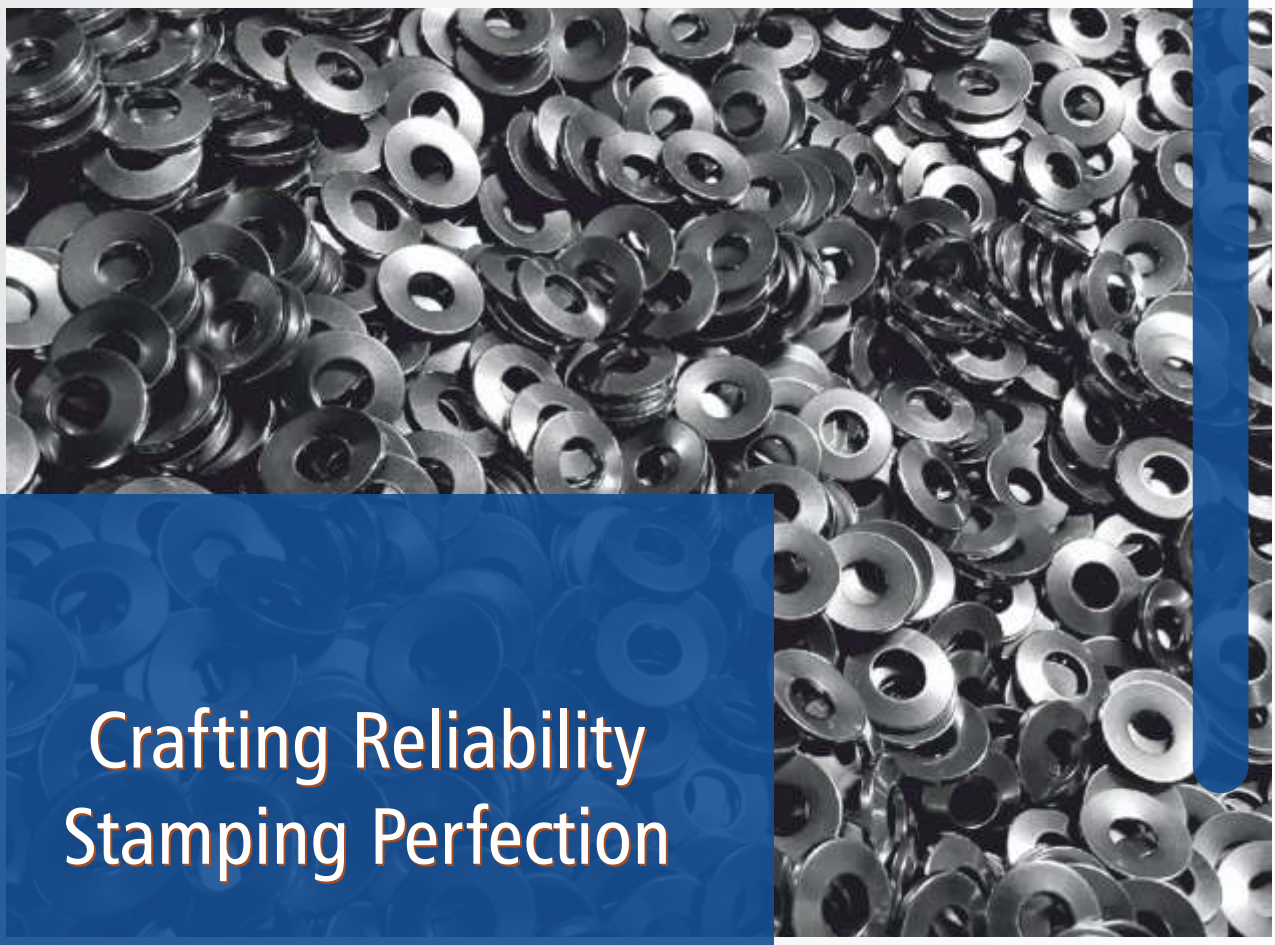
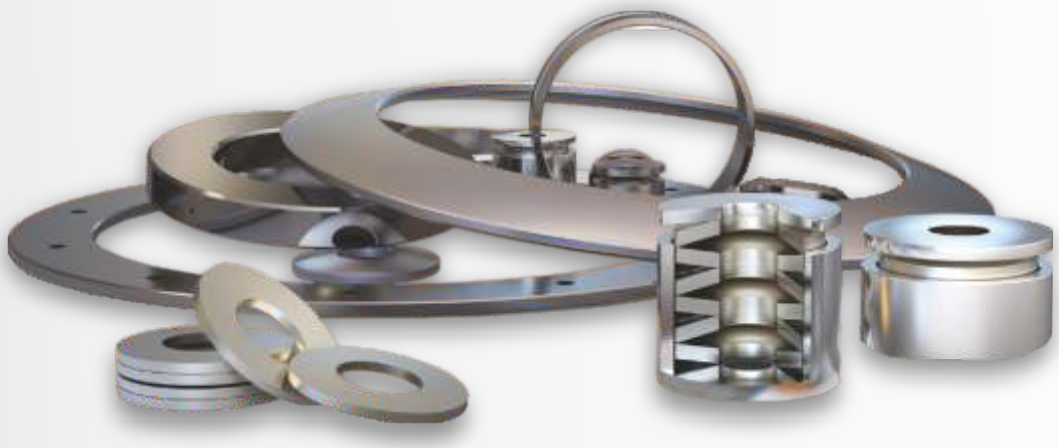
Stampco India



# Crafting Reliability
# Stamping Perfection



# About Stampco India

Stampco India, one of the leading manufacturers of quality Disc Springs, Belleville Washer, Circlips, E-clips at Nashik, India. We have one of the largest and most comprehensive inventories in the industry as we offer 'Just–In–time' delivery of our products. Our experience, dedication and quality make us a leading source for all types of Disc Springs, Belleville Washer, Circlips, E-clips as per DIN 2093. Our commitment to customers is built on a solid foundation.

We manufacture & fabricate large and small quantities in all shapes and sizes, our customers need the best services, they stay with us because we deliver the quality. We invest in training, technology and process improvement and give our customers a competitive advantage and almost zero rejection.

Today we are an ISO 9001:2008 enterprise carrying a decent repute for ourselves developed by supplying quality material at optimum rates & scheduled deliveries. Having substantial experience in the field.

Disc Springs, Belleville Washer, Circlips, E-clips manufacturing requires thorough knowledge about the technicalities of the tooling required for the same. At STAMPCO INDIA, we have mastered this through our acquired knowledge in the field. This experience in hands with our manufacturing skills has enabled us to maintain high level consistency in our products thus helping us to obtain customer satisfaction.

# Vision


To become the Largest Quality Manufacturer & Supplier of Disc Springs, Belleville Washer, Circlips, E-clips in India


KNOWLEDGE
INTEGRITY
CORE VALUES
CUSTOMER FOCUS
COLLABORATION

# Product

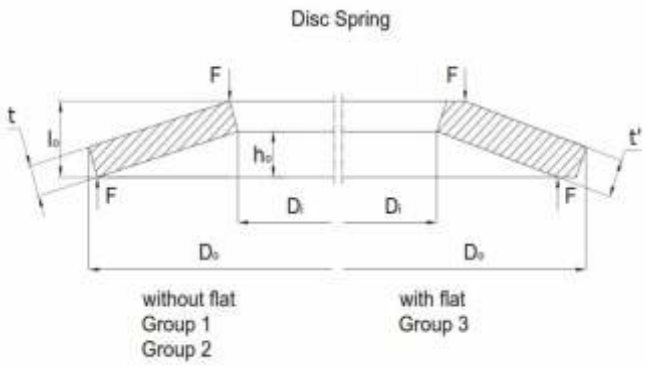
## 1. Disc Spring

Disc Springs are conically formed angular discs, which are loaded in the axial direction. Disc Springs have a unique combination of high force in small space with customized deflection combinations.

Stampco India offer Disc springs as per DIN 2093, American inch standard and specials as per customer specific requirements. Stampco is one of the few companies in the world adhering to these demanding standards. Within following groups of DIN 2093, standard sizes as per series A, B and C are available.

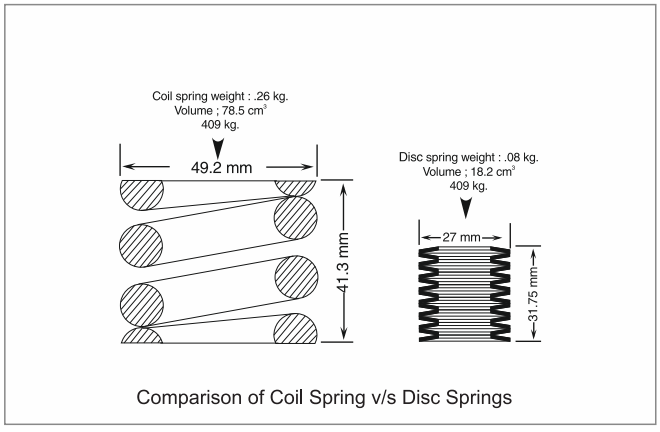
Group 1 (Thickness t < 1.25 mm)

Group 2 (Thickness t = 1.25 mm to 6 mm)




## Advantages of Disc Springs:

- No Deformation or Fatigue under normal loads.
- High Energy Storage Capacity.
- Long Service Life.
- Stock keeping is minimized as the individual spring sizes can be combined universally.
- Space Saving.
- Largely Self-damping, giving good shock absorption and energy dissipation.
- Efficient use of space and high spring force with small deflections.
- Adaptable to stacking in numerous configurations.
- Combination use as a modular spring element.
- Low Maintenance cost & Greater Security
- Low height/thickness ratio employed reduces stresses




Comparison of Coil Spring v/s Disc Springs

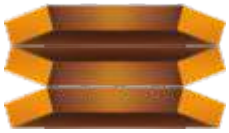
# Applications of disc springs and belleville springs

## Stacking Configurations

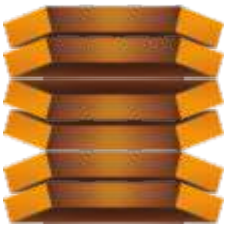
Disc springs can be configured in several ways to take advantage of the spring rate and available space.
**Series** multiplies the deflection by the number in series.
**Parallel** multiplies the load by the number in parallel.

**Single Load**
Specific Load and Deflection

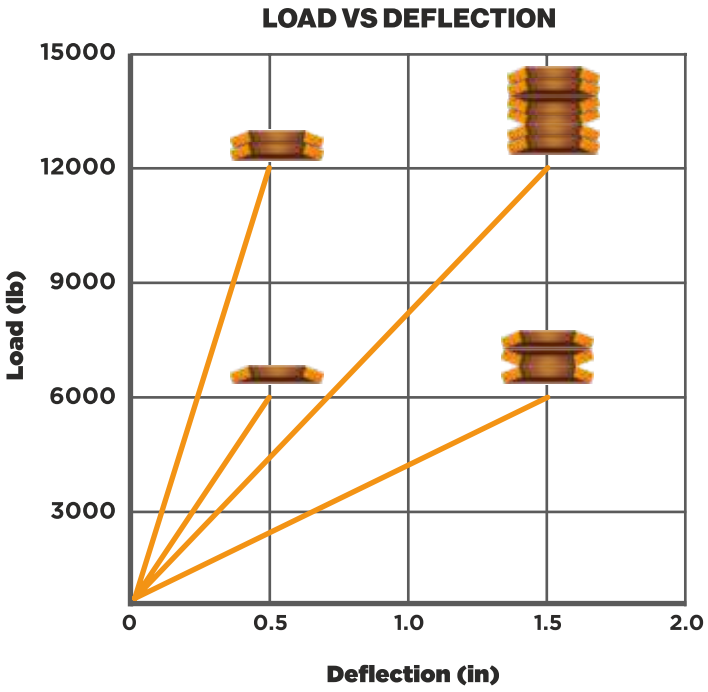
**Two Springs in Parallel**
2x Load
No Deflection Increase



**Three Springs in Series**
3x Deflection
No Load Increase



**Two Springs in Parallel/ Three Springs in Series**
2x Load
3x Deflection

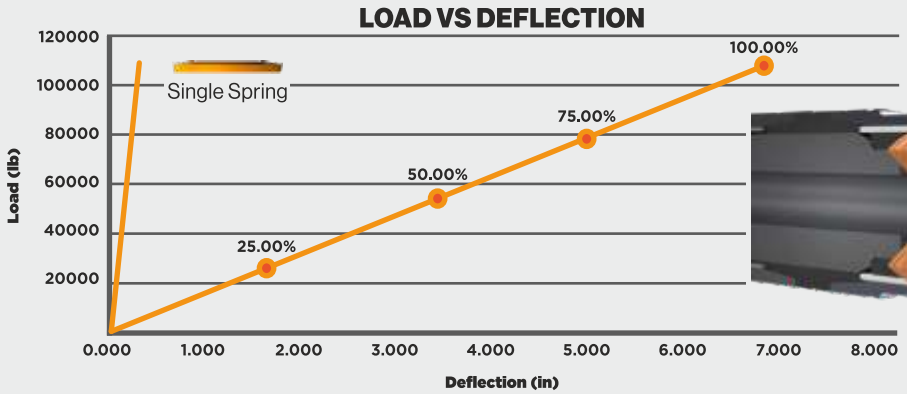



## Common Applications

- Shock Absorption
- Bearing Preload
- Clamping/Unclamping
- Latching/Unlatching
- Bolt Preload
- Vibration
- Dampening
- Thermal Expansion/Contraction

## Disc Spring Applied

A common application for Belleville Springs is to absorb shock impact. The individual spring is designed to meet the load requirement and then the stack is configured to achieve the needed stroke length.




35 Springs in Series
Same Load 35 Times The Deflection

# Applications of Disc Springs

## Torque Limiter

Disc Springs are used in a torque limiter to apply force to friction pads, causing it to grip the drive components under normal loads. When an overload occurs, the drive components slip to prevent damage. When the load returns to normal, the spring force again causes the friction pads to grip the drive components and transmit torque.

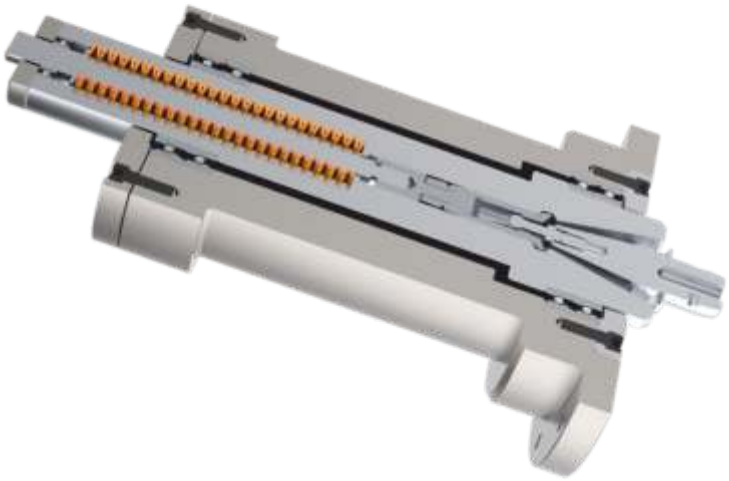
## Clutch and Brake Systems

Disc Springs are used in all industries to apply force or to maintain a consistent load. They are commonly used in automotive and industrial clutch and brake systems for gear boxes and transmissions. Disc Springs are also an integral Component in mechanical fail-safe systems, such as fall protection.

## Maintain Preload

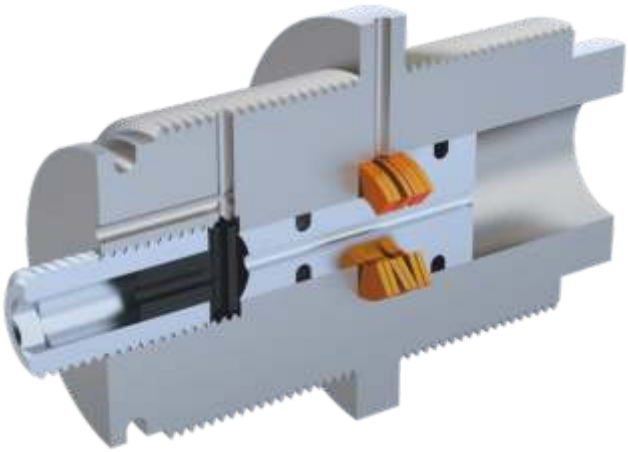
Disc Springs are used to maintain consistent preload on bearings by compensating for tolerance stack up, wear and axial loading. They are also used to maintain bolt load in vibration applications seen in industrial and heavy equipment.

# Applications of Disc Springs



## Clamp/Unclamp

Disc Springs are commonly used in CNC machine spindle drawbars to supply clamp force on the toolholder. The Disc spring force pulls the tool holder into the spindle bore. Hydraulic force is then used to overcome the disc springs and release the toolholder.



## Regulators & Actuators

Disc springs are used in aircraft, aerospace, transportation, and machinery industries for precise and constant force in cylinders and regulators.

## Dampening and Shock Absorption

Disc springs can be custom designed to absorb shock or perform dampening function. Their ability to stack and configure for high loads and travel make them ideal for axial impact loads seen in suspensions and coupling and for vibration dampening

# Product-Disc Spring

Standard material C60-C75 & 51CrV4

| Sr. No. | Item Code | Dimensions | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Series | $D_e$ (mm) | $D_i$ (mm) | t (mm) | $l_o$ (mm) | t' (mm) | Group | 0.25 ho | | 0.50 ho | | 0.75 ho | |
| | | | | | | | | | F (N) | S (mm) | F (N) | S (mm) | F (N) | S (mm) |
| 1 | 6X3.2X0.3 | | 6.0 | 3.2 | 0.30 | 0.45 | - | 1 | 45 | 0.038 | 84 | 0.075 | 119 | 0.113 |
| 2 | 8X3.2X0.2 | | 8.0 | 3.2 | 0.20 | 0.40 | - | 1 | 12 | 0.050 | 21 | 0.100 | 26 | 0.150 |
| 3 | 8X3.2X0.3 | | 8.0 | 3.2 | 0.30 | 0.55 | - | 1 | 46 | 0.063 | 79 | 0.125 | 104 | 0.188 |
| 4 | 8X3.2X0.4 | | 8.0 | 3.2 | 0.40 | 0.60 | - | 1 | 69 | 0.050 | 130 | 0.100 | 186 | 0.150 |
| 5 | 8X3.2X0.5 | | 8.0 | 3.2 | 0.50 | 0.70 | - | 1 | 128 | 0.050 | 246 | 0.100 | 357 | 0.150 |
| 6 | 8X4.2X0.2 | C | 8.0 | 4.2 | 0.20 | 0.45 | - | 1 | 21 | 0.063 | 33 | 0.125 | 39 | 0.188 |
| 7 | 8X4.2X0.3 | B | 8.0 | 4.2 | 0.30 | 0.55 | - | 1 | 52 | 0.063 | 89 | 0.125 | 118 | 0.188 |
| 8 | 8X4.2X0.4 | A | 8.0 | 4.2 | 0.40 | 0.60 | - | 1 | 78 | 0.050 | 147 | 0.100 | 210 | 0.150 |
| 9 | 10X3.2X0.3 | | 10.0 | 3.2 | 0.30 | 0.65 | - | 1 | 51 | 0.088 | 82 | 0.175 | 98 | 0.263 |
| 10 | 10X3.2X0.4 | | 10.0 | 3.2 | 0.40 | 0.70 | - | 1 | 75 | 0.075 | 133 | 0.150 | 179 | 0.225 |
| 11 | 10X3.2X0.5 | | 10.0 | 3.2 | 0.50 | 0.75 | - | 1 | 104 | 0.063 | 196 | 0.125 | 279 | 0.188 |
| 12 | 10X4.2X0.4 | | 10.0 | 4.2 | 0.40 | 0.70 | - | 1 | 79 | 0.075 | 140 | 0.150 | 189 | 0.225 |
| 13 | 10X4.2X0.5 | | 10.0 | 4.2 | 0.50 | 0.75 | - | 1 | 110 | 0.063 | 206 | 0.125 | 294 | 0.188 |
| 14 | 10X4.2X0.6 | | 10.0 | 4.2 | 0.60 | 0.85 | - | 1 | 175 | 0.060 | 360 | 0.125 | 508 | 0.190 |
| 15 | 10X5.2X0.25 | C | 10.0 | 5.2 | 0.25 | 0.55 | - | 1 | 31 | 0.075 | 48 | 0.150 | 58 | 0.225 |
| 16 | 10X5.2X0.4 | B | 10.0 | 5.2 | 0.40 | 0.70 | - | 1 | 88 | 0.075 | 155 | 0.150 | 209 | 0.225 |
| 17 | 10X5.2X0.5 | A | 10.0 | 5.2 | 0.50 | 0.75 | - | 1 | 122 | 0.063 | 228 | 0.125 | 325 | 0.188 |
| 18 | 12X4.2X0.4 | | 12.0 | 4.2 | 0.40 | 0.80 | - | 1 | 85 | 0.100 | 141 | 0.200 | 178 | 0.300 |
| 19 | 12X4.2X0.5 | | 12.0 | 4.2 | 0.50 | 0.85 | - | 1 | 116 | 0.088 | 208 | 0.175 | 284 | 0.263 |
| 20 | 12X4.2X0.6 | | 12.0 | 4.2 | 0.60 | 1.00 | - | 1 | 224 | 0.100 | 405 | 0.200 | 557 | 0.300 |
| 21 | 12X5.2X0.5 | | 12.0 | 5.2 | 0.50 | 0.90 | - | 1 | 151 | 0.100 | 263 | 0.200 | 350 | 0.300 |
| 22 | 12X5.2X0.6 | | 12.0 | 5.2 | 0.60 | 0.95 | - | 1 | 196 | 0.088 | 361 | 0.175 | 506 | 0.263 |
| 23 | 12X6.2X0.5 | | 12.0 | 6.2 | 0.50 | 0.85 | - | 1 | 134 | 0.088 | 239 | 0.175 | 326 | 0.263 |
| 24 | 12X6.2X0.6 | | 12.0 | 6.2 | 0.60 | 0.95 | - | 1 | 214 | 0.088 | 394 | 0.175 | 552 | 0.263 |
| 25 | 12.5X5.2X0.5 | | 12.5 | 5.2 | 0.50 | 0.85 | - | 1 | 111 | 0.088 | 200 | 0.175 | 272 | 0.263 |
| 26 | 12.5X6.2X0.35 | C | 12.5 | 6.2 | 0.35 | 0.80 | - | 1 | 84 | 0.113 | 130 | 0.225 | 151 | 0.338 |
| 27 | 12.5X6.2X0.5 | B | 12.5 | 6.2 | 0.50 | 0.85 | - | 1 | 120 | 0.088 | 215 | 0.175 | 294 | 0.263 |
| 28 | 12.5X6.2X0.7 | A | 12.5 | 6.2 | 0.70 | 1.00 | - | 1 | 240 | 0.075 | 457 | 0.150 | 660 | 0.225 |
| 29 | 14X7.2X0.35 | C | 14.0 | 7.2 | 0.35 | 0.80 | - | 1 | 68 | 0.113 | 106 | 0.225 | 123 | 0.338 |
| 30 | 14X7.2X0.5 | B | 14.0 | 7.2 | 0.50 | 0.90 | - | 1 | 120 | 0.100 | 210 | 0.200 | 279 | 0.300 |
| 31 | 14X7.2X0.8 | A | 14.0 | 7.2 | 0.80 | 1.10 | - | 1 | 284 | 0.075 | 547 | 0.150 | 797 | 0.225 |
| 32 | 15X5.2X0.4 | | 15.0 | 5.2 | 0.40 | 0.95 | - | 1 | 101 | 0.138 | 154 | 0.275 | 176 | 0.413 |
| 33 | 15X5.2X0.5 | | 15.0 | 5.2 | 0.50 | 1.00 | - | 1 | 133 | 0.125 | 221 | 0.250 | 278 | 0.375 |
| 34 | 15X5.2X0.6 | | 15.0 | 5.2 | 0.60 | 1.05 | - | 1 | 171 | 0.113 | 302 | 0.225 | 407 | 0.338 |
| 35 | 15X5.2X0.7 | | 15.0 | 5.2 | 0.70 | 1.10 | - | 1 | 214 | 0.100 | 395 | 0.200 | 555 | 0.300 |
| 36 | 15X6.2X0.5 | | 15.0 | 6.2 | 0.50 | 1.00 | - | 1 | 138 | 0.125 | 230 | 0.250 | 289 | 0.375 |
| 37 | 15X6.2X0.6 | | 15.0 | 6.2 | 0.60 | 1.05 | - | 1 | 178 | 0.113 | 314 | 0.225 | 424 | 0.338 |
| 38 | 15X6.2X0.7 | | 15.0 | 6.2 | 0.70 | 1.10 | - | 1 | 222 | 0.100 | 411 | 0.200 | 578 | 0.300 |
| 39 | 15X8.2X0.7 | | 15.0 | 8.2 | 0.70 | 1.10 | - | 1 | 256 | 0.100 | 474 | 0.200 | 666 | 0.300 |
| 41 | 15X8.2X0.8 | | 15.0 | 8.2 | 0.80 | 1.20 | - | 1 | 367 | 0.100 | 689 | 0.200 | 982 | 0.300 |
| 41 | 16X8.2X0.4 | C | 16.0 | 8.2 | 0.40 | 0.90 | - | 1 | 84 | 0.125 | 131 | 0.250 | 154 | 0.375 |
| 42 | 16X8.2X0.6 | B | 16.0 | 8.2 | 0.60 | 1.05 | - | 1 | 172 | 0.113 | 304 | 0.225 | 410 | 0.338 |

# Product-Disc Spring

Standard material C60-C75 & 51CrV4

| Sr. No. | Item Code | Dimensions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Series | $D_e$ (mm) | $D_i$ (mm) | t (mm) | $l_o$ (mm) | t' (mm) | Group | 0.25 ho | | 0.50 ho | | 0.75 ho | |
| | | | | | | | | | F (N) | S (mm) | F (N) | S (mm) | F (N) | S (mm) |
| 43 | 16X8.2X0.7 | | 16.0 | 8.2 | 0.70 | 1.15 | - | 1 | 254 | 0.113 | 461 | 0.225 | 637 | 0.338 |
| 44 | 16X8.2X0.8 | | 16.0 | 8.2 | 0.80 | 1.20 | - | 1 | 308 | 0.100 | 579 | 0.200 | 825 | 0.300 |
| 45 | 16X8.2X0.9 | A | 16.0 | 8.2 | 0.90 | 1.25 | - | 1 | 363 | 0.088 | 697 | 0.175 | 1013 | 0.263 |
| 46 | 18X6.2X0.4 | | 18.0 | 6.2 | 0.40 | 1.00 | - | 1 | 85 | 0.150 | 126 | 0.300 | 139 | 0.450 |
| 47 | 18X6.2X0.5 | | 18.0 | 6.2 | 0.50 | 1.10 | - | 1 | 130 | 0.150 | 206 | 0.300 | 246 | 0.450 |
| 48 | 18X6.2X0.6 | | 18.0 | 6.2 | 0.60 | 1.20 | - | 1 | 191 | 0.150 | 317 | 0.300 | 400 | 0.450 |
| 49 | 18X6.2X0.7 | | 18.0 | 6.2 | 0.70 | 1.25 | - | 1 | 236 | 0.138 | 414 | 0.275 | 553 | 0.413 |
| 50 | 18X6.2X0.8 | | 18.0 | 6.2 | 0.80 | 1.30 | - | 1 | 286 | 0.125 | 523 | 0.250 | 726 | 0.375 |
| 51 | 18X8.2X0.5 | | 18.0 | 8.2 | 0.50 | 1.10 | - | 1 | 140 | 0.150 | 222 | 0.300 | 265 | 0.450 |
| 52 | 18X8.2X0.7 | | 18.0 | 8.2 | 0.70 | 1.25 | - | 1 | 255 | 0.138 | 446 | 0.275 | 596 | 0.413 |
| 53 | 18X8.2X0.8 | | 18.0 | 8.2 | 0.80 | 1.30 | - | 1 | 309 | 0.125 | 564 | 0.250 | 783 | 0.375 |
| 54 | 18X8.2X1 | | 18.0 | 8.2 | 1.00 | 1.40 | - | 1 | 425 | 0.100 | 815 | 0.200 | 1181 | 0.300 |
| 55 | 18X9.2X0.45 | C | 18.0 | 9.2 | 0.45 | 1.05 | - | 1 | 121 | 0.150 | 186 | 0.300 | 214 | 0.450 |
| 56 | 18X9.2X0.7 | B | 18.0 | 9.2 | 0.70 | 1.20 | - | 1 | 233 | 0.125 | 417 | 0.250 | 566 | 0.375 |
| 57 | 18X9.2X1 | A | 18.0 | 9.2 | 1.00 | 1.40 | - | 1 | 451 | 0.100 | 865 | 0.200 | 1254 | 0.300 |
| 58 | 20X8.2X0.5 | | 20.0 | 8.2 | 0.50 | 1.15 | - | 1 | 127 | 0.163 | 200 | 0.325 | 231 | 0.490 |
| 59 | 20X8.2X0.6 | | 20.0 | 8.2 | 0.60 | 1.30 | - | 1 | 214 | 0.175 | 342 | 0.350 | 412 | 0.525 |
| 60 | 20X8.2X0.7 | | 20.0 | 8.2 | 0.70 | 1.35 | - | 1 | 262 | 0.163 | 442 | 0.325 | 569 | 0.488 |
| 61 | 20X8.2X0.8 | | 20.0 | 8.2 | 0.80 | 1.40 | - | 1 | 315 | 0.150 | 557 | 0.300 | 751 | 0.450 |
| 62 | 20X8.2X0.9 | | 20.0 | 8.2 | 0.90 | 1.45 | - | 1 | 374 | 0.138 | 685 | 0.275 | 954 | 0.413 |
| 63 | 20X8.2X1 | | 20.0 | 8.2 | 1.00 | 1.55 | - | 1 | 494 | 0.138 | 918 | 0.275 | 1295 | 0.413 |
| 64 | 20X10.2X0.4 | | 20.0 | 10.2 | 0.40 | 0.90 | - | 1 | 55 | 0.130 | 84 | 0.250 | 99 | 0.380 |
| 65 | 20X10.2X0.5 | C | 20.0 | 10.2 | 0.50 | 1.15 | - | 1 | 141 | 0.163 | 219 | 0.325 | 254 | 0.488 |
| 66 | 20X10.2X0.8 | B | 20.0 | 10.2 | 0.80 | 1.35 | - | 1 | 304 | 0.138 | 547 | 0.275 | 748 | 0.413 |
| 67 | 20X10.2X0.9 | | 20.0 | 10.2 | 0.90 | 1.45 | - | 1 | 412 | 0.138 | 754 | 0.275 | 1050 | 0.413 |
| 68 | 20X10.2X1 | | 20.0 | 10.2 | 1.00 | 1.55 | - | 1 | 544 | 0.138 | 1010 | 0.275 | 1425 | 0.413 |
| 69 | 20X10.2X1.1 | A | 20.0 | 10.2 | 1.10 | 1.55 | - | 1 | 548 | 0.113 | 1050 | 0.225 | 1521 | 0.338 |
| 70 | 20X10.2X1.25 | | 20.0 | 10.2 | 1.25 | 1.75 | - | 1 | 890 | 0.125 | 1708 | 0.250 | 2477 | 0.375 |
| 71 | 20X10.2X1.5 | | 20.0 | 10.2 | 1.50 | 1.80 | - | 2 | 857 | 0.075 | 1695 | 0.150 | 2521 | 0.225 |
| 72 | 22.5X11.2X0.6 | C | 22.5 | 11.2 | 0.60 | 1.40 | - | 1 | 241 | 0.200 | 370 | 0.400 | 426 | 0.600 |
| 73 | 22.5X11.2X0.8 | B | 22.5 | 11.2 | 0.80 | 1.45 | - | 1 | 306 | 0.163 | 533 | 0.325 | 708 | 0.488 |
| 74 | 22.5X11.2X1.25 | A | 22.5 | 11.2 | 1.25 | 1.75 | - | 2 | 693 | 0.125 | 1330 | 0.250 | 1929 | 0.375 |
| 75 | 23X8.2X0.7 | | 23.0 | 8.2 | 0.70 | 1.50 | - | 1 | 280 | 0.200 | 448 | 0.400 | 544 | 0.600 |
| 76 | 23X8.2X0.8 | | 23.0 | 8.2 | 0.80 | 1.55 | - | 1 | 332 | 0.188 | 560 | 0.375 | 719 | 0.563 |
| 77 | 23X8.2X0.9 | | 23.0 | 8.2 | 0.90 | 1.60 | - | 1 | 391 | 0.175 | 687 | 0.350 | 919 | 0.525 |
| 78 | 23X8.2X1 | | 23.0 | 8.2 | 1.00 | 1.70 | - | 1 | 507 | 0.175 | 909 | 0.350 | 1240 | 0.525 |
| 79 | 23X10.2X0.9 | | 23.0 | 10.2 | 0.90 | 1.65 | - | 1 | 463 | 0.188 | 802 | 0.375 | 1058 | 0.563 |
| 80 | 23X10.2X1 | | 23.0 | 10.2 | 1.00 | 1.70 | - | 1 | 538 | 0.175 | 964 | 0.350 | 1315 | 0.525 |
| 81 | 23X10.2X1.25 | | 23.0 | 10.2 | 1.25 | 1.90 | - | 2 | 870 | 0.163 | 1627 | 0.325 | 2310 | 0.488 |
| 82 | 23X12.2X1 | | 23.0 | 12.2 | 1.00 | 1.60 | - | 1 | 475 | 0.150 | 872 | 0.300 | 1217 | 0.450 |
| 83 | 23X12.2X1.25 | | 23.0 | 12.2 | 1.25 | 1.85 | - | 2 | 864 | 0.150 | 1630 | 0.300 | 2331 | 0.450 |
| 84 | 23X12.2X1.5 | | 23.0 | 12.2 | 1.50 | 2.00 | - | 2 | 1159 | 0.125 | 2250 | 0.250 | 3297 | 0.375 |
| 85 | 25X10.2X1 | | 25.0 | 10.2 | 1.00 | 1.75 | - | 1 | 492 | 0.188 | 870 | 0.375 | 1172 | 0.563 |
| 86 | 25X12.2X0.7 | C | 25.0 | 12.2 | 0.70 | 1.60 | - | 1 | 331 | 0.225 | 515 | 0.450 | 600 | 0.675 |
| 87 | 25X12.2X0.9 | B | 25.0 | 12.2 | 0.90 | 1.60 | - | 1 | 367 | 0.175 | 644 | 0.350 | 862 | 0.525 |
| 88 | 25X12.2X1 | | 25.0 | 12.2 | 1.00 | 1.80 | - | 1 | 585 | 0.200 | 1021 | 0.400 | 1359 | 0.600 |

# Product-Disc Spring

Standard material C60-C75 & 51CrV4

| Sr. No. | Item Code | Dimensions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Series | $D_e$ (mm) | $D_i$ (mm) | t (mm) | $l_o$ (mm) | t' (mm) | Group | 0.25 ho | | 0.50 ho | | 0.75 ho | |
| | | | | | | | | | F (N) | S (mm) | F (N) | S (mm) | F (N) | S (mm) |
| 89 | 25X12.2X1.25 | | 25.0 | 12.2 | 1.25 | 1.95 | - | 2 | 848 | 0.175 | 1573 | 0.350 | 2214 | 0.525 |
| 90 | 25X12.2X1.5 | A | 25.0 | 12.2 | 1.50 | 2.05 | - | 2 | 1040 | 0.138 | 2007 | 0.275 | 2926 | 0.413 |
| 91 | 28X10.2X0.8 | | 28.0 | 10.2 | 0.80 | 1.75 | - | 1 | 348 | 0.238 | 553 | 0.475 | 662 | 0.713 |
| 92 | 28X10.2X1 | | 28.0 | 10.2 | 1.00 | 1.90 | - | 1 | 512 | 0.225 | 872 | 0.450 | 1130 | 0.675 |
| 93 | 28X10.2X1.25 | | 28.0 | 10.2 | 1.25 | 2.05 | - | 2 | 737 | 0.200 | 1339 | 0.400 | 1853 | 0.600 |
| 94 | 28X10.2X1.5 | | 28.0 | 10.2 | 1.50 | 2.20 | - | 2 | 1003 | 0.175 | 1899 | 0.350 | 2723 | 0.525 |
| 95 | 28X12.2X1 | | 28.0 | 12.2 | 1.00 | 1.95 | - | 1 | 590 | 0.238 | 992 | 0.475 | 1268 | 0.713 |
| 96 | 28X12.2X1.25 | | 28.0 | 12.2 | 1.25 | 2.10 | - | 2 | 844 | 0.213 | 1519 | 0.425 | 2083 | 0.638 |
| 97 | 28X12.2X1.5 | | 28.0 | 12.2 | 1.50 | 2.25 | - | 2 | 1149 | 0.188 | 2159 | 0.375 | 3077 | 0.563 |
| 98 | 28X14.2X0.8 | C | 28.0 | 14.2 | 0.80 | 1.80 | - | 1 | 435 | 0.250 | 681 | 0.500 | 801 | 0.750 |
| 99 | 28X14.2X1 | B | 28.0 | 14.2 | 1.00 | 1.80 | - | 1 | 476 | 0.200 | 832 | 0.400 | 1107 | 0.600 |
| 100 | 28X14.2X1.25 | | 28.0 | 14.2 | 1.25 | 2.10 | - | 2 | 907 | 0.213 | 1634 | 0.425 | 2240 | 0.638 |
| 101 | 28X14.2X1.5 | A | 28.0 | 14.2 | 1.50 | 2.15 | - | 2 | 1033 | 0.163 | 1970 | 0.325 | 2841 | 0.488 |
| 102 | 31.5X12.2X1 | | 31.5 | 12.2 | 1.00 | 2.10 | - | 1 | 587 | 0.275 | 951 | 0.550 | 1167 | 0.825 |
| 103 | 31.5X12.2X1.25 | | 31.5 | 12.2 | 1.25 | 2.20 | - | 2 | 761 | 0.238 | 1343 | 0.475 | 1805 | 0.713 |
| 104 | 31.5X12.2X1.5 | | 31.5 | 12.2 | 1.50 | 2.35 | - | 2 | 1033 | 0.213 | 1912 | 0.425 | 2688 | 0.638 |
| 105 | 31.5X16.3X0.8 | C | 31.5 | 16.3 | 0.80 | 1.85 | - | 1 | 384 | 0.263 | 594 | 0.525 | 687 | 0.788 |
| 106 | 31.5X16.3X1.25 | B | 31.5 | 16.3 | 1.25 | 2.15 | - | 2 | 791 | 0.225 | 1409 | 0.450 | 1913 | 0.675 |
| 107 | 31.5X16.3X1.5 | | 31.5 | 16.3 | 1.50 | 2.40 | - | 2 | 1260 | 0.225 | 2314 | 0.450 | 3230 | 0.675 |
| 108 | 31.5X16.3X1.75 | A | 31.5 | 16.3 | 1.75 | 2.45 | - | 2 | 1391 | 0.175 | 2669 | 0.350 | 3871 | 0.525 |
| 109 | 31.5X16.3X2 | | 31.5 | 16.3 | 2.00 | 2.75 | - | 2 | 2199 | 0.188 | 4239 | 0.375 | 6173 | 0.563 |
| 110 | 34X12.3X1 | | 34.0 | 12.3 | 1.00 | 2.25 | - | 1 | 637 | 0.313 | 998 | 0.625 | 1174 | 0.938 |
| 111 | 34X12.3X1.25 | | 34.0 | 12.3 | 1.25 | 2.35 | - | 2 | 815 | 0.275 | 1395 | 0.550 | 1818 | 0.825 |
| 112 | 34X12.3X1.5 | | 34.0 | 12.3 | 1.50 | 2.50 | - | 2 | 1097 | 0.250 | 1982 | 0.500 | 2725 | 0.750 |
| 113 | 34X14.3X1.25 | | 34.0 | 14.3 | 1.25 | 2.40 | - | 2 | 913 | 0.288 | 1546 | 0.575 | 1993 | 0.863 |
| 114 | 34X14.3X1.5 | | 34.0 | 14.3 | 1.50 | 2.55 | - | 2 | 1224 | 0.263 | 2192 | 0.525 | 2990 | 0.788 |
| 115 | 34X16.3X1.5 | | 34.0 | 16.3 | 1.50 | 2.55 | - | 2 | 1291 | 0.263 | 2313 | 0.525 | 3155 | 0.788 |
| 116 | 34X16.3X2 | | 34.0 | 16.3 | 2.00 | 2.85 | - | 2 | 2097 | 0.213 | 4003 | 0.425 | 5783 | 0.638 |
| 117 | 35.5X18.3X0.9 | C | 35.5 | 18.3 | 0.90 | 2.05 | - | 1 | 458 | 0.288 | 712 | 0.575 | 832 | 0.863 |
| 118 | 35.5X18.3X1.25 | B | 35.5 | 18.3 | 1.25 | 2.25 | - | 2 | 731 | 0.250 | 1277 | 0.500 | 1699 | 0.750 |
| 119 | 35.5X18.3X2 | A | 35.5 | 18.3 | 2.00 | 2.80 | - | 2 | 1864 | 0.200 | 3576 | 0.400 | 5187 | 0.600 |
| 120 | 40X14.3X1.25 | | 40.0 | 14.3 | 1.25 | 2.65 | - | 2 | 904 | 0.350 | 1459 | 0.700 | 1780 | 1.050 |
| 121 | 40X14.3X1.5 | | 40.0 | 14.3 | 1.50 | 2.75 | - | 2 | 1114 | 0.313 | 1929 | 0.625 | 2545 | 0.938 |
| 122 | 40X14.3X2 | | 40.0 | 14.3 | 2.00 | 3.05 | - | 2 | 1800 | 0.263 | 3363 | 0.525 | 4769 | 0.788 |
| 123 | 40X16.3X1.5 | | 40.0 | 16.3 | 1.50 | 2.80 | - | 2 | 1224 | 0.325 | 2102 | 0.650 | 2749 | 0.975 |
| 124 | 40X16.3X2 | | 40.0 | 16.3 | 2.00 | 3.10 | - | 2 | 1972 | 0.275 | 3663 | 0.550 | 5169 | 0.825 |
| 125 | 40X18.3X2 | | 40.0 | 18.3 | 2.00 | 3.15 | - | 2 | 2182 | 0.288 | 4030 | 0.575 | 5656 | 0.863 |
| 126 | 40X20.4X1 | C | 40.0 | 20.4 | 1.00 | 2.30 | - | 1 | 565 | 0.325 | 876 | 0.650 | 1017 | 0.975 |
| 127 | 40X20.4X1.5 | B | 40.0 | 20.4 | 1.50 | 2.65 | - | 2 | 1109 | 0.288 | 1953 | 0.575 | 2621 | 0.863 |
| 128 | 40X20.4X2 | | 40.0 | 20.4 | 2.00 | 3.10 | - | 2 | 2175 | 0.275 | 4041 | 0.550 | 5701 | 0.825 |
| 129 | 40X20.4X2.25 | A | 40.0 | 20.4 | 2.25 | 3.15 | - | 2 | 2336 | 0.225 | 4481 | 0.450 | 6500 | 0.675 |
| 130 | 40X20.4X2.5 | | 40.0 | 20.4 | 2.50 | 3.45 | - | 2 | 3351 | 0.238 | 6453 | 0.475 | 9390 | 0.713 |
| 131 | 45X22.4X1.25 | C | 45.0 | 22.4 | 1.25 | 2.85 | - | 2 | 1041 | 0.400 | 1620 | 0.800 | 1891 | 1.200 |

# Product-Disc Spring

Standard material C60-C75 & 51CrV4

| Sr. No. | SAP Code | Dimensions | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Series | $D_e$ (mm) | $D_i$ (mm) | t (mm) | $l_o$ (mm) | t' (mm) | Group | 0.25 ho | | 0.50 ho | | 0.75 ho | |
| | | | | | | | | | F (N) | S (mm) | F (N) | S (mm) | F (N) | S (mm) |
| 132 | 45X22.4X1.75 | B | 45.0 | 22.4 | 1.75 | 3.05 | - | 2 | 1524 | 0.325 | 2701 | 0.650 | 3646 | 0.975 |
| 133 | 45X22.4X2.5 | A | 45.0 | 22.4 | 2.50 | 3.50 | - | 2 | 2773 | 0.250 | 5320 | 0.500 | 7716 | 0.750 |
| 134 | 50X18.4X1.25 | | 50.0 | 18.4 | 1.25 | 2.85 | - | 2 | 757 | 0.400 | 1178 | 0.800 | 1375 | 1.200 |
| 135 | 50X18.4X1.5 | | 50.0 | 18.4 | 1.50 | 3.30 | - | 2 | 1379 | 0.450 | 2184 | 0.900 | 2606 | 1.350 |
| 136 | 50X18.4X2 | | 50.0 | 18.4 | 2.00 | 3.50 | - | 2 | 1918 | 0.375 | 3392 | 0.750 | 4572 | 1.125 |
| 137 | 50X18.4X2.5 | | 50.0 | 18.4 | 2.50 | 4.10 | - | 2 | 3703 | 0.400 | 6733 | 0.800 | 9315 | 1.200 |
| 138 | 50X18.4X3 | | 50.0 | 18.4 | 3.00 | 4.40 | - | 2 | 5043 | 0.350 | 9546 | 0.700 | 13688 | 1.050 |
| 139 | 50X20.4X2 | | 50.0 | 20.4 | 2.00 | 3.50 | - | 2 | 1966 | 0.375 | 3478 | 0.750 | 4687 | 1.125 |
| 140 | 50X20.4X2.5 | | 50.0 | 20.4 | 2.50 | 3.85 | - | 2 | 3008 | 0.338 | 5601 | 0.675 | 7919 | 1.013 |
| 141 | 50X22.4X2 | | 50.0 | 22.4 | 2.00 | 3.60 | - | 2 | 2247 | 0.400 | 3924 | 0.800 | 5222 | 1.200 |
| 142 | 50X22.4X2.5 | | 50.0 | 22.4 | 2.50 | 3.90 | - | 2 | 3261 | 0.350 | 6044 | 0.700 | 8510 | 1.050 |
| 143 | 50X25.4X1.25 | C | 50.0 | 25.4 | 1.25 | 2.85 | - | 2 | 854 | 0.400 | 1328 | 0.800 | 1550 | 1.200 |
| 144 | 50X25.4X1.5 | | 50.0 | 25.4 | 1.50 | 3.10 | - | 2 | 1242 | 0.400 | 2028 | 0.800 | 2512 | 1.200 |
| 145 | 50X25.4X2 | B | 50.0 | 25.4 | 2.00 | 3.40 | - | 2 | 1949 | 0.350 | 3491 | 0.700 | 4762 | 1.050 |
| 146 | 50X25.4X2.25 | | 50.0 | 25.4 | 2.25 | 3.75 | - | 2 | 2940 | 0.380 | 5249 | 0.750 | 7241 | 1.130 |
| 147 | 50X25.4X2.5 | | 50.0 | 25.4 | 2.50 | 3.90 | - | 2 | 3473 | 0.350 | 6437 | 0.700 | 9063 | 1.050 |
| 148 | 50X25.4X3 | A | 50.0 | 25.4 | 3.00 | 4.10 | - | 2 | 4255 | 0.275 | 8214 | 0.550 | 11976 | 0.825 |
| 149 | 56X28.5X1.5 | C | 56.0 | 28.5 | 1.50 | 3.45 | - | 2 | 1458 | 0.488 | 2259 | 0.975 | 2622 | 1.463 |
| 150 | 56X28.5X2 | B | 56.0 | 28.5 | 2.00 | 3.60 | - | 2 | 1910 | 0.400 | 3335 | 0.800 | 4438 | 1.200 |
| 151 | 56X28.5X2.5 | | 56.0 | 28.5 | 2.50 | 4.20 | - | 2 | 3676 | 0.430 | 6550 | 0.850 | 9004 | 1.280 |
| 152 | 56X28.5X3 | A | 56.0 | 28.5 | 3.00 | 4.30 | - | 2 | 4142 | 0.325 | 7895 | 0.650 | 11388 | 0.975 |
| 153 | 60X20.5X2 | | 60.0 | 20.5 | 2.00 | 4.10 | - | 2 | 2318 | 0.525 | 3802 | 1.050 | 4730 | 1.575 |
| 154 | 60X20.5X2.5 | | 60.0 | 20.5 | 2.50 | 4.30 | - | 2 | 3018 | 0.450 | 5379 | 0.900 | 7302 | 1.350 |
| 155 | 60X20.5X3 | | 60.0 | 20.5 | 3.00 | 4.70 | - | 2 | 4449 | 0.425 | 8234 | 0.850 | 11577 | 1.275 |
| 156 | 60X25.5X2.5 | | 60.0 | 25.5 | 2.50 | 4.40 | - | 2 | 3447 | 0.475 | 6081 | 0.950 | 8175 | 1.425 |
| 157 | 60X25.5X3 | | 60.0 | 25.5 | 3.00 | 4.65 | - | 2 | 4495 | 0.413 | 8352 | 0.825 | 11784 | 1.238 |
| 158 | 60X30.5X2.5 | | 60.0 | 30.5 | 2.50 | 4.30 | - | 2 | 3447 | 0.450 | 6145 | 0.900 | 8342 | 1.350 |
| 159 | 60X30.5X2.75 | | 60.0 | 30.5 | 2.75 | 4.75 | - | 2 | 5125 | 0.500 | 9117 | 1.000 | 12360 | 1.500 |
| 160 | 60X30.5X3 | | 60.0 | 30.5 | 3.00 | 4.70 | - | 2 | 5083 | 0.425 | 9407 | 0.850 | 13226 | 1.275 |
| 161 | 60X30.5X3.5 | | 60.0 | 30.5 | 3.50 | 5.00 | - | 2 | 6591 | 0.375 | 12574 | 0.750 | 18153 | 1.125 |
| 162 | 63X31X1.8 | C | 63.0 | 31.0 | 1.80 | 4.15 | - | 2 | 2364 | 0.588 | 3658 | 1.175 | 4238 | 1.763 |
| 163 | 63X31X2.5 | B | 63.0 | 31.0 | 2.50 | 4.25 | - | 2 | 2942 | 0.438 | 5270 | 0.875 | 7189 | 1.313 |
| 164 | 63X31X3 | | 63.0 | 31.0 | 3.00 | 4.80 | - | 2 | 4891 | 0.450 | 8981 | 0.900 | 12536 | 1.350 |
| 165 | 63X31X3.5 | A | 63.0 | 31.0 | 3.50 | 4.90 | - | 2 | 5399 | 0.350 | 10359 | 0.700 | 15025 | 1.050 |
| 166 | 63X35.50X3.50 | | 63.0 | 35.5 | 3.50 | 5.00 | - | 2 | 6443 | 0.375 | 12293 | 0.750 | 17746 | 1.125 |
| 167 | 70X25.5X2 | | 70.0 | 25.5 | 2.00 | 4.50 | - | 2 | 2408 | 0.625 | 3771 | 1.250 | 4437 | 1.875 |
| 168 | 70X30.5X2.5 | | 70.0 | 30.5 | 2.50 | 4.90 | - | 2 | 3755 | 0.600 | 6297 | 1.200 | 8031 | 1.800 |
| 169 | 70X30.5X3 | | 70.0 | 30.5 | 3.00 | 5.10 | - | 2 | 4676 | 0.525 | 8376 | 1.050 | 11426 | 1.575 |
| 170 | 70X35.5X3 | | 70.0 | 35.5 | 3.00 | 5.10 | - | 2 | 5028 | 0.525 | 9007 | 1.050 | 12287 | 1.575 |
| 171 | 70X35.5X3.5 | | 70.0 | 35.5 | 3.50 | 5.30 | - | 2 | 6077 | 0.450 | 11380 | 0.900 | 16180 | 1.350 |
| 172 | 70X35.5X4 | | 70.0 | 35.5 | 4.00 | 5.80 | - | 2 | 8757 | 0.450 | 16634 | 0.900 | 23923 | 1.350 |
| 173 | 70X35.5X3.75 | | 70.0 | 35.5 | 4.00 | 5.80 | 3.75 | 2 | 9167 | 0.450 | 17020 | 0.900 | 23920 | 1.350 |
| 174 | 70X40.5X4 | | 70.0 | 40.5 | 4.00 | 5.60 | - | 2 | 8391 | 0.400 | 16099 | 0.800 | 23351 | 1.200 |
| 175 | 70X40.5X3.75 | | 70.0 | 40.5 | 4.00 | 5.60 | 3.75 | 2 | 8739 | 0.400 | 16430 | 0.800 | 23350 | 1.200 |
| 176 | 70X40.5X5 | | 70.0 | 40.5 | 5.00 | 6.20 | - | 2 | 11544 | 0.300 | 22728 | 0.600 | 33672 | 0.900 |

# Product-Disc Spring

Standard material C60-C75 & 51CrV4

| Sr. No. | Item Code | Dimensions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Series | $D_e$ (mm) | $D_i$ (mm) | t (mm) | $l_o$ (mm) | t' (mm) | Group | 0.25 ho | | 0.50 ho | | 0.75 ho | |
| | | | | | | | | | F (N) | S (mm) | F (N) | S (mm) | F (N) | S (mm) |
| 177 | 70X40.5X4.6 | | 70.0 | 40.5 | 5.00 | 6.20 | 4.60 | 2 | 11900 | 0.300 | 23070 | 0.600 | 33672 | 0.900 |
| 178 | 71X36X2 | C | 71.0 | 36.0 | 2.00 | 4.60 | - | 2 | 2861 | 0.650 | 4432 | 1.300 | 5144 | 1.950 |
| 179 | 71X36X2.5 | B | 71.0 | 36.0 | 2.50 | 4.50 | - | 2 | 2894 | 0.500 | 5054 | 1.000 | 6725 | 1.500 |
| 180 | 71X36X4 | A | 71.0 | 36.0 | 4.00 | 5.60 | - | 2 | 7379 | 0.400 | 14157 | 0.800 | 20535 | 1.200 |
| 181 | 71X36X3.75 | | 71.0 | 36.0 | 4.00 | 5.60 | 3.75 | 2 | 7685 | 0.400 | 14440 | 0.800 | 20530 | 1.200 |
| 182 | 80X31X2.5 | | 80.0 | 31.0 | 2.50 | 5.30 | - | 2 | 3678 | 0.700 | 5933 | 1.400 | 7239 | 2.100 |
| 183 | 80X31X3 | | 80.0 | 31.0 | 3.00 | 5.50 | - | 2 | 4531 | 0.625 | 7847 | 1.250 | 10352 | 1.875 |
| 184 | 80X31X4 | | 80.0 | 31.0 | 4.00 | 6.10 | - | 2 | 7319 | 0.525 | 13677 | 1.050 | 19394 | 1.575 |
| 185 | 80X31X3.75 | | 80.0 | 31.0 | 4.00 | 6.10 | 3.75 | 2 | 7783 | 0.525 | 14050 | 1.050 | 19440 | 1.580 |
| 186 | 80X36X3 | | 80.0 | 36.0 | 3.00 | 5.70 | - | 2 | 5401 | 0.675 | 9196 | 1.350 | 11919 | 2.025 |
| 187 | 80X36X4 | | 80.0 | 36.0 | 4.00 | 6.20 | - | 2 | 8163 | 0.550 | 15168 | 1.100 | 21400 | 1.650 |
| 188 | 80X36X3.75 | | 80.0 | 36.0 | 4.00 | 6.20 | 3.75 | 2 | 8626 | 0.550 | 15600 | 1.100 | 21400 | 1.650 |
| 189 | 80X41X2.25 | C | 80.0 | 41.0 | 2.25 | 5.20 | - | 2 | 3698 | 0.738 | 5715 | 1.475 | 6613 | 2.213 |
| 190 | 80X41X3 | B | 80.0 | 41.0 | 3.00 | 5.30 | - | 2 | 4450 | 0.575 | 7838 | 1.150 | 10518 | 1.725 |
| 191 | 80X41X4 | | 80.0 | 41.0 | 4.00 | 6.20 | - | 2 | 8726 | 0.550 | 16213 | 1.100 | 22874 | 1.650 |
| 192 | 80X41X3.75 | | 80.0 | 41.0 | 4.00 | 6.20 | 3.75 | 2 | 9220 | 0.550 | 16670 | 1.100 | 22874 | 1.650 |
| 193 | 80X41X5 | A | 80.0 | 41.0 | 5.00 | 6.70 | - | 2 | 11821 | 0.425 | 22928 | 0.850 | 33559 | 1.275 |
| 194 | 80X41X4.7 | | 80.0 | 41.0 | 5.00 | 6.70 | 4.70 | 2 | 12350 | 0.425 | 23300 | 0.850 | 33682 | 1.280 |
| 195 | 90X46X2.5 | C | 90.0 | 46.0 | 2.50 | 5.70 | - | 2 | 4232 | 0.800 | 6585 | 1.600 | 7684 | 2.400 |
| 196 | 90X46X3.5 | B | 90.0 | 46.0 | 3.50 | 6.00 | - | 2 | 5836 | 0.625 | 10416 | 1.250 | 14161 | 1.875 |
| 197 | 90X46X5 | A | 90.0 | 46.0 | 5.00 | 7.00 | - | 2 | 11267 | 0.500 | 21617 | 1.000 | 31354 | 1.500 |
| 198 | 90X46X4.7 | | 90.0 | 46.0 | 5.00 | 7.00 | 4.70 | 2 | 11710 | 0.500 | 22040 | 1.000 | 31354 | 1.500 |
| 199 | 100X41X4 | | 100.0 | 41.0 | 4.00 | 7.20 | - | 2 | 8714 | 0.800 | 15219 | 1.600 | 20251 | 2.400 |
| 200 | 100X41X3.75 | | 100.0 | 41.0 | 4.00 | 7.20 | 3.75 | 2 | 9345 | 0.800 | 15800 | 1.600 | 20251 | 2.400 |
| 201 | 100X41X5 | | 100.0 | 41.0 | 5.00 | 7.75 | - | 2 | 12345 | 0.688 | 22937 | 1.375 | 32361 | 2.063 |
| 202 | 100X41X4.75 | | 100.0 | 41.0 | 5.00 | 7.75 | 4.75 | 2 | 12940 | 0.688 | 23520 | 1.375 | 32328 | 2.060 |
| 203 | 100X51X2.7 | C | 100.0 | 51.0 | 2.70 | 6.20 | - | 2 | 4779 | 0.875 | 7410 | 1.750 | 8609 | 2.625 |
| 204 | 100X51X3.5 | B | 100.0 | 51.0 | 3.50 | 6.30 | - | 2 | 5624 | 0.700 | 9823 | 1.400 | 13070 | 2.100 |
| 205 | 100X51X4 | | 100.0 | 51.0 | 4.00 | 7.00 | - | 2 | 8673 | 0.750 | 15341 | 1.500 | 20674 | 2.250 |
| 206 | 100X51X3.75 | | 100.0 | 51.0 | 4.00 | 7.00 | 3.75 | 2 | 9282 | 0.750 | 15910 | 1.500 | 20674 | 2.250 |
| 207 | 100X51X5 | | 100.0 | 51.0 | 5.00 | 7.80 | - | 2 | 13924 | 0.700 | 25810 | 1.400 | 36339 | 2.100 |
| 208 | 100X51X4.75 | | 100.0 | 51.0 | 5.00 | 7.80 | 4.75 | 2 | 14550 | 0.700 | 26400 | 1.400 | 36340 | 2.100 |
| 209 | 100X51X6 | A | 100.0 | 51.0 | 6.00 | 8.20 | - | 2 | 17061 | 0.550 | 32937 | 1.100 | 48022 | 1.650 |
| 210 | 100X51X5.6 | | 100.0 | 51.0 | 6.00 | 8.20 | 5.60 | 2 | 17750 | 0.550 | 33590 | 1.100 | 48020 | 1.650 |
| 211 | 112X57X3 | C | 112.0 | 57.0 | 3.00 | 6.90 | - | 2 | 5834 | 0.975 | 9038 | 1.950 | 10489 | 2.925 |
| 212 | 112X57X4 | B | 112.0 | 57.0 | 4.00 | 7.20 | - | 2 | 7639 | 0.800 | 13341 | 1.600 | 17752 | 2.400 |
| 213 | 112X57X3.75 | | 112.0 | 57.0 | 4.00 | 7.20 | 3.75 | 2 | 8192 | 0.800 | 13850 | 1.600 | 17752 | 2.400 |
| 214 | 112X57X6 | A | 112.0 | 57.0 | 6.00 | 8.50 | - | 2 | 15800 | 0.625 | 30215 | 1.250 | 43707 | 1.875 |
| 215 | 112X57X5.6 | | 112.0 | 57.0 | 6.00 | 8.50 | 5.60 | 2 | 16660 | 0.625 | 30910 | 1.250 | 43800 | 1.880 |
| 216 | 125X41X4 | | 125.0 | 41.0 | 4.00 | 8.20 | - | 2 | 8501 | 1.050 | 13943 | 2.100 | 17346 | 3.150 |
| 217 | 125X41X3.75 | | 125.0 | 41.0 | 4.00 | 8.20 | 3.75 | 2 | 9146 | 1.050 | 14540 | 2.100 | 17350 | 3.150 |
| 218 | 125X51X4 | | 125.0 | 51.0 | 4.00 | 8.50 | - | 2 | 10096 | 1.125 | 16265 | 2.250 | 19817 | 3.375 |
| 219 | 125X51X3.75 | | 125.0 | 51.0 | 4.00 | 8.50 | 3.75 | 2 | 10890 | 1.125 | 16970 | 2.250 | 19820 | 3.380 |
| 220 | 125X51X5 | | 125.0 | 51.0 | 5.00 | 8.90 | - | 2 | 13063 | 0.975 | 22931 | 1.950 | 30669 | 2.925 |
| 221 | 125X51X4.7 | | 125.0 | 51.0 | 5.00 | 8.90 | 4.70 | 2 | 14020 | 0.975 | 23760 | 1.950 | 30700 | 2.930 |
| 222 | 125X51X6 | | 125.0 | 51.0 | 6.00 | 9.40 | - | 2 | 17027 | 0.850 | 31514 | 1.700 | 44307 | 2.550 |
| 223 | 125X51X5.6 | | 125.0 | 51.0 | 6.00 | 9.40 | 5.60 | 2 | 18090 | 0.850 | 32500 | 1.700 | 44310 | 2.550 |

# Product-Disc Spring

Standard material C60-C75 & 51CrV4

| Sr. No. | Item Code | Dimensions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Series | $D_e$ (mm) | $D_i$ (mm) | t (mm) | $l_o$ (mm) | t' (mm) | Group | 0.25 ho | | 0.50 ho | | 0.75 ho | |
| | | | | | | | | | F (N) | S (mm) | F (N) | S (mm) | F (N) | S (mm) |
| 224 | 125X61X5 | | 125.0 | 61.0 | 5.00 | 9.00 | - | 2 | 14615 | 1.000 | 25526 | 2.000 | 33965 | 3.000 |
| 225 | 125X61X4.7 | | 125.0 | 61.0 | 5.00 | 9.00 | 4.70 | 2 | 15630 | 1.000 | 26470 | 2.000 | 33965 | 3.000 |
| 226 | 125X61X6 | | 125.0 | 61.0 | 6.00 | 9.60 | - | 2 | 19789 | 0.900 | 36336 | 1.800 | 50722 | 2.700 |
| 227 | 125X61X5.6 | | 125.0 | 61.0 | 6.00 | 9.60 | 5.60 | 2 | 21080 | 0.900 | 37540 | 1.800 | 50720 | 2.700 |
| 228 | 125X61X8 | | 125.0 | 61.0 | 8.00 | 10.90 | - | 3 | 34434 | 0.725 | 65305 | 1.450 | 93577 | 2.175 |
| 229 | 125X61X7.5 | | 125.0 | 61.0 | 8.00 | 10.90 | 7.50 | 3 | 34434 | 0.725 | 65305 | 1.450 | 93577 | 2.175 |
| 230 | 125X64X3.5 | C | 125.0 | 64.0 | 3.50 | 8.00 | - | 2 | 8514 | 1.125 | 13231 | 2.250 | 15416 | 3.375 |
| 231 | 125X64X5 | B | 125.0 | 64.0 | 5.00 | 8.50 | - | 2 | 12238 | 0.875 | 21924 | 1.750 | 29908 | 2.625 |
| 232 | 125X64X4.7 | | 125.0 | 64.0 | 5.00 | 8.50 | 4.70 | 2 | 13090 | 0.875 | 22660 | 1.750 | 29940 | 2.630 |
| 233 | 125X64X6 | | 125.0 | 64.0 | 6.00 | 9.60 | - | 2 | 20350 | 0.900 | 37360 | 1.800 | 52150 | 2.700 |
| 234 | 125X64X5.6 | | 125.0 | 64.0 | 6.00 | 9.60 | 5.60 | 2 | 21670 | 0.900 | 38600 | 1.800 | 52150 | 2.700 |
| 235 | 125X64X7 | | 125.0 | 64.0 | 7.00 | 10.00 | - | 3 | 25530 | 0.750 | 47610 | 1.500 | 67220 | 2.250 |
| 236 | 125X64X6.55 | | 125.0 | 64.0 | 7.00 | 10.00 | 6.55 | 3 | 25530 | 0.750 | 47610 | 1.500 | 67220 | 2.250 |
| 237 | 125X64X8 | A | 125.0 | 64.0 | 8.00 | 10.60 | - | 3 | 31118 | 0.650 | 59520 | 1.300 | 85926 | 1.950 |
| 238 | 125X64X7.5 | A | 125.0 | 64.0 | 8.00 | 10.60 | 7.50 | 3 | 31118 | 0.650 | 59520 | 1.300 | 85926 | 1.950 |
| 239 | 125X71X6 | | 125.0 | 71.0 | 6.00 | 9.30 | - | 2 | 19538 | 0.825 | 36302 | 1.650 | 51304 | 2.475 |
| 240 | 125X71X5.6 | | 125.0 | 71.0 | 6.00 | 9.30 | 5.60 | 2 | 20840 | 0.830 | 37410 | 1.650 | 51290 | 2.480 |
| 241 | 125X71X8 | | 125.0 | 71.0 | 8.00 | 10.40 | - | 3 | 30867 | 0.600 | 59149 | 1.200 | 85494 | 1.800 |
| 242 | 125X71X7.4 | | 125.0 | 71.0 | 8.00 | 10.40 | 7.40 | 3 | 30867 | 0.600 | 59149 | 1.200 | 85494 | 1.800 |
| 243 | 125X71X10 | | 125.0 | 71.0 | 10.00 | 11.80 | - | 3 | 42963 | 0.450 | 84219 | 0.900 | 124124 | 1.350 |
| 244 | 125X71X9.2 | | 125.0 | 71.0 | 10.00 | 11.80 | 9.20 | 3 | 42963 | 0.450 | 84219 | 0.900 | 124124 | 1.350 |
| 245 | 140X72X3.8 | C | 140.0 | 72.0 | 3.80 | 8.70 | - | 2 | 9514 | 1.225 | 14773 | 2.450 | 17195 | 3.675 |
| 246 | 140X72X5 | B | 140.0 | 72.0 | 5.00 | 9.00 | - | 2 | 12014 | 1.000 | 20982 | 2.000 | 27920 | 3.000 |
| 247 | 140X72X4.7 | | 140.0 | 72.0 | 5.00 | 9.00 | 4.70 | 2 | 12850 | 1.000 | 21760 | 2.000 | 27920 | 3.000 |
| 248 | 140X72X8 | A | 140.0 | 72.0 | 8.00 | 11.20 | - | 3 | 31903 | 0.800 | 59967 | 1.600 | 85251 | 2.400 |
| 249 | 140X72X7.5 | A | 140.0 | 72.0 | 8.00 | 11.20 | 7.50 | 3 | 31903 | 0.800 | 59967 | 1.600 | 85251 | 2.400 |
| 250 | 150X61X5 | | 150.0 | 61.0 | 5.00 | 10.30 | - | 2 | 15292 | 1.325 | 25021 | 2.650 | 31041 | 3.975 |
| 251 | 150X61X4.8 | | 150.0 | 61.0 | 5.00 | 10.30 | 4.80 | 2 | 16080 | 1.325 | 25710 | 2.650 | 31059 | 3.980 |
| 252 | 150X61X6 | | 150.0 | 61.0 | 6.00 | 10.80 | - | 2 | 19560 | 1.200 | 34161 | 2.400 | 45456 | 3.600 |
| 253 | 150X61X5.8 | | 150.0 | 61.0 | 6.00 | 10.80 | 5.80 | 2 | 20300 | 1.200 | 34850 | 2.400 | 45456 | 3.600 |
| 254 | 150X71X6 | | 150.0 | 71.0 | 6.00 | 10.80 | - | 2 | 20721 | 1.200 | 36189 | 2.400 | 48155 | 3.600 |
| 255 | 150X71X5.65 | | 150.0 | 71.0 | 6.00 | 10.80 | 5.65 | 2 | 22120 | 1.200 | 37490 | 2.400 | 48155 | 3.600 |
| 256 | 150X71X8 | | 150.0 | 71.0 | 8.00 | 12.00 | - | 3 | 35296 | 1.000 | 64684 | 2.000 | 89851 | 3.000 |
| 257 | 150X71X7.5 | | 150.0 | 71.0 | 8.00 | 12.00 | 7.50 | 3 | 35296 | 1.000 | 64684 | 2.000 | 89851 | 3.000 |
| 258 | 150X81X8 | | 150.0 | 81.0 | 8.00 | 11.70 | - | 3 | 34518 | 0.925 | 63877 | 1.850 | 89532 | 2.775 |
| 259 | 150X81X7.5 | | 150.0 | 81.0 | 8.00 | 11.70 | 7.50 | 3 | 34518 | 0.925 | 63877 | 1.850 | 89532 | 2.775 |
| 260 | 150X81X10 | | 150.0 | 81.0 | 10.00 | 13.00 | - | 3 | 50088 | 0.750 | 96121 | 1.500 | 139128 | 2.250 |
| 261 | 150X81X9.3 | | 150.0 | 81.0 | 10.00 | 13.00 | 9.30 | 3 | 50088 | 0.750 | 96121 | 1.500 | 139128 | 2.250 |
| 262 | 160X82X4.3 | C | 160.0 | 82.0 | 4.30 | 9.90 | - | 2 | 12162 | 1.400 | 18832 | 2.800 | 21843 | 4.200 |
| 263 | 160X82X6 | B | 160.0 | 82.0 | 6.00 | 10.50 | - | 2 | 17203 | 1.125 | 30431 | 2.250 | 41008 | 3.375 |
| 264 | 160X82X5.6 | | 160.0 | 82.0 | 6.00 | 10.50 | 5.60 | 2 | 18570 | 1.125 | 31630 | 2.250 | 41040 | 3.380 |
| 265 | 160X82X10 | A | 160.0 | 82.0 | 10.00 | 13.50 | - | 3 | 50547 | 0.875 | 96216 | 1.750 | 138331 | 2.625 |
| 266 | 160X82X9.4 | A | 160.0 | 82.0 | 10.00 | 13.50 | 9.40 | 3 | 50547 | 0.875 | 96216 | 1.750 | 138331 | 2.625 |
| 267 | 180X92X4.8 | C | 180.0 | 92.0 | 4.80 | 11.00 | - | 2 | 14646 | 1.550 | 22731 | 3.100 | 26442 | 4.650 |
| 268 | 180X92X6 | B | 180.0 | 92.0 | 6.00 | 11.10 | - | 2 | 16558 | 1.275 | 28552 | 2.550 | 37502 | 3.825 |
| 269 | 180X92X5.6 | | 180.0 | 92.0 | 6.00 | 11.10 | 5.60 | 2 | 17920 | 1.275 | 29770 | 2.550 | 37530 | 3.830 |
| 270 | 180X92X10 | A | 180.0 | 92.0 | 10.00 | 14.00 | - | 3 | 46850 | 1.000 | 88141 | 2.000 | 125417 | 3.000 |
| 271 | 180X92X9.4 | A | 180.0 | 92.0 | 10.00 | 14.00 | 9.40 | 3 | 46850 | 1.000 | 88141 | 2.000 | 125417 | 3.000 |
| 272 | 180X92X13 | | 180.0 | 92.0 | 13.00 | 16.50 | - | 3 | 85040 | 0.880 | 163400 | 1.750 | 238300 | 2.630 |
| 273 | 180X92X12.1 | | 180.0 | 92.0 | 13.00 | 16.50 | 12.10 | 3 | 85040 | 0.880 | 163400 | 1.750 | 238300 | 2.630 |

# Product-Disc Spring

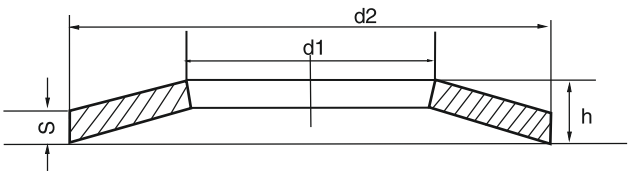
Standard material C60-C75 & 51CrV4

| Sr. No. | Item Code | Dimensions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Series | $D_e$ (mm) | $D_i$ (mm) | t (mm) | $l_o$ (mm) | t' (mm) | Group | 0.25 ho | | 0.50 ho | | 0.75 ho | |
| | | | | | | | | | F (N) | S (mm) | F (N) | S (mm) | F (N) | S (mm) |
| 274 | 200X82X8 | | 200.0 | 82.0 | 8.00 | 14.20 | - | 3 | 35029 | 1.550 | 60013 | 3.100 | 78034 | 4.650 |
| 275 | 200X82X7.6 | | 200.0 | 82.0 | 8.00 | 14.20 | 7.60 | 3 | 35029 | 1.550 | 60013 | 3.100 | 78034 | 4.650 |
| 276 | 200X82X10 | | 200.0 | 82.0 | 10.00 | 15.50 | - | 3 | 51105 | 1.375 | 93357 | 2.750 | 129445 | 4.125 |
| 277 | 200X82X9.6 | | 200.0 | 82.0 | 10.00 | 15.50 | 9.60 | 3 | 51105 | 1.375 | 93357 | 2.750 | 129445 | 4.125 |
| 278 | 200X82X12 | | 200.0 | 82.0 | 12.00 | 16.60 | - | 3 | 66924 | 1.150 | 127191 | 2.300 | 182737 | 3.450 |
| 275 | 200X82X11.5 | | 200.0 | 82.0 | 12.00 | 16.60 | 11.50 | 3 | 66924 | 1.150 | 127191 | 2.300 | 182737 | 3.450 |
| 276 | 200X92X10 | | 200.0 | 92.0 | 10.00 | 15.60 | - | 3 | 55136 | 1.400 | 100014 | 2.800 | 137688 | 4.200 |
| 277 | 200X92X9.5 | | 200.0 | 92.0 | 10.00 | 15.60 | 9.50 | 3 | 55136 | 1.400 | 100014 | 2.800 | 137688 | 4.200 |
| 278 | 200X92X12 | | 200.0 | 92.0 | 12.00 | 16.80 | - | 3 | 73913 | 1.200 | 139548 | 2.400 | 199269 | 3.600 |
| 279 | 200X92X11.4 | | 200.0 | 92.0 | 12.00 | 16.80 | 11.40 | 3 | 73913 | 1.200 | 139548 | 2.400 | 199269 | 3.600 |
| 280 | 200X92X14 | | 200.0 | 92.0 | 14.00 | 18.10 | - | 3 | 95633 | 1.025 | 184092 | 2.050 | 267227 | 3.075 |
| 281 | 200X92X13.1 | | 200.0 | 92.0 | 14.00 | 18.10 | 13.10 | 3 | 95633 | 1.025 | 184092 | 2.050 | 267227 | 3.075 |
| 282 | 200X102X5.5 | C | 200.0 | 102.0 | 5.50 | 12.50 | - | 2 | 19817 | 1.750 | 30882 | 3.500 | 36111 | 5.250 |
| 283 | 200X102X8 | B | 200.0 | 102.0 | 8.00 | 13.60 | - | 3 | 33367 | 1.400 | 57955 | 2.800 | 76378 | 4.200 |
| 284 | 200X102X7.5 | B | 200.0 | 102.0 | 8.00 | 13.60 | 7.50 | 3 | 33367 | 1.400 | 57955 | 2.800 | 76378 | 4.200 |
| 285 | 200X102X10 | | 200.0 | 102.0 | 10.00 | 15.60 | - | 3 | 58757 | 1.400 | 106099 | 2.800 | 145357 | 4.200 |
| 286 | 200X102X9.4 | | 200.0 | 102.0 | 10.00 | 15.60 | 9.40 | 3 | 58757 | 1.400 | 106099 | 2.800 | 145357 | 4.200 |
| 287 | 200X102X12 | A | 200.0 | 102.0 | 12.00 | 16.20 | - | 3 | 66983 | 1.050 | 127401 | 2.100 | 183020 | 3.150 |
| 288 | 200X102 | A | 200.0 | 102.0 | 12.00 | 16.20 | 11.25 | 3 | 66983 | 1.050 | 127401 | 2.100 | 183020 | 3.150 |
| 289 | 200X102 | | 200.0 | 102.0 | 14.00 | 18.20 | - | 3 | 103781 | 1.050 | 199476 | 2.100 | 289181 | 3.150 |
| 290 | 200X102X13.1 | | 200.0 | 102.0 | 14.00 | 18.20 | 13.10 | 3 | 103781 | 1.050 | 199476 | 2.100 | 289181 | 3.150 |
| 291 | 200X112X12 | | 200.0 | 112.0 | 12.00 | 16.20 | - | 3 | 72257 | 1.050 | 136873 | 2.100 | 195830 | 3.150 |
| 292 | 200X112X11.1 | | 200.0 | 112.0 | 12.00 | 16.20 | 11.10 | 3 | 72257 | 1.050 | 136873 | 2.100 | 195830 | 3.150 |
| 293 | 200X112X14 | | 200.0 | 112.0 | 14.00 | 17.50 | - | 3 | 91033 | 0.875 | 176156 | 1.750 | 256758 | 2.625 |
| 294 | 200X112X12.9 | | 200.0 | 112.0 | 14.00 | 17.50 | 12.90 | 3 | 91033 | 0.875 | 176156 | 1.750 | 256758 | 2.625 |
| 295 | 200X112X16 | | 200.0 | 112.0 | 16.00 | 18.80 | - | 3 | 105268 | 0.700 | 206697 | 1.400 | 305100 | 2.100 |
| 296 | 200X112X14.8 | | 200.0 | 112.0 | 16.00 | 18.80 | 14.80 | 3 | 105268 | 0.700 | 206697 | 1.400 | 305100 | 2.100 |
| 297 | 225X112X6 | | 225.0 | 112.0 | 6.00 | 13.60 | - | 2 | 25820 | 1.900 | 39660 | 3.800 | 45500 | 5.700 |
| 298 | 225X112X6.5 | C | 225.0 | 112.0 | 6.50 | 13.60 | - | 3 | 23582 | 1.775 | 37417 | 3.550 | 44580 | 5.325 |
| 299 | 225X112X6.2 | C | 225.0 | 112.0 | 6.50 | 13.60 | 6.20 | 3 | 23582 | 1.775 | 37417 | 3.550 | 44580 | 5.325 |
| 300 | 225X112X8 | B | 225.0 | 112.0 | 8.00 | 14.50 | - | 3 | 32870 | 1.625 | 55412 | 3.250 | 70749 | 4.875 |
| 301 | 225X112X7.5 | B | 225.0 | 112.0 | 8.00 | 14.50 | 7.50 | 3 | 32870 | 1.625 | 55412 | 3.250 | 70749 | 4.875 |
| 302 | 225X112X12 | A | 225.0 | 112.0 | 12.00 | 17.00 | - | 3 | 64497 | 1.250 | 120738 | 2.500 | 171016 | 3.750 |
| 303 | 225X112X11.25 | A | 225.0 | 112.0 | 12.00 | 17.00 | 11.25 | 3 | 64497 | 1.250 | 120738 | 2.500 | 171016 | 3.750 |
| 304 | 225X112X16 | | 225.0 | 112.0 | 16.00 | 20.50 | - | 3 | 128500 | 1.130 | 247100 | 2.250 | 360100 | 3.380 |
| 305 | 225X112X15 | | 225.0 | 112.0 | 16.00 | 20.50 | 15.00 | 3 | 128500 | 1.130 | 247100 | 2.250 | 360100 | 3.380 |
| 306 | 250X102X10 | | 250.0 | 102.0 | 10.00 | 18.00 | - | 3 | 56867 | 2.000 | 97282 | 4.000 | 126387 | 6.000 |
| 308 | 250X102X9.6 | | 250.0 | 102.0 | 10.00 | 18.00 | 9.60 | 3 | 56867 | 2.000 | 97282 | 4.000 | 126387 | 6.000 |
| 309 | 250X102X12 | | 250.0 | 102.0 | 12.00 | 19.00 | - | 3 | 73563 | 1.750 | 133131 | 3.500 | 182962 | 5.250 |
| 310 | 250X102X11.5 | | 250.0 | 102.0 | 12.00 | 19.00 | 11.50 | 3 | 73563 | 1.750 | 133131 | 3.500 | 182962 | 5.250 |
| 311 | 250X127X6.5 | | 250.0 | 127.0 | 6.50 | 14.80 | - | 3 | 29700 | 2.080 | 45420 | 4.150 | 51970 | 6.230 |
| 312 | 250X127X7 | C | 250.0 | 127.0 | 7.00 | 14.80 | - | 3 | 26895 | 1.950 | 42527 | 3.900 | 50466 | 5.850 |
| 313 | 250X127X6.7 | C | 250.0 | 127.0 | 7.00 | 14.80 | 6.70 | 3 | 26895 | 1.950 | 42527 | 3.900 | 50466 | 5.850 |
| 314 | 250X127X10 | B | 250.0 | 127.0 | 10.00 | 17.00 | - | 3 | 51871 | 1.750 | 90206 | 3.500 | 119053 | 5.250 |
| 315 | 250X127X9.4 | B | 250.0 | 127.0 | 10.00 | 17.00 | 9.40 | 3 | 51871 | 1.750 | 90206 | 3.500 | 119053 | 5.250 |
| 316 | 250X127X12 | | 250.0 | 127.0 | 12.00 | 19.30 | - | 3 | 87633 | 1.825 | 156021 | 3.650 | 210806 | 5.475 |
| 317 | 250X127X11.25 | | 250.0 | 127.0 | 12.00 | 19.30 | 11.25 | 3 | 87633 | 1.825 | 156021 | 3.650 | 210806 | 5.475 |
| 318 | 250X127X14 | A | 250.0 | 127.0 | 14.00 | 19.60 | - | 3 | 93239 | 1.400 | 175145 | 2.800 | 248828 | 4.200 |
| 319 | 250X127X13.1 | A | 250.0 | 127.0 | 14.00 | 19.60 | 13.10 | 3 | 93239 | 1.400 | 175145 | 2.800 | 248828 | 4.200 |
| 320 | 250X127X16 | | 250.0 | 127.0 | 16.00 | 21.80 | - | 3 | 140941 | 1.450 | 267295 | 2.900 | 383017 | 4.350 |
| 321 | 250X127X15 | | 250.0 | 127.0 | 16.00 | 21.80 | 15.00 | 3 | 140941 | 1.450 | 267295 | 2.900 | 383017 | 4.350 |

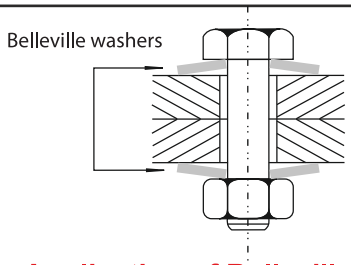
## 2. Belleville Washer

A Belleville washer, also known as conical-disc spring, Belleville springs, conical spring washer, or cupped spring washer, can produce high loads in a tiny area and has a high spring rate. These washers can be stacked together in the same orientation, alternating orientation, or used as a single spring.Belleville washers are manufactured as per DIN 6796 and DIN 6908 Standards. Belleville Washers aredesigned specifically for Heavy Duty Bolted Section such as Bus Bars,Transformers, Rectifiers, Heat Exchangers, Transmissions etc.

Their configuration varies and can be classified into different groups based on the thickness of the material, the inner and outer diameter of these springs. Stampco India has all Standard Sizes of Belleville Washers in HighCarbon Steel, Stainless Steel 300 series, InconelR, 17-7 PH etc. with avariety of surface finishes.




Belleville Washer DIN 6796



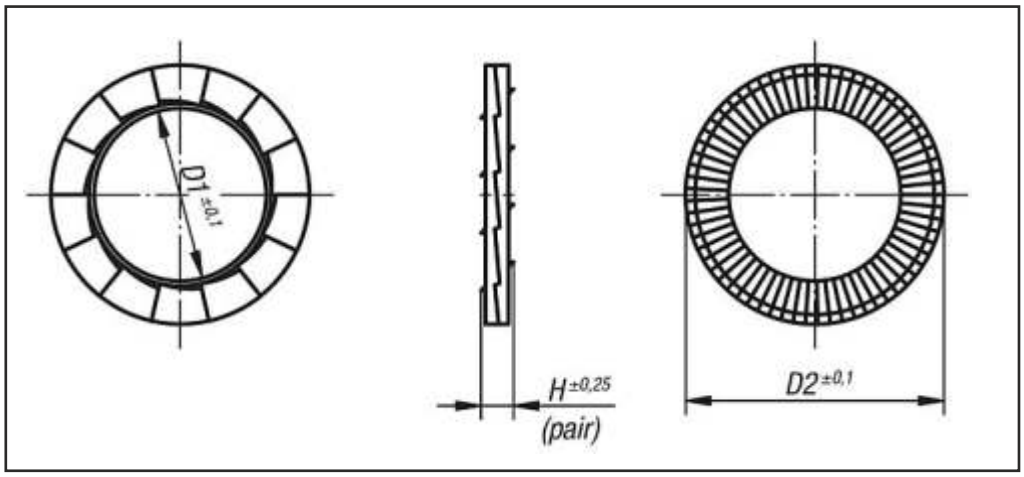

Application of Belleville Washer

### Dimension Table for Belleville Washer Din 6796

| Sr. No. | Item Code | Nominal Bolt Size (mm) | Outer Diameter d2 H14 (mm) | Inner Diameter d1 H14 (mm) | Thickness s (mm) | h max (mm) | h min after permanent set | Flattening Force N | Residual Spring Force N |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5X2.2X0.4 | 2.0 | 5.0 | 2.2 | 0.40 | 0.60 | 0.50 | 920 | - |
| 2 | 6X2.7X0.5 | 2.5 | 6.0 | 2.7 | 0.50 | 0.72 | 0.61 | 1540 | - |
| 3 | 7X3.2X0.6 | 3.0 | 7.0 | 3.2 | 0.60 | 0.85 | 0.72 | 2350 | - |
| 4 | 8X3.7X0.8 | 3.5 | 8.0 | 3.7 | 0.80 | 1.06 | 0.92 | 3160 | - |
| 5 | 9X4.3X1 | 4.0 | 9.0 | 4.3 | 1.00 | 1.30 | 1.12 | 4050 | 1400 |
| 6 | 11X5.3X1.2 | 5.0 | 11.0 | 5.3 | 1.20 | 1.55 | 1.35 | 6700 | 2300 |
| 7 | 14X6.4X1.5 | 6.0 | 14.0 | 6.4 | 1.50 | 2.00 | 1.70 | 9400 | 4200 |
| 8 | 17X7.4X1.75 | 7.0 | 17.0 | 7.4 | 1.75 | 2.30 | 2.00 | 13700 | 6200 |
| 9 | 18X8.4X2 | 8.0 | 18.0 | 8.4 | 2.00 | 2.60 | 2.24 | 17200 | 7700 |
| 10 | 23X10.5X2.5 | 10.0 | 23.0 | 10.5 | 2.50 | 3.20 | 2.80 | 27500 | 12400 |
| 11 | 29X13X3 | 12.0 | 29.0 | 13.0 | 3.00 | 3.95 | 3.43 | 40000 | 18000 |
| 12 | 35X15X3.5 | 14.0 | 35.0 | 15.0 | 3.50 | 4.65 | 4.04 | 55000 | 25000 |
| 13 | 39X17X4 | 16.0 | 39.0 | 17.0 | 4.00 | 5.25 | 4.58 | 75000 | 34000 |
| 14 | 42X19X4.5 | 18.0 | 42.0 | 19.0 | 4.50 | 5.80 | 5.08 | 95000 | 57000 |
| 15 | 45X21X5 | 20.0 | 45.0 | 21.0 | 5.00 | 6.40 | 5.60 | 122000 | 73000 |
| 16 | 49X23X5.5 | 22.0 | 49.0 | 23.0 | 5.50 | 7.05 | 6.15 | 152000 | 91000 |
| 17 | 56X25X6 | 24.0 | 56.0 | 25.0 | 6.00 | 7.75 | 6.77 | 175000 | 122000 |
| 18 | 60X28X6.5 | 27.0 | 60.0 | 28.0 | 6.50 | 8.35 | 7.30 | 230000 | 161000 |
| 19 | 70X31X7 | 30.0 | 70.0 | 31.0 | 7.00 | 9.20 | 8.00 | 280000 | 196000 |

## 3. Wedge Lock Washer

Bolted connections tend to work themselves loose under certain operating conditions. Vibrations cause particular problems as they can overpower the “self-locking effect” of bolted connections. This can lead to functional failure or even lead to the connection coming apart. As it’s not always possible to know what forces are acting on the structure, and as constructional measures cannot be implemented everywhere, securing elements are often used. One of the few effective securing technologies available is the wedge locking system, the effectiveness of which has been demonstrated by the latest experimental standards (including DIN 65151, DIN 25201-4, NASM 1312-7).




**Advantages and Features**

1. To solve the problem of fastener failure due to Bolt Loosening
2. Simple, Reusable & Reduces Maintenance Cost
3. No lubrication required and no failure in locking if there is lubrication
4. Available is Stock to fit Standard Bolt Size
5. No friction during Locking and Vibration thus No Damage Wear and Tear to bolts
6. Available in variety of material to suit similar working temperature of bolts
7. Results in joint integrity

# Product - Wedge Lock Washer

**Alloy steel 51 Crv4 or C75**

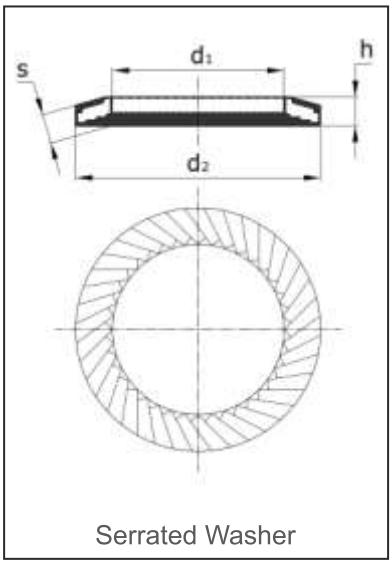
| Sr. No. | Item Code | Bolt size Metric | UNC | øi [mm] | øo [mm] | Thickness T [mm] |
|---|---|---|---|---|---|---|
| 1 | 7X3.4X1.8M3 | M3 | #5 | 3.40 | 7.00 | 1.80 |
| 2 | 7.6X3.9X1.8M3.5 | M3.5 | #6 | 3.90 | 7.60 | 1.80 |
| 3 | 9X3.9X1.8M3.5 | M3.5 | #6 | 3.90 | 9.00 | 1.80 |
| 4 | 7.6X4.4X1.8M4 | M4 | #8 | 4.40 | 7.60 | 1.80 |
| 5 | 9X4.4X1.8M4 | M4 | #8 | 4.40 | 9.00 | 1.80 |
| 6 | 9X5.4X1.8M5 | M5 | #10 | 5.40 | 9.00 | 1.80 |
| 7 | 10.8X5.4X1.8M5 | M5 | #10 | 5.40 | 10.80 | 1.80 |
| 8 | 10.8X6.5X1.8M6 | M6 | - | 6.50 | 10.80 | 1.80 |
| 9 | 13.5X6.5X2.5M6 | M6 | - | 6.50 | 13.50 | 2.50 |
| 10 | 11.5X7.2X1.8X1/4 | - | 1/4" | 7.20 | 11.50 | 1.80 |
| 11 | 13.5X7.2X2.5X1/4 | - | 1/4" | 7.20 | 13.50 | 2.50 |
| 12 | 13.5X8.7X2.5M8 | M8 | 5/16" | 8.70 | 13.50 | 2.50 |
| 13 | 16.6X8.7X2.5M8 | M8 | 5/16" | 8.70 | 16.60 | 2.50 |
| 14 | 16.6X10.3X2.53/8 | - | 3/8" | 10.30 | 16.60 | 2.50 |
| 15 | 21.1X10.4X2.53/8 | - | 3/8" | 10.30 | 21.10 | 2.50 |
| 16 | 16.6X10.7X2.5M10 | M10 | - | 10.70 | 16.60 | 2.50 |
| 17 | 21X10.7X2.5M10 | M10 | - | 10.70 | 21.00 | 2.50 |
| 18 | 18.5X11.4X2.5M11 | M11 | 7/16" | 11.40 | 18.50 | 2.50 |
| 19 | 19.5X13X2.5M12 | M12 | - | 13.00 | 19.50 | 2.50 |
| 20 | 25.4X13X3.4M12 | M12 | - | 13.00 | 25.40 | 3.40 |
| 21 | 19.5X13.5X2.51/2 | - | 1/2" | 13.50 | 19.50 | 2.50 |
| 22 | 25.4X13.5X3.41/2 | - | 1/2" | 13.50 | 25.40 | 3.40 |
| 23 | 23X15.2X3.4M14 | M14 | 9/16" | 15.20 | 23.00 | 3.40 |
| 14 | 30.7X15.2X3.4M14 | M14 | 9/16" | 15.20 | 30.70 | 3.40 |
| 25 | 25.4X17X3.4M16 | M16 | 5/8" | 17.00 | 25.40 | 3.40 |
| 26 | 30.7X17X3.4M16 | M16 | 5/8" | 17.00 | 30.70 | 3.40 |
| 27 | 29X19.5X3.4M18 | M18 | - | 19.50 | 29.00 | 3.40 |
| 28 | 34.5X19.5X3.4M18 | M18 | - | 19.50 | 34.50 | 3.40 |
| 29 | 30.7X20X3.4X3/4 | - | 3/4" | 20.00 | 30.70 | 3.40 |
| 30 | 39X20X3.4X3/4 | - | 3/4" | 20.00 | 39.00 | 3.40 |
| 31 | 30.7X21.4X3.4M20 | M20 | - | 21.40 | 30.70 | 3.40 |
| 32 | 39X21.4X3.4M20 | M20 | - | 21.40 | 39.00 | 3.40 |
| 33 | 34.5X23.4X3.4M22 | M22 | 7/8" | 23.40 | 34.50 | 3.40 |
| 34 | 42X23.4X4.6N22 | M22 | 7/8" | 23.40 | 42.00 | 4.60 |
| 35 | 39X25.3X3.4M24 | M24 | - | 25.30 | 39.00 | 3.40 |
| 36 | 48.5X25.3X4.6M24 | M24 | - | 25.30 | 48.50 | 4.60 |
| 37 | 39X27.9X3.4X1 | - | 1" | 27.90 | 39.00 | 3.40 |
| 38 | 48.5X27.9X4.6X1 | - | 1" | 27.90 | 48.50 | 4.60 |
| 39 | 42X28.4X5.8M27 | M27 | - | 28.40 | 42.00 | 5.80 |
| 40 | 48.5X28.4X5.8M27 | M27 | - | 28.40 | 48.50 | 5.80 |
| 41 | 47X31.4X5.8M30 | M30 | 1.1/8" | 31.40 | 47.00 | 5.80 |
| 42 | 58.5X31.5X6.6M30 | M30 | 1.1/8" | 31.40 | 58.50 | 6.60 |
| 43 | 48.5X34.4X5.8M33 | M33 | 1.1/4" | 34.40 | 48.50 | 5.80 |
| 44 | 58.5X34.4X6.6M33 | M33 | 1.1/4" | 34.40 | 58.50 | 6.60 |
| 45 | 55X37.4X6.6M36 | M36 | 1.3/8" | 37.40 | 55.00 | 6.60 |
| 46 | 63X37.3X6.6M36 | M36 | 1.3/8" | 37.40 | 63.00 | 6.60 |
| 47 | 58.5X40.4X6.6M39 | M39 | 1.1/2" | 40.40 | 58.50 | 6.60 |
| 48 | 63X43.2X6.6M42 | M42 | - | 43.20 | 63.00 | 6.60 |
| 49 | 70X46.2X7M45 | M45 | 1.3/4" | 46.20 | 70.00 | 7.00 |
| 50 | 75X49.6X7M48 | M48 | - | 49.60 | 75.00 | 7.00 |
| 51 | 80X53.6X7M52 | M52 | 2" | 53.60 | 80.00 | 7.00 |
| 52 | 85X59.1X7M56 | M56 | 2.1/4" | 59.10 | 85.00 | 7.00 |
| 53 | 90X63.1X7M60 | M60 | - | 63.10 | 90.00 | 7.00 |
| 54 | 95X67.1X7M64 | M64 | 2.1/2" | 67.10 | 95.00 | 7.00 |
| 55 | 100X71.1X9.5M68 | M68 | - | 71.10 | 100.00 | 9.50 |
| 56 | 105X75.1X9.5M72 | M72 | - | 75.10 | 105.00 | 9.50 |
| 57 | 110X79X9.4M76 | M76 | 3" | 79.10 | 110.00 | 9.40 |
| 58 | 115X83.1X9.4M80 | M80 | - | 83.10 | 115.00 | 9.40 |
| 59 | 120X88.1X9.4M85 | M85 | - | 88.10 | 120.00 | 9.40 |
| 60 | 130X92.5X9.4M90 | M90 | - | 92.40 | 130.00 | 9.40 |
| 61 | 135X97.3X9.4M95 | M95 | - | 97.40 | 135.00 | 9.40 |
| 62 | 145X103.4X9.4 | M100 | - | 103.40 | 145.00 | 9.40 |
| 63 | 150X108.5X9.4 | M105 | - | 108.40 | 150.00 | 9.40 |
| 64 | 155X113.3X9.4 | M110 | - | 113.40 | 155.00 | 9.40 |
| 65 | 165X118.4X9.4 | M115 | - | 118.40 | 165.00 | 9.40 |
| 66 | 170X123.4X9.4 | M120 | - | 123.40 | 170.00 | 9.40 |
| 67 | 173X128.5X9.4 | M125 | - | 128.40 | 173.00 | 9.40 |
| 68 | 178X133.3X9.4 | M130 | - | 133.40 | 178.00 | 9.40 |

# 4. Serrated Washer

Serrated WashersSerrated Washers are Coned Washers with Trapezoidal Ribs across the cross section on both sides for gripping.Serrated Safety Washers are ready to fit washers to sustain preload and avoid loosening. As the bolt is tightenedthe serrations crunch into the mating surfaces and prevent the screw from loosening due to vibration. Also, the discshape holds the necessary pre-tension. They are available in various sizes to fit bolts or screws. The diameters forSerrated Washers are matched to screw dimensions. The outer diameter of washer is matched to the diameter of screw head. This allows using screw and bolt including recessed heads, except countersunk screw.

## Dimension table for "L" (Light Series) Safety Washers

| Sr. No. | Item Code | Size (Nominal) [mm] | $d_1$ H14 [mm] | $d_2$ H14 [mm] | s [mm] | h max. [mm] | h min. [mm] | for bolts metric [mm] | for bolts imperial [mm] |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.2X1.7X0.35 | 1.60 | 1.70 | 3.20 | 0.35 | 0.60 | 0.38 | 1.60 | - |
| 2 | 4X2.2X0.35 | 2.00 | 2.20 | 4.00 | 0.35 | 0.60 | 0.39 | 2.00 | - |
| 3 | 4.8X2.7X0.45 | 2.50 | 2.70 | 4.80 | 0.45 | 0.90 | 0.49 | 2.50 | - |
| 4 | 5.5X3.2X0.45 | 3.00 | 3.20 | 5.50 | 0.45 | 0.90 | 0.51 | 3.00 | 1/8" |
| 5 | 6X3.7X0.45 | 3.50 | 3.70 | 6.00 | 0.45 | 0.90 | 0.52 | 3.50 | - |
| 6 | 7X4.3X0.5 | 4.00 | 4.30 | 7.00 | 0.50 | 1.00 | 0.59 | 4.00 | 5/32" |
| 7 | 9X5.3X0.6 | 5.00 | 5.30 | 9.00 | 0.60 | 1.10 | 0.73 | 5.00 | 3/16" |
| 8 | 10X6.4X0.7 | 6.00 | 6.40 | 10.00 | 0.70 | 1.20 | 0.82 | 6.00 | - |
| 9 | 9.5X6.7X0.7 | 6.35 | 6.70 | 9.50 | 0.70 | 1.20 | 0.79 | 0.00 | 1/4" |
| 10 | 12X7.4X0.7 | 7.00 | 7.40 | 12.00 | 0.70 | 1.30 | 0.89 | 7.00 | - |
| 11 | 13X8.4X0.8 | 8.00 | 8.40 | 13.00 | 0.80 | 1.40 | 0.98 | 8.00 | 5/16" |
| 12 | 16X10.5X1 | 10.00 | 10.50 | 16.00 | 1.00 | 1.60 | 1.21 | 10.00 | 3/8" |
| 13 | 15.9X11.6X1 | 11.10 | 11.60 | 15.90 | 1.00 | 1.60 | 1.18 | 0.00 | 7/16" |
| 14 | 18X13X1.1 | 12.00 | 13.00 | 18.00 | 1.10 | 1.70 | 1.31 | 12.00 | - |
| 15 | 19X13.7X1.1 | 12.70 | 13.70 | 19.00 | 1.10 | 1.80 | 1.33 | 0.00 | - |
| 16 | 22X15X1.2 | 14.00 | 15.00 | 22.00 | 1.20 | 2.00 | 1.52 | 14.00 | 9/16" |
| 17 | 24X17X1.3 | 16.00 | 17.00 | 24.00 | 1.30 | 2.10 | 1.63 | 16.00 | 5/8" |
| 18 | 27X19X1.5 | 18.00 | 19.00 | 27.00 | 1.50 | 2.30 | 1.85 | 18.00 | - |
| 19 | 30X20X1.5 | 19.00 | 20.00 | 30.00 | 1.50 | 2.50 | 1.98 | 0.00 | 3/4" |
| 20 | 30X21X1.5 | 20.00 | 21.00 | 30.00 | 1.50 | 2.50 | 1.94 | 20.00 | - |
| 21 | 33X23X1.5 | 22.00 | 23.00 | 33.00 | 1.50 | 2.70 | 2.08 | 22.00 | 7/8" |
| 22 | 36X25.6X1.8 | 24.00 | 25.60 | 36.00 | 1.80 | 2.90 | 2.32 | 24.00 | - |
| 23 | 38X27X2 | 25.40 | 27.00 | 38.00 | 2.00 | 3.10 | 2.52 | 0.00 | 1" |
| 14 | 39X28.6X2 | 27.00 | 28.60 | 39.00 | 2.00 | 3.10 | 2.52 | 27.00 | - |
| 25 | 45X31.6X2 | 30.00 | 31.60 | 45.00 | 2.00 | 3.60 | 2.78 | 30.00 | 1 1/8" |
| 26 | 54X38X2.5 | 36.00 | 38.00 | 54.00 | 2.50 | 4.20 | 3.38 | 36.00 | 1 3/8" |



Serrated Washer

## Dimension table for "H" (Heavy Series) Safety Washers

| Sr. No. | Item Code | Size (Nominal) [mm] | $d_1$ H14 [mm] | $d_2$ H14 [mm] | s [mm] | h max. [mm] | h min. [mm] | for bolts metric [mm] | for bolts imperial [mm] |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 9X5.3X1 | 5.0 | 5.3 | 9.0 | 1.0 | 1.3 | 1.07 | 5.0 | 3/16" |
| 2 | 10X6.4X1 | 6.0 | 6.4 | 10.0 | 1.0 | 1.4 | 1.08 | 6.0 | - |
| 3 | 13X8.4X1.2 | 8.0 | 8.4 | 13.0 | 1.2 | 1.7 | 1.32 | 8.0 | 5/16" |
| 4 | 16X10.5X1.5 | 10.0 | 10.5 | 16.0 | 1.5 | 2.0 | 1.64 | 10.0 | 3/8" |
| 5 | 18X13X1.5 | 12.0 | 13.0 | 18.0 | 1.5 | 2.1 | 1.65 | 12.0 | - |
| 6 | 22X15X1.5 | 14.0 | 15.0 | 22.0 | 1.5 | 2.2 | 1.76 | 14.0 | 9/16" |
| 7 | 24X17X2 | 16.0 | 17.0 | 24.0 | 2.0 | 2.6 | 2.21 | 16.0 | 5/8" |
| 8 | 27X19X2 | 18.0 | 19.0 | 27.0 | 2.0 | 2.7 | 2.27 | 18.0 | - |
| 9 | 30X21X2 | 20.0 | 21.0 | 30.0 | 2.0 | 2.8 | 2.34 | 20.0 | - |
| 10 | 33X23X2 | 22.0 | 23.0 | 33.0 | 2.0 | 3.0 | 2.42 | 22.0 | 7/8" |
| 11 | 36X25.6X2.5 | 24.0 | 25.6 | 36.0 | 2.5 | 3.4 | 2.87 | 24.0 | - |
| 12 | 38X27X2.5 | 25.4 | 27.0 | 38.0 | 2.5 | 5.8 | 5.35 | 25.4 | 1" |
| 13 | 39X28.6X2.5 | 27.0 | 28.6 | 39.0 | 2.5 | 3.5 | 2.91 | 27.0 | - |
| 14 | 45X31.6X2.5 | 30.0 | 31.6 | 45.0 | 2.5 | 3.8 | 3.12 | 30.0 | 11/8" |
| 15 | 54X38X3 | 36.0 | 38.0 | 54.0 | 3.0 | 7.5 | 6.76 | 36.0 | 1.3/8" |

### Advantages of Serrated Washer

1. Used for high vibration resistance due to positive rib contact.
2. Excellent Pretensioning.
3. Through proper radius selection, no splitting/cracking occurs during tightening.
4. The concentric force of the washer eliminates the chances of bending the fastener.
5. Extensive application and flexibility, minimizes stocks.

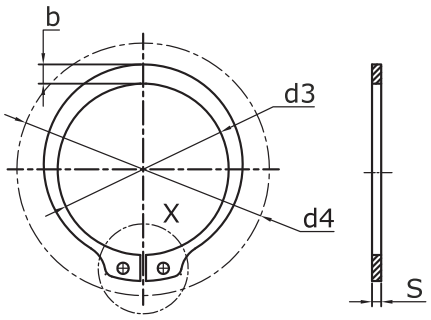
## 5. Circlips & E-Clips

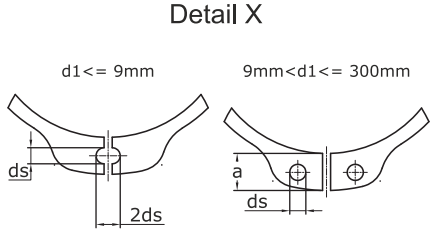
Circlips are used in application where a part needs to be pivot, spin or turn usually along with the bearing. Circlips are commonly used in Motors, Turbines, Pistons & Assemblies where they are subjected to strong centrifugal forces. Circlips fits in to a groove on the inside of a bore or outside a shaft.

**Circlips & E-Clips - internal and external circlips**

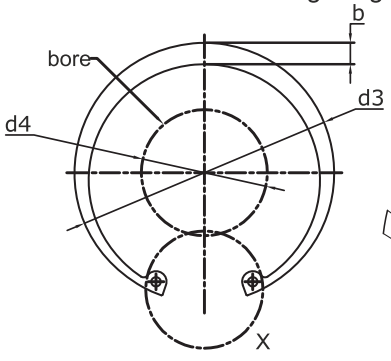
Stampco Manufactures Circlips, E-Clips, Snap Rings, Retaining Rings as per DIN 471, DIN 472, DIN 6799, IS 3075, DIN 7993 in Carbon Steel with phosphate finish. Varieties of other materials are available on request. Stampco also manufactures Custom Size for shafts & bores requiring a smaller radial mounting height.

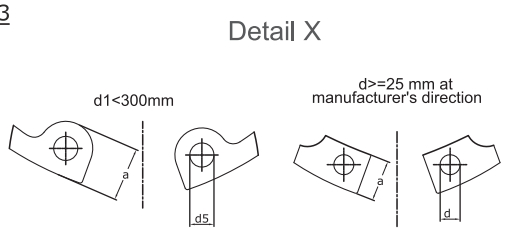
Retaining Ring for shafts DIN 471 (Circlips)




Retaining Ring for bores DIN 472 (Circlips)




Lock Washers (Retaining Washers) for shafts DIN6799 (E Clip)

Unloaded

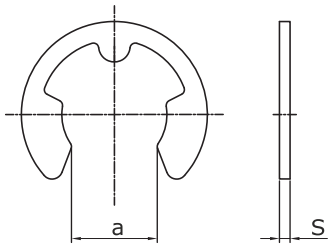



Figure 1.

Loaded

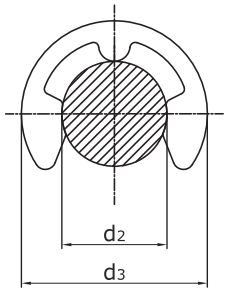



Figure 2.

# 5. Circlips & E-Clips

**Advantages & Features**

- Constructed as curved beams of uniform strength, the radial width is reduced towards the free ends so that a constantly round shape is maintained throughout continuous use. This form of circlip often used in assemblies subjected to strong centrifugal forces, is also secure against high rotational speeds. Lugs with holes are provided for rapid fitting or removal with circlip pliers.
- The circlips rings are used in structures to make sure that smaller moving parts such as bearing wheels are held into place. The ring is strong enough to be able to fight against the force that is created by the moving part and keeps the machine safely working.
- In the working of a machine with multiple parts, it is important to make sure that the measurements of the machine parts remain constant. The external rings provided by circlips suppliers help in creating an outward force on the pipe like structures to not expand or change in diameter.
- When you need to make sure that you have the right grip on some part of a mechanical instrument, a retention ring can prove to be extremely useful for you.
- If you need to have a death grip on a certain machine part and cannot afford to let it go, the circlips will help you in achieving it. All you have to do is make use of the grip circlips.
- When the gears move in combination with other gears, it is important that they remain in the same axial sphere. A circlip helps in ensuring that none of the gears move out of their path.

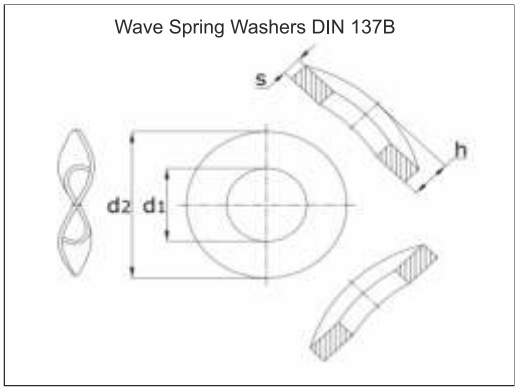
**Applications:**

- Securing gudgeon pins (special shapes)
- Gear systems
- Automotive engineering
- As auxiliary installation elements
- In the fittings industry

# 5. Wave Washer

## Wave Spring Washers DIN 137B

Wave washers, also known as wave springs or wave washers, are a type of compression washer that is designed to provide a load-bearing and/or spring force between two surfaces. They are typically made from high-quality spring steel and have a wavy or curvy shape that provides a unique spring-like effect. Wave washers are commonly used in applications where space is limited, and a high level of spring force is required.




**Dimension Table for Wave Washer DIN 137B**

| Sr. No. | Item Code | Nominal size | $d_1$ 1) H14 | $d_2$ 1) js16 | s Nominal size | s Limit deviations | h min. | h max. |
|---|---|---|---|---|---|---|---|---|
| 1 | 8X3.2X0.5 | 3.0 | 3.2 | 8 | 0.5 | - +0.05 | 0.5 | 1.6 |
| 2 | 8X3.7X0.5 | 3.5 | 3.7 | 8 | 0.5 | - +0.05 | 0.5 | 1.8 |
| 3 | 9X4.3X0.5 | 4.0 | 4.3 | 9 | 0.5 | - +0.05 | 0.5 | 2.0 |
| 4 | 11X5.3X0.5 | 5.0 | 5.3 | 11 | 0.5 | - +0.05 | 0.5 | 2.2 |
| 5 | 12X6.4X0.5 | 6.0 | 6.4 | 12 | 0.5 | - +0.05 | 0.5 | 2.6 |
| 6 | 14X7.4X0.8 | 7.0 | 7.4 | 14 | 0.8 | - +0.06 | 0.8 | 3.0 |
| 7 | 15X8.4X0.8 | 8.0 | 8.4 | 15 | 0.8 | - +0.06 | 0.8 | 3.0 |
| 8 | 21X10.5X1 | 10.0 | 10.5 | 21 | 1.0 | - +0.07 | 1.0 | 4.2 |
| 9 | 24X13X1.2 | 12.0 | 13.0 | 24 | 1.2 | - +0.07 | 1.2 | 5.0 |
| 10 | 28X15X1.6 | 14.0 | 15.0 | 28 | 1.6 | - +0.08 | 1.6 | 6.0 |
| 11 | 30X17X1.6 | 16.0 | 17.0 | 30 | 1.6 | - +0.08 | 1.6 | 6.4 |
| 12 | 34X19X1.6 | 18.0 | 19.0 | 34 | 1.6 | - +0.08 | 1.6 | 6.6 |
| 13 | 36X21X1.6 | 20.0 | 21.0 | 36 | 1.6 | - +0.08 | 1.6 | 7.4 |
| 14 | 40X23X1.8 | 22.0 | 23.0 | 40 | 1.8 | - +0.10 | 1.8 | 7.8 |
| 15 | 44X25X1.8 | 24.0 | 25.0 | 44 | 1.8 | - +0.10 | 1.8 | 8.2 |
| 16 | 50X28X2 | 27.0 | 28.0 | 50 | 2.0 | - +0.10 | 2.0 | 9.4 |
| 17 | 56X31X2.2 | 30.0 | 31.0 | 56 | 2.2 | - +0.10 | 2.2 | 10.0 |
| 18 | 60X34X2.2 | 33.0 | 34.0 | 60 | 2.2 | - +0.10 | 2.2 | 10.6 |
| 19 | 68X37X2.5 | 36.0 | 37.0 | 68 | 2.5 | - +0.15 | 2.5 | 11.6 |

1) The diameter tolerances specified apply to spring washers when pressed flat. The tolerance on coaxiality between $d_1$ and $d_2$ (related to d2) shall be 1/2 IT 14
2) Values to be complied with in the spring force test as described in DIN 267 Part 26 have not as yet been specified for this size.

**Advantages of wave spring washers:**

1) The spring washer has a good anti-loosening effect;
2) The spring washer has better anti-vibration effect;
3) Low manufacturing cost;
4) Easy to install.

# Material & Surface Finish

| Spring Material Properties | | | | | |
|---|---|---|---|---|---|
| Material Name | Material No. | Standard | Working Temp Range $^{0}$C | Tensile Strenght N/mm2 | Suitable Application Areas |
| C 60 | 1.1211 | EN 10132-4 | -20+100 | 1150-1750 | These materials offer the best spring characteristics, most suited to high fatigue and low and moderate stressed applications. |
| C75 | 1.1248 | EN 10132-4 | -20+100 | 1200-1800 | |
| 51CrV4<br>50CrV4 | 1.8159 | EN 10132-4 | -50+200 | 1200-1800 | |
| SS 301 | 1.4310 | DIN EN 10151 | -200+200 | 1150-1500 | Suitable for high corrosion resistance, indoor & outdoor services, high temperature, wear, abrasion, chemical & organic materials |
| SS 304 | 1.4301 | DIN EN 10151 | -200+200 | 1000-1500 | |
| 17/7 Ph | 1.4568 | DIN EN 10151 | -200+300 | 1150-1700 | Offers combined advantage of high strengh & corrosion resistance, used for cryogenic applications & intricate parts due to its low distortion in heat treatment |
| INCONEL X750 | 2.4668 | - | -200+700 | ≥1170 | Involving good strengh under high temperatures, corrosive environment, high fatigue strengh, excellent resistance to oxidation at |
| INCONEL 718 | 2.4669 | - | -200+600 | ≥1240 | |
| H11 | 1.2343 | - | 0- +600 | 1650-1990 | Suitable for highly stressed structural parts, resistance to softening & retaintion of good toughness with high strengh at temperatures upto 600 C. |
| H13 | 1.2344 | - | 0- +600 | 1650-1990 | Offers high hardenability, excellent wear resistance, hot toughness, good thermal resistance, greater homogeneity & fine structure with high temperature tensile strengh |

| Details of different types of plating | | | |
|---|---|---|---|
| Sr. No. | Types of coating | Standard/Reference | Salt Spray Test ASTM B117 |
| 1 | Zinc Phosphating | IS 3618 / DIN EN12476 | 24 hrs. red rust |
| 2 | Mechanical Zinc Plating | ASTM B695 | 192 hrs. red rust |
| 3 | Electro Plating & Nickel Plating | ASTM - B633 & ASTM - B689 | 96 hrs. red rust |
| 4 | Powder coating, CED coating & Enamel Painting | IS - 13871 | NA |
| And variety of other finishes available as per Customer requirement | | | |

# Quality Experience

“Quality is never an accident; it is always the result of high intention, sincere effort, intelligent direction and skilful execution" "We will consistently fulfil the needs of our customers, our employees and our community by:

- Our commitment to consistently deliver superior products/services to our customers through rigorous design and development process.
- Our commitment to establish and maintain an effective quality system that allows us to deliver products/services at the highest level of customer satisfaction and to demonstrate compliance with applicable laws and regulations.

Stampco India is committed to the designing and delivering safe, effective and reliable products/ services. To achieve our quality goal, we will:

- Meet or exceed internal and external customer needs.
- Meet or exceed applicable worldwide quality standards and regulatory requirements.
- Continually motivate and develop our employees to improve our processes and quality system

We at Stampco India have evolved incipience, meticulously designed every process within the organization in bringing highest organizational excellence and offer greater customer satisfaction. Quality is carefully constructed in our cultural environment and it is the fabric of our organization.Stampco India demonstrates its commitment and organizational excellence by attaining highest compliance to worldwide regulatory requirement and global standards.


Stampco India

Survey No. 804 A/B, Mumbai-Agra Highway, Adgaon, Nashik-03

+91 96577 15583 www.stampco.in info@stampco.in

GSTIN No.: 27AMDPT5984F2ZI