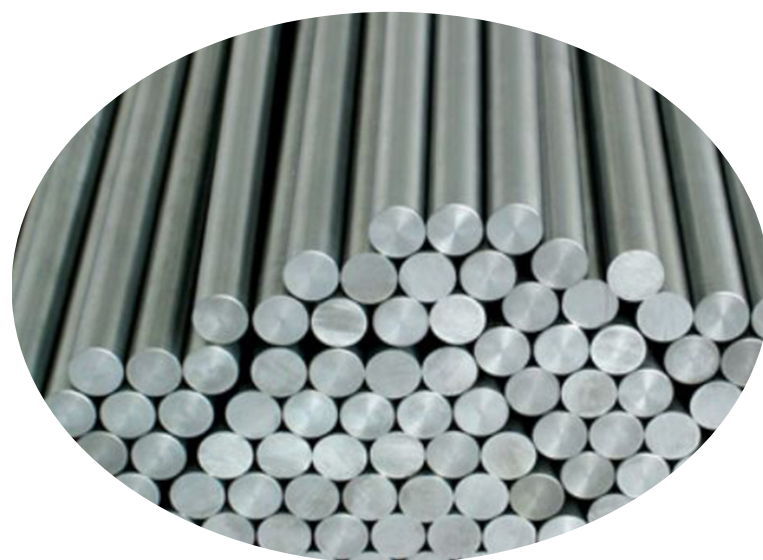


STEEL

TEST EQUIPMENTS



<i>Hydraulic Universal Testing Machine</i>	109-111
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HYDRAULIC UNIVERSAL TESTING MACHINE

Product Code

- TME-6240 | Hydraulic Universal Testing Machine 400 kN, 220-240V

TME-6242 | Hydraulic Universal Testing Machine Frame for 400 kN

TME-6243 | Hydraulic Grips Jaw Faces Set for Round Specimens

TME-6244 | Hydraulic Grips Jaw Faces Set for Flat Specimens

TME-6245 | Extensometer for Universal Testing Machine, 50 mm Gauge Length (Accuracy 0.01 mm)

TME-6246 | Data acquisition and control System TCM304 and Pc Software

TME-6247 | Automatic Hydraulic Power Pack
- TME-6260 | Hydraulic Universal Testing Machine 600 kN, 220-240V

TME-6262 | Hydraulic Universal Testing Machine Frame for 600 kN

TME-6263 | Hydraulic Grips Jaw Faces Set for Round Specimens

TME-6264 | Hydraulic Grips Jaw Faces Set for Flat Specimens

TME-6265 | Extensometer for Universal Testing Machine, 50 mm Gauge Length (Accuracy 0.01 mm)

TME-6266 | Data acquisition and control System TCM304 and Pc Software

TME-6267 | Automatic Hydraulic Power Pack
- TME-6270 | Hydraulic Universal Testing Machine 1000 kN, 220-240V

TME-6272 | Hydraulic Universal Testing Machine Frame for 1000 kN

TME-6273 | Hydraulic Grips Jaw Faces Set for Round Specimens

TME-6274 | Hydraulic Grips Jaw Faces Set for Flat Specimens

TME-6275 | Extensometer for Universal Testing Machine, 50 mm Gauge Length (Accuracy 0.01 mm)

TME-6276 | Data acquisition and control System TCM304 and Pc Software

TME-6277 | Automatic Hydraulic Power Pack

Standards

TS EN 10002-1 | ASTM A370

Desctription

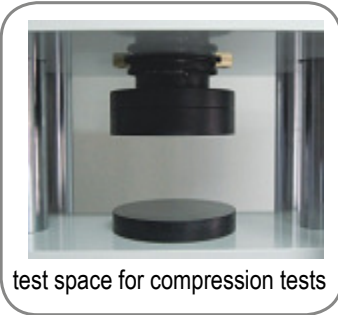
Universal Hydraulic Tensile Test Machine is produced to test the ferrous materials for structural values such as yield strength and tensile strength. Universal Test Machines can also be used for compression tests up to the capacity of the machine. Maximum capacity is 600 kN. Can be test flat and round samples. 0-40 mm flat and 8-32 mm round samples can be tested with a hydraulic jaws that comply with standards.

Load cell is used for load measurements. Strain measurement is done by the electronic displacement transducer built in the machine if required external extensometer fitted to the specimen also can be used for strain measurement. Strain measurements can be done directly from the extensometer fitted to the specimen.

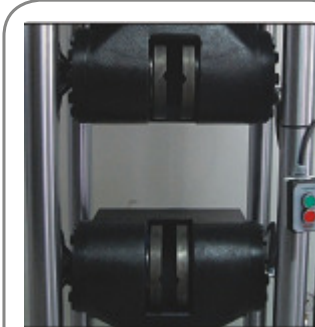
Tests can be done automatic by digital control unit or computer. Machine complete the test with the set pace rate and turns to start position automatically.

Hydraulic Universal Testing Machine, features two test spaces for tension tests and compression tests.

The distance between the grips can be set by motor driven hand set system. With open front hydraulic wedge grips user can load specimen easily.



test space for compression tests



test space for tension tests

HYDRAULIC UNIVERSAL TESTING MACHINE

HYDRAULIC GRIPS

Hydraulic grips are very safe. Hydraulic grips come with grip sets for pulling 8 – 32 mm diameter cylinder samples. The hydraulic grips has an independent hydraulic power unit with a working pressure of 400 bars. Jaw faces for flat samples should be ordered separately.

EXTENSOMETER

Different types of extensometers with accuracy of $\pm 0.1\%$ of indicated value are available depending on requirements. Extensometer can directly measure deformation of specimens.

Data Acquisition & PC Software

The Universal Testing machine can be controlled (Start, Stop commands) by a computer with the software (given free of charge by TESTMAK). This software provides data acquisition and management for compression, tensile and splitting tensile test throughout the test execution. The advanced functions for data base management provide an easy navigation of all saved data. The test results certificate includes all descriptive information. Therefore, test parameters can be set and details about the test carried out such as client details, test type, specimen type, user info and other information required can be entered and printed out as well as test report and graph.

TCM304 Software is developed for testing tensile strength of Reinforcing Rubbed Steel Bars and Welded fabric for the Reinforcement and Prestressing of Concrete. The software includes control of machine, data acquisition, saving them and preparing reports. The user can prepare his own report and also can send the results to Microsoft Excel environment. The software accepts sample's weigh, length, diameter and gauge length as input, and then the user can give start test command to the machine. The samples calculated diameter gives user a perspective about the density of rebar prior to the test. The software continuously updates load, stress and elongation percentage till the break point. When the test is completed the yield point is calculated and indicated on the graph. Each report is a group of 42 samples where 14 different diameters had been entered. The software is prepared as making at least 3 samples for each diameter. This gives user a total report about all the batch. The report includes all standart limits and one can easily check whether the sample can be acceptable. These limits are minimum yield, minimum tensile, minimum break elongation value, Tensile per yield ratio etc. The user can zoom on the graph for further inspection Break elongation value can be synchronized with the manual measurement after the test has been completed for the users that do not use extensometer.

- Foreign Language Support and Customizable User Interface
All contents of experimental data and additional information can be organized by user. Software can be performed in x different languages.
- Capability to Save 24 test results of different specimens in one test folder
Test results, graphics and properties of 24 different specimens can be saved in one folder. Old test folders can be reviewed and be edited easily. Advanced Graphic User Interface Software.
- Graphical data on the screen is refreshed simultaneously during test procedure
Load values can be monitored in high resolution graphics at every 100 milliseconds. User can highlight all 24 different specimen curves or preferred ones in different colors on the graphics. Zooming in-out and dragging can be done easily by mouse. Peak values of curves can be marked on the graphics and user can get load value of any point on the graph via high resolution.
- Able to save frequently used texts in memory and recall them when necessary
Frequently used information like name and location of the laboratory, type and dimensions of mostly used specimens are held in memory and can be written automatically by right clicking on information boxes and selecting frequently used text in menu.
- Capable to Access and use previously done test data
User can access any data of previously completed tests and use in his/ her new report since most of the tests have same structure and properties.
- Able to edit test parameters of the testing equipment through Software

All test parameters supported by testing equipment can be changed remotely via software. All test parameters specified by user are downloaded to the device before initialing the test procedure. By this way predefined device parameters will not cause errors in test results

HYDRAULIC UNIVERSAL TESTING MACHINE

- Graphical outputs and reports can be saved as a MS Excel worksheet

Test result parameters and graphics are transferred to MS Excel worksheet properly to give user a chance to edit any data and graph easily.

- Maximum Flexibility to edit report and graph templates

User can design his/her custom report template and graphic scheme in MS Excel. In software part, user will define which data will be screened in which cell on the worksheet. Therefore , he/she will be able to monitor test results in his/her specific design.

Technical Specification

Product Code	TME-6240	TME-6260	TME-6270
Standards	EN	EN	ASTM
Capacity	400 kN	600 kN	1000 kN
Test Speed	2mm/min - 25mm/min	2mm/min - 25mm/min	2mm/min - 25mm/min
Load Measurement Accuracy	± %1	± %1	± %1
Lower Columns Diameter	60 mm	70 mm	90 mm
Upper Columns Diameter	60 mm	70 mm	90 mm
Vertical Test Distance for Tension	Min.: 40 mm - Max.: 280 mm	Min.: 40 mm - Max.: 320 mm	Min.: 40 mm - Max.: 400 mm
Vertical Test Distance for Compression	Max. 110 mm	Max. 110 mm	Max. 110 mm
Distance Between Columns	450 mm	450 mm	450 mm
Piston Stroke	150 mm	150 mm	150 mm
Max Pressure for Grips	200 Bar	350 Bar	410 Bar
Max Pressure for Load	200 Bar	200 Bar	200 Bar
Oil Capacity	18 Liters	18 Liters	18 Liters
Power	750 W	750 W	750 W
Dimensions	1400x1000x2500 mm	1500x1000x2750 mm	1800x1200x3000 mm
Weight	1750 kg	1850 kg	2500 kg

ELECTROMECHANICAL TENSILE TEST MACHINES

Product Code

TME-6010 | Electromechanical Tensile Testing Machine 50 kN - 220-240 V 50 /60 Hz
TME-6020 | Electromechanical Tensile Testing Machine 100 kN - 220-240 V 50 /60 Hz
TME-6040 | Electromechanical Tensile Testing Machine 300 kN - 220-240 V 50 /60 Hz

Standards

TS 12002 , TS 112 , TS 113 | ISO 527, ISO 8295, ISO 37, ISO 178, ISO 6892 | ASTM D412, ASTM C1161, ASTM D882, ASTM D885 ASTM D918, ASTM D1876, ASTM D4632

Description

Fully Automatic Electromechanical Universal Testing Machines are multi purpose versatile machines which satisfy the requirement for tensile, compression flexural tests under load or displacement control for a wide range of materials. Electromechanical Universal Testing Machines can be used for tensile test on any material i.e (metal, plastic, textile, wood) by using suitable accessories. Those machines can also be used for general compression, flexural, test on steel, soil, concrete, cement, asphalt and similar materials, by using suitable accessories.

- The machine is supplied complete with:
- Wedge action mechanical jaw set
 - Digital quality control indicator on the LCD screen
 - Load Cell
 - Wedge jaw action
 - Extensometer
 - Software
 - Limited Switch
 - Servo drive servo motor and reducer

LOAD CELL

- High Precision Force Value Sensor.
- 0.4% to 100% Test Range of Full Capacity
- High Overloading Range Protection.
- Linearity Within 0.05%.

EXTENSOMETER

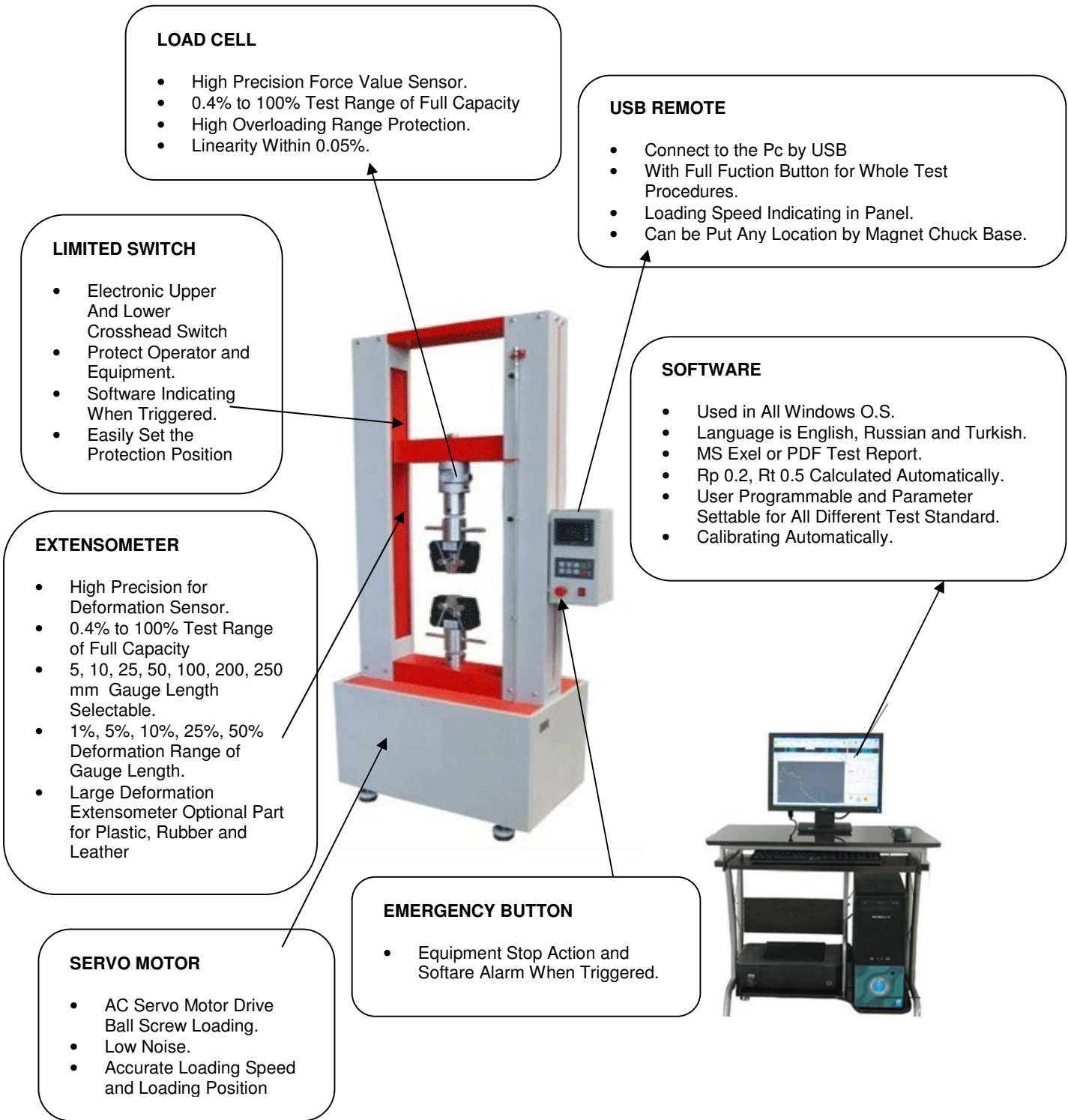
- High Precision for Deformation Sensor.
- 0.4% to 100% Test Range of Full Capacity
- 5, 10, 25, 50, 100, 200, 250 mm Gauge Length Selectable.
- 1%, 5%, 10%, 25%, 50% Deformation Range of Gauge Length.
- Large Deformation Extensometer Optional Part for Plastic, Rubber and Leather

SOFTWARE

- Used in All Windows O.S.
- Language is English, Russian and Turkish.
- MS Exel or PDF Test Report.
- Rp 0.2, Rt 0.5 Calculated Automatically.
- User Programmable and Parameter Settable for All Different Test Standard.
- Calibrating Automatically.



ELECTROMECHANICAL TENSILE TEST MACHINES



ELECTROMECHANICAL TENSILE TEST MACHINES



Technical Specification

Product Code	TME-6010	TME-6020	TME-6040
Capacity	50 kN	100 kN	300 kN
Max. Vertical Test Space (Without Accessories).	700 mm	900 mm	900 mm
Distance Between Columns	300 mm	400 mm	600 mm
Crosshead Trave	400 mm	300 mm	200 mm
Test Speed Range	0-100 mm/min.	0-500 mm/min.	0-750 mm/min.
Load Rate	0.001 – 2 kN/s (Depend on Specimen Stiffness)	0.001 – 2 kN/s (Depend on Specimen Stiffness)	0.001 – 2 kN/s (Depend on Specimen Stiffness)
Class	Class 1 starting from 1% of the capacity	Class 1 starting from 1% of the capacity	Class 1 starting from 1% of the capacity
Encoder Resolution	0.001 mm	0.001 mm	0.001 mm
Encoder Accuracy	0.01 mm	0.01 mm	0.01 mm
Electrical Requirement	220-240V, 50-60Hz, 1 phase	220-240V, 50-60Hz, 1 phase	220-240V, 50-60Hz, 1 phase
Dimensions	1100x400x2000 mm	1200x500x2300 mm	1300x660x2300 mm
Weight	450 kg	900 kg	1100 kg

CHARPY IMPACT TEST MACHINES

Product Code

TME-6300 | Charpy Impact Test Machines with Software
TME-6310 | Charpy Impact Test Machines

Standards

ASTM E23 | ISO 148

Description

INTRODUCTION

Charpy Impact Test Machines are mainly used to determine the anti-impact capability of ferrous metal materials with high toughness, especially for steel and iron material and their alloy, under dynamic load impacting.

This machine can be operated semi-automatically. The pendulum of the machine can be raised or released automatically by button pressed. They are essential testing instruments for quality testing section, university and college, research institution and industrial and mining enterprise. The machine can do test according to ASTM E23 and ISO 148 or other equal standard.

FEATURES

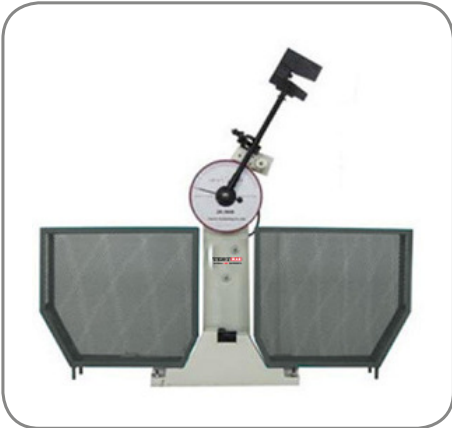
Two pendulum and two scale reading for each testing machine which enlarge the test of energy.

Pendulum rising, impact free releasing is realised as automatically by control remote.

Safety pin guarantees the impact action.

Protection shell avoids the hit and break sample splashing

Electromagnetic clutch hold the raising pendulum. Power sudden of still in safety.



Technical Specification

Product Code	TME-6300	TME-6310
Impact Energy	150 and 300J (2 pendulum)	150 and 300J (2 pendulum)
Pendulum speed	5.4m / s	5.4m / s
Sample display with center distance	800 mm	800 mm
Pendulum removal	Motorized	Electrical Control
Pendulum release	Computer Controlled	Computer Controlled
Start angle	150 °	150 °
Standard range (Bridge range)	40 mm	40 mm
Holder radius	R1-1.5 mm	R1-1.5 mm
The radius of the crash edge	R2-2.5 mm	R2-2.5 mm
Power	380 V 50/60 Hz	380 V 50/60 Hz
Dimensions	2100x650x1900mm	2100x650x1900mm
Weight	450 kg	450 kg

DIGITAL BRINELL - ROCKWELL - VICKERS HARDNESS TESTER

Product Code

TME-6400 | Digital Brinell – Rockwell - Vickers Hardness Tester

Description

Chilled steel, surface hardening steel, hard alloy steel, cast iron, ferrous metal, all kinds of hardening and tempering steel, harden thin plate, also adapted to soft metal, surface heat treatment and chemical treatment etc.

This machine with concise design, stable function, handy operation, which is adapted to fine mechanical technique and photoelectric technology new type hardness tester.

The outer shell of machine is formed of special founding one-time casted technique, stable structure, it is not easy to be out of shape

It is automatic to test when the working platform lifting up to some height, then indicate the test result directly

It can directly read the Brinell and Vickers hardness value by Omron encoder digital objective

It is equipped with 7 grades test forces, which can test the Brinell, Rockwell and Vickers three hardness value, it can meet customers' requirements

Built-in printer, it can print out the test result

It can connect to the computer, analyze, print the report by software



Product Code	TME-6400
Rockwell scale	HRA, HRB, HRC, HRD,HRE, HRF,HRG,HRH,HRK
Test force	60Kg (588N),100Kg (980.7N),150Kg(1471N)
Brinell scale	HBW2.5/31.25, HBW2.5/62.5, HBW5/62.5, HBW2.5/187.5
Test force	31.25Kg(306.5N), 62.5Kg (612.9N), 187.5Kg (1839N)
Vickers scale	HV30, HV100
Test force	30Kg(294.2N), 100Kg (980.7N)
Hardness value read	Big digital LCD
Amplification times	37.5X, 75X
Specimen maximum height allowed	Rockwell: 170mm Brinell, Vickers: 140mm
Dwell time	1 - 60S
Executive standard	GB/T230.2, Rockwell), GB/T231.2(Brinell, GB/T4340.2 (Vickers) JJG112 (Rockwell), JJG150(Brinell)
Standard accessories	Rockwell diamond indenter 1 piece, Vickers diamond indenter 1 piece, Φ1.588mm, Φ2.5mm, Φ5mm, hard alloy ball indenter 1 piece, measuring microscope 1 set(install in the machine), large, medium, “V” shape, and slide test platform each 1 piece, hardness block 5 pieces, accessory box 1 set, dust-proof cover 1 set, power cable 1 piece, manual instruction, certificate of quality, warranty card each 1 piece
Power	AC220V + 5%, 50~60 Hz
Dimensions	465×180×655mm
Weight	85 kg