

12 Durometer & IRHD Hardness Tester

Abundant Lineups of Hardness Testers for ISO and JIS standard.

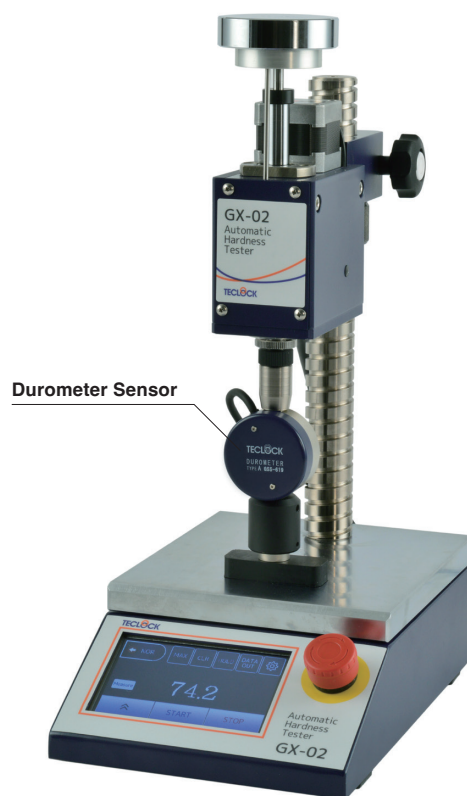
Durometers show the degree of hardness by value whether a non-rigid material like rubber is soft or hard (hardness gauge for rubber or plastic). Recently, JIS standard and ISO standard have been drastically revised and details of hardness tester of rubber and method of measuring hardness are changed. As an all embracing manufacturer of non-rigid material hardness tester, Teclock proposes lots of measuring methods of measuring hardness of not only rubber and plastic but many non-rigid materials and elastic materials.



IRHD(M-method) Hardness Tester for standard can measure hardness of O-ring, small rubber parts and thin rubber sheet.



Pocket type and Digital Durometer with peak hold type.



In order to solve individual difference of measured value, it is clearly mentioned in the standard to measure hardness by mounting durometer to special stand.

Features, Measuring hardness, Durometer standard	136
JIS K 6253 compliance	137
GX-02series Automatic Hardness Tester	138
GX-700II Totally Automatic type IRHD M-method	139
Model selection of Durometer, Comparison of Measured Value	140,141
JIS K 6253 Compliance	142
Deep Hole, Long Leg Type, Pocket Type	143
JIS K 7215 Compliance, JIS K 7312 Compliance	144

ASTM D 2240 Compliance, TECLOCK Original standard	145
Thin sheet hardness Tester, JIS K 6301 Compliance	146
Durometer Standard Table	147
GX- 610II Automatic type Motor Driving Durometer Stand	148
Measuring Stand for Durometer	149
Durometer Periodical Inspection and Calibration	150
Precautions on use of Durometer	151
"Duro" of Durometer means "hardness"	152

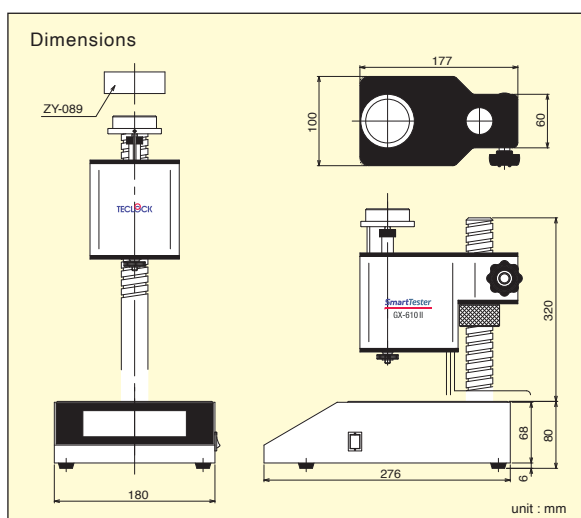
SmartTester GX-610 II

Durometer stand mounted VFD with touch panel

New JIS
complianceISO
compliance

Features

- Large and easy-to-see display.
- Easy-to-understand operation with touch panel.
- Accurate and repeatable descent speed controlled by stepping motors.
- High adhesion between pressurized face and test piece by Alignment Unit.
- Measurement of TypeA, TypeD or TypeE by exchange the sensor and weight.
- Calibration certificate can be issued.



Specifications

Moving-down speed	1.0~20.0mm/sec (Every 0.1mm/sec setting possible)
Pressing mass	Unit mass 346g(With spring load) Standard weight(ZY-089) 487.5g
Display brightness	Following 1.0(A)
Current consumption	W180xL276xH400(mm)
Dimensions	Input AC100-240(V)Output DC 24(V)
Weight	Body 11.4(kg)/AC Adapter 0.2(kg)
Operating temperature	10 - 30(°C)
Storage temperature	-10 - 50(°C)
AC Adapter	8-step setting possible
Touch sound	Hi/Lo setting possible
Touch sensitivity	Yes/No setting possible
Suggested List price	363,000 JPY



* The durometer is option.



Weight ZY-128
(Option)



Weight ZY-089
(Accessory)

Adaptive Durometer

Stand	Durometer			Weight for Load	
	Type	Durometer ex.	Load	Weight Code No.	
GX-610II	Analog	"A,B,E, AskerC,O,Old A"	for 1kg	ZY-089(Accessory)	
	Digital	GSD-719K-R etc.		ZY-090(Optional)	
	Analog	"D,ASTM C, DO, Old JIS C"	for 5kg	ZY-089(Accessory)+ ZY-128(Optional)	
	Digital	GSD-720K-R etc.		ZY-090(Optional)+ ZY-128(Optional)	
GS-612	Analog	"A,B,E, AskerC,O,Old A"	for 1kg	ZY-089(Accessory)	
	Digital	GSD-719K-R etc.		ZY-090(Optional)	
	Analog	"D,ASTM C, DO, Old JIS C"	for 5kg	ZY-089(Accessory)+ ZY-128(Optional)	
	Digital	GSD-720K-R etc.		ZY-090(Optional)+ ZY-128(Optional)	
GS-615	Analog	"A,B,E, AskerC,O,Old A"	for 1kg	ZY-078(Accessory)	
	Digital	GSD-719K-R etc.		ZY-079(Optional)	
	Analog	"D,ASTM C, DO, Old JIS C"	for 5kg	ZY-078(Accessory)+ ZY-128(Optional)	
	Digital	GSD-720K-R etc.		ZY-079(Optional)+ ZY-128(Optional)	

Measuring Stand for Durometer

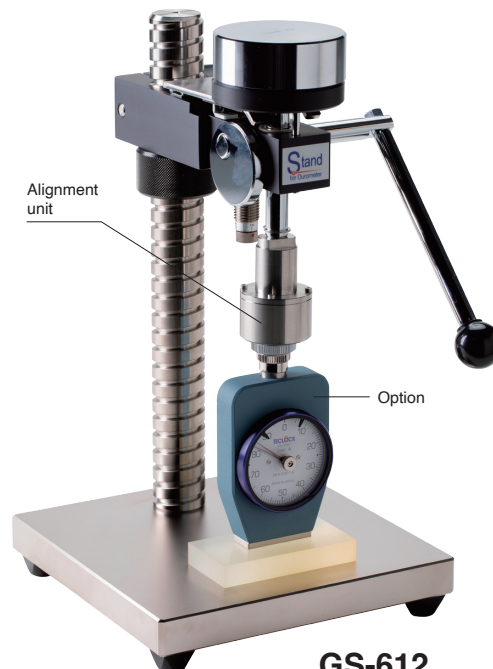
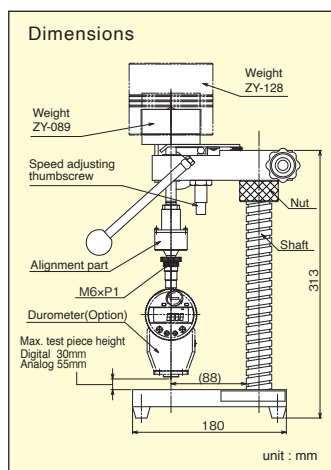


In case of measuring with durometer by pushing by hand, measuring values vary in some degree due to individual difference. Therefore, Measuring stand is materialized as measuring method for high reproducibility, which is prescribed in JIS and ISO.

New JIS compliance

GS-612 Manual Operation type Durometer Stand with Speed Controller

- Speed controller with high reliability is adopted for moving down speed adjustment unit.
- Alignment unit which realizes high contact between indenter (contact point) of durometer and test piece is mounted.
- 65mm for analog and 40mm for digital are obtained for possible measuring range.
- Shaft with square thread is adopted that can prevent holder falling down and moving up and down.
- 1kg can be measured by type A and type E durometer as they are.
- Measuring by type D needs optional weight ZY-128 for measuring 5kg.. Digital durometer GSD series needs optional weight ZY-090 for measuring 1kg..
- Calibration certificate of mass (with durometer) can be issued, which are prescribed in ISO / JIS.



GS-612

Mass	8.5kg
Model	Suggested List Price
GS-612	203,280 JPY
ZY-128	45,980 JPY
ZY-090	14,770 JPY



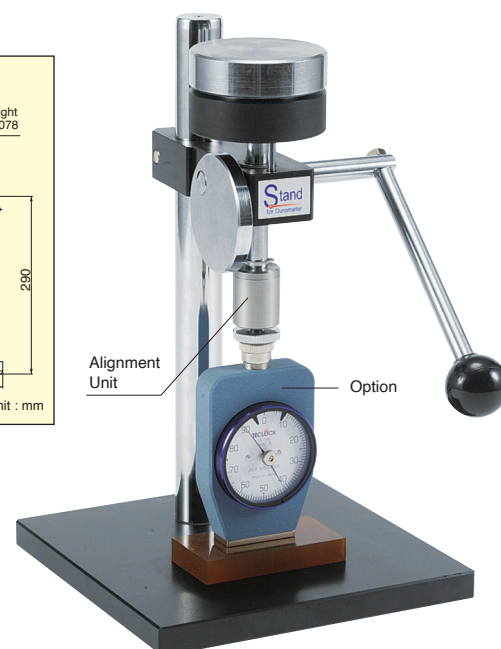
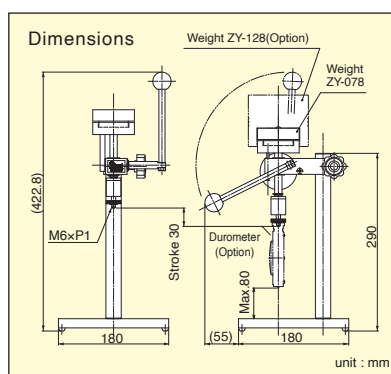
Weight ZY-128 (Option)



Weight ZY-089 (Accessory)

GS-615 Manual Operation type Durometer Stand

- Hardness can be measured by durometer with load prescribed by JIS by mounting durometer and manual operation.
- Adopting cam has realized easy operation and cost performance.
- Alignment unit which realizes high contact between indenter (contact point) of durometer and test piece is mounted.
- 1kg can be measured by type A and type E durometer as they are.
- Measuring by type D needs optional weight ZY-128 for measuring 5kg.. Digital durometer GSD series needs optional weight ZY-079 for measuring 1kg..
- Calibration certificate can be issued (Operation speed certificate can not be issued.).



GS-615

Mass	3.9kg
Model	Suggested List Price
GS-615	90,530 JPY
ZY-128	45,980 JPY
ZY-079	14,770 JPY



Weight ZY-128 (Option)



Weight ZY-078 (Accessory)

Durometer Periodical Inspection / Calibration

Durometer is a testing machine. In case that it corresponds to "Monitoring Machine" and "Measuring Machine" of ISO 9001 (JIS G 9001), controlling machines along with it is needed. Teclock is one of a few manufacturers of durometer which has obtained the authentication of ISO9001 and can originally issue 3 kinds of traceability system diagram, calibration certificate and inspection report that are needed for calibration documents. In addition, Teclock can issue 3 kinds of documents for durometer tester and indenter height gauge, that are needed for internal inspection. Use these for control based on internal calibration standard.

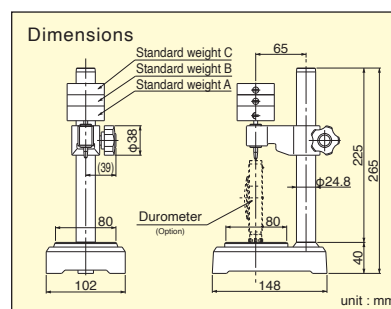
Durometer Tester



GS-607

Durometer is optional.

This is inspection machine which simply checks spring load value of analog type durometer. Putting defined load with 3 pieces of standard weight to the inverted durometer and inspecting whether graduation of 25, 50 and 75 correctly point out. Calibration certificate can be issued. (Digital type durometer and other makes products can not be calibrated.) In addition, in the standard of overseas and also domestic, inspection method by using mechanism of even balance and with normal position of durometer is introduced.

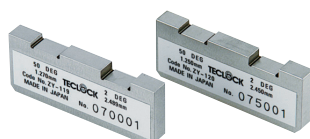


Specifications

Code.No.	Applicable Durometer	Weight(kg)	Suggested List Price
GS-607	GS-701N/GS-701G/GS-706N/GS-706G	3.7	78,650 JPY
GS-607A	GS-709N/GS-709G	3.7	94,820 JPY
GS-607B	GS-719N/GS-719G/GS-721N/ GS-721G/GS-750G/GS-753G	3.7	94,820 JPY
GS-607C	GS-743G	3.7	94,820 JPY

Type D durometer for tester does not manufacture. Calibration certificate is Available.

Indenter Extension Gauge



ZY-119

ZY-120

Height of indenter (contact point) of durometer is simply checked. ZY-119 is for JIS K 6301 and ZY-120 is for JIS K 6253. Products of other makers can be checked.

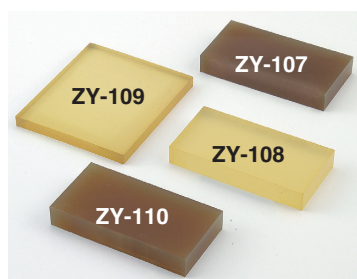
Specifications

Code No.	Indenter Height (mm)	50DEG	2DEG	Applicable Durometer	Suggested List Price
ZY-119	2.54 type	1.27mm	2.489mm	GS-701N/G, 706N/G	19,360 JPY
ZY-120	2.5 type	1.25mm	2.45mm	GS-GSD-719, 720 Series	19,360 JPY

Calibration certificate is possible.

Rubber Piece for Durometer Measuring

This is not rubber test piece. It is used for easy checking to find out failure of durometer. Measuring hardness when it is purchased and use it for daily control of durometer.



for Durometer



for IRHD Tester

Specifications for Durometer

Code No.	Type	Dimension(mm)	Applicable Durometer	Suggested List Price
ZY-107	nearly A50	40x80x12 Thickness	TypeA (GS,GSD-719J Series)	6,660 JPY
ZY-108	nearly A80	40x80x12 Thickness		6,660 JPY
ZY-109	nearly D40	70x80x7 Thickness	TypeD (GS,GSD-720J Series)	6,660 JPY
ZY-110	nearly E70	40x80x12 Thickness	TypeE (GS,GSD-721J Series)	6,660 JPY

Specifications for IRHD Tester

Code No.	Hardness IRHD	Dimension (mm)	Color	Material	Suggested List Price
ZY-917	Set of 6 pcs. (ZY-080~ZY-085)				50,600 JPY
ZY-080	40±5	25x25x2	Blue	Silicon	8,800 JPY
ZY-081	50±5		Black	Silicon	8,800 JPY
ZY-082	60±5		Yellow	Silicon	8,800 JPY
ZY-083	70±5		Bengara	Silicon	8,800 JPY
ZY-084	80±5		Gray	Silicon	8,800 JPY
ZY-085	90±5		Transparent	Urethane	9,900 JPY