

# Material Testing Apparatus

- Universal testing machine EMC Series (Single screw)
- Universal testing machine EMC Series (Table type)
- Universal testing machine EMC Series (Stand type)
- Universal testing machine EMA Series (Single screw)
- Universal testing machine EMA Series (Table type)
- Universal testing machine EMA Series (Stand type)
- Universal testing machine EMD Series (Single screw)
- Universal testing machine EMD Series (Table type)
- Universal testing machine EMD Series (Stand type)
- Thermal - Mechanical tester EMC-100
- Universal testing machine DYHU Series
- Universal testing machine TSH Series

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# Universal Testing Machine EMC Series

( Single Screw type )



## Specifications

Items	EMC-01	EMC-02	EMC-05	EMC-1
Capacity(max.)	10kg.f	20kg.f	50kg.f	100kg.f
Control Method	Computer control with Digital controller			
Load & Position Display	Computer monitor display			
Load Sensor & Accuracy	Load cell +/- 0.5% with			
Position Sensor & Accuracy	Rotary encoder & +/- 1% within			
Test room(Width x Height)	460 x 990mm			
Crosshead speed	0.1~ 500mm/min			
Crosshead movement	Servo Motor Operation & Ball screw			
Dimension(W x D x H)	1900 x 750 x 1940mm			
Weight ( Approx.)	60Kg			
Electric power	Three phase, 220V, 50/60Hz			

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# Universal Testing Machine EMC Series

( Table type )



## Specifications

Items	EMC-2	EMC-5	EMC-10
Capacity(max.)	200kg.f	500kg.f	1000kg.f
Control Method	Computer control with Digital controller		
Load & Position Display	Computer monitor display		
Load Sensor & Accuracy	Load cell +/- 0.5% with		
Position Sensor & Accuracy	Rotary encoder & +/- 1% within		
Test room(Width x Height)	460 x 990mm		
Crosshead speed	0.1~ 500mm/min		
Crosshead movement	Servo Motor Operation & Ball screw		
Dimension(W x D x H)	2120 x 750 x 2160mm		
Weight ( Approx.)	250Kg		
Electric power	Three phase, 220V, 50/60Hz		

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# Universal Testing Machine EMC Series

( Stand type )



## Specifications

Items	EMC-20	EMC-50	EMC-100	EMC-200	EMC-300
Capacity(max.)	2 Ton.f	5 Ton.f	10 Ton.f	20 Ton.f	30 Ton.f
Control Method	Computer control with Digital controller				
Load & Position Display	Computer monitor display				
Load Sensor & Accuracy	Load cell +/- 0.5% with				
Position Sensor & Accuracy	Rotary encoder & +/- 1% within				
Test room(Width x Height)	480 x 1000mm	560 x 1000	560 x 1200		600 x 1350
Crosshead speed	0.1~ 500mm/min		0.1 ~ 300		
Crosshead movement	Servo Motor Operation & Ball screw				
Dimension(W x D x H)mm	2270x750x1900	2400x800x2000	2430x850x2050	2580x900x2300	
Weight ( Approx. ) kg	500	600	950	1100	
Electric power	Three phase, 220V, 50/60Hz				

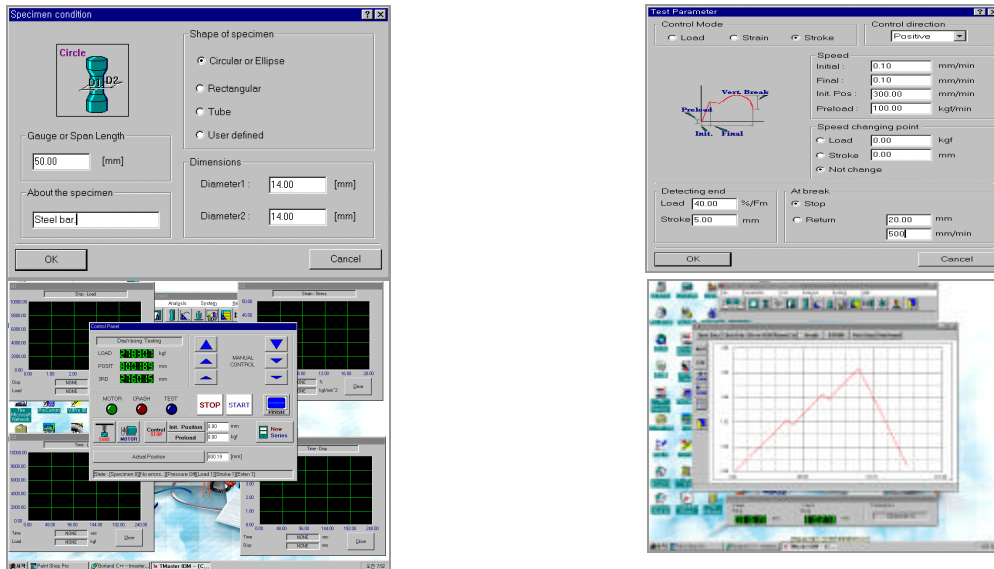
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# Testing Software

## ( TMaster )

Program Tmaster works in WINDOWS invironment, Test parameters are saved into disk files format.

Test parameterization executes on the basis of menus, which enable to create a new test, or to modify already created test.



### Testing software

Material	Testing specimens	Test	Test result
<b>Metals</b>	flat and cylindrical rod pipes wires foils and band	Tensile test Pressure test Tensile test at lower temp. Tensile test at higher temp. Strength of wires in tension Three point bend	maximum load/stress extension at maximum load load/stress at break extension/strain at break load/stress at upper yield maximum/minimum strength breaking length
<b>Plastic</b>	Rods Pipes hard foamed materials fibers	Tensile test Pressure test Fracture mechanics test Creep Bend	strength at break extension at upper yield average maximum/minimum load average maximum / minimum strength
<b>Rubber</b>	vulcanized rubber combined materials	Tensile and pressure test Resistance against fatigue Setting of structural strength	load at offset yield (proof) stress at offset yield extension at offset yield strain at offset yield
<b>Textile</b>	Fibers Yarns knitted fabric	Tensile test	elongation after fracture(%) sample data
<b>Leather</b>		Tensile strength Strength for tearing of the slot	sample time pass/fail limit
<b>Concrete</b>	cylinder mold cube mold beam mold	Pressure test Bend test Tensile test Structural test	sample dimension static loads extension at % maximum load

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# Universal Testing Machine EMA Series

( Single Screw type )



## Specifications

Items	EMA-01	EMA-02	EMA-05	EMA-1
Capacity(max.)	10kg.f	20kg.f	50kg.f	100kg.f
Control Method	Data acquisition with Computer			
Load & Position Display	Computer monitor display & LCD panel display			
Load Sensor & Accuracy	Load cell +/- 0.5% with			
Position Sensor & Accuracy	Rotary encoder & +/- 1% within			
Test room(Width x Height)	460 x 990mm			
Crosshead speed	0.1~ 500mm/min			
Crosshead movement	Servo Motor Operation & Ball screw			
Dimension(W x D x H)	1900 x 750 x 1940mm			
Weight ( Approx.)	60Kg			
Electric power	Three phase, 220V, 50/60Hz			

\* **Control panel :** LCD display - Load, Displacement, Test speed

**(EM2000)**

Function Key - Load, Disp Zero, Enter, Mode, Shift, Up, Speed Test Control - Test, Stop, Test mode

Manual Control - Crosshead Up, Down(3 Step)

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# Universal Testing Machine EMA Series

( Table type )



## Specifications

Items	EMA-2	EMA-5	EMA-10
Capacity(max.)	200kg.f	500kg.f	1000kg.f
Control Method	Data acquisition with Computer		
Load & Position Display	Computer monitor & LCD panel display		
Load Sensor & Accuracy	Load cell +/- 0.5% with		
Position Sensor & Accuracy	Rotary encoder & +/- 1% within		
Test room(Width x Height)	460 x 990mm		
Crosshead speed	0.1~ 500mm/min		
Crosshead movement	Servo Motor Operation & Ball screw		
Dimension(W x D x H)	2120 x 750 x 2160mm		
Weight ( Approx.)	250Kg		
Electric power	Three phase, 220V, 50/60Hz		

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# Universal Testing Machine EMA Series

( Stand type )



## Specifications

Items	EMA-20	EMA-50	EMA-100	EMA-200	EMA-300
Capacity(max.)	2 Ton.f	5 Ton.f	10 Ton.f	20 Ton.f	30 Ton.f
Control Method	Data acquisition with Computer				
Load & Position Display	Computer monitor & LCD panel display				
Load Sensor & Accuracy	Load cell +/- 0.5% with				
Position Sensor & Accuracy	Rotary encoder & +/- 1% within				
Test room(Width x Height)	480 x 1000mm	560 x 1000	560 x 1200	600 x 1350	
Crosshead speed	1~ 500mm/min				1 ~ 300
Crosshead movement	Servo Motor Operation & Ball screw				
Dimension(W x D x H)mm	2270x750x1900	2400x800x2000	2430x850x2050	2580x900x2300	
Weight ( Approx. ) kg	500	600	950	1100	
Electric power	Three phase, 220V, 50/60Hz				

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# Thermal - Mechanical Tester

## EMC-100 ( Stand type )

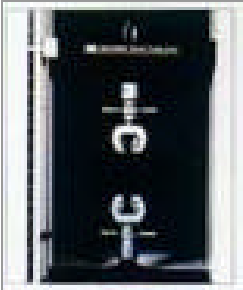


### Specifications

Items	EMC-100
Capacity(max.)	10 Ton.f
Control Method	Computer control with Digital controller
Load & Position Display	Computer monitor display
Load Sensor & Accuracy	Load cell +/- 0.5% with
Position Sensor & Accuracy	Rotary encoder & +/- 1% within
Test room(Width x Height)	910 x 2100mm
Crosshead speed	1~ 500mm/min
Crosshead movement	Servo Motor Operation & Ball screw
Chamber	Temp : -20`C ~ +100`C/Temp. Controller : Digital program type Inside Size : 380 x 380 x 1520mm/Circulation system : Mechanical type
Dimension(W x D x H)mm	350 x 1980 x 3460mm
Weight ( Approx.) kg	1500kg
Electric power	Three phase, 220V, 50/60Hz

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## Accessories



Wedge grip



Screw action grip



Screw action grip



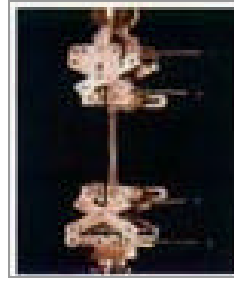
Paper grip



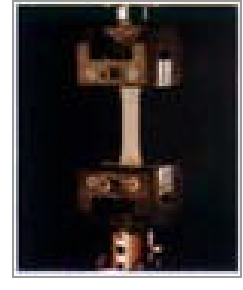
Rubber grip



Self tightening grip



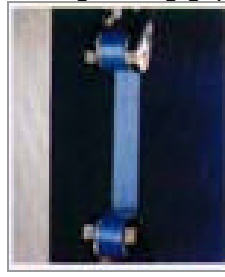
Scissor action grip



Vise grip



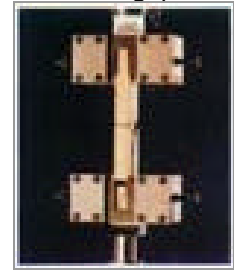
Vise grip



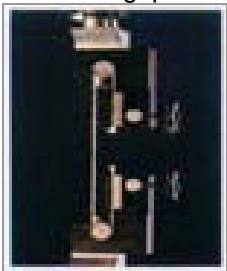
Roller grip



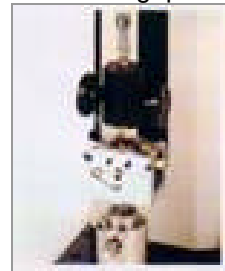
Hydraulic grip



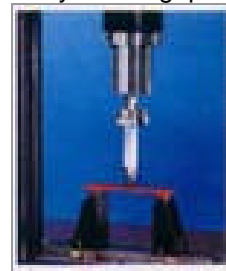
Wood grip



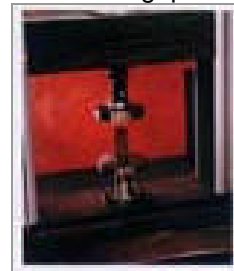
Cord, Yarn, Wire grip



90 degree Peel Jig



3 Point flexural Jig



Compression plate

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# Universal Testing Machine

( DYHU Series )



## Specification

Type	DYHU-100	DYHU-300	DYHU-500	DYHU-1000	DYHU-2000
Nominal load-static(KN)	100	300	500	1000	2000
Stroke of the hydraulic actuator	200mm(+/-100)				
Working pressure	210kg.f/cm <sup>2</sup> (21Npa)				
Type of load cell	Strain gauge				
Accuracy of load cell	Accuracy class 1 in range 1-100% of nominal load with EU 2000S				
Accuracy of displacement transducer	0.25 % (0.1 option )				
Controller	Digital				
Resolution of measurement	16 bit for EU 2000S				
Loop of update rate of controller	1 KHz				
Data acquisition rate	1 KHz				
Stiffness of the fram(KN/mm)	750	2250	3750	7500	15000
Height of the test space	600mm	600mm	700mm	880mm	880mm
Dimension of the frame - Width mm	675	675	820	820	1170
- Depth mm	400	400	500	550	800
- Height mm	1640	1800	2300	2450	2800
Frame weight with the hydraulic actuator (Kg)	1000	1700	2500	2500	3500
Power requirements hydraulic power unit	3 Phase, 380V or 220V / 50,60Hz				
- Computer	220V / 50,60Hz				
Power requirement - hydraulic	7Kw for static testing system				
- Computer	0.6 Kw				

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# Fatigue Testing Machine

( TSH Series )



## Specification

Type	TSH-30	TSH-50	TSH-100	TSH-300	TSH-500	TSH-1000	TSH-2000
Nominal load-static(KN)	30	50	100	300	500	1000	2000
- dynamic(KN)	24	40	80	240	400	1600	1600
Working pressure	250Kg.f/cm <sup>2</sup> (21Npa)						
Type of load cell	Strain gauge						
Accuracy of load cell	+/- 1.0% of the full scale						
Accuracy of displacement transducer :	0.25 %						
Controller	Digital control system						
Resolution of measurement	32 bit for EU 2000D						
Loop of update rate of controller	1000/sec						
Data acquisition rate	1 KHz						
Stiffness of the fiam (KN/mm)	150	250	400	1200	2000	3500	5500
Height of the test space	300 to 2200mm						
Dimension of the frame-Width(mm)	700	700	700	1200	1200	1680	1800
- Depth(mm)	480	480	480	800	800	1640	1780
- Height(mm)	2600	2600	2600	2700	2700	3000	3500
Power requirements hydraulic power unit :	3 Phase, 380V or 220V / 50,60Hz						
- Computer	220V / 50,60Hz						

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