

## Current Client List

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HK Metalcraft is a certified or approved vendor and a supplier to facilities operated by the following companies:

**Caterpillar Inc.**

**Dana Corporation**

**Delphi Corporation**

**Denso Corporation**

**Emerson Electric Co.**

**General Electric Company**

**Magna International Inc.**

**Xerox Corporation**



**METALCRAFT**

Manufacturing Corporation

**Precision Metal Washers, Gaskets and Stampings**

35 Industrial Road  
Lodi, New Jersey 07644  
Telephone: (973) 471-7770  
Fax: (973) 471-9666  
[www.hkmetalcraft.com](http://www.hkmetalcraft.com)

## A Modern Approach to the Future

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Quality and service have been company traditions at HK Metalcraft ever since our precision metal washer, gasket and stamping company was founded in 1926. Seventy years later, under the direction of Raymond H. Hopp, our President and CEO, HK Metalcraft continues its steady growth by implementing modern manufacturing methods, exploring new ideas and expanding our product lines into new markets.

Mr. Hopp has brought together a professional management team. This group has utilized its varied industry backgrounds and skills in the manufacturing process to enhance the company's effectiveness as an engineering-oriented problem-solver.

Under this team's direction, for example, HK Metalcraft has implemented computerized Statistical Process Control (SPC) methods to help ensure the highest standards of quality. Our company now provides "just-as-needed" manufacturing with "just-in-time" delivery service to meet individual customer requirements.

Today, HK Metalcraft enjoys a solid reputation as an innovative custom manufacturer. It's no wonder that our customers look to HK Metalcraft for flexibility in devising engineering solutions to the special problems presented by the unique specification and performance demands of their products.

Individual attention, custom engineering, modern manufacturing methods, dedicated employees and a management commitment to the goals of product quality and customer satisfaction....

That's the proud tradition of HK Metalcraft Manufacturing Corporation.



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## Mission Statement

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**HK Metalcraft** is a quality manufacturer of precision metal stampings, formed products and related assemblies for all industries worldwide. We are an engineering-oriented problem-solver, committed to "Quality On Time, Every Time" performance of all our customers.

To achieve our goal, we will:

- Promote a quality-in-all-we-do philosophy with a total company effort and commitment to continuous improvement.
- Be attuned to the dynamic individual requirements of our customers, addressing all requests, inquiries and concerns in a timely manner.
- Provide leadership in the areas of design, engineering, processes and material utilization.
- Acknowledge that employees and their families, our customers, suppliers and the community deserve recognition and respect because they play an important role in the success of our company.
- Foster a safe and clean workplace and a responsible attitude toward the outside environment.

To meet our goals, we must have a strong sense of purpose and integrity in an environment that promotes teamwork, fosters strong support and respect for one another, and allows us to enjoy our endeavors. We must maintain a company-wide attitude, which facilitates long-standing relationships between our customers, suppliers and **HK Metalcraft**.



**Precision Metal Washers, Gaskets and Stampings**

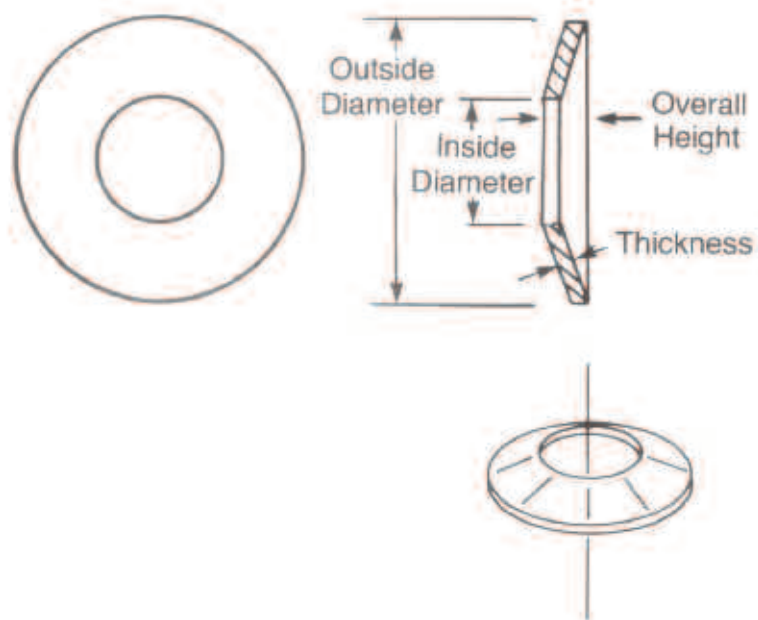
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## BELLEVILLE SPRING WASHERS

### Description

Conical discs are widely used as compression springs to support large loads where space in the direction of loading is limited. One type of conical disc spring is the Belleville Spring Washer. The benefit of this particular type of spring washer is that it does not take a permanent set on application. A permanent set, due to stresses exceeding the elastic limit of the washer material, can result in internal strains and washer failures.

### Diagram

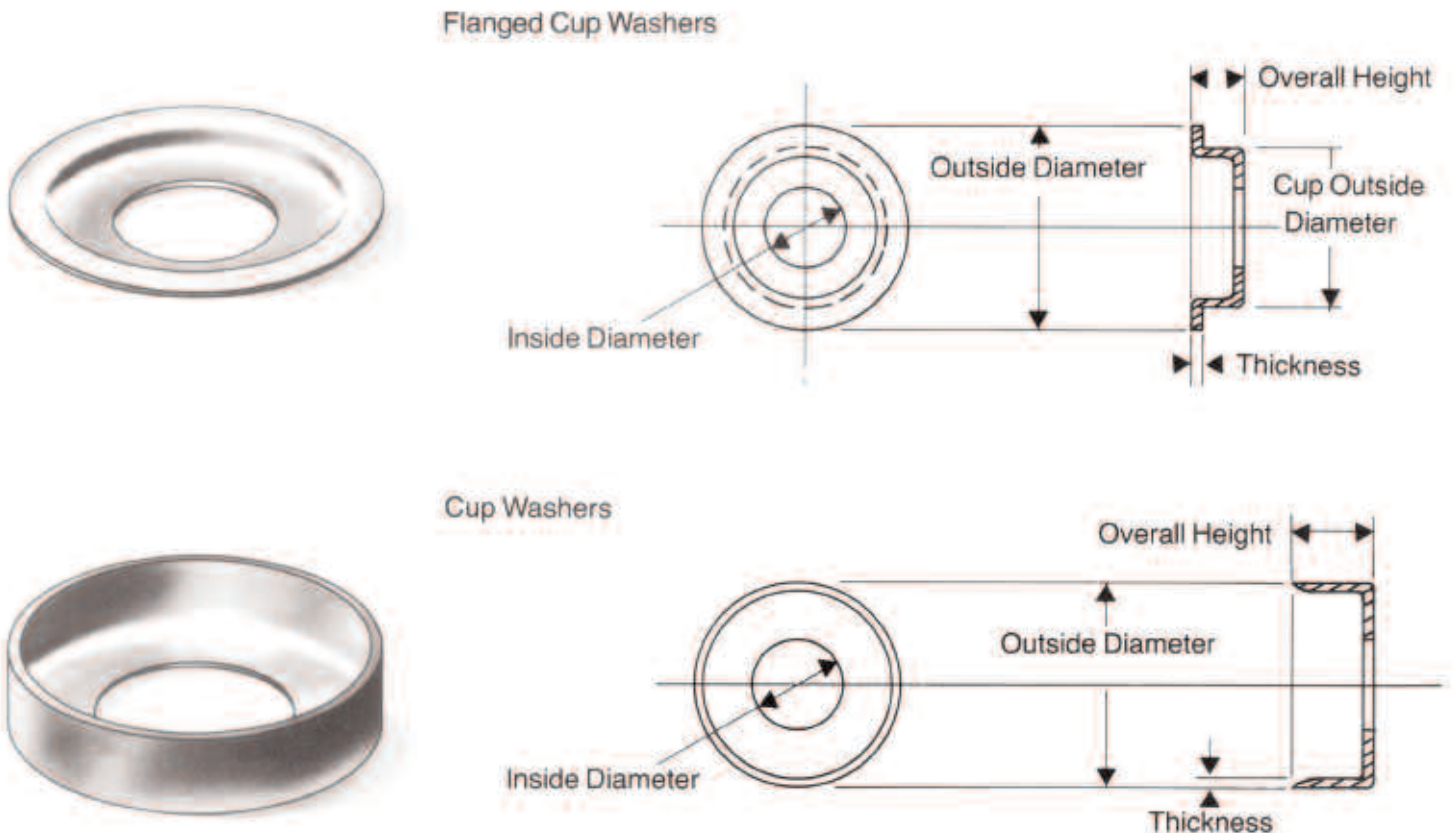


## FLANGED & PLAIN CUP WASHERS

### Description

Whether your specific needs are for one or one million cup washers, we will help you to define that need, select the appropriate washer from our tool library of cup washer dies of various sizes or we will design to your unique specifications. Cup Washers can be made of Steel, Stainless Steel, Aluminum, Copper, Brass and other malleable metals. Cup Washers are used as spring retainers, centering washers, housings for assemblies, a substitute for larger heavier washers, spacers to reduce material usage and weight of product or for many other reasons.

### Diagram

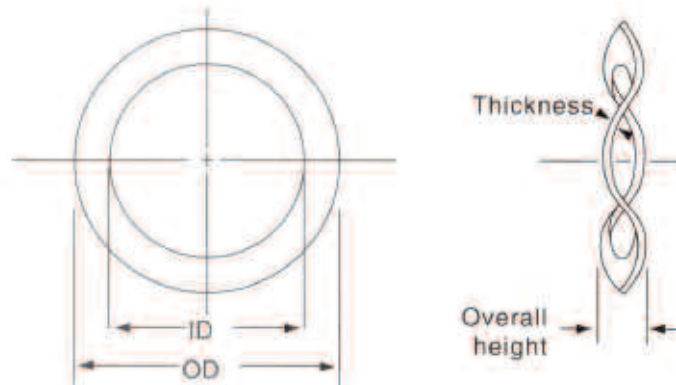


## WAVE SPRING WASHERS

### Description

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 spring 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 large range of sizes. However, when the ratio of mean diameter to radial width becomes less than 8, the load and stress calculations are not accurate. This is due to distortion of the material and the inability of the waves to recover their shape after deflection.

### Diagram

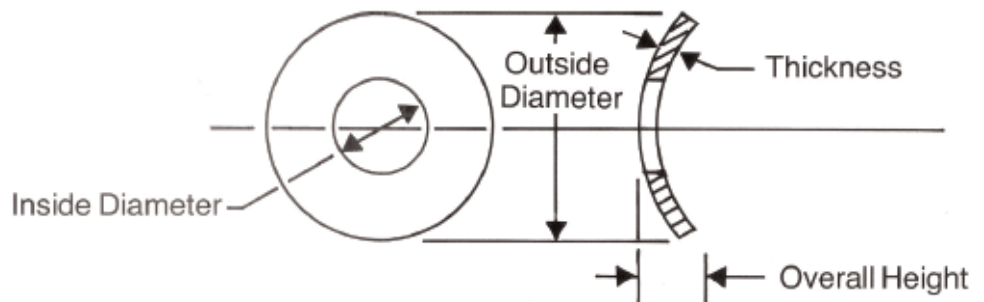


## CYLINDRICALLY CURVED SPRING WASHERS

### Description

The cylindrically curved spring washer is well-suited for applications requiring flexibility and light loads (from ounces up to about one hundred pounds) and repeated cycles through a range of motion. Of the cylindrically curved, wave and Belleville types, the cylindrically curved washer exhibits the most uniform spring constant over the widest range of deflection. In order for this type of washer to function properly, the formed portions that make contact must be free to slide. Space must be provided for this expansion, and the loading surfaces must be hard enough to prevent the formed ends from digging in. The maximum height should be limited to less than one-half of the outside diameter.

### Diagram



## GASKETS

### Description

HK Metalcraft gaskets are designed to keep gases and fluids under pressure from leaking. They are manufactured from steel, annealed to a hardness of 120 Knoop maximum, and copper, annealed to a hardness of 70 Knoop maximum, to enhance their sealing ability. Gaskets are available for over-the-thread, screw-on, stake-on, and pre-assembly (captive) applications. Our method of manufacturing and annealing of gaskets has solved engineering problems for the following applications by replacing rubber, fiber, aluminum, asbestos, and other types of gaskets.

Transmission Lines  
Oil Pumps  
Hydraulics

Oil Drain Plugs  
Pollution Control  
Fuel Injection

Sensors  
Front Wheel Drives  
Spark Plugs

There are many other applications for our gaskets.

### Diagram

