



Digital/Analog Durometer compliance with ISO, ASTM, DIN and JIS

Methods for determining hardness of vulcanized rubber and thermoplastic rubber

These durometers comply with ISO, ASTM, DIN and JIS K 6253(new JIS). There are three different type of durometers corresponding to different degrees of hardness. Type A, the most common or central durometer, is used to measure medium hardness, while Type D is for high hardness and Type E is for low hardness. Type A, tends to indicate readings 1 to 2 points higher compared to the previous JIS A-type hardness tester. Type D durometer is used to measure super hard rubber that has a reading of more than 90 points when measuring with a Type A durometer. Type E durometer is used to measure soft rubber that has a reading of less than 20 points when measured with a Type A durometer. The Type A GS-719N model has also been designated for use in unbonded capping tests, which is a method for testing concrete compression. Further more, ISO7619 refers to the Type E as the Type AO durometer.

Standard Type



GS-719N
Type A Durometer
for general rubber



GSD-719J
Type A Digital Durometer
with peak hold function
for general rubber

Peak Hold Function(J)

*Model J equipped with "peak hold" function (maintains the peak reading) effective for measuring elastomer and other materials for which obtaining the peak reading is difficult due to stress relaxation and other issues

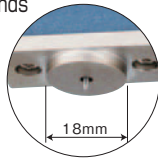
*Minimum reading of 0.5(1/2 for analog type durometer)

*Connection to SD-763P Printer(Optional) allows for easy statistical processing of the measured data.

φ18mm Presser Foot Durometer

can both used as with Stands and without stands

The presser foot diameters for the Type A and D durometers which can be with measurement stands, is φ18mm surface as stipulated in the ISO and JIS standards. The φ18mm type A(GS-719R) and type D (GS-720R) can both be used without the measurement stands.



GS-719R
Type A Durometer
can both be used with
and without stands
with Peak pointer



GSD-719J-R
Type D Digital Durometer
can both be used as with
and without stands
with Peak hold function

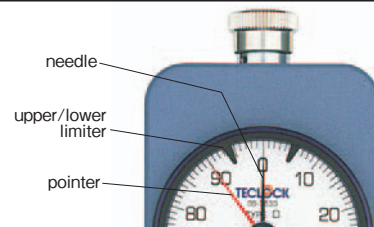
Specification

| | Model | Type | Application | Applicable Standards | Spring Load Hardness 0-100 | Indenter Shape (mm) | Indenter Height (mm) | Weight (g) | |
|---------|------------|-------|----------------|--|-------------------------------|---------------------------------------|---------------------------------------|---------------|-----|
| Analog | GS-719N | A | General Rubber | JIS K 6253 | 550-8050mN (56.1-821.1gf) | φ0.79 with 35°angle Truncated Cone | 2.50 | 200 | |
| | GS-719G | A | General Rubber | | ISO 7619 | 550-8050mN (56.1-821.1gf) | φ0.79 with 35°angle Truncated Cone | 2.50 | 208 |
| | GS-719R | A | General Rubber | | | 550-8050mN (56.1-821.1gf) | φ0.79 with 35°angle Truncated Cone | 2.50 | 213 |
| | GS-720N | D | Hard Rubber | ISO 868 | 0-44450mN (0-4533gf) | R0.1 with 30°angle Conical Cone | 2.50 | 200 | |
| | GS-720G | D | Hard Rubber | ASTM D 2240 | 0-44450mN (0-4533gf) | R0.1 with 30°angle Conical Cone | 2.50 | 208 | |
| | GS-720R | D | Hard Rubber | | DIN 53 505(R type only) | 0-44450mN (0-4533gf) | R0.1 with 30°angle Conical Cone | 2.50 | 213 |
| | GS-721N | E(AO) | Soft Rubber | JIS K 6253 | 550-8050mN (56.1-821.1gf) | Hemisphere of R2.50 | 2.50 | 200 | |
| | GS-721G | E | Soft Rubber | ISO 7619 ASTM D 2240 | 550-8050mN (56.1-821.1gf) | Hemisphere with φ0.79 | 2.50 | 208 | |
| | GS-719P | A | General Rubber | JIS K 6253 | 550-8050mN (56.1-821.1gf) | φ0.79 with 35°angle Truncated Cone | 2.50 | 125 | |
| Digital | GSD-719J | A | General Rubber | JIS K 6253, JIS K 7215, ISO 7619, ISO 868, ASTM D 2240 | 550-8050mN (56.1-821.1gf) | φ0.79 with 35°angle Truncated Cone | 2.50 | 313 | |
| | GSD-720J | D | Hard Rubber | JIS K 6253, ISO 7619 ASTM D 2240 | 0-44450mN (0-4533gf) | Hemisphere of R2.50 | 2.50 | 313 | |
| | GSD-721J | E(AO) | Soft Rubber | | 550-8050mN (56.1-821.1gf) | Hemisphere with φ0.79 | 2.50 | 313 | |
| | GSD-719J-R | A | General Rubber | JIS K 6253, ISO 7619 ISO 868, ASTM D 2240 | 550-8050mN (56.1-821.1gf) | φ0.79 with 35°angle Truncated Cone | 2.50 | 320 | |
| | GSD-720J-R | D | Hard Rubber | DIN 53 505 | 0-44450mN (0-4533gf) | Conical with 30° angle | 2.50 | 320 | |

*N: standard *G: with peak pointer *P: Pocket type *R:φ18mm surface type *Indenter Height:2.50mm

Peak Pointer(model numbers ending with G, R, H, L or P)

Sometimes it is difficult to read the peak value immediately after the presser foot makes contact with rubber, elastomer and other soft elastic bodies as creep characteristics and other factors cause the indicated value to decline. Even though the indicator needle continues to indicate the lower value, the pointer stays at the peak value, which greatly improves precision. This feature is also useful in cases where something blocks the view of the display when the measurement is taken, as the pointer remains at the peak value and can be confirmed after taking the measurement. The peak pointer method is also effective for making common difference assessments of the hardness value as upper and lower limiters are standard.





Analog Digital

Deep Hole/Long Leg Durometer

When the measurement surface is uneven, has limited flat areas due to irregular shapes or has deep hallows, good contact with the durometer presser foot and accurate measurements become very difficult. In such cases, measurements are only possible if the presser foot is smaller or has a longer reach, such as with the deep hole(H) and long leg(L) durometer models. Pointers and upper/lower limits are standard for both models.



GS-720H
Type D Durometer
Deep hole(H) model with Peak pointer

GS-719L
Type A Durometer
Long leg(L) model with Peak pointer

GSD-719J-H
Type A Digital Durometer
Deep hole(H) model with Peak hold function

GSD-719J-L
Type A Digital Durometer
Long leg(L) Model with Peak hold function

Specification

| | Model | Type | Application | Applicable Standards | Spring Load Hardness 0-100 | Indenter shape | Surface Diameter | Indenter Height (mm) | Weight (g) |
|---------|------------|------|---------------------------------|--|------------------------------|-------------------------------|------------------|----------------------|------------|
| Analog | GS-719H | A | General Rubber, deep/small hole | JIS K 6253, ISO 7619 ASTM D 2240 | 550-8050mN (56.1-821.1gf) | φ0.79 with 35° Truncated Cone | φ12 | 2.50 | 120 |
| | GS-719L | A | General Rubber, deep/small hole | JIS K 6253, ISO 7619 ASTM D 2240, DIN 53 505 | 550-8050mN (56.1-821.1gf) | φ0.79 with 35° Truncated Cone | φ18 | 2.50 | 360 |
| | GS-720H | D | Hard rubber, long/large hole | JIS K 6253, ISO 7619 ASTM D 2240 | 0-44450mN (0-4533gf) | R0.1 with 30° Conical Cone | φ12 | 2.50 | 120 |
| | GS-720L | D | Hard rubber, long/large hole | JIS K 6253, ISO 7619 ASTM D 2240, DIN 53 505 | 0-44450mN (0-4533gf) | R0.1 with 30° Conical Cone | φ18 | 2.50 | 360 |
| Digital | GSD-719J-H | A | General rubber, deep/small hole | JIS K 6253, JIS K 7215, ISO 7619, ISO868, ASTM D 2240 | 550-8050mN (56.1-821.1gf) | φ0.79 with 35° Truncated Cone | φ12 | 2.50 | 170 |
| | GSD-719J-L | A | General Rubber, deep/small hole | JIS K 6253, JIS K 7215, ISO 7619, ISO868, ASTM D 2240 | 550-8050mN (56.1-821.1gf) | φ0.79 with 35° Truncated Cone | φ18 | 2.50 | 380 |
| | GSD-720J-H | D | Hard rubber, deep/small hole | JIS K 6253, JIS K 7215, ISO 7619, ISO868, ASTM D 2240 | 0-44450mN (0-4533gf) | φ0.79 with 35° Truncated Cone | φ12 | 2.50 | 170 |
| | GSD-720J-L | D | Hard rubber, long/large hole | JIS K 6253, JIS K 7215, ISO 7619, ISO868, ASTM D 2240, DIN 53 505 | 0-44450mN (0-4533gf) | φ0.79 with 35° Truncated Cone | φ18 | 2.50 | 380 |

*All of above Durometers cannot be used with Stands.

Pocket Durometer

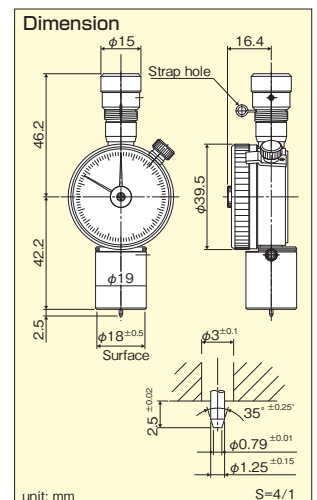
Analog

This is compact and lightweight Durometer, and convenient to use at any places (inside or outside). Peak Pointer is equipped for accurate measurement.

GS-719P
GS-709P
Type A Durometer with Peak Pointer



Comparison of Standard type(left) and Pocket type



Specification

| Model | Type | Application | Applicable Standards | Spring Load Hardness 0-100 | Indenter shape (mm) | Indenter Height (mm) | Weight(g) |
|---------|------|--------------------------------|----------------------|------------------------------|-------------------------------|----------------------|-----------|
| GS-719P | A | General Rubber | JIS K 6253 | 550-8050mN (56.1-821.1gf) | φ0.79 with 25° Truncated Cone | 2.50 | 125 |
| GS-709P | A | General Rubber Soft Plastic | JIS K 7215 | 549-8061mN (55-822gf) | | | |