

Servohydraulic Universal Testing Machines Series UTM

Our UTM Series of static-hydraulic universal test systems are available with force capacities up to 2000 kN. This monotonic, dual test space designed universal test systems provide reliable & accurate high-speed & high-resolution digital closed-loop controlled tension and compression testing. The compact Control Console with its integrated low noise, self-contained hydraulic power pack makes this system compact and easy-to-use for quality control to research and development.

The load frames are rigid 6-column (4-column & 2-spindle) dual zone constructions with actuator and load cell for direct force measurement located in the machines base. To adjust the test space, the position of the lower crosshead can be adjusted via two spindles.

The UTM series integrates high-resolution and high-speed w+b controls, static-hydraulic load frames up to 2000 kN, a broad portfolio of complement accessories and easy-to-use Dion7 application software package complying with international standards at competitively prices.



w+b Materials Testing Systems

This test systems are well-suited to perform accurate and repeatable monotonic tests across a wide range of applications including tension, bending/flexural, compression and shear tests on metal sheet/plate/bar specimens to rebars, castings, non-metal fasteners, welds, construction materials, wood and more.

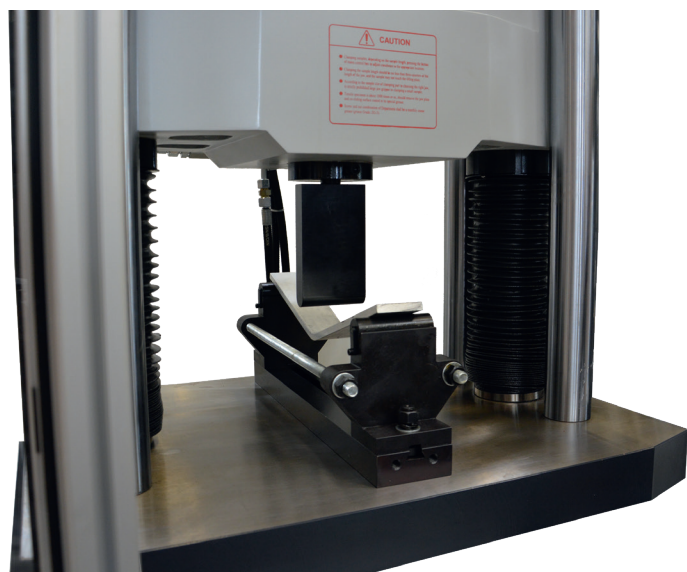
The test system with its compact and ergonomic Control Console offers reliable w+b servo-controlled hydraulic actuation with high-resolution & high-speed, digital closed loop controls complying international standards to test in load, displacement or strain control at force capacities from 400 kN to 2000 kN.

Dual Zone Mechanical Design

The dual zone test space design makes changing between tension and compression or bending quick & safe and more efficient as there is no need to remove heavy fixtures. The Tension work zone is on top, the Compression / Bending work zone on bottom below the lower crosshead. The lower crosshead is guided by two fixed spindles, which are connected to the machine base. To adjust the vertical test space the crosshead can be moved via motor in the desired position. The upper crosshead is connected to the machine table via the four (4) loading columns. The machine table is fixed to the piston of the hydraulic actuator, whereas the load cell is mounted between piston rod and machine table for direct force measurements. The piston stroke limit switch as well as the digital high-resolution piston stroke transducer are integrated in the machines base.

The UTM family includes, beside of the robust and versatile static load frames, the latest w+b hardware and software platform innovations for accurate and repeatable monotonic testing from materials research to high-volume quality control. With standards-compliant test templates and wide range of complement testing accessories the UTM>s are used across a wide range of applications and materials including:

- Metallic Bars
- Plate metal
- Castings
- Wire & cables
- Plate metal
- Fasteners
- Welds
- Cement & Concrete
- Sheet metal
- Strands
- Forgings
- and others



Key Features

- Rigid 6-column load frame design
- Dual test space design makes changing between tension and compression or bending quick & safe and more efficient as no need to remove heavy fixtures.
- For tensile tests in upper test space
- Compression and bending tests in lower test space
- Two spindles for test space adjustments through positioning of lower crosshead
- Open-front grip design make it easy to insert and remove specimens for increased productivity and operator safety.
- Interchangeable gripe inserts (Jaws) allows to accommodate a large range of specimen sizes
- Anti-rotation system for the actuator
- Piston stroke limit-switch
- With integrated precise electronic load cell for direct force measurement
- With high resolution digital displacement transducer
- Available Extra Height Tension space for strand tests

Model		UTM-400	UTM-400extra	UTM-600	UTM-600extra
Part Number		04-5783-000	04-5784-000	04-5785-000	04-5786-000
Force Range	kN	400	400	600	600
Test Zones	Singe/Dual	Dual	Dual	Dual	Dual
Column Configuration	No. of Column	6	6	6	6
Force Accuracy Grade 0.5 Force Accuracy Grade 1	ISO 7500-1	2%-100% 1% to 2%	2%-100% 1% to 2%	2%-100% 1% to 2%	2%-100% 1% to 2%
Closed Loop Control Rate	Hz	14400	14400	14400	14400
Data Acquisition Rate	Hz	14400	14400	14400	14400
Piston Stroke	mm	250	250	250	250
Max. Test (actuator) Speed	mm/min.	300	300	175	175
Displacement Resolution	µm	0.5	0.5	0.5	0.5
Displacement Accuracy	ISO 9513	Grade 0.5	Grade 0.5	Grade 0.5	Grade 0.5
Tensile Space	mm	750	900	810	900
Compression Space	mm	750	900	810	900
Column Spacing (Test Space Width)	mm	500	500	575	575
Crosshead Adjust Speed	mm/min.	350	350	350	350

Hydraulic Wedge Grips		Yes	Yes	Yes	Yes
Diameter of Round Specimens	mm	6 to 40	6 to 40	6 to 60	6 to 60
Thickness of Flat Specimens Insert Width	mm	0 to 30 90	0 to 30 90	0 to 60 110	0 to 60 110
Compression Platen	mm	Ø178	Ø178	Ø200	Ø200
Frame Width	mm	940	940	1030	1030
Frame Depth	mm	640	580	700	700
Frame Height	mm	2320	2470	2490	2580
Frame Weight	kg	2560	2590	3580	3610

Control Console					
Console Width	mm	600			
Console Depth	mm	910			
Console Height	mm	2020			
Console Weight	kg	310	310	315	315
Cooling		Air cooling (Water cooling on request)			
Power Requirements		400 V, 50 Hz, 3 Phases, E, N			
Operating Temp. Range		5°C to 40°C			
Humidity Range		5-92% Non-condensing			
Power	kW	4	4	4	4

Model		UTM-1000	UTM-1000 xtra	UTM-1000 strand	UTM-1500	UTM-2000
Part Number		04-8788-000	04-5788-000	04-5789-000	04-5790-000	04-5791-000
Force Range	kN	1000	1000	1000	1500	2000
Test Zones	Singe/Dual	Dual	Dual	Dual	Dual	Dual
Column Configuration	No. of Column	6	6	6	6	6
Force Accuracy Grade 0.5 Force Accuracy Grade 1	ISO 7500-1	2%-100% 1% to 2%	2%-100% 1% to 2%	2%-100% 1% to 2%	2%-100% 1% to 2%	2%-100% 1% to 2%
Closed Loop Control Rate	Hz	14400	14400	14400	14400	14400
Data Acquisition Rate	Hz	14400	14400	14400	14400	14400
Piston Stroke	mm	250	250	250	250	250
Max. Test (actuator) Speed	mm/min.	175	175	175	130	130
Displacement Resolution	µm	0.5	0.5	0.5	0.5	0.5
Displacement Accuracy	ISO 9513	Grade 0.5	Grade 0.5	Grade 0.5	Grade 0.5	Grade 0.5
Tensile Space	mm	810	900	1100	760	890
Compression Space	mm	810	900	1100	760	890
Column Spacing (Test Space Width)	mm	575	575	575	720	720
Crosshead Adjust Speed	mm/min.	270	270	270	330	330

Hydraulic Wedge Grips		Yes	Yes	Yes	Yes	Yes
Diameter of Round Specimens	mm	5 to 60	5 to 60	5 to 60	5 to 70	5 to 70
Thickness of Flat Specimens Insert Width	mm	up to 60 100	up to 60 100	up to 60 100	up to 70 150	up to 70 150
Compression Platen	mm	Ø200	Ø200	Ø200	300x300 (square)	300x300 (square)
Frame Width	mm	1205	1205	1205	1290	1290
Frame Depth	mm	700	700	700	900	900
Frame Height	mm	2510	2600	2800	2885	3015
Frame Weight	kg	4200	4230	4280	7870	7920

Control Console						
Console Width	mm	600				
Console Depth	mm	910				
Console Height	mm	2020				
Console Weight	kg	320	320	320	360	380
Cooling		Air cooling (Water cooling on request)				
Power Requirements		400 V, 50 Hz, 3 Phases, E, N				
Operating Temp. Range		5°C to 40°C				
Humidity Range		5-92% Non-condensing				
Power	kW	5.5	5.5	5.5	5.5	7.5

*including piston stroke

Operation Control Console with integrated Hydraulic Power Supply

This space saving and ergonomic operation Control Consoles are modular designed and available for all UTM Series machines, provide closed loop servocontrolled hydraulic actuation in combination with high-resolution and high-speed digital control system, servovalve and load-cell, piston stroke transducer, extensometer or any other external transducer.



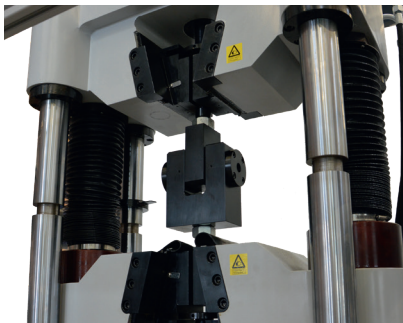
The Control Console offers ergonomic and space-saving operation that includes in the upper part integrated necessary periphery equipment like personal computer with running material testing software, screen, keyboard, digital controller and electrical switch board.

The hydraulic power supply which furnish the necessary pressurised oil for the UTM machine is integrated in the base of the Control Console.

Due to the used internal gear pumps the system base a very low noise level. The tank is put on anti-vibration elements to avoid any vibrations on the console. The hydraulic part includes oil tank, pump, safety controls, pressure limited, oil filter, oil/water cooler or oil/air cooler (external) etc, filter glogged indicator, temperature limit switch, low oil level switch and more.

Features

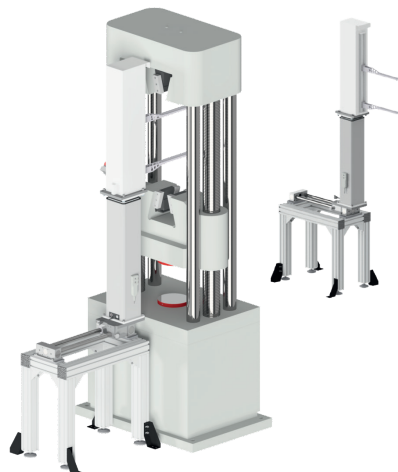
- Compact and ergonomically unit
- Integrated large oil tank
- Low noise internal gear pump as main pump
- Oil filter with electrical indication when filter is glogged
- Oil/water cooler with thermostatic regulation water-valve for minimum water consumption or oil/air cooling
- Electrical maximum temperature protection
- Electrical minimum oil level protection
- Electrical motor protection



Accessories

- In-Head Grip Jaws/Faces - Flat, Round
- Bending / Flexural and Folding Devices
- Compression Platens - Plane and Self-Aligning Shear Devices
- Button Head, Shoulder End Holders
- Fastener Fixtures
- Extensometers, Deflectometers
- Interlocked Safety Enclosures
- Furnaces
- Test area enclosures with safety switch for operator protection fully comply with latest international safety directives including 2006/42/EC.

Motorized Support for Fully Automatic MFL Extensometers



he fully automatic MFL extensometers can be selected as alternative to clip-on extensometers in combination with the UTM series of static-hydraulic universal test systems.

The MFL's are attached to the UTM through a motorized extensometer support which is located on the rear side of the machine. The support which is free-standing and detached from the frame allows to We are offering Motorized MFL Extensometer Attachment Kits for the installation on UTM Testing Machines. The motorized attachment kit allows to push the extensometer out of the test space as well as move the unit up and down via motorized system and operating handset.

The extensometers series MFL are fully digital, high precision and high resolution units suitable for almost all specimens and materials with an initial gauge length starting from 10 mm. There low clamping force combined with high measurement accuracy makes them suitable for a wide range of specimens and materials, even for small, notch sensitive test samples.