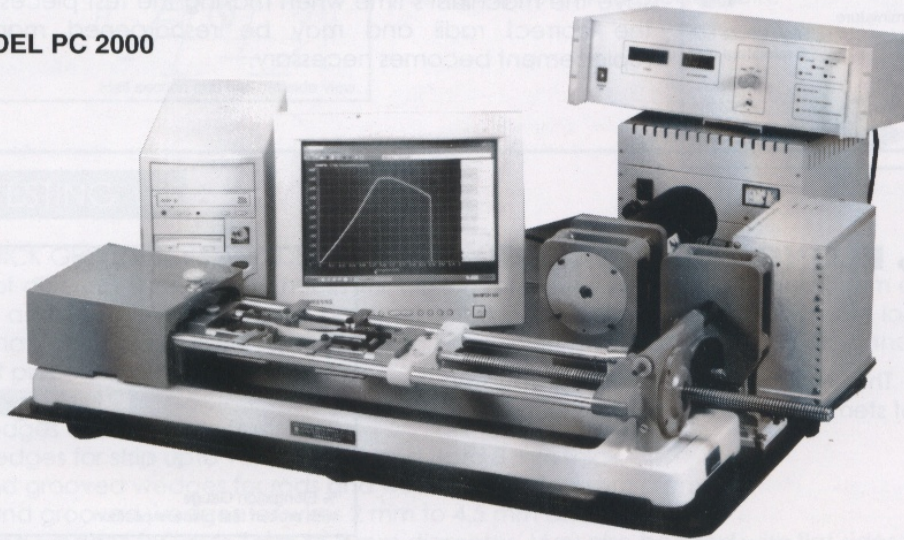


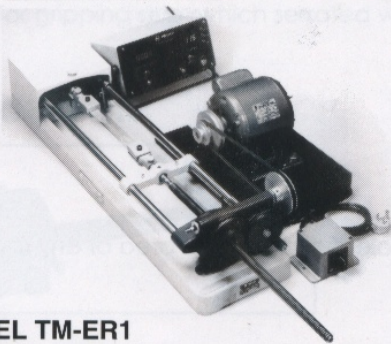
ELECTRONIC TENSOMETER ACCESSORIES

Horizontal Bench Model
Universal Testing Machine (Capacity 20kN)

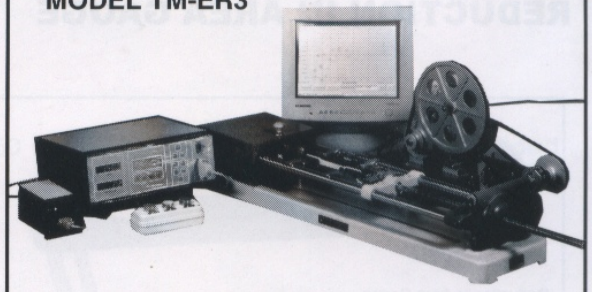
MODEL PC 2000



MODEL TM-ER1



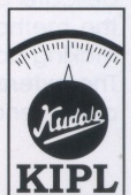
MODEL TM-ER3



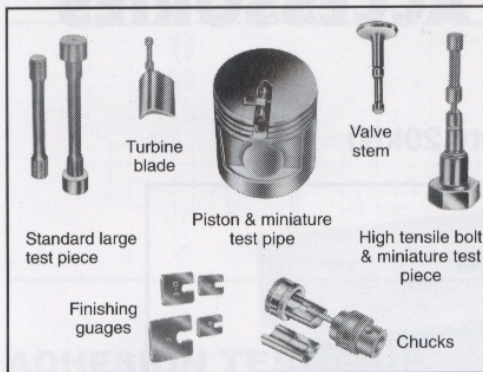
To test a variety of materials such as metals; plastics; timber;
ceramics; cement; fabrics;
pharmaceuticals; packaging, wires & cables etc.
in tension, shear, compression & bend

ISO 9001
COMPANY

*With these machines, there is a choice of over 100 accessories
& grips to cover most of the varied requirements
for R & D; Quality Control in science; industries & education.*



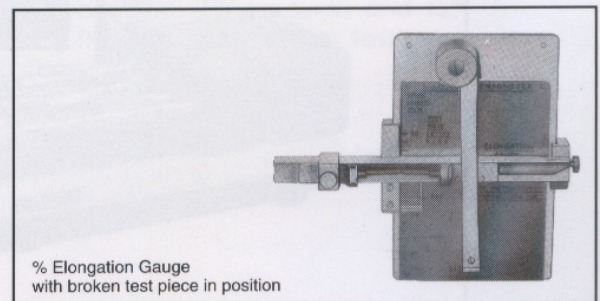
TURNED TENSILE TEST PIECES/LATHE TOOLS AND GAUGES



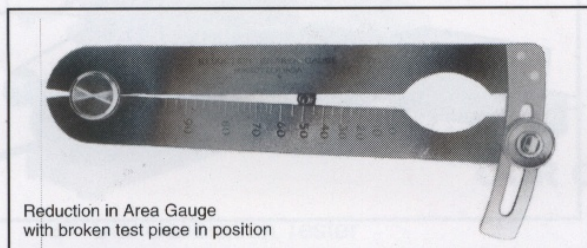
Turned tensile test pieces provide an easy method of obtaining stress/strain diagrams from a wide range of materials including metals and plastics of high tensile strength. A range of lathe tools and finishing gauges are available and matching chucks for mounting the finished test pieces in the tensometer. The tools and gauges are designed to save the machinist's time when making the test pieces. The cutters give the correct radii and may be resharpened many times before replacement becomes necessary.

UNIVERSAL % ELONGATION GAGUE

Shows % elongation. The vertical slide scale is graduated to show parallel length of stem or number of the test piece.



REDUCTION IN AREA GAUGE



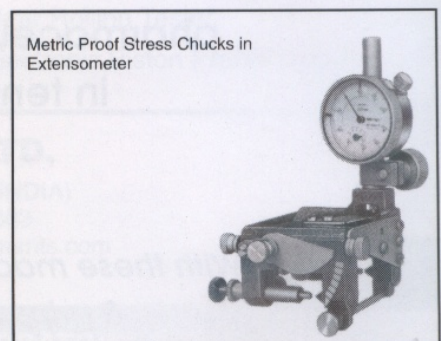
Indicates on a single scale % reduction in area of any round test piece.

EXTENSOMETER

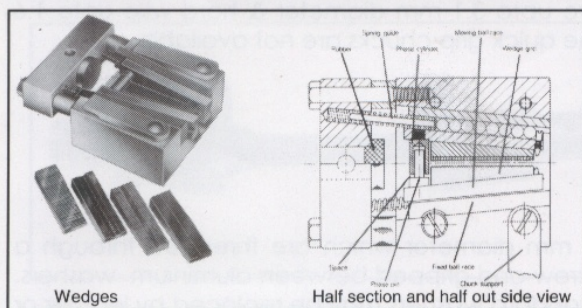
Extensometer is used with materials of low elongation such as metals, carbon, fibres etc. It provides data on the exact stress at which a material reaches its elastic limit, proof stress and young's modulus.

Although great accuracy is obtainable in research laboratories with the use of delicate apparatus using microscopes, telescopes, or reflected rays of light, the method used in the extensometer is recognised as the best method for making accurate measurements commercially.

The extensometer is used with a dial gauge. It can be used for bars 25 mm diameter down to small wires and for strips 25 mm wide and less.



PRINCIPAL CHUCKS, GRIPS AND ATTACHMENTS



Accessories described and illustrated are for the more specialised applications.

For general purpose accessories such as quick grips, strip chucks & wire chucks, please enquire whether they are suitable for your specifications. Space does not permit listing of all IS, BS, ASTM, DIN, ISO and the other specifications which can be satisfied using the items included herein.

FOR TENSILE TESTING

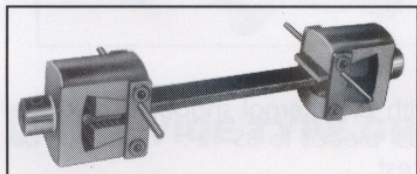
THE STANDARD QUICK GRIP CHUCKS AND DEEP GROOVE QUICK GRIP CHUCKS

By using wedges of different sizes, these chucks will accommodate wires from 1 mm to 8 mm diameter, and strips up to 8 mm thick and 16 mm wide. Chucks are open on the top enabling quick and easy loading and efficient gripping action enables simple parallel specimens to be used in most instances, avoiding the need for specially made waisted test pieces.

The four sets of wedges available are illustrated :

1. Serrated wedges for strip upto 16 mm wide and upto 8 mm thick.
2. Toothed and grooved wedges for rods and wires 4.5 mm to 8 mm diameter.
3. Thoothed and grooved wedges for wires 2 mm to 4.5 mm diameter.
4. Plain grooved wedges for wires 1mm to 2 mm diameter. May also be used with flat sides turned inwards for gripping strip which serrated wedges might damage.

WEDGE GRIP



For conveyor belts etc. upto 50 mm wide and 16 mm thick. Maximum load 2000 kg. (20 kN)

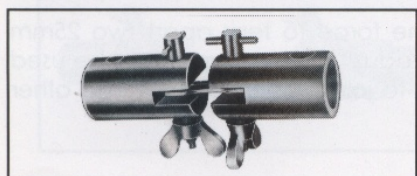
STANDARD STRIP CHUCKS



Strip or plates chucks take specimens of sheet metal, plywood etc. upto 6.5 mm thick. The test pieces are dumbell shaped with 8 mm holes in the heads. Maximum load 2000 kg. (20kN)

A large version will take strips upto 12.7 mm with 11.1 mm holes in the heads.

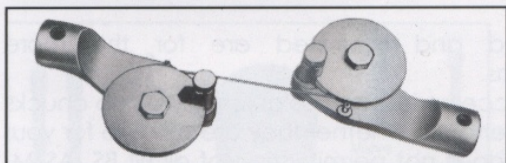
MINIATURE STRIP CHUCKS



For use with dumbell shaped specimens as in the standard chucks but when only a very small specimen is obtainable.

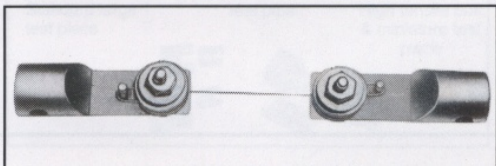
For test pieces upto 4.75 mm thick maximum load 500 kg (5kN)

VEE WIRE CHUCKS



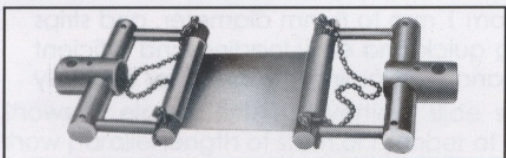
Simple grips for soft wire upto 3.1 mm diameter & hard wire upto 1.6 mm diameter, where the quick grip chucks are not available.

DISC WIRE CHUCKS



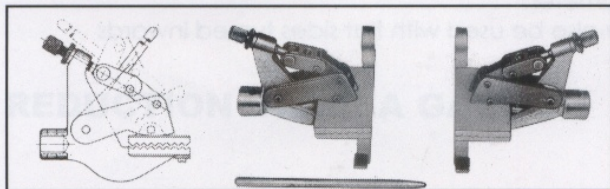
For fine wires upto 0.8 mm diameter which are threaded through a hole in the clamping screw and gripped between aluminium washers. For very soft wires the standard washers may be replaced by leather or lead washers.

WIND - UP GRIP



For ductile foils, fibres and light fabrics. Will take test pieces up to 63.5 mm wide. Maximum load 250 kg.

LOCK JAW GRIPS



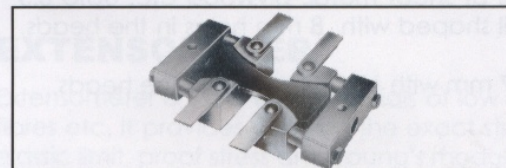
Grips designed for use with woven textiles, films, heavy paper and any material which will conform to the contours of the jaws without damage. Corrugation in the jaws are sharper at the back than at the front to minimise any tendency to fracture in the jaws. Also greater grip is exerted in the back of the test piece, again to minimise tendency to fracture in the jaws.

CEMENT TEST CHUCKS



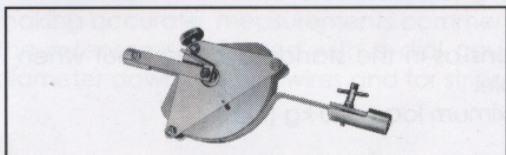
A non-clamping chuck designed with an internal shape to hold the specimen. For cast cement tensile test pieces to BS 12 : 1958 may be used as mould specimens ready for test.

MOULDED PLASTICS GRIPS



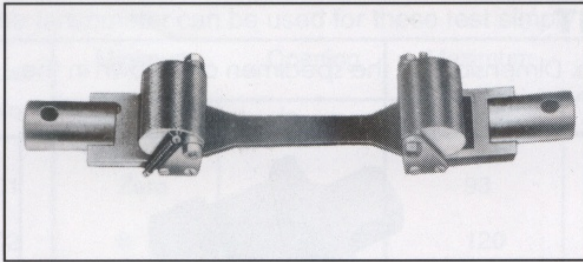
Non-clamping type to take flat dog-bone shaped test pieces as specified in BS 2782 Method 301 A (and BS 771) and in ASTM D651 and D700. IS 867 - 1963.

STRIPPING ATTACHMENT



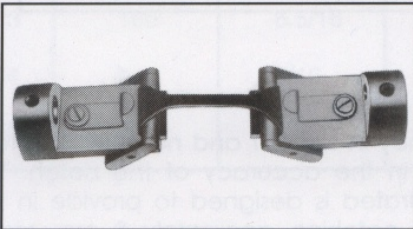
Designed primarily for measuring the force to tear apart two 25mm wide metal strips test joined by the "Redux" process : may also be used for 90° peel tests on adhesives used to join plastics, fabrics and other strip test pieces upto 25 mm wide.

EXCENTRIC ROLLER GRIPS / HEAVY EXCENTRIC ROLLER GRIPS



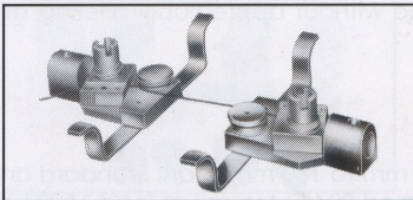
Self-tightening grips using spring loaded rollers for waisted or dumbbell shaped test pieces of rubber, plastics etc. upto 25 mm wide. Meet BS 903 : Part A2, ASTM D412, DIN 53504 and many other standards. Maximum load 220 kg. A heavy version will take test pieces upto 50 mm wide maximum load 230 kg IS 3400 II.

STANDARD DUMBELL GRIPS



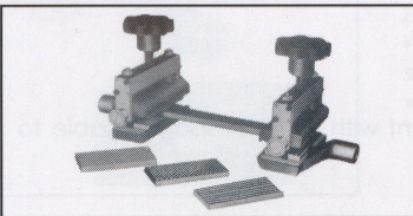
Self-tightening grips using spring loaded rollers with smooth gripping surfaces. For strip or dumbbells of rubber, plastic etc. upto 32 mm wide where the cross hatched rollers of eccentric roller grips would damage the test piece.

CORD GRIPS



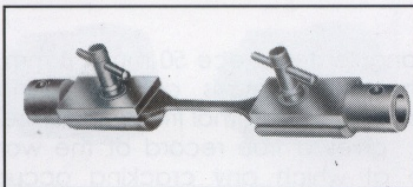
For fine cords. The cord is wound round a friction bollard to reduce tension in the cam operated clamp; For medium cords, spilt bollard grips are available.

LARGE VICE TYPE GRIPS



For heavier fabrics, cork, belting, plastics etc. Heavy pressure is applied through large hand screws. The jaws in common with all tensometer chucks are designed to avoid extra stresses on the test piece which might cause failure at the gripping point. Needle roller bearing support the weight of these heavy grips with minimum friction. Jaws 100 mm wide, 50 mm deep. Maximum load 2000 kg (20kN). Three sets of jaws are available rasp face (shown in grips) cross-hatched and corrugated.

VICE TYPE GRIPS

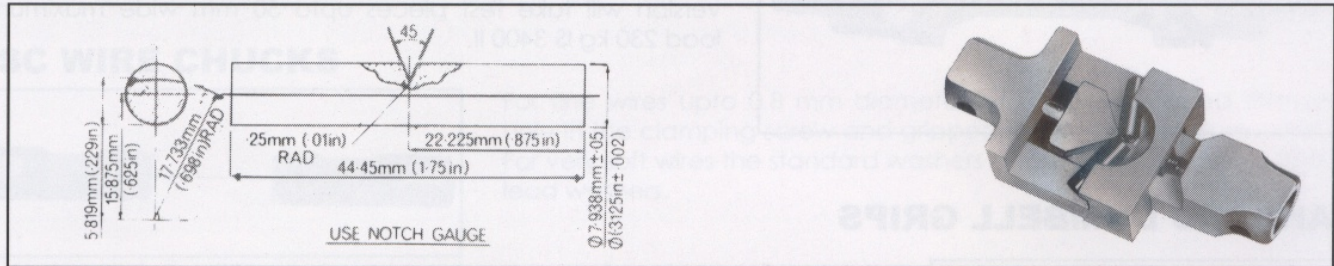


With rasp faced jaws these grips are suitable for waisted specimens of rigid plastics and soft metals. For test pieces upto 32 mm wide. Maximum load 450 kg.

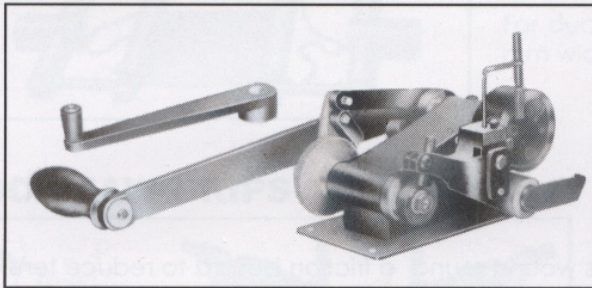
FOR FLEXURAL AND NOTCHED BAR TESTING

NOTCHED BAR SLOW BEND ATTACHMENT

Measure the ability of material to withstand stress concentration. Dimensions of the specimen are shown in the drawing and the precise notch can be made in the notching machine.

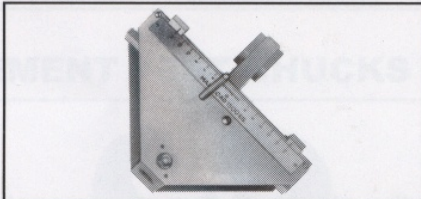


NOTCHING MACHINE



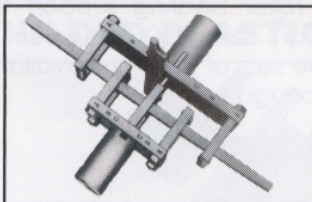
Accuracy and consistency in impact and notched bar tests are largely dependent in the accuracy of the notch. The notching machine illustrated is designed to provide in the laboratory a means of notching accurately 8 mm round specimens in metal and plastics and also 6.35 mm square or rectangular test pieces in plastics without the need to make adjustments when changing from one type of test piece to another. The cutter can be removed, sharpened and replaced in the machine without appreciably altering other adjustments.

VARIABLE SPAN BEND TEST ATTACHMENT



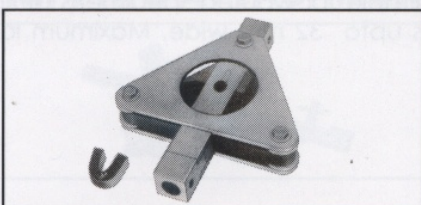
Provides three point loading variable 25 mm to 150 mm span. Standard anvils are 2 mm and 5 mm radius (BS 2782 Method 304 E) Maximum load 1500 kg.

UNIVERSAL BEND TEST ATTACHMENT



A simple three or four point bend test attachment with a major span variable to 101 mm, 63.5 mm, or 38 mm Maximum load 250 kg.

180° BEND TEST ATTACHMENT



Used for testing welded joints. A rectangular test piece 50 mm x 8 mm x 12 mm bends into the 'U' shape illustrated. Bending is carried out in a single operation and almost completely without external friction. The area of the graph which can be plotted gives a true record of the work performed and indicates the force at which any cracking occurs. Maximum load 2000 kg (20kN).

COMPRESSION AND INDENTOR TESTS

The tensometer can be used for these test simply by using one of a series of compression cages.

List No.	Minimum	Opening	Maximum	Opening	Maximum piece	Test diameter	Maximum load	
	mm	in	mm	in	mm	in	kg	lb
C1	Zero	Nil	93	3.11/16	54	2.1/8	2000	4480
C2	8	5/16	120 (136.5 without anvils)	4.3/4 (5.3/8 without anvils)	54	2.1/8	2000	4480
C3	160	6.5/16	315	12.3/8	54	2.1/8	2000	4480
C4	8	5/16	238	9.3/8	54	2.1/8	2000	4480
C5	10*	3/8*	105	4.1/8	60	2.3/8	250	560

* Zero with spacers removed

COMPRESSION AND DUCTILITY TESTS

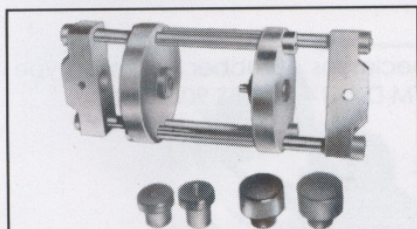
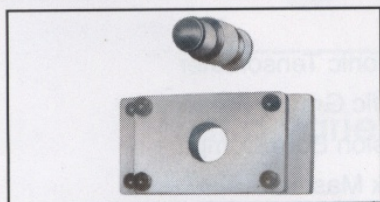


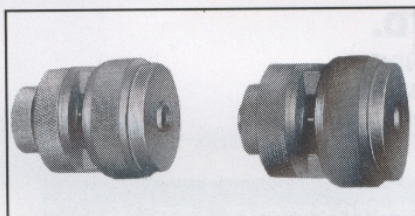
Illustration shows precision compression cage. Precision alignment enables 6.35 mm and 3.17 mm diameter punches and dies for shear tests to be mounted directly into the tables hardened anvils Brinell Balls in Bolsters supplied in fitted box enable Brinell Hardness and other tests to be made in Indian, British and many other standards.

CUPPING TEST ATTACHMENT (Modified Erichsen Test)



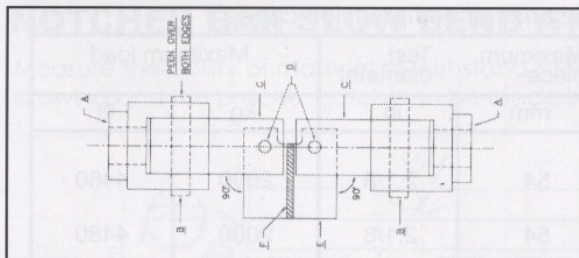
Designed for use with the C1 or C2 cages. A 50 mm square specimen of sheet metal is clamped and a 20 mm diameter ball-ended punch is forced into the sample until fracture occurs. The resultant graph shows the precise load at which the test piece fails. IS 10175 (part 1) : 1993.

SHEAR TEST ATTACHMENT S1 AND S2



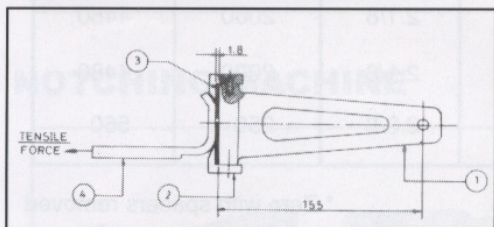
S1 - 6.35 mm diameter, S2 - 12.7 mm diameter. Incorporating a punch and die to determine the shear strength of a clamped specimen of plastics or thin metal sheet. These attachments must be used in C1 or C2 compression cages.

CLEAVAGE GRIP



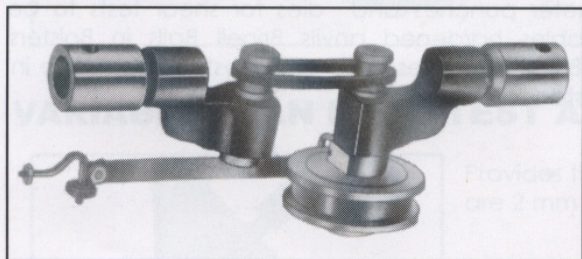
Simple grip for adhesion test width upto 25 mm and length as described in the testing procedure in the ASTM D 1062.

ADHESION TEST GRIP



Simple grip for determination of adhesion of rubber to metal. Standard test piece of 6 mm thick rubber strip, 25 mm wide and 125 mm long adhering to a 25 mm² area of the face of the metal. Test procedure is as described in the I. S. 3400 (Part 14) 1984.

ROTATING O-RING GRIPS



For testing ring-shaped test specimens of rubber or similar type material in accordance to ASTM D 1414 and BS 903 - A2.

Specification :

Load Capacity : 130 kg
Spool Diameter : 12.7 mm / 6.35 mm
Weight Each : 0.3 kg
Length Each : 90 mm

OUR OTHER PRODUCTS

- | | |
|--------------------------------------|------------------------------------|
| ☞ Dial Calibration Tester | ☞ Electronic Tensometer |
| ☞ Roundness and Cylindricity Tester | ☞ Specific Gravity Balance |
| ☞ Rubber Hardness Tester Calibration | ☞ Precision Bore Comparator |
| ☞ Piston Ring Tester | ☞ Check Master |
| ☞ Torque Wrench Tester | ☞ Gear Rolling Tester |
| ☞ Scale & Tape Calibration Unit | ☞ Electronic Piston Profile Tester |



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