

METROLOGY

WS 1003 to WS 1007/2 BROOKFIELD Rotation Viscometer/Rheometer (ASTM D-4402) & BOHLIN Dynamic Shear Rheometer Model DSR)

Vernier Calipers

- * Electronic or mechanical versions
- * High accuracy 0.01 mm or 0.02 mm
- * Dual measuring range, mm or inches
- * Brand Mitutoyo, Japan

WS 8000

Vernier Caliper (LCD) display, range 0 to 150 mm x 0.01 mm.

WS 8001

Vernier Caliper (LCD) display, range 0 to 200 mm x 0.01 mm.

WS 8002

Vernier Caliper, range 0 to 150 mm x 0.02 mm.

WS 8003

Vernier Caliper, range 0 to 250 mm x 0.02 mm.

WS 8004

Vernier Caliper, range 0 to 300 mm, vernier scale 1 - 50 mm.

Micrometers

- * Tungsten carbide faces
- * High measuring accuracy
- * Brand : Mitutoyo, Japan

WS 8005

Micrometer, external measuring, 0 to 25 mm x 0.01 mm.

WS 8006

Micrometer, external measuring, 25 to 50 mm x 0.002 mm.

WS 8007

Micrometer, external measuring, 50 to 75 mm x 0.002 mm.

WS 8008

Micrometer, external measuring, 150 x 175 mm x 0.01 mm.

Accessories for Micrometers

Setting Gauges

- WS 8009
- Setting Gauge 50 mm, rod form.

Photo/Contact Tachnometer

Digital reading. Hand held.

Ranges :

Optical mode : 5 to 100,000 rpm.

Contact mode : 0.5 to 19,999 rpm.

Will measure surface speeds also in metres/min and feet/min. Accuracy $\pm 0.05\%$, ± 1 digit. With 5 digit LCD display and data hold facility. Overall 215 x 65 x 38 mm. Supplied with 4 x 1.5 V batteries, reflective tape, contact adapter and instructions in case.

WS 8012 Tachnometer

WS 8013 Spare battery, 1.5V (4 required).



Digital Tachnometer

Dial Gauges

With clear, easy-to-read dial faces, the gauges are of the continuous reading type. i.e. the main pointer describes numerous revolutions during the full travel while the secondary pointer indicates the number of revolutions.

Accessories and Spares

WS 8014

Stem Brake Unit.

WS 8015

Stem Extension Set, comprising 2 rods and a



WS 8014 WS 8015 & WS 8016

WS 8016

Magnetic Base Dial Gauge Test Set (less dial gauge), incorporates a fine adjustable crossarm and is supplied with a large powerful magnetic base. The dial gauge clamp operates independently on both crossarm and upright permitting rapid adjustment. Base dimensions 65 x 65 mm. Weight 41 kg. Suitable for use with Dial Gauge listed having back type A.

Straight Edges

Manufactured from high quality steel, hardened and finished ground on both sides and edges. Comply to BS 5204.

WS 8017

Straight Edge 300 mm, complies with BS 5204 Grade A.

WS 8018

Straight Edge 600 mm, complies with BS 5204 Grade B.

WS 8019

Straight Edge 1 200 mm, complies with BS 5204 Grade B.

Steel Rules and Tapes

WS 8020

Steel Rule 300 mm, Metric 0.5 mm, 1.0 mm and 10 mm graduations. One round end, rustless.

WS 8021

Steel Rule 1 000 mm, Metric 0.5 mm figure every 10 mm in mm. One round end, rustless.

WS 8022

Steel Tape 2 m. Lightweight high strength case, power return and true zero hook, dual graduated in mm and inches.

WS 8023

Steel Tape 3 m. Fast rewind action, hard wearing tape with clear, easy-to-read marking in metric/imperial units.

WS 8024

YAMAYO 30 m Steel Measuring Tape, with white face.

WS 8025

YAMAYO 30 m Non-steel Measuring Tape, with fibreglass box.

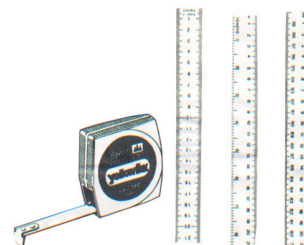


Digital caliper

Vernier caliper



WS 8017 to WS 8019



METROLOGY

WS 8026 TO WS 8060/4 Precision Measuring Equipment

Dial Gauges

Cat. No	Diameter	Travel	Graduation	Graduation per rev.	Anvils	Back Type
WS 8026	76 mm	50 mm	0.01 mm	100	Ball	A
WS 8027	76 mm	50 mm	0.01 mm	100	Ball	A
WS 8028	57 mm	25 mm	0.01 mm	100	Ball	Special
WS 8035	57 mm	10 mm	0.002 mm	100	Ball	B
WS 8036	57 mm	10 mm	0.002 mm	100	None	B
WS 8037	57 mm	10 mm	0.01 mm	100	Ball	C
WS 8038	57 mm	5 mm	0.002 mm	100	Ball	Flat
WS 8039	76 mm	5 mm	0.002 mm	100	Ball	C

Calibration Weights

Accurate, high quality calibration masses are essential for checking and monitoring the performance of weight equipment used in the laboratory. Weights are classified according to a tolerance or maximum permissible error.

Boxed Sets

Stainless steel weights supplied in a purpose built case with a pair of tweezers, handling glove and traceable certificate

Class E2	Class F1	Range	Total Weight
WS 8040	WS 8042	10g to 1mg	201g
WS 8041	WS 8043	1 000g to 1mg	2 001g

Weight Class

Class	Description
E1 & E2	Integral stainless steel weights without markings or adjusting chamber. Tolerance ± 0.5 or ± 1.5 ppm at 1 kg level.
F1	Stainless steel weights which may have a screw knob. Tolerance ± 15 ppm at 1 kg level.
F2	Weights of plated brass. Tolerance ± 15 ppm at 1 kg level.
M1	Weights of brass (not corroded or tarnished) or cast iron with a good quality paint finish. Tolerance ± 50 ppm at kg level.

Individual Weights

Stainless steel weights supplied individually boxed complete with traceable certificate.

Cat. No	Weights	
Class E2	Class F1	
WS 8044	WS 8052	10 kg
WS 8045	WS 8053	5 kg
WS 8046	WS 8054	2 kg
WS 8047	WS 8055	1 kg
WS 8048	WS 8056	0.5 kg
WS 8049	WS 8057	0.2 kg
WS 8050	WS 8058	0.1 kg
WS 8051	WS 8059	0.05 kg



WS 8060/1

DIMENSI 10 kg cast weight set with handle.

WS 8060/2

DIMENSI 20 kg cast weight set with handle.

WS 8060/3

DIMENSI 25 kg cast weight set with handle.

WS 8060/4

DIMENSI 50 kg cast weight set with handle.



METROLOGY

WS 8061 TO WS 8082 Force Measurement (Proving Ring)

Force Measurement

DIMENSI Clamped Boss Load Rings

- * Repeatability within 0.2% of indicated load
- * Accuracy within $\pm 1\%$ of indicated load
- * Works calibrated

All load rings offer a consistently high order of accuracy and repeatability. Clamped boss load rings are available in the range 1 kN to 50 kN.

The repeatability of all load rings is within 0.2% of indicated load and accuracy is $\pm 1\%$ of the indicated load over the upper 80% of the working range, at the calibration loads. The change of 'no load' reading during calibration is less than 0.1% of the deflection under full load.

The dial gauge supplied with each ring, has a sensitivity of at least 0.002 mm and the deflection is directly proportional to the applied load. It is rigidly mounted within the load ring and accurately aligned on the loading axis. All clamped boss load rings are calibrated in kN and supplied with a calibration chart with conversion for kgf. All rings, complete with a detachable ball nipple are supplied in a protective polystyrene mouldings.

Accessories for load rings

WS 8061

Steam Brake Unit, for fitting to load ring dial gauges. Enables maximum reading to be retained at completion of loading event.

Clamped Boss Load Rings calibrated in compression or in compression/tension

Cat No	Capacity			Typical design sensitivity			Overall Height mm	Approx weight kg	Cat No
	kN	kgf	lbf	N/div	kgf/div	lbf/div			
WS 8062	1.0	100	225	0.6	6	0.13	232	2.0	
WS 8063	2.0	200	450	1.3	13	0.30	248	3.2	WS 8074
WS 8064	3.0	300	650	2.0	2.0	0.43	248	3.3	WS 8075
WS 8065	4.5	450	1 000	3.0	30	0.66	248	3.5	WS 8076
WS 8067	7.0	700	1 500	4.7	47	1.00	248	3.6	WS 8077
WS 8068	10.0	1 000	2 250	7.7	0.77	1.73	248	4.6	WS 8078
WS 8069	14.0	1 400	3 000	10.7	1.08	2.30	248	4.8	WS 8079
WS 8070	20.0	2 000	4 500	18.2	1.82	4.09	248	5.2	WS 8080
WS 8071	28.0	2 800	6 000	25.5	2.54	5.45	248	5.4	WS 8081
WS 8072	50.0	5 000	11 200	45.5	4.54	10.18	248	7.9	

