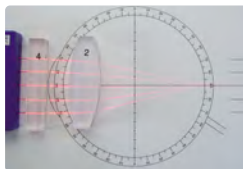
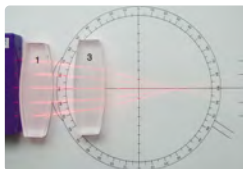
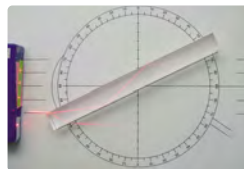
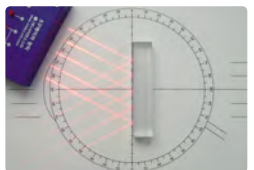
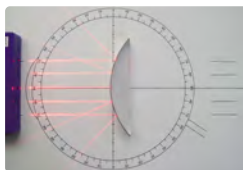
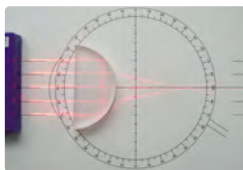
실험 1안



실험 2안

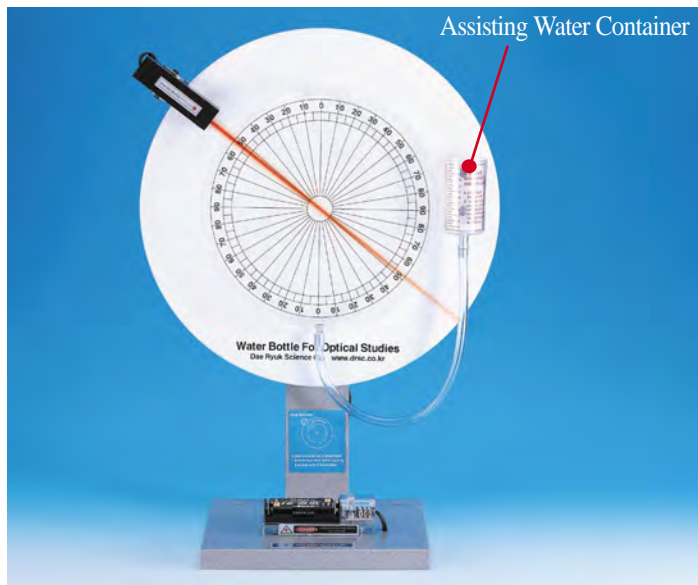


실험 3안



DR-206

Water Bottle For Optical Studies



FEATURE

As a water container that manifests light bending by laser, this tool used to have difficulties to adjust horizontal line of 180, but by attaching an adjustment tool that makes adjustment easily, it made the preparation simply.

1. Water level adjustment is easy by moving assisting water container up and down
 2. Horizontal adjustment is adjusted by turning horizontal handle.
- Size : Water Container, laser, assisting water container, horizontal bolt(3), power
 - Power source : AA battery 1.5Vx 2(3V)

DR-208

Colored Top



FEATURE

It makes various color composition by using various colors.

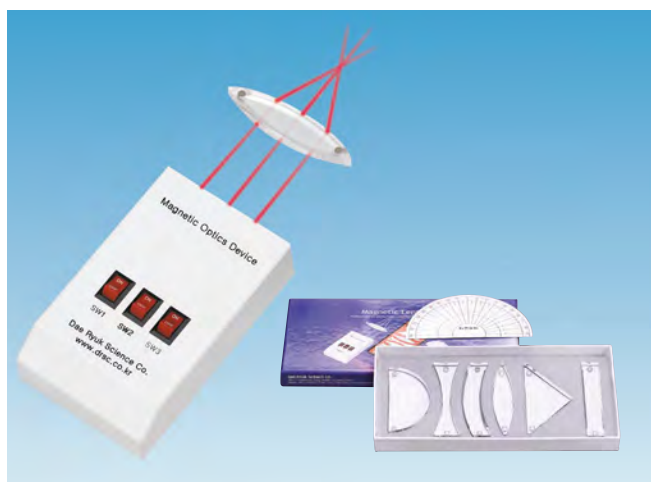
- Size : 10 monochromatic color, 1 three primary color filter board(red, blue, yellow)

How to use

1. It is incised to put different colors in a monochromatic color board.
2. It may adjust color size by overlapping 2 or 3 incised parts. Also it may make more various colors by using a color filter.

DR-209

Magnetic Optics device



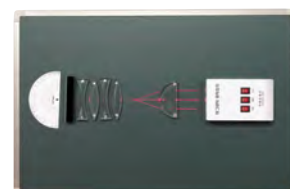
FEATURE

- It's easy to understand for the paths reflection, Refraction, total reflection of the light.

And installed separate switch for three slit lasers.

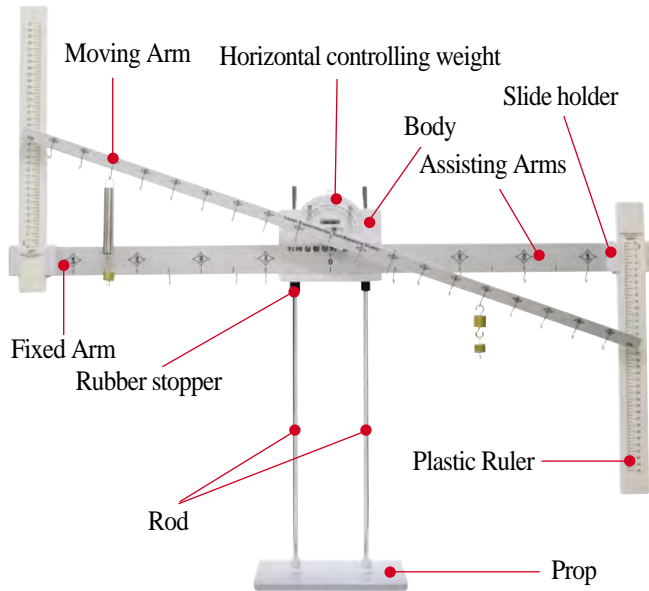
- Both magnetic optics device and lens are magnetic. It's convenient for individualized teaching at school as It attachable to magnetic blackboard.
- Size: Optic device 150 x 90 x 40mm, Lens barrel 235 x 120 x 25mm
- Power source: AA battery 1.5V x 2(3V)
- Component: Magnetic optic device, Lens set

Attachment example for magnet Blackboard



DR-302

Lever Experimental Tool (Balance Scale)

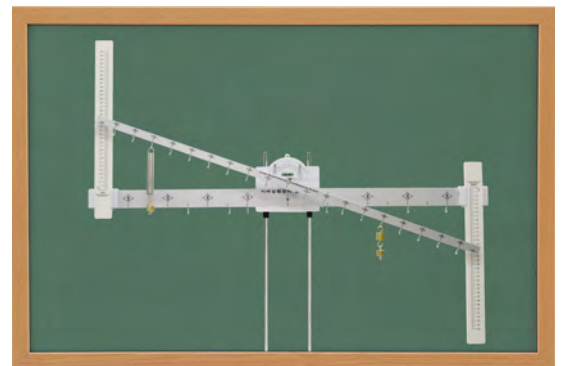
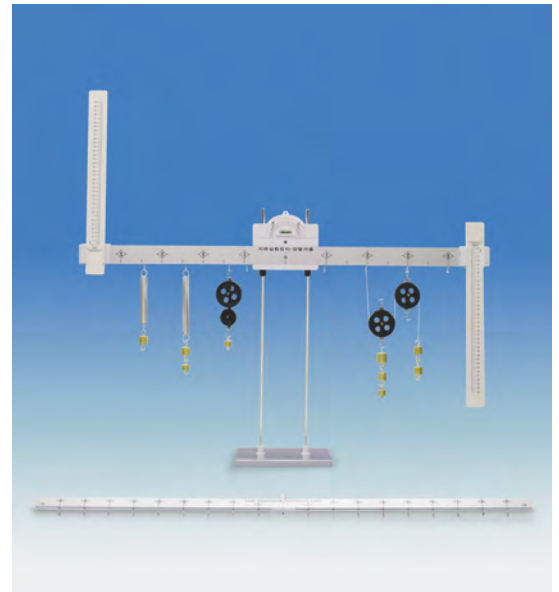


Example of Statics Experiment

FEATURE

It was made to hang objects at a hook which is divided into both sides with a central point of 1000mm of the arm as a standard, and it allows to keep the balance as the balancer to adjust balance at the bottom and head, and as making a balance adjustment bolt at the bottom part. Also each end of assisting arm of 1060mm, it is attached with a perpendicular ruler, which allows you to know the slope degree. There is an angle measurement board at head. The body arm can be disjoined when you do an experiment of various lever experiments and dynamics experiments, and helps you to a settled experiment by using hooks at assisting arms. At central spindle of the arms, it minimizes rubbing resistance by using bearing which makes the operation soft and smooth. Also it can be used while attaching to a magnetic blackboard.

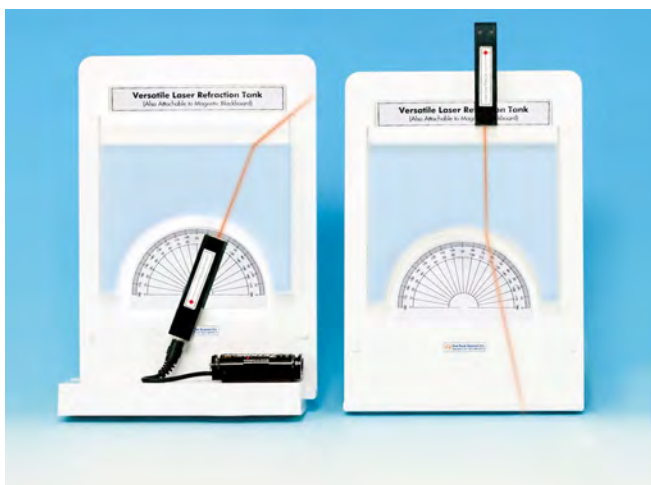
- Size : 1060x120x800mm (WxD xH)



Example of Using Magnetic Blackboard

DR-210

Versatile laser refraction tank



FEATURE

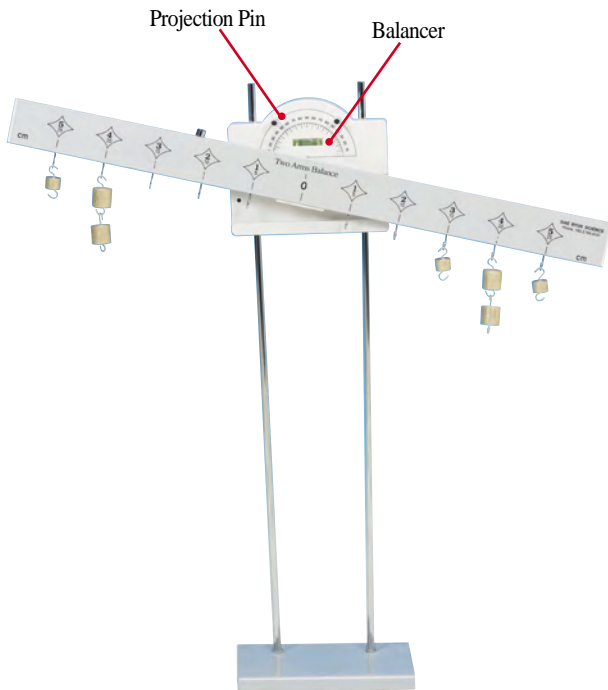
- The protractor in the center of main body and water Tank are made of stainless steel which magnets can be attached and you can see refraction angle of Water at versatile angles.
- Stand and main body can be separated, and main body can be attached to magnetic blackboard for Teachers demonstration purpose.
- Size : 160 x 60 x 240mm
- Power source : AA battery 1.5V x 2 (3V)
- Component : Laser, main laser power

Attachment example for magnet Blackboard



DR-301

Two Arm Balance



FEATURE

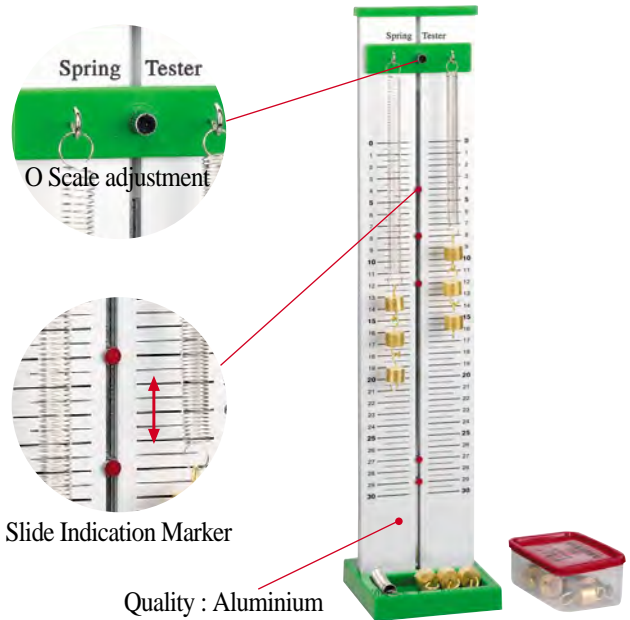
It was made to hang objects at a hook which is divided into both sides with a central point of 600mm of the arm as a standard, and there is a balancer and balance adjustment knob at the bottom and head parts to adjust balance. Also

with an angle measurement board, it shows the slope. In order to prevent leaning of an arm, it is attached with a projection pin. Also it can be used while attached to a magnetic blackboard.

- Size : 600x50x100mm (WxDxH)

DR-303

Spring Tester



FEATURE

It has a slide market which indicates upgrade of the product and experimental point.

As used 2 types of springs which has same types of wire(iron wire) but has different diameter, it can experiment characteristics of spring scale. The experiment is accurate because it removed initial bouncing power of the spring.

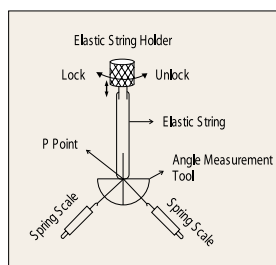
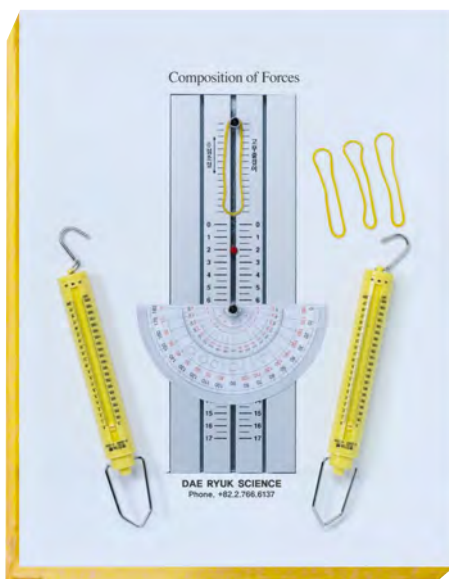
- Parts : 20g weightx5, 30x3, two types of springs, 5 side indication markers

How to use

The experiment will perform well without errors when you use a big Φ (diameter) spring for experimenting 20g, and use a small Φ (diameter) for 30g.

DR-304

Composition of Forces



FEATURE

There is a slide groove in order to adjust distance between slide elastic string holder and elastic string which allows to hang the elastic string in the middle of a rectangular board. For elastic string, use a gum band, and slide angle measurement tool is movable.

- Size : 300x400x18mm (WxDxH)

How to use

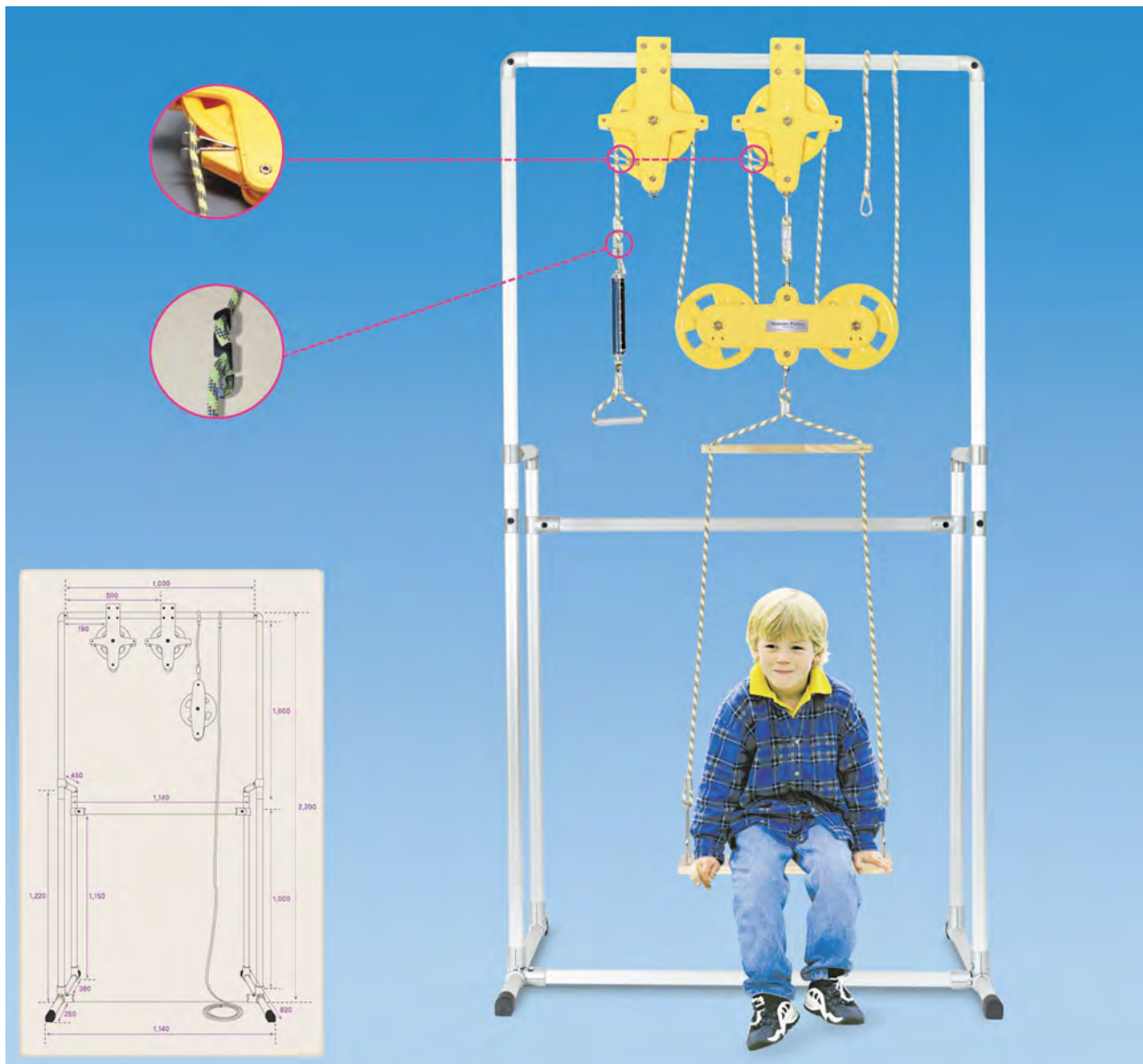
- When you turn the handle left and right after hanging the gum band to a elastic string holder, it becomes locking and unlocking, and adjusts 0 scale (\uparrow up \leftarrow down).

※ Do not add strong power (damage).

- Do the experiment by moving the angle measurement tool and adjust it to an arbitrary point of P.

DR-305

Human Pulley



FEATURE

Human pulley can be used in order to lift the heavy object.

In compliance with the principle of work, able to lift the object with 25% of original weight.

It's easy to assemble or disassemble and can be move or storage conveniently.

It also applying the large spring balances and possible to calculate the volume of the force

Which enters fixed quantity.

- Size : 1100 x 800 x 2200mm (W x D x H)
- Box Size : 900 x 610 x 250mm (W x D x H) / Weight 18.7kg
- Components : Fixed pulley (2 sets), Moving Pulley, 2nd gear pulley, spring balance, Rope bench, Spring balance, Holder (16 pcs), pipe (12 pcs)



DR-414

Magnetic field of Solenoid



Kit

FEATURE

In case the magnet put in or pull out in the coil of solenoid(in case the magnetic field is changed), we can understand that electromagnetic-induction phenomenon which induced electromotive force is occurred.

The magnetic field made by the induced current interfere the magnetic motion so that induced current flow.

So, It can show the Lenz's law.

- Size : 120x95 x105mm (WxDxH)
Dry cell holder, LED, LED socket, Solenoid coil, Basic board, Leader switch, Drinking straw, Magnet
- Power source : AA battery 1.5V x 2(3V)

DR-402

Electric Resistance Experiment Circuit

FEATURE

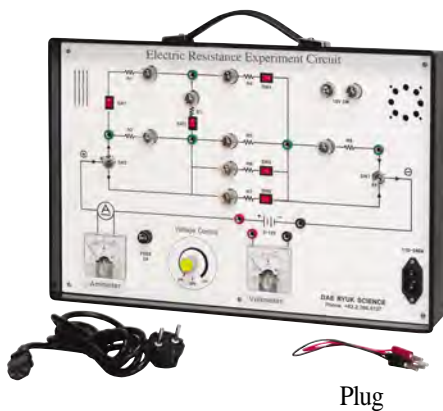
Experiment circuit device is produced that it's to be improve comprehensive faculty For the basic electric which is applied the lamp instead of current resistance.

It actually shows voltage and electrical circuit flow by consisting various flows such as electrical series, parallel circuit, wheatston bridge while checking brightness of the bulb.

- Accessories : 10 lamps, manual, 2 power cable plug lines, 1 individual experimental evaluation question sheet
- Power : 110V ~ 240V, 50/60Hz Free Voltage / Capacity : 3.5A DC
- Lamp : 12V 5W / Size : 440x290x70mm (WxDxH) / Weight : 2.1kg

How to use

1. Connect power.
2. Connect the plug into a voltmeter, put it into $\text{---} \text{---} \text{---} \text{---} \text{---} \text{---}$ jack, adjust it into a proposed voltage for measurement with a power adjustment.
3. You may manipulate the circuit with a switch which you want to experiment.
4. Detailed instruction is given in a users' guideline manual.



Plug

DR-211

Polariscope

Technical note

- Standards : 380x230x100mm
- power source : 3V high brilliance LED. .

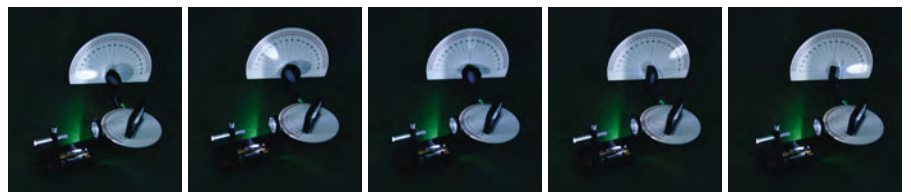
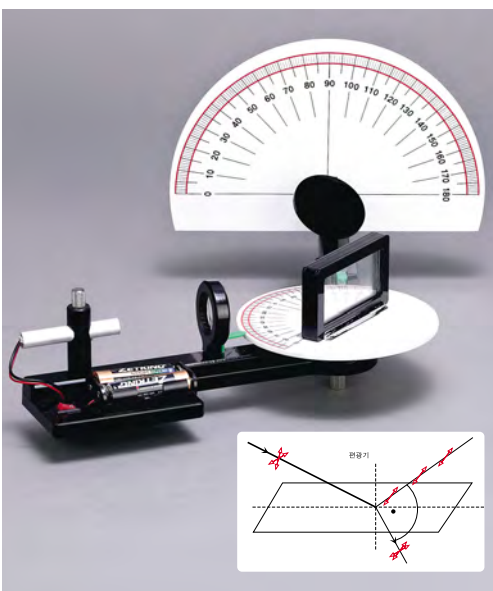
Specification

How can you prove Brewster's law (be informed as a polarizing angle) in classroom? The polarity property can't be seen in Nature light's source, but phenomenon of polarized light will be appeared if the light is reflected or refracted.

We calls light's incidence angle as polarized light's angle if the light which is reflected by mirror is polarized completely.

The tangent of polarized light's angle is the same as refractive index (Brewster's law).

On the normal glass cup, it is 56 degree. Only simple light can be polarized completely.



DR-118

Potential Energy Conversion Measuring Apparatus, Gravity Acceleration Measuring Apparatus



Design Application

Transparent acrylic pipe

This angle can be adjusted

Specification

- in case of free fall object nearby the surface of the earth, it exercises equivalent velocity by the acceleration of gravity, g . If we measure mass of bead (m), initial speed (v_0), last speed (v), fell distance (h), we can experiment that decreased location energy is the same as Increased exercise energy.

$$mgh = \frac{1}{2}mv^2 - \frac{1}{2}mv_0^2$$

- We can get the acceleration of gravity, g by using dynamic energy conservation law or exercise equation of exercising object at equivalent velocity.

$$g = \frac{v^2 - v_0^2}{2h}$$

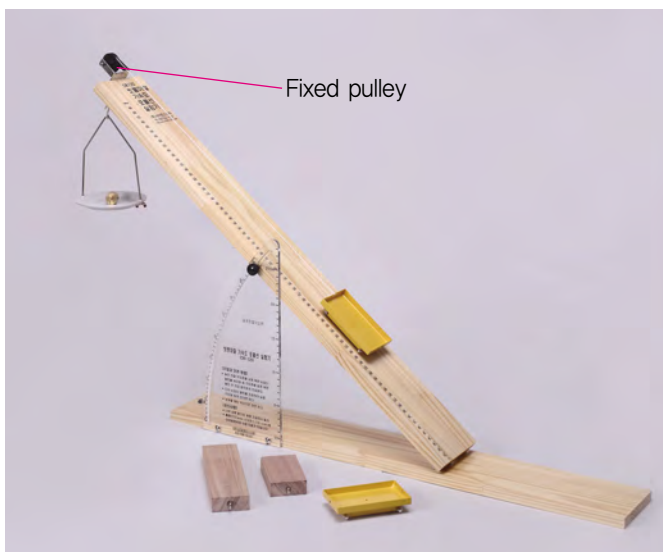
- Dynamic energy conservation law experiment is possible.
- There is a gradation on vertical plane buttress. It is possible to get two kinds of beads depart and falling experiment is also available.
- Let's experiment speed measuring instrument while moving. Falling speed is different.
- We can prevent object's breakaway by using transparent acrylic pipe.
- It is good if we put at cm/s speed unit and experiment.
 - * composition : angle plate, metal bead departure pin, two kinds of metal beads
 - * price : speed measuring instrument is being sold separately. (drawing) it is possible to adjust its angle.



실험예

DR-119

Inclined Plane Friction Tester



Fixed pulley

Technical note

- Specifications: 1060x100x310mm

Specification

Let's do friction experiment by an inclined plane with different size's two object and cart.

It is convenient to adjust an angle of inclination and angle & distance is marked.

Inclined plane's adjustment is good according to angle and safe experiment is possible.

- composition : two kinds of chips, dish, cart, thread, angle plate, pulley

DR-120

Inclined Plane Friction-Acceleration-Parabola Experimental Unit

Design Application



Technical note

- Specifications: 100x1050x600mm
- Composition : cart, 2pcs object, plate, height adjustable angle plate, two kinds of beads

Specification

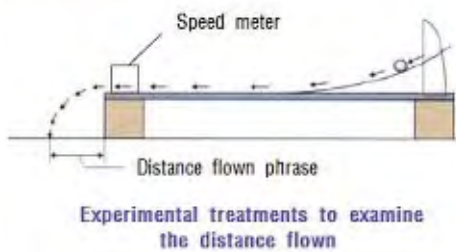
This is a experimental apparatus for change of mass by equivalent velocity exercise, momentum conservation law, surface friction by one device and there is a gradation which can know its section distance on the plane buttress.

After adjusting an angle of inclination, let's fall different mass bead and we can know the change of speed & falling location. (you can use the experiment table).

Also, let's find out its speed by using speed measuring instrument. Experiment of an inclined plane is possible.

Let's do our experiment after adjusting an angle of inclination of cart and friction object. (we can use a fixed pulley).

실험예



Parabolic acceleration experiments fall

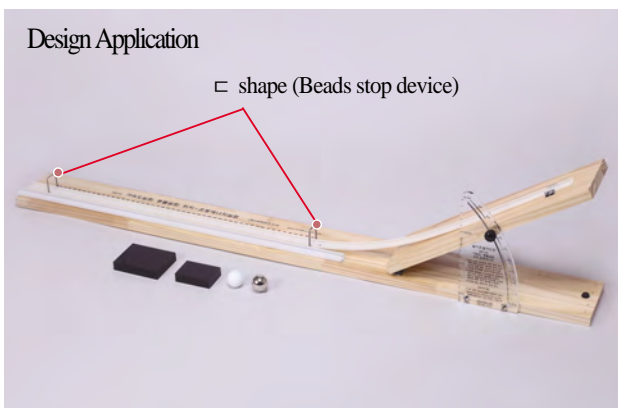


Bevel experiments

DR-121

Acceleration-Collision-Kinetic Energy Experiment

Design Application



Technical note

- composition : □ type goalpost 2pcs, metal bead, magnetic bead, 2pcs object, height adjustable angle plate
- Standards : 1010x100x280mm

Specification

We can feel the globe's speed which is rolling on an inclined plane differently between high place and low place.

We are not sure if we don't proceed our experiment actually even it is listed on our textbook.

Let's make the object collide through adjusting the height of side angle plate, changing the location and making the metal bead fall onto inclined plane.

Then, we can see its exercise energy.

Let's do falling experiment of metal bead after we set an experimental apparatus on the end of table.

We can see its falling distance which is flying in an arc.

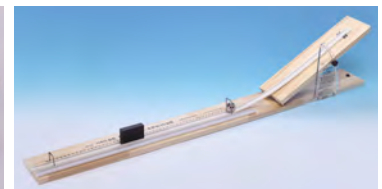
실험예



가속도 · 낙하



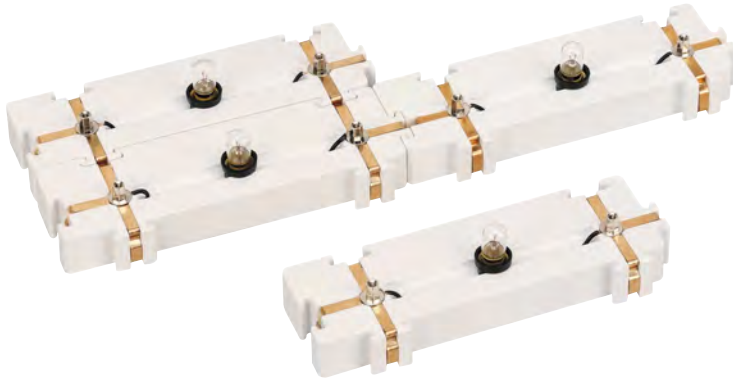
가속도 · 충돌



위치 · 운동에너지 충돌실험

DR-408

Bulb Resistance Panel(4pcs/pack)



FEATURE

It may connect freely without conducting wire tweezers electrical series, parallel circuits, series and parallel(combination) circuits with bulb resistance board. You may change it with a small bulb.

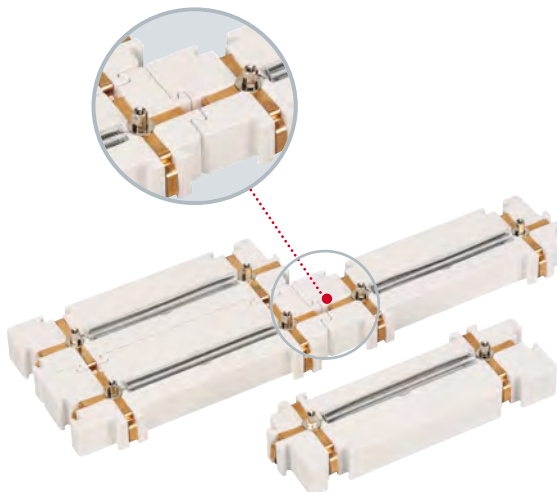
- Size : 115x50x20mm (WxDxH)
- 3V 4 in 1 set (may change with 1.5V, 6V, 9V)

How to use

1. Adjust one in a flat plane and push the other to fit in the form from top to bottom when connecting in electrical series.
2. Do the other way round when disjoint them.

DR-413

Nichrome Wire Resistor Block Set (4 pcs)



FEATURE

It can be connect the nichrome line resistance board freely without conducting wire tweezers electrical series, parallel circuits, series and parallel(combination) circuits.

To prevent damage of nichrome line by using the machine which is strong to heat and a glass tube.

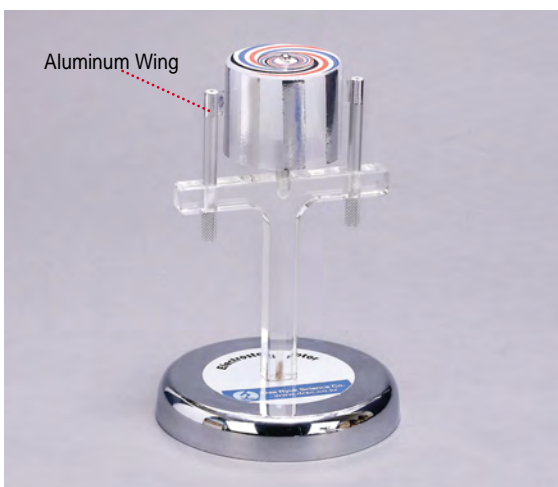
- Size : 115x50x20mm (WxDxH)
- 5 Ω , 10 Ω , 15 Ω , 20 Ω , 1 each

How to use

1. Adjust one in a flat plane and push the other to fit in the form from top to bottom when connecting in electrical series.
2. Do the other way round when disjoint them.

DR-417

Electro Static Motor



FEATURES

There is a possibility of knowing the movement electricity flowing. The electron leads and the wing of the motor it moves with an opposition polarity. Positive charge until when always arriving balanced. It moves with a negative charge side. The electrons are out of surface. The surface be at the end of sharp pointed (aluminum wing). And Positive charge can be move to the side of negative charge. It's calling peak effect.

(Example on the experiment)
When it dose a wing direction simultaneously in opposition and the rotary direction is exchanged.



High voltage



Genecon



DR-418

Electro Static Bell



FEATURES

- There is a possibility of doing a power failure badge experiment with the electrostatic bell which is very sensitive with the electrostatic bell where the battery is not a necessity.
- The metal ball is being hung in the thread between two bells, while one bell is electrified, Another bell is becoming ground connection.
- The bell which is electrified contact it pulls the metal which same signal is electrified and it pulls. It will see in order for the electrification which is identical jostle and with the bell in electrification condition of the bell again being bumped against and, is, or, it is running.
- Like this actual condition repeats when the magnetic field between two bells which one ball as it moved subtracting until, continuously.
The high voltage generator which is connected in the socket of the electrostatic bell or it operates with ebonite enormous.

(Example on the experiment)

High voltage
power supply



content high
voltage genecon

DR-419

High Voltage power supply(10KV)

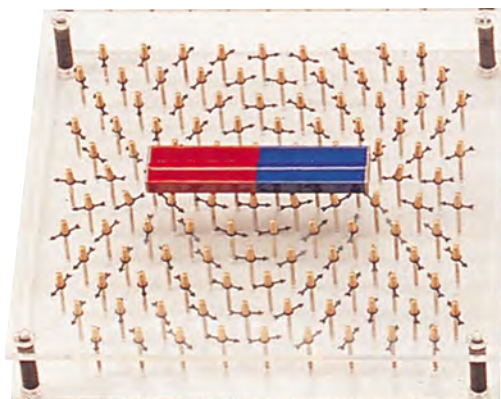


FEATURES

- It's using various electrostatic experiment like for electrostatic motor, electrostatic bell & electric flux magnetic field, crookes tube, These are very safe and well operation.
- Size : 850 x 145 x 35mm
- Power source: 9V battery, High voltage output 10 KV

DR-420

Magnetic Needle Observation Panel



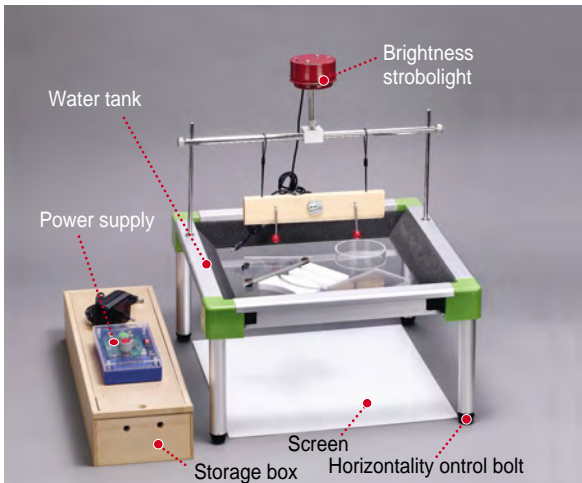
FEATURE

Magnetic field and magnetic force by magnet can observe forming circle in three dimension. We can observe that scattered magnetic needles form three dimensionally at once when we put magnet at a magnetic board. It is made to enlarge and show how the forming of magnetic power is done on a screen by putting it on a OHP.

- Size : 150 x 150 x 25mm (W × D × H),
consists of 108 magnetic needles 1 Alnico bar magnet

DR-501

Mini Surface Wave Projecting Device



FEATURES

- **Vibration** : It means the object shaking in the center as one point.
- **The wave** : It means that vibration condition spreads out follow the object. the vibration connect with the wave and It's connect with water wave.
- It's made the Mini Surface Wave Projecting device that it can be observe delivery Process of the water wave.
- This experiment device forms a wave motion in the water surface that It can be study Several actual condition of wave motion, It's very easy to move and storage, assemble and disassemble, It's able to possibility of doing with surface wave for OHP.
- In order for the echo not to happen in the water tank's wall, the accuracy is high.
- The interference actual condition which it comes to make from two spaced planting circles of the water wave the disappearance interference where the constructive interference and the vibration where the vibration occur on a large scale happens.
- When occur two original wave, reiteration From the place which occur The place where the vibration occur on a large scale constructive interference and the place which occur destructive interference.
- The illuminant at brightness LED strobe it will use step and standstill of the water wave and it will flow and the person will be able to control, cleanly there is a possibility of seeing the wave shape which is clear.
- It's possible to replace old illuminant(glow lamp) and supply with low price.

Standard : Water tank : 400 x 400 x 230mm (WxD xH)
Power : AC110 ~ 240V, Output : DC 5V

DR-807

Adiabatic Expansion Tester (Type A)



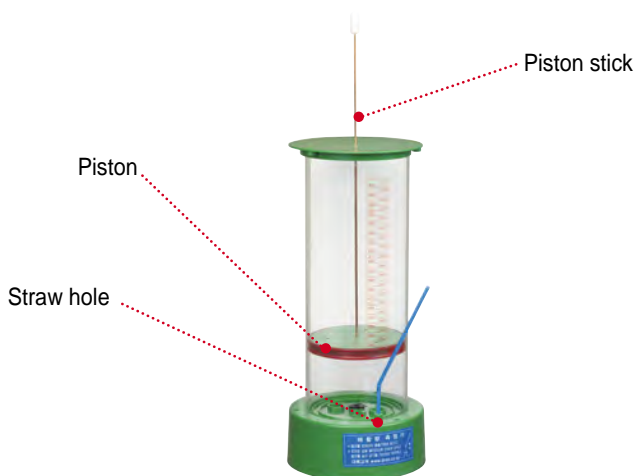
FEATURES

- An adiabatic process is one in which there is no loss or gain of heat. In an adiabatic expansion external work is done at the expense of the internal energy of the gas and results in lower temperature of the gas molecules.
- According to the kinetic theory of gases, all gas molecules are in continuous motion and their kinetic energy is a measure of the absolute temperature of the gas. As the temperature increases, the molecules move faster. When a gas is expanded, as in the case of air being pumped from a vacuum system, the gas molecules will do work by expanding into vacated spaces in an attempt to equalize the pressure. The work to do this is obtained at the expense of the internal kinetic energy of the gas. The result is a decrease in the temperature of the gas molecules. If the expansion is so fast that very little heat energy can be transferred to the gas, it can be considered adiabatic.

Size : $\Phi 10 \times 320\text{mm}$
Component : Digital thermometer, pressurizing meter, depressurizing meter

DR-701

Breathing Capacity Meter



FEATURE

How much air is breathed in and out when we breath? Also, how much amount of air will be there when we breath in the air at the maximum and breath out? Let's check this by using a measuring instrument of lung capacity.

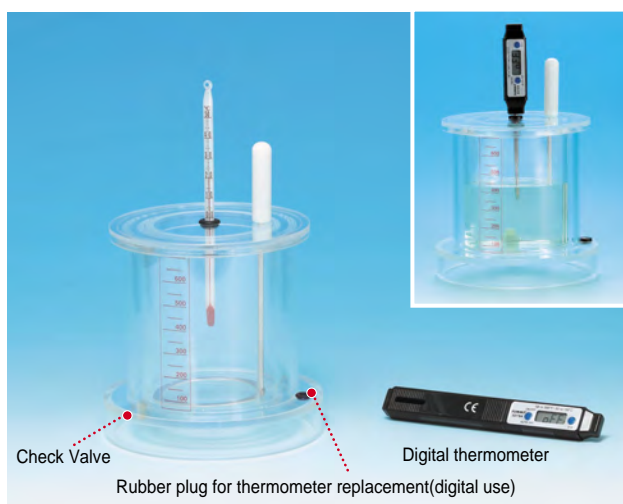
- Size : $\Phi 90 \times 370\text{mm}$

How to use

1. Put a piston closely to the ground by using a pillar handle of the piston.
 2. A piston rises when you blow the straw after putting the straw in a straw holder.
 3. One straw is used for one person each for hygienic reason.
- ※ Put the straw after using the piston. When you push while the straw is put inside, it may be polluted due to elimination of inside air.

DR-803

Calorimeter



FEATURES

- It can be observed inner experiment as it's made the transparent cup which is possible to substitute the current Styrofoam cup.
- The cup is made as 2 layers and It's maintain vacuum condition
- It can thermally resist upto 300 °C and can be put boiling water directly.
- Check Valve is installed to extract air between inner wall and outer wall to make vacuum. When air is inside, You can extract air by syringe.
- It is the rubber for digital thermometer.
- Size : Φ 130 x 120mm
- Component : Container, Thermometer, Stirrer

DR-804

Specific Heat tester

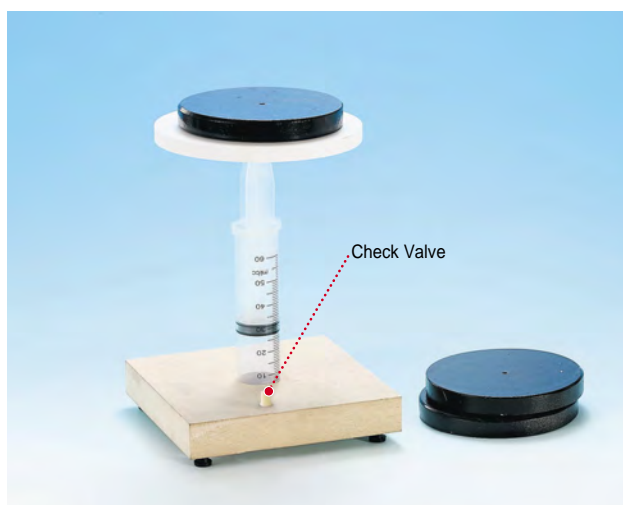


FEATURES

- There were many difficulties finding the right Position of specific heat measuring objects and stirrers since inner side of tester was not seen while test of specific heat, adiabatic reaction test and calory test.
- cup is made as 2 layers and It's maintain vacuum condition and same function as thermos. It can be substitutes Styrofoam cup. You can observe inner side and able to proceed the experiment more easily.
- It can thermally resist upto 300 °C and can be put boiling water directly.
- Check Valve is installed to extract air between inner wall and outer wall to make vacuum. When air is inside, You can extract air by syringe.
- It is the rubber for digital thermometer.
- Size : Φ 130 x 120mm
- Component : Container, stirrer, Thermometer, Specific heat measuring objects(3).

DR-809

Boyle's Law Demonstrator



FEATURES

- It can be observed the relation with pressure of gas and the volume.
- It combines and builds PVC injection to wooden holder, Use the check valve to be control the air at the end of Injection using the hose. Then, It can be adjust easily for Scaled level control.
- Boyle's law is one of law as made the name of Robert boyle. It shows the relation between the volume and Pressure.

Boyle's law is expressed as follows.

If it's fixed the volume and temperature of gas, pressure(P) And volume(V) is in inverse each other.' In other words, if Pressure will be grow big, the volume will be shrink and If pressure will be grow smaller, then the volume will be Grow big.

- Size: 130 x 130 x 170mm
- Component: Wooden material, 1 kg pendulum 3ea

Light Reflection & Refraction Experiment Kit Set (Comprehensive optical experiment set)

- **Experiment purpose** : This experiment kit set allows experimenting various characteristics of light; including rectilinearity, independent movement, absorption, reflection, regular reflection and diffused reflection of light, light's reflection law, light's reflection on a spherical mirror and the formation of shape by a reflex lens.

- Dimensions: 440 x 390 x 80 mm



Name of item	Specification	Quantity
Laser point	650 μm	3
Laserlight source	120 x 80 mm	1
Concave lens	20 x 80	1
Convex lens	20 x 80	1
Triangular prism	60° Triangle	1
Concave mirror	20 x 80	1
Convex mirror	20 x 80	1
Surface mirror	20 x 90	2
Round water tank	ϕ 100	1
Experiment stand (plate type)		1

FEATURE

The laser beam generator for experiment, which can be easily attached or removed by a simple device and magnet, can be freely moved up, down, left and right; multiple experiments can be carried out with one sample (for example, light refraction experiment in a water tank, experiment of light reflection on the surface of water, levitation experiment, etc.); a device that allows adjusting the degree of light's clarity is included.

ECO Saver (WM)

- **EZ WM Test Kit Set (WM : WATER MONITORING)**

EZ WM test kit set consists of the test kits, other components to measure water quality and case; the test kit set is used to identify the water contamination level by accurately and easily measuring the concentration of chemical oxygen demand (COD), dissolved oxygen (DO), (PO₄) phosphorus and nitrogen (ammonia nitrogen and nitrate nitrogen), pH and water temperature.

- **Features: The product**

1. allows easy measuring of water contamination level in the field such as a river without having additional measuring devices or electrical power,
2. is not expensive, generates little error and has high reproducibility,
3. is easy to handle by anyone and good for environmental monitoring activities of environment protection organizations or groups; can be used as a study material of environment related subject or field experience study for students.



- **Measuring items and range and product composition**

chemical oxygen demand (COD)	0 ~ 20 ppm, (0/ 2/ 3/ 4/ 5/ 8/ 10/ 15/ 20) reagent①, reagent② and test tubes
dissolved oxygen (DO)	0 ~ 10 ppm, (0/ 1/ 2/ 4/ 6/ 8/ 10) reagent①, reagent② and test tubes
(PO ₄) phosphorus	0 ~ 20 ppm, (0/ 0.05/ 0.1/ 0.2/ 0.4/ 0.6/ 0.8/ 1.5/ 2.0) reagent①, reagent② two and test tubes
NH ₄ (ammonia nitrogen)	0 ~ 5 ppm, (0/ 0.025/ 0.05/ 0.1/ 0.2/ 0.4/ 0.6/ 0.8/ 1.0) reagent①, reagent②, reagent③ and test tubes
NO ₂ (nitrite nitrogen)	0 ~ 80 ppm, (0/ 0.5/ 1/ 5/ 10/ 15/ 30/ 50/ 80) reagent①, reagent② and test tubes
pH (hydrogen ion concentration)	1 ~ 11 (1/ 2/ 3/ 4/ 5/ 6/ 7/ 8/ 9/ 10/ 11)
Water temperature	0 ~ 50°C Thermometer
Other components	Two comparator blocks, one spoon, two beakers, two syringes for injecting specimens, one COD syringe, ballpoint pen, Post-it and carrying case

ECO Saver (DO)



• EZ DO Test Kit Set (Dissolved Oxygen: DO) introduction

Dissolved oxygen refers to the amount of oxygen dissolved in water (ppm). The DO level is lower in more contaminated water because oxygen is consumed when organisms breathe or dissolved materials are oxidized in the water. In general, fish cannot survive in a water of which DO level drops below 4 ~ 5ppm.

- EZ DO test kit set is composed of kits and components that are useful in measuring the concentration level of DO in water in order to identify the contamination level of water quickly and accurately.

• **Measuring range** : 0~10ppm (0/ 1/ 2/ 4/ 6/ 8/ 10)

• **Product components** : reagent ① reagent ② syringes for injecting specimens, beaker, test-tube, user manual and case.

※ Additional reagent for refill

ECO Saver (COD)



• EZ COD test kit set introduction

- COD (Chemical Oxygen Demand) :
COD indicates the amount of oxygen (ppm) required when oxidizing contaminating materials such as organic matters. The bigger COD value is, the more organisms exist contaminating the water; on the other hand, less COD value indicates fewer amount of organisms and low contamination.

- EZ COD test kit set is composed of kits and components that are useful in measuring the concentration level of COD (Chemical Oxygen Demand) in water in order to identify the contamination level of water quickly and accurately.

• **Measuring range** : 0~20ppm (0/2/3/4/5/8/10/15/20)

• **Product components** : reagent①, reagent②, syringes (for injecting specimens and reagent), beaker, test-tube, user manual and case.

※ Be careful when using reagent② (if the color of the reagent is changed, it can be replaced for free)

※ Additional reagent for refill

2

Korea Scientific Instruments Industry Cooperative



■ AHA INC Co., Ltd.	62 ~ 65
■ B&S MEDIA CO.,LTD.	66 ~ 71
■ Dongwon Systems Co., Ltd.	72 ~ 75
■ EARZONE CO., LTD.	76 ~ 77
■ OMAX CO., LTD.	78 ~ 81
■ ORIENT AV CO., LTD.	82 ~ 83
■ TOPEX Corporation	84 ~ 85

Audio & Video Educational System

Smart Table Interactive Touch Table - LCD 32"

Group learning software is becoming increasingly popular. AHA's Interactive Table is designed to recognize several touch points so students can collaborate and have fun. For Business, customers could play games, check their favorite websites, or read the news while they wait for their meal.



Technical Features

- 32" display is large enough for several users.
- Capacitive sensor detects up to 20 simultaneous touch points. Perfect for lots of fingers.
- Height adjustable to accommodate users when sitting or standing

Interactive LCD 32 / 46 / 55 / 65 / 70 / 82 / 84"

The LCD screen accepts writing by hand or by a tool.

- *Multimedia display for classroom or meeting room*

- Multi touch function - Optical Camera Sensor
- Soft writing on screen - Anti-aliasing tech.
- Full HD (1920 x 1080)
- No more projector



With the adoption of tempered anti-glare glass,
the lecturer's sight is protected and
viewers can enjoy great picture quality.

Clear and bright high-definition picture under any lighting conditions.

An Optical Camera touch sensor system
provides accurate and delicate touch detection.

Digital Podium Elf, Simpo, Maestro

AHA Multimedia podium series -
LCD Tablet monitor on top, Wired/Wireless
Mic. & Amp, Lecture room control system.

➤ **Elf** : The world's first
dual monitor lectern



Simpo : Height
adjustable (150 mm)

➤ **Maestro** :
Bold and stylish
design gives authority



Digital Signage 32 / 46 / 55 / 65" LCD

Broadcast digital contents for Public/Internal Info, Advertising.

Dynamic audio, video and imagery

24/7. Programmable per location or time of day.

- Powerful built-in speaker system
- Built-in LAN connection
(Wireless optional)
- Bright LCD 700cd/m2
- Support Full HD
- Supports Windows 7
- Management Software
 - Bluebird Scheduler
 - Bluebird CS Player



- Freely configure the screen
Information and Video layout
- PIP, POP functions
- Pop-up frame for simplified maintenance

STAND TYPE PODIUM_e-STATION S

The e-STATION S is advanced smart podium and workstation address technology-based learning environments.

It has the latest technology for presenting in Classrooms, Auditoriums, Meeting Rooms, and Lecture Halls.

It is equipped with a user-friendly control panel, a tablet LCD monitor, a personal computer, a DVD/VCR, and audio systems such as a microphone and an amplifier.



FEATURES

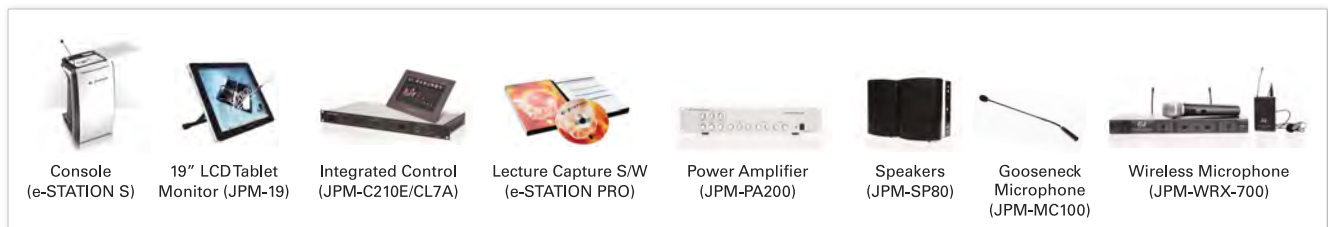
- All in one cabinet style
- Ergonomic and futuristic design
- Adjustable monitor viewing angle
- International standard 19" rack use to store devices
- One-touch and central device control (7" Touch Panel)
- Tablet LCD monitor and large screen display
- Molded console for consistent quality
- Writing and recording S/W, e-STATION PRO (GS certificate)
- Support RMS (Optional)
- Fan, Additional I/O port, wheels, keyboard tray, mouse pad

SPECIFICATION

Podium Body	Stand Type / 860(W) x 1092(H) x 600(D) mm / 70Kg
Tablet Monitor	19"(4:3) Tablet / 19"(16:9 W) Tablet
Integrated Controller	Controller / 7" LCD Touch Panel
Wireless Microphone	Hand microphone x 1 ea / pin microphone x 1 ea
Amplifier	200 Watts (100 Watts + 100 Watts)/8 ohms x 2
Speakers	80W x 2 ea
S/W	Writing, annotations, recording



COMPONENT



STAND TYPE PODIUM_ e-STATION Z

The e-STATION Z is advanced smart podium and workstation address technology-based learning environments.

It has the latest technology for presenting in Classrooms, Auditoriums, Meeting Rooms, and Lecture Halls.

It is equipped with a user-friendly control panel, a tablet LCD monitor, a personal computer, a DVD/VCR, and audio systems such as a microphone and an amplifier.



FEATURES

- All in one cabinet style
- Ergonomic and futuristic design
- Adjustable monitor viewing angle
- International standard 19" rack use to store devices
- One-touch and central device control (7" Touch Panel)
- Tablet LCD monitor and large screen display
- Molded console for consistent quality
- Writing and recording S/W, e-STATION PRO (GS certificate)
- Support RMS (Optional)
- Fan, Additional I/O port, wheels, keyboard tray, mouse pad

SPECIFICATION

Podium Body	StandType / 700(W) x 1200(H) x 720(D) mm / 80Kg
Tablet Monitor	19"(4:3) Tablet / 19"(16:9 W) Tablet
Integrated Controller	Controller / 7" LCD Touch Panel
Wireless Microphone	Hand microphone x 1 ea / pin microphone x 1 ea
Amplifier	200 Watts (100 Watts + 100 Watts)/8 ohms x 2
Speakers	80W x 2 ea
S/W	Writing, annotations, recording



"e-STATION Z is the number one Smart Podium in Korea that became the standard of classroom equipment."

COMPONENT



Console (e-STATION S)

19" LCD Tablet Monitor (JPM-19)

Integrated Control (JPM-C210E/CL7A)

Lecture Capture S/W (e-STATION PRO)

Power Amplifier (JPM-PA200)

Speakers (JPM-SP80)

Gooseneck Microphone (JPM-MC100)

Wireless Microphone (JPM-WRX-700)

TABLE TYPE PODIUM_e-STATION T

e-STATION T is a single smart podium that has an all-in-one power source and many other functions designed for optimal customer convenience. It certainly stores all its components and accessories such as a LCD tablet monitor and integrate controller in a rack type storage device, and it is ideal for K-12 environments.



FEATURES

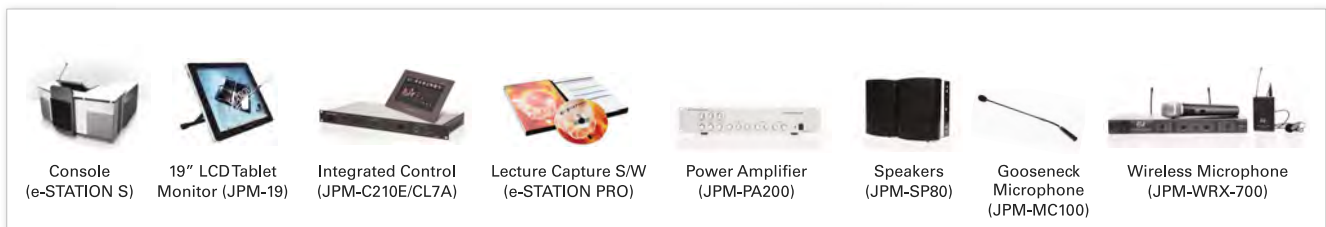
- All in one cabinet style
- Ergonomic and futuristic design
- Adjustable monitor viewing angle
- International standard 19" rack use to store devices
- One-touch and central device control (7" Touch Panel)
- Tablet LCD monitor and large screen display
- Molded console for consistent quality
- Writing and recording SW, e-STATION PRO (GS certificate)
- Support RMS (Optional)
- Fan, Additional I/O port, wheels, keyboard tray, mouse pad

SPECIFICATION

Podium Body	TableType / 1800(W) x 740(H) x 750(D) mm / 100Kg
Tablet Monitor	19"(4:3) Tablet / 19"(16:9 W) Tablet
Integrated Controller	Controller / 7" LCD Touch Panel
Wireless Microphone	Hand microphone x 1 ea / pin microphone x 1 ea
Amplifier	200 Watts (100 Watts + 100 Watts)/8 ohms x 2
Speakers	80W x 2 ea
S/W	Writing, annotations, recording



COMPONENT



LCD TOUCH BOARD_ e-VISION LCD

Enrich the quality of your presentation with high-definition LCD display.
The e-VISION enables 2 people to write their fingers or any objects simultaneously.

e-VISION LCD 065 / 070 / 082

FEATURES

- Exact touch point and smooth writing by optical camera sensor
- Full HD(1920 X 1080)
- Multi-touch support
- Anti-glare glass
- Viewing angle (180°)
- e-STATION PEN S/W included

SPECIFICATION

Model	LCD065	LCD070	LCD082
Size	65" LCD	70" LCD	82" LCD
Brightness	450cd/m ²	450cd/m ²	450cd/m ²
Contrast Ratio	1,500:1	1,500:1	2,000:1
Screen	Anti-glare glass		
Writing	Finger touch or any objects		
Screen Display	16:9		
Technology	Camera image sensor (Optical camera sensor)		
Resolution	1920 x 1080 FULL HD		



INTERACTIVE WHITEBOARD_ e-VISION FB-1010

e-VISION FB is an interactive whiteboard that allows users to work at the board and annotate over lecture content.
Create an interactive learning environment with e-VISION FB.
It gives teachers and students to have more interactive and dynamic class.

e-VISION FB-9000 / 1010

FEATURES

- Finger touch
- Wide screen (100 inch)
- Can be used with short throw projector
- Optical camera sensor
- e-STATION PEN S/W included
- Content included

SPECIFICATION

Model	FB-1010
Size	100" LCD
Technology	Optical image sensor
Response speed	121Hz
Screen ratio	16:9
Size	2214 x 1245mm
Supported OS	Windows 98/XP/Vista/7
S/W	e-STATION PEN



LED TOUCH BOARD_ e-VISION LED

e-VISION 7000 LED is 70" LED Interactive Display which realizes Full HD and Touch Function. Touch the world with your fingers.

e-VISION LED 70/80

FEATURES

- Light Weight: 80kg
- Low Power Consumption: 230W
- Low Heat: No Need of Cooling Fan
- Tempered Glass (Non-reflecting or Clear)
- Options: Pen Tray & Height-adjustable stand

SPECIFICATION

Model	e-VISION 7000 LED	
LED Interactive Board	Coordinate Recognition	Optical Camera Sensor
	Touch	Multi-Touch
	Glass	Special Tempered Glass (THK5mm)
	Exterior Material/Color	Aluminum/ PVC
	Touch Tool	Any Object
	Accuracy	±2 mm
	Resolution	1920 X 1080 pixel
	Response Speed	18ms
	Reading Speed	10ms
	Interface	Plug Play
	OS	Window XP, Vista, Windows 8
	PC Connection	USB
	LED	Screen Size
Panel		Sharp LED
Contrast Ratio		5000:1
Brightness		500cd
Resolution		1920X1080 (FULL HD)
Viewing Angle		160/160
Pixel		0.82X0.82
AUDIO		Sound
INTERFACE	RGB	1
	RCA-AV	1
	CVBS/ Audio	1
	SPDIF	1
	Component	2
	HDMI	2
	RS232C	1
POWER	Power, Frequency	AC 100~240V (158W)
SW (Basic)	Pen Tool	Easiteach ver.1.3.1



AUTO TRACKING CAMERA SYSTEM_ e-MOTION

e-MOTION is an auto tracking camera system that automatically tracks the presenter's movement during presentations.

A camera operator is not needed and it gives the presenter move freely within certain ranges.

e-MOTION

FEATURES

- Motion detection camera
- Automatic return to the original position after using without motion detection for a certain time
- Various modes support by Preset
- Automatic zoom out for multi users
- Communicate with RS-232 and RS-485



SPECIFICATION

Model	JPM-CMC 100 (Main Controller)
CPU	Samsung 667 MHz S3C6410
OS	WINCE 6.0
19" Rack	429.8 x 43.9 x 123.9mm
UART	RS-232 2 port, up to 115.2K baud (RS-485 support)
RCA	NTSC/PPAL Composite 1 port
Input Method	12 Key input
Horizontal resolution	500TV-LINE
Size	85 x 85 x 84mm
S/N Ratio	45dB or more(AGC OFF)

Model	C-100 (Motion Camera)
High resolution	550TV Lines
Max Speed	Pan(345 degree/sec) Swing (190 degree/sec)
Built-in Auto Focus. Auto Iris	
TDN(ICR), DSS, OSD, SDNR	
127 Presets, 8 Swings, 4 patters, 8 Groups	
Privacy zone, Auto flip, Auto parking	
RS-485 interface	
Remote controller , USB	

Biological Microscope



<Monitor Debarment>

Model number	DM 400	DM 600	DM 900	DM 1200	DM 1500
Total Magnification	40x ~ 400x	40x ~ 600x	100x ~ 900x	100x ~ 1200x	100x ~ 1500x
Head	Monocular				
Eyepiece Lens	10x	10x, 15x	10x, 15x	10x, 20x	10x, 15x
Objective Lens	4x, 10x, 40x		4x, 10x, 60x		4x, 10x, 100x
Illuminator	MIRROR / LED Illuminator				
Focusing Mechanism	Coaxial coarse and Fine focus				

Model number	DUM 400U	DUM 600U	DUM 900U	DUM 1200U
Total Magnification	40x ~ 400x	40x ~ 600x	100x ~ 900x	100x ~ 1200x
Head	Monocular			
Eyepiece Lens	10x	10x, 15x	10x, 15x	10x, 20x
Objective Lens	4x, 10x, 20x, 40x		10x, 20x, 40x, 60x	
Light source	Built in Light Intensity Control Device & Transformer, LED lamp			
Focusing Mechanism	3-gear adjustment with helical, rack and spire gears, coaxial coarse & fine focusing knob			
CCD CAMERA	1/3", 410,000 Picture elements, COLOR, Electronic shutter 1/60 ~ 1/100,000sec, White Balance : AUTO			
Image storage method	Still image storage and editing (BMP File), animated file storage (AVI)			
Resolution	720 x 480(USB 2.0), 320 x 240(USB 1.0)			
Output terminal	Video/S-video/USB			

Model number	DW-BMSP1000	DW-BMSP1600
Total Magnification	40x ~ 1000x	40x ~ 1600x
Head	Compensation free trinocular head, inclined at 30° (55mm~75mm)	
Eyepiece Lens	Wide Field 10x	Wide Field 10x, 16x
Nosepiece	Quadruple nosepiece	
Objective Lens	Ach 4x, 10x, S40x, S100x(oil)	
Stage	Double layers mechanical stage Stage size : 140mm x 140mm, Moving range : 75mm x 50mm	
Condenser	N.A.1.25Abbe condenser with iris diaphragm & filter	
Focusing	Coaxial coarse & fine focusing adjustment with rack and pinion mechanism Fine focusing scale value 0.002mm	
Light source	Type of Illumination : White LED Lamp built in Light Intensity Control Royalty Switch & Transformer Luminous-Field Diaphragm	

Model number	DW-PMS	
Total Magnification	40x ~ 1600x	
Head	Compensation free trinocular head, inclined at 30° (55mm~75mm)	
Eyepiece Lens	Wide Field 10x, 16x	
Nosepiece	Quadruple nosepiece	
Objective Lens	PH4x, PH10x, PH40x, PH100x(oil)	
Stage	Double layers mechanical stage Stage size : 140mm x 140mm Moving range : 75mm x 50mm	
Condenser	N.A.1.25Abbe condenser with iris diaphragm & filter	
Focusing	Coaxial coarse & fine focusing adjustment with rack and pinion mechanism Fine focusing scale value 0.002mm	
Light source	Type of Illumination : White LED Lamp built in Light Intensity Control Royalty Switch & Transformer Luminous-Field Diaphragm	
CAMERA SYSTEM	Picture elements	CMOS, 1/3", 3million Picture elements
	Resolution	"720 x 480(USB 2.0), 320 x 240(USB 1.0)"
	Image storage method	Still Image Storage and Editin (BMP File), animated file storage (AVI)
	Network	USB 2.0

Stereoscopic Microscope



Model number	OAM-30SR	OAM-60SR
Total Magnification	10x, 30x	20x, 30x, 40x, 60x
Eyepiece Lens	W.F. 10x	
Objective Lens	1x, 3x	2x, 4x
Head	Binocular, Interpupillary distance adjustment	Binocular, 45° Inclination, Dioptric adjustment, 360° Rotationable, Interpupillary distance adjustment
Focusing Mechanism	COARSE	

Model number	OSM-1(U)	OSM-1
Total Magnification	10x, 20x, 40x	
Eyepiece Lens	Super Wide Field, HWF10X : FIELD NO. 24mm	
Objective Lens	3Step Turret(1X, 2X, 4X) Achromat	
Head	Interpupillary Distance : 54 ~ 74mm Dioptric Adjustment : ± 6.4 Diopter(Available On Both Eyepiece Tube)	
Working Distance	100.6mm	
Stand	309(W) X 250(D) X 36(H)mm	309(W) X 250(D) X 20(H)mm
Weight	9.7Kg	7.5Kg
Output terminals	S-Video x 1, Video x 1, USB x 1	
CAMERA SYSTEM	Picture elements	CCD, 1/3", 410,000 Picture elements
	Resolution	"720 x 480(USB 2.0), 320 x 240(USB 1.0)"
	Image storage method	Still image storage and editing (BMP File), animated file storage (AVI)
	Network	USB 2.0

Polarization Microscope



Model number	PM400	DUM400PU
Total Magnification	40x ~ 400x	
Eyepiece Lens	WF10x(DIN), FN 18mm	
Nosepiece		Quadruple nosepiece
Objective Lens	Ach. 4x, 10x, 40x	4x, 10x, 20x, 40x
Head	Monocular, 45° Inclination, 360° Rotationable	
Polarizer	Gyps 1λ, Mica 1/4λ	
Stage	"360° rotatable, 0, 90, 180, 270 four type graduations, with locking devices, and can shift out the optical way	
Light source	MIRROR	3-gear adjustment with helical, rack and spire gears, coaxial coarse & fine focusing knob
CAMERA SYSTEM	Picture elements	CCD, 1/3", 410,000 Picture elements
	Resolution	320 x 240
	Image storage method	Still image storage and editing (BMP File), animated file storage (AVI)
	Network	USB 2.0

<Monitor Debarment>

LCD Projector(12,000 ~ 5,000 ANSI Lumens)



Model number	DVM-L100M	DVM-F100M	DVM-E100M / E100LM
Brightness	12,000 ANSI lumens	6,000 ANSI lumens	5,000 ANSI lumens
LCD panel	1.8" TFT p-si LCD x 3 + 1 Color Control Device	0.8" TFT p-si LCD x 3	0.8" TFT p-si LCD x 3
Pixel	1,024x768 dots /Total pixels 2,359,296	1,024x768 dots /Total pixels 2,359,296	1,024x768 dots /Total pixels 2,359,296
Contrast Ratio(Full On/Full Off)	2,000 : 1	1,000 : 1	1,000 : 1
Screen Size(Full On/Full Off)	40" ~ 600"	40" ~ 400"	40" ~ 400"
Light Source	330W x 4	330W	275W
Power Consumption	1,700W	460W	400W
Dimensions(WxHxD)	581 x 251.5 x 812 mm	489.5 x 164 x 434.8 mm	489.5 x 164 x 434.8 mm
Weight	36.5 kg	9.7 kg	9.7 kg
Terminals	<ul style="list-style-type: none"> - DVI-D / D-sub15 pin - 5-BNC / S-video - Open for input 	<ul style="list-style-type: none"> - DVI-D(HDCP) x 1(Digital RGB) - D-sub 15 x 1(RGB, Scart RGB) - 5BNC x 1(G B R H/V V) (Video/Y Pb/Cb Pr/Cr) - Mini DIN 4pin x 1(S-Video) - RCA x 1(Composite Video, Y) - RCA x 2(Pb/Cb Pr/Cr) 	<ul style="list-style-type: none"> - DVI-D(HDCP) x 1(Digital RGB) - D-sub 15 x 1(RGB, Scart RGB) - 5BNC x 1(G B R H/V V) (Video/Y Pb/Cb Pr/Cr) - Mini DIN 4pin x 1(S-Video) - RCA x 1(Composite Video, Y) - RCA x 2(Pb/Cb Pr/Cr)

LCD Projector (4,000 ~ 2,700 ANSI Lumens)



Model number	DVM-D95M	DVM-D100M	DVM-US927A
Brightness	4,500 ANSI lumens	4,000 ANSI lumens	2,700 ANSI lumens
LCD panel	1.8" TFT p-si LCD x 3 with Micro Lens	0.63" TFT p-si x 3 inorganic	0.8" TFT p-si LCD x 3
Pixel	1,024x768 dots /Total pixels 2,359,296	1,024x768 dots /Total pixels 2,359,296	1,024x768 dots /Total pixels 2,359,296
Contrast Ratio(Full On/Full Off)	1,000 : 1	2,000 : 1	1,200 : 1
Screen Size(Full On/Full Off)	40" ~ 300"	40" ~ 300"	40" ~ 80"
Light Source	275W	245W	275W
Power Consumption	327W	332W / 307W(Normal)	390W
Dimensions(WxHxD)	334.2 x 78.4 x 257.5 mm	350 x 87.5 x 254.4 mm	374 x 196.8 x 495 mm
Weight	3.4 kg	3.3 kg	7.7 kg
Terminals	<ul style="list-style-type: none"> - D-sub 15 x 1(RGB) - D-sub 15 x 1 (RGB, Component, Scart RGB) - Mini DIN 4pin x 1(S-Video) - RCA x 1(Composite Video) 	<ul style="list-style-type: none"> - S-Video, Composite, D-sub 15pin - S-Video : Mini Din 4pin, composite : - RCA, Component : D-sub 15pin - True XGA up to WUXGA(compression) - D-sub 15pin x 2 Monitor out - RCA (L/R) for Video input, - Mini-Jack x 2(stereo) - D-sub 9 for Control Port(RS-232C), - RJ-45 for LAN 	<ul style="list-style-type: none"> - D-sub 15 pin for input - D-sub 15 pin for input or Monitor out - RCA x 1:Video - Mini DIN 4pin x 1(S-Video) - RCA x 3:Y-Pb/Cb-Pr/Cr - RCA (L/R) for Video input - Mini Jack(Stereo) for Computer input - Mini Jack(Stereo) output(variable)

Visual Projector



Section		Function & Performance	DW-3VP	DW-3VPL	DW-3VPLA
			Digital Visual Presenter	Talking Visual Presenter	3D Visual Presenter
Camera	Capturing Device	CMOS type	O	O	O
	Magnification	Digital zoom 10times	O	O	O
	Effective Pixel	3.2 megapixel	O	O	O
	Focus	Auto focusing	O	O	O
	Powver supply	PC USB 5V power supply ,Mixmum 400mA	O	O	O
Program	Powver Function	Recording, Positive/Negative, Color/White & black, Rotation, up-and-down/ Rright & left revese, Split screen effcts, PIP	O	O	O
	Interwrite Function	Pen, , Highlighter,Hue,Thickness, Figure, Board selection funtion	O	O	O
	Video Funtion	Video replay, Speed control, Progressive time display	O	O	O
	Learing Function(OCR-TTS)	Reading, Phause,Unlimited repeat , Language selection (Korean/English)	X	O	O
	Augmented Reality (3D)	3D content for elementary Science text book from 3~6 grade	X	X	O

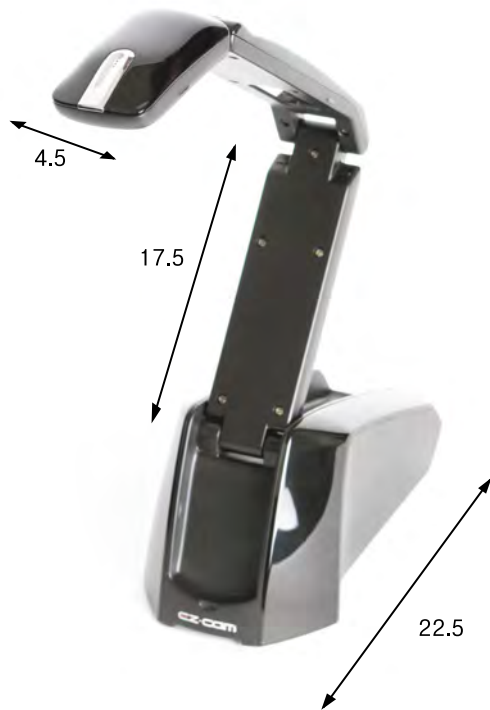
Monitor / Lecture Desk



Compition	Section	Standard	DW-M190	DW-K190
Tablet Monitor	Operating System	TFT LCD Monitor	O	O
	Interactive Type	Electromagnetic type		
	Screen Size	408.24 x 255.15mm(19")		
	Resolution	1,440 x 900(WXGA)		
	Number of Color	16.7M and over		
	Touch Type	Electromagnetic type		
	Brightness	250cd/m ² and over		
	Contrast Rate	1000:1 and over		
	Viewing Angle	160° and over		
	Pen	Wireless		
	Interface	USB		
	Power	DC 12V 3A, AC220V		
Electronic Teaching Desk	Dimension	715(w) x 740(d) x 1168(h)	X	O
	Topboard Slide	ABS, Liquid coating		
	Frontal Cover	ABS, Liquid coating		
	Cabinet	STEEL, 분체 coating		
	Door	STEEL, 분체 coating		
	Monitor Angle Control	OK		
	Power Supply Checking Device	Checking ON/OFF status of main power supply by frontal LED device		

EZ-300

IMAGE RECOGNIZING DIGITAL VISUALIZER EZ-CAM



SPECIFICATION

sensor	1/4" Auto Focus
Max. resolution	2045 * 1536 High resolution
Lens angle	F2.9 / 8Cm~ / 63.5
Photography range	3.2 Mega pixel , A4 Size
Image output	20fps@800*600, 10fps@2048*1536
Weight	1.2 Kg
Interface	USB 2.0 Interface

APPLICATION

Educate in classroom, science lab and language lab
Meeting report and presentation

FEATURE

- Versatile and powerful function, excellent conveniently
- Portability and storability by compact design
- Image recognizing technology for providing effective lecture
- Take photo & make video is available by one click simply
- Compatible with electronic board and electronic desk
- Operated multilingual language (English, Chinese, Arabic, Thailand, Korean, Russian)

B R X T-CA

WIRELESS MICROPHONE SYSTEM



SPECIFICATION

Audio Frequency Response	20 ~ 20,000Hz
System Distortion	≤ 0.5%
Operating Distance	Appr. 20m
Carrier Frequency Range	ISM(2.4GHz ~ 2.48GHz)
Dynamic Range	≥ 90dB
Signal / Noise Ratio	≥ 90dB
Operating Temperature Range	0℃ ~ 35℃

APPLICATION

Used in Classrooms, Conference Rooms, Auditoriums

FEATURE

- 2.4GHz ISM BAND Frequency used
- Frequency Active Hopping cross protection
- Applied howling protection of digital AMP, EQ
- RMS 250W high output power AMP
- Split to output signal of AV (Audio & Video)
- Possible to install it in the type of wall mount or rack

EZB-LCD70WT

Interactive 70 Inch LCD Blackboard



SPECIFICATION

Panel Resolution	1920 x 1080 (Full HD)
Contrast Ratio	2000/1 (Typ)
Response time	8ms (Gray to Gray)
Aspect Ratio	16:9
Display Colors	16.7M Colors
Viewing Angle	178° / 178° (Typ)
W x D x H (mm)	1680 x 1040 x 140

APPLICATION

Educate in classroom, science lab and language lab
Meeting report and presentation

FEATURE

- Full HD LCD 70 / 82 inch electronic blackboard
- Central role of audio-visual education by applying various outside-input
- Product of eco-environmental and saving energy (stand by power 0.4W)
- Applying various multimedia to system by providing multi-touch
- Effect of gesture with combined with IR sensor © writing program
- Hidden tool-bar menu for students to concentrate in the lecture
- Reducing the break and light reflected by applying anti-reflection and tempered-glass

EZD-19TCA(D)

Electronic Podium



SPECIFICATION

Tablet Monitor	Screen Size	48.3Cm (19 inch)
	Panel Type	TFT LCD
	Resolution	1440x900 (WXGA)
	Viewing Angle	140° / 140°
Controller	Size	483 x 300 x90
	Control Panel	VFD
	USB: in 2, Out1	Input/ output
	LAN: in 2, Out1	Laptop&Desktop

APPLICATION

Educate in classroom, science lab and language lab
Meeting report and presentation

FEATURE

- Practical and ergonomic design
- The plan and design considered the safety of appearance
- Controlling various monitor's angle
- Wide and clear tablet monitor leading electric magnetic induction
- The free-battery pen recognizing a writing pressure
- Providing various input-terminal from outside
- Providing Software which is controlled in teaching class

OAC -7700,
Solcian Air

Air purge sterilizer



OAC -7700



Solcian Air

Removal of pollutants in the air

- Killing various virus and Colon bacillus(Fungus, Colon bacillus, E.Coli O-157, ammonia, bacteria, AI, SARS)
- Purifying toilet odors in restroom
- Removal of formaldehyde which is the cause of sick house syndrome
- Removal of odors and foul smells

TMHS-2000, Pocell,
TMHS-777, TMHS-6000S

Hand Sanitizer

Prevent infectious diseases with tecomax's Hand Sanitizer!

- Safe sterilizer from natural substances: The product guarantees safety approved by Korea Food & Drug Administration.
- Highly sensitive infrared sensor: Automatic spraying on skin by the infrared sensor
- Killing 99.6% of the surface Bacteria with Strong sterilizing power!



TMHS-2000



POCELL



TMHS-777



TMHS-6000S

SMP- 16/16PS, Procama-3600/3300
Wellcam-320/500, Maxcam-LED300

Visual presenter

auto-focusing Clean display by high-resolution 3.0 megapixel (UXGA 1,600x1,200) of High-definition
Photo and video recording function Writing function on image and video clip screen, simultaneous recording function
Recording even teacher's writing contents on board in the class
Zoom/enlarge, mirror effect, screen rotation



SMP- 16/16PS



Procama-3600/3300



Wellcam-320/500



MAXCAM-LED300

AKS-ZB45, AKS-400~1500,
AKS-BL1500

Microscope



AKS-ZB45



AKS-400~1500



AKS-BL1500

Education experts from the various line-up
Low-power LED lamps mounted in a way
Free movement without charge in a way
connected with the power
Advanced lens to use with clear samples
observed

AKS-ZH40, AKS-ZV45,
AKS-1000MV, AKS-1500VS

Monitor Microscope

Connecting to a PC for editing and image storage 7~9 inch high-definition LCD monitors mounted to the many people
at once can be observed.

Advanced lens to use with clear samples observed Equipped with 61 megapixel CCD lens to provide sharp screen



AKS-ZH40



AKS-ZV45



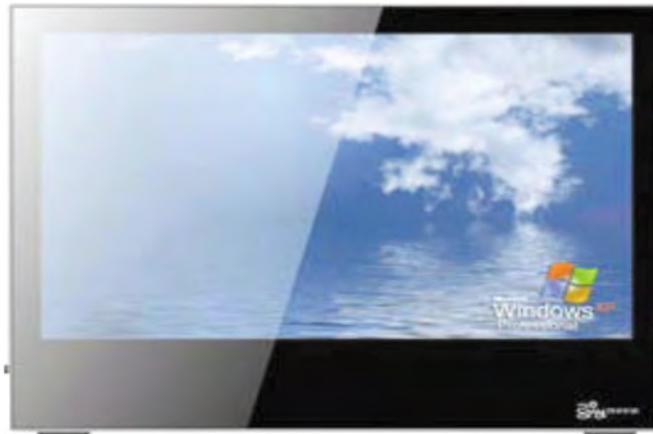
AKS-1000MV



AKS-1500VS

Magic Pen Delta-Z

Tablet Monitor



- H/W TYPE : Pressure touch / Electromagnetic induction method
- Display : TFT LCD Panel
- Screen size : 19 Inch(480mm) / 16:9
- Resolution : 1400 X 900
- Interface : USB
- Written : PEN Type
Direct write capability to monitor
Accurate and smooth writing feeling
- S/W : Lecture assistance and Save class software

M Pen Desk 11

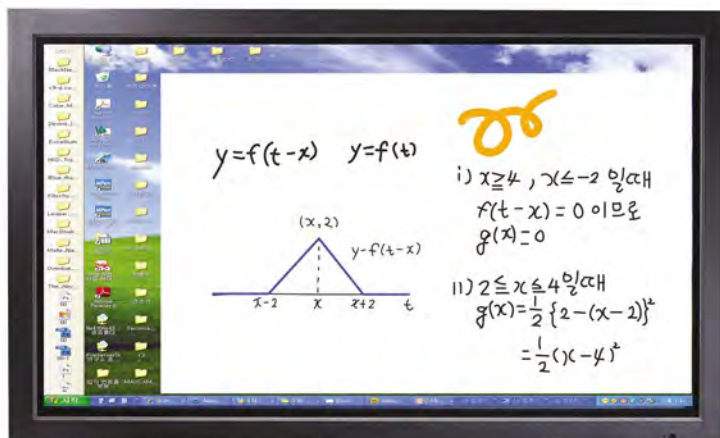
Tablet Monitor Desk



- H/W TYPE : Pressure touch
- Display : TFT LCD Panel
- Screen size : 19 Inch(480mm) / 16:9
- Resolution : 1400 X 900
- Interface : USB
- Written : Hand or a hard object(Pressure touch)
- S/W : Lecture assistance and Save class software
- Specification : Intelligent Controllers
(Project,Screen,DVD Player Control)
Goose-neck microphone, Speaker
- By Use : Intelligent Peripheral using the controller can be easily controlled Presentation, while allowing the screen write directly to the screen can be explained High-performance amplifier and has a built-in microphone
Locking devices are available to protect the internal equipment.

ACB 63PC (PDP Type), ACB 7000 (LCD Type)
ACB-70LHK (LCD Type)

TOUCH Board (MONITOR Type)



- H/W Type : Wall Attaching Offset Type
- Screen Size : 70 inch (1770mm)
- Resolution : 1920 X 1080p (Full HD)
- Written : or a hard object
- S/W : Lecture assistance and Save class software

- Features : AR Screen, Display with more than 50,000 hours
- By Use : Free write on any PC screen
Touch the screen to direct all of the content will improve educational efficiency. Writing and teaching details of progress on the screen capture videos and images can be stored.

ACB-82SF

TOUCH Board



- H/W Type : Projector Screen Board Type
- Display : Projector options Screen
- Size : 85 Inch
- Written : Hand or a hard object / IR method
- S/W : Lecture assistance and Save class software
- SIZE : 1855 X 1045 mm

- Features : Equipped with a special anti-reflective contrast screen brightness is excellent.
- By Use : Large touch screen can be configured at low cost
Free write on any PC screen
Touch the screen to direct all of the content will improve educational efficiency.
Writing and teaching details of progress on the screen capture videos and images can be stored

The most advanced Science Content



3D Science Content

D³ D-CUBE

- **Human Body & Structure**
- **Volcanoes & Earthquakes**
- **The Earth & the Moon**

Student can enjoy and learn by direct and actual experience thru 3D model objects and animations and pictures

Dynamic and Intuitional GUI.

- ❖ It's easy to operate a software with the mouse without any extra manual.

Innovative 3D Interactive, Educational Software.

- ❖ Student would enjoy understanding complex topics of science in 3D version making learning fun & exciting just like watching the 3D movie.

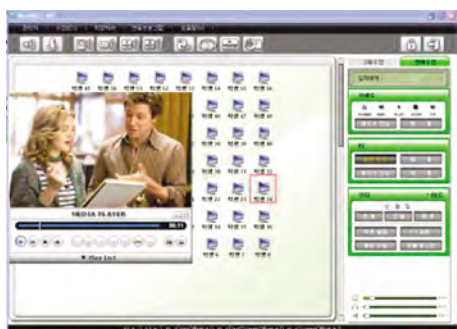
Specialized 3D Science Content with High Quality

- ❖ It is composed of reliable data which were proven by researcher of Korea Institute of Geoscience and Mineral Resources and science teaching professor.

Real-time 3D Object Viewer and Available connecting with Interactive Board

NuriNET NF System

Digital Language LAB System(PC Network-based)



NuriNET NF System

Developed for future-oriented ICT(Information & Communication Technology) Education, NuriNET-NF System is a cutting-edge class operation solution which is available under the PC-network environment using audio & video integrated controller where top technology is applied.

Also this system provides effectively various functions necessary for improve & enhance language skill as well as multimedia class and self-study .

Functions

- Pair / Group Study
- Attendance Check
- Electronic Board
- IBT/CBT/Oral Test
- Intercom
- Visual & Audio supervision
- Media Player with bookmarks
- Monitoring 12 students at once
- Broadcasting all/group/individual
- Messenger
- VOD (Video On Demand)
- Remote Control
- Presentation
- Class Management function

Components

- Master Controller
- Application(operation/test)
- Headset & others
- Student media controller
- Application
- Headset & others

NuriNET AOD System

Digital Language LAB System(Digital Recorder Type)



NuriNET AOD System

NuriNET AOD System in the best language education solution which has never been developed before. As uniquely-designed FTP mode-supported as well as TCP/IP network-based, this system allows all data from teacher computer to be processed by digital, which makes high quality AOD(Audio On Demand) function available.

NuriNET AOD System provide various functions to classroom based on MP3 technology and TCP/IP network

Functions

- AOD function and management
- Monitoring
- Dialogue practice(Drill)
- Test & evaluation
- Virus free system
- 1:1 / group conversation
- Remote control (function/power)
- Recording lecture / user voice
- Support external flash memory (USB)
- All material saved as mp3

Components

- Master Controller
- Application(operation/test)
- Headset & others
- Student digital recorder
- Headset & others

TTV-5.0

TOUCH VISION

NEW!

HIGH RESOLUTION DIGITAL VIDEO PRESENTER



FEATURES

- 5 MEGA pixels high-definition CMOS camera
- Shooting a sharp image quality at Max 30 frame speed
- 7" Full touch screen interface and 1GB inner memory
- Letter/Voice convertible program(English learning function)
- Individual operating without PC
- Various output : USB, RGB, HDMI, DVI, S-video, Composite & Audio

SPECIFICATIONS

- 5 MEGA pixels CMOS Sensor
- Auto Focus, MAX 30fps, Resolution : Max. 2592x1944
- Inner memory : 1GB Flash memory
- Output : USB, RGB, HDMI, DVI, S-video, Composite & Audio
- Software : Letter/Voice recognition, Electronic board, Nega/Posi, color/Mono, Up & Down / Right & Left inversion, Capture, Record, Zoom in & Zoom out, Picture division, PIP & etc.,
- Size : 195x228x615(mm), 1.8kgs

TEC-3.2T(OCR/TTS)

EDUCAM

NEW!

DIGITAL VIDEO PRESENTER



FEATURES

- 3.2 Mega pixels high-definition CMOS camera
- Max. 30 fps / 8 pcs of high-brightness LED
- Convenient outer button(CAPTURE, LED, FLIP, A/F)
- Electronic board function / Letter & Voice conversion program (OCR/TTS)
- My dictionary function / Highlight function / Cover Function / BGM function / Voice book function

SPECIFICATIONS

- 3.2 Mega Pixel CMOS sensor, Auto Focus
- Frame : 30 fps(VGA), 10fps(QXGA) / Support A4 size
- Preview, Learning, Drawing & Movies program
- Interface : USB 2.0 / OS : Window XP, Vista, Window 7 support
- Size : 140(W)x170(D)x630(H/mm), 1.7kgs

TEC-3.2

EDUCAM

NEW!

DIGITAL VIDEO PRESENTER



FEATURES

- 3.2 Mega pixels high-definition CMOS camera
- Max. 30 fps / 8 pcs of high-brightness LED
- Convenient outer button(CAPTURE, LED, FLIP, A/F)
- Electronic board function / Movie player function
- Nega/Posi, B/W, Zoom in/Zoom out, Mirror, Flip, Rotate Functions.
- Undo, Redo functions, Split, PIP function

SPECIFICATIONS

- 3.2 Mega Pixel CMOS sensor, Auto Focus
- Frame : 30 fps(VGA), 10fps(QXGA) / Support A4 size
- Preview, Drawing & Movies program
- Interface : USB 2.0 / OS : Window XP, Vista, Window 7 support
- Size : 140(W)x170(D)x630(H/mm), 1.7kgs

LSP-500

MICROSCOPIC PROJECTOR



FEATURES

- Simultaneous observation by multi-persons to maximize the objective educational effects
- Projects microscopic images without imaging devices
- A group of observers can see the microscopic images at the same time
- Suitable for the classroom with no imaging devices
- Quality is acknowledged by the Science & Technology office

SPECIFICATIONS

- Magnification : 100X, 200X, 300X
- Object Lens : Plan lens system
- Projection distance : 1~2M
- Light source : JC24V/150W halogen lamp
 - 45 2 sheet condenser lens system
 - 45 heat observation filter, _80 cooling fan
- Projection head : 360° rotatable
- Coarse / Fine integration
- Mechanical stage
- Power: 110/220V

3

Korea Scientific Instruments Industry Cooperative



■ CHC LABORATORY CO., LTD.	88 ~ 91
■ DAIHAN Scientific Co., Ltd.	92 ~ 93
■ DASOL SCIENTIFIC CO., LTD.	94 ~ 97
■ EUNHA FLUID SCIENCE	98 ~ 101
■ Universal Scientific Co., Ltd.	102 ~ 103
■ GT SCIEN CO., LTD.	104 ~ 107
■ HONGMYONG SCIENCE	108 ~ 109
■ Human Corporation	110 ~ 113
■ LSHIN BIOBASE CO., LTD.	114 ~ 115
■ ISTEK. INC.	116 ~ 119
■ JEIO TECH CO., LTD.	120 ~ 149
■ JISICO CO., LTD.	150 ~ 153
■ JS RESEARCH INC.	154 ~ 155
■ Labzone Co., Ltd.	156 ~ 157
■ MDM INSTRUMENTS	158 ~ 159
■ MIRAE ST CO., LTD.	160 ~ 161
■ OPERON CO., LTD.	162 ~ 163
■ SAMIN SCIENCE CO., LTD.	164 ~ 165
■ THREE SHINE. INC.	166 ~ 167
■ VISION SCIENTIFIC CO., LTD.	168 ~ 171

Laboratory Equipments

Vertical Laminar Flow Cabinet (CLB-201-04)

CE



FEATURE

1. Safety: providing sample protection against contamination
2. Ergonomic design: reducing fatigue with the inclined front structure.
3. High efficiency HEPA filter: removing 99.995% of particles greater than 0.3 μ m
4. Differential pressure gauge: indicating filter status and replacement time
5. Utility valve is available (gas, air and vacuum)
6. Support stand is optional

SPECIFICATIONS

Model no.	CLB-201-03	CLB-201-04	CLB-201-05	CLB-201-06
Dimensions (external)	1040x742x1231	1340x742x1231	1650x742x1231	1960x742x1231
W x D X H (mm) (internal)	919x617x565	1219x617x565	1529x617x565	1839x617x565
Avg. downflow velocity	0.3 m/s ~ 0.4 m/s (variable set speed)			
Filter efficiency	HEPA filter (>99.995% at 0.3 μ m) / Class 100			
Noise level	≤ 65db(A) at normal speed			
Sterilization	Germicidal UV lamp			
Door	Laminated glass			
Work top	Stainless steel 304			
Electrical supply	110/220V, 50/60Hz (available)			
Electrical receptacle	1ea		2ea	
Support stand(mm)	Support frame : 633 / Leveling caster : 82			

Horizontal Laminar Flow Cabinet (CLB-202D-04)

CE



FEATURE

1. Safety: providing sample protection against cross- contamination
2. High efficiency HEPA filter: removing 99.995% of particles greater than 0.3 μ m
3. Differential pressure gauge: indicating filter status and replacement time
4. Utility valve is available (gas, air and vacuum)
5. Support stand is optional

SPECIFICATIONS

Model no.	CLB-202D-03	CLB-202D-04	CLB-202D-05	CLB-202D-06
Dimensions (external)	1040x777x1300	1340x777x1300	1650x777x1300	1960x777x1300
W x D X H (mm) (internal)	919x520x584	1219x520x584	1529x520x584	1839x520x584
Avg. downflow velocity	0.3 m/s ~ 0.4 m/s (variable set speed)			
Filter efficiency	HEPA filter (>99.995% at 0.3 μ m) / Class 100			
Noise level	≤ 65db(A) at normal speed			
Sterilization	Germicidal UV lamp			
Door	Laminated glass			
Work top	Stainless steel 304			
Electrical supply	110/220 V, 50/60Hz (Available)			
Electrical receptacle	2ea			
Support stand(mm)	Support frame : 633 / Leveling caster : 82			

Laminar Flow Cabinet (CLB-060-03)

CE



FEATURE

1. Safety: providing sample protection against contamination
2. High efficiency HEPA filter: removing 99.995% of particles greater than 0.3 μ m
3. Support stand is optional
4. Acrylic panel: providing excellent visibility on 3 sides

SPECIFICATIONS

Model No.	CLB-060-03	CLB-060-04
Dimensions (external)	906x660x1172	1206x660x1172
W x D X H (mm) (internal)	884x625x715	1184x625x715
Avg. Downflow velocity	0.3 m/s ~ 0.4 m/s (variable set speed)	
Filter efficiency	HEPA filter (>99.995% at 0.3 μ m)	
Noise level	≤ 65db(A) at normal speed	
Sterilization	Germicidal UV Lamp	
Door	Acrylic (PMMA) 8mm	
Work top	Phenolic Laminate	
Electrical supply	110/220 V, 50/60Hz (Available)	
Electrical receptacle	1ea	
Support stand(mm)	Support frame : 633 / Leveling caster : 71	

Biological Safety Cabinet Class II, Type A2 (CHC-777A2-04)

NSF UL CE EN 12469



CHC-777A2 is classified as biological safety cabinet class II type A2, which can protect effectively all of the personnel, product and environment. 70% of the airflow at work space is re-circulated through HEPA filter and 30% of it is exhausted to the outside through HEPA filter. The polluted airflow is not leaked as perfectly surrounded by the negative pressure.

FEATURE

1. quality certifications: acquiring NSF 49, UL EN12469, CE and KS M 10103
2. High efficiency HEPA filter: removing 99.995% of particles greater than 0.3 μ m
3. LCD digital display panel: controlling cabinet operations, on/off, password setting, timer setting, etc
4. Safety: providing audible and visual alarms for airflow fail, and keeping UV light exposure perfectly
5. Ergonomic design: reducing fatigue with the inclined front structure.
6. Differential pressure gauge: indicating filter status and replacement time
7. Support stand is optional

OFFERS 3 FORMS OF PROTECTION

1. Personnel Protection
Protects personnel from potentially harmful agents used inside the cabinet.
2. Product Protection
Protects the research materials for product/experiment from contaminants in the room environment or from cross-contamination inside the cabinet.
3. Environmental Protection
Protects your environment from research materials for contaminants generated or used inside the cabinet.

SPECIFICATIONS

Model no.	CHC-777A2-03	CHC-777A2-04	CHC-777A2-05	CHC-777A2-06
Dimensions (external W x D X H (mm))	1060x810x1590	1385x810x1590	1690x810x1590	1995x810x1590
Chamber dimensions W x D X H (mm)	925x615x655	1250x615x655	1555x615x655	1860x615x655
Avg. inflow velocity	0.53 m/s			
Avg. downflow velocity	0.35 m/s			
Filter efficiency	HEPA filter (>99.995% at 0.3 μ m) / Class 100			
Noise level	< 64db(A) at normal speed			
Sterilization	Germicidal UV lamp			
Electrical supply	110/220V, 50/60Hz (available)			
Utility valve	1ea (vacuum) / option - gas, air, water			
Support stand(mm)	Support frame : 633 / Urethane: 103			

* CHC-777A2 series is certified by NSF 49 in U.S

Model no.	CHC-222A2-03	CHC-222A2-04	CHC-222A2-05	CHC-222A2-06
Dimensions (external W x D X H (mm))	1060x810x1590	1385x810x1590	1690x810x1590	1995x810x1590
Chamber dimensions W x D X H (mm)	925x615x655	1250x615x655	1555x615x655	1860x615x655
Avg. inflow velocity	0.53 m/s			
Avg. downflow velocity	0.35 m/s			
Filter efficiency	HEPA filter (>99.995% at 0.3 μ m) / Class 100			
Noise level	< 64db(A) at normal speed			
Sterilization	Germicidal UV lamp			
Electrical supply	110/220V, 50/60Hz (available)			
Utility valve	1ea (vacuum) / option - gas, air, water			
Support stand(mm)	Support frame : 633 / Urethane: 103			

* CHC-222A2 series is certified by EN 12469 in Europe

* The product might be different as the shown above

Lab Center Table (CLF-1110)



LAB DESIGN & CONSULTING

CHC lab suggests the healthy and pleasant research environment taking the balance of customer's convenience and safety regulations as well as the individual characteristics of actual research work into consideration

TYPE OF LAB TABLES

1. Center table
2. Side table
3. Corner table
4. Sink table
5. Functional table (micro scope, electric balance)
6. Movable cabinet
7. Movable drawer

FEATURE

1. Worktop: Phenolic laminate, epoxy resin(optional)
2. Structure: epoxy power coated steel
3. Shelf: Particle board, phenolic laminate(optional), glass(optional)
4. Peg board: Polypropylene
5. Movable cabinet: Particle board, steel(optional)
6. Movable drawer: Particle board, steel(optional)
7. Sink bowl: Polypropylene, epoxy resin(optional)

* The detail information will be available on our website www.chclab.com

Movable Arm Hood (CLE-020)

CE



The movable arm hood is used by attaching arm hood to the filter box, including pre filter, HEPA and carbon filter, filtered small solvent and fumes, not strong acid.

SPECIFICATIONS

Model No.	Dimensions	
CLE-020	Arm	φ75 x 1300
		Dia. x L (mm)
	Filter box	500 x 500 x 865
		W x D x H (mm)

Fume Hood (CLE-101-04)



Fume hood is the essential equipment to secure the safety of the researchers as well as the laboratory environment from harmful substances and contaminated gas during the experiment. CHC lab fume hood is to provide the efficient and pleasant laboratory environment with the aerodynamic technology. Also they are produced and tested under ASHRAE 110 standard.

Fume hood type by airflow

1. Bypass air type
2. Air curtain type
3. Auxiliary air type

Fume hood type by function

1. Center table top hood
2. Side table top hood
3. Low work-in hood
4. Walk-in hood

SPECIFICATIONS

Model no.	CLE-101-04	CLE-101-05	CLE-101-06	CLE-101-07	CLE-101-08
Dimensions (external) W x D X H (mm)	1200x860x2370	1500x860x2370	1800x860x2370	2100x860x2370	2400x860x2370
External (material)	Phenolic laminate 6t & Aluminum structure				
Chamber (material)	Phenolic laminate 4t				
Airfoil	Steel plate 1.6t with epoxy powder coated				
Work top	Ceramide 30mm				
Ventilation (Collar ϕ)	200 ϕ / 250 ϕ / 300 ϕ				
Electrical supply	110/220 V, 50/60Hz (Available)				
Utility valve	Water, gas, air, vacuum				
Air velocity monitor	Optional				

Ductless Fume Hood (CLE-051-03)



Ductless fume hood can be used without the duct system in the laboratory. It maintains a clean environment of the laboratory to protect researchers and environment from the contaminated and chemical fumes.

FEATURE

1. Filtering system : pre filter, HEPA filter, carbom filter(organic or acid)
2. Anemometer : checking filter status by air velocity inside chamber
3. LCD controller : operating on/off of blower and lamp
4. Acrylic panel : providing excellent visibility on 3 sides
5. Support stand is optional

SPECIFICATIONS

Model no.	CLE-051-03	CLE-051-04
Dimensions (external) W x D X H (mm) (internal)	900 x 650 x 1150 884 x 622 x 715	1200 x 650 x 1150 1184 x 622 x 715
Filter	Carbon filter (organic or acid), Pre-filter : Nylon filter HEPA filter(optional)	
Noise level	≤ 65db(A) at Normal speed	
Volume of air treated	180m ³ /h	320m ³ /h
Electrical supply	110/220 V, 50/60Hz (available)	
Support stand(mm)	Support frame : 633 / leveling caster: 71	

Arm Hood (CLE-001-05)



Arm hood is a local exhaust system that can ventilate small contaminated air in order to protect both user and partial area in the laboratory

FEATURE

1. Pivot structure: revolving freely and easy to move
2. Damper controller: adjusting air velocity as user's needs

SPECIFICATIONS

Model No.	Dimensions
CLE-001-05	ϕ 75 x 1500 Dia. x L (mm)

Pipe : Polypropylene

Dome : Polypropylene, Polyethylene Terephthalate (selectable)

Bracket : various bracket type available(ceiling, wall and roof)

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¥ No Button. No Knob. Simply Touch!!

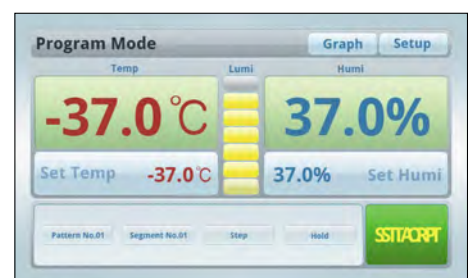
¥ DAIHAN SMART Line of Lab Equipments with **Full Touch Screen Controller**
and with **Internet Connectivity!!**

- ▶ 4" or 7" Full Touch Screen TFT LCD
- ▶ Ergonomic Design for Intuitive User Interface
- ▶ Program Control - Multiple Pattern with Multiple Segments
- ▶ Data Recording - On-Screen Temperature Chart
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- ▶ Internet Connectivity with Ethernet or WiFi
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- ▶ Real-time Notification of Any Failure in the Equipment to the User(s), to the Service Man and to Supplier, through WiRe™ Service

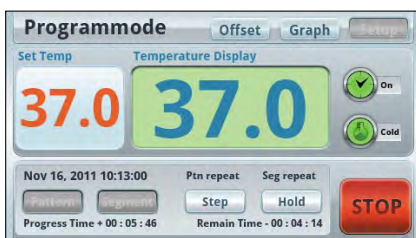
Specialized User Interface Design



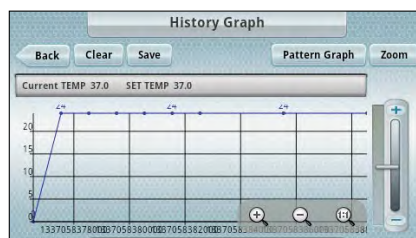
WUF ULT Freezer



WGC Growth Chamber



WIG Incubator



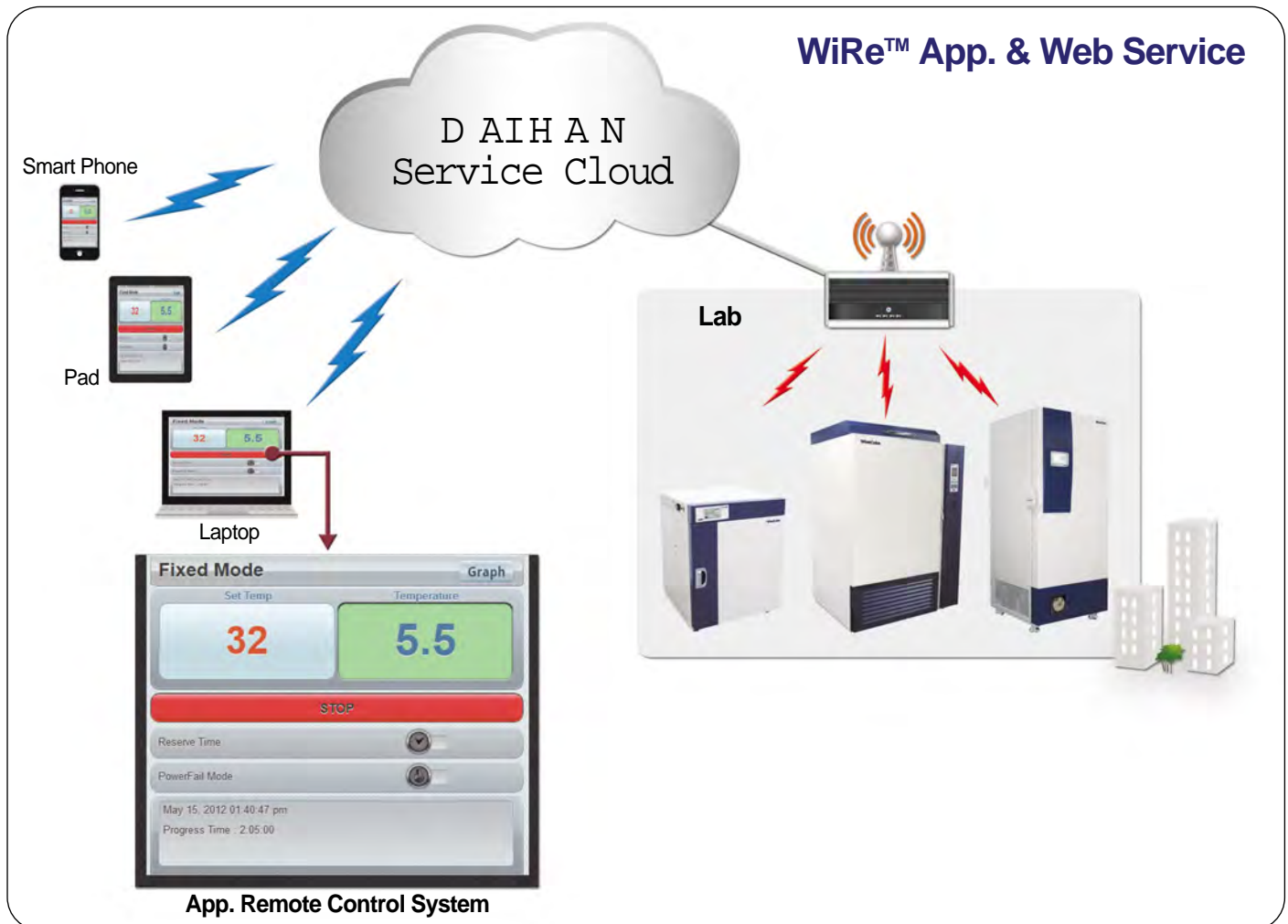
Temperature Chart



WiRe™ App. & Web Service

¥ At anytime, Anywhere You are, and Anyhow, You can Check and Control All the Equipments in your Lab **Using Your Smart Phone or on the Web.**

- ▶ Developed by Advanced Web Technology
- ▶ Support all different kinds of Web browser Based on HTML Standards
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- ▶ Offering Android App and Apple iOS App
- ▶ Almost same UI as the Touch Screen Controller on the Equipment is available



» SMART Lab Equipment Lines

- ¥ WCR- / WCL-Series of Refrigerated Bath Circulators
- ¥ WIG- / WIF-Series of General Purpose Incubators
- ¥ WIR-Series of Low Temperature Incubators
- ¥ WIS-Series of Shaking Incubators
- ¥ WON- / WOF-Series of General Purpose Ovens
- ¥ WOV-Series of Vacuum Ovens
- ¥ WGC-Series of Growth Chambers
- ¥ WTH-Series of Temp. & Humidity Chambers
- ¥ WCC-Series of Cold Lab Chambers
- ¥ WUF-Series of Ultra Low Temperature Freezers

DS-50CPLH

LED Plant Growth Chamber



FEATURE & SPECIFICATION

- LCD displayed full microprocessor program touch 11 step control(Temperature, Humidity, Illumination)
- Temperature : 0℃ to 65℃/ ±0.1℃ at 25℃
- Humidity : 30 to 96% RH/±1% at 70%
- LED (Standard) : FL40W x 6ea
(Optional) : Red 660nm ±20nm,
Blue 470nm,
Far-red 735nm
- Dimensions(in) : 600 x 600 x 1200(WxDxH)mm
(out) : 820 x 900 x 1900(WxDxH)mm
- Shelves : Coating 3ea, Adjustable
- Power : AC220V, 60/50Hz, 3Kw, 1phase

DS-55GPS

Table top CO2 Chamber



FEATURE & SPECIFICATION

- LCD displayed full microprocessor program touch 11 step control(Temperature, Humidity, Illumination, CO2)
- Temperature : 0℃ to 60℃/ ±0.1℃ at 25℃
- Humidity : 30 to 98% RH/±0.8% at 70%
- CO2 : 0 ~ 5000 ppm / ±20 ppm at 1000 ppm
- Illumination : F.L 40W x 4sets, 99hr59min/step
- Dimensions(in) : 400 x 600 x 500(WxDxH)mm
(out) : 820 x 900 x 1900(WxDxH)mm
- Shelves : Coating 1ea, Adjustable
- Power : AC220V, 60/50Hz, 3Kw, 1phase

DS-52G4PC

CO2 & Plant Growth Chamber



FEATURE & SPECIFICATION

- LCD displayed full microprocessor program touch 11step control(Temperature, Humidity, Illumination, CO2)
- Temperature : 0℃ to 60℃/ ±0.1℃ at 25℃
- Humidity : 30 to 98% RH / ±0.5% at 70%
- CO2 : 0 ~ 5000 ppm / ± 20 ppm at 1000 ppm
- Illumination : F.L 40W x 18sets / 99hr59min or hold / 0 ~ 23,000Lux
- Dimensions(in) : 600 x 600 x 1200(WxDxH)mm
(out) : 820 x 900 x 1900(WxDxH)mm
- Shelves : SUS 3ea, Adjustable
- Power : 220V, 60/50Hz, 3Kw, 14A, 1phase

DS-10G-S

Seed Germinator



DS-10G-S



DS-10G

FEATURE & SPECIFICATION

- Temperature : Ambient 1℃ to 45℃ / ±0.1℃ at 30℃
- Humidity : Up to 98% RH at 30℃
- Dimensions (in) : 490 x 500 x 700(WxDxH)mm
(out) : 620 x 620 x 960(WxDxH)mm
- Power : AC220V, 60/50Hz, 0.3Kw

• DS-10G	: (IN) 400 x 400 x 300mm
• DS-10G-L	: (IN) 490 x 500 x 1000mm
• DS-10G-C	: (IN) 490 x 500 x 1000mm, 0℃ to 60℃
• DS-10G4-H	: (IN) 500 x 500 x 500 x4rom, Humidity

DS-3CIO

Multi Purpose Chamber(Oven, Incubator, Cold)



DS-3CIO

FEATURE & SPECIFICATION

- Drying chamber : Ambient to 260°C/ $\pm 0.3^\circ\text{C}$ at 140°C
- Incubator chamber : -5°C to 80°C / $\pm 0.1^\circ\text{C}$ at 25°C
- Cold lab chamber : 0°C to 10°C / $\pm 0.2^\circ\text{C}$ at 4°C
- Temp. controller : Microprogram no-revision C.P.U auto tune P.I.D controller(1ea/per room)
- Time : 99Hr 59min or Hold
- Dimensions(in) : 550 x 500 x 500(WxDxH)mm x 3rooms
(out) : 990 x 770 x 1920(WxDxH)mm
- Shelves : SUS 2ea, Adjustable
- Power : AC220V, 60/50Hz, 1phase, 2.6Kw, 12A

Other chamber(4 rooms)

- Constant temp. & Humi., Shaking incubator(DS-14MHSP)



DS-14MHSP

DS-11BS

BOD Incubator



DS-11BS



DS-11BSS

FEATURE & SPECIFICATION

- LCD displayed full microprocessor program touch 11step control(Temperature, Humidity, Illumination)
- Temperature : -5°C to 70°C / $\pm 0.1^\circ\text{C}$ at 25°C
- Dimensions(in) : 500 x 500 x 600(WxDxH)mm
- Power : AC220V, 60/50Hz, 1Kw, 1phase
- Other chamber :

DS-11T	: (IN) 400 x 400 x 400mm
DS-11BSS	: (IN) 400 x 300 x 300mm
DS-11B	: (IN) 500 x 500 x 1000mm

- Program, Lamp type (in size)

DS-11TPL	: (IN) 400 x 400 x 400mm
DS-11BPSSL	: (IN) 400 x 300 x 300mm
DS-11BPSL	: (IN) 500 x 500 x 600mm
DS-11BPL	: (IN) 500 x 500 x 1000mm

DS-10

Personal Incubator



DS-10S



DS-10SS



DS-10

FEATURE & SPECIFICATION

- Digital displayed full microprocessor control
- Temperature : Ambient. +5°C to 80°C / $\pm 0.1^\circ\text{C}$ at 37°C
- Time. controller : 99Hr. 59min or Hold
- Dimensions(in) : 400 x 400 x 300(WxDxH)mm
(out) : 600 x 470 x 370(WxDxH)mm
- Material(in/out) : SUS 304 / SCP-1
- Power : AC220V, 60/50Hz, 0.2Kw, 1phase

• DS-10SS	: (IN) 250 x 230 x 155mm
• DS-10SM	: (IN) 400 x 400 x 500mm
• DS-10S	: (IN) 500 x 500 x 700mm
• DS-10L	: (IN) 500 x 500 x 1000mm
• DS-10LL	: (IN) 600 x 600 x 1200mm

DS-21M

Water Bath



DS-21M



DS-24SC

FEATURE & SPECIFICATION

- Temp. range : Ambient to 99°C / $\pm 0.1^\circ\text{C}$ at 37°C
- Dimensions(in) : 495 x 290 x 150(WxDxH)mm
(out) : 530 x 330 x 180(WxDxH)mm
- Material(in/out/lid) : SUS304 / SCP-1 / SUS304
- Power : AV220V, 60/50Hz, 0.5Kw, 1phase

* Other

• DS-21S	: (IN)295 x 245 x 150mm
• DS-21L	: (IN)600 x 300 x 250mm
• DS-21SP	: Pump attach water bath
• DS-23SN, DS-24S	: Shaking water bath

EH-HB-140E, 140L

Hydraulics Bench



EH-HB-140E



EH-HB-140L

FEATURE

- Self contained and fully mobile service unit for the water circulation and flow rate measuring support for Eunha Fluid mechanics and Hydraulics Instruments : - Bernoulli's theorem apparatus
 - Flow measuring apparatus
 - Orifice and jet apparatus & etc.

Continuous flow monitoring and the exact flow rate measurement.

An open channel and ample working space on the bench top for various experiment.

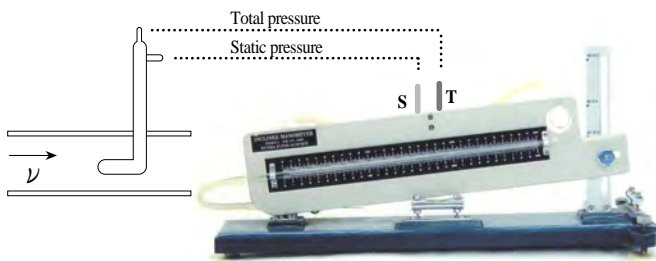
Supplied as standard Accessories, 3 type of weirs.

SPECIFICATIONS

MODEL	EH-HB-140E	EH-HB-140L
Open channel	23W × 17H × 80L(cm)	23W × 17H × 120L(cm)
	Magnetic coupling pump	
Pump & motor	Total head(Max) : 8m	12m
	220V(60Hz)	220V(60Hz)
	90(Out)~170(In)W	150(Out)~290(In)W
	70ℓ /min (Max)	110ℓ /min (Max)
Sump tank	Capacity : 150ℓ (Max)	
Volumetric measuring tank	35ℓ (Max)	
Sight tube & scale	0~40ℓ (Max)	
Weight	110kg	131kg
Pressure gauge	0~2 kg/cm ²	
Flow meter	4~40ℓ /min (Max)	
Dimensions	70W × 100H × 120L(cm)	70W × 100H × 160L(cm)

EH-IM-100

Inclined Manometer



SPECIFICATIONS

Measuring range	100 (3:1)	60 (5:1)	30 (10:1)	15 (20:1)
Differential pressure (mmAq)	0~100	0~60	0~30	0~15
Minor divisions (mm)	0.33	0.2	0.1	0.05
Full scale range	300mm			
Velocity (Max.)	40m/sec			
Gauge fluid	Alcohol or Water			
Weight (Approx.)	3kg			
Dimension (Approx.)	520L × 240H × 160W (mm)			
※ Option	Pitot tube			

EH-FVC-15

Flow Visualization Apparatus



FEATURE

- Visualize the flow patterns associated with submerged models in open channel. The silent flow to wide open channel (10 x 150 x 700 mm) of one side observation is obtained through pass round glass marbles. Array of 10 injection needles makes sharp parallel lines. Acceptable not only the 6 shaped supplied models but any shaped self made models also.

SPECIFICATIONS

Dye injection needles	10 ea.
Dye reservoir capacity	0.4ℓ
Channel (Acryl)	Width - 10mm, Depth - 150mm, Length - 700mm
Water head tank	180W × 180D × 400H(mm)
Flow rate (Max.)	3.5ℓ /min
Undershot weir	10mm (wide)
Dimensions (Approx.)	1030L × 800H × 350W (mm)

EH-JIM-M8

Jet Impact



FEATURE

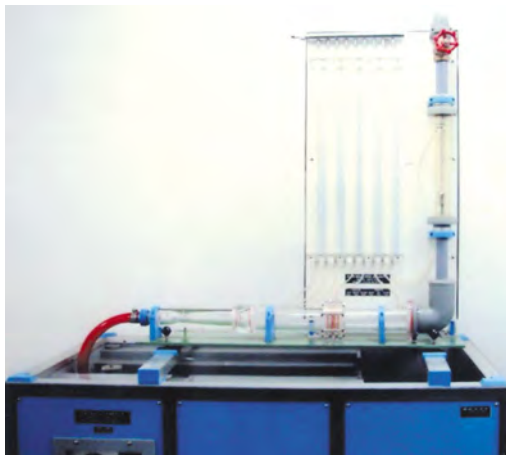
- Demonstrate the force of water jet impinging to stationary object.
- For the best performance, connect to Eunha Hydraulics bench(EH-HB-140/140E) is essential.
- On the upper end of this stem is mounted a weight container.
- The dead weight of the moving parts is counter-balanced by a compression spring.
- Total of three targets are provided; a flat plate, a 120 degree cone and a hemispherical cup.

SPECIFICATIONS

Nozzle diameter	8mm
Target (PVC)	Flat plate : 35 φ Cone type : 40 φ (120 degree cone) Hemispherical cup : 40 φ
Tank (Cylindrical)	150 φ (mm) × 300H (mm), Transparent acryl
Flow rate	20ℓ /min (Max.)
Drain hole (Outlet)	25A
Dimension	250 φ (mm) × 50H (cm)
Standard accessories	<ul style="list-style-type: none"> • Weight : 100gr - 2 ea, 50gr - 2 ea, 20gr - 3 ea, 10gr - 3 ea, 5gr - 2 ea. • Target : Flat plate, Cone (120 Degree), Hemispherical cup - 1 ea. • L-Wrench : 5/32" - 1 ea.

EH-FVO-G

Flow Measuring Apparatus

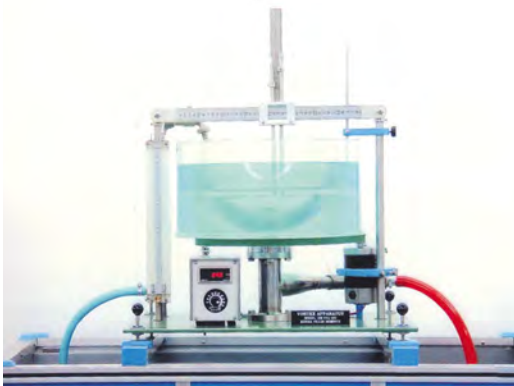


FEATURE

- A serial connection of Venturi, Orifice meter and 90 degree Elbow pipe with proprietary rotameter with tappings of prior or after each of devices. The 9 lane of vertically installed manometer tube is connected to each of devices so that they can shows energy loss of flow water. Determine of flow rate and pressure drops using a Venturi Meter, an Orifice Plate, 90 degree Elbow pipe and a Rotameter and Demonstrate the Bernoulli's Equation. Measure the head loss across the devices of a sudden enlargement and sudden reduction. For the best performance, connect to Eunha Hydraulics bench(EH-HB-140/140E) is essential.

EH-VTX-400

Vortex Apparatus



SPECIFICATIONS

Rotating vessel	Transparent acryl
	Diameter (O.D) : 400mm (Approx)
	Deep : 190mm (Approx)
Spiral perforated cylinder	Transparent acryl
	Diameter (O.D) : 300mm (Approx)
	Deep : 190mm (Approx)
Speed Variation	DC voltage regulator : rpm 140 (Max)
	(Inlet voltage : AC 220V, 70W, 60Hz)
Probe, linear scale	Horizontal : 400mm
	Vertical : 180mm
Dimension (Approx.)	600W × 700H × 450L(mm)
Weight	25.5kg

EH-OJ-400H

Orifice and Jet Apparatus



FEATURE

- Scaled head tank with height and water level adjustable overflow unit.
- 3 sets of vertically attached moveable orifice of different diameter (3, 6, 9mm).
- The 10 needles represent the detail of trajectory of flow jet.
- Two magnetic strips hold graph paper on the support back board.
- Connect to Eunha Hydraulics bench(EH-HB-140/140E) is highly recommended.

RANGE OF EXPERIMENTS

- Experimentally determine the velocity coefficient for small orifices, 3, 6 and 9mm dia.
- Calculate the coefficient of discharge for a small orifice under the flow of constant and varying head.
- Demonstrate the Torricelli's law for the flow energy.

EH-FO-13M

Flow Through an Orifice



SPECIFICATIONS

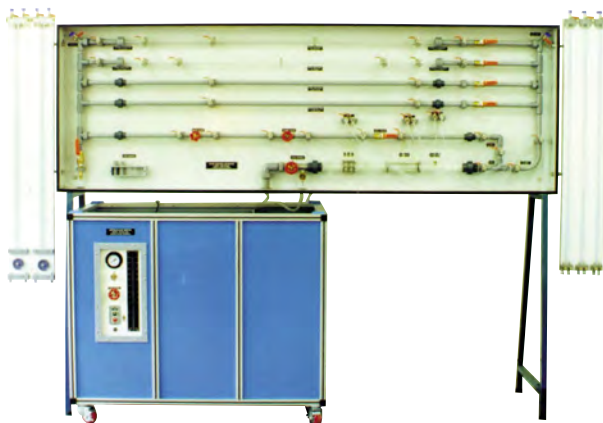
Standard orifice	13mm Dia.
Head (Max.)	390mm
Cylindrical tank (Acryl)	180 ϕ (mm) \times 40H (cm)
Inlet pipe (With dissipator)	19mm
Overflow pipe (Variable head)	22mm
Overflow tank (Acryl)	100D \times 110W \times 270H (mm)
Flow rate (Approx.)	18 ℓ /min
Traverse mechanism	Lead screw with adjusting nut calibrated 1/10(mm) per division (With pitot tube)
Dimension (Approx.)	340 ϕ (mm) \times 800H (mm)

FEATURE

- Full analysis of Vertical water jet and orifice flow.
- Integral pitot traverse tube.
- For the best performance, connect to Eunha Hydraulics bench(EH-HB-140/140E) is essential.
- Direct measurement of total head, head loss and diameter of jet.
- Determination of the actual discharge coefficient by measuring the flow rate.

EH-FF-2000

Fluid Friction Apparatus



FEATURE

- Total 14 devices with manometer tabs are arranged in a single board.
- Energy loss experiments due to the friction of fluid flows of any conditions are performed accurately.
- Multiple lanes of manometers, two u-tube mercury and three pair of water manometer measures the pressure head of 5 devices simultaneously.
- Eunha Hydraulics bench(EH-HB-140/ 140E) included.
- Fluid Friction in a smooth bore pipe
- Head loss due to friction & pipe fittings
- Head loss due to Sudden Contraction & Enlargement
- Fluid Friction in a roughened pipe
- Flow measurement using differential head (Orifice, Venturi, Pitot-tube)

EH-HEW-1500

Heat Exchanger

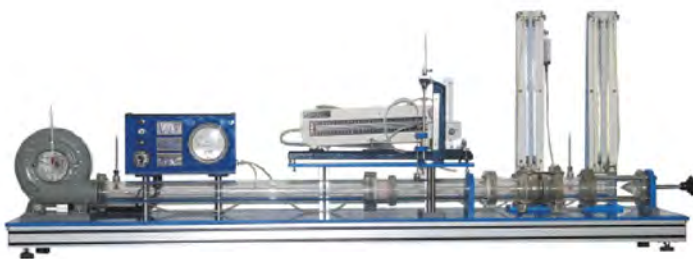


SPECIFICATIONS

Heat exchanger (Concentric tube)	Tube (Copper) : 16mm O.D., Effective length : 1.5m,	Wall Thickness : 1.0mm Effective area : 0.071 m ²
Working temperature	80°C (Max.)	
Temperature controller	Digital, Accuracy : ±0.5°C	
Temperature indicator (Digital)	6 Points (6ea.) Accuracy approx. : ±0.5°C Thermocouple : Pt 100Ω	
Circulating pump	Magnetic coupling pump Capacity : 7ℓ /min Max. temp : 80°C	
Heater (Immersion type)	220V(60Hz), 2.4kw	
Heater regulator	Thyristor controlled	
Sump tank	Capacity : 24ℓ (Max.), Stainless steel	
Flow meters	0.3~3ℓ /min (Hot water), 0.5~5ℓ /min (Cold water)	
Weight	52.8kg	
Dimensions	125H × 85W × 60D (cm)	

EH-FTR-C50

Fan Test Rig



SPECIFICATIONS

Electrical supply	220Volts (60Hz), 1.5A	
Centrifugal Fan	Flow rate	: 60~90cm ³ /h
	Rotational speed	: 0~3600rpm
	Drive motor	: DC 90V, 0.1KW
Duct (In)	50mm	
Flow rate control	Throttle Valve	
Flow rate measuring detector	Orifice meter (Orifice Diameter 30mm)	
Velocity measuring detector	Pitot tube (with Vertical Traverse)	
Panel meters (Control Box)	DC volt meter (Digital), DC Ampere meter (Digital)	
	Tacho meter (Digital), Differential pressure gauge (Analog)	
Standard accessory	Inclined Manometer	
	U-Water Manometer(400mm) 2set	
	Thermometer (50°C) 3ea	
Weight	39.7kg	
Dimension	180L × 33D × 68H(cm)	

EH-TFC-200

Tilting Flow Channel



SPECIFICATIONS

Perspex Channel	IN : 2200L × 200H × 80W (mm) OUT : 2200L × 250H × 100W (mm)
Bed slope (Adjustable)	1/120 ~ 5/120cm
Flow meter (Range)	15~150ℓ /m
Pump, Motor	220V(60Hz), 400W 160ℓ /min (Ht=7m)
Sump tank (PVC)	300ℓ (Max.)
Weight	160kg
Overall dimensions	Height : 180cm (To top of point gauge)
	Width : 50cm
	Length : 310cm
Standard accessories	Hook & Point gauge(MODEL EH-HP-200) : 0~180mm Weir • Sharp crests weir • Ogee weir • Broad crested weir • Crump weir
	Adjustable sluice gate

- Demonstrate flow behaviors over the various weirs, sluice and slope in a uniform flow of open channel.

◆ In case of quality improvement control specification can be changed without notification and please make the detailed inquiry for the particular product of interesting.

Universal Washing Chamber



SPECIFICATION

- Controller : PV Display : 5 Digit 7-Segment red LED, Height 20mm
LCD Display : 32 x 128 DOT LCD Indicator
Status Indicator Lamp : Yellow and Green LEDS
Control Method & Input : Micro processor and touchpad
Power unit Lithium battery : For data storage, for approx. 10 years
- Dimension(W × D × H) : (in size) 600 × 600 × 700mm
(out size) 930 × 760 × 1850mm
(rotation rack size) ϕ 550 mm
- Material : External : Stainless H/L Plate
Internal : Stainless P/L Plate
- Door : Automatic System , Safety Glass
- Washing Pump : Goulds Pump NPE-LC Series.
Impellor Material : SUS #304
Capacity : 60 ~ 160kg/min , H Max. : 40M , RPM : 3500rpm
Pressure : 2.2 ~ 3.3kg/cm²
Temperature : 100°C below
- Drying System : Heater : Infrared ceramic Heater 1.5KW
Drying Fan Motor : Sirocco Type , Forced Convection
Drying Air Filter : Nylon
Air Drying : External
Drying Temperature : 90°C
- Water Heater : SUS #316 Pipe Heater 5KW
Boiler for hot water supply
- Power Consumption : 8.6KW (Max. : 6kw , Min. : 2.6kw)
- Water Supply : Hot and Cold Water (Pressure 0.5 ~ 2.5kg/cm²)
- Washing Method : Power Jet Spray
- Chamber : Up : Jet Rack
Down : Rotation Rack
- Drain Pump : Automatic Control and Manual Control
- Detergent Pump : Mechanical Magnetic Pump 30cc/Per cycle
- Water Consumption : 24 ~ 190ℓ / Pre Cycle
- Program Pattern : Pre Wash → Wash → Rinse → Dry → End (7-Pattern)
- Sterilization : U.V Ray 15W 2EA
- Interface : RS - 485
- Power Supply : 3 Phase 220V 60Hz

- This machine is capable of washing, rinsing, sterilizing through the lamp-style sterilizer, and drying glass equipment used in experiments, substance analysis and examinations through and automated digital program control.

This allows for savings in time and work time for the operator, as well as improving the level of data acquired in experiments.

It is an easy to use cleaner using warm sterilized air during the drying

FEATURE

- The pattern for cleaning can be changed according to the residue on the instruments
- With the built in water filter the rinsing water is free from outside contamination
- In order to increase the level of cleaning, a separate hot water pipe is installed, in the event that hot water is not available, the built in heater can be used to enhance.
- With the built in lighting system you can inspect the nozzle, there by preventing stoppage.
- An automatic liquid soap Supplier is built in, and there is a separate switch to regulate the flow of liquid soap depending on the type of glass used and the degree of contamination
- A variety of baskets can be interchanged to accommodate the different sized instruments.
- The indicator shows the current cycle in the cleaning process
- The cleaner is equipped with an automatic door opener.
- With a built in water tank and pump the level of water provided is maintained at a constant level.

US - VM

Vortex Mixer



- Vortex Mixer is the product, which is designed to test the results such as through using tubes, tiny flask, etc. Mixing Plate has 5 holes in order to mix multiple test tubes simultaneously, it is designed to pursue convenience and speed of laboratory work.

FEATURE

- A variety of tube can be used without changing mixing plate, and the plate of Vortex Mixer is too soft, flexible, and resistible to be damaged easily.
- Through choice of switch button between full or touch, a researcher is able to proceed his experiment in terms of 3 options of operation of the product.
- Vortex Mixer is equipped with a speed controller, so a researcher can control the speed of his test work by virtue of sample in order to get more powerful results of experiment in lab.
- Vortex Mixer has suction cup, with a view to trivializing vibration while the product being operated.

SPECIFICATION

- Speed Range : 1000 ~ 3500 rpm
- Mixing Plate : \varnothing 90mm
- Mixing Method : Vibration Type
- Plate Stroke : 4mm
- Power Consumption : 0.5A
- Power Source : 220V/60Hz
- Use Container : Test Tube and Flask

TW - SC - D/DS

Steam Aging Test Bath



TW - SC - DS



TW - SC - D

- Testing aging or quality status of any apparatus, this more advanced test bath employs digital mode in setting and indicating Temperature to develop operation, temperature reproducibility, and safety more than ever.

FEATURE

- The temperature control uses a digital format, reducing the level of error and enhancing the ease of operation and maintenance of required temperature
- The water supply and level is adjusted automatically, allowing for longer and safer use of the steam aging machine
- With the Auto Start, Auto Stop Timer it can be operated by simply inputting the temperature and item setting.
- The entire product is made of stainless steel.
- There is a viewing window in the front of the machine.
- This product is a steam aging tester appropriate for the Older Bility Test (Mil-Std-883C) of semi-conductors.

SPECIFICATION

- Temp. Range : Amb. +5 $^{\circ}$ C ~ 95 $^{\circ}$ C
- Temp. Control : Digital Set Readout PID Control
- Temp. Stability : $\pm 0.3^{\circ}$ C at 90 $^{\circ}$ C
- Dimension(W \times D \times H) : (in size) 685 \times 285 \times 240mm
(out size) 965 \times 345 \times 475mm
- Material : All SUS #304
- Timer & Buzzer : auto start, auto stop, 99.9/hr, digital display
- Heater : 1KW \times 4
- Safety Device : Power Breaker Switch
- Power Source : AC 100 or 220V/60Hz

TOGA M01

TOGA Clean System, Movable Type

FEATURES

- Easy move by rolling casters for local cleaning and exhaustion
- Compact design with Flexible Arm rotating in a 360° arc
- TOGA filter : removal of harmful gases, VOCs, Offensive smell and fume
- Chemical motor : special coils and bearing for no chemical reaction
- Turbo blower : High efficient specially designed blower
- Pre-HEPA filter : removal of 0.3um fine dust to make longer life time of HEPA filter
- Lower Noise and soundproofing : by melamine absorption board and vibration pad
- Ductless type : easy installation and prevention of heat-loss
- Lower maintenance cost by unique and renovated developed filters



SPECIFICATIONS

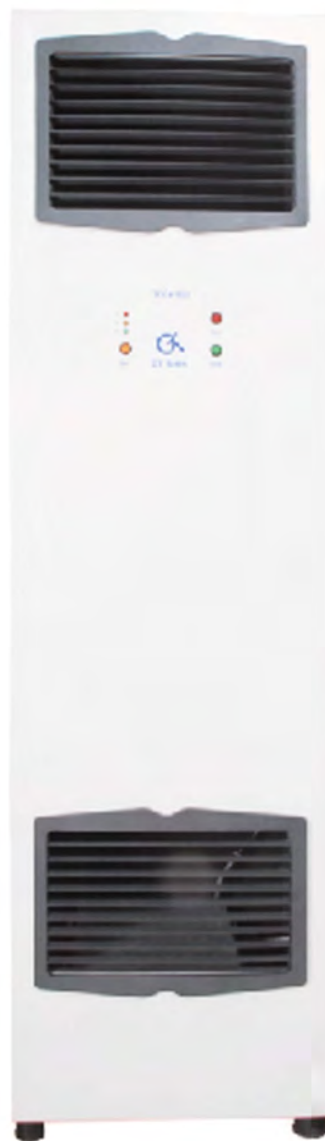
MODEL	TOGA-M01
Removal Efficiency	Better than 99.97% of Harmful and Toxic Gases, VOCs, Offensive Smells and Fumes
Adsorption capability	10m ³ /min
Replacement period of filters	Around 1 Year
Power consumption	750W
Power input	110/220V, 50/60Hz ± 10%
Weight	87kg
Dimension(W x D x H)	400 x 400 x 950 mm

TOGA S01/S02

TOGA Clean System, Stand Type

FEATURES

- TOGA filter : removal of harmful gases, VOCs, Offensive smell and fume
- Chemical motor : special coils and bearing for no chemical reaction
- Turbo blower : High efficient specially designed blower
- Pre-HEPA filter : removal of 0.3um fine dust to make longer life time of HEPA filter.
- Lower Noise and soundproofing : by melamine absorption board and vibration pad
- Ductless type : easy installation and prevention of heat-loss
- Lower maintenance cost by unique and renovated developed filters



SPECIFICATIONS

MODEL	TOGA-S01	TOGA-S02
Removal Efficiency	Better than 99.97% of Harmful and Toxic Gases, VOCs, Offensive Smells and Fumes	
Adsorption capability	39.6m ²	79.2m ²
Replacement period of filters	Around 1 Year	
Power consumption	750W	
Power input	110/220V, 50/60Hz ± 10%	
Weight	121kg	142kg
Dimension(W x D x H)	450 x 400 x 1630 mm	500 x 450 x 1750 mm

TOGA GS01/GS02

TOGA Reagent Storage, Single & Double

FEATURES

- Slide type and adjustable positions of the shelves
- Display of temperature of humidity of storage inside
- Better than 99.97% removal of toxic gases volatilized from reagents
- More than 1 year long life time of filters by chemical neutralization filtration
- World first and unique technologies
- Custom made filters as per different laboratory environments
- Easy installation and no heat loss with ductless type



SPECIFICATIONS

MODEL	TOGA-GS01	TOGA-GS02
Removal Efficiency	Better than 99.97% of Harmful and Toxic Gases, VOCs, Offensive Smells and Fumes	
Bottle storing capability	120 bottles(1L)	260 bottles(1L)
Noise level	< 50dB	< 50dB
Replacement period of filters	Around 1 Year	
Power consumption	20W	47W
Power input	110/220V, 50/60Hz ± 10%	110/220V, 50/60Hz ± 10%
Weight	150kg	250kg
Dimension(W x D x H)	800 x 540 x 1950 mm	1600 x 450 x 1750 mm
	690 x 500 x 1580 mm	1480 x 500 x 1520 mm

TOGA GSR01

TOGA Reagent Storage with cooling option, Single

FEATURES

- Temperature control : 0 ~ 40 degree C
- Slide type and adjustable positions of the shelves
- Display of temperature of humidity of storage inside
- Better than 99.97% removal of toxic gases volatilized from reagents
- More than 1 year long life time of filters by chemical neutralization filtration
- World first and unique technologies
- Custom made filters as per different laboratory environments
- Easy installation and no heat loss with ductless type



SPECIFICATIONS

MODEL	TOGA-GSR01
Removal Efficiency	Better than 99.97% of Harmful and Toxic Gases, VOCs Offensive Smells and Fumes
Bottle storing capability	160 bottles(1L)
Temperature control	0 ~ 40 degree C
Noise level	< 50dB
Replacement period of filters	Around 1 Year
Power consumption	600W
Power input	110/220V, 50/60Hz ± 10%
Weight	180kg
Dimension(W x D x H)	840 x 800 x 2040 mm

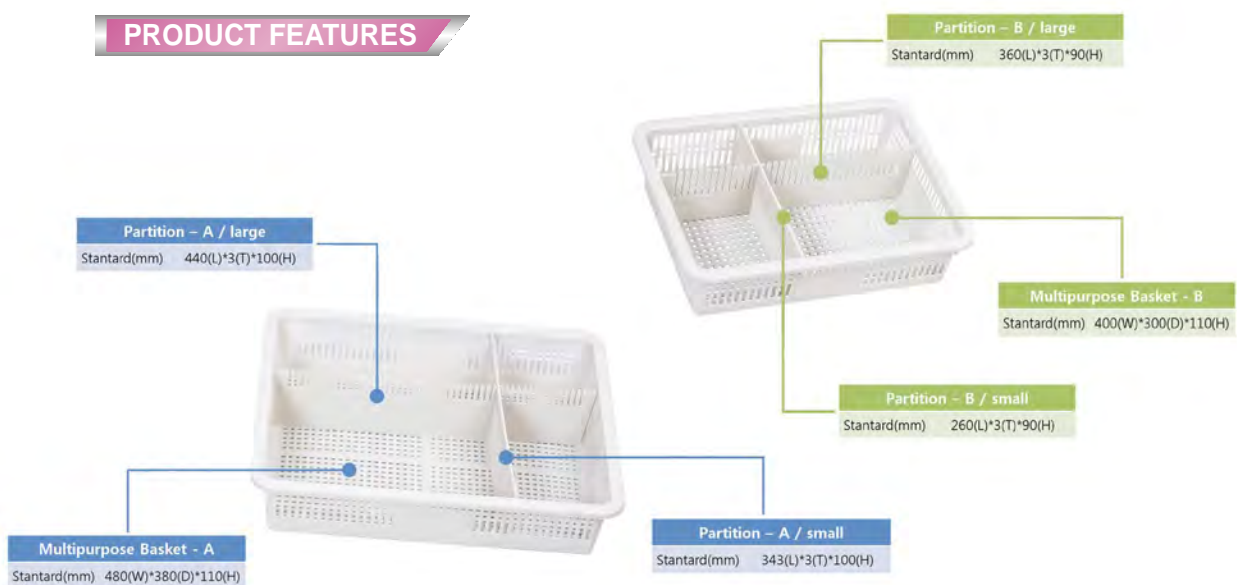
MULTIPURPOSE BASKET

FEATURE OF PRODUCT

This product made of polypropylent is so strong after assembled.
Anyone can assemble that product according to standards and sized so usefully, and it is easy to store



PRODUCT FEATURES



MULTIPURPOSE BASKET

PRODUCT COLORS



(GRAY)



(SKY)



(PURPLE)



(GREEN)

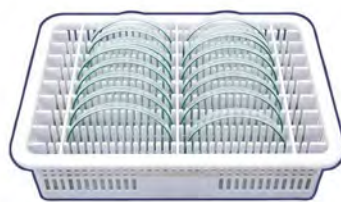


Higher level of
design and **quality** oriented
only to the **best.**

EXAMPLE



(BEAKER)



(SCHALE)



(ERLENMEYER FLASK)



(TEST TUBE)



(ALCOHOL LAMP)



(FNNEL)

Zeneer Power Series (RO & UP)

Water Purification System



FEATURES

- Certified CE, NRTL ISO 9001, ISO 14001, GD, QD, SD mark
- Built-in TOC monitoring system (option)
- Built-in Volumetric dispensing function by timer

SPECIFICATIONS

	Zeneer Power I	Zeneer Power II	Zeneer PowerIII
Product (RO, UP)	Max. 15L/Hr	Max. 25L/Hr	Max. 35L/Hr
Water Quality	-Pure Water: 0.0 to 30.0 $\mu\text{s}/\text{cm}$ -Ultra Pure: Up to 18.3 M Ω -cm		
Controller functions	1) Self test for external & internal system 2) Auto cleaning and monitoring function 3) Filter exchange indicator 4) Auto monitoring of Feed water quality		
Dimensions(W × D × H)	390 × 460 × 470mm		
Power	230V(110V on request), 50/60Hz, 60W		

Zeneer RO Series

Pure Water System



FEATURES

- Certified CE, NRTL ISO 9001, ISO 14001, GD, QD, SD mark
- Built-in RS 232C Port
- Built-in Volumetric dispensing function by timer

SPECIFICATIONS

	Zeneer RO 180	Zeneer RO 280	Zeneer RO 380
Product (RO)	Max. 15L/Hr	Max. 25L/Hr	Max. 35L/Hr
Water Quality	-Pure Water: 0.0 to 30.0 $\mu\text{s}/\text{cm}$		
Controller functions	1) Self test for external & internal system 2) Auto cleaning and monitoring function 3) Filter exchange indicator 4) Auto monitoring of Feed water quality		
Dimensions(W × D × H)	300 × 460 × 470mm		
Power	230V(110V on request), 50/60Hz, 60W		

Zeneer UP Series

Ultra Pure Water System



FEATURES

- Certified CE, NRTL ISO 9001, ISO 14001, GD, QD, SD, mark
- Built-in TOC monitoring system (option)
- Built-in Volumetric dispensing function by timer

SPECIFICATIONS

	Zeneer UP 900
Product (UP)	1 ~ 1.2L/min
Water Quality	-Ultra Pure: Up to 18.3M Ω -cm
Controller functions	1) Self test for external & internal system 2) Auto recirculation function 3) Filter/UV Lamp exchange indicator 4) Auto monitoring of Feed water quality
Dimensions(W × D × H)	300 × 460 × 470mm
Power	230V(110V on request), 50/60Hz, 60W

New PNIX Power Series (RO & UP)

Water Purification System



FEATURES

- Certified CE, ISO 9001, ISO 14001, GD, QD mark
- Built-in TOC monitoring system (option)
- Built-in Volumetric dispensing function by timer

SPECIFICATIONS

	New P.NIX Power I	New P.NIX Power II	New P.NIX Power III
Product (RO, UP)	Max. 15L/Hr	Max. 25L/Hr	Max. 35L/Hr
Water Quality	-Pure Water: 0.0 to 30.0 $\mu\text{s}/\text{cm}$ -Ultra Pure: Up to 18.3 M Ω -cm		
Controller functions	1) Self test for external & internal system 2) Auto cleaning and monitoring function 3) Filter/UV Lamp exchange indicator 4) Auto monitoring of Feed water quality		
Dimensions(W × D × H)	390 × 460 × 470mm		
Power	230V(110V on request), 50/60Hz, 60W		

New PNIX RO Series

Pure Water System



FEATURES

- Certified CE, ISO 9001, ISO 14001, GD, QD mark
- Built-in RS 232C Port
- Built-in Volumetric dispensing function by timer

SPECIFICATIONS

	New P.NIX RO 180	New P.NIX RO 280	New P.NIX RO 380
Product (RO)	Max. 15L/Hr	Max. 25L/Hr	Max. 35L/Hr
Water Quality	-Pure Water: 0.0 to 30.0 $\mu\text{s}/\text{cm}$		
Controller functions	1) Self test for external & internal system 2) Auto cleaning and monitoring function 3) Filter exchange indicator 4) Auto monitoring of Feed water quality		
Dimensions(W × D × H)	300 × 460 × 470mm		
Power	230V(110V on request), 50/60Hz, 60W		

New PNIX UP Series

Ultra Pure Water System



FEATURES

- Certified CE, ISO 9001, ISO 14001, GD, QD mark
- Built-in TOC monitoring system (option)
- Built-in Volumetric dispensing function by timer

SPECIFICATIONS

	New P.NIX UP 900
Product (UP)	1 ~ 1.2L/min
Water Quality	-Ultra Pure: Up to 18.3M Ω -cm
Controller functions	1) Self test for external & internal system 2) Auto recirculation function 3) Filter/UV Lamp exchange indicator 4) Auto monitoring of Feed water quality
Dimensions(W × D × H)	300 × 460 × 470mm
Power	230V(110V on request), 50/60Hz, 60W

Zenix RO Series

Pure Water System



FEATURES

- Certified CE, ISO 9001, ISO 14001, GD, QD mark
- Built-in RS 232C Port
- Built-in Volumetric dispensing function by timer

SPECIFICATIONS

	Zenix RO 180	Zenix RO 280	Zenix RO 380
Product (RO)	Max. 15L/Hr	Max. 25L/Hr	Max. 35L/Hr
Water Quality	-Pure Water: 0.0 to 30.0 $\mu\text{s}/\text{cm}$		
Controller functions	1) Self test for external & internal system 2) Auto cleaning and monitoring function 3) Filter exchange indicator 4) Auto monitoring of Feed water quality		
Dimensions(W × D × H)	300 × 480 × 470mm		
Power	230V(110V on request), 50/60Hz, 60W		

Zenix UP Series

Ultra Pure Water System



FEATURES

- Certified CE, ISO 9001, ISO 14001, GD, QD mark
- Built-in RS 232C Port
- Built-in TOC monitoring system (option)

SPECIFICATIONS

	Zenix UP 900
Product (UP)	1 ~ 1.2L/min
Water Quality	-Ultra Pure: Up to 18.3M Ω -cm
Controller functions	1) Self test for external & internal system 2) Auto recirculation function 3) Filter/UV Lamp exchange indicator 4) Auto monitoring of Feed water quality
Dimensions(W × D × H)	300 × 480 × 470mm
Power	230V(110V on request), 50/60Hz, 60W

Zenix EDI System

Electrodeionization system



FEATURES

- High Quality water, to over 10M Ω -cm from tap water
- EDI does not require the exchange of Ion filter pack
- Simple & Compact System

SPECIFICATIONS

	Zenix EDI 180
Product (RO, EDI)	Max. 10L/Hr
Water Quality	-RO Water : 0.0 to 30 $\mu\text{s}/\text{cm}$ -EDI Water : Up to 15M Ω -cm
Controller functions	1) Self test for external & internal system 2) Filter/UV Lamp exchange indicator 3) Auto monitoring of Feed water quality
Dimensions(W × D × H)	300 × 480 × 470mm
Power	230V(110V on request), 50/60Hz, 60W

New Human Power Series (RO & UP)

Water Purification System



FEATURES

- Certified CE, ISO 9001, ISO 14001, GD, QD mark
- Programming by 2 steps of water quality for the filter exchange.
- Very simple to exchange the Filter-Pack (Molding Type)

SPECIFICATIONS

	New Human Power I	New Human Power II	New Human Power III
Product (RO, UP)	Max. 15L/Hr	Max. 25L/Hr	Max. 35L/Hr
Water Quality	-Pure Water: 0.0 to 30.0 μ s/cm -Ultra Pure: Up to 18.3 M Ω -cm		
Controller	1) Self test for external & internal system 2) Auto cleaning functions 3) Filter exchange indicator		
Dimensions(W×D×H)	400×567×510mm		
Power	230V(110V on request), 50/60Hz, 60W		

- New Human Power Series, New Human RO Series, New Human UP Series available

Nex Power Series (RO & UP)

Water Purification System



FEATURES

- Certified CE, ISO 9001, ISO 14001
- Produce Pure water & Ultra Pure water, simultaneously
- Very simple to exchange the Filter-Pack

SPECIFICATIONS

	Nex Power 1000	Nex Power 2000	Nex Power 3000
Product(RO, UP)	Max. 15L/Hr	Max. 25L/Hr	Max. 35L/Hr
Water Quality	-Pure Water : 0 to 30 μ s/cm -Ultra Pure : Up to 18.3M Ω -cm		
Display	Digital Display (RO : 0 to 200 μ s/cm), (UP : 1 to 18.3M Ω -cm)		
Dimensions(W×D×H)	400×570×510mm		
Power	230V(110V on request), 50/60Hz, 60W		

- Nex Power Series, Nex RO Series, Nex UP Series available

X-ma 6000/3000/1000 series

UV / VIS Spectrophotometer



FEATURES

- Built-in 8 cell holder
- High resolution scanning (X-ma 6000/3000 series)
- Double beam (X-ma 6000 series)
- Single beam (X-ma 3000/1000 series)
- Built-in USB or Parallel Port

SPECIFICATIONS

	X-ma 6300	X-ma 3200	X-ma 1200
Wavelength Range	190-1100nm	190-1100nm	200-1000nm
Wavelength Accuracy	±0.3nm	±0.5nm	±1.0nm
Wavelength Repeatability	0.2nm	0.3nm	0.5nm
Spectral Bandwidth	1.0nm	2.0nm	2nm
Photometric accuracy	±0.3%T	±0.3%T	±0.5%T
Photometric repeatability	±0.15%T	±0.2%T	±0.3%T
Display	Large LCD Display		
Sample Compartment	Auto 8 Cell holder		4 Cell holder
Dimensions (WxDxH)	600x450x200mm	480x360x160mm	480x360x160mm

DEEP FREEZER(CRYO - PRIDE SERIES)



FEATURE

- Hermetically sealed cooling system with very durable compressors
- Cold air loss is minimized by insulated inner doors
- 130 mm polyurethane foamed insulation
- Cabinet with round corners for easy cleaning
- Quiet running fans and compressors create a very low noise level (+/- 60 dBA)
- Light adjustable HDPE shelf with air circulation hole(No wrenched in -120°C)
- Door - Vacuum insulation panel

Standard Specification Up-Right Freezers Cascade Refrigeration System : -40°C to -86°C

Model no:	DF8510	DF8514	DF8517	DF8520	DF8524
Capacity	276 liters	369 liters	484 liters	605 liters	730 liters
Ext Dimensions W×D×H mm	920×900×1740	920×900×1979	920×1050×1979	1070×1050×1979	1070×1180×1979
Int Dimensions W×D×H mm	600×480×960	600×480×1280	600×630×1280	750×630×1280	750×760×1280
Weight	294 kg	334 kg	380 kg	410 kg	450 kg
Insulation	130 mm Non CFC, foamed in place polyurethane				
Certifical	ISO9001, ISO14001, CE, KFDA, ETL Certified				

Standard Specification Chest Freezers Cascade Refrigeration System : -40°C to -90°C

Model no:	DF9007	DF9010	DF9014	DF9017	DF9020
Capacity	191 liters	295 liters	392 liters	492 liters	593 liters
Ext Dimensions W×D×H mm	1280×790×1030	1590×790×1030	1880×790×1030	2180×790×1030	24800×790×1030
Int Dimensions W×D×H mm	570×500×670	870×500×670	1170×500×670	1470×500×670	1770×500×670
Weight	211 kg	236 kg	261 kg	286 kg	311 kg
Insulation	130 mm Non CFC, foamed in place polyurethane				
Certifical	ISO9001, ISO14001, CE, KFDA				

ICE - MAKER (FLAKE TYPE)



FEATURE

- One-touch connection system for easy water supply
- Safety System of check ice storage check, with automatic check system.
- Twin screw shaft mechanism
- Automatic system form water supply to ice production

SPECIFICATION

- Specifications of Ice Maker
 - Model No IF300-150
 - Cabinet Dimensions : 700W×700D×975H mm
 - Bin Storage Dimensions : 600W×300D×500H mm
 - Ice Production : 120 kg / Day
 - Storage Capacity : 90 kg
 - Refrigeration System : 1/3 Hp Compressor
 - Cabinet Material : Blower Molded(High Density Poly Ethylene)

FREEZE DRYER(LYOPHILIZER SERIES)



FEATURE

- Automatic Control System: Customer can operate from drying to defrosting by pushing a button at once.
- Automatic Purge System : Automatic purge system prevents backward of vacuum oil to protect sample.

Model no:	TFD5503	FD55508	FD5512	FD518	TFD8503	FD8508	FD8512	FD8518
ICE Capacity/day	2 liters	5 liters	10 liters	12 liters	2 liters	5 liters	12 liters	18 liters
Total Ice Capacity	3 liters	8 liters	12 liters	18 liters		8 liters	12 liters	18 liters
Cabinet Dimensions	805W × 750D × 885H mm							
Weight	68kg	120 kg	122 kg	130 kg	86 kg	145 kg	147 kg	155 kg
Condenser Temperature	-50℃ to -55℃				-75℃ to -85℃			
Certifical	ISO9001, ISO14001, CE, NEP							

PROGRAMMABLE VACUUM FREEZE DRYER(LYOPH-PRIDE SERIES)



FEATURE

- Using compulsory Circulation method for heat-transmission allows equality of shelf temperature. So sample can be stabilized and equally dried.
- With Touch Screen Control System customer can monitor whole drying procedure and store/print as per customer's need.
- Ice holding method protects refrigeration system by expanding cold trap surface.
- Customer can use manifold drying system when they want to dry separated sample during chamber drying procedure.
- Automatic alarm signal and sound when alarm system is working'
- Automatic dial contact five telephone number as per customer's setting

Model No:	PVTFD10R	PVTFD20R	PVTFD30R	PVTFD50R	PVTFD100R
ICE Capacity/day	8 liters	16 liters	24 liters	40 liters	80 liters
Total Ice Capacity	10 liters	20 liters	30 liters	50 liters	100 liters
Condenser temperature	- 50℃ to -85℃				
Shelf temperature	-45℃ to +75℃				
Shelf dimensions(W × D × H)	400 × 500 × 20	500 × 800 × 20	500 × 800 × 20	805 × 1005 × 20	
Shelf Quantity	3+1 = 4 EA	6+1 = 7 EA	5+1 = 6 EA	8+1 = 9 EA	8+1 = 9 EA
Refrigeration system	2Hp × 2 EA	3Hp × 2 EA	5Hp × 2 EA	7.5Hp × 2 EA	10Hp × 2 EA
Cabinet dimensions (W × D × H)	1390 × 850 × 1765	1470 × 1023 × 1905	1300 × 1891 × 1895	1450 × 2003 × 2140	1600 × 2415 × 2210
Electrical requirements	220/230V, 50/60Hz, Single/Three phase			380V, 50/60Hz, Three phase	
Vacuum Pump	417 Liters/Min	648 Liters/Min	841 Liters/Min	841 Liters/Min	1600 Liters/Min
Certifical	ISO9001, ISO14001, CE, NEP				

Portable Series

■ pH/mV/ORP/DO/O₂/Air/Conductivity/TDS/Salinity

EcoMet

- Clear custom LCD display
- Fast & accurate and easy to use
- Automatic (2points) calibration & buffer recognition
- Simultaneous displays of Data and Temperature
- Automatic (Manual) compensation for Temperature
- Automatic compensation for barometric pressure and salinity
- Easy to use by Automatic O₂ compensation
- Selectable cell constant for accurate measurement



Multi

- Industrial electrodes (pH/DO/EC) are used
- Waterproof(IP66) housing, Backlit graphic LCD display
- Cable length can be adjusted on request (std 3M, Max 100M)
- Fast, accurate and easy to use, Auto hold
- Depth of water 10M(Max), Data-log up to 210 points
- Measure and display of pH(ISE), DO and EC simultaneously
- Fast, Accurate and easy to install, Auto buffer choice
- Selectable cell constant, Auto ranging
- Automatic compensation for Temp and barometric pressure
- Auto power-off, Self diagnostics, Low Battery Alarm
- Rechargeable Battery, RS 232C communication
- Certificated CE mark, GD Mark, ISO9001, KT Mark
- * Application : Industrial water, Aqua cultural water, Supplying water and Ground water

NeoMet

- Waterproof(IP66) housing, Backlit custom LCD display
- Fast, accurate and easy to use, RS 232C communication
- Simultaneous display of pH, temp and current time
- Auto(Manual) calibration with choice of buffer(3points)
- Automatic compensation for Temp, Self diagnostics
- Low Battery Alarm, Rechargeable Battery
- Data-log up to 100 Points, Auto power-off
- Certificated CE mark, GD mark, ISO 9001



Series models

Model	EcoMet					NeoMet					Multi			
	P15	O15	D35	C65	S60	pH-20N	pH-25N	DO-30N	DO-35N	EC-40N	CP-50N	PD-60N	CPD-65N	Multi-80N
pH	•					•	•				•	•	•	•
mV	•					•	•				•	•	•	•
ORP		•				•	•				•	•	•	•
ISE							•				•	•	•	•
DO			•					•	•			•	•	•
O ₂			•					•	•			•	•	•
Air(%)								•	•			•	•	•
Conductivity				•						•	•		•	•
TDS					•					•	•		•	•
Salinity										•	•		•	•
Temperature	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Waterproof						•	•	•	•	•	•	•	•	•
Certificate	GD					CE, GD					CE, GD			

Laboratory Series

■ pH/mV/ORP/DO/O₂/Air/Conductivity/TDS/Salinity/Temp

EcoMet

- Clear custom LCD display
- Fast, accurate and easy to use
- Simultaneous display of pH(mV) with Temp
- Automatic compensation for Temperature
- Available measure by using latest calibration data
- Self diagnostics, Auto-hold, Auto-read stable Data
- Data-log up to 100 Points, RS 232C communication



NeoMet

- Bright LCD applying white backlight
- 2GB memory/ Unlimited data storage with SDIS program
- Automatic compensation for Temp, Alarm displays at high/low limit,
- Available measuring by using latest calibration data
- History View on data & calibration
- USB communication support (USB to RS232 cable connection)
- Certificated CE mark, ISO 9001, Built-in printer (Option) Upload the data in Excel format to PC by RS232C cable (SDIS-Option)



Multi

- -Measure and display of pH(ISE), DO and EC simultaneously
- Fast, Accurate and easy to install, Auto buffer choice
- Selectable cell constant, Auto ranging, Built-in printer (Option)
- Self diagnostics, Auto hold, Alarm displays at high/low limit
- RS 232C communication, Certificated CE mark, ISO9001
- Upload the data in Excel format to PC by RS232C (SDIS- Option)
- Bright LCD applying white backlight
- 2GB memory/ Unlimited data storage with SDIS program
- History View on data & calibration
- USB communication support (USB to RS232 cable connection)



Series models

Model	EcoMet			NeoMet									Multi				
	P25	D45	C75	pH 200L	pH 220L	pH 240L	pH 250L	DO 300L	DO 350L	EC 400L	EC 450L	EC 470L	pH 270L	pH 290L	CP 500L	PD 600L	PDC 700L
pH	•			•	•	•	•						•	•	•	•	•
mV	•			•	•	•	•						•	•	•	•	•
ORP					•	•	•						•	•	•	•	•
ISE						•	•						•	•	•	•	•
DO		•						•	•							•	•
O ₂		•						•	•							•	•
Air(%)		•						•	•							•	•
Conductivity			•							•	•	•			•		•
TDS			•									•			•		•
Salinity			•							•	•	•			•		•
Temperature	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
SDIS program							•		•		•	•	•	•	•	•	•
Internal printer							•		•		•	•	•	•	•	•	•

S O W A Series

Controller pH/DO/Conductivity

pH Controller pH-910 DO Controller DO-920 Conductivity Controller EC-930

- Microprocessor based on single chip
- Programmable dialogue-Menu adopted for easy operating
- Convenient LCD, LED display (Measure, Calibrate, Data display)
- User password function for protection
- Easy to stop of Relay by 'control-cut' function
- Low maintenance cost, High/Low alarm setting
- Standard serial communication by connecting with PC(RS232C)
- Sewage & waste water disposal plant, Filtration plant, River



Residual Chlorine Analyzer

SOWA RC-500

- Intelligent microprocessor-based
- modular devices of power, digital input/output, A/D, D/A converter
- Convenient use interface
- Automatic sensor self-diagnostic per each module
- Easy and automatic standardized function
- Various output signal (4-20mA DC, RS232)
- Gas permeable membrane type with 3 electrodes (Polarographic)
- Polyfluoroethylen membrane transmit the HOCl gas only
- Easily maintained (easy to clean) cell construction
- Water jet cleaning for more effective automatic continuous cleaning
- Low hysteresis of reference electrode with temperature



Chemical Oxygen Demand

SOWA COD200Mn

- Potentiometric Method
- Low Maintenance cost
- LCD Touch Screen (Option)
- Monitoring & Controlling in real time
- Accurate measuring by digital control system
- Setting and controlling of High/Low Alarm
- Multi-functions-program adopted for easy-to-operate



Water Analyzing System

SOWA Multi 100

- Multi measuring of 4 to 6 items
- Auto calibration of pH, conductivity according to user's setting
- User can select items to be measured that requested from site
- Real time controlling and monitoring, reducing labor and management cost
- Economic operation and maintenance, self diagnosis system
- Remote control & monitoring using wireless transmitter
- Sending message to cell phone when it has any troubles in measuring date



Process & Laboratory Sensors

■ pH & ORP

238 821 Clarytrode



pH 0~14, -5~100°C, 6 bar
Durable HF Glass
For HF and strong acid

238 801 Mecotrode



pH 0~14, 0~135°C, 16 bar
Tube inserting type
For HT and strong base

238 180 Liq-Glass



pH 0~14, -10~100°C Glass, For
Sea water, pool
Strong acid/base, general

238 381 Polyplast



pH 0~14, 0~60°C Epoxy,
For water, sewage and
general

5773701A2 VL-PC



pH 0~14, -10~100°C, 4bar
220~300mm (adjustable)

2737672 VL-PC



pH 2~11, -5~80°C
HF (less 20% concentration)

5473901 VL-PC



pH 0~14, -5~130°C 10bar
KNO₃ Gel type
For strong acid, HT, sewage

BP635KNV12 VL-PC



pH 0~13, -5~130°C
4mm diameter
For test tube

5733528 VL-PC



pH 0~13, -5~80°C, Epoxy
with temperature unit
For water, sewage
Glass type : 5773504A2

5773504 VL-PC



pH 0~13, 0~100°C, Glass
For water, sewage
General
Epoxy type: 5733526

5739602 VL-PC(ORP)



± 1999mV, 0~100°C, Epoxy
For laboratory
Epoxy type: 5739601

ION



Ammonia, Ammonium,
Chloride, Fluoride,
Potassium, Iodide, Nitrate

■ Dissolved Oxygen

237 150 Oxygen



40ppb~40ppm, 0~60°C, 4bar
NTC 22kOhm, polarographic
Easy maintenance
(One unit with membrane)

237 452 Oxyferm FDA



40ppb~40ppm, 0~130°C, 4bar,
NTC 22kOhm,
Polarographic
For pharmacy, food, bio
Potable/ CIP
Steam and sterilization

023IP17S VL-PC



0~20ppm, 0~50°C PT100
Polarographic & portable

023IP15G VL-PC



0~20ppm, 0~50°C..., PT100
Polarographic & laboratory

■ Conductivity

5731302-31 VL-PC



0.01~2ms/cm K=1.0, Epoxy
5771302-31(K=1.0 Glass)

5731302-41 VL-PC



0.5~200us/cm K=0.1, Epoxy
C527-3-1(K=0.1 SS)

C527-1-1 VL-PC



0.055~20us/cm K=0.01
Stainless steel

5771302-61 VL-PC



1~200ms/cm K=10
Glass
5771302-61(K=10 Epoxy)

Baths & Circulators



BW-10B
Heating Bath (Economy-Analog)



BW-10H
Heating Bath (Economy-Digital)



BW-0510H
Heating Bath (Economy-Dual)



BW-05G
Heating Bath (General)



BS-31
Shaking & Heating Bath



VB-40G
Viscometer Heating Bath



CW-05G
Heating Bath Circulator



RW-0525G
Refrigerated & Heating Bath Circulator

Baths & Circulators

Technical Benefits

Safety features

- 1) Built-in power cutoff circuit with audible and visual alarms:
 - Over temperature limit
 - Two separate fuses
- 2) Time setting functions for both Automated Run and Off (except for BW-B and BW-H Models):
 - Integrated time setting for Delayed ON/OFF
 - Operation mode selection(Automated Run and Manual Run)
- 3) Protection against low fluid level and dry running (except for BW-B and BW-H Models):
 - Intermittent alert sounds along with a visual alarm
 - Automatic shut down of the heater and the alarms

Control & Constructional features

- 1) Advanced electronic and program controls (except for BW-B Models):
 - Microprocessor PID temperature control
 - Preset three most commonly used temp. settings
 - Selectable Celsius and Fahrenheit
- 2) Intuitive control display based on MMI (Man Machine Interface) design (except for BW-B and BW-H Models):
 - Splash-proof and easy-to-clean keypad and bright LED displays
 - A quick lock button
- 3) High-quality 304 grade stainless steel interior bath
- 4) Corrosion-resistant stainless steel construction of all wetted parts

Selection Guide

Heating Baths



Description		Working Temp. Range (°C/°F)	Bath Volume (L/cu ft)	Temperature Stability (±°C/°F)
Analog Models(Economy)	BW-05B	Amb. +7 to 100 / Amb. +12.6 to 212	3.5 / 0.1	0.5 / 0.9
	BW-10B		11.5 / 0.4	
	BW-20B		20.0 / 0.7	
Digital Models(Economy)	BW-05H	Amb. +5 to 100 / Amb. +9 to 212	3.5 / 0.1	0.1 / 0.18
	BW-10H		11.5 / 0.4	
	BW-20H		20.0 / 0.7	
Dual Models(Economy)	BW-0505H	Amb. +5 to 100 / Amb. +9 to 212	3.5 & 3.5 / 0.1 & 0.1	0.1 / 0.18
	BW-0510H		3.5 & 11.5 / 0.1 & 0.4	
	BW-1010H		11.5 & 11.5 / 0.4 & 0.4	
General Purpose	BW-1020H	Amb. +5 to 100 / Amb. +9 to 212	11.5 & 20.0 / 0.4 & 0.7	0.2 / 0.36
	BW-05G		5.0 / 0.2	
	BW-10G		10.0 / 0.4	
Shaking & Heating	BW-20G	Amb. +5 to 100 / Amb. +9 to 212	20.0 / 0.7	0.2 / 0.36
	BS-06		17.0 / 0.6	
	BS-11		25.0 / 0.9	
Viscometer	BS-21	Amb. +5 to 100 / Amb. +9 to 212	37.0 / 1.3	0.05 / 0.09
	BS-31		55.0 / 1.9	
	VB-25G		25.0 / 0.9	
	VB-40G	Amb. +5 to 150 / Amb. +9 to 302	40.0 / 1.4	0.1 / 0.18

Bath Circulators



Description		Working Temp. Range (°C/°F)	Bath Volume (L/cu ft)	Temperature Stability (±°C/°F)
Heating	CW-05G	Amb. +5 to 150 / Amb. +9 to 302	5.0 / 0.2	0.05 / 0.09
	CW-10G		10.0 / 0.4	0.05 / 0.09
	CW-20G		20.0 / 0.7	0.1 / 0.18
	CW-30G		30.0 / 1.1	0.1 / 0.18
Refrigerated & Heating (to -25 °C)	RW-0525G	-25 to 150 / -13 to 302	5.0 / 0.2	0.05 / 0.09
	RW-1025G		10.0 / 0.4	0.05 / 0.09
	RW-2025G		20.0 / 0.7	0.05 / 0.09
	RW-3025G		30.0 / 1.1	0.08 / 0.14
Refrigerated & Heating (to -35 °C)	RW-0540G	-35 to 150 / -31 to 302	5.0 / 0.2	0.05 / 0.09
	RW-1040G		10.0 / 0.4	0.05 / 0.09
	RW-2040G		20.0 / 0.7	0.05 / 0.09
	RW-3040G		30.0 / 1.1	0.08 / 0.14

Cold Trap Bath

Description		Working Temp. Range (°C/°F)	Bath Volume (L/cu ft)
Cold Trap	CTB-10	Down to -40/-40	4.8 / 0.17

* Our Web-site includes detailed information of all JEIOTECH products with recent technical data

Desiccators



Cubic Vacuum Desiccators (VDC models)



Round Vacuum Desiccators (VDR models)



Cylindrical Vacuum Desiccators (VDP models)

Desiccators

Technical Benefits

Features for VDC

- 1) Maximum vacuum of 1 Torr(1.33×10^{-4} Mpa) for 72 hours
- 2) Greaseless airtight vacuum seal using high quality silicon gasket
- 3) Highly transparent, shatter-proof, non-corrosive, and easy to-clean polycarbonate(PC) construction
- 4) Convenient three-way stopcock providing consistent and uniform vacuum draw, vacuum release, or shutoff
- 5) Maximized utilization of internal space using maximum four to six shelves depending on product sizes
- 6) Stackable space-saving design allowing efficient usage of cramped lab space
- 7) Easy vacuum level checking with the standard vacuum gauge attached to the front door
- 8) Minimizing damages or discoloration of light sensitive samples when using UV-blocking models
- 9) Four built-in ports allowing easy attachment of various accessories

Features for VDR & VDP

- 1) Maximum vacuum of 1 Torr(1.33×10^{-4} Mpa) for 72 hours
- 2) Greaseless airtight vacuum seal using high quality silicon gasket
- 3) Highly transparent, shatter-proof, non-corrosive, and easy-to clean polycarbonate(PC) construction
- 4) Convenient three-way stopcock providing consistent and uniform vacuum draw, vacuum release, or shutoff
- 5) Flange lock holding the base and the lid together during non-vacuum conditions
- 6) Various models available with respect to sizes and UV-blocking effect
- 7) Minimizing damages or discoloration of light sensitive samples when using UV-blocking models
- 8) A vacuum gauge attachable at the center of the lid (for G and UG Models only)
- 9) The lid and bottom of VDR & VDP are compatible with each other for diverse use

Selection Guide

Desiccators

Description		Internal Volume (L/cu ft)	Vacuum Range (MPa)	Body Material
Cubic Models	VDC-11/11U	11 / 0.4	1.33×10^{-4}	Polycarbonate
	VDC-21/21U	23 / 0.8		
	VDC-31/31U	35 / 1.2		
	VDC-41/41U	45 / 1.6		
Round Models	VDR-20/20U/20G/20UG	6 / 0.2		
	VDR-25/25U/25G/25UG	10 / 0.4		
	VDR-30/30U/30G/30UG	20 / 0.7		
Cylindrical Models	VDP-25/25U/25G/25UG	16 / 0.6		
	VDP-30/30U/30G/30UG	25 / 0.9		

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Incubators



General Incubators (IB-G models)



Economy Incubators (IB-E models)



Low Temperature Incubator (IL, IL-A models)
- Forced Convection or Air-jacketed type



Low Temperature Incubators-Four chambers (IL-11-4C)

Incubators



Low Temperature Incubator-Personal (ILP models)



Hybridization Oven (HO-10)



Mini Incubator (IM-10)



Incubated Shaker-Benchtop (SI, SI-R models)



Incubated Shaker-Chamber (SIF, SIF-R models)



Incubated Shaker-Floor Standing (IS, IS-R/RF models)

Incubators

Technical Benefits

Safety features

- 1) Open door alert:
 - Audible and visible alarm
 - Automatic power cutoff from the heater and the fan if the door is open to minimize heat loss and also to protect the operator
- 2) Protection against overheating by automatic power cutoff from the heater controller before shutting down the unit
- 3) Two separate fuses to protect against over current

Constructional features

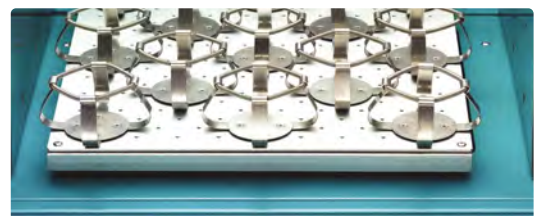
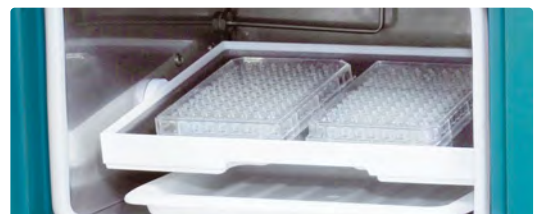
- 1) High-quality 304 grade stainless steel chamber interior and dirt-repellent external surface with power coating
- 2) Perfectly sealed door gasket minimizing heat loss and fully insulated chambers
- 3) Adjustable and electropolished stainless steel wire shelves allowing efficient air-flow and easy cleaning (except for SI and IS Models)

Control features

- 1) Microprocessor PID control
- 2) Simple calibration and auto-tuning functions
- 3) Built-in digital timer with Delayed ON/OFF function
- 4) Timer range: 1 min ~ 99 hr 59 min
- 5) Operation mode selection after power interruption: either Automatic Run or Manual Run
- 6) Convenient preset function for 3 most commonly used temperature settings
- 7) Easy conversion between Celsius and Fahrenheit
- 8) Self-diagnostic function identifying errors
- 9) Intuitive control panel design based on MMI (Man Machine Interface) system:
 - bright LED displays as well as splashproof and easy to clean keypads
 - Quick-lock button preventing accidental parameter changes (for IB, IL, and ILP Models only)
 - Separate power switches for shaker and lamp mechanisms for independent incubation (IS-971RF, SIF Models only)

Features for HO-10, IM-10

- 1) Over temperature limit protection and open door alert
- 2) Microprocessor PID control
- 3) Simple calibration
- 4) Ease-of-operation provided by a bright VFD, responsive touch buttons, and a jog dial
- 5) Memory function of programmed protocols allowing relevant parameters (such as temperature, rocking speed, time, etc) of each protocol step to be stored (only for HO-10)



Incubators

Selection Guide

Incubators



CE Certification without IM-10

Description		Operating Temp. Range (°C / °F)	Chamber Volume (L / cu ft)	Temperature Fluctuation at 37°C (±°C/°F)	Temperature Variation at 37°C (±°C/°F)
General Models	IB-05G	Amb. +5 to 70 / Amb. +9 to 158	60 / 2.1	0.1 / 0.18	0.6 / 1.08
	IB-15G		102 / 3.6		0.2 / 0.36
	IB-25G		151 / 5.3		0.2 / 0.36
Economy Models	IB-01E	Amb. +3 to 60 / Amb. +5.4 to 140	65 / 2.3	0.2 / 0.36	0.6 / 1.08
	IB-11E		150 / 5.3	0.3 / 0.54	0.8 / 1.44
	IB-21E		205 / 7.2	0.1 / 0.18	1.1 / 1.98
Mini Incubator	IM-10	Amb. +5 to 65 / Amb. +9 to 140	10 / 0.4	0.5 / 0.9	0.5 / 0.9

Low Temperature Incubators



CE Certification without IL-11-2C/4C

Description		Operating Temp. Range (°C / °F)	Chamber Volume (L / cu ft)	Temperature Fluctuation at 25°C (±°C/°F)	Temperature Variation at 25°C (±°C/°F)
Forced Convection Models	IL-11	0 to 60 / +32 to 140	150 / 5.3	0.1 / 0.18	0.5 / 0.9
	IL-21		224 / 8.6		0.4 / 0.72
Air-jacketed Models	IL-11A	+4 to 60 / +39.2 to 140	162 / 5.7	0.2 / 0.36	0.5 / 0.9
	IL-21A		254 / 9.0		
Personal Models	ILP-02	+1 to 40°C at ambient temp. of 25°C	14 / 0.5	0.1 / 0.18	0.5 / 0.9
	ILP-12		48 / 1.7		0.4 / 0.72
2-chambers Model	IL-11-2C	0 to 60 / +32 to 140	150 / 5.3 × 2 chambers	0.1 / 0.18	0.5 / 0.9
4-chambers Model	IL-11-4C	0 to 60 / +32 to 140	150 / 5.3 × 4 chambers	0.1 / 0.18	0.5 / 0.9

Incubated & Refrigerated & Illuminated Shakers



CE Certification without IS-971RF
UL Certification only for SI models

Description		Operating Temp. Range (°C / °F)	Speed Range (RPM)	Maximum Orbit Size		
Benchtop Models	SI-300	Incubated Shakers	Amb. +5 to 60 / Amb. +9 to 140	40mm dia		
	SI-600					
	SI-300R				Incubated & Refrigerated Shakers	+15 to 60 / +59 to 140
	SI-600R					
Floor Standing Models	IS-971	Incubated Shakers	Amb. +5 to 60 / Amb. +9 to 140	10 to 300		
	IS-971R	Incubated & Refrigerated Shakers	+4 to 60 / +40 to 140			
	IS-971RF	Incubated & Refrigerated & Illuminated Shakers	Amb. -15 to 60 / Amb. -27 to 140			
Chamber Models	SIF-5000	Incubated Shakers	Amb. +5 to 80 / Amb. +9 to 176	25mm dia		
	SIF-6000			38mm dia		
	SIF-5000R	Incubated & Refrigerated Shakers	Amb. -20 to 80 / Amb. -36 to 176	25mm dia		
	SIF-6000R			38mm dia		

Low Temperature Incubators

Description		Operating Temp. Range (°C / °F)	Chamber Volume (L / cu ft)	Temperature Fluctuation at 25°C (±°C/°F)	Temperature Variation at 25°C (±°C/°F)
Hybridization Oven	HO-10	Amb. +5 to 65 / Amb. +41 to 149	10 / 0.4	0.5 / 0.9 (at 9RPM)	0.5 / 0.9 (at 9RPM)

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Ovens



General Ovens (OF-G / ON-G models)



Economy Ovens (OF-E / ON-E models)



Vacuum Ovens (OV models)



Forced Convection Ovens-4-Chambers (OF-02G-4C)



Forced Convection Ovens-Large chambers (OF-G models)

Ovens

Technical Benefits

Safety functions

- 1) Open door alert (except for OV Models)
- 2) Protection against overheating by automatic power cutoff from the heater and controller in sequence
- 3) Two separate fuses for protecting against overcurrent (without OF-300,450,750 G/H Models)
- 5) Operation mode selection after power interruption: either Automatic or Manual Run
- 6) Switch from Celsius and Fahrenheit. (°C or °F)
- 7) Intuitive and easy-to-operate control panel design using MMI (Man Machine Interface) network system

Control features

- 1) Microprocessor PID control
- 2) Simple calibration and auto-tuning function
- 3) Convenient presetting function for 3 most commonly used temperature settings
- 4) Delayed ON/OFF digital timer range (1 min ~ 99 hr 59 min)

Constructional features

- 1) Grade 304 Stainless Steel chamber interior and dirt-repellent external surface with power coating (without OV Models)
- 2) Air-tight door gasket minimizing heat loss
- 3) Fully insulated oven chamber maintaining the exterior at a safe temperature

Selection Guide

Convection Ovens



CE Certification without the ON-G/E models, OF-02G-2C/4C and OF-300G/H to OF-750G/H

Description		Operating Temp. Range (°C/°F)	Chamber Volume (L/cu ft)	Temperature Fluctuation at 100 °C(±°C/°F)	Temperature Variation at 100 °C(±°C/°F)
Forced Convection (General)	OF-02G	Amb. +10 to 250	60 / 2.1	0.5 / 0.9	1.0 / 1.8
	OF-12G	Amb. +18 to 482	102 / 3.6	0.6 / 1.08	1.3 / 2.3
	OF-22G		151 / 5.3	0.8 / 1.44	1.7 / 3.1
	OF-300G	Amb. +10 to 200	314 / 11	0.2 / 0.36	0.9 / 1.6
	OF-450G	Amb. +18 to 392	450 / 15.9	0.1 / 0.18	0.7 / 1.3
	OF-750G		760 / 26.8	0.2 / 0.36	1.5 / 2.7
	OF-300H	Amb. +10 to 300	314 / 11	0.2 / 0.36	0.9 / 1.6
	OF-450H	Amb. +18 to 572	450 / 15.9		0.8 / 1.4
OF-750H		760 / 26.8	1.9 / 3.4		
Forced Convection (2-Chambers)	OF-02G-2C	Amb. +10 to 200 Amb. +18 to 392	60 / 2.1 x 2 Chambers	0.5 / 0.9	1.0 / 1.8
Forced Convection (4-Chambers)	OF-02G-4C	Amb. +10 to 200 Amb. +18 to 392	60 / 2.1 x 4 Chambers	0.5 / 0.9	1.0 / 1.8
Forced Convection (Economy)	OF-01E	Amb. +10 to 220 Amb. +18 to 482	52 / 1.8	0.4 / 0.72	3.3 / 5.94
	OF-11E		100 / 3.5		3.3 / 5.94
	OF-21E		150 / 5.3		2.3 / 4.14
Natural Convection (General)	ON-02G	Amb. +15 to 250 Amb. +27 to 482	52 / 1.8	0.3 / 0.54	5.9 / 10.62
	ON-12G		91 / 3.2	0.3 / 0.54	7.5 / 13.5
	ON-22G		135 / 4.8	0.3 / 0.54	6.9 / 12.42
Natural Convection (Economy)	ON-01E	Amb. +15 to 220 Amb. +27 to 428	52 / 1.8	0.3 / 0.54	6.5 / 11.7
	ON-11E		100 / 3.5	0.4 / 0.72	4.1 / 7.38
	ON-21E		150 / 5.3	0.5 / 0.9	7.3 / 13.14

Vacuum Ovens

Description		Operating Temp. Range (°C/°F)	Chamber Volume (L/cu ft)	Temperature Fluctuation at 100 °C(±°C/°F)	Temperature Variation at 100 °C(±°C/°F)
Vacuum	OV-11	Amb. +5 to 250	28 / 1.0	0.1 / 0.18	3.7 / 6.66
	OV-12	Amb. +9 to 482	65 / 2.3	0.3 / 0.54	

* Our Web-site includes detailed information of all JEIOTECH products with recent technical data

Recirculating Coolers [Chillers]



Recirculating Coolers [Chillers] (HX/HL/HS/HH models)

Technical Benefits

Safety features

- 1) Self protecting cut off function and signal:
 - For over temp. the power supply is automatically cut from the controller systematically before the unit shuts down
 - Over current circuit breaker for user safety
- 2) Low fluid level and dry-running protection:
- 3) Double service valve provided to prevent refrigerant leakage

Control features

- 1) Functional LCD (resolution 0.1 °C) keypad type display:
Designed to simplify operation with a VFD touch screen type display (HL / HS / HH Models)
- 2) Bright LED water level indicator
- 3) Pump pressure gauge
- 4) Run, compressing, pumping visual indicator
- 5) Hot gas by-pass (only HL Models)
- 6) Integrated heaters with high temp. stability (only for HH Models)

Constructional features

- 1) High quality #304 grade stainless inner chamber and dirt repellent powder coated external surface
- 2) Stainless steel submerged parts are resistant to corrosion against all usual bath fluids
- 3) Pump pressure can be controlled using a by pass function (only for HX-H type)
- 4) Removable gridded vent for reducing condenser contamination and to facilitate cleanliness
- 5) Wheels allow for easy mobility
- 6) Computer Interface (only for HS / HH Models)
- 7) Warning alarm/monitoring system
 - Over temperature
 - Lack of bath solutions
- 8) Pressure gauge comes standard with recirculating units to provide fluid system diagnostics at a glance and for observing the pump pressure

Recirculating Coolers [Chillers]

Selection Guide

Recirculating Coolers



CE Certification only for the HX and HL models

Description	Working Temp. Range (°C / °F)	Cooling Capacity at 20°C (Kw)	Pump(50Hz)		
			Max. Flow Rate (L / min, gal / min)	Max. Pressure (bar / psi)	
General Models	+3 to 40 / +37.4 to 104	HX-20	1.9	38 / 10.03	1.58 / 22.92
		HX-25	2.4		
		HX-20H	1.9	45 / 11.89	4.3 / 62.37
		HX-25H	2.4		
		HX-35H	3.6		
		HX-45H	4.7		
		HX-55H	7.1		
Low Temp. Models	-20 to 40 / -4 to 104	HL-05	0.6	50 / 13.2	1 / 14.5
		HL-10	0.7		
		HL-15	1.45		
		HL-20	1.8		
		HL-15H	1.45	40 / 10.57	2.8 / 40.6
		HL-20H	1.8		
		HL-25H	2.5		
		HL-35H	3.3		
		HL-45H	6.5		
		HL-55H	7.1		
Advanced Low Temp. Models	-20 to 40 / -4 to 104	HS-15	1.45	40 / 10.57	3.3 / 47.86
		HS-20	1.8		
		HS-25	2.5		
		HS-35	3.3		
		HS-45	6.5		
		HS-55	7.1	70 / 18.49	6 / 87
		HS-25H	2.5		
		HS-35H	3.3		
		HS-45H	6.5		
		HS-55H	7.1		
High Temp. Models	-20 to 80 / -4 to 176	HH-15	1.45	40 / 10.6	3.3 / 47.9
		HH-20	1.8		
		HH-25	2.5		
		HH-35	3.3		
		HH-25H	2.5	70 / 18.5	6 / 87
		HH-35H	3.3		
		HH-45H	6.5		
		HH-55H	7.1		

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Laboratory Refrigerators & Freezers



General Purpose Laboratory Refrigerators (CLG models)
Pharmacy Refrigerators (CLP models)



General purpose Laboratory Freezers (FHG/FMG/FCG models)

Laboratory Refrigerators & Freezers

Technical Benefits

Safety features

- 1) High as well as low temperature alerts with visual and audible alarms
- 2) Open door alert
- 3) Automatic shutdown of the fan for minimizing heat loss when the door is opened
- 4) Two separate fuses protecting against over current
- 5) Auto-dialing remote alarm for all freezer models (optional)
- 6) Built-in door lock

Constructional features

- 1) High-quality 304 grade stainless steel chamber interior and dirt-repellent external surface with powder coating
- 2) Double-pan tempered glass door with built-in wire heater providing clear inside view (for the models with glass doors only)
- 3) Double-cushioned magnetic door
- 4) Built-in 50mm diameter cable port (except for CLG-150, FHG, FMG, FCG Models)
- 5) High thermal efficiency evaporation system
- 6) Built-in casters for easy transport (except for CLG, FHG, FMG, FCG-150 Models)

Control features

- 1) Intuitive and easy-to-operate control panel
 - Vivid and colorful display (VFD), touch-sensitive buttons, and a jog dial
- 2) Optimizing defrost system
 - Non-conventional defrost system, with an automatic defrost system manages the defrost cycle (for CLG / CLP-150, 300, 650 and FHG / FMG / FCG Models)
 - Manual defrost system also allows for immediate control (only for FHG / FMG / FCG Models)
- 3) Keypad lock button preventing inadvertent parameter changes
- 4) Easy temperature unit conversion between °C and °F
- 5) Three types of recorders to choose from (optional)
 - Dot matrix recorder, Chart recorder, Thermal line recorder

Protect the global environment

- 1) Use of HFC refrigerant prevents damage to the ozone layer
 - Complies with the Montreal Protocol on Substances that Deplete the Ozone Layer control measures

Selection Guide

Laboratory Refrigerators & Freezers



CE Certification without the CLP models

Description	Operating Temp. Range (°C/°F)	Chamber Volume (L / cu ft)	Door type	Shelve or Drawer
General Purpose Laboratory Refrigerators	2 to 10 / 35.6 to 50	CLG-150	Glass or Solid	Shelve
		CLG-300		
		CLG-650		
		CLG-850		
		CLG-1400		
Pharmacy Refrigerators		CLP-650		Drawer
		CLP-850		
		CLP-1400		
General Purpose Laboratory Freezer	-15 to 0 / 5 to 32	FHG-150	Solid	Shelve
		FHG-300		
		FHG-650		
	-25 to -15 / -13 to 5	FMG-150		
		FMG-300		
		FMG-650		
	-35 to -25 / -31 to -13	FCG-150		
		FCG-300		
		FCG-650		

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Shakers



Mini&Microplate Shakers (CMS/CPS-350)



Rocking&Waving Shakers (CRS-350/CWS-350)



Dual-Action Shakers (SK models)



Economy Shakers (SKF models)



Advanced Orbital Shakers (SKC models)

Shakers

Technical Benefits

Safety & Control features

- 1) Automatic power cut-off in case of overcurrent
- 2) User settable operation mode after power interruption: either Automatic Run or Manual Run
- 3) Special acceleration and deceleration circuitry (except for RS, CPS, CMS, CWS and CRS models)
 - The unit gently stops and starts at the always same position
- 4) Automatic adjusted shaking speed when load imbalance or unusual vibration is detected by the sensor (Only SKC models)
- 5) Microprocessor PID control
- 6) Diverse shaking features
 - Wait ON/OFF timer and program mode
 - Forward & Backward, Pause

Constructional features

- 1) Low-profile design minimizing vibration or sliding caused by the high speed shaking motion
- 2) Smooth, quiet, and uniform shaking motion thanks to the maintenance-free BLDC motor which also supports high-speed applications and heavy workloads (without SKC models)
- 3) Innovative and durable triple-cam shaking mechanism (for SKC models only)
- 4) Dirt-repellent external surface with power coating
- 5) Direct drive motor allows the shaker to hold heavy loads, is quiet, high rpm, and durable (SKC models)
- 6) Wide range of accessories

Selection Guide

Shakers



Description		Speed Range (RPM)	Maximum Amplitude Size (mm / inch, dia)	Net Weight (kg/lbs)	
Benchtop Models -Open-air	Advanced Orbital Shakers	SKC-6075	19 / 0.75	65 / 143.3	
		SKC-6100	25 / 1		
		SKC-6200	50 / 2		
		SKC-7075	19 / 0.75		
		SKC-7100	25 / 01		
		SKC-7200	50 / 2		
	Dual-action Shakers	SK-300	10 to 300	40 / 1.6	24 / 52.9
		SK-600		29 / 63.9	
		SK-71		50 / 110.2	
	Economy Shakers	SKF-2025	10 to 500	7 / 0.25	20 / 44.1
		SKF-2050	10 to 400	13 / 0.5	
		SKF-2075	10 to 300	19 / 0.75	
		SKF-2025R	10 to 450	7 / 0.25	
		SKF-2050R	10 to 350	13 / 0.5	
		SKF-2075R	10 to 250	19 / 0.75	
		SKF-3050	10 to 400	13 / 0.5	
		SKF-3075	10 to 300	19 / 0.75	
		SKF-3100	10 to 300	25 / 1	
		SKF-3050R	10 to 350	13 / 0.5	
		SKF-3075R	10 to 250	19 / 0.75	
Mini Shaker	SKF-3100R	10 to 250	25 / 1	33.68 / 74.25	
	CMS-350	50 to 300	13 / 0.5		
Microplate Shakers	CPS-350	150 to 1200	3 / 0.1	8 / 17.6	
Rocking Shaker	CRS-350	5 to 100	(Tilt 7~13° adjustable)	3.7 / 8.16	
Waving Shaker	CWS-350	8 to 100	(Tilt 0~13° adjustable)		

Separatory Funnel Shakers

Description		Speed Range (RPM)	Maximum Amplitude Size (mm / inch, dia)	Net Weight (kg/lbs)
Benchtop Type	Separatory Funnel Shaker	RS-1	50 to 300	40 / 1.6
				24 / 52.9

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Hotplates & Stirrers



Hotplates & Hotplate Stirrers (T/TM models)



Overhead Stirrers (MSE/MSM/MSP models)
-Economy & Analog & Digital



Magnetic Stirrers-Scale (MS-B/T models)



Magnetic Stirrers-Digital (MS-G models)



Magnetic Stirrers-Multi position (MS-M models)

Hotplates & Stirrers

Technical Benefits

Hotplates & Hotplate Stirrers

- 1) Virtually no decoupling of stir bars(only for Hotplate Stirrers)
- 2) Fast and precise stirring speed even at high temp. (only for Hotplate Stirrers)
- 3) High heat transfer rate
- 4) Non-slip heating bath preventing accidental spills
- 5) Hot top warning indicator and multiple overheat prevention features
- 6) Temperature limit setting(up to 350°C)
- 7) Smooth start and quick stop
- 8) Bright digital display panel (except for Basic Hotplate Stirrers)
- 9) Separate heater ON/OFF button (except for Basic Hotplate Stirrers)
- 4) Accurate speed control regardless of the sample weight
- 5) Safe control even at low speed
- 6) Quick real-time start of the stirring action (MS-B/T Models only)
- 7) Wide speed range (up to 2,500 rpm)

Magnetic Stirrers

- 1) Easy to use
- 2) Microprocessor PID controls(MS-G/M Models only)
- 3) Equipped with a durable and silent BLDC motor

Overhead Stirrers

- 1) Powerful torque capable of handling high viscosity tasks
- 2) Maintenance of constant motor speed by PID feedback control system even under conditions of changing viscosity(MSM and MSP Models only)
- 3) Wide speed range
- 4) Bright FND digital display panel(MSM and MSP Models only)
- 5) Compact and slim head design
- 6) Sturdy aluminum main body efficiently absorbing and emitting the heat generated by the motor

Selection Guide

Hotplates & Stirrers



Description		Temperature Range (°C/°F)	Speed Range (RPM)	Stirring Capacity, Max. (L / cu ft, H ₂ O)	Positions
Hotplates	T-14S/R	Amb. to 350/662	-	-	Single
	T-17S/R				
Hotplate Stirrers (Advanced)	TM-14S/R	Amb. to 350/662	30 to 2,000	20 / 0.7	Single
	TM-17S/R				
Hotplate Stirrers (Basic)	TM-14SB/RB		50 to 2,000		
	TM-17SB/RB				
Magnetic Stirrers(Scale)	MS-12B/T	-	150 to 2,500	2	Single
	MS-17B/T			4	
	MS-22B			5	
Magnetic Stirrers(Digital)	MS-17G	-	30 to 2,000	4	Single
	MS-22G			5	
Magnetic Stirrers (Multi-position)	MS-23M	-	30 to 2,000	1.5*	6
	MS-32M			1.5*	6
	MS-33M			2.25*	9
	MS-51M			1.25*	5
	MS-52M			2.5*	10
	MS-53M			3.75*	15
Overhead Stirrers (Economy)	MSE-1	-	up to 1,400	20	Single
	MSE-2		up to 1,200	30	
	MSE-3		up to 900	50	
Overhead Stirrers (Analog)	MSM-1	-	50 to 1,400	20	Single
	MSM-2		50 to 1,200	30	
	MSM-3		50 to 900	50	
Overhead Stirrers (Digital)	MSP-1	-	50 to 1,400	20	Single
	MSP-2		50 to 1,200	30	
	MSP-3		50 to 900	50	

* Erlenmeyer flask: usable under 250ml in case full positions

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Heating Blocks



Heating Blocks-Short (CHB-350S)



Heating Blocks-Tall (CHB-350T)

Operating Features

- 1) Precision accuracy of $\pm 0.1^{\circ}\text{C}$ is ensured by its PID controller from ambient $+ 5^{\circ}\text{C}$ to 130°C
- 2) Its built-in temperature limit setting feature (with max. 0.2°C overshooting) allows you to perform highly temperaturesensitive reactions such as isothermal amplifications
- 3) Automatic power cutoff
 - If the temperature of the main body exceeds 150°C
 - If the internal circuit is overheated
- 4) Two types of timer modes
 - Timer 1: Timer activation starts only after reaching the set temperature
 - Timer 2: Timer activation starts right after the timer setting

Constructional Features

- 1) Its polypropylene main body is highly chemical resistant and easy to clean
- 2) Optimal heat transfer is achieved by the tight coupling design of the main body and the corrosion resistant anodized aluminum blocks
- 3) Bright high-quality VFD display, responsive touch buttons, and a big dial knob offer max. ease of use
- 4) Transparent lid allows easy sample monitoring and even temperature distribution
- 5) Blocks can be easily interchanged by using the included block lifter
- 6) Interchangeable tube blocks (sold separately) accept various tube or vial sizes



Model		CHB-350S	CHB-350T
Control System		Feedback control PID	
Display		VFD(0.1 $^{\circ}\text{C}$ resolution)	
Temperature	Range ($^{\circ}\text{C}$ / $^{\circ}\text{F}$)	Ambient $+5$ to 130	
	Fluctuation at 80°C ($\pm^{\circ}\text{C}$ / $^{\circ}\text{F}$)	0.1 / 0.18	
	Variation at 80°C ($\pm^{\circ}\text{C}$ / $^{\circ}\text{F}$)	0.2 / 0.36	
Dimension (WxDxH)	Internal (mm / inch)	154x99x37 / 6.1x3.9x1.5	
	Overall (mm / inch)	276x334x120 / 10.9x13.1x4.7	276x334x250 / 10.9x13.1x9.8
	Net Weight (kg / lbs)	3.9 / 8.6	4.3 / 9.5

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Vortex Mixers



Vortex Mixers-Basic (VM-96B)



Vortex Mixers-Economy (VM-96E)

Features

- 1) Well-balanced design and optimized safety features
- 2) Low-profile with small footprint ideal for use on lab benches and within fume hoods or clean benches
- 3) Real-time mixing for thanks to highly touch sensitive switch
- 4) Selective mixing modes with Variable speed control knob:
 - VM-96B (Touch, Continuous, High-continuous)
 - VM-96E (Touch, Continuous)
- 5) Built in LED lamps in case of VM-96B for easy recognition of mixing mode selected
- 6) Spark less BLDC motor adopted for safety quick acceleration, and low maintenance
- 7) Built-in safety features against overload and over current
- 8) Chemically resistant PP molded exterior
- 9) A wide range of accessories available (rubber platform comes standard)



Model		VM-96B	VM-96E
Technical Data	Motion	Orbital	
	Speed Range (RPM)	0 - 3,000	200 - 3,000
	Control	Scale	
	Orbit (mm / inch, Ø)	4 / 0.16	
	Operating Mode	Touch, Continuous, High-continuous	Touch, Continuous
	Motor Rating Input / Output (W)	12W / 6W	
	Motor	BLDC motor	
	Max. Load (kg / lbs) - incl. attachment	0.5 / 1.1	
General Data	Material	Body	Polypropylene
		Platform	Silicone rubber
	Dimension (mm / inch, W×D×H)	154×210×83 / 6.1×8.3×3.3	148×159×77 / 5.8×7.4×3
	Net Weight (kg / lbs)	3.1 / 6.8	2.6 / 5.7
	Electrical Requirements	AC 100V ~ 240V, 50 / 60Hz	
	Safety Device	Self-resetting / Current limit protection	Current limit protection
Protection Class (DIN EN 60529)	IP 42		

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Temperature [& Humidity] Chambers



Temperature [& Humidity] Chambers (TH-ME/KE/PE, TC-ME/KE models)



Temperature [& Humidity] Chambers (TH-G/I/GU, TC-G/GU models)



Temperature & Humidity Chambers (TH-TG/ICH models)



Plant Growth Chambers (GC models)

Temperature [& Humidity] Chambers

Technical Benefits

Safety functions

- 1) Self-protecting cut-off function:
 - Over temperature, electrical leakage or overvoltage automatically cuts the power from the unit starting with the heating element
- 2) Time setting function for automated RUN/OFF:
 - Enable automatic start and shut off of a unit
 - A timer can be set for a month and data can be recorded in time, day, or week intervals
- 3) Low fluid level protection water leakage alarm (only for TH models)
 - Intermittent toned alarm and signal alarm
 - Water supply and circuit compartment separate from each other to ensure safety
- 4) Door-open warning alarm:
 - Intermittent toned alarm and signal alarm
 - Heating element, fan, and platform automatically stops when the door is opened to minimize heat loss and to ensure users safety

Optimum control performance

- 1) Microprocess PID control/Auto-tuning/Calibration
- 2) Optimize CPU logic control system
 - Optimum control of temperature/humidity with economical controls that reduces power consumption
- 3) Touch screen type monitor
 - 5.7-inch Color LCD display with interactive input system(Floor Standing Models only)
 - Temperature[& humidity]timer settings, and operation condition
 - Temperature[& humidity]and other operating parameters can be recorded using a chart recorder
 - Easily visible set value: set point(SP)/present value(PV) are also added on the colorful LCD controller

Selection Guide

Temperature (& Humidity) Chambers



CE Certification without the TH, TC-G-800/1000, TH,TC-GU-300, TH-PF-100, and TH-CR-270

Description		Operating Temp. Range (°C/°F)	Operating Humid. Full Range (%RH)	Chamber Volume (L / cu ft)
Temperature & Humidity Chamber (Floor Standing)	TH-G models	-35 to 150 / -31 to 302	25 to 98	180 to 1500 / 6.4 to 53
	TH-I models		20 to 98	180 to 408 / 6.4 to 14.4
	TH-GU-300	-60 to 150 / -76 to 302	25 to 98	300 / 10.6
	TH-TG models	-5 to 100 / 23 to 212	10 to 95	190 to 1500 / 6.7 to 53
	TH-ICH models	-5 to 85 / 23 to 185	20 to 85	300, 760 / 10.6, 26.8
Temperature & Humidity Chamber (Tabletop)	TH-KE models	-35 to 150 / -31 to 302	20 to 95	25 to 100 / 0.9 to 3.53
	TH-ME models	-20 to 120 / -4 to 248	20 to 95	
	TH-PE models	0 to 120 / 32 to 248	35 to 95	
	TH-PF-100	40 to 100 / 104 to 212	50 to 90	
Temperature Chamber (Floor Standing)	TC-G models	-35 to 150 / -31 to 302	-	180 to 1500 / 6.4 to 53
	TC-GU-300	-60 to 150 / -76 to 302	-	300 / 10.6
Temperature Chamber (Tabletop)	TC-KE models	-35 to 150 / -31 to 302	-	25 to 100 / 0.9 to 3.53
	TC-ME models	-20 to 120 / -4 to 248	-	25 to 100 / 0.9 to 3.53
Clean Temperature & Humidity Chamber (Floor Standing)	TH-CR-270	-35 to 100 / -31 to 212	30 to 90	270 / 9.5

Plant Growth Chambers

Description		Operating Temp. Range (°C/°F)	Operating Humid. Full Range (%RH)	Chamber Volume (L / cu ft)
Plant Growth Chambers (Floor Standing)	GC-300TL	5 to 50 / 41 to 122	-	300 / 10.6
	GC-300TLH	- Lamp off 10 to 50 / 50 to 122	40 to 80	300 / 10.6
	GC-1000TLH	- Lamp on	50 to 90	1000 / 35.3

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Fume Hoods



Clean Benches (BC-E models)



Clean Benches (BC-H models)



Ductless Fume Hoods (DLH-G models)



UV Sterilization Cabinets (UVC models)



PCR Workstations (PW models)

Fume Hoods

Technical Benefits

Clean Benches

- 1) UV-blocking tempered glass sliding door
– UV sensor for checking UV dosage and operating hours (BC-H model)
- 2) Automatic switch off of the UV lamp when the door is opened
- 3) Lighting mode selection by a 3-position toggle switch (UV/OFF/Fluorescent) (BC-E model)
- 4) 99.99% efficient HEPA filter
- 5) 2 separate fuses protecting against overcurrent
- 6) Magnehelic differential pressure gauge measuring the HEPA filter efficiency (optional)
- 7) Dirt-repellent powder coating on the external surface
- 8) Easy-to-reach light and blower switches
- 9) Grade 304 stainless steel work surface with high chemical resistance
- 10) Digital airflow rate sensor for automated airflow speed control (BC-H model)
- 11) Using a BLDC motor in the blower provides a quiet and comfortable working environment (less than 65dB) (BC-H model)
- 12) Each digital display is equipped inside and front (easy visibility)
–Ease of control of unit conditions (checking velocity, temperature, and humidity for BC-H model)

Ductless Fume Hoods

- 1) Front windows part can be seeing though made by transparent acryl
- 2) Lower stand mounted fixable casters easy for moving & fixing(optional)
- 3) Control panel: consist of florescent lamp, Fan Start/Stop, Blower speed controller, alarm, menu and etc.
- 4) Over-current circuit CP (Circuit Protector) for user safety
- 5) Anemometer: visual for the input air velocity at real time
- 6) Door Stay: fixture to fix it when door open at 2 step (if it's dropped without backing up, result in damage, and fixing magnetic enable to open hold it to 1 step-door)

PCR Workstations

UV Sterilization Cabinets

- 1) Built-in over-current products for user safety
- 2) Intelligent digital controller (timer, alarm, blower speed for PW-models)
- 3) Pre filter mounted extends the life of the filters (PW-models)
- 4) High quality 99.99% efficient supply HEPA filter
- 5) Powerful, uniformly distributed, UV-C (average 8,000 hours)
- 6) Excellent chemical resistance work surface
- 7) Automated UV lamp switch off

Selection Guide



Certification only for the BC-E models

Description		Filter	Work Surface
Clean Benches	BC-01E/H	HEPA filter	Stainless steel #304
	BC-11E/H		
	BC-21E/H		
Ductless Fume Hoods	DLH-01G	Optional 6 different filters	Optional 6 different Work Surfaces
	DLH-11G		
PCR Workstations	PW-01	HEPA filter	Acryl 10 mm / 0.39 inch (clear type)
	PW-11		
	PW-21		
UV Sterilization Cabinets	UVC-01	—	Stainless steel #304
	UVC-11		
	UVC-21		

* Our Web-site includes detailed information of all JEIOTECH products with recent technical data

Furniture

Impressive range of cabinet
Models to choose from
for creating the most
ideal lab environments



The world professional organization for providing leadership in issues involving the design, specification and utilization of laboratory furniture and equipment



Tall Cabinets

	Stand Type (DS-SL)			Stand Type (DS-S)				
Width (mm)	476	560	644	476	560	644	686	938
Height (mm)	2400			1800				
Depth (mm)	700			700				
Model	24047-D6	24056-D6	24064-D6	18047-D4	18056-D4	18064-D4	18068-D6	18093-D6
Depth (mm)	-			550				
Model	-			18047-N4	18056-N4	18064-N4	18068-N6	18093-N6

	Combi Type (DS-C)				Window Type (DS-OW)			
Width (mm)	476		560		472	556	915	1083
Height (mm)	1800				1800			
Depth (mm)	700				-			
Model	18047-D4	18047-D5	18056-D4	18056-D5	-	-	-	-
Depth (mm)	550				550			
Model	18047-N4	18047-N5	18056-N4	18056-N5	18047-N1	18055-N1	18091-N2	18108-N2

	Open Rack Type (DS-OR)				Gas Cylinder Type (DS-GC)	
Width (mm)	472	556	915	1083	740	1070
Height (mm)	1800				1800	
Depth (mm)	550				550	
Model	18047-N1	18055-N1	18091-N2	18108-N2	18074-N2	18107-N2

Base Cabinets

	Tabletop Type (DS-TT)			Tabletop Type (DS-TW)			
Width (mm)	476	560	644	472	556	915	1083
Height (mm)	900			900			
Depth (mm)	700			-			
Model	09047-D2	09056-D2	09064-D2	-	-	-	-
Depth (mm)	550			550			
Model	09047-N2	09056-N2	09064-N2	09047-N1	09055-N1	09091-N2	09108-N2

	Under Table Type (DS-UT)			Under Table Type (DS-UD)			
Width (mm)	476	560	644	476	560		
Height (mm)	650			650			
Depth (mm)	700			700			
Model	06047-D2	06056-D2	06064-D2	06047-D2	06047-D3	06056-D2	06056-D3
Depth (mm)	550			550			
Model	06047-N2	06056-N2	06064-N2	06047-N2	06047-N3	06056-N2	06056-N3

Furniture

Technical Benefits

Manufactured with PP trays and dividers



- 8 different tray dimensions
- Impact resistant, durable, and excellent chemical resistance rating
- Adjustable trays can be placed at different heights
- The tray divider keeps stuff tidy and organized

Easily removable name plates

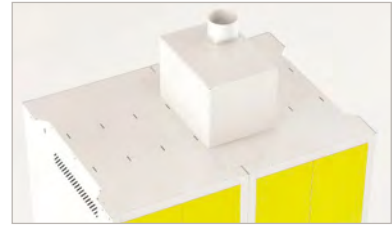


- Convenient and useful for keeping track of inventory
- 3 different sizes

Epoxy powder coated

- High-grade steel constructed completely with galvanized and power coated surface for high protection against corrosion, and chemicals

Ventilation system



- Hexagonal or trapezoidal ventilation space is formed between the innovatively designed cabinet side structures
- Exhaust fan(optional) : Radial ventilators great for filtering out fumes lighter or heavier than air
- Exhaust fan and filter(optional): Ductless air filter system with active carbon filter absorbs the toxic chemicals

Locking mechanism



- Adopted self-lock handle convenient for keeping things secure, comes standard with lock for protection against unauthorized users
- Comes standard with lock for protection against unauthorized personnel

3 types of color choices



Anchoring kit

- All tall cabinets include anchoring kits to fix the cabinet to the floor to prevent the cabinet from tipping over

Gas cylinder cabinets are constructed for storage of gas cylinders inside building



- DS-GC Models: Essentially convenient and standard safety functions are incorporated in the cabinets

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Pumps



Rotary Vacuum Pump

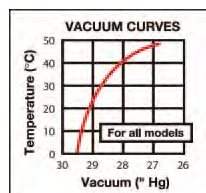
- MVP-6 rotary vacuum pumps with directly connected oil seal prevent air reflux and provide high vacuum pressure for vacuum ovens
- Oil mist trap, sold separately, is recommended for trapping evaporated oil or for blocking oil in-flow

Model	MVP-6	
	60Hz	50Hz
Pumping speed (L / min)	100	80
Max. pressure (Pa)	6.7 × 10 ⁻²	
Motor power (W)	400	
Motor speed (rpm)	1750	1450



Electrical Aspirator Pump

- Creating a vacuum by means of Venturi effect, VE-11 aspirator pumps are suitable for rotary vacuum evaporation, decompression distillation, vacuum drying, and vacuum filtering



Model	VE-11
Bath volume (L / cu ft)	9.5 / 0.3
Max. vacuum range (Mpa / Hg)	0.0998 / 29.5
Free-air capacity	18L / minute (0.6cfm) × 2ea

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Other Products



Ice Pan

- Resistant to temperatures from -196° to $+80^{\circ}$
- Rigid one molded urethane foam construction provides high durability and excellent insulating properties
- Water proof, leak proof, unbreakable with normal use
- Rim enables safe handling and transport

Model		IBS-310
Material		Urethane Foam
Volume(L / cu ft)		4 / 0.14
Dimension (WxDxH)	Overall (mm, inch)	347 x 257 x 132 / 13.7 x 10.1 x 5.2
	Net Weight (kg, lbs)	1.3 / 2.9



Carboys

- Space saving design for storing liquid solvent
- High density polyethylene container features durable and excellent chemical resistance
- Molded in shoulder handles provide great convenience and strength
- Gradations for easy checking

Model		DBR-05	DBR-10	DBR-20	DBC-05	DBC-10
Description		Round type			Rectangular type	
Volume (L / gal)		5 / 1.3	10 / 2.6	20 / 5.3	5 / 1.3	10 / 2.6
Dimension (WxDxH)	Overall (mm, inch)	180 x 242 x 333 / 7.1 x 9.5 x 13.1	225 x 277 x 399 / 8.9 x 10.9 x 15.7	260 x 317 x 539 / 10.2 x 12.5 x 21.2	114 x 387 x 305 / 4.5 x 15.2 x 12	204 x 387 x 317 / 8 x 15.2 x 12.5
	Net weight (kg, lbs)	0.8 / 1.76	1.5 / 3.31	2.1 / 4.63	1.4 / 3.09	1.8 / 3.97
Material	Body	High density Polyethylene				
	Cap	Polypropylene & Silicone				
	Spigot	High density Polyethylene & Teflon				

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Other Products



Flask Supports

- Flask size : 100ml, 250ml, 500ml, 1000ml, 2000ml
- Chemically resistant to various organic solvents
- Material : PP (Polypropylene)
- Heat Resistance : -30°C to + 121°C

Model	FT 010 13	FT 010 34	FT 025 12	FT 025 23
Each Hole Capacity(ml)	100	100	250	250
Hole (Dia. x H)(mm/inch)	70 × 91/2.76 × 3.58	70 × 91/2.76 × 3.58	98 × 122/3.86 × 4.8	98 × 122/3.86 × 4.8

Model	FT 050 12	FT 100 12	FT 200 12
Each Hole Capacity(ml)	500	1000	2000
Hole (Dia. x H)(mm/inch)	121 × 128/4.76 × 5.04	148 × 156/5.83 × 6.14	183 × 188/7.2 × 7.4



Magnetic Drives

- Use of rare earth element which is Neodymium(Nd), Samarium (Sm-Co) magnetic
- High-speed RPM, vibration-free operation
- Specially designed permanent magnets which have dynamic torque rating of drive throughout it's operation

Model	MD-T6-24	MD-T6-29	MD-T6-34
Ground joint	24 / 40	29 / 42	34 / 45

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Other Products

Ultrasonic Cleaners



- Durable leakproof ABS / PBT housing and cover with 304 stainless steel tanks
- Digital LED display using splash-proof keypads
- High frequency 40 kHz sound waves provide greater cleaning power and increased reliability
- Multiple frequency on 3 stages for both gentle cleaning and intensive cleaning(without UC-02)

Model	UC - 02	UC - 10 (10P)	UC - 20 (20P)
Bath volume (L / cu ft)	2.0 / 0.07	10.0 / 0.35	20.0 / 0.70
Temperature range (°C / °F)	Amb. to 50 Amb. to 122	Amb. to 70 / Amb. to 158	
Ultrasonic power (W)	70	200 (300)	400 (500)

Ultrasonic Cleaners



- All parts are made of durable 304 stainless steel tanks, cover and powder coating steel housing
- Digital LED display using splash-proof keypads
- High-frequency 40 kHz sound waves provide greater cleaning power and increased reliability
- Multiple frequency on 3 stages for both gentle cleaning and intensive cleaning

Model	US-05 (05P)	US-10 (10P)	US-20 (20P)
Bath volume (L / cu ft)	5.7 / 0.20	10.0 / 0.35	20.0 / 0.70
Temperature range (°C / °F)	Amb. to 70 / Amb. to 158		
Ultrasonic power (W)	150 (200)	200 (300)	400 (500)

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J-300S / 300M

Forced convection drying oven

CE



Model		J-300S	J-300M
Type		Forced convection system	
Overall size (W×D×H) mm		580×600×820	730×650×870
Chamber size (W×D×H) mm		450×450×450	600×500×500
Capacity ℓ		91	150
Temperature	Range	Ambient+ 10℃~ 260℃	
	Accuracy	± 0.5℃ at 100℃	
	Uniformity	± 1.0℃ at 100℃	
	Controller	PID controller	
Regulator		TRIAC	
Thermocouple		K type (CA)	
Heater	W	1,200	1,200
Circulation fan & motor		Φ 150×60×24W	
Safety device		Self diagnosis function (Memory error, Temp. overheating, SSR short circuit, Sensor short circuit), E.L.B. (Electric Leakage Breaker)	
Shelves		3ea	
Material	Interior	Stainless steel plate	
	Exterior	Steel plate with powder coated finish	
Power source		AC 230V, 50/60Hz, 1 Phase	
Certificate		CE	

J-IRW300 / IRA200

CO₂ incubator

CE



Model		J-IRW300	J-IRA200
Type		Water jacketed system	Air jacketed system
Environmental temperature range		5℃ ~ 28℃	
Overall size (W×D×H) mm		635×625×1000	635×625×930
Bath inner size (W×D×H) mm		440/470×420/470×700	440/470×470×660/700
Using capacity ℓ		129/154	136/154
Temperature	range	Ambient+ 5.0℃ ~ 60.0℃	
	accuracy	± 0.5℃ at 37.0℃	
	uniformity	± 1.0℃ at 37.0℃	
CO ₂	range	0.0% ~ 10.0%	
	accuracy	± 0.1%	
	uniformity	± 0.25%	
CO ₂ sensor		N.D.I.R. (Non dispersive infrared) sensor	
Heater (incoloy sheath)	W	400	650
Safety device		Self diagnosis functions (Memory error, Temp. overheating, SSR short circuit, Sensor short circuit), E.L.B. overheating protection, water level display	
Shelves		3ea	
Power source		AC 230V, 50/60Hz, 1Phase	
Certification		CE, RoHS	

J-NSIL-R / J-SISN-R

Shaking incubator

CE



Model		J-NSIL-R (cooling)	J-SISN-R
Shaking type		Rotation type	
Overall size (W×D×H) mm		540×680×580/600	540×615×435/460
Chamber size (W×D×H) mm		500×500×300	500×500×300
Plat-form size mm		410×410	
Temperature	range	15.0℃ ~ 60.0℃	Ambient + 10.0℃ ~ 60.0℃
	accuracy	± 0.5℃ at 37.0℃	
	uniformity	± 1.0℃ at 37.0℃	
	controller	PID controller (digital setting and display)	
Thermocouple		Pt 100 ohms	
Heater(Ni-Cr)	W	700	500
Capacity		Erlenmeyer flasks 250ml×18ea or 500ml×13ea	
Shaking speed rpm		15 ~ 350	
Refrigeration compressor		1/8	-
Safety device		Self Diagnosis function (Memory error, temperature overheating, SSR short circuit, Sensor short circuit), E.L.B. (Electrical Leakage Breaker), Sound alarm	
Material	interior	Stainless steel plate	
	exterior	Steel plate with powder coated finish	
Power source		AC 230V, 50/60Hz, 1Phase	
Certificate		CE	-

J-RHC1-LCD-T

Constant temp. & humidity chamber

CE



Model		J-RHC1-LCD-T
Overall size (W×D×H)	mm	1,070×1,020×1,760
Chamber size (W×D×H)	mm	500×500×600
Capacity	ℓ	150
Temperature	range	-20.0℃ ~ 150.0℃
	controller	LCD touch screen programmable logic controller
Humidity	range	35% ~ 95% (Basic range)
	controller	LCD touch screen programmable logic controller
	sensor	Electronic sensor (4~20mA)
Thermocouple		Pt 100 ohms
Heater (sheath)	drying bulb W	2,000
	humidity bulb W	2,000
Refrigerator	condenser system	One stage (air cooling)
	compressor Hp	1/3×1ea, 3/4×1ea
Safety device		Overload prevent, alarm, overheating prevent, E.L.B., water empty, current leak, over current, circuit breaker
Shelves		3 ea
Material	interior	Stainless steel plate
	exterior	Steel plate with powder coated finish
Power source & consumption		AC 230V, 50/60Hz, 1Phase
Certificate		CE

※Option : Temp. & Humidity recorder

J-SWB19 / J-SWB29

Water bath shaker

CE



Model		J-SWB19	J-SWB29
Type		Reciprocating type	
Overall size (W×D×H)	mm	580×503×445	780×553×445
Bath inner size (W×D×H)	mm	400×350×250	600×400×250
Capacity	ℓ	35	60
Temperature	range	Ambient+ 5℃ ~ 99℃	
	accuracy	± 0.1℃ at 50.0℃	
	uniformity	± 0.5℃ at 50.0℃	
	controller	PID controller	
Thermocouple		Pt 100 ohms	
Shaking	speed range rpm	35 ~ 250	
	stroke mm	30	
	motor W	25	
	capacity ml	250×9ea	500×12ea or 250×15ea
Heater(sheath)	W	2,000	3,000
Safety device		Self diagnosis function (Memory error, temp. overheating, SSR short circuit, Sensor short circuit), E.L.B.	
Material	interior	Stainless steel plate	
	exterior	Steel plate with powder coated finish	
Power source & consumption		AC 230V, 50/60Hz, 1Phase	AC 230V, 50/60Hz, 1Phase
Certificate		CE	-

※ Option : Shaking plate (spring wire rack)

J-FM28 / FM38 / FM48

Electric muffle furnace



Model		J-FM28	J-FM38	J-FM48
Overall size (W×D×H)	mm	435×610×575	580×655×695	1,010×770×1,220
Chamber size (W×D×H)	mm	150×300×100	250×350×160	350×450×400
Capacity	ℓ	4.5	14	63
Temperature	range	Ambient +10℃ ~ 1,000℃(Max)		
	using range	300℃ ~ 900℃		
	controller	PID controller		
	regulator	SSR type		SCR type
Thermocouple		K type(CA)		
Heater capacity	kW	3	4.5	12
Heating element		Molded Kanthal A1		
Insulation		Fiber & ceramic		
Power source		AC 220V, 50/60Hz, 1phase		AC 220V, 50/60Hz, 3phase



J-NAS62 / NAS81 / NAS103

Automatic autoclave, sterilizer

CE



Model		J-NAS62	J-NAS81	J-NAS103
Overall size (W × D × H)	mm	700 × 500 × 880/1,075	750 × 550 × 880/1,165	800 × 600 × 880/1,165
Inner size (ø × H)	mm	350 × 650	400 × 650	450 × 650
Capacity	ℓ	62.5	81.6	103
Method sterilization		High pressure system		
Temperature	using range	115 ~ 125 °C		
	controller	PID controller		
	regulator	SSR type		
Thermocouple		Pt 100 ohms		
Using pressure		1.15kgf/cm ²		
Heater (sheath)	W	3,500	4,000	4,500
Pressure gauge	kgf/cm ²	Mechanical type 0 ~ 2		
Basket		2ea		
Safety device	heating	Self diagnosis function (Memory error, temp.overheating, SSR short circuit, Sensor short circuit), E.L.B.		
	pressure	Double safety valve		
Material	basket	Stainless steel		
	exterior	Steel plate with powder coated finish		
Power source		AC 230V, 50/60Hz, 1phase		
Certification		CE		

※ Option : J-HAS series (Max. 135°C products) CE certified

J-BSCV2

Clean bench / Bio safety cabinet

CE



Model		J-BSCV2
Type		Class II A2
Overall size (W × D × H)	mm	1,380 × 785 × 2,230/2,280
Inner size(W × D × H)	mm	1,230 × 645 × 730
Working size(W × D)	mm	1,190 × 475
Main control		LCD microprocessor control with membrane touch type
Main filter		HEPA filter(99.97% efficient on particle of 0.3μ)
FL lamp	W	40 × 1ea
Germicidal lamp(UV)	W	30 × 1ea
Air flowing volume	m ³ /min	45 ± 5
Velocity	m/sec	0.5 ± 0.2
Utility	socket	AC 220V 2ea
	gas cock	1ea
Material	working table	Stainless steel plate
	cabinet	Steel plate with powder coated finish
Power source		AC 230V, 50/60Hz, 1phase
Certification		CE

J-USRC

Shaker

CE



Model		J-USRC
Shaking type		Rotation type (Option :Reciprocating type)
Main body size (W × D × H)	mm	310 × 370 × 75 (without plat-form)
Plat-form size (W × D × H)	mm	300 × 300 × 50 (with 100ml flask holder)
Stroke	mm	30
Shaking speed	rpm	15~350
Motor (BLDC)	W	15
Controller		Digital setting / feedback system
Capacity(flask)	mℓ	100 × 16ea or 250 × 9ea or 500 × 6ea
Power source		230V, 50/60Hz, 1Phase
Certification		CE

Option



J-MSFS

Separatory funnel shaker

CE



Option



Model		J-MSFS
Shaking type		Reciprocating type (vertical or horizontal shaking)
Overall size (W × D × H) mm		660 × 500 / 515 × 480
Platform size (W × D) mm		300 × 400
Shaking	controller	Dial knob/ digital display
	speed rpm	60 ~ 350
	capacity ml	Separatory funnel 250, 500, 1000 (250/500/1,000 × 6ea) Erlenmeyer flask holder 250 ~ 300 × 12ea
Motor (BLDC) W		60
Accessories (option)		Shaking rack for flask (clamp type)
		Shaking rack for test tube (spring type)
		Shaking rack for bottles or flasks (bar type)
		Safety cover and rubber foot (4 ea)
		Funnel flask holders (max. additional 4ea : 250ml)
Power source & consumption		AC 230V 50/60Hz 1Phase
Certification		CE



J-VSS

Vibratory sieve shaker

CE



Model		J-VSS
Shaking type		Vibration type(up/down)
Overall size(W × D × H) mm		360 × 460 × 620(170/450)
Shaking(vibration)	control system	Frequency control
	controller	Digital setting / display
	mode	Interval vibratory motion :3.2.1sec Continuous & vibratory motion (4 mode)
	vibration speed	130 cycles per min.
Power consumption W		500
Sieve(option)	size(Ø × H) mm	203 × 41
	quantity	7ea
	material	Brass or stainless steel plate
Power source		AC 230V 50/60Hz 1Phase
Certification		CE

※Option : Sieves

J-HSWD

Slide warmer



Model		J-HSWD
Overall size (W × D × H) mm		635 × 270 × 150
Plate size (W × D × H) mm		630 × 270
Temperature	range	Ambient+5℃ ~ 60℃
	controller	PID controller
Heater(sheath) W		150
Material	plate	Aluminum plate
	body	Stainless steel plate
Power source		AC 220V, 50/60Hz, 1Phase
Net weight		12.1



Premium Climatic Chamber

Network Control

Up to nine (9) instruments can be networked and controlled by one PC through RS-485 communication interface (Optional Ethernet RJ-45)

Program Control

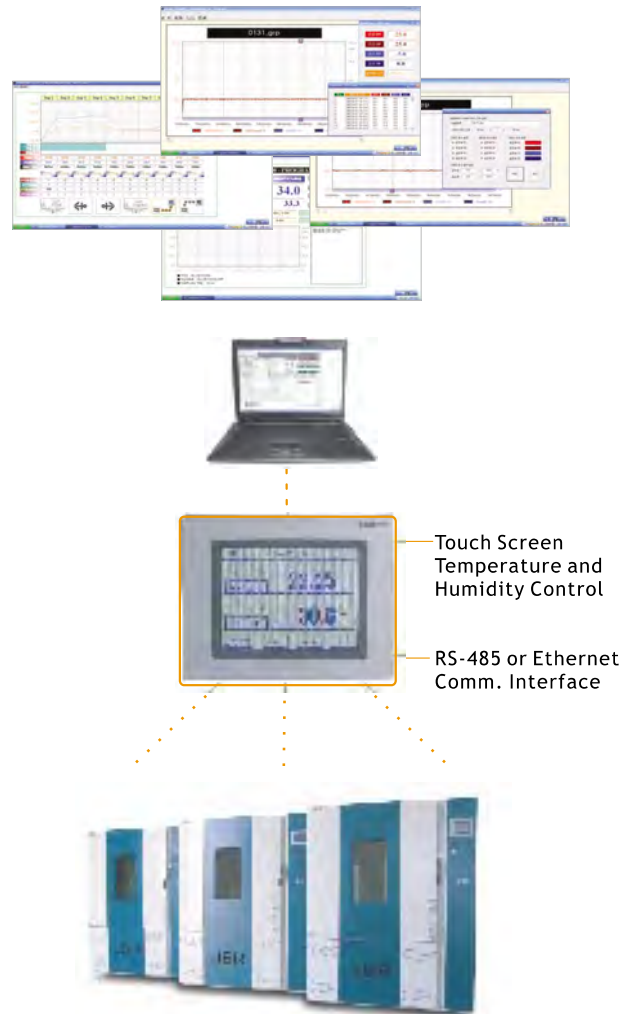
30 Program Patterns 999 cycle repeat
Maximum 300 segment up to 99 hr 59 min

Remote Control and Monitoring Software

Chambers are controlled and monitored on remote site
Fixed or Program operation ON/OFF and SV change
Compose, save and upload program patterns
Realtime monitoring of present temperature and humidity and graph rendering

Data Recording and Processing

Virtually unlimited compose and save program patterns
Records operating temperature and humidity in PC or USB
Processing data and convert to excel file for report



Specifications & Ordering Information

Model		JSRH-150CP JSRH-150CPL	JSRH-250CP JSRH-250CPL	JSRH-500CP JSRH-500CPL	JSRH-800CP JSRH-800CPL
Chamber Capacity		150 L	250 L	500 L	800 L
Temperature	Heating Type	Forced Convection by silent blower fan			
	Range	-20 °C ~ 120 °C (for CP Models)		-40 °C ~ 150 °C (for CPL Models)	
	Accuracy	± 0.3 °C at 20 °C			
	Uniformity	± 0.8 °C at 20 °C			
Humidity	Humidifier Type	Water boiler with immersed incoloy sheath heater			
	Range	35 % ~ 98 % RH (Depends on Temp.Range)			
	Accuracy	± 3.0 % at 60 %			
	Uniformity	± 6.0 % at 60 %			
Control	Main Controller	Touch Screen Remote Network Control System /w RS-485 Interface and Control Software			
	Program	30 Pattern 300 Segment, 999 Cycle or continuous			
	Sensor	Pt 100 Ω for Temperature / Electronic Sensor for Humidity			
Safety Device	Temperature	Hydraulic Over Temperature Protection / Low Water Level Warning and Cut-Off			
	Electrical	Electrical Leakage Breaker			
Dimensions	Inner	500 x 500 x 600	600 x 600 x 700	800 x 700 x 800	1000 x 800 x 1000
	Outer	1000 x 900 x 1300	1100 x 1000 x 1500	1300 x 1000 x 1700	1500 x 1200 x 1900
Material	Chamber	1.0 Gauge Stainless Steel Polished (SUS304)			
	External	Steel 1T with Epoxy Powder Coating			
	Door	Tempered Safety Glass Window			
	Utility	Water Inlet / Water Outlet / Over Flow / Drain			
Electrical Requirement		120VAC 60Hz or 220 VAC 50/60Hz			

BSC Cabinet Class II Type A2

JSCB-SB Series Biohazard Safety Cabinet Class II Type A2

- Safety Class** : Class II Type A2
- Filtration** : Aluminum Frame
Mini Pleated HEPA Filter
Optional ULPA Filter
- Efficiency** : 99.995% at 0.3um particles
- Control** : Microprocessor Control
9 Step Air Velocity Control
- Material** : Stainless Steel 304
(AISI304) working chamber
- Sterilization** : Germicidal UV lamp /w timer
Including Stand with Caster



- ▶ Biohazard Class II type A2 application**
 - ▶ Class II Type A2 design for personnel, product, sample, environment protection
 - ▶ 70% of total air re-circulates within the cabinet and 30% of air vent through HEPA filter to ambient
- ▶ 0.3 um Particle 99.993% Removal Efficiency**
 - ▶ Two Minipleat HEPA filters, which operates at a typical efficiency of 99.993% at 0.3um particles
 - ▶ These filter provide a higher level of product and cross contamination protection
- ▶ Back Light LCD Microprocessor Control**
 - ▶ 9 step air velocity, FL, UV lamp on/off, timer, total using time alarm
- ▶ Silent Fan Blower**
 - ▶ Noiseless and vibration free working environment
- ▶ Weight Balanced Smooth Sliding Sash Door**
 - ▶ 5mm thick tempered safety glass

Model		JSCB-900SB	JSCB-1200SB	JSCB-1500SB	JSCB-1800SB
Dimensions	Inner	840 x 530 x 680	1200 x 530 x 680	1500 x 530 x 680	1800 x 530 x 680
	W x D x H mm	900 x 800 x 1990	126 x 800 x 1990	1560 x 800 x 1990	1860 x 800 x 1990
HEPA Filter		0.3 um Particle Removal 99.993% ~ 99.995% / Inquire for optional ULPA Filter Aluminum frame mini-pleated type with wire mesh protection guard			
Air Circulation		70% of HEPA filtered air re-circulation and 30% exhaust through HEPA Filter			
Controller	Display	Back Light LCD Display			
	Speed Control	9 Step Air Velocity Control from 0.3 ~ 0.6 m/sec.			
	Lamp Control	FL Lamp ON/OFF / UV Lamp ON/OFF / UV Lamp Timer / Total Using Time			
Illumination Lamps		FL 20W x 2 ea	FL 30W x 2 ea	FL 30W x 2 ea	FL 32W x 2 ea
Germicidal UV Lamp		UV 20W x 1 ea	UV 20W x 1 ea	UV 30W x 1 ea	UV 40W x 1 ea
Utility		Gas Cock / Air Cock / Power Outlet 220V x 2 ea			
Sash Door		Weight Balanced Sliding Tempered Safety Glass 5 mm Thick			
Electrical Requirement		220 VAC 50/60 Hz or 120 VAC 60Hz			

Labstore-Single

Filtration Reagent Storage Cabinet



FEATURE

- Ductless Filtering Reagent Storage System
- Toxic Gas & Odor Eliminated by Chemical Filter System
- Purified Room Air by Filtration System

SPECIFICATION

- Dimension : 800(W) × 500(D) × 2,100(H)mm
- Storage Capacity : More than 100 bottle (1Liter)
- Filter type : Chemical Filter
- Retention Capacity : More than 2,000g
- Air Flow : 90 CMH
- Air Velocity : More than 0.51 m/s
- Shelves : 5ea (Adjustable)
- Sound Level : Less than 49dBA
- Power Consumption : 50W
- Voltage : 230V-60Hz / 115V-50Hz
- Safety Device : Filter Check, Velocity Monitor, Fan Failure, Spill Tray, Lock System

Labstore-Double

Filtration Reagent Storage Cabinet



FEATURE

- Ductless Filtering Reagent Storage System
- Toxic Gas & Odor Eliminated by Chemical Filter System
- Purified Room Air by Filtration System

SPECIFICATION

- Dimension : 1,600(W) × 500(D) × 2,100(H)mm
- Storage Capacity : More than 200 bottle (1Liter)
- Filter type : Chemical Filter
- Retention Capacity : More than 2,000g
- Air Flow : 90 CMH
- Air Velocity : More than 0.51 m/s
- Shelves : 10ea (Adjustable)
- Sound Level : Less than 49dBA
- Power Consumption : 50W
- Voltage : 230V-60Hz / 115V-50Hz
- Safety Device : Filter Check, Velocity Monitor, Fan Failure, Spill Tray, Lock System

Labcare-900

Filtration Fume Cupboard



FEATURE

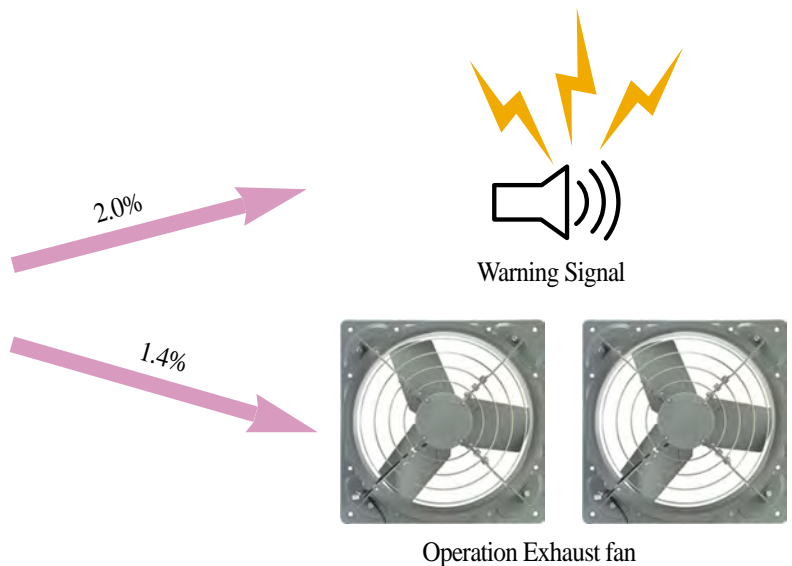
- Ductless Filtering Fume Cupboard System
- Toxic Gas & Odor Eliminated by Chemical Filter System
- Purified Room Air by Filtration System

SPECIFICATION

- Dimension : 900(W) × 750(D) × 2,000(H)mm
- Filter type : Chemical Filter
- Retention Capacity : More than 3,000g
- Air Flow : 300 CMH
- Air Velocity : More than 0.53 m/s
- Lighting : 36W × 2ea
- Sound Level : Less than 49dBA
- Power Consumption : 100W (Except Lamp)
- Voltage : 230V-60Hz / 115V-50Hz
- Safety Device : Timer, Filter Check, Velocity Monitor, Fan Failure, Worksurface & Spill Tray

Lab Guardian

Hydrogen Gas Detection System



SPECIFICATION

- Detection range : 0~4% (Hydrogen gas concentration)
- Warning condition : 2.0% (Adjustable)
- Exhaust fan control : 1.4% (Automatic)
- Detection resolution : 50ppm
- Detection accuracy : 50ppm
- Warning signal sound : more than 85dBA
- Warning system : Flashing light & warning signal
- Display : Luminance LED (8 point)
- Analog output : 2 channel SSR output (220V)

FEATURE

- Real time hydrogen gas monitoring system
- Gas detection, Warning signal, Exhaust fan control

Water Purifier System (Wellix Series)



FEATURE

- 20X4 Line Blue backlight LCD is adjusted, so quality of water and temperature are shown in one screen.

Model	Wellix Plus I	Wellix Plus II	Wellix Pure I	Wellix Pure II	Wellix Mega
Product	P.W, U.W	P.W, U.W	P.W	P.W	U.W
Product flow	Max. 13L/Hr	Max. 23L/Hr	Max. 13L/Hr	Max. 23L/Hr	Max. 45L/Hr
Quality display	Input water(I.W) : 0 ~ 600 μ s/cm Pure water (P.W) : 0 ~ 200 μ s/cm Ultra pure water (U.W) : 0 ~ 18.2M Ω .cm Input Temp(I.T) : 0 ~ 99.9 $^{\circ}$ C	Input water(I.W) : 0 ~ 600 μ s/cm Pure water (P.W) : 0 ~ 200 μ s/cm Input Temp(I.T) : 0 ~ 99.9 $^{\circ}$ C	Input water(I.W) : 0 ~ 600 μ s/cm Pure water (P.W) : 0 ~ 200 μ s/cm Input Temp(I.T) : 0 ~ 99.9 $^{\circ}$ C	Input water(I.W) : 0 ~ 600 μ s/cm Ultra pure water (U.W) : 0 ~ 18.2M Ω .cm Input Temp(I.T) : 0 ~ 99.9 $^{\circ}$ C	Input water(I.W) : 0 ~ 600 μ s/cm Ultra pure water (U.W) : 0 ~ 18.2M Ω .cm Input Temp(I.T) : 0 ~ 99.9 $^{\circ}$ C
Function	- System auto test - Flushing function - Machine protection function - Check key function - Auto / Manual Recycle - Filter replace function - Filter replace display - Auto control function for drain	- System auto test - Flushing function - Machine protection function - Check key function - Filter replace function - Filter replace display - Auto control function for drain	- System auto test - Flushing function - Machine protection function - Check key function - Filter replace function - Filter replace display - Auto control function for drain	- System auto test - Auto Recycle - Machine protection function - Check key function - Filter replace function - Filter replace display	- System auto test - Auto Recycle - Machine protection function - Check key function - Filter replace function - Filter replace display
Dimensions	400(W) \times 492(D) \times 517(H)	400(W) \times 492(D) \times 517(H)	400(W) \times 492(D) \times 517(H)	400(W) \times 492(D) \times 517(H)	400(W) \times 492(D) \times 517(H)
Power	110Vac or 220Vac, 50/60Hz, 80W	110Vac or 220Vac, 50/60Hz, 80W	110Vac or 220Vac, 50/60Hz, 60W	110Vac or 220Vac, 50/60Hz, 60W	110Vac or 220Vac, 50/60Hz, 60W

Water Purifier System (Dream Series)



FEATURE

- 16 \times 2 Line Blue backlight LCD is adjusted.
- When error occurs during the working, error message is shown.
- Quality of water is displayed in real-time, because sensor for correction about quality of water is attached.
- Filter life can be expected, because run time and remainder % of filter are shown during the working.

Model	Dream Plus I	Dream Plus II	Dream Pure I	Dream Pure II	Dream Mega
Product	P.W, U.W	P.W, U.W	P.W	P.W, U.W	U.W
Product flow	Max. 13L/Hr	Max. 23L/Hr	Max. 13L/Hr	Max. 23L/Hr	Max. 45L/Hr
Quality display	Pure water (P.W) : 0 ~ 200 μ s/cm Ultra water (U.W) : 0 ~ 18.2M Ω .cm	Pure water (P.W) : 0 ~ 200 μ s/cm Ultra water (U.W) : 0 ~ 18.2M Ω .cm	Pure water (P.W) : 0 ~ 200 μ s/cm	Pure water (P.W) : 0 ~ 200 μ s/cm	Ultra water (U.W) : 0 ~ 18.2M Ω .cm
Function	- System auto test - Machine protection function - Filter replace display - Auto control function for drain	- System auto test - Machine protection function - Filter replace display - Auto control function for drain	- System auto test - Machine protection function - Filter replace display - Auto control function for drain	- System auto test - Auto Recycle - Machine protection function - Filter replace function - Filter replace display	- System auto test - Auto Recycle - Machine protection function - Filter replace function - Filter replace display
Dimensions	400(W) \times 505(D) \times 517(H)	400(W) \times 505(D) \times 517(H)	400(W) \times 505(D) \times 517(H)	400(W) \times 505(D) \times 517(H)	400(W) \times 505(D) \times 517(H)
Power	110Vac or 220Vac, 50/60Hz, 80W	110Vac or 220Vac, 50/60Hz, 80W	110Vac or 220Vac, 50/60Hz, 60W	110Vac or 220Vac, 50/60Hz, 60W	110Vac or 220Vac, 50/60Hz, 60W

Water Purifier System (Chosim Series)



FEATURE

- Error lamp is turned on, when error occurs during the working.
- When quality of water lowers, a point of replacement time is expressed as lamp and buzzer.
- Front door can be open, so replacement is easy.

Model	Chosim Plus I	Chosim Plus II	Chosim Pure I	Chosim Pure II
Product	P.W, U.W	P.W, U.W	P.W	P.W
Product flow	Max. 13L/Hr	Max. 23L/Hr	Max. 13L/Hr	Max. 23L/Hr
Quality display	Pure water (P.W) : 0 ~ 200 μ s/cm Ultra water (U.W) : 0 ~ 18.2M μ .cm		Pure water (P.W) : 0 ~ 200 μ s/cm	
Function	- Machine protection function - Filter replace display - Auto control function for drain		- Machine protection function - Filter replace display - Auto control function for drain	
Dimensions	400(W) \times 470(D) \times 517(H)		400(W) \times 470(D) \times 517(H)	
Power	110Vac or 220Vac, 50/60Hz, 80W		110Vac or 220Vac, 50/60Hz, 80W	

Water Purifier System (Max Series)



FEATURE

- 20 \times 4Line Blue backlight LCD is adjusted, quality and temperature of water are displayed in one screen.
- When error occurs during the working, error message is shown.
- Pressure of input water and Membrane can be confirmed in front.

Model	Max Pure 50/100	Max Pure 200/400	Max Pure 600/1000
Product	P.W	P.W	P.W
Product flow	50,100L/Hr	200,400L/Hr	600,1000L/Hr
Quality display	Input water (I.W) : 0 ~ 600 μ s/cm Pure water (P.W) : 0 ~ 200 μ s/cm Ultra pure water (U.W) : 0 ~ 18.2M μ .cm Input Temp (I.T) : 0 ~ 99.9 $^{\circ}$ C		
Function	- System auto test - Machine protection function - Check key function - Filter replace display		
Dimensions	500(W) \times 500(D) \times 800(H)	570(W) \times 570(D) \times 1500(H)	900(W) \times 800(D) \times 1500(H)
Power	110Vac or 220Vac, 50/60Hz, 1kW	110Vac or 220Vac, 50/60Hz, 1.5kW	380Vac/3,50/60Hz, 3kW

Eco-UP9000

Eco-Series : Economic to save you laboratory cost



FEATURES

1. It is very easy and convenient to exchange. (Eco-UP Pack)
2. It is economic model
3. It is very easy to set and move the Water Purification System
4. This system are registered to ISO9001, and certificated on" NEP Mark.

SPECIFICATION

1. Product Rate (UP to) : 1.5L/Min(90L/Hr)
2. Resistivity : 18.2M Ω -cm (at25°C)
 - TOC : < 10ppb
 - Particles(0.2 μ s) : m ℓ
 - Bacteria : < 1cfu/m ℓ
3. Function : Recirculation to inhibit Bacteria
4. Power : 220V, 50/60Hz, 70W
5. Display : Digital LED

Esse-RO Basic

Esse-Series : Post DI System



FEATURES

Puris, RO Water System is a instrument to make basic pure water in laboratory and you can use this pure water in general chemical test, final washing and rinsing for glassware, making the media and feed in Ultra water purification system.

(This systems are produced under ISO9001, CE certified quality meangement system and NEP mark for the best product quality and security)

SPECIFICATION

1. Flow Rate (UP to) : 10L/Hr
2. Conductivity : 1-25 μ s/cm
 - Heavy Metals : < 100ppb
3. Cartridge exchange reminder
4. Time program for RO Membrane cleaning
5. Automatic drain for less value than setting value
6. Power : 120/230V, 50/60Hz, 65VA
7. Display : Microprocessor Control LCD

Esse-UP Analysis

Esse-Series : TOC Monitoring System and Quantative Dispenser



FEATURES

1. Verified Ultrapure Quality of Water
2. A Great Variety of Components
3. Easy and Handy Function
4. Sensational Design
5. This systems are produced under ISO9001/CE certified quality management system and NEP mark for the best product quality and security

SPECIFICATION

1. Flow Rate (UP to) : 1.5L/min
2. Resistivity (at25°C) : 18.2M Ω -cm
 - Inorganics : < 0.1ppb
 - TOC : 1-5ppb
 - Particles (0.2 μ m) : < 1 μ m
 - Bacteria : < 1cfu/m ℓ
3. Dispenser timer for product quantities
4. UV Lamp exchange reminder
5. Pack exchange reminder
6. Power : 110/230V, 50/60Hz, 65VA
7. Interface : RS-232C/RS45 for data output
8. Display : Microprocessor Control LCD

Expe-RO Ele

Expe-Series : EDI System and Graphic display



FEATURES

1. Produces the ASTM water grade III, IV,
2. Wide graphic LCD display
3. Easy to use and convenient maintenance
4. Compact design
5. Printer for data output
6. ISO9001 and certified CE

SPECIFICATION

- | | |
|--------------------------------------|--|
| 1. Product Rate (up to) : 10L/Hr | 5. Automatic drain for low quality |
| 2. Product Quality : 1-25 μ s/cm | 6. Power : 110/230V, 50/60Hz, 85A |
| 3. Filter pack exchange message | 7. Printer with interface for data output |
| 4. RO Membrane cleaning timer | 8. Display : Wide graphic LCD(128X64 digits) |

Expe-UP Ele UV

Expe-Series : Graphic display and Data System



FEATURES

- | | |
|---|---|
| 1. Produces the ASTM water grade . I | 5. Reliable & desired water quality |
| 2. Wide graphic LCD display | 6. Printer for data output with interface |
| 3. Easy to use and convenient maintenance | 7. ISO9001 and certified CE and NEP |
| 4. Volumetric time setting | |

SPECIFICATION

- | | |
|---|--|
| 1. Flow Rate (up to) : 1.5L/Min | 5. Protection for high temp. & feed water |
| 2. Resistivity (at25°C) : 18.2M Ω -cm | 6. Filter pack exchange message |
| - Inorganics : <0.05ppb - TOC : 1-5ppb | 7. UV Lamp exchange message |
| - Particles (0.2 μ m) : <1/ml - Bacteria : <1cfu/ml | 8. Power : 110/230V, 50/60Hz, 100VA |
| 3. Volumetric time setting | 9. Printer with interface for data output |
| 4. protection for low water quality | 10. Display : Wide graphic LCD (128X64 digits) |

Expe-CB Ele

Expe-Series : Graphic display and Data System



FEATURES

- | | |
|--|-------------------------------------|
| 1. Produces the ASTM water grade I, III, IV, by one system | 4. Reliable & desired water quality |
| 2. Produces wide graphic LCD display | 5. Printer for data output |
| 3. Easy to use and convenient maintenance | 6. ISO9001 and certified CE and NEP |
| 4. Reliable & desired water quality | |

SPECIFICATION

- | | |
|---|---|
| 1. Product Rate : (RO-10L/Hr, UP-1.5L/Min) | 4. Automatic drain for low quality |
| 2. Conductivity (RO) : 1-25 μ s/cm | 5. Filter pack exchange message |
| - Resistivity (UP) : 18.2M Ω -cm | 6. Power : 110/230V, 50/60Hz, 20VA |
| - Inorganics : <0.1ppb - TOC : 20ppb | 7. Printer with interface for data output |
| - Particles (0.2 μ m) : <1/ml - Bacteria : <1cfu/ml | 8. Display : Wide graphic LCD (128X64 digits) |
| 3. RO Membrane cleaning timer | |



-156 °C Cryogenic Freezers

CFQ-156



Operon products Group

Operon is manufacturer and Exporter specialized in the Cryogenic temperature & Ultra high vacuum technologies since 1991 Year.

The Products lines are Cryogenic freezer (-156 °C ~ -140 °C), Ultra low temperature freezers (-86 °C ~ -40 °C), Lab & Production Lyophilizers (-120 °C ~ -50 °C), Speed vacuum centrifugal concentrator (-120 °C ~ -70 °C), Cryogenic test chamber (-165 °C ~ -20 °C), Water vapor cryo pump (-203 °C ~ -150 °C), Industrial Chiller (-120 °C ~ +250 °C), Cold trap (-120 °C ~ -50 °C), Blast freezer, Immersion cooler, Chemical-free freeze dryer (-120 °C), and exporting to 24 Countries.

Especially Operon's the Cryogenic Refrigeration Systems which are International Patent registered in Korea, USA, Germany and China achieved the lowest interior temperature of -156 °C utilized in the Conqueror Cryo freezer, ISO Certificated, CE marked, KFDA approved.

-120 °C Chemical-free freeze dryer

FDCF-12012



-120 °C Cold trap / Vapor trap

C T-120



-165°C Cryogenic test chamber

C TC-165



-120°C Speed Vacuum Centrifugal Concentrator

S VQ-120



-90°C Production freeze dryer

FDT-8650



-86°C Double door / Double controller ULT freezer

DFUD-657AC



LABSIS - BASIC TABLE



FEATURE

A basic type table of LABSIS system. The work top style made of various materials with high chemical resistivity can be applied. A height adjustment system that is strong enough to hold heavy weight has been adopted. Utilities or other options can be added depending on the use.

LABSIS - SHELVES TABLE



FEATURE

Additional frames for utilities and concent panel and shelves are included in a basic table on which various pre-process devices and basic laboratory equipment can be set.

LABSIS - REAGENT CABINET



FEATURE

This ventilation reagent cabinet is composed of a self circulation purification module which does not need to replace a filter. The self circulation purification method in which ion clusters are embedded has not only dramatically reduced operation and maintenance costs but also adopted a modularized system of individual component so that users are allowed setting the system to meet the space and size requirements of their work areas. In addition, the independently developed touch screen facilitates even easier operation of all the functions.

LABSIS - SAFETY CABINET



FEATURE

This modularized safety cabinet is developed for the purpose of preventing important materials from a fire or incident in a laboratory. Entire parts of the product have been painted with powder painting, so the painted surface is highly resistant to contamination and the materials inside the cabinet with sealed structure can be safely kept from being damaged when any liquid is leaked on the floor. In addition, internal shelves can be moved up and down in level. It can be replaced with reagent cabinets and tables when necessary.

LABSIS - LOCAL CLEANER For POLLUTANTS



FEATURE

This equipment is a portable hazardous gas collector which protects users from contaminated materials by quickly purifying contaminated air in a small area; it is useful for a work that generates hazardous gases and dust in a non-fixed place. It consists of a flexible arm which moves up and down freely, turbo fan and highly effective filter.

LABSIS - FUME HOOD



FEATURE

The fume hood has been designed focusing not only the safety and environmental features but also the efficient use of limited working space. The management effectiveness has been maximized by adopting an integrated control part. When installing additional options such as gas, water, electricity, etc, the function can be easily added to the panel type control part. The face velocity control device allows maintaining the most suitable face velocity. Users can set additional safety cabinets, drawers, storage cabinet, etc. under the fume hood.

SK-G1200

VACUUM GLOVE BOX



FEATURES

- This model provides Oxygen-free, No-humidity, Germfree & Constant Temps/Humidity conditions with its unique Box, closed type. It can be applied to both vacuum & de-airation purpose of the experimentation.
- 1. Equipped with transparent specially coated PMMA window, front side.
- 2. Regeneration control system with automatic control exerts the maximization of De-humidity & De-acidification of the chamber of the equipment by providing constant air flow inside.
- 3. Special Gloves adopted will increase the effectiveness of the operation by researchers.

SPECIFICATION

- Dimension : 1200W x 760D x 850H mm(Main Chamber), 1500W x 760D x 900H mm(Table)
- Remarks : Ante Chamber Φ 360 x 600L(SUS-304), Dry Trap : Φ 110 x 400L(38 ℓ)
- *Other size & specification are available upon request.

SK-G001

ANAEROBIC GLOVE BOX



FEATURES

- This model provides Oxygen-free, No-humidity, Germfree & Constant Temps/Humidity conditions with its unique Box, closed type. It can be applied to both vacuum & de-airation purpose of the experimentation.
- 1. Equipped with transparent specially coated PMMA chamber & Glove.
- 2. Main chamber exchangeable with gas. Pass Box provides vacuum.
- 3. Special Gloves adopted will increase the effectiveness of the operation by researchers.
- *Dry trap, automatic controller & work table are optional.
- *Other size & specification are available upon request.

SK-G002-A1

VACUUM GLOVE BOX



FEATURES

- Features the vacuum operation of Main chamber as well as Pass Box up to 1 torr.

SPECIFICATION

- Dimension : 800W x 500D x 500H mm(Main Chamber)
260W x 240D x 240H mm(Pass Box) : SK-G001,2
- Option : Dry trap, automatic controller & work table are optional(G001,2)
- *Other size & specification are available upon request.

SK-V001

VACUUM DESICATOR



FEATURES

- This model is applicable for both vacuum experimentation & de-airation purpose.
- 1. No need for greasing at door position due to silicone Packing for the perfect closing.
- 2. De-pressurization is available up to 1 torr.(-760mmHg) Therefore, it can be used for the sample storage under vacuum, exchange of gas etc.
- 3. This equipment is so made of special grade PMMA, much resistance to abrasiveness, transparency that it exerts long duration time.

SPECIFICATION

- Dimension : 400W x 300D x 400H mm(ID)
- Remarks : Shelf -2ea, Gauge -2ea, Tray -1ea
- *Other size & specification are available upon request.

M VCS 140 RAC K

MICRO(Mouse) Ventilation Cage System



FEATURES

- Equipping many animals within small floor area by providing S.P.F. circumstances over all of the cages in the Rack. Individually Ventilated Caging System.(IVC)
- Dual Filter system of Cage Top eliminates the noise, no catch on the Cage Top leads easy handling & maintenance.
- Even to power off, no problem of suffocation death as it maintains CO2 concentration under 1,000ppm.
- No cross contamination among the cages on the rack, also no pressure differentiation among the cages.
- No detaching of the cages on the rack in case of transportation & earth quake.
- Size : 1803W x 765D x 1991H mm(+330H for Controller on top)able upon request.
*Other size & specification are available upon request.

M VCS 60 RAC K

MICRO(Rat) Ventilation Cage System



FEATURES

- Equipping many animals within small floor area by providing S.P.F. circumstances over all of the cages in the Rack. Individually Ventilated Caging System.(IVC)
- Dual Filter system of Cage Top eliminates the noise, no catch on the Cage Top leads easy handling & maintenance.
- Even to power off, no problem of suffocation death as it maintains CO2 concentration under 1,000ppm.
- No Dycross contamination among the cages on the rack, also no pressure differentiation among the cages.
- No detaching of the cages on the rack in case of transportation & earth quake.
- Size : 1742W x 891D x 1683H mm(+330H for Controller on top)
Cage : Polysulfone(P.S.F), Polycarbonate(P.C)for RAT.
*Other size & specification are available upon request.

M VCS RAC K

MICRO(Mouse, Rat) Ventilation Cage System



FEATURES

- Separate panel use 5T optical smog type MMA plate
- Front door of clean MMA plate is covered by curtain
- The difference of pressure in each cages preserve 0.5pascal tolerance
- Cage maintains below 3% of CO2 gas in 60min after electricity failed
- Washable rack without disassemble
- Auto control ACH, cage pressure, display alarm or warning signal
- Size: 1200W x 490D x 1865Hmm (6 Shelf 4 Row 24 Cage Set Type)
*Other size & specification are available upon request.

M VCS RAC K

Work Station(Double Type)



FEATURES

- Features the very stable laminar flow of air circulation, no cross contamination among the cages.
- Equipped with Inter Lock System.
- Easily exchangeable Pre-filter of roll type.
- Easily exchangeable Hepa-filter from outside.
- Equipped with POT Lamps for sterilization at front Pre-filter and Hepa-filter possible to clean filters.
- Upper exhaust type will improve the circumstances better.
- Size : 1500W x 1000D x 2250H mm
- Material : SUS-304 Stainless steel Frame.
*Other size & specification are available upon request.

VS-91G09M

Growth Chamber



FEATURE

- Temp. Humidity & Lighting : Multiple setting Possible
- 11 steps' program possible
- Light Bank structure
- Safety devices
- Light bank's Q'ty, location Control
- Touch screen (option)
- Temp's recording function (option)

SPECIFICATION

Model	VS-91G09M-HL	VS-91G09M-1300	VS-91G09M-800	VS-91G09M-600
Dimension (IN)	1400 x 800 x 1200	1400 x 800 x 1200	800 x 800 x 1200	700 x 700 x 1200
W x D x H mm (OUT)	1800 x 1090 x 2300	2020 x 940 x 2160	1420 x 945 x 2160	1320 x 845 x 2160
Capacity	1344 L	1344 L	768 L	588 L
Light Bank	3 Side	Upper Side	Upper Side	Upper Side
Illuminance	50,000 Lux	23,000 Lux	15,000 Lux	15,000 Lux
Shelves	6 EA	6 EA	4 EA	4 EA
Power	220V, 40A, 9.5kW, 60Hz	220V, 28A, 6.5kW, 60Hz	220V, 22A, 5kW, 60Hz	220V, 20A, 4.5kW, 60Hz
Specification				
Main control	Multi channel Step Programmable Control			
Display	Back-lit LCD display			
Temperature Range	0°C to 60°C (Light ON : 10°C to 60°C)			
Temperature Accuracy	±0.5°C at ±25°C			
PID Auto Tuning	One touch Auto Tuning			
Temperature Program	10 Step program			
Humidity Range	35 to 98%RH			
Humidity Accuracy	± 1% at 70%			
Humidity Program	10 Step program			
Humidity Sensor	Electronic Device			
Humidifier	Evaporation by motor with SUS 316 Pipe heater			
Light Control	Photo-period control, 10step			
Material (IN)	Stainless steel, SUS 304			
(OUT)	Steel plate with powder coating			
(Ceiling)	Vacuumed Triple pair Glass			
Door	Silicon packing magnet door with window			
Cooling Device	Hermetically sealed Compressor, Auto exchange Dual Evaporator			
Safety Device	Over / Under Temperature Protector, Water Level monitor, Power Breaker			

VS-1321-60

Auto steam sterilizer

Control Panel Layout



FEATURE

- Microprocessor control
- water Level Monitor
- Full Automatic procedure
- Appointment sterilization
- Ideal Construction
- Programmability
- Self Diagnostic
- Safety Device

SPECIFICATION

Model	VS-1321-60	VS-1321-80	VS-1321-100
Dimension (In)	Dia. 350 x 630 mm	Dia. 400 x 630 mm	Dia. 450 x 630mm
(Out)	600 ^o φ530 ^o φ950(h)mm	700 x 580 x 950(H)mm	810 x 630 x 950(H)mm
Capacity	60 Liter	80 Liter	100 Liter
Heater	2.4KW	3.6KW	4.0KW
Power	220V, 11A, 60Hz	220V, 16A, 60Hz,	220V, 18A, 60Hz
Specification			
Temp. Range	Ambient to 135 °C		
Temp. Accuracy	± 1 °C		
Operating Pressure	1.0 to 2.0kg/cm ²		
Temp. Controller	Microprocessor controller		
Display	Back light LCD 20 character display		
Program	10 Program		
Timer	0 - 60min.		
Appointment	Pre-appointment function		
Pressure Gage	0 - 5 kg/cm ²		
Air Vent selection	Automatic selectable		
Air Vent type	3 type / Fast, Slow & no vent		
Water level monitor	Level sensor, Auto refill Function		
Safety Device	Over Heat / Over Pressure protector, water level monitor		
Monitor unit	Audible & Visible Device		
Basket	Standard Type, 2EA		

VS-1205SW2

Constant-temperature shaking water tank



FEATURE

- Orbital type shaking constant-temperature water tank
- Brushless motor with less noise
- Digital PID controller
- Auto Tuning PID function that reduces temperature variation
- Holder rack to use a flask conveniently
- Trustworthy safety device
- Easy to use

SPECIFICATION

Model	VS-1205SW2
Temp. Range	Ambient+5 °C to 99 °C
Temp. Accuracy	± 0.1 °C at 37 °C
Temp. Controller	Digital P.I.D. Controller
Speed Range	0-250RPM
Speed Controller	Solid state Electronic controller
Drive Motor	Brushless Motor
Shaking motion	Orbital
Dimension (IN)	400x450x245(H)mm
(OUT)	600x560x620(H)mm
Capacity	44 Liter
Material (IN)	SUS304
(OUT)	Steel Plate with powder coating
Lid	SUS304
Standard plate	Holder Plate/250ml x 12EA
Power	220v, 6.5A, 1.4kW, 60Hz

VS-9160C, VS-9160GC

CO₂ / Incubator / CO₂ O₂ Incubator



FEATURE

- Invariable temperature
- Accurate Infra red sensor
- Safety protector
- Water Jacket type
- Compact design

SPECIFICATION

Model VS-9160C	
Temperature Control	Digital PID Controller
Temperature Range	Ambient +5°C to 50°C, +/-0.1°C at 37°C
CO ₂ Range	0 to 20%, +/- 0.1% at 5%
CO ₂ Sensor	Dual-Beam Non dispersive Infra-red sensor
Humidification	Up to 96% RH at 37°C
Display	Dual Display, Set - LCD & Run - LED
Dimension (In)	510 × 480 × 705(H)mm
(Out)	600 × 600 × 990(H)mm
Capacity	173 Liter
Materials (In)	Stainless steel
(Out)	Steel plate with powder coating
Water Jacket Volume	34 Liter
Door	Double, Silicone magnetic packing door
Inner door	Safety glass door with U-groove packing
Door Heater	Silicone heater, Independent control
Shelves	3EA, Stainless steel plate, adjustable type
Safety device	Over Temp. protector, Gas monitor alarm
	Water level monitor, Power breaker
Utility	sample port, access hole, drain port
Net Weight	114 kg
Power	220A, 4,2A, 60Hz

Control Panel Layout



VS-130SHE

Hot plate & Magnetic stirrer



FEATURE

- Two digital type to Choice from Customer
- Chemically resistant ceramic coated
- Control Methods of setting & spin
- Micro processor control for accurate Temperature setting & RPM
- Constructed for a long & durable life
- Charming feature which statute indicator
- Clearly visible LED display suiting all lighting conditions

SPECIFICATION

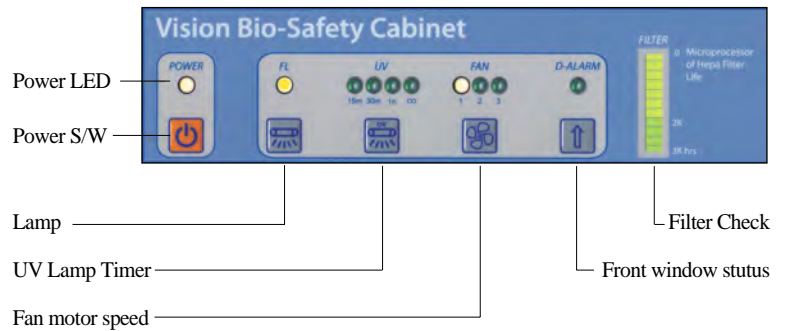
Model VS-130SHE	
Speed Range	100 - 1500 RPM
Temperature Rang	Ambient to 350°C
Temp. Controller	PID Controller (LED)
Heater	Interchangeable plate heater
Plate Area	180 x 180 mm
Top Plate	Ceramic coated plate
Dimension	335 x 230 x 90(H)mm
Power	AC220V, 3.0A, 60Hz

VS-151BS

Bio Hazard Safety Cabinet



Control Panel Layout



SPECIFICATION

Model VS-151BS	
Inflow Velocity	0.5m/sec
Down flow Velocity	0.3m/sec
Dimension (In)	1230 × 648 × 660(H)mm
(Out)	1387 × 809 × 1523 / 2164(H)mm
Body	SUS 304
Decorate panel	Steel Plate with powder coating
Door	Sliding Safety Glass Door
Illumination	40W F.L. × 1 EA
UVG Lamp	30W × 1 EA
Velocity Meter	Electronic type, 10 stage display
UV Timer	30, 60min & constant
Safety Device	Auto Change FL/UV S/W, Door limit Alarm /8" Filter change warning Auto Gas locking valve
Utility	Gas faucet, Vacuum faucet, Power Outlet
Power	220V, 60Hz 4.2A
Certification	ISO9001, ISO14001

MAIN FEATURE

- CLASS II TYPE A2
- Efficient HEPA Filter
- Convenient utility ports
- Tested for safety & Reliability
- Validation Service (Option)

4

Korea Scientific Instruments Industry Cooperative



- DAE SUNG G-3 CO., LTD. 174 ~ 193
- H WAN WOONG MECHATRONICS CO., LTD. 194 ~ 195
- YOUNGIL EDUCATION SYSTEM CO., LTD. 196 ~ 205

Machinery and Automobile Education

G-060102

Structure Educational System Hybrid Car

FEATURES



- Gasoline 1,500cc 50HP electric 40HP Hybrid PRIUS by Toyota Motor Co.
- It is educational system of automotive structure for display by precisely cross-sectioning body and chassis.
- It is effective for understanding and explaining functions of hybrid system's engine, transmission, electric motor, power cable, battery, charging system, inverter, converter, etc.
- Design and operating principles of vehicle can be explained systematically.
- It is educational equipment of power train system including engine, transmission, differential gear, drive shaft, and tire by cross-sectioning components.
- Internal structure and operating principle of piston, valve, crank, etc. can be educated effectively by cross-sectioning cylinder and head of 4-stroke 4-cylinder engine.
- Block, head, starting motor, alternator, air-conditioning compressor, fuel, cooling system, lubricating system, manifold, muffler, and actual body are cross-sectioned, and operated for better educational quality.
- Internal structure of clutch, transmission, differential gear, brake system, etc. can be seen by directly operating pedal and lever, and also, detailed power system education can be done.
- Structure and operating principle of auxiliary device, steering, suspension systems, and actual body frame can be demonstrated.
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow, cylinder block: light black, cylinder head: silver, gasket: white.
- Exterior is painted by diamond, and parts are coated for durability.
- 4 jack stands for safe and effective education and motor speed control type structure.
- Control box, single phase 220V 180W of motor, 0~15 rpm, two lamps, additional safety device
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Product size ≒ (L)445×(W)173×(H)149cm, Wt≒1,330kg

G-080501

Hybrid System Structure Educational Equipment

FEATURES



- It is exhibit educational training model for understanding engine motor of hybrid system by cross-sectioning components
- It is hybrid system for gasoline 50HP and electricity 40HP of 1500cc vehicle of PRIUS by Toyota Co.
- It can be systematically educated for operating principle of hybrid system such as engine, transmission, electric motor, etc, and it is effectively manufactured for understanding.
- It is equipped in control box for manufacturing by special module to educate operating each parts of hybrid system such as low/high speed, acceleration, deceleration, brake and charging.
- It is operating system of each engine and motor part for changing process on hybrid system of 6 types of driving condition, and it has high effect on education using LED system to color circuit panel.
- It is operating educational system to be shown operating structure of power system by cross-sectioning of engine, motor, transmission, differential gear, drive shaft.
- The model is printed by our company's detailed specification for painting to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow, cylinder block: light black, cylinder head: silver, gasket: white.
- Exterior is painted by diamond, and parts are coated for durability.
- Module for system, control box, single-phase 220V, 2 of 180W motor, RPM: 0~5, additional safety devices, aluminum name plate.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Product size ≒ (L)154×(W)94×(H)165cm, Wt≒350kg

G-260202

Electronic Control Suspension System Educational Training Equipment

FEATURES



- It is an educational equipment for integrated training of 20 different type functions of active ECS system installed to a high class passenger car.
- Components: ECU, instrument panel, color location indicator, ECS mode switch, damping force actuator, steering wheel, steering angle sensor, brake switch, idle switch, accelerator, reverse button, light button, door button, self-diagnosis jack, power terminal, voltmeter and ammeter, variable controllers, air cylinder, control lever, etc.
- When car body's position changes or temporary value is set to rear pressure-G sensor-VSS speed, ECU reads the change and it automatically shows automotive height sensor value and position control change process.
- By installation of DM diagnosis error control unit to ECU circuit, it controls input and output condition.
- By using self-diagnostic system to DLC, data values of ECS operation can be measured and with actuator's compulsory operation, individual solenoid valve can be tested.
- Control panel has excellent durability with installation of ECS control switches, 4 variable control valves, actuator, diagnostic terminal, etc. to an aluminum CNC engraved coated plate.
- Color circuit diagram panel is designed for effective education and has excellent durability with aluminum plate engraved with CNC.
- ECS air pressure is a built-in compressor and an air tank control type. And position control is a input operational type of commercial air pressure.
- Built-in high-efficient constant voltage transmission designed and manufactured for AC 220V ECU electronic control.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder-coated, 6-wheel frame panel stand
- Product size ≒ (L)250×(W)140×(H)157cm, Wt≒800kg

G-110302

Hybrid Car System Simulator Educational Training Equipment



FEATURES

- Engine specifications: Gasoline 50Hp, 1,500cc, electricity 40Hp, hybrid Prius by Toyota Motor Co.
- Engine starts only with electric motor and when it accelerates, motor converts into generator and become charged. Then depending on driving condition, it converts into engine, motor, and generator which efficiently saves fuel.
- A consecutive operating system that is equipped with components such as engine electronic fuel, cooling system, intake and exhaust system, CVT.
- It is manufactured as an educational structure with same condition of actual vehicle for efficient education.
- It is composed as an efficient system for automotive engineer qualifying education and inspection training such as engine tune-up, exhaust gas, ignition timing, intake pipe, vacuum level, cylinder pressure, radiator, timing, fan belt, fuel, oil, electrolyte, charging, moving circuit, etc.
- Electric-control function of EOBD and instruction of diagnostic system and data can be trained through DLC
- Hydraulic circuits of CVT transmission to instruct operation of hydraulic circuits according to each range.
- It is a high quality educational equipment mounted on a stand with operation of starting, driving, charging, etc.
- Principal components: gasoline engine, electric motor, power cable, battery, charging device, inverter, converter, A/C compressor, electric circuit system, etc.
- By installing check point to the principal operating sensor, and it makes easier for diagnosis and test.
- Control panel has excellent durability with aluminum plate, CNC engraver, and color.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- An user's manual, and a cover
- Product size ≒ (L)202×(W)180×(H)137cm, Wt≒600kg

G-210501

Hybrid Transmission System Structure Exhibit Educational Equipment



FEATURES

- It is an educational equipment for display of electronic-controlled transmission of hybrid vehicle. (Prius by Toyota Motor Co.)
- It is for internal and external structure display of hybrid transmission's motor, generator, gear, trans axle, etc.
- It is very effective for functional explanation and operating principle new hybrid system.
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, lubricating system: yellow, etc.
- Top quality paint and coating are adapted such as diamond, etc.
- It is manufactured for excellent durability and high display effect.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Display lamp, reinforced glass cover, 4-wheel stand with advanced design.
- Product size ≒ (L)90×(W)70×(H)160cm, Wt≒150kg

G-240303

ABS System Educational Training Equipment



FEATURES

- It is a high standard educational training equipment for understanding operating principle and function through experiment, fault diagnosis and tester with simulating system of 4-sensor 4-channel anti-lock brake system and traction control system installed to a medium-size passenger car.
- Components: ABS system's 4 wheel hydraulic actuator assembly, control module, wheel speed sensor, master cylinder, vacuum brake booster, etc.
- RPM can be controlled with a inverter and each tire is composed of tire grip force, rotation inertia, and hydraulic control system.
- The input and output condition can be controlled by installing diagnosis error control unit to ECU circuit.
- By installation of diagnosis terminal for each circuit, input&output data can be measured and trained with multimeter, oscilloscope, diagnostic system, etc.
- By using self-generator installed to DLC, all data can be seen and with compulsory operation of actuator, each solenoid valve can be tested and educated.
- ABS education is systematic and effective with installation of 4 wheel digital rpm gauge, brake pressure gauge, master cylinder 1.2 pressure gauge, etc. to AL color circuit diagram panel.
- Control panel has excellent durability with installation of ABS control switches, control valve, actuator, diagnostic terminal power, connector, key switch, safety switch, etc and aluminum plate engraved with CNC.
- AC 380V, 1HP 5 motors, 15HP inverter (0~60Hz), alternator operated by motor, 12V battery automatic charging, and vacuum system are installed inside.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder coated, stainless steel molding, 2 drawer door cabinet, 4-wheel frame stand.
- Product size ≒ (L)160×(W)136×(H)150cm, Wt≒460kg

G-070201

F/R Automotive Power Train System Structure Educational Equipment



FEATURES

- Engine specifications: Gasoline, 2,000cc, 4-cylinder, SOHC, electric-controlled engine. rear drive by GM Daewoo Motor Co.
- It is a very effective educational equipment for understanding operating principle and function of power train system including engine, transmission, propeller shaft, differential gear, rear axle, shaft, brake, and tire by cross-sectioning components.
- Internal structure and operating principle of piston, valve, crank, etc. can be educated effectively by cross-sectioning cylinder and head of 4-stroke 4-cylinder engine.
- Internal structure of clutch, 5 speed manual transmission, differential gear, brake system, etc. can be seen by directly operating pedal and lever, and also, gear ratio of manual transmission and detailed power system education can be done.
- Block, head, starting motor, alternator, fuel system, cooling system, lubricating system, manifold, muffler, and actual body are cross-sectioned, and operated for better educational quality.
- Structure and operating principle of steering, suspension systems, and actual body frame can be demonstrated.
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow, cylinder block: light black, cylinder head: silver, gasket: white.
- Exterior is painted by diamond and parts are coated for durability.
- Single phase 220V, 180W motor, 4.5~5.5 rpm, two lamps, control box, additional safety device.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- A robust 6 wheels stand and powder coated.
- Product size ≙ (L)314×(W)157×(H)138cm, Wt≙450kg

G-090106

V6 Engine Structure Exhibit Educational Equipment



FEATURES

- Gasoline 3,000cc V 6-cylinder, electronic-controlled engine for exhibit and education.
- It is a very effective exhibit equipment for understanding operating principle and function of V-type high quality engine by cross-sectioning components.
- It is an educational structure that is operated by motor with block, cylinder, and head of V-type engine cross-sectioned.
- Starting motor, alternator, air-conditioning compressor, fuel system, cooling system, lubricating system, intake system, exhaust system, manifold, etc. are cross-sectioned, and operated for better educational quality
- It has high exhibit effect with engine stand and device that rotates crank and shaft by motor rotating simultaneously.
- Lower part of engine can be reflected and seen through mirror stand.
- Exterior is painted by diamond, nickel, and chrome, and parts are coated for durability
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow, cylinder block: light black, cylinder head: silver, gasket: white.
- Single phase 220V 180W 4-pole motor, 0~5.5 rpm, stand, 4-pole 250W motor, 5~7 rpm halogen lamp, control box, control module, additional safety device
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- 4 wheel circular stand, powder coated
- Product size ≙ (φ)100×(H)138cm, Wt≙363kg

G-090311

SOHC Engine Structure Educational Equipment



FEATURES

- Gasoline 1,500~1,800cc 4-cylinder electric-control SOHC engine
- SOHC engine is general rocker arm, indirect operating type and it is operated with one camshaft with entire engine body cross-sectioned and mounted on educational stand.
- It is an educational structure that is operated by motor with block, cylinder, and head of SOHC engine cross-sectioned.
- Operating speed of internal components such as valve, piston, intake and exhaust system, crank, and shaft can be controlled and it can be systematically educated.
- It is very effective for education of power generating principle with LED indicating module for each stroke of intake, compression, expansion and exhaust.
- Starting motor, electric generator, air-conditioning compressor, fuel system, cooling system, lubricating system, intake system, exhaust system, manifold, etc. are cross-sectioned, and operated for better educational quality.
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow, cylinder block: light black, cylinder head: silver, gasket: white.
- Exterior is painted by diamond, and parts are coated for durability.
- Single phase 220V 180W 4-pole motor, 4.5~5.5 rpm, lamp, control box, additional safety device, control module
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- 4 wheel stand, powder-coated
- Product size ≙ (L)94×(W)65×(H)133cm, Wt≙220kg

G-080201

F/F Engine, Transmission Structure Educational Equipment

FEATURES



- Gasoline 1,800~2,000cc 4-cylinder, DOHC, electronic-controlled engine, front drive vehicle by Hyundai Motor Co.
- It is educational equipment for understanding internal structure and operating principle of engine, clutch, transaxle, etc. by cross-sectioning components.
- It is an educational structure that is operated by motor with block, cylinder, and head of engine cross-sectioned.
- Starting motor, alternator, air-conditioning compressor, fuel system, cooling system, lubricating system, intake system, exhaust system, manifold, etc. are cross-sectioned, and operated for better educational quality.
- Operating speed of internal components such as valve, piston, intake and exhaust system, crank, and shaft can be controlled and it can be systematically educated.
- It is very effective for education of power generating principle with LED indicating module for each stroke of intake, compression, expansion and exhaust.
- Internal structure of clutch, 5 speed manual transmission can be seen and it can be educated systematically by directly operating it with pedal and lever.
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow, cylinder block : light black, cylinder head: silver, gasket: white.
- Exterior is painted by diamond and parts are coated for durability, and controlling-type structure of motor speed.
- Single phase 220V 180W 4-pole motor, 0~5.5 rpm, lamp, control box, additional safety device
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- A robust frame, made of steel and painted, can be easily moved and stopped by 4 wheels.
- Product size ≒ (L)110×(W)94×(H)115cm, Wt≒220kg

G-090702

Diesel Engine Structure Educational Equipment

FEATURES



- 2,500cc 4-cylinder Diesel engine, Porter by Hyundai Motor Co.
- It is a very effective equipment for understanding operating principle and function of general Diesel engine
- It is an educational structure that is operated by motor with block, cylinder, and head of engine cross-sectioned.
- Rotary injection pump, alternator, starting motor, air con compressor, fuel, cooling, lubricating, intake and exhaust system, manifold, etc. are cross-sectioned for better operation.
- This equipment can be educated systematically by controlling operating speed of internal components such as valve, piston, intake and exhaust system, crank, shaft, etc.
- It is very effective for education of power generating principle with LED indicating module for each stroke of intake, compression, expansion and exhaust.
- Exterior is painted by diamond, and parts are coated for durability
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow, cylinder block : light black, cylinder head: silver, gasket: white.
- Single phase 220V, 4P, 180W of motor power, 0~5.5 rpm, control box, lamp, safety device, controlling type structure of motor speed.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- 4-wheel stand, powder-coated
- Product size ≒ (L)94×(W)65×(H)150cm, Wt≒150kg

G-210601

Automatic Transmission Structure Educational Equipment

FEATURES



- It is an educational equipment for understanding internal structure of 2,000cc FF type passenger car's 4 speed automatic transmission.
- Precisely cross-sectioned structure of torque converters, clutch, planetary gear, band, servo, etc.
- It is effective for functional explanation and operating principle during automatic transmission education.
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, lubricating system: yellow, etc.
- Top quality paint and coating are adapted such as diamond, etc.
- It is manufactured for excellent durability and high display effect.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder coated 4-wheel stand.
- Product size ≒ (L)60×(W)50×(H)100cm, Wt≒100kg

G-110304

Gasoline ENG, A/T Wheel Control System Educational Training Equipment

FEATURES



- Training engine stand with 2,000cc class gasoline engine + A/T + A/T hydraulics + brake system (EF Sonata Engine)
- It is high standard educational system of gasoline 2,000cc engine with 4speed automatic transmission.
- A consecutive operating system that is equipped with components such as engine electronic fuel, cooling system, intake and exhaust system, automatic transmission, etc.
- It is manufactured as an educational structure with same condition of actual vehicle for efficient education.
- It has educational training function that controls condition of input and output by installing Diagnosis
- It is composed as an efficient system for automotive engineer qualifying education and inspection training such as engine tune-up, exhaust gas, ignition timing, intake pipe, vacuum level, cylinder pressure, radiator, timing, fan belt, fuel, oil, electrolyte, charging, moving circuit, etc.
- Electric-control function of EOBD and instruction of diagnostic system and data can be trained through DLC and DM.
- Pressure gages are installed at P, R, N, D and L hydraulic circuits of automatic transmission to instruct operation of hydraulic circuits according to each range.
- By installing check terminal for each sensor, it is convenient to use tester and also, it protects the circuit.
- Instruments, vacuum gauge, fuel pressure gauge, voltmeter, DLC, power source jack, key, accelerate pedal, battery, stainless fuel tank, engine, radiator protector, fire extinguisher, a book holder etc. are installed.
- Control panel has excellent durability with aluminum plate, CNC engraver, and color.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder-coated, 2-door cabinet stainless molding, 4-wheel stand
- An user's manual and a cover
- Product size ≈ (L)183×(W)163×(H)123cm, Wt≈570kg

G-110601

Gasoline ENG, A/T Control System Educational Training Equipment

FEATURES



- It is high standard educational system of gasoline 2,000cc 4-cylinder VVT engine 4 speed automatic transmission. (NF Sonata)
- A consecutive operating system that is equipped with components such as engine electronic fuel, cooling system, intake and exhaust system, automatic transmission, etc.
- It is manufactured as an educational structure with same condition of actual vehicle for efficient education.
- It has educational training function that controls condition of input and output by installing diagnosis error control module to ECU circuit.
- By installation of check terminal to ECU circuit, input and output data can be measured and trained conveniently with multimeter or oscilloscope.
- It is composed as an efficient system for automotive engineer qualifying education and inspection training such as engine tune-up, exhaust gas, ignition timing, intake pipe, vacuum level, cylinder pressure, radiator, timing, fan belt, fuel, oil, electrolyte, charging, moving circuit, etc.
- Electric-control function of EOBD and instruction of diagnostic system and data can be trained through DLC and DM.
- Pressure gages are installed at P, R, N, D and L hydraulic circuits of automatic transmission to instruct operation of hydraulic circuits according to each range.
- By installing check terminal for each sensor, it is convenient to use tester and also, it protects the circuit.
- Instruments, vacuum gauge, fuel pressure gauge, voltmeter, DLC, power source jack, key, dual accelerate module, battery, stainless fuel tank, engine, radiator protector, fire extinguisher, a book holder etc. are installed.
- Control panel has excellent durability with aluminum plate, CNC engraver, and color.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder-coated, 2-drawer door cabinet stainless molding, 4-wheel stand
- Product size ≈ (L)150×(W)136×(H)125cm, Wt≈470kg

G-130201

Diesel Engine Educational Training Equipment

FEATURES



- It is an educational training equipment of 2,500cc 4 cylinder Porter Diesel engine. Hyundai
- A consecutive operating system that is equipped with components such as engine electrical system, fuel, cooling system, intake and exhaust system, etc.
- It is manufactured as an educational structure with same condition of actual vehicle for efficient education.
- It is composed as an efficient system for automotive engineer qualifying education and inspection training such as exhaust gas, intake pipe, cylinder pressure, radiator, timing, fan belt, fuel, oil, charging, moving circuit, etc.
- By installing check terminal for each it is convenient to use tester and also, it protects the circuit.
- Instruments, oil pressure gauge, voltmeter, power source jack, key, dual accelerate module, battery, stainless fuel tank, engine, radiator protector, fire extinguisher, a book holder etc. are installed.
- Control panel has excellent durability with aluminum plate, CNC engraver, and color.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder-coated, 2-door cabinet stainless molding, 4-wheel stand
- Product size ≈ (L)150×(W)136×(H)120cm, Wt≈400kg

G-120301

CRDI Diesel ENG, A/T Control System Educational Training Equipment

FEATURES



- It is high standard educational system of gasoline 2,000cc 4-cylinder VGT engine 4 speed automatic transmission. (SANTAFE, TRAJET, TUCSON, etc RV car)
- A consecutive operating system that is equipped with components such as engine electrical system, fuel, cooling system, intake and exhaust system, automatic transmission, etc.
- It is manufactured as an educational structure with same condition of actual vehicle for efficient education.
- It has educational training function that controls condition of input and output by installing button diagnosis error control module to ECU circuit.
- By installation of check terminal to ECU circuit, input and output data can be measured and trained conveniently with multimeter or oscilloscope.
- It is composed as an efficient system for automotive engineer qualifying education and inspection training such as engine tune-up, exhaust gas, ignition timing, intake pipe, vacuum level, cylinder pressure, radiator, timing, fan belt, fuel, oil, electrolyte, charging, moving circuit, etc.
- Electric-control function of EOBD and instruction of diagnostic system and data can be trained through DLC and DM.
- Pressure gages are installed at P, R, N, D and L hydraulic circuits of automatic transmission to instruct operation of hydraulic circuits according to each range.
- By installing check terminal for each sensor, it is convenient to use tester and also, it protects the circuit.
- Instruments, vacuum gauge, fuel pressure gauge, voltmeter, DLC, power source jack, key, accelerate module, battery, stainless fuel tank, engine, radiator protector, fire extinguisher, a book holder etc. are installed.
- Control panel has excellent durability with aluminum plate, CNC engraver, and color.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder-coated, 2-drawer door cabinet stainless molding, 4-wheel stand
- Product size ≈ (L)150×(W)136×(H)122cm, Wt≈565kg

G-140201

LPI ENG, A/T Control System Educational Training Equipment

FEATURES



- It is high standard educational system of LPI 2,000cc 4cylinder engine, 4 speed automatic transmission. (LPI: Liquid Petroleum Injection) NF Sonata.
- A consecutive operating system that is equipped with components such as engine electrical system, fuel, cooling system, intake and exhaust system, automatic transmission, etc.
- It is manufactured as an educational structure with same condition of actual vehicle for efficient education.
- It has educational training function that controls condition of input and output by installing diagnosis error control module to ECU circuit.
- By installation of check terminal to ECU circuit, input and output data can be measured and trained conveniently with multimeter or oscilloscope.
- It is composed as an efficient system for automotive engineer qualifying education and inspection training such as engine tune-up, exhaust gas, ignition timing, intake pipe, vacuum level, cylinder pressure, radiator, timing, fan belt, fuel, oil, electrolyte, charging, starting circuit, etc.
- Electric-control function of EOBD and instruction of diagnostic system and data can be trained through DLC and DM.
- Pressure gages are installed at P,R,N,D and L hydraulic circuits of automatic transmission to instruct operation of hydraulic circuits according to each range.
- By installing check terminal for each sensor, it is convenient to use tester and also, it protects the circuit.
- Instruments, vacuum gauge, fuel pressure gauge, voltmeter, DLC, power source jack, key, dual accelerate module, battery, stainless fuel tank, engine, radiator protector, fire extinguisher, etc. are installed.
- Control panel has excellent durability with aluminum plate, CNC engraver, and color.
- Manufacturing vehicle's LPG tank as a separate type stand facilitates charging and maintenance.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder-coated, 2-drawer door cabinet stainless molding, 4-wheel stand
- Product size ≈ (L)150×(W)136×(H)137cm, Wt≈500kg
- LPG tank stand size ≈ (L)112×(W)40×(H)65cm, Wt≈80kg

G-210201

Automatic Transmission Educational System Training Equipment

FEATURES



- It is an educational training equipment of 2 new-type HIVEC 5 speed automatic transmissions that is manufactured as same as actual vehicle and cross-sectioned internal structure.
- The shift lever positions are P, R, N, and D(+,-). conditions, timing and pattern for shift can be compared, analyzed, and tested by inverter and controller.
- Hydraulic condition can be seen visually during automatic speed change and lever control. And also, real-time hydraulic route can be trained with manometer.
- It has educational training function that controls condition of input and output by installing diagnosis error control module to TCU circuit.
- By installation of diagnosis terminal to TCU circuit and sensors, input and output data can be measured and trained conveniently with multimeter or oscilloscope.
- EOBD and automatic transmission can be controlled and analyzed by DLC and data analysis can be trained.
- Cross-sectioned automatic transmission is operated by pneumatic pressure control system and it is very effective for education of internal structure.
- Precisely cross-sectioned valve body and vibration-resistant system at high speed is installed to the internal structure.
- Control panel and color circuit diagram have excellent durability and are effective for education with aluminum plate engraved with CNC.
- AC 380V, variable inverter 10HP motor, geared motor system, air from outside.
- Powder coated 4-wheel panel stand with 2 door cabinet.
- Product size ≈ (L)190×(W)110×(H)165cm, Wt≈400kg

G-170407

Automotive Electric, Electronic Integrated Component System, Educational Training Equipment

FEATURES



- It is an integrated educational training equipment of gasoline 2,000cc passenger car's electric and electronic system. EF Sonata.
- The whole electronic system is designed as a coated panel type color circuit diagram
- It is an operating system with electronic parts and wire harness installed to front and rear of panel.
- Color circuit diagram facilitates circuit education.
- It is an efficient educational equipment for training of electronic system.
- Components: ECU, audio system, air conditioning system, window, door lock system, electronic ignition system, handle, multi-functional switch, lamp system, charging system, actuators, motor, switches, relay, sensor, operating sensor module, LED injection system, etc.
- It has educational training function that controls condition of input and output by installing Button diagnosis error control unit to ECU, circuit.
- By installation of check terminal to ECU, circuit, input and output data can be measured and trained conveniently with multimeter or oscilloscope.
- By installing 1:1 circuit check terminal to each components, it makes it convenient to use the tester and protects its circuit.
- It is equipped high efficiency transformer by designed and manufactured vehicle electronic control.
- Safety cover is attached to motor, spark, fan, and speaker.
- Installation of control box which is composed of operating switch, automatic circuit breaker, fuse, and safety switch.
- Powder-coated 4 door cabinet 6 wheel panel stand.
- Product size ≒ (L)250×(W)80×(H)180cm, Wt≒350kg

G-180303

Motronic Electronic Control System Educational Training Equipment

FEATURES



- ME-Motronic is the newest model of DLI Fuel Injection System by Bosch Co. which electronically controls fuel and ignition system.
- It is an educational training equipment of DLI Motronic Fuel Injection system with installation of actual components and educational devices.
- Motronic system's data change of input and output can be diagnosed and educated by controlling injection time and ignition time with data variable controller of TPS, ATS, WTS, MAP and O2 sensor.
- By installation of diagnosis terminal to ECU circuit, input and output data can be measured and trained conveniently with multimeter or oscilloscope.
- EOBD Motronic electric-control function and data instruction of diagnostic system can be trained with DLC.
- Diagram panel is effective for training theory and test, and has excellent durability with aluminum coated plate and CNC engraver.
- Operation of fuel line system such as fuel tank, fuel pump, injection, etc.
- It has high efficiency of visual education with installation of LED ignition system which consecutively operates in intake line, exhaust line, and fuel line for each injector.
- It is composed of constant-voltage transformer with high efficiency which is designed and manufactured for automotive electric control. And also, key, switch, automatic cutout, fuse, safety switch, cover, etc. are included. Power source: single phase 220V.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder coated 2-door cabinet 4-wheel panel stand.
- Product size ≒ (L)122×(W)50×(H)160cm, Wt≒110kg

G-180331

Common Rail Direct Injection System Educational Training Equipment

FEATURES



- The newest model of 2,000~2,900cc RV vehicle CRDI electronic-controlled Diesel engine system. (Delphi)
- It is a high standard educational training equipment of CRDI fuel injection system such as ECU, high pressure pump, injector, fuel pump, filter, fuel tank, fuel line, etc.
- By controlling injection time and injection amount with installation of data variable controller to APS, MAFS, IATS, ECTS, and RPM, data change of input and output can be analyzed, and theory & practice of CRDI system can be educated.
- Injection condition for each nozzle can be seen visually through high pressure transparent glass. Also, injection amount for each nozzle can be measured.
- By installation of diagnosis terminal to ECU circuit and sensors, input and output data can be measured and trained conveniently with multimeter or oscilloscope.
- Education can be efficiently done by indicating engine rpm and pressure of rail's high pressure as digital meter.
- EOBD and CRDI function can be controlled and data instruction can be trained with DLC.
- Diagram panel is effective for training theory and test, and has excellent durability with aluminum plate designed and engraved with CNC.
- Constant-voltage transformer with high efficiency, designed and manufactured for automotive electric control, is installed.
- It is composed of safety cover and control box such as key, power lamp, automatic cutout, fuse, safety switch, etc.
- Single phase 220V, 2HP motor, inverter speed variable system.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- 4-wheel panel stand with powder-coated 2-door cabinet.
- Product size ≒ (L)122×(W)80×(H)160cm, Wt≒200kg

G-190101

Automotive Integrated Electrical System, Training Equipment

FEATURES



- It is an integrated educational training equipment for training of automotive electric device.
- It is effective for study and training with 12 types of panel for each circuit.
- It has operating function for circuit education and training function of circuit connection for each system.
- During education, it converts into operating circuit and function of circuit and parts can be educated and tested with diagnosis terminal.
- During training this equipment disconnects internal circuit and it completes the circuit with Lab Connection Cable to diagnosis terminal.
- Color circuit diagram, parts name, special connector, and pin number has excellent durability with aluminum coated plate engraved with CNC.
- Panel is composed for training of circuit components, in-out power terminal, key switch, control switch, etc. (Please refer to G-190107~190118 for circuits)
- Power source: AC 220V (Alternator system motor 1/2HP)
- The whole system operates with DC 12V constant-current transformer.
- Connection terminal per panel is used for training power source.
- This structure can be easily assembled and disassembled during the practice.
- Integrated education and maintenance are easier with A, B set type.
- Two 100P Lab Connection Cable display stands are provided.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Aluminum panel powder-coated 4 wheel stand.
- User's manual for teacher, student, and maintenance and a cover
- A Type Product size ≒ (L)220×(W)80×(H)180cm, Wt≒300kg
- B Type Product size ≒ (L)220×(W)80×(H)180cm, Wt≒250kg

G-240501

Brake System Synthesis Educational Training Equipment

FEATURES



- It is an integrated educational training equipment of hydraulic brake system installed to a passenger car by cross-sectioning components for effective education.
- Components: disk drum brake assembly, master cylinder, vacuum brake booster, etc.
- As an operating type of brake system and low speed operation of front drive shaft, it is effective for understanding hydraulic brake system.
- The function of each components are explained on a color circuit diagram panel for education of structure. Disk drum brake assembly, wheel cylinder, etc. are precisely cross-sectioned and parking lever is installed to the panel.
- Control panel has excellent durability with installation of master cylinder, 12 pressure gauge, vacuum system, brake pedal, parking brake lever, key switches, power lamp, etc and aluminum plate engraved with CNC.
- It is manufactured as a miniature which facilitates maintenance training and theoretical education of assembly and disassembly such as brake shoe, pad adjustment and replacement, air removal, etc.
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, etc.
- AC 220V, 2HP motor, alternator operated by motor, 12V battery automatic charging, and vacuum system are installed inside.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder coated, 2 door cabinet, 4-wheel frame stand.
- Product size ≒ (L)160×(W)136×(H)150cm, Wt≒350kg

G-270401

Automotive Air Conditioning System Educational Training Equipment

FEATURES



- It is the latest educational training equipment of manual temperature control air conditioning system installed to 1,500cc passenger car.
- The operating principle of MTC can be educated and professional training can be done efficiently with this equipment.
- Control panel has excellent durability with installation of power lamp, safety switch, key switch, A/C switch, display, etc. to an aluminum panel engraved with CNC.
- Designed color circuit diagram panel is effective for education and understanding with circuit diagram for individual air conditioning cycle.
- Operating principle of MTC system can be educated and additional maintenance training and testing of refrigerant can be done.
- Components: compressor, condenser, dryer, expansion valve, orifice tube, evaporator, ventilator, pipe, coolant fan, unit, control panel, etc.
- Compressor is AC 380V 7.5HP motor driven system.
- Air condition. Refrigerant - R134a. - HFC (Hydro Fluro Carbon)
- Heating-5kw, how-water heating.
- Equipment power - alternator motor driven, 12V battery, automatic charging system.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder coated, 2 door cabinet, stainless steel molding, panel, 4-wheel frame stand.
- An user's manual and a cover.
- Product size ≒ (L)190×(W)140×(H)170cm, Wt≒300kg

G-310102

Two Stroke Engine Structure Educational Model



FEATURES

- It is an educational model for understanding internal structure of 2 stroke 1 cylinder air-cooling actual gasoline engine by cross-sectioning components.
- The operating principle and cycle of intake, compression, expansion and exhaust strokes can be explained systematically and seen visually so that enhances educational effect for 2 stroke theory and practice.
- Internal structure of engine such as cylinder, head, crank chamber, fuel tank, intake/exhaust manifold, carburetor, muffler, generator, etc. are precisely cross-sectioned and it is manufactured as a 5rpm motor operating type in order to facilitate education.
- Power generating principle of 2 stroke engine such as scavenging, compression, expansion and exhaust strokes can be educated and components' function can be understood by attaching cross-sectioned part.
- AC 220V, DC12V transformer and LED light operating during the combustion stroke with micro switch.
- The model is painted by our company's detailed specifications to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow, block: light black, cylinder head: silver, gasket: white.
- Exterior is painted by diamond, and parts are coated for durability.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Mirror stainless stand with adjustable base frame.
- Product size ≒ (L)40×(W)30×(H)45cm, Wt≒25kg

G-320102

Four Stroke Engine Structure Educational Model



FEATURES

- It is an educational model for understanding internal structure of 4 stroke 1 cylinder air-cooling actual 3HP gasoline engine by cross-sectioning components.
- The operating principle and cycle of intake, compression, expansion and exhaust strokes can be explained systematically and seen visually so that enhances educational effect for 4 stroke theory and practice.
- Internal structure of engine such as cylinder, head, crank chamber, fuel tank, intake/exhaust manifold, carburetor, muffler, generator, etc. are precisely cross-sectioned and it is manufactured as a 5rpm motor operating type in order to facilitate education.
- Power generating principle of 4 stroke engine such as lubricating, fuel, ignition system, etc. and operation of piston, crank, cam, and valve can be educated and components' function can be understood with cross-sectioned part.
- AC 220V, DC12V transformer and LED light operating during the combustion stroke with micro switch.
- The model is painted by our company's detailed specifications to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow, block: light black, cylinder head: silver, gasket: white.
- Exterior is painted by diamond, and parts are coated for durability.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Mirror stainless stand with adjustable base frame.
- Product size ≒ (L)40×(W)30×(H)45cm, Wt≒23kg

G-320701

Four Stroke Diesel Engine Structure Educational Equipment



FEATURES

- It is an educational model for understanding internal structure of 4 stroke 1 cylinder water-cooling actual cultivator Diesel engine by cross-sectioning components.
- The operating principle and cycle of intake, compression, expansion and exhaust strokes can be explained systematically and seen visually so that enhances educational effect for 4 stroke theory and practice.
- Internal structure of engine such as cylinder, head, crank chamber, fuel pump, nozzle, intake/exhaust manifold, air filter, muffler, etc. are precisely cross-sectioned and it is manufactured manual operating type in order to facilitate education.
- Power generating principle of Diesel engine such as lubricating, fuel, etc. and operation of piston, crank, cam, and valve can be educated and components' function can be understood with cross-sectioned part.
- The model is painted by our company's detailed specifications to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow, block: light black, cylinder head: silver, gasket: white.
- Exterior is painted by diamond, and parts are coated for durability.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Mirror stainless stand with adjustable base frame.
- Product size ≒ (L)80×(W)55×(H)58cm, Wt≒72kg

G-340101

Tractor Structure Educational Training Equipment

FEATURES



- It is an educational displaying model for understanding the power train structure of new agricultural tractor by cross-sectioning component.
- It is educational system for theoretical and practical education by controlling internal operating structure and principle of functions to explain by seeing and operating each parts of tractor.
- It is effective to understand power train system of tractor as well as technical training such as fault diagnosis, periodic inspection, and maintenance.
- 4 stroke 4 cylinder, water cooling, 1,732cc, 35Hp of Diesel engine, 8 speed transmission.
- It is useful for technical education of power generating principle and components such as intake, exhaust, cooling and lubricating system by cross-sectioning cylinder, piston, head, cam, valve, nozzle.
- It is manufactured as operating type by cross-sectioning clutch, transmission, 4WD, differential gear, hub, break, power train, PTO, power steering, working parts, etc.
- Power source : AC 220V. Motor driving system of 4~5rpm and control box including power s/w, power lamp, fuse, circuit breaker, emergency s/w are installed.
- Display effect is good because of using two high brightness halogen lamp.
- The model is painted by our company's detailed specifications to enhance educational quality. Cut face part : dark red, intake : skyblue, exhaust : pink, lubricating device : yellow, block : black, head : silver, gasket : white.
- Exterior is painted by diamond and parts are coated for durability.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- A robust stand, made of steel and powder-coated, can be easily moved and stopped by 6 wheels.
- Product size ≒ (L)340×(W)152×(H)254cm, Wt ≒ 1,945kg

G-341501

Combine Structure Educational Training Equipment (3 ROW Type)

FEATURES



- It is educational system for understanding internal structures and operating principle of combine by cross-sectioning component.
- Complicated whole system is divided into three major subsystem such as cutting, threshing, and power source parts.
- It is effective for theoretical and practical education by operating three subsystems to watch internal structures and operating principle.
- It is effective for technical training such as fault diagnosis, periodic inspection, and maintenance. It clearly shows power generation mechanism of 4-stroke Diesel engine, from which power transfer processes to driving, cutting and threshing parts are clearly seen.
- Cutting part: upper and lower cutting blades, feeding chain, driving shaft gear
- Threshing part: feed system, threshing system, screw, reservoir tank
- Power source part: engine, intake and exhaust systems, fuel system, lubricating system, cooling system, clutch, caterpillar.
- Power train parts are cross-sectioned, and are operated.
- Cutting and threshing parts have motor operating system of 4~5rpm, AC 220V and electric circuit control box including power switch, power lamp, fuse, circuit breaker and emergency switch.
- It uses halogen lamp to visualize internal structure and increase display effect.
- The model is painted by our company's detailed specifications to enhance educational quality. Cut face : dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow, block: light black, cylinder head: silver, gasket: white.
- Exterior is painted by diamond, and parts are coated for durability.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- A robust stand, made of steel and powder-coated, can be easily moved and stopped by 4~6 wheels.

G-360101

Multi-Functional Training Stand

FEATURES



- It is multi function training stand for practical training of disassembly, and assembly of engine and transmission, and starting of engine and they can be rotated by 360° C.
- It is designed for functional, mechanical, dynamic relationship and manufactured by Korean patent.
- It is the safest educational multi function stand with main shaft rotating system and brake system of patent no. 0251812.
- Supporting capacity : 500kg(700kg with assistant 6 taps), supporting range : 180~430mm, supporting plate : Ø200mm, block : 220mm(2ea), 150mm(2ea), block pin : 120mm(4ea), left&right handles, connecting bracket, bolt tray, oil tray, drain cock.
- Robust and integrated main shaft of 45mm is made of S45C and precisely machined with CNC. In addition, installation of brake provides excellent supporting without any vibration.
- Internal worm gear is a rotating equipment for right and left all in one type, and it is operated in safe and easy way for high-weighted engine that it uses the most efficient rotational ratio of NC 134:1 and Ø208 × Ø38mm S45C.
- Stand is made of high strength material and assembled with bearings and special bolts.
- Exterior is painted by diamond, and parts are coated for durability.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- It is easily moved and stopped by 4 wheels.
- Product size ≒ (L)122×(W)80×(H)95cm, Wt ≒ 85kg

G-240101

TCS, ABS System Computer Educational Training Equipment

FEATURES



- It is an educational equipment that enables integrated training and education by using 4 sensor 4 channel ABS, TCS system and control system installed to a passenger car.
- Components: ABS brake system and TCS system's 4 wheel hydraulic actuator assembly, control module, wheel speed sensor, master cylinder, vacuum brake booster, etc.
- RPM can be controlled with 4 inverters and each tire is composed of tire grip force, rotation inertia, and hydraulic control system.
- A special device of inertia without slip system is installed to drive and brake, and a control system of actual drive change.
- The operating principle of ABS TCS hydraulic circuit system and additional maintenance can be trained and educated.
- ABS TCS education is systematic and effective with installation of 4 wheel digital rpm gauge, brake pressure gauge, master cylinder 1.2 pressure gauge, etc. to color circuit diagram panel
- Input, control function for real-time system and input, output, diagnosis, saving of data can be done by PC interface. And also, by inspecting circuit diagram standard value and graph, it can be efficiently done by comparison and analysis of education.
- By directly providing breakdown to ECU or actuator control with PC, engine, and automatic transmission equipment, it measures data of before and after period of breakdown.
- Input/output of ECU and actuators can be controlled manually with control connection system and it could be measured easily with multimeter and oscilloscope through diagnosis terminal.
- PC Specification(Window XP, Ram 1G, HDD 160G, LCD monitor 17", Printer)
- Running program, S/W setting, English version(Korean-optional)
- Simultaneous measurement of oscilloscope 4-channel
- Data sampling speed 500kHz ■ Voltage measurement DC 0~±150V Max
- Frequency 1Hz~100Khz ■ Duty ratio 0~99.9%
- Voltage frequency variable output simulation function
- Measuring probe and adaptor are provided for equipment use.
- This model is designed and manufactured according to ISO 9001 and our company's technical spec.
- PC size ≈ (L) 60 × (W) 75 × (H) 160cm, Wt ≈ 120kg ■ Product size ≈ (L) 165 × (W) 155 × (H) 150cm, Wt ≈ 480kg

G-210101

Automatic Transmission System Computer Educational Training Equipment

FEATURES



- It is an integrated educational training equipment using hivesc 5 speed automatic transmission system and computer control system.
- Input, control function for real-time system and input, output, diagnosis, saving of data can be done by PC interface. And also, by inspecting circuit diagram standard value and graph, it can be efficiently done by comparison and analysis of education.
- The shift lever positions are P, R, N, and D(+,-), conditions, timing and pattern for shift can be compared, analyzed, and tested by inverter and controller
- Cross-sectioned automatic transmission is operated by pneumatic pressure control system and it is very effective for education of internal structure
- Control panel and color circuit diagram have excellent durability and are effective for education with aluminum plate engraved with CNC.
- Control panel is composed of digital meter for TPS, ECU, ETS, oil thermometer, voltmeter, rpm, and key, APS, switches, inverter, power lamp, automatic breaker, fuse, safety switch, DLC, etc. And also, control box and safety cover are installed inside.
- By directly providing breakdown to ECU or actuator control with PC and equipment, it measures data of before and after period of breakdown.
- Input and output of ECU and actuators can be manually controlled with control connection system and it can be measured easily by multimeter and oscilloscope with diagnosis terminal.
- PC Specification(Window XP, Ram 1G, HDD 160G, LCD monitor 17", Printer)
- Running program, S/W setting, English version(Korean-optional)
- Simultaneous measurement of oscilloscope 4-channel
- Data sampling speed 500kHz ■ Voltage measurement DC 0~±150V Max
- Frequency 1Hz~100Khz ■ Duty ratio 0~99.9%
- Voltage frequency variable output simulation function
- Measuring probe and adaptor are provided for equipment use.
- This model is designed and manufactured according to ISO 9001 and our company's technical spec.
- PC size ≈ (L) 60 × (W) 75 × (H) 160cm, Wt ≈ 120kg ■ Product size ≈ (L) 190 × (W) 150 × (H) 170cm, Wt ≈ 530kg

G-260101

ECS System Computer Educational Training Equipment

FEATURES



- It is an educational equipment that enables integrated training and education by using electronic control suspension system and computer control system.
- Components: ECU, instrument panel, color location indicator, ECS mode switch, damping force actuator, steering wheel, steering angle sensor, brake switch, idle switch, accelerator, reverse button, light button, door button, self-diagnosis jack, power terminal, voltmeter and ammeter, variable controllers, air cylinder, control lever, etc.
- The instructor can freely operate automobile height control for each wheel in any condition. Also, operating condition and change in position control of ECS can be educated both in automatic and manual manners with controllers.
- When car body's position changes or temporary value is set to rear pressure-G sensor-VSS speed, ECU reads the change and it automatically shows automotive height sensor value and position control change process.
- For the change of automotive height due to passengers and freight weight, it controls with balance weight of front-80kg and rear-70kg, total-150kg to reach the target height. And also, it measures change value of location with 4-corner 1 meter stainless steel ruler.
- Control panel has excellent durability with installation of ECS control switches, 4 variable control valves, actuator, diagnostic terminal, etc. to an aluminum CNC engraved coated plate.
- Input, control function for real-time system, and input, output, diagnosis, saving of data can be done with PC interface. And also, by sharing related information such as circuit diagram, standard value, etc. comparison and analysis can be efficiently done with graph or figure.
- By directly providing trouble to ECU or actuator control with PC and equipment, it measures data of before and after period of trouble.
- Input and output of ECU and actuators can be controlled manually with control connection system and also it could be easily measured with multimeter and oscilloscope by diagnosis terminal.
- PC Specification(Window XP, Ram 1G, HDD 160G, LCD monitor 17", Printer)
- Running program, S/W setting, English version(Korean-optional)
- Simultaneous measurement of oscilloscope 4-channel
- Data sampling speed 500kHz ■ Voltage measurement DC 0~±150V Max
- Frequency 1Hz~100Khz ■ Duty ratio 0~99.9%
- Voltage frequency variable output simulation function
- Measuring probe and adaptor are provided for equipment use.
- This model is designed and manufactured according to ISO 9001 and our company's technical spec.
- PC size ≈ (L) 60 × (W) 75 × (H) 160cm, Wt ≈ 120kg ■ Product size ≈ (L) 250 × (W) 140 × (H) 176cm, Wt ≈ 800kg

G-180601

Electric Car Educational Training Equipment



FEATURES

- It is an training equipment of electric car training simulator
- A operating system that is equipped with components such as motor electrical system,
- By exposing electronic, etc. during the test education, it facilitates education of system.
- Actual operation and diagnostic condition can be monitored conveniently during the training and education of starting condition.
- Educational check point terminal and connector are installed to each sensor and part of electronic circuit.
- It is a road type vehicle which can be efficiently used for maintenance & inspection training and diagnostic test education.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Product size ≈ (L) 113 × (W) 96 × (H) 143 cm, Wt ≈ 392kg

G-100501

Electric Car Body Structure and Diagnostic Educational Equipment



FEATURES

- Electric passenger car education test system.
- It is an educational equipment that enables convenient integrated education of open car structure and engine test.
- By exposing electronic, etc. during the test education, it facilitates education of system.
- Actual operation and diagnostic condition can be monitored conveniently during the training and education of starting condition.
- Educational check point terminal and connector are installed to each sensor and part of electronic circuit.
- It is a road type vehicle which can be efficiently used for maintenance & inspection training and diagnostic test education.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.

- * kiosk specification
 - CPU : dual core
 - CPU(Ghz) : 2.0Ghz FSB 800Mhz L
 - MB : 2GB DDR2 667Mhz SDRAM
 - GB : 160GB SATA (7200rpm)
 - Monitor : TOUCH SCREEN-
 - Monitor size : 17"
 - Main board : intel 945GC

G-060104

Structure Educational System Hybrid Car



FEATURES

- Gasoline 1,500cc 50HP electric 40HP Hybrid PRIUS by Toyota Motor Co.
- It is educational system of automotive structure for display by precisely cross-sectioning body and chassis.
- It is effective for understanding and explaining functions of hybrid system's engine, transmission, electric motor, power cable, battery, charging system, inverter, converter, etc.
- Design and operating principles of vehicle can be explained systematically.
- Internal structure and operating principle of piston, valve, crank, etc. can be educated effectively by cross-sectioning cylinder and head of 4-stroke 4-cylinder engine.
- Block, head, starting motor, electric generator, air-conditioning compressor, fuel, cooling system, lubricating system, manifold, muffler, and actual body are cross-sectioned, and operated for better educational quality.
- Internal structure of Clutch, transmission, differential gear, brake system, etc. can be seen by directly operating pedal and lever, and also, detailed power system education can be done.
- Structure and operating principle of auxiliary device, steering, suspension systems, and actual body frame can be demonstrated.
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow cylinder block: light black, cylinder head: silver, gasket: white.
- Steel plate stand
- Control box, single phase 220V 180W of motor, 0~15 rpm, two lamps, additional safety device
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Product size ≈ (L) 445 × (W) 173 × (H) 149 cm, Wt ≈ 1.370kg

- * kiosk specification
 - CPU : dual core
 - CPU(Ghz) : 2.0Ghz FSB 800Mhz L
 - MB : 2GB DDR2 667Mhz SDRAM
 - GB : 160GB SATA (7200rpm)
 - Monitor : TOUCH SCREEN-
 - Monitor size : 17"
 - Main board : intel 945GC

G-120204

CRDI Diesel ENG A/T Wheel, Control System Educational Training Equipment

FEATURES



- It is high standard educational system of 2,000cc 4-cylinder CRDI Diesel engine, 4-speed automatic transmission for passenger car.
- A consecutive operating system that is equipped with components such as engine electrical system, fuel, cooling system, intake and exhaust system, automatic transmission, wheel, etc.
- It is manufactured as an educational structure with same condition of actual vehicle for efficient education.
- It has educational training function that controls condition of input and output by installing diagnosis error control module to ECU circuit.
- It is composed as an efficient system for automotive engineer qualifying education and inspection training such as engine tune-up, exhaust gas, ignition timing, intake pipe, vacuum level, cylinder pressure, radiator, timing, fan belt, fuel, oil, electrolyte, charging, moving circuit, etc.
- Electric-control function of EOBD and instruction of diagnostic system and data can be trained through DLC and DM.
- Pressure gages are installed at P, R, N, D and L hydraulic circuits of automatic transmission to instruct operation of hydraulic circuits according to each range.
- By installing check terminal for each sensor, it is convenient to use tester and also, it protects the circuit.
- Instruments, vacuum gauge, fuel pressure gauge, voltmeter, DLC, power source jack, key, accelerate module, battery, stainless fuel tank, engine, radiator protector, fire extinguisher, a book holder etc. are installed.
- Control panel has excellent durability with aluminum plate, CNC engraver, and color.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder-coated, 2-drawer door cabinet stainless molding 4-wheel stand.
- Product size (L)187 × (W)163 × (H)123cm, Wt ≈ 650kg

G-120401

CRDI Diesel ENG, A/T, Control System Educational Training Equipment

FEATURES



- It is high standard educational system of 2,500cc 4-cylinder CRDI Diesel engine, 4-speed automatic transmission for passenger car.
- A consecutive operating system that is equipped with components such as engine electrical system, fuel, cooling system, intake and exhaust system, automatic transmission, etc.
- It is manufactured as an educational structure with same condition of actual vehicle for efficient education.
- It has educational training function that controls condition of input and output by installing diagnosis error control module to ECU circuit.
- It is composed as an efficient system for automotive engineer qualifying education and inspection training such as engine tune-up, exhaust gas, ignition timing, intake pipe, vacuum level, cylinder pressure, radiator, timing, fan belt, fuel, oil, electrolyte, charging, moving circuit, etc.
- Electric-control function of EOBD and instruction of diagnostic system and data can be trained through DLC and DM.
- Pressure gages are installed at P, R, N, D and L hydraulic circuits of automatic transmission to instruct operation of hydraulic circuits according to each range.
- By installing check terminal for each sensor, it is convenient to use tester and also, it protects the circuit.
- Instruments, vacuum gauge, fuel pressure gauge, voltmeter, DLC, power source jack, key, accelerate module, battery, stainless fuel tank, engine, radiator protector, fire extinguisher, a book holder etc. are installed.
- Control panel has excellent durability with aluminum plate, CNC engraver, and color.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder-coated, 2-drawer door cabinet stainless molding 4-wheel stand.
- Product size (L)180 × (W)140 × (H)120cm, Wt ≈ 600kg

G-160201

Gasoline ENG, Air Conditioning Control System Educational Training Equipment

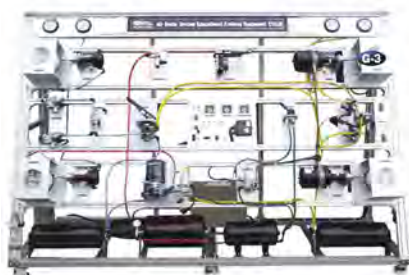
FEATURES



- It is an integrated educational training equipment of gasoline, 2,000cc, engine and FATC air-conditioning system.
- A consecutive operating Full Automatic Temperature Control type air-conditioning system that is fully equipped with components such as engine electrical system, fuel, cooling system, intake and exhaust system, automatic transmission, etc.
- It is manufactured as an educational structure with same condition of actual vehicle for efficient education.
- It is for education of automotive air-conditioning system's principle, and training of inspectors on refrigerant exchange (HFC-134a), trouble, diagnosis, disassembly, inspection, maintenance, etc.
- It has educational training function that controls condition of input and output by installing button diagnosis error control Module to ECU, FATC circuit.
- Electric-control function of EOBD and instruction of diagnostic system and data can be trained through DLC and BU.
- By installing check terminal for each sensor, it is convenient to use tester and also, it protects the circuit.
- Instruments, vacuum gauge, fuel pressure gauge, voltmeter, DLC, power source jack, key, dual accelerate module, battery, stainless fuel tank, engine, radiator protector, fire extinguisher, a book holder etc. are installed.
- By color-coating circuit diagram of air conditioning to a panel, it advances theoretical educational efficiency.
- Control panel has excellent durability with aluminum plate, CNC engraver, and color.
- Pressure gauge for each cycle, sight glass, thermometer, control valve are optional.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder-coated, 2-drawer door cabinet stainless molding, 4-wheel stand
- Product size ≈ (L)170 × (W)150 × (H)123cm, Wt ≈ 480kg

G-240803

Air Brake System Educational Training Equipment



FEATURES

- It is an educational training equipment of air brake and ABS, ARS system installed to a truck and Bus.
- Components : air compressor, air tank, pressure controller, relay valve, quick release valve, brake chamber, diaphragm, push rod, shoe, pressure control valve, pressure gauge, parking valve, air dryer pedal, etc.
- The functional education and operating principle of air brake system can be efficiently done.
- Each air line is indicated with color for understanding flow of air pressure system and pressure gauge are installed to the equipment.
- Exterior is painted by diamond, and parts are coated for durability.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- 6-wheel aluminum profile stand.
- Product size ≈ (L) 283 × (W) 115 × (H) 198cm, Wt ≈ 420kg

G-240801

Air, Hydraulic Combined Brake System Educational Equipment



FEATURES

- It is an educational system of air and hydraulic combined brake system installed to a truck and Bus.
- Components: air compressor, air tank, pressure controller, relay valve, quick release valve, brake chamber, diaphragm, push rod, shoe, pressure control valve, pressure gauge, parking valve, air dryer pedal, etc.
- The functional education and operating principle of air brake system can be efficiently done.
- Each air line is indicated with color for understanding flow of air pressure system, and circuit diagram panel and pressure gauge are installed to the equipment.
- Exterior is painted by diamond, and parts are coated for durability.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder coated, 6-wheel stand.
- Product size ≈ (L) 250 × (W) 80 × (H) 180cm, Wt ≈ 500kg

G-180401

Automotive Sensor Diagnostic System Educational Training Equipment



FEATURES

- It is an educational training equipment of sensor with installation of diagnostic system arranged by electronic-controlled vehicle's sensor and components.
- Components: crank angle sensor, automatic transmission pulse generator sensor, cam position sensor, ABS wheel sensor, CAS&CMP sensor (Optical type), ECS G sensor steering angle sensor, rain sensor, humidity sensor, rear sensor, AQS sensor, engine temperature sensor, automatic transmission oil sensor, auto-light sensor, daylight sensor, knock sensor, SRS impact sensor, vehicle speed sensor, accelerator position sensor, oxygen sensor (zirconia, titania), throttle position sensor, air-flow sensor, air sensor.
- Sensor's name and function are explained on color printed panel to educate theory and operating function of sensors more efficiently and systematically.
- Operating voltage, resistance, pulse, AC waveform can be easily measured and trained with multimeter, oscilloscope, etc. by installing operating system per sensor and diagnosis terminal.
- Constant-current transformer, operating switch, controllers, fuse, safety switch, thermometer, etc. are installed for sensor operation. Single phase 220V.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder-coated 6-wheel panel stand with 4-door cabinet
- Product size ≈ (L) 250 × (W) 80 × (H) 180, Wt ≈ 250kg

G-210301

Automatic Transmission Simulator System Educational Training Equipment (5P)



FEATURES

- It is an educational training simulating equipment for understanding transmission principle and control system of new-type HIVEC 5 speed front drive automatic transmission.
- Clutch, planetary gear trains, etc. can be seen by operating high speed, low speed and stop of precisely cross-sectioned automatic transmission with automatic and manual control system. Therefore it is very effective for understanding operating principle of automatic transmission.
- Operating speed and rpm of input&output shaft are indicated by monitor.
- During automatic mode education, it automatically changes speed and rotates in order of D, 1, 2, 3, 4, and 5. At this moment, this system precisely controls P.R.N.D and L to maintain adequate speed for education.
- By controlling control switch when rotation of automatic transmission is stopped during the manual mode education, function and operating process of internal transmission's one way clutch, brake, gear, etc. can be seen and educated.
- For manual mode education, it rotates automatic transmission in low speed for education with RPM control switch. During the rotation, internal transmission's operating process can be seen as well as operating function for each speed.
- Shift lever positions are P, R, N, D, 2, and L. RPM digital sensor is installed to input/output shaft.
- Actuator control panel is composed of power lamp, key, transmission switch, auto/manual switch, transmission fixing switch, transmission operating button, speed control switch, etc. Operating system, control box, fuse, automatic breaker, safety cover, etc. are installed inside.
- AC 220V, transmission DC 90-180V 1HP motor control system, air module connected from outside.
- Patent 5488, automatic transmission operating control system and program, is installed.
- Valve body and automatic transmission's one way clutch, brake, gear are precisely cross-sectioned and powder coated to see internal structure more closely.
- Control panel and color diagram have excellent durability and are effective for education with aluminum plate engraved with CNC.
- Product size ≈ (L) 135 × (W) 132 × (H) 142cm, Wt ≈ 320kg

G-210904

Automatic Transmission Structure Arrangement Educational Equipment



FEATURES

- It is educational model for understanding internal structure of FF type 4 speed automatic transmission.
- A panel effective for understanding function and operating principle of automatic transmissions.
- It is manufactured with precisely cross-sectioned torque converters, stator, clutch, planetary gear, band, servo, valve body, trans axels, etc.
- It is cross-sectioned and colored to see fixed internal gear.
- Exterior is painted by diamond and parts are coated for durability.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Power-coated 4-wheel panel stand with 2 door cabinet.
- Product size ≈ (L) 122 × (W) 80 × (H) 160cm, Wt ≈ 150kg

G-210806

CVT System Educational Training Equipment



FEATURES

- It is an educational training equipment for understanding transmission principle and function of continuously variable transmission.
- Conditions, timing and pattern for shift can be compared and tested by controlling rpm with inverter.
- It is cross-sectioned and has transparent cover to see transmission function, internal driving pulley and steel V belt structure.
- Hydraulic and electric circuit diagram, educational panel and control box of constant-voltage transformer, inverter and switches.
- By installation of diagnosis terminal for each CVT circuit, sensor, and part, input and output data can be measured and trained with multimeter, oscilloscope, diagnostic system, etc.
- Control panel and color circuit diagram have excellent durability and are effective for education with aluminum plate engraved with CNC.
- AC 380V, Variable inverter 5 HP motor control system. Vibration-resistant system at high speed, cooling system.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder coated 4-wheel panel stand with 2-door cabinet.
- Product size ≈ (L) 142 × (W) 132 × (H) 158cm, Wt ≈ 420kg

G-270204

Automotive Air Conditioning System Educational Training Equipment

FEATURES



- It is the latest educational training equipment of full automatic temperature control (FATC) air conditioning system installed to a 2000cc high-class passenger car.
- This equipment is effective for professional training and systematic education of FATC operating principle.
- It is manufactured to facilitate training of refrigerant circulating process, temperature and pressure of cooling and heating related processes by operation of all devices and sensors under same driving condition of actual vehicle.
- Digital thermometer - 4ea, high low pressure gauge - 3ea, side glass - 2ea, pressure relief valve - 3ea and evaporating part - transparent cover are installed to the equipment.
- Control panel has excellent durability with installation of photo sensor, AQS, indoor and outdoor temperature sensor, inverter, power lamp, safety switch, key switch, A/C switch, display, etc. to an aluminum panel engraved with CNC.
- With temperature, pressure gauge installed at each air conditioning cycle of color circuit diagram panel and FATC circuit diagram, education is systematic and effective.
- By using diagnosis terminal and self-diagnostic instrument installed to DLC, data value can be seen and tested.
- Operating principle of FATC system can be educated and additional maintenance training and testing of refrigerant can be done.
- Components: compressor, condenser, dryer, expansion valve or orifice tube, evaporator, ventilator, pipe cooler, fan, unit, control panel, etc.
- Compressor operating part - AC 380V 7.5HP motor and 7.5HP inverter rpm control system
- Air condition. Refrigerant - R134a. - HFC (Hydro Fluro Carbon)
- Heating - 5kw, hot-water heating, PT sensor, PID, SCR, control automatic operating system.
- Equipment power - alternator motor driven. 12V battery automatic charging system.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder coated, 2 door cabinet, stainless steel molding, panel, 4-wheel frame stand.
- Product size ≈ (L) 190 × (W) 152 × (H) 170cm, Wt ≈ 390kg

G-250301

Electronic Power Steering System Educational Training Equipment

FEATURES



- It is an educational training equipment for understanding operating principle and diagnostic test of electronic power steering system.
- TPS operating, and function can be tested and diagnosed efficiently and systematically by controlling earthing power of tire and EPS operational simulating system.
- Components: EPS, ECU, instrument, car speed sensor, solenoid valve, power pump, pressure pipe, control valve, chamber rack, booster cylinder, wheel, tire, etc.
- Speed sensitive variable assist power steering system is operated with inverter and TPS, VSS variable controller. And power pump pressure, thermometer, and TPS values are indicated with digital volt meter.
- By installation of diagnosis error control module and diagnosis terminal to ECU and circuit, input and output condition can be controlled. Also, input and output data can be measured and trained conveniently with multimeter, oscilloscope, diagnostic system, etc.
- EPS electric control function and instruction of diagnostic devices and data can be trained with DLC.
- Control panel has excellent durability with installation of main switch, power lamp, power connector, key switch, safety switch, TPS, VSS, variable controller, digital meter, inverter, cluster, DLC, DM, etc. to an aluminum plate engraved with CNC.
- The operating principle education of hydraulic circuit system installed to EPS power steering system and additional maintenance training can be done.
- AC 380V 3HP motor, power pump driven, inverter 3HP 0-60Hz control system.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder-coated, 4-wheel panel stand with 2-door cabinet.
- Product size ≈ (L) 200 × (W) 193 × (H) 129cm, Wt ≈ 400kg

G-300601

Mechanical Elements Actuate Educational Equipment

FEATURES



- It is an educational equipment manufactured as a simultaneous operating type and composed of operational mechanical elements by integrately connecting them for effective education.
- The operating principle can be easily educated with composition of straight shaft, crank shaft, flexible shaft, coupling, universal joint, clutch, spur, helical, rack, bevel, worm gears, V-belt, pulley, chain, link, plate, etc.
- By operating the operational switch for each element on control panel, relevant element's blinker is operated.
- Control panel has excellent durability by installing switches, control circuit, key switch, safety switch, etc. on an aluminum coated plate engraved with CNC.
- 'Built-in' operating device of AC 220V motor and operational system of R,F safety warning lamp.
- It is effective for operating principle and function instruction of 8 types of bearing by cross-sectioning components.
- Panel is effective for exhibition with color printed name indication.
- Parts are coated for durability.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder-coated, 4-wheel panel stand with 3 door cabinet.
- Product size ≈ (L) 188 × (W) 60 × (H) 16cm, Wt ≈ 240kg

G-190118S

Ignition Circuit Training Model



FEATURES

- It is an effective model for study and training education of ignition circuit system.
- Components: circuit educational system, ignition switch, high tension cable, spark plug, distributor, VS motor, power transistor, relays, diagnosis terminal, etc
- Product size ≈ (L) 70 × (W) 50 × (H) 22cm, Wt ≈ 13kg
- * **Training Adjustable Stand Specification**
- An educational training adjustable stand.
- The angle can be freely adjusted within 0-90 for convenient education and training.
- A robust frame, made of steel and painted, can be stopped according to the size of panel.
- A power-coated 4-wheel stand.
- Product size ≈ (L) 65 × (W) 54 × (H) 135cm, Wt ≈ 15kg
- * **Lab Connection Cable Display Stand Specification**
- It is an educational cable display stand for electric circuit test and training.
- It is displayed and kept in order by size which makes it easy to train.
- Lab Connection Cable is provided by order for each model.
- Product size ≈ (L) 63 × (W) 45 × (H) 122cm, Wt ≈ 13kg

G-250201

Air Bag System Educational Training Equipment



FEATURES

- It is an educational training equipment for understanding operating principle and diagnostic test of air bag system.
- It is very effective for operating principle education of air bag by simulating immediate operation of sensor, seat belt and air bag at the instant of crash.
- Components: crash sensor, air bag ECU, safety sensor, air bag module, clock spring, PPD sensor, G sensor, steering wheel, etc.
- A single operating function during crash is designed and manufactured with control circuit and technical operating system.
- By installation of diagnosis error control module and diagnosis terminal to ECU and circuit, input and output condition can be controlled. Also, input and output data can be measured and trained conveniently with multimeter, oscilloscope, diagnostic system, etc.
- Air bag electrical control function and instruction of diagnostic system and data can be trained with DLC.
- It is effective for education and training with color circuit diagram panel and crosssectioned components.
- A storage tank with commercial compressed air and single/continuous operating control system are installed.
- An internal high-efficiency constant voltage transformer is designed for AC 220V automotive electronic control.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder-coated, 4-wheel panel stand with 2-door cabinet.
- Product size ≈ (L) 122 × (W) 50 × (H) 160cm, Wt ≈ 100kg

G-180211

Automotive ETACS, IMS System Educational Training Equipment



FEATURES

- It is an educational training equipment for test and diagnosis of high class passenger car's electric time and alarm control system and integrated memory system. (Grandeur XG by Hyundai Motor Co.)
- It is a professional system equipment with installation of educational device and arrangement of ETACS, IMS system components in position and circuit diagram.
- Components: ETACS, module, IMS module, power seat, combination switch, wiper motor, washer motor, wiper relay, door switch lamp, instrument panel, left door module, right door module, power window relay, motor, hot-wire switch, seat belt, door lock actuator, start relay, buzzer, key lamp, room lamp, lightning system, etc.
- It has high educational efficiency with digital indication and control of timer and additional device such as key, remote control, keyless module, burglar alarm relay, auto-light sensor, defogger, and automatic door unlock system for crash.
- It has excellent durability with installation of 1:1 Diagnosis terminal to ETACS, IMS module, circuit, and components. Also, input/output data can be easily diagnosed and trained with multimeter, oscilloscope, etc.
- This panel is efficient for training of theory and test with systematic and beautiful color circuit diagram
- It is equipped high efficiency constant voltage transformer by designed and manufactured vehicle electronic control.
- Control box and safety cover such as operating switch, automatic cutout, fuse, safety switch
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- 4-wheel panel stand with powder-coated 4-door cabinet.
- Product size ≈ (L) 250 × (W) 80 × (H) 180cm, Wt ≈ 270kg

G-070307

F/F Automotive Power Train System Structure Frame Educational Equipment

FEATURES



- Gasoline, 1,500cc, 4-cylinder, electronic-controlled engine front drive automotive power train system structure.
- It is educational equipment for understanding internal structure and operating principle of engine, clutch, transaxle, wheel and tire by cross-sectioning components.
- It is an educational structure that is operated by motor with block, cylinder and head of engine cross-sectioned.
- Starting motor, electric generator, air-conditioning compressor, fuel system, cooling system, lubricating system, intake system, exhaust system, manifold, etc. are cross-sectioned, and operated for better educational quality.
- Operating speed of internal components such as valve, piston, intake and exhaust system, crank and shaft can be controlled and it can be systematically educated.
- It is very effective for education of power generating principle with LED indicating module for each stroke of intake, ignition, exhaust and compression.
- Internal structure of clutch, 5 speed manual transmission can be seen and it can be educated systematically by directly operating it with pedal and lever.
- Steering, suspension system, etc. are educational structure with frame stand type.
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow, cylinder block: light black, cylinder head: silver, gasket: white.
- Exterior is painted by diamond and parts are coated for durability
- Single phase 220V 180W 4-pole motor, 0~5.5 rpm, lamp, control box, safety device, control module.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- A robust frame, made of steel and painted, can be easily moved and stopped by 6 wheels.
- Product size ≈ (L) 270 × (W) 150 × (H) 140cm, Wt ≈ 400kg

G-070502

F/R Diesel Automotive Power Train System Structure Educational Equipment

FEATURES



- 2,500cc 4-cylinder rotary injection diesel engine rear drive, Porter by Hyundai Motor Co.
- It is educational equipment for understanding internal structure of power train of diesel engine, clutch, transmission, differential, rear axle drum by cross-sectioning components.
- Internal structure and operating principle of piston, valve, crank, etc. can be educated effectively by cross-sectioning cylinder and head of engine.
- Engine intake and exhaust manifold, injection pump, starting motor, alternator, fuel system, cooling system, lubricating system, etc. are cross-sectioned and operated for better educational quality.
- Internal structure of Clutch, transmission, differential gear, brake system, etc. can be seen by directly operating pedal and lever and also, gear ratio of manual transmission and detailed power system education can be done.
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow, cylinder block: light black, cylinder head: silver, gasket: white.
- Single phase 220V 180W motor, 0 ~ 5.5 rpm, two lamps, control box, additional safety device
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- A robust frame, made of steel and painted, can be easily moved and stopped by 6 wheels.
- Product size ≈ (L) 230 × (W) 140 × (H) 130cm, Wt ≈ 420kg

G-070403

4WD Diesel Automotive Power Train System Structure Frame Educational Equipment

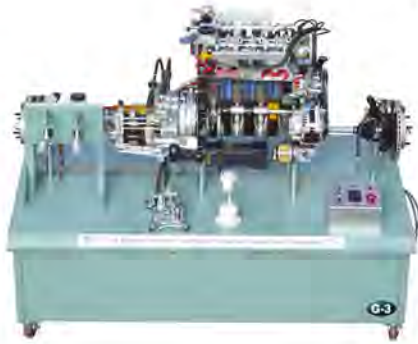
FEATURES



- 5-cylinder, Bens Diesel Engine, 2,874-3,000cc, 4 WD Musso by Ssangyong Motor Co.
- It is educational equipment for understanding internal structure of 4 WD power train of Diesel engine, transmission, differential gear, axle, tire by cross-sectioning components.
- It is very effective for explanation and understanding of function for every part of 4 WD vehicle.
- Design and operating principles of RV vehicle can be explained systematically.
- Internal structure and operating principle of piston, valve, crank, etc. can be educated effectively by cross-sectioning cylinder and head of 4-stroke 5-cylinder engine.
- Intake and exhaust system, starting motor, alternator, air-conditioning compressor, fuel system, cooling system, lubricating system, etc. are cross-sectioned and operated for better educational quality.
- Internal structure of clutch, transmission, differential gear, brake system, etc. can be seen by directly operating pedal and lever and also, gear ratio of 4 WD manual transmission and detailed power system can be trained.
- Structure and operating principle of auxiliary device, steering, suspension system and actual body frame can be demonstrated.
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow, cylinder block: light black, cylinder head: silver, gasket: white.
- Exterior is painted by diamond and parts are coated for durability.
- 4 jack stands for safe and effective education, and motor speed control type structure.
- Single phase 220V 180W motor, 0~5.5 rpm, lamp, control box, additional safety device.
- The model is designed and manufactured according to ISO 9001 our company's technical spec.
- Product size ≈ (L) 390 × (W) 180 × (H) 150cm, Wt ≈ 1,200kg

G-070303

F/F Automotive Power Train System Structure Educational Equipment



FEATURES

- Gasoline 2,000cc 4-cylinder, DOHC electric-controlled engine, front drive. Sonata by Hyundai Motor Co.
- It is educational equipment for understanding internal structure and operating principle of engine, clutch, transaxle, driver wheel by cross-sectioning components.
- Internal structure and operating principle of piston, valve, crank, etc. can be educated effectively by cross-sectioning cylinder and head, and exhaust system can be educated using 4-stroke 4-cylinder LED indicator.
- Block, head, starting motor, alternator, air-conditioning compressor, fuel system, cooling system, lubricating system, manifold, etc. are cross-sectioned, and operated for better educational quality.
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow, cylinder block: light black, cylinder head: silver, gasket: white.
- Single phase 220V 180W motor, 0-5.5 rpm, lamp, control box, additional safety device
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- A robust frame, made of steel and painted, can be easily moved and stopped by 4 wheels.
- Product size ≈ (L) 160 × (W) 94 × (H) 115cm, Wt ≈ 340kg

G-220101

Clutch & Manual Transaxles Structure Educational Training Equipment



FEATURES

- It is an educational equipment of manual F/F type clutch and transmission for passenger car by cross-sectioning components.
- Operation of master cylinder, release cylinder, release fork, pressure plate, clutch plate, etc. can be seen when operating clutch pedal so that the operating principle of clutch can be educated efficiently.
- By manually operating transmission lever, transmission process and operating structure of main drive gear, synchronizers, N, 1, 2, 3, 4, 5, R speed gear, output shaft, etc can be educated.
- It is very effective for education and understanding of gear function for each clutch, power transfer, gear ratio, etc.
- The education of clutch and transmission is easy with low speed rotation of AC 220V geared motor.
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, lubricating system: yellow, etc.
- Exterior is painted by diamond, and parts are coated for durability.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder coated 4-wheel stand.
- Product size ≈ (L) 94 × (W) 64 × (H) 98cm, Wt ≈ 100kg

G-080301

Powertec CRDI Engine Transmission Exhibit Equipment



FEATURES

- 12,920cc 320HP 6-cylinder CRDI diesel Powertec engine, manual transmission structure for exhibition, heavy vehicle (bus, truck, etc.) by Hyundai Motor Co.
- It is exhibit equipment that shows operating process of internal components by cross-sectioning block, cylinder, and head of big-size CRDI diesel engine and also by motor rotation.
- Transmission, starting motor, alternator, air-conditioning compressor, fuel system, cooling system, lubricating system, intake system, exhaust system, manifold, etc. are cross-sectioned, and operated for better educational quality.
- Operating speed of internal components such as valve, piston, intake and exhaust system, crank, and shaft can be controlled and it can be systematically educated.
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow, cylinder block: light black, cylinder head: silver, gasket: white.
- Control box, Single phase 220V geared motor, 4.5-5.5 rpm, lamp, additional safety device.
- Injection pump(EUI), ECU, unit injector, jake-brake, exhibit sensor module, timer module, and LED lamp for each stroke is installed.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- 6-wheel stand, powder-coated
- Product size ≈ (L) 240 × (W) 120 × (H) 150cm, Wt ≈ 1,400kg

G-090502

BUS Engine Exhibit Structure Educational Equipment



FEATURES

- 6-cylinder 196-Z25HP diesel engine for bus and truck.
- It is exhibit equipment that shows operating process of internal components by cross-sectioning block, cylinder, and head of big-size diesel engine and also by motor rotation.
- Starting motor, alternator, air-conditioning compressor, fuel system, cooling system, lubricating system, intake system, exhaust system, manifold, etc. are cross-sectioned.
- Operating speed of internal components such as valve, piston, intake and exhaust system, crank, and shaft can be controlled and it can be systematically educated.
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, lubricating system: yellow, cylinder block: light black, cylinder head: silver, gasket: white.
- Exterior is painted by diamond, nickel, and chrome for exhibit effect.
- Single phase 220V 180W 4-pole motor, 4.5-5.5 rpm, control box, lamp, safety device, contro module.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- 4-wheel stand, powder-coated
- Product size ≈ (L)160 × (W)110 × (H) 150cm, Wt ≈ 624kg

G-280401

Diesel Fuel System Educational Training Equipment



FEATURES

- It is an educational training equipment of rotary distributor injection pump of Diesel fuel system.
- Components: fuel tank, fuel pipe, fuel supply pump, fuel filter, injection pump, high pressure pipe, injection nozzle, etc.
- Rotary distributor injection pump rpm is controlled by inverter and geared motor, and injection pressure, injection condition and injection amount for each line can be efficiently measured and educated.
- A special pipe and high pressure gauge of 150kg/cm² are installed to 4 high pressure lines, which facilitates training education of checking injection pressure and analyzing high pressure pump operation.
- Theoretical education such as control of governor and timer, and maintenance training can be practiced systematically.
- Injection condition for individual nozzle can be seen and checked, and by exchanging injection nozzles, it can be compared and analyzed.
- Injection amount and condition can be seen through a transparent cylinder and it uses safe oil.
- Installation of fuel pressure gauge to in line of fuel pump facilitates education and 'built-in' fuel tank is installed.
- Color circuit diagram has excellent durability with an aluminum plate engraved with CNC.
- AC 220V, key, ON/OFF light, automatic breaker, fuse, safety switch, safety cover, etc.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Powder-coated, 4-wheel panel stand with 2-door cabinet.
- Product size ≈ (L)122 × (W) 50 × (H) 160cm, Wt ≈ 120kg

G-280501

In Line Plunger Injection Pump Structure Educational Model



FEATURES

- It is an educational model for understanding internal structure of in-line plunger injection pump of 6 cylinder direct nozzle by cross-sectioning components.
- Fuel supply pump, governor, timing device, cam shaft, roller tappet, plunger, in let port, and needle valve of nozzle are precisely cross-sectioned and manufactured for easy education.
- The operating principle of injection pump can be educated systematically and explained efficiently by manual operation.
- The model is painted by our company's detailed specifications to enhance educational quality.
- Mirror stainless stand with adjustable base frame.
- Product size ≈ (L) 49 × (W) 40 × (H) 44cm, Wt ≈ 21kg

G-280701

Rotary Distributor Injection Pump Structure Educational Model



FEATURES

- It is an educational model for understanding internal structure of rotary type distributor injection pump of 4 cylinder indirect nozzle by cross-sectioning components.
- Cam, plunger, rotor, inlet passanger, and needle valve of nozzle are precisely crosssectioned and manufactured for easy education.
- The operating principle of injection pump can be educated systematically and explained efficiently by manual operation.
- The model is painted by our company's detailed specifications to enhance educational quality.
- Mirror stainless stand with adjustable base frame.
- Product size ≈ (L) 30 × (W) 20 × (H) 38cm, Wt ≈ 18kg

G-290501

Turbocharger Structure Educational Model



FEATURES

- It is an educational model for understanding internal structure of high output turbocharger by cross-sectioning components.
- Turbocharger rotates turbine by exhaust gas pressure, to rotate compressor and it provides air so that it enhances education of compressed air's supplying principle.
- Internal operating principle of 100,000-150,000rpm high speed rotary part can be seen by cross-sectioning components such as turbine, floating bearing, thrust collar, compressor, waste gate valve, etc. to facilitate education.
- The model is painted by our company's detailed specifications to enhance educational quality. Cut face: dark red, intake system: sky blue, exhaust system: pink, etc.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Mirror stainless stand with adjustable base frame.
- Product size ≈ (L) 30 × (W) 20 × (H) 20cm, Wt ≈ 6kg

G-210702

A/T Structure Educational Equipment



FEATURES

- It is an educational equipment for understanding internal structure of FR type passenger car's 5 speed automatic transmission.
- Precisely cross-sectioned for structure education of torque converters, stator, clutch, planetary gear, band, servo, etc.
- It is effective for understanding operating principle and function explanation during automatic transmission education.
- The model is painted by our company's detailed specifications for painting to enhance educational quality. Cut face: dark red, lubricating system: yellow, etc.
- Top quality paint and coating are adapted such as diamond, etc.
- It is manufactured for excellent durability and high display effect.
- The model is designed and manufactured according to ISO 9001 and our company's technical spec.
- Adjustable base frame mirror stainless stand.
- Product size ≈ (L) 94 × (W) 40 × (H) 67cm, Wt ≈ 63kg

DYTEK 40/70/130
/230/400

Eddy Current Dynamometer - Machine



FEATURE

- The increasing demands to improve technology of vehicle test systems have become a major concern in line with the development of automotive industry all over the world. Leading suppliers strive arduous efforts to produce better engine related test equipment which is regarded as a basis in testing engines.

DYTEK 2000

Dynamometer Main Control System

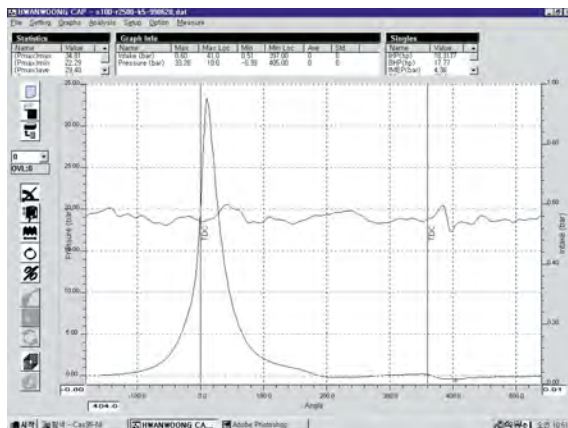


FEATURE

- Our high quality engine dynamometer is the result of ceaseless research and expertise invested for more than 10 years in this field. Advanced know-how and skill in both precision and assembling assure us high competitiveness and therefore produce every year innovative latest systems with high stability and endurance.
- Every unit is subject to stringent inspection to insure high quality and safety, Reliability precision and stability means our Dynamometer Controller

DYTEK 5200

Engine Combustion Analysis System



FEATURE

- Total S/W Package for Combustion Analysis
- Real Time Scanning & Graphic Display
- Real Time Measuring
- Pointing Zoom (Free Scale)
- Pressure Graphs
- Crank Angle Cylinder Pressure
- Crank Angle Intake
- Crank Angle Based Graphs
- P - \ominus , P - V Curve, $dp/d\ominus$ $dQ/d\ominus$ - \ominus , x - \ominus , Poly - \ominus
- Statistical Service : IMEP
- Cycle, Pmax/Pmin Cycle Pmax-Hist, Pmin-Hist, \ominus Cycle

DYTEK 6000

Chassis Dynamometer



DYTEK-6000



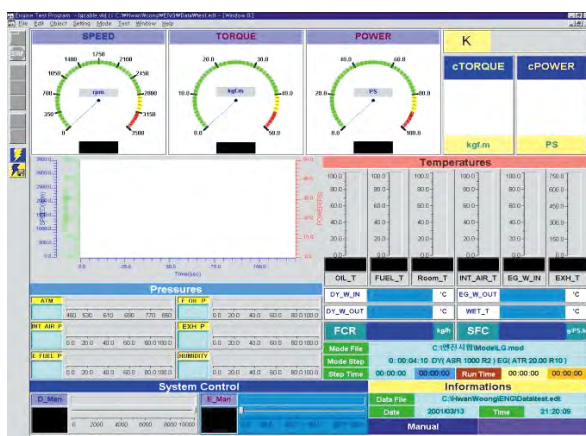
FEATURE

- Our chassis dynamometer is a system to fulfill accurate measurements through simulating on-road driving conditions of four-wheel drive vehicles by giving flywheel inertia and electrical control. Nothing can carry out correct test performance better than our advanced measurement technology. Our product enables the operator to capture quite precise measurement values such as the number of roller rotation and torque by measuring damping force gained from break work. Applications, depending on the vehicle type and performance aims, can be classified according to the missions such as assessment of exhaust gas components, endurance test, general function measurement and further research.

- Among various chassis dynamometers for exhaust gas component measurement, our product is engineered essentially with flywheel-130kw(180ps)/200kw(260ps) Eddy Current Dynamometer equipped with widely accepted C^{TM} 220mm twin roller which not only answers the E.P.A. standards but offers significant strengths in ease of control, durability covering specific range and competitive cost frames. Materials are carefully adopted by our analyzers through perfect examinations and thorough research on the structure and functional characteristics of chassis dynamometer system. Key parts like flywheel and roller are uncomparatively designed with sophisticated design know-how.

DYTEK 5000

Automation System for Dynamometer

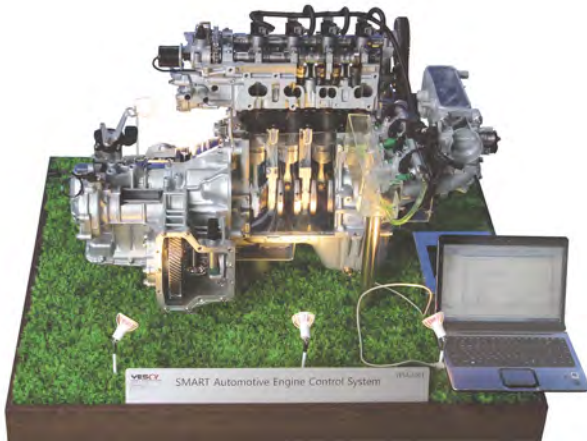


FEATURE

- Carrying out high speed integral data acquisition from engine performance test units, our auto measuring system features a wide range of capabilities in accurate data conversion, output in graphs and record by user's easier operation.
- In combustion chamber examination, it presents reliable measurement values of torque, engine speed, pressure, temperature, fuel consumption ratio and throttle on-off effect, etc. Computer base forms signal from sensor units, Interface measurement device, data acquisition board and built-in programmes.

YESA-1001

SMART Automotive Engine Control System



FEATURE

- A training equipment enabling education with naked eyes using precisely sectioned engine + gearbox of real vehicle of 1500cc or above grade with direct ignition and injection
- A training equipment to educate by adjusting the amount of fuel injection and timing of ignition of the equipment after connecting fuel injection and ignition system with a PC and manipulating the program according to the condition of engine operation
- Supplying ECU circuit, ECU program, source and textbook
- Available Experiment s
 - 1) Control Fuel Injection, Ignition
 - 2) CPS signal modulation
 - 3) ISG control function
 - 4) Abrupt acceleration & deceleration control
 - 5) Control fuel pump control
 - 6) Starting control
- Supplied User Manual with theory

YESA-1002

UVO Smart Control System

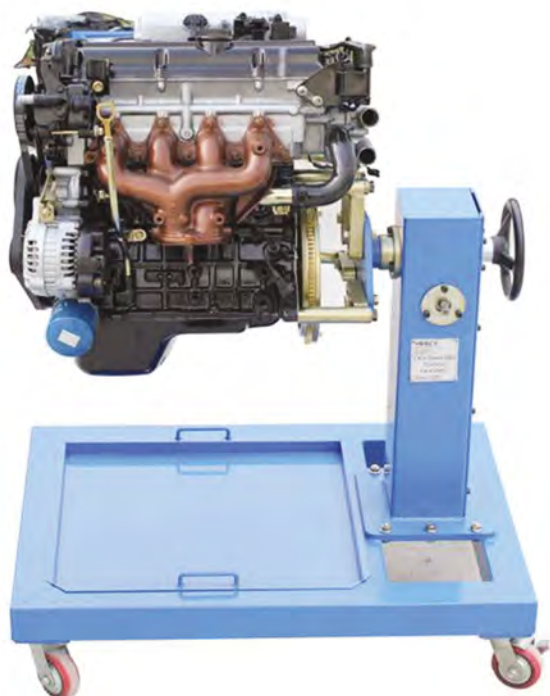


FEATURE

- The equipment is controlled with a smart phone - using YES01 application
- A convenient application for an autocar to perform parking check, air conditioning control, door control, horn control, escort light control, remote door opening control, wiper and trunk manipulation with a smart phone.
- Opening and Closing of car door may be checked with naked eyes through LED display.
- Using a small size motor, RPM of the equipment may be controlled to perform door lock function.
- Headlight and taillight are manufactured so that the condition may be checked using LED. By installing diagnostic terminals at each movable part, the state of operation may be diagnosed.
- Supplied with theory & student experiment manual

YESA-3115

Gasoline ENG Practice Equipment, 4-Cylinder



FEATURE

- With a system having a robust main shaft brake and NC100:1 inner rotating device, this engine stand is manufactured into a safe and patented product with no vibration. Gasoline ENG practice equipment
 - 1) Stroke : 4 Stroke gasoline engine
 - 2) Cylinder : 4 Cylinder Cam Shaft type
 - 3) Cooling : Water cooling system
 - 4) Engine
 - HP: over 1500CC
 - Engine rotary stand for 100:1(Installed safety break)
 - 360 degree rotating main axle break installed
 - Weight adjusting range: 180mm~430mm
 - Weight capacity: under 500kg, under 4tab 700kg with additional buttress
- Gasoline Engine Assembly/Disassembly Training Equipment.
- Supplied User Manual with theory

YESA-3306

Diesel ENG Practice Equipment, 4-Cylinder



FEATURE

- With a system having a robust main shaft brake and NC100:1 inner rotating device, this engine stand is manufactured into a safe and patented product with no vibration..
- Diesel ENG practice equipment
 - 1) Stroke : 4 Stroke Diesel engine
 - 2) Cylinder : 4 Cylinder Cam Shaft type
 - 3) Cooling : Water cooling system
 - 4) Engine
 - Engine rotary stand for 100:1(Installed safety break)
 - 360 degree rotating main axle break installed
 - Weight adjusting range: 180mm~430mm
 - Weight capacity: under 500kg, under 4tab 700kg with additional buttress
 - Engine assemble with safety and stable structure
- Diesel Engine Assembly/Disassembly Training Equipment.
- Supplied User Manual with theory

YESA-1110

F/R Automotive Power Train System Equipment



FEATURE

- Effective learning of inner structure and operating principle of piston, valve, crank, and others. is available using cross-sectioned head of 4-stroke 4-cylinder engine.
- Inner structure of clutch, 5 stages manual transmission, differential gear, brake system, and others may be checked by directly manipulating pedal and lever, and also, gear ratio of 4 Wheel Drive manual gearbox and detailed power system may be taught successfully.
- Single phase 220V, 180W motor with various rpm, two lamps, control box, and separate safety device.
- Supplied User Manual with theory

YESA-1200

V 6 Engine Structure Training Equipment



FEATURE

- An educational structure which may be operated by a motor with block, cylinder, and head of cross-sectioned V-type engine.
- An excellent demonstration effect using an engine stand device to rotate crank and shaft with a motor rotating synchronously.
- The product has superior durability with plating treatment.
- Gear part of the motor is heat treated and durable against prolonged training and exhibition.
- Driving speed of engine may be controlled by adjustment of engine driving motor.
- Gasoline, 3,000cc, V 6-cylinder, electronic-controlled engine
- Single phase 220V 180W 4-pole motor, 0~5.5 rpm, stand, 4-pole 250W motor with various halogen lamp, control box, control module, additional safety device
- The model is painted with different colors to better differentiate the various parts.
- Supplied User Manual with theory

YESA-4701A

Automotive Central Locking System Simulator



FEATURE

- All sensors and actuators should be installed on the trainer panel, full data measurements needed should be taken from the control, OBD II data link connector should be provided, should be able to demonstrate the total construction and operation of automotive "central locking system", Should be able to measure the input and output data of each sensors and actuators, all measurement points should be accessible for the use of multi meters, oscilloscopes, should be able to study the principles of analog / digital conversion
- Supplied User Manual with theory

YESA-4004

Automotive Electricity Component System



FEATURE

- Total wiring system training equipment for gasoline 1500cc passenger car
- Effective understanding of electricity flow by direct driving of automobile electrical equipment and parts and by installing check connector
- Understanding of fuel quantity and changes in ignition system in accordance with rpm by enabling waveform of ckp/cmp and ignition/fuel injection through incorporation of engine rotation
- Equipment to understand and teach overall automobile electric unit ignition system, light system, cooling system, ETACS system, door system, air conditioning system, fuel system, etc.
- As for exterior part, durability was enhanced using special heat treatment powder coating
- Charge System is mounted to the equipment, Fuel injection can be checked by naked eyes.

YESA-3501

Hybrid LPI Engine Diagnostic Simulator



FEATURE

- Manufacturing hybrid starting simulation with Avante 1.6 engine, Hybrid control Unit
- Attached sensor of slant angle, brake boost pressure
- To check the operation such as start of hybrid engine, power support by idle or slow move, driving force support when speed up, energy retrieve decreasing speed (battery charge) with brake switch
- With the center of HCU (hybrid control unit), connect each control unit, ECU, TCM, BMS ECU, MCU, LDC with CAN communication.
- Panel display engine start – engine status
- With diagnosis equipment, check sensor, short circuit, failure diagnosis and output power
- Display panel, ECU circuit, education check terminal and toggle switches are set up in the front control panel, it is convenient to check failure, diagnosis, test and experiment.
- Supplied with theory & student experiment manual

YESA-4800

Electric Vehicle Training Equipment

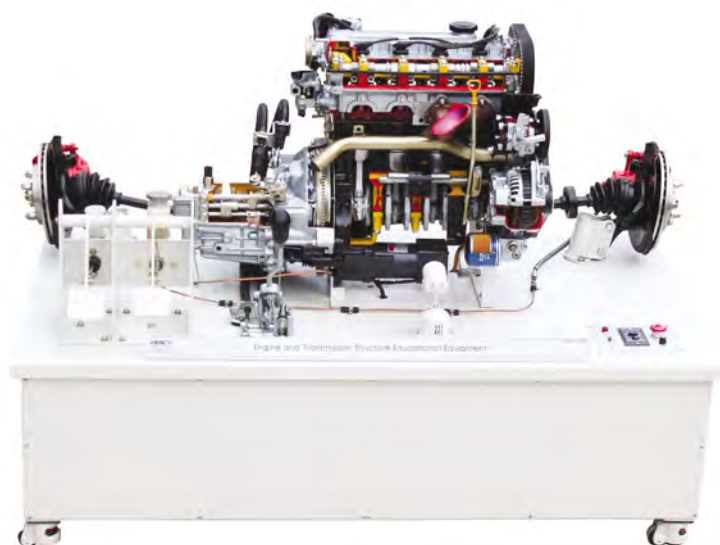


FEATURE

- Checking the power supply
- Checking the sensors
- Checking the actuators
- Determining the influence of the different sensors on the different actuators
- Recording and evaluating the control of the actuators with regard to the input information
- Representing the pressure conditions with regard to the sensor signals and the engine speed
- Representing, recording and evaluating errors which occur in practice
- Supplied with theory & student experiment manual

YESA-1102T

Gasoline Engine with Transmission Training Equipment



FEATURE

- An educational training equipment for teaching inner structure and performance property of gasoline engine, transmission, clutch, transaxle, and others using cross-section of components.
- Operating speed of internal components such as valve, piston, intake and exhaust system, crank, and shaft can be controlled and it can be systematically educated.
- Manual operation of clutch enables transmission.
- Engine: 1,800~2,000cc, gasoline, 4-cylinder, DOHC
- Single phase 220V 180W powered motor drive with various rpm, control box, and lamp,
- The model is painted with different colors to better differentiate the various parts.
- Supplied User Manual with theory

YESA-4801

Electric Vehicle Test System

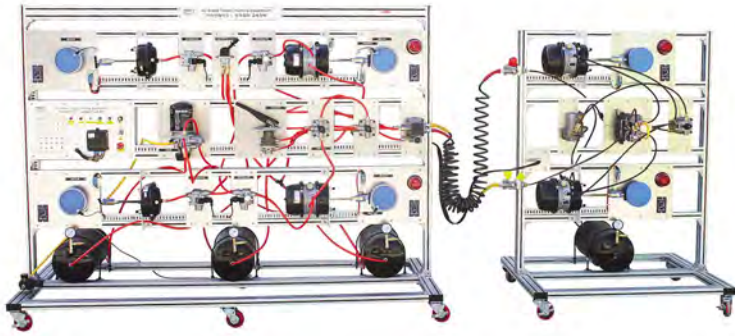


FEATURE

- Adjustment and reaction are available at simulator stand without operating real automotive.
- Diagnosis system shall provide fundamental diagnosis and failure checking features by modifying common settings of an electric car.
- Simulator shall be manufactured so that handling sense and follow-up experiment by mounting the steering system.
- Analysis on waveform measured with environment metering system shall be available using oscilloscope and spectrum.
- Trainees may actually execute test operation of vehicle, deletion of defective code, direct checking of vivid built-in data, command of acknowledge against sensor and actuator using laboratory use tools and so on.
- Using built-in database, trainees are able to check typical comparative data through data and component.
- Supplied User Manual with theory & Experiment

YESA-4911A

Air Brake ABS Training System(Trailer type)

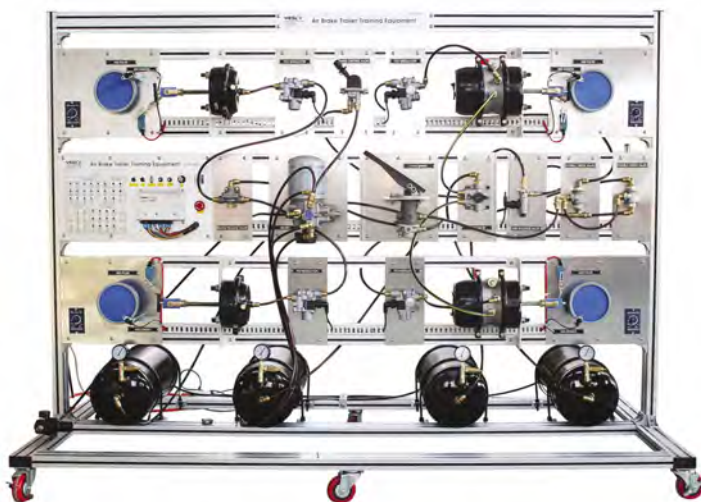


FEATURE

- Trailer air brake system
- Using motor, rotation and speed of the wheel are controlled.
- Actual operation and test by mounting every parts of Air Tank and Air Brake System
- Training of brake and side brake operation status and air line wiring
- Confirmation of actual parts by using names of each part
- Effective control of air brake operation during every movement of air brake and vehicle traveling
- Supplied User Manual with theory

YESA-4911

Air Brake ABS Training System(Truck type)

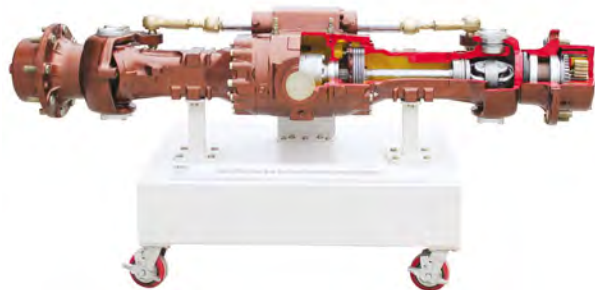


FEATURE

- Truck air brake system
- Using motor, rotation and speed of the wheel are controlled.
- Actual operation and test by mounting every parts of Air Tank and Air Brake System
- Training of brake and side brake operation status and air line wiring
- Confirmation of actual parts by using names of each part
- Effective control of air brake operation during every movement of air brake and vehicle traveling
- Supplied User Manual with theory

YESA-2811

Heavy Machinery Axle Structure Away Model



FEATURE & SPECIFICATION

- The model is painted with different colors to better differentiate the various parts.
- Differential gear of heavy vehicles may be checked with naked eyes and educated.
- The model is painted with different colors to better differentiate the various parts.
- Supplied User Manual with theory

YESA-2810

Tractor Front Axle Structure Model



FEATURE & SPECIFICATION

- An educational system to understand the structure of front axle of a tractor using cross-sectioned components.
- Aluminum control box comprising AC 220V, motor-operated system with various rpm, circuit breaker, fuse, emergency switch, power lamp is provided.
- The model is painted with different colors to better differentiate the various parts.
- Supplied User Manual with theory

YESA-2710

Alternator Model

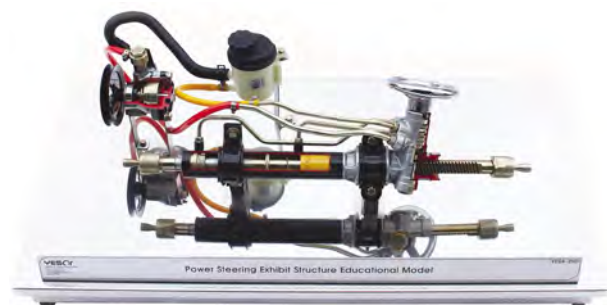


FEATURE & SPECIFICATION

- Effective learning of operating principle and structure of precisely cross-sectioned Diesel alternator.
- Available to select stand type of wooden, steel, and mirror stainless by customer..
- The model is painted with different colors to better differentiate the various parts.
- Supplied User Manual with theory

YESA-2501

Power Steering Rack Model



FEATURE & SPECIFICATION

- Power steering is cut precisely to understand operating relationship of rack pinion, operating concept of power pump and operating structure at the transmission of the driving power.
- Sight glass, suction accumulator, high and low pressure transducer, high and low pressure gauge, high /low pressure switch, head pressure control valve, controller, O/I board box, load center.
- The model is painted with different colors to better differentiate the various parts.
- Supplied User Manual with theory

YESA-2804

Educational Model of Universal Joint



FEATURE & SPECIFICATION

- Effective learning of the principle of universal joint and rotational angle during off-axis operation.
- Operation mechanism
- Operation structure of manual type universal joint can be understood.
- The model is painted with different colors to better differentiate the various parts.
- Supplied User Manual with theory

YESA-2306

Drum Brake Manual Training Equipment

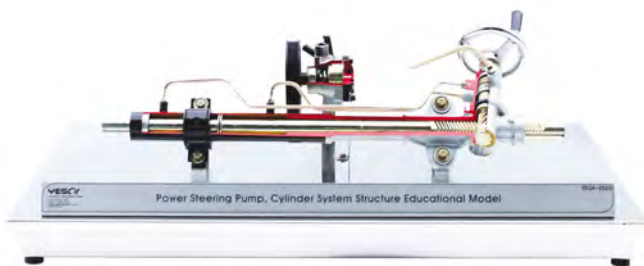


FEATURE & SPECIFICATION

- Effective learning of inner structure and operating principle of drum brake and wheel cylinder using cross-sectioned components.
- The model is painted with different colors to better differentiate the various parts.
- Available to select stand type of wooden, steel, and mirror stainless by customer.
- Supplied User Manual with theory

YESA-2503

Power Steering System on The Steel Plate

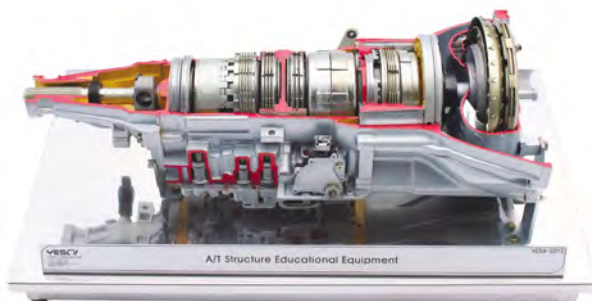


FEATURE & SPECIFICATION

- Effective learning of inner structure of power steering pump and cylinder system using cross-sectioned components.
- The model is painted with different colors to better differentiate the various parts.
- Available to select stand type of wooden, steel, and mirror stainless by customer.
- Supplied User Manual with theory

YESA-2212

Automatic Transmission Structure Training Equipment



FEATURE & SPECIFICATION

- Effective learning of inner structure of F/R type passenger car's 4 speed automatic transmission.
- Rear wheel auto transmission and torque converter are cut precisely to understand structure
- The model is painted with different colors to better differentiate the various parts.
- Available to select stand type of wooden, steel, and mirror stainless by customer.
- Supplied User Manual with theory

YESA-2611

Diesel In Line Plunger Injection Pump Model



FEATURE & SPECIFICATION

- Effective learning of inner structure of in-line plunger injection pump of 4 cylinders direct nozzle using cross-sectioned components.
- The model is painted with different colors to better differentiate the various parts.
- Available to select stand type of wooden, steel, and mirror stainless by customer.
- Supplied User Manual with theory

YESA-2732

Involute Gear Pump Model



FEATURE & SPECIFICATION

- Effective learning of inner structure of engine's involute gear pump using cross sectioned components.
- The model is painted with different colors to better differentiate the various parts.
- Available to select stand type of wooden, steel, and mirror stainless by customer.
- Supplied User Manual with theory

YESA-2714

Worm Reducer, Gear Model



FEATURE & SPECIFICATION

- Effective learning of Operating concept and structure of worm gear within the reduction gear
- Operating relationship may be checked with naked eyes by manual driving.
- The model is painted with different colors to better differentiate the various parts.
- Available to select stand type of wooden, steel, and mirror stainless by customer.
- Supplied User Manual with theory

YESA-2715

Turbo- Intercooler Model



FEATURE & SPECIFICATION

- Effective learning of inner structure of intercooler and turbocharger for high output using cross-sectioned components.
- The model is painted with different colors to better differentiate the various parts.
- Available to select stand type of wooden, steel, and mirror stainless by customer.
- Supplied User Manual with theory

5

Korea Scientific Instruments Industry Cooperative



■ CHUNGPA EMT CO., LTD.	208 ~ 215
■ FESTECH CO.,LTD.	216 ~ 219
■ FESTOONE CO., LTD.	220 ~ 221
■ Hanback Electronics Co., Ltd.	222 ~ 223
■ IEG CO., LTD.	224 ~ 227
■ KTENG	228 ~ 237
■ POSTECH CO., LTD.	238 ~ 247
■ RO BO RO BO Co., Ltd.	248 ~ 249
■ W OOSUN CONTROL CO., LTD.	250 ~ 253

Electric & Electronic Measuring Device, Automatic Control

CPE-EN4500

Smart Grid (Solar/Wind/Fuel Cell) Training System



Features

- Intergrated equipments that is available in theory verification by renewable energy and circuit configuration
- Possible practicing solar energy test by various angles with angle PV module
- Plane PV module is additionally installed
- Designed modules to easily fix on the rack and taken off
- Changing controller and charging battery with protection device
- Possible practicing AC load test with AC power output through the inverter
- Displaying the voltage and current values of testing module on the monitoring module
- Composed of table, module rack, modules and accessories
- Designed for indoor practicing
- Possible measuring voltage, current, and load of both solar and wind
- All-in-one trainer with strong aluminum frame, wheel, module rack and modules
- Insulated connecting cables and I/O terminals for the safety

Experimental contents

- Basic principles of solar and wind power generation
- Principles and system of solar and wind power generation
- Characteristics of power generation by the quantity of light
- V-I characteristics and load of solar power generation by series and parallel connection
- Charging and discharging of storage battery by charging controller
- Power converting by stand-alone inverter
- Street-light controlling by the time of sunup and sunset
- Smart-grid monitoring the values of voltage and current by power systems
- Other various practices about the generation of solar and wind power

Specifications

• Experimental table set :	1ea
• AC power source module :	1ea
• Photovoltaic cell module-A :	1ea
• Photovoltaic cell module -B :	1ea
• IND generator module :	1ea
• Charging controller module :	1ea
• Battery module :	1ea
• Stand-alone inverter module :	1ea
• DC load module :	1ea
• AC load module :	1ea
• Time controller module :	1ea serial receiver
• Automatic charger module :	1ea
• Smart grid monitor module :	1ea
• Arm-typed light source module :	1ea



CP-Solar110

Solar Generating System



Features

- Real-time educational training system
- Designed to enable the user to understand the principal of solar generation, solar cell, power converter, and solar generation system and to make experiments of solar generating structure and operation
- Designed to enable the user to use easily as system diagram is attached with voltmeter and ammeter on every measurement area

Experimental contents

- Practice of the configuration of Solar Generating System
- Practice of Characteristic Curve of the Solar Module
- Photocurrent as a Function of Distance and Angle of Incidence of the Light Source
- Practice of Battery Charging and DC Loading
- Practice of Inverter and DL Loading Characteristics

CP-WS300

Wind Power Training System



Features

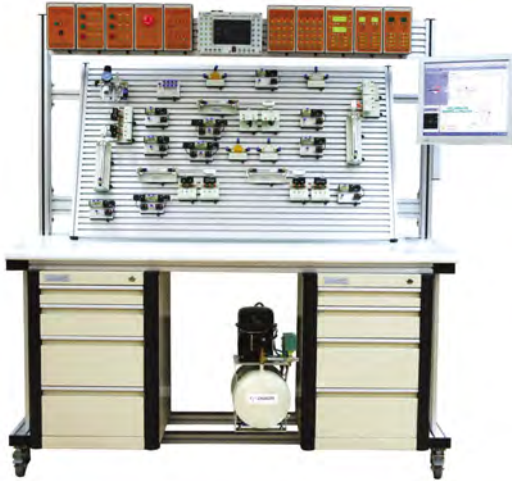
- Wind Generating Trainer was designed for the easy experiment and practice, as a wind and solar generating system.
- Software can be linked with of Wind Generating
- Trainer and the user can monitor data such as the output current and power of temperature, wind speed, wind generating, solar generating, battery voltage, load current, and etc.

Experimental contents

- Wind & solar generating trainer configuration
- Wind & solar generating trainer load device
- Measuring IV characteristic curve of solar cell module
- Measuring photocurrent by incidence angle and distance
- Theory of wind generation characteristic experiment
- Wind power and solar combined training
- Training for software measurement and data management
- Characteristic training by TEST JIG for load test

CPE-PN7000 / 7500

Pneumatics Training System



- Basic Pneumatics Training System
| CPE-PN7000
- Electro-Pneumatics Training System
| CPE-PN7500

Chungpa EMT's pneumatics trainer is very useful to practice various contents ranging from basic and electrical pneumatics principal to applicable control.

Features

- Basic and electrical pneumatics circuit practice using various pneumatics parts
- Relay, PLC, Microprocessor practice
- Suitable to study from basic to high grade technology
- One-touch lever 2 site clamps (convenient to handle)
- The module is movable vertically and horizontally
- Industrial symbols and names are printed on the module panel
- Various optional modules and various parts for FMS

Experimental contents

- Pneumatics principal and practice (more than 35types)
- Electric pneumatics principal and practice (more than 25types)
- PLC pneumatics principal and practice (more than 45types)

CPE-HY8000 / 8500

Hydraulics Training System



- Basic Hydraulics Training System
| CPE-HY8000
- Electro-Hydraulics Training System
| CPE-HY8500

Chungpa EMT's Hydraulics trainer is very useful to practice various contents ranging from basic and electrical hydraulics principal to applicable control.

Features

- Basic and electrical hydraulics circuit practice using various hydraulics parts
- Relay, PLC, Microprocessor practice
- Suitable to study from basic to high grade technology
- One-touch lever 2 site clamps (convenient to handle)
- The module is movable vertically and horizontally
- Industrial symbols and name is printed on the module panel
- Various optional modules and various part for FMS

Experimental contents

- Hydraulics principal and practice (more than 30types)
- Electric hydraulics principal and practice (more than 25types)
- PLC hydraulics principal and practice (more than 45types)

CPE-FMS100

Flexible Manufacturing System



Features

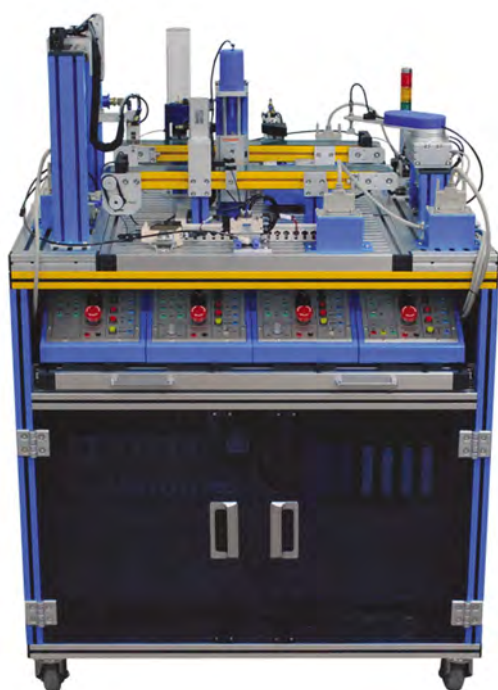
- Individual PLC Programming Training is available with various types of PLC
- Robot Control Training with assembly part
- Vision Camera Adjust Training with inspection
- Servo motor Control Training with storage
- Good/Bad Test with Sensor Control
- Conveyor Control Training
- Factory Manufacturing System control and programming
- Practical experiment with theoretical studying

FMS 10 stations system consists

- Conveyor station
- Distribution station
- Testing station
- Vision station
- CNC station
- Robot station
- Assembly station
- Automatic Storage & Retrieval
- Handling station
- Sorting station
- HMI (Human Machine Interface)

CPE-AT8030N

Factory Automatic Trainer



Features

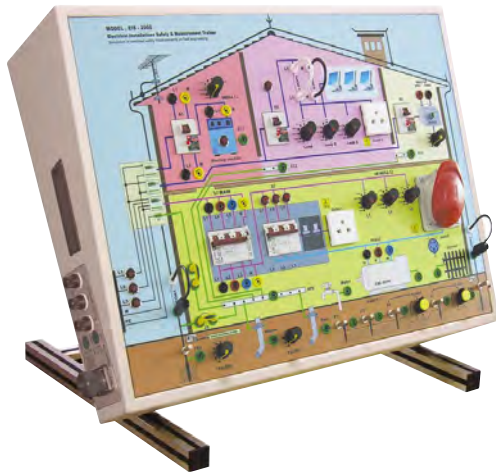
- Air Pressure and electrical air pressure practice.
- Possible to train with every module individually.
- Ø fitting connection.
- Possible to train with all modules generally.
- Used DC power for the safety of control signal.
- PLC control design education of factory automatic control system.

Specifications

- Operation Table
- Intelligent PLC Unit
- Linear movement to load and unload the work
- Conveyance and separation of the work
- Pick and Place of the work
- Conveyance and Machining process of the work
- PLC Control unit and system table : slide configuration (optional)

EIS-2000

Electric Installation Safety Measurement Trainer



This trainer is the integrated simulation equipment for measuring AC voltage, DC voltage, earth resistance, insulation resistance, and leak current in single-phase AC, 3-phase AC, 3-phase 4-wire AC circuits and for allowing the test of electric leak cutoff.

Features

- Electric safety education preventing from electric accidents
- Grounding and electric installation safety education
- Electromagnetic Interferences and their prevention education
- Static electricity disturbances and their prevention education
- Thunderbolt damages protection education
- Inspection prior to the power supply of electric installations
- Experiments and practices of electric equipment safety
- Single phase / three phase voltage measurements
- DC voltage measurements
- R/S/T phase and live line voltage detection
- Insulation resistance measurements
- Ground resistance (2 point, 3 point type) and earth voltage measurements
- The measurement experiment of ground resistance which is influenced by earth resistivity
- Leakage current measurements and electric leakage breaker test
- Measurement of wiring continuity test

CPE-MP100B

Microprocessor Training Kits



Main configurations

1. Microprocessor master unit (MP100B Master) : 1set
2. MCU board : 3ea
3. Experimental control module : 6ea
4. Interface cable and high strength jump wire set : 1set

CPE-MP100B is basically composed of 3 MCU boards, 1 microprocessor master unit (MP100B Master), and 6 interface control experimental modules. In addition, the training kit is supplied with various cables and an experimental guidebook as well. CPE-MP100B has 11 optional experimental control modules like peripheral expand 8255 module by which users are able to learn various studys like industrial facility control and automatic control

Features

- MCU (AT89S51 or 8051 / ATmega8535 or ATmega128 / PIC 16F874) characteristics
- Hardware interface
- MCU software and development tool
- General-purpose input/output port
- Make additions to Parallel I/O port
- AC I/Oport additional function
- Interrupt control
- Analog comparator
- Analog to digital converter(ADC)
- Digital to analog converter(DAC)
- SPI(Serial peripheral interface)
- USART(Universal synchronous and asynchronous serial receiver and transmitter)
- RS232, Parallel, and USB interface control
- Graphic LCD Module control
- 7-segment LED control
- Dot-matrix control
- LED control
- Relay control
- Limit switch and read switch control
- 16-Key control
- PWM DC motor control
- Step-motor control
- Thermistor (NTC) and CDS control
- Infrared light sensor control

CPE-E02400

Basic Electricity & Electronics Trainer



Accessories

- User's Manual : 1ea
- Power Cable : 1ea
- Connection Cable : 1ea

Features

- Basic principles of electricity circuits
- Convenient module changes with One-touch connection way
- Supply all input power by a main component
- Configure with 3~6 experimental circuits in each module (subject)
- DC, AC power signal about input signal is available with an additional function generator
- Comparison experiment is available about changing of characteristics and variables.
- Easy access about circuit with graphic expression of module circuits

Specification(Main Frame : Power Console)

Power Supply Section	DC Output : 0_20V, 2A (Connector & Terminal Output) ± 5V, 1A (Connector & Terminal Output) ± 15V, 1A (Connector Output)
	AC Output : 24V (CT), 0.5A (Connector & Terminal Output) ± 12V, 1A (Connector Output)
Indication	Variable Voltage Output : 0~20V
	Digital Volt Meter : AC/DC 2V, 20V (2ranges)
	Digital Current Meter : AC/DC 0.2A, 2A (2ranges)
Protection Circuit	AC Output Circuit : 12V+12V (24V) (With Reset)
	DC Output Circuit : +12V, 5V, -5 (With Reset)
Input Power	AC 240V, 50/60Hz

CPS-3500U

Universal Programmable Logic Control Training System



Features

- Setup Input/output conditions by various simulation. PLC experimental practices in automatic system.
- Ease of model replacement and conjunction with replacement operation by easy detachable one of trainers among MITSUBISHI, SIEMENS, LS Industrial system, and PLC.
- Built-in DC24V power supply and aluminum profile to ease attach of practice modules.
- Modular input and output devices for expansion and conjunction operations.
- Experimental content is able to change to appropriate state for industry, according to demanding of user.
- DC power monitoring device(4digit) to confirm power condition.
- Built-in over load protection device to turn off from outside.
- Fix 4Ø plug terminal by PCB.
- Display current consumption with variable power output.

The experimental trainer is a lab automation trainer system, pneumatics, hydraulics, sensors, electric sequence, and motor control practice, which can be done at concurrently by connection with various PLC control circuit to actual PLC. It allows various experimental practices to study expert application of advanced process technology by attaching easily an additional special module.

CPE-ER1100

Intelligent Light Control Trainer



Features

- 6-experimental modules
- All kinds of lighting control function
- MCU (ATmega128) control
- CDMA Wireless communication control by mobile phone
- PC interface program control
- All kinds of I/O devices control
- Firmware download training using ISP port
- Ubiquitous remote control training
- Building lighting control principal training
- Lighting control circuit design and lighting power control circuit training

Experimental contents

- Illumination intensity measurement training by CDS
- Illumination intensity measurement training by Photo TR
- Lamp operation and control training by sequence training equipments
- Lamp operation and control training by PLC
- Xenon lamp operation and control circuit training
- Halogen lamp operation and control circuit training
- LED control training
- Dot Matrix control training
- High brightness LED control training
- O-LED control training
- Control training by SCR & TRIAC
- Control training by A/D, D/A converter
- Dot Matrix control training by PWM type
- Control training by timer
- Stage lighting simulation training
- CDMA Wireless communication lighting control by mobile phone training
- Ethernet(TCP/IP) network control training

CSN-2005

Integrated Sensor Application Trainer



Main configurations

- CSN-200 Sensor network system (main unit)
- 22 ea of sensor circuit experimental modules
- 15 ea of sensor units
- PC Application software, accessories, system case, and etc..

CSN-2005 is very useful for various and systematical trainings as this trainer consists of one main unit(CSN-200), and various sensor circuit experimental modules and sensor unit, one bread-board module, one external I/O control module, and PC application software.

Features

- Sensor signal measuring experiment through main unit (CSN-200)
- Real time measuring for sensor signal waves
- Digital graphic LCD display with high sensitivity
- Quick and precise response of measuring values
- PC interface through 2-USB / RS-485 communication
- Sensor characteristic experiment through PC application S/W
- Automatic recognition of sensor modules
- 4-Channel sensor experimental module interface
- External output control practice through sensing data
- RF(Radio Frequency) transmitting practice of sensor values
- Various analogue sensor characteristic practice
- Sensor signal AD converting and digital control
- Sensor circuit controlling practice through Microcomputer(CSN-200)

CPE-MP500

Ubiquitous Mobile Tracking System



■ Main System (CPE-MP500-SM) ■ Main System (CPE-MP500-TM) ■ Sub System (CPE-MP500-SUB)

Features

- Remote control functions with Mobile Transmitter & Receiver
- Display various sensor data values in TEXT LCD
- GPS module control and GPS data analysis
- GEO-Fence setup and control
- Data query features of user interface
- Main and Sub System real-time monitoring and control
- Remote monitoring and control with CDMA communication, internet, web server
- Measure temperature, humidity, solar light, gas and transfer location data with GPS function
- wireless communication network in indoor/outdoor
- Convenient control and use with Key Pad and touch panels

CPE-TC5010

Wireless Communication & Antenna Trainer



Features

- Basis practice for antenna characteristics and wireless communication
- Compose of various and different types of antenna
- Practice for the characteristics of various antennas
- Multi-channel RF source of 500MHz, 2GHz, 10GHz
- PWM integral comprehension and characteristics experiment
- PLL-VCO (Phase Locked Loop-Voltage Control Oscillator) experimental
- Possible to select various frequencies and antennas
- Possible to measure and analyzer frequency and characteristics of various antenna types

Accessories

- Basic Antenna : 8ea
- Application antenna (optional) : 10ea
- RF-Cable (SMA to SMA), 1.5m : 2ea
- BNC-SMA Cable, 1.5m : 2ea
- BNC-BNC Cable, 1.5m : 2ea
- Motor Cable : 1ea
- Serial Cable : 1ea
- User's manual : 1ea
- Computer Program CD : 1ea
- AC Power cable : 1ea



FP-100 series

Pneumatics training set



The pneumatics training set is composed of various industrial pneumatic parts. All the parts are adopted one-touch mounting clamp so that users can easily attach it and make a pneumatic circuit. Pneumatic training package is consist of FP101, FP102, FP201 and FP202.

FP101 is for basic level of pneumatics and FP102 is for advanced level. FP201 and FP202 are electro-pneumatic training packages. FP201 is for basic level and FP202 is for advanced level.

FH-100 series

Hydraulics training set



The hydraulics training set is composed of various industrial hydraulic parts. All the parts are adopted one-touch mounting clamp so that users can easily attach it and make a hydraulic circuit. Hydraulic training package is consist of FH101, FH102, FH201 and FH202.

FH101 is for basic level of hydraulics and FH102 is for advanced level. FH201 and FH202 are electro-hydraulic training packages. FH201 is for basic level and FH202 is for advanced level.

FS-100 series

Sensors training set



Sensor training package is consist of FS110, FS120, FS130.

FS110 is Poximity Sensors training packages. The equipment set FS 110 offers comprehensive training on the topic of proximity sensors. FS120 is sensors for distance and displacement. FS130 is sensors for force and pressure. The equipment set FS130 uses force and pressure sensors with an analog output. The output signals of the analog sensors are measured with a digital multimeter.

FATK series

MAS



FEATURES

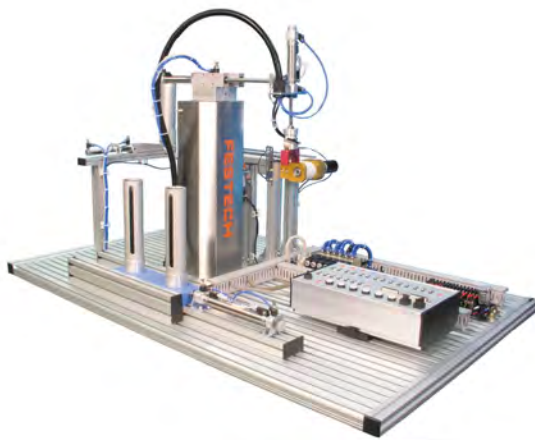
- Each module has a mounting clamp
- Variable module combination
- Open structure for practical training
- 4mm standard electric socket

COMPONENTS

- Distribution module
- Transfer cylinder module
- Conveyor module
- Tower lamp module
- Solenoid valve & relay module
- Drill motor module
- Sensor test module
- Ejecting module
- I/O control module

FATK series

PTP robot



FEATURES

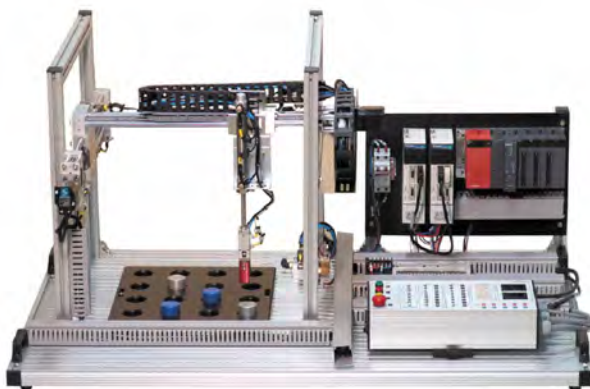
- Pneumatic transfer and sorting system
- Real industrial parts
- Basic and advanced training
- Open structure for practical training
- Control module for Auto/Manual
- 4mm standard electric socket

MAIN COMPONENTS

- Distribution module
- Conveyor module
- PTP robot module
- Sensor unit
- Sort & storing module
- Control module

FATK series

Motion Control Trainer



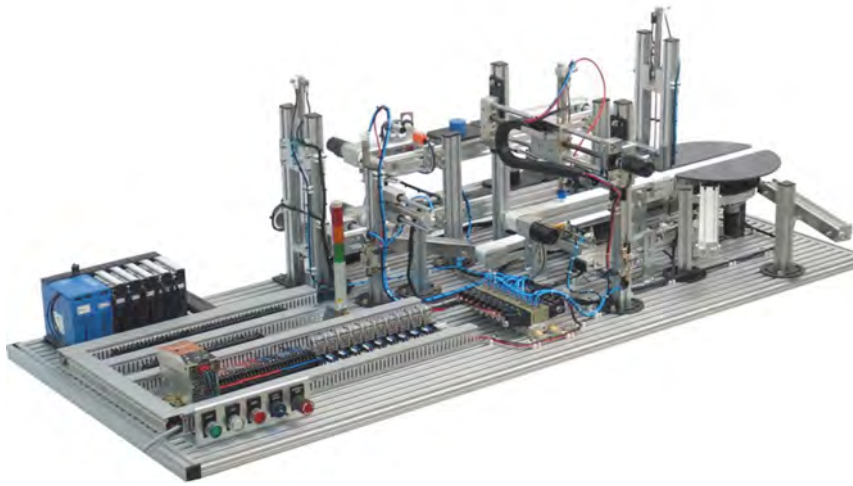
FEATURES

- 2 axes servo motor system
- Linear spindle drive type
- Pneumatic hand gripper for workpiece handling
- Basic and advanced training
- Open structure for practical training

MAIN COMPONENTS

- Linear spindle drive module
- Pneumatic gripper module with double-acting cylinder
- Servo drive and PLC
- I/O control module
- Graphic touch panel (option)

VMS (Variable Mechatronics System)



VMS is a basic step to learn the advanced technologies for the FMS, and a training equipment to develop the mechatronics experts. VMS consists of module components, so as to be used for the practice of assembly/disassembly. VMS is expandable equipment that allows the trainees realistically simulating the industrial field increasingly complicated.

VMS allows the reconfiguration of process and system in steps from a simple and basic operation to the complicated operation to suit the ability of trainees. A variety of workplace practices in the production system, including design, assembly, programming, operation, maintenance and repair, are available in VMS.

In addition to the expertise of mechatronics, VMS provides the system to develop a project based integrated personal abilities, including teamwork, cooperation, education, unique design and comprehensive analysis.

Training purpose

- Work Plan
- Control and Operation
- Assembling Machines and Systems
- Maintenance
- Programming
- Troubleshooting

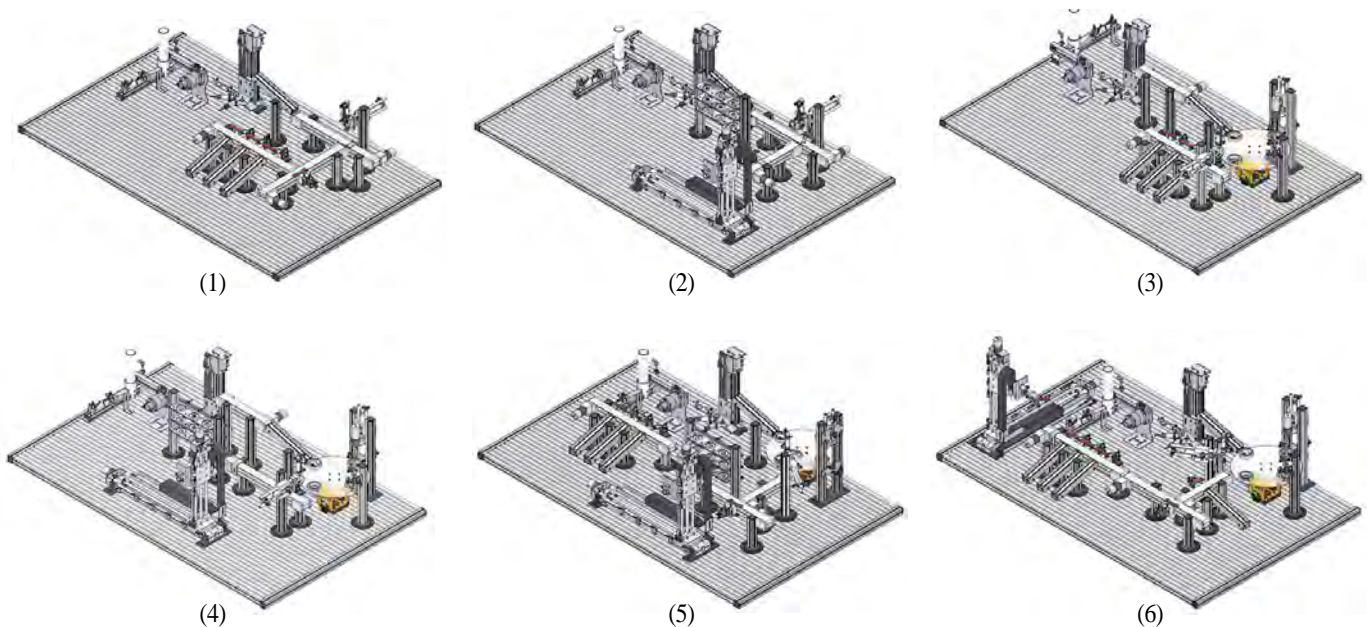
Variable processes

VMS includes processes with different operating conditions and scenarios. A variety of configurations and combinations of processes are available to meet the user's needs. It is possible to customize the practice equipment from module and a single process to the integrated processes.

< Example of processes >

- Distribution : Sequentially distributes the workpieces stored in a magazine.
- Testing : Determines the material, color and height of workpieces.
- Processing : Uses a rotary index table to process the workpieces, and test the processing condition.
- Handling : Pneumatic actuators arranged on orthogonal axis delivers the workpieces to the next process.
- Buffer : Controls the flow of workpieces for a flexible operation between the stations based on the waiting time and operating time.
- Sorting and storing : Sorts and stores the workpieces into slider or warehouse based on the information of workpieces.

VMS Scenarios











MPS (Modular Product System)

- MPS was developed for actual training of production field technology and automation system.
- Not only theoretical knowledge but also practical technology for system designing, making, operating and maintenance is mastered with this training set.
- MPS is composed of various modules for easy separating, assembling and maintenance.
- It is possible to obtain overall knowledge of electro-pneumatics, control engineering, sensor and mechatronics.

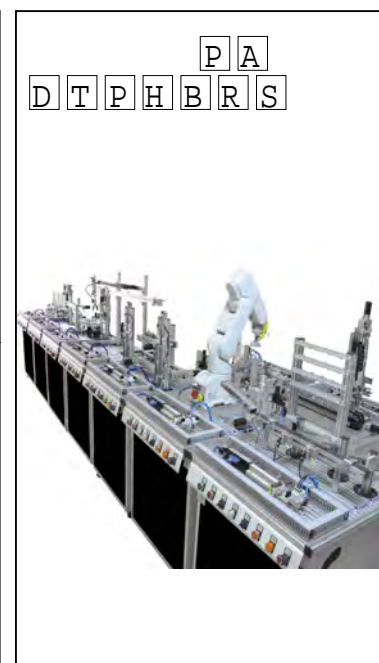
FEATURES

- Various stations
- Industrial parts and practical connection
- Selectable controller
- High compatibility and expansion
- Customer order made solution
- Creative project for apprentices
- Easy combine with robot controller

Combination of stations

<p>There are 9 stations which can be combined each other.</p> <p>Basically all the parts on the station are completely fixed and electrically wired.</p> <p>Example of combination</p> <p>D+T+P</p> <p>D+T+S</p> <p>D+T+P+H</p> <p>D+T+P+H+B</p> <p>D+T+P+H+B+R</p> <p>D+T+P+H+B+R+S</p> <p>D+T+P+H+B+R+S+P+A</p>	<p>D Distribution</p>  <p>Distributes a source material from its magazine</p>	<p>T Testing</p>  <p>Tests material and status of work-piece with sensors</p>	<p>P Processing</p>  <p>Makes a drill hole and test it on rotary index table</p>	<p>H Handling</p>  <p>Transfers the work-piece into another place with a rotary cylinder</p>
	<p>B Buffering</p>  <p>Delays time for sequential processing</p>	<p>R Robot</p>  <p>Assembles and handles work-piece</p>	<p>S Sorting</p>  <p>Sorts and stores work-piece according to product data</p>	<p>Pr Pressing</p>  <p>Press and distribute work-piece cap</p>

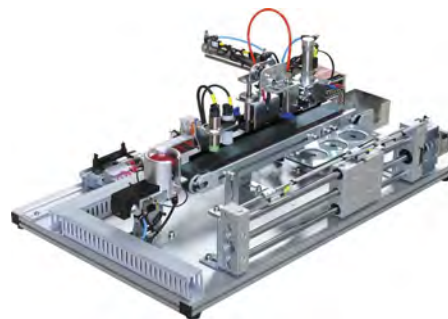
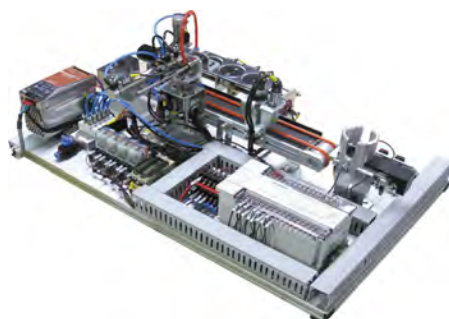
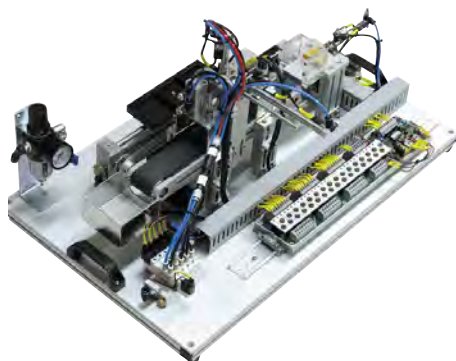
MPS-9 Stations



FATK series

MMPS (Mini Multi Programming System)

- Standard model (ON:25036)
- New-Basic model (ON:25037)
- New-Advanced model (ON:25038)



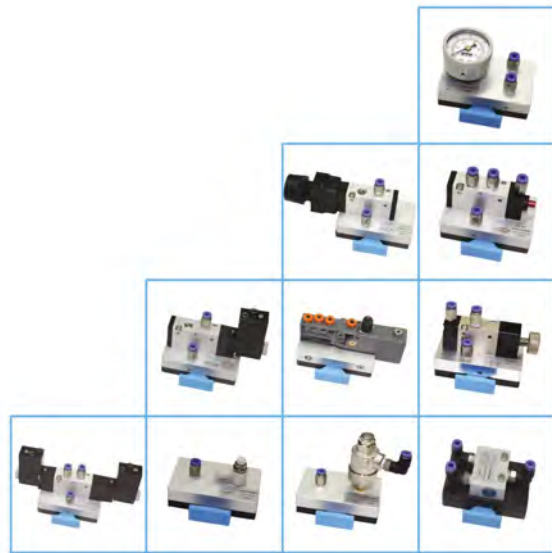
FEATURES

- Simulation system for production
- DC motor and belt conveyor
- Stepping motor drive
- Various industrial sensors
- Basic and advanced training
- Open structure for practical training

Main Components

- Distribution unit
- Sensor & conveyor unit
- Handling unit
- Storage unit for stepping motor
- Solenoid valve unit
- I/O control module

Pneumatics System Training Kit



FEATURE

Pneumatics System Training Kit enables combining theory and practice of Pneumatics.

This kit provides sufficient training from basic knowledge and applies knowledge of Pneumatics as well as PLC education. Work station, which is biotechnologically designed and the combination of aluminum profile provides ONE-STOP education environment for various automation tests. Pneumatic training kit is consist of FOPn101, FOPn102, FOPn201, FOPn202, FOPn301, FOPn302, FOPn401 and FOPn402.

FOPn101 is for basic level of pneumatics and FOPn102 is for advanced level.

FOPn201 is for basic level of Electric pneumatics and FOPn202 is for advanced level.

FOPn301 is for pneumatic compact level and FOPn302 is for electric pneumatic compact level.

FOPn401 is for Mobile pneumatic system and FOPn402 is for Mobile electric pneumatic system.

Hydraulics System Training Kit



FEATURE

Hydraulics System Training Kit enables combining theory and practice of Hydraulics.

This kit provides sufficient training from basic knowledge and applies knowledge of Hydraulics as well as PLC education. Work station, which is biotechnologically designed and the combination of aluminum profile provides ONE-STOP education environment for various automation tests. Hydraulics system training kit is consist of FOHY501 and FOHY502.

FOHY501 is for basic level for hydraulics and FOHY502 is for basic level of Electric hydraulics.

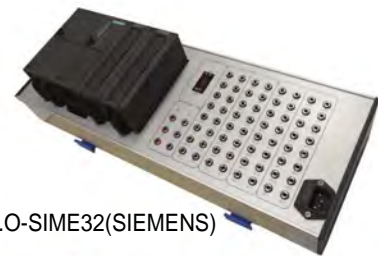
PLC Training Kit



F.O-MP.TK300



F.O-MP.TK400



F.O-SIME32(SIEMENS)



F.O-GP.TK200



F.O-GP.FD-32



F.O-MPU16(MITSUBISHI)

FEATURE

All the PLC practical equipments of FESTOONE are designed to enhance the training effects for both theory and actual performance with user friendly manufacture of diverse on-market products.

able to select&combine the proper control module in accordance with the training target.

Variable utilization with compatible combination for the environment of the diverse automatic practical equipments and training mechatronics such as electric, pneumatic control, etc.

easy&simple connection by using of 4mm banana jack for all the wiring of equipments.

able to reduce the practice time with easy attachment/detachment to the profile system by applying the one-touch clamp device to PLC practical equipment. PLC training kit is consist of SIEMENS PLC

(F.O-SIME32), MITSUBISHI PLC(F.O-MPU16), PLC Touch screen system(F.O-MP.TK300), PLC motor system

(F.O-MP.TK400), Module-type PLC(F.O-GP.FD-32) and Multi modular PLC(F.O-GP.TK200), etc.

Production Automatic System Training Kit



FEATURE

This kit increases the efficiency of distribution management, such as dealing & keeping distribution and unloading. Also, it can be applied in production management system and material management system. This kit can be designed and constructed according to the needs of the user.

Motor System Training Kit



FEATURE

Motor System Training Kit, which used Servo Motor or Stepping Motor is an automation kit. By acquiring the mechanism of the motor, this kit enables keen location control and speed control by using the most used parts in the actual industry.

Intelligent Robot System



HBE-Balance Robot



HBE-Erobo-TANK



HBE-ROBONOVA-AI II



HBE-RoboCAR-Embedded II



HBE-RoboCAR



HBE-RoboCAR-Vision



HBE-RoboCAR & USN



HBE-RoboCAR-Arm



HBE-RoboMotor

- **HBE-Balance Robot :**
Study Basic Control and Balance Control of Two-wheel Actuator
- **HBE-EROBO-Tank :**
Intelligent Caterpillar Traction Tank Robot System
- **HBE-ROBONOVA-AI II :**
Intelligent two-legs walking robot equipped-CCD camera(Robot eye)/32bit embedded board(RoboBrain) installed with 32bit Real time image processing using FPGA
- **HBE-RoboCAR-Embedde II :**
ARM Cortex-A8(SV210) based Embedded Systems based on Real Intelligent Robot Platform
- **HBE-RoboCAR :**
8-bit microprocessor (ATmega128L)based Robot, driving unit enabling various sensors and motor control experiment, Converged with HBE-SM2/HBE-MCU-Multi/ HBE-ZigbeX
- **HBE-RoboCAR-Vision :**
Real-Time Robot Image Processing (Acquisition, Tracing, Recognition) Training Kit
- **HBE-RoboCAR-ARM :**
the servo motor control training for six joint arm
- **HBE-RoboMotor :**
Can learning Motor and Sensor for Robot Training kit

Network Educational Platform



HBE-ZigbeX II



HBE-Ubi-nanoLOC



HBE-Ubi-HomeNet



HBE-Ubi-Box II



HBE-Ubi-House II



HBE-WPAN

- **BE-ZigbeX II :**
A New Efficient base station of ported TinyOS 2.x for wireless sensor network
- **HBE-Ubi-NanoLOC :**
CSS (chirp spread spectrum) technology is used to measure the Distance
- **HBE-Ubi-HomeNet :**
New Ubiquitous Home Network Test-beds based on Wireless Sensor Networks
- **HBE-Ubi-Box II :**
A New Efficient base station for wireless sensor network
- **HBE-Ubi-House II :**
The Applications Platform of Home Network
- **HBE-WPAN :**
A Comprehensive training kit for wireless personal communications

FPGA

RFID

DSP



HBE-COMBO II



HBE-RFID-REX II



HBE-DSPLAB II

- **HBE-COMBO II :**
FPGA(ALTERA / XILINX) Device design training kit
- **HBE-RFID-REX II :**
RFID(Radio Frequency Identification)Training platform
- **HBE-DSPLAB II :**
TMS320F28335 DSP(Digital Signal Processing) Trainer

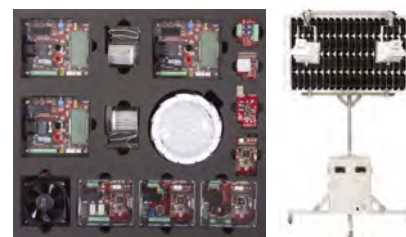
Green IT Experiment System



- **HBE-Green-Energy**
New Energy and Renewable Energy
Integrated test Platform



- **HBE-Green-ETS-Solar**
A Platform for Photovoltaic System
Experimental Test and Basic Test



- **HBE-Green-HomeNet**
Green Home Test Platform applying
Photovoltaic Power Generation and USN

LED Experiment System



- **HBE-Green-LED**
A Platform for LED Basic Test
and LED Application Test



- **HBE-LED-Lighting**
Test Equipment for Smart
Lighting using LED



- **HBE-EMPOS III-SV210**
Android/Embedded Compre-
hensive Training System



- **HBE-SM5-S4210**
Dual-core Android
Convergence Test System

Electric & Electronics Experiment



- **HBE-B3E**
PC-based Electrical & Elect-
ronic circuits integrated lab Kit



- **HBE-LogicLAB-D**
Basic Digital logic circuits
Experiment kit



- **HBE-LogicCircuit-Digital**
Modular Digital logic circuits
Experiment kit



- **HBE-LogicCircuit-Digital**
Modular basic Electronic
Circuit Experiment Kit

Sensor



- **HBE-Sensor-Multi**
practicing application of various
sensors

Microprocessor



- **HBE-MCU-Multi**
AVR/8051/PIC
microprocessor trainer consist of various
modules for convergence concept

Communication



- **HBE-OPT-303**
Function Generator, Light Source (1310/1550/650nm), Dual
Optical Receiver, and Digital Oscilloscope

LED Solution

IEG 6690

LED Display control System



IEG 6691

LED Lighting control System



IEG 6611

LED Trainer



IEG 6615

LED Trainer (Portable Type)



Features

- Large sized LED display system for exterior lighting experiment in laboratory and LED lamps control system in actual home or building (on/off control, dimming control, color control)
- LED modules removable from Base system, and support DMX512 protocols, inter-module communication with RS485 communication.
- 13 experimental modules provided for LED Training from basic circuit to full color LED sign board application. Each modules provide hardware test point to improve LED control principles.
- Provides a breadboard to circuit configuration for advanced applications (LED brightness control, color control, multiple lights control)
- Practice of basic drive, constant voltage drive, constant current drive, serial and parallel connection of LEDs.
- Microprocessor in each modules provide special functions, basic LED lighting control, LED lighting control with sensors, smart lighting control and microprocessor embedded in each Individual modules enable communicate between the modules by RS-485.
- PWM & Brightness Control, AC LED brightness control and Webbench exercise
- LED pattern control, and LED control practice by various kind of sensors (Cds, Ir, pressure, temperature sensors)

+ Installation Case of LED Solution



LED Workshop



LED Fountain

Digital Integrated Protection And Monitoring System Trainer(GIPAM)

IEG 6401

GIPAM-2000 FI Simulation Trainer



Features

- Monitoring and measurement for protecting a variety of power distribution systems. By using LS Industry GIPAM power protective surveillance system, it is proper for a trainee to understand power simulation and have a practical training for necessary equipment applicable to on site
- PC interface program(G2K Manager) can easily set up all kinds of protective relay elements and various functions.
- Monitoring through MIMIC Diagram is made available and operational status of a protective relays can be checked (On-line)
- Up to 800 event records such as operation and in/output status of protective relay and circuit breaker, a user's controlling details, and savable memory are available
- When a problem occurs, up to 200 detailed information regarding its root cause, voltage in breakdown /data on voltage
- Harmonics spectrum is displayed, and input voltage and current phase is displayed as vector diagram
- Current-measuring instrument proper for time characteristic wireless monitoring and load characteristic can be implemented
- Protective function on temporary and sequential factors
- Status on voltage/current can be monitored by the meter through which set point can easily be adjusted automatically or manually as attached to the frontal plate

+ Digital Protective Relays

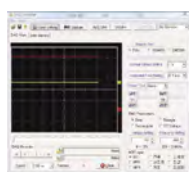
- Over Current Relay : 50/51
- Ground Overcurrent Relay : 50/51N
- Negative Sequence Overcurrent Relay : 46
- Undervoltage Relay : 27
- Residual Undervoltage Relay : 27R
- Overvoltage Relay : 59
- Ground Overvoltage Relay : 64
- Negative Sequence Overvoltage Relay : 47N
- Phase Open Relay : 47P
- Sensitive Directional Ground Relay : 67G
- Directional Ground Relay : 67N
- Thermal Overload Relay : 49
- Stall/Locked Rotor Relay : 48/51LR
- AC Reclosing Relay : 79
- Differential Relay : 87T
- 3Phase TR Inrush Current Detector : 68

+ Precision Measurement Function

- Phase Current / Voltage
- Volt-Ampere / Zero-Phase Voltage
- Phase / Active-Reactive Power
- Power Factor / Zero-Phase Current
- Active Power Demand
- Apparent Electric Power / Fundamental Power Factor
- Voltage Harmonics / Frequency
- Reactive Power Demand
- Current Harmonics / Current Demand

PC Based Sensor Trainer

IEG 3300
PC Based
Sensor Trainer



IEG DAQ Viewer (Monitoring S/W)



Basic Table

Features

- Various sensors are included extensively in the IEG 3300 pc based sensor trainer. Tutorials includes sensor characteristics, function, configuration, areas of application and the selection of sensors based on the requirements of an application. The equipment set contains electricity, electronics, automation, robotics, renewable energy and basic science sensors with experimental examples to educate the operational principles of different sensors.

Measure and control modules

DAQ controller module with pc monitoring software,
Power supply & breadboard module

Sensor modules

Motor speed control module, Lamp/buzzer module, Counter module
Lamp control application module, Motor control application module,
Input/output module, OP-Amp & comparator module
Voltage/current measurement module, Load cell module,
Acceleration sensor Module, Renewable energy sensor module,
CdS sensor module, Photo diode module, Photo transistor module,
Transmissive photosensor module, Reflective photosensor module,
Mirror reflective photosensor module, Optical fiber sensor with amplifier module,
Hall sensor module, Hall IC sensor module, Thermistor(NTC) module,
Thermocouple module, PT thermistor module, Pyro-electricity sensor module,
Ultrasonic sensor module, 2 Inductive proximity sensor modules,
Capacitive proximity sensor module, Gas sensor module(LPG/LNG/Methane),
Humidity sensor module, Heating module, Spindle drive unit,
Motor control module, Optical transform module,
Weight-load set for load cell test, Slide unit, Specimen set

Pneumatic / Hydraulic System Trainer

IEG 4000
Pneumatics System Trainer



IEG 4100
Hydraulic System Trainer



Features

- Workstation system for basic and advanced electro-pneumatics and hydraulics training. This conventional training system equipped with brand-new industrial components, enables learning latest industrial standard technologies.
- The universal aluminium profile working board used in conjunction with workstation system easily change slope angles for convenience training. Ergonomically designed training components can be flexibly positioned and securely mounted in the universal aluminium profile working board using our unique designed one touch hand lever clamp.
- The new version of simulation software for training industrial automation is optionally provided. Pneumatic system simulation software, hydraulic system simulation software, PLC simulation software, sequence circuit simulation software.

Pneumatic Training System	Working table (W)1400cm x (H)1600cm x (D)800cm Working board (W)1100cm x (D)760cm Pneumatic cylinders, Pneumatic valves Electro-pneumatic valves, Sensors, Relay units, Counter and switch units
Hydraulic Training System	Working table (W)1500cm x (H)1650cm x (D)850cm Working board (W)1100cm x (D)760cm Hydraulic cylinders, Hydraulic valves Electro-hydraulic valves, Sensors, Relay units, Counter and switch units
Pneumatic simulation S/W	Option
Hydraulic simulation S/W	Option
PLC simulation S/W	Option
Sequence circuit simulation S/W	Option

SIEMENS PLC Application Trainer

IEG 3430

SIEMENS SMSCP (Siemens Mechatronics Systems Certification Program) Trainer



Features

- An authorized system from SIEMENS for training SMSCP (Siemens Mechatronics System Certification Program), from SMSCP level 1 to level 3.
- Various electrical and mechanical components are equipped to improve control skills and HMI (Human Machine Interface) control skills can be advanced by provided touch panel, many kinds of analog and industrial sensors and Pneumatics parts are synthetically installed
- 9 kinds of separated units can be operated individually and integrative from 2 units combination to all units combination.
- SIEMENS S7-300 Series 314C-2DPA PLC installed at every single unit to deploy the Profibus PLC network by using DP port.
- Understanding and learning the mechanism of mechatronics system through assemble and disassemble the system.

IEG 3210-S

Modular Type PLC Trainer



IEG 3221S / 3241

Portable Type PLC Trainer



IEG 2600

X-Y Gantry Robot Trainer



IEG 3770

Inverter Trainer



Transparency and Safety covered Motor & Generator Trainer



Features

- Provide specially designed transparency safety cover enables experimentator observe the inside of motor and generator while conducting experiments.
- Control circuits are printed on the control panel and current meter, voltage meter, power meter, variable resistor, load resistor, and NFB for safety protection is equipped for experiments.
- Each kind of Motor & Generator training system provides unique learning courses that developed by electrical machine research center of IEG.
- Transparency covered motor and generator is provided to examine the structure of Motor and Generator. To determine its starting, no-load and loaded characteristics of motor and generator system.



IEG 6011

- DC Motor (Shunt/Series winding)
- DC Generator (Compound Winding)



IEG 6012

- Squirrel Cage Induction Motor
- DC Generator (External Exciting)



IEG 6013

- 3 Phase Synchronous Motor
- DC Generator



IEG 6014

- DC Motor (Compound Winding)
- AC Generator (Synchronous Machine)



IEG 6015

- Synchronous Motor (3-Phase)
- DC Generator (Self Exciting)



IEG 6017

- Synchronous Motor (3-Phase)
- AC Generator (Synchronous Machine)

NI ELVIS II Application Modules

NI Application

NI ELVIS II Application Modules



Features

- ELVIS II application board for analog, digital, OP-AMP, communication, applied electron, electric circuit, physiological measurement, energy conversion, alternative energy system education.
- By using NI LabVIEW software and ELVIS II, engineering teacher oriented experience enables teaching material to be applied to actual designing
- By using Multisim, students are able to test the performances of designed circuit through embedded NI ELVIS II virtual instrument and probe
- The circuit designed in Multisim SPICE simulation S/W is equipped with 12 integrated instruments with oscilloscope, digital multi meter, power supplier, function generator and etc. as same as real thing, and can completely be interchanged by using LabVIEW
- It has function on Hi-Speed USB plug and play and free curriculum, and if additional modules with measurement, circuit, microcontroller designing, simulation, prototype and etc. are equipped, concept learning is available
- For teaching basic concept of control, communication and embedded design, plug in device of competing companies can be added
- With NI ELVIS II instrument of Multisim, simulated data can be compared to real signal



Analog Application Module (9 kinds)

- Ohm's Kirchhoff's Law & Variable Power
- Transistor Amplifier Circuit
- FET Basic & Amplifier Circuit
- OP-AMP Circuit
- Multi Vibrator
- Transistor Amplifier Application
- Basic Power Supply Circuit
- Analog/ Digital & Digital/ Analog Converter
- Signal Converter Circuit



Digital Application Module (5 kinds)

- Basic Switching Circuit
- Logic Gates Circuit
- Arithmetic & Combination Logic Circuit
- Flip-Flop Basic Circuit
- Flip-Flop Application Circuit Board



Electricals & Electronics Basic Module (16 kinds)

- Ohm's Law
- Volt Meter
- Ampere Meter
- Ohm Meter
- Transformer & Transformation
- Inductor & Inductance
- Capacitor & Capacitance
- LC Circuit Resonance
- Kirchoff's Law
- Resistance Bridge
- 3-Phase Transformer Connection
- Relay & Latch Circuit
- Half & Full Wave Rectifier(1-Phase)
- Oscillator Module
- RL/RC Circuit & Filter Circuit
- Semiconductor Module



Display Application Module (10 kinds)

- R/G/B LED PWM Controller Construction
- Serial & Parallel LED Circuits
- 7-Segment Basic
- 7-Segment Application
- Dot-Matrix
- IR LED Wireless Communication
- OLED Controlling
- Automatic LED Light Control
- Character LCD & Back Light Control
- Full Color Dot Matrix



New & Renewable Energy Module (3 kinds)

- Step Up/Down Charger
- DC/DC DC/AC Inverter
- Electro Load



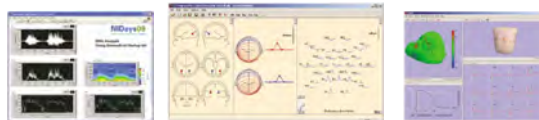
Biomedical & Biosignal Module (4 kinds)

- ECG / EMG Module
- EEG / EOG Module
- GSR / PPG Module
- Biomedical Sensor Interface Board



RFID & PC Interface Module (4 kinds)

- RFID Board
- Multi COM Interface Board
- Multi COM Sensor Application Board
- ATmega128 MCU



ECG / EMG / EEG / EOG Monitoring software

New & Renewable Electricity Energy Experimental Equipment

KTE-HB520

Hybrid Power Conversion Experiment Equipment



Patent No.0952928 - Wind Power Generation Apparatus

- Real wiring training kit connected with solar PV module and wind power generation module (800W)
- Conversion of DC power collected through power generation test equipment to high-voltage AC
- Configuration of 2-channel hybrid system by connection with both of a solar PV generation test module and a wind power generation test module.
- Wind power source is from a blower fan with 3-blades
- Test on hybrid power generation (solar PV, wind power)
- Solar PV: 400W, wind power: 400W
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-7000WG

Wind Power Generation Experiment Equipment



Patent No.0952928 - Wind Power Generation Apparatus

- Test on power production after collecting power from the wind power generator through power conversion test equipment, test on 400W power production
- Test on performance of the wind power generator using a motor
- Real wiring training kit connected with wind power generating system
- Wind power source is from a blower fan with 3-blades
- SQ and PLC-based system remote control enabled
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-CP520

Power Conversion Experiment Equipment



Application Patent No.447670 - Educational Energy Acquisition Apparatus

- Power control test, power generation system composition and capacity estimation, efficiency test, system control and maintenance, control technology
- Conversion of DC power collected through power generation test equipment to high-voltage DC
- 4-channel junction box capable of receiving up to 250V
- Test on power conversion without power generation test equipment
- Available in education and training of control programs such as inverter and joint box
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-7000SG

Solar Power Generation Experiment Equipment



Application Patent No.0447670 - Educational Energy Acquisition Apparatus

- Grid-connection and general load startup power
- Test on solar PV generation system control
- Test on solar PV generation system composition using banana jack
- Series and parallel control circuit composition and load power input circuit
- Automatic transfer circuit configuration at electric discharge or power failure
- Grid-connected inverter circuit configuration
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-7000PL

New & Renewable Energy PLC Training Kit



Patent No.0802437 - Refrigeration PLC training Kit

- New & renewable energy power generation PLC control test
- Power generation can be monitored on a real time basis through the new & renewable energy power generation system PLC control programming practice screen
- PLC control of the past national technical license test
- Safe PLC test and practice after adopting DC 24V input power
- Monitoring of the power generated by each new & renewable energy power generation test system such as solar PV, wind power, tidal power and hydrogen power generation systems on a real time basis using the mobile or wired touch screen
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-7000SQ

New & Renewable Energy Real Wiring Training Kit



Patent No.0802437 - Refrigeration PLC training Kit

- New & renewable energy power generation control real wiring sequence control test equipment, basic electric circuit practice, national technical license test circuit practice, practice using new & renewable energy power generation system sequence control real-wiring jack, screen real time power generation power monitoring
- Electrical real wiring practice based on the past national technical license test
- Composition of connectors such as round connector and banana jack to save connection time at wiring
- Safe real wiring test and practice after adopting DC 24V input power
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-7000SH

Solar-hydrogen Fuel Cell Experiment Equipment

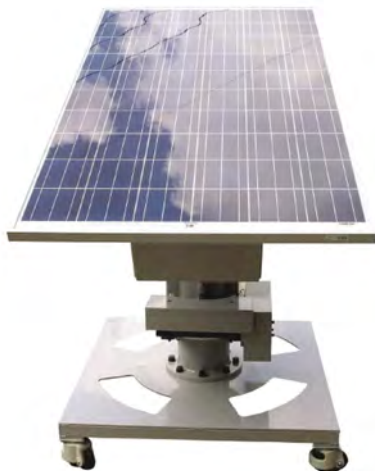


Patent No.0854131 - Solar Heat Radiation Energy Apparatus

- Solar PV-used hydrogen fuel cell test equipment in console type / portable test equipment which will be available anywhere if power is available
- Composition of connectors such as round connector and banana jack to save connection time at wiring / electrolysis test system for the safe production and storage of hydrogen
- Education on solar cell module structure and operating principle
- Measurement of power depending on lamp distance and intensity of light sources
- Education on electricity generation principle and structure using electrolysis and hydrogen
- Education on fuel cell stack structure and operating principle and operating test on the load of LED and motor
- Collection of test data through data monitoring in each unit
- 200mW fuel cell stacks are connected in series to generate 2W.
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-DX520

Solar PV Tracker Dual-axis Experiment Equipment



Application Patent No.0447670 - Educational Energy Acquisition Apparatus

- It tracks down sun light using slew driver and actuator. To decrease error probability, a program tracking method has been used. In terms of sunlight source, artificial sunlight has been used. A test can be performed on the power which has been generated through the power conversion test equipment.
- Installation of 200W solar PV modules enabled
- Program tracking method (sensor-based tracking method)
- Improvement of power generation efficiency using actuator and single axis of slew driver
- Available in PV tracker control education
- Available in PV tracker control circuit education.
- Fit for an indoor test thanks to easy system configuration and convenient installation.
- Available in PV tracker development and education
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-MT520

Monitoring Experiment Equipment



Inverter power status, meteorological data, the connection is transferred from the solar array output class status, and bulk, and each of the terminal equipment from the transmission lines need to analyze various information comes to handling.

- (1) Monitoring control and features
 - Inverter power status monitoring
 - Array status monitor progress
 - Meteorological Observation Device: wind speed, wind direction, solar radiation, rainfall, air temperature display
 - (2) Electricity production from solar power system is transmitted, and displayed in real time temperature, solar radiation
 - Remote wired and wireless monitoring system
 - Daily, monthly, annual and other data, data Save Excel
 - 7000SQ, 7000PL wireless monitor touch screen monitor
 - Renewable energy, wired and wireless monitoring design for Experiment
 - Renewable energy, wired and wireless monitoring program for teaching practice
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-7000ISG

Solar Power Generation Practice Experiment Equipment



A photovoltaic power generation practice device

A practice device with actual parts used in the photovoltaic power generation device
PV level: 40W

- Stand-alone inverter system
- Grid-connected inverter system
- Sequence control
- PLC control
- Wireless control
- Real-time monitoring
- Combined wired-wireless communication
- Touch screen computer control
- AutoBase program practice
- Dual-axis tracking controller
- Capacity calculation of system equipment
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-PL1K

Plasma Artificial Sun Experiment Equipment



- An artificial sun testing device designed to provide similar performance of photovoltaic energy for wide use in indoor tests for photovoltaic power generation.
- Increased suitability for photovoltaic power generation test
- 1KW plasma lamp
- Heightened similarity to the light source of natural sun (color rendition > 80, color temperature>7500K, luminous flux = 8500lm)
- Excellent suitability for indoor test by easier system configuration and simple erection.
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-7000HS

Electrolysis-based Hydrogen Fuel Cell Experiment Equipment



- A testing device for performance of water electrolysis.
- A testing device for performance of hydrogen fuel cell (20W).
- Water electrolysis yields hydrogen.
- Volume of hydrogen is identifiable in real time.
- Hydrogen fuel cell can generate electricity.
- Current and voltage value, in relation to electrolysis and fuel cell, are identifiable as well.
- Efficiency of electrolysis is identifiable.
- Efficiency of hydrogen fuel cell is identifiable.
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-7000ASG

Assembly Solar Generation Training Equipment



- Equipment is designed under the same condition as industrial solar generation system.
- Indoor practice is possible because photovoltaic module is replaced by image on control panel.
- Each parts are designed to assemble by trainee on equipment table.
- Stand-alone inverter system
- Grid-connected inverter system
- Sequence control
- PLC control
- Real-time monitoring
- Touch screen computer control
- Autotest program practice
- Capacity calculation of system equipment.
- Image & design of equipment could be changed because of equipment upgrade continuously.

New & Renewable Thermal Energy Experimental Equipment

KTE-7000AS

Artificial Sunlight Experiment Equipment



Application Patent No.0447670 - Educational Energy Acquisition Apparatus

- It is artificial sun specially designed to generate solar energy. It can be used in diverse indoor tests such as solar PV power generation test and solar heat test.
- Metal halide lamp (2.5kw) used
- Artificial sun with light sources similar to natural sun (Color rendering: 90 or above, color temperature: 5,000K or above, illuminance: 6,000Lx or above)
- Classification into 2.5kw, 5kw and 7.5kw depending on capacity
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-7000SW

Solar Energy Saving System Control Equipment



Patent No.0776333 - Wind blind against Solar heat by Natural or Artificial Sunlight Apparatus

- This equipment is used to measure the performance of solar heat which is used as the energy source for cooling and heating in architecture. It consists of artificial sun-related test equipment and building-miniature window shielding solar collector.
- Heat measurement test and practice depending on angle of incidence and height of both artificial and natural suns
- Heat test and practice depending on temperature at each point in the inside of insulation box
- Heat comparative test depending on solar collection
- Heat test depending on the replacement of solar collector
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-7000SR

Solar Radiation Energy Experiment Equipment



Patent No.0854131 - Solar Heat Radiation Energy Apparatus

- It is designed to test and practice the basic principles of solar radiation energy. In addition, a test can be carried out using both artificial and natural suns. The temperature in the inside of the insulation box can be kept at a constant level. Since materials with different emission rates are installed in the inside of insulation box with different angle of incidence, the efficiency of the test is raised.
- Principle of collecting solar radiation energy using artificial and natural suns
- Measurement and comparative test of the emission rates in different materials
- Measurement of temperature distribution by point depending on angle of incidence
- Measurement of temperature change in light sources by installing temperature sensor on the slots of the halogen lamp which is used as light source at the use of artificial sunlight
- Calculation and comparative analysis of the amount of transmission of radiation heat depending on the angle of incidence of solar PV
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-7000GH

Geothermal Heat Pump Experiment Equipment



Patent No.0948337 - Heat-Pump System by Geothermal Apparatus

- It is also possible to experience the conversion of heating and cooling operations using the 4-way valve.
- Test and practice of the 4-way valve control sequence circuit
- Test on forced geothermal heat pump using artificial ground
- Education on the structure and principle of heat pump using geo-heat
- Heat pump performance depending on the burying method of geothermal exchanger
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-7000PVT

PVT Performance Measurement Instrument



- Utilize a heat source generated from solar PV module.
- Electricity is generated by solar energy using PV module.
- Heat is produced from the back side of PV module
- Generated heat is utilized of heating & hot water source of a building.
- Promotion of the PV module's efficiency.
- Practice of PVT collector's performance using artificial light and natural light.
- Understanding the electricity & heat generating principle using solar energy.
- Comparative analysis of electricity & heat generation depends on entrance temperature of PVT collector
- PVT (Photovoltaic-Thermal Collector)
Module power : 235W. Power(Pt) : 500W Size : 1650 x 990 x 38mm.
- Image & design of equipment could be changed because of equipment upgrade continuously.

Refrigeration & Air-conditioning Experimental Equipment

KTE-1000BA

Standard Refrigeration Experiment Equipment



Design Patent No.0336786 - Educational Refrigeration Experimental Equipment

- Real-time temperature and pressure data view & graph view
- Real-time temperature and pressure data view on the variety of refrigeration cycle
- Real-time enthalpy view on the temperature measuring point of the variety of refrigeration cycle
- Refrigerating efficiency, Heat equivalent of compression load, Emission heat quantity of condenser, Evaporating latent heat, Heat equivalent of flash gas, Quantity of saturated vapor, Quantity of wet vapor and Theoretical Coefficient Of Performance of the variety of refrigeration cycle
- All data automatically can be saved intended every minute by interval data saving time
- All data automatically can be saved in MS excel format
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-1000AHU

Air-conditioning Unit Automatic Control Equipment

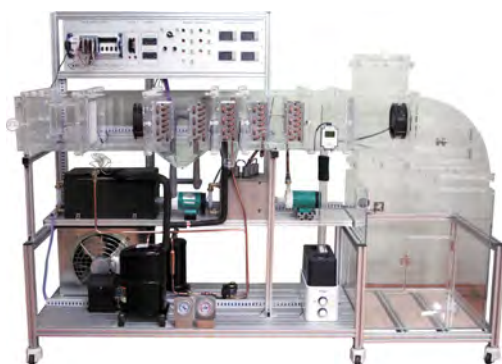


Patent No.0510745 - Air Handling Unit Apparatus

- Cycle composition : Preheater - Precooler - Blower - Humidifier - Reheater - Recooler - Control Volume - Outside. With controlling mount of air.
- Refrigerant : R-22.
- The construct of air-conditioning trainer should be a controlled chamber, the duct is visual so that an user can see inside of the trainer, and an user can control amount of inside and outside air temperature.
- Options : NI-DAQ
- Refrigerant is changeable with that buyer needs .
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-2000AHU

Air handling Unit Lab-view Programing Equipment



Patent No.0854130 - Air Handling Unit by lab-view control Apparatus

- Study for the principle of air-conditioning in construct field.
- Experiment cooling and heating with control of intake, exhaust and return air.
- Measurement performance of individual device in mechanical air-conditioning.
- Control Air-conditioning with electric penal or computing programming software.
- Measurement performance of refrigeration system.
- Obtaining data and control the system with NI DAQ equipment.
- Experiment with computing programming of NI LabView.
- Drawing psychrometric chart and analysis with real time.
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-1000TP

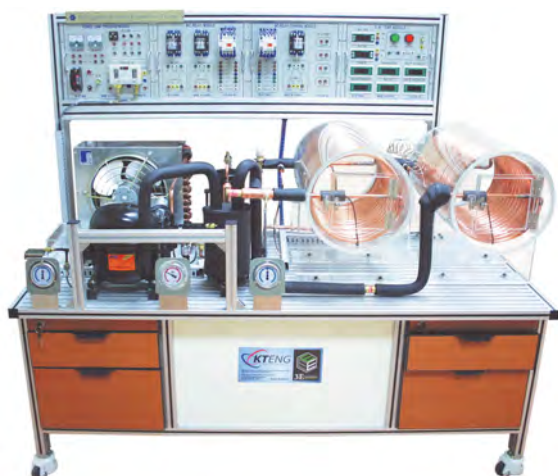
Temperature, Pressure & Defrost Control Refrigeration Experiment Equipment



- Measuring heat exchanging quantity in the Liquid-gas exchanger
- Operating performance test of air-cooling and cold-storage
- Performance test by increasing and decreasing air-cooling and cold-storage load
- Performance test about temperature variable of finned evaporator cooling coil
- Operating performance test about evaporating pressure variable
- Degree of superheat test about the decrease refrigerant charging
- Wet compression experiment about the increase of refrigerant charging
- Performance test for the proper refrigerant charging
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-2000EP

Evaporation Pressure Parallel Control Experiment Equipment (E.P.R Control)



Patent No.0473494 - Evaporation Pressure Parallel Control System Apparatus

- Operating test for air-cooling of the high temperature evaporator and freezing for the low temperature evaporator
- Performance test by changing temperature of the high temperature evaporator, while keeping temperature of the low temperature evaporator
- Refrigerant distribution measuring test by changing temperature of the low and high temperature evaporator
- Testing refrigerant distribution effect for the refrigerator
- Operating test about variation of evaporating pressure by using the Evaporator Pressure Regulator(E.P.R)
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-2000EV

Refrigerant Parallel Expansion Refrigeration Experiment Equipment



Patent No.0463030 - Refrigerant Parallel Expansion Refrigeration Apparatus

- Basic Experiment of Standard Refrigeration Trainer
- Operating test of air cooling and freezing
- Performance comparing test for the proper refrigerant charging during the air-cooling or freezing operation
- Variable expansion valve(Capillary tube, T.E.V, A.E.V) performance test about item 3
- Test for the air-cooling and freezing by decreasing or increasing capillary tube length
- Variable expansion valve(capillary tube, T.E.V, A.E.V) comparing test
- Performance test by changing condensing temperature
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-3000HD

4-Way Reverse Valve Control Heat Pump Heating & Cooling Experiment Equipment



Patent No.0432527 - Heat Pump Heating and Cooling System Apparatus

- Basic Experiment of Standard Refrigeration Trainer
- Changing refrigerant flow way by controlling 4-way reverse valve
- Heating operating test by controlling 4-way reverse valve
- Cooling operating test by controlling 4-way reverse valve
- Heat efficiency rate analysis comparing other heat machine during heating operation
- Heat efficiency rate test by changing heating load
- Economic analysis of electric heat pump comparing with other heat machine
- Analysis of system effect by changing heating load
- Drawing Pressure-enthalpy diagram with excel filed data by using refrigeration utilities
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-5000LT

Binary Refrigeration Experiment Equipment



Patent No.0463027 - Binary Refrigeration System Apparatus

- Basic Experiment of Standard Refrigeration Trainer
- Low stage evaporating temperature test by changing temperature of high stage condensing temperature
- Low stage evaporating temperature test by changing temperature of high stage evaporating temperature
- Low stage evaporating temperature test by changing temperature air-forced heat exchanger
- Testing temperature variation about cascade temperature variable
- Variation test of low stage refrigeration system by changing charging refrigerant
- Analysis temperature by controlling low stage evaporating pressure
- Low stage operating test by changing refrigerant (R-23, ethane)
- Drawing Pressure-enthalpy diagram with excel filed data by using refrigeration utilities
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-4000PL

Air-conditioning & Refrigeration PLC Training Kit

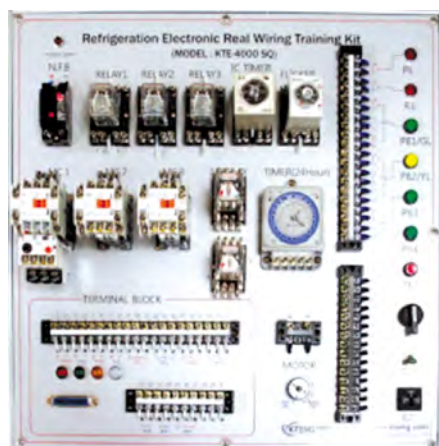


Patent No.0802437 - Refrigeration PLC training Kit

- Basic programming of GM-WIN PLC
 - How to install GM-WIN program
 - How to use EDIT TOOL
 - How to make a LD program
 - How to make a sequence circuit.
- Control programming for refrigeration system
 - How to make a programming operation by temperature and pressure control
 - How to make a programming operation by pump down control
 - How to make a programming operation by hot-gas and defrost control
 - How to make a programming operation by electric defrost control
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-4000SQ

Air-Conditioning & Refrigeration Wiring control Training Kit



Design Patent No.0424765, Patent No.0802437 - Refrigeration Sequence Training Kit, Refrigeration PLC training Kit

- Practicing to have performance test after making real wire.(But, the real wire trainer should be connected with air-con. system, refrigeration system, freezing system, binary refrigeration system, and heat pump refrigeration system).
- Practicing to make basic circuit and practical circuit in wiring power, electric step by step.
- Practicing to make circuit about that is controlled by every electric control valves as like magnet contactor switch(MC), relay(Ry), push button switch(PB), select switch(S/SW), toggle switch(T/S), buzzer(BZ), timer(Timer), defrost timer(D.T), power lamp(PL), operation lamp(PL), stop lamp(GL) with several kind of circuits.
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-6000BR

Brine Refrigeration Experiment Equipment (Ice Maker)



Patent No.0458070 - Brine Refrigeration System Apparatus

- Basic Experiment of Standard Refrigeration Trainer
- Testing exchange rate evaporator cooling coil and brine
- Testing exchange rate water and brine
- Analysis early evaporating load
- Testing compression load, brine temperature, evaporator temperature and water temperature as passing operation
- Observing melting and icing water
- Comparing of ice thermal storage capacity of industrial ice ball
- Testing heat capacity of a variety of brine
Drawing Pressure-enthalpy diagram with excel filed data by using refrigeration utilities
- Image & design of equipment could be changed because of equipment upgrade continuously.

KTE-9000AU

Car Air-conditioner(A/C) Experiment Equipment



Patent No.0854132 - Car Air conditioning System Apparatus

- Study for the principle of air-conditioning and refrigeration with a car
 - Study for assembling of air-conditioning system in a car.
 - Operation and experiment of every element for air-conditioning in a car.
 - Experiment for cooling and heating in a car.
 - Training for repair of air-conditioning system in a car.
 - Understanding of the principle and operation for FATC (Full Automatic Temperature Control).
 - Measurement refrigeration ability when the system is in an abnormal condition.
 - Measurement refrigeration ability as RPM of Compressor.
 - Monitoring and recording for data from hardware to computer through software as real time
 - Operation of each element through control panel.
- Image & design of equipment could be changed because of equipment upgrade continuously.

RH-R-1000

Standard Refrigeration trainer



Features

- The possibility of the experiment on temperature, pressure, automatic control and mechanical trouble
- The possibility of experiment and theoretical education related to automatic control ,refrigeration system and refrigerator accessories.
- The experiment on cycle change of refrigeration equipment according to temperature and Mollier diagram drawing in P-I diagram drawing part.
- Theoretical education of efficiency test and experiment while operating
- The sequence screen attached to the graphic module control department and power automatic control machine for experiment on temperature, pressure and automatic control and operation
- The control department is made up of visual lamps separated system from machine department
- Automatic control with graphic panel and two automatic control modules
- Data formation by data auto-saving and P-I diagram auto-operation in the system with control program

Specifications

- | | | |
|---|--|---|
| • Compressor : 1/2HP, | • Electronic valve : 3/8" nut clamp type | • Thermostat range: -40°C~100°C |
| • Condenser : Air-cooled type | • Manometer | • Pressure switch range: |
| • Evaporator: pin, Tube air-cooled type | • fitting nipple | Low side: 0bar~5bar / High side: 5bar~30bar |
| • Evaporator chamber, damper | • Sight Glass | • Size(LxWxH): 1200x730x1720mm |
| • Expansion Valve : manual type | • Electric control module: DC24V | • Weight: 150kg |
| • Liquid receiver : 1HP | • Graphic module: digital DC24V | |
| • Accumulator : 1/2HP | 595 * 595 Al | |

RH-R-2000

Refrigeration & Freezing trainer



Features

- The possibility of the experiment on temperature, pressure, defrosting auto control of automatic pressure control device and mechanical trouble
- A check of change of the refrigeration system according to expansion valve's shape and function with connecting expansion valve of other types
- The experiment on cycle change of refrigeration equipment according to temperature and Mollier diagram drawing in P-I diagram drawing part.
- Theoretical education of efficiency test and experiment while operating
- The sequence screen attached to the graphic module control department and power automatic control machine for experiment on temperature, pressure and automatic control and operation
- The control department is made up of visual lamps separated system from machine department
- Automatic control with graphic panel and two automatic control modules
- Data formation by data auto-saving and P-I diagram auto-operation in the system with control program

Specifications

- | | | |
|--|--|---|
| • Compressor : 1/2HP, | • Liquid receiver : 1HP | • Graphic module: digital DC24V |
| • Condenser : Air-cooled type | • Accumulator : 1/2HP | 795 * 595 A1 |
| • Evaporator: pin, Tube air-cooled type | • Electronic valve : 3/8" nut clamp type | • Thermostat range(7ea): -40°C~100°C |
| • Evaporator chamber, damper
320*350*500, damper | • Manometer | • Pressure switch range: |
| • Expansion Valve : manual type 1ea ,
capillary tube type 1ea | • Fitting nipple | Low side: 0bar~5bar / High side: 5bar~30bar |
| | • Sight Glass | • Size(LxWxH): 1600x730x1720mm |
| | • Electric control module: DC24V | • Weight: 180kg |

RH-R-3000

Heat Pump heat accumulation trainer



Features

- The possibility of the experiment on temperature, pressure, defrosting auto control of heat accumulation pump device and mechanical trouble
- The possibility of experiment and theoretical education related to automatic control, refrigeration system and refrigerator accessories .
- The experiment on cycle change of refrigeration equipment according to temperature and Mollier diagram drawing in P-I diagram drawing part.
- Secondary heat exchange through heat accumulation tank
- The possibility of heat carrier's flow control and flow's quantity check
- Digital pressure switch (high and Low pressure) with the most accurate data
- Visual heat accumulation tanks by transparent acryl and cool-warm heat system with circulation part
- The structure to heat accumulation with heat pump and the design to know heat circulation or state and control
- Data formation by data auto-saving and P-I diagram auto-operation in the system with control program

Specifications

- | | | |
|-------------------------------------|--|---|
| • Compressor : 1/2HP, | • Check V/V | • Graphic module: digital DC24V
795 * 595 Al |
| • Condenser : Air-cooled type | • Heat exchanger: tube type | • Thermostat range: -40℃~100℃ |
| • Evaporator: Tube type Chamber | • Electronic valve : 3/8" nut clamp type | • Pressure switch range:
Low side: 0bar~5bar / High side: 5bar~30bar |
| • Evaporator | • Manometer | • Size(LxWxH): 1600x730x1720mm |
| • Expansion Valve : manual type | • Fitting nipple | • Weight: 150kg |
| • Liquid receiver : 1HP | • Sight Glass | |
| • Accumulator : 1/2HP | • Electric control module: DC24V | |
| • 4way reversing V/V : welding type | | |

RH-R-4000

Air handling unit trainer



Features

- The possibility of experiment on ventilation system (4-type) and cool - warm condition with heat pump
- Assistant heat source with heat pump and humidification for both cooling and heating water
- Humidification device made up of watering or air crossing type, inhalation and emission of conditioning damper and inside made up of inhalation and emission part
- The structure of humidified cooling or heating water according to user's temperature control
- The structure to operating system from outside and the structure to control inside temperature and humidity
- Automatic control by systematic temperature and humidity
- The sequence screen attached to the graphic module control department and power automatic control machine for experiment on temperature, pressure and automatic control and operation
- The possibility of cutting the overload, working the pressure switch, alarm bell and a pilot lamp and safe operation with occurring the problem of a thermo-hygrostat
- Application to refrigeration system for compressor of variable types

Specifications

- | | | |
|--|--|---|
| • Duct | • Expansion Valve : manual type | • Graphic module: digital DC24V
1205 * 600 AI |
| • intake / exhaust/ return: transparency | • Liquid receiver : 1/2HP | • Thermostat range: -40℃~100℃ |
| • Blower: 2ea | • Accumulator : 1HP | • Pressure switch range:
Low side: 0bar~5bar / High side: 5bar~30bar |
| • Water pump: 3ea | • Electronic valve : 3/8" nut clamp type | • Size(LxWxH): 1850x700x1900mm |
| • Humidifier: spray type | • Manometer | • Weight: 250kg |
| • Compressor : 1/2HP, | • Fitting nipple | |
| • Condenser : Air-cooled type | • Sight Glass | |
| • Evaporator: pin, Tube air-cooled type | • Electric control module: DC24V | |

RH-R-5000

Refrigerator system trainer



Features

- The possibility of the experiment on temperature, pressure, defrosting automatic control and mechanical trouble in the automatic pressure control device
- The comprehension of principle to refrigerator and study to refrigeration and cold system
- The experiment on cycle change of refrigeration equipment according to temperature from two parallel evaporators and Mollier diagram drawing in P-I diagram drawing part.
- Theoretical education of a fundamental circuit, application circuit and experiment with evaporation pressure control device
- The compatibility and expandability of the graphic module control
- Unlike separated system from machine department, the control department is visual automatic control with graphic panel and two automatic control modules
- Data formation by data auto-saving and P-I diagram auto-operation in the system with control program

Specifications

- Compressor : 1/2HP,
- Condenser : Air-cooled type
- Evaporator chamber: pin, Tube air-cooled type
- Evaporating Pressure Regulator: IEA
- Expansion Valve : manual type
- Liquid receiver : 1HP
- Accumulator : 1/2HP
- Electronic valve : 3/8" nut clamp type
- Fitting nipple
- Sight Glass
- Electric control module: DC24V
- Graphic module: digital DC24V
1205 * 600 AI
- Thermostat range: -40°C~100°C
- Pressure switch range:
Low side: 0bar~5bar / High side: 5bar~30bar
- Size(LxWxH): 1800x730x1720mm
- Weight: 200kg

RH-R-6000

ICE-Maker system trainer



Features

- The possibility of the experiment on temperature, pressure, automatic control of the device with Ice Accumulation and mechanical trouble
- The comprehension of refrigeration system with Ice thermal storage and device's principle
- The experiment on cycle change of refrigeration equipment according to temperature and Mollier diagram drawing in P-I diagram drawing part.
- Theoretical education and experiment related to efficiency test of device and Ice storage
- Theoretical education of a fundamental circuit, application circuit and experiment with Ice storage
- The sequence screen attached to the graphic module control department and power automatic control machine for experiment on temperature, pressure and automatic control and operation
- Unlike separated system from machine department, the control department is visual
- Automatic control with graphic panel and two automatic control modules
- Data formation by data auto-saving and P-I diagram auto-operation in the system with control program

Specifications

- | | | |
|---|--|---|
| • Compressor : 1/2HP, | • Liquid receiver : 1HP | • Graphic module: digital DC24V |
| • Condenser : Air-cooled type | • Accumulator : 1/2HP | 795 * 600 Al |
| • Evaporator: pin, Tube air-cooled type | • Electronic valve : 3/8" nut clamp type | • Thermostat range: -40°C~100°C |
| • Evaporator chamber, Brine tank | • Manometer | • Pressure switch range: |
| • Ice maker: cylinder type | • Fitting nipple | Low side: 0bar~5bar / High side: 5bar~30bar |
| • Brine pump: 1EA | • Sight Glass | • Size(LxWxH): 1600x730x1720mm |
| • Expansion Valve : manual type | • Electric control module: DC24V | • Weight: 200kg |

RH-R-7000

Binary Refrigeration trainer



Features

- The possibility of the experiment on temperature, pressure, automatic control and mechanical trouble using cascade refrigeration
- The comprehension of refrigeration system with an extremely low temperature
- The experiment on cycle change of refrigeration equipment according to temperature and Mollier diagram drawing in P-I diagram drawing part.
- Low temperature side's evaporator is range of between -50°C and -70°C
- Theoretical education of a fundamental circuit, application circuit and experiment by cascade refrigeration system
- The sequence screen attached to the graphic module control department and power automatic control machine for experiment on temperature, pressure and automatic control and operation
- Transparent accessories to observe refrigerant state or flow and principle of accessories
- The control department is made up of visual lamps separated system from machine department
- Automatic control with graphic panel and two automatic control modules
- Data formation by data auto-saving and P-I diagram auto-operation in the system with control program

Specifications

- | | | |
|---|---|---|
| • Compressor : 1HP, 2ea | • Electronic valve : 3/8" nut clamp type | • Pressure switch range: |
| • Condenser : Air-cooled type | • Manometer | Low side: 0bar~5bar / High side: 5bar~30bar |
| • Evaporator: Tube Air-cooled type | • fitting nipple | • Size(LxWxH): 1600x730x1720mm |
| • Cascade: plate type heat exchanger | • Sight Glass | • Weight: 200kg |
| • Expansion Valve : manual type Capillary tube type | • Electric control module: DC24V | |
| • Liquid receiver : 1HP | • Graphic module: digital DC24V | |
| • Accumulator : 1HP | 795 * 600 AI | |
| | • Thermostat range: -80°C ~ 100°C | |

RH-R-7100

Two stage-expansion system trainer



Features

- Available to experiment and test by temperature or pressure control in two-stage compressing and expansion system.
- Using solo coolant for two-stage compressing and expansion system.
- As variable pressure at middle cooling device, available to check temperature change.
- The sequence screen attached to the graphic module control department and power automatic control machine for experiment on temperature, pressure and automatic control and operation
- The experiment on cycle change of refrigeration equipment according to temperature and Mollier diagram drawing in P-I diagram drawing part.
- The control department is made up of visual lamps separated system from machine department
- Automatic control with graphic panel and two automatic control modules
- Data formation by data auto-saving and P-I diagram auto-operation in the system with control program

Specifications

- | | | |
|---|--|---|
| • Compressor : 1/2HP 1ea, 1HP 1ea | • Electronic valve : 3/8" nut clamp type | • Pressure switch range: |
| • Condenser : Air-cooled type | • Manometer | Low side: 0bar~5bar / High side: 5bar~30bar |
| • Evaporator: pin, Tube air-cooled type | • fitting nipple | • Size(LxWxH): 1600x730x1720mm |
| • Evaporator chamber | • Sight Glass | • Weight: 200kg |
| • Middle cooler | • Electric control module: DC24V | |
| • Expansion Valve : manual type | • Graphic module: digital DC24V | |
| • Liquid receiver : 1/2HP | 795 * 600 Al | |
| • Accumulator : 1HP 2ea | • Thermostat range: -50℃~100℃ | |

Inverter DC TIG Arc Welder



Features

1. With high performance and high speed inverter control, it shows excellent welding capacity. Also, electricity expense is very economic due to stable power current.
2. Advance circuit with more than 5 diverse multi-functions.
3. If needed direct current coating arc welding can be conducted.
4. High usage and guaranteed durability regardless of quantity.
5. Excellent low speed and high speed pulse function.

Specifications

MODEL	POSWEL-350T	POSWEL-500T	POSWEL-600T
Rated current (V)	1~3Ø 220/380/440V ±10%	1~3Ø 220/380/440V ±10%	3Ø 220/380/440V
Rated frequency Hz	50~60	50~60	50~60
Electric Current range TIG (A)	5~350	5~500	5~600
Electric Current range arc (A)	10~200	10~300	10~400
Rated input (Kv/A)	12 (T)	19 (T)	22.8 (T)
Power cable (mm ²)	Over6	Over10	Over10
Rated usage (%)	60	60	60
Measurement (mm)	270x430x520	380x540x600	410x620x760
Weight (Kg)	26	52	62

Inverter AC/DC TIG Arc Welder



Features

1. One machine can weld 7 different kinds of metal
2. Advanced machine with over 6 different multi-functions
3. Independent control of each welding electric current, start current, pulse current and creator current

Specifications

MODEL	POSWEL-250AD	POSWEL-350AD	POSWEL-500AD
Rated current (V)	1Ø 220V	1~3Ø 220/380/440V ±10%	1~3Ø 220/380/440V ±10%
Rated frequency Hz	50~60	50~60	50~60
Electric Current range TIG (A)	5~250	5~350	5~500
Electric Current range arc (A)	10~150	10~200	10~300
Rated input (Kv/A)	7.5 (T)	14 (T)	19 (T)
Power cable (mm ²)	Over4	Over6	Over10
Rated usage (%)	60	60	60
Measurement (mm)	270x430x500	380x540x600	400x620x760
Weight (Kg)	26	55	70

Inverter CO₂ Arc Welder



Features

1. With high speed inverter control's high speed response, achieve high speed welding without any arc discontinuance even during changes in arc load
2. Reduced slag control time due to low spatter during welding operations
3. Unique arc start security circuit and control circuit prevents wire-tip sticking to welding subject after welding completion, and provide excellent arc start

Specifications

Model	POSWEL-250C	POSWEL-350C	POSWEL-500C	POSWEL-600C
Rated current (V)	1~3Ø 220V	1~3Ø 220/380/440V ±10%	1~3Ø 220/380/440V ±10%	3Ø 380/440V
Rated frequency Hz	50~60	50~60	50~60	50~60
Rated input (KV/A)	17.5	17.5	29.2	36
Output current range (A)	50~250	50~350	50~500	50~600
Rated control	IGBT INVERTER CONTROL	IGBT INVERTER CONTROL	IGBT INVERTER CONTROL	IGBT INVERTER CONTROL
External measurement (mm)	270X430X520	380X540X600	400X620X760	410X620X760
Weight (kg)	32	50	60	62

Inverter Air Plasma Cutting M/C



Features

1. High usage
2. Excellent function (50p) for vehicle maintenance operations
3. Speedy cutting of middle and back board (130p, 150p)
4. Highly efficient during automatic cutting system operations
5. Embedded air unit function automatically removing moisture
6. Exceptional work capacity guaranteed compared to gas cutting due to no preheating time.

Specifications

MODEL	POSWEL-80P	POSWEL-130P	POSWEL-150P
Rated current (V)	1~3Ø 220V	1~3Ø 220/380/440 ±10%	3Ø 380/440V
Rated frequency (Hz)	50~60	50~60	50~60
Rated input (KV/A)	13.5	23	28.5
Pilot circuit	o	o	o
Output current range (A)	20~80	20~130	20~150
Maximum no load voltage (V)	≒260	≒300	≒300
Rated usage (%)	60	60	60
Measurement (mm)	270x430x520	380x540x600	410x620x760
Weight (Kg)	24	60	62

SP-50

Air Spot Welder



Features

1. Performs best in high quality and high precision welding work
2. Designed to get stable welding currents though in low input and high output by making efficient transformer and primary circuit.
3. Easy operation in production line environments by adjusting the height of the upper and lower arm due to the work piece is not slides while working
4. Micom Timer attached(15 kinds condition)

Specifications

Model	SP-50
Rated Capacity	50kVA
Input Voltage	Single Phase Ø 440V
Max. Input	132 kVA
Max. Short Circuit	18,000A
Max. Electrode pressure	600Kgf
Cooling water volume	6L/min
Frequency	50/60 Hz
Duty Cycle	6.5 %

N G W-200S

Non-gas welder (self-shield)



Features

1. Non-gas type welding machine
2. Easy movement in production line environments with ultralight (17kg)
3. A wide range of use in automobile parts, signboard, steel frame...etc
4. Installed the overload circuit breaker for preventing the equipment damages

Specifications

Model	SP-200S
Rated current (V)	1Ø, 220
Rated input (KV/A)	5.4
Rated output current	FCW(A) 50~200
Rated output current	ARC(A) current 200
Rated output voltage	FCW(V) 24
Rated usage (%)	50(200A)
Measurement (mm)	220x390x370 (WxLxH)
Weight (Kg)	17
Delivery equipment	built-in

Educational Robot Kit

RoboKit (No.1~ No.5)



Beginner Course
[total : 12 robots]

Intermediate Course
[total : 12 robots]

Advance Course
[total : 12 robots]

HIGH GRADE Course 1
[total : 6 robots]

HIGH GRADE Course 2
[total : 6 robots]

RoboKit series are an educational robot kit that can be applied from a primary school to a university. Using various shapes of frames, sensor, and circuits, Children can assemble 12 robots at each level.



FEATURE

- **Product** : Robokit for each level(Iv.1~Iv.5), Workbook, Rogic program
- Build **48 robots** using five **ROBOKIT** series with software **ROGIC**.
- In the whole process of assembling & programming of your own robot, users can strengthen spatial perception, activate their brain and easily understand programming skill.
- **Process** : Design → Build up the robot → Programming → Download → Run



WORKBOOK

- **Step-by-step curricula** : English Workbook 1 ~ 5 (For each level)
- Various illustrations and character for fun and efficient learning
- Various examples for Self-learning



ROGIC PROGRAM

- **Graphic User Interface** : Icon-based programming.
- **Flowchart concept** : Children can make a program just by drag-and-drop and they can easily understand complex algorithm.
- **Various function icon** : Icons can be used as functions, variables and control statements such as WHILE, IF, BREAK, LOOP and so on.
- **C-language Controllable** : To improve the learning, higher grade students can program directly by C-language.

Robokids(No.1, No.2)



• Detailed product description

It is important to form a good learning attitude from early childhood because children soak up knowledge like sponges in the period. ROBOROBO designs the Robotic kit called ROBOKIDS, intended for the children of 37~72 months who are too little to use 'Robokit', another ROBOROBO's robot series. While working out a way to assemble robots, children can activate their brain and develop the creativity.



<Assembling>



<programming>



<operating>

- Up to 16 robots can be assembled.(each kit, kids 1, 2)
- Kit for age of 5 to 7
- Learning period : 32 weeks Curriculum



FEATURE

- Block type kit : Easy to interlock and control.
- Various types of the part : CPU block, IR sensor block, touch sensor block etc
- 32 different robots by every chapter
- Teamwork and spatial perception can be improved throughout assembling process



WORKBOOK

- Encourage children's imaginative play through characters and systematic episodes
- Story-telling situation in the illustration motivates children to make the robot naturally.



PROGRAM

- Using ROBOROBO's own card reader, children can program without a computer.
- There are many types of program cards called 'funny card'.
- Interesting robotic actions by only swiping the card
- Try to combine various funny cards and make various application motions.
- Various games can be set up.

New Renewable Energy(Solar & Wind) Educational Equipment (Module Type)

WS-SFG1

Solar Generation System



Virtual solar light controller

- Power : 1[ϕ] AC 220[V], 50/60[Hz]
- Lighting Mode (Manual / Auto)
- Solar light auto control ability by set pattern
- The halogen lamp 500W

Solar Module

- Max Power Output : 24W
- Open Circuit Voltage : 21.5 V
- Short Circuit Current : 1.28 A
- Max Output Voltage : 17.3 V
- Max Output Current : 1.5 A

WS-WFG1

Wind Generation System



This trainer is designed to study construction and principle of wind generation system for permanent magnetic type and winding type. It is easy to take apart and assemble components. Poles and field winding are attached to circle yolk and armature is at the middle.

- Power : 1[ϕ] AC 220[V], 50/60[Hz]
- variable power : AC 6/12/24/50V
- DC variable power
- York Block : Circle Type, 6 poles
- Driving Block : DC Motor, Continuously Variable Transmission
- 2 poles, 3poles rotor
- 2 kinds of pole

WS-SGIC

Solar or Wind System Educational Equipment (Module Type)



This trainer is designed to study construction and principle of solar and wind generation system from basic to application. It is combined with Solar Generation System and Wind Generation System. This trainer can be used for studying for grid and independent system and streetlamp. The capacity for power converter(grid system) is over than 1.5KW.

SPECIFICATION

- Power : 1[ϕ] AC 220[V], 50/60[Hz]
- MCCB : DCP-32PR

WS-SFG1 + WS-SGIC Solar Generation Trainer
WS-WFG1 + WS-SGIC Wind Generation Trainer

WS-SCS-1K

Wind & Solar Hybrid Generation System



Real Time Measuring Software



This trainer is designed to study characteristic and principle of hybrid(wind & solar generation) system. To boost a voltage, a chopper is used and an inverter changes DC to AC. It is designed by a brushless type from a permanent magnetic and structure is made to absorb an oscillation.

SPECIFICATION

- Rated Capacity : 400W, Output Voltage : DC 24V
- Operation Wind Speed : 2.7m/s
- Inner Wind Speed : 50m/s
- Type of Solar Cell : Single Crystalline Silicon Solar Cell. Built-in bypass diodes.
- Open Circuit Voltage : 21.8 V / Short Circuit Current : 4.75 A
- Max Output Voltage : 17.3 V / Max Output Current : 1.5 A
- Max Output : 480 W

WS-SC1K

Solar Trainer(Portable Type)



It is designed as a bag and portable to move elsewhere. The both sides of bag are useful for storage and solar cells are arranged safely. It is used to study for charging a battery, load test, inverter practice by using Photovoltaic(PV).

SPECIFICATION

- Type of Solar Cell : Single Crystalline Silicon Solar Cell.
- Open Circuit Voltage : 21.5 V / Short Circuit Current : 1.28 A
- Max Output Voltage : 17.2 V / Max Output Current : 1.32 A
- Max Output : 22 W

W S T-23

Power Electronics Trainer (Board Type)



Every experimental board contains transformer, gate circuit, drive circuit, variable resistance, variable reactance, DC motor and AC motor.

SPECIFICATION

- Diode Rectification Board(WST-2301)
- Single Phase Control Board(WST-2302)
- Three Phase Control Board(WST-2303)
- Single Phase AC Control Board(WST-2304)
- Three Phase AC Control Board(WST-2305)
- Switching Board(SCR)(WST-2306)
- DC Power Control Board(WST-2307)
- Single Phase Inverter Board(WST-2308)
- Three Phase Inverter Board(WST-2309)
- Single Phase Cyclo Converter Board(WST-2310)

W S - P E T

Basic Energy Conversion Trainer



The gate circuit and the driver circuit should be formed as block type so that it is easy to connect with power and signal line. It should be formed with check point to measure waveform according to function. All element of main circuit should be formed with module, as plug type which is easy to remove, adhere or replace.

SPECIFICATION

- Power : 1[ϕ] AC 220[V], 50/60[Hz]
- Inner Power : AC 12V, DC 5V/15V/80V
- Signal Generator : 1/10/100[Hz], 5V
- Meter : DC 300V/DC 2A/AC 300V/AC 2A
- Rotation Speed Meter : 5 digits, 60p/rev encoder
- DC Motor : 30W, 90V, 3000rpm
- AC Motor : 25W, 220V, 4 poles

W S T-9

DC Servo Motor Trainer



This equipment could be test out principle and introduction of DC servo PID controller operation and position control.

SPECIFICATION

- Power : 1[ϕ] AC 220[V], 50/60[Hz]
- DC Power : \pm DC15V
- Speed Position : LCD Display
- Computer Interface : RS-232C
- Training Content : 12 Items

W S T-10

Setpper Motor Trainer



The Cover of each panel shows oscillator circuit, control circuit and circuit etc. The LED display shows polarity of stepping motor rotor and stator.

SPECIFICATION

- Power : 1[ϕ] AC 220[V], 50/60[Hz]
- Application Motor : 2-Phase, Unipolar Type
- Excitation Type : 1-Phase, 2-Phase, 1~2 Phase
- Driving Method : PWM Drive Method
- Software : ST MERCURY T10 V3.0

W S T-25A

Automatic Control Trainer (P.I.D Control, Board Type)



P.I.D device installed separately part the Level control system that belong to driver part establish not cyber real things.

WST-25A-M System Controller

- Power : 1[ϕ], AC 220[V], 50/60[Hz]
- System Software : AT MARS T25 V3.0
- System Control Block : 16 set
- Computer Interface : RS-232C

WST-25A-L Level Control System

- Lever Range : 0~300mm / 0~10[V]
- Liquid & Voltage : 1.98 $\%$ / min & 10[V]
- Variable Method : Continuous Variable
- Level Sensor

WST-25A-T Temperature Control System

- Heater : 100[V], 100[W]
- Temperature Sensor : PT 100[\bullet]
- Temperature & Voltage Ratio : 50 $^\circ$ & 10[V]
- Cooling Fan : AC 200[V]

WST-25A-S Servo Control System

- Motor : DC Servo Motor , DC 0 ~ 75[V]
- Tacho Generator : DC 0~10[V]
- Brake & Scale
- Control Method : PWM Type

W S T-50

PC Based Electricity & Electronics Exp. Trainer



The SmaTra is basically PC Based Electricity, Electronics & Power Electronics Exp. and it is possible to interface with PC. This trainer consist of 14 items and 50 modules. Modules are classified into Lower, Middle and High Class. Therefore users can study circuit and principle in a step. First of all, the SmaTra has the troubleshooting ability and it helps users to understand a circuit easily.

MODULE GROUPS

DC Circuit, AC Circuit, Semiconductor Circuit, Digital Circuit, Transistor Amplifier Circuit, Power Circuit, OP-Amp Circuit, Oscillation Circuit, Magnetic Circuit, A/D & D/A Converter, Sensor Circuit, Photo Electronics Circuit, DC Servo, Power Electronics Circuit

W S M - 1

Electric Machine Exp. Trainer



The electric machine experiment set contains series, shunt, wound DC machine that classify connection way, single induction motor that used condenser run type and phase splitting induction type, 3 phase squirrel motor, slip ring motor that used synchronous motor and wound induction motor, universal motor that used as AC and DC braking machine that used brake and dynamometer. These parts can assembly use to DC machine, induction motor and synchronous motor.

SPECIFICATION

- Power : 3[ϕ], AC 220[V], 50/60[Hz]
- Electric Machines : 7set
- Experimental Modules : 10set
- Main Device Unit / Electric Machine Storage Cabinet / Working Table / Frame
- Graphic Board (Insulation Plate) : 1unit

※ **Motor & Generator Trainer Series** : WSM - 6 : Heavy Current Machine Exp. Trainer, WSM - 7 : Wound Induction Motor&DC Shunt Ge. Trainer, WSM - 9 : DC Compound Motor & Compound Ge. Trainer, WSM - 10 : DC Shunt Motor & Synchronous Ge. Trainer, WSM - 24 : Transformer Experimental Trainer

WSB-60P

P.L.C Trainer (Portable Type)



It can be P.L.C training without other devices.

The approach switch, photo sensor and small induction motor combined and display revolution detecting. The push button switch, output lamp and buzzer can assist program simulator. The input output module and sensor contain power supply.

SPECIFICATION

- Power Supply : Main Power, P.L.C Power, DC Out Power, AC Out Power
- Input Terminals / 32 Point, Output Terminals / 32 Point
- Sensor Unit : DC Motor / Photo Sensor / Proximity Sensor
- Input Switch Unit / Output Lamp Unit / Digital Switch Unit
- Noise Situation

WSP-4

Electro-Pneumatic Trainer(Quick Module Type)



This equipment contains solenoid valve, all sorts of switch, relay, sensor for basic pneumatic to application practice. This equipment is designed pneumatic modular type & modular type that use at the AL injection molding board. Attach method of each kind module is quick & easy type. It is plastic injection molding type and its size is 100(W)X 85(D)X15(H)mm. Clearance of AL injection molding board is 30mm.

SPECIFICATION

- Power : 1[ϕ], AC 220[V], 50/60[Hz]
- Pneumatic Modules : 35 unit
- Electric Modules : 3 unit
- Electric Control Panel : 9 Block
- Dimension : 1600(W) X 950(D) X 1500(H) mm

WSH-4

Application Hydraulic Trainer(Quick Module Type)



This equipment is designed hydraulic modular type that use at the AL Profile board iron working table contains 4 wheels at the bottom for easy moving. There is an over 40 liter oil tank at the working table, the working table contains relief valve attach for safety. Attach method of each kind module is quick & easy type. It is plastic injection molding type and its size is 100(W)X 85(D)X15(H)mm. Clearance of AL injection molding board is 30mm.

SPECIFICATION

- Power : 1[ϕ], AC 220[V], 50/60[Hz]
- Hydraulic Modules : 38 unit
- Electric Modules : 3 unit
- Electric Control Panel : 9 Block
- Dimension : 1600(W) X 950(D) X 1500(H) mm

OPTION

Excavator trainer : It is made to control the excavator's working by using hydraulic cylinders-swing, arm, boom and bucket cylinder.

#131, Changsungdong Jongnogu, Seoul 110-034, KOREA

Phone : +82-2-725-4495

Fax : +82-2-725-6111

Website : www.ksiic.or.kr

e-mail : ksiic@ksiic.or.kr



Korea Scientific Instruments Industry Cooperative(KSIIC)

MEMBER'S PRODUCT



Korea Scientific Instruments Industry Cooperative

Basic Scientific Instruments

Astrolabe kit



I.P.S balance arm



Periscope



Time recorder



Dynamic cart



Incline lane



Stopwatch



Solar cell experiment



Electromagnetic experiments



Power supply (digital)



Power supply (analog)



Induction coil



AC ammeter (digital)



AC voltmeter (digital)



DC ammeter (digital)



DC voltmeter (digital)



Galvanometer (digital)



Electrical circuit tester



Balance arm



Metal weight



Weight



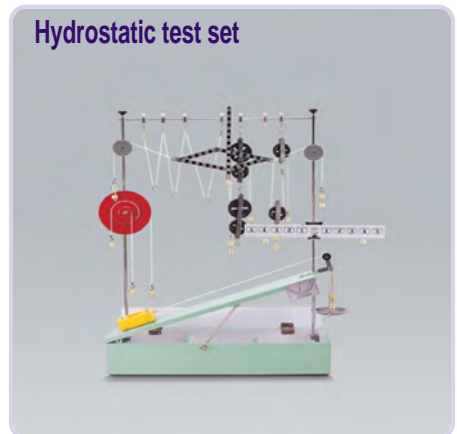
Pulley (brass)



Pulley apparatus



Hydrostatic test set



Pendulum experiment



Wheel axle



Ball (3 kinds 1)



Spring for simple harmonic motion



Steel beads



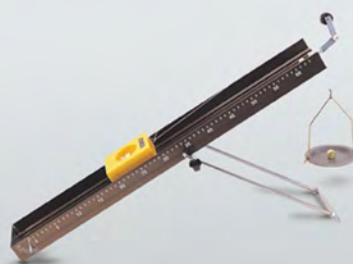
Elastic collision



Two-dimensional collision devices



Inclined plane apparatus



Bevel bench



Friction experiment



Elastic view cart



Air vehicle



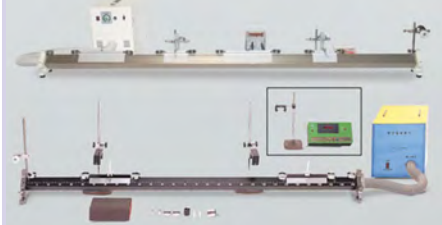
Vehicle magnets



C-type clamp



Non rubbing experiment



Spring (pushing)



Spring (Pulling)



Spring set



Spring (3 kinds)



Centripetal force apparatus (electric)



Rotating



Standstill inertia



Projection surface wave devices



Laboratory wave spring



Melde's experiment



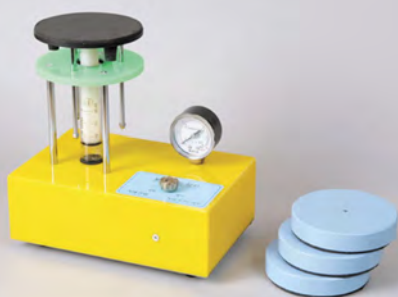
Metal density meter



Surface tension



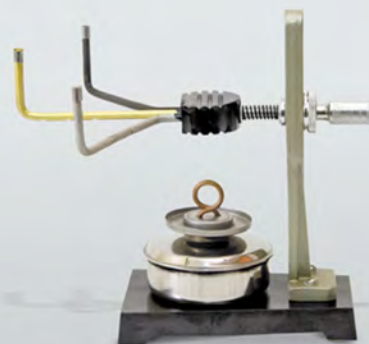
Boyle's law



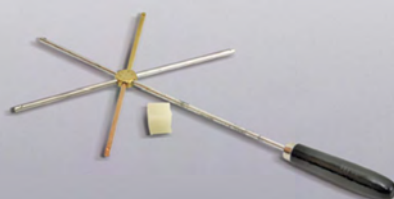
Pascal's principle



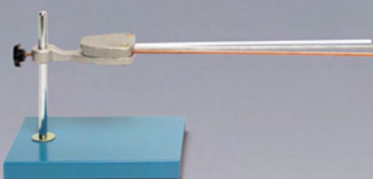
Thermal conduction apparatus A type



Thermal conduction apparatus B type



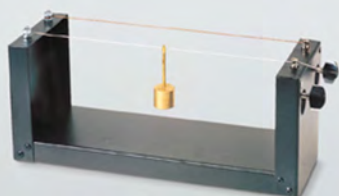
Thermal conduction apparatus C type



Expansion ball and ring



Linear expansion apparatus



Radio meter



Heat measurement devices



Calorimeter



Joule's heat apparatus



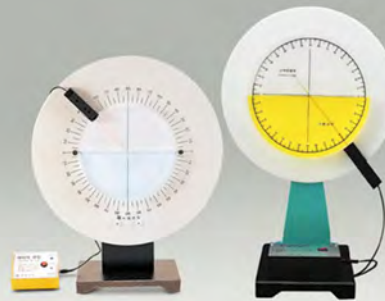
Laser abuse



Laser generator



Bucket for optical



Light comprehensive test kit



Lighting source



Colorless glass rod



Light synthetic test kit



7 color plates



Magnifier



Convex, concave mirrors for both



Convex lens



Triangular prism



Flat mirror



Floor lamp



Lighting system



Spectrometer



Extra spectroscopy



Newton ring



Face spectroscopy



Polarizer



Photocurrent measurement system



Line spectrum light Source



Line spectrum light source



Multiple flash devices



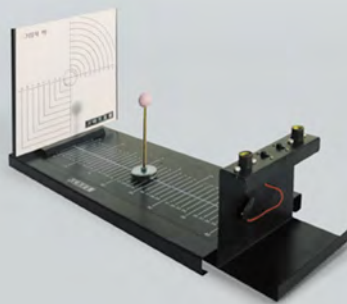
Stroboscope



Linear light source



Shadow observation kit



Ultraviolet rays lamp



Convection box



Pinhole camera



Shadow box



Diapason



Standard tuning



Host resonance apparatus



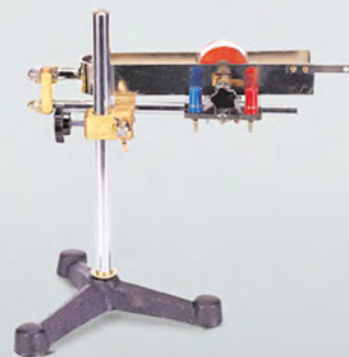
Organ pipes



Wave interference



Electronic tuning



Model lyra



Bar magnet



Horseshoe magnet (force, alriko)



Simple electromagnet (not) for each



Powerful magnet plates



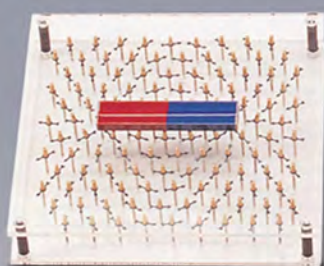
Magnetizer



Magnetic compass (a compass stand)



Observations on 3D magnetic needle



Dip the room hierarchy



Erester kit



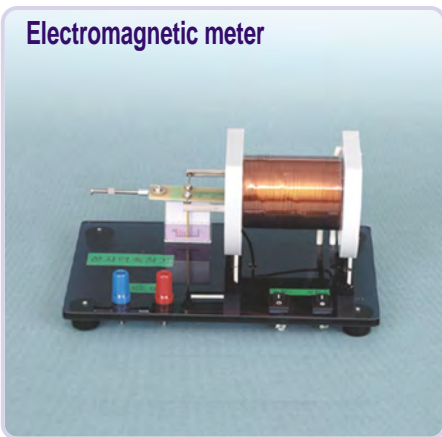
Acupuncture



Solenoid



Electromagnetic meter



Bicycle generator



Light bulbs



Choke coils



Electric condenser



Slide resistor



Ohm's law descriptor



Wheatstone bridge



Charge-ray lane experiments



Fast switch



Double switch



Cable tongs



Friction electrical test instruments



Metal foil electroscope



Electrical pendulum



Van de graff



Spectrum tube



Vacuum tubes



Expression of electrolysis



Gas molecule movement apparatus



Measuring osmotic



Fireworks set of reaction



Branched round flask



Round bottom flask



Beaker



Erlenmeyer flask



Reagent bottle (wide-mouth White)



Reagent bottle (wide-mouth Brown)



Reagent bottle (narrow-mouth White)



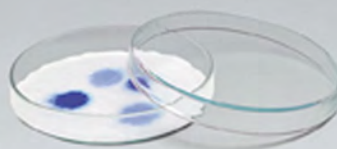
Reagent bottle (narrow-mouth Brown)



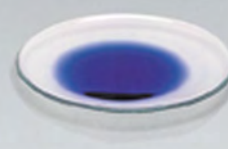
Funnel



Chalet



Watch glass



Connection tube



Basis weight bottles



Test tube



Glass tube



Desicator



Lampshade



Dropper



Pnumetic bottle



Chick sensible atmosphere



Burette



Safety funnel



Mass cylinder



Pipette scalpel



Hall pipette



U tube



Libby hebrews cooler



Rubber stopper



Cork stopper



Crucible



Mortar



Evaporating dish



Burette clamp



Iron stand



Clamp



Test tube stand



Funnel stand



Pipette stand



Stirrer (Magnetic heating)



Stirrers (Magnetic)



Sieve



Burette brush



Beaker brush



Tube brush



Cork borer



Spatula



Pincette



Pinch cork



Pinch clamp



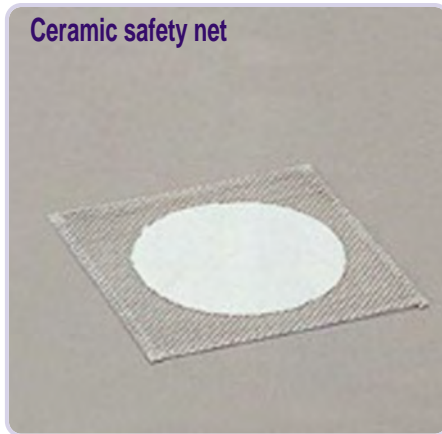
Tripod



Spirit-lamp



Ceramic safety net



Tube clamp



Filter paper



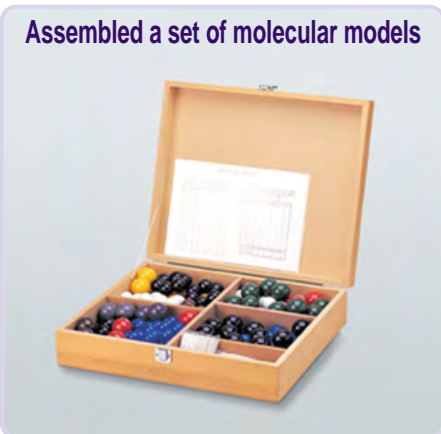
litmus test of paper



PH testing paper



Assembled a set of molecular models



Assembled a set of molecular models



Insect toolset



Plants collected a set of tools



Room type template



Durham Tube



Dissect set



Dissecting dish



Insect specimen boxes



Display pannel



Microtome



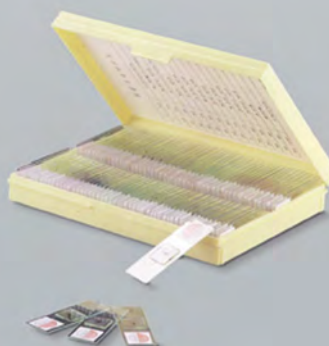
Slide glass (glass support)



Cover glass



Permanent preparat set



Human skeleton muscle model



Human skeleton model



Human circulatory system model(LED)



Human torso model



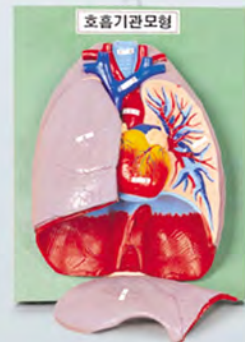
Human leg muscle model



Human digestion organ model



Human respiratory organ model



Ear structural models



Eye structure model



Tooth structure model



Heart structure model



Tooth model



DNA models



Plants samples



Insect samples



Frog specimen



Sea sponge specimen



Sea urchin specimen



Apple snail specimen



Jellyfish specimen



Grapsid crab specimen



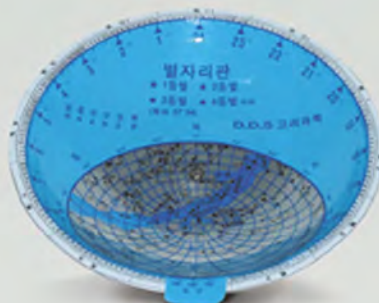
Illuminated orbital planetarium



Illuminated orbital planetarium



Planisphere



Semi-transparent set



Vertical globe



Bearing plate



Fault model



Fold model



Earth's interior structure models



Volcano model



Contact goniometer



Geological survey, a set of instruments



Marble samples



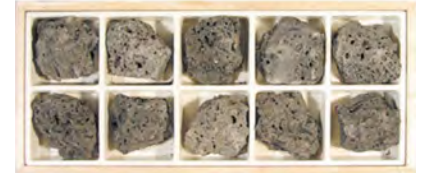
Samples of sandstone



Mudstone samples



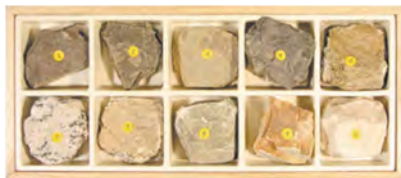
Basalt samples



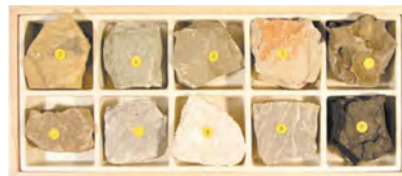
Granite samples



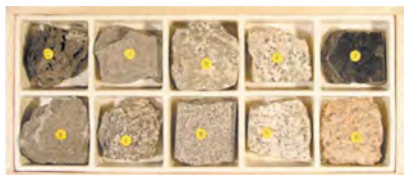
Metamorphic samples



Sedimentary samples



Igneous rock samples



Mohs hardness



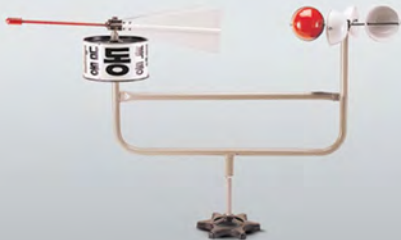
Dual Temperature



Shelter(set)



Wind vane



Wind vane (Portable digital)



Rain gauge



Dry bulb thermometer



Maximum-minimum thermometer



Soil Thermometer



Sundial



Changes in insulation apparatus



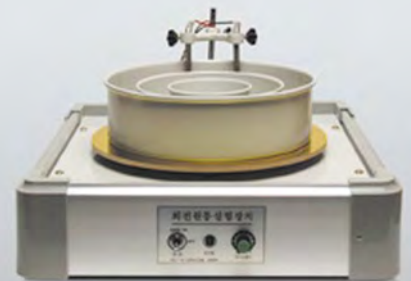
Vertical distribution of temperature



Deflecting force apparatus



Rotating cylinder apparatus



Laboratory Instruments

Center Table



Side Table



Corner Table



Sink Table



Working Table



Balance Table



Storage Cabinet



Wall Mounted Cabinet



Mobile Cabinet



Reagent Storage



Filtration Reagent Storage Cabinet



Laminar Flow Cabinet (Clean Bench)



Biological Safety Cabinet



Fume Cupboard (Fume Hood)



Filtration Fume Cupboard (Ductless Fume Hood)



Mobile Filtration Hood System



Extraction Arm System



Autoclave



Sterilizer for Medical



Shaking & Heating Bath



Heating Bath Circulator



Refrigerated Circulating Bath



Shaking Water Bath



Immersion Circulator



Refrigerated Chiller



Refrigerated Recirculator



Aspirator Pump



General Purpose Centrifuge



Clinical Centrifuge



Refrigerated Centrifuge



High Speed Centrifuge



Ultrasonic Cleaner



Pipette Cleaner



Glassware Washing Machine



Cubic Vacuum Desiccator



Hydraulic Bench



Inclined Manometer



Flow Visualization Apparatus



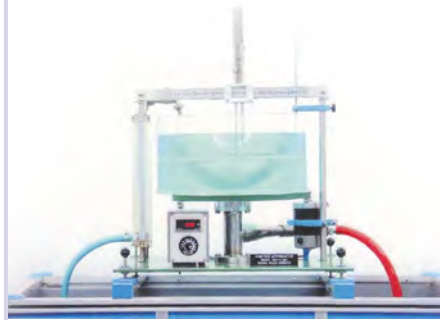
Jet Impact



Flow Measuring Apparatus



Vortex Apparatus



Orifice & Jet Apparatus



Flow Through Orifice



Fluid Friction Apparatus



page

Heat Exchanger



Fan Test Rig



Tilting Flow Channel



Muffle Furnace



Tube Furnace



High Temperature Furnace



Glove Box



Heating Mantle



HotPlate



Hot Plate & Magnetic Stirrer



Magnetic Stirrer-Multi position



Immersion Stirrer



Gravity Convection Incubator



Forced Convection Incubator



CO2 Incubator



BOD Incubator



Low Temperature Incubator



Constant Temperature & Humidity Chambers



Growth Chamber



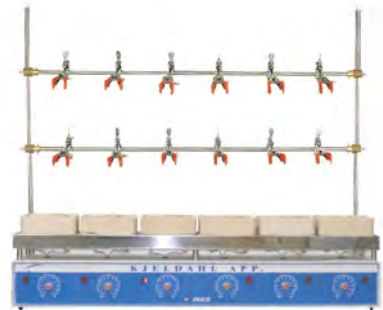
Incubated Shaker



Jar Test Apparatus



Kjeldahl Digestion System



Gravity Convection Oven



Forced Convection Oven



Vacuum Oven



Laboratory Refrigerator



Ultra-Low Temperature Freezer (Deep Freezer)



Blood Bank Refrigerator



Pharmaceutical Refrigerator



Ice Maker



Freezer Dryer



Rotary Evaporator



Orbital Shaker



Reciprocating Shaker



Rocking Shaker



Rolling Shaker



Platform Shaker



Funnel Shaker



Vertex Mixer



Sieve Shaker



Soxhlet Apparatus



Pure Water Purification System



Ultra Pure Water Purification System



Pure & Ultra Pure Water Purification System



Acidity Meter



COD Analyser



Conductivity Meter



DO Meter



Moisture Meter



PH Meter



Refractor Meter



Salt Meter



Spectrophotometer



PH / Ion Meter



Animal Breeding Facilities & Equipment



Vocational Training Instruments

Machinery and Automobile

Combine structure educational system(Cutting parts)



Power tiller structure educational system



Tractor structure educational system



4 stroke gasoline engine structure educational system



2 stroke gasoline engine structure educational system



Dynamometer



Standard Triaxial Apparatus



Digicom Motorized Vane Tester



Digicom Consolidation Apparatus



Automatic Mechanical Compactor



Gasoline engine educational system



MOTRONIC educational system



Diesel 4WD automotive power train educational system



Engine & A/T simulation educational system



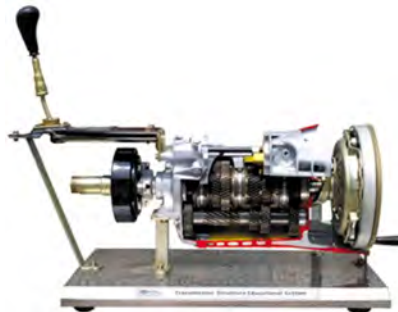
Engine practical training educational system



CRDI Diesel engine & A/T simulation educational system



M/T structure educational system



4 x 4 Diesel engine educational system



F / R automotive power train educational system



Air conditioner simulation educational system



Integrated electric & electronic components educational system



ECS simulation educational system



Engine stand for practical training



ABS simulation educational system



V6 engine exhibition system



Ro-Tap Sieves Shaker



75mm Motorized Sieve Shaker



Motorized Sieve Shaker



Concrete Creep Apparatus



Precision Large Sample Cutting Machine



Three Dimension Sieve Shaker



Concrete Mold Grinding Machine



Electric & Electronic Measuring Device, Automatic Control

Smart-grid Solar & Wind Power Trainer



Portable Solar Power Trainer



Grid-tie Solar Power Training System



Stand-alone Solar Power Generation Trainer



Multifunctional Electrical Meter



Pneumatics Training System



Hydraulics Training System



Digital Supersonic Cleaner



Mini-MPS Trainer



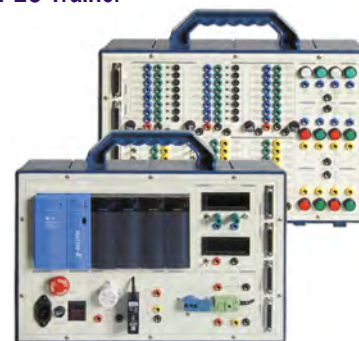
Sensor training set



Transparent model



PLC Trainer



Digital Logic Lab Unit



Analogue Lab Unit



Analogue & Digital Circuit Trainer



Factory Pneumatic Robot Trainer



Electronic Demonstration Trainer



Temperature Control Trainer



Elevator Trainer



Building Parking Trainer



PLC Sensor Circuit Trainer



Function generator



DC Switching Power Supply



Computing Scale



All In One Instrument



1MHz Audio Oscillator



100MHz Real Time Analog Oscilloscope



Analyzer Wireless LAN Protocol Analyzer



CDMA Win DM Protocol



Bluetooth Analyzer



Embedded Training System



Analyzer ANYPA-LAN Protocol Analyzer



IMT-2000 DM & Protocol Analyzer



20MHz Function Generator



Function Generators



Transistor Curve Tracer



Label Printing Scale



Precision Weighing Scale



Precision Loadcell Balance



Precision Loadcell Balance



Parts Counting Scale



Price Computing Scale



Sensor module



CO2 & Temp. Indicator



CO2 Monitor



Oxygen Gas Monitor



Stainless Steel Temperature Sensor



Photodiode Light Sensor



Voltage Sensor



PH Sensor



CO2 Sensor



Force Sensor



Science cube - LITE



Gas Pressure Sensor-B



Current Sensor



Microphone



Gas Pressure Sensor-A



Magnetic Field Sensor



Motion Detector



Galvanometer



Thermocouple Probe



PT Stainless Steel Temperature Sensor



Dissolved Oxygen Probe



Photogate Probe



Relative Humidity Sensor



#131, Changsungdong Jongnogu, Seoul 110-034, KOREA

Phone : +82-2-725-4495

Fax : +82-2-725-6111

Website : www.ksiic.or.kr

e-mail : ksiic@ksiic.or.kr



Korea Scientific Instruments Industry Cooperative(KSIIC)

MEMBER LIST



21 SCIENCE

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Gwonong-dong, Jongno-gu, Seoul,
Korea
Phone +82-02-766-6406
Fax +82-02-766-6408
URL
Product switch, stand

ACOM INC.

Address 679-1 Yugyo-ri, Gunnae-myun,
Pocheon-si, Kyunggi-do Korea
Phone +82-031-531-2205
Fax +82-031-531-9199
URL www.acominc.co.kr
Product Elec Scale

AD POWER CO., LTD.

Address 402-1304 bucheon techno-park 4bl 193
yakdae-dongwonmidistrict bucheon
city Korea
Phone +82-070-7777-
Fax +82-032-234-3793
URL www.adpower21.com
Product Power Meter. Power Quality
Analyzer. Analog Oscilloscope.
Signal Generator. DC Power Supply.
Power Factor & Frequency Meter

AHA I&C CO., LTD.

Address Lot2 Block33, F2 Yangchon
Industrial Park Hakwoon-ri
Yangchon-myon, Kimpo-si,
Kyunggi-do, KOREA
Phone +82-031-997-0909
Fax +82-031-997-0911
URL www.ahainc.co.kr
Product video presenter language lab system,
cyber computer board

AN SUNG SCIENTIFIC CO.

Address Nadong, 818, Deogi-dong, Ilsan-gu,
Goyang-si, Gyeonggi-do, Korea
Phone +82-031-919-9155
Fax +82-031-919-9144
URL
Product Pulley

A-SUNG CO.

Address 241-91 Guuil-dong Gwangjin-gu
Seoul Korea
Phone +82-02-765-8404
Fax +82-02-747-3622
URL www.asunlab.com
Product Mini Lamp Socket

B&S MEDIA CO., LTD.

Address JNK Digital tower A 703-ho, 222-3,
Guro-dong, Guro-gu, Korea
Phone +82-02-588-3323
Fax +82-02-588-3659
URL www.bnsmedia.co.kr
Product A/V SYSTEM, Broadcast Solution,
Educational Product

BnB Tek

Address 446 Life sangga 614-33 Guro-dong
Guro-gu Seoul Korea
Phone +82-02-2068-6992
Fax +82-02-2068-6991
URL www.mmieng.com
Product Slide. PLC Trainer.

BORA GYOGU CO.

Address 85-26 Won-dong Dong-gu
Daejeon-si, Korea85-26
Phone +82-042-256-2526
Fax +82-042-256-2612
URL
Product Lab Table. Fume Hood

BOSUNG ELECTRONICS CO. LTD.

Address Saemaellulo 74-12, Gumi-si,
Gyeongsangbuk-do, Republic of
Korea
Phone +82-054-452-4584
Fax +82-054-455-0034
URL www.bse.co.kr
Product

C&C INSTRUMENTS CO., LTD.

Address 203-806, Techno-Park, 192
Yakdaedong, Wonmigu, Bucheon,
Kyungkido, Korea
Phone +82-032-327-3344
Fax +82-032-327-3348
URL www.cncinst.co.kr
Product Wibro/HSDPA/802.11a/b/g/e
Simulator & Analyzer, Ubiquitous,
u-Smart Home, Embedded,
U-Smart Robot,

CASPI CO., LTD.

Address 251-12 Mokdongri Kyohaep
Paju-si, Gyeonggi-do Korea
Phone +82-031-943-0541
Fax +82-031-943-0543
URL www.caspihome.com
Product Projector Screen, Projector Lift,
Portable Screen

CHC LAB CO., LTD.

Address 520-1, Yongsan-dong, Yuseong-gu,
Daejeon, KOREA
Phone +82-042-933-0036
Fax +82-042-933-0039
URL www.chclab.com
Product Laboratory furniture, fume hood,
clean bench and biological safety
cabinet

CHEIL SCIENCE CO., LTD.

Address 5F Yujin bldg, 139-2,
Dangsan-dong 3(sam)-ga,
Yeongdeungpo-gu, Seoul, KOREA
Phone +82-02-3667-9512
Fax +82-02-3667-9515
URL www.cheilsci.com
Product Fume Hood, Convection Drying
Oven, Clean bench, Constant
Temp.& Humidity Chamber, etc

CHONGWON COMPANY

Address 171-36 Gwonong-dong Jongno-gu
Seoul Korea
Phone +82-02-741-5078
Fax +82-02-766-4079
URL www.krscience.com
Product electrolysis Apparatus

CHUNG BUK SCIENCE CO., LTD.

Address 499-1, Bokdae-dong,
Heungdeok-gu, Cheongju-si,
Chungcheongbuk-do. Korea
Phone +82-043-234-6200
Fax +82-043-231-4499
URL
Product Incubator, Shaker

CHUNGPA EMT CO., LTD.

Address No.906, Daeryung Technotown 6th,
#493-6, Gasan-dong,
Gumcheon-gu, Seoul, Korea
Phone +82-02-2108-5980
Fax +82-02-2108-5988
URL www.chungpaemt.co.kr
Product Electric Installation Safety
Measurement Trainer, Integrated
Senor Application Trainer,
Micro Processor Trainer.
Multifunctional Electric Meter.

COMBUSTECH CO., LTD.

Address Eiseuhaiendutawo 612-ho, 235-2,
Guro-dong, Guro-gu, Seoul, Korea
Phone +82-02-6299-5151
Fax +82-02-6299-5158
URL www.combus.co.kr
Product Cyber computer board,
Electronic Desk & Visual Presenter,
Cyber Iecture Solution,
Multimedia Learning System

COMMBOX TECHNOLOGY CO.,LTD.

Address #703, C-Dong, Yongtong-dong,
Yongtong-Gu, Suwon-si,
Gyeonggi-do, Korea
Phone +82-031-205-5577
Fax +82-031-205-5077
URL www.commtek.co.kr
Product Interactive White Board

COURSE AUTO

Address 792-160, Dongseo-ri, Hayang-eup,
Gyeongsan-si, Gyeongsangbuk-do,
Korea
Phone +82-053-8290-
Fax +82-053-853-2515
URL
Product Engine Simulator

CURIOUS CO., LTD.

Address 14F, Ace-High End Tower 6CHA
60-25, Gasan-dong, Kumchun-gu,
Seoul, Korea
Phone +82-02-6299-5000
Fax +82-02-6299-5001
URL www.curiousinc.com
Product CNC CONTROLLER, OLED CAP.

DAE KYUNG ENGINEERING CO., LTD.

Address Samjeong-dong 224-9 Ojeong-gu
Bucheon-si, Gyeonggi-do Korea
Phone +82-032-677-2931
Fax +82-032-675-8774
URL www.dktester.com
Product Tensile Testing Machine

DAE RIM SCIENCE

Address 189-6, Munhyeon 3(sam)-dong,
Nam-gu, Busan, KOREA
Phone +82-051-637-8912
Fax +82-051-637-8914
URL
Product Table

DAE SUNG G-3 CO., LTD.

Address 559 Hansa-ri, Hayang-Eup,
Gyeongsan-si, Gyeongsangbuk-do,
Korea
Phone +82-053-854-2400
Fax +82-053-854-2406
URL www.g-3.co.kr
Product Automotive power train, engine,
electric system, transmission,
clutch, brake, steering, suspension,
axle, air conditioning, fuel system,
automotive parts,

DAEBONG TECHONE CO., LTD.

Address Garden Five B-Dong 807-ho, 289,
Jangji-dong, Songpa-gu, Seoul
Korea
Phone +82-02-2047-0388
Fax +82-02-2047-0389
URL www.dbtechone.com
Product Analog Experimental device

DAEIL TRADING COMPANY

Address SK 144-902-ho, 1353, Mia
7(chil)-dong, Gangbuk-gu, Seoul,
Korea
Phone +82-02-2265-1088
Fax +82-02-2265-2089
URL
Product Fume Hood, Lab Table, incubator,
Clean Bench

DAI HEUNG INSTRUMENT CO.

Address 184-1 Gwonong-dong Jongno-gu
Seoul Korea
Phone +82-02-743-2779
Fax +82-02-741-6450
URL
Product sedimentation experiment,

DAIHAN LABTECH CO., LTD.

Address 247-16 Gagok-Ri Hwado-Eup
Namyangju-City, Kyonggi-Do,
Korea
Phone +82-031-593-9561
Fax +82-031-593-9563
URL www.labtech.co.kr
Product Autoclave, Phourmaceutical
Refrigerators, Thermo-hygrostal

DAIHAN Scientific CO., LTD.

Address 187-1, Wolsong-ri, Jijeong-myeon,
Wonju-si, Gangwon-do, Korea,
Phone +82-033-737-7500
Fax +82-033-737-7509
URL www.DAIHAN-Sci.com
Product Temperature & Humidity chamber,
Incubator, Water bath, Shaker,
Shaking incubator,
Culture chamber, Dew chamber,
Cold wind seed dry, Clean bench,

DASOL KOREA CO., LTD.

Address Hyeemno 1300-183,
Gwangtan-myeon, Paju-si,
Gyeonggi-do Korea
Phone +82-031-957-0297
Fax +82-031-957-1039
URL www.dasolko.co.kr
Product model etc

DASOL SCIENTIFIC CO., LTD.

Address 570-2, Banwol-dong , Hwaseongsi,
Gyeonggi-do Korea Korea
Phone +82-031-376-1526
Fax +82-031-377-4264
URL www.dasolltd.co.kr
Product Growth chamber, Temperature &
Humidity chamber, Incubator,
Water bath, Shaker,
Shaking incubator, Culture
chamber, Dew chamber, Seed
germinator,

DEAMYUNG SCIENCE

Address 38-2, Waryong-dong, Jongno-gu,
Seoul Korea
Phone +82-02-744-1178
Fax +82-02-747-0212
URL
Product Molecular Model Kit, Variable
Rheostat

DESTEK

Address 1017-2, Jungni-dong Seo-gu Daegu
703-090 Korea(South)
Phone +82-053-753-5477
Fax +82-053-753-5477
URL
Product Automotive educational system,
Automotive simulator system

DIDATEK CO., LTD.

Address 7F minam Bldg, 1400-6,
Oncheon-dong, Dongnae-gu,
Busan, Korea
Phone +82-051-638-1271
Fax +82-051-638-1274
URL www.eddiatek.co.kr
Product Educational Trainer & measuring
equipmet

DILLI INCORPORATED

Address 542-2, Dongducheon-dong,
Dongducheon-si, Gyeonggi-do
Korea
Phone +82-031-860-5500
Fax +82-031-860-5590
URL www.dilli.co.kr
Product Drafting Machine.

DONG A ELTEK CO., LTD.

Address 1428-2 Gwanyang-dong Donga-gu
Anyang-si Gyeonggi-do Korea
Phone +82-031-345-1500
Fax +82-031-421-4053
URL www.dongaeltek.co.kr
Product TFT-LCD Aging System,TFT-LCD
LCD Aging Tester

DONG JIN E&T CO., LTD.

Address 1301Ho,Ko-O-Rong Digital tower
Building Unit2,
Guro-dong,Goro-Gu.Seoul. Korea
Phone +82-02-585-3565
Fax +82-02-585-3566
URL www.dimt.co.kr
Product Educational Training Equipment,
Hydraulics Trainer,
Electricity & Electronics
Educational Equipment
Electronics Educational Equipment,

DONG SHIN INSTRUMENT PLANT CO., LTD.

Address 493-32 Dongsin B/D 2F,
Gongneung-dong, Nowon-gu,
Seoul, Korea
Phone +82-02-975-6201
Fax +82-02-977-8360
URL www.dongshinipc.com
Product Chloride Analyzer

DONGAH TESTING MACHINE

Address 656-505, Sungsoo1-ka
Sungsoo-dong, Sungdong-Gu,
Seoul, Korea
Phone +82-02-463-7231
Fax +82-02-469-0553
URL www.dongahtest.com
Product universal test machine, water
testing machine, civil construction
testing machine

DONGIL SCIENCE CORP.

Address 12-6, Bupyeong-dong 4(sa)-ga,
Jung-gu, Busan, Korea
Phone +82-051-257-1010
Fax +82-051-257-1040
URL www.dongilsci.com
Product Dry Oven, Incubator

DONGWON SCIENTIFIC

Address 33-7 Beonji, Bupyeong-dong 1Ga,
Jung-gu, Busan Korea
Phone +82-051-245-7521
Fax +82-051-246-8521
URL www.dongwonsm.co.kr
Product Universal Testing Machine, Ball
mill, Furnace, Friction Experiment
Apparatus, Incubator

DONGWON SYSTEMS CO., LTD.

Address 275 Dongwon Industries Bldg. 5F,
Yangjae-dong, Seocho-gu, Seoul,
Korea
Phone +82-02-589-4759
Fax +82-02-589-4750
URL www.dongwonsystems.com
Product Microscope, Visual-Projector, Over
Head Projector, LCD-Projector,
Screen, Telescope, Computer Sys.

DONGYOO ELECTRONICS CO., LTD.

Address 267-10, Yumchang-dong,
Gangseo-gu, Seoul, Korea
Phone +82-02-3662-5234
Fax +82-02-3664-0763
URL www.dymix.co.kr
Product Language Lab System,
Interactive White Board

DREAM INFOTECH CO., LTD.

Address SJ Techno Vill 1412 Gasan-dong,
60-19 Gasan dong, Geumcheon-gu,
Seoul, Korea
Phone +82-02-3397-3939
Fax +82-02-3397-3930
URL www.dreamlab.co.kr
Product computer, monitor, language lab
system

EARZONE CO., LTD.

Address #309. Ace Techno Tower 3,
197-48, Kuro3-Dong, Kuro-Ku,
Seoul, Korea
Phone +82-02-811-3500
Fax +82-02-811-3533
URL www.earzone.co.kr
Product wireless education system video
presenter

ED CO., LTD.

Address 517-15 Sangdaewon-dong
Jungwon-gu Seongnam-si
Gyeonggi-do Korea
Phone +82-031-730-7300
Fax +82-031-730-7312
URL www.ed.co.kr
Product PLC Trainer. Automatic control
Trainer, Hydraulics Pneumatics
Trainer, FMS
Industrial Trainer, DMM DC Power
Supply, Spectrum Analyzer

EMAX GREEN CO., LTD.

Address 310-ho, Cheongam Bldg.
1650-21, Sinlim 8-dong,
Kwanak-ku, Seoul, KOREA.
Phone +82-02-857-0123
Fax +82-02-857-0890
URL
Product Sensor Trainer.

ESOL Information & Communication CO., LTD.

Address #707, SK Techno B/D 16-4,
Sungsu-1ga, Sungdong-gu, Seoul,
Korea
Phone +82-02-548-5172
Fax +82-02-547-2493
URL www.esolgroup.co.kr
Product Interactive White Board

ETHE

Address 269-3. Dodang-Dong, Wonmi-gu,
Buch-si, Gyeonggi-Do, Korea
Phone +82-032-684-4616
Fax +82-032-684-4615
URL www.ethe.co.kr
Product Process control system, Servo
control system, Computer control
system, Circuit Testing machine,
Fluid Control system

EUNHA FLUID SCIENCE

Address 13-450, Sungsu1ga-dong,
Sungdong-gu, Seoul, Korea
Phone +82-02-463-0407
Fax +82-02-462-0971
URL www.ehf.co.kr
Product Hydraulics Bench. Inclined
Manometer.
Flow Through an Orifice. Tilting
Flow Channel

FESTECH CO., LTD.

Address RM#706, Daeryung-technotown 5,
493, Kasan-Dong, Geumcheon-Ku,
Seoul, Korea
Phone +82-02-2107-7800
Fax +82-02-2107-7801
URL www.festech.co.kr
Product Hydraulic-Pneumatic Training set.
Sensors training set.

FESTOONE CO., LTD.

Address 1305, 481-10, Kasan-dong,
Kumchun-ku, Seoul, Korea
Phone +82-02-2113-0660
Fax +82-02-2113-0664
URL www.festoone.co.kr
Product Microprocessor Trainer. Basic
Electronics

GMP CO., LTD.

Address 472, Munbal-ri, Gyoha-myeon,
Paju-si, Gyeonggi-do, Korea
Phone +82-031-943-5000
Fax +82-031-942-8812
URL www.gmp.co.kr
Product Lamination

GREEN CORE SYSTEM CO., LTD.

Address 1006-202, Bucheon Technopark-
3danji, Samjeong-dong, Ojeong-gu,
Bucheon-si, Gyeonggido Korea
Phone +82-032-624-3495
Fax +82-032-624-3497
URL www.green-core.co.kr
Product Video Presenter, Air Quality
Monitor, Air Circulator

GT SCIEN CO., LTD.

Address 222, Hanshinsmecha, 1359,
Gwanpyeong-Dong, Yuseong-Gu,
Daejeon. Korea
Phone +82-042-936-4520
Fax +82-042-621-2892
URL www.gtscien.com
Product Lab Table, TOGA Clean System.

H.I SYSTEM CO., LTD.

Address 21,4F Pos-techno B/D, 234-1, Sangdaewon-Dong, Jungwon-Gu, Sungnam-City, Gyeonggi-Do, Korea
Phone +82-031-737-5544
Fax +82-031-737-5548
URL www.hi-sys.co.kr
Product Embedded Linux System, Ubiquitous, Robot, Network, Microprocessor, DVR

HAHNSHIN SCIENTIFIC CO.

Address 320-8 Nae-dong Ojung-ku Bucheon Kyungki-do, 421-807 South Korea
Phone +82-032-675-6276
Fax +82-032-678-9652
URL www.hsscience.co.kr
Product Rotary evaporator, Cooling water bath, Electric aspirator

HAN IL DIS

Address 732-2 1F, Geumho-dong, Seo-gu, Gwangju. KOREA
Phone +82-062-383-7744
Fax +82-062-383-7746
URL
Product pitchfork Stimmgabel tuning fork

HAN IL LAB TECH CO., LTD.

Address 26-38, Pyeonghwaro 1677, Yangjusi, Gyeonggi-do Korea
Phone +82-02-2265-1426
Fax +82-02-2277-5106
URL www.hanillab.co.kr
Product Fume Hood

HAN KOOK AV SCIENTIFIC CO., LTD.

Address Centerm IS tower 902-ho, 1209, Jaesong-dong, Haeundae-gu, Busan Korea
Phone +82-051-808-5566
Fax +82-051-803-1413
URL www.hankookscience.com
Product Screen, aerovane, test tube rack

HAN SUNG F&C CO., LTD.

Address 3-50, 3Fl., Jun-dong, Nam-gu, Incheon. KOREA
Phone +82-032-872-0846
Fax +82-032-563-6697
URL www.hansungfc.com
Product Dry Oven. Stirrers

HAN WON INDUSTRIAL CO.

Address #608 Hyosung city office A-dong, 48-2 Inui-dong Jongno-gu Seoul Korea
Phone +82-02-2267-2936
Fax +82-02-2277-7522
URL www.hanwonsoway.co.kr
Product Beaker Dyeing Apparatus with IR radiator

Laundry O Meter(Model;HT-700)

HANBACK ELECTRONICS CO., LTD.

Address 487-1, Gung-dong, Yuseong-gu, Daejeon, KOREA
Phone +82-042-610-1111
Fax +82-042-610-1199
URL www.hanback.com
Product Ubiquitous Sensor Network, Embedded System, Intelligent Robot

HANBAEK SCIENTIFIC CO.

Address 4-7 Wonmi-dong, Wonmi-gu, Bucheon-si, Kyunggi-do, Korea
Phone +82-032-654-9772
Fax +82-032-654-0070
URL www.hanbaeksci.co.kr
Product dry oven incubator clean bench

HANIL SCIENCE INDUSTRIAL

Address 853-19, Jakjeon 2(i)-dong, Gyeyang-gu, Incheon Korea
Phone +82-032-543-6906
Fax +82-032-542-7124
URL www.ihanyl.com
Product Centrifuge

HANJIN MULTIMEDIA

Address 343-2 Yeonghwa-dong Jangan-gu, Suwon-si Gyeonggi-do Korea(South)
Phone +82-031-242-8833
Fax +82-031-242-7117
URL www.기상전광판.kr
Product human body model,

HANKOOK LAB.EQUIPMENT MFG CO.

Address 122 Sansuri, Buyong Myon Chong won kun, Chung buk
Phone +82-043-277-6650
Fax +82-043-277-6654
URL www.fumehood.co.kr
Product Fume Hood, Clean Bench, Forced Air Sender, Lab Table

HANKOOK SCIENCE CO.

Address 42, Waryong-dong, Jongno-gu, Seoul KOREA
Phone +82-02-764-2948
Fax +82-02-742-0479
URL
Product easy switch

HANSHIN KUMPUNG CO., LTD.

Address 301-1 Chowonji-ri Daegot-myeon Gimpo-gun Gyeonggi-do Korea
Phone +82-031-989-9991
Fax +82-031-989-9994
URL www.han-shin.co.kr
Product Universal Testing Machine

HIROSCI CO., LTD.

Address 101 Industry Academic Cooperation Foundation, Yeongnam Univ. Daemyeong 3dong Namgu Daegu Korea
Phone +82-053-655-8980
Fax +82-053-655-8982
URL www.hirosci.com
Product Jet controller, Scientific Experimental Instruments

HONGIK Corporation

Address 265 Wonnam-dong Jongno-gu Seoul Korea
Phone +82-02-762-4551
Fax +82-02-742-8870
URL
Product Power Relay, Eol Relay, Set Reset

HONGMYONG FURNITURE

Address 154-24 Pyeongchon-dong Daedeok-gu Daejeon, KOREA
Phone +82-042-822-2734
Fax +82-042-932-7100
URL www.hongmyong.co.kr
Product Testing bench, show case

HUMAN CORPORATION

Address 304-19, Jamsilbon-dong, Songpa-gu, Seoul, Korea
Phone +82-02-418-4182
Fax +82-02-423-6430
URL www.humancorp.co.kr
Product Water Purification System, UV/VIS Spectrophotometer, Kjeldahl System, Washing Machine, Camera for microscope

HUSTEM CO., LTD.

Address 943-27, Daechi 2-dong, Gangnam-gu, Seoul, Korea
Phone +82-02-6262-1080
Fax +82-02-508-6399
URL www.hustem.co.kr
Product Interactive White Board(CreaBoard)

HWA SUNG INDUSTRIAL CO., LTD.

Address 238-6, Ihyun-dong, Seo-gu, Daegu, Korea
Phone +82-053-526-6701
Fax +82-053-521-2937
URL www.hscaster.co.kr
Product Automobile Education Electric Welding

HWANWOONG MECHATRONICS CO., LTD.

Address 578-21 Sinsan-ri Sanin-myeon Haman-gun Gyeongsangnam-do Korea
Phone +82-055-582-7970
Fax +82-055-582-7975
URL www.dytek.co.kr
Product Dynamometer, Engine Performance Test System
 Combustion Analysis System

HWASHIN TECHNOLOGY CO.

Address 216-7, Jangji-dong, Gwangju, Gyeonggi-do Korea
Phone +82-031-765-2530
Fax +82-031-765-2540
URL www.hwashin.net
Product Ultrasonic Cleaner, Ultrasonic Pipet Cleaner, Roller Mixer, Vortex Mixer, Ratator

ICAN CO., LTD.

Address 504, HanSin S meca 1359, KwanPyung-dong, YuSung-gu, DaeJeon, Korea
Phone +82-042-934-6928
Fax +82-042-934-6927
URL www.icankorea.co.kr
Product Power supply

IEG CO., LTD.

Address 2F 211, MEGA Center SKn TechnoPark, 190-1 Sangdaewon-dong, Seongnam-si, Gyeonggi-do, Korea
Phone +82-1644-3263
Fax +82-031-776-4448
URL www.ieg.kr
Product Hybrid Generation System Trainer. Intelligent Robot Trainer. PC Based Sensor Trainer

IKEON SCIENTIFIC CO.

Address 183-15 Poi-dong Gangnam-gu Seoul Korea
Phone +82-02-529-5901
Fax +82-02-529-5905
URL
Product Dry Oven, Fume Hood

IL DONG CHEMICAL CO.

Address 205-1 Jungni-dong Daedeok-gu Daejeon-si Korea
Phone +82-042-621-5260
Fax +82-042-621-5261
URL
Product Dry Oven, Fume Hood, Autoclave, incubator,

IL SHIN SCIENCE CO., LTD.

Address 485-5 Yeonsan9-dong Yeonje-gu Busan-si Korea
Phone +82-051-759-0731
Fax +82-051-759-0734
URL www.일신과학.co.kr
Product Double Coil, wind gauge

ILSHIN BIOBASE CO., LTD.

Address 482-872 82 Ibam-ri Nam-myeon Yangju-si Gyeonggi-do Korea
Phone +82-031-867-1384
Fax +82-070-7950-
URL www.1sbb.com
Product Deep Freeze. Freeze Dryer. Ice Maker.
 Programmable Vacuum Freeze Dryer

ISTEK. INC.

Address Room 1011, Hanshin IT-Tower, #235 Kuro-Dong, Kuro-Ku, Seoul Korea
Phone +82-02-2108-8400
Fax +82-02-6442-8430
URL www.istek.co.kr
Product pH/ISE/DO/EC Meter TMS(COD, Chlorine, TN, Turbidity)

JEIL INDUSTRIAL CO.

Address 40-1, Waryong-dong, Jongno-gu, Seoul, KOREA
Phone +82-02-766-6058
Fax +82-02-764-7850
URL www.jeilsience.com
Product Wind Vane & Anemometer

JEIL PRECISION INDUSTRIAL INSTRUMENTS CO., LTD.

Address 783-8 Majang-dong Seongdong-gu Seoul Korea
Phone +82-02-2293-2325
Fax +82-02-2296-6608
URL www.jeil1981.co.kr
Product Testing Machine

JEIO TECH CO., LTD.

Address #1005, Byucksan Digital Vally 6-cha, 481-4, Gasan-dong, Geumcheon-gu, Seoul, Korea
Phone +82-02-2627-3811
Fax +82-02-325-2335
URL www.jeiotech.com
Product Baths & Circulators. Desiccators. Fume Hoods. Incubators. Ovens. Chillers. Laboratory Refrigerators & Freezers. Shakers. Strrers & Vortex Mixer. Temperature Chambers. Flask Supports

JHONSAM CORPORATION

Address Chowonbilla 202-ho, 476-17, Bangbae 3(sam)-dong, Seocho-gu, Seoul, Korea
Phone +82-02-586-3069
Fax +82-02-586-3074
URL www.johnsam.co.kr
Product Incubator, thermostat,

JIN HEUNG SCIENTIFIC CO.

Address 35 Waryong-dong, Jongno-gu, Seoul Korea
Phone +82-02-742-3555
Fax +82-02-742-3348
URL www.jico.co.kr
Product ACV(alternating current voltmeter)

JINGU SCIENTIFIC. CO., LTD.

Address 438-1, Topyeong-dong, Guri-si, Gyeonggi-do, Korea
Phone +82-031-566-0758
Fax +82-031-566-0768
URL www.jingusci.com
Product Soil analyser

JISICO CO., LTD.

Address Jisico BLDG., 301-1 Seongsu-dong 2-ga, Seongdong-gu, Seoul, Korea
Phone +82-02-467-7071
Fax +82-02-464-1962
URL www.jisico.co.kr
Product Drier, Shaker, Glove box, Water bath, Autoclave, incubator

JOENBIO CO.

Address 1063-18 Doksan2-dong Geumcheon-gu Seoul Korea
Phone +82-02-893-7831
Fax +82-02-893-7832
URL
Product Anatomy Sample

JOONG HEUNG INC.

Address 157, Yeonji-dong, Jongno-gu, Seoul, Korea
Phone +82-02-2265-6284
Fax +82-02-2273-4743
URL
Product Polarizer, direct vision spectroscope, deflecting force experiment

JS RESEARCH INC.

Address 176-1. GUMSANG-DONG, GONGJU-CITY, KOREA
Phone +82-041-856-3677
Fax +82-041-856-3679
URL www.jsresearch.co.kr
Product Spring apparatus Surface

JUNG DO TEST INSTRUMENT CO.

Address 50-6 Mullaedong1-ga
Yeongdeungpo-gu Seoul Korea
Phone +82-02-2675-4431
Fax +82-02-2671-3856
URL www.jungdo21.com
Product Mini/Pilot Plating Plants. Hull Cell Testing Equipments. Analyzers of Plating Solution. Testing Instruments for Plating & Painting. Salt Spray & Cass Testing Instruments

KCT CO., LTD.

Address Rm 502, StarTower, 223-25, Sangdaewon-dong jungwon, Seongnam-si, Gyeonggi-do, Korea
Phone +82-070-4163-
Fax +82-031-702-3113
URL www.koreact.co.kr
Product power supply,Hydraulics Pneumatics Trainer.

KMC ROBOTICS CO., LTD

Address 508 Daejeon Intelligent Robot Industrialization Center, 694, Tamnip-dong, Yuseong-gu, Daejeon, Korea
Phone +82-042-933-8305
Fax +82-042-933-8309
URL www.kmrobot.com
Product Micro-Processor Evaluation Kit, Micro-robot, Humanoid Robot, electronic Evaluation Kit, etc

KOREA DIGITAL CO., LTD.

Address #804, Ace Twin Tower 2, 212-30, Guro 3-dong, Guro-gu, Seoul, Korea
Phone +82-02-2109-8877
Fax +82-02-2109-8878
URL www.koreadigital.com
Product sensor control apparatus. MBL

KOREA SCIENTIFIC TECHNIQUE INDUSTRY CO., LTD.

Address 12 lot 2 block, 936, Gosaek-dong, Gwonseon-gu, Suwon-si, Gyeonggi-do, Korea
Phone +82-0502-555-
Fax +82-031-291-4066
URL www.gaooze.com
Product Constant Temp & Humid Chamber

KOREAKIYON CO., LTD.

Address Rm911, 448, Daeryung Technotown 3'rd Gasan-dong Guemcheon-gu Seoul, Korea
Phone +82-02-2107-3510
Fax +82-02-2107-3514
URL www.glovebox.co.kr
Product Glove Box

KOVET INC.

Address Goseok Bldg. 2Fl., 72-10, Sinyeong-dong, Jongno-gu, Seoul Korea
Phone +82-02-722-2001
Fax +82-02-396-0850
URL
Product Digital Lab System

KT ENG CORPORATION

Address 133-1, Sinhyeon-ri, Opo-eup, Gwangju-city, Gyeonggi-do, Korea
Phone +82-031-749-5373
Fax +82-031-749-5376
URL www.kteng.com
Product Heating & Air Conditioning Education Equipment

KU RYONG SCIENTIFIC CO., LTD.

Address 179 Gwonong-dong Jongno-gu Seoul Korea
Phone +82-02-742-0659
Fax +82-02-744-9489
URL www.kuryong.co.kr
Product Earth Model Kit

KWANG DONG INDUSTRIAL CO., LTD.

Address 68-1, Singi-ri, Seoun-myeon, Anseong-si, Gyeonggi-do Korea
Phone +82-031-677-2141
Fax +82-031-677-5945
URL www.forlab.co.kr
Product Fume Hood, Clean Bench. Lab Table

KYUNG SUNG INDUSTRIAL ARTS CO.

Address 75-1 Geumgok-dong, Namyangju-si, Gyeonggi-do, Korea
Phone +82-031-592-9664
Fax +82-031-591-6586
URL
Product Test Tube Stand, black box, Insect sample

KYUNGIN SCIENCE CO.

Address #118 HyundieThrevice 1F, 55 Ikseon-dong, Jongno-gu, Seoul Korea
Phone +82-02-3675-0088
Fax +82-02-3675-0087
URL www.kiscoshop.co.kr
Product Balance, Thermometer Case, Scoliometer Edu System

LAB DESIGN CO., LTD.

Address woosan Bldg, RM#203, 336-4 Hwikyoung-Dong Dongdaemun-ku 130-090 Seoul Korea
Phone +82-02-957-8440
Fax +82-02-957-8443
URL www.labdesign21.co.kr
Product Lab Furniture, Storage Cabinet, Safety Reagent Cabinet, Sink Table, Fume Hood, Ductless Fume Hood

LABZONE CO., LTD.

Address #17-302 Daejeon Industrial materials Complex Center, 289-1 Daehwa-dong, Daedeok-gu, Daejeon, Korea
Phone +82-042-670-4664
Fax +82-042-670-4670
URL www.safelab.co.kr
Product Filtration Reagent Storage Cabinet. Filtration Fume Cupboard. Hydrogen Gas Detection System

MANIX CO., LTD.

Address 1337-17, Bowoun B/D, Seocho-dong, Seocho-gu, Seoul, Korea
Phone +82-02-3474-8765
Fax +82-02-3474-7008
URL www.manix.co.kr
Product CNC Engrving Machine. CNC Milling Machine Mini Lathe Machine. Mini Milling Machine Acrylic Bender. Hotwire Foam Cutter

MASTER EDU CO.

Address 202ho Daeseong Building 90beonji Nagwon-dong Jongno-gu Seoul Korea
Phone +82-031-593-6658
Fax +82-031-593-6659
URL www.masteredu.co.kr
Product Tripod, IQ Traffic Signal,

MDM INSTRUMENTS CO., LTD.

Address #911, Suwon Chomdan Venture Valley, 958, Gosaek-dong, Gwonseon-gu, Suwon-si, Gyeonggi-do, KOREA
Phone +82-031-252-9755
Fax +82-031-252-9756
URL www.mdm-ins.com
Product Hoom Food. Incubator. Dry Oven, Clean Dry Shel, Water Purification System

MIRAE EDUPIA

Address 28-3, Waryong-dong, Jongno-gu, Seoul, Korea
Phone +82-02-765-1101
Fax +82-02-765-1103
URL www.edu4u.biz
Product adiabatic expansion device, metal leaf electroscope

MIRAE SCIENCE CO.

Address 28-2 Ikseon-dong Jongnogu Seoul Korea
Phone +82-02-744-1280
Fax +82-02-764-8885
URL www.miraes.co.kr
Product Spring appartus Surface test appartus Breath tester

MIRAE ST CO., LTD.

Address #717, Anyang-Megavalley, 799, Kwanyang-dong, Dongan-ku, Anyang-si, Gyeonggi-do, Korea
Phone +82-031-420-5753
Fax +82-031-420-5978
URL www.miraest.co.kr
Product Reverse Osmosis Water System, Ultrapure Water System, Ultrasonic Pipet Cleaner

MIT ZONE CO., LTD.

Address #442-42, chang-dong, Dobong-ku, Seoul, 132-040, Korea
Phone +82-02-992-4300
Fax +82-02-992-4303
URL www.mitzone.co.kr
Product story pen, electric board

MOCOMTECH CO., LTD.

Address 604-10, Gongneung-dong, Nowon-gu, Seoul, Korea
Phone +82-02-739-9968
Fax +82-02-739-9971
URL www.mocomtech.com
Product high-gain projection screen

MODNNET CO., LTD.

Address Seongseo 5-cha Saneopdanji 5B 2L, Secheon-ri, Dasa-eup, Dalseo-gu, Daegusi Korea
Phone +82-053-218-6777
Fax +82-053-218-8778
URL www.modnnet.co.kr
Product interactive White Board, Wireless Microphone

MOON SUNG CO.

Address 130, Gwonnong-dong, Jongno-gu, Seoul Korea
Phone +82-02-764-2246
Fax +82-02-743-3138
URL
Product Molecular Model Kit

MYEONG JI SCIENTIFIC INDUSTRY CO.

Address 93-1 Waryong-dong, Jongno-gu, Seoul, Korea
Phone +82-02-741-8513
Fax +82-02-741-8516
URL www.labedu.co.kr
Product mechanical energy apparatus

NAMBUK TRADING COMPANY

Address Byeoksan 112-dong 1204-ho Danwongu Wongok-dong, Ansan-si Gyeonggi-do Korea
Phone +82-031-506-0047
Fax +82-031-506-0008
URL
Product Application Trainer, Hydraulics Trainer, Industrial Automation Trainer, Casting Machine

NEOPOWERTECT CO., LTD.

Address 4F Gumsan B/D,1026-19 sanbon-dong, Gunpo-si,Kyungki-do,435-040,Korea
Phone +82-382-9474
Fax +82-031-382-9422
URL www.neopwr.co.kr
Product digital osiloscope,AC-DC POWER SUPPLY

OMAX CO., LTD.

Address 263-1, Samjeong-dong, Ojeong-gu, Bucheon-city, Gyeonggi-do, S. KOREA
Phone +82-032-682-8811
Fax +82-032-675-6959
URL www.omax.co.kr
Product Video Presenter, screen, microscope, LANGUIGE STUDY UNIT, Cyber Computer Board

OPERON CO., LTD.

Address 448-54 Hakun-ri Yangchon-myon Kimpo-city Kyeonggi-do Korea
Phone +82-031-989-9012
Fax +82-031-989-9017
URL www.operon.co.kr
Product Stem cell Freezer-156. Cryo Freezer-156, Freeze Dryer. Chemical Free Freeze Dryer- 120, Ultra Low Temperature Petrochemistry Chiller-120

ORIENT AV CO., LTD.

Address 72-10, Sinyeong-dong, Chongno-gu, Seoul Korea
Phone +82-02-396-0880
Fax +82-02-396-0850
URL www.orientav.co.kr
Product Digital Lab System, NuriNET System, Language Lab System

ORIENT SCIENCE

Address 202ho BON 183 Myo-dong Jongno-gu Seoul Korea
Phone +82-02-765-3937
Fax +82-02-744-7963
URL
Product magnetic compass,

ORIENTAL INTERGRATED ELECTRONICS CO., LTD.

Address 281-34, Dodang-dong, Wonmi-gu, Bucheon-si, Gyeonggi-do, Korea
Phone +82-032-675-2247
Fax +82-032-671-2244
URL www.vieway.co.kr
Product CCTV, Power Supply. Video Presenter

OSUN HI TECH CO., LTD.

Address 613ho, Yuntekeubul 613-ho, 1141-2, Baekseok-dong, Ilsan-gu, Goyang-si, Gyeonggi-do
Phone +82-031-902-9006
Fax +82-031-902-9109
URL www.osunhitech.co.kr
Product MicroScope, Video Present System

POSTECH CO.,LTD.

Address In the korea Polytech Univ. Wonju Campus, 170, Woosan-dong, Wonju-shi, Gangwondo, Korea
Phone +82-033-732-8200
Fax +82-033-731-0989
URL www.pos-tech.com
Product Automobile Education Electric Welding

PRINCE CO.

Address 173-665, Jangsa-dong, Jongno-gu, Seoul, Korea
Phone +82-02-2267-6542
Fax +82-02-2278-9551
URL www.princelab.co.kr
Product Language Lab System

ROBOROBO CO., LTD.

Address 5F RoboRobo Bldg., 197-16, Mia-dong, Gangbuk-gu, Seoul, Korea
Phone +82-02-909-5050
Fax +82-02-917-3511
URL www.roborobo.co.kr
Product Educational Robot Kit

ROBOTIS CO., LTD.

Address #1506 ACE HIGH END TOWER NO.3, 371-50 Gasandong, Geumcheon-gu, Seoul, Korea
Phone +82-070-8671-
Fax +82-070-8230-
URL www.robotis.com
Product Educational Robot Kit

SAE HAN LAB

Address 2 Floor 103 beonji Ikseon-dong Jongno-gu Seoul Korea
Phone +82-02-766-1303
Fax +82-02-766-1304
URL www.saehanlab.co.kr
Product Beaker, Flask,Cylinder, Condenser, Test tube, Funnel

SAM JEE INTERNATIONAL CORP.

Address 19-1 Bongik-dong Jongno-gu Seoul Korea
Phone +82-02-743-0381
Fax +82-02-744-2658
URL www.samjeeintl.com
Product optic communication tester

SAMDUK SCIENCE CO., LTD.

Address 303-7 Inchang-dong Guri-si
Gyeonggi-do Korea
Phone +82-031-563-3590
Fax +82-031-563-4665
URL www.samduck-lab.com
Product Beaker, Glass ware

SAMHO SYSTEC

Address #739-28 ANCHUNG,
GWANGSAN-GU, GWANGJU,
506-258, KOREA
Phone +82-062-961-3277
Fax +82-062-961-3278
URL www.samhosystec.co.kr
Product Automotive power train, electric
system, fuel system, automotive
parts,

SAMIN SCIENCE CO., LTD.

Address Daerung Technotown 8th 706ho,
481-11, Gasan-dong,
Geumchon-Gu, Seoul, Korea
Phone +82-02-2163-8940
Fax +82-02-2163-8942
URL www.saminsci.com
Product low-noise & vibration-free oilless
compressors, laboratory work
benches

SAMJIN ENGINEERING

Address 279 Daehwa-dong Daedeok-gu
Daejeon-si Korea
Phone +82-042-622-8055
Fax +82-042-628-2757
URL www.samjineng.com
Product Centrifugal Caster, Electroplating
Processor, hydraulic press

SAMJIN UNICHEM

Address 676-9 Yangjin Onam-myun
Namyangju Kyunggi-do Korea
Phone +82-031-575-7736
Fax +82-031-575-8307
URL www.samjinuc.com
Product heat exchanger

SAMKI LAB

Address 469-7, Seokgok-ri,
Seongnam-myeon, Cheonan-si,
Chungcheongnam-do. Korea
Phone +82-041-552-6770
Fax +82-041-552-6771
URL www.samkilab.co.kr
Product LABORATORY, FURNITURE,
Fume Hood

SAMYEON TECH CORP.

Address Dalseong2th 2ro 103, Guji-myeon,
Dalseong-gun, Daegu-si Korea
Phone +82-053-592-3053
Fax +82-053-591-4226
URL www.samyeon.co.kr
Product HYD. Servo Actuator, HYD. Servo
Fatigue tester, Rock tester, UTM.
Strain meter

SCIENCELOVE IND., CO.

Address Rm.613, Unitechvill, 1141-2,
Baekseok-Dong, Ilsan-Ku,
Koyang-si, Kyonggi-Do 411-722
Korea(South)
Phone +82-031-938-9494
Fax +82-031-938-9694
URL www.sciencelove.co.kr
Product power supply.

SCIENCESTAR CO., LTD.

Address 164-2, Gwonngong-dong,
Jongno-gu, Seoul, Korea
Phone +82-02-766-6136
Fax +82-02-766-6139
URL www.sciencestar.biz
Product Water Bottle For Optical Studies,
Mini Surface Wave Projecting
Device, Sound Wave
Monitoring Device

SCINCO CO., LTD.

Address 74-27 Nonhyeon-dong,
Ganagnam-gu, Seoul, Korea
Phone +82-02-2143-8200
Fax +82-02-2143-8355
URL www.scinco.com
Product UV-Vis Spectrophotometer, Color
Spectrophotometer, Fluorescence
Spectrometer

SE JIN CORPORATION

Address 77-1, Gye-dong, Jongno-gu, Seoul,
Korea
Phone +82-02-745-2815
Fax +82-02-745-2816
URL
Product Arm blanching Scale, Coulomb's
law, compound pulley

SEGYE INDUSTRY CO., LTD.

Address 994-5 Pyeoniksangga A-dong
307-ho, Wongok-dong Danwongu
Ansan-si, Gyeonggi-do Korea
Phone +82-031-507-8800
Fax +82-031-507-0011
URL www.sictop.com
Product Intelligent Robot, Educational
Application Trainer, Work Table,
Air Compressor, Hydraulic Shear
Machine, Hydraulic Press Brake,
Hydraulic Press

SEGYE SCIENTIFIC CO., LTD.

Address 813 TECH-dong SKn
TECHNOPARK 190-1
Sangdaewon-dong Jungwon-gu
Seongnam-si, Gyeonggi-do, Korea
Phone +82-031-776-0015
Fax +82-031-776-0019
URL www.sgs.co.kr
Product Physics Instrument, PC Interface
unit, Electronic Instrument,
Educational Trainers and etc.

SEHYUN SCIENCE CO., LTD.

Address 224-3 Na dong, Gaun-dong,
Namyangju-si, Gyeonggi-do, Korea
Phone +82-031-577-5418
Fax +82-031-576-5418
URL www.shscience.kr
Product Electric Stand, Sola Energy Car

SEJONG SCIENTIFIC CO.

Address #404 Dawoo Technotown 44
na-dong Ojung-ku Buchen-city
Gyeonggi-do, Korea
Phone +82-032-676-6631
Fax +82-032-673-6631
URL www.sejongsci.co.kr
Product Incubator, Dryoven, chamber,
ConstantTemp. WaterBath, Clean
Beanch, Shaker

SEO JEON GLOBE CO., LTD.

Address 5F Dongil technotown 889-3
Gwanyang-dong Donga-gu
Anyang-si Gyeonggi-do Korea
Phone +82-031-423-6122
Fax +82-031-424-6030
URL www.seojeon-globe.com
Product terrestrial globe, celestial azimuth

SEOUL OPTICAL CO., LTD.

Address 171-14 Gaepo-dong Gangnam-gu
Seoul Korea
Phone +82-02-577-9804
Fax +82-02-574-0483
URL www.selopt.com
Product Microscope, Stereo Microscope

SEOUL SCIENTIFFIC INSTRUMENTS

Address #492-1, Mangu-dong Jungrang-Gu,
Seoul Korea
Phone +82-02-741-3330
Fax +82-02-741-3332
URL www.physicspro.co.kr
Product physics experimental instruments

SEOULIN BIOSCIENCE CO., LTD.

Address Seoulin Bldg 452-2 Songnae-dong
Gangdong-gu SEOUL 134-030
KOREA
Phone +82-031-628-3000
Fax +82-031-628-3007
URL www.seoulin.co.kr
Product Vortex Mixer, 3D Mini Shaker,
Orbital Shaker, Intelli Mixer

SEWON SCIENCE INDUSTRY

Address 149 Gwon Nong Dong Jongno-gu
Seoul, Korea
Phone +82-02-762-0356
Fax +82-02-762-0357
URL www.swsciencemall.com
Product Solar Car Model

SHIN GANG PRECISION MFG. CO., LTD.

Address 6 Floor Singang Building 309-141
Seongsu2gal-dong Seongdong-gu
Seoul Korea
Phone +82-02-499-7835
Fax +82-02-467-4585
URL www.singang.co.kr
Product Universal Testing Machine, tensile
strength Testing Machine,
compression Testing Machine

SHIN IL METER CO.

Address 226-2 Seongsu1ga-dong
Seongdong-gu Seoul Korea
Phone +82-02-462-0008
Fax +82-02-499-1013
URL www.eshinill.co.kr
Product Analogue Meter

SHINHAN BIOLOGICAL-SPECIMEN

Address 35-4-ho, Daeheung-dong, Mapo-gu,
Seoul, Korea
Phone +82-02-393-2613
Fax +82-02-393-2615
URL www.shslab.co.kr
Product Viscera. Specimen of dissection of
entire body of frog

SHINIL CORPORATION

Address 684-2 Ahyeon3-dong Mapo-gu
Seoul Korea
Phone +82-02-3676-4335
Fax +82-02-3673-5123
URL
Product Anatomy Model

SHINSAENG INSTRUMENTS CO., LTD.

Address 598-25 Janggok-ri Jori-myeon
Paju-si Gyeonggi-do Korea
Phone +82-031-943-1961
Fax +82-031-943-1964
URL www.shinsaeng.com
Product The depository of reagent, Fume
Hood, Clean Bench,
Thermo-hygrostat, Dry Oven

SHINSEGI SCIENCE CO.

Address 47 Unni-dong Jongno-gu Seoul
Korea
Phone +82-02-765-5700
Fax +82-02-766-3474
URL www.ssgedu.co.kr
Product Tripod Stand, Iron Stand,
Elementary Twopan Balance,
Simple Switch, Electric Wiretongs

SHIN-SUNG PHYSICAL AND CHEMICAL CO.

Address 35, Waryong-dong, Jongno-gu,
Seoul, Korea
Phone +82-02-743-8387
Fax +82-02-743-8385
URL
Product Glass ware

SIDAE CO.

Address 707 Chasan-ri, Hwado-eub,
Namyangju-city, Kyunggi-do,
Korea
Phone +82-031-593-8675
Fax +82-031-595-4463
URL
Product Water Bottle For Optical Studies,
wind vane

SO JUNG MEA- INS CO.

Address Anyangmegavelly 106ho,
Gwangyang-dong 799, Dongan-gu,
Anyang-si, Gyeonggi-do, Korea
Phone +82-031-420-5715
Fax +82-031-420-5719
URL www.sojung.co.kr
Product Dry Oven

SUDO TEACHING AIDS CO.

Address 65-2 Bungmullo2-ga Cheongju-si
Chungcheongbuk-do Korea
Phone +82-043-252-2983
Fax +82-043-221-2983
URL
Product Lab Table,

SUMOK FURNITURE CO., LTD.

Address 3F Donggwang Building 46-1
Donui-dong Jongno-gu Seoul Korea
Phone +82-02-742-5003
Fax +82-02-765-5125
URL
Product Computer Table, Connecting Line,
Machnical Cart, collisions in two
dimensions

SUNG KWAMG CO., LTD.

Address 218-2 Nowon3-ga Buk-gu Daegu-si
Korea
Phone +82-053-358-2297
Fax +82-053-354-0755
URL www.skeng.tv
Product FMS System, VLC System, PLC

TAMTUS CO., LTD.

Address 301-1406 Bucheon Techno Park
365 Samjung-dong, Aujung-gu,
Bucheon-shi, Kyunggi-do, Korea
Phone +82-032-328-0244
Fax +82-032-328-0242
URL www.tamtus.com
Product video presenter, language lab
system, multipurpose microscope

THE SCIENTIFIC & EDUCATION INSTRUMENTS STORE

Address 182-11 Gwonong-dong Jongno-gu
Seoul Korea
Phone +82-02-741-3420
Fax +82-02-741-4288
URL www.xn--9d0b408a1b357a4xbzz0b.kr
Product Optical instrument, Cloud chamber.
ECD Saver

THREE SHINE INC.

Address 1326 Guanpyung-dong,
Yuseong-gu, Daejeon, Korea
Phone +82-042-933-3361
Fax +82-042-933-3398
URL www.threeshine.com
Product Micro Ventilation Cage System,
Vacumm Dessicator, Isolator

TOPEX Corporation

Address 522-5 Yonghyun-dong Uijongbu-si
Kyonggi-do Korea
Phone +82-031-852-1991
Fax +82-031-852-2992
URL www.topex.com
Product Video Presenter, Flex Vision,
O.H.P., Microscopic Projector,
Microscope

TOPIANET CO., LTD.

Address 701ho 278-51 Seongsu2gal-dong
Seongdong-gu Seoul Korea
Phone +82-02-466-6080
Fax +82-02-466-6464
URL www.topianet.co.kr
Product Video Presenter

TREEM CO., LTD.

Address 228-2, Guui-dong, Gwangin-gu,
Seoul, Korea
Phone +82-02-2024-1900
Fax +82-02-565-9079
URL www.treem.co.kr
Product Screen Video Presenter, Interactive
White Board

UNION ENTERPRISE CO., LTD.

Address 184-1 Dodang-dong Wonmi-gu
Buchun-city Kyungki-do Korea
Phone +82-032-678-7021
Fax +82-032-678-7026
URL www.unionkr.co.kr
Product Astronomical Telescope

UNIVERSAL SCIENCE CO., LTD.

Address 332-10, Sau-dong, Gimpo-si, Gyeonggi-do, Korea
Phone +82-031-982-1804
Fax +82-031-984-1804
URL www.woojusc.co.kr
Product Washing Chamber, Dry Oven, Culture Chamber, Stem Aging Test Bath, Fume Hood, Flask Shaker

VISION SCIENTIFIC CO., LTD.

Address Samjangno 121-33, Bucheon-si, Gyeonggi-do, Korea
Phone +82-032-672-3091
Fax +82-032-672-3098
URL www.visionbionex.com
Product Centrifuge, Incubator, Growth chamber, Shaker, Autoclave, Clean bench, Water bath

WEED ELECTRONICS CO.

Address 429-5, Oncheon-dong, Dongnae-gu, Busan. Korea
Phone +82-051-552-4711
Fax +82-051-553-4712
URL www.weedcam.co.kr
Product Video Presenter

WELLPIX CO., LTD.

Address Yunitekubul 828-ho, 1141-2, Baekseok-dong, Ilsan-gu, Goyang-si, Gyeonggi-do, Korea
Phone +82-031-962-4437
Fax +82-031-962-4439
URL www.wellpix.com
Product Video Presenter, Auto planisphere

WON IL SCIENTIFIC CO.

Address 44, Waryong-dong, Jongno-gu, Seoul, Korea
Phone +82-02-743-6602
Fax +82-02-743-6603
URL
Product Experience Cart, Aero vane

WOOSIN CO., LTD.

Address 484-3 Ojeong-dong Daedeok-gu Daejeon-si Korea
Phone +82-042-633-7101
Fax +82-042-634-7101
URL www.woosinfirm.co.kr
Product Wet Duplex Grinder, Dry Duplex Grinder

WOOSUN CONTROL CO., LTD.

Address 1695-9, Sinil-dong, Daedeok-gu, Daejeon, Korea
Phone +82-042-935-2143
Fax +82-042-935-2147
URL www.woosun.com
Product Educational Training Equipment
 1. Electricity & Electronics Educational Equipment
 2. Power Electronics Educational Equipment

WOYUN Co., LTD.

Address 4F,KOVIX Bldg,210-1, Nonhyun-dong, Gangam-gu, Seoul, Korea
Phone +82-02-514-8033
Fax +82-02-514-8037
URL www.woo-yun.com
Product Lab Table,Fume Hood,Clean Bench.

WOWSystem.co.,Ltd

Address #411,MEGA Center,SKn Technopark,190-1 Sangdaewon-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do, Korea
Phone +82-070-8193-
Fax +82-0303-0799-
URL www.wowsystem.co.kr
Product smart grid lab equipment, LED lab equipment

YEONHEUNG ENTERPRISE CO.

Address 1032 Daewon-ri, Jorieup, Paju-si, Gyeonggi-do KOREA
Phone +82-031-944-9980
Fax +82-031-944-9982
URL www.yhlab.co.kr
Product Lab Table. Job Table

YOUNGIL EDUCATION SYSTEM CO., LTD.

Address #604, Samhwan Digital Venture Tower 280-13, Seongsu-dong 2ga, Seongdong-gu, Seoul, 133-832 Korea
Phone +82-02-2024-0077
Fax +82-02-2024-0070
URL www.yes01.co.kr
Product Educational Elec. Electronic Measuring devices, Automobile Education System

YOUNGLIN INSTRUMENT CO., LTD.

Address 899-6, Hogye 2(i)-dong, Dongan-gu, Anyang-si, Gyeonggi-do. Korea
Phone +82-031-428-8700
Fax +82-031-428-8787
URL www.younglin.com
Product Acme 6000 GC, Water Purification, Gas Chromatography, Liquid Chromatography

YUIL TRADING CORPORATION

Address 5 Floor Sehyeon Building 1417-50 Sillim5-dong Gwanak-gu Seoul Korea
Phone +82-02-882-0117
Fax +82-02-882-1131
URL www.yuilcorp.co.kr
Product Ultrasonic Cleaner

#131, Changsungdong Jongnogu, Seoul 110-034, KOREA

Phone : +82-2-725-4495

Fax : +82-2-725-6111

Website : www.ksiic.or.kr

e-mail : ksiic@ksiic.or.kr



Korea Scientific Instruments Industry Cooperative(KSIIC)

STANDARD INSTRUMENTS FOR SCHOOL



Elementary School

No	Equipments	Specification	Unit	Qun'ty	No	Equipments	Specification	Unit	Qun'ty
1	Stand	Φ12 ±600mm, Clamp, Ring (large, medium, small), including 2 in 1	ea	4 per 1	43	Goggles	Safety	ea	1 per 1
2	Tripod	Height adjustment, 2 in 1	ea	4 per 1	44	Mass cylinder	Φ 120mm or more, 2 in 1	ea	4 per 1
3	Heat Safety Net	Seramik Net, 130 x 150mm	ea	4 per 1	45	Lab coats	Cotton	ea	1 per 1
4	Spirit-lamp	Stainless, 2 in 1	ea	4 per 1	46	Mortar	Φ90mm Glassware, including Muller, Φ90mm	ea	4 per 1
5	Bar Thermometers	-20°C ~ 110°C, 3 in 1	ea	4 per 1	47	Evaporating dish	Φ70mm	ea	4 per 1
6	Platform balance	Weihgtting 200g, weight loss 100mg	ea	4 per 1	48	Sieve	Three kinds (holes 1mm, 3mm, 5mm or so) 1 set	ea	4 per 1
7	Bar magnet	2 in 1	ea	4 per 1	49	Lampshade	HOYA, lamp	ea	4 per 1
8	Magnifier	6 x or more, 60mm or more, grip chin	ea	2 per 1	50	Combustion spoon	Length of 200mm or more	ea	4 per 1
9	Test Tube (Φ15mm)	Φ21 x 200mm, Φ15 x 150mm, 10 in 1	ea	4 per 1	51	Tray	Rectangular or circular	ea	4 per 1
10	Test Tube Stand	Spring (20)	ea	4 per 1	52	Crucible tongs	200mm 200mm	ea	4 per 1
11	Beaker (100mL)	Rigid Level 2 or above, 3 in 1	ea	4 per 1	53	Hydrometer		ea	1 per school
12	Beaker (250mL)	Rigid Level 2 or above, 2 in 1	ea	4 per 1	54	Mini blender		ea	1 per school
13	Beaker (500mL)	Rigid Level 2 or above, 2 in 1	ea	4 per 1	55	Portable stove		ea	1 per test
14	Beaker (1,000 mL)	Rigid Level 2 or above, 2 in 1	ea	8 per 1	56	pH meter	Digital, pH 0 ~ 14 +0.01pH	ea	1 per school
15	Funnel	Glass Φ60mm, 120mm 2 in 1	ea	4 per 1	57	Syringe	20 ~ 100mL, 2 in 1	ea	4 per 1
16	Funnel stand	More than six loops	ea	4 per 1	58	Electronic scales	Digital, Weighting 200g, 0.1g for reduce	ea	1 per school
17	Erlenmeyer flask	2 in 1, 4 in 1	ea	4 per 1	59	Iron plate	15 x 15cm 15 x 15cm	ea	4 per 1
18	Branched flask	250mL 250mL	ea	4 per 1	60	Finch Cork	Spring	ea	4 per 1
19	Chalet	Glass level Φ150mm, 2 in 1	ea	4 per 1	61	Balance Arm	Arm 40 x 40mm, Plate 2,	ea	4 per 1
20	Dropper	The grid will, 5 ~ 10mL, 2 in 1	ea	4 per 1	62	weight (10g)	Vertical adjust, 10 in 1	ea	4 per 1
21	Dropper Reagent bottle	Brown, about 50mL glass, 2 in 1	ea	4 per 1	63	weight (20g)	Vertical adjust, 10 in 1	ea	4 per 1
22	Reagent bottle	Brown, 100 ~ 250mL, 2 in 1	ea	4 per 1	64	weight (30g)	Vertical adjust, 10 in 1	ea	4 per 1
23	Glass rod	Φ5mm, 300mm, 2 in 1	ea	2 per 1	65	weight (50g)	Vertical adjust, 10 in 1	ea	4 per 1
24	Glass	15 x 15mm 4 in 1	ea	4 per 1	66	Spring scale		ea	4 per 1
25	Pnumetic Bottle	(500mL) (1000mL) 2 in 1	ea	4 per 1	67	Pulley	Fixed, move the pulley combined (5 in 1)	ea	4 per 1
26	Tank (round)	Φ300mm 2 in 1	ea	4 per 1	68	Spring	Danggimyong, 2 in 1	ea	4 per 1
27	Tank (rectangular)	300 x 200 x 200mm or more	ea	8 per 1	69	equilibrium of force	Plank, stand, wood coating	ea	4 per 1
28	Spatula	Stainless steel, 4 in 1	ea	4 per 1	70	Shadow observation kit	Light Source, object, screed	ea	4 per 1
29	Pincette	Stainless steel, 4 in 1	ea	4 per 1	71	Shadow Box	Combined convection box	ea	4 per 1
30	Stopwatch	Digital, 1 / 100 seconds	ea	4 per 1	72	Flashlight	Rechargeable	ea	4 per 1
31	Transparent glass	About 250mL, 2 in 1	ea	4 per 1	73	Solar Cells	Simplicity	ea	8 per 1
32	Tube brush	Test tubes, each three kinds 3 in 1	ea	4 per 1	74	Motor	Vane includes	ea	2 per 1
33	Cripples the scale	Weighting 2kg, loss 0.1g	ea	1 per test	75	Thermal conduction apparatus		ea	4 per 1
34	Round Magnets	Φ10 ~ 30mm degree	ea	2 per 1	76	Plank	Length 70cm or more	ea	4 per 1
35	Tube clamp	Wood	ea	4 per 1	77	Linear expansion apparatus	Wire, copper wire, including additional	ea	4 per 1
36	Tape Measure (50m or more)		ea	8 per 1	78	Expansion ball and ring		ea	4 per 1
37	Tape Measure (5 ~ 10m)		ea	8 per 1	79	light bulbs	1.5 ~ 3V, 10 in 1	ea	2 per 1
38	Magnetizer	AC for	ea	1 per school	80	Pinhole camera		ea	4 per 1
39	Tank	Rectangular 600 x 400 x 400mm or more	ea	1 per class	81	Lighting	300W or more, AC only	ea	2 per school
40	Air inflator	For Balloon	ea	8 per 1	82	Diapason	including the grip chin	ea	4 per 1
41	Sandbox	250 x 250mm, 2 in 1	ea	4 per 1	83	Wire with tongs	DC, 2 in 1	ea	1 per 1
42	Alcohol Lamp	Length 200 ~ 300mm, lighter	ea	1 per test					

No	Equipments	Specification	Unit	Qun'ty
84	light bulb socket	10 in 1	ea	1 per 1
85	Battery holder	1.5V batteries, 4 in 1	ea	2 per 1
86	Various mirror	3 types (concave, convex, flat) 1,	ea	4 per 1
87	Fast Switch	DC, 120 x 60mm	ea	2 per 1
88	Metal Plate	Copper, iron	ea	4 per 1
89	Various lenses	2 in1 (concave, convex)	ea	4 per 1
90	wheel axle		ea	1 per test
91	Buzzer	DC 1.5V DC 1.5V	ea	4 per 1
92	Laser Points	For Teacher	ea	2 per school
93	Transparent acrylic	40 x 40mm, 10 in 1	ea	4 per 1
94	Speaker		ea	1 per test
95	Planisphere	∅200mm or more, saucers,	ea	2 per 1
96	Illuminated orbital planetarium	sun, Earth, Moon, electric	ea	1 per Lab
97	Floor lamp	110 ~ 220V compatible	ea	4 per 1
98	Compass	∅38mm level, 8 in 1	ea	4 per 1
99	Astronomic Telescope	Refracted reflections, ∅6-inch or Inspector macrophages	ea	1 per school
100	Dry buld thermometer	-20°C ~ 50°C, -20°C ~ 50°C,	ea	4 per 1
101	Maximum-minimum thermometer	30°C ~ 50°C, U-shaped Plate Member	ea	1 per school
102	Soil Thermometer	3 in 1	ea	1 per school
103	Shelter(set)	600 x 600mm	ea	1 per school
104	Rain gauge	Stainless steel	ea	1 per school
105	Anemometer	For Child, Digital	ea	1 per school
106	Aneroid	Analog	ea	1 per school
107	Diary of a blackboard	900 x 900mm 900 x 900mm	ea	1 per school
108	Conglomerate	More than 70mm in diameter	ea	8 per 1
109	Sandstone	More than 70mm in diameter	ea	8 per 1
110	Mudstone	More than 70mm in diameter	ea	8 per 1
111	Basalt	More than 70mm in diameter	ea	8 per 1
112	Granite	More than 70mm in diameter	ea	8 per 1
113	Marble	More than 70mm in diameter	ea	8 per 1
114	Gneiss	More than 70mm in diameter	ea	8 per 1
115	Quartzite	More than 70mm in diameter	ea	8 per 1
116	Limestone	More than 70mm in diameter	ea	8 per 1
117	Hammer for rock samples		ea	8 per 1
118	Strata model	Three kinds (faults, folds, flat) 1	ea	1 for Lab
119	Volcano Model	330 x 570 x 330mm	ea	1 for Lab
120	structure models	Earth's interior 320mm 320mm diameter	ea	1 for Lab
121	Volcanic bomb	5 in 1	ea	1 for Lab
122	Animal fossils specimens	5 in 1	ea	1 for Lab
123	Plant Fossil specimens	5 in 1	ea	1 for Lab
124	Globes	∅300mm or more	ea	4 per 1
125	Sundial		ea	1 per school

No	Equipments	Specification	Unit	Qun'ty
126	Portable Sundial		ea	1 per school
127	Celestial glove	∅300mm or more	ea	1 per school
128	Plank	45cm x 45cm 45cm x 45cm	ea	2 per 1
129	Digital Thermometer		ea	1 per school
130	Liquid Crystal Thermometer		ea	1 per school
131	Infrared Thermometer		ea	1 per school
132	Stereoscopic microscope	10X ~ 30X 10X ~ 30X	ea	4 per 1
133	Microscope	Eyeiece 10X, 20X,objective lens 5X, 10X, 40X, will not saeksuchaga,	ea	4 per 1
134	Microscope Lights	"110V ~ 220V, 20W or more"	ea	4 per 1
135	Microscopic Projector	If the projection integral (∅150mm or more)	ea	1 for Lab
136	Plants collected a set of tools		ea	6 per school
137	Landing net		ea	4 per 1
138	Insect toolset		ea	6 per school
139	Human body model	Prefab	ea	1 per school
140	Human Skeleton Model	Prefab	ea	1 per school
141	Joint Model	Prefab	ea	1 per school
142	Structural model of the skin	Prefab	ea	1 per school
143	Circulation models	Prefab circulation features	ea	1 per school
144	Structural model of the nose	Prefab	ea	1 per school
145	Eye structure model	Prefab	ea	1 per school
146	Ear structural models	Prefab	ea	1 per school
147	Digestive System Models	Prefab	ea	1 per school
148	Its structure model	Prefab	ea	1 per school
149	Respiratory tract model	Prefab	ea	1 per school
150	Excretory organ models	Prefab	ea	1 per school
151	Heart Model	Prefab	ea	1 per school
152	Muscle Model	Prefab	ea	1 per school
153	Respiratory Model	Prefab	ea	1 per school
154	Computer (Teacher)	Pentium 3 more (RAM 512M or more), sound card, internet access	ea	1 per school
155	Computer (Student)	Pentium III more	ea	6 per school
156	Video Presentor	410,000 pixels or more	ea	1 for Lab
157	TV Projection TV	45 inches or more	ea	1 per school
158	LCD projector	2000ANSI more	ea	1 per school
159	VTR		ea	1 for Lab
160	Electric Screen	180cm above the horizontal	ea	1 per school
161	Refrigerator		ea	1 per school
162	Equipment cart		ea	1 per school
163	OHP	740 x 600 x 735mm	ea	1 for Lab
164	Waste Water Disposal		ea	1 per school

Middle School

No	Equipments	Specification	Unit	Qun'ty	No	Equipments	Specification	Unit	Qun'ty
1	pH Meter (Digital)	pH 0 ~ 14 ± 0.01pH	ea	1 per school	56	Mass cylinder (10mL)		ea	2 per 1
2	Grinders		ea	1 per school	57	Erlenmeyer flask (100mL)		ea	2 per 1
3	Desiccator		ea	1 per school	58	Erlenmeyer flask (250mL)		ea	2 per 1
4	Vise		ea	1 per school	59	Tripod	height adjustment	ea	2 per 1
5	G cm scale	Weight 311g, weight loss 10mg	ea	1 per school	60	Chalet	2 in 1	ea	2 per 1
6	Cripples the scale	Weight 2kg, loss 0.1g	ea	1 per school	61	Dropper (10mL)		ea	2 per 1
7	Centrifugal		ea	1 per school	62	Watch glass		ea	2 per 1
8	Electric drill		ea	1 per school	63	Spirit-lamp		ea	2 per 1
9	Cork Borer	Automatic	ea	1 per school	64	Spatula		ea	2 per 1
10	Waste Disposal		ea	1 per school	65	Combustion spoon		ea	2 per 1
11	Constant Chamber(drying)		ea	1 per school	66	Ruler (1m or more)	Transparent resin	ea	2 per 1
12	Vernier calipers		ea	1 per school	67	Magnet	Bar, horseshoe, circular magnets(3 in 1)	ea	2 per 1
13	Electronic scales	Weight 200g, 0.1g loss	ea	1 per school	68	Syringe		ea	2 per 1
14	LCD projector		ea	Are per room 1	69	Pnumetic Bottle		ea	2 per 1
15	Tool Set		ea	Are per room 1	70	Iron stand		ea	2 per 1
16	Screen	Electric	ea	Are per room 1	71	Pincette		ea	2 per 1
17	Video Presenter		ea	Are per room 1	72	Pinchikok		ea	2 per 1
18	Computer (Teacher)	Pentium 3 more (RAM 128M or more), MPEG card, sound card, internet access	ea	Are per room 1	73	Hall pipette (10mL)		ea	2 per 1
19	OHP OHP		ea	Are per room 1	74	Goggles		ea	1 per 1
20	Mortar		ea	6 per 1	75	Lab Cloth	Cotton	ea	1 per 1
21	Volumetric flask (1000mL)		ea	6 per 1	76	Thermometer (alcohol)	-20℃ ~ 110℃ -20℃ ~ 110℃	ea	1 per 1
22	Volumetric flask (500mL)		ea	6 per 1	77	DC Power Supply		ea	1 per school
23	Computer (Student)	Pentium 3 more	ea	6 per 1	78	Inclined plane apparatus	rotractor attached, pulley, cart, including additional	ea	1 per school
24	Tank (rectangular)		ea	4 per 1	79	Wave projection devices		ea	1 per school
25	Reagent bottle (100mL)	White and brown (2 in 1)	ea	4 per 1	80	Free-fall experiment		ea	1 per school
26	Reagent bottle (250mL)	White and brown (2 in 1)	ea	4 per 1	81	Joule's Heat Apparatus	200ml, DC6V 200ml, DC6V	ea	1 per school
27	Floor lamp	Adjustable intensity	ea	4 per 1	82	Electrical circuit tester		ea	Are per room 1
28	Heater		ea	4 per 1	83	Hydrostatic test set	Lever, pulley, including additional	ea	6 per 1
29	Branched tube		ea	4 per 1	84	wing Type electromagnetic Smeasuring devices	DC 3 ~ 6V, including bar magnet	ea	4 per 1
30	Branched flask (250mL)		ea	4 per 1	85	Slide resistor	Closed Type	ea	4 per 1
31	Spritz bottle	Plastic	ea	4 per 1	86	DC Power Supply		ea	4 per 1
32	Brush (3 in 1)		ea	4 per 1	87	Pendulum experiment	Stand Type	ea	4 per 1
33	Tank (round)		ea	4 per 1	88	Time Recorder		ea	4 per 1
34	Balance Arm	Weight 200g, 0.1g loss	ea	4 per 1	89	Metal Weight	5 in 1	ea	4 per 1
35	Electric Iron		ea	4 per 1	90	Dynamic cart		ea	4 per 1
36	Tape Measure (2m or more)	Iron	ea	4 per 1	91	Potential Energy-measuring devices	100, 200, 300g, including additional	ea	4 per 1
37	Heating safety net (a net asbestos-iron)		ea	4 per 1	92	Laboratory wave spring	2 in 1	ea	4 per 1
38	Funnel		ea	4 per 1	93	Laser Pointer		ea	4 per 1
39	Funnel Steand	2 in	ea	4 per 1	94	C-type clamp	3 in 1	ea	4 per 1
40	Round Bottom flask (250mL)		ea	4 per 1	95	Pulley	5 in 1	ea	4 per 1
41	Ring	Three kinds (large, medium, small) 1	ea	4 per 1	96	Heat measurement devices	130 x 130mm diameter	ea	4 per 1
42	Mass cylinder (250mL)		ea	4 per 1	97	convex Lenses		ea	4 per 1
43	Metz pipette (10mL)		ea	4 per 1	98	Diapason	Including rubber mallet (1 in 2)	ea	4 per 1
44	Trowel		ea	4 per 1	99	Double-sided mirror		ea	4 per 1
45	Burette (50mL)		ea	4 per 1	100	Concave lens		ea	4 per 1
46	Burette clamp	2 in	ea	4 per 1	101	Resistive Nichrome Wire	Exposed	ea	2 per 1
47	Erlenmeyer flask (500mL)		ea	4 per 1	102	Metal foil electroscope		ea	2 per 1
48	Tube clamp		ea	4 per 1	103	Friction electrical test instruments	Set	ea	2 per 1
49	Test Tube Stand	Iron (20)	ea	4 per 1	104	Ammeter	DC for	ea	2 per 1
50	Spring scale	weight 200g	ea	4 per 1	105	Voltmeters	DC for	ea	2 per 1
51	Platform balance	Weight 200g, weight loss 100mg	ea	4 per 1	106	Transparent half-cylinder	Plastic	ea	2 per 1
52	Stopwatch	1 / 100 seconds	ea	4 per 1	107	Prism		ea	2 per 1
53	Compass		ea	2 per 1	108	Boyle's law experiment	Including three additional	ea	1 per school
54	Magnifier		ea	2 per 1					
55	Mass cylinder (100mL)		ea	2 per 1					

No	Equipments	Specification	Unit	Qun'ty
109	V expression of electrolysis	85 x 95 x 290mm, AC 110/220 Combined, power supplies	ea	6 per 1
110	Gas molecule movement apparatus	DC 3 ~ 6V	ea	6 per 1
111	Gas diffusion rate meter		ea	6 per 1
112	Grid tray	Aluminium	ea	6 per 1
113	Crucible		ea	6 per 1
114	Crucible tongs		ea	6 per 1
115	Libby Hebrews Cooler		ea	6 per 1
116	Spectroscope	Diameter, 20 x 110mm, slit gap adjustment	ea	6 per 1
117	Triangle Grill		ea	6 per 1
118	Line spectrum Light Source	He, Ne, Ar lamp (3 in 1)	ea	6 per 1
119	Water bath		ea	6 per 1
120	Torch Lamps	Recurrence touch	ea	6 per 1
121	Assembled a set of molecular models	355 pieces	ea	4 per 1
122	U tube		ea	4 per 1
123	Y tube	∅20 x 20mm ∅20 x 20mm	ea	4 per 1
124	Discern the funnel (250mL)		ea	4 per 1
125	Electrode	Copper, stainless steel, zinc and carbon electrodes, jeonhaejilyong	ea	4 per 1
126	Evaporating dish		ea	4 per 1
127	Clamp		ea	4 per 1
128	Platinum Wire	Anti-fireworks applications	ea	2 per 1
129	Household sample	10 x 30cm	ea	1 per school
130	Sampling occurred during the frog	10 x 40cm	ea	1 per school
131	Frog specimens	10 x 40cm	ea	1 per school
132	Ear Model		ea	1 per school
133	Eye Model		ea	1 per school
134	Chicken samples	11 x 53cm	ea	1 per school
135	Animal Book	Primary color	ea	1 per school
136	seaweed samples	11 x 50cm	ea	1 per school
137	Snake specimens	11 x 53cm	ea	1 per school
138	Thermos		ea	1 per school
139	Carp samples	10 x 40cm	ea	1 per school
140	Plant Book	Primary color	ea	1 per school
141	Kidney samples dissected	10 x 40cm	ea	1 per school
142	Heart dissection specimens	11 x 50cm	ea	1 per school
143	Aquarium (Aquarium)		ea	1 per school
144	Squid samples	12 x 40cm	ea	1 per school
145	Book protist	Primary color	ea	1 per school
146	Human body model		ea	1 per school
147	Human cerebrospinal nervous system models		ea	1 per school
148	Shellfish samples	10 x 40cm	ea	1 per school
149	Earthworm sampling	10 x 40cm	ea	1 per school
150	Iron plate		ea	1 per school
151	Thermometer	Mercury film formation	ea	1 per school
152	Rabbit samples	12 x 40cm	ea	1 per school
153	grasshoppers the sample	10 x 40cm	ea	1 per school
154	Microscopic Projector		ea	1 per school
155	Poison bottle		ea	3 per school
156	Plant Collecting cage		ea	3 per school
157	Plant press		ea	3 per school
158	Insect net		ea	3 per school
159	Permanent Preparat (cell division)	Three kinds of	ea	1 per school
160	Permanent Preparat (animal cell)	More than 10 kinds of sets	ea	1 per school
161	Permanent Preparat (blood)	Set	ea	1 per school

No	Equipments	Specification	Unit	Qun'ty
162	Permanent Preparat (Plant Cell)	10 kind set	ea	1 per school
163	Pruning shears		ea	6 per 1
164	specimens bottle		ea	4 per 1
165	Breathing Capacity Meter	Plastic Cylindrical	ea	4 per 1
166	Dissect Set	10 kinds 1set	ea	4 per 1
167	Dissecting dish		ea	4 per 1
168	Dissecting microscope		ea	4 per 1
169	Rubber mallet		ea	2 per 1
170	Microscope	Eyepiece 10 x 20 x objective lens 5 x 10 x 40 x, saeksuchaga will not, copy source device	ea	2 per 1
171	Optical bench		ea	1 per school
172	Set of meteorological	6 in 1 (portable)	ea	1 per school
173	Fault Model	4 in 1	ea	1 per school
174	Shelter		ea	1 per school
175	Star Spectrum Pictures	30 kinds	ea	1 per school
176	Camera	B-timer, tripod, release sheet	ea	1 per school
177	Illuminated orbital planetarium		ea	1 per school
178	Mercury barometers		ea	1 per school
179	Fold the model mismatch	3 in 1	ea	1 per school
180	Binoculars	7 x 50 or more	ea	1 per school
181	Aneroid		ea	1 per school
182	Weather blackboard		ea	1 per school
183	Hair hygrometer		ea	1 per school
184	Introducing the device automatically		ea	1 per school
185	Crustal Structure Model		ea	1 per school
186	Earth's interior structure models		ea	1 per school
187	celestial globe		ea	1 per school
188	Astronomic Telescope	102mm or more, and automatic tracking device,	ea	1 per school
189	Ejecta of volcano specimen	5 in 1	ea	1 per school
190	Iron mortar	Cast iron	ea	1 per school
191	Globes		ea	1 per school
192	Mineral samples	10 in 1	ea	4 per 1
193	Aluminum Cup	Black, White (2 in1)	ea	4 per 1
194	Thermal conductivity apparatus		ea	4 per 1
195	Glass bell	Cap attached	ea	4 per 1
196	Solar radiation measuring devices		ea	4 per 1
197	Wet and dry hygrometer	-20℃ ~ 50℃, Plate Department	ea	4 per 1
198	Changes in insulation apparatus	Part Thermometer	ea	4 per 1
199	Mohs Hardness	10 in 1	ea	4 per 1
200	Metamorphic rock samples	10 in 1	ea	4 per 1
201	Rectangular tank	Compartment attached	ea	4 per 1
202	Earth model		ea	4 per 1
203	Neonatology Hammer	Steel	ea	4 per 1
204	Sieve	4 in 5	ea	4 per 1
205	Sedimentary samples	10 in 1	ea	4 per 1
206	Fossil specimens	10 in 1	ea	4 per 1
207	Igneous rock samples	10 in 1	ea	4 per 1
208	Astro Photo Sets	30 in	ea	2 per 1
209	Astronomical map		ea	2 per 1
210	Galaxy wide photos	30 in	ea	2 per 1
211	streak plate		ea	2 per 1
212	Planisphere		ea	1 per 1

High School

No	Equipments	Specification	Unit	Qun'ty	No	Equipments	Specification	Unit	Qun'ty
1	pH Meter (Digital)	pH0~14±0.01pH	ea	1 per school	40	Heating appliances		ea	6 per 1
2	AC ammeter	0 ~ 19.99A	ea	1 per school	41	Mass cylinder (1000mL)		ea	6 per 1
3	AC voltmeter	0 ~ 199.9V	ea	1 per school	42	Platform balance	weight 200g, weight loss 100mg	ea	6 per 1
4	Agitator		ea	1 per school	43	Mortar		ea	4 per 1
5	Desiccator		ea	1 per school	44	Volumetric flask (100mL)		ea	4 per 1
6	Beckman thermometer	-6 ~ 0°C, 0 ~ 6°C (2 Items 1 Act)	ea	1 per school	45	Branched flask (500mL)		ea	4 per 1
7	Noise Meter	35~130dB	ea	1 per school	46	Volumetric flask (500mL)		ea	4 per 1
8	Mercury barometers	860 ~ 1090hPa	ea	1 per school	47	Sensible funnel (250mL)		ea	4 per 1
9	Laboratory Ice Machines		ea	1 per school	48	Branched flask (200mL)		ea	4 per 1
10	Electric drill		ea	1 per school	49	Volumetric flask (200mL)		ea	4 per 1
11	Electric Iron		ea	1 per school	50	Branched flask (100mL)		ea	4 per 1
12	Electronic scales	Weight 200g, loss 0.1g	ea	1 per school	51	Face spectroscopy		ea	4 per 1
13	Light Meter	0 ~ 20,000Lux	ea	1 per school	52	Water tank		ea	4 per 1
14	Water maker		ea	1 per school	53	Holpipet (10mL)		ea	4 per 1
15	Maximum, minimum thermometer	-30°C ~ 50°C, U-shaped Plate	ea	1 per school	54	Holpipet (20mL)		ea	4 per 1
16	Cork Borer	Automatic	ea	1 per school	55	Funnel		ea	4 per 1
17	Waste Disposal		ea	1 per school	56	Funnel Stand		ea	4 per 1
18	Constant Chamber (drying)		ea	1 per school	57	DC Power Supply	Output 0 ~ 30V, 0 ~ 3A	ea	4 per 1
19	Environmental Meter		ea	1 per school	58	Ring	∅50, 70, 90mm (3 species in 1)	ea	4 per 1
20	Hood		ea	1 per school	59	Floor lamp	Adjustable intensity	ea	4 per 1
21	Tap Connection Pnumetic		ea	1 per school	60	Burette clamp		ea	4 per 1
22	Tool sets		ea	1 per school	61	Flashlight		ea	4 per 1
23	LCD projector		ea	per room 1	62	Platinum Wire		ea	4 per 1
24	OHP OHP		ea	per room 1	63	Iron stand		ea	4 per 1
25	Screen	Electric	ea	per room 1	64	Tape Measure (2m)	Steel	ea	4 per 1
26	Video Presenter		ea	per room 1	65	Metz pipette (20mL)		ea	4 per 1
27	Computer (Teacher)		ea	per room 1	66	Mass cylinder (100mL)		ea	4 per 1
28	pH meter	pH0~14 ± 0.1pH	ea	6 per 1	67	Mass cylinder (200mL)		ea	4 per 1
29	G cm scale	Weight 311g, weight loss 10mg	ea	6 per 1	68	Mass cylinder (20mL)		ea	4 per 1
30	Test tube Stand	Iron (20)	ea	6 per 1	69	Mass cylinder (500mL)		ea	4 per 1
31	Tape Measure (50m)	cotton	ea	6 per 1	70	Metz pipette (10mL)		ea	4 per 1
32	Computer (Student)		ea	6 per 1	71	Burette (50mL)	White	ea	4 per 1
33	Pipetdae		ea	6 per 1	72	Syringe		ea	4 per 1
34	Galvanometer	± 1999mA	ea	6 per 1	73	Stopwatch	1 / 100 seconds	ea	4 per 1
35	Micrometer	0.01 ~ 25mm, 0.01mm error	ea	6 per 1	74	DC Ammeter	0 ~ 1999mA	ea	3 per 1
36	Bath pot		ea	6 per 1	75	DC voltmeter	0 ~ 199.9V	ea	3 per 1
37	Gas burner		ea	6 per 1	76	Compass		ea	2 per 1
38	Volumetric flask (1000mL)		ea	6 per 1	77	Tripod		ea	2 per 1
39	Vernier calipers		ea	6 per 1	78	Triangle Grill		ea	2 per 1
					79	Heat Safety Net		ea	2 per 1

No	Equipments	Specification	Unit	Qun'ty
80	Spatula		ea	2 per 1
81	Burette (50mL)	Brown	ea	2 per 1
82	Chalet		ea	2 per 1
83	Alcohol Lamp		ea	2 per 1
84	Dropping bottle(100mL)	Brown	ea	2 per 1
85	Dropping bottle(100mL)	White	ea	2 per 1
86	Evaporating dish		ea	2 per 1
87	Magnet	Bar, horseshoe, round (3 in 1)	ea	2 per 1
88	Clamp		ea	2 per 1
89	Pipette Filler		ea	2 per 1
90	Pincette		ea	2 per 1
91	Pinchikok		ea	2 per 1
92	Magnifier		ea	2 per 1
93	Tube clamp		ea	1 per 1
94	Lab coats	Cotton	ea	1 per 1
95	Dropper (5 ~ 10mL)	The grid will	ea	1 per 1
96	Goggles		ea	1 per 1
97	Thermometer (alcohol)	-20°C ~ 110°C -20°C ~ 110°C	ea	1 per 1
98	Geiger Miller Counter		ea	1 per school
99	Phototube		ea	1 per school
100	Optical bench		ea	1 per school
101	DC Power Supply		ea	1 per school
102	Newton ring		ea	1 per school
103	Multiple flash devices		ea	1 per school
104	Laser optical bench	Aluminum reil	ea	1 per school
105	Laser generator		ea	1 per school
106	Non Rubbing Top experiment		ea	1 per school
107	Bimetal	DC for	ea	1 per school
108	Boyle's law experiment		ea	1 per school
109	Spectrometer	Metal	ea	1 per school
110	Inclined plane apparatus		ea	1 per school
111	Strobe		ea	1 per school
112	Spectrum Tube	5 in 1	ea	1 per school
113	Cloud chamber		ea	1 per school
114	Induction coil		ea	1 per school
115	Magnetizer	AC for	ea	1 per school
116	Infrared lamp		ea	1 per school
117	Vacuum drop apparatus	2 in 1	ea	1 per school
118	Vacuum tubes	6 in 1	ea	1 per school
119	Vacuum Pump		ea	1 per school

No	Equipments	Specification	Unit	Qun'ty
120	Crookes tube	3 in 1	ea	1 per school
121	Elastic Collision	7 in 1	ea	1 per school
122	Rotating Disk (turntables)	Afferent Mounted	ea	1 per school
123	Photocurrent measurement system		ea	6 per 1
124	Swing-type electromagnetic S measuring devices		ea	6 per 1
125	Laser Pointer		ea	6 per 1
126	Wave projection devices		ea	6 per 1
127	Heat measurement devices	Box in	ea	6 per 1
128	Triangular	PrismPerpendicular, the dot (2 in 1)	ea	6 per 1
129	Slide resistor	0 ~ 50Ω, Hermetic	ea	6 per 1
130	Ultraviolet		ea	6 per 1
131	Linear light source	includes a color filter	ea	6 per 1
132	Capacitors	Set	ea	6 per 1
133	Wheatstone Bridge		ea	6 per 1
134	Cripples the scale		ea	6 per 1
135	Time Recorder	AC for	ea	6 per 1
136	Dynamic cart		ea	6 per 1
137	Solenoid	Including balance	ea	6 per 1
138	Weight	Set(10 ~ 1000g) Sets (10 ~ 1000g)	ea	6 per 1
139	Resistive Nichrome Wire	Exposed	ea	6 per 1
140	Diode (LED)	Set	ea	6 per 1
141	Spring for simple harmonic motion	Weight, spring-set	ea	6 per 1
142	Pendulum experiment	Stand Type	ea	6 per 1
143	Pulley	5 in 1	ea	6 per 1
144	Dual Coil		ea	6 per 1
145	Diapason	Including the hammer	ea	6 per 1
146	Two-dimensional collision devices	Standard	ea	6 per 1
147	C-type clamp	3 in 1	ea	6 per 1
148	Concave mirror		ea	6 per 1
149	Concave lens		ea	6 per 1
150	Electrical circuit tester		ea	6 per 1
151	Choke coils	Terminal 4, 12V	ea	6 per 1
152	Convex Lenses		ea	6 per 1
153	Convex mirrer		ea	6 per 1
154	Transparent half-cylinder		ea	4 per 1
155	Electric pendulum		ea	4 per 1
156	Metal foil electroscope		ea	4 per 1

No	Equipments	Specification	Unit	Qun'ty	No	Equipments	Specification	Unit	Qun'ty
157	Electrical test set friction	Set	ea	4 per 1	193	Poultry conductivity		ea	6 per 1
158	Centripetal force apparatus		ea	4 per 1	194	Conical beaker (250mL)		ea	6 per 1
159	Laboratory wave spring	2 in 1	ea	4 per 1	195	Torch Lamps	Recurrence touch	ea	6 per 1
160	Spring scale		ea	4 per 1	196	Molecular models		ea	6 per 1
161	The crystal structure model	2 in 1	ea	1 per school	197	Gas-side articles		ea	6 per 1
162	Mixer		ea	1 per school	198	Gas diffusion rate meter		ea	6 per 1
163	Hydrometer1	9 in 1	ea	1 per school	199	Spritz bottle		ea	6 per 1
164	Line spectrum Light Source	He, Ne, Ar lamp (three kinds)	ea	1 per school	200	Tap Funnel		ea	6 per 1
165	Liquid nitrogen soils		ea	1 per school	201	Combustion spoon		ea	6 per 1
166	Periodic Table of Elements		ea	1 per school	202	Elemental Card Set		ea	6 per 1
167	The atomic structure descriptor		ea	1 per school	203	Branched tube	$\phi 21 \times 200\text{mm}$	ea	4 per 1
168	Libby Hebrews Cooler		ea	1 per school	204	Assembled a set of molecular models	355 pieces	ea	4 per 1
169	Soksiretchuchulgi (250mL)		ea	1 per school	205	Reagent bottle	Brown 100, 250mL	ea	4 per 1
170	Air Absorption Funnel		ea	1 per school	206	Pnumetic Bottle		ea	4 per 1
171	Absorption Bottle (500mL)	Glass	ea	1 per school	207	DNA Models		ea	1 per school
172	U tube		ea	6 per 1	208	DO meter		ea	1 per school
173	Y tube		ea	6 per 1	209	Coelenterata	$\phi 100 \times 410\text{mm}$	ea	1 per school
174	U tube branched		ea	6 per 1	210	High-pressure autoclave	Heating	ea	1 per school
175	Extra gas buret		ea	6 per 1	211	Ear Model		ea	1 per school
176	Gas molecule movement apparatus		ea	6 per 1	212	Echinoderms	$\phi 110 \times 510\text{mm}$	ea	1 per school
177	Thigh bottom flask (100 ~ 500mL)		ea	6 per 1	213	Eye Model		ea	1 per school
178	Crucible		ea	6 per 1	214	Animal Book	Primary color	ea	1 per school
179	Crucible tongs		ea	6 per 1	215	Book protist	Primary color	ea	1 per school
180	Round bottom flask (1000mL)		ea	6 per 1	216	Plant Book	Primary color	ea	per school
181	Round bottom flask (100 ~ 500mL)		ea	6 per 1	217	Kidney samples dissected	$\phi 100 \times 410\text{mm}$	ea	1 per school
182	Erlenmeyer flask (1000mL)		ea	6 per 1	218	Heart dissection specimens	$\phi 110 \times 510\text{mm}$	ea	1 per school
183	Erlenmeyer flask (500mL)		ea	6 per 1	219	Amphibian sampling	$\phi 00 \times 410\text{mm}$	ea	1 per school
184	Erlenmeyer flask (50mL)		ea	6 per 1	220	Fish samples	$\phi 110 \times 510\text{mm}$	ea	1 per school
185	Stainless steel spoon		ea	6 per 1	221	Mollusc	$\phi 110 \times 510\text{mm}$	ea	1 per school
186	Stainless Steel Electrodes		ea	6 per 1	222	Centrifuge		ea	1 per school
187	Styrofoam tube		ea	6 per 1	223	Human cerebrospinal nervous system models		ea	1 per school
188	Watch glass		ea	6 per 1	224	Human circulatory system modelea		ea	1 per school
189	Safety funnel		ea	6 per 1	225	Human body model		ea	1 per school
190	Calorimeter		ea	6 per 1	226	Arthropods	$\phi 110 \times 510\text{mm}$	ea	1 per school
191	Chloride Calcium tube		ea	6 per 1	227	Bird specimens	$\phi 120 \times 410\text{mm}$	ea	1 per school
192	Electrolysis		ea	6 per 1	228	Stethoscope		ea	1 per school

No	Equipments	Specification	Unit	Qun'ty
229	Lamprey specimens	Ø 110 x 510mm	ea	1 per school
230	Reptile specimens	Ø 100 x 410mm	ea	1 per school
231	Flatworm	Ø 100 x 410mm	ea	1 per school
232	Mammal specimens	Ø 120 x 410mm	ea	1 per school
233	Sponge	Ø 100 x 310mm	ea	1 per school
234	Microscopic projection devices		ea	1 per school
235	Sphygmomanometer		ea	1 per school
236	Annelid	Ø 100 x 410mm	ea	1 per school
237	Permanent Preparat (animal cell)	10 in 1	ea	1 per school
238	Permanent Preparat(Plant Cell)	10 in 1	ea	1 per school
239	Permanent Preparat (blood)	Set	ea	1 per school
240	Permanent Preparat (cell division)	Three kinds	ea	1 per school
241	Poison bottle		ea	6 per 1
242	Trowel		ea	6 per 1
243	Plant Collecting cage		ea	6 per 1
244	Plant press		ea	6 per 1
245	Pruning shears		ea	6 per 1
246	Insect net		ea	6 per 1
247	BOD bottles (300mL)		ea	4 per 1
248	Dissecting dish		ea	4 per 1
249	Dissecting microscope		ea	4 per 1
250	Dissect Set		ea	4 per 1
251	Microscope	Eyepiece 10 x , 20 x , objective lens 5 x , 10 x , 40 x , chromatic aberration, no light most bookings	ea	2 per 1
252	Micrometer microscopes	Eyepiece, objective (2 in 1)	ea	2 per 1
253	Extra seismograph	Horizontal	ea	1 per school
254	Raised a cloud experiment		ea	1 per school
255	Set of meteorological instruments	Portable	ea	1 per school
256	Adiabatic change in the board graph		ea	1 per school
257	Fault Model	4 in 1	ea	1 per school
258	Shelter		ea	1 per school
259	Dip the room hierarchy		ea	1 per school
260	Coal samples	10 in 1	ea	1 per school
261	World Map		ea	1 per school
262	The currents of the world		ea	1 per school
263	Global ocean floor topography		ea	1 per school

No	Equipments	Specification	Unit	Qun'ty
264	Folding model	4 in 1	ea	1 per school
265	Binoculars		ea	1 per school
266	Aneroid		ea	1 per school
267	Fossil Model brachiopod	5 in 1	ea	1 per school
268	Mica Flakes	2 in 1	ea	1 per school
269	Weather blackboard		ea	1 per school
270	Geological Survey, a set of instruments	Clinometer, including	ea	1 per school
271	Astronomic Telescope	102 mm or more, jeokdosik trestle, auto tracking device, observing sunspots, including equipment	ea	1 per school
272	Semi-transparent		ea	1 per school
273	Polarizing microscope projectors		ea	1 per school
274	Fossil specimens	10 in 1	ea	1 per school
275	Minerals determined		ea	6 per 1
276	Mineral samples	10 in 1	ea	6 per 1
277	Mohs Hardness	10 in 1	ea	6 per 1
278	Azimuth Altitude Meter		ea	6 per 1
279	Metamorphic rock samples	15 in 1	ea	6 per 1
280	Sedimentary samples	15 in 1	ea	6 per 1
281	Transparency celestial globe		ea	6 per 1
282	igneous rock samples	15 in 1	ea	6 per 1
283	Fast Foucault pendulum		ea	4 per 1
284	Wet and dry hygrometer	20 °C ~ 50°C Plate Member	ea	4 per 1
285	Changes in insulation apparatus		ea	4 per 1
286	Astronomical map		ea	4 per 1
287	Crystal	The size of three others	ea	4 per 1
288	The vertical distribution of temperature measuring devices	Adjustable	ea	4 per 1
289	Aluminum Cup	Black and White 2 in 1	ea	4 per 1
290	Galaxy Pictures		ea	4 per 1
291	Galaxy Spectrum Pictures		ea	4 per 1
292	Globes		ea	4 per 1
293	Sieve		ea	4 per 1
294	Deposition apparatus		ea	4 per 1
295	Rotating cylinder apparatus		ea	4 per 1
296	Contact goniometer		ea	4 per 1
297	Polarization device		ea	4 per 1

Machinery Education

No	Equipments	Specification	Unit	Qun'ty
1	Lathe	More than SW380mm	ea	17
2	Milling machine	Universal, vertical, horizontal	ea	17
3	Cylinder grinding machine	More than SW x L: 200 x 400	ea	1
4	Plane grinding machine	More than 450 x 250mm	ea	2
5	Drilling machine	Less than Φ 13mm	ea	2
6	Electric welding machine	More than 10kw	ea	1
7	Band sawing machine	3660 x 0.95 x 25mm	ea	1
8	Double-head grinder	0.37~1.5KW	ea	2
9	Stone plate	More than 300 X 300	ea	2
10	Vice with working plate	150	ea	17
11	CNC lathe	More than SW380mm	ea	2
12	Machining center	More than 510 x 300mm	ea	6
13	Programmanipulator	More than 32bit	ea	34
14	CNC discharging machine	More than 300 x 200mm	ea	1

No	Equipments	Specification	Unit	Qun'ty
15	CNC wire cutting machine	More than 260 x 160mm	ea	1
16	Air compressor	More than 5HP	ea	1
17	Duplicator	More than A3	ea	1
18	Scanner	More than A4	ea	1
19	Computer	Pentium 4 or more	ea	34
20	Printer	More than A3	ea	4
21	Plotter	A0(color)	ea	1
22	LAN	More than 50 Port	set	1
23	Air conditioner	Considering room size	ea	1
24	Projector	More than 1024 x 768	ea	1
25	Office work software	MS office	copy	34
26	CAD(2D) Software	CAD(2D)	copy	34
27	CAD(3D) Software	CAD(3D)	copy	34

Electric Education

No	Equipments	Specification	Unit	Qun'ty
1	Computer	Pentium 4 or higher level	ea	34
2	Printer	A3	ea	4
3	Projector	More than 1024 x 768	ea	1
4	Air conditioner	Considering room sizeea	1	
5	Electric device structure trainer	Module type	set	1
6	Voltage controller		ea	1
7	Winding machine (electro-motion)	1 Φ 220V	ea	2
8	Transformer	Less than 1 Φ , 10KVA	ea	2
9	Sequence trainer	AC 220V	ea	2
10	Electric circuit trainer	Module type	set	5
	Electric device			
11	characteristictrainer	Module type	set	1
12	Electric device circuit trainer	Module type	set	1
13	Phase Sequence Indicator	100-600V	ea	1
14	Ammeter	AC,DC 0-30A	ea	8
15	Voltmeter	AC, DC 0-300V	ea	8
16	Wattmeter	Less than 6kw	ea	8
17	Galvanometer	$\pm 50 \mu$ A	ea	2
18	Power-factor meter	90 Lead 0 ~ Lag 0	ea	2
19	Single-phase energy meter	220V,40(10)A, 1 Φ 2W	ea	4
20	Three-phase energy meter	220V,40(10)A 3 Φ 4W	ea	4
21	Insulation resistance tester	500V, 1000M Ω	ea	2
22	Earth tester	0-1K Ω	ea	1
23	Photoelectric tachometer	100-10,000rpm	ea	1
24	Illumination photometer	0-3000Lx	ea	2
25	Analog lab unit	For education	ea	17
26	Microprocessor trainer	For education	ea	8

No	Equipments	Specification	Unit	Qun'ty
27	AD/DA converter	More than 8Bit	set	5
28	DC power supply	More than 0-30V, 3A, 2CH	ea	8
29	Digital lab unit	For education	ea	17
30	Semiconductor trainer	Module type	set	3
31	Electronic circuit trainer	Module type	set	4
32	Electric power trainer	OP AMP	set	5
33	Logic circuit trainer	Module type	set	3
34	Sensor trainer	For education	set	2
35	Digital oscilloscope	More than 100MHz	ea	2
36	Variable AC/DC power supply	0-250V, 20A	ea	8
37	Digital multi-meter	For desk use	ea	17
38	Function generator	3waves, 0.02Hz-2MHz	ea	4
39	Digital oscilloscope	More than 2CH, 40MHz	ea	17
40	Frequency counter	10Hz-1GHz	ea	2
41	LCR bridge	Digital	ea	2
42	Digital IC tester	TTL, CMOS IC check	ea	1
43	Inverter	PWM type	set	2
44	Electro pneumatic trainer	For education	ea	2
45	Electro hydraulic trainer	For education	ea	2
46	Servo motor trainer	For education	ea	3
47	Stepping motor trainer	For education	ea	3
48	PLC Trainer	I/O 128P (PC included)	ea	17
49	PLC application trainers	5 trainers including elevator trainer	set	1
50	Plotter	A0	ea	1
51	Automatic control trainer	Module type(PID)	set	1
52	Electric CAD S/W	For education	copy	34
53	Power SIM S/W	Transformer, Sequence	copy	10
54	Simulation S/W	Pneumatic, Hydraulic, PLC, MICOM	copy	34

Electronic Education

No	Equipments	Specification	Unit	Qun'ty	No	Equipments	Specification	Unit	Qun'ty
1	Power Supply	DC0-30V, 3A, 2CH	ea	17	34	D/A converter	More than 8Bit	ea	5
2	Digital oscilloscope	2CH,40MHz	ea	17	35	Logic Analyzer	More than sampling 100MHz	ea	1
3	Low-frequency characteristic tracer	20Hz-200KHz GPIB	ea	1	36	Duplicator	A3	ea	1
4	Digital Multi-meter	AVR(bench type)	ea	17	37	FPGA Trainer	FPGA logic/VHDL design	ea	17
5	OP Amp. IC tester	Short-circuit, voltage, current, gain, Generation 0-90dB	ea	2	38	PLC trainer	PC included	set	33
6	Transistor tester	hfe: 50,250,500	ea	2	39	Sequence trainer	For education	set	33
7	Frequency counter	10Hz-2.1GHz(Digital)	ea	3	40	TV generating electric field meter	PLL type	ea	2
8	Function generator	More than 0.1Hz-20MHz(3 waves)	ea	17	41	Level meter	100 μ V~300V, \pm 3% 10MHz	ea	2
9	LCR meter	Less than Accuracy 0.2%	ea	1	42	Air conditioner	According to room size	ea	1
10	Portable double-bridge	0.1Hz-110KHz	ea	1	43	FM stereo signal generator	100KHZ-110MHZ	ea	2
11	Piston bridge	1 Ω -10M Ω	ea	1	44	TV-FM marker generator	More than 2-300MHz	ea	2
12	Distortion meter	20Hz-200KHz	ea	1	45	High- frequency signal generator	100kHZ-1GHz	ea	4
13	Digital Lab unit	Digital	ea	17	46	Function generator	More than 0.1Hz-20MHz (3 waves)	ea	6
14	Analog Lab unit	Analog	ea	17	47	Recorder	VHS	ea	2
15	Attenuation meter	0-90dB	ea	4	48	Audio system	AF/FM, CD, LDP, cassette Amp.	ea	2
16	Electronic circuit trainer	Module type	set	4	49	Digital TV	20 inches	ea	3
17	Logic circuit trainer	Module type	set	4	50	DVD player		ea	3
18	Electric circuit trainer	Module type	set	4	51	Color pattern generator	NTSC	ea	2
19	Operational amplifier	24 circuit, \pm 15V \pm 10%	ea	4	52	TV trainer	Digital	ea	2
20	Digital IC tester	TTL, CMOS IC check	ea	1	53	Video camera	VHS	ea	2
21	Curve tracer	100Hz	ea	1	54	Ultrasonic trainer	Output 200W, 28KHz	ea	2
22	Drilling machine	Φ 13	ea	1	55	Sensor application trainer	8051,AVR,PIC	set	2
23	Sensor trainer	Communication 28 kinds	set	4	56	Digital illumination photometer	Response time: Automatic/Manual(5/2 sec.)	ea	1
24	PCB machine	60,000rpm	ea	1	57	Insulation resistance tester	5000V, 1000M Ω	ea	2
25	Projector	1024 x 768	set	1	58	Noise meter	100mv	ea	1
26	Microprocessor trainer	More than 8bit	set	17	59	Antenna trainer	For education	set	4
27	EP-ROM programmer	8-64 bit	set	1	60	Wireless communication trainer	For education	set	1
28	EP-ROM remover		set	2	61	Router	More than 128KB	ea	8
29	Computer	Pentium 4 or high level	set	34	62	Hub	More than 16P	ea	8
30	Printer	A3	ea	4	63	Digital signal generator/Analyzer	For education	ea	1
31	Plotter	A0	ea	1	64	CAD program	For education	copy	34
32	Plus generator	1MHzvariable	ea	3	65	Simulation software	For education	copy	34
33	A/D converter	More than 8Bit	ea	5					

Automation Education

No	Equipments	Specification	Unit	Qun'ty	No	Equipments	Specification	Unit	Qun'ty
1	Computer	More than Pentium 4	ea	34	26	Hydraulic trainer	For education	set	6
2	Projector	More than 5200ANSI	ea	1	27	Servo hydraulic trainer	For education	set	6
3	Printer	Laser, A4	ea	4	28	Air compressor	5HP	ea	1
4	Air-conditioner	Considering room size	ea	1	29	Pneumatic equipment	36 kinds	set	1
5	Lathe	More than SW38	ea	17	30	Programmanipulator	More than 32 bit	ea	17
6	Milling machine	#2	ea	17	31	PLC applicable trainer	More tha I/O 32 points	set	17
7	Drilling machine	Less than Φ 13	ea	4	32	Pneumatic applicable trainer	For education	set	17
8	Working plate	1800 x 900	ea	8	33	Production automation trainer	Standard	set	6
9	Double-head grinder	0.37-1.5KW	ea	2	34	Sensor trainer	For education	set	6
10	Stone plate	More than 300 x 300	ea	8	35	Servo motor trainer	For education	set	6
11	Drilling machine	More than Φ 13	ea	1	36	Mechatronic trainer	Standard	set	6
12	Band sawing machine	Cutting ability more than 350	ea	1	37	Microprocessor trainer	For education	set	17
13	Plane grinding machine	More than 450 x 250	ea	2	38	Electro circuit trainer	Module type	set	17
14	Finishing-touch grinding machine	More than 300 x 150	ea	1	39	Electric circuit trainer	Module type	set	17
15	Tool grinding machine	More than SWXL200 x 400	ea	1	40	DC power supply	0-30V, 3A, 2CH	ea	17
16	Vacuum cleaner	50L	ea	1	41	Digital multi-meter	Desk use	ea	17
17	CNC Lathe	SW300	ea	2	42	Function generator	3waves, 0.02-2MHZ	ea	17
18	CNC machining center	510 x 300	ea	2	43	Digital oscilloscope	2CH, 40MHZ	ea	17
20	CNC discharging machine	300 x 200	ea	1	44	CAD software	2D software	copy	34
21	CNC wire cutting machine	250 x 160	ea	1	45	CAM software	NC processing	copy	34
22	Scanner	More thanB4	ea	1	46	3D modeling software	3D modeling	copy	34
23	Vacuum cleaner	More than 50L	ea	1	47	DNC processing software	DNC processing	copy	2
24	Plotter	More than A0	ea	1	48	Simulation S/W	For pneumatic and hydraulic training	copy	34
25	Pneumatic trainer	For education	set	6					

Automobile Education

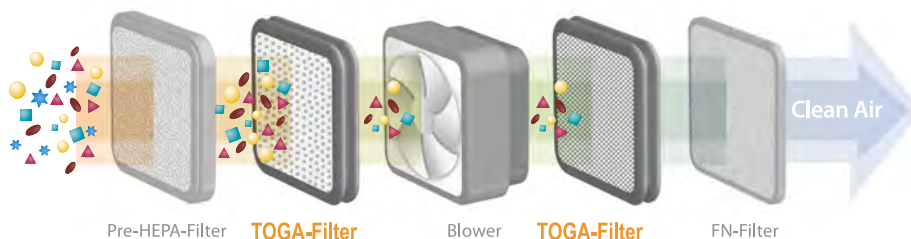
No	Equipments	Specification	Unit	Qun'ty
1	Air Conditioner		ea	1
2	PC Viewer	HD resolution	ea	1
3	Personal Computer		ea	41
4	Printer	A3 then more	ea	2
5	Measuring tools		set	Required
6	Measuring tools		set	Required
7	Finishing Tools		set	Required
8	Cleansing Tools		set	Required
9	Welding Tools		set	Required
10	Special Tools for Automobile		set	Required
11	Work Table		set	Required
12	Work Tools		set	Required
13	Metal Plate Tools		set	Required
14	High Speed Cutting M/C	2.2-3.7KW	ea	1
15	Nozzle Tester	0.6ℓ	ea	4
16	Oil Pressure Tester	high / low	ea	2
17	Electronic Control Diesel Engine	6 Cylinder then more	ea	5
18	Overhead Traveling Crane	1ton then more	ea	1
20	Air Compressor	5HP over	ea	1
21	Spray Booth	Closed type	ea	1
22	Excavator	Small	ea	1
23	Fork Lift	Small	ea	2
24	Radiator Cap Tester	10 kg/cm2	ea	2
25	Air Compressor	3.75Kw	ea	1
26	Air Conditioner		ea	1
27	Specialist Checker	PC include	ea	2
28	Basic Electronic	OP-AMP circuit tester	ea	2
29	Diesel Injection Pump Tester	4 Cylinder over	ea	1
30	Diesel Timing Light And Tachometer	10,000rpm	ea	2
31	Oscillo Scope		ea	3
32	ECU Tester	Elec. Control for Car	ea	5
33	Hydraulic Tester	10 then more	ea	2
34	Air Conditioner		ea	1
35	Scopemeter	For Car	ea	5
36	Scanner	Elec. Control for Car	ea	2
37	Ammeter	AC,DC 0 - 30A	ea	2
38	Total Distributing Board	General circuit	ea	2
39	Gasoline Engine	4 Cylinder then more	ea	10
40	Combustible Gas Detector	LPG, Air conditioner Gas	ea	1
41	Multi Press	10-50Ton then more	ea	1
42	Diesel Engine	4 Cylinder then more	ea	5

No	Equipments	Specification	Unit	Qun'ty
43	Smoke Tester	0 - 100%	ea	2
44	Battery Capacity Tester	200AH	ea	2
45	Battery Charger	6-24V	ea	2
46	Exhaust Gas Tester		ea	2
47	Transmission Jack	0.5Ton more	ea	4
48	Antifreeze Recycliner	70ℓ	ea	1
49	Brake Tester	3-10Ton	ea	1
50	Side Slip Tester	3-10Ton	ea	1
51	Chassis Dynamometer		ea	1
52	Speedmeter Tester	9999rpm	ea	1
53	Camber Caster Gauge	Magnetic type	ea	1
54	Air-Con Gas Charger	rechargeable	ea	1
55	Engine Systhesis Tester	combine use for Gasoline Diesel	ea	3
56	Fuel Tester	20ℓ	ea	1
57	Oil Exchanger	20ℓ more	ea	2
58	Stand Specal Tool For A/T	108item	ea	4
59	Car	ECS,ABS,A/T, Airbag	ea	10
60	Heavyweight Conveyance Car	2Ton more	ea	1
61	Car Lifter	2t then more	ea	5
62	Wheel Alignment Tester	left include	ea	1
63	Common rail nozzle tester	Ultra High Pressure	ea	5
64	Common rail engine pressure tester	High Pressure	ea	1
65	Common rail fuel pressure tester	High Pressure	ea	1
66	Wheel Balance Tester	10 - 24 "	ea	2
67	Tire Changer	Air type	ea	1
68	Portable Crane	1ton then more	ea	1
69	Head Light Tester	3m	ea	1
70	Shock absorber	Portable	ea	2
71	Copy M/C	A3 then more	ea	1
72	Automatic Voltage Regulator		ea	1
73	Oxy-Acce Gas Welder Set	Portable	ea	5
74	AC Arc Welder	32-300A	ea	5
75	Body Frame Repair System	For pit	ea	1
76	Double Ended Bench Grinder	0.37-1.5KW	ea	2
77	Electrope Drying Oven	350-600°C	ea	1
78	Spot Welder	15KVA	ea	5
79	Bench Drilling M/C	∅ 13mm Under	ea	2

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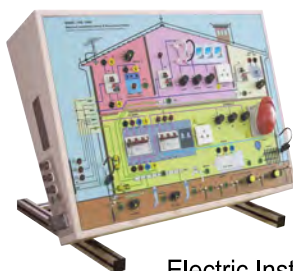
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