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## **Double Column Computer Controlling Servo Universal Testing Machine**



This series of computer-controlled testing machine is designed and manufactured yuke Instruments. It adopts the current international mainstream speed control technology, and the main parts are made of imported professional brand companies; this series has long-term high reliability and stability. With precision,

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smooth operation and long life. This series is mainly used for material testing with load below 50kN. The functional application covers the testing of most products. It is the perfect testing instrument for mechanical testing by factories, scientific research units and quality inspection organizations.

It has a wider and more accurate loading speed and force range, and has higher accuracy and sensitivity for measurement and control of load, deformation and displacement. It has stress-strain, force-displacement, power-time, intensity-time and other modes. Can find the maximum force value, tensile strength, flexural strength, compressive strength, elastic modulus, elongation at break, yield strength and other parameters, suitable for testing and analysis of tensile, compression, peeling, tearing, shearing, etc. The testing machine adopts high-speed DSP platform, which has high integration, powerful control, data processing capability and high reliability, which is unmatched by other processor test machines; all-digital adaptive PID algorithm, the closed-loop(force, deformation, displacement) control system, can realize full digital closed-loop control of force and displacement, and can automatically switch between control loops, and realizes smooth transition without impact when switching between modes.

#### **Application industry:**

Metal materials; aerospace; powder metallurgy; magnetic materials, ceramics manufacturing; rubber and plastics; metrological quality inspection; commodity inspection and arbitration; technical supervision departments; universities; research laboratories; basic materials laboratory; metallurgical steel; machinery manufacturing; Automobile production; textile and chemical fiber; wire and cable; packaging materials and food; instrumentation; medical equipment; petrochemical; civil nuclear energy; energy battery; basic materials;

#### **Application Products:**

» Medium strength metal	» Foam material	» Oil bearing
» Sintered products	» Tape	» Ceramics
» Friction material	» Elastomer	» Parts
» Rubber	» Connector	» Fastener
» Plastic	» Biomaterials	» Composite materials
» Film	» Wood and paper products	
» Fiber and thin lines	» Metal foil	
» Adhesive	» Metallic line	

#### **Standard:**

ASTM, ISO, DIN, GB and other international standards.

<ul style="list-style-type: none"> <li>◆ This machine is suitable for a wide range of applications</li> <li>◆ Powerful function, meet most of the mechanical properties test</li> <li>◆ Easy to operate, easy for anyone to operate</li> <li>◆ World-class AC servo motor and server for maintenance-free maintenance</li> <li>◆ Precision preloaded ball screw</li> <li>◆ Smooth operation, high reliability, sturdy and durable</li> <li>◆ Accurate measurement, certified by a third-party testing agency</li> <li>◆ High speed, low vibration, low noise servo motor drive</li> <li>◆ Multilingual application function, adapt to different countries' using</li> <li>◆ Test mode function such as tensile, flexural, compressive, flexural, adhesive, tear, peel, elongation, etc.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Has a variety of curve modes such as stress-strain, force-displacement, force-time, intensity-time</li> <li>◆ Automatic calculation of maximum force, minimum force, average force, maximum deformation, elongation, strength, etc.</li> <li>◆ Flexible capabilities of graph, datasheet, report viewing and printing.</li> <li>◆ Automatic homing function that automatically returns to the test start after the test is completed</li> <li>◆ With mechanical travel switch; emergency stop switch; over current, over voltage, under current, under voltage, leakage overload; software overload limit protection; breakpoint shutdown protection and other multiple protection devices</li> <li>◆ Optional: small deformation metal</li> <li>◆ extensometer, large deformation displacement tracker</li> </ul>
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**Specification:**

Brand		YUKE											
Model		YK-D											
		-00 2	-005	-01	-02	-05	-1	-2	-5	-10	-20	-30	-50
Cap acity	KN	0.0 2	0.05	0.1	0.2	0.5	1	2	5	10	20	30	50
	KG	2	5	10	20	50	100	200	500	1000	2000	3000	5000
	lb												
Unit switching		G、Kg、lb、N、KN											
Displacement unit switching		Inch    cm    mm											
Test machine level		0.5 class											
Effective force range		0.4%～100%FS											
Force accuracy		Within ±0.5% of indicated value											

Force decomposition		1/500000
Force Power magnification		Full automatic shift switching
Displacement resolution		$\leq 0.05\mu\text{m}$
Displacement accuracy		Within $\pm 0.5\%$ of indicated value
Deformation measurement range		0.2%~100%FS
Deformation indication accuracy		Within $\pm 0.5\%$ of indicated value
Large deformation measurement range		(10~1000)mm(optional)
Large deformation resolution		0.01mm(optional)
Large deformation indication error limit		Within $\pm 0.5\%$ of indicated value(optional)
Maximum test speed		500mm/min; optional maximum 1000mm/min
Minimum test speed		0.01mm/min
Speed accuracy		Within $\pm 1\%$ of indicated value
Beam travel	stand ard	No grip testing stroke:1330mm; With grip testing stroke:800mm
Measuring height	option al	/
		/
Effective width	stand ard	420mm
	option al	650mm
Fixture configuration		One set of tensile grip; can choose other grips

Returning method	Manual or automatic selection, automatically return after the test ends or manually return to the initial position
Stop method	1.Maximum break value automatically stop      2.Upper and lower limit safety setting stop
Safety devices	1.Mechanical limit switch protection      2.Emergency stop switch emergency brake
Overload protection	Over 10% of maximum load, automatic machine protection
Accessories	1 power cord; 1 test software program CD; 1 data cable; 1 manual; 1 certificate
Optional accessories	Anti-splash device (protective door); computer; printer; small deformation metal extensometer, large deformation displacement tracker, T-type workbench;
Power supply	220V.AC/ 50HZ; 110V.AC/60HZ
Main host size/ weight	Length*Width*Height:750mm*500mm*1650mm / around 165KG
Packing size / weight	Length*Width*Height:850mm*600mm*1800mm / around 203KG

Panasonic AC Servo Motor.



HBM Sensor:



# TEST REPORT



Model: S40AC3/1t  
F-Nr.: 31758106  
Date: 24-Apr-2019

## Wire Color Code:

Exc+:	Blue	Exc-:	Black
Sig+:	White	Sig-:	Red
Sen+:	Green	Sen-:	Grey
Shield:	Wire strand, Shield connected with housing		

## Measured Values:

Input Resistance:	391.3	$\Omega$
Output Resistance:	349.9	$\Omega$
Zero balance:	-0.00249	mV/V
Sensitivity:	2.00042	mV/V

Specifications (Tolerance):  
Linearity:  $< \pm 0.0180\%$   
Hysteresis:  $< \pm 0.0170\%$   
Creep:  $< \pm 0.0245\%/30\text{min}$   
TC-Zero:  $< \pm 0.0170\%/10\text{K}$   
TC-Span:  $< \pm 0.0140\%/10\text{K}$   
Insulation Resistance:  $> 5\text{G}\Omega/100\text{V}$   
Nominal temp. range:  $-10^\circ\text{C} \sim +40^\circ\text{C}$   
Operating temp. range:  $-30^\circ\text{C} \sim +70^\circ\text{C}$   
Ref. Exc. Voltage: 5V  
Max. Exc. Voltage: 12V  
Safe load limit: 150%  
Breaking load limit: 300%

Approved:

