



Business Machines



Retainer / Snap Rings

(Single & double coil in Spring steel & Stainless steel)

Retaining Rings are precision engineered components that are designed to be applied on shafts or in bores and provide a shoulder that accurately positions, locates and retains other parts of an assembly. BM, an expertise in manufacturing the retaining / snap rings, have developed different types over the years, each a solution to a specific problem / issues such as: tolerance take-up, clearance diameter, thrust load capacity, flexible installation, rpm capacity, impact loading, non-removable lock-rings, groove-less push-on fastening and radial installation.

BM rings can be economically produced in carbon steel & stainless steel as these are been manufactured by coiling from flat wire, hence no burrs and no scrap. We offer thousands of parts available in both carbon and stainless steel with no tooling cost for your designs.

Benefits of Retaining Rings:

- Retaining rings fasten assemblies on shafts or in housing/bores.
- They are installed into a groove creating a shoulder that retains the assembly.
- Retaining rings are more efficient and cost-effective than traditional fasteners like screws, nuts, bolts, cotter pins, washers and more.
- Functions with a minimum amount of surface preparation to either shaft or housing.

Applications:

- Automobile Industry – Applicable in many components
- Military, Aerospace applications



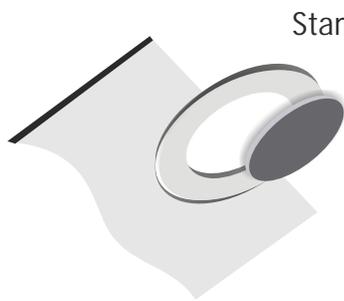


Wave Spring / Washers

(Spring Steel & Stainless Steel in 2 / 3 / 4 waves, gap type, overlap type, double wave type)

A wave spring is made from coiled flat wire with waves added to give it a spring effect. The on-edge-coiling process creates a circle with one or more turns to specifications in any diameter and any number of specific designed waves. When compared with typical coil springs, wave springs have equal performance with about half of the overall free height. This not only provides for space savings, but also smaller assemblies that use less materials, hence lower production costs. Wave springs are a precision spring and available in many styles and materials.

Wave Washers are solid washers that have pressed waves. These items are typically used to offer preload to bearings and bolts.



Stamping Process



Flat Wire Coiling

Flat Wire Wave Springs versus Conventional Stampings

- No material waste compared to stamped parts
- Rolled flat wire features edges with a radius—NO DAMAGE TO SHAFT/BORE
- No stamping burrs eliminates the grinding process
- No stamping through the metal grain--microstructures remain intact
- Microstructure offers better strength because the line of force in circumferential direction is not disturbed; risk of fatigue cracking and inconsistent loading in a lot is minimized

Applications

- Quick Connectors for military, aerospace and industrial applications
- Centrifugal Pump
- Bearing Retention
- Fluid Power Assemblies
- Mechanical seals
- Automotive Air assemblies
- Sprinkler Device
- Inflation component
- Flashlight assembly





Chain Assemblies

(Stainless steel, nylon cord, stainless steel cord as per Military or customer specifications)

Various other standard chain assemblies are available or custom assemblies can be built to order for special projects. Our expert engineering staff can assist in designing a new system for your needs.



Circlips

Business Machines offers a full selection of Circlips. Basic internal, external, inverted lug types, E-Rings, C-Rings, push-on rings and others comprise the mix of Circlip Style Rings that we have readily available from stock.





Special press parts



Special press parts components made as per customer designs / specifications to meet very high tolerances and dimensions. These components are made from a variety of materials as per the customer requirements and application standards. Business Machines keep these items in stocks that are required by our customer on regular basis and also can be made as and when required.

Load Springs



Load springs are used for push and pull connectors as per the standards and customer designs / specifications to meet very high tolerances and dimensions. These components are made from variety of materials as per the customer requirements and application standards. Business Machines keep these items in stocks that are required by our customer on regular basis and also can be made as and when required.

Special Copper Components

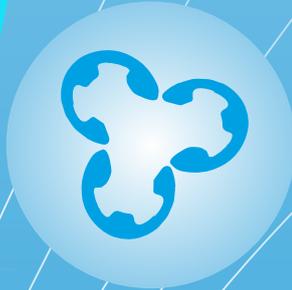


Beryllium copper are shaped wire products in coiled form and are having variety of shapes. Press components in copper are mainly socket heads and mounting brackets. Business Machines keep these items in stocks that are required by our customer on regular basis and also can be made as and when required.



PRODUCTS

- *standard and specialized*



INDUSTRY APPLICATIONS

- *never the limit*



MATERIAL & FINISHES

- *no compromise*



QUALITY

- *that you can trust*



BM ADVANTAGES

- *life long...unlimited*

www.businessmachines.in

Business Machines

6, Chintamani Industrial Estate,
Ramtekdi Industrial Area, Hadapsar,
Pune - 411013 (Maharashtra, India)
Mobile : +91-9823096219 / 9881338762
9623625197 / 9890093910
Email: sales@businessmachines.in