TECLOCK

Precision Measuring Instruments

Catalog No.5002

ISO 9001
REGISTERED No.
JET-0085

JAB
QMS Accreditation
R013

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02-214-0101

TECLOCK

JIS K 6301準拠 加硫ゴム物理試験方法（1998年8月廃止）

1950年に制定され、わが国のゴム産業の根幹を支え続けてきたJIS K 6301は、ISOに整合していないということから新たにJIS K 6253が規定されたことを受け、猶予期間を経て1998年に廃止になりました。しかしながら約50年にわたって"ゴム硬度計"として使われ続けており、新JISへの移行が進み、規格が廃止になった今でも一部では当事者間合意の上の試験データとして使用されています。一般ゴム用のスプリング式A形と硬質ゴム用のC形の2機種があります。

GS-703N
旧JIS C形
・硬質ゴム
エボナイト用

GS-706N
旧JIS A形
・一般ゴム用

□ 仕　様

型　式	タ イ プ	用　途	準拠規格	スプリング荷重値 0度-100度	押針形状 (mm)	押針高さ (mm)	質量 (g)	標準価格
GS-703N	旧JIS C形	硬質ゴム	JIS K 6301 スプリング式C形	980-44100mN (100-4500gf)	先端直径0.79 35°円すい台形	2.54	180	¥42,000
GS-703G	旧C形（置針式）	硬質ゴム	JIS K 6301 スプリング式C形	980-44100mN (100-4500gf)	先端直径0.79 35°円すい台形	2.54	180	¥48,000
GS-706N	旧JIS A形	一般ゴム	JIS K 6301 スプリング式A形	539-8379mN (55-855gf)	先端直径0.79 35°円すい台形	2.54	180	¥42,000
GS-706G	旧A形（置針式）	一般ゴム	JIS K 6301 スプリング式A形	539-8379mN (55-855gf)	先端直径0.79 35°円すい台形	2.54	180	¥48,000

SRIS 0101準拠（日本ゴム協会標準規格）膨張ゴムの物理試験方法（2002年3月廃止）

現在では、軟質材料の硬さ測定用として、新JISに規定のタイプEデュロメータがありますが、それ以前のJIS規格には消しゴム程度の軟質ゴムの硬さを測定する規定がありませんでした。そこで、日本ゴム協会が、協会の標準を設ける目的で制定したのが、このSRIS 0101で、半球状押針のため、軟質ゴム（膨張ゴム）のほか繊維の糸巻き硬さやフィルムロール硬さなど、タイプAデュロメータだと押針が刺さってしまうような軟らかい材料に適しています。なおJIS S 6050「プラスチック字消し」（＝消しゴム）にも準拠しています。

GS-701N
タイプSRIS
・軟質ゴム
糸巻き硬さ用

□ 仕　様

型　式	タ イ プ	用　途	準拠規格	スプリング荷重値 0度-100度	押針形状 (mm)	押針高さ (mm)	質量 (g)	標準価格
GS-701N	タイプSRIS	軟質ゴム	JIS S 6050	539-8379mN (55-855gf)	直径5.08 半球形	2.54	180	¥42,000
GS-701G	タイプSRIS（置針式）	軟質ゴム	JIS S 6050	539-8379mN (55-855gf)	直径5.08 半球形	2.54	180	¥48,000

DUROMETER
(RUBBER, PLASTIC HARDNESS TESTER)

When the base of Durometer and workpiece are cohered each other, the indentor changes shape of workpiece by pressurized force caused by spring of Durometer and workpiece makes force against this force. Force amount of indentor is indicated as hardness when this pressurized force and repulsive force are equivalent. The reason why there are various kinds of Durometer, it is for the purpose of measuring various hardness for soft materials like sponge and hard materials like plastic by combining strong and weak spring force and shape of needle indentor (sharp pointed or round)

Compliance with JIS K 6253, ISO7619, ISO868 and ASTM D 2240 — standard for hardness test of vulcanized or thermoplastic rubber

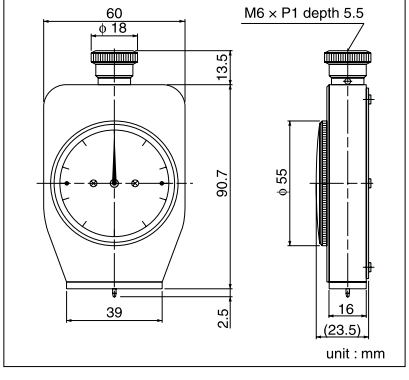
This is Durometer to comply with JIS K 6253 (new JIS) standard established in 1993 for the purpose of conforming to ISO (International Standard Organization). Durometrers consist of 3 types namely, Type A for medium hardness, Type D for high hardness and Type E for low hardness. Type A tends to indicates higher value by 1~2 points compared with former Type A durometers. Type D is suitable for hard rubber having more than 90 hardness measured by type A durometer and Type E is suitable for soft rubber of which hardness is 20 and below measured by Type A durometer.

GS-719N
Type A Durometer
General rubber

GS-720N
Type D Durometer
Hard rubber

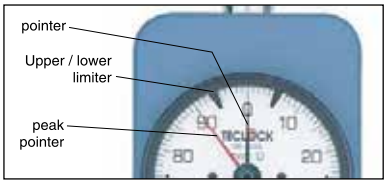
GS-721N
Type E Durometer
Soft rubber

Dimension



Specifications

Model	Type	APPLICATION / MATERIALS	Conform standards	Spring load value 0-100	Indentor shape (mm)	Indentor height (mm)	Weight (g)
GS-719N	Type A	General rubber (Medium hardness)	JIS K 6253	550-8050mN (56.1-821.1gf)	Truncated Cone of ϕ 0.79 with 35° angle	2.50	180
GS-719G	Type A (Peak pointer type)	General rubber (Medium hardness)	ISO7619	550-8050mN (56.1-821.1gf)	Truncated Cone of ϕ 0.79 with 35° angle	2.50	180
GS-720N	Type D	Hard rubber (High hardness)	ISO868	0-44450mN (0-4533gf)	Conical Cone of R0.1 with 35° angle	2.50	180
GS-720G	Type D (Peak pointer type)	Hard rubber (High hardness)	ASTM D 2240	0-44450mN (0-4533gf)	Conical Cone of R0.1 with 35° angle	2.50	180
GS-721N	Type E	Soft rubber (Low hardness)	JIS K 6253	550-8050mN (56.1-821.1gf)	Hemisphere of R2.50	2.50	180
GS-721G	Type E (Peak pointer type)	Soft rubber (Low hardness)	ASTM D 2240	550-8050mN (56.1-821.1gf)	Hemisphere of R2.50	2.50	180



Peak Pointer Type

Some of Rubbers, Elastomer' elastic body is not easily read the maximum value after firm contacting with a presser foot of durometer , due to the stress relaxation. The pointer indicates the descendent value but the peak pointer is holding the maximum measured value. The peak pointer type can easily read the maximum value efficiently. In case the pointer cannot be read directly due to some obstacles altough the measuring can be done, the mesured value can be confirmed from peak pointer after measuring. The upper / lower limiters equipped will be effectively used in tolerance judgment.

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DUROMETER (RUBBER, PLASTIC HARDNESS TESTER)

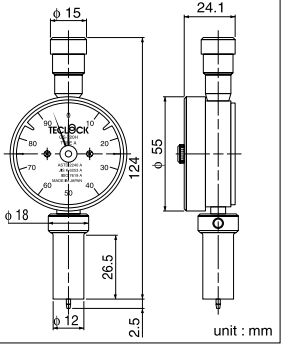
Deep Hole / Long Leg Type

In some cases, such as the measurement surface of uneven or with a narrow flat area and the bottom of deep hollow, it may be impossible to achieve the proper results because of the difficult contact of the presser foot. The Deep Hole (H) type and the Long Leg (L) type make such measurements possible with a small or long presser foot. Both are supplied with Peak Pointer and the upper/lower limiters. The Long Leg type meets also to DIN 53505 standard.

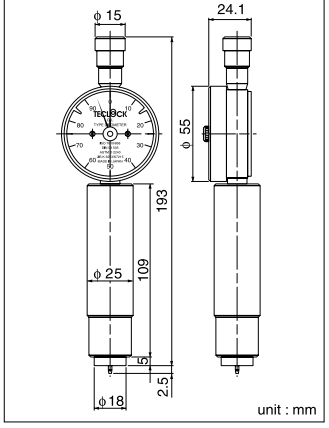
GS-720H
Type D Durometer
Deep hole type
Peak pointer type

GS-719L
Type A Durometer
Long leg type
Peak pointer type

Dimension: Deep hole type



Dimension: Long leg type



Specifications

Model	Type	APPLICATION / MATERIALS	Conform standards	Presser Foot Diameter (mm)	Weight (g)
GS-719H	Type A	General rubber / Deep hole type (narrow hole)	JIS K 6253, ISO7619 ASTM D 2240	ϕ12(Minimum size Specified in standards)	160
GS-719L	Type A	General rubber / Long leg type (thick hole)	JIS K 6253, ISO7619 ASTM D 2240, ✻ DIN 53 505	ϕ18(Specified size in DIN standards)	360
GS-720H	Type D	Hard rubber / Deep hole type (narrow hole)	JIS K 6253, ISO7619 ASTM D 2240	ϕ12(Minimum size Specified in standards)	160
GS-720L	Type D	Hard rubber / Long leg type (thick hole)	JIS K 6253, ISO7619 ASTM D 2240, ✻ DIN 53 505	ϕ18(Specified size in DIN standards)	360

*Permissible value such as edge diameter of indenter and spring load value prescribed in DIN are the value complying with ISO.

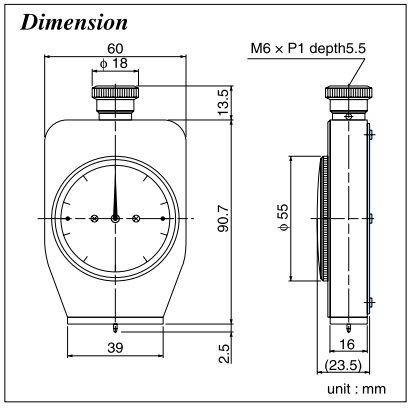
Compliance with JIS K 7215, ISO868 and ASTM D 2240 — standard Durometer for hardness test of plastic

This standard is prescribed by plastic industry in Japan apart from testing method of hardness of rubber. This is basically equal to Durometer of JIS K 6253, as only its round up method of spring load value etc. is different. But we distinguish model name as another Durometer according to the view of conformity to standard.

GS-702N
Type D Durometer
Plastics
Hard rubber

GS-709N
Type A Durometer
General rubber
Soft plastic

Dimension



Specifications

Model	Type	APPLICATION / MATERIALS	Conform standards	Spring load value 0-100	Indentor shape (mm)	Indentor height (mm)	Weight (g)
GS-702N	Type D	Plastics Hard rubber	JIS K 7215 ISO868 ASTM D 2240	0-44483mN (0-4536gf)	Conical Cone of R0.1 with 35° angle	2.50	180
GS-702G	Type D (Peak pointer type)	Plastics Hard rubber		0-44483mN (0-4536gf)	Conical Cone of R0.1 with 35° angle	2.50	180
GS-709N	Type A	Soft plastic General rubber		549-8061mN (56-822gf)	Truncated Cone of ϕ 0.79 with 35° angle	2.50	180
GS-709G	Type A (Peak pointer type)	Soft plastic General rubber		549-8061mN (56-822gf)	Truncated Cone of ϕ 0.79 with 35° angle	2.50	180

DUROMETER (RUBBER, PLASTIC HARDNESS TESTER)

Compliance with ASTM D 2240 standard
Durometer for hardness test of rubber characteristic

ASTM (American Society for Testing and Materials) is historically old and various types of durometers are prescribed. ISO applies durometer of type A and Type D among this standard and they are prescribed in JIS standard. TECLOCK provides all of this ASTM Durometer for the usage of hard material application to ultra soft material application in our line up. Please select according to usage in addition to type A and Type D.

GS-750G
Type B Durometer
Medium-hard rubber

GS-751G
Type C Durometer
Hard rubber

GS-752G
Type DO Durometer
Medium-hard rubber

Specifications

Model	Type	APPLICATION / MATERIALS	Conform standards	Spring load value 0-100	Indentor shape (mm)	Indentor height (mm)	Weight (g)
GS-750G	Type B (Peak Pointer type)	Medium-hard rubber	ASTM D 2240	550-8050mN (56.1-821.1gf)	Conical corn of R 0.1 with 30° angle	2.50	180
GS-751G	Type C (Peak Pointer type)	Hard rubber	ASTM D 2240	0-44450mN (0-4533gf)	Truncated cone of ϕ 0.79 with 30° angle	2.50	180
GS-752G	Type DO (Peak Pointer type)	Medium-hard rubber	ASTM D 2240	0-44450mN (0-4533gf)	Hemisphere of R 1.19	2.50	180
GS-753G	Type O (Peak Pointer type)	Soft rubber	ASTM D 2240	550-8050mN (56.1-821.1gf)	Hemisphere of R 1.19	2.50	180
GS-754G	Type OO (Peak Pointer type)	Very soft rubber	ASTM D 2240	203-1111mN (20.7-113.3gf)	Hemisphere of R 1.19	2.50	180

TECLOCK Original Standard Durometer

This is available as TECLOCK original standard based on customers' requirement, even though they are not prescribed in JIS or ISO. Type E 2 durometer for soft rubber with around half of spring load value of Type E, and Type FO to measure hardness of polystyrene sponge for the level of sponge for washing dishes are available.

GS-743G
Type E2 Durometer
Soft rubber

GS-744G
Type FO Durometer
Soft styrene foam

unit : mm

Hardness is measured by placing GS-744G on the sponge sheet. Dispersion of polystyrene level can be judged.

Specifications

Model	Type	APPLICATION / MATERIALS	Conform standards	Spring load value 0-100	Indentor shape (mm)	Indentor height (mm)	Weight (g)
GS-743G	Type E2 (Peak Pointer type)	Soft rubber	TECKLOCK E2	550-4300mN (56.1-438.6gf)	Hemisphere of R2.50	2.50	180
GS-744G	Type FO (Peak Pointer type)	Soft styrene foam	TECKLOCK FO	550-4300mN (56.1-438.6gf)	Cylindrical cone of ϕ 25.2	2.50	500

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DUROMETER (RUBBER, PLASTIC HARDNESS TESTER)

Greensand Hardness Tester

- Exclusive durometer to measure surface hardness of greensand mold.
- As casting is made on better condition by adjusting density of casting sand based on acquired measurement result, quality of products are stable.
- Limiter to be able to set permissible value and peak pointer to indicate maximum value are equipped. It can be judged according to distinguish of color of dial face.

GS-756G

Mold condition	hardness data
mold hardened extremely soft	~20
mold hardened soft	20~35
mold hardened normal	35~60
mold hardened solid	60~75
mold hardened extremely solid	75~

Specifications

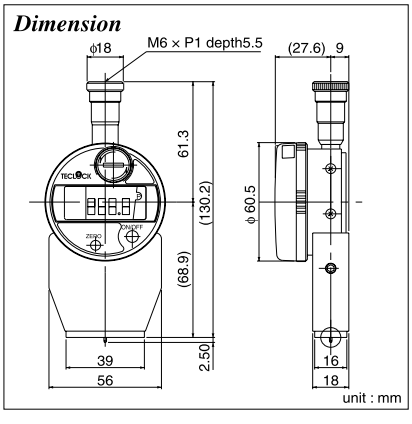
Model	APPLICATION / MATERIALS	Conform standards	Spring load value 0-100	Indentor shape (mm)	Indentor height (mm)	Weight (g)
GS-756G	Sand mold	Teclock original	1,030-2,324mN (105-237gf)	Hemisphere of R 2.54	2.54	180

Digital Durometer

- Possible to observe a change of hardness with the passage in time.
- Minimum readable value is 0.5HS which 1/2 of analog type.
- Statistics calculation is possible by connected to SD-764P Printer (Option)

GSD-719S
Type A Durometer
Digital type

Dimension



Specifications

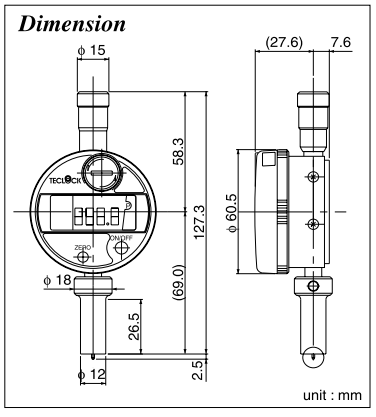
Model	Type	APPLICATION / MATERIALS	Conform standards	Spring load value 0-100	Indentor shape (mm)	Indentor height (mm)	Weight (g)
GSD-719S	Type A	General rubber Soft plastic	JIS K 6253, JIS K 7215, ISO7619 ISO868, ASTM D 2240 Type A durometer	550-8050mN (56.1-821.1gf)	Truncated cone of ϕ 0.79 with 35° angle	2.50	250
GSD-720S	Type D	Hard rubber Plastic	JIS K 6253, JIS K 7215, ISO7619 ISO868, ASTM D 2240 Type D durometer	0-44450mN (0-4533gf)	Conical corn of R 0.1 with 30° angle	2.50	250
GSD-721S	Type E	Soft rubber	JIS K 6253, ASTM D 2240 Type E durometer	550-8050mN (56.1-821.1gf)	Hemisphere of R 2.50	2.50	250
GSD-701S	Type SRIS	Soft rubber	SRIS 0101, JIS S 6050	539-8379mN (55-855gf)	Hemisphere of ϕ 5.08	2.54	250
GSD-706S	Type A (old)	General rubber	JIS K 6301, Spring type A style	539-8379mN (55-855gf)	Truncated cone of ϕ 0.79 with 35° angle	2.54	250
GSD-743S	Type E2	Soft rubber	TECKLOCK E2 durometer	550-4300mN (56.1-438.6gf)	Hemisphere of R 2.50	2.50	250
GSD-744S	Type FO	Soft styrene foam	TECKLOCK FO durometer	550-4300mN (56.1-438.6gf)	Cylindrical cone of ϕ 25.2	2.50	250
GSD-750S	Type B	Medium-hard rubber	ASTM D 2240, Type B durometer	550-8050mN (56.1-821.1gf)	Conical corn of R 0.1 with 30° angle	2.50	250
GSD-751S	Type C	Hard rubber	ASTM D 2240, Type C durometer	0-44450mN (0-4533gf)	Truncated cone of ϕ 0.79 with 35° angle	2.50	250
GSD-752S	Type DO	Medium-hard rubber	ASTM D 2240, Type DO durometer	0-44450mN (0-4533gf)	Hemisphere of R 1.19	2.50	250
GSD-753S	Type O	Soft rubber	ASTM D 2240, Type O durometer	550-8050mN (56.1-821.1gf)	Hemisphere of R 1.19	2.50	250
GSD-754S	Type OO	Very soft rubber	ASTM D 2240, Type OO durometer	203-1111mN (20.7-113.3gf)	Hemisphere of R 1.19	2.50	250

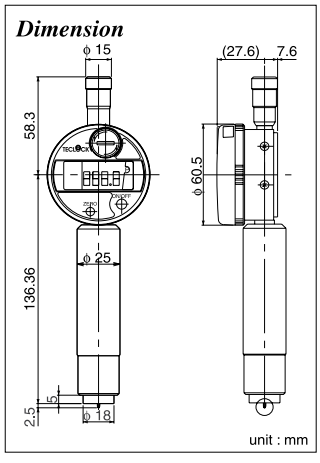
DUROMETER (RUBBER, PLASTIC HARDNESS TESTER)

Deep Hole / Long Leg Type Digital Durometer

GSD-719SH
Type A Durometer
Deep hole (H) model

GSD-719SL
Type A Durometer
Long leg (L) model





Specifications

Model	Type	Application / Materials	Standards	Spring Load 0 - 100	Shape of Indentor (mm)	Height of Indentor (mm)	Weight (g)
GSD-719SH	Type A Deep hole model	General rubber	JIS K 6253, JIS K 7215, ISO7619, ISO868, ASTM D 2240	550-8050mN (56.1-821.1gf)	Truncated cone of ϕ 0.79 with 35° angle	2.50	170
GSD-720SH	Type D Deep hole model	Hard rubber	JIS K 6253, JIS K 7215, ISO7619, ISO868, ASTM D 2240	0-44450mN (0-4533gf)	Conical corn of R 0.1 with 30° angle	2.50	170
GSD-719SL	Type A Long leg model	General rubber	JIS K 6253, JIS K 7215, ISO7619, ISO868, ASTM D 2240, DIN53 505*	550-8050mN (56.1-821.1gf)	Truncated cone of ϕ 0.79 with 35° angle	2.50	380
GSD-720SL	Type D Long leg model	Hard rubber	JIS K 6253, JIS K 7215, ISO7619, ISO868, ASTM D 2240, DIN53 505*	0-44450mN (0-4533gf)	Conical corn of R 0.1 with 30° angle	2.50	380

*Permissible value such as edge diameter prescribed in DIN and spring load value is the value complying with ISO.

Constant Pressure Load Instrument for Durometer

GS-710

Durometer is option

This is hydraulic exclusive instrument with constant speed / constant load, which has dissolved individual difference to measure rubber hardness. Each durometer of Type A,E,B,O and SRIS with fixing around 1kg weight and Type D, DO, C with fixing around 4kg weight can measure by static loading around 5kg. These load values are specified in ISO, JIS, ASTM.

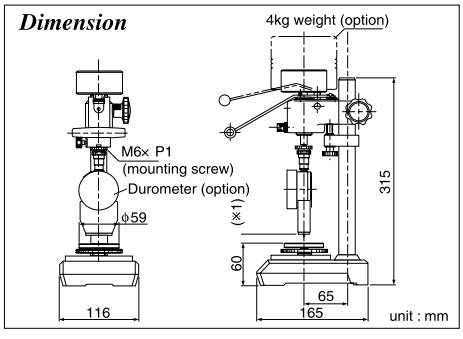
4kg weight
ZY-046 (option)

Specifications

Model	Weight
GS-710	7kg
ZY-046	4kg

※ Dimension
(※1) Maximum workpiece Thickness
Digital Durometer : 20mm
Analog Durometer : 63mm

Load Value	Applicable Durometer type
About 1kg	A , B , E , A (old) , SRIS , O
About 5kg	D , C , DO , C (old)

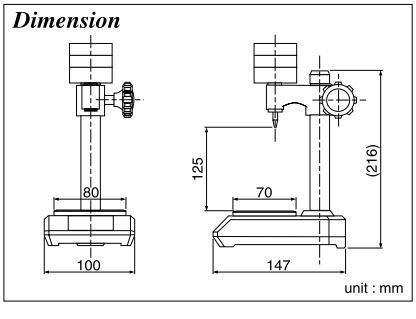


Durometer Tester GS-707 Series

GS-707

Durometer is option

This is an calibration instrument to simply confirm spring load value of analog type durometer. It inspects whether dial 25, 50 and 75 are correctly indicating by providing prescribed load to inverted durometer with 3 pieces of standard weight. Calibration Certificate for analog type durometers can be issued on request (option) but it is not available for Digital Durometer calibration method that durometer is erect condition by using mechanism of balance is introduced in domestic and international standard.

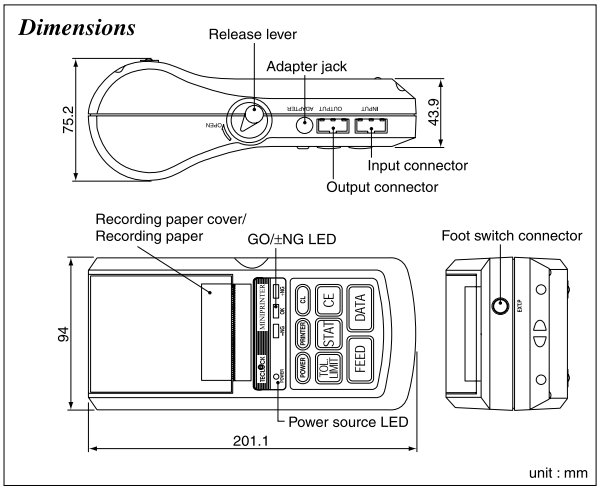


Specifications

Model	Applicable Durometer model	Weight (kg)
GS-707	GS-701N/GS-701G/GS-706N/GS-706G	3.7
GS-707A	GS-709N/GS-709G	3.7
GS-707B	GS-719N/GS-719G/GS-721N/GS-721G	3.7

Mini-printer for Digital Durometer

This is a exclusive Printer for Digital Durometer and suitable for statistics transaction of hardness test data.



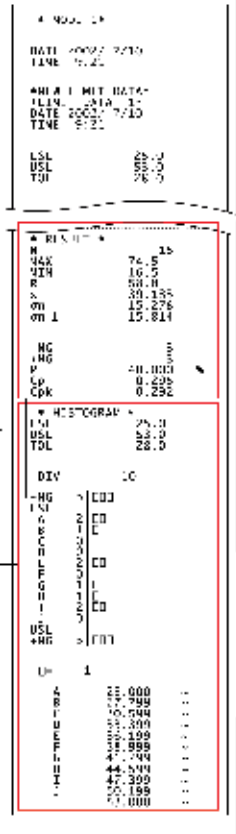
Mode 0
To print measured data, and judgement.

Judgement

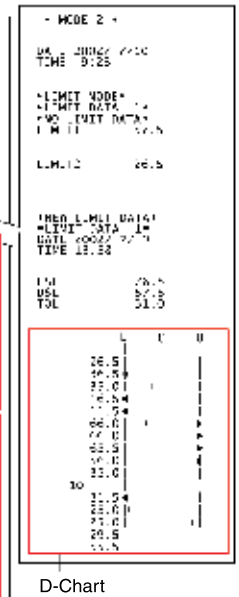
Perform statistical calculations

Histogram

Mode 1
To print measured data, judgement, perform statistical calculations, and generate histogram.

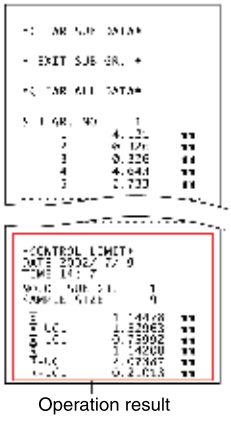


Mode 2
To print D-chart, perform statistical calculations, and generate histogram.



D-Chart

Mode 3
By entering data, it will calculate and draw a R-control chart.



Operation result

Specifications

Item	Description	Remarks
Printing Method	Line thermal 384 dot	
Character format	36 × 24 (Large) 24 × 14 (Normal)	
Printing Speed	0.5 sec. per line	When using AC adapter
Printing line numbers per printing roll	7000 lines / 1 roll (normal)/ 1000 lines / 1 roll (large)	
Power supply	AC adapter (6V, 500 mA) 4 Alkali batteries size AA (LR6) or 4 size AA Ni-MH batteries	Dual power supply *AC adapter input voltage within a range of 100VAC ±5%
Operating Temperature	0 ~ 45°C (AC Adapter) 10 ~ 45°C (batteries)	
Storage Temperature	–10 ~ 50°C	In a package as specified by TECLOCK
Accuracy	±2 min. max / month	
Clock battery life expectancy	Approx. 10 years	Average life expectancy
Battery life	10000 lines 1600 mAh Ni-MH Printing every 5 sec.	Average life expectancy but varies with usage
Dimensions	201.1 × 94 × 75.2 (D × W × H)	
Weight	390 g	Without accessories
Printouts	Measurements, GO/±NG judgment results	Mode 0
	Measurements, GO/±NG judgment results, Number of measurements, MAX., MIN., Range, Standard deviation (σ -n,σ n-1), Number of defects, Percentage of defects, Process capability index (Cp, Cpk), Histogram	Mode 1
	Same as above plus D-Chart	Mode 2
	Function of calculating the center value between the control limits required for generating various control charts	Mode 3
Processing capability	100000	Mode 0
	9999	Both Mode 1 and 2
	10 × 9999 = 99990 (Sample size × Number of sub-groups = total number of measurements) 5 sets of limit data	Mode3
Output function	Measured data (RS-232C, TTL level) GO/±NG Judgment results (+NG, GO, –NG)	
Timer-controlled data input	0.25 sec, 1 sec, 5 sec, 30 sec, 1 min, 30 min, 60 min.	
Standard accessories	AC Adapter	100V~240V ZE-217 (JAPAN, USA, KOREA) 100V~240V ZE-218 (GERMANY) 100V~240V ZE-219 (U.K. and Other)
	Recording paper: 1 pc. (58 mm (W) 48 m (L))	When ordering Part No. ZE-304 (10 packs.)
	Strap	ZY-111
	Quick Reference	Q-036
	Operation manual	Q-035

Options

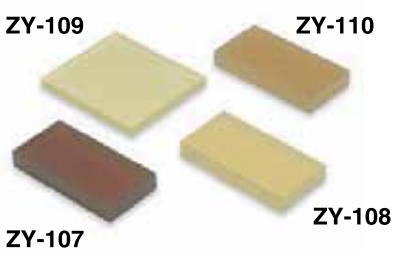
Model	Accessories
ZE-304	Recording Paper (10 packs)
ZE-110	RS-232C conversion cable 9 pins for AT connector
ZE-018	Extension cable 1m
ZE-019	Extension cable 2m
ZE-020	Extension cable 5m
ZE-013	Foot switch

DUROMETER (RUBBER, PLASTIC HARDNESS TESTER)

Parts

Test Block (option)

These are rubber test pieces which can simply check whether accuracy of durometer is in the range of standard value . It is absolutely approximate value but accuracy of durometer can be easily controlled in a short period.



Specifications

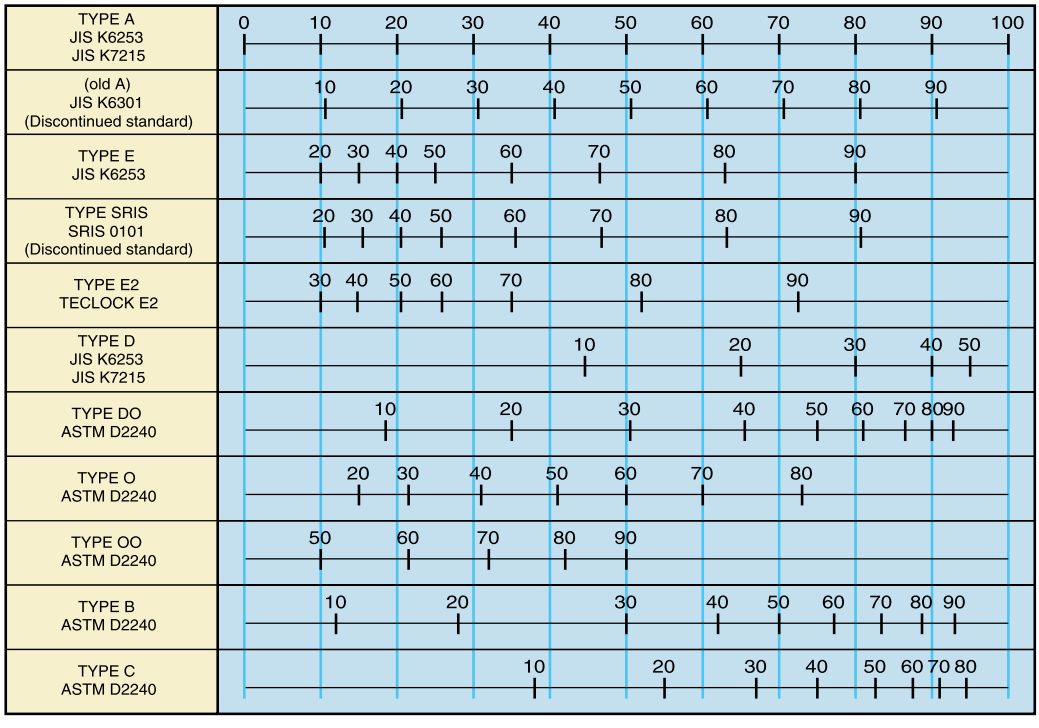
Code No.	Type	Dimension (mm)	Applicable Durometer
ZY-107	Durometer A Hardness:50	40×80×12 thickness	GS-719N • GS-719G • GSD-719S Measuring value: nearly 50
ZY-108	Durometer A Hardness:80	40×80×12 thickness	GS9719N • GS-719G • GSD-719S Measuring value: nearly 80
ZY-109	Durometer D Hardness:40	70×80×7 thickness	GS-720N • GS-720G • GSD-720S Measuring value: nearly 40
ZY-110	Durometer E Hardness:80	40×80×12 thickness	GS-721N • GS-721G • GSD-721S Measuring value: nearly 80

✻Durometers complying with these test pieces are Type A, Type D, Type E, which are compliant with JIS K 6253.
✻Calibration Certificate about test pieces can not be issued.

Data

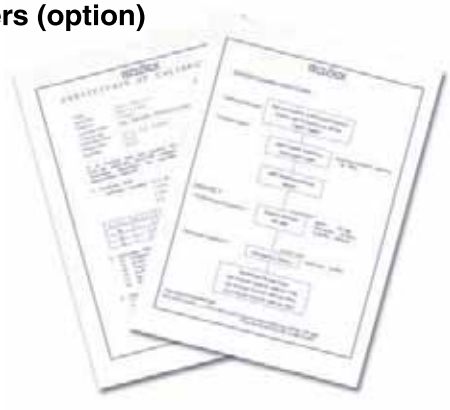
Comparison Table of measurement value by Durometer

This is a comparison table of measuring data of each Durometer based on Type A. As hardness value changes in the certain range due to various factors like temperature, humidity, dimension, shape and vulcanization condition, justification of complete correlation between each type is impossible. But please refer to the right table as comparison value.



Calibration Certificate can be issued for all of TECLOCK durometers (option)

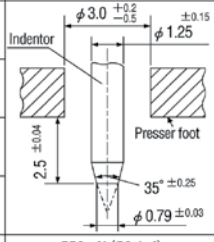
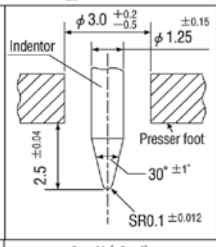
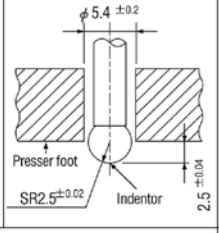
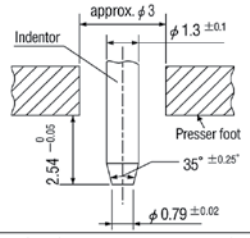
Recently, Durometer is sometimes regarded as one of "inspection, measurement and test instrument" of ISO 9000 series. TECLOCK can issue so called 3 sets documents such as traceability system chart, calibration certificate and inspection certificate which are necessary for ISO. Details are to be referred at the nearest outlet.

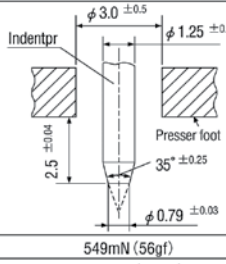
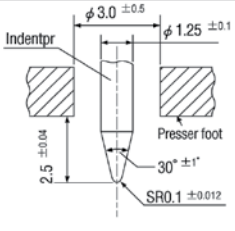
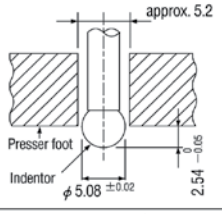


TECLOCK

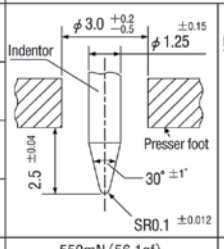
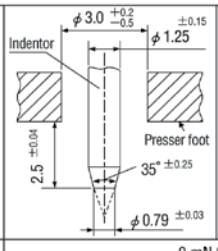
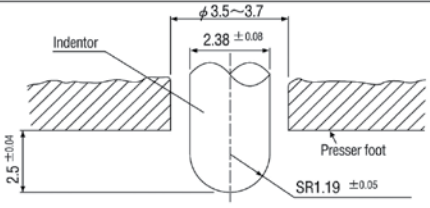
DUROMETER (RUBBER, PLASTIC HARDNESS TESTER)

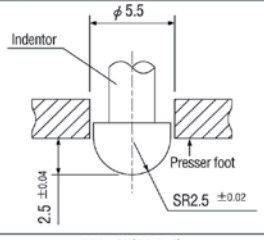
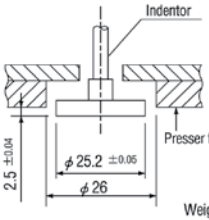
Durometer Standard Table

			JIS K 6253-1997			JIS K 6301-1995 (1998 abolition)	
Specification of Testers	Name of standard		Type A	Type D	Type E	Type A	Type C
	Presser foot dimension		more than 12mm, Diameter3 $^{+0.2}_{-0.5}$ mm hole		more than 14mm, ϕ5.4 $^{\pm0.2}$ mm hole	more than Diameter 10mm , approx. 3.2mm hole	
	Indentor shaft diameter / Indentor tip diameter / Indentor tip angle / Indentor amount exceeding from force surface						
	weight at 0		550mN (56.1gf)	0 mN (0 gf)	550mN (56.1gf)	539.5mN (55gf)	981mN (100gf)
	weight at 100		8,050mN (821.1gf)	44,450mN (4,533gf)	8,050mN (821.1gf)	8,385mN (855gf)	44,130mN (4,500gf)
	load accuracy	Load allowance value	±80mN (8.16gf)	±440mN (44.9gf)	±80mN (8.16gf)	± 8 gf	±20gf
		Indicating tolerance value	± 1	± 1	± 1	± 1	±0.45
	Other standards		ASTM D 2240 ISO 7619		———	———	
Test Piece and Measuring condition	Test pieces	Flat area dimension	more than pressurized surface			more than pressurized surface	
		Thickness	more than 6mm		more than 10mm	more than 12mm	more than 6 mm
	Measuring position		more than 12mm			———	
	Time to read		within 1-sec.			Read at once (or after regulating time)	
	Number of measurement and data summery		5-points median more than 6mm off			5-points average value	
			Test report (example):A45	Test report (example):D50	Test report (example):E 60	Test report (example):Hs (JIS A) 50	Test report (example):Hs (JIS C) 50
	Weight of constant pressure weighter		1kg (preferable)	5.0kg (preferable)	1kg (preferable)	1,000g	5,000g
	Temperature condition Acclimate time of specimen		23±2℃／more than 3 hour			20°~30℃／one hour	
	Use range		more than A90 use TypeD under A20 use TypeD			A>70 use C type C type is preferable for range of 30-90	
Suitable specimen to the standards			Normal Rubber	Normal Rubber (hard)	Soft Rubber	Normal Rubber	Hard Rubber
Our original durometer		Standard	GS-719N	GS-720N	GS-721N	GS-706N	GS-703N
		Peak Pointer	GS-719G	GS-720G	GS-721G	GS-706G	GS-703G
Our original digital durometer			GSD-719S	GSD-720S	GSD-721S	GSD-706S	———

			JIS K 7215-1992		SRIS-0101-1968 (2002 abolition)
Specification of Testers	Name of standard		Type A	Type D	
	Presser foot dimension		more than diameter 12mm, diameter3 $^{\pm0.5}$ mm hole Center		about 14×50mm approx. 5.2mm hole in Center
	Indentor shaft diameter / Indentor tip diameter / Indentor tip angle / Indentor amount exceeding from force surface				
	weight at 0		549mN (56gf)	0 mN (0 gf)	539.5mN (55gf)
	weight at 100		8,061mN (822gf)	44,483mN (4,536gf)	8,385mN (855gf)
	load accuracy	Load allowance value	±78mN (± 8 gf)	±441mN (±45gf)	± 8 gf
		Indicating tolerance value	± 1	± 1	± 1
	Other standards		ASTM D 2240 ／ ISO 868 (SHORE A) (DIN 53505)	ASTM D 2240 ／ ISO 868 (SHORE D) (DIN 53505)	JIS S 6050 (Plastics Erasers)
Test Piece and Measuring condition	Test pieces	Flat area dimension	Width : about 25mm or more		more than pressurized surface
		Thickness	6mm or more, 2mm acceptable for HDD 40 pr above		more than 10mm
	Measuring position		12mm or more from edge		———
	Time to read		1sec or less (time to be specified for over 1sec)		At first weighing and 30sec later
	Number of measurement and data summery		5 or preferably 10meas, at 6mm or more		Average value of 5initial and 30sec later measurement.
			Test report (example):HDA83	Test report (example):HDD56	
	Weight of constant pressure weighter		approx. 1kg	approx. 5kg	1,000g
	Temperature condition Acclimate time of specimen		23±2℃ 50± 5 % (humidity) 88h (Time can be shortened if measured value does not vary)		20^{+10}_{0} /h
	Use range		As a rule, use in range 20-90 Use D for A>90, Use A for D<20		———
Suitable specimen to the standards			Plastic (plastic film, tape and foam plastic excluded) (usable for elastomer)		Expanded rubber
Our original durometer		Standard	GS-709N	GS-702N	GS-701N
		Peak Pointer	GS-709G	GS-702G	GS-701G
Our original digital durometer			GSD-719S	GSD-720S	GSD-701S

DUROMETER (RUBBER, PLASTIC HARDNESS TESTER)

			ASTM D 2240-02b				
	Name of standard		Type B	Type C	Type DO	Type O	Type OO
Specification of Testers	Presser foot dimension		6mm diameter 2.5~3.2mm hole				
	Indentor shaft diameter Indentor tip diameter Indentor tip angle Indentor amount exceeding from force surface						
	weight at 0		550mN (56.1gf)	0 mN (0 gf)		550mN (56.1gf)	203mN (20.7gf)
	weight at 100		8,050mN (821.1gf)	44,450mN (4,533gf)		8,050mN (821.1gf)	1,111mN (113.3gf)
	load accuracy	Load allowance value	±0.075N	±0.4445N		±0.075N	±0.0182N
		Indicating tolerance value	±1				±2
	Other standards		———				
Test Piece and Measuring condition	Test pieces	Flat area dimension	more than radius 6mm than				
		Thickness	more than 6mm				
	Measuring position		more than 12mm (length and width)				
	Time to read		within 1-sec.				
	Number of measurement and data summery		5-points of average value or medium 6mm off				
	Weight of constant pressure weighter		1kg (preferable)	5kg (preferable)		1kg (preferable)	———
	Temperature condition Acclimate time of specimen		23±2℃				
	Use range		20~90				
Suitable specimen to the standards			Rubber, Cellular, Elasticity material, Thermoplastic elastomers, Hard plastic, Soft plastic				
Our original durometer		Standard	———	———	———	———	———
		Peak Pointer	GS-750G	GS-751G	GS-752G	GS-753G	GS-754G
Our original digital durometer			GSD-750S	GSD-751S	GSD-752S	GSD-753S	GSD-754S

			Teclock standard	
	Name of standard		Type E2	Type FO
Specification of Testers	Presser foot dimension		more than 16mm, Diameter 5.5mm hole	more than 80mm diameter, 26mm hole in Center diameter
	Indentor shaft diameter Indentor tip diameter Indentor tip angle Indentor amount exceeding from force surface			 Weight of Durometer 500g
	weight at 0		550mN (56.1gf)	550mN (56.1gf)
	weight at 100		4,300mN (438.6gf)	4,300mN (438.6gf)
	load accuracy	Load allowance value	0.4N (±40gf)	0.4N (±40gf)
		Indicating tolerance value	±1	±1
	Other standards		———	———
Test Piece and Measuring condition	Test pieces	Flat area dimension	more than pressurized surface	more than pressurized surface
		Thickness	more than 10mm	more than 30mm
	Measuring position			
	Time to read		within 1-sec.	within 1-sec.
	Number of measurement and data summery		5-points median more than 6mm off	5-points median more than 80mm off
	Weight of constant pressure weighter		1kg (preferable)	———
	Temperature condition Acclimate time of specimen		23±2℃	23±2℃
	Use range			
Suitable specimen to the standards			Soft sponge	Foam sponge, Polyurethane foam
Our original durometer		Standard	———	———
		Peak Pointer	GS-743G	GS-744G
Our original digital durometer			GSD-743S	GSD-744S