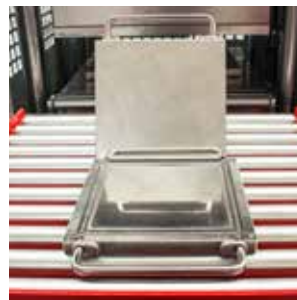
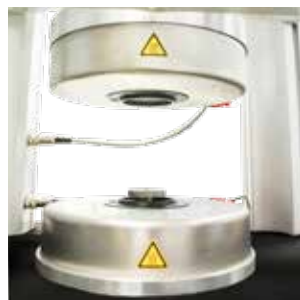
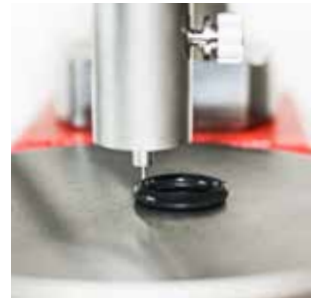
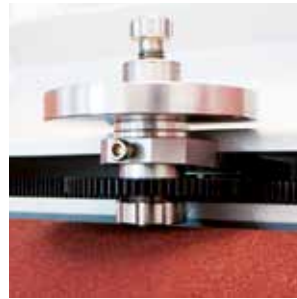
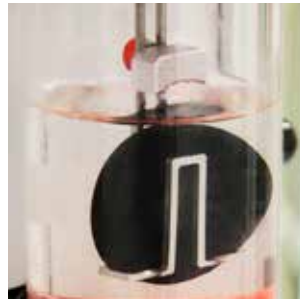


Compression Set and Ageing



***INNOVATIONS IN
RUBBER TESTING***



MonTech CS 3000

Compression Set test fixtures

Compression set fixtures CS 3000 for constant deflection testing according to ISO 815, DIN 53517, ASTM D 395 and other International Standards.

Compression set testing measures the ability of rubber to return to its original thickness after prolonged compressive stresses.

As a rubber sample is compressed over time between two flat parallel plates with a predefined percentage and kept for a specific time at a certain temperature, it loses its ability to return to its original thickness. This loss of resiliency, also called memory or permanent set, characterizes the capability of an elastomeric product to perform over a long period of time. MonTech Compression set fixtures are entirely made of precision ground stainless steel and feature stiff compression plates as well as sets of spacers according to customer choice.

Two standard dimensions of compression set test fixtures are readily available from stock - each size is available in a single and double layer configuration. Optionally suitable tempering ovens, height gages and curing moulds in accordance with standards are available.



Technical specification

Standards	ISO 815, DIN 53517, ASTM D 395, ...	
Material	fine ground stainless steel	
No. of layers	1 or 2	
Platen size	96 x 96 x 17mm	178 x 98 x 17mm
No. of samples	8x Type A / I or 16x Type B / II	16x Type A / I or 32x Type B / II
No. of bolts	4 x M12	6 x M12
Deflection / Spacers	according to standard(s) or customers choice	
Scope of supply	includes bolts, washers, nuts, tools and accessories	



Speciality Compression set fixtures CS 3000

In addition MonTech manufactures a variety of specialized compression set testing tools for various applications such as:

- Compression set testing under deflection with variable / adjustable spacing for highest flexibility
- Compression set testing under constant force ASTM D395 Method A, UNI 4913-2, FIAT 50410
- Compression set acc. PV 3307 Standard for testing 6 specimens with 15mm diameter simultaneously
- Compression set acc. PV 3330 Standard for testing on finished parts - spacers per customer request



CS 3000
PV3307

MonTech TGD 3000

Digital precision thickness gauge

The TGD 3000 thickness gauge is a cost efficient and easy to use instrument for measuring the thickness of rubber of rubber-like materials. The constant force enables repeatable readings.

A standard thickness gauge for rubber which can be adapted to meet most international standards. The gauge is manufactured to close tolerances and can be used as a quality control instrument. It is crucial that any thickness gauge applies a controlled pressure (kPa) to the material whose thickness is being measured.

The TGD 3000 uses a deadweight system removing the uncertainty of other mechanical devices. This system ensures that the thickness is being measured under the same controlled conditions for each sample. This design ensures excellent repeatability of results. To measure the thickness of any sample, lift the deadweight by pressing the cable release or optionally lever and insert the material between the anvil and the presser foot.

The deadweight is lowered automatically by releasing the button and the thickness reading can be obtained. Precise measurements are guaranteed by the absolute measuring system without the need for referencing.

Optional gauge blocks are available for verification and calibration.



Technical specification

Measurement method	Dead load with constant measuring force (1N standard)
Display	Digital with 9mm LCD display, 0.001mm Resolution
Measurement table	Polished, 50mm diameter
Measurement tip	Diameter 5mm standard, others optional
Measurement range	0 to 12.5mm (25 or 50mm optional)
International standards	ISO 23529, ISO 815, ISO 23529, ISO 5084, ...
Repeatability	Better than ± 0.0015 mm
Output interfaces	Serial (RS232) optional
Electrical	Battery powered, SR44, 18.000 hours lifetime
Options	<ul style="list-style-type: none"> - Various presser foot designs and tips (4, 4.3, 6, 10, 50.5mm, ...) - Additional dead load weights according to various standards - Manual lifting lever - Interface kit and software

*Combining the CS 3000
Compression set testing tools
with the TGD 3000
thickness gauge and AO 3000
ageing oven creates a full testing
set according to
ISO 815, DIN 53517,
ASTM D 395, ...*

MonTech AO 3000

Universal forced air laboratory oven series

MonTech AO 3000 forced ventilation cabinet ageing ovens are designed for precision ageing of polymer materials and rubber parts, products and components.

The universal applicable lab oven is the standard appliance for temperature control in science, research and material testing within the rubber and polymer industry. The interior as well as exterior are made of high-quality, hygienic, easy-to-clean textured stainless steel - together with the easy-to-use 4" control panel, single knob operation and integrated setting for ventilation, flap overtemperature protection and timer the AO 3000 is the ideal ageing equipment for almost any application.

Temperature deviations caused by fresh air can influence the sample characteristics as well as the ageing process - therefore MonTech ageing ovens have been designed with a special pre-heating chamber in where fresh air is fed through and warmed up before being introduced into the working chamber. Air exchange rates and air flap position can be electronically set on the control panel ensuring that the required - typically low - air speed for ageing of rubber materials is met.

In the standard configuration the ovens are equipped with a Ethernet Interface for direct integration in the customers network.

A data recording software is optionally available.

Optionally the AO 3000 is available with:

- Viewing windows integrated in the door of the device
- side or top openings
- additional temperature protection devices
- sample shelves, racks and hangers
- rotary carousels
- USB data interface
- data recording software



Model / Volume [Liter]	30	55	75	110	160	260	450	1060
Interior dimensions [mm]	400 x 320 x 250	400 x 400 x 330	400 x 560 x 330	560 x 480 x 400	560 x 720 x 400	640 x 800 x 500	1040 x 720 x 600	1040 x 1200 x 850
Exterior dimensions [mm]	585 x 704 x 434	585 x 784 x 514	585 x 944 x 514	745 x 864 x 584	745 x 1104 x 584	814 x 1183 x 684	1224 x 1247 x 784	1224 x 1726 x 1035
Working range	+ 5°C above ambient to +300°C							
Resolution	to 99.9°C: 0,1°C from 100°C: 0,5°C							
Accuracy	+/- 1.5°C (Standard), optional higher accuracies are possible							
Shelves included / Maximum no. of shelves	1 / 3 20 kg max.	1 / 4 20 kg max.	2 / 6 20 kg max.	2 / 5 20 kg max.	2 / 8 20 kg max.	2 / 9 20 kg max.	2 / 8 30 kg max.	1 / 14 60 kg max.
Net weight / Gross weight [kg]	45 / 61	57 / 76	66 / 85	74 / 99	96 / 122	110 / 161	161 / 227	252 / 416
Power rating at 230V, 50/60 Hz [W] (other voltages on request)	1600	2000	2500	2800	3200	3400	5800 (triple phase)	7000 (triple phase)

MonTech OB 3000 and WB 3000

Oil- and Waterbaths for immersion ageing

Oil- and waterbaths are unparalleled in terms of precision, safety and comfort and perfectly suited for professional heat and immersion ageing of natural or synthetic rubber, silicones and other elastomers

A corrosion resistance, textured stainless steel exterior and interior allows easy maintenance and cleaning - for operator safety every MonTech Oil- and Waterbath is fitted with a dual overtemperature protection as well as safety cover. MonTech thermostatic bath feature a resolution of 0.1°C, superior thermal accuracy as well as an integrated timer. All units can be equipped with according the customers' specific requirements and testing standards with a variety of optional concentric ring sample covers, tube racks and specimen holders

Key features of MonTech thermostatic baths include:

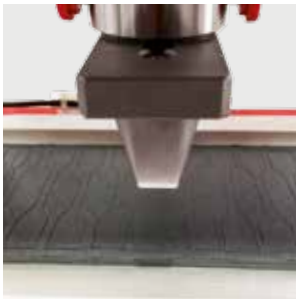
- Available in 6 different sizes according to specific testing needs
- Easy to use with single button control
- Variety of more than 150 different types of sample holders available
- Ageing can be performed simultaneously e.g. ASTM D471 and D865
- Cross-contamination is eliminated due to individual sample compartments
- Improved heat transfer compared to block ovens
- High watt density heaters for longer service life and performance
- Optional level control and Peltier cooling system available (WB 3000 only)



Model / Volume [Liter]	7	10	14	22	29	45
Bath dimensions [mm]	240 x 210 x 140	350 x 210 x 140	350 x 290 x 140	350 x 290 x 220	590 x 350 x 140	590 x 350 x 220
Exterior dimensions [mm]	468 x 356 x 337	578 x 356 x 337	578 x 436 x 347	578 x 436 x 405	818 x 516 x 343	818 x 516 x 401
Working range Oilbath / Waterbath	+ 5°C above ambient to +200°C / + 5°C above ambient to +95°C (boiling stage optional)					
Temperature variation Oilbath / Waterbath	better than +/- 0.3°C / better than +/- 0.1°C					
Temperature distribution Oilbath / Waterbath	better than +/- 0.8°C / better than +/- 0.25°C					
Net weight / Gross weight [kg]	11 / 16	13 / 19	15 / 21	17 / 23	24 / 31	26 / 33
Power rating at 230V, 50/60 Hz [W] (other voltages on request)	1200	1200	1800	2000	2400	2800



Rubber Testing Solutions



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