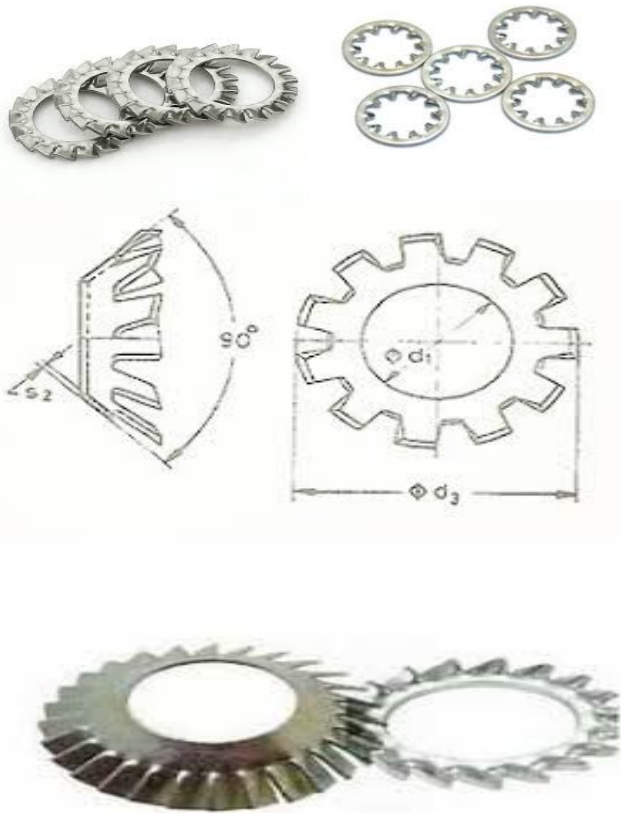


L.V.LOCKING DEVICES
GST NO.: 27ARVPP2209E1ZL

GALA NO . B21, GIRIRAJ INDUSTRIAL
ESTATE, MAHAKALI CAVES ROAD,
ANDHERI EAST, MUMBAI : 400093

MULTI TEETH WASHER / OVERLAPPING WASHER



- Being a quality conscious company, we are gaining a huge appreciation in this field by putting forth an optimum quality of **External Overlapping Washer**. It is manufactured at our advanced production set-up with the use of premium quality raw materials as per international quality norms. Widely acknowledged in various engineering applications as an important component for aiding in fastening, the offered washer ensures tight joining. Additionally, our clients can avail the provided **External Overlapping Washer** at marginal prices from us.

CIRCLIP /

INTERNAL CIRCLIPS



- Internal Circlips are a metal ring with open ends placed onto a machined groove to allow rotation but prevent a Lateral Movement. Circlips are generally used to secure a pinned connection.

Internal Circlips are fitted inside a Cylindrical bore or a Housing and push outwards.

To ensure you get the correct size for an Internal Circlip: Measure from the Outside on one side to the Inside on the other.

CIRCLIP /

EXTERNAL CIRCLIPS



- External Circlips are a metal ring with open ends placed onto a machined groove to allow rotation but prevent a Lateral Movement. Circlips are generally used to secure a pinned connection.

External circlips are fitted around the shaft and press against it.

To ensure you get the correct size for an External Circlip: Measure from the Outside on one side to the Inside on the other.

CIRCLIP /

E TYPE CIRCLIPS : E - CLIPS



- Certain cylindrical parts such as hinge pins are held in place with flat, semi-circular steel fasteners called e-clips. E-Clips are used on applications such as a Radio Controlled cars.

To make sure you order the correct size of E-Clip measure the Outside Diameter of the Shaft.

LOCK WASHER /

UNCAPPED STAR LOCK
WASHER



- Starlock washers are used not only on precision machined shafts but also on tubes, cast parts, plastic shafts and studs.

The Starlock Washers are pushed on to the shaft causing the prongs to grip the shaft tightly, thus locking the washers in place.

DISC WASHER /

DISC SPRING WASHERS /

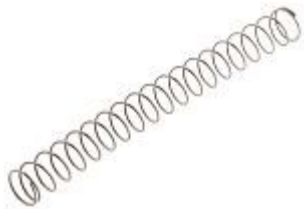
BELLEVILLE WASHERS



- The Standard Product Range of disc springs (sizes to DIN 2093 / DIN6796 and Factory Standards) includes 246 sizes with outside diameters between 8 and 250 mm. These springs are manufactured from C80 & 50 CrV 4, and are typically available from stock. The standard corrosion protection is zinc phosphating and oiling.

SPRING /

COMPRESSION SPRINGS



- Compression Springs, also known as coil springs, are open-coiled steel wire in a variety of cross sections and forms for linear applications. As compression springs are compressed, they provide a force (push) to return the spring back to its normal height. The force produced by compression springs makes them an excellent component for storing energy, ideal for various applications. They are used in everyday items, such as pens, vehicles, and mobile phones. Compression springs can be manufactured in any size, with varying degrees of stiffness, known as spring rate.

SPRING /

TORSION SPRINGS



- **Dimensions**
- Wire diameter: 0.03 – 5.00 mm
- **Designs**
- Spring body: Cylindrical, conical
- Leg shapes: Bent onto the spring body radially or tangentially
- Customized leg shape according to drawing
- Double torsion springs
- Wire cross section: Round, oval, square, rectangular, multi-arc special profiles

SPRING DOWEL PIN /
DOWEL PINS /
CYLINDRICAL PIN / SOFT &
HARDENED /
TAPER PIN SOFT & HARDENED



- Dowel pins are designed to achieve maximum holding power in assemblies where parts must be accurately positioned and held in absolute relations to one another. Similar to traditional wooden dowels, dowel pins are small steel rods machined to a high tolerance for accurate locating and alignment. Their added strength means for greater reliability and assurance over time without the concern for wood rot. Dowel pins typically come in metric sizes with 1mm diameter increments for ease of use in most applications. Always consider the length of pin when purchasing as unlike their wooden counterpart, dowel pins are more difficult to trim.

FEY LAMINAR RING



- Fey laminar rings combine a low contact multiple labyrinth with very little gap width and are especially effective for grease sealings and for the exclusion of fluid media, dirt and dust entry as well as other contaminations. In addition to their outstanding sealing characteristics for rotating components, the low contact laminar rings with low friction produce a significant reduction of internal heat and wear, which qualifies these sealing elements for high speed applications and applications in temperature and/or friction sensitive installations.
- For static sealing applications such as axial compensators at screwed exhaust manifold systems for internal combustion engines, exhaust gas recirculation systems and power units with operating temperatures of up to +700°C, Fey laminar rings will be manufactured from chrome nickel materials, which are spring and heat resistant in the sealing area even at high temperatures.
- **Design types include single wound (FK3) and double wound (FK6/FK5/FK5-HFL) laminar rings:**
- Fey laminar rings are offered as single wound laminar rings (AS and IS) with joint gap and as double wound laminar rings (ASD and ISD) without joint gap. The use of the different laminar ring geometries and the design of the installation technology depend on the operating conditions, the motion sequence of the components to be sealed and on the leakage requirements of the customer. In addition to single outspringing or single inspringing ring sets, Fey laminar rings can also be combined as a ring set within a groove: outspringing rings with inspringing rings and vice versa. The additional coverage of the groove base plays within the bore of the housing or at the groove base of the shaft optimize the labyrinth effect and therefore the sealing effect. However, we must point out that these combinations cannot be recommended for all sealing tasks.
- One thing which must be avoided at all costs is that the laminar ring seal sets are moved axially by the movement of the groove, which may result from the axial play in the bearings. Depending on the frequency involved, friction would be generated between the ring and the groove flanks which may lead to premature wear of the rings and adjacent components.
- **FK 2: Laminar piston rings**
- for pistons of internal combustion engines, compressors, pneumatic and hydraulic equipment, shock absorbers, etc.
- **FK 3: Single laminar sealing rings**
- Single wound laminar rings for the sealing of grease lubricated roller and plain bearings.
- **FK 4: Laminar piston rings**
- for pistons of freeform and drop forging machine, hydraulic controls and presses.
- **FK 5: Single and/or double laminar sealing rings**
- Single and/or double laminar sealing rings are used to seal compensators at exhaust pipes for internal combustion engines, turbochargers and turbines. "FK5" rings are also used to seal bearing units for continuous casting plants.
- **FK 6: Double laminar sealing rings**
- Double wound laminar rings for the sealing of grease lubricated roller and plain bearings for special requirements and also for high rotational speeds.
- **FK 7: Laminar retaining rings**
- Single and double wound laminar retaining rings. DMS double laminar retaining rings with centrifugal force retainer for high shaft speeds.
- **FK 8: Plastic laminar ring carrier seals**
- Plastic ring carriers with laminar sealing rings for the sealing of grease lubricated axle and machine bearings and conveyor belts.

SEEGER GRIP RINGS



- Seeger retaining systems can only fulfill their function if they are assembled perfectly. During assembly, the ring is mostly subjected to higher stresses than during later operation. Improper assembly damages the ring and/or the groove. These rings are equipped with assembly holes and are mostly fitted and dismantled using special pliers. It is important to use the plier suitable for each single ring. "During assembly, a Seeger-Ring should be expanded or closed only to the extent necessary to pass over the shaft or into the bore. The shaft and bore must be of the same nominal diameter as the ring".

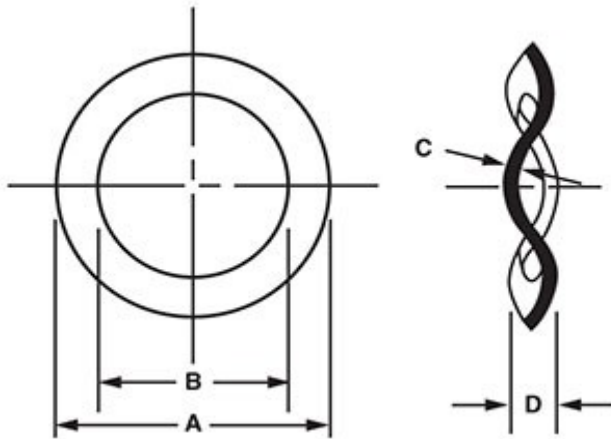
SNAP RING



- A spring ring that is sprung open and snapped into place in its groove and is used especially for a piston or other retaining ring function. An oval or pear-shaped ring used by rock climbers to fasten a rope to a piton

WAVE WASHER /

BEARING WASHER



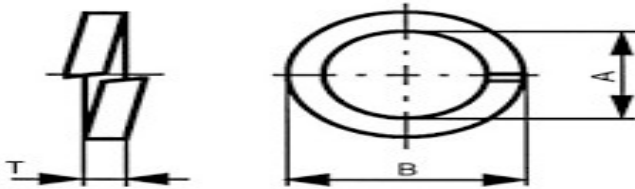
- When the load is static or the working range is small, and the allowable amount of axial space is limited, the use of a wave washer is an efficient method of obtaining the required loading. Loads obtainable from wave washers are usually in the range of a few pounds to hundreds of pounds. These springs are often used as cushion springs or cushion spacers between parts on shafts, or to take up the expected amount of variation in assembled parts. Wave washers can be made in a very large range of sizes.

SPIRAL PIN



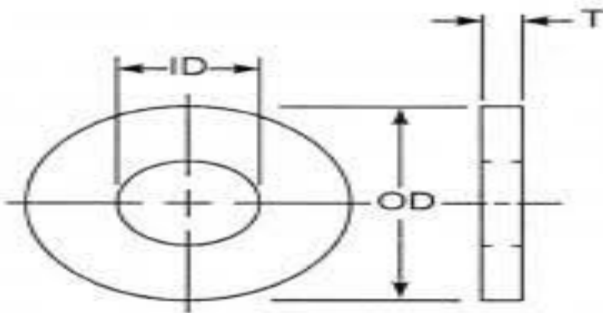
- All Spring Pins have the common characteristic of a pin diameter larger than the hole diameter into which the pin is installed. Coiled Pins can be easily identified by the 2.1 / 4 coil cross-section. The absence of a slot eliminates pin nesting and interlocking. When Spiral Coiled Pins are installed, the compression starts at the outer edge and moves through the coils toward the center. SPIROL Coiled Pins spread compressive stress over the entire pin and do not have stress point concentrations. Comparatively, Slotted Pins compress by closing the slot, and stress is concentrated 180 degrees opposite the slot. This imbedded stress at installation, combined with the concentration of stress during the assembly's life reduces the fatigue life of the Slotted Pin potentially causing premature assembly failure. Solid Pins are retained by compressing and deforming the host material, not the pin. If the Solid Pin has knurls, the knurls cut into the host material during installation. In all instances, the Solid Pin must be harder than the host material or else the pin will be deformed.

SPRING WASHER



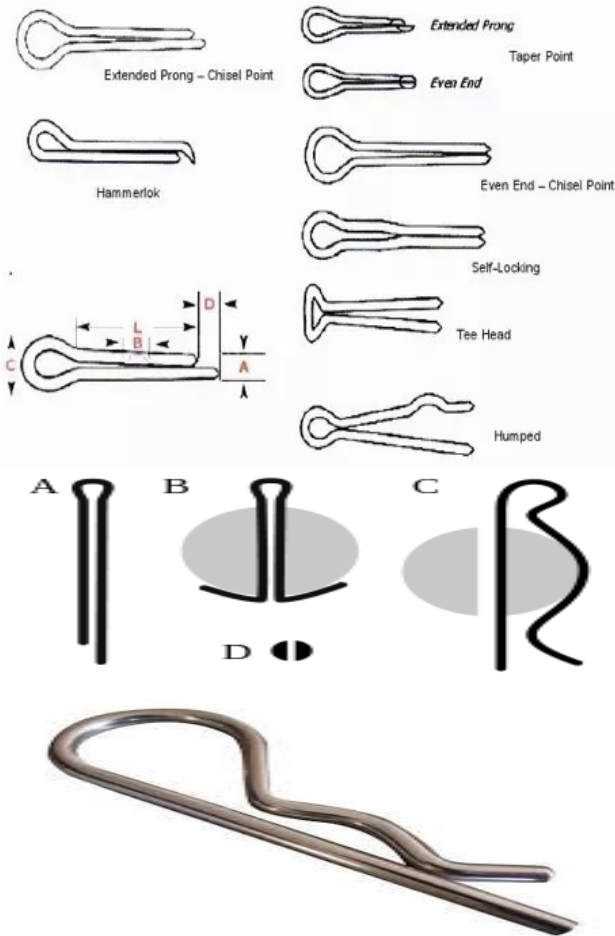
- Spring washers are specifically designed to provide a compensating spring force and sustain a load or absorb a shock. Many design variations have evolved to best serve one or the other of these two basic functions or to optimize both functions in a single part within specific I.D./O.D. limits.
- Two principle factors are at work that continually increase the requirement for spring washers:
- The continuing effort to down-size many end products, relative to both weight and cost, creates a need for small, multi-functioning assembly components, such as washers that support a load, span a hole, or both, while providing a compensating spring force.
- Automated assembly requires some “play” or tolerance in the “fit” of components. Spring tension is needed to compensate for these tolerances.

PLAIN WASHER



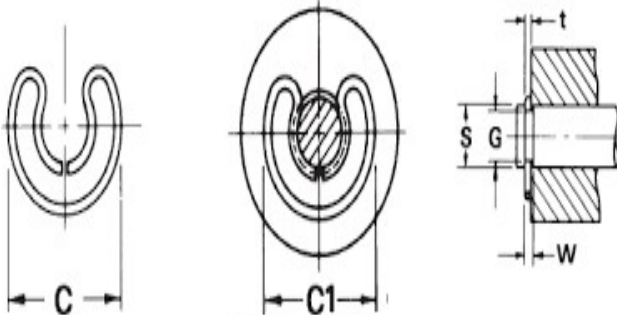
- A **plain washer** (or 'flat washer') is a flat [annulus or ring](#), often of metal, used to spread the load of a screwed fastening. Additionally, a plain washer may be used when the hole is a larger diameter than the fixing nut. *Plain washers*, which spread a load, and prevent damage to the surface being fixed, or provide some sort of insulation such as electrical
- Washers are usually [metal](#) High quality [bolted joints](#) require hardened steel washers to prevent the loss of pre-load after the [torque](#) is applied.

COTTER PIN



- A cotter pin (also known as a cotter key) is a metal fastener with two tines that are bent during installation, similar to a staple or rivet. Typically made of wire with a half-circular cross section.
- A cotter pin is a fastener that is placed through two holes on one end of a clevis pin. It is used for locking and to hold an object in place. It is commonly split in the middle and has two tines that can be bent around the nut or bolt to secure machinery.
- Split cotter pins have multiple individual styles, each portraying a different kind of wire terminus.

PLAIN WIRE RING



When Sprung into Groove

- Plain wire snap rings are most commonly used for shafts, bores and [bearing retention](#). If your application requires strong centrifugal forces or extreme rotational speeds, check out our [circlip](#) selection. Many of these are available in stainless steel, Beryllium copper, bronze or carbon spring steel.