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WARNING

Pressure on the spring-loaded outer ring which exceeds the range of the instrument by more than 100% may cause permanent damage to the measuring spring and must be avoided under any circumstances.

This device must not be operated in explosion hazard areas and must not come into contact with aggressive substances.

1.0 INTRODUCTION

This manual covers the operation of the Check•line HPSA-R Durometer. This gauge is a customized version of the Check•Line HPSA featuring a concave radius bottom and truncated sensing pin for measuring rubber coated rollers, such as cots, nip rollers, pressure rollers, etc.

Three HPSA-R models, each with different concave radii, are available for use on different roller sizes (see page 6 for details).

All HPSA-R Durometers are calibrated using standards that are specified in various Test Procedures issues by ASTM, DIN and JIS Quality organizations worldwide.

1.1 Unpacking

Unpack the Durometer carefully and inspect it for any damage. If damage is found, contact Electromatic immediately by telephone at 516-295-4300 or send email to info@checkline.com.

1.2 Complete Kit

HPSA-R Durometers are supplied as a complete kit, including:

- Durometer
- Operating manual
- Carrying case.



6.0 WARRANTY

ELECTROMATIC Equipment Co., Inc. (ELECTROMATIC) warrants to the original purchaser that this product is of merchantable quality and conforms in kind and quality with the descriptions and specifications thereof. Product failure or malfunction arising out of any defect in workmanship or material in the product existing at the time of delivery thereof which manifests itself within one year from the sale of such product, shall be remedied by repair or replacement of such product, at ELECTROMATIC's option, except where unauthorized repair, disassembly, tampering, abuse or misapplication has taken place, as determined by ELECTROMATIC. All returns for warranty or non-warranty repairs and/or replacement must be authorized by ELECTROMATIC, in advance, with all repacking and shipping expenses to the address below to be borne by the purchaser.

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Some State jurisdictions or States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. The duration of any implied warranty, including, without limitation, fitness for any particular purpose and merchantability with respect to this product, is limited to the duration of the foregoing warranty. Some states do not allow limitations on how long an implied warranty lasts but, notwithstanding, this warranty, in the absence of such limitations, shall extend for one year from the date of invoice.

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5.0 SPECIFICATIONS

Model:	HPSA-R20
Workface Radius:	20 mm
Indentation Body:	Truncated Cone 35°, 1.25 mm Ø
Depth of Indentation:	0 – 2.5 mm
Test pressure*:	approx. 12.5 N
Meas. spring force:	0.55 - 8.065 N
Display range:	0 – 100 Shore hardness graduation marks
Scale diameter:	54 mm
Working face diameter:	18mm
Weight approx.	300 g net/ 500 g gross
Dimensions:	50 (L) x 50 (W) x 110 mm (H)

Model:	HPSA-R35
Workface Radius:	35 mm
Indentation Body:	Truncated Cone 35°, 1.25 mm Ø
Depth of Indentation:	0 – 2.5 mm
Test pressure*:	approx. 12.5 N
Meas. spring force:	0.55 - 8.065 N
Display range:	0 – 100 Shore hardness graduation marks
Scale diameter:	54 mm
Working face diameter:	18mm
Weight approx.	300 g net/ 500 g gross
Dimensions:	50 (L) x 50 (W) x 110 mm (H)

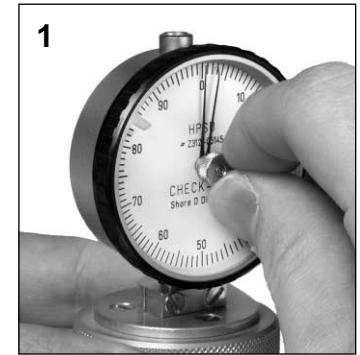
Model:	HPSA-R55
Workface Radius:	55 mm
Indentation Body:	Truncated Cone 35°, 1.25 mm Ø
Depth of Indentation:	0 – 2.5 mm
Test pressure*:	approx. 12.5 N
Meas. spring force:	0.55 - 8.065 N
Display range:	0 – 100 Shore hardness graduation marks
Scale diameter:	54 mm
Working face diameter:	18mm
Weight approx.	300 g net/ 500 g gross
Dimensions:	50 (L) x 50 (W) x 110 mm (H)

*Pressure on test material surface when outer ring is in measuring position.

2.0 OPERATING PROCEDURES

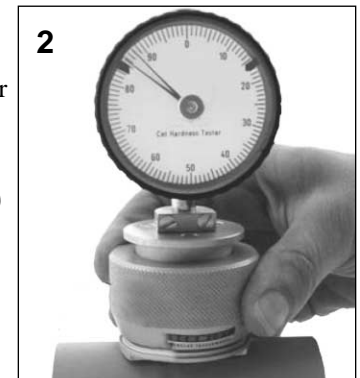
1. Before beginning a new measurement, reset the Memory Pointer to the zero position. (See section 2.1.)

To return the Memory Pointer to the zero position, rotate the knurled knob on the face of the instrument counter-clockwise until the pointer has been reset. See figure at right.

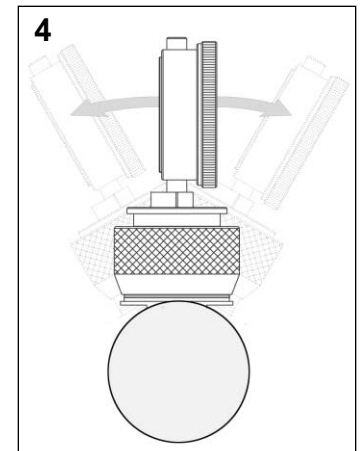


2. Place the instrument on the material to be tested. The durometer must be level, and the sensing pin must be perpendicular to the material to be tested.

Any angle other than perpendicular (90°) may cause errors.



3. Holding the knurled, spring-loaded outer shell between fingers, press downwards until the lower edge of the shell meets the red line marked on the housing. This ensures that sufficient pressure is applied as specified in the standard. It also ensures that the same amount of pressure is applied from measurement to measurement, and when the durometer is used by different operators.

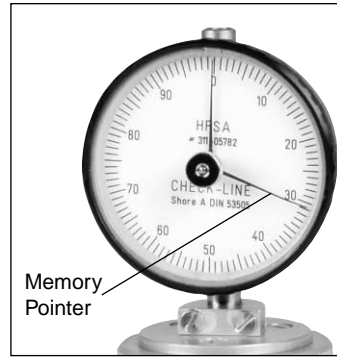


4. Rock the unit back and forth. The peak value shown by the Memory Pointer is the measured value. Release pressure on the outer shell and remove the durometer from the test material.

2.1 Memory Pointer

The Memory Pointer moves with the measurement pointer when a measurement is taken. However, when pressure on the outer shell is released, and the measurement pointer returns to zero, the Memory Pointer remains in position, marking the last measurement.

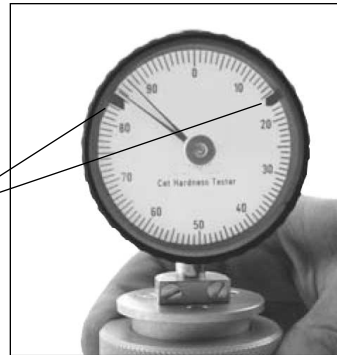
To return the Memory Pointer to the zero position prior to taking another measurement, rotate the knurled knob on the face of the instrument counter-clockwise until the pointer has been reset. See figure at right.



2.2 Upper and Lower Limit Markers

Two movable markers can be rotated around the faceplate to mark the upper and lower measurement limits.

Upper and Lower Limit Markers

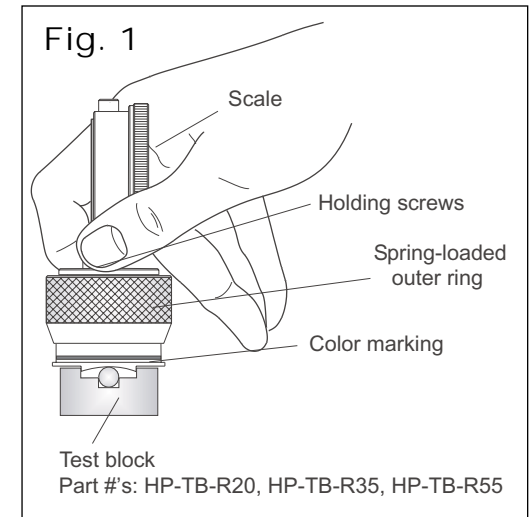


3.0 VERIFYING FUNCTIONALITY

The HPSA-R Durometer is calibrated against industry standards as specified in ASTM, DIN and JIS Test Procedures. Calibrated Test Samples **CAN NOT BE USED** for verification of the calibration, as these test samples are subject to change due to temperature, sunlight and other ambient conditions. Certification of the calibration is normally done at test facilities that can independently test the internal spring forces of the Durometer and check the travel/reading accuracy of the dial indicator.

You can, however, test that the gauge is functional and undamaged using the optional Zero Test Block which can be ordered under item numbers HP-TB-R20, HP-TB-R35, HP-TB-R55.

1. Press the Durometer down on the test block. Do not move the spring-loaded outer ring.
2. The scale pointer should make one full turn on the scale, from zero to zero, when you press down on the instrument. If it does not, contact Electromatic for assistance.



NOTE: Do not loosen the holding screws of the movement under any circumstances. Loosening these screws may alter the calibration of the instrument.

HPSA-R SERIES SHORE DUROMETERS



Operating Instructions



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