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WAW-2000A Computer Controlled Servo Hydraulic Universal Testing Machine

Brief Introduction: WAW-2000A computer controlled servo hydraulic universal testing machine is mainly used to execute the tension, compression, bending, flexural etc. test for metal materials. Attached with simple accessories and devices, it can be used to test wood, concrete, cement, rubber, and so on. It is very suitable for making test to different metal or nonmetal materials under high toughness and hardness against extreme big loading force.

Standards: In accordance with or exceed the requirements of the ISO6892.

A Type Load Frame: The oil cylinder is at the top of the load frame. Tension space is between the crosshead and working table, and the compression & bending spaces are between the crosshead and oil cylinder base. It is adopting oil hydraulic power to push the piston in the oil cylinder to provide loading force. The testing space is adjusted by the moving of crosshead.

Measuring System: The machine adopts oil pressure transducer to measure load and use photoelectric encoder to measure the displacement. The computer is timely collecting the testing parameters like loading force, stroke etc. Our Winwew software based on Windows system is able to display the load, load peak value, deformation, testing curves etc. very easily, and can make automatic calculating of test results, i.e. tensile strength, up / low yield strength, Non proportional stress point etc. Report creation function makes it is very simple to make testing report in your needed format.

Applications: It is widely used in different steel works, engineering areas, quality control department, universities and institutes as well as other areas and works.

Features:

- ◆ Full computer controlled testing process.
- ◆ Adopt oil-hydraulic automatic clamps which can be operated from separate control box.
- ◆ Wedge tension jaw processed by advanced technology; increase the stiffness of crosshead under high load and high intensity tests.
- ◆ Powerful multifunctional control software will provide more testing methods to meet ASTM, ISO and other testing standards.
- ◆ Report Guide will create your testing report in only three steps.
- ◆ Programable testing software makes LCF testing or cyclic testing become available.
- ◆ Overload protection will secure operators.

Common sense: The differences between WAW, WEW and WE series testing machines

WAW Series is computer controlled servo hydraulic universal testing machine. The space adjusting, & test processes could be controlled by the software and the test result could be transferred to the software in the computer for further analysis. It is the most advanced series in hydraulic universal testing machines.

WEW Series is computer display manual control hydraulic universal testing machine. The space adjusting & force loading could be executed by manual control. The test result could also be transferred to the software for further analysis.

WE Series is pendulum dynamometer display manual control universal testing machine. The space adjusting & force loading could be executed by manual control, and the test result could be shown through dynamometer.



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	Specification	WAW-2000A
	Max. capacity (KN)	: 2000
	Measuring range	: 2%-100% of FS
	Relative error of reading	: $\leq \pm 1\%$
	Uniform speed stress control range(N/mm ² •S ⁻¹)	: 2-60
	Stress velocity tolerance	: $\leq \pm 5\%$
	Uniform speed strain control range	: 0.00025/s – 0.0025/s
	Strain velocity tolerance	: $\leq \pm 5\%$
	Uniform speed displacement control range(mm/min)	: 0.5-50
	Displacement velocity relative error	: $\leq \pm 5\%$
	Clamping method	: Hydraulic clamping
	Round specimen clamping range(mm):	: $\Phi 15-\Phi 70$
	Flat specimen clamping range(mm):	: 0-50
	Flat specimen clamping width(mm)	: 140
	Max. tension test space (mm)	: 850
	Max. compression test space (mm)	: 720
	Cabinet dimensions (mm)	: 600*480*960
	Load frame dimensions (mm)	: 1510*1040*4700
	Motor power (KW)	: 9.2
	Load frame weight (KG)	: 10400
	Column distance (mm)	: 900
	Compression platen size (mm)	: 204*204
	Span of bending roller (mm)	: 1000
	Width of bending roller (mm)	: 140
	Allowable camber (mm)	: 190
	Max. piston stroke (mm)	: 250
	Piston max. speed (mm/min)	: Approx. 50
	Crosshead max. speed (mm/min)	: Approx. 200
		

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Introduction of WAW Series Software

1 Software Main Interface

The screenshot shows the main interface of the WAW Series Software. It features a top menu bar with options like 'Management(M)', 'Report(P)', 'Setup(S)', and 'about(A)'. Below the menu, there are several digital displays showing '0.00' for Load, Peak, Deformation, and Time. A central 'Test Curve' window displays a 'Time-Load Curve' graph. To the right, there are control buttons for 'Up', 'Hold', and 'Down', along with a 'Speed Console' showing '10.0' mm/min. At the bottom, there are buttons for 'Test Start', 'Test Over', and 'Return', and a 'Test State' indicator.

Callouts identify the following areas:

- Main menu:** Located at the top left of the interface.
- Area for real time test data display:** The top section containing digital readouts for Load, Peak, Deformation, and Time.
- Area for drawing test curve & inputting specimen parameters:** The central 'Test Curve' window and the 'Specimens...' button.
- Area for choosing specimen:** A list on the left side of the interface with checkboxes for specimens 1 through 6.
- Area for data processing:** The bottom section containing various input fields for force (F1, F2), displacement (Fm, Fc), and other parameters.
- Area for test process control, programming and speed display:** The right side of the interface, including the 'Speed Console', 'Load Hold' button, and 'Test Start/Over/Return' buttons.

This panel shows the 'Basic' control settings. It includes 'Up', 'Hold', and 'Down' buttons. The 'Speed Console (mm/min)' is set to 10.0, with other options at 0.2, 1.0, 2.0, 5.0, 10.0, 20.0, 50.0, and 100.0. There is a 'Load Hold' button and 'Test Start', 'Test Over', and 'Return' buttons. At the bottom, there are 'Next Specimen', 'Return Apace', and a stop button.

2. Stroke Control

User can define a customized test speed to make tensile, compression or

This panel shows the 'Programming' settings. It includes a 'Step Number' dropdown set to 1. Below is a table for test steps:

Step	At	Mode	To	Unit	Hc
1(Pre)	5	%/s	12	kN	0
2					
3					
4					

Below the table, there are fields for 'Step: 1', 'At 5 %/s', 'To 12 kN', and 'Hold 0 s. Turn Next Step'. There are also 'Test Start', 'Test Over', and 'Return' buttons, and 'Next Specimen', 'Return Apace', and a stop button at the bottom.

3. Program Control

User can input programming conditions to regulate test process. Suitable for

This panel shows the 'Speed' control settings. It features four digital displays for real-time speed monitoring: 'Piston Speed 0.00 mm/min', 'Load Speed 0.00 kN/s', 'Stress Speed 0.000 MPa/s', and 'Strain Speed 0.000 %/s'. At the bottom, there are 'Next Specimen', 'Return Apace', and a stop button.

4. Test Speed Timely Display

Piston speed, load speed, stress speed and strain speed timely display.

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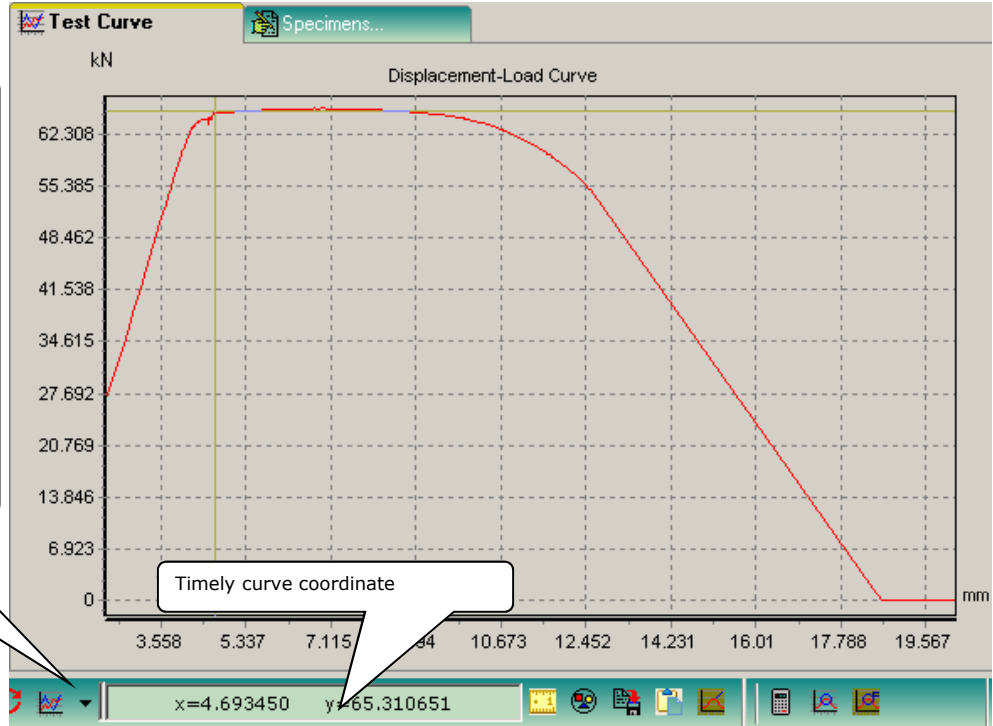
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Introduction of WAW Series Software

5 Curves switching option

Diversified curves choice

- Time-Load Curve
- Displacement-Load Curve
- Deformation-Load Curve
- Displacement-Stress Curve
- Deformation-Stress Curve
- Strain-Stress Curve**
- Time-Stress Curve
- Time-Strain Curve
- Time-Displacement Curve
- Time-Deformation Curve
- Display Giving Curve



6 Units could be converted as per your requirement based on International System of Units

Conversion Units

Setup | Comment

Load Unit: **kN** | Stress Unit: **MPa**

Deformation Unit: **kN** | Modulus of Elasticity Unit: **GPa**

Displacement Unit: **N** | Specimens Size Unit: **mm**

Enable and Return | Cancel

- Load Unit: kN, Kip, Lbs, Kgf, N
- Deformation Unit: mm, inch
- Displacement Unit: mm, inch
- Stress Unit: MPa, Psi, Kgf/sc
- Modulus Elasticity Unit: GPa, Ksi
- Specimens Size Unit: mm, inch

7 Over load protection and stop condition setting

System Protection Setup

Machine Stop | Test Over

Deformation exceeds 5 %Full Scale

Control Error

Load control error exceeds 40 kN

Displacement control error exceeds 50 mm.

Deformation control error exceeds 2 mm.

Displacement exceeds 75 mm. less than .75 mm.

Data Processing Option

Item Selection | Modulus of Elasticity | Process Control | Deal With Fracture Poi

Max. force point----Fm&Rm

Upper yield point----FeH&ReH

Lower yield point----FeL&ReL

Break point----Fb&Rb

Percentage elongation after fracture----A

Percentage reduction of area----Z

Ratio of Rm/ReL

Ratio of ReL/Re

Proof point of non-proportional extension----Fp&Rp 0.2 | 0.5

Proof point of total extension----Ft&Rt 0.5 | 0.7


Percentage total elongation at Max. force----Agf

Percentage non-proportional elongation at max.force----Agf(Optional)

Percentage yield point extension----Ae(Optional)

Display rounded result on result panel

Can input bend etc. result.

 Enable and Return

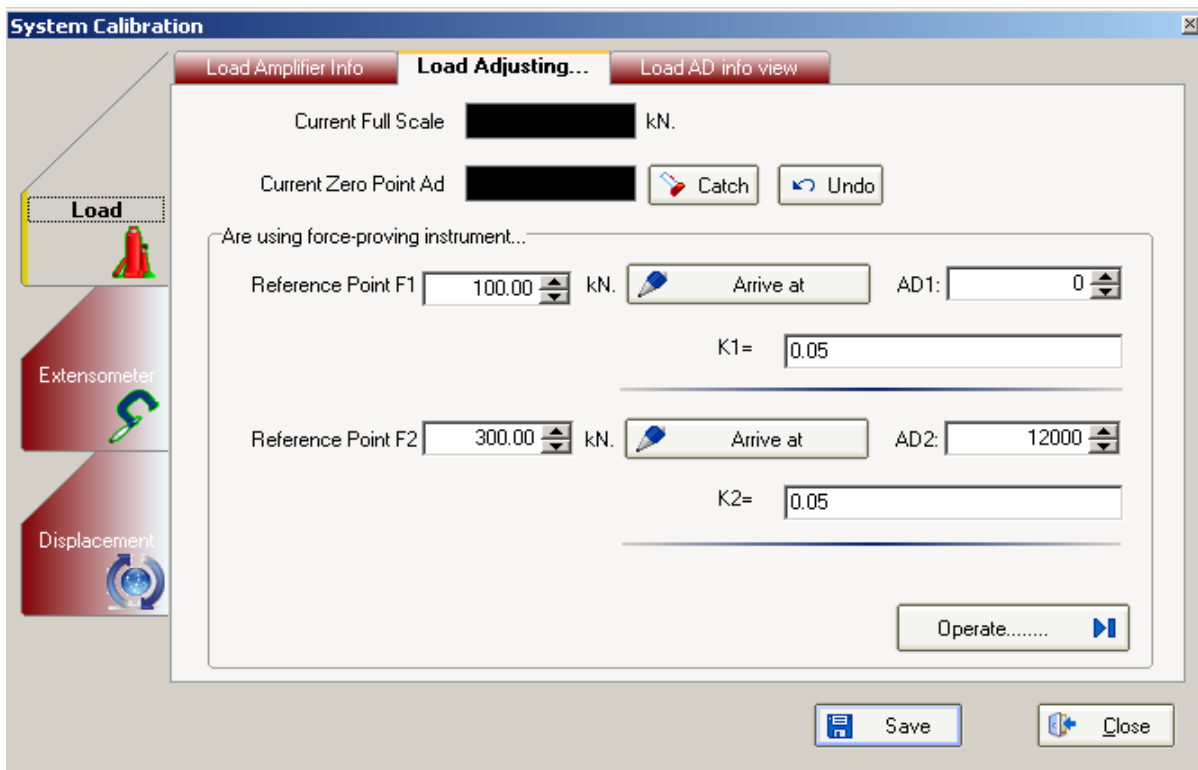
 Cancel

**8 International standard test results
process method input**

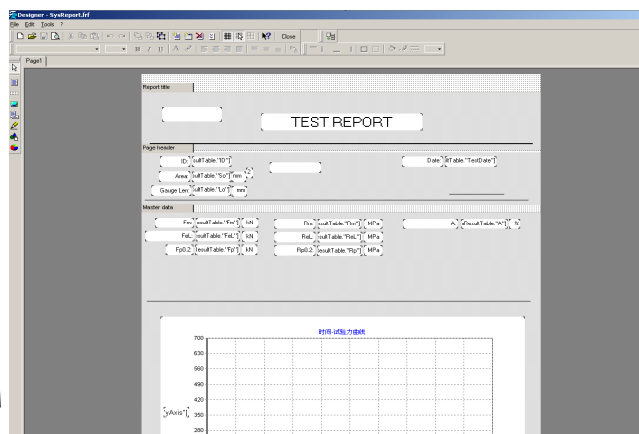
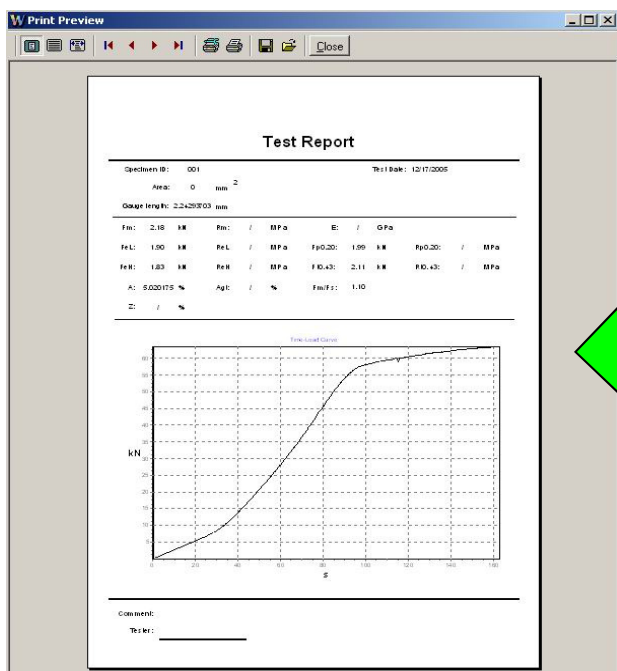


Introduction of WAW Series Software

9 Easy software calibration



10 Firendly test report



Customization of test report

	A	B	C	D	E	F	G	H	I	J	K
1	No:	SO	LO	Fm	Rm	A	FeL	ReL	Fp	Rp	Z
2	1	0	0	3.05	0	0	2.55	0	2.69	0	0
3	2	470.4	50	335.5	715	0	280.9	595	280.6	595	0
4	3	486.8	50	345.35	710	0	288.3	590	291.9	600	0
5	4	441.4	0	336.9	763.3	0	291.6	660.6	283.95	643.3	0
6	5	441.4	0	336.9	763.3	0	291.6	660.6	283.95	643.3	0
7	6	470.4	50	335.5	713.2	0	280.9	597.2	280.6	596.5	0
8	7	0	0	3.05	0	0	2.55	0	2.69	0	0
9	8	0	0	22.35	0	0	0	0	0	0	0
10	9	0	0	22.35	0	0	0	0	0	0	0
11	10	470.4	50	335.5	713.2	0	280.9	597.2	280.6	596.5	0

The test report could be customized as per your requirements and be transferred to Excel easily for further analysis.

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Certificate

ISO9001 International Quality

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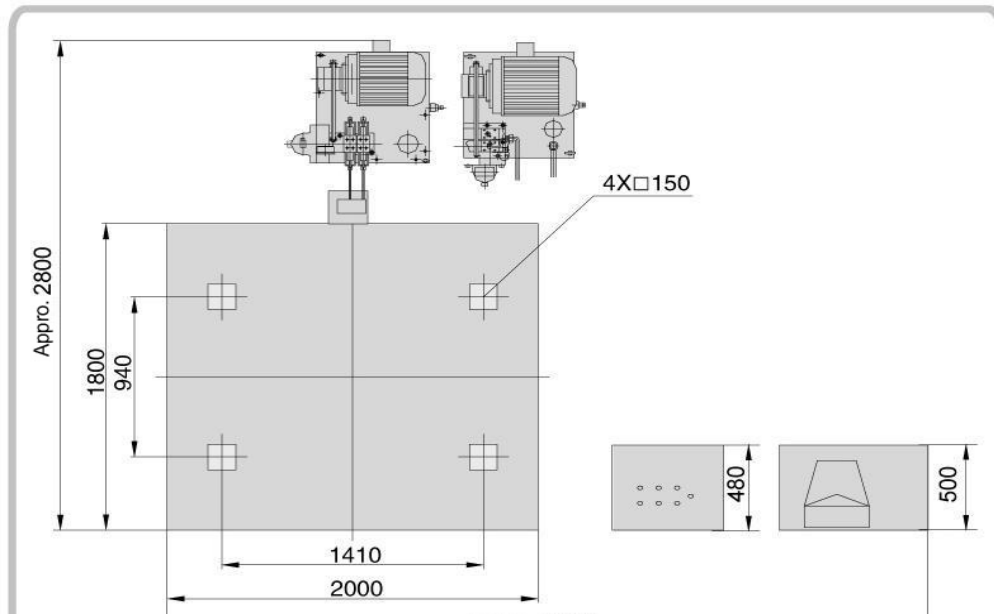
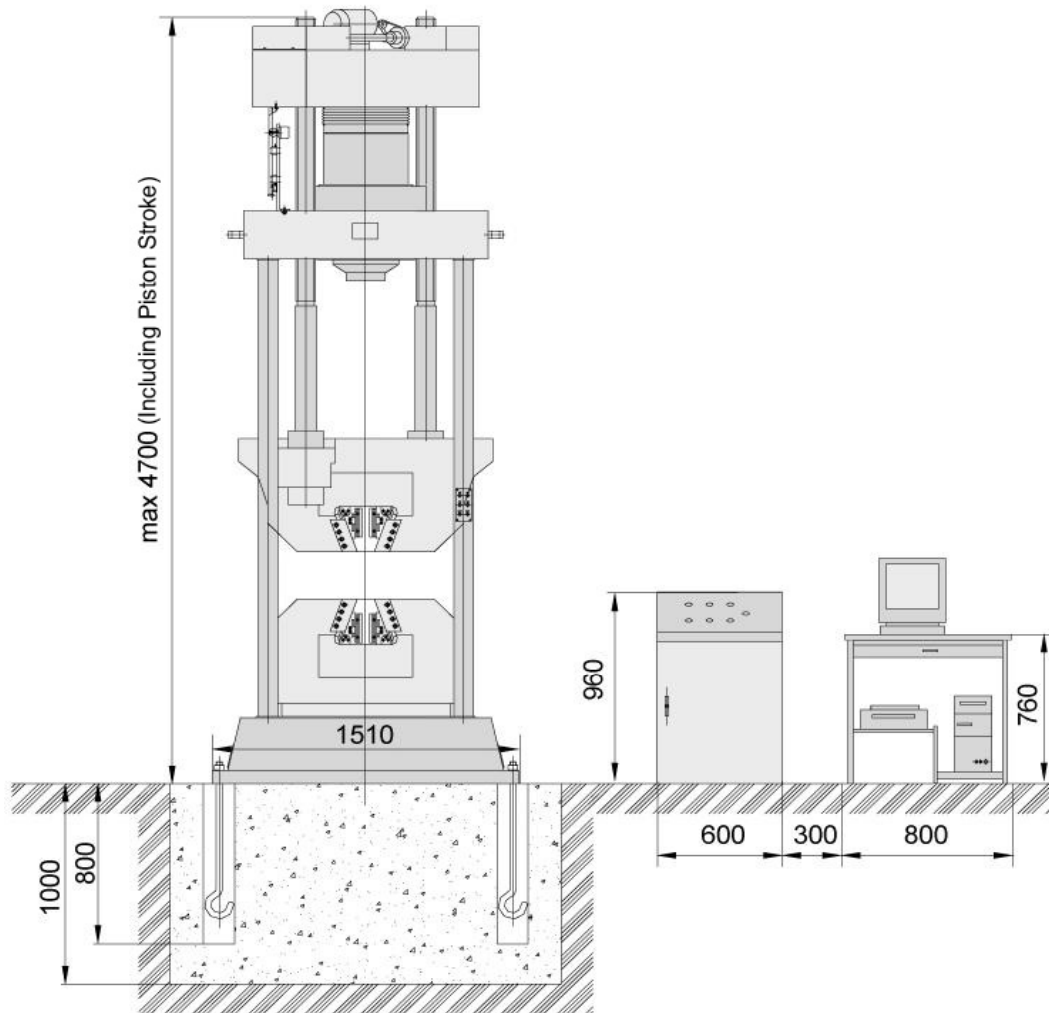
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Standard accessories of WAW-2000A UTM

	Content	QTY	Picture
	Load frame The oil cylinder is at the top of testing machine. High intensity testing machine structure and crosshead, high stiffness to assure the accuracy;	1 set	
	Control cabinet Electromagnetic proof cabinet improves the reliability and stability of the whole electric system.	1 set	
	Servo oil source To provide the test load.	1 set	
	Clamping oil source To provide the load to clamp the specimen	1 set	
	Clamping jaws Jaws for round specimen: Φ 15- Φ 30mm, Φ 30- Φ 50mm, Φ 50- Φ 70mm Jaws for flat specimen: 0-25mm, 25-50mm	Each 1 set Each 1 set	
	Compression test attachment Dimension: 204 X 204 mm	1 set	
	Bending test attachment Span: 1000mm Width of roller: 140mm Allowable camber (mm): 190mm	1 set	
	Tool kit Screw, Spanner, Socket Board etc.	1 set	
	Extensometer YYU-10/50 Standard gauge: 50mm Deformation: 10mm)	1 set	
	Photoelectric encoder LEC-500BM	1 pc	
	Oil transducer Model: CYB-12SA	1 pc	
	Data-processing system TIME WINWAW Software	1 set	
	Industry computer (Lenovo Brand) Intel Pentium E2200/Core 2 Duo 2.2G/ 1 G memory 160G Hard disk/ DVD-ROM/17" LCD screen	1 set	
	Printer (HP 1468):	1 set	
	Computer desk		

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(Unit: mm)



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Shipping Packages

Package Material: In fumigated wooden cases.

Be suitable for export delivery.

Wooden case 01

Content:	Load Frame
Net weight:	11000kg
Gross eight:	12000kg
Dimension:	5300×1900×1530 (mm)
CBM:	15.40m ³

Wooden case 02

Content:	Control Part
Net weight:	1200kg
Gross eight:	1500kg
Dimension:	2300×1540×1460 (mm)
CBM:	5.17m ³

Total

Quantity	Two wooden cases
Total Gross Weight	13500kg
Total CBM	20.57m ³

*The above weights & dimensions are just for your reference.

The final weights & dimensions should be subject to the delivery.