Over twenty years of experience, engineering expertise and dynamic growth has given PENCOM® the reputation as one of the foremost global suppliers to the fastener industry. PENCOM prides itself on having quality products at competitive prices with on-time deliveries.
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The most popular thread used in fastening is the machine screw thread (Figure 1). The machine screw thread has a 60 degree thread angle made in a continual running helix pattern. All fastener threads have five defining dimensions, they are the major diameter, minor diameter, pitch diameter, flank angle, and pitch.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Male Thread</th>
<th>Female Thread</th>
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<tr>
<td>Major Diameter</td>
<td>This is the diameter across the crest of the thread. It is easily checked with calipers.</td>
<td>This is the diameter across the root of a female thread. This diameter is very hard to measure and is best checked by a thread gage.</td>
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<tr>
<td>Minor Diameter</td>
<td>This is the diameter across the root of the thread. The easiest way to check this dimension is with an optical comparator.</td>
<td>This is the diameter of the through hole of the female thread. It can be easily checked with a pin gauge.</td>
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<tr>
<td>Pitch Diameter</td>
<td>This is the mid point between the crest and root of the thread. It is checked by using a pitch micrometer.</td>
<td>This is the mid point between the crest and root of the thread. It is checked with the use of a thread gauge.</td>
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<tr>
<td>Flank Angle</td>
<td>This is the angle made by the intersection of the two thread flanks. It is best checked with an optical comparator.</td>
<td>This is the angle made by the intersection of the two thread flanks. It is best checked with a thread gauge.</td>
</tr>
<tr>
<td>Pitch</td>
<td>This is the distance between two consecutive thread crests. It is best checked with an optical comparator.</td>
<td>This is the distance between two consecutive thread crests. It is best checked with a thread gauge.</td>
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</table>

A fastener with a machine screw thread can have one of three classes of thread tolerances. (Figure 2) The tolerance is called “Class of Fit”. To indicate that a thread is a male thread an “A” is placed behind the Class of Fit number (for example, 2A). To indicate that a thread is a female thread a “B” is used, (for example, 3B).

Class 1 – Is a very loose fit. It is rarely used in today’s market place.

Class 2 – Is the most widely used tolerance class by the fastener industry. All industrial applications use a Class 2 Fit.

Class 3 – Is thought of as the, “Aerospace” tolerance. This class of fit is used on more critical applications.

Dimensions for all thread sizes and their corresponding class of fit can be found in the ASME B1.1 Specification.
The fastener industry has developed a very strong nomenclature to identify a thread. Here is how to call out a fastener thread.

### Machine Screw Threads

A machine screw thread is defined by starting with the size of the thread, then the number of threads in one inch, followed by the thread form call out, "UN" for Unified National then the letter "C" for coarse, "F" for fine, the Class of Fit, and an "A" for an external thread or "B" for an internal thread (Figure 3).

In this guidebook, the thread nomenclature has been shortened to use only the thread size and threads per inch. A Class 2 tolerance is assumed, and the internal / external thread profile can be determined from the rest of the description.

### Sheet Metal Screw Threads

In sheet metal screw threads there is no Class of Fit. The nomenclature used calls out the size and the type of thread (for example, #6 Type B). See “Threads” on page 9 to see all the various sheet metal threads.

A screw can be broken down into various components (Figure 4). These components have been dimensionally detailed by ANSI standards. A complete set of fastener standards can be found in the Industrial Fasteners Institute (IFI) Fasteners Standards book.

In addition to the nomenclature used to describe a thread, there is also a standard terminology to define the rest of a fastener. This is accomplished by describing the features of a fastener.

Other features can also be added to a screw (Figure 5). The various combinations of each of these components can produce an endless number of possible screw options. This guide will try to detail many of these options and what their unique values are.

Terminology used to call out a fastener:

- 4–40 x 5/16 PH-PN-MS- STL-Z
- 4–40 Phillips pan head machine screw steel zinc.
- 6–32 NY-IN-LK-NU-SS
- 6–32 nylon insert locknut stainless steel
**Type 1 Cross Recess** is the most popular drive found in small diameter screws. It is often referred to as a Phillips ® drive after the firm that developed it many years ago. Tools are readily available to install this screw. Its ability to keep the screwdriver bit in place is good and it transfers torque to the screw well. The Type 1 cross recess can be found in almost all applications and offers the best “off the shelf” availability.

**Slotted Drive** is the oldest of screw drives dating back to the industrial revolution. It is still very popular where home applications are involved. Tools are readily available almost anywhere. If a slotted screwdriver is not available, other items (knife or coin) have been known to stand-in. The slotted drive offers a poor ability to hold the driver bit in the drive, preventing the full transfer of torque to the screw.

**6 Lobe Recess** was developed by Camcar ® in the 1970’s to address the limitations of the popular drives of the time. They called this drive the Torx ®. The 6 lobe recess offers excellent drive to Screwdriver bit engagement. The bit nests into the drive in a way that, during use, all torsional forces are transferred to the screw. This allows for maximum loading of the fastener. As driver bits have become more popular, the 6 lobe recess has worked its way into more consumer products. It is very popular for high volume assemblies.

**Tamperproof 6 Lobe Recess** allows a high volume manufacture to get some level of tamper resistance into their product. This is often used on disc drives and other computer products to convey the message that the general consumer is not welcomed. All the benefits of the 6 lobe recess are still in force. Driver bits are difficult to get if not in the trade.

**Pozı Drive ®** was also developed as an improvement on the Phillips ® drive. Officially called a Type 1A cross recess, the design produces more grain flow in the drive area. This is designed to increase the toughness of the drive and reduce the stripping problem inherent with the Phillips ® drive. Though not very popular in the USA, the pozı drive has become very popular in Europe. Drive to bit engagement is slightly better that a “Phillips”. Transfer of torque from the screwdriver to the screw is good. Drive bit availability in the USA is poor.

**Combination Drive** was developed to get the production benefits of the Type 1 Cross Recess. It has good drive to bit engagement and thus good torque transfer to the screw. This drive is often used when there is product assembly done by the consumer. Either a standard Phillips ® bit or a slotted bit can be used for assembly.

**Slotted 6 Lobe Recess** was developed to make the 6 lobe more convenient to the end user. This drive still offers all the high-speed assembly benefits of the 6 lobe recess to the manufacture. It also allows the end user to disassemble the screw with a slotted driver. This style recess has become very popular where customer disassembly is required. Many high tech consumer products have made this their standard (computers, prints, disc drives, etc.)

**Square Drive** has become popular in the construction industry. The drive to bit engagement is excellent, and the torque transfer to the screw is also very good. Square drive bits are readily available from construction supply stores, but are more difficult to obtain for consumers. This produces a mildly tamper resistant condition with the screw.

**Tamperproof Hex Recess** is a way to make a standard hex recess tamper resistant. During the manufacturing process, a small shaft of material is formed that sticks up from the bottom of the hex recess, this prevents any standard hex bits from engaging the recess. Since most hex bits are hardened, it becomes a difficult task to modify. The driver bit engagement and the torque transfer is the same as a hex recess. Typical applications are when simple tampering needs to be prevented.

**Hex Recess** is used primarily on socket products. The points on the hex bit produces a high-pressure point against the contact location of the hex recess during assembly. This produces a higher drive bit wear then a 6 lobe recess. To protect the hex recess, all steel screws are heat-treated. Recess to screwdriver bit engagement is excellent. Torque transfer from the bit to screw is excellent. Driver bits have excessive wear. Typical applications are high-end instrumentation, medical and test equipment.
Drives

**Torx Plus**® is a patented drive from the Camcar Division of Textron. Its' design comes from its predecessor, the 6 lobe recess. The benefits of this Drive according to Camcar is high drive torques. To date, most application needs can be solved with the 6 Lobe Drive. There is a cost premium when using the Torx Plus®.

**Phillips Square** Designed to meet the demanding needs of manufacturing engineers. The Phillips Square Drive combines the cross recess and the square recess. The result: a highly efficient and functional “multi-driver serviceable recess.”

**Anti Cam-out Recess** (ACR Phillips II ®) has vertical ridges running down into the recess. These ribs engage with horizontal ribs on the driver bit to lock the driver to the screw. The drive was developed to address the inherent stripping problems of the type Cross Recess. It was also designed to take back some of the 6-Lobe market. There is a cost premium when using the ACR ®.

**One Way Drive** falls into the family of tamper resistant drives. It is based on a slotted drive, which has had the back flanks removed. This allows the drive to be installed but not removed. The one-way drive is a very user-friendly drive since a slotted screwdriver is readily available. This drive has become very popular in public areas where field assembly will take place. The process to remove a one way screw is very difficult.

**Spanner Drive** has two small holes on the top of the drive. A screwdriver with two male pins is inserted into the mating holes on top of the screw for assembly. The spanner drive can be easily removed with the proper driver bit. The drive to bit engagement is good, but the drive pins can be easily overloaded, so the torque transfer is low. This drive has become very popular in public areas where tamper resistance and field repair are required.

**Tri Wing** was developed as a drive for the aerospace industry. Its design puts more of the installation force vector onto a larger drive flank. It enables the drive bit to transfer more torque into screw load. However, what is gained in installation is lost in removal. The tri wing has also been used as a tamper resistant drive.

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**Heads**

**Pan Head** is the general purpose head used by all industries. It has a good bearing area to spread load into the mating part.

**Flat Head** is the general purpose head that is used when a flush condition is required. The standard flat head has an 82º head. (90º head for metric screws)

**100 Degree Flat Head** is used in thin materials like those found in the aerospace industry.

**Undercut Flat Head** is used in thin materials where the deep shape of the standard flat head is undesirable. The head angle is 82º.

**Trimmed Flat Head** has a smaller diameter head than the standard flat head. It is used when a smaller diameter head is needed. The head angle is 82º.

**Indented Hex Washer Head** offers excellent torque transfer into the screw when driven from the hex body. The washer increases the bearing area of the screw.

**Indented Hex Head** has excellent torque to load transfer. In most cases a design engineer will choose the Indented hex washer head instead.

**Binder Head** is a specialized style that is chosen for its look by design engineers.

**Button Head** is used for producing a hi-tech look on a product, generally mated with either a hex or a torx recess.

**Fillister Head** has a smaller outside diameter than the pan head. It is excellent for use in a counter bored hole. The higher head allows for a deeper drive. The bearing area is small and damage around the mating hole is possible.

**Oval Head** is used to add a finished look to the surface of a product. The head angle is 82º.

**Undercut Oval Head** is used to add a finished look to the surface of a product when the materials will not allow a standard oval head. The head angle is 82º.

**Trimmed Oval Head** is similar to the oval head machine screw except that the size of head for a given size screw is one or two sizes smaller than the oval standard sizes. The head angle is 82º.

**Truss Head** is lower in height and has a larger bearing area than the pan head. Truss head screws offer a pleasing look on the surface of a product.

**Cheese Head** is a specialized head that is used by design engineers for its particular look.

**Socket Head Cap Screw** is the standard for all of the high strength hex recess driven screws.

**Wafer Head** is a low profile head style that has a very low height. It does not require a countersink in the mating material.

**Round Washer Head** is popular in the auto industry. Excellent bearing area.

**Round Head** is one of the oldest head styles. It has generally been replaced by the Pan head.
**Threads**

**Machine Screw Thread Styles**

- **Machine Screw** threads are the most common of all thread profiles. It has a 60 degree flank angle.

- **Type C** threads are machine screw threads with a tapered point that will form a thread.

- **Trilobular** threads are machine screw threads with a thread forming feature. Trilobular screws will form their own threads in the mating materials. They will form threads in all soft ductile metals (Aluminum, Low Carbon Steel, Brass, and Copper).

- **Type 25** sheet metal screws have a Type B thread shaft with a blunt point. A milled groove is added to the thread making it a thread cutting version of the Type B.

- **Type TK** sheet metal screws have the same thread as a Type B with a drill feature for a point. Type TK screws are very popular in applications where a screw must drill a hole in the part.

- **Type PF** is a thread designed to be used in soft materials. It has a 30 degree flank angle thread that slices through the plastic without inducing high stress levels. It has the smallest minor diameter of the screws for plastics, and offers the highest pull performance.

- **Type HL** is a thread forming screw with a double-lead, consisting of a high and low thread. The lower thread varies in height from 1/3 to 1/2 that of the higher thread, which is sharper and flatter than a standard thread. Type HL thread is for use in plastic, nylon or other low-density materials.

**Sheet Metal Screw Thread Styles**

- **Type A** sheet metal screws have a 60 degree flank angle and a space between the threads. The Type A is still available but most applications have been switched to the more available Type AB and Type B.

- **Type AB** threads are standard sheet metal screw threads. They have a 60 degree flank angle thread and can form a thread in soft materials. The Type AB has the same point as the Type A.

- **Type B** sheet metal screws have the same thread as the Type AB. The end of the screw is blunt, offering more thread engagement in short length applications. The Type B is the most popular thread in the sheet metal family.

- **Type 1** is a thread cutting screw with a machine screw thread pitch, blunt point, tapered entering threads and a single cutting edge.

- **Type 23** threads are machine screw threads that have a milled section removed from the shaft. This larger space is helpful when there is paint or other materials that could build up during the cutting process.

- **Type F** threads are machine screw threads that have two grooves for cutting a thread into the mating material. This thread style has been replaced by the better performing TA style.

**Threads for Plastic Application**

- **Type PLAST 48/2** is a trilobular thread for plastics. It has a 48 degree flank angle that produces less stress on a plastic boss than a 60 degree thread. The minor diameter is also smaller than that of the Type B which gives it a better pull out.

- **Type PLAST 60/1** is a trilobular thread rolling screw designed for high performance fastening in a wide range of thermoplastics. The 60 Deg profile on the type 60/1 screw penetrates deeply into the work piece, absorbing higher torques without stripping and resisting pullout forces.
### Points - Machine Screw

- **Cut-off Point** is the standard shape when a screw is processed without any special attention. The Cut-off point produces a very abrupt transition between the point and the thread.

- **Header Point** is produced during the forming operation. There is a small chamfer that is added to the screw blank. When the thread is added to the screw blank. This small chamfer produces a smooth transition between the point and the thread.

- **Dog Point** is the unthreaded minor diameter shank of a screw. It is helpful for the alignment into hard to see holes. Here it is used with a machine screw thread.

### Points - Sheet Metal

- **BP Point** is a cone point on a Type B thread. It enables the screw to locate and then pry or force its way into holes that are not aligned. Generally when this feature is needed the designer will opt for the more readily available Type AB.

- **Dog Point** is the unthreaded minor diameter shank of a screw. It is helpful for the alignment into a hard to see hole. Here it is used with a Type B thread.

- **Needle Point** is a sharp long point that allows the thread to extrude a female thread in the mating material.
Attached Washers

**Internal Tooth Lock Washer SEMS** is used when it is desirable to have the locking teeth near the mounting hole. They are also popular when there is high volume assembly. The teeth do not come in contact with the assembler’s fingers as is the case of the external tooth washer.

**Square Cone Lock Washer SEMS** is designed to provide an additional spring component in the fastened joint. As the joint flexes, the square cone washer SEMS is able to respond and keep the joint in tension. The square cone washer SEMS also has a bearing surface that is not part of the typical conical spring washer.

**External Tooth Lock Washer SEMS** takes the standard external tooth lock washer SEMS and permanently attaches it to the screw. This eliminates the need to handle two parts. This is a good locking device, but it’s real strength is in the ability of the teeth to dig into surfaces. This is very effective in sizes up to #8. Sizes above a #8, the load gets high enough to flatten the teeth and render them useless.

**Split Ring Lock Washer SEMS** is a very popular locking device. However, a quick review of the tension provided by the split ring will show that it is a very small percent of the total load on a fastener. Its true benefit is that it provides a hardened bearing surface for the fastener to load against. This improves the torque / tension curve and provides the best joint loading.

**Flat Washer SEMS** is a great way to eliminate the need to handle two components. Any size and shape washer can be assembled on to a screw. The flat washer will increase the bearing area of the screw.

**Epoxy Lock** is a powerful locking / sealing fastener thread adhesive that is pre-applied to either male or female threaded fasteners. Though the adhesive surface is dry to the touch, the forces of engagement crush the surface skin, mix the separate epoxy components, and initiate a chemical reaction that fixtures in minutes. Curing continues after installation for 72 hours.

**Patch Lock** process make threaded fasteners of all sizes and configurations self-locking and self-sealing. Patch lock can be used with both male and female threads and leaves fasteners fully adjustable. Patch Lock is completely dry, fused to the fastener, and requires no curing time after installation.

**Strip Lock** is a tough bar of Nylon automatically inserted into a milled slot in a threaded fastener. The result is a fastener that is self-locking, self-sealing, and fully adjustable. Strip lock performs well in both high and low temperature extremes.

**Pellet Lock** is a special, tough nylon plug, inserted into a drilled hole, which makes any threaded fastener self-locking and self-sealing, while leaving it fully adjustable. In addition to nylon, KEL-F® and Vespel® are available for extremely high temperature applications.

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**Serrated Teeth** have integrated formed teeth on their bearing surfaces which are shaped and directed to “bite” into the surface of the member being joined when tightened. This “biting” mechanism creates a ratchet-type resistance to loosening without the sloppiness or variation of a multi-piece bolted joint.

Integrated Locking Features

When fasteners are used in a vibration environment, there are many solutions that can be used to keep the assembly tight. Locking features can be added to the fastener to improve its resistance to vibration.

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**Socket Screws**

Socket screws can be placed into a sub group of all machine screws. They have a machine screw thread, but this is where the similarity stops. Socket screws are made primarily in two materials, steel and stainless steel. The steel socket screws are made from an alloy steel and are heat treated to high tensile strengths. The stainless steel socket screws are generally made from 302 or 304 and are not heat treated. Socket screws are also made from 17-7 Stainless Steel when a heat treated part is required, these are expensive and should be avoided if possible.

**Socket Head Cap Screw** is the most popular in the series and can be found in stock in a full range of sizes ( #2 thru 1” ). Generally supplied in a black finish, they can also be zinc plated. Tensile strength 180,000psi ( steel ), 80,000 - 100,000psi ( Stainless Steel ). Strength will vary slightly depending on size.

**Flat Head Cap Screw** is used when a flush assembly is required. The socket head style is chosen over the standard phillips or slotted drive when a higher tech look is desired. Tensile strength 137,000 – 150,000psi ( steel ), 80,000 - 120,000psi ( Stainless Steel ). Strength will vary slightly depending on size.

**Button Head Cap Screw** has become the screw of chose on small electronic devices. It offers a low profile look and high performance strength. Tensile strength 137,000 – 150,000psi ( steel ), 80,000 - 120,000psi ( Stainless Steel ). Strength will vary slightly depending on size.

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**Socket Head Shoulder Screw** has a +/- 0.001 tolerance shoulder diameter starting at ¼” thru 2”. The tolerance on the shoulder length is +/- 0.005. All Socket Shoulder Screws have a hex recess for a drive. The parts are made from alloy steel, are through hardened to Rc 32 – 43, and are similar to a grade 8 fastener. Shoulder screws are generally supplied in a black condition and then the shoulder is ground to a silver appearance.

**Socket Head Precision Shoulder Screw** has a +0.000 / -0.001 tolerance shoulder diameter starting at 1/8 thru 1/2”. The tolerance on the shoulder length is +0.002 / -0.000. Precision shoulder screws are made in three materials, Brass, 303 Stainless Steel, and 12L14 Steel case hardened. Their strength level is similar to a grade 2 fastener. Phillips, slotted, and hex socket drives are available.
### Materials

Fasteners are made from many materials but most design applications can be handled with either carbon or stainless steel. The common carbon steel grades used for fasteners are AISI 1010 through 1022. The common stainless steel grades are 303 and 304. They are part of the 18-8 family (18% Chrome, 8% Nickel) (Figure 6).

<table>
<thead>
<tr>
<th>Material</th>
<th>Application</th>
<th>Strength</th>
<th>Corrosion Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Carbon Steel</td>
<td>All</td>
<td>Low</td>
<td>Must be Plated</td>
</tr>
<tr>
<td>Medium Carbon Steel</td>
<td>Automotive</td>
<td>Medium</td>
<td>Must be Plated</td>
</tr>
<tr>
<td>Alloy Steel</td>
<td>Critical Joints, Socket Head Products</td>
<td>High</td>
<td>Fair</td>
</tr>
<tr>
<td>Titanium</td>
<td>Aerospace</td>
<td>High</td>
<td>Excellent</td>
</tr>
<tr>
<td>Monel</td>
<td>Marine</td>
<td>High</td>
<td>Excellent</td>
</tr>
<tr>
<td>Inconel</td>
<td>High Temperature</td>
<td>High</td>
<td>Excellent</td>
</tr>
<tr>
<td>Brass</td>
<td>Marine / Cosmetic</td>
<td>Low</td>
<td>Good</td>
</tr>
<tr>
<td>Stainless Steel 300 Series</td>
<td>All</td>
<td>Medium</td>
<td>Excellent</td>
</tr>
<tr>
<td>Stainless Steel 400 Series</td>
<td>Thread Cutting / Thread Forming</td>
<td>Medium / High</td>
<td>Good</td>
</tr>
<tr>
<td>Aluminum</td>
<td>Light Weight</td>
<td>Low</td>
<td>Excellent</td>
</tr>
<tr>
<td>Phosphorus Bronze</td>
<td>Electrical</td>
<td>Medium</td>
<td>Good</td>
</tr>
<tr>
<td>Nylon</td>
<td>Chemical</td>
<td>Very Low</td>
<td>Excellent</td>
</tr>
<tr>
<td>Ultem</td>
<td>Chemical</td>
<td>Low</td>
<td>Excellent</td>
</tr>
<tr>
<td>Copper</td>
<td>Electrical</td>
<td>Low</td>
<td>Good</td>
</tr>
</tbody>
</table>

Figure 6
When to Use

<table>
<thead>
<tr>
<th>Screw Size</th>
<th>#2</th>
<th>#4</th>
<th>#6</th>
<th>#8</th>
<th>#10</th>
<th>#12</th>
<th>#14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheet Metal Screw Max. Material Thickness</td>
<td>0.060</td>
<td>0.078</td>
<td>0.097</td>
<td>0.115</td>
<td>0.133</td>
<td>0.151</td>
<td>0.175</td>
</tr>
<tr>
<td>Machine Screw MIN Material Thickness</td>
<td>0.043</td>
<td>0.056</td>
<td>0.069</td>
<td>0.082</td>
<td>0.095</td>
<td>0.108</td>
<td>0.125</td>
</tr>
<tr>
<td>Sheet Metal Screw MIN Material Thickness</td>
<td>0.015</td>
<td>0.015</td>
<td>0.015</td>
<td>0.025</td>
<td>0.025</td>
<td>0.025</td>
<td>0.030</td>
</tr>
</tbody>
</table>
The importance of thread ramp angle is the fewer number of threads, the higher the ramp angle of the thread. As a screw is tightened, a load (Force) is applied to the flanks of the threads. This load is held in place by the friction between the two threads, the friction between the bearing surface of the screw and the mating material. The higher the ramp angle of the thread, the easier it is for the load to slide down the thread.

### Threads Per Inch

<table>
<thead>
<tr>
<th>Thread</th>
<th>Machine Screw Threads</th>
<th>Sheet Metal Screws</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fine</td>
<td>Coarse</td>
</tr>
<tr>
<td>2</td>
<td>64</td>
<td>56</td>
</tr>
<tr>
<td>4</td>
<td>48</td>
<td>40</td>
</tr>
<tr>
<td>6</td>
<td>40</td>
<td>32</td>
</tr>
<tr>
<td>8</td>
<td>36</td>
<td>32</td>
</tr>
<tr>
<td>10</td>
<td>32</td>
<td>24</td>
</tr>
<tr>
<td>12</td>
<td>28</td>
<td>24</td>
</tr>
<tr>
<td>1/4</td>
<td>24</td>
<td>20</td>
</tr>
<tr>
<td>5/16</td>
<td>24</td>
<td>18</td>
</tr>
<tr>
<td>3/8</td>
<td>24</td>
<td>14</td>
</tr>
</tbody>
</table>
### Machine Screws

#### Inch

<table>
<thead>
<tr>
<th>Head Type</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pan Head</strong></td>
<td></td>
</tr>
<tr>
<td>Machine Screw, Pan Head</td>
<td>22</td>
</tr>
<tr>
<td>Machine Screw, Slotted Pan Head</td>
<td>22</td>
</tr>
<tr>
<td><strong>Flat Head</strong></td>
<td></td>
</tr>
<tr>
<td>Machine Screw, 82 Deg Flat Head</td>
<td>23</td>
</tr>
<tr>
<td>Machine Screw, 100 Deg Flat Head</td>
<td>23</td>
</tr>
<tr>
<td>Machine Screw, 82 Deg Trimmed Flat Head</td>
<td>24</td>
</tr>
<tr>
<td>Machine Screw, 82 Deg Undercut Flat Head</td>
<td>24</td>
</tr>
<tr>
<td><strong>Hex Head</strong></td>
<td></td>
</tr>
<tr>
<td>Machine Screw, Indented Hex Head</td>
<td>25</td>
</tr>
<tr>
<td>Machine Screw, Indented Hex Washer Head</td>
<td>25</td>
</tr>
<tr>
<td>Machine Screw, Indented Hex Washer Head with Serrations</td>
<td>26</td>
</tr>
<tr>
<td><strong>SEMS</strong></td>
<td></td>
</tr>
<tr>
<td>Machine Screw, Internal Tooth Lock Washers SEMS</td>
<td>26</td>
</tr>
<tr>
<td>Machine Screw, Square Cone Washer SEMS</td>
<td>27</td>
</tr>
<tr>
<td>Machine Screw, External Tooth Lock Washer SEMS</td>
<td>27</td>
</tr>
<tr>
<td>Machine Screw, Split Lock Washer SEMS</td>
<td>28</td>
</tr>
<tr>
<td><strong>Special Use Heads</strong></td>
<td></td>
</tr>
<tr>
<td>Machine Screw, Slotted Binder Head</td>
<td>28</td>
</tr>
<tr>
<td>Machine Screw, Button Head</td>
<td>29</td>
</tr>
<tr>
<td>Machine Screw, Fillister Head</td>
<td>29</td>
</tr>
<tr>
<td>Machine Screw, Oval Head</td>
<td>30</td>
</tr>
<tr>
<td>Machine Screw, Trimmed Oval Head</td>
<td>31</td>
</tr>
<tr>
<td>Machine Screw, Undercut Oval Head</td>
<td>31</td>
</tr>
<tr>
<td>Machine Screw, Truss Head</td>
<td>32</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Head Type</th>
<th>Page</th>
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<tbody>
<tr>
<td>Pan Head Page 22</td>
<td></td>
</tr>
<tr>
<td>Slotted Pan Head Page 22</td>
<td></td>
</tr>
<tr>
<td>82 Deg Flat Head Page 23</td>
<td></td>
</tr>
<tr>
<td>100 Deg Flat Head Page 23</td>
<td></td>
</tr>
<tr>
<td>82 Deg Trimmed Flat Head Page 24</td>
<td></td>
</tr>
<tr>
<td>82 Deg Undercut Flat Head Page 24</td>
<td></td>
</tr>
<tr>
<td>Indented Hex Head Page 25</td>
<td></td>
</tr>
<tr>
<td>Indented Hex Washer Head Page 25</td>
<td></td>
</tr>
<tr>
<td>Button Head Page 29</td>
<td></td>
</tr>
<tr>
<td>Fillister Head Page 29</td>
<td></td>
</tr>
<tr>
<td>Internal Tooth Lock Washer SEMS Page 26</td>
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<tr>
<td>Square Cone Washer SEMS Page 27</td>
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<tr>
<td>Slotted Oval Head Page 30</td>
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<tr>
<td>External Tooth Lock Washer SEMS Page 27</td>
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</tr>
<tr>
<td>Trimmed Oval Head Page 31</td>
<td></td>
</tr>
<tr>
<td>Split Lock Washer SEMS Page 28</td>
<td></td>
</tr>
<tr>
<td>Undercut Oval Head Page 31</td>
<td></td>
</tr>
<tr>
<td>Slotted Binder Head Page 28</td>
<td></td>
</tr>
<tr>
<td>Truss Head Page 32</td>
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</tr>
</tbody>
</table>
## Machine Screw
### Pan Head

**Sample Part Number**

6 - 32 x 1/2  PH - PN - MS - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Material Description</th>
<th>Finish</th>
<th>Other finishes available.</th>
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</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.062 / .053</td>
<td>.167 / .155</td>
<td>1 T7</td>
<td>STL Low Carbon Steel</td>
<td>Z - BLK Zinc Black</td>
<td></td>
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<tr>
<td>4 - 40</td>
<td>.080 / .070</td>
<td>.219 / .205</td>
<td>1 T10</td>
<td>SS 18-8 Stainless Steel</td>
<td>Z Zinc Clear</td>
<td></td>
</tr>
<tr>
<td>6 - 32</td>
<td>.097 / .087</td>
<td>.270 / .256</td>
<td>2 T15</td>
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<td></td>
<td></td>
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<tr>
<td>8 - 32</td>
<td>.115 / .105</td>
<td>.322 / .306</td>
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<td>10 - 32</td>
<td>.133 / .122</td>
<td>.373 / .357</td>
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<td>14 - 20</td>
<td>.175 / .162</td>
<td>.492 / .473</td>
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</tr>
</tbody>
</table>

**Thread** | **Height** | **Head Diameter** | **Drive Size** | **Material** | **Finish** | **Other Finishes Available**

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
<th>#2 thru #10</th>
<th>1/4</th>
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<tbody>
<tr>
<td>1/8</td>
<td>.125 / .105</td>
<td>–</td>
<td></td>
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<tr>
<td>3/16</td>
<td>.187 / .167</td>
<td>–</td>
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</tr>
<tr>
<td>1/4</td>
<td>.250 / .230</td>
<td>.250 / .220</td>
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<tr>
<td>5/16</td>
<td>.313 / .293</td>
<td>.313 / .283</td>
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<tr>
<td>3/8</td>
<td>.375 / .355</td>
<td>.375 / .345</td>
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<tr>
<td>7/16</td>
<td>.438 / .418</td>
<td>.438 / .408</td>
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<tr>
<td>1/2</td>
<td>.500 / .480</td>
<td>.500 / .470</td>
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<tr>
<td>1/4</td>
<td>.250 / .230</td>
<td>.250 / .220</td>
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<tr>
<td>1/2</td>
<td>.500 / .480</td>
<td>.500 / .470</td>
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</tr>
</tbody>
</table>

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## Machine Screw
### Slotted Pan Head

**Sample Part Number**

4 - 40 x 1/2  SL - PN - MS - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Material Description</th>
<th>Finish</th>
<th>Other finishes available.</th>
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</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.053 / .045</td>
<td>.167 / .155</td>
<td>1 T7</td>
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<td>Z - BLK Zinc Black</td>
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</tr>
<tr>
<td>4 - 40</td>
<td>.068 / .058</td>
<td>.219 / .205</td>
<td>1 T10</td>
<td>SS 18-8 Stainless Steel</td>
<td>Z Zinc Clear</td>
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<td>.082 / .072</td>
<td>.270 / .256</td>
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<td>8 - 32</td>
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<td>.322 / .306</td>
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<td>.373 / .357</td>
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<tr>
<td>1/4 - 20</td>
<td>.144 / .130</td>
<td>.492 / .473</td>
<td>3 T30</td>
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</tr>
</tbody>
</table>

**Thread** | **Height** | **Head Diameter** | **Drive Size** | **Material** | **Finish** | **Other Finishes Available**

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<tr>
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<tr>
<td>3/16</td>
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<td>1/4</td>
<td>.250 / .230</td>
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<tr>
<td>5/16</td>
<td>.313 / .293</td>
<td>.313 / .283</td>
<td></td>
</tr>
<tr>
<td>3/8</td>
<td>.375 / .355</td>
<td>.375 / .345</td>
<td></td>
</tr>
<tr>
<td>7/16</td>
<td>.438 / .418</td>
<td>.438 / .408</td>
<td></td>
</tr>
<tr>
<td>1/2</td>
<td>.500 / .480</td>
<td>.500 / .470</td>
<td></td>
</tr>
<tr>
<td>1/4</td>
<td>.250 / .230</td>
<td>.250 / .220</td>
<td></td>
</tr>
<tr>
<td>5/16</td>
<td>.313 / .293</td>
<td>.313 / .283</td>
<td></td>
</tr>
<tr>
<td>3/8</td>
<td>.375 / .355</td>
<td>.375 / .345</td>
<td></td>
</tr>
<tr>
<td>7/16</td>
<td>.438 / .418</td>
<td>.438 / .408</td>
<td></td>
</tr>
<tr>
<td>1/2</td>
<td>.500 / .480</td>
<td>.500 / .470</td>
<td></td>
</tr>
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<td>1/4</td>
<td>.250 / .230</td>
<td>.250 / .220</td>
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</tr>
<tr>
<td>5/16</td>
<td>.313 / .293</td>
<td>.313 / .283</td>
<td></td>
</tr>
<tr>
<td>3/8</td>
<td>.375 / .355</td>
<td>.375 / .345</td>
<td></td>
</tr>
<tr>
<td>7/16</td>
<td>.438 / .418</td>
<td>.438 / .408</td>
<td></td>
</tr>
<tr>
<td>1/2</td>
<td>.500 / .480</td>
<td>.500 / .470</td>
<td></td>
</tr>
</tbody>
</table>

---

### Notes

- Custom sizes available.

---

### Drive & Description

- PH Cross Recess
- SL - PH Slotted - Cross Recess
- TX 6 - Lobe
- SL - TX Slotted - 6 - Lobe

### Material & Description

- STL Low Carbon Steel
- SS 18-8 Stainless Steel
- Z - BLK Zinc Black
- Z Zinc Clear

### Other Finishes Available

- Slotted Pan Head
### Machine Screw
82 Deg Flat Head

**Sample Part Number**
2 - 56 x 1/2 PH - FL - MS - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height REF</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length #2 thru #10</th>
<th>L 1/4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.051</td>
<td>162 / 144</td>
<td>1 T8</td>
<td>1/8 .125 / .105</td>
<td>-</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.067</td>
<td>212 / 191</td>
<td>2 T16</td>
<td>3/16 .187 / .17</td>
<td>-</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.083</td>
<td>262 / 238</td>
<td>2 T20</td>
<td>1/4 .250 / .230</td>
<td>.250 / .220</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.100</td>
<td>312 / 285</td>
<td>2 T25</td>
<td>5/16 .317 / .293</td>
<td>.317 / .283</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.153</td>
<td>477 / 442</td>
<td>3 T30</td>
<td>7/16 .438 / .418</td>
<td>.438 / .408</td>
</tr>
</tbody>
</table>

Custom sizes available.

### Machine Screw
100 Deg Flat Head

**Sample Part Number**
8 - 32 x 1/2 PH - 100DG - MS - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height REF</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length #2 thru #10</th>
<th>L 1/4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.037</td>
<td>162 / 142</td>
<td>1 T6</td>
<td>1/8 .125 / .105</td>
<td>-</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.049</td>
<td>212 / 188</td>
<td>1 T8</td>
<td>3/16 .187 / .17</td>
<td>-</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.060</td>
<td>262 / 235</td>
<td>2 T10</td>
<td>1/4 .250 / .230</td>
<td>.250 / .220</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.072</td>
<td>312 / 282</td>
<td>2 T15</td>
<td>5/16 .317 / .293</td>
<td>.317 / .283</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.110</td>
<td>477 / 437</td>
<td>3 T27</td>
<td>7/16 .438 / .418</td>
<td>.438 / .408</td>
</tr>
</tbody>
</table>

Custom sizes available.
Machine Screw
82 Deg Trimmed Flat Head
Inch
Sample Part Number
4 - 40 x 1/2 PH - TRIM2 - MS - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>Head Size</th>
<th>H Height REF</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 - 40</td>
<td>3</td>
<td>.052</td>
<td>.199 / .171</td>
<td>1</td>
</tr>
<tr>
<td>6 - 32</td>
<td>4</td>
<td>.052</td>
<td>.226 / .195</td>
<td>1</td>
</tr>
<tr>
<td>8 - 32</td>
<td>5</td>
<td>.068</td>
<td>.252 / .220</td>
<td>2</td>
</tr>
<tr>
<td>10 - 32</td>
<td>6</td>
<td>.069</td>
<td>.270 / .244</td>
<td>2</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>10</td>
<td>.080</td>
<td>.385 / .340</td>
<td>2</td>
</tr>
</tbody>
</table>

Custom sizes available.

Length
<table>
<thead>
<tr>
<th>L Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#2 thru #10 1/4</td>
</tr>
<tr>
<td>1/8 .125 / .105 -</td>
</tr>
<tr>
<td>3/16 .187 / .167 -</td>
</tr>
<tr>
<td>1/4 .250 / .230 .250 / .220</td>
</tr>
<tr>
<td>5/16 .313 / .283 .313 / .283</td>
</tr>
<tr>
<td>3/8 .375 / .355 .375 / .345</td>
</tr>
<tr>
<td>7/16 .438 / .418 .438 / .408</td>
</tr>
<tr>
<td>1/2 .500 / .480 .500 / .470</td>
</tr>
<tr>
<td>9/16 .563 / .533 .563 / .533</td>
</tr>
<tr>
<td>5/8 .625 / .595 .625 / .595</td>
</tr>
<tr>
<td>3/4 .750 / .720 .750 / .720</td>
</tr>
<tr>
<td>7/8 .875 / .845 .875 / .845</td>
</tr>
<tr>
<td>1 1.000 / .970 1.000 / .970</td>
</tr>
<tr>
<td>1 – 1/4 1.250 / 1.190 1.250 / 1.190</td>
</tr>
<tr>
<td>1 – 3/8 1.375 / 1.315 1.375 / 1.315</td>
</tr>
<tr>
<td>1 – 1/2 1.500 / 1.440 1.500 / 1.440</td>
</tr>
<tr>
<td>1 – 5/8 1.625 / 1.565 1.625 / 1.565</td>
</tr>
<tr>
<td>1 – 3/4 1.750 / 1.690 1.750 / 1.690</td>
</tr>
<tr>
<td>1 – 7/8 1.875 / 1.815 1.875 / 1.815</td>
</tr>
<tr>
<td>2 2.000 / 1.940 2.000 / 1.940</td>
</tr>
</tbody>
</table>

82 Deg Trimmed Flat Head
Inch
Sample Part Number
4 - 40 x 1/2 PH - UFL - MS - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.036 / .028</td>
<td>.162 / .144</td>
<td>1</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.047 / .038</td>
<td>.212 / .191</td>
<td>1</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.059 / .048</td>
<td>.262 / .238</td>
<td>3</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.070 / .058</td>
<td>.312 / .286</td>
<td>3</td>
</tr>
<tr>
<td>10 - 32</td>
<td>.081 / .068</td>
<td>.362 / .333</td>
<td>3</td>
</tr>
<tr>
<td>11/4 - 20</td>
<td>.107 / .092</td>
<td>.477 / .442</td>
<td>3</td>
</tr>
</tbody>
</table>

Custom sizes available.

Length
<table>
<thead>
<tr>
<th>L Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#2 thru #10 1/4</td>
</tr>
<tr>
<td>1/8 .125 / .105 -</td>
</tr>
<tr>
<td>3/16 .187 / .167 -</td>
</tr>
<tr>
<td>1/4 .250 / .230 .250 / .220</td>
</tr>
<tr>
<td>5/16 .313 / .283 .313 / .283</td>
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<tr>
<td>3/8 .375 / .355 .375 / .345</td>
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<tr>
<td>7/16 .438 / .418 .438 / .408</td>
</tr>
<tr>
<td>1/2 .500 / .480 .500 / .470</td>
</tr>
<tr>
<td>9/16 .563 / .533 .563 / .533</td>
</tr>
<tr>
<td>5/8 .625 / .595 .625 / .595</td>
</tr>
<tr>
<td>3/4 .750 / .720 .750 / .720</td>
</tr>
<tr>
<td>7/8 .875 / .845 .875 / .845</td>
</tr>
<tr>
<td>1 1.000 / .970 1.000 / .970</td>
</tr>
<tr>
<td>1 – 1/4 1.250 / 1.190 1.250 / 1.190</td>
</tr>
<tr>
<td>1 – 3/8 1.375 / 1.315 1.375 / 1.315</td>
</tr>
<tr>
<td>1 – 1/2 1.500 / 1.440 1.500 / 1.440</td>
</tr>
<tr>
<td>1 – 5/8 1.625 / 1.565 1.625 / 1.565</td>
</tr>
<tr>
<td>1 – 3/4 1.750 / 1.690 1.750 / 1.690</td>
</tr>
<tr>
<td>1 – 7/8 1.875 / 1.815 1.875 / 1.815</td>
</tr>
<tr>
<td>2 2.000 / 1.940 2.000 / 1.940</td>
</tr>
</tbody>
</table>

Machine Screw
82 Deg Undercut Flat Head
Inch
Sample Part Number
4 - 40 x 1/2 PH - UFL - MS - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.036 / .028</td>
<td>.162 / .144</td>
<td>1</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.047 / .038</td>
<td>.212 / .191</td>
<td>1</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.059 / .048</td>
<td>.262 / .238</td>
<td>3</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.070 / .058</td>
<td>.312 / .286</td>
<td>3</td>
</tr>
<tr>
<td>10 - 32</td>
<td>.081 / .068</td>
<td>.362 / .333</td>
<td>3</td>
</tr>
<tr>
<td>11/4 - 20</td>
<td>.107 / .092</td>
<td>.477 / .442</td>
<td>3</td>
</tr>
</tbody>
</table>

Custom sizes available.

Length
<table>
<thead>
<tr>
<th>L Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#2 thru #10 1/4</td>
</tr>
<tr>
<td>1/8 .125 / .105 -</td>
</tr>
<tr>
<td>3/16 .187 / .167 -</td>
</tr>
<tr>
<td>1/4 .250 / .230 .250 / .220</td>
</tr>
<tr>
<td>5/16 .313 / .283 .313 / .283</td>
</tr>
<tr>
<td>3/8 .375 / .355 .375 / .345</td>
</tr>
<tr>
<td>7/16 .438 / .418 .438 / .408</td>
</tr>
<tr>
<td>1/2 .500 / .480 .500 / .470</td>
</tr>
<tr>
<td>9/16 .563 / .533 .563 / .533</td>
</tr>
<tr>
<td>5/8 .625 / .595 .625 / .595</td>
</tr>
<tr>
<td>3/4 .750 / .720 .750 / .720</td>
</tr>
<tr>
<td>7/8 .875 / .845 .875 / .845</td>
</tr>
<tr>
<td>1 1.000 / .970 1.000 / .970</td>
</tr>
<tr>
<td>1 – 1/4 1.250 / 1.190 1.250 / 1.190</td>
</tr>
<tr>
<td>1 – 3/8 1.375 / 1.315 1.375 / 1.315</td>
</tr>
<tr>
<td>1 – 1/2 1.500 / 1.440 1.500 / 1.440</td>
</tr>
<tr>
<td>1 – 5/8 1.625 / 1.565 1.625 / 1.565</td>
</tr>
<tr>
<td>1 – 3/4 1.750 / 1.690 1.750 / 1.690</td>
</tr>
<tr>
<td>1 – 7/8 1.875 / 1.815 1.875 / 1.815</td>
</tr>
<tr>
<td>2 2.000 / 1.940 2.000 / 1.940</td>
</tr>
</tbody>
</table>

Other finishes available.

Custom sizes available.
### Machine Screw
#### Indented Hex Head

Sample Part Number

6 - 32 x 1/2   PH - INHX - MS - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>WAF Width Across Flats</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 – 56</td>
<td>.050 / .040</td>
<td>.125 / .120</td>
<td>1</td>
</tr>
<tr>
<td>4 – 40</td>
<td>.060 / .049</td>
<td>.188 / .181</td>
<td>1</td>
</tr>
<tr>
<td>6 – 32</td>
<td>.093 / .080</td>
<td>.250 / .244</td>
<td>2</td>
</tr>
<tr>
<td>8 – 32</td>
<td>.110 / .096</td>
<td>.250 / .244</td>
<td>2</td>
</tr>
<tr>
<td>10 – 32</td>
<td>.120 / .105</td>
<td>.312 / .305</td>
<td>2</td>
</tr>
<tr>
<td>1/4 – 20</td>
<td>.375 / .367</td>
<td>.375 / .367</td>
<td>3</td>
</tr>
</tbody>
</table>

Custom sizes available.

### Machine Screw
#### Indented Hex Washer Head

Sample Part Number

4 - 40 x 1/2   PH - INHX - MS - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>G Washer Outside Diameter</th>
<th>W Washer Thickness</th>
<th>WAF Width Across Flats</th>
<th>Drive Size Washer Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 – 56</td>
<td>.050 / .040</td>
<td>.125 / .120</td>
<td>.016 / .010</td>
<td>.125 / .120</td>
<td>1</td>
</tr>
<tr>
<td>4 – 40</td>
<td>.060 / .049</td>
<td>.188 / .181</td>
<td>.019 / .011</td>
<td>.188 / .181</td>
<td>1</td>
</tr>
<tr>
<td>6 – 32</td>
<td>.093 / .080</td>
<td>.250 / .244</td>
<td>.025 / .015</td>
<td>.250 / .244</td>
<td>2</td>
</tr>
<tr>
<td>8 – 32</td>
<td>.110 / .096</td>
<td>.250 / .244</td>
<td>.031 / .019</td>
<td>.250 / .244</td>
<td>2</td>
</tr>
<tr>
<td>10 – 32</td>
<td>.120 / .105</td>
<td>.312 / .305</td>
<td>.031 / .019</td>
<td>.312 / .305</td>
<td>2</td>
</tr>
</tbody>
</table>

Custom sizes available.
### Machine Screw
**Indented Hex Washer Head with Serration**

#### Inch

**Sample Part Number:**

4 - 40 x 1/2  PH - INHX - SERR - WA - MS - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>G Washer Outside Diameter</th>
<th>W Washer Thickness</th>
<th>WAF Width Across Flats</th>
<th>Drive Size</th>
<th>Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 – 56</td>
<td>.050 / .040</td>
<td>.166 / .154</td>
<td>.016 / .010</td>
<td>.125 / .120</td>
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</tr>
<tr>
<td>4 – 40</td>
<td>.040 / .040</td>
<td>.243 / .225</td>
<td>.018 / .011</td>
<td>.188 / .181</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6 – 32</td>
<td>.093 / .080</td>
<td>.328 / .302</td>
<td>.025 / .015</td>
<td>.250 / .244</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8 – 32</td>
<td>.110 / .096</td>
<td>.348 / .322</td>
<td>.031 / .019</td>
<td>.250 / .244</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>10 – 32</td>
<td>.120 / .105</td>
<td>.414 / .384</td>
<td>.031 / .019</td>
<td>.312 / .305</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>1/4 – 20</td>
<td>.190 / .172</td>
<td>.520 / .480</td>
<td>.050 / .030</td>
<td>.375 / .367</td>
<td>3</td>
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</tr>
</tbody>
</table>

Custom sizes available.

#### Internal Tooth Lock Washer SEMS

**Sample Part Number:**

4 - 40 x 1/4  PH - PN - INT - SEMS - MS - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>G Washer Outside Diameter</th>
<th>W Washer Thickness</th>
<th>Drive Size</th>
<th>6 - Lobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 – 56</td>
<td>.062 / .053</td>
<td>.185 / .175</td>
<td>.016 / .010</td>
<td>1 T7</td>
<td></td>
</tr>
<tr>
<td>4 – 40</td>
<td>.080 / .070</td>
<td>.268 / .258</td>
<td>.018 / .012</td>
<td>1 T10</td>
<td></td>
</tr>
<tr>
<td>6 – 32</td>
<td>.097 / .087</td>
<td>.288 / .278</td>
<td>.022 / .016</td>
<td>2 T15</td>
<td></td>
</tr>
<tr>
<td>8 – 32</td>
<td>.115 / .105</td>
<td>.338 / .327</td>
<td>.023 / .018</td>
<td>2 T20</td>
<td></td>
</tr>
<tr>
<td>10 – 32</td>
<td>.133 / .122</td>
<td>.383 / .372</td>
<td>.024 / .018</td>
<td>2 T25</td>
<td></td>
</tr>
<tr>
<td>1/4 – 20</td>
<td>.175 / .162</td>
<td>.478 / .466</td>
<td>.028 / .023</td>
<td>3 T30</td>
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</tr>
</tbody>
</table>

Custom sizes available.
## Machine Screw

**Square Cone Lock Washer SEMS**

Inch

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>6 - 32 x 1/2</th>
<th>PH - PN - SQCN - SEMS - MS - STL - Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thread</td>
<td>Length Drive</td>
<td>Threads</td>
</tr>
<tr>
<td>4 – 40</td>
<td>1/8</td>
<td>1/8</td>
</tr>
<tr>
<td>6 – 32</td>
<td>3/16</td>
<td>1/4</td>
</tr>
<tr>
<td>8 – 32</td>
<td>1/4</td>
<td>1/4</td>
</tr>
<tr>
<td>10 – 32</td>
<td>5/16</td>
<td>1/4</td>
</tr>
<tr>
<td>1/4 – 20</td>
<td>3/8</td>
<td>1/4</td>
</tr>
</tbody>
</table>

### Custom sizes available.

<table>
<thead>
<tr>
<th>Material Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18-8 Stainless Steel</td>
</tr>
</tbody>
</table>

### Other finishes available.

<table>
<thead>
<tr>
<th>Finish Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>BLK Zinc Black</td>
</tr>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

### Material Description

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>Cross Recess</td>
</tr>
<tr>
<td>SL - PH</td>
<td>Slotted - Cross Recess</td>
</tr>
<tr>
<td>TX</td>
<td>6 - Lobe</td>
</tr>
<tr>
<td>SL - TX</td>
<td>Slotted - 6 - Lobe</td>
</tr>
</tbody>
</table>

### Length

<table>
<thead>
<tr>
<th>Thread</th>
<th>#2 thru #10</th>
<th>1/4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 – 56</td>
<td>0.062 / 0.033</td>
<td>0.180 / 0.170</td>
</tr>
<tr>
<td>4 – 40</td>
<td>0.097 / 0.070</td>
<td>0.285 / 0.270</td>
</tr>
<tr>
<td>6 – 32</td>
<td>0.115 / 0.105</td>
<td>0.320 / 0.305</td>
</tr>
<tr>
<td>8 – 32</td>
<td>0.133 / 0.122</td>
<td>0.381 / 0.365</td>
</tr>
<tr>
<td>10 – 32</td>
<td>0.175 / 0.162</td>
<td>0.510 / 0.494</td>
</tr>
<tr>
<td>1/4 – 20</td>
<td>0.088 / 0.064</td>
<td>0.250 / 0.244</td>
</tr>
</tbody>
</table>

### Custom sizes available.

## Machine Screw

**External Tooth Lock Washer SEMS**

Inch

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>6 - 32 x 1/2</th>
<th>PH - PN - EXT - SEMS - MS - STL - Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thread</td>
<td>Length Drive</td>
<td>Threads</td>
</tr>
<tr>
<td>2 – 56</td>
<td>1/8</td>
<td>1/8</td>
</tr>
<tr>
<td>4 – 40</td>
<td>3/16</td>
<td>1/4</td>
</tr>
<tr>
<td>6 – 32</td>
<td>1/4</td>
<td>1/4</td>
</tr>
<tr>
<td>8 – 32</td>
<td>5/16</td>
<td>1/4</td>
</tr>
<tr>
<td>10 – 32</td>
<td>3/8</td>
<td>1/4</td>
</tr>
<tr>
<td>1/4 – 20</td>
<td>7/16</td>
<td>1/4</td>
</tr>
</tbody>
</table>

### Custom sizes available.

<table>
<thead>
<tr>
<th>Material Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
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</tr>
<tr>
<td>SS</td>
<td>18-8 Stainless Steel</td>
</tr>
</tbody>
</table>

### Other finishes available.

<table>
<thead>
<tr>
<th>Finish Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>BLK Zinc Black</td>
</tr>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

### Material Description

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>Cross Recess</td>
</tr>
<tr>
<td>SL - PH</td>
<td>Slotted - Cross Recess</td>
</tr>
<tr>
<td>TX</td>
<td>6 - Lobe</td>
</tr>
<tr>
<td>SL - TX</td>
<td>Slotted - 6 - Lobe</td>
</tr>
</tbody>
</table>

### Length

<table>
<thead>
<tr>
<th>Thread</th>
<th>#2 thru #10</th>
<th>1/4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 – 56</td>
<td>0.062 / 0.033</td>
<td>0.180 / 0.170</td>
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<td>4 – 40</td>
<td>0.097 / 0.070</td>
<td>0.285 / 0.270</td>
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<td>6 – 32</td>
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<td>10 – 32</td>
<td>0.175 / 0.162</td>
<td>0.510 / 0.494</td>
</tr>
<tr>
<td>1/4 – 20</td>
<td>0.088 / 0.064</td>
<td>0.250 / 0.244</td>
</tr>
</tbody>
</table>

### Custom sizes available.
### Machine Screw
#### Split Lock Washer SEMS

**Inch**

**Sample Part Number**

2 - 56 x 1/2 PH - PN - SPLIT - LK - SEMS - MS - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>G Washer Outside Diameter</th>
<th>W Washer Thickness</th>
<th>Drive Size</th>
<th>Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 – 56</td>
<td>.062 / .053</td>
<td>.156 / .145</td>
<td>.035 / .020</td>
<td>1/8</td>
<td>1.125 / 1.05</td>
</tr>
<tr>
<td>6 – 32</td>
<td>.097 / .087</td>
<td>.261 / .248</td>
<td>.062 / .034</td>
<td>1/4</td>
<td>.250 / .230</td>
</tr>
<tr>
<td>8 – 32</td>
<td>.115 / .105</td>
<td>.319 / .305</td>
<td>.078 / .031</td>
<td>5/16</td>
<td>.313 / .293</td>
</tr>
<tr>
<td>1/4 – 20</td>
<td>.175 / .162</td>
<td>.496 / .480</td>
<td>.125 / .062</td>
<td>7/16</td>
<td>.438 / .418</td>
</tr>
</tbody>
</table>

**Length**

<table>
<thead>
<tr>
<th>#2 thru #10</th>
<th>1/4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8</td>
<td>1.125 / 1.05</td>
</tr>
<tr>
<td>3/16</td>
<td>.187 / .167</td>
</tr>
<tr>
<td>1/4</td>
<td>1.250 / 1.190</td>
</tr>
<tr>
<td>5/16</td>
<td>.313 / 0.283</td>
</tr>
<tr>
<td>3/8</td>
<td>.375 / .345</td>
</tr>
<tr>
<td>7/16</td>
<td>.438 / .408</td>
</tr>
</tbody>
</table>

**Material**

<table>
<thead>
<tr>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18 – 8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Finish**

<table>
<thead>
<tr>
<th>Description</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

Other finishes available.

### Machine Screw
#### Slotted Binder Head

**Inch**

**Sample Part Number**

2 - 56 x 1/2 SL - BIND - MS - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 – 56</td>
<td>.050 / .043</td>
<td>.181 / .171</td>
<td>1/8</td>
<td>1.125 / 1.05</td>
</tr>
<tr>
<td>6 – 32</td>
<td>.087 / .078</td>
<td>.290 / .275</td>
<td>1/4</td>
<td>.250 / .230</td>
</tr>
<tr>
<td>8 – 32</td>
<td>.105 / .095</td>
<td>.344 / .326</td>
<td>5/16</td>
<td>.313 / .293</td>
</tr>
<tr>
<td>10 – 32</td>
<td>.123 / .112</td>
<td>.399 / .378</td>
<td>3/8</td>
<td>.375 / .355</td>
</tr>
</tbody>
</table>

**Length**

<table>
<thead>
<tr>
<th>#2 thru #10</th>
<th>1/4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8</td>
<td>1.125 / 1.05</td>
</tr>
<tr>
<td>3/16</td>
<td>.187 / .167</td>
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<tr>
<td>1/4</td>
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<td>3/8</td>
<td>.375 / .345</td>
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<td>7/16</td>
<td>.438 / .408</td>
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**Material**

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<tbody>
<tr>
<td>STL</td>
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</tr>
<tr>
<td>SS</td>
<td>18 – 8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Finish**

<table>
<thead>
<tr>
<th>Description</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

Other finishes available.

Custom sizes available.
### Machine Screw

**Button Head**

**Inch**

| Sample Part Number | 6 - 32 x 1/2 TX - BUT - MS - STL - Z |

**Thread** | **H Height** | **D Head Diameter** | **Drive Size 6 - Lobe** |
---|---|---|---|
2 – 56 | .046 / .038 | .164 / .154 | T6 |
4 – 40 | .069 / .061 | .213 / .201 | T8 |
6 – 32 | .073 / .063 | .262 / .250 | T10 |
8 – 32 | .087 / .077 | .312 / .298 | T15 |
10 – 32 | .101 / .091 | .361 / .347 | T25 |
1/4 – 20 | .132 / .122 | .437 / .419 | T27 |

**Length** | **#2 thru #10** | **1/4** |
---|---|---|
1/8 | .125 / .105 | – |
3/16 | .187 / .167 | – |
1/4 | .250 / .230 | .250 / 220 |
5/16 | .313 / .293 | .313 / .283 |
3/8 | .375 / .355 | .375 / .345 |
7/16 | .438 / .418 | .438 / .408 |
1/2 | .500 / .480 | .500 / .470 |
9/16 | .563 / .533 | .563 / .533 |
5/8 | .625 / .595 | .625 / .595 |
3/4 | .750 / .720 | .750 / .720 |
7/8 | .875 / .845 | .875 / .845 |
1 | 1.000 / .970 | 1.000 / .970 |
1 – 1/4 | 1.250 / 1.190 | 1.250 / 1.190 |
1 – 3/8 | 1.375 / 1.315 | 1.375 / 1.315 |
1 – 1/2 | 1.500 / 1.440 | 1.500 / 1.440 |
1 – 5/8 | 1.625 / 1.565 | 1.625 / 1.565 |
1 – 3/4 | 1.750 / 1.690 | 1.750 / 1.690 |
1 – 7/8 | 1.875 / 1.815 | 1.875 / 1.815 |
2 | 2.000 / 1.940 | 2.000 / 1.940 |

**Material Description**

- **STL** Low Carbon Steel
- **SS** 18 – 8 Stainless Steel

**Finish Description**

- **Z - BLK** Zinc Black
- **Z** Zinc Clear

Other finishes available.

**Drive Description**

- **TX** 6 - Lobe
- **SL - TX** Slotted - 6 - Lobe

### Machine Screw

**Fillister Head**

**Inch**

| Sample Part Number | 6 - 32 x 1/2 PH - FIL - MS - STL - Z |

**Thread** | **H Height** | **D Head Diameter** | **Drive Size Cross Recess** |
---|---|---|---|
2 – 56 | .083 / .066 | .140 / .124 | 1 |
4 – 40 | .107 / .088 | .183 / .166 | 1 |
6 – 32 | .132 / .111 | .226 / .208 | 2 |
8 – 32 | .156 / .133 | .270 / .250 | 2 |
10 – 32 | .180 / .158 | .313 / .292 | 2 |
1/4 – 20 | .237 / .207 | .414 / .389 | 3 |

**Length** | **#2 thru #10** | **1/4** |
---|---|---|
1/8 | .125 / .105 | – |
3/16 | .187 / .167 | – |
1/4 | .250 / .230 | .250 / 220 |
5/16 | .313 / .293 | .313 / .283 |
3/8 | .375 / .355 | .375 / .345 |
7/16 | .438 / .418 | .438 / .408 |
1/2 | .500 / .480 | .500 / .470 |
9/16 | .563 / .533 | .563 / .533 |
5/8 | .625 / .595 | .625 / .595 |
3/4 | .750 / .720 | .750 / .720 |
7/8 | .875 / .845 | .875 / .845 |
1 | 1.000 / .970 | 1.000 / .970 |
1 – 1/4 | 1.250 / 1.190 | 1.250 / 1.190 |
1 – 3/8 | 1.375 / 1.315 | 1.375 / 1.315 |
1 – 1/2 | 1.500 / 1.440 | 1.500 / 1.440 |
1 – 5/8 | 1.625 / 1.565 | 1.625 / 1.565 |
1 – 3/4 | 1.750 / 1.690 | 1.750 / 1.690 |
1 – 7/8 | 1.875 / 1.815 | 1.875 / 1.815 |
2 | 2.000 / 1.940 | 2.000 / 1.940 |

**Material Description**

- **STL** Low Carbon Steel
- **SS** 18 – 8 Stainless Steel

**Finish Description**

- **Z - BLK** Zinc Black
- **Z** Zinc Clear

Other finishes available.

**Drive Description**

- **PH** Cross Recess
- **SL** Slotted
### Machine Screw
**Oval Head**

**Sample Part Number**
6 - 32 x 1/2 PH - OVAL - MS - STL - Z

**Thread** | **H Total Head Height** | **S Head Side Height REF** | **D Head Diameter** | **Drive Size** | **Cross Recess**
--- | --- | --- | --- | --- | ---
2 – 56 | .080 / .063 | .051 | .162 / .144 | 1 | 82 DEG
4 – 40 | .104 / .084 | .067 | .212 / .191 | 1 | 82 DEG
6 – 32 | .128 / .105 | .083 | .262 / .238 | 2 | 82 DEG
8 – 32 | .152 / .126 | .100 | .312 / .285 | 2 | 82 DEG
10 – 32 | .176 / .148 | .116 | .362 / .333 | 2 | 82 DEG
1/4 – 20 | .232 / .197 | .153 | .477 / .442 | 3 | 82 DEG

Custom sizes available.

### Machine Screw
**Slotted Oval Head**

**Sample Part Number**
8 - 32 x 1/2 SL - OVAL - MS - STL - Z

**Thread** | **H Total Head Height** | **S Head Side Height REF** | **D Head Diameter** | **Drive Size** | **Cross Recess**
--- | --- | --- | --- | --- | ---
2 – 56 | .080 / .063 | .051 | .172 / .147 | 1 | 82 DEG
4 – 40 | .104 / .084 | .067 | .225 / .195 | 1 | 82 DEG
6 – 32 | .128 / .105 | .083 | .279 / .244 | 2 | 82 DEG
8 – 32 | .152 / .126 | .100 | .332 / .292 | 2 | 82 DEG
10 – 32 | .176 / .148 | .116 | .385 / .340 | 2 | 82 DEG
1/4 – 20 | .232 / .197 | .153 | .507 / .452 | 3 | 82 DEG

Custom sizes available.
## Machine Screw
### Trimmed Oval Head
#### Inch

**Sample Part Number:** 8 - 32 x 1/2 PH - TRIM - OVAL - MS - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>Head Size</th>
<th>H Total Head Height</th>
<th>S Head Size</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 – 40</td>
<td>3</td>
<td>.086 / .074</td>
<td>0.072</td>
<td>.199 / .181</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6 – 32</td>
<td>4</td>
<td>.091 / .079</td>
<td>0.086</td>
<td>.225 / .207</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6 – 32</td>
<td>5</td>
<td>.112 / .098</td>
<td>0.073</td>
<td>.252 / .232</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8 – 32</td>
<td>5</td>
<td>.096 / .083</td>
<td>0.073</td>
<td>.252 / .232</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8 – 32</td>
<td>6</td>
<td>.117 / .102</td>
<td>0.092</td>
<td>.279 / .257</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>10 – 32</td>
<td>8</td>
<td>.141 / .124</td>
<td>0.107</td>
<td>.332 / .308</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>10</td>
<td>.148 / .129</td>
<td>0.125</td>
<td>.385 / .359</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

**Material Description:**
- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

**Finish Description:**
- Z - BLK Zinc Black
- Z Zinc Clear

**Other finishes available.**

## Machine Screw
### Undercut Oval Head
#### Inch

**Sample Part Number:** 6 - 32 x 1/2 PH - UOVAL - MS - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Total Head Height</th>
<th>S Head Size</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 – 56</td>
<td>.065 / .050</td>
<td>.036</td>
<td>.162 / .144</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4 – 40</td>
<td>.084 / .067</td>
<td>.047</td>
<td>.212 / .191</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6 – 32</td>
<td>.104 / .084</td>
<td>.059</td>
<td>.262 / .238</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8 – 32</td>
<td>.123 / .101</td>
<td>.070</td>
<td>.312 / .285</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>10 – 32</td>
<td>.142 / .188</td>
<td>.081</td>
<td>.362 / .333</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.186 / .158</td>
<td>.107</td>
<td>.477 / .442</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Material Description:**
- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

**Finish Description:**
- Z - BLK Zinc Black
- Z Zinc Clear

**Other finishes available.**

**Custom sizes available.**
### Machine Screw

#### Truss Head

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Material Description</th>
<th>Finish Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 – 56</td>
<td>.053 / .044</td>
<td>.194 / .180</td>
<td>1</td>
<td>STL Low Carbon Steel</td>
<td>Z-BLK Zinc Black</td>
</tr>
<tr>
<td>4 – 40</td>
<td>.069 / .059</td>
<td>.257 / .241</td>
<td>1</td>
<td>SS 18-8 Stainless Steel</td>
<td>Z Zinc Clear</td>
</tr>
<tr>
<td>6 – 32</td>
<td>.086 / .074</td>
<td>.321 / .303</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 – 32</td>
<td>.102 / .088</td>
<td>.384 / .364</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 – 32</td>
<td>.118 / .103</td>
<td>.448 / .425</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/4 – 20</td>
<td>.150 / .133</td>
<td>.573 / .546</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Custom sizes available.

### Sample Part Number

4 - 40 x 1/2 PH - TRUSS - MS - STL - Z

### Thread Length

<table>
<thead>
<tr>
<th>Length</th>
<th>#2 thru #10</th>
<th>1/4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8</td>
<td>.125 / .105</td>
<td></td>
</tr>
<tr>
<td>3/16</td>
<td>.187 / .167</td>
<td></td>
</tr>
<tr>
<td>1/4</td>
<td>250 / 230</td>
<td>250 / 220</td>
</tr>
<tr>
<td>5/16</td>
<td>313 / 293</td>
<td>313 / 283</td>
</tr>
<tr>
<td>7/16</td>
<td>418 / 408</td>
<td></td>
</tr>
<tr>
<td>9/16</td>
<td>533 / 533</td>
<td></td>
</tr>
<tr>
<td>5/8</td>
<td>626 / 596</td>
<td></td>
</tr>
<tr>
<td>3/4</td>
<td>750 / 720</td>
<td>750 / 720</td>
</tr>
<tr>
<td>7/8</td>
<td>845 / 845</td>
<td>845 / 845</td>
</tr>
<tr>
<td>1</td>
<td>1000 / 970</td>
<td>1000 / 970</td>
</tr>
<tr>
<td>1 x 1/4</td>
<td>1250 / 1190</td>
<td>1250 / 1190</td>
</tr>
<tr>
<td>1 x 3/8</td>
<td>1500 / 1440</td>
<td>1500 / 1440</td>
</tr>
<tr>
<td>1 x 1/2</td>
<td>1565 / 1565</td>
<td>1565 / 1565</td>
</tr>
<tr>
<td>1 x 5/8</td>
<td>1625 / 1590</td>
<td>1625 / 1590</td>
</tr>
<tr>
<td>1 x 3/4</td>
<td>1750 / 1690</td>
<td>1750 / 1690</td>
</tr>
<tr>
<td>1 x 7/8</td>
<td>1875 / 1815</td>
<td>1875 / 1815</td>
</tr>
<tr>
<td>2</td>
<td>2000 / 1940</td>
<td>2000 / 1940</td>
</tr>
</tbody>
</table>

### Drive Description

- PH Cross Recess
- SL Slotted
- SL-PH Slotted - Cross Recess
- Z Zinc Clear
- Z-BLK Zinc Black
- STL Low Carbon Steel

Other finishes available.
Machine Screws, Thread Cutting
Inch - Type F

Pan Head
- Machine Screw, Pan Head 34
- Machine Screw, Slotted Pan Head 34

Flat Head
- Machine Screw, 82 Deg Flat Head 35
- Machine Screw, 82 Deg Undercut Flat Head 35

Hex Head
- Machine Screw, Indented Hex Head 36
- Machine Screw, Indented Hex Washer Head 36

Special Use Heads
- Machine Screw, Oval Head 37
- Machine Screw, Undercut Oval Head 37
- Machine Screw, Truss Head 38
### Machine Screw, Thread Cutting

#### Pan Head

**Sample Part Number**

6 - 32 x 1/2  PH - PN - F - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.062 / .063</td>
<td>.167 / .155</td>
<td>1 T7</td>
<td>3/16</td>
<td>.187 / .167</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.080 / .070</td>
<td>.219 / .205</td>
<td>1 T10</td>
<td>5/16</td>
<td>.313 / .293</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.087 / .077</td>
<td>.270 / .256</td>
<td>2 T15</td>
<td>7/16</td>
<td>.438 / .418</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.115 / .105</td>
<td>.322 / .306</td>
<td>2 T20</td>
<td>1/2</td>
<td>.500 / .480</td>
</tr>
<tr>
<td>10 - 32</td>
<td>.133 / .122</td>
<td>.373 / .357</td>
<td>2 T25</td>
<td>9/16</td>
<td>.563 / .533</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.175 / .162</td>
<td>.492 / .473</td>
<td>3 T30</td>
<td>5/8</td>
<td>.625 / .595</td>
</tr>
</tbody>
</table>

**Material Description**

- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

### Machine Screw, Thread Cutting

#### Slotted Pan Head

**Sample Part Number**

4 - 40 x 1/2  SL - PN - F - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.053 / .045</td>
<td>.167 / .155</td>
<td>1 T7</td>
<td>3/16</td>
<td>.187 / .167</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.068 / .058</td>
<td>.219 / .205</td>
<td>1 T10</td>
<td>5/16</td>
<td>.313 / .293</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.082 / .072</td>
<td>.270 / .256</td>
<td>2 T15</td>
<td>7/16</td>
<td>.438 / .418</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.096 / .085</td>
<td>.322 / .306</td>
<td>2 T20</td>
<td>1/2</td>
<td>.500 / .480</td>
</tr>
<tr>
<td>10 - 32</td>
<td>.110 / .099</td>
<td>.373 / .357</td>
<td>2 T25</td>
<td>9/16</td>
<td>.563 / .533</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.144 / .130</td>
<td>.492 / .473</td>
<td>3 T30</td>
<td>5/8</td>
<td>.625 / .595</td>
</tr>
</tbody>
</table>

**Material Description**

- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

Custom sizes available.
### Machine Screw, Thread Cutting

#### 82 Deg Flat Head

**Inch - Type F**

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>4 - 40 x 1/2 PH - FL - F - STL - Z</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thread</strong></td>
<td><strong>Length</strong></td>
</tr>
<tr>
<td>H Height DEF</td>
<td>D Head Diameter</td>
</tr>
<tr>
<td>2 - 56</td>
<td>.051</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.067</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.083</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.100</td>
</tr>
<tr>
<td>10 - 32</td>
<td>.116</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.153</td>
</tr>
</tbody>
</table>

Custom sizes available.

#### Machine Screw, Thread Cutting

#### 82 Deg Undercut Flat Head

**Inch - Type F**

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>4 - 40 x 1/2 PH - UFL - F - STL - Z</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thread</strong></td>
<td><strong>Length</strong></td>
</tr>
<tr>
<td>H Height DEF</td>
<td>D Head Diameter</td>
</tr>
<tr>
<td>2 - 56</td>
<td>.036 / .028</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.047 / .038</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.059 / .048</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.070 / .058</td>
</tr>
<tr>
<td>10 - 32</td>
<td>.081 / .068</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.107 / .092</td>
</tr>
</tbody>
</table>

Custom sizes available.
### Machine Screw, Thread Cutting

#### Indented Hex Head

**Sample Part Number**

4 - 40 x 1/2 PH - INHX - F - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>WAF Width Across Flats</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.050 / .040</td>
<td>.125 / .120</td>
<td>1</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.060 / .049</td>
<td>.168 / .181</td>
<td>1</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.093 / .080</td>
<td>.250 / 244</td>
<td>2</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.110 / .096</td>
<td>.250 / 244</td>
<td>2</td>
</tr>
<tr>
<td>10 - 32</td>
<td>.120 / .105</td>
<td>.312 / .305</td>
<td>2</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.190 / .172</td>
<td>.375 / .367</td>
<td>3</td>
</tr>
</tbody>
</table>

**Custom sizes available.**

### Machine Screw, Thread Cutting

#### Indented Hex Washer Head

**Sample Part Number**

4 - 40 x 1/2 PH - INHX - WA - F - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>G Washer Outside Diameter</th>
<th>W Washer Thickness</th>
<th>WAF Width Across Flats</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.050 / .040</td>
<td>.166 / .154</td>
<td>.016 / .010</td>
<td>.125 / .120</td>
<td>1</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.060 / .049</td>
<td>.243 / .225</td>
<td>.019 / .011</td>
<td>.188 / .181</td>
<td>1</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.093 / .080</td>
<td>.328 / .302</td>
<td>.025 / .015</td>
<td>.250 / 244</td>
<td>2</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.110 / .096</td>
<td>.348 / .322</td>
<td>.031 / .019</td>
<td>.250 / 244</td>
<td>2</td>
</tr>
<tr>
<td>10 - 32</td>
<td>.120 / .105</td>
<td>.414 / .384</td>
<td>.031 / .019</td>
<td>.312 / .305</td>
<td>2</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.190 / .172</td>
<td>.432 / .398</td>
<td>.050 / .030</td>
<td>.375 / .367</td>
<td>3</td>
</tr>
</tbody>
</table>

**Custom sizes available.**

---

**Material Description**

- **Inch - Type F**
  - **Thread Cutting**
  - **Indented Hex Head**
  - **Indented Hex Washer Head**

**Other finishes available.**

**Drive Description**

- **Cross Recess**
- **Slotted**
- **Unslotted**
### Machine Screw, Thread Cutting

**Oval Head**

**Inch - Type F**

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>6 - 32 x 1/2 PH - OVAL - F - STL - Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thread</td>
<td>Length</td>
</tr>
<tr>
<td>Thread</td>
<td>H Total Head</td>
</tr>
<tr>
<td>2 - 56</td>
<td>.065 / .050</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.084 / .067</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.104 / .084</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.123 / .101</td>
</tr>
<tr>
<td>10 - 32</td>
<td>.142 / .118</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.186 / .158</td>
</tr>
</tbody>
</table>

Custom sizes available.

### Machine Screw, Thread Cutting

**Undercut Oval Head**

**Inch - Type F**

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>6 - 32 x 1/2 PH - OVAL - F - STL - Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thread</td>
<td>Length</td>
</tr>
<tr>
<td>Thread</td>
<td>H Total Head</td>
</tr>
<tr>
<td>2 - 56</td>
<td>.065 / .050</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.084 / .067</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.104 / .084</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.123 / .101</td>
</tr>
<tr>
<td>10 - 32</td>
<td>.142 / .118</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.186 / .158</td>
</tr>
</tbody>
</table>

Custom sizes available.

---

**Material Description**
- STL: Low Carbon Steel
- SS: 18-8 Stainless Steel

**Finish Description**
- Z - BLK: Zinc Black
- Z: Zinc Clear

Other finishes available.
## Machine Screw, Thread Cutting
### Truss Head
#### Inch - Type F

**Sample Part Number**

4 - 40 x 1/2  PH - TRUSS - F - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.053 / .044</td>
<td>.194 / .180</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4 - 40</td>
<td>.069 / .059</td>
<td>.257 / .241</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6 - 32</td>
<td>.086 / .074</td>
<td>.321 / .303</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8 - 32</td>
<td>.102 / .088</td>
<td>.384 / .364</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>10 - 32</td>
<td>.118 / .103</td>
<td>.448 / .425</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.150 / .133</td>
<td>.573 / .546</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Length**

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16</td>
<td>.187 / .167</td>
</tr>
<tr>
<td>1/4</td>
<td>.250 / .230</td>
</tr>
<tr>
<td>5/16</td>
<td>.313 / .293</td>
</tr>
<tr>
<td>3/8</td>
<td>.375 / .355</td>
</tr>
<tr>
<td>7/16</td>
<td>.438 / .418</td>
</tr>
<tr>
<td>1/2</td>
<td>.500 / .480</td>
</tr>
<tr>
<td>9/16</td>
<td>.563 / .533</td>
</tr>
<tr>
<td>5/8</td>
<td>.625 / .595</td>
</tr>
<tr>
<td>3/4</td>
<td>.750 / .720</td>
</tr>
<tr>
<td>7/8</td>
<td>.875 / .845</td>
</tr>
<tr>
<td>1</td>
<td>1.000 / .970</td>
</tr>
<tr>
<td>1.25</td>
<td>1.250 / 1.190</td>
</tr>
<tr>
<td>1.5</td>
<td>1.500 / 1.440</td>
</tr>
<tr>
<td>1.75</td>
<td>1.750 / 1.690</td>
</tr>
<tr>
<td>2</td>
<td>2.000 / 1.940</td>
</tr>
</tbody>
</table>

**Material**

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Finish**

<table>
<thead>
<tr>
<th>Finish</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

**Other finishes available.**

**Drive**

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>Cross Recess</td>
</tr>
<tr>
<td>SL</td>
<td>Slotted</td>
</tr>
<tr>
<td>SL - PH</td>
<td>Slotted - Cross Recess</td>
</tr>
</tbody>
</table>

Custom sizes available.
Machine Screws, Thread Cutting
Inch - Type 23

Pan Head
- Machine Screw, Pan Head (Page 40)
- Machine Screw, Slotted Pan Head (Page 40)

Flat Head
- Machine Screw, 82 Deg Flat Head (Page 41)
- Machine Screw, 82 Deg Undercut Flat Head (Page 41)

Hex Head
- Machine Screw, Indented Hex Head (Page 42)
- Machine Screw, Indented Hex Washer Head (Page 42)

Special Use Heads
- Machine Screw, Oval Head (Page 43)
- Machine Screw, Undercut Oval Head (Page 43)
- Machine Screw, Truss Head (Page 44)
### Machine Screw, Thread Cutting

#### Pan Head

**Inch - Type 23**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>6 - Lobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.062 / .053</td>
<td>.167 / .155</td>
<td>1</td>
<td>T7</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.080 / .070</td>
<td>.219 / .205</td>
<td>1</td>
<td>T10</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.097 / .087</td>
<td>.270 / .256</td>
<td>2</td>
<td>T15</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.115 / .105</td>
<td>.322 / .306</td>
<td>2</td>
<td>T20</td>
</tr>
<tr>
<td>10 - 32</td>
<td>.133 / .122</td>
<td>.373 / .357</td>
<td>2</td>
<td>T25</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.175 / .162</td>
<td>.492 / .473</td>
<td>3</td>
<td>T30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16</td>
<td>.187 / .167</td>
</tr>
<tr>
<td>1/4</td>
<td>.250 / .230</td>
</tr>
<tr>
<td>5/16</td>
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<td>.500 / .480</td>
</tr>
<tr>
<td>9/16</td>
<td>.563 / .533</td>
</tr>
<tr>
<td>5/8</td>
<td>.625 / .595</td>
</tr>
<tr>
<td>3/4</td>
<td>.750 / .720</td>
</tr>
<tr>
<td>7/8</td>
<td>.875 / .845</td>
</tr>
<tr>
<td>1</td>
<td>1.000 / .970</td>
</tr>
<tr>
<td>1.25</td>
<td>1.250 / 1.190</td>
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<tr>
<td>1.5</td>
<td>1.500 / 1.440</td>
</tr>
<tr>
<td>1.75</td>
<td>1.750 / 1.690</td>
</tr>
<tr>
<td>2</td>
<td>2.000 / 1.940</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Finish</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

*Other finishes available.

**Sample Part Number**

6 - 32 x 1/2  PH - PN - 23 - STL - Z

---

### Machine Screw, Thread Cutting

#### Slotted Pan Head

**Inch - Type 23**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>6 - Lobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.053 / .045</td>
<td>.167 / .155</td>
<td>1</td>
<td>T7</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.068 / .058</td>
<td>.219 / .205</td>
<td>1</td>
<td>T10</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.082 / .072</td>
<td>.270 / .256</td>
<td>2</td>
<td>T15</td>
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<td>.313 / .293</td>
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<td>.375 / .355</td>
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<td>.438 / .418</td>
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<td>.500 / .480</td>
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<td>.563 / .533</td>
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<td>.875 / .845</td>
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<td>1.000 / .970</td>
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<tr>
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<tr>
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<th>Description</th>
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<tbody>
<tr>
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<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
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<table>
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<tr>
<td>Z</td>
<td>Zinc Clear</td>
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</table>

*Other finishes available.

**Sample Part Number**

4 - 40 x 1/2  SL - PN - 23 - STL - Z
### Machine Screw, Thread Cutting

**82 Deg Flat Head**

**Inch - Type 23**

**Sample Part Number**

4 - 40 x 1/2   PH - FL - 23 - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height REF</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
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</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.051</td>
<td>.162 / .144</td>
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<td>4 - 40</td>
<td>.067</td>
<td>.212 / .191</td>
<td>1</td>
</tr>
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<td>6 - 32</td>
<td>.083</td>
<td>.262 / 238</td>
<td>2</td>
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<tr>
<td>8 - 32</td>
<td>.100</td>
<td>.312 / .285</td>
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<td>10 - 32</td>
<td>.116</td>
<td>.362 / .333</td>
<td>2</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.153</td>
<td>.477 / .442</td>
<td>3</td>
</tr>
</tbody>
</table>

**Material Description**

- STL: Low Carbon Steel
- SS: 18-8 Stainless Steel

**Finish Description**

- Z - BLK: Zinc Black
- Z: Zinc Clear

Other finishes available.

**Other specifications**

- Custom sizes available.

---

### Machine Screw, Thread Cutting

**82 Deg Undercut Flat Head**

**Inch - Type 23**

**Sample Part Number**

4 - 40 x 1/2   PH - UFL - 23 - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
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<th>Drive Size Cross Recess</th>
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<td>10 - 32</td>
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<td>.362 / .333</td>
<td>2</td>
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<tr>
<td>1/4 - 20</td>
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<td>.477 / .442</td>
<td>3</td>
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</tbody>
</table>

**Material Description**

- STL: Low Carbon Steel
- SS: 18-8 Stainless Steel

**Finish Description**

- Z - BLK: Zinc Black
- Z: Zinc Clear

Other finishes available.

**Other specifications**

- Custom sizes available.
### Machine Screw, Thread Cutting

**Indented Hex Head**

**Inch - Type 23**

<table>
<thead>
<tr>
<th>Material Description</th>
<th>Drive Series</th>
<th>Material Finish</th>
</tr>
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<tbody>
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<td>PH</td>
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<td>SS</td>
<td>INHX</td>
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</tbody>
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#### Sample Part Number

4 - 40 x 1/2  PH - INHX - 23 - STL - Z

<table>
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<tr>
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<th>Material</th>
<th>Description</th>
<th>Length</th>
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<tbody>
<tr>
<td>3/16</td>
<td>STL</td>
<td>Low Carbon Steel</td>
<td>1.187 / 1.167</td>
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</tr>
<tr>
<td>1/4</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
<td>250 / 230</td>
<td></td>
</tr>
<tr>
<td>5/16</td>
<td>Finish</td>
<td>Description</td>
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</tr>
<tr>
<td>3/8</td>
<td>Z</td>
<td>Zinc Clear</td>
<td>375 / 355</td>
<td></td>
</tr>
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<td>7/16</td>
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<td>Zinc Clear</td>
<td>438 / 418</td>
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<tr>
<td>1/2</td>
<td>2</td>
<td>Zinc Clear</td>
<td>500 / 480</td>
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<tr>
<td>9/16</td>
<td>2</td>
<td>Zinc Clear</td>
<td>563 / 533</td>
<td></td>
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<td>625 / 595</td>
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</tr>
<tr>
<td>3/4</td>
<td>2</td>
<td>Zinc Clear</td>
<td>750 / 720</td>
<td></td>
</tr>
<tr>
<td>7/8</td>
<td>2</td>
<td>Zinc Clear</td>
<td>875 / 845</td>
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<tr>
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<td>2</td>
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#### Other finishes available.

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<thead>
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<tbody>
<tr>
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<td>Slotted</td>
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<tr>
<td>USL</td>
<td>Unslotted</td>
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</table>

<table>
<thead>
<tr>
<th>Drive Size</th>
<th>Cross Recess</th>
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<tbody>
<tr>
<td>2 - 56</td>
<td>.066 / .050</td>
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<td>4 - 40</td>
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<td>.110 / .096</td>
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<tr>
<td>8 - 32</td>
<td>.120 / .105</td>
</tr>
<tr>
<td>10 - 32</td>
<td>.190 / .172</td>
</tr>
<tr>
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<thead>
<tr>
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<td>.243 / .225</td>
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<td>.328 / .302</td>
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<td>8 - 32</td>
<td>.348 / .322</td>
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<td>10 - 32</td>
<td>.414 / .384</td>
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<td>1/4 - 20</td>
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### Machine Screw, Thread Cutting

**Indented Hex Washer Head**

**Inch - Type 23**

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<tr>
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<td>SS</td>
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#### Sample Part Number

4 - 40 x 1/2  PH - INHX - WA - 23 - STL - Z

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<th>Material</th>
<th>Description</th>
<th>Length</th>
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<tbody>
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<td>STL</td>
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<td>SS</td>
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#### Other finishes available.

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<td>USL</td>
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<td>.120 / .105</td>
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<td>.414 / .384</td>
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Machine Screw, Thread Cutting
Oval Head
Inch - Type 23

Sample Part Number
6 - 32 x 1/2 PH - OVAL - 23 - STL - Z
Thread Length Drive Series Material Finish

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<th>Drive Size Cross Recess</th>
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<td>.477 / .442</td>
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Custom sizes available.

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<tbody>
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<td>.313 / .293</td>
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<table>
<thead>
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</tr>
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<tbody>
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<td>STL Low Carbon Steel</td>
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<table>
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<tr>
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<tr>
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</table>

Other finishes available.

Machine Screw, Thread Cutting
Undercut Oval Head
Inch - Type 23

Sample Part Number
6 - 32 x 1/2 PH - UOVAL - 23 - STL - Z
Thread Length Drive Series Material Finish

<table>
<thead>
<tr>
<th>Thread</th>
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<th>S Head Side Height REF</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
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<td>1/4 - 20</td>
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<td>.107</td>
<td>.477 / .442</td>
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Custom sizes available.

<table>
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<tr>
<th>Length</th>
<th>L</th>
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<tbody>
<tr>
<td>3/16</td>
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<td>1.750 / 1.690</td>
</tr>
<tr>
<td>2</td>
<td>2.000 / 1.940</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL Low Carbon Steel</td>
</tr>
<tr>
<td>SS 18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Finish Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z - BLK Zinc Black</td>
</tr>
<tr>
<td>Z Zinc Clear</td>
</tr>
</tbody>
</table>

Other finishes available.
**Machine Screw, Thread Cutting**

**Truss Head**

**Inch - Type 23**

---

### Sample Part Number

4 - 40 x 1/2  PH - TRUSS - 23 - STL - Z

**Thread** | **H Height** | **D Head Diameter** | **Drive Size** | **Cross Recess**
--- | --- | --- | --- | ---
2 - 56 | .053 / .044 | .194 / .180 | 1 |
4 - 40 | .069 / .059 | .257 / .241 | 1 |
6 - 32 | .086 / .074 | .321 / .303 | 2 |
8 - 32 | .102 / .088 | .384 / .364 | 2 |
10 - 32 | .118 / .103 | .448 / .425 | 2 |
1/4 - 20 | .150 / .133 | .573 / .546 | 3 |

### Table

<table>
<thead>
<tr>
<th><strong>Thread</strong></th>
<th><strong>Length</strong></th>
<th><strong>L</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16</td>
<td>187 / 167</td>
<td></td>
</tr>
<tr>
<td>1/4</td>
<td>250 / 230</td>
<td></td>
</tr>
<tr>
<td>5/16</td>
<td>313 / 293</td>
<td></td>
</tr>
<tr>
<td>3/8</td>
<td>375 / 355</td>
<td></td>
</tr>
<tr>
<td>7/16</td>
<td>438 / 418</td>
<td></td>
</tr>
<tr>
<td>1/2</td>
<td>500 / 480</td>
<td></td>
</tr>
<tr>
<td>9/16</td>
<td>563 / 533</td>
<td></td>
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<tr>
<td>5/8</td>
<td>625 / 595</td>
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</table>

### Material Description

- **STL** Low Carbon Steel
- **SS** 18 - 8 Stainless Steel

### Finish Description

- **Z - BLK** Zinc Black
- **Z** Zinc Clear

---

Other finishes available.

---

**Drive Description**

- **PH** Cross Recess
- **SL** Slotted
- **SL - PH** Slotted - Cross Recess

---

Custom sizes available.
Machine Screws, Thread Cutting
Inch - Type 1

Pan Head
- Machine Screw, Pan Head 46
- Machine Screw, Slotted Pan Head 46

Flat Head
- Machine Screw, 82 Deg Flat Head 47
- Machine Screw, 82 Deg Undercut Flat Head 47

Hex Head
- Machine Screw, Indented Hex Head 48
- Machine Screw, Indented Hex Washer Head 48

Special Use Heads
- Machine Screw, Oval Head 49
- Machine Screw, Undercut Oval Head 49
- Machine Screw, Truss Head 50

Machine Screws, Thread Cutting
Inch - Type 1
Machine Screw, Thread Cutting
Pan Head
Inch - Type 1

Sample Part Number
6 - 32 x 1/2 PH - PN - 1 - STL - Z

Thread | H Height | D Head Diameter | Drive Size | Length | L
-------|---------|----------------|------------|-------|--------
2 - 56 | .062 / .053 | .167 / .155 | 1 T7 | 3/16 | .187 / .167
4 - 40 | .060 / .070 | .219 / .205 | 1 T10 | 5/16 | .313 / .293
6 - 32 | .097 / .087 | .270 / .256 | 2 T15 | 7/16 | .438 / .418
8 - 32 | .115 / .105 | .322 / .306 | 2 T20 | 1/2 | .500 / .480
10 - 32 | .133 / .122 | .373 / .357 | 2 T25 | 9/16 | .563 / .533
1/4 - 20 | .175 / .162 | .492 / .473 | 3 T30 | 5/8 | .625 / .595

Material Description
STL Low Carbon Steel
SS 18 - 8 Stainless Steel

Finish Description
Z - BLK Zinc Black
Z Zinc Clear
Other finishes available.

Custom sizes available.

Machine Screw, Thread Cutting
Slotted Pan Head
Inch - Type 1

Sample Part Number
4 - 40 x 1/2 SL - PN - 1 - STL - Z

Thread | H Height | D Head Diameter | Drive Size | Length | L
-------|---------|----------------|------------|-------|--------
2 - 56 | .053 / .045 | .167 / .155 | 1 PH | 3/16 | .187 / .167
4 - 40 | .068 / .058 | .219 / .205 | 1 TX | 1/4 | .250 / .230
6 - 32 | .082 / .072 | .270 / .256 | 2 PH | 5/16 | .313 / .293
8 - 32 | .096 / .085 | .322 / .306 | 2 TX | 3/8 | .375 / .355
10 - 32 | .110 / .099 | .373 / .357 | 3 PH | 7/16 | .438 / .418
1/4 - 20 | .144 / .130 | .492 / .473 | 3 TX | 1/2 | .500 / .480

Material Description
STL Low Carbon Steel
SS 18 - 8 Stainless Steel

Finish Description
Z - BLK Zinc Black
Z Zinc Clear
Other finishes available.

Custom sizes available.
**Machine Screw, Thread Cutting**

### 82 Deg Flat Head

**Sample Part Number**

4 - 40 x 1/2   PH - FL - 1 - STL - Z

**Thread Length Drive Series Material Finish**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height REF</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
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</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.051</td>
<td>.172 / .147</td>
<td>1</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.067</td>
<td>.225 / .195</td>
<td>1</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.083</td>
<td>.279 / .244</td>
<td>2</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.100</td>
<td>.332 / .292</td>
<td>2</td>
</tr>
<tr>
<td>10 - 32</td>
<td>.116</td>
<td>.385 / .340</td>
<td>2</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.153</td>
<td>.507 / .452</td>
<td>3</td>
</tr>
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**Length L**

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
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<tbody>
<tr>
<td>3/16</td>
<td>.187 / .167</td>
</tr>
<tr>
<td>1/4</td>
<td>.250 / .230</td>
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<tr>
<td>5/16</td>
<td>.313 / .293</td>
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<td>3/8</td>
<td>.375 / .355</td>
</tr>
<tr>
<td>7/16</td>
<td>.438 / .418</td>
</tr>
<tr>
<td>1/2</td>
<td>.500 / .480</td>
</tr>
<tr>
<td>9/16</td>
<td>.563 / .533</td>
</tr>
<tr>
<td>5/8</td>
<td>.625 / .595</td>
</tr>
<tr>
<td>7/8</td>
<td>.875 / .845</td>
</tr>
<tr>
<td>1</td>
<td>1.000 / .970</td>
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<td>1.250 / 1.190</td>
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<td>1.500 / 1.440</td>
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<td>1.750 / 1.690</td>
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<tr>
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<td>2.000 / 1.940</td>
</tr>
</tbody>
</table>

**Material Description**

- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

### Machine Screw, Undercut Flat Head

**Sample Part Number**

4 - 40 x 1/2   PH - UFL - 1 - STL - Z

**Thread Length Drive Series Material Finish**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
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</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.036 / .028</td>
<td>.162 / .144</td>
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<tr>
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<td>.047 / .038</td>
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<td>6 - 32</td>
<td>.059 / .048</td>
<td>.262 / .238</td>
<td>2</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.070 / .058</td>
<td>.312 / .285</td>
<td>2</td>
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<td>10 - 32</td>
<td>.081 / .068</td>
<td>.362 / .333</td>
<td>2</td>
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<tr>
<td>1/4 - 20</td>
<td>.107 / .092</td>
<td>.417 / .442</td>
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</table>

**Length L**

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
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<tbody>
<tr>
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<td>1/4</td>
<td>.250 / .230</td>
</tr>
<tr>
<td>5/16</td>
<td>.313 / .293</td>
</tr>
<tr>
<td>3/8</td>
<td>.375 / .355</td>
</tr>
<tr>
<td>7/16</td>
<td>.438 / .418</td>
</tr>
<tr>
<td>1/2</td>
<td>.500 / .480</td>
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<td>9/16</td>
<td>.563 / .533</td>
</tr>
<tr>
<td>5/8</td>
<td>.625 / .595</td>
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<tr>
<td>7/8</td>
<td>.875 / .845</td>
</tr>
<tr>
<td>1</td>
<td>1.000 / .970</td>
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<tr>
<td>1.25</td>
<td>1.250 / 1.190</td>
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<td>1.500 / 1.440</td>
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<tr>
<td>1.75</td>
<td>1.750 / 1.690</td>
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<tr>
<td>2</td>
<td>2.000 / 1.940</td>
</tr>
</tbody>
</table>

**Material Description**

- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

---

Custom sizes available.
## Machine Screw, Thread Cutting

### Indented Hex Head

**Inch - Type 1**

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>4 - 40 x 1/2 PH - INHX - 1 - STL - Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thread</td>
<td>Length</td>
</tr>
<tr>
<td>2 - 56</td>
<td>3/16</td>
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<tr>
<td>4 - 40</td>
<td>1/4</td>
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<td>6 - 32</td>
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<tr>
<td>10 - 32</td>
<td>7/16</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>1/2</td>
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</tbody>
</table>

### Indented Hex Washer Head

**Inch - Type 1**

<table>
<thead>
<tr>
<th>Sample Part Number</th>
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</thead>
<tbody>
<tr>
<td>Thread</td>
<td>Length</td>
</tr>
<tr>
<td>2 - 56</td>
<td>3/16</td>
</tr>
<tr>
<td>4 - 40</td>
<td>1/4</td>
</tr>
<tr>
<td>6 - 32</td>
<td>5/16</td>
</tr>
<tr>
<td>8 - 32</td>
<td>3/8</td>
</tr>
<tr>
<td>10 - 32</td>
<td>7/16</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>1/2</td>
</tr>
</tbody>
</table>

### Other dimensions available.

Custom sizes available.

---

**Machine Screw, Thread Cutting**

**Indented Hex Head**

**Inch - Type 1**

<table>
<thead>
<tr>
<th>Material Description</th>
<th>Description</th>
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<tbody>
<tr>
<td>STL</td>
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</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Finish Description**

| Z - BLK | Zinc Black |
| Z | Zinc Clear |

**Other finishes available.**

**Drive Description**

| PH | Cross Recess |
| SL | Slotted |
| USL | Unslotted |

---

**Machine Screw, Thread Cutting**

**Indented Hex Washer Head**

**Inch - Type 1**

<table>
<thead>
<tr>
<th>Material Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Finish Description**

| Z - BLK | Zinc Black |
| Z | Zinc Clear |

**Other finishes available.**

**Drive Description**

| PH | Cross Recess |
| SL | Slotted |
| USL | Unslotted |

---

**Custom sizes available.**
**Machine Screw, Thread Cutting**

**Oval Head**

*Inch - Type 1*

Sample Part Number

6 - 32 x 1/2   PH - OVAL - 1 - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
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<th>S Head Side Height REF</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
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<tr>
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<td>.051</td>
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<td>.104 / .084</td>
<td>.067</td>
<td>.212 / .191</td>
<td>1</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.128 / .105</td>
<td>.083</td>
<td>.262 / .238</td>
<td>2</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.152 / .126</td>
<td>.100</td>
<td>.312 / .285</td>
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<tr>
<td>10 - 32</td>
<td>.176 / .148</td>
<td>.116</td>
<td>.362 / .333</td>
<td>2</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.232 / .197</td>
<td>.153</td>
<td>.477 / .442</td>
<td>3</td>
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</tbody>
</table>

**Machine Screw, Thread Cutting**

**Undercut Oval Head**

*Inch - Type 1*

Sample Part Number

6 - 32 x 1/2   PH - OVAL - 1 - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Total Head Height</th>
<th>S Head Side Height REF</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
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</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.065 / .050</td>
<td>.038</td>
<td>.167 / .155</td>
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<td>4 - 40</td>
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<td>.047</td>
<td>.219 / .205</td>
<td>1</td>
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<tr>
<td>6 - 32</td>
<td>.104 / .084</td>
<td>.059</td>
<td>.270 / .258</td>
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<td>8 - 32</td>
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<td>.322 / .308</td>
<td>2</td>
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<td>10 - 32</td>
<td>.142 / .188</td>
<td>.081</td>
<td>.373 / .357</td>
<td>2</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.186 / .158</td>
<td>.107</td>
<td>.402 / .473</td>
<td>3</td>
</tr>
</tbody>
</table>

**Material Description**

- **STL** Low Carbon Steel
- **SS** 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

**Drive Description**

- PH Cross Recess
- SL Slotted
- SL - PH Slotted - Cross Recess

**Machine Screw, Thread Cutting**

Custom sizes available.

**Machine Screw, Thread Cutting**

Custom sizes available.
Machine Screw, Thread Cutting

**Inch - Type 1**

Sample Part Number

4 - 40 x 1/2 PH - TRUSS - 1 - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
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</thead>
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<tr>
<td>2 - 56</td>
<td>.053 / .044</td>
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<td>.257 / .241</td>
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<tr>
<td>6 - 32</td>
<td>.086 / .074</td>
<td>.321 / .303</td>
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<tr>
<td>8 - 32</td>
<td>.102 / .088</td>
<td>.384 / .364</td>
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<td>10 - 32</td>
<td>.118 / .103</td>
<td>.448 / .425</td>
<td>2</td>
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<td>1/4 - 20</td>
<td>.150 / .133</td>
<td>.573 / .546</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16</td>
<td>.187 / .167</td>
</tr>
<tr>
<td>1/4</td>
<td>.250 / .230</td>
</tr>
<tr>
<td>5/16</td>
<td>.313 / .293</td>
</tr>
<tr>
<td>3/8</td>
<td>.375 / .355</td>
</tr>
<tr>
<td>7/16</td>
<td>.438 / .418</td>
</tr>
<tr>
<td>1/2</td>
<td>.500 / .480</td>
</tr>
<tr>
<td>9/16</td>
<td>.563 / .533</td>
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<tr>
<td>5/8</td>
<td>.625 / .595</td>
</tr>
<tr>
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<td>.700 / .670</td>
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<td>.775 / .745</td>
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<td>1.000 / .970</td>
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<tr>
<td>1.25</td>
<td>1.250 / 1.190</td>
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<tr>
<td>1.5</td>
<td>1.500 / 1.440</td>
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<tr>
<td>1.75</td>
<td>1.750 / 1.690</td>
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<tr>
<td>2</td>
<td>2.000 / 1.940</td>
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</tbody>
</table>

**Material Description**

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
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<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
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</table>

**Finish Description**

<table>
<thead>
<tr>
<th>Finish</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Z - BLK</td>
<td>Zinc Black</td>
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<tr>
<td>Z</td>
<td>Zinc Clear</td>
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</tbody>
</table>

Other finishes available.

**Drive Description**

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>Cross Recess</td>
</tr>
<tr>
<td>SL - PH</td>
<td>Slotted - Cross Recess</td>
</tr>
<tr>
<td>SL</td>
<td>Slotted</td>
</tr>
</tbody>
</table>

Custom sizes available.
Machine Screws, Thread Forming

Inch - Type TA

Pan Head
- Machine Screw, Pan Head 52
- Machine Screw, Slotted Pan Head 52

Flat Head
- Machine Screw, 82 Deg Flat Head 53
- Machine Screw, 82 Deg Undercut Flat Head 53

Hex Head
- Machine Screw, Indented Hex Head 54
- Machine Screw, Indented Hex Washer Head 54

Special Use Heads
- Machine Screw, Oval Head 55
- Machine Screw, Undercut Oval Head 55
- Machine Screw, Truss Head 56

Machine Screws, Thread Forming

Inch - Type TA
### Machine Screw, Thread Forming
#### Pan Head
**Sample Part Number**
6 - 32 x 1/2 PH - PN - TA - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>L</th>
<th>Material</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.062 / .053</td>
<td>.167 / .165</td>
<td>1</td>
<td>T7</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.080 / .070</td>
<td>.219 / .205</td>
<td>1</td>
<td>T10</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.097 / .087</td>
<td>.270 / .256</td>
<td>2</td>
<td>T15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 - 32</td>
<td>.115 / .105</td>
<td>.322 / .306</td>
<td>2</td>
<td>T20</td>
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<td></td>
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<tr>
<td>10 - 32</td>
<td>.133 / .122</td>
<td>.373 / .357</td>
<td>2</td>
<td>T25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.175 / .162</td>
<td>.492 / .473</td>
<td>3</td>
<td>T30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Length**
3/16 .187 / .167
1/4 .250 / .230
5/16 .313 / .293
3/8 .375 / .356
7/16 .438 / .418
1/2 .500 / .480
9/16 .563 / .533
5/8 .625 / .595
3/4 .750 / .720
7/8 .875 / .845
1 1.000 / .970
1.25 1.250 / 1.190
1.5 1.500 / 1.440
1.75 1.750 / 1.690
2 2.000 / 1.940

**Other finishes available.**
- Z - BLK Zinc Black
- Z Zinc Clear

---

### Machine Screw, Thread Forming
#### Slotted Pan Head
**Sample Part Number**
4 - 40 x 1/2 SL - PN - TA - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>L</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.053 / .045</td>
<td>.167 / .155</td>
<td>1</td>
<td>T7</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.068 / .058</td>
<td>.219 / .205</td>
<td>1</td>
<td>T10</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.082 / .072</td>
<td>.270 / .256</td>
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<td>T15</td>
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</tr>
<tr>
<td>8 - 32</td>
<td>.096 / .085</td>
<td>.322 / .306</td>
<td>2</td>
<td>T20</td>
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<td></td>
</tr>
<tr>
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<td>.110 / .099</td>
<td>.373 / .357</td>
<td>2</td>
<td>T25</td>
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<td></td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.144 / .130</td>
<td>.492 / .473</td>
<td>3</td>
<td>T30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Length**
3/16 .187 / .167
1/4 .250 / .230
5/16 .313 / .293
3/8 .375 / .356
7/16 .438 / .418
1/2 .500 / .480
9/16 .563 / .533
5/8 .625 / .595
3/4 .750 / .720
7/8 .875 / .845
1 1.000 / .970
1.25 1.250 / 1.190
1.5 1.500 / 1.440
1.75 1.750 / 1.690
2 2.000 / 1.940

**Other finishes available.**
- SL Slotted
- PH Cross Recess
- SL - PH Slotted - Cross Recess
- TX 6 - Lobe
- SL - TX Slotted - 6 - Lobe

---

Custom sizes available.
### Machine Screw, Thread Forming

**82 Deg Flat Head**

**Inch - Type TA**

#### Sample Part Number

2 - 56 x 1/2   PH - FL - TA - STL - Z

**Thread**        **Length** **Diameter** **Drive Size** **Material** **Description**

<table>
<thead>
<tr>
<th>Thread</th>
<th>Height</th>
<th>Head</th>
<th>Diameter</th>
<th>Cross Recess</th>
<th>Drive Series</th>
<th>Material</th>
<th>Description</th>
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<tr>
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<td>SS</td>
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</tr>
<tr>
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<td>.285</td>
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<td>T20</td>
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<td>Zinc Clear</td>
</tr>
<tr>
<td>10 - 32</td>
<td>.116</td>
<td>.362</td>
<td>.333</td>
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<td>T25</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.153</td>
<td>.477</td>
<td>.442</td>
<td>3</td>
<td>T30</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

Custom sizes available.

**Thread**        **Length** **Diameter** **Drive Size** **Material** **Description**

<table>
<thead>
<tr>
<th>Thread</th>
<th>Height</th>
<th>Head</th>
<th>Diameter</th>
<th>Cross Recess</th>
<th>Drive Series</th>
<th>Material</th>
<th>Description</th>
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<td>STL</td>
<td>Low Carbon Steel</td>
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<tr>
<td>4 - 40</td>
<td>.047</td>
<td>.212</td>
<td>.191</td>
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<td>TX 6 - Lobe</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.059</td>
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<td>.238</td>
<td>3</td>
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<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
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<td>.285</td>
<td>3</td>
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<td>Z</td>
<td>Zinc Clear</td>
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<tr>
<td>10 - 32</td>
<td>.081</td>
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<td>.333</td>
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<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.107</td>
<td>.477</td>
<td>.442</td>
<td>3</td>
<td>SL Slotted</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

Custom sizes available.

---

### Machine Screw, Thread Forming

**82 Deg Undercut Flat Head**

**Inch - Type TA**

#### Sample Part Number

4 - 40 x 1/2   PH - UFL - TA - STL - Z

**Thread**        **Length** **Diameter** **Drive Size** **Material** **Description**

<table>
<thead>
<tr>
<th>Thread</th>
<th>Height</th>
<th>Head</th>
<th>Diameter</th>
<th>Cross Recess</th>
<th>Drive Series</th>
<th>Material</th>
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</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.036</td>
<td>.162</td>
<td>.144</td>
<td>1</td>
<td>PH Cross Recess</td>
<td>STL</td>
<td>Low Carbon Steel</td>
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<tr>
<td>4 - 40</td>
<td>.047</td>
<td>.212</td>
<td>.191</td>
<td>1</td>
<td>TX 6 - Lobe</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.059</td>
<td>.262</td>
<td>.238</td>
<td>3</td>
<td>SL Slotted</td>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>8 - 32</td>
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<td>.312</td>
<td>.285</td>
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<td>Z</td>
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<tr>
<td>10 - 32</td>
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<td>.362</td>
<td>.333</td>
<td>3</td>
<td>SL Slotted</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.107</td>
<td>.477</td>
<td>.442</td>
<td>3</td>
<td>SL Slotted</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
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</table>

Custom sizes available.

**Thread**        **Length** **Diameter** **Drive Size** **Material** **Description**

<table>
<thead>
<tr>
<th>Thread</th>
<th>Height</th>
<th>Head</th>
<th>Diameter</th>
<th>Cross Recess</th>
<th>Drive Series</th>
<th>Material</th>
<th>Description</th>
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<tbody>
<tr>
<td>2 - 56</td>
<td>.036</td>
<td>.162</td>
<td>.144</td>
<td>1</td>
<td>PH Cross Recess</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.047</td>
<td>.212</td>
<td>.191</td>
<td>1</td>
<td>TX 6 - Lobe</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.059</td>
<td>.262</td>
<td>.238</td>
<td>3</td>
<td>SL Slotted</td>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
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<td>8 - 32</td>
<td>.070</td>
<td>.312</td>
<td>.285</td>
<td>3</td>
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<td>10 - 32</td>
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<td>.362</td>
<td>.333</td>
<td>3</td>
<td>SL Slotted</td>
<td>Z</td>
<td>Zinc Clear</td>
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<tr>
<td>1/4 - 20</td>
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<td>.477</td>
<td>.442</td>
<td>3</td>
<td>SL Slotted</td>
<td>Z</td>
<td>Zinc Clear</td>
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Custom sizes available.
### Machine Screw, Thread Forming
**Indented Hex Head**

**Indented Hex Washer Head**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>W Washer Outside Diameter</th>
<th>W Washer Thickness</th>
<th>WAF Width Across Flats</th>
<th>Drive Size</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.050 / .040</td>
<td>.166 / .154</td>
<td>.016 / .010</td>
<td>.125 / .120</td>
<td>1</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>4 - 40</td>
<td>.060 / .049</td>
<td>.243 / .225</td>
<td>.019 / .011</td>
<td>.188 / .181</td>
<td>1</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.093 / .080</td>
<td>.328 / .302</td>
<td>.025 / .015</td>
<td>.250 / .244</td>
<td>1</td>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.110 / .096</td>
<td>.348 / .322</td>
<td>.031 / .019</td>
<td>.320 / .315</td>
<td>2</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>10 - 32</td>
<td>.120 / .105</td>
<td>.414 / .384</td>
<td>.031 / .019</td>
<td>.312 / .305</td>
<td>2</td>
<td>Other finishes available.</td>
<td></td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.190 / .172</td>
<td>.432 / .398</td>
<td>.050 / .030</td>
<td>.375 / .367</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Machine Screw, Thread Forming

**Indented Hex Head**

**Indented Hex Washer Head**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>G Washer Outside Diameter</th>
<th>G Washer Thickness</th>
<th>WAF Width Across Flats</th>
<th>Drive Size</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.050 / .040</td>
<td>.166 / .154</td>
<td>.016 / .010</td>
<td>.125 / .120</td>
<td>1</td>
<td>STL</td>
<td>Low Carbon Steel</td>
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<tr>
<td>4 - 40</td>
<td>.060 / .049</td>
<td>.243 / .225</td>
<td>.019 / .011</td>
<td>.188 / .181</td>
<td>1</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.093 / .080</td>
<td>.328 / .302</td>
<td>.025 / .015</td>
<td>.250 / .244</td>
<td>1</td>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.110 / .096</td>
<td>.348 / .322</td>
<td>.031 / .019</td>
<td>.320 / .315</td>
<td>2</td>
<td>Z</td>
<td>Zinc Clear</td>
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<tr>
<td>10 - 32</td>
<td>.120 / .105</td>
<td>.414 / .384</td>
<td>.031 / .019</td>
<td>.312 / .305</td>
<td>2</td>
<td>Other finishes available.</td>
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</tr>
<tr>
<td>1/4 - 20</td>
<td>.190 / .172</td>
<td>.432 / .398</td>
<td>.050 / .030</td>
<td>.375 / .367</td>
<td>3</td>
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<td></td>
</tr>
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</table>

Custom sizes available.
Machine Screw, Thread Forming

Oval Head
Inch - Type TA

Sample Part Number
6 - 32 x 1/2 PH - OVAL - TA - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Total Head Height</th>
<th>S Head Side Height</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.065 / .050</td>
<td>0.036</td>
<td>.167 / .155</td>
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</tr>
<tr>
<td>4 - 40</td>
<td>.084 / .067</td>
<td>0.047</td>
<td>.219 / .205</td>
<td>1</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.104 / .084</td>
<td>0.059</td>
<td>.270 / .256</td>
<td>2</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.123 / .101</td>
<td>0.070</td>
<td>.322 / .308</td>
<td>2</td>
</tr>
<tr>
<td>10 - 33</td>
<td>.142 / .188</td>
<td>0.081</td>
<td>.373 / .357</td>
<td>2</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.186 / .158</td>
<td>0.107</td>
<td>.492 / .473</td>
<td>3</td>
</tr>
</tbody>
</table>

Length L
3/16 .187 / .167
1/4 .250 / .230
5/16 .313 / .293
5/8 .425 / .395
7/8 .563 / .533
1 .625 / .595
5/8 .750 / .720
7/8 .875 / .845
1.000 / .970
1.250 / 1.190
1.500 / 1.440
1.750 / 1.690
2 .000 / 1.940

Material Description
- STL Low Carbon Steel
- SS 18-8 Stainless Steel

Finish Description
- Z - BLK Zinc Black
- Z Zinc Clear
- P Passivate

Other finishes available.

Machine Screw, Thread Forming

Undercut Oval Head
Inch - Type TA

Sample Part Number
6 - 32 x 1/2 PH - UOVAL - TA - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Total Head Height</th>
<th>S Head Side Height</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
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</thead>
<tbody>
<tr>
<td>2 - 56</td>
<td>.065 / .050</td>
<td>0.036</td>
<td>.167 / .155</td>
<td>1</td>
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<tr>
<td>4 - 40</td>
<td>.084 / .067</td>
<td>0.047</td>
<td>.219 / .205</td>
<td>1</td>
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<tr>
<td>6 - 32</td>
<td>.104 / .084</td>
<td>0.059</td>
<td>.270 / .256</td>
<td>2</td>
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<tr>
<td>8 - 32</td>
<td>.123 / .101</td>
<td>0.070</td>
<td>.322 / .308</td>
<td>2</td>
</tr>
<tr>
<td>10 - 33</td>
<td>.142 / .188</td>
<td>0.081</td>
<td>.373 / .357</td>
<td>2</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.186 / .158</td>
<td>0.107</td>
<td>.492 / .473</td>
<td>3</td>
</tr>
</tbody>
</table>

Length L
3/16 .187 / .167
1/4 .250 / .230
5/16 .313 / .293
5/8 .425 / .395
7/8 .563 / .533
1 .625 / .595
5/8 .750 / .720
7/8 .875 / .845
1.000 / .970
1.250 / 1.190
1.500 / 1.440
1.750 / 1.690
2 .000 / 1.940

Material Description
- STL Low Carbon Steel
- SS 18-8 Stainless Steel

Finish Description
- Z - BLK Zinc Black
- Z Zinc Clear
- P Passivate

Other finishes available.

Custom sizes available.
### Machine Screw, Thread Forming

**Truss Head**

*Inch - Type TA*

<table>
<thead>
<tr>
<th>Thread</th>
<th>Height</th>
<th>Diameter</th>
<th>Drive Size</th>
<th>Cross Recess</th>
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<tr>
<td>2 - 56</td>
<td>.053 / .044</td>
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<tr>
<td>4 - 40</td>
<td>.069 / .059</td>
<td>.257 / .241</td>
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<tr>
<td>6 - 32</td>
<td>.086 / .074</td>
<td>.321 / .303</td>
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<td>2</td>
<td></td>
</tr>
<tr>
<td>10 - 32</td>
<td>.118 / .103</td>
<td>.448 / .425</td>
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<tr>
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<td>.150 / .133</td>
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<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
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<tbody>
<tr>
<td>3/16</td>
<td>.167 / 1.167</td>
</tr>
<tr>
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<td>.250 / .230</td>
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<td>5/16</td>
<td>.313 / .303</td>
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<td>.500 / .480</td>
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<td>9/16</td>
<td>.563 / .533</td>
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<tr>
<td>5/8</td>
<td>.625 / .595</td>
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### Material Description

- **STL:** Low Carbon Steel
- **SS:** 18 - 8 Stainless Steel

### Finish Description

- **Z - BLK:** Zinc Black
- **Z:** Zinc Clear

**Sample Part Number**

4 - 40 x 1/2   PH - TRUSS - TA - STL - Z

**Additional Sizes**

- Custom sizes available.

Other finishes available.
<table>
<thead>
<tr>
<th>Socket Screws</th>
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<tbody>
<tr>
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<tr>
<td>Flat Countersunk Head Cap Screw</td>
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</tr>
<tr>
<td>Button Head Cap Screw</td>
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### Socket Screws
**Socket Head Cap Screw**

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<td>1.750 / 1.710</td>
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<td>Zinc Clear</td>
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Other finishes available.

**Drive**

| SOC | Hex Socket |

**Socket Screws**

**Flat Countersunk Head Cap Screw**

**Inch**

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<th>Sample Part Number</th>
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</thead>
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<tr>
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<td>Black Oxide</td>
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<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

Other finishes available.

**Drive**

| SOC | Hex Socket |
# Socket Screws

**Button Head Cap Screw**

### Material Description
- **ALY** - Alloy Steel
- **SS** - 18 - 8 Stainless Steel

### Finish Description
- **BLK-OX** - Black Oxide
- **Z** - Zinc Clear

### Drive Description
- **SOC** - Hex Socket

### Sample Part Number
- **6 - 32 x 1/2 SOC - BUT - CAP - SC - ALY - Z**

## Specifications

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<tr>
<th>Thread</th>
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<th>J Hexagon Socket Size NOM</th>
<th>K Key Engagement MIN</th>
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<td>.062 / .055</td>
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<td>.078 / .044</td>
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<td>.094 / .052</td>
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<td>.437 / .419</td>
<td>.158 / .08</td>
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</tbody>
</table>

### Length L
- 3/16: .187 / .157
- 1/4: .250 / .220
- 5/16: .313 / .283
- 3/8: .375 / .345
- 7/16: .438 / .408
- 1/2: .500 / .470
- 5/8: .625 / .595
- 3/4: .750 / .720
- 7/8: .875 / .845
- 1: 1.000 / .970
- 1.25: 1.250 / 1.210
- 1.5: 1.500 / 1.460
- 1.75: 1.750 / 1.710
- 2: 2.000 / 1.960

Custom sizes available.

Other finishes available.
Precision Shoulder Screws
- Precision Cross Recess Head Shoulder Screw 62
- Precision Socket Head Shoulder Screw 63
- Precision Slotted Head Shoulder Screw 64
**Precision Shoulder Screw**

**Precision Cross Recess Head Shoulder Screw**

---

**Sample Part Number**

1/8 x 3/16 - 1032 x 1/4 - PH - CAP - PSHLD - SC - ALY - Z

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<td>.156</td>
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<td>632</td>
<td>9/32</td>
<td>1/8</td>
<td>3/16</td>
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<td>1032</td>
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<td>1/16</td>
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</table>

Custom sizes available.

**Material Description**

- STL Steel
- SS 300 Series Stainless Steel
- S4 400 Series Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

---

**Drive Description**

- PH Cross Recess
# Precision Shoulder Screw

Precision Socket Head Shoulder Screw

**Inch**

Sample Part Number

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<tr>
<th>Code</th>
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**Material Description**

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**Finish Description**

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Other finishes available.

Custom sizes available.

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## Precision Shoulder Screw

**Precision Slotted Head Shoulder Screw**

### Inch

**Sample Part Number**

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Custom sizes available.

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<td>S4</td>
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**Finish Description**

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<tr>
<td>Z</td>
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Other finishes available.

**Drive Description**

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<td>Slotted</td>
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**Precision Slotted Head Shoulder Screw**

**Inch**

<table>
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<tr>
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<th>6 - 32</th>
<th>8 - 32</th>
<th>10 - 32</th>
<th>1/4 - 20</th>
<th>5/16 - 18</th>
<th>3/8 - 16</th>
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## Sheet Metal Screws, Thread Forming

**Inch - Type B**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Page</th>
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</thead>
<tbody>
<tr>
<td>Pan Head</td>
<td>Sheet Metal Screw, Pan Head</td>
<td>66</td>
</tr>
<tr>
<td>Flat Head</td>
<td>Sheet Metal Screw, 82 Deg Flat Head</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>Sheet Metal Screw, 82 Deg Undercut Flat Head</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>Sheet Metal Screw, 100 Deg Flat Head</td>
<td>68</td>
</tr>
<tr>
<td>Hex Head</td>
<td>Sheet Metal Screw, Indented Hex Head</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>Sheet Metal Screw, Indented Hex Washer Head</td>
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<tr>
<td>Special Use Heads</td>
<td>Sheet Metal Screw, Oval Head</td>
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<td>Sheet Metal Screw, Truss Head</td>
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**Pan Head**

- Sheet Metal Screw, Pan Head  
  - Page 66

**Flat Head**

- Sheet Metal Screw, 82 Deg Flat Head  
  - Page 67
- Sheet Metal Screw, 82 Deg Undercut Flat Head  
  - Page 67
- Sheet Metal Screw, 100 Deg Flat Head  
  - Page 68

**Hex Head**

- Sheet Metal Screw, Indented Hex Head  
  - Page 68
- Sheet Metal Screw, Indented Hex Washer Head  
  - Page 69

**Special Use Heads**

- Sheet Metal Screw, Oval Head  
  - Page 69
- Sheet Metal Screw, Truss Head  
  - Page 70

---

**Sheet Metal Screws, Thread Forming**

**Inch - Type B**

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<tr>
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<th>Description</th>
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</tr>
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<td>Sheet Metal Screw, Slotted Pan Head</td>
<td>66</td>
</tr>
<tr>
<td>Flat Head</td>
<td>Sheet Metal Screw, 82 Deg Flat Head</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>Sheet Metal Screw, 82 Deg Undercut Flat Head</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>Sheet Metal Screw, 100 Deg Flat Head</td>
<td>68</td>
</tr>
<tr>
<td>Hex Head</td>
<td>Sheet Metal Screw, Indented Hex Head</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>Sheet Metal Screw, Indented Hex Washer Head</td>
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<td>Special Use Heads</td>
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<td>69</td>
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<tr>
<td></td>
<td>Sheet Metal Screw, Truss Head</td>
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**Sheet Metal Screws, Thread Forming**

**Inch - Type B**

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<tr>
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<td>67</td>
</tr>
<tr>
<td></td>
<td>Sheet Metal Screw, 100 Deg Flat Head</td>
<td>68</td>
</tr>
<tr>
<td>Hex Head</td>
<td>Sheet Metal Screw, Indented Hex Head</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>Sheet Metal Screw, Indented Hex Washer Head</td>
<td>69</td>
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<tr>
<td>Special Use Heads</td>
<td>Sheet Metal Screw, Oval Head</td>
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<tr>
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<td>Sheet Metal Screw, Truss Head</td>
<td>70</td>
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Sheet Metal Screw, Thread Forming
Pan Head
Inch - Type B

Sample Part Number
#6 x 3/4 PH - PN - B - STL - Z
Thread Length Drive Series Material Finish

<table>
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<tr>
<th>Thread</th>
<th>Thread Code</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 32</td>
<td>#2</td>
<td>.062 / .053</td>
<td>.167 / .155</td>
<td>1 T8</td>
</tr>
<tr>
<td>4 - 24</td>
<td>#4</td>
<td>.080 / .070</td>
<td>.219 / .205</td>
<td>1 T10</td>
</tr>
<tr>
<td>6 - 20</td>
<td>#6</td>
<td>.097 / .087</td>
<td>.270 / .256</td>
<td>2 T15</td>
</tr>
<tr>
<td>8 - 18</td>
<td>#8</td>
<td>.115 / .105</td>
<td>.322 / .306</td>
<td>2 T20</td>
</tr>
<tr>
<td>10 - 16</td>
<td>#10</td>
<td>.133 / .122</td>
<td>.373 / .357</td>
<td>2 T25</td>
</tr>
<tr>
<td>1/4 - 14</td>
<td>1/4</td>
<td>.175 / .162</td>
<td>.462 / .473</td>
<td>3 T30</td>
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</tbody>
</table>

Length | L
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>3/16</td>
<td>.187 / .167</td>
</tr>
<tr>
<td>1/4</td>
<td>.250 / .230</td>
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<td>5/16</td>
<td>.313 / .293</td>
</tr>
<tr>
<td>3/8</td>
<td>.375 / .356</td>
</tr>
<tr>
<td>7/16</td>
<td>.438 / .418</td>
</tr>
<tr>
<td>1/2</td>
<td>.500 / .480</td>
</tr>
<tr>
<td>9/16</td>
<td>.563 / .533</td>
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<td>5/8</td>
<td>.625 / .596</td>
</tr>
<tr>
<td>3/4</td>
<td>.750 / .720</td>
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<tr>
<td>7/8</td>
<td>.875 / .845</td>
</tr>
<tr>
<td>1</td>
<td>1.000 / .970</td>
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<td>1.25</td>
<td>1.250 / 1.190</td>
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<td>1.5</td>
<td>1.500 / 1.440</td>
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<tr>
<td>1.75</td>
<td>1.750 / 1.690</td>
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<td>2</td>
<td>2.000 / 1.940</td>
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</table>

Material Description
- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

Finish Description
- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

Drive Description
- PH Cross Recess
- TX 6 - Lobe

Custom sizes available.

Sheet Metal Screw, Thread Forming
Slotted Pan Head
Inch - Type B

Sample Part Number
#6 x 3/4 SL - PN - B - STL - Z
Thread Length Drive Series Material Finish

<table>
<thead>
<tr>
<th>Thread</th>
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<th>H Height</th>
<th>D Head Diameter</th>
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<tbody>
<tr>
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<td>#2</td>
<td>.053 / .045</td>
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<td>.219 / .205</td>
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<td>6 - 20</td>
<td>#6</td>
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<td>.270 / .256</td>
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<td>8 - 18</td>
<td>#8</td>
<td>.096 / .085</td>
<td>.322 / .306</td>
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<tr>
<td>10 - 16</td>
<td>#10</td>
<td>.110 / .099</td>
<td>.373 / .357</td>
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<td>1/4 - 14</td>
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<td>.144 / .130</td>
<td>.492 / .473</td>
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Length | L
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</thead>
<tbody>
<tr>
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<td>.187 / .167</td>
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<tr>
<td>1/4</td>
<td>.250 / .230</td>
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<td>.313 / .293</td>
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<td>.375 / .356</td>
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<td>.438 / .418</td>
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<td>.500 / .480</td>
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<td>.625 / .596</td>
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<td>.750 / .720</td>
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<td>.875 / .845</td>
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<td>1.000 / .970</td>
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<td>1.250 / 1.190</td>
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<td>1.750 / 1.690</td>
</tr>
<tr>
<td>2</td>
<td>2.000 / 1.940</td>
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</table>

Material Description
- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

Finish Description
- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

Drive Description
- SL Slotted

Custom sizes available.
### Sheet Metal Screw, Thread Forming
#### 82 Deg Flat Head

**Inch - Type B**

**Sample Part Number**

#6 x 7/8   PH - FL - B - STL - Z

**Thread Length Drive Material Finish**

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
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<td>#6 - 20</td>
<td>.083</td>
<td>.279 / .244</td>
<td>2</td>
</tr>
<tr>
<td>#8 - 18</td>
<td>.100</td>
<td>.332 / .292</td>
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<td>.116</td>
<td>.385 / .340</td>
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<td>1/4 - 14</td>
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<td>.507 / .452</td>
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*Custom sizes available.*

**Length L**

<table>
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<tr>
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<td>.187 / .167</td>
</tr>
<tr>
<td>1/4</td>
<td>.250 / .230</td>
</tr>
<tr>
<td>5/16</td>
<td>.313 / .293</td>
</tr>
<tr>
<td>5/8</td>
<td>.375 / .355</td>
</tr>
<tr>
<td>7/16</td>
<td>.438 / .418</td>
</tr>
<tr>
<td>9/16</td>
<td>.563 / .533</td>
</tr>
<tr>
<td>3/4</td>
<td>.750 / .720</td>
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<tr>
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<td>.875 / .845</td>
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<td>1.750 / 1.690</td>
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<td>2.000 / 1.940</td>
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</table>

**Material Description**

- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel
- Z - BLK Zinc Black
- Z Zinc Clear

**Other finishes available.**

**Drive Description**

- PH Cross Recess
- SL Slotted

---

### Sheet Metal Screw, Thread Forming
#### 82 Deg Undercut Flat Head

**Inch - Type B**

**Sample Part Number**

#6 x 3/8   PH - UFL - B - STL - Z

**Thread Length Drive Material Finish**

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
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<tbody>
<tr>
<td>#2 - 32</td>
<td>.036 / .028</td>
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<td>.047 / .038</td>
<td>.225 / .195</td>
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<td>#6 - 20</td>
<td>.059 / .048</td>
<td>.279 / .244</td>
<td>2</td>
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<td>#8 - 18</td>
<td>.070 / .058</td>
<td>.332 / .292</td>
<td>2</td>
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<td>#10 - 16</td>
<td>.081 / .068</td>
<td>.385 / .340</td>
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<td>1/4 - 14</td>
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*Custom sizes available.*

**Length L**

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<td>1/4</td>
<td>.250 / .230</td>
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<td>.313 / .293</td>
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<td>5/8</td>
<td>.375 / .355</td>
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<td>.563 / .533</td>
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<td>.750 / .720</td>
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<tr>
<td>7/8</td>
<td>.875 / .845</td>
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<tr>
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<td>2.000 / 1.940</td>
</tr>
</tbody>
</table>

**Material Description**

- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel
- Z - BLK Zinc Black
- Z Zinc Clear

**Other finishes available.**

**Drive Description**

- PH Cross Recess
- SL Slotted
### Sheet Metal Screw, Thread Forming

**100 Deg Flat Head**

#### Sample Part Number

#4 x 5/16  PH - 100DG - B - STL - Z - BLK

**Thread Code** | **Length** | **Material** | **Description**
--- | --- | --- | ---
#4 | 3/16 | STL | Low Carbon Steel
#6 | 1/4 | SS | 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

---

### Sheet Metal Screw, Thread Forming

**Indented Hex Head**

#### Sample Part Number

#10 x 3/4  PH - INHX - B - STL - Z

**Thread Code** | **Length** | **Material** | **Description**
--- | --- | --- | ---
#2 | 3/16 | STL | Low Carbon Steel
#4 | 1/4 | SS | 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

---

### Table Data

#### Sheet Metal Screw, Thread Forming

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<thead>
<tr>
<th>Thread Code</th>
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<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
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</thead>
<tbody>
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<td>.225 / .191</td>
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</tr>
<tr>
<td>6 - 20</td>
<td>.060</td>
<td>.279 / .238</td>
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</tr>
<tr>
<td>8 - 18</td>
<td>.072</td>
<td>.332 / .285</td>
<td>2</td>
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<tr>
<td>10 - 16</td>
<td>.083</td>
<td>.385 / .333</td>
<td>2</td>
</tr>
<tr>
<td>1/4 - 14</td>
<td>.110</td>
<td>.507 / .442</td>
<td>3</td>
</tr>
</tbody>
</table>

**Sheet Metal Screw, Thread Forming**

#### 100 Deg Flat Head

**Inch - Type B**

**Sample Part Number**

#4 x 5/16  PH - 100DG - B - STL - Z - BLK

**Thread Code** | **Length** | **Material** | **Description**
--- | --- | --- | ---
#4 | 3/16 | STL | Low Carbon Steel
#6 | 1/4 | SS | 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

---

### Table Data

#### Sheet Metal Screw, Thread Forming

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 - 24</td>
<td>.049</td>
<td>.225 / .191</td>
<td>1</td>
</tr>
<tr>
<td>6 - 20</td>
<td>.060</td>
<td>.279 / .238</td>
<td>2</td>
</tr>
<tr>
<td>8 - 18</td>
<td>.072</td>
<td>.332 / .285</td>
<td>2</td>
</tr>
<tr>
<td>10 - 16</td>
<td>.083</td>
<td>.385 / .333</td>
<td>2</td>
</tr>
<tr>
<td>1/4 - 14</td>
<td>.110</td>
<td>.507 / .442</td>
<td>3</td>
</tr>
</tbody>
</table>

**Sheet Metal Screw, Thread Forming**

#### Indented Hex Head

**Inch - Type B**

**Sample Part Number**

#10 x 3/4  PH - INHX - B - STL - Z

**Thread Code** | **Length** | **Material** | **Description**
--- | --- | --- | ---
#2 | 3/16 | STL | Low Carbon Steel
#4 | 1/4 | SS | 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

---

### Table Data

#### Sheet Metal Screw, Thread Forming

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>H Height</th>
<th>WAF Width Across Flats</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 32</td>
<td>.065 / .050</td>
<td>.125 / .120</td>
<td>1</td>
</tr>
<tr>
<td>4 - 24</td>
<td>.084 / .067</td>
<td>.188 / .181</td>
<td>1</td>
</tr>
<tr>
<td>6 - 20</td>
<td>.104 / .084</td>
<td>.250 / .244</td>
<td>2</td>
</tr>
<tr>
<td>8 - 18</td>
<td>.123 / .101</td>
<td>.250 / .244</td>
<td>2</td>
</tr>
<tr>
<td>10 - 16</td>
<td>.142 / .118</td>
<td>.312 / .305</td>
<td>2</td>
</tr>
<tr>
<td>1/4 - 14</td>
<td>.186 / .158</td>
<td>.375 / .367</td>
<td>3</td>
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</tbody>
</table>

**Sheet Metal Screw, Thread Forming**

#### 100 Deg Flat Head

**Inch - Type B**

**Sample Part Number**

#4 x 5/16  PH - 100DG - B - STL - Z - BLK

**Thread Code** | **Length** | **Material** | **Description**
--- | --- | --- | ---
#4 | 3/16 | STL | Low Carbon Steel
#6 | 1/4 | SS | 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

---

### Table Data

#### Sheet Metal Screw, Thread Forming

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>H Height</th>
<th>WAF Width Across Flats</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 32</td>
<td>.065 / .050</td>
<td>.125 / .120</td>
<td>1</td>
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<tr>
<td>4 - 24</td>
<td>.084 / .067</td>
<td>.188 / .181</td>
<td>1</td>
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<tr>
<td>6 - 20</td>
<td>.104 / .084</td>
<td>.250 / .244</td>
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<td>8 - 18</td>
<td>.123 / .101</td>
<td>.250 / .244</td>
<td>2</td>
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<tr>
<td>10 - 16</td>
<td>.142 / .118</td>
<td>.312 / .305</td>
<td>2</td>
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<tr>
<td>1/4 - 14</td>
<td>.186 / .158</td>
<td>.375 / .367</td>
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### Sheet Metal Screw, Thread Forming

**Indented Hex Washer Head**

**Inch - Type B**

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>#6 x 5/8 PH - INHX - WA - B - STL - Z</th>
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<tbody>
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</tr>
<tr>
<td>2 - 32</td>
<td>#2</td>
</tr>
<tr>
<td>4 - 24</td>
<td>#4</td>
</tr>
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<td>6 - 20</td>
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<td>#8</td>
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<tr>
<td>10 - 16</td>
<td>#10</td>
</tr>
<tr>
<td>1/4 - 14</td>
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</table>

Custom sizes available.

<table>
<thead>
<tr>
<th><strong>Material</strong></th>
<th><strong>Description</strong></th>
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</thead>
<tbody>
<tr>
<td>STL</td>
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</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

<table>
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<tr>
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<th><strong>Description</strong></th>
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</thead>
<tbody>
<tr>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

Other finishes available.

### Sheet Metal Screw, Thread Forming

**Oval Head**

**Inch - Type B**

<table>
<thead>
<tr>
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<th>#4 x 3/4 PH - OVAL - B - STL - Z</th>
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<tbody>
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<td><strong>Thread</strong></td>
<td><strong>Thread Code</strong></td>
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<tr>
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<td>#2</td>
</tr>
<tr>
<td>4 - 24</td>
<td>#4</td>
</tr>
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<td>6 - 20</td>
<td>#6</td>
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<tr>
<td>8 - 18</td>
<td>#8</td>
</tr>
<tr>
<td>1/4 - 14</td>
<td>1/4</td>
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Custom sizes available.

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<tr>
<th><strong>Material</strong></th>
<th><strong>Description</strong></th>
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</thead>
<tbody>
<tr>
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<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Finish</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
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<td>Zinc Black</td>
</tr>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

Other finishes available.
### Sheet Metal Screw, Thread Forming

**Truss Head**  
Inch - Type B

#### Sample Part Number

#8 x 1/2  PH - TRUSS - B - STL - Z

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>Thread Length</th>
<th>Drive Size</th>
<th>Material</th>
<th>Description</th>
<th>Finish</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 32</td>
<td>#2</td>
<td>1/16</td>
<td>STL</td>
<td>Low Carbon Steel</td>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>4 - 24</td>
<td>#4</td>
<td>1/16</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>6 - 20</td>
<td>#6</td>
<td>3/16</td>
<td>ST</td>
<td>Low Carbon Steel</td>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>8 - 18</td>
<td>#8</td>
<td>1/2</td>
<td>ST</td>
<td>Low Carbon Steel</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>10 - 16</td>
<td>#10</td>
<td>5/16</td>
<td>ST</td>
<td>Low Carbon Steel</td>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>1/4 - 14</td>
<td>1/4</td>
<td>9/16</td>
<td>ST</td>
<td>Low Carbon Steel</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td></td>
<td>1/8</td>
<td>10 - 16</td>
<td>STL</td>
<td>Low Carbon Steel</td>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td></td>
<td>1/4</td>
<td>7/8</td>
<td>ST</td>
<td>Low Carbon Steel</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

Custom sizes available.

![Sheet Metal Screw Diagram](image)

**Thread Code**  
- H: Height
- D: Head Diameter
- Drive Size: Cross Recess

**Drive Description**  
- PH: Cross Recess
- SL: Slotted

**Finish Description**  
- Z: Zinc
- Z BLK: Zinc Black
- Z CLEAR: Zinc Clear

**Other finishes available.**

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>PH</td>
<td>Cross Recess</td>
</tr>
<tr>
<td>SL</td>
<td>Slotted</td>
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</tbody>
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**Material Description**

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
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</thead>
<tbody>
<tr>
<td>3/16</td>
<td>.187 / .167</td>
</tr>
<tr>
<td>1/4</td>
<td>.250 / .230</td>
</tr>
<tr>
<td>5/16</td>
<td>.313 / .293</td>
</tr>
<tr>
<td>3/8</td>
<td>.375 / .355</td>
</tr>
<tr>
<td>7/16</td>
<td>.438 / .418</td>
</tr>
<tr>
<td>1/2</td>
<td>.500 / .480</td>
</tr>
<tr>
<td>9/16</td>
<td>.563 / .533</td>
</tr>
<tr>
<td>5/8</td>
<td>.625 / .595</td>
</tr>
<tr>
<td>3/4</td>
<td>.750 / .720</td>
</tr>
<tr>
<td>7/8</td>
<td>.875 / .845</td>
</tr>
<tr>
<td>1</td>
<td>1.000 / .970</td>
</tr>
<tr>
<td>1.25</td>
<td>1.250 / 1.190</td>
</tr>
<tr>
<td>1.5</td>
<td>1.500 / 1.440</td>
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<td>1.75</td>
<td>1.750 / 1.690</td>
</tr>
<tr>
<td>2</td>
<td>2.000 / 1.940</td>
</tr>
</tbody>
</table>
## Sheet Metal Screws, Thread Forming
### Inch - Type AB

<table>
<thead>
<tr>
<th>Head Type</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pan Head</td>
<td>Sheet Metal Screw, Pan Head</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>Sheet Metal Screw, Slotted Pan Head</td>
<td>72</td>
</tr>
<tr>
<td>Flat Head</td>
<td>Sheet Metal Screw, 82 Deg Flat Head</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>Sheet Metal Screw, 82 Deg Undercut Flat Head</td>
<td>73</td>
</tr>
<tr>
<td>Hex Head</td>
<td>Sheet Metal Screw, Indented Hex Head</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>Sheet Metal Screw, Indented Hex Washer Head</td>
<td>74</td>
</tr>
<tr>
<td>Special Use Heads</td>
<td>Sheet Metal Screw, Oval Head</td>
<td>75</td>
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<tr>
<td></td>
<td>Sheet Metal Screw, Undercut Oval Head</td>
<td>75</td>
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<tr>
<td></td>
<td>Sheet Metal Screw, Truss Head</td>
<td>76</td>
</tr>
</tbody>
</table>

### Thread Forming Screws

- **Pan Head**: Sheet Metal Screw, Pan Head - Page 72
- **Indented Hex Washer Head**: Sheet Metal Screw, Indented Hex Washer Head - Page 74
- **Slotted Pan Head**: Sheet Metal Screw, Slotted Pan Head - Page 72
- **Oval Head**: Sheet Metal Screw, Oval Head - Page 75
- **82 Deg Flat Head**: Sheet Metal Screw, 82 Deg Flat Head - Page 73
- **Undercut Oval Head**: Sheet Metal Screw, Undercut Oval Head - Page 75
- **82 Deg Undercut Flat Head**: Sheet Metal Screw, 82 Deg Undercut Flat Head - Page 73
- **Truss Head**: Sheet Metal Screw, Truss Head - Page 76
- **Indented Hex Head**: Sheet Metal Screw, Indented Hex Head - Page 74
Sheet Metal Screw, Thread Forming
Pan Head
Inch - Type AB

Sample Part Number
#6 x 1/2 PH - PN - AB - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>Thread Code</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 32</td>
<td>#2</td>
<td>.062 / .063</td>
<td>.167 / .155</td>
<td>1 T6</td>
<td>3/16</td>
<td>.187 / .167</td>
</tr>
<tr>
<td>4 - 24</td>
<td>#4</td>
<td>.080 / .070</td>
<td>.219 / .205</td>
<td>1 T8</td>
<td>5/16</td>
<td>.313 / .293</td>
</tr>
<tr>
<td>6 - 20</td>
<td>#6</td>
<td>.097 / .087</td>
<td>.270 / .256</td>
<td>2 T10</td>
<td>7/16</td>
<td>.438 / .418</td>
</tr>
<tr>
<td>8 - 18</td>
<td>#8</td>
<td>.115 / .105</td>
<td>.322 / .306</td>
<td>2 T15</td>
<td>1/2</td>
<td>.500 / .480</td>
</tr>
<tr>
<td>10 - 16</td>
<td>#10</td>
<td>.133 / .122</td>
<td>.373 / .357</td>
<td>2 T20</td>
<td>9/16</td>
<td>.563 / .533</td>
</tr>
<tr>
<td>1/4 - 14</td>
<td>1/4</td>
<td>.175 / .162</td>
<td>.492 / .473</td>
<td>3 T27</td>
<td>5/8</td>
<td>.625 / .595</td>
</tr>
</tbody>
</table>

Custom sizes available.

Sheet Metal Screw, Thread Forming
Slotted Pan Head
Inch - Type AB

Sample Part Number
#6 x 1/2 SL - PN - AB - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>Thread Code</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
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</thead>
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<tr>
<td>2 - 32</td>
<td>#2</td>
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<td>.167 / .155</td>
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<td>3/16</td>
<td>.187 / .167</td>
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<td>4 - 24</td>
<td>#4</td>
<td>.068 / .058</td>
<td>.219 / .205</td>
<td>1 T8</td>
<td>5/16</td>
<td>.313 / .293</td>
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<td>6 - 20</td>
<td>#6</td>
<td>.082 / .072</td>
<td>.270 / .256</td>
<td>2 T10</td>
<td>7/16</td>
<td>.438 / .418</td>
</tr>
<tr>
<td>8 - 18</td>
<td>#8</td>
<td>.096 / .085</td>
<td>.322 / .306</td>
<td>2 T15</td>
<td>1/2</td>
<td>.500 / .480</td>
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<tr>
<td>10 - 16</td>
<td>#10</td>
<td>.110 / .099</td>
<td>.373 / .357</td>
<td>2 T20</td>
<td>9/16</td>
<td>.563 / .533</td>
</tr>
<tr>
<td>1/4 - 14</td>
<td>1/4</td>
<td>.144 / .130</td>
<td>.492 / .473</td>
<td>3 T27</td>
<td>5/8</td>
<td>.625 / .595</td>
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Custom sizes available.
Sheet Metal Screw, Thread Forming
82 Deg Flat Head
Inch - Type AB

Sample Part Number
#8 x 3/4 PH - FL - AB - STL - Z
Thread Length: Drive Series: Material Finish

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>Height</th>
<th>Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>Material Description</th>
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<tbody>
<tr>
<td>3/16</td>
<td>0.187 / 0.167</td>
<td></td>
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<td>1/4</td>
<td>0.250 / 0.230</td>
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<tr>
<td>5/16</td>
<td>0.313 / 0.293</td>
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<td></td>
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<tr>
<td>3/8</td>
<td>0.375 / 0.355</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>7/16</td>
<td>0.438 / 0.418</td>
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<tr>
<td>1/2</td>
<td>0.500 / 0.480</td>
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<td></td>
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</tr>
<tr>
<td>9/16</td>
<td>0.563 / 0.533</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5/8</td>
<td>0.625 / 0.595</td>
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<tr>
<td>3/4</td>
<td>0.750 / 0.720</td>
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<td>7/8</td>
<td>0.875 / 0.845</td>
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</tbody>
</table>

Other finishes available.

Drive Description
- PH: Cross Recess
- SL: Slotted
- TX: 6-Lobe

Custom sizes available.

Sheet Metal Screw, Thread Forming
82 Deg Undercut Flat Head
Inch - Type AB

Sample Part Number
#4 x 5/16 PH - FL - AB - STL - Z
Thread Length: Drive Series: Material Finish

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>Height</th>
<th>Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>Material Description</th>
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<tbody>
<tr>
<td>2 - 32</td>
<td>0.036 / 0.028</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 - 24</td>
<td>0.047 / 0.038</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6 - 20</td>
<td>0.059 / 0.048</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 - 18</td>
<td>0.070 / 0.058</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 - 16</td>
<td>0.081 / 0.068</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/4 - 14</td>
<td>0.107 / 0.092</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Other finishes available.

Drive Description
- PH: Cross Recess
- SL: Slotted

Custom sizes available.
### Sheet Metal Screw, Thread Forming
#### Indented Hex Head

**Type AB**

**Sample Part Number**

#8 x 1/2  PH - INHX - AB - STL - Z

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>Thread Code</th>
<th>Height</th>
<th>WAF Across Flats</th>
<th>Drive Size</th>
<th>Cross Recess</th>
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</thead>
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<td>#8</td>
<td>.123 / .101</td>
<td>.250 / .244</td>
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<td>.142 / .118</td>
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<td>.375 / .367</td>
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Custom sizes available.

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<th>Material</th>
<th>Description</th>
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<tr>
<td>STL</td>
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</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
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</table>

**Finish Description**

- Z-BLK Zinc Black
- Z Zinc Clear

Other finishes available.

### Sheet Metal Screw, Thread Forming
#### Indented Hex Washer Head

**Type AB**

**Sample Part Number**

#4 x 1/4  PH - INHX - WA - AB - STL - Z

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<th>Washer Outside Diameter</th>
<th>Washer Thickness</th>
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<th>Cross Recess</th>
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<td>#4</td>
<td>.060 / .049</td>
<td>.243 / .225</td>
<td>.019 / .011</td>
<td>.188 / .181</td>
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<td>#6</td>
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<td>#8</td>
<td>.110 / .096</td>
<td>.348 / .322</td>
<td>.031 / .019</td>
<td>.250 / .244</td>
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<td>10 - 16</td>
<td>#10</td>
<td>.120 / .105</td>
<td>.414 / .384</td>
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<td>.312 / .305</td>
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<td>.190 / .172</td>
<td>.520 / .460</td>
<td>.050 / .030</td>
<td>.375 / .367</td>
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</table>

Custom sizes available.

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<tr>
<th>Material</th>
<th>Description</th>
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<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Finish Description**

- Z-BLK Zinc Black
- Z Zinc Clear

Other finishes available.
**Sheet Metal Screw, Thread Forming**

Oval Head

Length: Drive Series Material Finish

Sample Part Number

#6 x 1/2 PH - OVAL - AB - STL - Z

### Thread Code

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<tr>
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<th>Material Description</th>
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<tbody>
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</tr>
<tr>
<td>4 - 24</td>
<td>SS 18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>6 - 20</td>
<td>Z BLK Zinc Black</td>
</tr>
<tr>
<td>8 - 18</td>
<td>Z Zinc Clear</td>
</tr>
<tr>
<td>10 - 16</td>
<td>Other finishes available.</td>
</tr>
<tr>
<td>1/4 - 14</td>
<td></td>
</tr>
</tbody>
</table>

### Drive Description

- PH Cross Recess
- SL Slotted

### Other Sizes Available

- 3/16/.167
- 1/4/.230
- 5/16/.313
- 3/8/.355
- 7/16/.415
- 1/2/.500
- 9/16/.533
- 5/8/.625
- 3/4/.720
- 7/8/.845
- 1.000
- 1.250
- 1.500
- 1.750
- 2.000

### Undercut Oval Head

Sample Part Number

#10 x 3/4 PH - UOVAL - AB - STL - Z

### Thread Code

<table>
<thead>
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<th>Thread Code</th>
<th>Material Description</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>4 - 24</td>
<td>SS 18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>6 - 20</td>
<td>Z BLK Zinc Black</td>
</tr>
<tr>
<td>8 - 18</td>
<td>Z Zinc Clear</td>
</tr>
<tr>
<td>10 - 16</td>
<td>Other finishes available.</td>
</tr>
<tr>
<td>1/4 - 14</td>
<td></td>
</tr>
</tbody>
</table>

### Drive Description

- PH Cross Recess
- SL Slotted

### Other Sizes Available

- 3/16/.167
- 1/4/.230
- 5/16/.313
- 3/8/.355
- 7/16/.415
- 1/2/.500
- 9/16/.533
- 5/8/.625
- 3/4/.720
- 7/8/.845
- 1.000
- 1.250
- 1.500
- 1.750
- 2.000
### Sheet Metal Screw, Thread Forming

**Truss Head**
Inch - Type AB

#### Sample Part Number

#8 x 1/2 PH - TRUSS - AB - STL - Z

<table>
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<tr>
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<th>Material</th>
<th>Description</th>
<th>Length</th>
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<tbody>
<tr>
<td>3/16</td>
<td>STL</td>
<td>Low Carbon Steel</td>
<td>0.187 / 0.167</td>
<td></td>
</tr>
<tr>
<td>1/4</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
<td>0.250 / 0.230</td>
<td></td>
</tr>
<tr>
<td>5/16</td>
<td>Z - BLK</td>
<td>Zinc Black</td>
<td>0.313 / 0.293</td>
<td></td>
</tr>
<tr>
<td>7/16</td>
<td>Z</td>
<td>Zinc Clear</td>
<td>0.375 / 0.355</td>
<td></td>
</tr>
</tbody>
</table>

#### Thread Code

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 32</td>
<td>0.053 / 0.044</td>
<td>0.194 / 0.180</td>
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<td>4 - 24</td>
<td>0.066 / 0.059</td>
<td>0.257 / 0.241</td>
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<td>6 - 20</td>
<td>0.086 / 0.074</td>
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<tr>
<td>8 - 18</td>
<td>0.102 / 0.088</td>
<td>0.384 / 0.364</td>
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<td>10 - 16</td>
<td>0.118 / 0.103</td>
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</tbody>
</table>

### Custom sizes available.

---

Screw_Book_REV_004       1300 INDUSTRIAL RD., STE. 21, SAN CARLOS, CA 94070       P: 650-593-3288       F: 650-593-3299       EMAIL: SALES@PENCOMSF.COM       WEB: WWW.PENCOMSF.COM
Sheet Metal Screws, Thread Cutting
Inch - Type 25

Pan Head
- Sheet Metal Screw, Pan Head 78
- Sheet Metal Screw, Slotted Pan Head 78

Flat Head
- Sheet Metal Screw, 82 Deg Flat Head 79
- Sheet Metal Screw, 82 Deg Undercut Flat Head 79

Hex Head
- Sheet Metal Screw, Indented Hex Washer Head 80
## Sheet Metal Screw, Thread Cutting

### Pan Head
**Inch - Type 25**

**Sample Part Number**

#6 x 1/2 PH - PN - 25 - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>Thread Code</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
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<tr>
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<td>4 - 24</td>
<td>#4</td>
<td>.080 / .070</td>
<td>.219 / .205</td>
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<td>T10</td>
<td>1/4</td>
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<tr>
<td>6 - 20</td>
<td>#6</td>
<td>.097 / .087</td>
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<td>5/16</td>
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<td>8 - 18</td>
<td>#8</td>
<td>.115 / .105</td>
<td>.332 / .306</td>
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<td>T20</td>
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<td>#10</td>
<td>.133 / .122</td>
<td>.425 / .407</td>
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<td>T25</td>
<td>7/16</td>
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<td>1/4 - 14</td>
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<td>.175 / .162</td>
<td>.492 / .473</td>
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<td>T30</td>
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<td>5/8</td>
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</tbody>
</table>

**Material Description**
- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

**Finish Description**
- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

### Slotted Pan Head
**Inch - Type 25**

**Sample Part Number**

#4 x 1/2 SL - PN - 25 - STL - Z

<table>
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<tr>
<th>Thread</th>
<th>Thread Code</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
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<tbody>
<tr>
<td>2 - 32</td>
<td>#2</td>
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<td>.167 / .155</td>
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<td>4 - 24</td>
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<td>.219 / .205</td>
<td>1</td>
<td>T10</td>
<td>1/4</td>
</tr>
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<td>.270 / .256</td>
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<td>T15</td>
<td>5/16</td>
</tr>
<tr>
<td>8 - 18</td>
<td>#8</td>
<td>.096 / .085</td>
<td>.332 / .306</td>
<td>2</td>
<td>T20</td>
<td>3/8</td>
</tr>
<tr>
<td>10 - 16</td>
<td>#10</td>
<td>.110 / .099</td>
<td>.425 / .407</td>
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<td>T25</td>
<td>7/16</td>
</tr>
<tr>
<td>1/4 - 14</td>
<td>1/4</td>
<td>.125 / .112</td>
<td>.492 / .473</td>
<td>3</td>
<td>T30</td>
<td>1/2</td>
</tr>
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<td></td>
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</table>

**Material Description**
- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

**Finish Description**
- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

Custom sizes available.
### Sheet Metal Screw, Thread Cutting
#### 82 Deg Flat Head
**Inch - Type 25**

Sample Part Number:

**#4 x 1/2 PH - FL - 25 - STL - Z**

**Thread Code**

<table>
<thead>
<tr>
<th>Thread</th>
<th>Thread Code</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
</tr>
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<tbody>
<tr>
<td>2 - 32</td>
<td>#2</td>
<td>.051 / .040</td>
<td>.172 / .147</td>
<td>1</td>
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<tr>
<td>4 - 24</td>
<td>#4</td>
<td>.067 / .055</td>
<td>.225 / .195</td>
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<tr>
<td>6 - 20</td>
<td>#6</td>
<td>.083 / .069</td>
<td>.279 / .244</td>
<td>2</td>
</tr>
<tr>
<td>8 - 18</td>
<td>#8</td>
<td>.100 / .084</td>
<td>.332 / .292</td>
<td>2</td>
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<tr>
<td>10 - 16</td>
<td>#10</td>
<td>.116 / .098</td>
<td>.385 / .340</td>
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<td>1/4 - 14</td>
<td>1/4</td>
<td>.153 / .131</td>
<td>.507 / .452</td>
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</table>

**Length**

<table>
<thead>
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<th>Length</th>
<th>L</th>
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</thead>
<tbody>
<tr>
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<td>.187 / .167</td>
</tr>
<tr>
<td>1/4</td>
<td>.290 / .250</td>
</tr>
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<td>5/16</td>
<td>.313 / .293</td>
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<td>3/8</td>
<td>.375 / .355</td>
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<td>.500 / .480</td>
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<td>9/16</td>
<td>.563 / .533</td>
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<td>5/8</td>
<td>.625 / .595</td>
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<td>3/4</td>
<td>.750 / .720</td>
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<td>.875 / .845</td>
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<td>2.000 / 1.940</td>
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**Material Description**

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
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<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
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**Finish Description**

<table>
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<th>Description</th>
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</thead>
<tbody>
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<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

Other finishes available.

Custom sizes available.

### Sheet Metal Screw, Thread Cutting
#### 82 Deg Undercut Flat Head
**Inch - Type 25**

Sample Part Number:

**#4 x 1/2 PH - UFL - 25 - STL - Z**

**Thread Code**

<table>
<thead>
<tr>
<th>Thread</th>
<th>Thread Code</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 32</td>
<td>#2</td>
<td>.036 / .028</td>
<td>.172 / .147</td>
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</tr>
<tr>
<td>4 - 24</td>
<td>#4</td>
<td>.047 / .038</td>
<td>.225 / .195</td>
<td>1</td>
</tr>
<tr>
<td>6 - 20</td>
<td>#6</td>
<td>.059 / .048</td>
<td>.279 / .244</td>
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<td>8 - 18</td>
<td>#8</td>
<td>.070 / .058</td>
<td>.332 / .292</td>
<td>2</td>
</tr>
<tr>
<td>10 - 16</td>
<td>#10</td>
<td>.081 / .068</td>
<td>.385 / .340</td>
<td>2</td>
</tr>
<tr>
<td>1/4 - 14</td>
<td>1/4</td>
<td>.107 / .092</td>
<td>.507 / .452</td>
<td>3</td>
</tr>
</tbody>
</table>

**Length**

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16</td>
<td>.187 / .167</td>
</tr>
<tr>
<td>1/4</td>
<td>.250 / .250</td>
</tr>
<tr>
<td>5/16</td>
<td>.313 / .293</td>
</tr>
<tr>
<td>3/8</td>
<td>.375 / .355</td>
</tr>
<tr>
<td>7/16</td>
<td>.438 / .418</td>
</tr>
<tr>
<td>1/2</td>
<td>.500 / .480</td>
</tr>
<tr>
<td>9/16</td>
<td>.563 / .533</td>
</tr>
<tr>
<td>5/8</td>
<td>.625 / .595</td>
</tr>
<tr>
<td>3/4</td>
<td>.750 / .720</td>
</tr>
<tr>
<td>7/8</td>
<td>.875 / .845</td>
</tr>
<tr>
<td>1</td>
<td>1.000 / .970</td>
</tr>
<tr>
<td>1.25</td>
<td>1.250 / 1.190</td>
</tr>
<tr>
<td>1.5</td>
<td>1.500 / 1.440</td>
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<td>1.75</td>
<td>1.750 / 1.690</td>
</tr>
<tr>
<td>2</td>
<td>2.000 / 1.940</td>
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</table>

**Material Description**

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Finish Description**

<table>
<thead>
<tr>
<th>Finish</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

Other finishes available.

Custom sizes available.
### Sheet Metal Screw, Thread Cutting

**Indented Hex Washer Head**

Inch - Type 25

#### Sample Part Number

#6 x 1/2  PH - INHX - WA - 25 - STL - Z

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>H Height</th>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 32</td>
<td>.950 / .460</td>
<td>STL Low Carbon Steel</td>
</tr>
<tr>
<td>4 - 24</td>
<td>.860 / .409</td>
<td>SS 18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length</th>
<th>L Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16</td>
<td>.187 / .167</td>
<td>STL Low Carbon Steel</td>
</tr>
<tr>
<td>1/4</td>
<td>.200 / .250</td>
<td>SS 18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Finish</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

#### Custom sizes available.

<table>
<thead>
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<th>H Height</th>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
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<td>.190 / .172</td>
<td>STL Low Carbon Steel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length</th>
<th>L Material</th>
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</tr>
</thead>
<tbody>
<tr>
<td>3/4</td>
<td>.750 / .720</td>
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<tr>
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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>PH</td>
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</tr>
<tr>
<td>SL</td>
<td>Slotted</td>
</tr>
<tr>
<td>USL</td>
<td>Unslotted</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length</th>
<th>L Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.25</td>
<td>1.250 / 1.190</td>
<td>STL Low Carbon Steel</td>
</tr>
<tr>
<td>1.5</td>
<td>1.500 / 1.440</td>
<td>SS 18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>1.75</td>
<td>1.750 / 1.690</td>
<td>STL Low Carbon Steel</td>
</tr>
</tbody>
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<thead>
<tr>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
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<td>STL Low Carbon Steel</td>
</tr>
</tbody>
</table>

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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
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</table>

#### Other finishes available.

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>Cross Recess</td>
</tr>
<tr>
<td>SL</td>
<td>Slotted</td>
</tr>
<tr>
<td>USL</td>
<td>Unslotted</td>
</tr>
</tbody>
</table>
Pan Head
- Screws For Plastic, Pan Head 82
- Screws For Plastic, Slotted Pan Head 82

Flat Head
- Screws For Plastic, 82 Deg Flat Head 83
- Screws For Plastic, 82 Deg Undercut Flat Head 83

Hex Head
- Screws For Plastic, Indented Hex Washer Head 84

Screws For Plastic, Thread Forming Inch - Type HL
## Screws For Plastic, Thread Forming
### Pan Head

**Sample Part Number**

#4 x 3/8 - PH - PN - HL - STL - Z

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 – 32</td>
<td>.062 / .063</td>
<td>.167 / .155</td>
<td>1 - T-8</td>
<td>3/16</td>
</tr>
<tr>
<td>4 – 24</td>
<td>.071 / .072</td>
<td>.193 / .180</td>
<td>1 - T-8</td>
<td>5/32</td>
</tr>
<tr>
<td>5 – 20</td>
<td>.080 / .070</td>
<td>.219 / .205</td>
<td>1 - T-9</td>
<td>3/16</td>
</tr>
<tr>
<td>6 – 19</td>
<td>.097 / .087</td>
<td>.254 / .240</td>
<td>2 - T-10</td>
<td>5/16</td>
</tr>
<tr>
<td>7 – 19</td>
<td>.097 / .087</td>
<td>.270 / .256</td>
<td>2 - T-10</td>
<td>1/4</td>
</tr>
<tr>
<td>8 – 18</td>
<td>.097 / .087</td>
<td>.270 / .256</td>
<td>2 - T-10</td>
<td>5/8</td>
</tr>
<tr>
<td>12 – 16</td>
<td>.133 / .122</td>
<td>.373 / .352</td>
<td>2 - T-15</td>
<td>5/16</td>
</tr>
<tr>
<td>1/4 – 15</td>
<td>.175 / .162</td>
<td>.492 / .473</td>
<td>3 - T-30</td>
<td>1</td>
</tr>
</tbody>
</table>

Custom sizes available.

### Material Description

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

### Finish Description

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>Cross Recess</td>
</tr>
<tr>
<td>TX</td>
<td>6 - Lobe</td>
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</tbody>
</table>

Other finishes available.

## Screws For Plastic, Thread Forming
### Slotted Pan Head

**Sample Part Number**

#4 x 3/8 - SL - PN - HL - STL - Z

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 – 32</td>
<td>.053 / .046</td>
<td>.167 / .155</td>
<td>1 - T-8</td>
<td>3/16</td>
</tr>
<tr>
<td>4 – 24</td>
<td>.060 / .051</td>
<td>.193 / .180</td>
<td>1 - T-8</td>
<td>5/32</td>
</tr>
<tr>
<td>5 – 20</td>
<td>.068 / .058</td>
<td>.219 / .205</td>
<td>1 - T-9</td>
<td>3/16</td>
</tr>
<tr>
<td>6 – 19</td>
<td>.075 / .065</td>
<td>.245 / .231</td>
<td>2 - T-10</td>
<td>5/16</td>
</tr>
<tr>
<td>7 – 19</td>
<td>.082 / .072</td>
<td>.270 / .256</td>
<td>2 - T-10</td>
<td>1/4</td>
</tr>
<tr>
<td>8 – 18</td>
<td>.082 / .072</td>
<td>.270 / .256</td>
<td>2 - T-10</td>
<td>5/8</td>
</tr>
<tr>
<td>10 – 16</td>
<td>.096 / .085</td>
<td>.332 / .306</td>
<td>2 - T-15</td>
<td>3/4</td>
</tr>
<tr>
<td>12 – 16</td>
<td>.110 / .099</td>
<td>.373 / .357</td>
<td>2 - T-15</td>
<td>5/16</td>
</tr>
<tr>
<td>1/4 – 15</td>
<td>.144 / .130</td>
<td>.492 / .473</td>
<td>3 - T-30</td>
<td>1</td>
</tr>
</tbody>
</table>

Custom sizes available.

### Material Description

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

### Finish Description

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL</td>
<td>Slotted</td>
</tr>
</tbody>
</table>

Other finishes available.

## Screws For Plastic, Thread Forming
### Other finishes available.

- Z - BLK: Zinc Black
- Z: Zinc Clear
# Screws For Plastic, Thread Forming

## 82 Deg Flat Head

### Inch - Type HL

| Sample Part Number | #4 x 7/8 PH - FL - HL - STL - Z |

<table>
<thead>
<tr>
<th>Thread</th>
<th>Thread Code</th>
<th>H Height REF</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 – 32</td>
<td>#2</td>
<td>.061</td>
<td>.162 / .144</td>
<td>1</td>
</tr>
<tr>
<td>4 – 24</td>
<td>#4</td>
<td>.067</td>
<td>.212 / .191</td>
<td>1</td>
</tr>
<tr>
<td>6 – 19</td>
<td>#6</td>
<td>.083</td>
<td>.262 / .238</td>
<td>2</td>
</tr>
<tr>
<td>8 – 18</td>
<td>#8</td>
<td>.100</td>
<td>.312 / .285</td>
<td>2</td>
</tr>
<tr>
<td>10 – 16</td>
<td>#10</td>
<td>.116</td>
<td>.362 / .333</td>
<td>2</td>
</tr>
<tr>
<td>12 – 16</td>
<td>#12</td>
<td>.132</td>
<td>.412 / .380</td>
<td>3</td>
</tr>
<tr>
<td>14 – 15</td>
<td>1/4</td>
<td>.153</td>
<td>.477 / .442</td>
<td>3</td>
</tr>
</tbody>
</table>

**Custom sizes available.**

<table>
<thead>
<tr>
<th>Length</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>1/4</td>
<td>SS</td>
<td>18-8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Finish Description**

- Z - BLK: Zinc Black
- Z: Zinc Clear

**Other finishes available.**

<table>
<thead>
<tr>
<th>Drive Description</th>
<th>Drive Series</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>PH Cross Recess</td>
<td>STL</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>SS</td>
<td>18-8 Stainless Steel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16</td>
<td>.187 / .140</td>
</tr>
<tr>
<td>1/4</td>
<td>.250 / .203</td>
</tr>
<tr>
<td>5/16</td>
<td>.313 / .266</td>
</tr>
<tr>
<td>3/8</td>
<td>.375 / .328</td>
</tr>
<tr>
<td>7/16</td>
<td>.438 / .391</td>
</tr>
<tr>
<td>1/2</td>
<td>.500 / .453</td>
</tr>
<tr>
<td>9/16</td>
<td>.563 / .516</td>
</tr>
<tr>
<td>5/8</td>
<td>.625 / .578</td>
</tr>
<tr>
<td>3/4</td>
<td>.750 / .703</td>
</tr>
<tr>
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<td>.875 / .828</td>
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<td>1</td>
<td>1.000 / .953</td>
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<tr>
<td>1 – 1/4</td>
<td>1.250 / 1.187</td>
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<td>1 – 3/4</td>
<td>1.750 / 1.687</td>
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<tr>
<td>2</td>
<td>2.000 / 1.937</td>
</tr>
</tbody>
</table>

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# Screws For Plastic, Thread Forming

## 82 Deg Undercut Flat Head

### Inch - Type HL

| Sample Part Number | #4 x 7/8 PH - UFL - HL - STL - Z |

<table>
<thead>
<tr>
<th>Thread</th>
<th>Thread Code</th>
<th>H Height REF</th>
<th>D Head Diameter</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 – 32</td>
<td>#2</td>
<td>.036 / .028</td>
<td>.162 / .144</td>
<td>1</td>
</tr>
<tr>
<td>4 – 24</td>
<td>#4</td>
<td>.047 / .038</td>
<td>.212 / .191</td>
<td>1</td>
</tr>
<tr>
<td>6 – 19</td>
<td>#6</td>
<td>.059 / .048</td>
<td>.262 / .238</td>
<td>2</td>
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<tr>
<td>8 – 18</td>
<td>#8</td>
<td>.070 / .058</td>
<td>.312 / .285</td>
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<tr>
<td>10 – 16</td>
<td>#10</td>
<td>.081 / .068</td>
<td>.362 / .333</td>
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<td>.107 / .092</td>
<td>.477 / .442</td>
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**Custom sizes available.**

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<thead>
<tr>
<th>Length</th>
<th>Material</th>
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<tbody>
<tr>
<td>3/16</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>1/4</td>
<td>SS</td>
<td>18-8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Finish Description**

- Z - BLK: Zinc Black
- Z: Zinc Clear

**Other finishes available.**

<table>
<thead>
<tr>
<th>Drive Description</th>
<th>Drive Series</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>PH Cross Recess</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SS</td>
<td>18-8 Stainless Steel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z</td>
<td>Zinc Clear</td>
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<td>2</td>
<td>2.000 / 1.937</td>
</tr>
</tbody>
</table>
# Screws For Plastic, Thread Forming

## Indented Hex Washer Head

### Inch - Type HL

**Sample Part Number**

#4 x 7/8  PH - INHX - WA - HL - STL - Z

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>Thread Length</th>
<th>Drive Series</th>
<th>Height</th>
<th>Washer Outside Diameter</th>
<th>Washer Thickness</th>
<th>Width Across Flats</th>
<th>Drive Size</th>
<th>Cross Recess</th>
<th>Length</th>
<th>Material</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 - 24</td>
<td>#4</td>
<td>PH</td>
<td>0.055</td>
<td>0.044</td>
<td>0.177 / 0.163</td>
<td>0.016 / 0.010</td>
<td>0.125 / 0.120</td>
<td>1</td>
<td>5/16</td>
<td>STL</td>
<td>Z</td>
</tr>
<tr>
<td>6 - 19</td>
<td>#6</td>
<td>INHX</td>
<td>0.070</td>
<td>0.058</td>
<td>0.260 / 0.240</td>
<td>0.025 / 0.015</td>
<td>0.188 / 0.181</td>
<td>1</td>
<td>3/8</td>
<td>SS</td>
<td>Z</td>
</tr>
<tr>
<td>8 - 18</td>
<td>#8</td>
<td>WA</td>
<td>0.093</td>
<td>0.080</td>
<td>0.328 / 0.302</td>
<td>0.025 / 0.015</td>
<td>0.250 / 0.244</td>
<td>2</td>
<td>7/16</td>
<td>STL</td>
<td>Z</td>
</tr>
<tr>
<td>10 - 16</td>
<td>#10</td>
<td>HL</td>
<td>0.110</td>
<td>0.096</td>
<td>0.348 / 0.322</td>
<td>0.031 / 0.019</td>
<td>0.250 / 0.244</td>
<td>2</td>
<td>1/2</td>
<td>SS</td>
<td>Z</td>
</tr>
<tr>
<td>12 - 18</td>
<td>#12</td>
<td>STL</td>
<td>0.155</td>
<td>0.139</td>
<td>0.432 / 0.398</td>
<td>0.039 / 0.022</td>
<td>0.312 / 0.305</td>
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<td>9/16</td>
<td>STL</td>
<td>Z</td>
</tr>
<tr>
<td>1/4 - 15</td>
<td>1/4</td>
<td>SL</td>
<td>0.190</td>
<td>0.172</td>
<td>0.520 / 0.480</td>
<td>0.050 / 0.030</td>
<td>0.375 / 0.367</td>
<td>3</td>
<td>5/8</td>
<td>STL</td>
<td>Z</td>
</tr>
<tr>
<td>5/16 - 14</td>
<td>5/16</td>
<td>USL</td>
<td>0.190</td>
<td>0.172</td>
<td>0.520 / 0.480</td>
<td>0.050 / 0.030</td>
<td>0.375 / 0.367</td>
<td>3</td>
<td>3/4</td>
<td>STL</td>
<td>Z</td>
</tr>
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</table>

**Other finishes available.**

<table>
<thead>
<tr>
<th>Drive Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>PH</td>
<td>Cross Recess</td>
</tr>
<tr>
<td>SL</td>
<td>Slotted</td>
</tr>
<tr>
<td>USL</td>
<td>Unslotted</td>
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</tbody>
</table>

Custom sizes available.
Pan Head
Screws For Plastic, Pan Head 86
Screws For Plastic, Slotted Pan Head 86

Flat Head
Screws For Plastic, 82 Deg Flat Head 87
Screws For Plastic, 82 Deg Undercut Flat Head 87

Hex Head
Screws For Plastic, Indented Hex Washer Head 88

Special Use Heads
Screws For Plastic, Truss Head 88

Pan Head
Page 86

Slotted Pan Head
Page 86

82 Deg Flat Head
Page 87

82 Deg Undercut Flat Head
Page 87

Indented Hex Washer Head
Page 88

Truss Head
Page 88
### Screws For Plastic, Thread Forming
#### Pan Head
Inch - Type PLAST 48/2

**Sample Part Number**

#4 x 3/8 PH - PN - PLAST 48/2 - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>Thread Code</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 28</td>
<td>#2</td>
<td>.062 / .053</td>
<td>.167 / .155</td>
<td>1 T7</td>
<td>3/16</td>
<td>217 / 157</td>
</tr>
<tr>
<td>4 - 20</td>
<td>#4</td>
<td>.080 / .070</td>
<td>.219 / .205</td>
<td>1 T10</td>
<td>5/16</td>
<td>343 / 283</td>
</tr>
<tr>
<td>6 - 19</td>
<td>#6</td>
<td>.097 / .087</td>
<td>.270 / .256</td>
<td>2 T15</td>
<td>7/16</td>
<td>468 / 408</td>
</tr>
<tr>
<td>8 - 16</td>
<td>#8</td>
<td>.115 / .105</td>
<td>.322 / .306</td>
<td>2 T20</td>
<td>1/2</td>
<td>530 / 470</td>
</tr>
<tr>
<td>10 - 14</td>
<td>#10</td>
<td>.133 / .122</td>
<td>.373 / .357</td>
<td>2 T25</td>
<td>9/16</td>
<td>593 / 533</td>
</tr>
<tr>
<td>1/4 - 10</td>
<td>#1/4</td>
<td>.175 / .162</td>
<td>.492 / .473</td>
<td>3 T30</td>
<td>5/8</td>
<td>665 / 595</td>
</tr>
</tbody>
</table>

Custom sizes available.

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16</td>
<td>217 / 157</td>
</tr>
<tr>
<td>5/16</td>
<td>343 / 283</td>
</tr>
<tr>
<td>7/16</td>
<td>468 / 408</td>
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<tr>
<td>1/2</td>
<td>530 / 470</td>
</tr>
<tr>
<td>9/16</td>
<td>593 / 533</td>
</tr>
</tbody>
</table>

#### Material Description

- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

#### Finish Description

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

### Screws For Plastic, Thread Forming
#### Slotted Pan Head
Inch - Type PLAST 48/2

**Sample Part Number**

#4 x 3/8 SL - PN - PLAST 48/2 - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>Thread Code</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 28</td>
<td>#2</td>
<td>.053 / .045</td>
<td>.167 / .155</td>
<td>1 T7</td>
<td>3/16</td>
<td>217 / 157</td>
</tr>
<tr>
<td>4 - 20</td>
<td>#4</td>
<td>.068 / .058</td>
<td>.219 / .205</td>
<td>1 T10</td>
<td>5/16</td>
<td>343 / 283</td>
</tr>
<tr>
<td>6 - 19</td>
<td>#6</td>
<td>.082 / .072</td>
<td>.270 / .256</td>
<td>2 T15</td>
<td>7/16</td>
<td>468 / 408</td>
</tr>
<tr>
<td>8 - 16</td>
<td>#8</td>
<td>.096 / .085</td>
<td>.322 / .306</td>
<td>2 T20</td>
<td>1/2</td>
<td>530 / 470</td>
</tr>
<tr>
<td>10 - 14</td>
<td>#10</td>
<td>.110 / .099</td>
<td>.373 / .357</td>
<td>2 T25</td>
<td>9/16</td>
<td>593 / 533</td>
</tr>
<tr>
<td>1/4 - 10</td>
<td>#1/4</td>
<td>.144 / .130</td>
<td>.492 / .473</td>
<td>3 T30</td>
<td>5/8</td>
<td>665 / 595</td>
</tr>
</tbody>
</table>

Custom sizes available.

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16</td>
<td>217 / 157</td>
</tr>
<tr>
<td>5/16</td>
<td>343 / 283</td>
</tr>
<tr>
<td>7/16</td>
<td>468 / 408</td>
</tr>
<tr>
<td>1/2</td>
<td>530 / 470</td>
</tr>
<tr>
<td>9/16</td>
<td>593 / 533</td>
</tr>
<tr>
<td>5/8</td>
<td>665 / 595</td>
</tr>
</tbody>
</table>

#### Material Description

- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

#### Finish Description

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>Cross Recess</td>
</tr>
<tr>
<td>TX</td>
<td>6 - Lobe</td>
</tr>
</tbody>
</table>
Screws For Plastic, Thread Forming
82 Deg Flat Head
Inch - Type PLAST 48/2

Length | L
--- | ---
3/16 | .217 / .157
1/4 | .280 / .220
5/16 | .343 / .283
3/8 | .405 / .345
7/16 | .468 / .408
1/2 | .530 / .470
9/16 | .593 / .533
5/8 | .655 / .595
3/4 | .780 / .720
7/8 | .925 / .825
1 | 1.050 / .950
1-1/4 | 1.300 / 1.200
1-1/2 | 1.550 / 1.450
1-5/8 | 1.800 / 1.700
2 | 2.050 / 1.950

Material | Description
--- | ---
STL | Low Carbon Steel
SS | 18-8 Stainless Steel
Z - BLK | Zinc Black
Z | Zinc Clear

Other finishes available.

Drive | Description
--- | ---
PH | Cross Recess
TX | 6 - Lobe

Screws For Plastic, Thread Forming
82 Deg Undercut Flat Head
Inch - Type PLAST 48/2

Length | L
--- | ---
3/16 | .217 / .157
1/4 | .280 / .220
5/16 | .343 / .283
3/8 | .405 / .345
7/16 | .468 / .408
1/2 | .530 / .470
9/16 | .593 / .533
5/8 | .655 / .595
3/4 | .780 / .720
7/8 | .925 / .825
1 | 1.050 / .950
1-1/4 | 1.300 / 1.200
1-1/2 | 1.550 / 1.450
1-5/8 | 1.800 / 1.700
2 | 2.050 / 1.950

Material | Description
--- | ---
STL | Low Carbon Steel
SS | 18-8 Stainless Steel
Z - BLK | Zinc Black
Z | Zinc Clear

Other finishes available.

Drive | Description
--- | ---
PH | Cross Recess
TX | 6 - Lobe
### Screws For Plastic, Thread Forming

**Indented Hex Washer Head**

**Inch - Type PLAST 48/2**

**Sample Part Number**

#8 x 5/8 PH - INHX - WA - PLAST 48/2 - STL - Z

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>H Height</th>
<th>G Washer Outside Diameter</th>
<th>W Washer Thickness</th>
<th>WAF Width Across Flats</th>
<th>Drive Size</th>
<th>Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 28</td>
<td>#2</td>
<td>.050 / .040</td>
<td>.166 / .154</td>
<td>.016 / .010</td>
<td>125 / 120</td>
<td>1</td>
</tr>
<tr>
<td>4 - 20</td>
<td>#4</td>
<td>.060 / .058</td>
<td>.243 / .225</td>
<td>.019 / .011</td>
<td>188 / 181</td>
<td>1</td>
</tr>
<tr>
<td>6 - 19</td>
<td>#6</td>
<td>.093 / .093</td>
<td>.328 / .302</td>
<td>.025 / .015</td>
<td>250 / 244</td>
<td>2</td>
</tr>
<tr>
<td>8 - 16</td>
<td>#8</td>
<td>.110 / .096</td>
<td>.416 / .322</td>
<td>.031 / .019</td>
<td>312 / 305</td>
<td>2</td>
</tr>
<tr>
<td>10 - 14</td>
<td>#10</td>
<td>.120 / .141</td>
<td>.416 / .384</td>
<td>.031 / .019</td>
<td>312 / 305</td>
<td>2</td>
</tr>
<tr>
<td>1-4 - 10</td>
<td>#1/4</td>
<td>.190 / .172</td>
<td>.520 / .480</td>
<td>.050 / .030</td>
<td>387 / 367</td>
<td>3</td>
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</table>

**Length L**

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16</td>
<td>.217</td>
</tr>
<tr>
<td>1/4</td>
<td>.280</td>
</tr>
<tr>
<td>5/16</td>
<td>.343</td>
</tr>
<tr>
<td>3/8</td>
<td>.406</td>
</tr>
<tr>
<td>7/16</td>
<td>.468</td>
</tr>
<tr>
<td>1/2</td>
<td>.530</td>
</tr>
<tr>
<td>9/16</td>
<td>.593</td>
</tr>
<tr>
<td>5/8</td>
<td>.655</td>
</tr>
<tr>
<td>7/8</td>
<td>.720</td>
</tr>
<tr>
<td>1-1/4</td>
<td>1.300</td>
</tr>
<tr>
<td>1-1/2</td>
<td>1.500</td>
</tr>
<tr>
<td>1-3/4</td>
<td>1.800</td>
</tr>
<tr>
<td>2</td>
<td>2.050</td>
</tr>
</tbody>
</table>

**Material Description**

- **STL**: Low Carbon Steel
- **SS**: 18 - 8 Stainless Steel

**Finish Description**

- **Z - BLK**: Zinc Black
- **Z**: Zinc Clear

Other finishes available.

**Drive Description**

- **PH**: Cross Recess
- **SL**: Slotted
- **USL**: Unslotted

**Width Across Flats (WAF)**

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Custom sizes available.**

---

### Screws For Plastic, Thread Forming

**Truss Head**

**Inch - Type PLAST 48/2**

**Sample Part Number**

#8 x 1/2 PH - TRUSS - PLAST 48/2 - STL - Z

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 28</td>
<td>#2</td>
<td>.053 / .044</td>
<td>194 / 180</td>
<td>1</td>
</tr>
<tr>
<td>4 - 20</td>
<td>#4</td>
<td>.069 / .059</td>
<td>257 / 241</td>
<td>1</td>
</tr>
<tr>
<td>6 - 19</td>
<td>#6</td>
<td>.086 / .074</td>
<td>321 / 303</td>
<td>2</td>
</tr>
<tr>
<td>8 - 16</td>
<td>#8</td>
<td>.102 / .088</td>
<td>384 / 364</td>
<td>2</td>
</tr>
<tr>
<td>10 - 14</td>
<td>#10</td>
<td>.118 / 103</td>
<td>448 / 425</td>
<td>2</td>
</tr>
<tr>
<td>1-4 - 10</td>
<td>#1/4</td>
<td>.150 / 133</td>
<td>573 / 546</td>
<td>3</td>
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</tbody>
</table>

**Length L**

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16</td>
<td>.217</td>
</tr>
<tr>
<td>1/4</td>
<td>.280</td>
</tr>
<tr>
<td>5/16</td>
<td>.343</td>
</tr>
<tr>
<td>3/8</td>
<td>.406</td>
</tr>
<tr>
<td>7/16</td>
<td>.468</td>
</tr>
<tr>
<td>1/2</td>
<td>.530</td>
</tr>
<tr>
<td>9/16</td>
<td>.593</td>
</tr>
<tr>
<td>5/8</td>
<td>.655</td>
</tr>
<tr>
<td>7/8</td>
<td>.720</td>
</tr>
<tr>
<td>1-1/4</td>
<td>1.300</td>
</tr>
<tr>
<td>1-1/2</td>
<td>1.500</td>
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<td>1.800</td>
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<tr>
<td>2</td>
<td>2.050</td>
</tr>
</tbody>
</table>

**Material Description**

- **STL**: Low Carbon Steel
- **SS**: 18 - 8 Stainless Steel

**Finish Description**

- **Z - BLK**: Zinc Black
- **Z**: Zinc Clear

Other finishes available.

**Drive Description**

- **PH**: Cross Recess
- **SL**: Slotted

**Custom sizes available.**
# Nuts

<table>
<thead>
<tr>
<th>Type</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hex Nuts</td>
<td>90</td>
</tr>
<tr>
<td>Hex Jam Nuts</td>
<td>90</td>
</tr>
<tr>
<td>Machine Screw Nuts</td>
<td>91</td>
</tr>
<tr>
<td>Machine Screw Nuts, Small Pattern</td>
<td>91</td>
</tr>
<tr>
<td>KPS Nuts</td>
<td>92</td>
</tr>
<tr>
<td>Conical KPS Nuts</td>
<td>92</td>
</tr>
<tr>
<td>Hex Flange Nuts</td>
<td>93</td>
</tr>
<tr>
<td>Serrated Flange Locknuts</td>
<td>93</td>
</tr>
<tr>
<td>Flange Side Locknuts</td>
<td>94</td>
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<tr>
<td>Flange Top Locknuts</td>
<td>94</td>
</tr>
<tr>
<td>Cap Nuts</td>
<td>95</td>
</tr>
<tr>
<td>Nylon Insert Locknuts</td>
<td>95</td>
</tr>
<tr>
<td>Nylon Insert Locknuts, Thin Pattern</td>
<td>96</td>
</tr>
<tr>
<td>Panel Nuts</td>
<td>96</td>
</tr>
</tbody>
</table>
### Nuts Hex Nut

**Sample Part Number**

1/4 - 20 HX - NU - STL - Z

<table>
<thead>
<tr>
<th>Thread Series</th>
<th>Material Description</th>
<th>Finish Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coarse</td>
<td>Fine</td>
<td>STL Low Carbon Steel</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>1/4 - 28</td>
<td>.226 / .212</td>
</tr>
<tr>
<td>7/16 - 14</td>
<td>7/16 - 20</td>
<td>.385 / .385</td>
</tr>
<tr>
<td>1/2 - 13</td>
<td>1/2 - 20</td>
<td>.448 / .427</td>
</tr>
<tr>
<td>9/16 - 12</td>
<td>9/16 - 18</td>
<td>.496 / .473</td>
</tr>
<tr>
<td>3/4 - 10</td>
<td>3/4 - 16</td>
<td>.665 / .617</td>
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</tbody>
</table>

**Custom sizes available.**

### Nuts Hex Jam Nut

**Sample Part Number**

3/8 - 16 HX - JAM - NU - STL - Z

<table>
<thead>
<tr>
<th>Thread Series</th>
<th>Material Description</th>
<th>Finish Description</th>
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<tbody>
<tr>
<td>Coarse</td>
<td>Fine</td>
<td>STL Low Carbon Steel</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>1/4 - 28</td>
<td>.163 / .150</td>
</tr>
<tr>
<td>7/16 - 14</td>
<td>7/16 - 20</td>
<td>.260 / .240</td>
</tr>
<tr>
<td>1/2 - 13</td>
<td>1/2 - 20</td>
<td>.323 / .320</td>
</tr>
<tr>
<td>9/16 - 12</td>
<td>9/16 - 18</td>
<td>.324 / .321</td>
</tr>
<tr>
<td>3/4 - 10</td>
<td>3/4 - 16</td>
<td>.446 / .398</td>
</tr>
</tbody>
</table>

**Custom sizes available.**
# Nuts

**Machine Screw Nut**

**Sample Part Number**

4 - 40 HX - MS - NU - STL - Z

**Thread Series**

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Finish Description**

<table>
<thead>
<tr>
<th>Finish</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>Z - BLK</td>
<td>Zinc Black</td>
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</tbody>
</table>

Other finishes available.

### Thread Specifications

<table>
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<tr>
<th>Material</th>
<th>Description</th>
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<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Finish</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
</tbody>
</table>

Other finishes available.

### Custom Sizes Available

### Sample Part Number

4 - 40 HX - MS - NU - STL - Z - SMALL PATTERN

<table>
<thead>
<tr>
<th>Thread Series</th>
<th>Material</th>
<th>Finish</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>4 - 40</td>
<td>STL</td>
<td></td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>6 - 32</td>
<td>SS</td>
<td></td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Other finishes available.**

### Nuts

**Machine Screw Nut, Small Pattern**

**Sample Part Number**

4 - 40 HX - MS - NU - STL - Z - SMALL PATTERN

### Thread Specifications

<table>
<thead>
<tr>
<th>Thread Series</th>
<th>Material</th>
<th>Finish</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 - 40</td>
<td>STL</td>
<td></td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>6 - 32</td>
<td>SS</td>
<td></td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Other finishes available.**

### Custom Sizes Available
# Nuts

## KPS Nut

### Inch

**Sample Part Number**

8 - 32  KPS - NU - STL - Z

**Thread**  Series  Material  Finish

<table>
<thead>
<tr>
<th>Thread</th>
<th>T Thickness</th>
<th>D Diameter</th>
<th>WAF Width Across Flats</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 - 40</td>
<td>.069 / .087</td>
<td>.266 / .277</td>
<td>.250 / .241</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.114 / .102</td>
<td>.348 / .338</td>
<td>.312 / .302</td>
</tr>
<tr>
<td>8 - 32 SP</td>
<td>.069 / .087</td>
<td>.267 / .277</td>
<td>.250 / .241</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.130 / .117</td>
<td>.381 / .370</td>
<td>.344 / .332</td>
</tr>
<tr>
<td>10 - 24</td>
<td>.130 / .117</td>
<td>.406 / .395</td>
<td>.375 / .362</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.193 / .178</td>
<td>.506 / .494</td>
<td>.438 / .423</td>
</tr>
<tr>
<td>5/16 - 18</td>
<td>.273 / .258</td>
<td>.592 / .579</td>
<td>.500 / .489</td>
</tr>
<tr>
<td>1/2 - 13</td>
<td>.437 / .425</td>
<td>.898 / .878</td>
<td>.750 / .736</td>
</tr>
</tbody>
</table>

**Finish Description**

<table>
<thead>
<tr>
<th>Finish</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
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</table>

Other finishes available.

**Material Description**

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

## Conical Washer KPS Nut

### Inch

**Sample Part Number**

1/4 - 20  KPS - NU - CON - WA - STL - Z

**Thread**  Series  Material  Finish

<table>
<thead>
<tr>
<th>Thread</th>
<th>T Thickness</th>
<th>G Washer Outside Diameter</th>
<th>WAF Width Across Flats</th>
<th>M Flange Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 - 20</td>
<td>.300 / .265</td>
<td>.560</td>
<td>.438 / .420</td>
<td>.040</td>
</tr>
<tr>
<td>5/16 - 18</td>
<td>.365 / .320</td>
<td>.680</td>
<td>.502 / .489</td>
<td>.050</td>
</tr>
<tr>
<td>7/16 - 20</td>
<td>.496 / .457</td>
<td>.930</td>
<td>.689 / .675</td>
<td>.070</td>
</tr>
<tr>
<td>1/2 - 13</td>
<td>.555 / .528</td>
<td>1.070</td>
<td>.752 / .736</td>
<td>.080</td>
</tr>
<tr>
<td>5/8 - 11</td>
<td>.690 / .646</td>
<td>1.330</td>
<td>.939 / .922</td>
<td>.100</td>
</tr>
<tr>
<td>3/4 - 10</td>
<td>.825 / .742</td>
<td>1.585</td>
<td>1.127 / 1.068</td>
<td>.110</td>
</tr>
</tbody>
</table>

**Finish Description**

<table>
<thead>
<tr>
<th>Finish</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
</tbody>
</table>

Other finishes available.

**Material Description**

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

Custom sizes available.
### Nuts

#### Hex Flange Nut

Sample Part Number

1/4 - 20  HX - FLANGE - NU - STL - Z

---

#### Table: Hex Flange Nut

<table>
<thead>
<tr>
<th>Thread</th>
<th>T Thickness</th>
<th>D Diameter</th>
<th>WAF Width Across Flats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coarse</td>
<td>Fine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 - 32</td>
<td>.171 / .166</td>
<td>.442 / .406</td>
<td>.312 / .302</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.203 / .187</td>
<td>.469 / .452</td>
<td>.344 / .334</td>
</tr>
<tr>
<td>10 - 24</td>
<td>10 - 32</td>
<td>.219 / .203</td>
<td>.500 / .480</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>1/4 - 28</td>
<td>.236 / .222</td>
<td>.594 / .574</td>
</tr>
<tr>
<td>7/16 - 14</td>
<td>7/16 - 20</td>
<td>.395 / .375</td>
<td>.937 / .910</td>
</tr>
<tr>
<td>1/2 - 13</td>
<td>1/2 - 20</td>
<td>.458 / .437</td>
<td>1.031 / 1.000</td>
</tr>
<tr>
<td>5/8 - 11</td>
<td>5/8 - 18</td>
<td>.569 / .545</td>
<td>1.281 / 1.248</td>
</tr>
<tr>
<td>3/4 - 10</td>
<td>3/4 - 16</td>
<td>.675 / .627</td>
<td>1.500 / 1.460</td>
</tr>
</tbody>
</table>

Custom sizes available.

### Nuts

#### Serrated Flange Locknut

Sample Part Number

5/16 - 18  SERR - HX - FLANGE - NU - ST - Z

---

#### Table: Serrated Flange Locknut

<table>
<thead>
<tr>
<th>Thread</th>
<th>T Thickness</th>
<th>D Diameter</th>
<th>WAF Width Across Flats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coarse</td>
<td>Fine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 - 32</td>
<td>.171 / .166</td>
<td>.442 / .406</td>
<td>.312 / .302</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.203 / .187</td>
<td>.469 / .452</td>
<td>.344 / .334</td>
</tr>
<tr>
<td>10 - 24</td>
<td>10 - 32</td>
<td>.219 / .203</td>
<td>.500 / .480</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>1/4 - 28</td>
<td>.236 / .222</td>
<td>.594 / .574</td>
</tr>
<tr>
<td>7/16 - 14</td>
<td>7/16 - 20</td>
<td>.395 / .375</td>
<td>.937 / .910</td>
</tr>
<tr>
<td>1/2 - 13</td>
<td>1/2 - 20</td>
<td>.458 / .437</td>
<td>1.031 / 1.000</td>
</tr>
<tr>
<td>5/8 - 11</td>
<td>5/8 - 18</td>
<td>.569 / .545</td>
<td>1.281 / 1.248</td>
</tr>
<tr>
<td>3/4 - 10</td>
<td>3/4 - 16</td>
<td>.675 / .627</td>
<td>1.500 / 1.460</td>
</tr>
</tbody>
</table>

Custom sizes available.
### Material Description

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18-8 Stainless Steel</td>
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</table>

### Finish Description

<table>
<thead>
<tr>
<th>Finish</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>Z-BLK</td>
<td>Zinc Black</td>
</tr>
</tbody>
</table>

Other finishes available.

### Flange Side Locknut

#### Sample Part Number

1/4 - 20 HX - FLANGE - SLK - NU - STL - Z

#### Thread

<table>
<thead>
<tr>
<th>Thread</th>
<th>Coarse</th>
<th>Fine</th>
<th>T Thickness</th>
<th>D Diameter</th>
<th>WAF Width Across Flats</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 - 32</td>
<td></td>
<td></td>
<td>.171 / .156</td>
<td>.442 / .406</td>
<td>.312 / .302</td>
</tr>
<tr>
<td>8 - 32</td>
<td></td>
<td></td>
<td>.203 / .187</td>
<td>.469 / .452</td>
<td>.344 / .334</td>
</tr>
<tr>
<td>10 - 24</td>
<td>10 - 32</td>
<td></td>
<td>.219 / .203</td>
<td>.500 / .480</td>
<td>.375 / .365</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>1/4 - 28</td>
<td></td>
<td>.236 / .222</td>
<td>.594 / .574</td>
<td>.438 / .428</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thread</th>
<th>Coarse</th>
<th>Fine</th>
<th>T Thickness</th>
<th>D Diameter</th>
<th>WAF Width Across Flats</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/16 - 14</td>
<td>7/16 - 20</td>
<td></td>
<td>.395 / .375</td>
<td>.907 / .910</td>
<td>.688 / .675</td>
</tr>
<tr>
<td>1/2 - 13</td>
<td>1/2 - 20</td>
<td></td>
<td>.458 / .437</td>
<td>1.031 / 1.000</td>
<td>.750 / .736</td>
</tr>
<tr>
<td>5/8 - 11</td>
<td>5/8 - 18</td>
<td></td>
<td>.569 / .545</td>
<td>1.281 / 1.248</td>
<td>.938 / .922</td>
</tr>
<tr>
<td>3/4 - 10</td>
<td>3/4 - 16</td>
<td></td>
<td>.675 / .627</td>
<td>1.500 / 1.480</td>
<td>1.125 / 1.088</td>
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</tbody>
</table>

**Custom sizes available.**

### Flange Top Locknut

#### Sample Part Number

1/4 - 20 HX - FLANGE - TLK - NU - STL - Z

#### Thread

<table>
<thead>
<tr>
<th>Thread</th>
<th>Coarse</th>
<th>Fine</th>
<th>T Thickness</th>
<th>D Diameter</th>
<th>WAF Width Across Flats</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 - 32</td>
<td></td>
<td></td>
<td>.171 / .156</td>
<td>.442 / .406</td>
<td>.312 / .302</td>
</tr>
<tr>
<td>8 - 32</td>
<td></td>
<td></td>
<td>.203 / .187</td>
<td>.469 / .452</td>
<td>.344 / .334</td>
</tr>
<tr>
<td>10 - 24</td>
<td>10 - 32</td>
<td></td>
<td>.219 / .203</td>
<td>.500 / .480</td>
<td>.375 / .365</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>1/4 - 28</td>
<td></td>
<td>.236 / .222</td>
<td>.594 / .574</td>
<td>.438 / .428</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thread</th>
<th>Coarse</th>
<th>Fine</th>
<th>T Thickness</th>
<th>D Diameter</th>
<th>WAF Width Across Flats</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/16 - 14</td>
<td>7/16 - 20</td>
<td></td>
<td>.395 / .375</td>
<td>.907 / .910</td>
<td>.688 / .675</td>
</tr>
<tr>
<td>1/2 - 13</td>
<td>1/2 - 20</td>
<td></td>
<td>.458 / .437</td>
<td>1.031 / 1.000</td>
<td>.750 / .736</td>
</tr>
<tr>
<td>5/8 - 11</td>
<td>5/8 - 18</td>
<td></td>
<td>.569 / .545</td>
<td>1.281 / 1.248</td>
<td>.938 / .922</td>
</tr>
<tr>
<td>3/4 - 10</td>
<td>3/4 - 16</td>
<td></td>
<td>.675 / .627</td>
<td>1.500 / 1.480</td>
<td>1.125 / 1.088</td>
</tr>
</tbody>
</table>

**Custom sizes available.**
### Nuts

**Cap Nut**

Sample Part Number

10 - 32 **HX - CAP - NU - STL - Z**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H</th>
<th>WAF</th>
<th>R</th>
</tr>
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<tbody>
<tr>
<td>6 - 32</td>
<td>.34</td>
<td>.3125 / .302</td>
<td>.16</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.34</td>
<td>.3125 / .302</td>
<td>.16</td>
</tr>
<tr>
<td>10 - 32</td>
<td>.41</td>
<td>.3750 / .362</td>
<td>.19</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.47</td>
<td>.4375 / .428</td>
<td>.25</td>
</tr>
<tr>
<td>5/16 - 18</td>
<td>.53</td>
<td>.5000 / .489</td>
<td>.31</td>
</tr>
<tr>
<td>3/8 - 16</td>
<td>.62</td>
<td>.5625 / .551</td>
<td>.38</td>
</tr>
<tr>
<td>1/2 - 13</td>
<td>.81</td>
<td>.7500 / .736</td>
<td>.50</td>
</tr>
<tr>
<td>5/8 - 11</td>
<td>1.00</td>
<td>.9375 / .922</td>
<td>.62</td>
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<tr>
<td>3/4 - 10</td>
<td>1.16</td>
<td>1.0625 / 1.045</td>
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</table>

**Nylon Insert Locknut**

Sample Part Number

10 - 24 **NY - IN - LK - NU - STL - Z**

<table>
<thead>
<tr>
<th>Thread</th>
<th>T</th>
<th>WAF</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 - 40</td>
<td>.153 / .133</td>
<td>.251 / .243</td>
<td>.081</td>
</tr>
<tr>
<td>6 - 32</td>
<td>.188 / .168</td>
<td>.313 / .305</td>
<td>.103</td>
</tr>
<tr>
<td>8 - 32</td>
<td>.239 / .219</td>
<td>.345 / .336</td>
<td>.140</td>
</tr>
<tr>
<td>10 - 24</td>
<td>.249 / .229</td>
<td>.376 / .367</td>
<td>.140</td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>.328 / .298</td>
<td>.439 / .430</td>
<td>.225</td>
</tr>
<tr>
<td>5/16 - 18</td>
<td>.359 / .329</td>
<td>.502 / .492</td>
<td>.250</td>
</tr>
<tr>
<td>3/8 - 16</td>
<td>.488 / .438</td>
<td>.564 / .553</td>
<td>.335</td>
</tr>
<tr>
<td>7/16 - 14</td>
<td>.468 / .438</td>
<td>.627 / .616</td>
<td>.324</td>
</tr>
<tr>
<td>1/2 - 13</td>
<td>.609 / .579</td>
<td>.752 / .741</td>
<td>.464</td>
</tr>
<tr>
<td>9/16 - 12</td>
<td>.656 / .626</td>
<td>.877 / .865</td>
<td>.469</td>
</tr>
<tr>
<td>5/8 - 11</td>
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<td>.593</td>
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<td>.890 / .860</td>
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<td>.742</td>
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</table>

Other finishes available.
### Nylon Insert Locknut, Thin Pattern

**Sample Part Number:**

8 - 32 NY - IN - LK - NU - STL - Z - THIN

<table>
<thead>
<tr>
<th>Thread Series</th>
<th>Coarse</th>
<th>Fine</th>
<th>T Thickness</th>
<th>WAF Width Across Flats</th>
<th>S Side Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 - 40</td>
<td>-</td>
<td>.124</td>
<td>.251 / .343</td>
<td>.075</td>
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<td>6 - 32</td>
<td>-</td>
<td>.140</td>
<td>.313 / .305</td>
<td>.090</td>
<td></td>
</tr>
<tr>
<td>8 - 32</td>
<td>-</td>
<td>.187</td>
<td>.345 / .336</td>
<td>.110</td>
<td></td>
</tr>
<tr>
<td>10 - 24</td>
<td>10 - 32</td>
<td>.187</td>
<td>.376 / .367</td>
<td>.110</td>
<td></td>
</tr>
<tr>
<td>1/4 - 20</td>
<td>1/4 - 28</td>
<td>.218</td>
<td>.439 / .430</td>
<td>.125</td>
<td></td>
</tr>
<tr>
<td>3/8 - 16</td>
<td>3/8 - 24</td>
<td>.281</td>
<td>.564 / .553</td>
<td>.150</td>
<td></td>
</tr>
<tr>
<td>7/16 - 14</td>
<td>7/16 - 20</td>
<td>.328</td>
<td>.627 / .615</td>
<td>.225</td>
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</tr>
<tr>
<td>1/2 - 13</td>
<td>1/2 - 20</td>
<td>.328</td>
<td>.752 / .741</td>
<td>.190</td>
<td></td>
</tr>
<tr>
<td>9/16 - 12</td>
<td>9/16 - 18</td>
<td>.374</td>
<td>.877 / .865</td>
<td>.225</td>
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<tr>
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<td>3/4 - 16</td>
<td>.421</td>
<td>1.064 / 1.052</td>
<td>.288</td>
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**Material Description:**

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Finish Description:**

<table>
<thead>
<tr>
<th>Finish</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
</tbody>
</table>

*Other finishes available.*

### Panel Nut

**Sample Part Number:**

3/8 - 32 HX - PANEL - NU - STL - Z

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<td>3/32</td>
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**Material Description:**

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<td>BRS</td>
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**Finish Description:**

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<td>N</td>
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*Other finishes available.*

*Custom sizes available.*
<table>
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<tr>
<th>Washers</th>
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<tr>
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<tr>
<td>Lock Washer, Internal Tooth</td>
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<tr>
<td>Lock Washer, Internal External Tooth</td>
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<td>Plain Washer, Type B - Narrow, Wide, Regular</td>
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### Washer

**Lock Washer - External tooth**

**Inch**

#### Sample Part Number

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<td>SS</td>
<td>Z</td>
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<td>8 - .164</td>
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<td>Z</td>
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<td>SS</td>
<td>Z</td>
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<td>Z</td>
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#### Thread Code

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<th>B Outside Diameter</th>
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<td>.760 / .740</td>
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*Custom sizes available.*

*Other finishes available.*
## Washer

**Lock Washer - Internal Tooth**

**Inch**

### Sample Part Number

<table>
<thead>
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<th>Size</th>
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<th>Finish</th>
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### Material Description

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### Finish Description

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### Other finishes available.

### Thread Code Table

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Custom sizes available.
### Material Description
- **STL**: Low Carbon Steel
- **SS**: 18-8 Stainless Steel

### Finish Description
- **Z**: Zinc Clear

### Nominal Washer Size Specifications

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### Sample Part Number
- Washer
- Lock Washer - Internal External Tooth
- Inch

**#6 INT/EXT - LK - WA - STL - Z**

**Size**

**Series**

**Material**

**Finish**

Other finishes available.
### Washer

**Plain Washer - A Inch**

#### Sample Part Number

**#6 A - NAR - FL - WA - STL - Z**

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<tr>
<td>5/8 - .625</td>
<td>Wide WIDE</td>
<td>.065</td>
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Custom sizes available.

Other finishes available.

### Material Description

<table>
<thead>
<tr>
<th>Type</th>
<th>Code</th>
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<tbody>
<tr>
<td>STL</td>
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<tr>
<td>SS</td>
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### Finish Description

<table>
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<tr>
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<th>Code</th>
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## Plain Washer - B Narrow, Regular, Wide

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<th>Type Code</th>
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<tr>
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<tr>
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<td>5/16 - .312</td>
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<tr>
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<td>7/16 - .438</td>
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<td>.063 .071 .056 .469 .015 .005</td>
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<tr>
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<td>9/16 - .562</td>
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<td>.100 .112 .090 .594 .015 .005</td>
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<td>.100 .112 .090 .656 .030 .007</td>
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Other finishes available.

### Narrow

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<tr>
<td>#8</td>
<td>.164</td>
<td>1.125</td>
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<tr>
<td>#10</td>
<td>.190</td>
<td>1.250</td>
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<tr>
<td>#12</td>
<td>.216</td>
<td>1.500</td>
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<tr>
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<tr>
<td>#8</td>
<td>.164</td>
<td>2.250</td>
</tr>
<tr>
<td>#10</td>
<td>.190</td>
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<tr>
<td>#12</td>
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<tr>
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Other finishes available.

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### Table

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<tr>
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<td>Narrow Regular Wide</td>
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<td>1/2 - .500</td>
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### Notes

- Custom sizes available.
- Other finishes available.
## Washer

### Lock Washer - Split Lock Washer

**Inch - Type WA**

Sample Part Number

#6 SPLIT - LK - WA - STL - Z

### Size Code Series Material Finish

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<th>B Outside Diameter MAX</th>
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<td>.064 / .088</td>
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<td>.025</td>
<td>.170 / .101</td>
<td>.195</td>
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<td>#4</td>
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<td>.025</td>
<td>.120 / .114</td>
<td>.209</td>
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<td>5 - 125</td>
<td>.031</td>
<td>.133 / .127</td>
<td>.236</td>
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<td>6 - 138</td>
<td>.031</td>
<td>.148 / .141</td>
<td>.250</td>
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<td>8 - 164</td>
<td>.040</td>
<td>.174 / .141</td>
<td>.293</td>
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<td>#10</td>
<td>10 - 190</td>
<td>.047</td>
<td>.200 / .193</td>
<td>.334</td>
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<td>#12</td>
<td>12 - 216</td>
<td>.056</td>
<td>.227 / .220</td>
<td>.377</td>
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<td>.262 / .254</td>
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<td>.326 / .317</td>
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<td>3/8 - 375</td>
<td>.094</td>
<td>.390 / .380</td>
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<tr>
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<td>7/16 - 438</td>
<td>.109</td>
<td>.455 / .443</td>
<td>.779</td>
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<tr>
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<td>1/2 - 500</td>
<td>.125</td>
<td>.518 / .506</td>
<td>.873</td>
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<tr>
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<td>9/16 - 562</td>
<td>.141</td>
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<td>.650 / .635</td>
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#### Custom sizes available.

#### Material Description

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<tr>
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<tr>
<td>SS</td>
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#### Finish Description

<table>
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<th>Description</th>
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<tbody>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
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</table>

Other finishes available.
Machine Screws
Metric

Pan Head
- Machine Screw, Pan Head 106
- Machine Screw, Slotted Pan Head 106

Flat Head
- Machine Screw, 90 Deg Flat Head 107

Hex Head
- Machine Screw, Indented Hex Head 107
- Machine Screw, Indented Hex Washer Head 108

SEMS
- Machine Screw, Internal Tooth Lock Washers SEMS 108
- Machine Screw, Square Cone Lock Washer SEMS 109
- Machine Screw, External Tooth Lock Washer SEMS 109
- Machine Screw, Split Ring Lock Washer SEMS 110

Special Use Heads
- Machine Screw, Button Head 110
- Machine Screw, Oval Head 111
- Machine Screw, Slotted Oval Head 111
### Machine Screw
#### Pan Head
**Metric**

**Sample Part Number**
M4 x 10MM PH - PN - MS - STL - Z

**ASME B 18.6.7M**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size 6 - Lobe</th>
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</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
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<td>T8</td>
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<tr>
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<td>5.0 / 4.7</td>
<td>T8</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>2.4 / 2.2</td>
<td>5.6 / 5.3</td>
<td>T10</td>
</tr>
<tr>
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<td>7.0 / 6.6</td>
<td>T15</td>
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<tr>
<td>M4 x 0.7</td>
<td>3.1 / 2.8</td>
<td>8.0 / 7.6</td>
<td>T20</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.7 / 3.4</td>
<td>9.5 / 9.1</td>
<td>T25</td>
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<tr>
<td>M6 x 1</td>
<td>4.6 / 4.3</td>
<td>12.0 / 11.5</td>
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</table>

- **Thread Length**
- **Drive Size**
- **Material Description**
  - STL Low Carbon Steel
  - SS 18 - 8 Stainless Steel

**Finish Description**
- Z - BLK Zinc Black
- Z Zinc Clear

**Drive Description**
- PH Cross Recess
- PZ Pozidriv
- TX 6 - Lobe
- SL - PH Slotted - Cross Recess
- SL - TX Slotted - 6 - Lobe

Custom sizes available.

---

### Machine Screw
#### Slotted Pan Head
**Metric**

**Sample Part Number**
M4 x 10MM SL - PN - MS - STL - Z

**ASME B18.6.7**

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<td>1.3 / 1.1</td>
<td>4.0 / 3.7</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>1.5 / 1.3</td>
<td>5.0 / 4.7</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>1.8 / 1.6</td>
<td>5.6 / 5.3</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.1 / 1.9</td>
<td>7.0 / 6.6</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>2.4 / 2.2</td>
<td>8.0 / 7.6</td>
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<tr>
<td>M5 x 0.8</td>
<td>3.0 / 2.7</td>
<td>9.5 / 9.1</td>
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<tr>
<td>M6 x 1</td>
<td>3.6 / 3.3</td>
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</table>

- **Thread Length**
- **Material Description**
  - STL Low Carbon Steel
  - SS 18 - 8 Stainless Steel

**Finish Description**
- Z - BLK Zinc Black
- Z Zinc Clear

**Drive Description**
- SL Slotted

Custom sizes available.

---

*® Same size for POZI Drive
** ISO 7045 has slightly tighter tolerances.
Contact PENCOM® for more information on ISO, DIN, and JIS standards.

** ISO 1580 has slightly tighter tolerances.
Contact PENCOM® for more information on ISO, DIN, and JIS standards.

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### Machine Screw
90 Deg Flat Head
Metric

#### Sample Part Number
M4 x 10MM  PH - FL - MS - STL - Z
Thread Length Drive Series Material Finish
ASME B18.6.7M**

<table>
<thead>
<tr>
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<td>M2.5 x 0.45</td>
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<td>6.3 / 5.7</td>
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<tr>
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<td>8.4 / 8.0</td>
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<td>10.3 / 9.7</td>
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<tr>
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<td>11.3 / 10.9</td>
<td>3 T30</td>
<td>12</td>
<td>12.4 / 11.6</td>
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</tbody>
</table>

#### Material Description
- STL Low Carbon Steel
- SS 18-8 Stainless Steel

#### Finish Description
- Z - BLK Zinc Black
- Z Zinc Clear

- Custom sizes available.

* Same size for POZI Drive

** ISO 7046 / 2009 has slightly tighter tolerances.
Contact PENCOM® for more information on ISO, DIN, and JIS standards.

---

### Machine Screw
Indented Hex Head
Metric

#### Sample Part Number
M4 x 10MM  PH - INHX - MS - STL - Z
Thread Length Drive Series Material Finish
ASME B18.6.7M

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>WAF Width Across Flats</th>
<th>Drive Size</th>
<th>Cross Recess</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
<td>1.6 / 1.3</td>
<td>3.20 / 3.02</td>
<td>0</td>
<td>3.2 / 2.8</td>
<td>3</td>
<td>3.2 / 2.8</td>
</tr>
<tr>
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<td>4.00 / 3.82</td>
<td>1</td>
<td>4.3 / 3.7</td>
<td>4</td>
<td>4.3 / 3.7</td>
</tr>
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<td>5.00 / 4.82</td>
<td>1</td>
<td>5.3 / 5.7</td>
<td>5</td>
<td>5.3 / 5.7</td>
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<td>M3.5 x 0.6</td>
<td>2.6 / 2.3</td>
<td>5.50 / 5.32</td>
<td>2</td>
<td>6.3 / 5.7</td>
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<td>8.3 / 7.7</td>
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<td>8.3 / 7.7</td>
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<tr>
<td>M5 x 0.8</td>
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<td>8.00 / 7.78</td>
<td>2</td>
<td>10.3 / 9.7</td>
<td>10</td>
<td>10.3 / 9.7</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>4.7 / 4.1</td>
<td>10.00 / 9.78</td>
<td>3</td>
<td>12.4 / 11.6</td>
<td>12</td>
<td>12.4 / 11.6</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>6.0 / 5.2</td>
<td>13.00 / 12.75</td>
<td>4</td>
<td>14.4 / 13.6</td>
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<tr>
<td>M10 x 1.5</td>
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<td>16.00 / 15.75</td>
<td>4</td>
<td>16.4 / 15.6</td>
<td>16</td>
<td>16.4 / 15.6</td>
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<tr>
<td>M12 x 1.75</td>
<td>9.0 / 7.8</td>
<td>18.00 / 17.75</td>
<td>4</td>
<td>18.4 / 17.6</td>
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<td>18.4 / 17.6</td>
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<tr>
<td>M14 x 2</td>
<td>10.5 / 8.8</td>
<td>20.00 / 19.75</td>
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<td>20.4 / 19.6</td>
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</tr>
<tr>
<td>M16 x 2.5</td>
<td>12.0 / 9.9</td>
<td>22.00 / 21.75</td>
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<td>22.4 / 21.6</td>
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<td>22.4 / 21.6</td>
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<tr>
<td>M18 x 3</td>
<td>13.5 / 10.9</td>
<td>24.00 / 23.75</td>
<td>4</td>
<td>24.4 / 23.6</td>
<td>24</td>
<td>24.4 / 23.6</td>
</tr>
<tr>
<td>M20 x 3.5</td>
<td>15.0 / 11.9</td>
<td>26.00 / 25.75</td>
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<td>26.4 / 25.6</td>
<td>26</td>
<td>26.4 / 25.6</td>
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<tr>
<td>M24 x 4</td>
<td>16.5 / 12.9</td>
<td>28.00 / 27.75</td>
<td>4</td>
<td>28.4 / 27.6</td>
<td>28</td>
<td>28.4 / 27.6</td>
</tr>
<tr>
<td>M30 x 5</td>
<td>18.0 / 13.9</td>
<td>30.00 / 29.75</td>
<td>4</td>
<td>30.4 / 29.6</td>
<td>30</td>
<td>30.4 / 29.6</td>
</tr>
<tr>
<td>M36 x 6</td>
<td>19.5 / 14.9</td>
<td>32.00 / 31.75</td>
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<td>32.4 / 31.6</td>
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<td>32.4 / 31.6</td>
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<tr>
<td>M40 x 7.5</td>
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<td>34.00 / 33.75</td>
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<td>34.4 / 33.6</td>
<td>34</td>
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</tr>
</tbody>
</table>

#### Material Description
- STL Low Carbon Steel
- SS 18-8 Stainless Steel

#### Finish Description
- Z - BLK Zinc Black
- Z Zinc Clear

- Custom sizes available.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

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* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
### Machine Screw
**Indented Hex Washer Head**
**Metric**

**Sample Part Number**
M4 x 10MM PH - INHX - WA - MS - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height MAX</th>
<th>G Washer Outside Diameter</th>
<th>WAF Width Across Flats</th>
<th>W Washer Thickness</th>
<th>Drive Size</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
<td>2.2</td>
<td>4.5 / 4.1</td>
<td>3.00 / 2.84</td>
<td>0.9 / 0.3</td>
<td>0</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>2.7</td>
<td>5.4 / 5.0</td>
<td>3.20 / 3.04</td>
<td>1.1 / 0.3</td>
<td>1</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>3.2</td>
<td>6.4 / 5.9</td>
<td>4.00 / 3.84</td>
<td>1.3 / 0.4</td>
<td>1</td>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>3.8</td>
<td>7.5 / 6.9</td>
<td>5.00 / 4.82</td>
<td>1.4 / 0.5</td>
<td>2</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>4.3</td>
<td>8.5 / 7.8</td>
<td>5.50 / 5.32</td>
<td>1.5 / 0.6</td>
<td>2</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>5.4</td>
<td>10.6 / 9.8</td>
<td>7.00 / 6.78</td>
<td>1.9 / 0.7</td>
<td>2</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>6.7</td>
<td>12.8 / 11.8</td>
<td>8.00 / 7.78</td>
<td>2.5 / 1.0</td>
<td>3</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>8.6</td>
<td>16.8 / 15.5</td>
<td>10.00 / 9.78</td>
<td>3.0 / 1.2</td>
<td>4</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>10.7</td>
<td>21.0 / 19.3</td>
<td>13.00 / 12.72</td>
<td>3.7 / 1.4</td>
<td>4</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

Custom sizes available.

- Contact PENCOM® for more information on ISO, DIN, and JIS standards.

### Machine Screw
**Internal Tooth Lock Washer SEMS**
**Metric**

**Sample Part Number**
M4 x 10MM PH - PN - INT - SEMS - MS - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>G Washer Outside Diameter</th>
<th>W Washer Thickness</th>
<th>Drive Size</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.5 x 0.45</td>
<td>2.1 / 1.9</td>
<td>7.00 / 6.50</td>
<td>.45 / .30</td>
<td>1</td>
<td>T8</td>
<td>STL</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>2.4 / 2.2</td>
<td>7.35 / 6.85</td>
<td>.45 / .30</td>
<td>1</td>
<td>T10</td>
<td>SS</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.6 / 2.3</td>
<td>7.50 / 7.00</td>
<td>.55 / .40</td>
<td>2</td>
<td>T15</td>
<td>Z - BLK</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>3.1 / 2.8</td>
<td>8.75 / 8.25</td>
<td>.60 / .45</td>
<td>2</td>
<td>T20</td>
<td>Z</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.7 / 3.4</td>
<td>10.50 / 10.00</td>
<td>.65 / .50</td>
<td>2</td>
<td>T25</td>
<td>Z</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>4.6 / 4.3</td>
<td>12.15 / 11.65</td>
<td>.75 / .60</td>
<td>3</td>
<td>T30</td>
<td>Z</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>6.0 / 5.6</td>
<td>15.50 / 14.75</td>
<td>.85 / .70</td>
<td>4</td>
<td>T40</td>
<td>Z</td>
</tr>
</tbody>
</table>

Custom sizes available.

- Same size for POZI Drive
- Contact PENCOM® for more information on ISO, DIN, and JIS standards.
**Machine Screw**

Square Cone Lock Washer SEMS

**Metric**

<table>
<thead>
<tr>
<th>Thread Size</th>
<th>Drive Size</th>
<th>Cross Recess</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3 x 0.5</td>
<td>2.4 / 2.2</td>
<td>1.55 / 0.99</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>2.8 / 2.3</td>
<td>1.55 / 0.99</td>
<td>SS</td>
<td>18-8 Stainless Steel</td>
</tr>
<tr>
<td>M4 x 1</td>
<td>3.1 / 2.8</td>
<td>1.65 / 1.32</td>
<td>Z-BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>M4 x 1.25</td>
<td>3.7 / 3.4</td>
<td>2.59 / 1.65</td>
<td>Z-ZN</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

**Custom sizes available.**

- Same size for POZI Drive
- Contact PENCOM® for more information on ISO, DIN, and JIS standards.

---

**Machine Screw**

External Tooth Lock Washer SEMS

**Metric**

<table>
<thead>
<tr>
<th>Thread Size</th>
<th>Drive Size</th>
<th>Cross Recess</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.5 x 0.45</td>
<td>1.8 / 1.66</td>
<td>0.45 / 0.30</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>2.0 / 1.86</td>
<td>0.45 / 0.30</td>
<td>SS</td>
<td>18-8 Stainless Steel</td>
</tr>
<tr>
<td>M3 x 0.6</td>
<td>2.4 / 2.26</td>
<td>0.55 / 0.40</td>
<td>Z-BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>2.6 / 2.46</td>
<td>0.60 / 0.45</td>
<td>Z-ZN</td>
<td>Zinc Clear</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.3 / 3.12</td>
<td>0.65 / 0.50</td>
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<tr>
<td>M6 x 1</td>
<td>3.9 / 3.6</td>
<td>0.75 / 0.60</td>
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<tr>
<td>M8 x 1.25</td>
<td>5.0 / 4.7</td>
<td>0.85 / 0.70</td>
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</table>

**Custom sizes available.**

- Same size for POZI Drive
- Contact PENCOM® for more information on ISO, DIN, and JIS standards.
### Machine Screw

**Split Ring Lock Washer SEMS**

#### Metric

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>M4 x 10MM PH - PN - SPLIT - SEMS - MS - STL - Z</th>
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</table>

**Thread** | **H Height** | **G Washer Outside Diameter** | **W Washer Thickness MIN** | **Drive Size** | **L Length** |
<table>
<thead>
<tr>
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<th></th>
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</thead>
<tbody>
<tr>
<td>M2.5 x 0.45</td>
<td>2.1 / 1.9</td>
<td>5.73 / 5.49</td>
<td>1.40</td>
<td>1</td>
<td>T8</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>2.4 / 2.2</td>
<td>6.19 / 5.95</td>
<td>1.40</td>
<td>1</td>
<td>T10</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.6 / 2.3</td>
<td>7.00 / 6.74</td>
<td>1.57</td>
<td>2</td>
<td>T15</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>3.1 / 2.8</td>
<td>8.34 / 8.08</td>
<td>1.78</td>
<td>2</td>
<td>T20</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.7 / 3.4</td>
<td>11.30 / 11.02</td>
<td>2.79</td>
<td>2</td>
<td>T25</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>4.6 / 4.3</td>
<td>14.29 / 13.96</td>
<td>3.30</td>
<td>3</td>
<td>T30</td>
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#### Material Description

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
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<tbody>
<tr>
<td>STL</td>
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</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
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</table>

#### Finish Description

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<th>Description</th>
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</thead>
<tbody>
<tr>
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<td>Zinc Black</td>
</tr>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

* Other finishes available.

### Machine Screw

**Button Head**

#### Metric

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>M4 x 10MM TX - BUT - MS - STL - Z</th>
</tr>
</thead>
</table>

**Thread** | **H Height** | **D Diameter** | **Drive Size** | **L Length** |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>M3 x 0.5</td>
<td>1.65 / 1.43</td>
<td>5.70 / 5.40</td>
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<td>T8</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>2.20 / 1.95</td>
<td>7.60 / 7.24</td>
<td>3.0</td>
<td>T15</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>2.75 / 2.50</td>
<td>9.50 / 9.14</td>
<td>4.0</td>
<td>T25</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>3.30 / 3.00</td>
<td>10.50 / 10.07</td>
<td>5.0</td>
<td>T27</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>4.40 / 4.05</td>
<td>14.00 / 13.57</td>
<td>6.0</td>
<td>T40</td>
</tr>
<tr>
<td>M10 x 1.50</td>
<td>5.50 / 5.20</td>
<td>17.50 / 17.07</td>
<td>8.0</td>
<td>T46</td>
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<tr>
<td>M12 x 1.75</td>
<td>6.60 / 6.24</td>
<td>21.00 / 20.48</td>
<td>10.0</td>
<td>T55</td>
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#### Material Description

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

#### Finish Description

<table>
<thead>
<tr>
<th>Finish</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

* Other finishes available.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

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* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
**Machine Screw**

**Oval Head**

Metric

Sample Part Number

M4 x 10MM PH - OVAL - MS - STL - Z

ASME B 18.6.7M**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Raised Head Height MAX</th>
<th>D Head Diameter</th>
<th>S Head Side Height MAX / REF</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
</tr>
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<tbody>
<tr>
<td>M2 x 0.4</td>
<td>0.5</td>
<td>3.8 / 3.5</td>
<td>1.2</td>
<td>0</td>
<td>T6</td>
<td>3</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>0.6</td>
<td>4.7 / 4.4</td>
<td>1.5</td>
<td>1</td>
<td>T8</td>
<td>4</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>0.7</td>
<td>5.5 / 5.2</td>
<td>1.7</td>
<td>1</td>
<td>T10</td>
<td>5</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>0.8</td>
<td>7.3 / 6.9</td>
<td>2.3</td>
<td>2</td>
<td>T15</td>
<td>6</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>1.0</td>
<td>8.4 / 8.0</td>
<td>2.7</td>
<td>2</td>
<td>T20</td>
<td>8</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>1.2</td>
<td>9.3 / 8.9</td>
<td>2.7</td>
<td>2</td>
<td>T25</td>
<td>10</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>1.4</td>
<td>11.3 / 10.9</td>
<td>3.3</td>
<td>3</td>
<td>T30</td>
<td>12</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>2.0</td>
<td>15.8 / 15.4</td>
<td>4.6</td>
<td>4</td>
<td>T40</td>
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<tr>
<td>M10 x 1.5</td>
<td>2.3</td>
<td>18.3 / 17.8</td>
<td>5.0</td>
<td>4</td>
<td>T50</td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL Low Carbon Steel</td>
</tr>
<tr>
<td>SS 18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>Z - BLK Zinc Black</td>
</tr>
<tr>
<td>Z Zinc Clear</td>
</tr>
</tbody>
</table>

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

Custom sizes available.

* Same size for POZI Drive

** ISO 7047 has slightly tighter tolerances.

Contact PENCOM® for more information on ISO, DIN, and JIS standards.

** ISO 2010 has slightly tighter tolerances.

Contact PENCOM® for more information on ISO, DIN, and JIS standards.

---

**Machine Screw**

**Slotted Oval Head**

Metric

Sample Part Number

M4 x 10MM SL - OVAL - MS - STL - Z

ASME B 18.6.7M**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Raised Head Height MAX</th>
<th>D Head Diameter</th>
<th>S Head Side Height MAX / REF</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
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<td>0</td>
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<td>0.6</td>
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<td>T8</td>
<td>4</td>
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<tr>
<td>M3 x 0.5</td>
<td>0.7</td>
<td>5.5 / 5.2</td>
<td>1.7</td>
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<td>T10</td>
<td>5</td>
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<tr>
<td>M3.5 x 0.6</td>
<td>0.8</td>
<td>7.3 / 6.9</td>
<td>2.3</td>
<td>2</td>
<td>T15</td>
<td>6</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>1.0</td>
<td>8.4 / 8.0</td>
<td>2.7</td>
<td>2</td>
<td>T20</td>
<td>8</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>1.2</td>
<td>9.3 / 8.9</td>
<td>2.7</td>
<td>2</td>
<td>T25</td>
<td>10</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>1.4</td>
<td>11.3 / 10.9</td>
<td>3.3</td>
<td>3</td>
<td>T30</td>
<td>12</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>2.0</td>
<td>15.8 / 15.4</td>
<td>4.6</td>
<td>4</td>
<td>T40</td>
<td>14</td>
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<tr>
<td>M10 x 1.5</td>
<td>2.3</td>
<td>18.3 / 17.8</td>
<td>5.0</td>
<td>4</td>
<td>T50</td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL Low Carbon Steel</td>
</tr>
<tr>
<td>SS 18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>Z - BLK Zinc Black</td>
</tr>
<tr>
<td>Z Zinc Clear</td>
</tr>
</tbody>
</table>

**Finish Description**

- SL - PH Slotted - Cross Recess
- S - PH Slotted - POZI Recess

Other finishes available.

Custom sizes available.

** iso 7047 has slightly tighter tolerances.

Contact PENCOM® for more information on ISO, DIN, and JIS standards.
Machine Screws, Thread Cutting
Metric - Type F

Pan Head
- Machine Screw, Pan Head 114
- Machine Screw, Slotted Pan Head 114

Flat Head
- Machine Screw, 90 Deg Flat Head 115

Hex Head
- Machine Screw, Indented Hex Head 115
- Machine Screw, Indented Hex Washer Head 116
- Special Use Heads
  - Machine Screw, Oval Head 116

Machine Screws, Thread Cutting
Metric - Type F
**Machine Screw, Thread Cutting**
Pan Head
Metric - Type F

Sample Part Number
M4 x 10MM  PH - PN - F - STL - Z
ASME B18.6.5M**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
<td>1.6 / 1.4</td>
<td>4.0 / 3.7</td>
<td>0 T6</td>
<td>STL - Low Carbon Steel</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>2.1 / 1.9</td>
<td>5.0 / 4.7</td>
<td>1 T8</td>
<td>SS - 18-8 Stainless Steel</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>2.4 / 2.2</td>
<td>5.6 / 5.3</td>
<td>1 T10</td>
<td>Z - BLK - Zinc Black</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.6 / 2.3</td>
<td>7.0 / 6.6</td>
<td>2 T15</td>
<td>Z - Zinc Clear</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>3.1 / 2.8</td>
<td>8.0 / 7.6</td>
<td>2 T20</td>
<td></td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.7 / 3.4</td>
<td>9.5 / 9.1</td>
<td>2 T20</td>
<td></td>
</tr>
<tr>
<td>M6 x 1</td>
<td>4.6 / 4.3</td>
<td>12.0 / 11.5</td>
<td>3 T30</td>
<td></td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>6.0 / 5.6</td>
<td>16.0 / 15.5</td>
<td>4 T40</td>
<td></td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>7.5 / 7.1</td>
<td>20.0 / 19.4</td>
<td>4 T50</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>4.0 / 3.2</td>
<td>STL - Low Carbon Steel</td>
</tr>
<tr>
<td>5</td>
<td>5.0 / 4.2</td>
<td>SS - 18-8 Stainless Steel</td>
</tr>
<tr>
<td>6</td>
<td>6.0 / 5.2</td>
<td>Z - BLK - Zinc Black</td>
</tr>
<tr>
<td>8</td>
<td>8.0 / 7.2</td>
<td>Z - Zinc Clear</td>
</tr>
<tr>
<td>10</td>
<td>10.0 / 9.2</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>12.0 / 11.2</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>16.0 / 15.2</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>20.0 / 19.2</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>25.0 / 23.8</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>30.0 / 28.8</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>35.0 / 33.8</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>40.0 / 38.8</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>45.0 / 43.5</td>
<td></td>
</tr>
</tbody>
</table>

* Same size for POZI Drive
** ISO 7049 has slightly tighter tolerances.
Contact PENCOM® for more information on ISO, DIN, and JIS standards.

** Other finishes available.

---

**Machine Screw, Thread Cutting**
Slotted Pan Head
Metric - Type F

Sample Part Number
M4 x 10MM  SL - PN - F - STL - Z
ASME B18.6.5M**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
<td>1.3 / 1.1</td>
<td>4.0 / 3.7</td>
<td>0 T6</td>
<td>STL - Low Carbon Steel</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>1.5 / 1.3</td>
<td>5.0 / 4.7</td>
<td>1 T8</td>
<td>SS - 18-8 Stainless Steel</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>1.8 / 1.6</td>
<td>5.6 / 5.3</td>
<td>1 T10</td>
<td>Z - BLK - Zinc Black</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.1 / 1.9</td>
<td>7.0 / 6.6</td>
<td>2 T15</td>
<td>Z - Zinc Clear</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>2.4 / 2.2</td>
<td>8.0 / 7.6</td>
<td>2 T20</td>
<td></td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.0 / 2.7</td>
<td>9.5 / 9.1</td>
<td>2 T20</td>
<td></td>
</tr>
<tr>
<td>M6 x 1</td>
<td>3.6 / 3.3</td>
<td>12.0 / 11.5</td>
<td>3 T30</td>
<td></td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>4.8 / 4.5</td>
<td>16.0 / 15.5</td>
<td>4 T40</td>
<td></td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>6.0 / 5.7</td>
<td>20.0 / 19.4</td>
<td>4 T50</td>
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</table>

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>4.0 / 3.2</td>
<td>STL - Low Carbon Steel</td>
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<tr>
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<td>5.0 / 4.2</td>
<td>SS - 18-8 Stainless Steel</td>
</tr>
<tr>
<td>6</td>
<td>6.0 / 5.2</td>
<td>Z - BLK - Zinc Black</td>
</tr>
<tr>
<td>8</td>
<td>8.0 / 7.2</td>
<td>Z - Zinc Clear</td>
</tr>
<tr>
<td>10</td>
<td>10.0 / 9.2</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>12.0 / 11.2</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>16.0 / 15.2</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>20.0 / 19.2</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>25.0 / 23.8</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>30.0 / 28.8</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>35.0 / 33.8</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>40.0 / 38.8</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>45.0 / 43.5</td>
<td></td>
</tr>
</tbody>
</table>

* ISO 1481 has slightly tighter tolerances.
Contact PENCOM® for more information on ISO, DIN, and JIS standards.
### Machine Screw, Thread Cutting

**90 Deg Flat Head**

**Metric - Type F**

*Sample Part Number*

M4 x 10MM PH - FL - F - STL - Z

**Height**

<table>
<thead>
<tr>
<th>Thread Diameter</th>
<th>Drive Size</th>
<th>Height MAX / REF</th>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
<td>1.2</td>
<td>3.8 / 3.5</td>
<td>STL - Low Carbon Steel</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>1.5</td>
<td>4.7 / 4.4</td>
<td>SS - 18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>1.7</td>
<td>5.5 / 5.2</td>
<td>Z - BLK - Zinc Black</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.3</td>
<td>7.3 / 6.9</td>
<td>Z - Zinc Clear</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>2.7</td>
<td>8.4 / 8.0</td>
<td></td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>2.7</td>
<td>9.3 / 8.9</td>
<td></td>
</tr>
<tr>
<td>M6 x 1</td>
<td>3.3</td>
<td>11.3 / 10.9</td>
<td></td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>4.6</td>
<td>15.8 / 15.4</td>
<td></td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>5.0</td>
<td>18.3 / 17.8</td>
<td></td>
</tr>
</tbody>
</table>

*Custom sizes available.*

**Other finishes available.**

- PH - Cross Recess
- SL - Slotted
- TX - 6 - Lobe
- PZ - Pozzi

*Same size for POZI Drive*

**90 Deg Flat Head**

**Metric - Type F**

*Sample Part Number*

M4 x 10MM PH - INHX - F - STL - Z

**Width Across Flats**

<table>
<thead>
<tr>
<th>Thread Diameter</th>
<th>Drive Size</th>
<th>Width Across Flats</th>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
<td>1.6 / 1.3</td>
<td>3.20 / 3.02</td>
<td>STL - Low Carbon Steel</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>2.1 / 1.8</td>
<td>4.00 / 3.82</td>
<td>SS - 18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>2.3 / 2.0</td>
<td>5.00 / 4.82</td>
<td>Z - BLK - Zinc Black</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.6 / 2.3</td>
<td>5.50 / 5.32</td>
<td>Z - Zinc Clear</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>3.0 / 2.6</td>
<td>7.00 / 6.78</td>
<td></td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.8 / 3.3</td>
<td>8.00 / 7.78</td>
<td></td>
</tr>
<tr>
<td>M6 x 1</td>
<td>4.7 / 4.1</td>
<td>10.00 / 9.78</td>
<td></td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>6.0 / 5.2</td>
<td>13.00 / 12.73</td>
<td></td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>7.5 / 6.5</td>
<td>16.00 / 15.73</td>
<td></td>
</tr>
</tbody>
</table>

*Custom sizes available.*

**Other finishes available.**

- PH - Cross Recess
- SL - Slotted
- USL - Unslotted

**ISO 1479 has slightly tighter tolerances.**

Contact PENCOM® for more information on ISO, DIN, and JIS standards.

---

**Machine Screw, Thread Cutting**

**Indent Hex Head**

**Metric - Type F**

*Sample Part Number*

M4 x 10MM PH - INHX - F - STL - Z

**Width Across Flats**

<table>
<thead>
<tr>
<th>Thread Diameter</th>
<th>Drive Size</th>
<th>Width Across Flats</th>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
<td>1.6 / 1.3</td>
<td>3.20 / 3.02</td>
<td>STL - Low Carbon Steel</td>
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<tr>
<td>M2.5 x 0.45</td>
<td>2.1 / 1.8</td>
<td>4.00 / 3.82</td>
<td>SS - 18 - 8 Stainless Steel</td>
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<tr>
<td>M3 x 0.5</td>
<td>2.3 / 2.0</td>
<td>5.00 / 4.82</td>
<td>Z - BLK - Zinc Black</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.6 / 2.3</td>
<td>5.50 / 5.32</td>
<td>Z - Zinc Clear</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>3.0 / 2.6</td>
<td>7.00 / 6.78</td>
<td></td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.8 / 3.3</td>
<td>8.00 / 7.78</td>
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</tr>
<tr>
<td>M6 x 1</td>
<td>4.7 / 4.1</td>
<td>10.00 / 9.78</td>
<td></td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>6.0 / 5.2</td>
<td>13.00 / 12.73</td>
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<tr>
<td>M10 x 1.5</td>
<td>7.5 / 6.5</td>
<td>16.00 / 15.73</td>
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</tr>
</tbody>
</table>

*Custom sizes available.*

**Other finishes available.**

- PH - Cross Recess
- SL - Slotted
- USL - Unslotted

**ISO 1479 has slightly tighter tolerances.**

Contact PENCOM® for more information on ISO, DIN, and JIS standards.
**Machine Screw, Thread Cutting**

**Indented Hex Washer Head**

**Metric - Type F**

Sample Part Number

M4 x 10MM   PH - INHX - WA - F - STL - Z

<table>
<thead>
<tr>
<th>Length</th>
<th>Material Description</th>
<th>L</th>
</tr>
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<tbody>
<tr>
<td>4</td>
<td>STL Low Carbon Steel</td>
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<td>SS 18 - 8 Stainless Steel</td>
<td>5.0 / 4.2</td>
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<tr>
<td>6</td>
<td>Z - BLK Zinc Black</td>
<td>6.0 / 5.2</td>
</tr>
<tr>
<td>8</td>
<td>Z Zinc Clear</td>
<td>8.0 / 7.2</td>
</tr>
<tr>
<td>10</td>
<td>Z - BLK Zinc Black</td>
<td>10.0 / 9.2</td>
</tr>
<tr>
<td>12</td>
<td>Z Zinc Clear</td>
<td>12.0 / 11.2</td>
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<td>Z Zinc Clear</td>
<td>16.0 / 15.2</td>
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<td>20</td>
<td>Z Zinc Clear</td>
<td>20.0 / 19.2</td>
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<td>Z Zinc Clear</td>
<td>25.0 / 23.8</td>
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<td>30.0 / 28.8</td>
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<tr>
<td>45</td>
<td>Z Zinc Clear</td>
<td>45.0 / 43.5</td>
</tr>
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</table>

Other finishes available.

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>Cross Recess</td>
</tr>
<tr>
<td>SL</td>
<td>Slotted</td>
</tr>
<tr>
<td>USL</td>
<td>Unslotted</td>
</tr>
</tbody>
</table>

Custom sizes available.

---

**Machine Screw, Thread Cutting**

**Oval Head**

**Metric - Type F**

Sample Part Number

M4 x 10MM   PH - OVAL - F - STL - Z

<table>
<thead>
<tr>
<th>Length</th>
<th>Material Description</th>
<th>L</th>
<th>ASME B18.6.5M**</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>STL Low Carbon Steel</td>
<td>4.0 / 3.2</td>
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</tr>
<tr>
<td>5</td>
<td>SS 18 - 8 Stainless Steel</td>
<td>5.0 / 4.2</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Z - BLK Zinc Black</td>
<td>6.0 / 5.2</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Z Zinc Clear</td>
<td>8.0 / 7.2</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Z - BLK Zinc Black</td>
<td>10.0 / 9.2</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Z Zinc Clear</td>
<td>12.0 / 11.2</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Z Zinc Clear</td>
<td>16.0 / 15.2</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Z Zinc Clear</td>
<td>20.0 / 19.2</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Z Zinc Clear</td>
<td>25.0 / 23.8</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Z Zinc Clear</td>
<td>30.0 / 28.8</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Z Zinc Clear</td>
<td>35.0 / 33.8</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>Z Zinc Clear</td>
<td>40.0 / 38.8</td>
<td></td>
</tr>
<tr>
<td>45</td>
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<td>45.0 / 43.5</td>
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Other finishes available.

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
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<tbody>
<tr>
<td>PH</td>
<td>Cross Recess</td>
</tr>
<tr>
<td>SL</td>
<td>Slotted</td>
</tr>
<tr>
<td>USL</td>
<td>Unslotted</td>
</tr>
<tr>
<td>PZ</td>
<td>Pozi</td>
</tr>
</tbody>
</table>

Custom sizes available.

---

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

** Contact PENCOM® for more information on POZI Drive

** ISO 7051 / 1483 has slightly tighter tolerances.

Contact PENCOM® for more information on ISO, DIN, and JIS standards.
### Machine Screws, Thread Cutting

**Metric - Type 23**

<table>
<thead>
<tr>
<th>Head Type</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pan Head</td>
<td></td>
</tr>
<tr>
<td>Machine Screw, Pan Head</td>
<td>118</td>
</tr>
<tr>
<td>Machine Screw, Slotted Pan Head</td>
<td>118</td>
</tr>
<tr>
<td>Flat Head</td>
<td></td>
</tr>
<tr>
<td>Machine Screw, 90 Deg Flat Head</td>
<td>119</td>
</tr>
<tr>
<td>Hex Head</td>
<td></td>
</tr>
<tr>
<td>Machine Screw, Indented Hex Head</td>
<td>119</td>
</tr>
<tr>
<td>Machine Screw, Indented Hex Washer Head</td>
<td>120</td>
</tr>
<tr>
<td>Special Use Heads</td>
<td></td>
</tr>
<tr>
<td>Machine Screw, Oval Head</td>
<td>120</td>
</tr>
</tbody>
</table>
## Machine Screw, Thread Cutting

### Pan Head

Metric - Type 23

Sample Part Number

M4 x 10MM  PH - PN - 23 - STL - Z

ASME B18.6.5M**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
<td>1.6 / 1.4</td>
<td>4.0 / 3.7</td>
<td>0 T6</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>2.1 / 1.9</td>
<td>5.0 / 4.7</td>
<td>1 T8</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>2.4 / 2.2</td>
<td>5.6 / 5.3</td>
<td>1 T10</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.6 / 2.3</td>
<td>7.0 / 6.6</td>
<td>2 T15</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>3.1 / 2.8</td>
<td>8.0 / 7.6</td>
<td>2 T20</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.7 / 3.4</td>
<td>9.5 / 9.1</td>
<td>2 T20</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>4.6 / 4.3</td>
<td>12.0 / 11.5</td>
<td>3 T30</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>6.0 / 5.6</td>
<td>16.0 / 15.5</td>
<td>4 T40</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>7.5 / 7.1</td>
<td>20.0 / 19.4</td>
<td>4 T50</td>
</tr>
</tbody>
</table>

** Custom sizes available.**

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
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</thead>
<tbody>
<tr>
<td>4</td>
<td>4.0 / 3.2</td>
</tr>
<tr>
<td>5</td>
<td>5.0 / 4.2</td>
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<td>6</td>
<td>6.0 / 5.2</td>
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<td>8</td>
<td>8.0 / 7.2</td>
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<td>10.0 / 9.2</td>
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<td>12</td>
<td>12.0 / 11.2</td>
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<td>16.0 / 15.2</td>
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<td>20.0 / 19.2</td>
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<tr>
<td>25</td>
<td>25.0 / 23.8</td>
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<tr>
<td>30</td>
<td>30.0 / 28.8</td>
</tr>
<tr>
<td>35</td>
<td>35.0 / 33.8</td>
</tr>
<tr>
<td>40</td>
<td>40.0 / 38.8</td>
</tr>
<tr>
<td>45</td>
<td>45.0 / 43.5</td>
</tr>
</tbody>
</table>

** Material Description **

- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

** Drive Description **

- PH Cross Recess
- TX 6 - Lobe
- PZ Pozi

** Finish Description **

- Z - BLK Zinc Black
- Z Zinc Clear

* Same size for POZI Drive

** ISO 7049 has slightly tighter tolerances.

Contact PENCOM® for more information on ISO, DIN, and JIS standards.

---

## Machine Screw, Thread Cutting

### Slotted Pan Head

Metric - Type 23

Sample Part Number

M4 x 10MM  SL - PN - 23 - STL - Z

ASME B18.6.5M**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
<td>1.3 / 1.1</td>
<td>4.0 / 3.7</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>1.5 / 1.3</td>
<td>5.0 / 4.7</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>1.8 / 1.6</td>
<td>5.6 / 5.3</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.1 / 1.9</td>
<td>7.0 / 6.6</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>2.4 / 2.2</td>
<td>8.0 / 7.6</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.0 / 2.7</td>
<td>9.5 / 9.1</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>3.6 / 3.3</td>
<td>12.0 / 11.5</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>4.8 / 4.5</td>
<td>16.0 / 15.5</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>6.0 / 5.7</td>
<td>20.0 / 19.4</td>
</tr>
</tbody>
</table>

** Custom sizes available.**

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>4.0 / 3.2</td>
</tr>
<tr>
<td>5</td>
<td>5.0 / 4.2</td>
</tr>
<tr>
<td>6</td>
<td>6.0 / 5.2</td>
</tr>
<tr>
<td>8</td>
<td>8.0 / 7.2</td>
</tr>
<tr>
<td>10</td>
<td>10.0 / 9.2</td>
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<tr>
<td>12</td>
<td>12.0 / 11.2</td>
</tr>
<tr>
<td>16</td>
<td>16.0 / 15.2</td>
</tr>
<tr>
<td>20</td>
<td>20.0 / 19.2</td>
</tr>
<tr>
<td>25</td>
<td>25.0 / 23.8</td>
</tr>
<tr>
<td>30</td>
<td>30.0 / 28.8</td>
</tr>
<tr>
<td>35</td>
<td>35.0 / 33.8</td>
</tr>
<tr>
<td>40</td>
<td>40.0 / 38.8</td>
</tr>
<tr>
<td>45</td>
<td>45.0 / 43.5</td>
</tr>
</tbody>
</table>

** Material Description **

- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

** Drive Description **

- SL Slotted

** Finish Description **

- Z - BLK Zinc Black
- Z Zinc Clear

* ISO 1481 has slightly tighter tolerances.

Contact PENCOM® for more information on ISO, DIN, and JIS standards.

** ISO 1481 has slightly tighter tolerances.

Contact PENCOM® for more information on ISO, DIN, and JIS standards.
### Machine Screw, Thread Cutting

#### 90 Deg Flat Head

**Metric - Type 23**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height MAX / REF</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
<td>1.2</td>
<td>3.8 / 3.5</td>
<td>0</td>
<td>4.0 / 3.2</td>
<td></td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>1.5</td>
<td>4.7 / 4.4</td>
<td>1</td>
<td>5.0 / 4.2</td>
<td></td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>1.7</td>
<td>5.5 / 5.2</td>
<td>1</td>
<td>6.0 / 5.2</td>
<td></td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.3</td>
<td>7.3 / 6.9</td>
<td>2</td>
<td>7.8 / 6.9</td>
<td></td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>2.7</td>
<td>8.4 / 8.0</td>
<td>2</td>
<td>8.8 / 8.0</td>
<td></td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>2.7</td>
<td>9.3 / 8.9</td>
<td>2</td>
<td>9.8 / 8.9</td>
<td></td>
</tr>
<tr>
<td>M6 x 1</td>
<td>3.3</td>
<td>11.3 / 10.9</td>
<td>3</td>
<td>10.8 / 10.9</td>
<td></td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>4.6</td>
<td>15.8 / 15.4</td>
<td>4</td>
<td>11.8 / 11.4</td>
<td></td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>5.0</td>
<td>18.3 / 17.8</td>
<td>4</td>
<td>13.0 / 12.0</td>
<td></td>
</tr>
</tbody>
</table>

**Material Description**

- STL Low Carbon Steel
- SS 18-8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

*Same size for POZI Drive

**ISO 7050 / 1482 has slightly tighter tolerances.

Contact PENCOM® for more information on ISO, DIN, and JIS standards.

### Other finishes available.

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>Cross Recess</td>
</tr>
<tr>
<td>SL</td>
<td>Slotted</td>
</tr>
<tr>
<td>TX</td>
<td>6-Lobe</td>
</tr>
<tr>
<td>PZ</td>
<td>Pozi</td>
</tr>
</tbody>
</table>

**ASME B18.6.5M**

Custom sizes available.

---

### Machine Screw, Thread Cutting

####Indented Hex Head

**Metric - Type 23**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>WAF Width Across Flats</th>
<th>Drive Size Cross Recess</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
<td>1.6 / 1.3</td>
<td>3.20 / 3.02</td>
<td>0</td>
<td>4.0 / 3.2</td>
<td></td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>2.1 / 1.8</td>
<td>4.00 / 3.82</td>
<td>1</td>
<td>5.0 / 4.2</td>
<td></td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>2.3 / 2.0</td>
<td>5.00 / 4.82</td>
<td>1</td>
<td>6.0 / 5.2</td>
<td></td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.6 / 2.3</td>
<td>5.50 / 5.32</td>
<td>2</td>
<td>7.8 / 7.5</td>
<td></td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>3.0 / 2.6</td>
<td>7.00 / 6.78</td>
<td>2</td>
<td>8.8 / 8.5</td>
<td></td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.8 / 3.3</td>
<td>8.00 / 7.78</td>
<td>2</td>
<td>9.8 / 9.5</td>
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</tr>
<tr>
<td>M6 x 1</td>
<td>4.7 / 4.1</td>
<td>10.00 / 9.78</td>
<td>3</td>
<td>10.8 / 10.5</td>
<td></td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>6.0 / 5.2</td>
<td>13.00 / 12.73</td>
<td>4</td>
<td>11.8 / 11.4</td>
<td></td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>7.5 / 6.5</td>
<td>16.00 / 15.73</td>
<td>4</td>
<td>13.0 / 12.0</td>
<td></td>
</tr>
</tbody>
</table>

**Material Description**

- STL Low Carbon Steel
- SS 18-8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

*ISO 1479 has slightly tighter tolerances.

Contact PENCOM® for more information on ISO, DIN, and JIS standards.

**ASME B18.6.5M**

Custom sizes available.

---

**Custom sizes available.**
# Machine Screw, Thread Cutting
**Indented Hex Washer Head**

### Metric - Type 23

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>M4 x 10MM</th>
<th>PH - INHX - WA - 23 - STL - Z</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thread</strong></td>
<td><strong>H Height MAX</strong></td>
<td><strong>G Washer Outside Diameter</strong></td>
</tr>
<tr>
<td>M2 x 0.4</td>
<td>2.2</td>
<td>4.5 / 4.1</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>2.7</td>
<td>5.4 / 5.0</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>3.2</td>
<td>6.4 / 5.9</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>3.8</td>
<td>7.5 / 6.9</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>4.3</td>
<td>8.5 / 7.8</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>5.4</td>
<td>10.6 / 9.8</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>6.7</td>
<td>12.8 / 11.8</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>8.6</td>
<td>16.8 / 15.5</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>10.7</td>
<td>21.0 / 19.3</td>
</tr>
</tbody>
</table>

**Material Description**
- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

**Finish Description**
- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

Custom sizes available.

---

# Machine Screw, Thread Cutting
**Oval Head**

### Metric - Type 23

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>M4 x 10MM</th>
<th>PH - OVAL - 23 - STL - Z</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thread</strong></td>
<td><strong>H Head Height MAX</strong></td>
<td><strong>D Head Diameter</strong></td>
</tr>
<tr>
<td>M2 x 0.4</td>
<td>0.5</td>
<td>3.8 / 3.5</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>0.6</td>
<td>4.7 / 4.4</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>0.7</td>
<td>5.5 / 5.2</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>0.8</td>
<td>7.3 / 6.9</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>1.0</td>
<td>8.4 / 8.0</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>1.2</td>
<td>9.3 / 8.9</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>1.4</td>
<td>11.3 / 10.9</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>2.0</td>
<td>15.8 / 15.4</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>2.3</td>
<td>18.3 / 17.8</td>
</tr>
</tbody>
</table>

**Material Description**
- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

**Finish Description**
- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

Custom sizes available.

---

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

** Same size for POZI Drive

** ISO 7051 / 1483 has slightly tighter tolerances. Contact PENCOM® for more information on ISO, DIN, and JIS standards.
# Machine Screws, Thread Cutting

## Metric - Type 1

<table>
<thead>
<tr>
<th>Head Type</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pan Head</td>
<td>122</td>
</tr>
<tr>
<td>Machine Screw, Pan Head</td>
<td>122</td>
</tr>
<tr>
<td>Machine Screw, Slotted Pan Head</td>
<td>122</td>
</tr>
<tr>
<td>Flat Head</td>
<td>123</td>
</tr>
<tr>
<td>Machine Screw, 90 Deg Flat Head</td>
<td>123</td>
</tr>
<tr>
<td>Hex Head</td>
<td>123</td>
</tr>
<tr>
<td>Machine Screw, Indented Hex Head</td>
<td>123</td>
</tr>
<tr>
<td>Machine Screw, Indented Hex Washer Head</td>
<td>124</td>
</tr>
<tr>
<td>Special Use Heads</td>
<td>124</td>
</tr>
<tr>
<td>Machine Screw, Oval Head</td>
<td>124</td>
</tr>
</tbody>
</table>
### Machine Screw, Thread Cutting

#### Pan Head
**Metric - Type 1**

**Sample Part Number**

M4 x 10MM  PH - PN - 1 - STL - Z

**Thread Length** Drive  Material  Finish
ASME B18.6.5M**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
<td>1.6 / 1.4</td>
<td>4.0 / 3.7</td>
<td>6</td>
<td>T6</td>
<td></td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>2.1 / 1.9</td>
<td>5.0 / 4.7</td>
<td>1</td>
<td>T8</td>
<td></td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>2.4 / 2.2</td>
<td>5.6 / 5.3</td>
<td>1</td>
<td>T10</td>
<td></td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.6 / 2.3</td>
<td>7.0 / 6.6</td>
<td>2</td>
<td>T15</td>
<td></td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>3.1 / 2.8</td>
<td>8.0 / 7.6</td>
<td>2</td>
<td>T20</td>
<td></td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.7 / 3.4</td>
<td>9.5 / 9.1</td>
<td>2</td>
<td>T20</td>
<td></td>
</tr>
<tr>
<td>M6 x 1</td>
<td>4.6 / 4.3</td>
<td>12.0 / 11.5</td>
<td>3</td>
<td>T30</td>
<td></td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>6.0 / 5.6</td>
<td>16.0 / 15.5</td>
<td>4</td>
<td>T40</td>
<td></td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>7.5 / 7.1</td>
<td>20.0 / 19.4</td>
<td>4</td>
<td>T50</td>
<td></td>
</tr>
</tbody>
</table>

*Same size for POZI Drive
**ISO 7049 has slightly tighter tolerances.
Contact PENCOM® for more information on ISO, DIN, and JIS standards.

### Machine Screw, Thread Cutting

#### Slotted Pan Head
**Metric - Type 1**

**Sample Part Number**

M4 x 10MM  SL - PN - 1 - STL - Z

**Thread Length** Drive  Material  Finish
ASME B18.6.5M**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
<td>1.3 / 1.1</td>
<td>4.0 / 3.7</td>
<td>6</td>
<td>T6</td>
<td></td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>1.5 / 1.3</td>
<td>5.0 / 4.7</td>
<td>1</td>
<td>T8</td>
<td></td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>1.8 / 1.6</td>
<td>5.6 / 5.3</td>
<td>1</td>
<td>T10</td>
<td></td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.1 / 1.9</td>
<td>7.0 / 6.6</td>
<td>2</td>
<td>T15</td>
<td></td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>2.4 / 2.2</td>
<td>8.0 / 7.6</td>
<td>2</td>
<td>T20</td>
<td></td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.0 / 2.7</td>
<td>9.5 / 9.1</td>
<td>2</td>
<td>T20</td>
<td></td>
</tr>
<tr>
<td>M6 x 1</td>
<td>3.6 / 3.3</td>
<td>12.0 / 11.5</td>
<td>3</td>
<td>T30</td>
<td></td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>4.8 / 4.5</td>
<td>16.0 / 15.5</td>
<td>4</td>
<td>T40</td>
<td></td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>6.0 / 5.7</td>
<td>20.0 / 19.4</td>
<td>4</td>
<td>T50</td>
<td></td>
</tr>
</tbody>
</table>

**ISO 1481 has slightly tighter tolerances.
Contact PENCOM® for more information on ISO, DIN, and JIS standards.
### Machine Screw, Thread Cutting

**90 Deg Flat Head**

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>M4 x 10MM PH - FL - 1 - STL - Z</th>
<th>ASME B18.6.5M**</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thread</strong></td>
<td><strong>H Height MAX / REF</strong></td>
<td><strong>D Head Diameter</strong></td>
</tr>
<tr>
<td>M2 x 0.4</td>
<td>1.2</td>
<td>3.8 / 3.5</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>1.5</td>
<td>4.7 / 4.4</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>1.7</td>
<td>5.5 / 5.2</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.3</td>
<td>7.3 / 6.9</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>2.7</td>
<td>8.4 / 8.0</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.3</td>
<td>11.3 / 10.9</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>4.6</td>
<td>15.8 / 15.4</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>5.0</td>
<td>18.3 / 17.8</td>
</tr>
</tbody>
</table>

Other finishes available.

- **Material Description**
  - STL Low Carbon Steel
  - SS 18 - 8 Stainless Steel

**Drive Description**
- PH Cross Recess
- TX 6 - Lobe
- SL Slotted
- PZ Pozidrive

**Finish Description**
- Z - BLK Zinc Black
- Z Zinc Clear
- **ISO 1479 has slightly tighter tolerances. Contact PENCOM for more information on ISO, DIN, and JIS standards.**

---

### Machine Screw, Thread Cutting

**Indented Hex Head**

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>M4 x 10MM PH - INHX - 1 - STL - Z</th>
<th>ASME B18.6.5M**</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thread</strong></td>
<td><strong>H Height</strong></td>
<td><strong>WAF Width Across Flats</strong></td>
</tr>
<tr>
<td>M2 x 0.4</td>
<td>1.6 / 1.3</td>
<td>3.20 / 3.02</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>2.1 / 1.8</td>
<td>4.00 / 3.82</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>2.3 / 2.0</td>
<td>5.00 / 4.82</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.6 / 2.3</td>
<td>5.50 / 5.32</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>3.0 / 2.6</td>
<td>7.00 / 6.78</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.8 / 3.3</td>
<td>8.00 / 7.78</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>4.7 / 4.1</td>
<td>10.00 / 9.78</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>6.0 / 5.2</td>
<td>13.00 / 12.73</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>7.5 / 6.5</td>
<td>16.00 / 15.73</td>
</tr>
</tbody>
</table>

Other finishes available.

- **Material Description**
  - STL Low Carbon Steel
  - SS 18 - 8 Stainless Steel

**Drive Description**
- PH Cross Recess
- SL Slotted
- TX 6 - Lobe
- PZ Pozidrive

**Finish Description**
- Z - BLK Zinc Black
- **ISO 1479 has slightly tighter tolerances. Contact PENCOM for more information on ISO, DIN, and JIS standards.**
Machine Screw, Thread Cutting
Indented Hex Washer Head
Metric - Type 1

Sample Part Number
M4 x 10MM PH - INHX - WA - 1 - STL - Z
Thread  Drive  Series  Material  Finish

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height MAX</th>
<th>G Washer Outside Diameter</th>
<th>WAF Width Across Flats</th>
<th>W Washer Thickness</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
<td>2.2</td>
<td>4.5 / 4.1</td>
<td>3.00 / 2.84</td>
<td>0.9 / 0.3</td>
<td>0</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>2.7</td>
<td>5.4 / 5.0</td>
<td>3.20 / 3.04</td>
<td>1.1 / 0.3</td>
<td>1</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>3.2</td>
<td>6.4 / 5.9</td>
<td>4.00 / 3.84</td>
<td>1.3 / 0.4</td>
<td>1</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>3.8</td>
<td>7.5 / 6.9</td>
<td>5.00 / 4.82</td>
<td>1.4 / 0.5</td>
<td>2</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>4.3</td>
<td>8.5 / 7.8</td>
<td>5.50 / 5.32</td>
<td>1.5 / 0.6</td>
<td>2</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>5.4</td>
<td>10.6 / 9.8</td>
<td>7.00 / 6.78</td>
<td>1.9 / 0.7</td>
<td>2</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>6.7</td>
<td>12.8 / 11.8</td>
<td>8.00 / 7.78</td>
<td>2.5 / 1</td>
<td>3</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>8.6</td>
<td>16.8 / 15.5</td>
<td>10.00 / 9.78</td>
<td>3 / 1.2</td>
<td>4</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>10.7</td>
<td>21.0 / 19.3</td>
<td>13.00 / 12.72</td>
<td>3.7 / 1.4</td>
<td>4</td>
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</tbody>
</table>

Length  | L |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>4.0 / 3.2</td>
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<td>5.0 / 4.2</td>
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<td>6.0 / 5.2</td>
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<td>10.0 / 9.2</td>
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<td>16.0 / 15.2</td>
</tr>
<tr>
<td>20</td>
<td>20.0 / 19.2</td>
</tr>
<tr>
<td>25</td>
<td>25.0 / 23.8</td>
</tr>
<tr>
<td>30</td>
<td>30.0 / 28.8</td>
</tr>
<tr>
<td>35</td>
<td>35.0 / 33.8</td>
</tr>
<tr>
<td>40</td>
<td>40.0 / 38.8</td>
</tr>
<tr>
<td>45</td>
<td>45.0 / 43.5</td>
</tr>
</tbody>
</table>

Material Description
- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel
- Z - BLK Zinc Black
- Z Zinc Clear

Finish Description
- PH Cross Recess
- SL Slotted
- USL Unslotted

Other finishes available.

Contact PENCOM for more information on ISO, DIN, and JIS standards.

Custom sizes available.

Machine Screw, Thread Cutting
Oval Head
Metric - Type 1

Sample Part Number
M4 x 10MM PH - OVAL - 1 - STL - Z
ASME B18.6.5M**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Head Height MAX</th>
<th>D Head Diameter</th>
<th>G Head Side Height MAX / REF</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
<td>0.5</td>
<td>3.8 / 3.5</td>
<td>1.2</td>
<td>0</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>0.6</td>
<td>4.7 / 4.4</td>
<td>1.5</td>
<td>1</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>0.7</td>
<td>5.5 / 5.2</td>
<td>1.7</td>
<td>1</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>0.8</td>
<td>7.3 / 6.9</td>
<td>2.3</td>
<td>2</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>1.0</td>
<td>8.4 / 8.0</td>
<td>2.7</td>
<td>2</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>1.2</td>
<td>9.3 / 8.9</td>
<td>2.7</td>
<td>2</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>1.4</td>
<td>11.3 / 10.9</td>
<td>3.3</td>
<td>3</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>2.0</td>
<td>15.8 / 15.4</td>
<td>4.6</td>
<td>4</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>2.3</td>
<td>18.3 / 17.8</td>
<td>5.0</td>
<td>4</td>
</tr>
</tbody>
</table>

Length  | L |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>4.0 / 3.2</td>
</tr>
<tr>
<td>5</td>
<td>5.0 / 4.2</td>
</tr>
<tr>
<td>6</td>
<td>6.0 / 5.2</td>
</tr>
<tr>
<td>8</td>
<td>8.0 / 7.2</td>
</tr>
<tr>
<td>10</td>
<td>10.0 / 9.2</td>
</tr>
<tr>
<td>12</td>
<td>12.0 / 11.2</td>
</tr>
<tr>
<td>16</td>
<td>16.0 / 15.2</td>
</tr>
<tr>
<td>20</td>
<td>20.0 / 19.2</td>
</tr>
<tr>
<td>25</td>
<td>25.0 / 23.8</td>
</tr>
<tr>
<td>30</td>
<td>30.0 / 28.8</td>
</tr>
<tr>
<td>35</td>
<td>35.0 / 33.8</td>
</tr>
<tr>
<td>40</td>
<td>40.0 / 38.8</td>
</tr>
<tr>
<td>45</td>
<td>45.0 / 43.5</td>
</tr>
</tbody>
</table>

Material Description
- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel
- Z - BLK Zinc Black
- Z Zinc Clear

Finish Description
- PH Cross Recess
- SL Slotted
- USL Unslotted

Other finishes available.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

** ASME B18.6.5M has slightly tighter tolerances.

Contact PENCOM for more information on ISO, DIN, and JIS standards.
# Machine Screws, Thread Forming
## Metric - Type TA

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pan Head</td>
<td>Machine Screw, Pan Head</td>
<td>126</td>
</tr>
<tr>
<td></td>
<td>Machine Screw, Slotted Pan Head</td>
<td>126</td>
</tr>
<tr>
<td>Flat Head</td>
<td>Machine Screw, 90 Deg Flat Head</td>
<td>127</td>
</tr>
<tr>
<td>Hex Head</td>
<td>Machine Screw, Indented Hex Head</td>
<td>127</td>
</tr>
<tr>
<td></td>
<td>Machine Screw, Indented Hex Washer Head</td>
<td>128</td>
</tr>
<tr>
<td>Special Use Heads</td>
<td>Machine Screw, Oval Head</td>
<td>128</td>
</tr>
</tbody>
</table>

![Pan Head](image1.png)

![Indented Hex Head](image2.png)

![Slotted Pan Head](image3.png)

![Indented Hex Washer Head](image4.png)

![90 Deg Flat Head](image5.png)

![Oval Head](image6.png)
### Machine Screw, Thread Forming

**Pan Head**

**Metric - Type TA**

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>M4 x 10MM</th>
<th>PH - PN - TA - STL - Z</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thread</strong></td>
<td><strong>Height</strong></td>
<td><strong>Head Diameter</strong></td>
</tr>
<tr>
<td>M2 x 0.4</td>
<td>1.6 / 1.4</td>
<td>4.0 / 3.7</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>2.1 / 1.9</td>
<td>5.0 / 4.7</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>2.4 / 2.2</td>
<td>5.6 / 5.3</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.6 / 2.3</td>
<td>7.0 / 6.6</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>3.1 / 2.8</td>
<td>8.0 / 7.6</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.7 / 3.4</td>
<td>9.5 / 9.1</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>4.6 / 4.3</td>
<td>12.0 / 11.5</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>6.0 / 5.6</td>
<td>16.0 / 15.5</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>7.5 / 7.1</td>
<td>20.0 / 19.4</td>
</tr>
</tbody>
</table>

**Material Description**

- STL Low Carbon Steel
- SS 18-8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

---

### Machine Screw, Thread Forming

**Slotted Pan Head**

**Metric - Type TA**

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>M4 x 10MM</th>
<th>SL - PN - TA - STL - Z</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thread</strong></td>
<td><strong>Height</strong></td>
<td><strong>Head Diameter</strong></td>
</tr>
<tr>
<td>M2 x 0.4</td>
<td>1.3 / 1.1</td>
<td>4.0 / 3.7</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>1.5 / 1.3</td>
<td>5.0 / 4.7</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>1.8 / 1.6</td>
<td>5.6 / 5.3</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.1 / 1.9</td>
<td>7.0 / 6.6</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>2.4 / 2.2</td>
<td>8.0 / 7.6</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.0 / 2.7</td>
<td>9.5 / 9.1</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>3.6 / 3.3</td>
<td>12.0 / 11.5</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>4.8 / 4.5</td>
<td>16.0 / 15.5</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>6.0 / 5.7</td>
<td>20.0 / 19.4</td>
</tr>
</tbody>
</table>

**Material Description**

- STL Low Carbon Steel
- SS 18-8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
## Machine Screw, Thread Forming
### 90 Deg Flat Head

**Metric - Type TA**

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th><strong>M4 x 10MM PH - FL - TA - STL - Z</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Thread</td>
<td><strong>H Height</strong></td>
</tr>
<tr>
<td></td>
<td>MAX</td>
</tr>
<tr>
<td>M3 x 0.4</td>
<td>1.2</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>1.5</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>1.7</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.3</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>2.7</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>2.7</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>3.3</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>4.6</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>5.0</td>
</tr>
</tbody>
</table>

**Length** | **L** | **Material** | **Description**
--- | --- | --- | ---
4 | 4.0 / 3.2 | STL | Low Carbon Steel
5 | 5.0 / 4.2 | SS | 18 - 8 Stainless Steel
6 | 6.0 / 5.2 | Z - BLK | Zinc Black
8 | 8.0 / 7.2 | Z | Zinc Clear
10 | 10.0 / 9.2 | 12 | 12.0 / 11.2
16 | 16.0 / 15.2 | 20 | 20.0 / 19.2
25 | 25.0 / 23.8 | 30 | 30.0 / 28.8
35 | 35.0 / 33.8 | 40 | 40.0 / 38.8
45 | 45.0 / 43.5 | Other finishes available.

* Same size for POZI Drive
* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

---

## Machine Screw, Thread Forming
### Indented Hex Head

**Metric - Type TA**

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th><strong>M4 x 10MM PH - INHX - TA - STL - Z</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Thread</td>
<td><strong>H Height</strong></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>M2 x 0.4</td>
<td>1.6 / 1.3</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>2.1 / 1.8</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>2.3 / 2.0</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.6 / 2.3</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>3.0 / 2.6</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.8 / 3.3</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>4.7 / 4.1</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>6.0 / 5.2</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>7.5 / 6.5</td>
</tr>
</tbody>
</table>

**Length** | **L** | **Material** | **Description**
--- | --- | --- | ---
4 | 4.0 / 3.2 | STL | Low Carbon Steel
5 | 5.0 / 4.2 | SS | 18 - 8 Stainless Steel
6 | 6.0 / 5.2 | Z - BLK | Zinc Black
8 | 8.0 / 7.2 | Z | Zinc Clear
10 | 10.0 / 9.2 | 12 | 12.0 / 11.2
16 | 16.0 / 15.2 | 20 | 20.0 / 19.2
25 | 25.0 / 23.8 | 30 | 30.0 / 28.8
35 | 35.0 / 33.8 | 40 | 40.0 / 38.8
45 | 45.0 / 43.5 | Other finishes available.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
**Machine Screw, Thread Forming**

**Indented Hex Washer Head**

**Metric - Type TA**

Sample Part Number

M4 x 10MM PH - INHX - WA - TA - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height MAX</th>
<th>G Washer Outside Diameter</th>
<th>WAF Width Across Flats</th>
<th>W Washer Thickness</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
<td>2.2</td>
<td>4.5 / 4.1</td>
<td>3.00 / 2.84</td>
<td>0.9 / 0.3</td>
<td>0</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>2.7</td>
<td>5.4 / 5.0</td>
<td>3.20 / 3.04</td>
<td>1.1 / 0.3</td>
<td>1</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>3.2</td>
<td>6.4 / 5.9</td>
<td>4.00 / 3.84</td>
<td>1.3 / 0.4</td>
<td>1</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>3.8</td>
<td>7.5 / 6.9</td>
<td>5.00 / 4.82</td>
<td>1.4 / 0.5</td>
<td>2</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>4.3</td>
<td>8.5 / 7.8</td>
<td>5.50 / 5.32</td>
<td>1.5 / 0.6</td>
<td>2</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>5.4</td>
<td>10.0 / 9.8</td>
<td>7.00 / 6.78</td>
<td>1.9 / 0.7</td>
<td>2</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>6.7</td>
<td>12.8 / 11.8</td>
<td>8.00 / 7.78</td>
<td>2.5 / 1</td>
<td>3</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>8.6</td>
<td>16.8 / 15.5</td>
<td>10.00 / 9.78</td>
<td>3.1 / 1.2</td>
<td>4</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>10.7</td>
<td>21.0 / 19.3</td>
<td>13.00 / 12.72</td>
<td>3.7 / 1.4</td>
<td>4</td>
</tr>
</tbody>
</table>

**Material Description**

- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

**Drive Description**

- PH Cross Recess
- SL Slotted
- USL Unslotted

Custom sizes available.

---

**Machine Screw, Thread Forming**

**Oval Head**

**Metric - Type TA**

Sample Part Number

M4 x 10MM PH - OVAL - TA - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Head Height MAX</th>
<th>D Head Diameter</th>
<th>G Head Side Height MAX / REF</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2 x 0.4</td>
<td>0.5</td>
<td>3.8 / 3.5</td>
<td>1.2</td>
<td>0</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>0.6</td>
<td>4.7 / 4.4</td>
<td>1.5</td>
<td>1</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>0.7</td>
<td>5.5 / 5.2</td>
<td>1.7</td>
<td>1</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>0.8</td>
<td>7.3 / 6.9</td>
<td>2.3</td>
<td>2</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>1.0</td>
<td>8.4 / 8.0</td>
<td>2.7</td>
<td>2</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>1.2</td>
<td>9.3 / 8.9</td>
<td>2.7</td>
<td>2</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>1.4</td>
<td>11.3 / 10.9</td>
<td>3.3</td>
<td>3</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>2.0</td>
<td>15.8 / 15.4</td>
<td>4.6</td>
<td>4</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>2.3</td>
<td>18.3 / 17.8</td>
<td>5.0</td>
<td>4</td>
</tr>
</tbody>
</table>

**Material Description**

- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

**Drive Description**

- PH Cross Recess
- SL Slotted
- USL Unslotted
- PZ Pozi

Other finishes available.

Custom sizes available.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
Socket Screws
Metric Type SOC

Shoulder Screws
- Socket Head Cap Screw 130
- Flat Countersunk Head Cap Screw 130
- Button Head Cap Screw 131

Socket Head Cap Screw
Page 130

Flat Countersunk Head Cap Screw
Page 130

Button Head Cap Screw
Page 131
## Socket Screws
### Socket Head Cap Screw

**Metric**

**Sample Part Number**

M4 x 10MM  **SOC - CAP - SC - ALY - Z**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>J Hexagon Socket Size NOM</th>
<th>K Key Engagement MIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1.6 x 0.35</td>
<td>1.60 / 1.52</td>
<td>3.00 / 2.87</td>
<td>1.5</td>
<td>0.80</td>
</tr>
<tr>
<td>M2 x 0.4</td>
<td>2.00 / 1.91</td>
<td>3.80 / 3.65</td>
<td>1.5</td>
<td>1.00</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>2.50 / 2.40</td>
<td>4.50 / 4.33</td>
<td>2.0</td>
<td>1.25</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>3.00 / 2.89</td>
<td>5.50 / 5.35</td>
<td>2.5</td>
<td>1.50</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>4.00 / 3.88</td>
<td>7.00 / 6.80</td>
<td>3.0</td>
<td>2.00</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>5.00 / 4.86</td>
<td>8.50 / 8.27</td>
<td>4.0</td>
<td>2.50</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>6.00 / 5.85</td>
<td>10.00 / 9.74</td>
<td>5.0</td>
<td>3.00</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>8.00 / 7.83</td>
<td>13.00 / 12.70</td>
<td>6.0</td>
<td>4.00</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>10.00 / 9.81</td>
<td>16.00 / 15.67</td>
<td>8.0</td>
<td>5.00</td>
</tr>
</tbody>
</table>

**Material Description**

- ALY: Alloy Steel
- SS: 18-8 Stainless Steel

**Finish Description**

- BLK - OX: Black Oxide
- Z: Zinc Clear

Other finishes available.

<table>
<thead>
<tr>
<th>Drive Description</th>
<th>SOC</th>
<th>Hex Socket</th>
</tr>
</thead>
</table>

*Contact PENCOM® for more information on ISO, DIN, and JIS standards.*

---

## Socket Screws
### Flat Countersunk Head Cap Screw

**Metric**

**Sample Part Number**

M4 x 10MM  **SOC - FL - CAP - SC - ALY - Z**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>J Hexagon Socket Size NOM</th>
<th>K Key Engagement MIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3 x 0.5</td>
<td>1.86</td>
<td>6.72 / 5.35</td>
<td>2.0</td>
<td>1.1</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>2.48</td>
<td>8.96 / 7.80</td>
<td>2.5</td>
<td>1.5</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>3.10</td>
<td>11.20 / 9.75</td>
<td>3.0</td>
<td>1.9</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>3.72</td>
<td>13.44 / 11.70</td>
<td>4.0</td>
<td>2.2</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>4.96</td>
<td>17.92 / 15.60</td>
<td>5.0</td>
<td>3.0</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>6.20</td>
<td>22.40 / 19.50</td>
<td>6.0</td>
<td>3.6</td>
</tr>
<tr>
<td>M12 x 1.75</td>
<td>7.44</td>
<td>26.88 / 23.40</td>
<td>8.0</td>
<td>4.3</td>
</tr>
<tr>
<td>M16 x 2</td>
<td>8.80</td>
<td>33.60 / 28.96</td>
<td>10.0</td>
<td>4.8</td>
</tr>
</tbody>
</table>

**Material Description**

- ALY: Alloy Steel
- SS: 18-8 Stainless Steel

**Finish Description**

- BLK - OX: Black Oxide
- Z: Zinc Clear

Other finishes available.

<table>
<thead>
<tr>
<th>Drive Description</th>
<th>SOC</th>
<th>Hex Socket</th>
</tr>
</thead>
</table>

*Contact PENCOM® for more information on ISO, DIN, and JIS standards.*
Socket Screws
Button Head Cap Screw
Metric

Sample Part Number
M4 x 10MM  SOC - BUT - CAP - SC - ALY - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>J Hexagon Socket Size NOM</th>
<th>K Key Engagement MIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3 x 0.5</td>
<td>1.65 / 1.43</td>
<td>5.70 / 5.40</td>
<td>2.0</td>
<td>1.04</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>2.20 / 1.95</td>
<td>7.60 / 7.24</td>
<td>2.5</td>
<td>1.30</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>2.75 / 2.50</td>
<td>9.50 / 9.14</td>
<td>3.0</td>
<td>1.56</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>3.30 / 3.00</td>
<td>10.50 / 10.07</td>
<td>4.0</td>
<td>2.08</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>4.40 / 4.05</td>
<td>14.00 / 13.57</td>
<td>5.0</td>
<td>2.60</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>5.50 / 5.20</td>
<td>17.50 / 17.07</td>
<td>6.0</td>
<td>3.12</td>
</tr>
<tr>
<td>M12 x 1.75</td>
<td>6.60 / 6.24</td>
<td>21.00 / 20.48</td>
<td>8.0</td>
<td>4.16</td>
</tr>
<tr>
<td>M16 x 2</td>
<td>8.80 / 8.44</td>
<td>28.00 / 27.48</td>
<td>10.0</td>
<td>5.20</td>
</tr>
</tbody>
</table>

Length L

<table>
<thead>
<tr>
<th>Length</th>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>ALY  ALloy Steel</td>
</tr>
<tr>
<td>5</td>
<td>SS      18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>6</td>
<td>BLK - OX Black Oxide</td>
</tr>
<tr>
<td>8</td>
<td>Z       Zinc Clear</td>
</tr>
</tbody>
</table>

Drive Description

Other finishes available.

Sample Part Number
M4 x 10MM  SOC - BUT - CAP - SC - ALY - Z

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
Precision Shoulder Screws

Precision Cross Recess Head Shoulder Screw  134
Precision Socket Head Shoulder Screw  135
Precision Slotted Head Shoulder Screw  136
## Shoulder Screw
### Precision Shoulder Screw Cross Recess Head
### Metric

**Sample Part Number**

3.18 x 3.96 - M3 x 4 - PH - CAP - PSHLD - SC - ALY - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3 x 0.5</td>
<td>ALY</td>
<td>Alloy Steel</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Finish Description**

<table>
<thead>
<tr>
<th>Finish</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

**Drive Description**

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>Cross Recess</td>
</tr>
</tbody>
</table>

**Shoulder Screw**

**Precision Shoulder Screw Cross Recess Head**

**Metric**

<table>
<thead>
<tr>
<th>Shoulder Length</th>
<th>M3 x 0.5</th>
<th>M3.5 x 0.6</th>
<th>M4 x 0.7</th>
<th>M5 x 0.8</th>
<th>M6 x 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.18</td>
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<td>4.76</td>
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<td>6.35</td>
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<td>7.94</td>
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<td>9.52</td>
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<td>11.11</td>
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<td>15.87</td>
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<td>17.46</td>
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<tr>
<td>19.05</td>
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<tr>
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<td>25.40</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Custom sizes available.

* Contact PENCOM<sup>®</sup> for more information on ISO, DIN, and JIS standards.
# Shoulder Screw

**Precision Shoulder Screw Socket Head**

**Metric**

| Sample Part Number | 3.18 x 3.96 - M3 x 4 - PH - SOC - CAP - PSHLD - SC - ALY - Z |

<table>
<thead>
<tr>
<th>Shoulder Length</th>
<th>Basic Shoulder Diameter</th>
<th>Thread Drive Length</th>
<th>Series</th>
<th>Material</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ALY</td>
<td>Z</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>F Thread Length</th>
<th>E Basic Shoulder Diameter</th>
<th>J Drive Hex</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3 x 0.5</td>
<td>3.18</td>
<td>6</td>
<td>4</td>
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<td>13</td>
<td>9.4</td>
<td>9.51</td>
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</tr>
</tbody>
</table>

**Thread Material Finish**

- **ALY**: Alloy Steel
- **SS**: 18-8 Stainless Steel

**Finish Description**

- **Z - BLK**: Zinc Black
- **Z**: Zinc Clear

Other finishes available.

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC</td>
<td>Hex Socket</td>
</tr>
</tbody>
</table>

**Thread Length**

- M3 x 0.5
- M3.5 x 0.6
- M4 x 0.7
- M5 x 0.8
- M6 x 1

<table>
<thead>
<tr>
<th>Shoulder Length</th>
<th>M3 x 0.5</th>
<th>M3.5 x 0.6</th>
<th>M4 x 0.7</th>
<th>M5 x 0.8</th>
<th>M6 x 1</th>
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<tr>
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<tr>
<td>25.40</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Custom sizes available.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
### Shoulder Screw
**Precision Slotted Head Shoulder Screw**
**Metric**

#### Sample Part Number
3.18 x 4.75 - M3 x 4 - PH - SL - CAP - PSHLD - SC - ALY - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>Material Description</th>
<th>Finish Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3 x 0.5</td>
<td>ALY Alloy Steel</td>
<td>BLK - OXI Black Oxide</td>
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<tr>
<td>M3.5 x 0.6</td>
<td>SS 18 - 8 Stainless Steel</td>
<td>Z Zinc Clear</td>
</tr>
<tr>
<td>M4 x 0.7</td>
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<td></td>
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<tr>
<td>M5 x 0.8</td>
<td></td>
<td></td>
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<tr>
<td>M6 x 1</td>
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<tr>
<td>M6 x 1.3</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Material Finish</th>
<th>drive Description</th>
</tr>
</thead>
<tbody>
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<td>SLK - OXI</td>
<td>Black Oxide</td>
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<tr>
<td>Z</td>
<td>Zinc Clear</td>
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</table>

**Other finishes available.**

Custom sizes available.

#### Dimension Table

<table>
<thead>
<tr>
<th>Thread Length</th>
<th>M3 x 0.5</th>
<th>M3.5 x 0.6</th>
<th>M4 x 0.7</th>
<th>M5 x 0.8</th>
<th>M6 x 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>L Shoulder Length</td>
<td>3.18</td>
<td>4.76</td>
<td>6.35</td>
<td>9.52</td>
<td>9.52</td>
</tr>
<tr>
<td></td>
<td>11.11</td>
<td>12.70</td>
<td>14.29</td>
<td>16.18</td>
<td>16.18</td>
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<td>17.46</td>
<td>19.05</td>
<td>22.22</td>
<td>25.40</td>
<td>25.40</td>
</tr>
</tbody>
</table>

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
Sheet Metal Screws, Thread Forming
Metric - Type B

Pan Head
Sheet Metal Screw, Pan Head 138
Sheet Metal Screw, Slotted Pan Head 138

Flat Head
Sheet Metal Screw, 90 Deg Flat Head 139

Hex Head
Sheet Metal Screw, Indented Hex Head 139
Sheet Metal Screw, Indented Hex Washer Head 140

Special Use Heads
Sheet Metal Screw, Oval Head 140
### Sheet Metal Screw, Thread Forming

**Pan Head**  
Metric - Type B

**Sample Part Number**  
M2.2 x 4.5MM  PH - PN - B - STL - Z  
Thread Length Drive Material Finish

ISO 7049

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.2 x 0.8</td>
<td>1.6 / 1.4</td>
<td>4 / 3.7</td>
<td>T8</td>
<td>4.5</td>
<td>5.3 / 3.7</td>
</tr>
<tr>
<td>M2.9 x 1</td>
<td>2.4 / 2.15</td>
<td>5.8 / 5.3</td>
<td>T10</td>
<td>6.5</td>
<td>7.3 / 5.7</td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
<td>2.6 / 2.35</td>
<td>7 / 6.4</td>
<td>T15</td>
<td>9.5</td>
<td>10.3 / 8.7</td>
</tr>
<tr>
<td>M4.2 x 1.4</td>
<td>3.1 / 2.8</td>
<td>8 / 7.64</td>
<td>T20</td>
<td>13</td>
<td>13.8 / 12.2</td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>3.7 / 3.4</td>
<td>9.5 / 9.14</td>
<td>T25</td>
<td>16</td>
<td>16.8 / 15.2</td>
</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>4 / 3.7</td>
<td>11 / 10.57</td>
<td>T25</td>
<td>19</td>
<td>19.8 / 18.2</td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
<td>4.6 / 4.3</td>
<td>12 / 11.57</td>
<td>T30</td>
<td>22</td>
<td>22.8 / 21.2</td>
</tr>
<tr>
<td>M8 x 2.1</td>
<td>6 / 5.6</td>
<td>16 / 15.57</td>
<td>T40</td>
<td>25</td>
<td>25.8 / 24.2</td>
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<tr>
<td>M9.5 x 2.1</td>
<td>7.5 / 7.1</td>
<td>20 / 19.48</td>
<td>T50</td>
<td>32</td>
<td>33.3 / 30.7</td>
</tr>
</tbody>
</table>

Custom sizes available.

- Same size for POZI Drive
- Contact PENCOM® for more information on ISO, DIN, and JIS standards.

### Sheet Metal Screw, Thread Forming

**Slotted Pan Head**  
Metric - Type B

**Sample Part Number**  
M2.2 x 4.5MM  SL - PN - B - STL - Z  
Thread Length Drive Material Finish

ISO 1481

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.2 x 0.8</td>
<td>1.3 / 1.1</td>
<td>4 / 3.7</td>
<td>4.5</td>
<td>5.3 / 3.7</td>
</tr>
<tr>
<td>M2.9 x 1</td>
<td>1.8 / 1.6</td>
<td>5.6 / 5.3</td>
<td>6.5</td>
<td>7.3 / 5.7</td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
<td>2.1 / 1.9</td>
<td>7 / 6.6</td>
<td>9.5</td>
<td>10.3 / 8.7</td>
</tr>
<tr>
<td>M4.2 x 1.4</td>
<td>2.4 / 2.2</td>
<td>8 / 7.6</td>
<td>13</td>
<td>13.8 / 12.2</td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>3 / 2.7</td>
<td>9.5 / 9.1</td>
<td>16</td>
<td>16.8 / 15.2</td>
</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>3.2 / 2.9</td>
<td>11 / 10.6</td>
<td>19</td>
<td>19.8 / 18.2</td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
<td>3.6 / 3.3</td>
<td>12 / 11.6</td>
<td>22</td>
<td>22.8 / 21.2</td>
</tr>
<tr>
<td>M8 x 2.1</td>
<td>4.8 / 4.5</td>
<td>16 / 15.6</td>
<td>25</td>
<td>25.8 / 24.2</td>
</tr>
<tr>
<td>M9.5 x 2.1</td>
<td>6 / 5.7</td>
<td>20 / 19.5</td>
<td>32</td>
<td>33.3 / 30.7</td>
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</table>

Custom sizes available.

- Contact PENCOM® for more information on ISO, DIN, and JIS standards.
### Sheet Metal Screw, Thread Forming

#### 90 Deg Flat Head

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height REF</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.2 x 0.8</td>
<td>1.1</td>
<td>3.8 / 3.5</td>
<td>0</td>
<td>4.5</td>
<td>5.5 / 3.7</td>
</tr>
<tr>
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<td>1.7</td>
<td>5.5 / 5.2</td>
<td>1 T6</td>
<td>6.5</td>
<td>7.3 / 5.7</td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
<td>2.35</td>
<td>7.3 / 6.9</td>
<td>2 T10</td>
<td>9.5</td>
<td>10.3 / 8.7</td>
</tr>
<tr>
<td>M4.2 x 1.4</td>
<td>2.6</td>
<td>8.4 / 8</td>
<td>2 T20</td>
<td>13</td>
<td>13.8 / 12.2</td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>2.8</td>
<td>9.3 / 8.9</td>
<td>2 T25</td>
<td>16</td>
<td>16.8 / 15.2</td>
</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>3</td>
<td>10.3 / 9.9</td>
<td>3 T25</td>
<td>19</td>
<td>19.8 / 18.2</td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
<td>3.15</td>
<td>11.3 / 10.9</td>
<td>3 T30</td>
<td>22</td>
<td>22.8 / 21.2</td>
</tr>
<tr>
<td>M8 x 2.1</td>
<td>4.65</td>
<td>15.8 / 15.4</td>
<td>4 T40</td>
<td>25</td>
<td>25.8 / 24.2</td>
</tr>
<tr>
<td>M9.5 x 2.1</td>
<td>5.25</td>
<td>18.3 / 17.8</td>
<td>4 T50</td>
<td>32</td>
<td>33.3 / 30.7</td>
</tr>
</tbody>
</table>

*Contact PENCOM for more information on ISO, DIN, and JIS standards.*

**Thread H Height**

**Width Across Flats**

**Drive Size 6 - Lobe**

**Material Description**

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18-8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Finish Description**

| Z - BLK | Zinc Black |
| Z | Zinc Clear |

Other finishes available.

### Sheet Metal Screw, Thread Forming

#### Indented Hex Head

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>WAF Width Across Flats</th>
<th>Drive Size Cross Recess</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.2 x 0.8</td>
<td>1.6 / 1.3</td>
<td>3.2 / 3.02</td>
<td>0</td>
<td>4.5</td>
<td>5.5 / 3.7</td>
</tr>
<tr>
<td>M2.9 x 1</td>
<td>2.3 / 2</td>
<td>5 / 4.82</td>
<td>1</td>
<td>6.5</td>
<td>7.3 / 5.7</td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
<td>2.6 / 2.3</td>
<td>5.5 / 5.32</td>
<td>2 T6</td>
<td>9.5</td>
<td>10.3 / 8.7</td>
</tr>
<tr>
<td>M4.2 x 1.4</td>
<td>3 / 2.6</td>
<td>7 / 6.78</td>
<td>2 T10</td>
<td>13</td>
<td>13.8 / 12.2</td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>3.8 / 3.3</td>
<td>8.7 / 7.78</td>
<td>2 T15</td>
<td>16</td>
<td>16.8 / 15.2</td>
</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>4.1 / 3.6</td>
<td>8 / 7.78</td>
<td>3 T20</td>
<td>19</td>
<td>19.8 / 18.2</td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
<td>4.7 / 4.1</td>
<td>10 / 9.78</td>
<td>3 T25</td>
<td>22</td>
<td>22.8 / 21.2</td>
</tr>
<tr>
<td>M8 x 2.1</td>
<td>6 / 5.2</td>
<td>13 / 12.73</td>
<td>4 T30</td>
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<td>25.8 / 24.2</td>
</tr>
<tr>
<td>M9.5 x 2.1</td>
<td>7.5 / 6.5</td>
<td>16 / 15.73</td>
<td>4 T40</td>
<td>32</td>
<td>33.3 / 30.7</td>
</tr>
<tr>
<td>M10 x 2.1</td>
<td>9 / 7.5</td>
<td>18.5 / 17.28</td>
<td>5 T50</td>
<td>38</td>
<td>39.3 / 36.7</td>
</tr>
</tbody>
</table>

*Contact PENCOM for more information on ISO, DIN, and JIS standards.*

**Material Description**

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>SS</td>
<td>18-8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Finish Description**

| Z - BLK | Zinc Black |
| Z | Zinc Clear |

Other finishes available.

**Drive Description**

| PH | Cross Recess |
| PZ | Pozi |
| TX | 6 - Lobe |

**Drive Description**

| SL | Slotted |
| USL | Unslotted |
### Sheet Metal Screw, Thread Forming

#### Indented Hex Washer Head

**Metric - Type B**

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>M2.9 x 6.5MM PH - INHX - WA - B - STL - Z</th>
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</thead>
<tbody>
<tr>
<td>DIN 6928</td>
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</tbody>
</table>

**Material Description**

- STL Low Carbon Steel
- SS 18-8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

**Dimensions**

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.5</td>
<td>7.3 / 5.7</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>9.5</td>
<td>10.3 / 8.7</td>
<td>SS</td>
<td>18-8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Other finishes available.**

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

---

### Sheet Metal Screw, Thread Forming

#### Oval Head

**Metric - Type B**

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>M2.2 x 6.5MM PH - OVAL - B - STL - Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO 7051</td>
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</tr>
</tbody>
</table>

**Material Description**

- STL Low Carbon Steel
- SS 18-8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

**Dimensions**

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5</td>
<td>5.5 / 3.7</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>6.5</td>
<td>7.3 / 5.7</td>
<td>SS</td>
<td>18-8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Other finishes available.**

* Same size for POZI Drive
* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

---

#### Long Formulas

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height MAX</th>
<th>G Washer Outside Diameter</th>
<th>W Washer Thickness MIN</th>
<th>WAF Width Across Flats</th>
<th>Drive Size</th>
<th>Cross Recess</th>
<th>6 - Lobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.9 x 1</td>
<td>2.8</td>
<td>6.3 / 5.8</td>
<td>0.4</td>
<td>4 / 3.82</td>
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<td></td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
<td>3.4</td>
<td>8.3 / 7.6</td>
<td>0.6</td>
<td>5.5 / 5.32</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3.9 x 1.3</td>
<td>3.4</td>
<td>8.3 / 7.6</td>
<td>0.6</td>
<td>5.5 / 5.32</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M4.2 x 1.4</td>
<td>4.1</td>
<td>8.8 / 8.1</td>
<td>0.8</td>
<td>7 / 6.78</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>4.3</td>
<td>10.5 / 9.8</td>
<td>0.9</td>
<td>8 / 7.78</td>
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<td></td>
</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>5.4</td>
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<td>1</td>
<td>8 / 7.78</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
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<td>13.5 / 12.2</td>
<td>1</td>
<td>10 / 9.78</td>
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<td>18 / 16.7</td>
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<td>13 / 12.73</td>
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**Dimensions**

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
<th>Material</th>
<th>Description</th>
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<tbody>
<tr>
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<td>7.3 / 5.7</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>9.5</td>
<td>10.3 / 8.7</td>
<td>SS</td>
<td>18-8 Stainless Steel</td>
</tr>
</tbody>
</table>

**Other finishes available.**

* Custom sizes available.
Sheet Metal Screws, Thread Forming
Metric - Type AB

Pan Head
Sheet Metal Screw, Pan Head 142
Sheet Metal Screw, Slotted Pan Head 142

Flat Head
Sheet Metal Screw, 90 Deg Flat Head 143

Hex Head
Sheet Metal Screw, Indented Hex Head 143
Sheet Metal Screw, Indented Hex Washer Head 144

Special Use Heads
Sheet Metal Screw, Oval Head 144
Sheet Metal Screw, Thread Forming
Pan Head
Metric - Type AB

Sample Part Number
M2.2 x 4.5MM PH - PN - AB - STL - Z
Thread Length Drive Series Material Finish
ISO 7049

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
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<td>0 T6</td>
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<td>5.3 / 3.7</td>
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<td>2.4 / 2.15</td>
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<td>7.3 / 5.7</td>
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<td>10.3 / 8.7</td>
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<td>8 / 7.64</td>
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<td>13.8 / 12.2</td>
</tr>
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<td>3.7 / 3.4</td>
<td>9.5 / 9.14</td>
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<td>16.8 / 15.2</td>
</tr>
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<td>11 / 10.57</td>
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<td>12 / 11.57</td>
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<td>22.8 / 21.2</td>
</tr>
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<td>16 / 15.57</td>
<td>4 T40</td>
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<td>25.8 / 24.2</td>
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<tr>
<td>M9.5 x 2.1</td>
<td>7.5 / 7.1</td>
<td>20 / 19.48</td>
<td>4 T50</td>
<td>32</td>
<td>33.3 / 30.7</td>
</tr>
</tbody>
</table>

Custom sizes available.

* Same size for POZI Drive
* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

Sheet Metal Screw, Thread Forming
Slotted Pan Head
Metric - Type AB

Sample Part Number
M2.2 x 4.5MM SL - PN - AB - STL - Z
Thread Length Drive Series Material Finish
ISO 1481

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.2 x 0.8</td>
<td>1.3 / 1.1</td>
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<td>4.5</td>
<td>5.3 / 3.7</td>
</tr>
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<td>5.6 / 5.3</td>
<td>6.5</td>
<td>7.3 / 5.7</td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
<td>2.1 / 1.9</td>
<td>7 / 6.6</td>
<td>9.5</td>
<td>10.3 / 8.7</td>
</tr>
<tr>
<td>M4.2 x 1.4</td>
<td>2.4 / 2.2</td>
<td>8 / 7.6</td>
<td>13</td>
<td>13.8 / 12.2</td>
</tr>
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<td>M4.8 x 1.6</td>
<td>3 / 2.7</td>
<td>9.5 / 9.1</td>
<td>16</td>
<td>16.8 / 15.2</td>
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<td>3.2 / 2.9</td>
<td>11 / 10.6</td>
<td>19</td>
<td>19.8 / 18.2</td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
<td>3.6 / 3.3</td>
<td>12 / 11.6</td>
<td>22</td>
<td>22.8 / 21.2</td>
</tr>
<tr>
<td>M8 x 2.1</td>
<td>4.8 / 4.5</td>
<td>16 / 15.6</td>
<td>25</td>
<td>25.8 / 24.2</td>
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<td>M9.5 x 2.1</td>
<td>6 / 5.7</td>
<td>20 / 19.5</td>
<td>32</td>
<td>33.3 / 30.7</td>
</tr>
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</table>

Custom sizes available.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
Sheet Metal Screw, Thread Forming
90 Deg Flat Head
Metric - Type AB

Sample Part Number
M2.2 x 4.5MM PH - FL - AB - STL - Z
Thread Length Drive Series Material Finish
ISO 1482

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.2 x 0.8</td>
<td>1.1</td>
<td>3.8 / 3.5</td>
<td>0</td>
<td>4.5</td>
<td>5.5 / 3.7</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>M2.9 x 1</td>
<td>1.7</td>
<td>5.5 / 5.2</td>
<td>1</td>
<td>6.5</td>
<td>7.3 / 5.7</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
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<td>7.3 / 6.9</td>
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<td>10.3 / 8.7</td>
<td>Z - BLK</td>
<td>Zinc Black</td>
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<tr>
<td>M4.2 x 1.4</td>
<td>2.6</td>
<td>8.4 / 8</td>
<td>2</td>
<td>13</td>
<td>13.8 / 12.2</td>
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<td>Zinc Clear</td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>2.8</td>
<td>9.3 / 8.9</td>
<td>2</td>
<td>16</td>
<td>16.8 / 15.2</td>
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</tr>
<tr>
<td>M5.5 x 1.8</td>
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<td></td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
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<td>3</td>
<td>22</td>
<td>22.8 / 21.2</td>
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</tr>
<tr>
<td>M8 x 2.1</td>
<td>4.65</td>
<td>15.8 / 15.4</td>
<td>4</td>
<td>25</td>
<td>25.6 / 24.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M9.5 x 2.1</td>
<td>5.25</td>
<td>18.3 / 17.8</td>
<td>4</td>
<td>32</td>
<td>33.3 / 30.7</td>
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</tr>
</tbody>
</table>

Custom sizes available.

Sheet Metal Screw, Thread Forming
Indented Hex Head
Metric - Type AB

Sample Part Number
M2.2 x 4.5MM PH - INHX - AB - STL - Z
Thread Length Drive Series Material Finish
ISO 1479

<table>
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<th>Thread</th>
<th>H Height</th>
<th>WAF Width Across Flats</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
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<td>3.2 / 3.02</td>
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<td>5.5 / 3.7</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>M2.9 x 1</td>
<td>2.3 / 2</td>
<td>5 / 4.82</td>
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<td>6.5</td>
<td>7.3 / 5.7</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
<td>2.6 / 2.3</td>
<td>5.5 / 5.32</td>
<td>2</td>
<td>9.5</td>
<td>10.3 / 8.7</td>
<td>Z - BLK</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>M4.2 x 1.4</td>
<td>3 / 2.6</td>
<td>7 / 6.78</td>
<td>2</td>
<td>13</td>
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<td>Zinc Clear</td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>3.8 / 3.3</td>
<td>8 / 7.78</td>
<td>2</td>
<td>16</td>
<td>16.8 / 15.2</td>
<td></td>
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</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>4.1 / 3.6</td>
<td>8 / 7.78</td>
<td>3</td>
<td>19</td>
<td>19.8 / 18.2</td>
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<tr>
<td>M6.3 x 1.8</td>
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<td>10 / 9.78</td>
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<td>22.8 / 21.2</td>
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<tr>
<td>M8 x 2.1</td>
<td>6 / 5.2</td>
<td>13 / 12.73</td>
<td>4</td>
<td>25</td>
<td>25.6 / 24.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M9.5 x 2.1</td>
<td>7.5 / 6.5</td>
<td>16 / 15.73</td>
<td>4</td>
<td>32</td>
<td>33.3 / 30.7</td>
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<td></td>
</tr>
</tbody>
</table>

Custom sizes available.

* Same size for POZI Drive
* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
**Sheet Metal Screw, Thread Forming**

**Indented Hex Washer Head**
Metric - Type AB

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height MAX</th>
<th>G Washer Outside Diameter</th>
<th>W Washer Thickness MIN</th>
<th>WAF Width Across Flats</th>
<th>Drive Size Cross Recess</th>
</tr>
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<tbody>
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<td>6.3 / 5.8</td>
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<td>4 / 3.82</td>
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<td>8.3 / 7.6</td>
<td>0.6</td>
<td>5.5 / 5.32</td>
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<td>M3.9 x 1.3</td>
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<td>8.3 / 7.6</td>
<td>0.6</td>
<td>5.5 / 5.32</td>
<td>2</td>
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<tr>
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<td>8.8 / 8.1</td>
<td>0.8</td>
<td>7 / 6.78</td>
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</tr>
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<td>10.5 / 9.8</td>
<td>0.9</td>
<td>8 / 7.78</td>
<td>2</td>
</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>5.4</td>
<td>11 / 10</td>
<td>1</td>
<td>8 / 7.78</td>
<td>3</td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
<td>5.9</td>
<td>13.5 / 12.2</td>
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<td>10 / 9.78</td>
<td>3</td>
</tr>
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<td>M8 x 2.1</td>
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<td>18 / 16.7</td>
<td>1.2</td>
<td>13 / 12.73</td>
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<table>
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<td>7.3 / 5.7</td>
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<tr>
<td>9.5</td>
<td>10.3 / 8.7</td>
</tr>
<tr>
<td>13</td>
<td>13.8 / 12.2</td>
</tr>
<tr>
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<td>16.8 / 15.2</td>
</tr>
<tr>
<td>19</td>
<td>19.8 / 18.2</td>
</tr>
<tr>
<td>22</td>
<td>22.8 / 21.2</td>
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<tr>
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<td>25.8 / 24.2</td>
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<td>33.3 / 30.7</td>
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<td>39.3 / 36.7</td>
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<td>45</td>
<td>46.3 / 43.7</td>
</tr>
<tr>
<td>50</td>
<td>51.3 / 48.7</td>
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</tbody>
</table>

**Material Description**

- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z - Zinc Clear

Other finishes available.

Custom sizes available.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

---

**Sheet Metal Screw, Thread Forming**

**Oval Head**
Metric - Type AB

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>S Head Height REF</th>
<th>Drive Size Cross Recess</th>
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</thead>
<tbody>
<tr>
<td>M2.2 x 0.8</td>
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<td>7.3 / 6.9</td>
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<td>T15</td>
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<td>M4.2 x 1.4</td>
<td>2.6</td>
<td>8.4 / 8</td>
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<td>2</td>
<td>T20</td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>2.8</td>
<td>9.3 / 8.9</td>
<td>1.2</td>
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</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>3</td>
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<td>T25</td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
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<td>18.3 / 17.8</td>
<td>2.3</td>
<td>4</td>
<td>T50</td>
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<table>
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<th>L</th>
</tr>
</thead>
<tbody>
<tr>
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<td>5.5 / 3.7</td>
</tr>
<tr>
<td>6.5</td>
<td>7.3 / 5.7</td>
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<td>13.8 / 12.2</td>
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<tr>
<td>16</td>
<td>16.8 / 15.2</td>
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<tr>
<td>19</td>
<td>19.8 / 18.2</td>
</tr>
<tr>
<td>22</td>
<td>22.8 / 21.2</td>
</tr>
<tr>
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<td>25.8 / 24.2</td>
</tr>
<tr>
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<td>33.3 / 30.7</td>
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<td>39.3 / 36.7</td>
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<td>45</td>
<td>46.3 / 43.7</td>
</tr>
<tr>
<td>50</td>
<td>51.3 / 48.7</td>
</tr>
</tbody>
</table>

**Material Description**

- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z - Zinc Clear

Other finishes available.

Custom sizes available.

* Same size for POZI Drive
* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
## Sheet Metal Screws, Thread Cutting
### Metric - Type 25

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Page</th>
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</thead>
<tbody>
<tr>
<td>Pan Head</td>
<td>Sheet Metal Screw, Pan Head</td>
<td>146</td>
</tr>
<tr>
<td></td>
<td>Sheet Metal Screw, Slotted Pan Head</td>
<td>146</td>
</tr>
<tr>
<td>Flat Head</td>
<td>Sheet Metal Screw, 90 Deg Flat Head</td>
<td>147</td>
</tr>
<tr>
<td>Hex Head</td>
<td>Sheet Metal Screw, Indented Hex Washer Head</td>
<td>147</td>
</tr>
</tbody>
</table>

- Pan Head
- Slotted Pan Head
- 90 Deg Flat Head
- Indented Hex Washer Head
Sheet Metal Screw, Thread Cutting
Pan Head
Metric - Type 25

Sample Part Number
M2.2 x 4.5MM PH - PN - 25 - STL - Z
Thread Length Drive Material Finish

ISO 7049

Material Description
STL Low Carbon Steel
SS 18 - 8 Stainless Steel

Finish Description
Z - BLK Zinc Black
Z Zinc Clear

Other finishes available.

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.2 x 0.8</td>
<td>1.6 / 1.4</td>
<td>4 / 3.7</td>
<td>0 T6</td>
<td>4.5</td>
<td>5.3 / 3.7</td>
</tr>
<tr>
<td>M2.9 x 1</td>
<td>2.4 / 2.15</td>
<td>5.8 / 5.3</td>
<td>1 T10</td>
<td>6.5</td>
<td>7.3 / 5.7</td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
<td>2.6 / 2.35</td>
<td>7 / 6.4</td>
<td>2 T15</td>
<td>9.5</td>
<td>10.3 / 8.7</td>
</tr>
<tr>
<td>M4.2 x 1.4</td>
<td>3.1 / 2.8</td>
<td>8 / 7.64</td>
<td>2 T20</td>
<td>13</td>
<td>13.8 / 12.2</td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>3.7 / 3.4</td>
<td>9.5 / 9.14</td>
<td>2 T25</td>
<td>16</td>
<td>16.8 / 15.2</td>
</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>4 / 3.7</td>
<td>11 / 10.57</td>
<td>3 T25</td>
<td>19</td>
<td>19.8 / 18.2</td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
<td>4.6 / 4.3</td>
<td>12 / 11.57</td>
<td>3 T30</td>
<td>22</td>
<td>22.8 / 21.2</td>
</tr>
<tr>
<td>M8 x 2.1</td>
<td>6 / 5.6</td>
<td>16 / 15.57</td>
<td>4 T40</td>
<td>25</td>
<td>25.8 / 24.2</td>
</tr>
<tr>
<td>M9.5 x 2.1</td>
<td>7.5 / 7.1</td>
<td>20 / 19.48</td>
<td>4 T50</td>
<td>28</td>
<td>28.8 / 27.2</td>
</tr>
</tbody>
</table>

Custom sizes available.

Same size for POZI Drive
Contact PENCOM® for more information on ISO, DIN, and JIS standards.
**Sheet Metal Screw, Thread Cutting**

**90 Deg Flat Head**

**Metric - Type 25**

**Sample Part Number**

M2.2 x 4.5MM  PH - FL - 25 - STL - Z

**Thread**  **Length**  **Drive**  **Series**  **Material**  **Finish**

ISO 1482

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Cross Recess</th>
<th>6 - Lobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.2 x 0.8</td>
<td>1.1</td>
<td>3.8 / 3.5</td>
<td>0</td>
<td>T6</td>
<td></td>
</tr>
<tr>
<td>M2.9 x 1</td>
<td>1.7</td>
<td>5.5 / 5.2</td>
<td>1</td>
<td>T10</td>
<td></td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
<td>2.35</td>
<td>7.3 / 6.9</td>
<td>2</td>
<td>T15</td>
<td></td>
</tr>
<tr>
<td>M4.2 x 1.4</td>
<td>2.6</td>
<td>8.4 / 8</td>
<td>2</td>
<td>T20</td>
<td></td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>2.8</td>
<td>9.3 / 8.9</td>
<td>2</td>
<td>T25</td>
<td></td>
</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>3</td>
<td>10.3 / 9.9</td>
<td>3</td>
<td>T25</td>
<td></td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
<td>3.15</td>
<td>11.3 / 10.9</td>
<td>3</td>
<td>T30</td>
<td></td>
</tr>
<tr>
<td>M8 x 2.1</td>
<td>4.65</td>
<td>15.8 / 15.4</td>
<td>4</td>
<td>T40</td>
<td></td>
</tr>
<tr>
<td>M9.5 x 2.1</td>
<td>5.25</td>
<td>18.3 / 17.8</td>
<td>4</td>
<td>T50</td>
<td></td>
</tr>
</tbody>
</table>

*Custom sizes available.*

**Sheet Metal Screw, Thread Cutting**

**Indented Hex Washer Head**

**Metric - Type 25**

**Sample Part Number**

M2.2 x 4.5MM  PH - INHX - WA - 25 - STL - Z

**DIN 6928**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height MAX</th>
<th>G Washer Outside Diameter</th>
<th>W Washer Thickness MIN</th>
<th>WAF Width Across Flats</th>
<th>Drive Size Cross Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.9 x 1</td>
<td>2.8</td>
<td>6.3 / 5.8</td>
<td>0.4</td>
<td>4 / 3.82</td>
<td>0</td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
<td>3.4</td>
<td>8.3 / 7.6</td>
<td>0.6</td>
<td>5.5 / 5.32</td>
<td>1</td>
</tr>
<tr>
<td>M3.9 x 1.3</td>
<td>3.4</td>
<td>8.3 / 7.6</td>
<td>0.6</td>
<td>5.5 / 5.32</td>
<td>2</td>
</tr>
<tr>
<td>M4.2 x 1.4</td>
<td>4.1</td>
<td>8.8 / 8.1</td>
<td>0.8</td>
<td>7 / 6.78</td>
<td>2</td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>4.3</td>
<td>10.5 / 9.8</td>
<td>0.9</td>
<td>8 / 7.78</td>
<td>2</td>
</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>5.4</td>
<td>11 / 10</td>
<td>1</td>
<td>8 / 7.78</td>
<td>3</td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
<td>5.9</td>
<td>13.5 / 12.2</td>
<td>1</td>
<td>10 / 9.78</td>
<td>3</td>
</tr>
<tr>
<td>M8 x 2.1</td>
<td>7</td>
<td>18 / 16.7</td>
<td>1.2</td>
<td>13 / 12.73</td>
<td>4</td>
</tr>
</tbody>
</table>

*Custom sizes available.*

- Same size for POZI Drive
- Contact PENCOM® for more information on ISO, DIN, and JIS standards.

---

**Sample Part Number**

M2.2 x 4.5MM  PH - FL - 25 - STL - Z

**Thread**  **Length**  **Drive**  **Series**  **Material**  **Finish**

<table>
<thead>
<tr>
<th>Length</th>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5</td>
<td>STL Low Carbon Steel</td>
</tr>
<tr>
<td>6.5</td>
<td>SS 18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

Other finishes available.

**Sample Part Number**

M2.2 x 4.5MM  PH - INHX - WA - 25 - STL - Z

**Thread**  **Length**  **Drive**  **Series**  **Material**  **Finish**

<table>
<thead>
<tr>
<th>Length</th>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.5</td>
<td>STL Low Carbon Steel</td>
</tr>
<tr>
<td>9.5</td>
<td>SS 18 - 8 Stainless Steel</td>
</tr>
</tbody>
</table>

Other finishes available.

Contact PENCOM® for more information on ISO, DIN, and JIS standards.
Sheet Metal Screws, Self Drilling
Metric - Type TEK2

Pan Head
  Sheet Metal Screw, Pan Head  150

Flat Head
  Sheet Metal Screw, 90 Deg Flat Head  150

Hex Head
  Sheet Metal Screw, Indented Hex Washer Head  151

Pan Head
  Page 150

90 Deg Flat Head
  Page 150

Indented Hex Washer Head
  Page 151
# Sheet Metal Screw, Self Drilling

## Pan Head

### Metric - Type TEK2

**Sample Part Number**

M2.9 x 9.5MM  PH - PN - TEK2 - STL - Z

**EN ISO 15481**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.9 x 1.1</td>
<td>2.40 / 2.15</td>
<td>5.6 / 5.3</td>
<td>1 T6</td>
<td>9.5</td>
<td>10.25 / 8.75</td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
<td>2.60 / 2.35</td>
<td>7.0 / 6.64</td>
<td>2 T10</td>
<td>13</td>
<td>13.9 / 12.1</td>
</tr>
<tr>
<td>M4.2 x 1.4</td>
<td>3.1 / 2.8</td>
<td>8.0 / 7.64</td>
<td>2 T15</td>
<td>16</td>
<td>16.9 / 15.1</td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>3.7 / 3.4</td>
<td>9.50 / 9.14</td>
<td>2 T20</td>
<td>19</td>
<td>20 / 18</td>
</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>4.0 / 3.7</td>
<td>11.00 / 10.57</td>
<td>3 T25</td>
<td>22</td>
<td>23 / 21</td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
<td>4.6 / 4.3</td>
<td>12.00 / 11.57</td>
<td>3 T30</td>
<td>25</td>
<td>26 / 24</td>
</tr>
</tbody>
</table>

**Material Description**

- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

### Other finishes available.

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>Cross Recess</td>
</tr>
<tr>
<td>PZ</td>
<td>Pozidrive</td>
</tr>
<tr>
<td>TX</td>
<td>6 - Lobe</td>
</tr>
</tbody>
</table>

* Same size for POZI Drive

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

---

# Sheet Metal Screw, Self Drilling

## 90 Deg Flat Head

### Metric - Type TEK2

**Sample Part Number**

M2.9 x 13MM  PH - FL - TEK2 - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height MAX</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.9 x 1.1</td>
<td>1.7</td>
<td>5.5 / 5.2</td>
<td>1 T6</td>
<td>13</td>
<td>13.9 / 12.1</td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
<td>2.35</td>
<td>7.3 / 6.9</td>
<td>2 T10</td>
<td>16</td>
<td>16.9 / 15.1</td>
</tr>
<tr>
<td>M4.2 x 1.4</td>
<td>6.2</td>
<td>8.4 / 8.0</td>
<td>2 T15</td>
<td>19</td>
<td>20 / 18</td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>2.6</td>
<td>9.3 / 8.9</td>
<td>2 T20</td>
<td>22</td>
<td>23 / 21</td>
</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>3</td>
<td>10.3 / 9.9</td>
<td>3 T25</td>
<td>25</td>
<td>26 / 24</td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
<td>3.15</td>
<td>11.3 / 10.9</td>
<td>3 T30</td>
<td>28</td>
<td>29.25 / 30.75</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>38</td>
<td>39.25 / 36.75</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>45</td>
<td>46.25 / 43.75</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>50</td>
<td>51.25 / 48.75</td>
</tr>
</tbody>
</table>

**Material Description**

- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK Zinc Black
- Z Zinc Clear

Other finishes available.

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>Cross Recess</td>
</tr>
<tr>
<td>PZ</td>
<td>Pozidrive</td>
</tr>
<tr>
<td>TX</td>
<td>6 - Lobe</td>
</tr>
</tbody>
</table>

* Same size for POZI Drive

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
**Sheet Metal Screw, Self Drilling**

**Indented Hex Washer Head**

**Metric - Type TEK2**

**Sample Part Number**

M2.9 x 9.5MM  PH - INHX - WA - TEK2 - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>G Washer Outside Diameter</th>
<th>WAF Width Across Flats</th>
<th>W Washer Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.9 x 1.1</td>
<td>2.8 / 2.5</td>
<td>6.3 / 5.8</td>
<td>4.00 / 3.82</td>
<td>0.4</td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
<td>3.4 / 3.0</td>
<td>8.3 / 7.6</td>
<td>5.50 / 5.32</td>
<td>0.6</td>
</tr>
<tr>
<td>M4.2 x 1.4</td>
<td>4.1 / 3.6</td>
<td>8.8 / 8.1</td>
<td>7.00 / 6.78</td>
<td>0.8</td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>4.3 / 3.8</td>
<td>10.5 / 9.8</td>
<td>8.00 / 7.78</td>
<td>0.9</td>
</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>5.4 / 4.8</td>
<td>11 / 10</td>
<td>8.00 / 7.78</td>
<td>1</td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
<td>5.9 / 5.3</td>
<td>13.5 / 12.2</td>
<td>10.00 / 9.78</td>
<td>1</td>
</tr>
</tbody>
</table>

**Length**

<table>
<thead>
<tr>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.5</td>
<td>10.25 / 8.75</td>
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<tr>
<td>13</td>
<td>13.9 / 12.1</td>
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<td>16</td>
<td>16.9 / 15.1</td>
</tr>
<tr>
<td>19</td>
<td>20 / 18</td>
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<tr>
<td>22</td>
<td>23 / 21</td>
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<tr>
<td>25</td>
<td>26 / 24</td>
</tr>
<tr>
<td>32</td>
<td>33.25 / 30.75</td>
</tr>
<tr>
<td>38</td>
<td>39.25 / 36.75</td>
</tr>
<tr>
<td>45</td>
<td>46.25 / 43.75</td>
</tr>
<tr>
<td>50</td>
<td>51.25 / 48.75</td>
</tr>
</tbody>
</table>

**Material Description**

- **STL** - Low Carbon Steel
- **SS** - 18-8 Stainless Steel

**Finish Description**

- **Z - BLK** - Zinc Black
- **Z** - Zinc Clear

Other finishes available.

**Drive Description**

- **PH** - Cross Recess
- **SL** - Slotted

*Contact PENCOM® for more information on ISO, DIN, and JIS standards.*
Pan Head
Screws For Plastic, Pan Head  154

Flat Head
Screws For Plastic, 90 Deg Flat Head  154

Hex Head
Screws For Plastic, Indented Hex Head  155
Screws For Plastic, Indented Hex Washer Head  155

Pan Head
Page 154

90 Deg Flat Head
Page 154

Indented Hex Head
Page 155

Indented Hex Washer Head
Page 155
### Screws For Plastic, Thread Forming

#### Pan Head

**Metric - Type PF**

| Sample Part Number | K22 x 10MM PH - PN - PF - STL - Z |

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>K15</td>
<td>1.22 / 0.98</td>
<td>2.6 / 2.35</td>
<td>0 - 6 - Lobe</td>
<td>6</td>
<td>6.38 / 5.62</td>
</tr>
<tr>
<td>K18</td>
<td>1.32 / 1.08</td>
<td>3.2 / 2.9</td>
<td>0 -</td>
<td>7</td>
<td>7.45 / 6.55</td>
</tr>
<tr>
<td>K22</td>
<td>1.62 / 1.38</td>
<td>3.9 / 3.6</td>
<td>1 T6</td>
<td>8</td>
<td>8.45 / 7.55</td>
</tr>
<tr>
<td>K25</td>
<td>1.82 / 1.58</td>
<td>4.4 / 4.1</td>
<td>1 T7</td>
<td>10</td>
<td>10.45 / 9.55</td>
</tr>
<tr>
<td>K30</td>
<td>2.12 / 1.88</td>
<td>5.3 / 5.0</td>
<td>1 T10</td>
<td>12</td>
<td>12.55 / 11.45</td>
</tr>
<tr>
<td>K35</td>
<td>2.62 / 2.38</td>
<td>6.1 / 5.74</td>
<td>2 T10</td>
<td>14</td>
<td>14.55 / 13.45</td>
</tr>
<tr>
<td>K40</td>
<td>2.82 / 2.58</td>
<td>7.0 / 6.64</td>
<td>2 T20</td>
<td>16</td>
<td>16.55 / 15.45</td>
</tr>
<tr>
<td>K50</td>
<td>3.55 / 3.25</td>
<td>8.8 / 8.44</td>
<td>2 T20</td>
<td>18</td>
<td>18.55 / 17.45</td>
</tr>
<tr>
<td>K60</td>
<td>4.15 / 3.85</td>
<td>10.5 / 10.07</td>
<td>3 T25</td>
<td>20</td>
<td>20.65 / 19.35</td>
</tr>
<tr>
<td>K70</td>
<td>4.65 / 4.35</td>
<td>12.2 / 11.87</td>
<td>3 T30</td>
<td>25</td>
<td>25.65 / 24.35</td>
</tr>
</tbody>
</table>

**Material Description**

- STL: Low Carbon Steel
- SS: 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK: Zinc Black
- Z: Zinc Clear

- Custom sizes available.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

---

### Screws For Plastic, Thread Forming

#### 90 Deg Flat Head

**Metric - Type PF**

| Sample Part Number | K22 x 10MM PH - FL - PF - STL - Z |

<table>
<thead>
<tr>
<th>Thread</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>K22</td>
<td>3.6 / 3.3</td>
<td>1 T6</td>
<td>6</td>
<td>6.38 / 5.62</td>
</tr>
<tr>
<td>K25</td>
<td>4.7 / 4.4</td>
<td>1 T8</td>
<td>7</td>
<td>7.45 / 6.55</td>
</tr>
<tr>
<td>K30</td>
<td>5.5 / 5.2</td>
<td>2 T8</td>
<td>8</td>
<td>8.45 / 7.55</td>
</tr>
<tr>
<td>K35</td>
<td>7.3 / 6.94</td>
<td>2 T15</td>
<td>10</td>
<td>10.45 / 9.55</td>
</tr>
<tr>
<td>K40</td>
<td>8.4 / 8.04</td>
<td>2 T20</td>
<td>12</td>
<td>12.45 / 11.55</td>
</tr>
<tr>
<td>K50</td>
<td>9.3 / 8.94</td>
<td>2 T20</td>
<td>14</td>
<td>14.55 / 13.45</td>
</tr>
<tr>
<td>K60</td>
<td>11.3 / 10.87</td>
<td>2 T30</td>
<td>16</td>
<td>16.55 / 15.45</td>
</tr>
<tr>
<td>K70</td>
<td>13.6 / 13.17</td>
<td>3 T40</td>
<td>18</td>
<td>18.55 / 17.45</td>
</tr>
</tbody>
</table>

**Material Description**

- STL: Low Carbon Steel
- SS: 18 - 8 Stainless Steel

**Finish Description**

- Z - BLK: Zinc Black
- Z: Zinc Clear

- Custom sizes available.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

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* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

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* Sample Part Number:

- Pan Head: K22 x 10MM PH - PN - PF - STL - Z
- 90 Deg Flat Head: K22 x 10MM PH - FL - PF - STL - Z

---

* Drive Description:

- PH: Cross Recess
- TX: 6 - Lobe
- SL - PH: Slotted - Cross Recess
- SL - TX: Slotted - 6 - Lobe

---

* Other finishes available.
**Screws For Plastic, Thread Forming**

**Indented Hex Head**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>WAF Width Across Flats</th>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>K25</td>
<td>1.42 / 1.18</td>
<td>3.2</td>
<td>STL Low Carbon Steel</td>
</tr>
<tr>
<td>K30</td>
<td>1.62 / 1.38</td>
<td>5.0</td>
<td>SS 18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>K35</td>
<td>2.42 / 2.18</td>
<td>5.5</td>
<td></td>
</tr>
<tr>
<td>K40</td>
<td>3.15 / 2.85</td>
<td>7.0</td>
<td></td>
</tr>
<tr>
<td>K50</td>
<td>3.15 / 2.85</td>
<td>8.0</td>
<td></td>
</tr>
<tr>
<td>K60</td>
<td>3.65 / 3.35</td>
<td>10.0</td>
<td></td>
</tr>
<tr>
<td>K70</td>
<td>4.65 / 4.35</td>
<td>10.0</td>
<td></td>
</tr>
<tr>
<td>K80</td>
<td>5.45 / 5.15</td>
<td>13.0</td>
<td></td>
</tr>
</tbody>
</table>

Custom sizes available.

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>Cross Recess</td>
</tr>
<tr>
<td>SL</td>
<td>Slotted</td>
</tr>
<tr>
<td>USL</td>
<td>Unslotted</td>
</tr>
</tbody>
</table>

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

---

**Screws For Plastic, Thread Forming**

**Indented Hex Washer Head**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>G Washer Outside Diameter</th>
<th>WAF Width Across Flats</th>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>K30</td>
<td>2.12 / 1.88</td>
<td>6.5</td>
<td>5.0</td>
<td>STL Low Carbon Steel</td>
</tr>
<tr>
<td>K35</td>
<td>2.42 / 2.18</td>
<td>7.0</td>
<td>5.5</td>
<td>SS 18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>K40</td>
<td>2.92 / 2.68</td>
<td>8.0</td>
<td>5.5</td>
<td></td>
</tr>
<tr>
<td>K50</td>
<td>3.66 / 3.35</td>
<td>10.0</td>
<td>7.0</td>
<td></td>
</tr>
<tr>
<td>K60</td>
<td>4.35 / 4.06</td>
<td>12.0</td>
<td>8.0</td>
<td></td>
</tr>
<tr>
<td>K70</td>
<td>5.15 / 4.85</td>
<td>14.0</td>
<td>8.0</td>
<td></td>
</tr>
<tr>
<td>K80</td>
<td>7.18 / 6.82</td>
<td>16.0</td>
<td>10.0</td>
<td></td>
</tr>
</tbody>
</table>

Custom sizes available.

<table>
<thead>
<tr>
<th>Drive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>Cross Recess</td>
</tr>
<tr>
<td>SL</td>
<td>Slotted</td>
</tr>
<tr>
<td>USL</td>
<td>Unslotted</td>
</tr>
</tbody>
</table>

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
Pan Head
Screws For Plastic, Pan Head 158
Screws For Plastic, Slotted Pan Head 158

Flat Head
Screws For Plastic, 90 Deg Flat Head 159

Hex Head
Screws For Plastic, Indented Washer Hex Head 159

Sheet For Plastic, Thread Forming
Metric - Type HL
Screws For Plastic, Thread Forming
Pan Head
Metric - Type HL

Sample Part Number
M3.5 x 10MM PH - PN - HL - STL - Z
Thread Length Drive Series Material Finish

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>L</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3.5 x 1.34</td>
<td>2.46 / 2.21</td>
<td>6.46 / 6.10</td>
<td>2</td>
<td>T10</td>
<td>8</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>M4.0 x 1.34</td>
<td>2.46 / 2.21</td>
<td>6.86 / 6.50</td>
<td>2</td>
<td>T10</td>
<td>10</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>M4.2 x 1.41</td>
<td>4.46 / 2.21</td>
<td>6.86 / 6.50</td>
<td>2</td>
<td>T15</td>
<td>12</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>M4.8 x 1.59</td>
<td>2.92 / 2.67</td>
<td>8.18 / 7.77</td>
<td>2</td>
<td>T20</td>
<td>14</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>M5.3 x 1.59</td>
<td>3.38 / 3.10</td>
<td>9.47 / 9.07</td>
<td>2</td>
<td>T20</td>
<td>16</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>M5.5 x 1.59</td>
<td>3.38 / 3.10</td>
<td>9.47 / 9.07</td>
<td>3</td>
<td>T20</td>
<td>18</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>M6.0 x 1.59</td>
<td>3.84 / 3.53</td>
<td>10.80 / 10.34</td>
<td>3</td>
<td>T25</td>
<td>20</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>M6.3 x 1.69</td>
<td>4.45 / 4.11</td>
<td>12.50 / 12.01</td>
<td>3</td>
<td>T30</td>
<td>22</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>M7.2 x 1.59</td>
<td>4.45 / 4.11</td>
<td>12.50 / 12.01</td>
<td>3</td>
<td>T30</td>
<td>24</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>M7.5 x 1.59</td>
<td>5.54 / 5.16</td>
<td>15.62 / 15.09</td>
<td>4</td>
<td>T40</td>
<td>26</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>M8 x 1.81</td>
<td>5.54 / 5.16</td>
<td>15.62 / 15.09</td>
<td>4</td>
<td>T40</td>
<td>28</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
</tbody>
</table>

Custom sizes available.

- Same size for POZI Drive
- Contact PENCOM® for more information on ISO, DIN, and JIS standards.

Screws For Plastic, Thread Forming
Slotted Pan Head
Metric - Type HL

Sample Part Number
M3.5 x 10MM SL - PN - HL - STL - Z
Thread Length Drive Series Material Finish

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Length</th>
<th>L</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3.5 x 1.34</td>
<td>1.91 / 1.65</td>
<td>6.45 / 6.10</td>
<td>8</td>
<td>8.0 / 8.8</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>M4.0 x 1.34</td>
<td>2.08 / 1.83</td>
<td>6.86 / 6.50</td>
<td>10</td>
<td>10.0 / 8.8</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>M4.2 x 1.41</td>
<td>2.08 / 1.83</td>
<td>6.86 / 6.50</td>
<td>12</td>
<td>12.0 / 10.8</td>
<td>SL</td>
<td>Slotted Pan Head</td>
</tr>
<tr>
<td>M4.8 x 1.59</td>
<td>2.44 / 2.16</td>
<td>8.18 / 7.77</td>
<td>14</td>
<td>14.0 / 12.8</td>
<td>PN</td>
<td>Pan Head</td>
</tr>
<tr>
<td>M5.3 x 1.59</td>
<td>2.79 / 2.51</td>
<td>9.47 / 9.07</td>
<td>16</td>
<td>16.0 / 14.8</td>
<td>HL</td>
<td>Metric - Type HL</td>
</tr>
<tr>
<td>M5.5 x 1.59</td>
<td>2.79 / 2.51</td>
<td>9.47 / 9.07</td>
<td>18</td>
<td>18.0 / 16.8</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>M6.0 x 1.59</td>
<td>3.18 / 2.84</td>
<td>10.80 / 10.34</td>
<td>20</td>
<td>20.0 / 18.8</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>M6.3 x 1.69</td>
<td>3.66 / 3.30</td>
<td>12.50 / 12.01</td>
<td>22</td>
<td>22.0 / 20.8</td>
<td>SL</td>
<td>Slotted Pan Head</td>
</tr>
<tr>
<td>M7.2 x 1.59</td>
<td>3.66 / 3.30</td>
<td>12.50 / 12.01</td>
<td>24</td>
<td>24.0 / 22.8</td>
<td>PN</td>
<td>Pan Head</td>
</tr>
<tr>
<td>M7.5 x 1.59</td>
<td>4.52 / 4.11</td>
<td>15.62 / 15.09</td>
<td>26</td>
<td>26.0 / 24.8</td>
<td>HL</td>
<td>Metric - Type HL</td>
</tr>
<tr>
<td>M8 x 1.81</td>
<td>4.52 / 4.11</td>
<td>15.62 / 15.09</td>
<td>28</td>
<td>28.0 / 26.8</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
</tbody>
</table>

Custom sizes available.

- Contact PENCOM® for more information on ISO, DIN, and JIS standards.
### Screws For Plastic, Thread Forming

#### 90 Deg Flat Head

**Metric - Type HL**

**Sample Part Number**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3.5 x 1.34</td>
<td>0.89</td>
<td>6.09 / 6.20</td>
<td>2 T10</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>M4.0 x 1.34</td>
<td>0.89</td>
<td>6.09 / 6.20</td>
<td>2 T10</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>M4.2 x 1.41</td>
<td>0.89</td>
<td>6.09 / 6.20</td>
<td>2 T10</td>
<td>Z</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>M4.8 x 1.59</td>
<td>0.89</td>
<td>6.09 / 6.20</td>
<td>2 T20</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

Other finishes available.

*Contact PENCOM® for more information on ISO, DIN, and JIS standards.*

---

### Screws For Plastic, Thread Forming

#### Indented Hex Washer Head

**Metric - Type HL**

**Sample Part Number**

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3.5 x 1.34</td>
<td>0.89</td>
<td>6.09 / 6.20</td>
<td>2 T10</td>
<td>STL</td>
<td>Low Carbon Steel</td>
</tr>
<tr>
<td>M4.0 x 1.34</td>
<td>0.89</td>
<td>6.09 / 6.20</td>
<td>2 T10</td>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>M4.2 x 1.41</td>
<td>0.89</td>
<td>6.09 / 6.20</td>
<td>2 T10</td>
<td>Z</td>
<td>Zinc Black</td>
</tr>
<tr>
<td>M4.8 x 1.59</td>
<td>0.89</td>
<td>6.09 / 6.20</td>
<td>2 T20</td>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

Other finishes available.

*Contact PENCOM® for more information on ISO, DIN, and JIS standards.*
Pan Head
- Screws For Plastic, Pan Head 162
- Screws For Plastic, Slotted Pan Head 162

Flat Head
- Screws For Plastic, 90 Deg Flat Head 163

Hex Head
- Screws For Plastic, Indented Hex Washer Head 163
Screws For Plastic, Thread Forming
Pan Head
Metric - Type PLAST 48/2

Sample Part Number
M2.2 x 4.5MM PH - PN - PLAST 48/2 - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>M2.2 thru M6.3</th>
<th>M8 &amp; M9.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.2 x 0.8</td>
<td>1.6 / 1.4</td>
<td>4.0 / 3.7</td>
<td>0 T6</td>
<td>4.5</td>
<td>5.26 / 3.74</td>
<td>-</td>
</tr>
<tr>
<td>M2.9 x 1.1</td>
<td>2.4 / 2.2</td>
<td>5.6 / 5.3</td>
<td>1 T6</td>
<td>6.5</td>
<td>7.26 / 5.74</td>
<td>-</td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
<td>2.8 / 2.3</td>
<td>7.0 / 6.6</td>
<td>2 T15</td>
<td>9.5</td>
<td>10.26 / 8.74</td>
<td>-</td>
</tr>
<tr>
<td>M4.2 x 1.4</td>
<td>3.1 / 2.8</td>
<td>8.0 / 7.6</td>
<td>2 T20</td>
<td>13</td>
<td>13.76 / 12.24</td>
<td>-</td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>3.7 / 3.4</td>
<td>9.5 / 8.1</td>
<td>2 T25</td>
<td>16</td>
<td>16.76 / 15.24</td>
<td>17.27 / 14.73</td>
</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>4.0 / 3.7</td>
<td>11.0 / 10.5</td>
<td>3 T25</td>
<td>19</td>
<td>19.76 / 18.24</td>
<td>20.27 / 17.73</td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
<td>4.8 / 4.3</td>
<td>12.0 / 11.5</td>
<td>3 T30</td>
<td>22</td>
<td>23.27 / 20.73</td>
<td>23.27 / 20.73</td>
</tr>
<tr>
<td>M8 x 2.1</td>
<td>6.0 / 5.6</td>
<td>16.0 / 15.5</td>
<td>4 T40</td>
<td>25</td>
<td>26.27 / 23.73</td>
<td>26.27 / 23.73</td>
</tr>
<tr>
<td>M9.5 x 2.1</td>
<td>7.5 / 7.1</td>
<td>20.0 / 19.4</td>
<td>4 T50</td>
<td>32</td>
<td>33.27 / 30.73</td>
<td>33.27 / 30.73</td>
</tr>
</tbody>
</table>

Custom sizes available.

\* Same size for POZI Drive
\* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

Screws For Plastic, Thread Forming
Slotted Pan Head
Metric - Type PLAST 48/2

Sample Part Number
2.2 x 4.5 SL - PN - PLAST 48/2 - STL - Z

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>Length</th>
<th>M2.2 thru M6.3</th>
<th>M8 &amp; M9.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.2 x 0.8</td>
<td>1.3 / 1.1</td>
<td>4.0 / 3.7</td>
<td>0 T6</td>
<td>4.5</td>
<td>5.26 / 3.74</td>
<td>-</td>
</tr>
<tr>
<td>M2.9 x 1.1</td>
<td>1.8 / 1.6</td>
<td>5.6 / 5.3</td>
<td>1 T6</td>
<td>6.5</td>
<td>7.26 / 5.74</td>
<td>-</td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
<td>2.1 / 1.9</td>
<td>7.0 / 6.6</td>
<td>2 T15</td>
<td>9.5</td>
<td>10.26 / 8.74</td>
<td>-</td>
</tr>
<tr>
<td>M4.2 x 1.4</td>
<td>2.4 / 2.2</td>
<td>8.0 / 7.6</td>
<td>2 T20</td>
<td>13</td>
<td>13.76 / 12.24</td>
<td>-</td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>3.0 / 2.7</td>
<td>9.5 / 8.1</td>
<td>2 T25</td>
<td>16</td>
<td>16.76 / 15.24</td>
<td>17.27 / 14.73</td>
</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>3.2 / 2.9</td>
<td>11.0 / 10.5</td>
<td>3 T25</td>
<td>19</td>
<td>19.76 / 18.24</td>
<td>20.27 / 17.73</td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
<td>3.6 / 3.3</td>
<td>12.0 / 11.5</td>
<td>3 T30</td>
<td>22</td>
<td>23.27 / 20.73</td>
<td>23.27 / 20.73</td>
</tr>
<tr>
<td>M8 x 2.1</td>
<td>4.8 / 4.5</td>
<td>16.0 / 15.5</td>
<td>4 T40</td>
<td>25</td>
<td>26.27 / 23.73</td>
<td>26.27 / 23.73</td>
</tr>
<tr>
<td>M9.5 x 2.1</td>
<td>6.0 / 5.7</td>
<td>20.0 / 19.4</td>
<td>4 T50</td>
<td>32</td>
<td>33.27 / 30.73</td>
<td>33.27 / 30.73</td>
</tr>
</tbody>
</table>

Custom sizes available.

\* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
Screws For Plastic, Thread Forming
90 Deg Flat Head
Metric - Type PLAST 48/2

Sample Part Number
M2.2 x 4.5MM  PH - FL - PLAST 48/2 - STL - Z
Thread  Length  Drive  Series  Material  Finish

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>D Head Diameter</th>
<th>Drive Size</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.2 x 0.8</td>
<td>1.1</td>
<td>3.8 / 3.5</td>
<td>0</td>
<td>5.26 / 3.74</td>
</tr>
<tr>
<td>M2.9 x 1.1</td>
<td>1.7</td>
<td>5.5 / 5.2</td>
<td>1</td>
<td>7.26 / 5.74</td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
<td>2.3</td>
<td>7.3 / 6.9</td>
<td>2</td>
<td>9.26 / 8.74</td>
</tr>
<tr>
<td>M4.2 x 1.4</td>
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<td>8.4 / 8.0</td>
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<td>13.76 / 12.24</td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>2.8</td>
<td>9.3 / 8.9</td>
<td>2</td>
<td>16.76 / 15.24</td>
</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>3.0</td>
<td>10.3 / 9.9</td>
<td>3</td>
<td>19.76 / 18.24</td>
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<tr>
<td>M6.3 x 1.8</td>
<td>3.1</td>
<td>11.3 / 10.9</td>
<td>3</td>
<td>22.37 / 20.73</td>
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<tr>
<td>M8 x 2.1</td>
<td>4.6</td>
<td>15.8 / 15.4</td>
<td>4</td>
<td>26.27 / 23.73</td>
</tr>
<tr>
<td>M9.5 x 2.1</td>
<td>5.2</td>
<td>18.3 / 17.8</td>
<td>4</td>
<td>30.27 / 27.03</td>
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</tbody>
</table>

Custom sizes available.

- Same size for POZI Drive
- Contact PENCOM® for more information on ISO, DIN, and JIS standards.

Other finishes available.

**Material Description**
- STL Low Carbon Steel
- SS 18 - 8 Stainless Steel

**Finish Description**
- Z - BLK Zinc Black
- Z Zinc Clear

Screws For Plastic, Thread Forming
Indented Hex Washer Head
Metric - Type Plast 48 / 2

Sample Part Number
M2.2 x 4.5MM  PH - INHX - WA - PLAST 48/2 - STL - Z
Thread  Length  Drive  Series  Material  Finish

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Height</th>
<th>G Washer Outside Diameter</th>
<th>W Washer Thickness Min.</th>
<th>WAF Width Across Flats</th>
<th>Drive Size</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.2 x 0.8</td>
<td>2.2</td>
<td>4.5 / 4.1</td>
<td>0.3</td>
<td>3.00 / 2.84</td>
<td>0</td>
<td>5.26 / 3.74</td>
</tr>
<tr>
<td>M2.9 x 1.1</td>
<td>3.2</td>
<td>6.4 / 5.9</td>
<td>0.4</td>
<td>4.00 / 3.84</td>
<td>1</td>
<td>7.26 / 5.74</td>
</tr>
<tr>
<td>M3.5 x 1.3</td>
<td>3.8</td>
<td>7.5 / 6.9</td>
<td>0.5</td>
<td>5.00 / 4.82</td>
<td>2</td>
<td>9.26 / 8.74</td>
</tr>
<tr>
<td>M4.2 x 1.4</td>
<td>4.3</td>
<td>8.5 / 7.8</td>
<td>0.6</td>
<td>6.50 / 5.32</td>
<td>2</td>
<td>13.76 / 12.24</td>
</tr>
<tr>
<td>M4.8 x 1.6</td>
<td>5.2</td>
<td>10.0 / 9.3</td>
<td>0.6</td>
<td>7.00 / 6.78</td>
<td>2</td>
<td>16.76 / 15.24</td>
</tr>
<tr>
<td>M5.5 x 1.8</td>
<td>6.0</td>
<td>11.2 / 10.3</td>
<td>0.8</td>
<td>7.00 / 6.78</td>
<td>3</td>
<td>19.76 / 18.24</td>
</tr>
<tr>
<td>M6.3 x 1.8</td>
<td>6.7</td>
<td>12.8 / 11.8</td>
<td>1.0</td>
<td>8.00 / 7.78</td>
<td>3</td>
<td>22.37 / 20.73</td>
</tr>
<tr>
<td>M8 x 2.1</td>
<td>8.6</td>
<td>16.8 / 15.5</td>
<td>1.2</td>
<td>10.00 / 9.78</td>
<td>4</td>
<td>26.27 / 23.73</td>
</tr>
<tr>
<td>M9.5 x 2.1</td>
<td>10.7</td>
<td>21.0 / 19.3</td>
<td>1.4</td>
<td>13.00 / 12.72</td>
<td>4</td>
<td>30.27 / 27.03</td>
</tr>
</tbody>
</table>

Custom sizes available.

- Contact PENCOM® for more information on ISO, DIN, and JIS standards.
Nuts

- Hex Nuts - Style 1  
- Hex Nuts - Style 2  
- Hex Jam Nuts  
- KPS Nuts  
- Conical Washer KPS Nuts  
- Hex Flange Nuts  
- Prevailing-Torque Hex Nuts  
- Prevailing-Torque Flange Nuts  
- Cap Nuts  
- Cage Nuts  
- Nylon Insert Locknuts  
- Jam Nylon Insert Locknuts  

Hex Nuts - Style 1  
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Hex Nuts - Style 2  
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Hex Jam Nuts  
Page 167

KPS Nuts  
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Conical Washer KPS Nuts  
Page 168

Hex Flange Nuts  
Page 168

Prevailing-Torque Hex Nuts  
Page 169

Prevailing-Torque Flange Nuts  
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Cap Nuts  
Page 170

Cage Nuts  
Page 171

Nylon Insert Locknuts  
Page 172

Nylon Insert Locknuts - Heavy Pattern  
Page 172
### Nuts

#### Hex Nut - Style 1
**Metric**

**Sample Part Number**
M3 HX - STYLE1 - NU - CL5 - Z - IFI
ASME B18.2.4.1M

<table>
<thead>
<tr>
<th>Thread</th>
<th>T Thickness</th>
<th>WAF Width Across Flats</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1.6 x 0.35</td>
<td>1.50 / 1.05</td>
<td>3.20 / 3.02</td>
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<tr>
<td>M2 x 0.4</td>
<td>1.60 / 1.35</td>
<td>4.00 / 3.82</td>
</tr>
<tr>
<td>M2.5 x 0.45</td>
<td>2.00 / 1.75</td>
<td>5.00 / 4.82</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>2.40 / 2.15</td>
<td>5.50 / 5.32</td>
</tr>
<tr>
<td>M3.5 x 0.6</td>
<td>2.80 / 2.55</td>
<td>6.00 / 5.82</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>3.20 / 2.90</td>
<td>7.00 / 6.78</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>4.70 / 4.40</td>
<td>8.00 / 7.78</td>
</tr>
<tr>
<td>M6 x 1.0</td>
<td>5.20 / 4.90</td>
<td>10.00 / 9.78</td>
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<tr>
<td>M8 x 1.25</td>
<td>6.80 / 6.44</td>
<td>13.00 / 12.73</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>8.40 / 8.04</td>
<td>16.00 / 15.73</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S3</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>CL5</td>
<td>Class 5 Steel</td>
</tr>
<tr>
<td>CL10</td>
<td>Class 10 Steel</td>
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<table>
<thead>
<tr>
<th>Finish</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

Other finishes available.

### Technical Data:

<table>
<thead>
<tr>
<th>Property</th>
<th>Condition</th>
<th>Style of Hex Nut</th>
<th>Matting with Property Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL5</td>
<td>Non-Heat Treated</td>
<td>Style 1</td>
<td>5.8, 4.8 and 4.6</td>
</tr>
<tr>
<td>CL10</td>
<td>Heat Treated</td>
<td></td>
<td>10.9, 9.8, 8.8, 4.8 and 4.6</td>
</tr>
</tbody>
</table>

**Custom sizes available.**

Contact PENCOM® for more information on ISO, DIN, and JIS standards.

---

### Nuts

#### Hex Nut - Style 2
**Metric**

**Sample Part Number**
M3.5 HX - STYLE2 - NU - CL9 - Z - IFI
ASME B18.2.4.1M

<table>
<thead>
<tr>
<th>Thread</th>
<th>T Thickness</th>
<th>WAF Width Across Flats</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3 x 0.5</td>
<td>2.90 / 2.65</td>
<td>5.50 / 5.32</td>
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<tr>
<td>M3.5 x 0.6</td>
<td>3.30 / 3.00</td>
<td>6.00 / 5.83</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>3.80 / 3.50</td>
<td>7.00 / 6.78</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>5.10 / 4.80</td>
<td>8.00 / 7.78</td>
</tr>
<tr>
<td>M6 x 1.0</td>
<td>5.70 / 5.40</td>
<td>10.00 / 9.78</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>7.50 / 7.14</td>
<td>13.00 / 12.73</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>9.30 / 8.94</td>
<td>16.00 / 15.73</td>
</tr>
<tr>
<td>M12 x 1.75</td>
<td>12.00 / 11.57</td>
<td>18.00 / 17.73</td>
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<tr>
<td>M14 x 2</td>
<td>14.10 / 13.40</td>
<td>21.00 / 20.67</td>
</tr>
<tr>
<td>M16 x 2</td>
<td>16.40 / 15.70</td>
<td>24.00 / 23.67</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S3</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>CL9</td>
<td>Class 9 Steel</td>
</tr>
<tr>
<td>CL12</td>
<td>Class 12 Steel</td>
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</table>

<table>
<thead>
<tr>
<th>Finish</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
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</table>

Other finishes available.

### Technical Data:

<table>
<thead>
<tr>
<th>Property</th>
<th>Condition</th>
<th>Style of Hex Nut</th>
<th>Matting with Property Class</th>
</tr>
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<tbody>
<tr>
<td>CL9</td>
<td>Non-Heat Treated</td>
<td>Style 2</td>
<td>9.8, 8.8, 4.8 and 4.6</td>
</tr>
<tr>
<td>CL12</td>
<td>Heat Treated</td>
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<td>12.9, 10.9, 9.8, 8.8, 4.8, 4.6</td>
</tr>
</tbody>
</table>

**Custom sizes available.**

Contact PENCOM® for more information on ISO, DIN, and JIS standards.
### Nuts

**Hex Jam Nut**

**Metric**

**Sample Part Number**

M3 HX - JAM - NU - STL - Z - IFI

**Thread**

- M5 x 0.8
- M6 x 1.0
- M8 x 1.25
- M10 x 1.5
- M12 x 1.75
- M14 x 2
- M16 x 2
- M20 x 2.5
- M24 x 3
- M30 x 3.5

**Width Across Flats**

- 2.70 / 2.45
- 3.20 / 2.90
- 4.00 / 3.70
- 5.00 / 4.70
- 6.00 / 5.70
- 7.00 / 6.64
- 8.00 / 7.64
- 10.00 / 9.42
- 12.00 / 11.30
- 15.00 / 14.30

**Finish Description**

- Z Zinc Clear

---

**Technical Data:**

**Finish**

- Z Zinc Clear

**Material Description**

- BS 18-8 Stainless Steel
- CL4 Class 4 Steel
- CL5 Class 5 Steel

---

**Other finishes available.**

---

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

### Nuts

**KPS Nut**

**Metric**

**Sample Part Number**

M3 KPS - NU - STL - Z

**Thread Series**

- M3 x 0.5
- M4 x 0.7
- M5 x 0.8
- M6 x 1
- M8 x 1.25
- M10 x 1.5

**Diameter**

- 6.5
- 8.2
- 9.5
- 11.5
- 15.0
- 19.0

**W Washer Thickness**

- 0.45
- 0.45
- 0.50
- 0.60
- 0.80
- 0.90

**WAF Width Across Flats**

- 5.5
- 7.0
- 8.0
- 10.0
- 13.0
- 17.0

**Finish Description**

- STL Low Carbon Steel
- SS 18-8 Stainless Steel

---

**Material Description**

- Z Zinc Clear

---

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
Nuts
Conical Washer KPS Nut
Metric

**Sample Part Number**
M3 KPS - NU - CON - WA - STL - Z - IFI

**Thread** Series Material Finish Standard

<table>
<thead>
<tr>
<th>Thread</th>
<th>H Thickness REF</th>
<th>G Washer Outside Diameter REF</th>
<th>M Flange Thickness REF</th>
<th>WAF Width Across Flats REF</th>
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</thead>
<tbody>
<tr>
<td>M4 x 0.7</td>
<td>3.2</td>
<td>10</td>
<td>0.5</td>
<td>7</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>4</td>
<td>12</td>
<td>0.8</td>
<td>8</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>5</td>
<td>14</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>6.5</td>
<td>18</td>
<td>1.4</td>
<td>13</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>8</td>
<td>22</td>
<td>1.6</td>
<td>17</td>
</tr>
<tr>
<td>M12 x 1.75</td>
<td>10</td>
<td>25.5</td>
<td>2.4</td>
<td>19</td>
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</tbody>
</table>

Custom sizes available.

Contact PENCOM® for more information on ISO, DIN, and JIS standards.

Nuts
Hex Flange Nut
Metric

**Sample Part Number**
M3 HX - FLANGE - NU - STL - Z - IFI

ANSI B18.2.4.4M

<table>
<thead>
<tr>
<th>Thread</th>
<th>T Thickness</th>
<th>D Diameter MAX</th>
<th>WAF Width Across Flats</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5 x 0.8</td>
<td>5.00 / 4.70</td>
<td>11.8</td>
<td>8.00 / 7.78</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>6.00 / 5.70</td>
<td>14.7</td>
<td>10.00 / 9.78</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>8.00 / 7.60</td>
<td>17.9</td>
<td>13.00 / 12.73</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>10.00 / 9.60</td>
<td>21.8</td>
<td>15.00 / 14.73</td>
</tr>
<tr>
<td>M12 x 1.75</td>
<td>12.00 / 11.60</td>
<td>26.0</td>
<td>18.00 / 17.73</td>
</tr>
<tr>
<td>M14 x 2</td>
<td>14.00 / 13.30</td>
<td>29.9</td>
<td>21.00 / 20.67</td>
</tr>
<tr>
<td>M16 x 2</td>
<td>16.00 / 15.30</td>
<td>34.5</td>
<td>24.00 / 23.67</td>
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<tr>
<td>M20 x 2.5</td>
<td>20.00 / 19.90</td>
<td>43.8</td>
<td>30.00 / 29.16</td>
</tr>
</tbody>
</table>

Custom sizes available.

Contact PENCOM® for more information on ISO, DIN, and JIS standards.
**Nuts**

**Prevailing-Torque Hex Nut**

Metric - Steel Property Class 5 and 9

**Sample Part Number**

M3  HX - PREV - TORQ - STL - Z - IFI

ASME B18.16.3M

<table>
<thead>
<tr>
<th>Thread</th>
<th>T Thickness</th>
<th>WAF Width Across Flats</th>
<th>Prevailing-Torque, N-M (in. lb)</th>
<th>Classes 5 and 9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1st Install. Max</td>
<td>1st Removal MIN</td>
</tr>
<tr>
<td>M3 x 0.5</td>
<td>3.10 / 2.65</td>
<td>5.50 / 5.32</td>
<td>0.43 (8.81)</td>
<td>0.12 (1.06)</td>
</tr>
<tr>
<td>M4 x 0.7</td>
<td>4.00 / 3.50</td>
<td>7.00 / 6.78</td>
<td>0.90 (17.97)</td>
<td>0.18 (1.59)</td>
</tr>
<tr>
<td>M5 x 0.8</td>
<td>5.30 / 4.80</td>
<td>8.00 / 7.78</td>
<td>1.6 (14.16)</td>
<td>0.29 (2.57)</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>5.90 / 5.40</td>
<td>10.00 / 9.78</td>
<td>3.0 (26.55)</td>
<td>0.45 (3.98)</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>7.10 / 6.44</td>
<td>13.00 / 12.73</td>
<td>7.0 (61.96)</td>
<td>0.85 (7.52)</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>9.00 / 8.04</td>
<td>16.00 / 15.73</td>
<td>10.5 (92.93)</td>
<td>1.5 (13.28)</td>
</tr>
<tr>
<td>M12 x 1.75</td>
<td>11.60 / 10.37</td>
<td>18.00 / 17.73</td>
<td>15.5 (137.18)</td>
<td>2.3 (20.36)</td>
</tr>
<tr>
<td>M14 x 2</td>
<td>13.20 / 12.10</td>
<td>21.00 / 20.67</td>
<td>24 (212.41)</td>
<td>3.3 (29.21)</td>
</tr>
<tr>
<td>M16 x 2</td>
<td>15.20 / 14.90</td>
<td>24.00 / 23.67</td>
<td>32 (283.22)</td>
<td>4.5 (39.83)</td>
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<tr>
<td>M20 x 2.5</td>
<td>19.00 / 16.90</td>
<td>30.00 / 29.16</td>
<td>54 (477.94)</td>
<td>7.5 (66.38)</td>
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<td>23.00 / 20.30</td>
<td>36.00 / 35.00</td>
<td>8.0 (708.05)</td>
<td>16.5 (141.78)</td>
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</table>

**Material Description**

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS</td>
<td>18 - 8 Stainless Steel</td>
</tr>
<tr>
<td>CL5</td>
<td>Class 5 Steel - Not Heat Treated</td>
</tr>
<tr>
<td>CL9</td>
<td>Class 9 Steel - Optional Heat Treating</td>
</tr>
</tbody>
</table>

**Finish Description**

<table>
<thead>
<tr>
<th>Finish</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

Other finishes available.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

**Nuts**

**Prevailing-Torque Flange Nut**

Metric - Steel Property Class 5 and 9

**Sample Part Number**

M3  PREV - TORQ - FLANGE - STL - Z - IFI

ASME B18.16.3M

<table>
<thead>
<tr>
<th>Thread</th>
<th>T Thickness</th>
<th>D Flange Diameter</th>
<th>WAF Width Across Flats</th>
<th>Prevailing-Torque, N-M (in. lb)</th>
<th>Classes 5 and 9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1st Install. MAX</td>
<td>1st Removal MIN</td>
</tr>
<tr>
<td>M6 x 1</td>
<td>7.30 / 5.70</td>
<td>14.2</td>
<td>10.00 / 9.78</td>
<td>3.0</td>
<td>0.45</td>
</tr>
<tr>
<td>M8 x 1.25</td>
<td>9.40 / 7.60</td>
<td>17.9</td>
<td>13.00 / 12.73</td>
<td>7.0</td>
<td>0.85</td>
</tr>
<tr>
<td>M10 x 1.5</td>
<td>11.40 / 9.60</td>
<td>21.8</td>
<td>15.00 / 14.73</td>
<td>10.5</td>
<td>1.5</td>
</tr>
<tr>
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**Material Description**

<table>
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<tr>
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<tr>
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**Finish Description**

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Other finishes available.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
## Nuts

**Cap Nut**

**Metric**

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<th>R Height REF</th>
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### Material Description

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### Finish Description

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<tr>
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<td>Zinc Clear</td>
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</table>

Other finishes available.

Custom sizes available.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
### Cage Nut

**Metric**

**Sample Part Number**

M5 CAGE - NU - STL - Z

**Thread Series**

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<td>M10 x 1.75</td>
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**Finish Description**

- Z - BLK: Zinc Black
- Z: Zinc Clear

**Other finishes available.**

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<th>Description</th>
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**Hole No.**

1. Custom sizes available.

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<th>B ±0.5</th>
<th>C ±0.5</th>
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<td>16.4</td>
<td>7.8</td>
<td>0.5</td>
<td>12.3</td>
</tr>
</tbody>
</table>

**Assembly / Application Guideline**

- Insert one end of the cage nut into the hole so that it clips around the edge. Push the other end in, making sure the cage lip catches.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
### Nuts

**Nylon Insert Locknut - Regular Pattern**

Metric

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>Thread</th>
<th>( T ) Thickness</th>
<th>Width Across Flats</th>
<th>Height MIN</th>
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<tbody>
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<td>10.00 / 9.78</td>
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Other finishes available.

### Nuts

**Nylon Insert Locknut - Heavy Pattern**

Metric

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<th>Height MIN</th>
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</tbody>
</table>

Other finishes available.

---

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
Washers

- Lock Washer, External Tooth 174
- Lock Washer, Internal Tooth 175
- Lock Washer, Internal External Tooth 176
- Plain Washer 177
- Plain Washer - Product Grade A 178
- Lock Washer, Split Lock Washer 179
### Washer

**Lock Washer - External Tooth**

**Metric**

**Sample Part Number**

M1.7  EXT - LK - WA - STL - Z - DIN - 1.7 ID / 3.3 OD / 0.3 THK

**Nominal Washer Size**

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<tr>
<th>Series Material Finish</th>
<th>Material Description</th>
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<tbody>
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<td>SS</td>
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**Nominal Washer Size**

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<th>B Outside Diameter Code</th>
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**Finish Description**

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<th>Finish Code</th>
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<tbody>
<tr>
<td>Z</td>
<td>Zinc Clear</td>
</tr>
</tbody>
</table>

Other finishes available.

Custom sizes available.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
Contact PENCOM® for more information on ISO, DIN, and JIS standards.

## Washer

**Lock Washer - Type Internal Tooth**

**Metric - Type WA**

### Sample Part Number

M1.7 INT - LK - WA - STL - Z - DIN - 1.7 ID / 3.3 OD / 0.3 THK

### DIN 6797

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<td>18 - 8 Stainless Steel</td>
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### Finish Description

- **Z** Zinc Clear

### Other finishes available.

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Custom sizes available.

* Contact PENCOM® for more information on ISO, DIN, and JIS standards.
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Other finishes available.

Custom sizes available.

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**Material Description**
- STL: Low Carbon Steel
- SS: 18 - 8 Stainless Steel

**Finish Description**
- Z: Zinc Clear

*Other finishes available.*

*Contact PENCOM® for more information on ISO, DIN, and JIS standards.*
# Washer

## Plain Washer - Narrow, Regular, Wide

### Metric

#### Sample Part Number

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<td>15.52 / 15.25</td>
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<th>Outside Diameter Code</th>
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<tbody>
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<td>22.32 / 21.80</td>
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<td>22.32 / 21.80</td>
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<tr>
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<td>WIDE</td>
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<td>5.10 / 5.10</td>
<td>22.32 / 21.80</td>
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</tbody>
</table>

- Contact PENCOM® for more information on ISO, DIN, and JIS standards.

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### Washer

**Lock Washer - Split Lock Washer**

**Metric**

**DIN 127**

<table>
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<th>Nominal Washer Size</th>
<th>T Thickness</th>
<th>Thickness</th>
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<th>Inside Diameter</th>
<th>B Outside Diameter MAX</th>
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</tbody>
</table>

**Material Description**

- **STL**: Low Carbon Steel
- **SS**: 18-8 Stainless Steel

**Finish Description**

- **Z**: Zinc Clear

Other finishes available.

Custom sizes available.

Contact PENCOM® for more information on ISO, DIN, and JIS standards.
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