

# SCREW BOOK



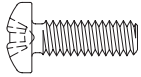
*Over twenty years of experience, engineering expertise and dynamic growth has given PENCOM® the reputation as one of the foremost global suppliers to the fastener industry. PENCOM prides itself on having quality products at competitive prices with on-time deliveries.*



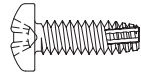
This book is provided as a reference guide only. PENCOM® will not be liable to any party for any direct, indirect, special or other consequential damages from the use of this reference material, including, without limitation, any lost profits, business interruption, loss of programs or otherwise, even if we are expressly advised of the possibility of such damages. All information is provided on an "as is" basis only. We provide no representations or warranties, express or implied, including the implied warranties of fitness for a particular purpose, merchantability and non-infringement.

REV.021207

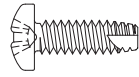
## Machine Screws



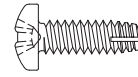
Type MS  
Inch p. 21  
Metric p. 105



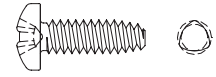
Type F  
Inch p. 33  
Metric p. 113



Type 23  
Inch p. 39  
Metric p. 117

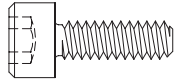


Type 1  
Inch p. 45  
Metric p. 121

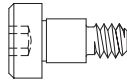


Type TA  
Inch p. 51  
Metric p. 125

## Socket Screws

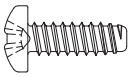


Type SOC  
Inch p. 57  
Metric p. 129

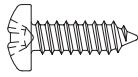


Type PSHLD  
Inch p. 61  
Metric p. 133

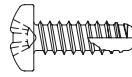
## Sheet Metal Screws



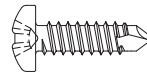
Type B  
Inch p. 65  
Metric p. 137



Type AB  
Inch p. 71  
Metric p. 141



Type 25  
Inch p. 77  
Metric p. 145

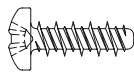


Type TEK2  
Metric p. 149

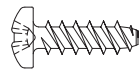
## Screws for Plastics



Type PF  
Metric p. 153



Type HL  
Inch p. 81  
Metric p. 157



Type PLAST 48/2  
Inch p. 85  
Metric p. 161

## Nuts

See Nuts section for all nut styles.



Type NU  
Inch p. 89  
Metric p. 165

## Washers

See Washer Section for all washer styles.



Type WA  
Inch p. 97  
Metric p. 173

# Table of Contents

<b>Introduction</b>	8
<b>Tolerances</b>	8
<b>Thread Nomenclature</b>	9
<b>Features</b>	9
<b>Drives</b>	10
<b>Heads</b>	12
<b>Threads</b>	13
<b>Points - Machine Screw</b>	14
<b>Points - Sheet Metal</b>	14
<b>Attached Washers</b>	15
<b>Integrated Locking Features</b>	15
<b>Socket Screws</b>	16
<b>Shoulder Screws</b>	16
<b>SEMS - How they are made</b>	17
<b>Materials</b>	17
<b>When to Use</b>	18
<b>Threads Per Inch</b>	19
<b>Notes</b>	20

## INCH

### Machine Screw Inch 21

Pan Head	
Machine Screw, Pan Head	22
Machine Screw, Slotted Pan Head	22
Flat Head	
Machine Screw, 82 Deg Flat Head	23
Machine Screw, 100 Deg Flat Head	23
Machine Screw, 82 Deg Trimmed Flat Head	24
Machine Screw, 82 Deg Undercut Flat Head	24
Hex Head	
Machine Screw, Indented Hex Head	25
Machine Screw, Indented Hex Washer Head	25
Machine Screw, Indented Hex Washer Head with Serrations	26
SEMS	
Machine Screw, Internal Tooth Lock Washers SEMS	26
Machine Screw, Square Lock Cone Washer SEMS	27
Machine Screw, External Tooth Lock Washer SEMS	27
Machine Screw, Split Lock Washer SEMS	28
Special Use Heads	
Machine Screw, Slotted Binder Head	28
Machine Screw, Button Head	29
Machine Screw, Fillister Head	29
Machine Screw, Oval Head	30
Machine Screw, Slotted Oval Head	30
Machine Screw, Trimmed Oval Head	31
Machine Screw, Undercut Oval Head	31
Machine Screw, Truss Head	32

### Machine Screw, Thread Cutting Inch - Type F 33

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 Inch Type - 23 39

Pan Head	
Machine Screw, Pan Head	40
Machine Screw, Slotted Pan Head	40
Flat Head	
Machine Screw, 82 Deg Flat Head	41
Machine Screw, 82 Deg Undercut Flat Head	41
Hex Head	
Machine Screw, Indented Hex Head	42
Machine Screw, Indented Hex Washer Head	42
Special Use Heads	
Machine Screw, Oval Head	43
Machine Screw, Undercut Oval Head	43
Machine Screw, Truss Head	44

### Machine Screw, Thread Cutting Inch - Type 1 45

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 Screw, Thread Forming Inch - Type TA 51

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

# Table of Contents

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

## Socket Screws Inch - Type SOC 57

Socket Screws	
Socket Head Cap Screw	58
Flat Countersunk Head Cap Screw	58
Button Head Cap Screw	59
Notes	60

## Precision Shoulder Screws Inch - Type PSHLD 61

Precision Shoulder Screws	
Precision Cross Recess Head Shoulder Screw	62
Precision Socket Head Shoulder Screw	63
Precision Slotted Head Shoulder Screw	64

## Sheet Metal Screws, Thread Forming Inch - Type B 65

Pan Head	
Sheet Metal Screw, Pan Head	66
Sheet Metal Screw, Slotted Pan Head	66

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

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

Special Use Heads	
Sheet Metal Screw, Oval Head	69
Sheet Metal Screw, Truss Head	70

## Sheet Metal Screws, Thread Forming Inch - Type AB 71

Pan Head	
Sheet Metal Screw, Pan Head	72
Sheet Metal Screw, Slotted Pan Head	72

Flat Head	
Sheet Metal Screw, 82 Deg Flat Head	73
Sheet Metal Screw, 82 Deg Undercut Flat Head	73

Hex Head	
Sheet Metal Screw, Indented Hex Head	74
Sheet Metal Screw, Indented Hex Washer Head	74

Special Use Heads	
Sheet Metal Screw, Oval Head	75
Sheet Metal Screw, Undercut Oval Head	75
Sheet Metal Screw, Truss Head	76

## Sheet Metal Screws, Thread Cutting Inch - Type 25 77

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

## Screws for Plastic, Thread Forming Inch - Type HL 81

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 PLAST 48/2 85

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

## Nuts Inch 89

Nuts	
Hex Nut	90
Hex Jam Nut	90
Machine Screw Nut	91
Machine Screw Nut, Small Pattern	91
Hex KPS Nut	92
Conical KPS Nut	92
Hex Flange Nut	93
Serrated Flange Locknut	93
Flange Side Locknut	94
Flange Top Locknut	94
Cap Nut	95
Nylon Insert Locknut	95
Nylon Insert Locknut, Thin Pattern	96
Panel Nut	96

## Washers Inch 97

Washers	
Lock Washer, External Tooth	98
Lock Washer, Internal Tooth	99
Lock Washer, Internal External Tooth	100
Plain Washer	101
Plain Washer - Regular, Narrow, Wide	102
Lock Washer, Split Lock Washer	103

Notes	104
-------	-----

# Table of Contents

## Metric

### Machine Screw Metric 105

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

Notes	112
-------	-----

### Machine Screw, Thread Cutting Metric - Type F 113

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 Screw, Thread Cutting Metric - Type 23 117

Pan Head	
Machine Screw, Pan Head	118
Machine Screw, Slotted Pan Head	118

Flat Head	
Machine Screw, 90 Deg Flat Head	119

Hex Head	
Machine Screw, Indented Hex Head	119
Machine Screw, Indented Hex Washer Head	120

Special Use Heads	
Machine Screw, Oval Head	120

### Machine Screw, Thread Cutting Metric - Type 1 121

Pan Head	
Machine Screw, Pan Head	122
Machine Screw, Slotted Pan Head	122

Flat Head	
Machine Screw, 90 Deg Flat Head	123

Hex Head	
Machine Screw, Indented Hex Head	123
Machine Screw, Indented Hex Washer Head	124

Special Use Heads	
Machine Screw, Oval Head	124

### Machine Screw, Thread Forming Metric - Type TA 125

Pan Head	
Machine Screw, Pan Head	126
Machine Screw, Slotted Pan Head	126

Flat Head	
Machine Screw, 90 Deg Flat Head	127

Hex Head	
Machine Screw, Indented Hex Head	127
Machine Screw, Indented Hex Washer Head	128

Special Use Heads	
Machine Screw, Oval Head	128

### Socket Screws Metric - Type SOC 129

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

Notes	132
-------	-----

### Precision Socket Screws Metric - Type PSHLD 133

Precision Shoulder Screws	
Precision Shoulder Screw Cross Recess Head	134
Precision Shoulder Screw Socket Head	135
Precision Slotted Shoulder Screw Head	136

### Sheet Metal Screws, Thread Forming Metric - Type B 137

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

# Table of Contents

Special Use Heads			
Sheet Metal Screw, Oval Head	140		
<b>Sheet Metal Screws, Thread Forming Metric - Type AB</b>	<b>141</b>		
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		
<b>Sheet Metal Screws, Thread Cutting Metric - Type 25</b>	<b>145</b>		
Pan Head			
Sheet Metal Screw, Pan Head	146		
Sheet Metal Screw, Slotted Pan Head	146		
Flat Head			
Sheet Metal Screw, 90 Deg Flat Head	147		
Hex Head			
Sheet Metal Screw, Indented Hex Washer Head	147		
Notes	148		
<b>Sheet Metal Screws, Self Drilling Metric - Type TEK2</b>	<b>149</b>		
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		
Notes	152		
<b>Screws for Plastic, Thread Forming Metric - Type PF</b>	<b>153</b>		
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		
Notes	156		
		<b>Screws for Plastic, Thread Forming Metric - Type HL</b>	<b>157</b>
		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
		Notes	160
		<b>Screws for Plastic, Thread Forming Metric - Type PLAST 48/2</b>	<b>161</b>
		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
		Notes	164
		<b>Nuts Metric</b>	<b>165</b>
		Nuts	
		Hex Nut - Style 1	166
		Hex Nut - Style 2	166
		Hex Jam Nut	167
		KPS Nut	167
		Conical Washer KPS Nut	168
		Hex Flange Nut	168
		Prevailing -Torque Finished Hex Nut	169
		Prevailing-Torque Flange Nut	169
		Cap Nut	170
		Cage Nut	171
		Jam Nylon Insert Locknut, Heavy Pattern	172
		Nylon Insert Locknut, Regular Pattern	172
		<b>Washers Metric</b>	<b>173</b>
		Washers	
		Lock Washer, External Tooth	174
		Lock Washer, Internal External Tooth	175
		Lock Washer, Internal Tooth	176
		Plain Washer	177
		Plain Washer - Product Grade A	178
		Lock Washer, Split Lock Washer	179
		Notes	180

# Introduction

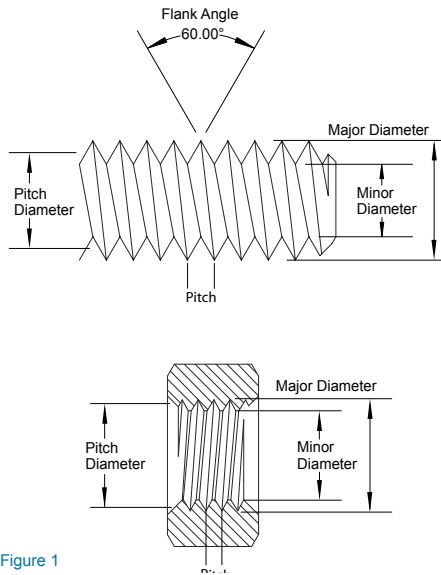


Figure 1

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.

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

# Tolerances

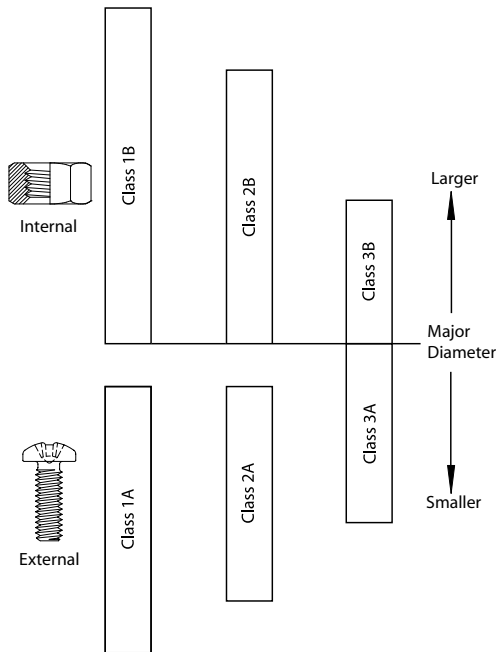


Figure 2

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



# Thread Nomenclature

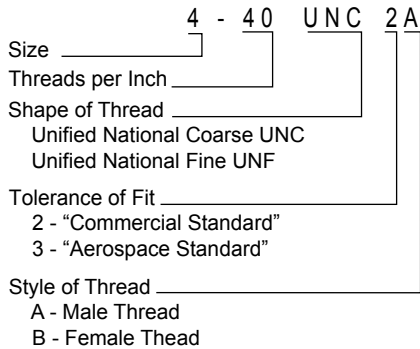


Figure 3

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.

# Features

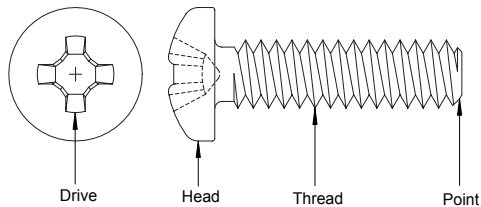


Figure 4

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.

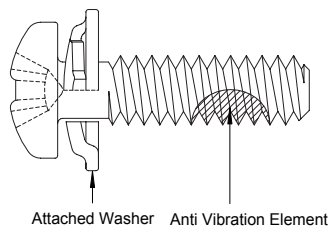


Figure 5

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



PH

**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.



SL - PH

**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.



SL

**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.



SL - TX

**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 manufacturer. 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, printers, disc drives, etc.)



TX

**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.



SQ

**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.



XTX

**Tamperproof 6 Lobe Recess** allows a high volume manufacturer 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.



HX

**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 than 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.



PZ

**Pozi 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 pozi drive has become very popular in Europe. Drive to bit engagement is slightly better than a “Phillips”. Transfer of torque from the screwdriver to the screw is good. Drive bit availability in the USA is poor.



HXX

**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 to bit engagement and the torque transfer is the same as a hex recess. Typical application is when simple tampering needs to be prevented.

## Drives



TPX

**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 ®.



PH-SQ

**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."



PAC

**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 ®.



WY

**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.



SPN

**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.



TW

**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.

# Heads



PN

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



FL

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



100DG

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



UFL

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



FL-TRIM

**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 82°.



INHX - WA

**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.



INHX

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



BIND

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



BUT

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



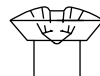
FIL

**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

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



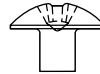
UOVAL

**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 82°.



TRIM - OVAL

**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 82°.



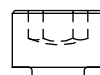
TRUSS

**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.



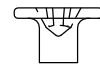
CH

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



CAP

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



WAFER

**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



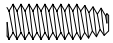
MS

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



C

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



TA

**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).



1

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



23

**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.



F

**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.

## Sheet Metal Screw Thread Styles



A

**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.



AB

**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.



B

**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.



25

**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.



TEK2

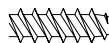
**Type TK** sheet metal screws have the same thread as a Type B with a drill feature for a point. Type TK screws are very popular in applications where a screw must drill a hole in the part.

## Threads for Plastic Application



PF

**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.



PLAST  
48/2

**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.



HL

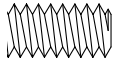
**Type HL** is a thread forming screw with a double-lead, consisting of a high and low thread. The lower thread varies in height from 1/3 to 1/2 that of the higher thread, which is sharper and flatter than a standard thread. Type HL thread is for use in plastic, nylon or other low-density materials.



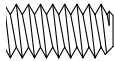
PLAST  
60/1

**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.

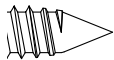


**Header Point** is produced during the forming operation. There is a small chamfer that is added to the screw blank. When the thread is added to the screw blank. This small chamfer produces a smooth transition between the point and the thread.

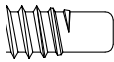


**Dog Point** is the unthreaded minor diameter shank of a screw. It is helpful for the alignment into hard to see holes. Here it is used with a machine screw thread.

## 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.

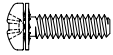


**Dog Point** is the unthreaded minor diameter shank of a screw. It is helpful for the alignment into a hard to see hole. Here it is used with a Type B thread.



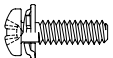
**Needle Point** is a sharp long point that allows the thread to extrude a female thread in the mating material.

## Attached Washers



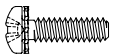
INT - SEMS

**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.



SQCN - SEMS

**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.



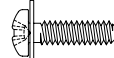
EXT - SEMS

**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 its 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.



SPLT - SEMS

**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.



FL - SEMS

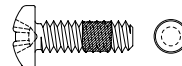
**Flat Washer SEMS** is a great way to eliminate the need to handle two components. Any size and shape washer can be assembled on to a screw. The flat washer will increase the bearing area of the screw.

## Integrated Locking Features

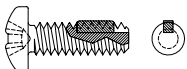
When fasteners are used in a vibration environment, there are many solutions that can be used to keep the assembly tight. Locking features can be added to the fastener to improve its resistance to vibration.



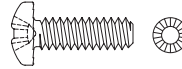
**Patch Lock** process make threaded fasteners of all sizes and configurations self-locking and self-sealing. Patch lock can be used with both male and female threads and leaves fasteners fully adjustable. Patch Lock is completely dry, fused to the fastener, and requires no curing time after installation.



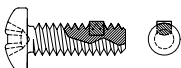
**Epoxy Lock** is a powerful locking / sealing fastener thread adhesive that is pre-applied to either male or female threaded fasteners. Though the adhesive surface is dry to the touch, the forces of engagement crush the surface skin, mix the separate epoxy components, and initiate a chemical reaction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



**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.



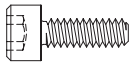
**Serrated Teeth** have integrated formed teeth on their bearing surfaces which are shaped and directed to "bite" into the surface of the member being joined when tightened. This "biting" mechanism creates a ratchet-type resistance to loosening without the sloppiness or variation of a multi-piece bolted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



**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<sup>®</sup> and Vespel3<sup>®</sup> are available for extremely high temperature applications.

## 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 choice 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.

## Shoulder Screws

PENCOM® offers two styles of shoulder screws. One is a Socket Head Shoulder Screw (cold headed) and the other is a precision shoulder screw (screw machined).



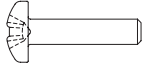
**Socket Head Shoulder Screw** has a  $\pm 0.001$  tolerance shoulder diameter starting at  $\frac{1}{4}$ " thru 2". The tolerance on the shoulder length is  $\pm 0.005$ . All Socket Shoulder Screws have a hex recess for a drive. The parts are made from alloy steel, are through hardened to Rc 32 – 43, 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.



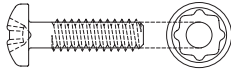
**Socket Head Precision Shoulder Screw** has a  $+0.000 / -0.001$  tolerance shoulder diameter starting at  $\frac{1}{8}$  thru  $\frac{1}{2}$ ". The tolerance on the shoulder length is  $+0.002 / -0.000$ . Precision shoulder screws are made in three materials, Brass, 303 Stainless Steel, and 12L14 Steel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



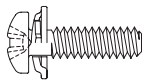
## SEMS - How they are made



A screw blank is made, looking exactly like a finished screw without the threads. The shaft of the screw blank is at the pitch diameter. The pitch diameter is midway between the minor diameter and the major diameter.



A washer is manufactured with an inner diameter that is slightly larger than the pitch diameter of the screw blank, but smaller than the major diameter of the finished screw.



The washer is assembled on to the screw blank. The threads are then made in a process called thread rolling. This operation forces the material into the minor diameter and forces material up to create the major diameter. The diameter of the thread is larger than the washer's inner diameter. Once finished, the washer will never be able to be removed again.

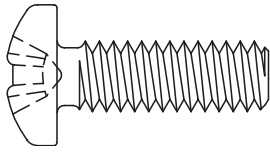
## Materials

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).

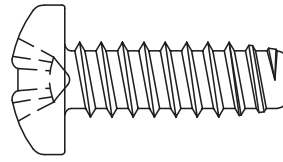
Material	Application	Strength	Corrosion Resistance
Low Carbon Steel	All	Low	Must be Plated
Medium Carbon Steel	Automotive	Medium	Must be Plated
Alloy Steel	Critical Joints, Socket Head Products	High	Fair
Titanium	Aerospace	High	Excellent
Monel	Marine	High	Excellent
Incoel	High Temperature	High	Excellent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

Figure 6

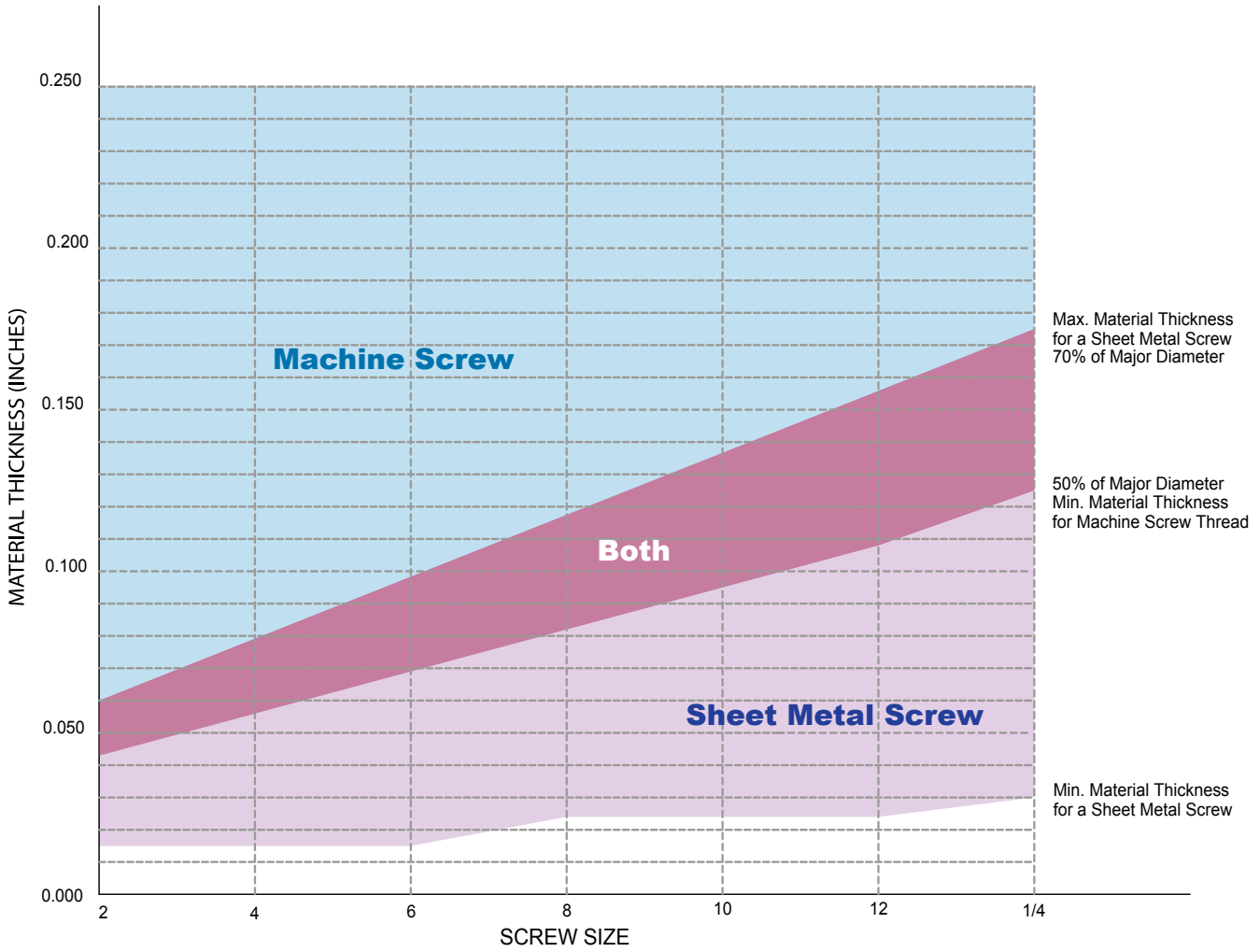
# When to Use



Machine Screw



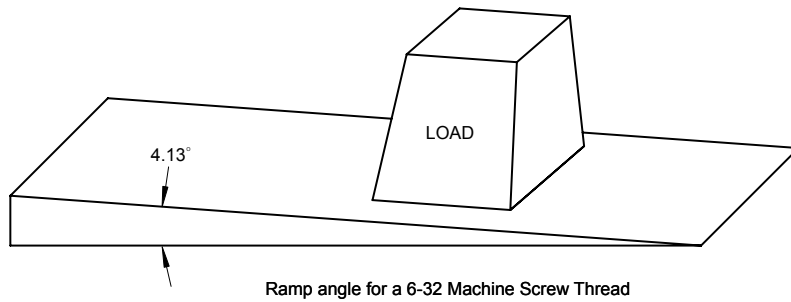
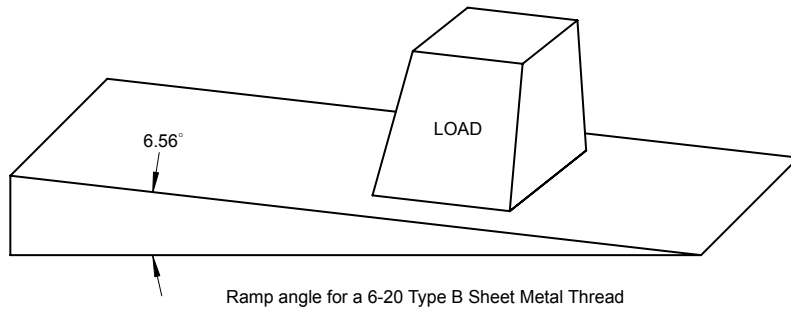
Sheet Metal Screw



Screw Size	#2	#4	#6	#8	#10	#12	#14
Sheet Metal Screw Max. Material Thickness	0.060	0.078	0.097	0.115	0.133	0.151	0.175
Machine Screw MIN Material Thickness	0.043	0.056	0.069	0.082	0.095	0.108	0.125
Sheet Metal Screw MIN Material Thickness	0.015	0.015	0.015	0.025	0.025	0.025	0.030

# Threads Per Inch

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

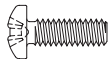
Thread	Machine Screw Threads		Sheet Metal Screws			
	Fine	Coarse	A	B, AB, BP, BF, 25	Type P482	Type HL
2	64	56	-	32	28	-
4	48	40	-	24	20	-
6	40	32	18	20	19	18
8	36	32	15	18	16	15
10	32	24	12	16	14	-
12	28	24	11	14	14	-
1/4	28	20	10	14	10	-
5/16	24	18	9	12	-	-
3/8	24	16	9	12	-	-



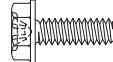
# Machine Screws

## Inch

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



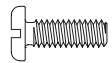
**Pan Head**  
Page 22



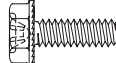
**Indented Hex Washer Head**  
Page 25



**Button Head**  
Page 29



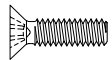
**Slotted Pan Head**  
Page 22



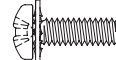
**Indented Hex Washer Head with Serrations**  
Page 26



**Fillister Head**  
Page 29



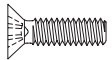
**82 Deg Flat Head**  
Page 23



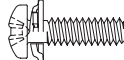
**Internal Tooth Lock Washer SEMS**  
Page 26



**Oval Head**  
Page 30



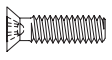
**100 Deg Flat Head**  
Page 23



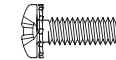
**Square Cone Washer SEMS**  
Page 27



**Slotted Oval Head**  
Page 30



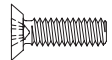
**82 Deg Trimmed Flat Head**  
Page 24



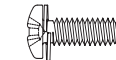
**External Tooth Lock Washer SEMS**  
Page 27



**Trimmed Oval Head**  
Page 31



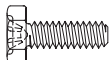
**82 Deg Undercut Flat Head**  
Page 24



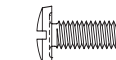
**Split Lock Washer SEMS**  
Page 28



**Undercut Oval Head**  
Page 31



**Indented Hex Head**  
Page 25



**Slotted Binder Head**  
Page 28



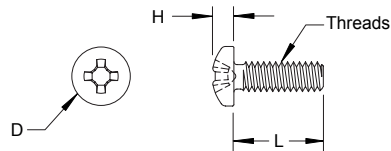
**Truss Head**  
Page 32

# Machine Screw

Pan Head  
Inch

Sample Part Number

6 - 32 x 1/2 PH - PN - MS - STL - Z  
Thread Length Drive Series Material Finish



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





Custom sizes available.

Length	L	
	#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.

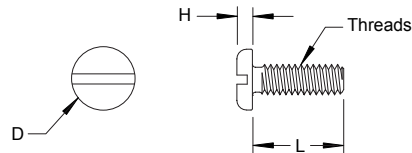
Drive	Description
 PH	Cross Recess
 SL - PH	Slotted - Cross Recess
 TX	6 - Lobe
 SL - TX	Slotted - 6 - Lobe

# Machine Screw

Slotted Pan Head  
Inch

Sample Part Number

4 - 40 x 1/2 SL - PN - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	D Head Diameter
2 - 56	.053 / .045	.167 / .155
4 - 40	.068 / .058	.219 / .205
6 - 32	.082 / .072	.270 / .256
8 - 32	.096 / .085	.322 / .306
10 - 32	.110 / .099	.373 / .357
1/4 - 20	.144 / .130	.492 / .473


Custom sizes available.

Length	L	
	#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.

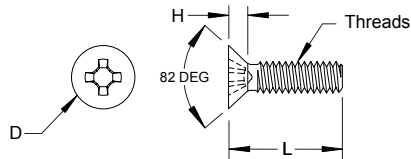
Drive	Description
 SL	Slotted

# Machine Screw

82 Deg Flat Head  
Inch

Sample Part Number

2 - 56 x 1/2 PH - FL - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height REF	D Head Diameter	Drive Size	
			Cross Recess	6 - Lobe
2 - 56	.051	.162 / .144	1	T8
4 - 40	.067	.212 / .191	1	T10
6 - 32	.083	.262 / .238	2	T15
8 - 32	.100	.312 / .285	2	T20
10 - 32	.116	.362 / .333	2	T25
1/4 - 20	.153	.477 / .442	3	T30

Custom sizes available.

Length	L	
	#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
	TX	6 - Lobe
	PZ *	Pozi

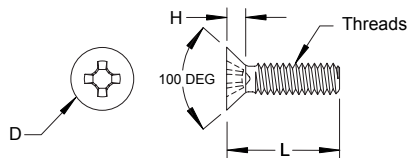
\* Same size for POZI Drive

# Machine Screw

100 Deg Flat Head  
Inch

Sample Part Number

8 - 32 x 1/2 PH - 100DG - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height REF	D Head Diameter	Drive Size	
			Cross Recess	6 - Lobe
2 - 56	.037	.162 / .142	1	T6
4 - 40	.049	.212 / .188	1	T8
6 - 32	.060	.262 / .m 235	2	T10
8 - 32	.072	.312 / .282	2	T15
10 - 32	.083	.362 / .329	2	T20
1/4 - 20	.110	.477 / .437	3	T27

Custom sizes available.

Length	L	
	#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.

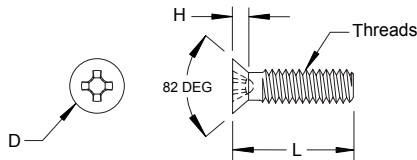
Drive	Description	
	PH	Cross Recess
	SL	Slotted
	TX	6 - Lobe
	PZ *	Pozi

# Machine Screw

82 Deg Trimmed Flat Head  
Inch

Sample Part Number

4 - 40 x 1/2 PH - TRIM2 - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	Head Size	H Height REF	D Head Diameter	Drive Size Cross Recess
4 - 40	3	.052	.199 / .171	1
6 - 32	4	.052	.225 / .195	1
6 - 32	5	.068	.252 / .220	2
8 - 32	5	.052	.252 / .220	2
8 - 32	6	.069	.279 / .244	2
10 - 32	8	.085	.332 / .292	2
1/4 - 20	10	.080	.385 / .340	2

Custom sizes available.

Length	L	
	#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.

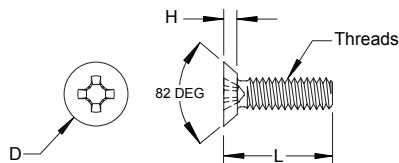
Drive	Description
	PH Cross Recess

# Machine Screw

82 Deg Undercut Flat Head  
Inch

Sample Part Number

4 - 40 x 1/2 PH - UFL - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	D Head Diameter	Drive Size Cross Recess
2 - 56	.036 / .028	.162 / .144	1
4 - 40	.047 / .038	.212 / .191	1
6 - 32	.059 / .048	.262 / .238	3
8 - 32	.070 / .058	.312 / .285	3
10 - 32	.081 / .068	.362 / .333	3
1/4 - 20	.107 / .092	.477 / .442	3

Custom sizes available.

Length	L	
	#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

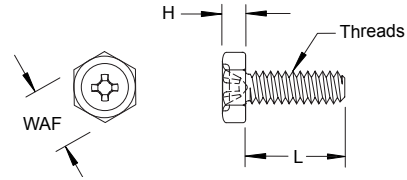


# Machine Screw

Indented Hex Head  
Inch

Sample Part Number

6 - 32 x 1/2 PH - INHX - MS - STL - Z  
Thread Length Series Material Finish



Thread	H Height	WAF Width Across Flats	Drive Size Cross Recess
2 - 56	.050 / .040	.125 / .120	1
4 - 40	.060 / .049	.188 / .181	1
6 - 32	.093 / .080	.250 / .244	2
8 - 32	.110 / .096	.250 / .244	2
10 - 32	.120 / .105	.312 / .305	2
1/4 - 20	.190 / .172	.375 / .367	3




Custom sizes available.

Length	L	
	#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.

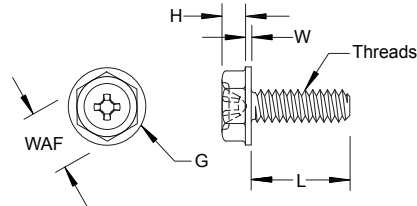
Drive	Description
 PH	Cross Recess
 SL	Slotted
 USL	Unslotted

# Machine Screw

Indented Hex Washer Head  
Inch

Sample Part Number

4 - 40 x 1/2 PH - INHX - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	G Washer Outside Diameter	W Washer Thickness	WAF Width Across Flats	Drive Size Cross Recess
2 - 56	.050 / .040	.125 / .120	.016 / .010	.125 / .120	1
4 - 40	.060 / .049	.188 / .181	.019 / .011	.188 / .181	1
6 - 32	.093 / .080	.250 / .244	.025 / .015	.250 / .244	2
8 - 32	.110 / .096	.250 / .244	.031 / .019	.250 / .244	2
10 - 32	.120 / .105	.312 / .305	.031 / .019	.312 / .305	2
1/4 - 20	.190 / .172	.375 / .367	.050 / .030	.375 / .367	3




Custom sizes available.

Length	L	
	#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.

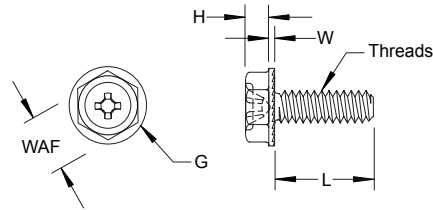
Drive	Description
 PH	Cross Recess
 SL	Slotted
 USL	Unslotted

# Machine Screw

Indented Hex Washer Head with Serration  
Inch

Sample Part Number

4 - 40 x 1/2 PH - INHX - SERR - WA - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	G Washer Outside Diameter	W Washer Thickness	WAF Width Across Flats	Drive Size Cross Recess
2 - 56	.050 / .040	.166 / .154	.016 / .010	.125 / .120	1
4 - 40	.060 / .049	.243 / .225	.018 / .011	.188 / .181	1
6 - 32	.093 / .080	.328 / .302	.025 / .015	.250 / .244	2
8 - 32	.110 / .096	.348 / .322	.031 / .019	.250 / .244	2
10 - 32	.120 / .105	.414 / .384	.031 / .019	.312 / .305	2
1/4 - 20	.190 / .172	.520 / .480	.050 / .030	.375 / .367	3

Custom sizes available.

Length	L	
	#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.

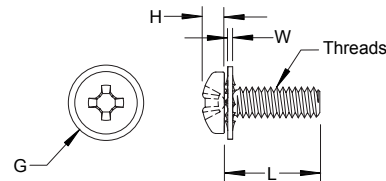
Drive	Description	
	PH	Cross Recess
	SL	Slotted
	USL	Unslotted

# Machine Screw

Internal Tooth Lock Washer SEMS  
Inch

Sample Part Number

4 - 40 x 1/4 PH - PN - INT - SEMS - MS - STL - Z  
Thread Length Drive Series Material Finish



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

Custom sizes available.

Length	L	
	#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.

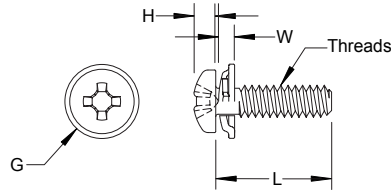
Drive	Description	
	PH	Cross Recess
	SL - PH	Slotted Cross Recess
	TX	6 - Lobe
	SL - TX	Slotted - 6 - Lobe

# Machine Screw

Square Cone Lock Washer SEMS  
Inch

Sample Part Number

6 - 32 x 1/2 PH - PN - SQCN - SEMS - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	G Washer Outside Diameter	W Washer Thickness	Drive Size	
				Cross Recess	6 - Lobe
4 - 40	.080 / .070	.250 / .244	.039 / .021	1	T10
6 - 32	.097 / .087	.320 / .307	.061 / .039	2	T15
8 - 32	.115 / .105	.383 / .370	.073 / .050	2	T20
10 - 32	.133 / .122	.446 / .433	.075 / .051	2	T25
1/4 - 20	.175 / .162	.508 / .495	.088 / .064	3	T30

Custom sizes available.

Length	L	
	#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.

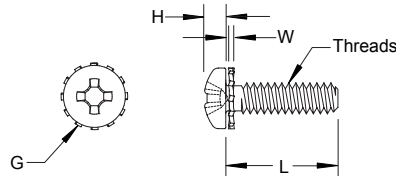
Drive	Description	
	PH	Cross Recess
	SL - PH	Slotted - Cross Recess
	TX	6 - Lobe
	SL - TX	Slotted - 6 - Lobe

# Machine Screw

External Tooth Lock Washer SEMS  
Inch

Sample Part Number

6 - 32 x 1/2 PH - PN - EXT - SEMS - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	G Washer Outside Diameter	W Washer Thickness	Drive Size	
				Cross Recess	6 - Lobe
2 - 56	.062 / .053	.180 / .170	.016 / .010	1	T7
4 - 40	.080 / .070	.230 / .220	.018 / .012	1	T10
6 - 32	.097 / .087	.285 / .270	.022 / .016	2	T15
8 - 32	.115 / .105	.320 / .305	.023 / .018	2	T20
10 - 32	.133 / .122	.381 / .365	.024 / .018	2	T25
1/4 - 20	.175 / .162	.510 / .494	.028 / .023	3	T30

Custom sizes available.

Length	L	
	#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 - PH	Slotted - Cross Recess
	TX	6 - Lobe
	SL - TX	Slotted - 6 - Lobe

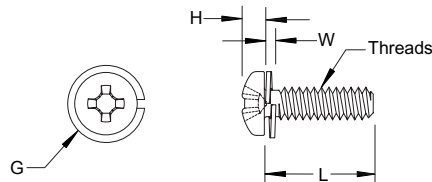
# Machine Screw

## Split Lock Washer SEMS

Inch

Sample Part Number

2 - 56 x 1/2 PH - PN - SPLT - LK - SEMS - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	G Washer Outside Diameter	W Washer Thickness	Drive Size Cross Recess
2 - 56	.062 / .053	.156 / .145	.035 / .020	1
4 - 40	.080 / .070	.208 / .195	.047 / .031	1
6 - 32	.097 / .087	.261 / .248	.062 / .034	2
8 - 32	.115 / .105	.319 / .305	.078 / .031	2
10 - 32	.133 / .122	.373 / .359	.093 / .047	2
1/4 - 20	.175 / .162	.496 / .480	.125 / .062	3

Custom sizes available.

Length	L	
	#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

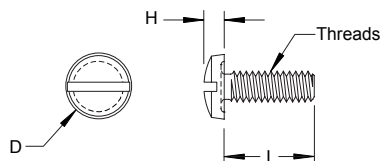
# Machine Screw

## Slotted Binder Head

Inch

Sample Part Number

2 - 56 x 1/2 SL - BIND - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	D Head Diameter	Drive Size Cross Recess
2 - 56	.050 / .043	.181 / .171	1
4 - 40	.068 / .061	.235 / .223	1
6 - 32	.087 / .078	.290 / .275	2
8 - 32	.105 / .095	.344 / .326	2
10 - 32	.123 / .112	.399 / .378	2
1/4 - 20	.165 / .152	.525 / .498	3

Custom sizes available.

Length	L	
	#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.

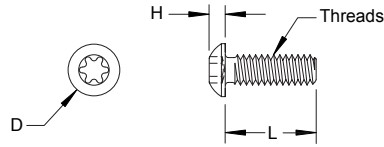
Drive	Description
	PH Cross Recess
	SL Slotted

# Machine Screw

Button Head  
Inch

Sample Part Number

6 - 32 x 1/2 TX - BUT - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	D Head Diameter	Drive Size 6 - Lobe
2 - 56	.046 / .038	.164 / .154	T6
4 - 40	.059 / .051	.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

Custom sizes available.

Length	L	
	#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.

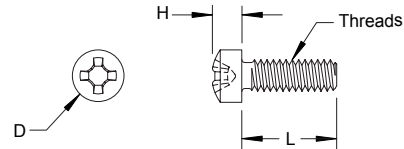
Drive	Description
	TX 6 - Lobe
	SL - TX Slotted - 6 - Lobe

# Machine Screw

Fillister Head  
Inch

Sample Part Number

6 - 32 x 1/2 PH - FIL - MS - STL - Z  
Thread Length Drive Series Material Finish



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 / .156	.313 / .292	2
1/4 - 20	.237 / .207	.414 / .389	3

Custom sizes available.

Length	L	
	#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.

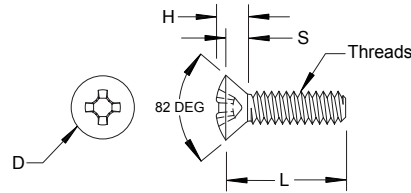
Drive	Description
	PH Cross Recess
	SL Slotted

# Machine Screw

Oval Head  
Inch

Sample Part Number

6 - 32 x 1/2 PH - OVAL - MS - STL - Z  
Thread Length Drive Series Material Finish



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
4 - 40	.104 / .084	.067	.212 / .191	1
6 - 32	.128 / .105	.083	.262 / .238	2
8 - 32	.152 / .126	.100	.312 / .285	2
10 - 32	.176 / .148	.116	.362 / .333	2
1/4 - 20	.232 / .197	.153	.477 / .442	3



Custom sizes available.

Length	L	
	#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.

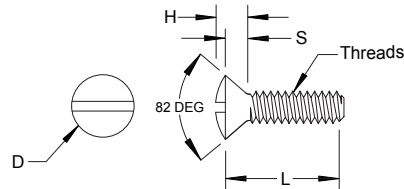
Drive	Description
 PH	Cross Recess
 SL - PH	Slotted - Cross Recess

# Machine Screw

Slotted Oval Head  
Inch

Sample Part Number

8 - 32 x 1/2 SL - OVAL - MS - STL - Z  
Thread Length Drive Series Material Finish



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

Custom sizes available.

Length	L	
	#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.

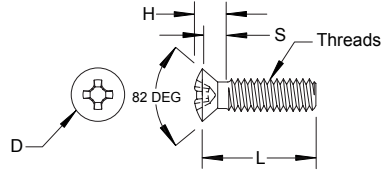
Drive	Description
 SL	Slotted

# Machine Screw

Trimmed Oval Head  
Inch

Sample Part Number

8 - 32 x 1/2 PH - TRIM - OVAL - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	Head Size	H Total Head Height	S Head Side Height REF	D Head Diameter	Drive Size Cross Recess
4 - 40	3	.086 / .074	0.072	.199 / .181	1
6 - 32	4	.091 / .079	0.086	.225 / .207	1
6 - 32	5	.112 / .098	0.073	.252 / .232	2
8 - 32	5	.096 / .083	0.073	.252 / .232	2
8 - 32	6	.117 / .102	0.092	.279 / .257	2
10 - 32	8	.141 / .124	0.107	.332 / .308	2
1/4 - 20	10	.146 / .129	0.125	.385 / .359	2


Custom sizes available.

Length	L	
	#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.

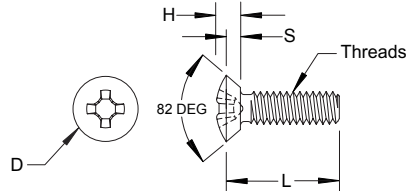
Drive	Description
 PH	Cross Recess

# Machine Screw

Undercut Oval Head  
Inch

Sample Part Number

6 - 32 x 1/2 PH - UOVAL - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Total Head Height	S Head Side Height REF	D Head Diameter	Drive Size Cross Recess
2 - 56	.065 / .050	0.036	.162 / .144	1
4 - 40	.084 / .067	0.047	.212 / .191	1
6 - 32	.104 / .084	0.059	.262 / .238	2
8 - 32	.123 / .101	0.070	.312 / .285	2
10 - 32	.142 / .118	0.081	.362 / .333	2
1/4 - 20	.186 / .158	0.107	.477 / .442	3


Custom sizes available.

Length	L	
	#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.

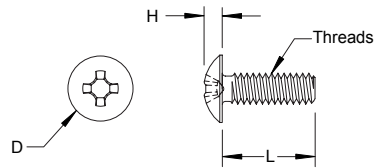
Drive	Description
 PH	Cross Recess

# Machine Screw

Truss Head  
Inch

Sample Part Number

4 - 40 x 1/2 PH - TRUSS - MS - STL - Z  
Thread Length Drive Series Material Finish



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

Custom sizes available.

Length	L	
	#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

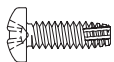
Other finishes available.

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

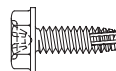


# Machine Screws, Thread Cutting Inch - Type F

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



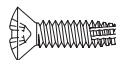
Pan Head  
Page 34



Indented Hex Washer Head  
Page 36



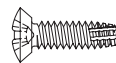
Slotted Pan Head  
Page 34



Oval Head  
Page 37



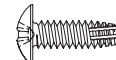
82 Deg Flat Head  
Page 35



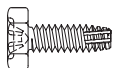
Undercut Oval Head  
Page 37



82 Deg Undercut Flat Head  
Page 35



Truss Head  
Page 38



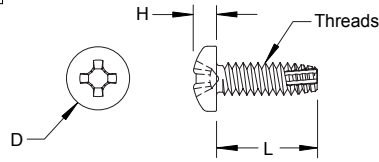
Indented Hex Head  
Page 36

# Machine Screw, Thread Cutting

Pan Head  
Inch - Type F

Sample Part Number

6 - 32 x 1/2 PH - PN - F - STL - Z  
Thread Length Drive Series Material Finish



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



Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

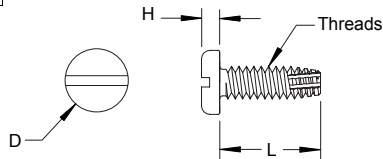
Drive	Description
	PH Cross Recess
	TX 6 - Lobe

# Machine Screw, Thread Cutting

Slotted Pan Head  
Inch - Type F

Sample Part Number

4 - 40 x 1/2 SL - PN - F - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	D Head Diameter
2 - 56	.053 / .045	.167 / .155
4 - 40	.068 / .058	.219 / .205
6 - 32	.082 / .072	.270 / .256
8 - 32	.096 / .085	.322 / .306
10 - 32	.110 / .099	.373 / .357
1/4 - 20	.144 / .130	.492 / .473

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

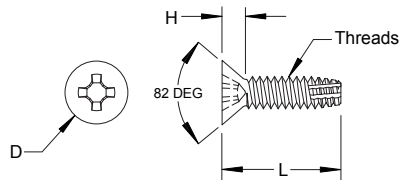
Drive	Description
	SL Slotted

# Machine Screw, Thread Cutting

82 Deg Flat Head  
Inch - Type F

Sample Part Number

4 - 40 x 1/2 PH - FL - F - STL - Z  
Thread Length Drive Series Material Finish



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

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

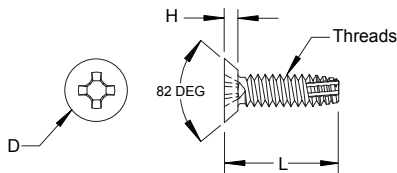
Drive	Description
	PH Cross Recess
	SL Slotted

# Machine Screw, Thread Cutting

82 Deg Undercut Flat Head  
Inch - Type F

Sample Part Number

4 - 40 x 1/2 PH - UFL - F - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	D Head Diameter	Drive Size Cross Recess
2 - 56	.036 / .028	.162 / .144	1
4 - 40	.047 / .038	.212 / .191	1
6 - 32	.059 / .048	.262 / 238	3
8 - 32	.070 / .058	.312 / .285	3
10 - 32	.081 / .068	.362 / .333	3
1/4 - 20	.107 / .092	.477 / .442	3

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

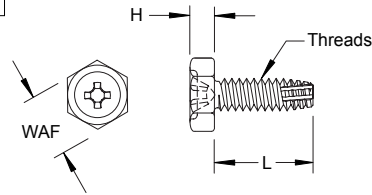
Drive	Description
	PH Cross Recess

# Machine Screw, Thread Cutting

Indented Hex Head  
Inch - Type F

Sample Part Number

4 - 40 x 1/2 PH - INHX - F - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	WAF Width Across Flats	Drive Size Cross Recess
2 - 56	.050 / .040	.125 / .120	1
4 - 40	.060 / .049	.188 / .181	1
6 - 32	.093 / .080	.250 / .244	2
8 - 32	.110 / .096	.250 / .244	2
10 - 32	.120 / .105	.312 / .305	2
1/4 - 20	.190 / .172	.375 / .367	3




Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

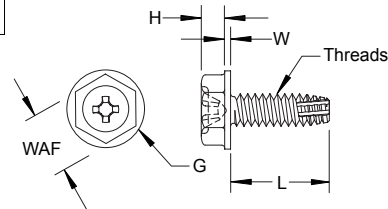
Drive	Description
	PH Cross Recess
	SL Slotted
	USL Unslotted

# Machine Screw, Thread Cutting

Indented Hex Washer Head  
Inch - Type F

Sample Part Number

4 - 40 x 1/2 PH - INHX - WA - F - STL - Z  
Thread Length Drive Series Material Finish



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




Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

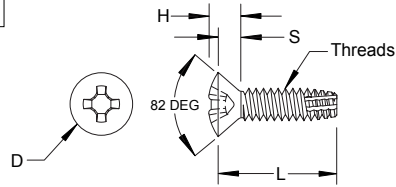
Drive	Description
	PH Cross Recess
	SL Slotted
	USL Unslotted

# Machine Screw, Thread Cutting

Oval Head  
Inch - Type F

Sample Part Number

6 - 32 x 1/2 PH - OVAL - F - STL - Z  
Thread Length Drive Series Material Finish



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
4 - 40	.104 / .084	.067	.212 / .191	1
6 - 32	.128 / .105	.083	.262 / .238	2
8 - 32	.152 / .126	.100	.312 / .285	2
10 - 32	.176 / .148	.116	.362 / .333	2
1/4 - 20	.232 / .197	.153	.477 / .442	3

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

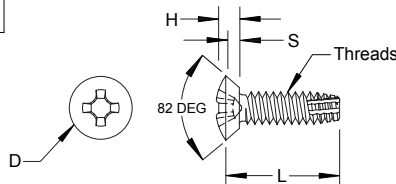
Drive	Description
	PH Cross Recess
	SL Slotted
	SL - PH Slotted - Cross Recess

# Machine Screw, Thread Cutting

Undercut Oval Head  
Inch - Type F

Sample Part Number

6 - 32 x 1/2 PH - UOVAL - F - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Total Head Height	S Head Side Height REF	D Head Diameter	Drive Size Cross Recess
2 - 56	.065 / .050	.036	.162 / .144	1
4 - 40	.084 / .067	.047	.212 / .191	1
6 - 32	.104 / .084	.059	.262 / .238	2
8 - 32	.123 / .101	.070	.312 / .285	2
10 - 32	.142 / .118	.081	.362 / .333	2
1/4 - 20	.186 / .158	.107	.477 / .442	3

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

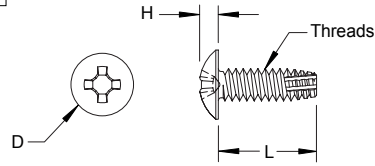
Drive	Description
	PH Cross Recess

# Machine Screw, Thread Cutting

Truss Head  
Inch - Type F

Sample Part Number

4 - 40 x 1/2 PH - TRUSS - F - STL - Z  
Thread Length Drive Series Material Finish



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

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

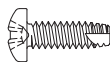
Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

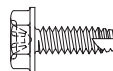
Drive	Description
	PH Cross Recess
	SL Slotted
	SL - PH Slotted - Cross Recess

# Machine Screws, Thread Cutting Inch - Type 23

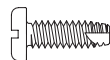
Pan Head	
Machine Screw, Pan Head	40
Machine Screw, Slotted Pan Head	40
Flat Head	
Machine Screw, 82 Deg Flat Head	41
Machine Screw, 82 Deg Undercut Flat Head	41
Hex Head	
Machine Screw, Indented Hex Head	42
Machine Screw, Indented Hex Washer Head	42
Special Use Heads	
Machine Screw, Oval Head	43
Machine Screw, Undercut Oval Head	43
Machine Screw, Truss Head	44



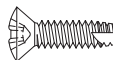
Pan Head  
Page 40



Indented Hex Washer Head  
Page 42



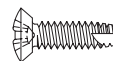
Slotted Pan Head  
Page 40



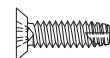
Oval Head  
Page 43



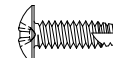
82 Deg Flat Head  
Page 41



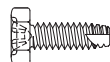
Undercut Oval Head  
Page 43



82 Deg Undercut Flat Head  
Page 41



Truss Head  
Page 44



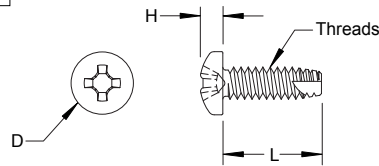
Indented Hex Head  
Page 42

# Machine Screw, Thread Cutting

Pan Head  
Inch - Type 23

Sample Part Number

6 - 32 x 1/2 PH - PN - 23 - STL - Z  
Thread Length Drive Series Material Finish



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

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

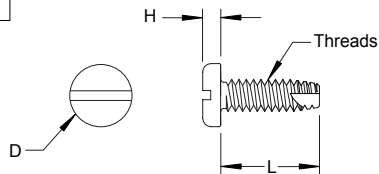
Drive	Description
	PH Cross Recess
	TX 6 - Lobe

# Machine Screw, Thread Cutting

Slotted Pan Head  
Inch - Type 23

Sample Part Number

4 - 40 x 1/2 SL - PN - 23 - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	D Head Diameter
2 - 56	.053 / .045	.167 / .155
4 - 40	.068 / .058	.219 / .205
6 - 32	.082 / .072	.270 / .256
8 - 32	.096 / .085	.322 / .306
10 - 32	.110 / .099	.373 / .357
1/4 - 20	.144 / .130	.492 / .473

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

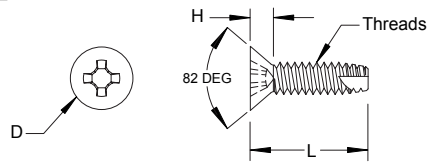


# Machine Screw, Thread Cutting

82 Deg Flat Head  
Inch - Type 23

Sample Part Number

4 - 40 x 1/2 PH - FL - 23 - STL - Z  
Thread Length Drive Series Material Finish



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

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

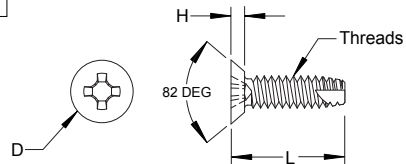
Drive	Description
	PH Cross Recess
	SL Slotted

# Machine Screw, Thread Cutting

82 Deg Undercut Flat Head  
Inch - Type 23

Sample Part Number

4 - 40 x 1/2 PH - UFL - 23 - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	D Head Diameter	Drive Size Cross Recess
2 - 56	.036 / .028	.162 / .144	1
4 - 40	.047 / .038	.212 / .191	1
6 - 32	.059 / .048	.262 / .238	2
8 - 32	.070 / .058	.312 / .285	2
10 - 32	.081 / .068	.362 / .333	2
1/4 - 20	.107 / .092	.477 / .442	3

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

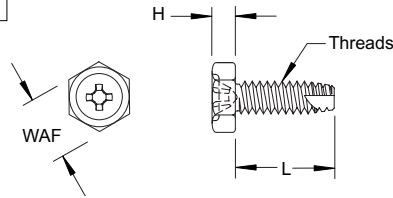
Drive	Description
	PH Cross Recess
	SL Slotted

# Machine Screw, Thread Cutting

Indented Hex Head  
Inch - Type 23

Sample Part Number

4 - 40 x 1/2 PH - INHX - 23 - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	WAF Width Across Flats	Drive Size Cross Recess
2 - 56	.050 / .040	.125 / .120	1
4 - 40	.060 / .049	.188 / .181	1
6 - 32	.093 / .080	.250 / .244	2
8 - 32	.110 / .096	.250 / .244	2
10 - 32	.120 / .105	.312 / .305	2
1/4 - 20	.190 / .172	.375 / .367	3




Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

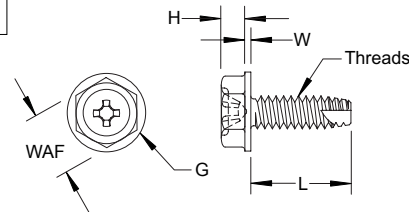
Drive	Description
	PH Cross Recess
	SL Slotted
	USL Unslotted

# Machine Screw, Thread Cutting

Indented Hex Washer Head  
Inch - Type 23

Sample Part Number

4 - 40 x 1/2 PH - INHX - WA - 23 - STL - Z  
Thread Length Drive Series Material Finish



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




Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

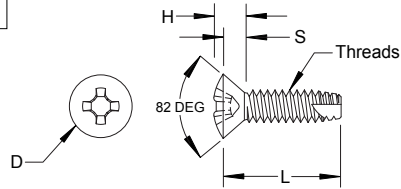
Drive	Description
	PH Cross Recess
	SL Slotted
	USL Unslotted

# 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



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
4 - 40	.104 / .084	.067	.212 / .191	1
6 - 32	.128 / .105	.083	.262 / .238	2
8 - 32	.152 / .126	.100	.312 / .285	2
10 - 32	.176 / .148	.116	.362 / .333	2
1/4 - 20	.232 / .197	.153	.477 / .442	3

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

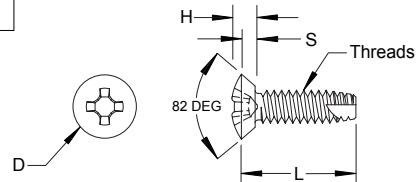
Drive	Description
	PH Cross Recess
	SL Slotted
	SL - PH Slotted - Cross Recess

# Machine Screw, Thread Cutting

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



Thread	H Total Head Height	S Head Side Height REF	D Head Diameter	Drive Size Cross Recess
2 - 56	.065 / .050	.036	.162 / .144	1
4 - 40	.084 / .067	.047	.212 / .191	1
6 - 32	.104 / .084	.059	.262 / .238	2
8 - 32	.123 / .101	.070	.312 / .285	2
10 - 32	.142 / .118	.081	.362 / .333	2
1/4 - 20	.186 / .158	.107	.477 / .442	3

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

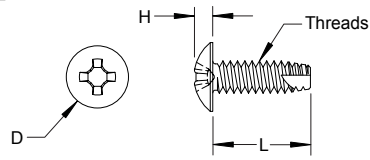
Drive	Description
	PH Cross Recess
	SL Slotted

# Machine Screw, Thread Cutting

Truss Head  
Inch - Type 23

Sample Part Number

4 - 40 x 1/2 PH - TRUSS - 23 - STL - Z  
Thread Length Drive Series Material Finish



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




Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

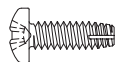
Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

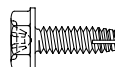
Drive	Description
	PH Cross Recess
	SL Slotted
	SL - PH Slotted - Cross Recess

# Machine Screws, Thread Cutting Inch - Type 1

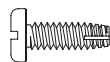
Pan Head	
Machine Screw, Pan Head	46
Machine Screw, Slotted Pan Head	46
Flat Head	
Machine Screw, 82 Deg Flat Head	47
Machine Screw, 82 Deg Undercut Flat Head	47
Hex Head	
Machine Screw, Indented Hex Head	48
Machine Screw, Indented Hex Washer Head	48
Special Use Heads	
Machine Screw, Oval Head	49
Machine Screw, Undercut Oval Head	49
Machine Screw, Truss Head	50



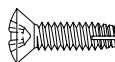
Pan Head  
Page 46



Indented Hex Washer Head  
Page 48



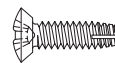
Slotted Pan Head  
Page 46



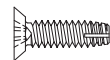
Oval Head  
Page 49



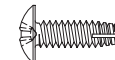
82 Deg Flat Head  
Page 47



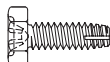
Undercut Oval Head  
Page 49



82 Deg Undercut Flat Head  
Page 47



Truss Head  
Page 50



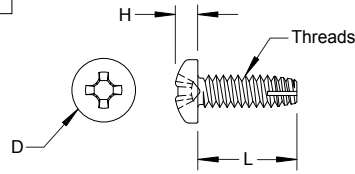
Indented Hex Head  
Page 48

# Machine Screw, Thread Cutting

Pan Head  
Inch - Type 1

Sample Part Number

6 - 32 x 1/2 PH - PN - 1 - STL - Z  
Thread Length Drive Series Material Finish



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

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

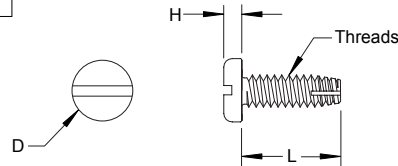
Drive	Description
	PH Cross Recess
	TX 6 - Lobe

# Machine Screw, Thread Cutting

Slotted Pan Head  
Inch - Type 1

Sample Part Number

4 - 40 x 1/2 SL - PN - 1 - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	D Head Diameter
2 - 56	.053 / .045	.167 / .155
4 - 40	.068 / .058	.219 / .205
6 - 32	.082 / .072	.270 / .256
8 - 32	.096 / .085	.322 / .306
10 - 32	.110 / .099	.373 / .357
1/4 - 20	.144 / .130	.492 / .473

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

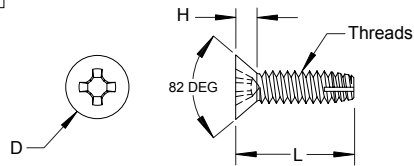
Drive	Description
	SL Slotted

# Machine Screw, Thread Cutting

82 Deg Flat Head  
Inch - Type 1

Sample Part Number

4 - 40 x 1/2 PH - FL - 1 - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height REF	D Head Diameter	Drive Size Cross Recess
2 - 56	.051	.172 / .147	1
4 - 40	.067	.225 / .195	1
6 - 32	.083	.279 / .244	2
8 - 32	.100	.332 / .292	2
10 - 32	.116	.385 / .340	2
1/4 - 20	.153	.507 / .452	3



Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

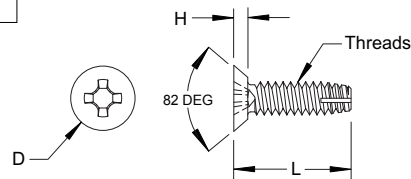
Drive	Description
	PH Cross Recess
	SL Slotted

# Machine Screw, Thread Cutting

82 Deg Undercut Flat Head  
Inch - Type 1

Sample Part Number

4 - 40 x 1/2 PH - UFL - 1 - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	D Head Diameter	Drive Size Cross Recess
2 - 56	.036 / .028	.162 / .144	1
4 - 40	.047 / .038	.212 / .191	1
6 - 32	.059 / .048	.262 / .238	2
8 - 32	.070 / .058	.312 / .285	2
10 - 32	.081 / .068	.362 / .333	2
1/4 - 20	.107 / .092	.477 / .442	3



Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

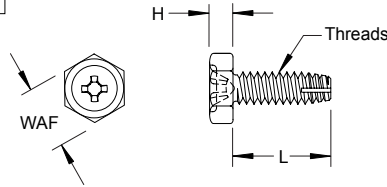
Drive	Description
	PH Cross Recess
	SL Slotted

# Machine Screw, Thread Cutting

Indented Hex Head  
Inch - Type 1

Sample Part Number

4 - 40 x 1/2 PH - INHX - 1 - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	WAF Width Across Flats	Drive Size Cross Recess
2 - 56	.050 / .040	.125 / .120	1
4 - 40	.060 / .049	.188 / .181	1
6 - 32	.093 / .080	.250 / .244	2
8 - 32	.110 / .096	.250 / .244	2
10 - 32	.120 / .105	.312 / .305	2
1/4 - 20	.190 / .172	.375 / .367	3




Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

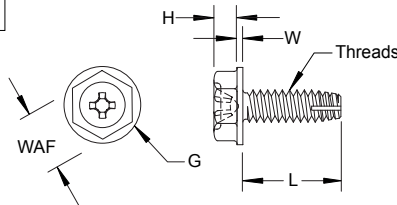
Drive	Description
 PH	Cross Recess
 SL	Slotted
 USL	Unslotted

# Machine Screw, Thread Cutting

Indented Hex Washer Head  
Inch - Type 1

Sample Part Number

4 - 40 x 1/2 PH - INHX - WA - 1 - STL - Z  
Thread Length Drive Series Material Finish



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




Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

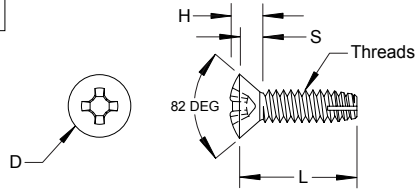


# Machine Screw, Thread Cutting

Oval Head  
Inch - Type 1

Sample Part Number

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



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
4 - 40	.104 / .084	.067	.212 / .191	1
6 - 32	.128 / .105	.083	.262 / .238	2
8 - 32	.152 / .126	.100	.312 / .285	2
10 - 32	.176 / .148	.116	.362 / .333	2
1/4 - 20	.232 / .197	.153	.477 / .442	3

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

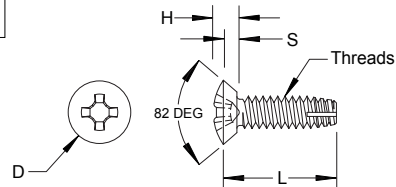
Drive	Description
	PH Cross Recess
	SL Slotted
	SL - PH Slotted - Cross Recess

# Machine Screw, Thread Cutting

Undercut Oval Head  
Inch - Type 1

Sample Part Number

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



Thread	H Total Head Height	S Head Side Height REF	D Head Diameter	Drive Size Cross Recess
2 - 56	.065 / .050	.036	.167 / .155	1
4 - 40	.084 / .067	.047	.219 / .205	1
6 - 32	.104 / .084	.059	.270 / .256	2
8 - 32	.123 / .101	.070	.322 / .306	2
10 - 32	.142 / .118	.081	.373 / .357	2
1/4 - 20	.186 / .158	.107	.492 / .473	3

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

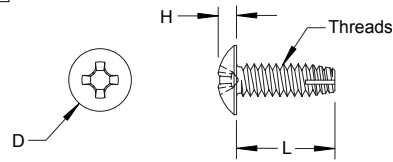
Drive	Description
	PH Cross Recess
	SL Slotted

# Machine Screw, Thread Cutting

Truss Head  
Inch - Type 1

Sample Part Number

4 - 40 x 1/2 PH - TRUSS - 1 - STL - Z  
Thread Length Drive Series Material Finish



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

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

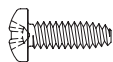
Other finishes available.


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

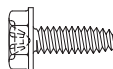
# Machine Screws, Thread Forming

## Inch - Type TA

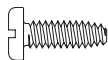
Pan Head		
Machine Screw, Pan Head		52
Machine Screw, Slotted Pan Head		52
Flat Head		
Machine Screw, 82 Deg Flat Head		53
Machine Screw, 82 Deg Undercut Flat Head		53
Hex Head		
Machine Screw, Indented Hex Head		54
Machine Screw, Indented Hex Washer Head		54
Special Use Heads		
Machine Screw, Oval Head		55
Machine Screw, Undercut Oval Head		55
Machine Screw, Truss Head		56



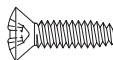
 Pan Head  
Page 52



 Indented Hex Washer Head  
Page 54



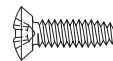
 Slotted Pan Head  
Page 52




 Oval Head  
Page 55




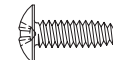
 82 Deg Flat Head  
Page 53



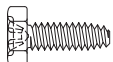
 Undercut Oval Head  
Page 55



 82 Deg Undercut Flat Head  
Page 53



 Truss Head  
Page 56



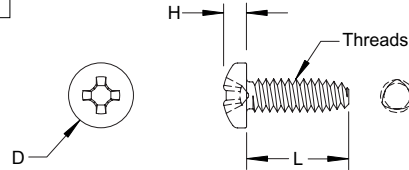
 Indented Hex Head  
Page 54

# Machine Screw, Thread Forming

Pan Head  
Inch - Type TA

Sample Part Number

6 - 32 x 1/2 PH - PN - TA - STL - Z  
Thread Length Drive Series Material Finish



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

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

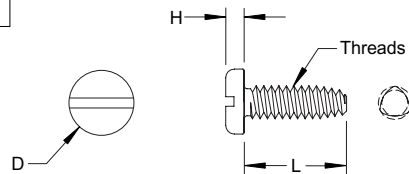
Drive	Description
	PH Cross Recess
	SL - PH Slotted - Cross Recess
	TX 6 - Lobe
	SL - TX Slotted - 6 - Lobe

# Machine Screw, Thread Forming

Slotted Pan Head  
Inch - Type TA

Sample Part Number

4 - 40 x 1/2 SL - PN - TA - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	D Head Diameter
2 - 56	.053 / .045	.167 / .155
4 - 40	.068 / .058	.219 / .205
6 - 32	.082 / .072	.270 / .256
8 - 32	.096 / .085	.322 / .306
10 - 32	.110 / .099	.373 / .357
1/4 - 20	.144 / .130	.492 / .473

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

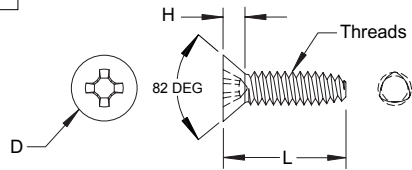
Drive	Description
	SL Slotted

# 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 Drive Series Material Finish



Thread	H Height REF	D Head Diameter	Drive Size	
			Cross Recess	6 - Lobe
2 - 56	.051	.162 / .144	1	T8
4 - 40	.067	.212 / .191	1	T10
6 - 32	.083	.262 / 238	2	T15
8 - 32	.100	.312 / .285	2	T20
10 - 32	.116	.362 / .333	2	T25
1/4 - 20	.153	.477 / .442	3	T30

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

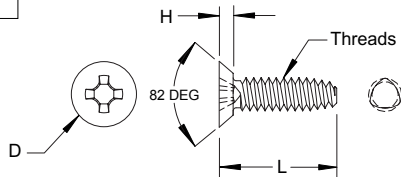
Drive	Description
	PH Cross Recess
	TX 6 - Lobe
	SL Slotted

# 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 Drive Series Material Finish



Thread	H Height	D Head Diameter	Drive Size Cross Recess
2 - 56	.036 / .028	.162 / .144	1
4 - 40	.047 / .038	.212 / .191	1
6 - 32	.059 / .048	.262 / 238	3
8 - 32	.070 / .058	.312 / .285	3
10 - 32	.081 / .068	.362 / .333	3
1/4 - 20	.107 / .092	.477 / .442	3

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

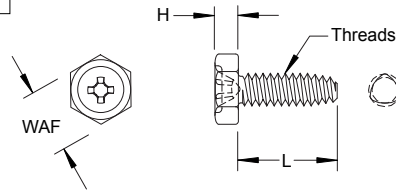
Drive	Description
	PH Cross Recess
	SL Slotted

# Machine Screw, Thread Forming

Indented Hex Head  
Inch - Type TA

Sample Part Number

6 - 32 x 1/2 PH - INHX - TA - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	WAF Width Across Flats	Drive Size Cross Recess
2 - 56	.050 / .040	.125 / .120	1
4 - 40	.060 / .049	.188 / .181	1
6 - 32	.093 / .080	.250 / .244	2
8 - 32	.110 / .096	.250 / .244	2
10 - 32	.120 / .105	.312 / .305	2
1/4 - 20	.190 / .172	.375 / .367	3




Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

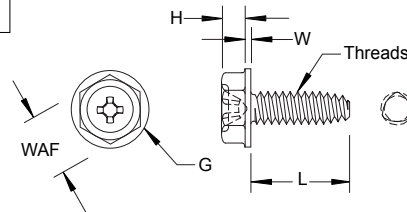
Drive	Description
	PH Cross Recess
	SL Slotted
	USL Unslotted

# Machine Screw, Thread Forming

Indented Hex Washer Head  
Inch - Type TA

Sample Part Number

4 - 40 x 1/2 PH - INHX - WA - TA - STL - Z  
Thread Length Drive Series Material Finish



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




Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

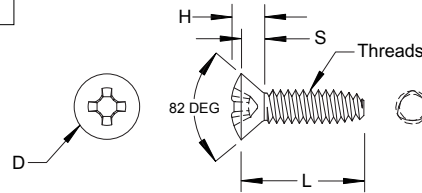
Drive	Description
	PH Cross Recess
	SL Slotted
	USL Unslotted

# Machine Screw, Thread Forming

Oval Head  
Inch - Type TA

Sample Part Number

6 - 32 x 1/2 PH - OVAL - TA - STL - Z  
Thread Length Drive Series Material Finish



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
4 - 40	.104 / .084	.067	.225 / .195	1
6 - 32	.128 / .105	.083	.279 / .244	2
8 - 32	.152 / .126	.100	.332 / .292	2
10 - 32	.176 / .148	.116	.385 / .340	2
1/4 - 20	.232 / .197	.153	.507 / .452	3

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

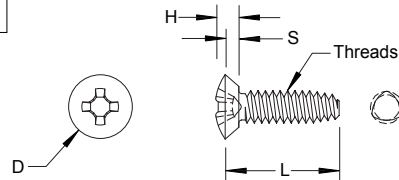
Drive	Description
	PH Cross Recess
	SL - PH Slotted - Cross Recess

# Machine Screw, Thread Forming

Undercut Oval Head  
Inch - Type TA

Sample Part Number

6 - 32 x 1/2 PH - UOVAL - TA - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Total Head Height	S Head Side Height REF	D Head Diameter	Drive Size Cross Recess
2 - 56	.065 / .050	0.036	.167 / .155	1
4 - 40	.084 / .067	0.047	.219 / .205	1
6 - 32	.104 / .084	0.059	.270 / .256	2
8 - 32	.123 / .101	0.070	.322 / .306	2
10 - 32	.142 / .188	0.081	.373 / .357	2
1/4 - 20	.186 / .158	0.107	.492 / .473	3

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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.

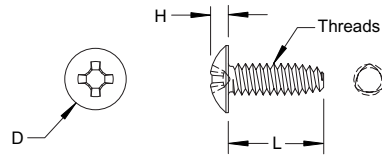
Drive	Description
	PH Cross Recess
	SL Slotted

# Machine Screw, Thread Forming

Truss Head  
Inch - Type TA

Sample Part Number

4 - 40 x 1/2 PH - TRUSS - TA - STL - Z  
Thread Length Drive Series Material Finish



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




Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

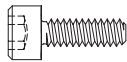


# Socket Screws

## Inch - Type SOC

### Socket Screws

Socket Head Cap Screw	58
Flat Countersunk Head Cap Screw	58
Button Head Cap Screw	59



Socket Head Cap Screw  
Page 58



Flat Countersunk Head Cap Screw  
Page 58



Button Head Cap Screw  
Page 59

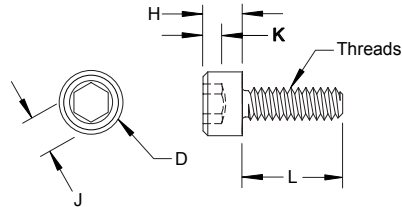
# Socket Screws

## Socket Head Cap Screw

Inch

Sample Part Number

6 - 32 x 1/2 SOC - CAP - SC - ALY - Z  
Thread Length Series Material Finish



Thread	H Height	D Head Diameter	J Hexagon Socket Size NOM	K Key Engagement MIN
2 - 56	.086 / .083	.140 / .134	.078	.038
4 - 40	.112 / .108	.183 / .176	.094	.051
6 - 32	.138 / .134	.226 / .218	.109	.064
8 - 32	.164 / .159	.270 / .262	.141	.077
10 - 32	.190 / .185	.312 / .303	.156	.090
1/4 - 20	.250 / .244	.375 / .365	.188	.120

Custom sizes available.

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
9/16	.563 / .533
5/8	.625 / .595
3/4	.750 / .720
7/8	.875 / .845
1	1.000 / .970
1.25	1.250 / 1.210
1.5	1.500 / 1.460
1.75	1.750 / 1.710
2	2.000 / 1.960

Material	Description
ALY	Alloy Steel
SS	18 - 8 Stainless Steel

Finish	Description
BLK - OX	Black Oxide
Z	Zinc Clear

Other finishes available.

Drive	Description
 SOC	Hex Socket

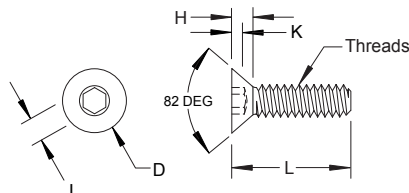
# Socket Screws

## Flat Countersunk Head Cap Screw

Inch

Sample Part Number

6 - 32 x 1/2 SOC - FL- CAP - SC - ALY - Z  
Thread Length Series Material Finish



Thread	H Height REF	D Head Diameter	J Hexagon Socket Size NOM	K Key Engagement MIN
2 - 56	.064	.197 / .168	.050	.038
4 - 40	.083	.255 / .218	.062	.055
6 - 32	.097	.307 / .263	.078	.066
8 - 32	.112	.359 / .311	.094	.076
10 - 32	.127	.411 / .359	.125	.087
1/4 - 20	.161	.531 / .480	.156	.111

Custom sizes available.

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
9/16	.563 / .533
5/8	.625 / .595
3/4	.750 / .720
7/8	.875 / .845
1	1.000 / .970
1.25	1.250 / 1.210
1.5	1.500 / 1.460
1.75	1.750 / 1.710
2	2.000 / 1.960

Material	Description
ALY	Alloy Steel
SS	18 - 8 Stainless Steel

Finish	Description
BLK - OX	Black Oxide
Z	Zinc Clear

Other finishes available.

Drive	Description
 SOC	Hex Socket

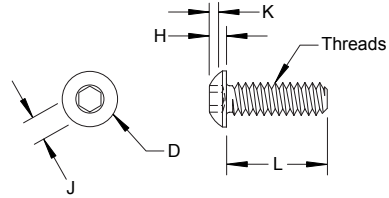
# Socket Screws

## Button Head Cap Screw

Inch

Sample Part Number

6 - 32 x 1/2 SOC - BUT - CAP - SC - ALY - Z  
Thread Length Series Material Finish



Thread	H Height	D Head Diameter	J Hexagon Socket Size NOM	K Key Engagement MIN
2 - 56	.046 / .038	.164 / .154	.050	.028
4 - 40	.059 / .051	.213 / .201	.062	.035
6 - 32	.073 / .063	.262 / .250	.078	.044
8 - 32	.087 / .077	.312 / .298	.094	.052
10 - 32	.101 / .091	.361 / .347	.125	.070
1/4 - 20	.132 / .122	.437 / .419	.156	.08

Custom sizes available.

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
9/16	.563 / .533
5/8	.625 / .595
3/4	.750 / .720
7/8	.875 / .845
1	1.000 / .970
1.25	1.250 / 1.210
1.5	1.500 / 1.460
1.75	1.750 / 1.710
2	2.000 / 1.960

Material	Description
ALY	Alloy Steel
SS	18 - 8 Stainless Steel

Finish	Description
BLK - OX	Black Oxide
Z	Zinc Clear

Other finishes available.

Drive	Description
	SOC Hex Socket

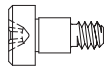


# Precision Shoulder Screw

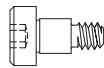
## Inch - Type PSHLD

### Precision Shoulder Screws

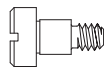
Precision Cross Recess Head Shoulder Screw	62
Precision Socket Head Shoulder Screw	63
Precision Slotted Head Shoulder Screw	64



Precision Cross Recess Head Shoulder Screw  
Page 62



Precision Socket Head Shoulder Screw  
Page 63



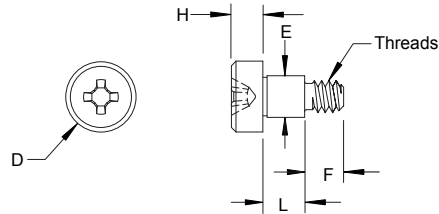
Precision Slotted Head Shoulder Screw  
Page 64

# Precision Shoulder Screw

Precision Cross Recess Head Shoulder Screw  
Inch

Sample Part Number

1/8 x 3/16 - 1032 x 1/4 - PH - CAP - PSHLD - SC - ALY - Z  
 Shoulder Diameter Shoulder Length Thread Code Length Code Drive Code Series Material Finish



E Shoulder Diameter Code	E Shoulder Diameter	Thread	Thread Code	D Head Diameter	H Head Height	F Thread Length	Drive Size
1/8	.124	4 - 40	440	1/4	1/8	5/32	1
5/32	.156	6 - 32	632	9/32	1/8	3/16	2
3/16	.187	8 - 32	832	5/16	5/32	3/16	2
1/4	.249	10 - 32	1032	3/8	3/16	1/4	2
5/16	.312	1/4 - 20	2520	7/16	7/32	3/8	3
3/8	.374	5/16 - 18	3118	1/2	7/32	1/2	3
1/2	.495	3/8 - 16	3716	5/8	1/16	1/2	4

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

Custom sizes available.

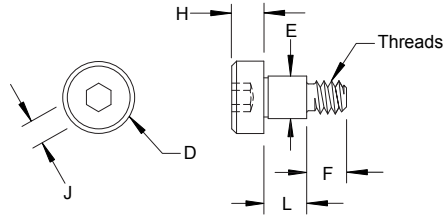
L Shoulder Length Code	L Shoulder Length	4 - 40	6 - 32	8 - 32	10 - 32	1/4 - 20	5/16 - 18	3/8 - 16
1/8	.125							
3/16	.188							
1/4	.250							
5/16	.313							
3/8	.375							
1/2	.500							
9/16	.562							
5/8	.625							
3/4	.750							
7/8	.875							
1	1.000							
1.250	1.250							
1.375	1.375							
1.500	1.500							

# Precision Shoulder Screw

Precision Socket Head Shoulder Screw  
Inch

Sample Part Number

1/8 x 3/16 - 1032 x 1/4 - SOC - CAP - PSHLD - SC - ALY - Z  
 Shoulder Diameter Shoulder Length Thread Length Drive Code Series Material Finish



E Shoulder Diameter Code	E Shoulder Diameter	Thread	Thread Code	D Head Diameter	H Height	F Thread Length	J Drive Hex
1/8	.124	4 - 40	440	1/4	1/8	5/32	5/64
5/32	.156	6 - 32	632	9/32	1/8	3/16	5/64
3/16	.187	8 - 32	832	5/16	5/32	3/16	3/32
1/4	.249	10 - 32	1032	3/8	3/16	1/4	1/8
5/16	.312	1/4 - 20	2520	7/16	7/32	3/8	5/32
3/8	.374	5/16 - 18	3118	1/2	1/4	4/16	5/32
1/2	.495	3/8 - 16	3716	5/8	1/16	1/2	3/16

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
☉	SOC Hex Socket

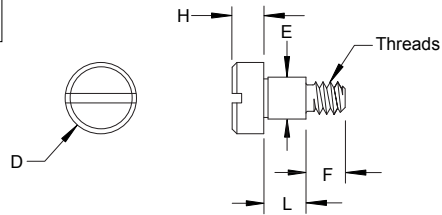
L Shoulder Length Code	L Shoulder Length	4 - 40	6 - 32	8 - 32	10 - 32	1/4 - 20	5/16 - 18	3/8 - 16
1/8	.125							
3/16	.188							
1/4	.250							
5/16	.313							
3/8	.375							
1/2	.500							
9/16	.562							
5/8	.625							
3/4	.750							
7/8	.875							
1	1.000							
1.250	1.250							
1.375	1.375							
1.500	1.500							

# Precision Shoulder Screw

Precision Slotted Head Shoulder Screw  
Inch

Sample Part Number

1/8 x 3/16 - 1032 x 1/4 - SL - CAP - PSHLD - SC - ALY - Z  
 Shoulder Diameter Shoulder Length Thread Code Length Code Drive Code Series Material Finish



E Shoulder Diameter Code	E Shoulder Diameter	Thread	Thread Code	D Head Diameter	H Height	F Thread Length	Slot Width
1/8	.124	4 - 40	440	1/4	1/8	5/32	1/16
5/32	.156	6 - 32	632	9/32	1/8	3/16	5/64
3/16	.187	8 - 32	832	5/16	5/32	3/16	5/64
1/4	.249	10 - 32	1032	3/8	3/16	1/4	3/32
5/16	.312	1/4 - 20	2520	7/16	7/32	3/8	1/8
3/8	.374	5/16 - 18	3118	1/2	1/4	7/16	5/32
1/2	.495	3/8 - 16	3716	5/8	1/6	1/2	3/16

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
 SL	Slotted

Custom sizes available.

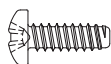
L Shoulder Length Code	L Shoulder Length	4 - 40	6 - 32	8 - 32	10 - 32	1/4 - 20	5/16 - 18	3/8 - 16
1/8	.125							
3/16	.188							
1/4	.250							
5/16	.313							
3/8	.375							
1/2	.500							
9/16	.562							
5/8	.625							
3/4	.750							
7/8	.875							
1	1.000							
1.250	1.250							
1.375	1.375							
1.500	1.500							



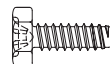
# Sheet Metal Screws, Thread Forming

## Inch - Type B

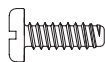
Pan Head	
Sheet Metal Screw, Pan Head	66
Sheet Metal Screw, Slotted Pan Head	66
Flat Head	
Sheet Metal Screw, 82 Deg Flat Head	67
Sheet Metal Screw, 82 Deg Undercut Flat Head	67
Sheet Metal Screw, 100 Deg Flat Head	68
Hex Head	
Sheet Metal Screw, Indented Hex Head	68
Sheet Metal Screw, Indented Hex Washer Head	69
Special Use Heads	
Sheet Metal Screw, Oval Head	69
Sheet Metal Screw, Truss Head	70



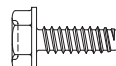
Pan Head  
Page 66



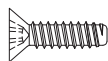
Indented Hex Head  
Page 68



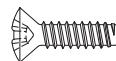
Slotted Pan Head  
Page 66



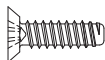
Indented Hex Washer Head  
Page 69



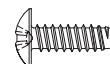
82 Deg Flat Head  
Page 67



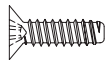
Oval Head  
Page 69



82 Deg Undercut Flat Head  
Page 67



Truss Head  
Page 70



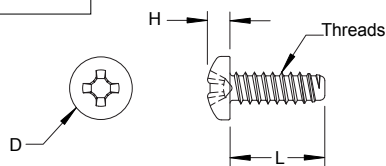
100 Deg Flat Head  
Page 68

# 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 Code



Thread	Thread Code	H Height	D Head Diameter	Drive Size	
				Cross Recess	6 - Lobe
2 - 32	#2	.062 / .053	.167 / .155	1	T8
4 - 24	#4	.080 / .070	.219 / .205	1	T10
6 - 20	#6	.097 / .087	.270 / .256	2	T15
8 - 18	#8	.115 / .105	.322 / .306	2	T20
10 - 16	#10	.133 / .122	.373 / .357	2	T25
1/4 - 14	1/4	.175 / .162	.492 / .473	3	T30



Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

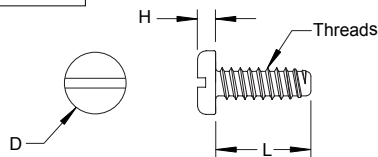
Drive	Description
	PH Cross Recess
	TX 6 - Lobe

# 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 Code



Thread	Thread Code	H Height	D Head Diameter
2 - 32	#2	.053 / .045	.167 / .155
4 - 24	#4	.068 / .058	.219 / .205
6 - 20	#6	.082 / .072	.270 / .256
8 - 18	#8	.096 / .085	.322 / .306
10 - 16	#10	.110 / .099	.373 / .357
1/4 - 14	1/4	.144 / .130	.492 / .473

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

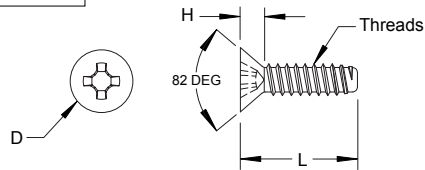
Drive	Description
	SL Slotted

# 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 Series Material Finish  
Code



Thread	Thread Code	H Height	D Head Diameter	Drive Size Cross Recess
2 - 32	#2	.051	.172 / .147	1
4 - 24	#4	.067	.225 / .195	1
6 - 20	#6	.083	.279 / .244	2
8 - 18	#8	.100	.332 / .292	2
10 - 16	#10	.116	.385 / .340	2
1/4 - 14	1/4	.153	.507 / .452	3

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

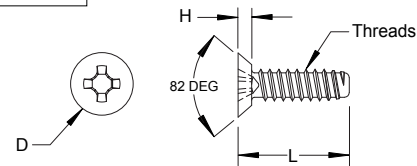
Drive	Description
	PH Cross Recess
	SL Slotted

# 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 Series Material Finish  
Code



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

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

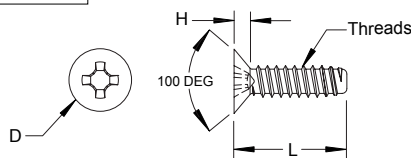
Drive	Description
	PH Cross Recess
	SL Slotted

# 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 Length Drive Series Material Finish Code



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

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

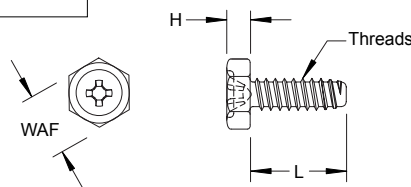
Drive	Description
	PH Cross Recess
	SL Slotted

# Sheet Metal Screw, Thread Forming

Indented Hex Head  
Inch - Type B

Sample Part Number

#10 x 3/4 PH - INHX - B - STL - Z  
Thread Length Drive Series Material Finish Code



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

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

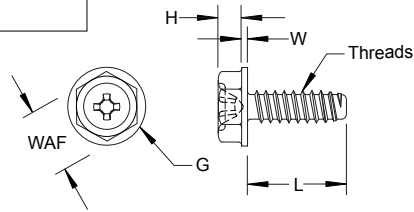
Drive	Description
	PH Cross Recess
	SL Slotted

# Sheet Metal Screw, Thread Forming

Indented Hex Washer Head  
Inch - Type B

Sample Part Number

#8 x 5/8 PH - INHX - WA - B - STL - Z  
Thread Length Drive Series Material Finish  
Code



Thread	Thread Code	H Height	G Washer Outside Diameter	W Washer Thickness	WAF Width Across Flats	Drive Size Cross Recess
2 - 32	#2	.050 / .040	.166 / .154	.016 / .010	.125 / .120	1
4 - 24	#4	.060 / .049	.243 / .225	.019 / .011	.188 / .181	1
6 - 20	#6	.093 / .080	.328 / .302	.025 / .015	.250 / .244	2
8 - 18	#8	.110 / .096	.348 / .322	.031 / .019	.250 / .244	2
10 - 16	#10	.120 / .105	.414 / .384	.031 / .019	.312 / .305	2
1/4 - 14	1/4	.190 / .172	.520 / .480	.050 / .030	.375 / .367	3




Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

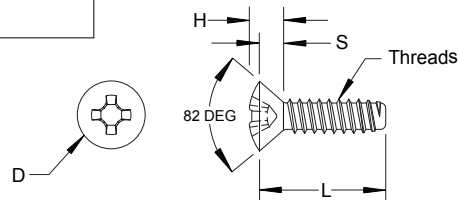
Drive	Description
	PH Cross Recess
	SL Slotted
	USL Unslotted

# Sheet Metal Screw, Thread Forming

Oval Head  
Inch - Type B

Sample Part Number

#4 x 3/4 PH - OVAL - B - STL - Z  
Thread Length Drive Series Material Finish  
Code



Thread	Thread Code	H Height	D Head Diameter	S Head Side Height	Drive Size Cross Recess
2 - 32	#2	.080 / .063	.172 / .147	.051	1
4 - 24	#4	.104 / .084	.225 / .195	.195	1
6 - 20	#6	.128 / .105	.279 / .244	.244	2
8 - 18	#8	.152 / .126	.332 / .292	.292	2
10 - 16	#10	.176 / .148	.385 / .340	.340	2
1/4 - 14	1/4	.232 / .197	.507 / .452	.452	3



Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

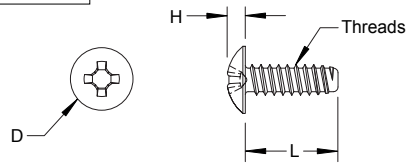
Drive	Description
	PH Cross Recess
	SL Slotted

# Sheet Metal Screw, Thread Forming

Truss Head  
Inch - Type B

Sample Part Number

#8 x 1/2 PH - TRUSS - B - STL - Z  
Thread Length Drive Series Material Finish  
Code



Thread	Thread Code	H Height	D Head Diameter	Drive Size Cross Recess
2 - 32	#2	.053 / .044	.194 / .180	1
4 - 24	#4	.069 / .059	.257 / .241	1
6 - 20	#6	.086 / .074	.321 / .303	2
8 - 18	#8	.102 / .088	.384 / .364	2
10 - 16	#10	.118 / .103	.448 / .425	2
1/4 - 14	1/4	.150 / .133	.573 / .546	3



Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

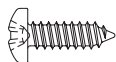
Other finishes available.

Drive	Description
	PH Cross Recess
	SL Slotted

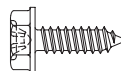
# Sheet Metal Screws, Thread Forming

## Inch - Type AB

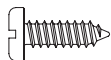
Pan Head	
Sheet Metal Screw, Pan Head	72
Sheet Metal Screw, Slotted Pan Head	72
Flat Head	
Sheet Metal Screw, 82 Deg Flat Head	73
Sheet Metal Screw, 82 Deg Undercut Flat Head	73
Hex Head	
Sheet Metal Screw, Indented Hex Head	74
Sheet Metal Screw, Indented Hex Washer Head	74
Special Use Heads	
Sheet Metal Screw, Oval Head	75
Sheet Metal Screw, Undercut Oval Head	75
Sheet Metal Screw, Truss Head	76



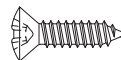
**Pan Head**  
Page 72



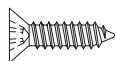
**Indented Hex Washer Head**  
Page 74



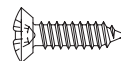
**Slotted Pan Head**  
Page 72



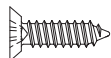
**Oval Head**  
Page 75



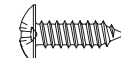
**82 Deg Flat Head**  
Page 73



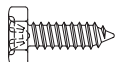
**Undercut Oval Head**  
Page 75



**82 Deg Undercut Flat Head**  
Page 73



**Truss Head**  
Page 76



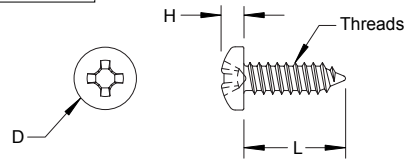
**Indented Hex Head**  
Page 74

# Sheet Metal Screw, Thread Forming

Pan Head  
Inch - Type AB

Sample Part Number

#6 x 1/2 PH - PN - AB - STL - Z  
Thread Length Drive Series Material Finish Code



Thread	Thread Code	H Height	D Head Diameter	Drive Size	
				Cross Recess	6 - Lobe
2 - 32	#2	.062 / .053	.167 / .155	1	T6
4 - 24	#4	.080 / .070	.219 / .205	1	T8
6 - 20	#6	.097 / .087	.270 / .256	2	T10
8 - 18	#8	.115 / .105	.322 / .306	2	T15
10 - 16	#10	.133 / .122	.373 / .357	2	T20
1/4 - 14	1/4	.175 / .162	.492 / .473	3	T27




Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

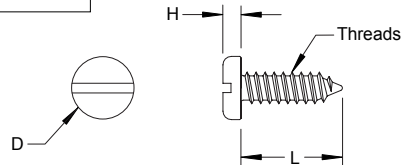
Drive	Description
	PH Cross Recess
	TX 6 - Lobe
	SL - PH Slotted - Cross Recess

# Sheet Metal Screw, Thread Forming

Slotted Pan Head  
Inch - Type AB

Sample Part Number

#6 x 1/2 SL - PN - AB - STL - Z  
Thread Length Drive Series Material Finish Code



Thread	Thread Code	H Height	D Head Diameter
2 - 32	#2	.053 / .045	.167 / .155
4 - 24	#4	.068 / .058	.219 / .205
6 - 20	#6	.082 / .072	.270 / .256
8 - 18	#8	.096 / .085	.322 / .306
10 - 16	#10	.110 / .099	.373 / .357
1/4 - 14	1/4	.144 / .130	.492 / .473

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

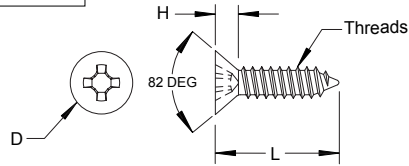


# Sheet Metal Screw, Thread Forming

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  
Code



Thread	Thread Code	H Height	D Head Diameter	Drive Size	
				Cross Recess	6 - Lobe
2 - 32	#2	.051	.172 / .147	1	T6
4 - 24	#4	.067	.225 / .195	1	T8
6 - 20	#6	.083	.279 / .244	2	T10
8 - 18	#8	.100	.332 / .292	2	T15
10 - 16	#10	.116	.385 / .340	2	T20
1/4 - 14	1/4	.153	.507 / .452	3	T27

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

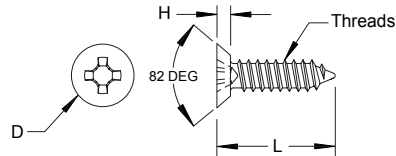
Drive	Description	
	PH	Cross Recess
	SL	Slotted
	TX	6 - Lobe

# Sheet Metal Screw, Thread Forming

82 Deg Undercut Flat Head  
Inch - Type AB

Sample Part Number

#4 x 5/16 PH - UFL - AB - STL - Z  
Thread Length Drive Series Material Finish  
Code



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

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

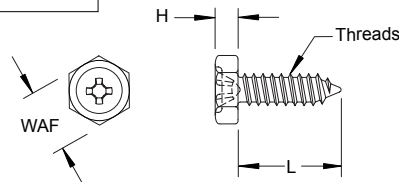
Drive	Description	
	PH	Cross Recess
	SL	Slotted

# Sheet Metal Screw, Thread Forming

Indented Hex Head  
Inch - Type AB

Sample Part Number

#8 x 1/2 PH - INHX - AB - STL - Z  
Thread Length Drive Series Material Finish  
Code



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




Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

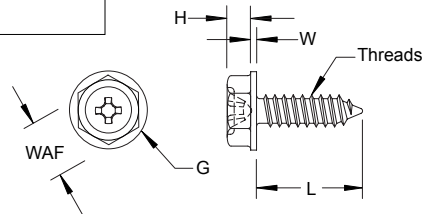
Drive	Description
 PH	Cross Recess
 SL	Slotted
 USL	Unslotted

# Sheet Metal Screw, Thread Forming

Indented Hex Washer Head  
Inch - Type AB

Sample Part Number

#4 x 1/4 PH - INHX - WA - AB - STL - Z  
Thread Length Drive Series Material Finish  
Code



Thread	Thread Code	H Height	G Washer Outside Diameter	W Washer Thickness	WAF Width Across Flats	Drive Size Cross Recess
2 - 32	#2	.050 / .040	.166 / .154	.016 / .010	.125 / .120	1
4 - 24	#4	.060 / .049	.243 / .225	.019 / .011	.188 / .181	1
6 - 20	#6	.093 / .080	.328 / .302	.025 / .015	.250 / .244	2
8 - 18	#8	.110 / .096	.348 / .322	.031 / .019	.250 / .244	2
10 - 16	#10	.120 / .105	.414 / .384	.031 / .019	.312 / .305	2
1/4 - 14	1/4	.190 / .172	.520 / .480	.050 / .030	.375 / .367	3




Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

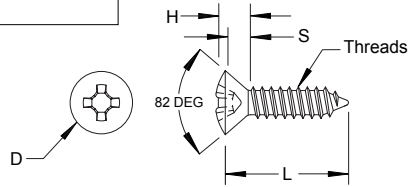
Drive	Description
 PH	Cross Recess
 SL	Slotted
 USL	Unslotted

# Sheet Metal Screw, Thread Forming

Oval Head  
Inch - Type AB

Sample Part Number

#6 x 1/2 PH - OVAL - AB - STL - Z  
Thread Length Drive Series Material Finish  
Code



Thread	Thread Code	H Total Head Height	D Head Diameter	S Head Side Height REF	Drive Size Cross Recess
2 - 32	#2	.080 / .063	.172 / .147	.051	1
4 - 24	#4	.104 / .084	.225 / .195	.067	1
6 - 20	#6	.128 / .105	.279 / .244	.083	2
8 - 18	#8	.152 / .126	.332 / .292	.100	2
10 - 16	#10	.176 / .148	.385 / .340	.116	2
1/4 - 14	1/4	.232 / .197	.507 / .452	.153	3

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

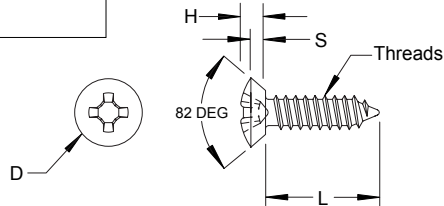
Drive	Description
	PH Cross Recess
	SL Slotted

# Sheet Metal Screw, Thread Forming

Undercut Oval Head  
Inch - Type AB

Sample Part Number

#10 x 3/4 PH - UOVAL - AB - STL - Z  
Thread Length Drive Series Material Finish  
Code



Thread	Thread Code	H Total Head Height	D Head Diameter	S Head Side Height REF	Drive Size Cross Recess
2 - 32	#2	.065 / .050	.172 / .149	.036	1
4 - 24	#4	.084 / .067	.225 / .195	.047	1
6 - 20	#6	.104 / .084	.279 / .244	.059	2
8 - 18	#8	.123 / .101	.332 / .292	.070	2
10 - 16	#10	.142 / .118	.385 / .340	.081	2
1/4 - 14	1/4	.186 / .158	.507 / .452	.107	3

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

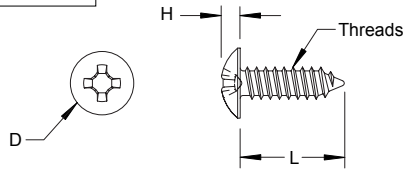
Drive	Description
	PH Cross Recess
	SL Slotted

# Sheet Metal Screw, Thread Forming

Truss Head  
Inch - Type AB

Sample Part Number

#8 x 1/2 PH - TRUSS - AB - STL - Z  
Thread Length Drive Series Material Finish  
Code



Thread	Thread Code	H Height	D Head Diameter	Drive Size Cross Recess
2 - 32	#2	.053 / .044	.194 / .180	1
4 - 24	#4	.069 / .059	.257 / .241	1
6 - 20	#6	.086 / .074	.321 / .303	2
8 - 18	#8	.102 / .088	.384 / .364	2
10 - 16	#10	.118 / .103	.448 / .425	2
1/4 - 14	1/4	.150 / .133	.573 / .546	3



Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .230
5/16	.313 / .293
3/8	.375 / .355
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

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

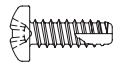
Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

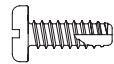
Drive	Description
	PH Cross Recess
	SL Slotted

# Sheet Metal Screws, Thread Cutting Inch - Type 25

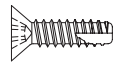
Pan Head	
Sheet Metal Screw, Pan Head	78
Sheet Metal Screw, Slotted Pan Head	78
Flat Head	
Sheet Metal Screw, 82 Deg Flat Head	79
Sheet Metal Screw, 82 Deg Undercut Flat Head	79
Hex Head	
Sheet Metal Screw, Indented Hex Washer Head	80



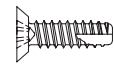
Pan Head  
Page 78



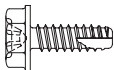
Slotted Pan Head  
Page 78



82 Deg Flat Head  
Page 79



82 Deg Undercut Flat Head  
Page 79



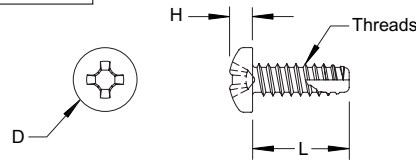
Indented Hex Washer Head  
Page 80

# Sheet Metal Screw, Thread Cutting

Pan Head  
Inch - Type 25

Sample Part Number

#6 x 1/2 PH - PN - 25 - STL - Z  
Thread Length Drive Series Material Finish Code



Thread	Thread Code	H Height	D Head Diameter	Drive Size	
				Cross Recess	6 - Lobe
2 - 32	#2	.062 / .053	.167 / .155	1	T7
4 - 24	#4	.080 / .070	.219 / .205	1	T10
6 - 20	#6	.097 / .087	.270 / .256	2	T15
8 - 18	#8	.115 / .105	.332 / .306	2	T20
10 - 16	#10	.133 / .122	.425 / .407	2	T25
1/4 - 14	1/4	.175 / .162	.492 / .473	3	T30

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .250
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

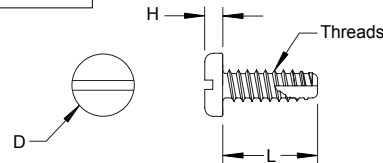
Drive	Description
	PH Cross Recess
	TX 6 - Lobe

# Sheet Metal Screw, Thread Cutting

Slotted Pan Head  
Inch - Type 25

Sample Part Number

#4 x 1/2 SL - PN - 25 - STL - Z  
Thread Length Drive Series Material Finish Code



Thread	Thread Code	H Height	D Head Diameter
2 - 32	#2	.053 / .045	.167 / .155
4 - 24	#4	.068 / .058	.219 / .205
6 - 20	#6	.082 / .072	.270 / .256
8 - 18	#8	.096 / .085	.332 / .306
10 - 16	#10	.110 / .099	.425 / .407
1/4 - 14	1/4	.125 / .112	.492 / .473

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .250
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

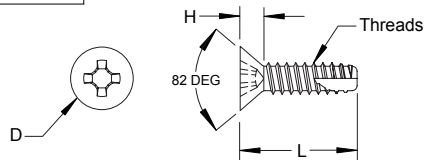
Drive	Description
	SL Slotted

# 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 Length Drive Series Material Finish Code



Thread	Thread Code	H Height	D Head Diameter	Drive Size Cross Recess
2 - 32	#2	.051 / .040	.172 / .147	1
4 - 24	#4	.067 / .055	.225 / .195	1
6 - 20	#6	.083 / .069	.279 / .244	2
8 - 18	#8	.100 / .084	.332 / .292	2
10 - 16	#10	.116 / .098	.385 / .340	2
1/4 - 14	1/4	.153 / .131	.507 / .452	3

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .250
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

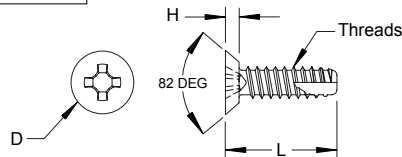
Drive	Description	
	PH	Cross Recess
	SL	Slotted

# 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 Length Drive Series Material Finish Code



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

Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .250
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

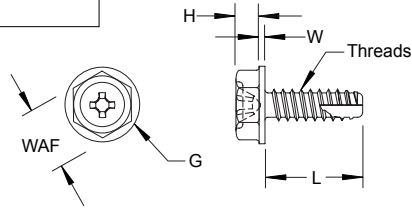
Drive	Description	
	PH	Cross Recess
	SL	Slotted

# 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  
Thread Length Drive Series Material Finish  
Code



Thread	Thread Code	H Height	G Washer Outside Diameter	WAF Width Across Flats	W Washer Thickness	Drive Size Cross Recess
2 - 32	#2	.050 / .040	.166 / .154	.125 / .125	.016 / .010	1
4 - 24	#4	.060 / .049	.243 / .255	.188 / .181	.019 / .011	1
6 - 20	#6	.093 / .080	.328 / .302	.250 / .244	.025 / .015	2
8 - 18	#8	.110 / .096	.348 / .322	.250 / .244	.031 / .019	2
10 - 16	#10	.120 / .105	.414 / .384	.312 / .305	.031 / .019	2
1/4 - 14	1/4	.190 / .172	.520 / .480	.375 / .367	.050 / .030	3




Custom sizes available.

Length	L
3/16	.187 / .167
1/4	.250 / .250
5/16	.313 / .293
3/8	.375 / .355
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

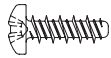
Other finishes available.

Drive	Description
	PH Cross Recess
	SL Slotted
	USL Unslotted

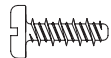


# Screws For Plastic, Thread Forming Inch - Type HL

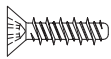
Pan Head	
Screws For Plastic, Pan Head	82
Screws For Plastic, Slotted Pan Head	82
Flat Head	
Screws For Plastic, 82 Deg Flat Head	83
Screws For Plastic, 82 Deg Undercut Flat Head	83
Hex Head	
Screws For Plastic, Indented Hex Washer Head	84



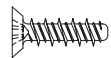
Pan Head  
Page 82



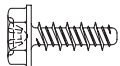
Slotted Pan Head  
Page 82



82 Deg Flat Head  
Page 83



82 Deg Undercut Flat Head  
Page 83



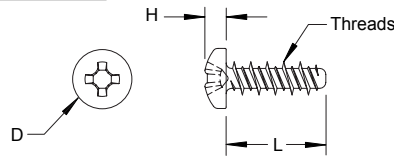
Indented Hex Washer Head  
Page 84

# Screws For Plastic, Thread Forming

Pan Head  
Inch - Type HL

Sample Part Number

#4 x 3/8 PH - PN - HL - STL - Z  
Thread Length Drive Series Material Finish Code



Thread	Thread Code	H Height	D Head Diameter	Drive Size	
				Cross Recess	Six-Lobe
2 - 32	#2	.062 / .053	.167 / .155	1	T-8
4 - 24	#4	.071 / .062	.193 / .180	1	T-8
5 - 20	#5	.080 / .070	.219 / .205	1	T-10
6 - 19	#6	.097 / .087	.254 / .240	2	T-10
7 - 19	#7	.097 / .087	.270 / .256	2	T-15
8 - 18	#8	.097 / .087	.270 / .256	2	T-15
10 - 16	#10	.115 / .105	.332 / .306	2	T-20
12 - 16	#12	.133 / .122	.373 / .357	2	T-25
1/4 - 15	1/4	.175 / .162	.492 / .473	3	T-30



Custom sizes available.

Length	L
3/16	.187 / .140
1/4	.250 / .203
5/16	.313 / .266
3/8	.375 / .328
7/16	.438 / .391
1/2	.500 / .453
9/16	.563 / .516
5/8	.625 / .578
3/4	.750 / .703
7/8	.875 / .828
1	1.000 / .953
1 - 1/4	1.250 / 1.187
1 - 1/2	1.500 / 1.437
1 - 3/4	1.750 / 1.687
2	2.000 / 1.937

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

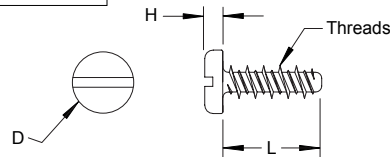
Drive	Description
	PH Cross Recess
	TX 6 - Lobe

# Screws For Plastic, Thread Forming

Slotted Pan Head  
Inch - Type HL

Sample Part Number

#4 x 3/8 SL - PN - HL - STL - Z  
Thread Length Drive Series Material Finish Code



Thread	Thread Code	H Height	D Head Diameter
2 - 32	#2	.053 / .045	.167 / .155
4 - 24	#4	.060 / .051	.193 / .180
5 - 20	#5	.068 / .058	.219 / .205
6 - 19	#6	.075 / .065	.245 / .231
7 - 19	#7	.082 / .072	.270 / .256
8 - 18	#8	.082 / .072	.270 / .256
10 - 16	#10	.096 / .085	.332 / .306
12 - 16	#12	.110 / .099	.373 / .357
1/4 - 15	1/4	.144 / .130	.492 / .473

Custom sizes available.

Length	L
3/16	.187 / .140
1/4	.250 / .203
5/16	.313 / .266
3/8	.375 / .328
7/16	.438 / .391
1/2	.500 / .453
9/16	.563 / .516
5/8	.625 / .578
3/4	.750 / .703
7/8	.875 / .828
1	1.000 / .953
1 - 1/4	1.250 / 1.187
1 - 1/2	1.500 / 1.437
1 - 3/4	1.750 / 1.687
2	2.000 / 1.937

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

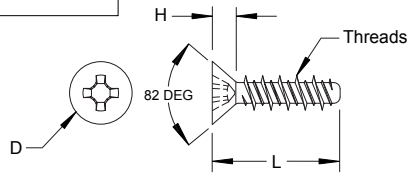
Drive	Description
	SL Slotted

# Screws For Plastic, Thread Forming

82 Deg Flat Head  
Inch - Type HL

Sample Part Number

#4 x 7/8 PH - FL - HL - STL - Z  
Thread Length Drive Series Material Finish  
Code



Thread	Thread Code	H Height REF	D Head Diameter	Drive Size Cross Recess
2 - 32	#2	.051	.162 / .144	1
4 - 24	#4	.067	.212 / .191	1
6 - 19	#6	.083	.262 / .238	2
8 - 18	#8	.100	.312 / .285	2
10 - 16	#10	.116	.362 / .333	2
12 - 16	#12	.132	.412 / .380	3
1/4 - 15	1/4	.153	.477 / .442	3


Custom sizes available.

Length	L
3/16	.187 / .140
1/4	.250 / .203
5/16	.313 / .266
3/8	.375 / .328
7/16	.438 / .391
1/2	.500 / .453
9/16	.563 / .516
5/8	.625 / .578
3/4	.750 / .703
7/8	.875 / .828
1	1.000 / .953
1 - 1/4	1.250 / 1.187
1 - 1/2	1.500 / 1.437
1 - 3/4	1.750 / 1.687
2	2.000 / 1.937

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

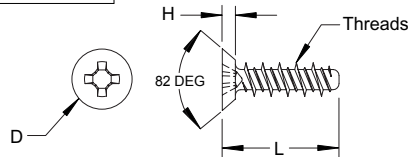
Drive	Description
	PH Cross Recess

# 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  
Thread Length Drive Series Material Finish  
Code



Thread	Thread Code	H Height	D Head Diameter	Drive Size Cross Recess
2 - 32	#2	.036 / .028	.162 / .144	1
4 - 24	#4	.047 / .038	.212 / .191	1
6 - 19	#6	.059 / .048	.262 / .238	2
8 - 18	#8	.070 / .058	.312 / .285	2
10 - 16	#10	.081 / .068	.362 / .333	2
12 - 16	#12	.092 / .078	.412 / .380	3
1/4 - 15	1/4	.107 / .092	.477 / .442	3



Custom sizes available.

Length	L
3/16	.187 / .140
1/4	.250 / .203
5/16	.313 / .266
3/8	.375 / .328
7/16	.438 / .391
1/2	.500 / .453
9/16	.563 / .516
5/8	.625 / .578
3/4	.750 / .703
7/8	.875 / .828
1	1.000 / .953
1 - 1/4	1.250 / 1.187
1 - 1/2	1.500 / 1.437
1 - 3/4	1.750 / 1.687
2	2.000 / 1.937

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

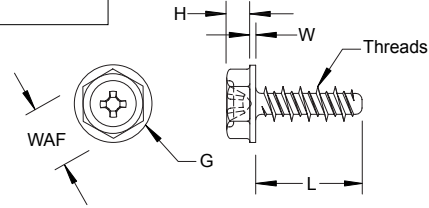
Drive	Description
	PH Cross Recess
	SL Slotted

# 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  
Thread Length Drive Series Material Finish  
Code



Thread	Thread Code	H Height	G Washer Outside Diameter	W Washer Thickness	WAF Width Across Flats	Drive Size Cross Recess
4 - 24	#4	.055 / .044	.177 / .163	.016 / .010	.125 / .120	1
6 - 19	#6	.070 / .058	.260 / .240	.025 / .015	.188 / .181	1
8 - 18	#8	.093 / .080	.328 / .302	.025 / .015	.250 / .244	2
10 - 16	#10	.110 / .096	.348 / .322	.031 / .019	.250 / .244	2
12 - 16	#12	.155 / .139	.432 / .398	.039 / .022	.312 / .305	3
1/4 - 15	1/4	.190 / .172	.520 / .480	.050 / .030	.375 / .367	3
5/16 - 14	5/16	.190 / .172	.520 / .480	.050 / .030	.375 / .367	3




Custom sizes available.

Length	L
3/16	.187 / .140
1/4	.250 / .203
5/16	.313 / .266
3/8	.375 / .328
7/16	.438 / .391
1/2	.500 / .453
9/16	.563 / .516
5/8	.625 / .578
3/4	.750 / .703
7/8	.875 / .828
1	1.000 / .953
1 - 1/4	1.250 / 1.187
1 - 1/2	1.500 / 1.437
1 - 3/4	1.750 / 1.687
2	2.000 / 1.937

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

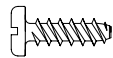
# Screws For Plastic, Thread Forming

## Inch - Type PLAST 48/2

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



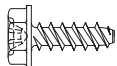
Slotted Pan Head  
Page 86



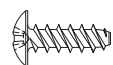
82 Deg Flat Head  
Page 87



82 Deg Undercut Flat Head  
Page 87



Indented Hex Washer Head  
Page 88



Truss Head  
Page 88

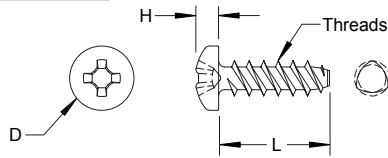
# Screws For Plastic, Thread Forming

## Pan Head

Inch - Type PLAST 48/2

Sample Part Number

#4 x 3/8 PH - PN - PLAST 48/2 - STL - Z  
Thread Length Drive Series Material Finish Code



Thread	Thread Code	H Height	D Head Diameter	Drive Size	
				Cross Recess	6 - Lobe
2 - 28	#2	.062 / .053	.167 / .155	1	T7
4 - 20	#4	.080 / .070	.219 / .205	1	T10
6 - 19	#6	.097 / .087	.270 / .256	2	T15
8 - 16	#8	.115 / .105	.322 / .306	2	T20
10 - 14	#10	.133 / .122	.373 / .357	2	T25
1/4 - 10	#1/4	.175 / .162	.492 / .473	3	T30

Custom sizes available.

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
1-3/4	1.800 / 1.700
2	2.050 / 1.950

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

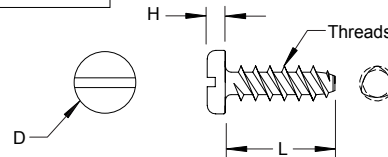
# Screws For Plastic, Thread Forming

## Slotted Pan Head

Inch - Type PLAST 48/2

Sample Part Number

#4 x 3/8 SL - PN - PLAST 48/2 - STL - Z  
Thread Length Drive Series Material Finish Code



Thread	Thread Code	H Height	D Head Diameter
2 - 28	#2	.053 / .045	.167 / .155
4 - 20	#4	.068 / .058	.219 / .205
6 - 19	#6	.082 / .072	.270 / .256
8 - 16	#8	.096 / .085	.322 / .306
10 - 14	#10	.110 / .099	.373 / .357
1/4 - 10	#1/4	.144 / .130	.492 / .473

Custom sizes available.

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
1-3/4	1.800 / 1.700
2	2.050 / 1.950

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

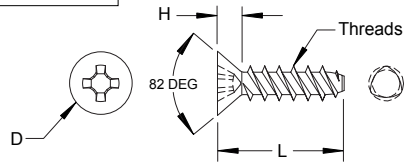
Drive	Description
	SL Slotted

# Screws For Plastic, Thread Forming

82 Deg Flat Head  
Inch - Type PLAST 48/2

Sample Part Number

#4 x 7/8 PH - FL - PLAST 48/2 - STL - Z  
Thread Length Drive Series Material Finish  
Code



Thread	Thread Code	H Height REF	D Head Diameter	Drive Size Cross Recess
2 - 28	#2	.051	.172 / .147	1
4 - 20	#4	.067	.225 / .195	1
6 - 19	#6	.083	.279 / .244	2
8 - 16	#8	.100	.332 / .292	2
10 - 14	#10	.116	.385 / .340	2
1/4 - 10	#1/4	.153	.507 / .452	3

Custom sizes available.

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
1-3/4	1.800 / 1.700
2	2.050 / 1.950

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

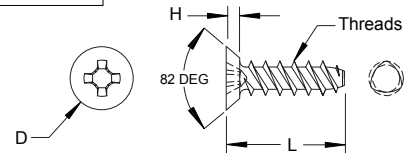
Drive	Description	
	PH	Cross Recess
	TX	6 - Lobe

# Screws For Plastic, Thread Forming

82 Deg Undercut Flat Head  
Inch - Type PLAST 48/2

Sample Part Number

#4 x 3/8 PH - UFL - PLAST 48/2 - STL - Z  
Thread Length Drive Series Material Finish  
Code



Thread	Thread Code	H Height	D Head Diameter	Drive Size Cross Recess
2 - 19	#2	.036 / .028	.172 / .147	1
4 - 17	#4	.047 / .038	.225 / .195	1
6 - 13	#6	.059 / .048	.279 / .244	2
8 - 11	#8	.070 / .058	.332 / .292	2
10 - 9	#10	.081 / .068	.385 / .340	2
1/4 - 8	#1/4	.107 / .092	.507 / .452	3

Custom sizes available.

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
1-3/4	1.800 / 1.700
2	2.050 / 1.950

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

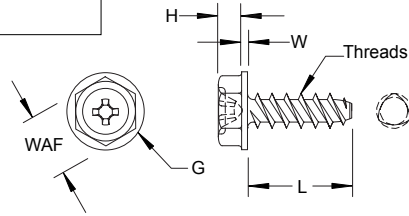
Drive	Description	
	PH	Cross Recess
	TX	6 - Lobe

## 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  
Thread Length Drive Series Material Finish  
Code



Thread	Thread Code	H Height	G Washer Outside Diameter	W Washer Thickness	WAF Width Across Flats	Drive Size Cross Recess
2 - 28	#2	.050 / .040	.166 / .154	.016 / .010	.125 / .120	1
4 - 20	#4	.060 / .498	.243 / .225	.019 / .011	.188 / .181	1
6 - 19	#6	.093 / .093	.328 / .302	.025 / .015	.250 / .244	2
8 - 16	#8	.110 / .096	.348 / .322	.031 / .019	.250 / .244	2
10 - 14	#10	.120 / .414	.414 / .384	.031 / .019	.312 / .305	2
1/4 - 10	#1/4	.190 / .172	.520 / .480	.050 / .030	.357 / .367	3

Custom sizes available.

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
1-3/4	1.800 / 1.700
2	2.050 / 1.950

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

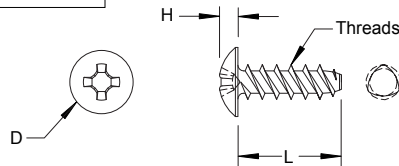
Drive	Description
	PH Cross Recess
	SL Slotted
	USL Unslotted

## 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  
Thread Length Drive Series Material Finish  
Code



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

Custom sizes available.

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
1-3/4	1.800 / 1.700
2	2.050 / 1.950

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



Nuts	
Hex Nuts	90
Hex Jam Nuts	90
Machine Screw Nuts	91
Machine Screw Nuts, Small Pattern	91
KPS Nuts	92
Conical KPS Nuts	92
Hex Flange Nuts	93
Serrated Flange Locknuts	93
Flange Side Locknuts	94
Flange Top Locknuts	94
Cap Nuts	95
Nylon Insert Locknuts	95
Nylon Insert Locknuts, Thin Pattern	96
Panel Nuts	96



Hex Nuts  
Page 90



Conical KPS Nuts  
Page 92



Cap Nuts  
Page 95



Hex Jam Nuts  
Page 90



Hex Flange Nuts  
Page 93



Nylon Insert Locknuts  
Page 95



Machine Screw Nuts  
Page 91



Serrated Flange Locknuts  
Page 93



Nylon Insert Locknuts,  
Thin Pattern  
Page 96



Machine Screw Nuts, Small Pattern  
Page 91



Flange Side Locknuts  
Page 94



Panel Nuts  
Page 96



KPS Nuts  
Page 92



Flange Top Locknuts  
Page 94

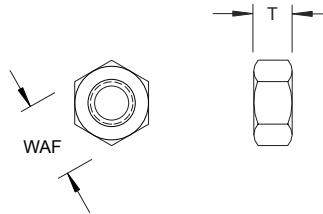
# Nuts

## Hex Nut

Inch

Sample Part Number

1/4 - 20 HX - NU - STL - Z  
Thread Series Material Finish



Thread		T Thickness	WAF Width Across Flats
Coarse	Fine		
1/4 - 20	1/4 - 28	.226 / .212	.438 / .428
5/16 - 18	5/16 - 24	.273 / .258	.500 / .489
3/8 - 16	3/8 - 24	.337 / .320	.562 / .551
7/16 - 14	7/16 - 20	.385 / .365	.688 / .675
1/2 - 13	1/2 - 20	.448 / .427	.750 / .736
9/16 - 12	9/16 - 18	.496 / .473	.875 / .861
5/8 - 11	5/8 - 18	.559 / .535	.938 / .922
3/4 - 10	3/4 - 16	.665 / .617	1.125 / 1.088

Custom sizes available.

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

Finish	Description
Z	Zinc Clear
Z - BLK	Zinc Black

Other finishes available.

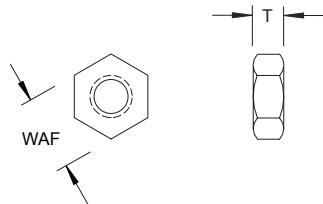
# Nuts

## Hex Jam Nut

Inch

Sample Part Number

3/8 - 16 HX - JAM - NU - STL - Z  
Thread Series Material Finish



Thread		T Thickness	WAF Width Across Flats
Coarse	Fine		
1/4 - 20	1/4 - 28	.163 / .150	.438 / .428
5/16 - 18	5/16 - 24	.195 / .180	.500 / .489
3/8 - 16	3/8 - 24	.227 / .210	.562 / .551
7/16 - 14	7/16 - 20	.260 / .240	.688 / .675
1/2 - 13	1/2 - 20	.323 / .302	.750 / .736
9/16 - 12	9/16 - 18	.324 / .301	.875 / .861
5/8 - 11	5/8 - 18	.387 / .363	.938 / .922
3/4 - 10	3/4 - 16	.446 / .398	1.125 / 1.088

Custom sizes available.

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

Finish	Description
Z	Zinc Clear
Z - BLK	Zinc Black

Other finishes available.

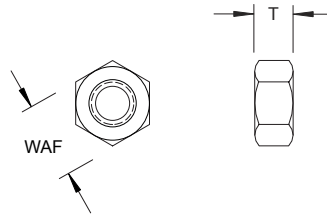
# Nuts

## Machine Screw Nut

Inch

Sample Part Number

4 - 40 HX - MS - NU - STL - Z  
Thread Series Material Finish



Thread		T Thickness	WAF Width Across Flats
Coarse	Fine		
-	0 - 80	.050 / .043	.156 / .150
-	1 - 72	.050 / .043	.156 / .150
2 - 56	-	.066 / .057	.188 / .180
4 - 40	-	.098 / .087	.250 / .241
6 - 32	-	.114 / .102	.312 / .302
8 - 32	-	.130 / .117	.344 / .332
10 - 24	10 - 32	.130 / .117	.375 / .362
12 - 24	-	.161 / .148	.438 / .423
1/4 - 20	1/4 - 28	.193 / .178	.438 / .423
5/16 - 18	5/16 - 24	.225 / .208	.562 / .545
3/8 - 16	3/8 - 24	.257 / .239	.625 / .607

Custom sizes available.

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

Finish	Description
Z	Zinc Clear
Z - BLK	Zinc Black

Other finishes available.

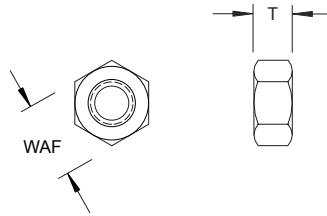
# Nuts

## Machine Screw Nut, Small Pattern

Inch

Sample Part Number

4 - 40 HX - MS - NU - STL - Z - SMALL PATTERN  
Thread Series Material Finish



Thread	T Thickness	WAF Width Across Flats
4 - 40	.066 / .057	.188 / .180
6 - 32	.098 / .087	.250 / .241
8 - 32	.098 / .087	.250 / .241
8 - 32	.114 / .102	.312 / .302
10 - 24	.114 / .102	.312 / .302
10 - 32	.114 / .102	.312 / .302

Custom sizes available.

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

Finish	Description
Z	Zinc Clear
Z - BLK	Zinc Black

Other finishes available.

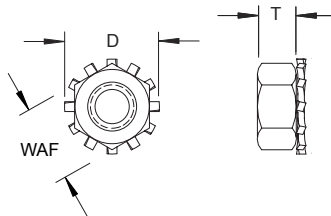
# Nuts

## KPS Nut

Inch

Sample Part Number

8 - 32 **KPS - NU** - STL - Z  
Thread Series Material Finish



Thread		T Thickness	D Diameter	WAF Width Across Flats
Coarse	Fine			
4 - 40	-	.098 / .087	.286 / .277	.250 / .241
6 - 32	-	.114 / .102	.348 / .338	.312 / .302
6 - 32 SP	-	.098 / .087	.287 / .277	.250 / .241
8 - 32	-	.130 / .117	.381 / .370	.344 / .332
10 - 24	10 - 32	.130 / .117	.406 / .395	.375 / .362
12 - 24	12 - 28	.161 / .148	.506 / .494	.438 / .423
1/4 - 20	1/4 - 28	.193 / .178	.506 / .494	.438 / .423
5/16 - 18	5/16 - 24	.273 / .258	.592 / .579	.500 / .489
3/8 - 16	3/8 - 24	.385 / .365	.665 / .651	.562 / .551
1/2 - 13	1/2 - 20	.437 / .425	.898 / .878	.750 / .736

Custom sizes available.

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

Finish	Description
Z	Zinc Clear
Z - BLK	Zinc Black

Other finishes available.

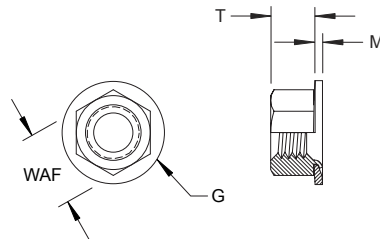
# Nuts

## Conical Washer KPS Nut

Inch

Sample Part Number

1/4 - 20 **KPS - NU - CON - WA** - STL - Z  
Thread Series Material Finish



Thread		T Thickness	G Washer Outside Diameter MAX	WAF Width Across Flats	M Flange Thickness MIN
Coarse	Fine				
1/4 - 20	1/4 - 28	.300 / .265	.560	.438 / .420	.040
5/16 - 18	5/16 - 24	.365 / .320	.680	.502 / .489	.050
3/8 - 16	3/8 - 24	.425 / .404	.810	.564 / .551	.060
7/16 - 14	7/16 - 20	.495 / .457	.930	.689 / .675	.070
1/2 - 13	1/2 - 20	.555 / .528	1.070	.752 / .736	.080
5/8 - 11	5/8 - 18	.690 / .646	1.330	.939 / .922	.100
3/4 - 10	3/4 - 16	.825 / .742	1.585	1.127 / 1.088	.110

Custom sizes available.

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

Finish	Description
Z	Zinc Clear
Z - BLK	Zinc Black

Other finishes available.

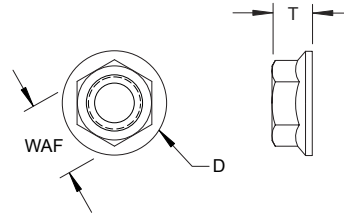
## Nuts

### Hex Flange Nut

Inch

Sample Part Number

1/4 - 20 HX - FLANGE - NU - STL - Z  
Thread Series Material Finish



Thread		T Thickness	D Diameter	WAF Width Across Flats
Coarse	Fine			
6 - 32	-	.171 / .156	.442 / .406	.312 / .302
8 - 32	-	.203 / .187	.469 / .452	.344 / .334
10 - 24	10 - 32	.219 / .203	.500 / .480	.375 / .365
1/4 - 20	1/4 - 28	.236 / .222	.594 / .574	.438 / .428
5/16 - 18	5/16 - 24	.283 / .268	.680 / .660	.500 / .489
3/8 - 16	3/8 - 24	.347 / .330	.750 / .728	.562 / .551
7/16 - 14	7/16 - 20	.395 / .375	.937 / .910	.688 / .675
1/2 - 13	1/2 - 20	.458 / .437	1.031 / 1.000	.750 / .736
5/8 - 11	5/8 - 18	.569 / .545	1.281 / 1.248	.938 / .922
3/4 - 10	3/4 - 16	.675 / .627	1.500 / 1.460	1.125 / 1.088

Custom sizes available.

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

Finish	Description
Z	Zinc Clear
Z - BLK	Zinc Black

Other finishes available.

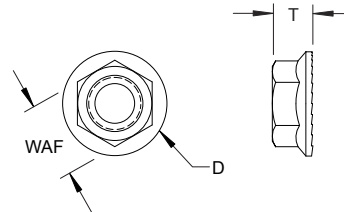
## Nuts

### Serrated Flange Locknut

Inch

Sample Part Number

5/16 - 18 SERR - HX - FLANGE - NU - ST - Z  
Thread Series Material Finish



Thread		T Thickness	D Diameter	WAF Width Across Flats
Coarse	Fine			
6 - 32	-	.171 / .156	.442 / .406	.312 / .302
8 - 32	-	.203 / .187	.469 / .452	.344 / .334
10 - 24	10 - 32	.219 / .203	.500 / .480	.375 / .365
1/4 - 20	1/4 - 28	.236 / .222	.594 / .574	.438 / .428
5/16 - 18	5/16 - 24	.283 / .268	.680 / .660	.500 / .489
3/8 - 16	3/8 - 24	.347 / .330	.750 / .728	.562 / .551
7/16 - 14	7/16 - 20	.395 / .375	.937 / .910	.688 / .675
1/2 - 13	1/2 - 20	.458 / .437	1.031 / 1.000	.750 / .736
5/8 - 11	5/8 - 18	.569 / .545	1.281 / 1.248	.938 / .922
3/4 - 10	3/4 - 16	.675 / .627	1.500 / 1.460	1.125 / 1.088

Custom sizes available.

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

Finish	Description
Z	Zinc Clear
Z - BLK	Zinc Black

Other finishes available.

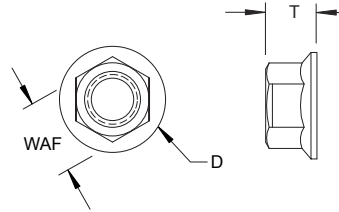
# Nuts

## Flange Side Locknut

Inch

Sample Part Number

1/4 - 20 HX - FLANGE - SLK - NU - STL - Z  
Thread Series Material Finish



Thread		T Thickness	D Diameter	WAF Width Across Flats
Coarse	Fine			
6 - 32	-	.171 / .156	.442 / .406	.312 / .302
8 - 32	-	.203 / .187	.469 / .452	.344 / .334
10 - 24	10 - 32	.219 / .203	.500 / .480	.375 / .365
1/4 - 20	1/4 - 28	.236 / .222	.594 / .574	.438 / .428
5/16 - 18	5/16 - 24	.283 / .268	.680 / .660	.500 / .489
3/8 - 16	3/8 - 24	.347 / .330	.750 / .728	.562 / .551
7/16 - 14	7/16 - 20	.395 / .375	.937 / .910	.688 / .675
1/2 - 13	1/2 - 20	.458 / .437	1.031 / 1.000	.750 / .736
5/8 - 11	5/8 - 18	.569 / .545	1.281 / 1.248	.938 / .922
3/4 - 10	3/4 - 16	.675 / .627	1.500 / 1.460	1.125 / 1.088

Custom sizes available.

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

Finish	Description
Z	Zinc Clear
Z - BLK	Zinc Black

Other finishes available.

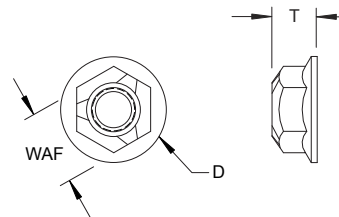
# Nuts

## Flange Top Locknut

Inch

Sample Part Number

1/4 - 20 HX - FLANGE - TLK - NU - STL - Z  
Thread Series Material Finish



Thread		T Thickness	D Diameter	WAF Width Across Flats
Coarse	Fine			
6 - 32	-	.171 / .156	.442 / .406	.312 / .302
8 - 32	-	.203 / .187	.469 / .452	.344 / .334
10 - 24	10 - 32	.219 / .203	.500 / .480	.375 / .365
1/4 - 20	1/4 - 28	.236 / .222	.594 / .574	.438 / .428
5/16 - 18	5/16 - 24	.283 / .268	.680 / .660	.500 / .489
3/8 - 16	3/8 - 24	.347 / .330	.750 / .728	.562 / .551
7/16 - 14	7/16 - 20	.395 / .375	.937 / .910	.688 / .675
1/2 - 13	1/2 - 20	.458 / .437	1.031 / 1.000	.750 / .736
5/8 - 11	5/8 - 18	.569 / .545	1.281 / 1.248	.938 / .922
3/4 - 10	3/4 - 16	.675 / .627	1.500 / 1.460	1.125 / 1.088

Custom sizes available.

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

Finish	Description
Z	Zinc Clear
Z - BLK	Zinc Black

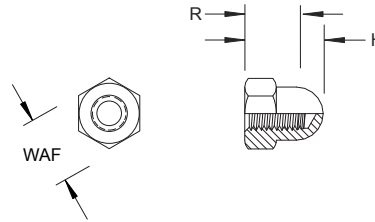
Other finishes available.

## Nuts

### Cap Nut Inch

Sample Part Number

10 - 32 HX - CAP - NU - STL - Z  
Thread Series Material Finish



Thread	H Height REF	WAF Width Across Flats	R Full Thread MIN
6 - 32	.34	.3125 / .302	.16
8 - 32	.34	.3125 / .302	.16
10 - 32	.41	.3750 / .362	.19
1/4 - 20	.47	.4375 / .428	.25
5/16 - 18	.53	.5000 / .489	.31
3/8 - 16	.62	.5625 / .551	.38
1/2 - 13	.81	.7500 / .736	.50
5/8 - 11	1.00	.9375 / .922	.62
3/4 - 10	1.16	1.0625 / 1.045	.75

Custom sizes available.

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

Finish	Description
Z	Zinc Clear
Z - BLK	Zinc Black

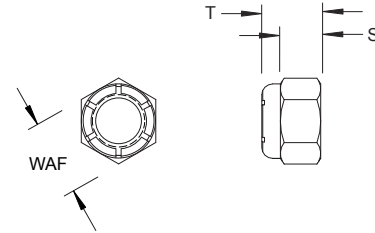
Other finishes available.

## Nuts

### Nylon Insert Locknut Inch

Sample Part Number

10 - 24 NY - IN - LK - NU - STL - Z  
Thread Series Material Finish



Thread		T Thickness	WAF Width Across Flats	S Side Height REF
Coarse	Fine			
4 - 40	-	.153 / .133	.251 / .243	.081
6 - 32	-	.188 / .168	.313 / .305	.103
8 - 32	-	.239 / .219	.345 / .336	.140
10 - 24	10 - 32	.249 / .229	.376 / .367	.140
1/4 - 20	1/4 - 28	.328 / .298	.439 / .430	.225
5/16 - 18	5/16 - 24	.359 / .329	.502 / .492	.250
3/8 - 16	3/8 - 24	.468 / .438	.564 / .553	.335
7/16 - 14	7/16 - 20	.468 / .438	.627 / .616	.324
1/2 - 13	1/2 - 20	.609 / .579	.752 / .741	.464
9/16 - 12	9/16 - 18	.656 / .626	.877 / .865	.469
5/8 - 11	5/8 - 18	.765 / .735	.940 / .928	.593
3/4 - 10	3/4 - 16	.890 / .860	1.064 / 1.052	.742

Custom sizes available.

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

Finish	Description
Z	Zinc Clear
Z - BLK	Zinc Black

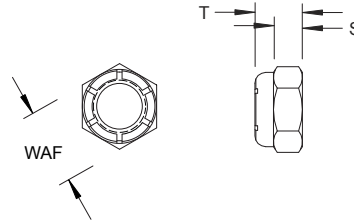
Other finishes available.

# Nuts

Nylon Insert Locknut, Thin Pattern  
Inch

Sample Part Number

8 - 32 NY - IN - LK - NU - STL - Z - THIN  
Thread Series Material Finish



Thread		T Thickness	WAF Width Across Flats	S Side Height REF
Coarse	Fine			
4 - 40	-	.124 / .094	.251 / .243	.075
6 - 32	-	.140 / .110	.313 / .305	.090
8 - 32	-	.187 / .157	.345 / .336	.110
10 - 24	10 - 32	.187 / .157	.376 / .367	.110
1/4 - 20	1/4 - 28	.218 / .188	.439 / .430	.125
5/16 - 18	5/16 - 24	.265 / .235	.502 / .492	.158
3/8 - 16	3/8 - 24	.281 / .251	.564 / .553	.150
7/16 - 14	7/16 - 20	.328 / .298	.627 / .615	.225
1/2 - 13	1/2 - 20	.328 / .298	.752 / .741	.190
9/16 - 12	9/16 - 18	.374 / .344	.877 / .865	.225
5/8 - 11	5/8 - 18	.406 / .376	.940 / .928	.265
3/4 - 10	3/4 - 16	.421 / .391	1.064 / 1.052	.288

Custom sizes available.

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

Finish	Description
Z	Zinc Clear
Z - BLK	Zinc Black

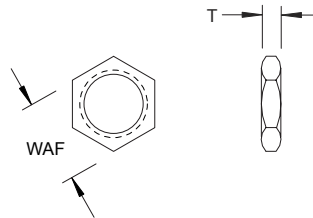
Other finishes available.

# Nuts

Panel Nut  
Inch

Sample Part Number

3/8 - 32 HX - PANEL - NU - STL - Z  
Thread Series Material Finish



Thread	T Thickness	WAF Width Across Flats
1/8 - 27	1/8	9/16
1/8 - 27	3/16	9/16
3/8 - 32	3/32	1/2
3/8 - 32	3/32	9/16
15/32 - 32	3/32	9/16

Custom sizes available.

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

Finish	Description
Z	Zinc Clear
N	Nickel

Other finishes available.



# Washers

## Inch

### Washers

Lock Washer, External Tooth	98
Lock Washer, Internal Tooth	99
Lock Washer, Internal External Tooth	100
Plain Washer, Type A	101
Plain Washer, Type B - Narrow, Wide, Regular	102
Lock Washer, Split Lock Washer	103



Lock Washer, External Tooth  
Page 98



Lock Washer, Internal Tooth  
Page 99



Lock Washer, Internal  
External Tooth  
Page 100



Plain Washer, Type A  
Page 101



Plain Washer, Type B - Narrow, Wide, Regular  
Page 102



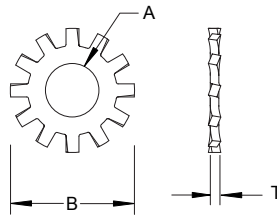
Lock Washer, Split Lock Washer  
Page 103

# Washer

Lock Washer - External tooth  
Inch

Sample Part Number

#6 EXT - LK - WA - STL - Z  
Size Series Material Finish



Thread Code	Nominal Washer Size	T Thickness	A Inside Diameter	B Outside Diameter
#3	3 - .099	.016 / .010	.109 / .102	.235 / .220
#4	4 - .112	.018 / .012	.123 / .115	.260 / .245
#5	5 - .125	.020 / .014	.136 / .129	.285 / .270
#6	6 - .138	.022 / .016	.150 / .141	.320 / .305
#8	8 - .164	.023 / .018	.176 / .168	.381 / .365
#10	10 - .190	.025 / .018	.204 / .195	.410 / .395
#12	12 - .216	.027 / .020	.231 / .221	.475 / .460
#1/4	1/4 - .250	.028 / .023	.267 / .256	.510 / .494
#5/16	5/16 - .3125	.034 / .028	.332 / .320	.610 / .588
#3/8	3/8 - .375	.040 / .032	.398 / .384	.694 / .670
#7/16	7/16 - .4375	.040 / .032	.464 / .448	.760 / .740
#1/2	1/2 - .500	.045 / .037	.530 / .513	.900 / .880
#9/16	9/16 - .5625	.045 / .037	.596 / .576	.985 / .960
#5/8	5/8 - .625	.050 / .042	.663 / .641	1.070 / 1.045
#11/16	11/16 - .6875	.050 / .042	.728 / .704	1.155 / 1.130
#3/4	3/4 - .750	.055 / .047	.795 / .768	1.260 / 1.220

Custom sizes available.

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

Finish	Description
Z	Zinc Clear

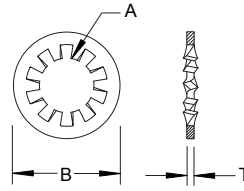
Other finishes available.

# Washer

Lock Washer - Internal Tooth  
Inch

Sample Part Number

#6 INT - LK - WA - STL - Z  
Size Series Material Finish



Thread Code	Nominal Washer Size	T Thickness	A Inside Diameter	B Outside Diameter
#2	2 - .086	.016 / .010	.095 / .089	.200 / .175
#3	3 - .099	.016 / .010	.109 / .102	.232 / .215
#4	4 - .112	.018 / .012	.123 / .115	.270 / .245
#5	5 - .125	.020 / .014	.136 / .129	.280 / .255
#6	6 - .138	.022 / .016	.150 / .141	.295 / .275
#8	8 - .164	.023 / .018	.176 / .168	.340 / .325
#10	10 - .190	.024 / .018	.204 / .195	.381 / .365
#12	12 - .216	.027 / .020	.231 / .221	.410 / .394
#1/4	1/4 - .250	.028 / .023	.267 / .256	.478 / .460
#5/16	5/16 - .3125	.034 / .028	.332 / .320	.610 / .594
#3/8	3/8 - .375	.040 / .032	.398 / .384	.692 / .670
#7/16	7/16 - .4375	.040 / .032	.464 / .448	.789 / .740
#1/2	1/2 - .500	.045 / .037	.530 / .512	.900 / .867
#9/16	9/16 - .5625	.045 / .037	.596 / .576	.985 / .957
#5/8	5/8 - .625	.050 / .042	.663 / .640	1.071 / 1.045
#11/16	11/16 - .6875	.050 / .042	.728 / .704	1.166 / 1.130
#3/4	3/4 - .750	.055 / .047	.795 / .769	1.245 / 1.220

Custom sizes available.

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

Finish	Description
Z	Zinc Clear

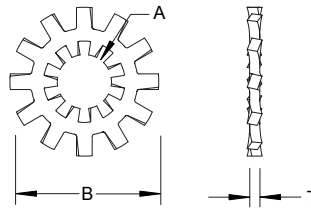
Other finishes available.

# Washer

Lock Washer - Internal External Tooth  
Inch

Sample Part Number

#6 INT/EXT - LK - WA - STL - Z  
Size Series Material Finish



Nominal Washer Size	T Thickness	A Inside Diameter	B Outside Diameter
4 - .112	.021 / .016	.123 / .115	.475 / .460
	.021 / .017		.510 / .495
	.021 / .017		.610 / .580
6 - .138	.028 / .023	.150 / .141	.510 / .495
	.028 / .023		.610 / .580
	.028 / .023		.690 / .670
8 - .164	.034 / .028	.176 / .168	.610 / .580
	.034 / .028		.690 / .670
	.034 / .028		.760 / .740
10 - .190	.034 / .028	.204 / .195	.610 / .580
	.040 / .032		.690 / .670
	.040 / .032		.760 / .740
	.040 / .032		.900 / .880
12 - .216	.040 / .032	.231 / .221	.690 / .670
	.040 / .032		.760 / .725
	.040 / .032		.900 / .880
	.045 / .037		.985 / .965
1/4 - .250	.040 / .032	.267 / .256	.760 / .725
	.040 / .032		.900 / .880
	.045 / .037		.985 / .965
	.045 / .037		1.070 / 1.045

Custom sizes available.

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

Finish	Description
Z	Zinc Clear

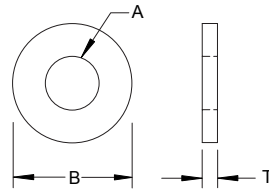
Other finishes available.

# Washer

Plain Washer - A  
Inch

Sample Part Number

#6 A - NAR - FL - WA - STL - Z  
Size Type Series Material Finish



Nominal Washer Size	Type	Type Code	T Thickness		A Inside Diameter		B Outside Diameter	
			Basic	MAX / MIN	Basic	+ / -	Basic	+ / -
0 - /	-	-	.020	.025 / .016	.078	.000 / .005	.188	.000 / .005
2 - /	-	-	.020	.025 / .016	.094	.000 / .005	.250	.000 / .005
4 - /	-	-	.032	.040 / .025	.125	.008 / .005	.312	.008 / .005
6 - .138	-	-	.049	.065 / .036	.156	.008 / .005	.375	.015 / .005
8 - .164	-	-	.049	.065 / .036	.188	.008 / .005	.438	.015 / .005
10 - .190	-	-	.049	.065 / .036	.219	.008 / .005	.500	.015 / .005
3/16 - .188	-	-	.049	.065 / .036	.250	.015 / .005	.562	.015 / .005
12 - .216	-	-	.065	.080 / .051	.250	.015 / .005	.562	.015 / .005
1/4 - .250	Narrow	NAR	.065	.080 / .051	.281	.015 / .005	.625	.015 / .005
1/4 - .250	Wide	WIDE	.065	.080 / .051	.312	.015 / .005	.734	.015 / .007
5/16 - .312	Narrow	NAR	.065	.080 / .051	.344	.015 / .005	.688	.015 / .007
5/16 - .312	Wide	WIDE	.083	.104 / .064	.375	.015 / .005	.875	.030 / .007
3/8 - .375	Narrow	NAR	.065	.080 / .051	.406	.015 / .005	.812	.015 / .007
3/8 - .375	Wide	WIDE	.083	.104 / .064	.438	.015 / .005	1.000	.030 / .007
7/16 - .438	Narrow	NAR	.065	.080 / .051	.469	.015 / .005	.922	.015 / .007
7/16 - .438	Wide	WIDE	.083	.104 / .064	.500	.015 / .005	1.250	.030 / .007
1/2 - .500	Narrow	NAR	.095	.121 / .074	.531	.015 / .005	1.062	.030 / .007
1/2 - .500	Wide	WIDE	.109	.132 / .086	.562	.015 / .005	1.375	.030 / .007
9/16 - .562	Narrow	NAR	.095	.121 / .074	.594	.015 / .005	1.156	.030 / .007
9/16 - .562	Wide	WIDE	.109	.132 / .086	.625	.015 / .005	1.469	.030 / .007
5/8 - .625	Narrow	NAR	.095	.121 / .074	.656	.030 / .007	1.312	.030 / .007
5/8 - .625	Wide	WIDE	.134	.160 / .108	.688	.030 / .007	1.750	.030 / .007
3/4 - .750	Narrow	NAR	.134	.160 / .108	.812	.030 / .007	1.469	.030 / .007
3/4 - .750	Wide	WIDE	.148	.177 / .122	.812	.030 / .007	2.000	.030 / .007

Custom sizes available.

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

Finish	Description
Z	Zinc Clear

Other finishes available.

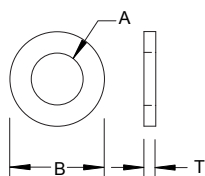
# Washer

Plain Washer - B Narrow, Regular, Wide  
Inch

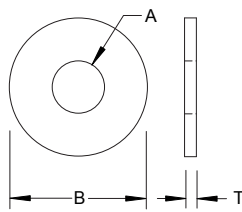
Sample Part Number

#6 B - NAR - FL - WA - STL - Z

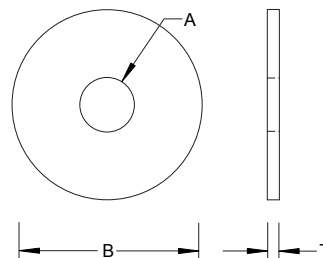
Size Code    Type Code    Series    Material    Finish



Narrow



Regular



Wide

Size Code	Nominal Washer Size	Type	Type Code	T Thickness		A Inside Diameter		B Outside Diameter	
				Basic	MAX / MIN	Basic	+ / -	Basic	+ / -
#0	0 - .060	Narrow	NAR	.025	.028 / .022	.068	.000 / .005	.125	.000 / .005
		Regular	REG	.025	.028 / .022	.068	.000 / .005	.188	.000 / .005
		Wide	WIDE	.025	.028 / .022	.068	.000 / .005	.250	.000 / .005
#1	1 - .073	Narrow	NAR	.025	.028 / .022	.084	.000 / .005	.156	.000 / .005
		Regular	REG	.025	.028 / .022	.084	.000 / .005	.219	.000 / .005
		Wide	WIDE	.032	.036 / .028	.084	.000 / .005	.281	.000 / .005
#2	2 - .086	Narrow	NAR	.025	.028 / .022	.094	.000 / .005	.188	.000 / .005
		Regular	REG	.032	.036 / .028	.094	.000 / .005	.250	.000 / .005
		Wide	WIDE	.032	.036 / .028	.094	.000 / .005	.344	.000 / .005
#3	3 - .099	Narrow	NAR	.025	.028 / .022	.109	.000 / .005	.219	.000 / .005
		Regular	REG	.032	.036 / .028	.109	.000 / .005	.312	.000 / .005
		Wide	WIDE	.040	.045 / .036	.109	.008 / .005	.406	.008 / .005
#4	4 - .112	Narrow	NAR	.032	.036 / .028	.125	.000 / .005	.250	.000 / .005
		Regular	REG	.040	.045 / .036	.125	.008 / .005	.375	.008 / .005
		Wide	WIDE	.040	.045 / .036	.125	.008 / .005	.438	.008 / .005
#5	5 - .125	Narrow	NAR	.032	.036 / .028	.141	.000 / .005	.281	.000 / .005
		Regular	REG	.040	.045 / .036	.141	.008 / .005	.406	.008 / .005
		Wide	WIDE	.040	.045 / .036	.141	.008 / .005	.500	.008 / .005
#6	6 - .138	Narrow	NAR	.040	.036 / .028	.156	.000 / .005	.312	.000 / .005
		Regular	REG	.040	.045 / .036	.156	.008 / .005	.438	.008 / .005
		Wide	WIDE	.063	.045 / .036	.156	.008 / .005	.562	.008 / .005
#8	8 - .164	Narrow	NAR	.040	.045 / .036	.188	.008 / .005	.375	.008 / .005
		Regular	REG	.040	.045 / .036	.188	.008 / .005	.500	.008 / .005
		Wide	WIDE	.063	.071 / .056	.188	.008 / .005	.625	.015 / .005
#10	10 - .190	Narrow	NAR	.040	.045 / .036	.203	.008 / .005	.406	.008 / .005
		Regular	REG	.063	.045 / .036	.203	.008 / .005	.562	.008 / .005
		Wide	WIDE	.063	.071 / .056	.203	.008 / .005	.734	.015 / .007
#12	12 - .216	Narrow	NAR	.063	.045 / .036	.234	.008 / .005	.438	.008 / .005
		Regular	REG	.063	.071 / .056	.234	.008 / .005	.625	.015 / .005
		Wide	WIDE	.063	.071 / .056	.234	.008 / .005	.875	.015 / .007
1/4	1/4 - .250	Narrow	NAR	.063	.071 / .056	.281	.015 / .005	.500	.008 / .005
		Regular	REG	.063	.071 / .056	.281	.015 / .005	.734	.015 / .007
		Wide	WIDE	.063	.071 / .056	.281	.015 / .005	1.000	.015 / .007
5/16	5/16 - .312	Narrow	NAR	.063	.071 / .056	.344	.015 / .005	.625	.015 / .005
		Regular	REG	.063	.071 / .056	.344	.015 / .005	.875	.015 / .007
		Wide	WIDE	.100	.071 / .056	.344	.015 / .005	1.125	.015 / .007
3/8	3/8 - .375	Narrow	NAR	.063	.071 / .056	.406	.015 / .005	.734	.015 / .007
		Regular	REG	.063	.071 / .056	.406	.015 / .005	1.000	.015 / .007
		Wide	WIDE	.100	.112 / .090	.406	.015 / .005	1.250	.030 / .007
7/16	7/16 - .438	Narrow	NAR	.063	.071 / .056	.469	.015 / .005	.875	.015 / .007
		Regular	REG	.063	.071 / .056	.469	.015 / .005	1.125	.015 / .007
		Wide	WIDE	.063	.112 / .090	.469	.015 / .005	1.469	.030 / .007
1/2	1/2 - .500	Narrow	NAR	.063	.071 / .056	.531	.015 / .005	1.000	.015 / .007
		Regular	REG	.100	.112 / .090	.531	.015 / .005	1.250	.030 / .007
		Wide	WIDE	.100	.112 / .090	.531	.015 / .005	1.750	.030 / .007
9/16	6/16 - .562	Narrow	NAR	.063	.071 / .056	.094	.015 / .005	1.125	.015 / .007
		Regular	REG	.100	.112 / .090	.094	.015 / .005	1.469	.030 / .007
		Wide	WIDE	.100	.112 / .090	.094	.015 / .005	2.000	.030 / .007
5/8	5/8 - .625	Narrow	NAR	.100	.112 / .090	.656	.030 / .007	1.250	.030 / .007
		Regular	REG	.100	.112 / .090	.656	.030 / .007	1.750	.030 / .007
		Wide	WIDE	.160	.174 / .146	.656	.030 / .007	2.250	.030 / .007
3/4	3/4 - .750	Narrow	NAR	.100	.112 / .090	.812	.030 / .007	1.375	.030 / .007
		Regular	REG	.100	.112 / .090	.812	.030 / .007	2.000	.030 / .007
		Wide	WIDE	.160	.174 / .146	.812	.030 / .007	2.500	.030 / .007

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

Finish	Description
Z	Zinc Clear

Other finishes available.

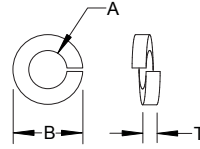
Custom sizes available.

# Washer

Lock Washer - Split Lock Washer  
Inch - Type WA

Sample Part Number

#6 SPLT - LK - WA - STL - Z  
Size Code Series Material Finish



Size Code	Nominal Washer Size	T Thickness MIN	A Inside Diameter	B Outside Diameter MAX
#2	2 - .086	.020	.094 / .088	.172
#3	3 - .099	.025	.170 / .101	.195
#4	4 - .112	.025	.120 / .114	.209
#5	5 - .125	.031	.133 / .127	.236
#6	6 - .138	.031	.148 / .141	.250
#8	8 - .164	.040	.174 / .141	.293
#10	10 - .190	.047	.200 / .193	.334
#12	12 - .216	.056	.227 / .220	.377
#1/4	1/4 - .250	.062	.262 / .254	.489
#5/16	5/16 - .312	.078	.326 / .317	.586
#3/8	3/8 - .375	.094	.390 / .380	.683
#7/16	7/16 - .438	.109	.455 / .443	.779
#1/2	1/2 - .500	.125	.518 / .506	.873
#9/16	9/16 - .562	.141	.582 / .570	.971
#5/8	5/8 - .625	.156	.650 / .635	1.079
#11/16	11/16 - .688	.172	.713 / .698	1.176
#3/4	3/4 - .750	.188	.775 / .760	1.271

Custom sizes available.

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

Finish	Description
Z	Zinc Clear

Other finishes available.

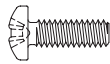




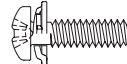
# Machine Screws

## Metric

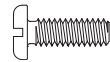
<b>Pan Head</b>	
Machine Screw, Pan Head	106
Machine Screw, Slotted Pan Head	106
<b>Flat Head</b>	
Machine Screw, 90 Deg Flat Head	107
<b>Hex Head</b>	
Machine Screw, Indented Hex Head	107
Machine Screw, Indented Hex Washer Head	108
<b>SEMS</b>	
Machine Screw, Internal Tooth Lock Washers SEMS	108
Machine Screw, Square Cone Lock Washer SEMS	109
Machine Screw, External Tooth Lock Washer SEMS	109
Machine Screw, Split Ring Lock Washer SEMS	110
<b>Special Use Heads</b>	
Machine Screw, Button Head	110
Machine Screw, Oval Head	111
Machine Screw, Slotted Oval Head	111



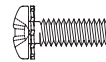
**Pan Head**  
Page 106



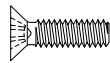
**Square Cone Lock Washer SEMS**  
Page 109



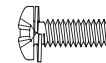
**Slotted Pan Head**  
Page 106



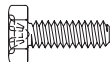
**External Tooth Lock Washer SEMS**  
Page 109



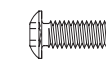
**90 Deg Flat Head**  
Page 107



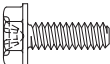
**Split Ring Lock Washer SEMS**  
Page 110



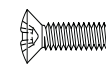
**Indented Hex Head**  
Page 107



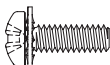
**Button Head**  
Page 110



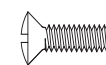
**Indented Hex Washer Head**  
Page 108



**Oval Head**  
Page 111



**Internal Tooth Lock Washer SEMS**  
Page 108



**Slotted Oval Head**  
Page 111

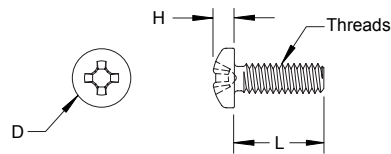
# Machine Screw

Pan Head  
Metric

Sample Part Number

M4 x 10MM PH - PN - MS - STL - Z  
Thread Length Drive Series Material Finish

ASME B 18.6.7M\*\*



Thread	H Height	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2 x 0.4	1.6 / 1.4	4.0 / 3.7	0	T6
M2.5 x 0.45	2.1 / 1.9	5.0 / 4.7	1	T8
M3 x 0.5	2.4 / 2.2	5.6 / 5.3	1	T10
M3.5 x 0.6	2.6 / 2.3	7.0 / 6.6	2	T15
M4 x 0.7	3.1 / 2.8	8.0 / 7.6	2	T20
M5 x 0.8	3.7 / 3.4	9.5 / 9.1	2	T25
M6 x 1	4.6 / 4.3	12.0 / 11.5	3	T30

Custom sizes available.

Length	L
3	3.2 / 2.8
4	4.3 / 3.7
5	5.3 / 5.7
6	6.3 / 5.7
8	8.3 / 7.7
10	10.3 / 9.7
12	12.4 / 11.6
14	14.4 / 13.6
16	16.4 / 15.6
20	20.5 / 19.5
25	25.5 / 24.5
30	30.5 / 29.5
35	35.5 / 34.5

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
	PZ * Pozi
	TX 6 - Lobe
	SL - PH Slotted - Cross Recess
	SL - TX Slotted - 6 - Lobe

\* Same size for POZI Drive

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

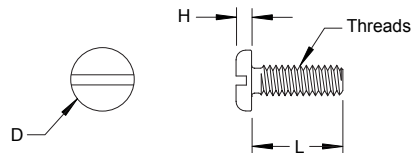
# Machine Screw

Slotted Pan Head  
Metric

Sample Part Number

M4 x 10MM SL - PN - MS - STL - Z  
Thread Length Drive Series Material Finish

ASME B18.6.7\*\*



Thread	H Height	D Head Diameter
M2 x 0.4	1.3 / 1.1	4.0 / 3.7
M2.5 x 0.45	1.5 / 1.3	5.0 / 4.7
M3 x 0.5	1.8 / 1.6	5.6 / 5.3
M3.5 x 0.6	2.1 / 1.9	7.0 / 6.6
M4 x 0.7	2.4 / 2.2	8.0 / 7.6
M5 x 0.8	3.0 / 2.7	9.5 / 9.1
M6 x 1	3.6 / 3.3	12.0 / 11.5

Custom sizes available.

Length	L
3	3.2 / 2.8
4	4.3 / 3.7
5	5.3 / 5.7
6	6.3 / 5.7
8	8.3 / 7.7
10	10.3 / 9.7
12	12.4 / 11.6
14	14.4 / 13.6
16	16.4 / 15.6
20	20.5 / 19.5
25	25.5 / 24.5
30	30.5 / 29.5
35	35.5 / 34.5

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

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

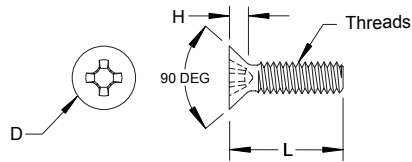
# Machine Screw

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\*\*



Thread	H Height MAX REF	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2 x 0.4	1.2	3.8 / 3.5	0	T6
M2.5 x 0.45	1.5	4.7 / 4.4	1	T8
M3 x 0.5	1.7	5.5 / 5.2	1	T10
M3.5 x 0.6	2.3	7.3 / 6.9	2	T15
M4 x 0.7	2.7	8.4 / 8.0	2	T20
M5 x 0.8	2.7	9.3 / 8.9	2	T25
M6 x 1	3.3	11.3 / 10.9	3	T30

Custom sizes available.

Length	L
3	3.2 / 2.8
4	4.3 / 3.7
5	5.3 / 5.7
6	6.3 / 5.7
8	8.3 / 7.7
10	10.3 / 9.7
12	12.4 / 11.6
14	14.4 / 13.6
16	16.4 / 15.6
20	20.5 / 19.5
25	25.5 / 24.5
30	30.5 / 29.5
35	35.5 / 34.5

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
	TX	6 - Lobe
	PZ *	Pozi

\* Same size for POZI Drive

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

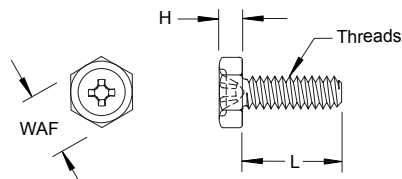
# Machine Screw

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



Thread	H Height	WAF Width Across Flats	Drive Size Cross Recess
M2 x 0.4	1.6 / 1.3	3.20 / 3.02	0
M2.5 x 0.45	2.1 / 1.8	4.00 / 3.82	1
M3 x 0.5	2.3 / 2.0	5.00 / 4.82	1
M3.5 x 0.6	2.6 / 2.3	5.50 / 5.32	2
M4 x 0.7	3.0 / 2.6	7.00 / 6.78	2
M5 x 0.8	3.8 / 3.3	8.00 / 7.78	2
M6 x 1	4.7 / 4.1	10.00 / 9.78	3
M8 x 1.25	6.0 / 5.2	13.00 / 12.73	4
M10 x 1.5	7.5 / 6.5	16.00 / 15.73	4

Custom sizes available.

Length	L
3	3.2 / 2.8
4	4.3 / 3.7
5	5.3 / 5.7
6	6.3 / 5.7
8	8.3 / 7.7
10	10.3 / 9.7
12	12.4 / 11.6
14	14.4 / 13.6
16	16.4 / 15.6
20	20.5 / 19.5
25	25.5 / 24.5
30	30.5 / 29.5
35	35.5 / 34.5

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

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

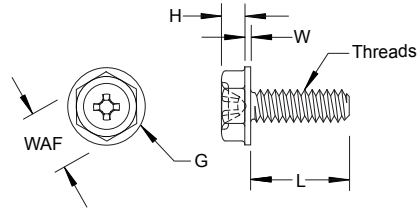
# Machine Screw

## Indented Hex Washer Head

Metric

Sample Part Number

M4 x 10MM PH - INHX - WA - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height MAX	G Washer Outside Diameter	WAF Width Across Flats	W Washer Thickness	Drive Size Cross Recess
M2 x 0.4	2.2	4.5 / 4.1	3.00 / 2.84	0.9 / 0.3	0
M2.5 x 0.45	2.7	5.4 / 5.0	3.20 / 3.04	1.1 / 0.3	1
M3 x 0.5	3.2	6.4 / 5.9	4.00 / 3.84	1.3 / 0.4	1
M3.5 x 0.6	3.8	7.5 / 6.9	5.00 / 4.82	1.4 / 0.5	2
M4 x 0.7	4.3	8.5 / 7.8	5.50 / 5.32	1.5 / 0.6	2
M5 x 0.8	5.4	10.6 / 9.8	7.00 / 6.78	1.9 / 0.7	2
M6 x 1	6.7	12.8 / 11.8	8.00 / 7.78	2.5 / 1.0	3
M8 x 1.25	8.6	16.8 / 15.5	10.00 / 9.78	3.0 / 1.2	4
M10 x 1.5	10.7	21.0 / 19.3	13.00 / 12.72	3.7 / 1.4	4

Length	L
3	3.2 / 2.8
4	4.3 / 3.7
5	5.3 / 5.7
6	6.3 / 5.7
8	8.3 / 7.7
10	10.3 / 9.7
12	12.4 / 11.6
14	14.4 / 13.6
16	16.4 / 15.6
20	20.5 / 19.5
25	25.5 / 24.5
30	30.5 / 29.5
35	35.5 / 34.5

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

Custom sizes available.

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

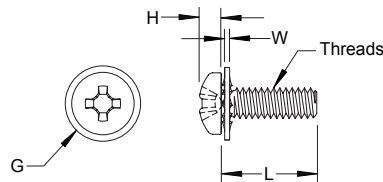
# Machine Screw

## Internal Tooth Lock Washer SEMS

Metric

Sample Part Number

M4 x 10MM PH - PN - INT - SEMS - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	G Washer Outside Diameter	W Washer Thickness	Drive Size	
				Cross * Recess	6 - Lobe
M2.5 x 0.45	2.1 / 1.9	7.00 / 6.50	.45 / .30	1	T8
M3 x 0.5	2.4 / 2.2	7.35 / 6.85	.45 / .30	1	T10
M3.5 x 0.6	2.6 / 2.3	7.50 / 7.00	.55 / .40	2	T15
M4 x 0.7	3.1 / 2.8	8.75 / 8.25	.60 / .45	2	T20
M5 x 0.8	3.7 / 3.4	10.50 / 10.00	.65 / .50	2	T25
M6 x 1	4.6 / 4.3	12.15 / 11.65	.75 / .60	3	T30
M8 x 1.25	6.0 / 5.6	15.50 / 14.75	.85 / .70	4	T40

Custom sizes available.

Length	L
3	3.3 / 2.7
4	4.3 / 3.7
5	5.3 / 5.7
6	6.3 / 5.7
8	8.3 / 7.7
10	10.3 / 9.7
12	12.4 / 11.6
14	14.4 / 13.6
16	16.4 / 15.6
20	20.5 / 19.5
25	25.5 / 24.5
30	30.5 / 29.5
35	35.5 / 34.5

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 - PH Slotted Cross Recess
	TX 6 - Lobe
	SL - TX Slotted - 6 - Lobe
	PZ * Pozi

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

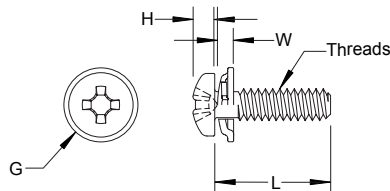
# Machine Screw

## Square Cone Lock Washer SEMS

Metric

Sample Part Number

M4 x 10MM PH - PN - SQCN - SEMS - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	G Washer Outside Diameter	W Washer Height	Drive Size	
				Cross * Recess	6 - Lobe
M3 x 0.5	2.4 / 2.2	7.82 / 7.52	1.55 / .99	1	T10
M3.5 x 0.6	2.6 / 2.3	7.82 / 7.52	1.55 / .99	2	T15
M4 x 0.7	3.1 / 2.8	8.46 / 8.20	1.65 / 1.32	2	T20
M5 x 0.8	3.7 / 3.4	9.73 / 9.47	2.59 / 1.65	2	T25
M6 x 1	4.60 / 4.3	12.90 / 12.57	2.24 / 1.63	3	T30

Custom sizes available.

Length	L
3	3.2 / 2.8
4	4.3 / 3.7
5	5.3 / 5.7
6	6.3 / 5.7
8	8.3 / 7.7
10	10.3 / 9.7
12	12.4 / 11.6
14	14.4 / 13.6
16	16.4 / 15.6
20	20.5 / 19.5
25	25.5 / 24.5
30	30.5 / 29.5
35	35.5 / 34.5

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 - PH Slotted - Cross Recess
	TX 6 - Lobe
	SL - TX Slotted - 6 - Lobe
	PZ * Pozi

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

# Machine Screw

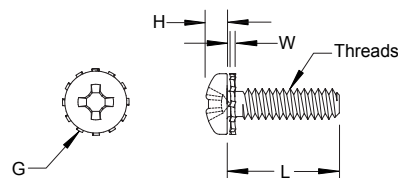
## External Tooth Lock Washer SEMS

Metric

Sample Part Number

M4 x 10MM PH - PN - EXT - SEMS - MS - STL - Z  
Thread Length Drive Series Material Finish

ASME B18.13.1M



Thread	H Height	G Washer Outside Diameter	W Washer Thickness	Drive Size	
				Cross * Recess	6 - Lobe
M2.5 x 0.45	1.8 / 1.66	5.85 / 5.45	.45 / .30	1	T8
M3 x 0.5	2.0 / 1.86	5.85 / 5.45	.45 / .30	1	T10
M3.5 x 0.6	2.4 / 2.26	7.35 / 6.85	.55 / .40	2	T15
M4 x 0.7	2.6 / 2.46	8.25 / 7.75	.60 / .45	2	T20
M5 x 0.8	3.3 / 3.12	10.50 / 10.00	.65 / .50	2	T25
M6 x 1	3.9 / 3.6	12.10 / 11.60	.75 / .60	3	T30
M8 x 1.25	5.0 / 4.7	16.00 / 15.25	.85 / .70	4	T40

Custom sizes available.

Length	L
3	3.2 / 2.8
4	4.3 / 3.7
5	5.3 / 5.7
6	6.3 / 5.7
8	8.3 / 7.7
10	10.3 / 9.7
12	12.4 / 11.6
14	14.4 / 13.6
16	16.4 / 15.6
20	20.5 / 19.5
25	25.5 / 24.5
30	30.5 / 29.5
35	35.5 / 34.5

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 - PH Slotted - Cross Recess
	TX 6 - Lobe
	SL - TX Slotted - 6 - Lobe
	PZ * Pozi

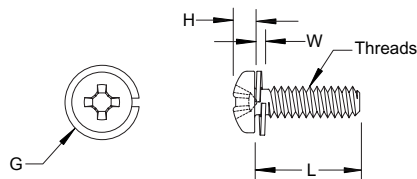
- \* Same size for POZI Drive
- \* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

# Machine Screw

Split Ring Lock Washer SEMS  
Metric

Sample Part Number

M4 x 10MM PH - PN - SPLIT - SEMS - MS - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	G Washer Outside Diameter	W Washer Thickness MIN	Drive Size	
				Cross * Recess	6 - Lobe
M2.5 x 0.45	2.1 / 1.9	5.73 / 5.49	1.40	1	T8
M3 x 0.5	2.4 / 2.2	6.19 / 5.95	1.40	1	T10
M3.5 x 0.6	2.6 / 2.3	7.00 / 6.74	1.57	2	T15
M4 x 0.7	3.1 / 2.8	8.34 / 8.08	1.78	2	T20
M5 x 0.8	3.7 / 3.4	11.30 / 11.02	2.79	2	T25
M6 x 1	4.6 / 4.3	14.29 / 13.96	3.30	3	T30

Custom sizes available.

Length	L
3	3.2 / 2.8
4	4.3 / 3.7
5	5.3 / 5.7
6	6.3 / 5.7
8	8.3 / 7.7
10	10.3 / 9.7
12	12.4 / 11.6
14	14.4 / 13.6
16	16.4 / 15.6
20	20.5 / 19.5
25	25.5 / 24.5
30	30.5 / 29.5
35	35.5 / 34.5

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
	PZ * Pozi

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

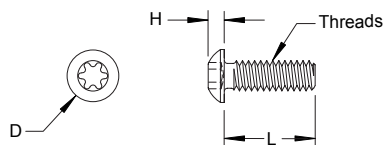
# Machine Screw

Button Head  
Metric

Sample Part Number

M4 x 10MM TX - BUT - MS - STL - Z  
Thread Length Drive Series Material Finish

ASME / ANSI B18.3.4M



Thread	H Height	D Diameter	Drive Size	
			Hex Size	6 - Lobe
M3 x 0.5	1.65 / 1.43	5.70 / 5.40	2	T8
M4 x 0.7	2.20 / 1.95	7.60 / 7.24	3.0	T15
M5 x 0.8	2.75 / 2.50	9.50 / 9.14	4.0	T25
M6 x 1	3.30 / 3.00	10.50 / 10.07	5.0	T27
M8 x 1.25	4.40 / 4.05	14.00 / 13.57	6.0	T40
M10 x 1.50	5.50 / 5.20	17.50 / 17.07	8.0	T45
M12 x 1.75	6.60 / 6.24	21.00 / 20.48	10.0	T55

Custom sizes available.

Length	L
3	3.2 / 2.8
4	4.3 / 3.7
5	5.3 / 5.7
6	6.3 / 5.7
8	8.3 / 7.7
10	10.3 / 9.7
12	12.4 / 11.6
14	14.4 / 13.6
16	16.4 / 15.6
20	20.5 / 19.5
25	25.5 / 24.5
30	30.5 / 29.5
35	35.5 / 34.5
40	40.5 / 39.5

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
	SOC Hex Socket

- \* Contact PENCOR® for more information on ISO, DIN, and JIS standards.

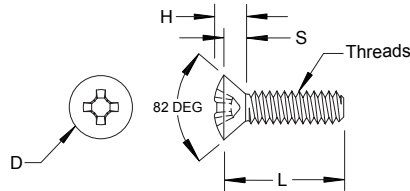
# Machine Screw

Oval Head  
Metric

Sample Part Number

M4 x 10MM PH - OVAL - MS - STL - Z  
Thread Length Drive Series Material Finish

ASME B 18.6.7M\*\*



Thread	H Raised Head Height MAX	D Head Diameter	S Head Side Height MAX / REF	Drive Size	
				Cross * Recess	6 - Lobe
M2 x 0.4	0.5	3.8 / 3.5	1.2	0	T6
M2.5 x 0.45	0.6	4.7 / 4.4	1.5	1	T8
M3 x 0.5	0.7	5.5 / 5.2	1.7	1	T10
M3.5 x 0.6	0.8	7.3 / 6.9	2.3	2	T15
M4 x 0.7	1.0	8.4 / 8.0	2.7	2	T20
M5 x 0.8	1.2	9.3 / 8.9	2.7	2	T25
M6 x 1	1.4	11.3 / 10.9	3.3	3	T30
M8 x 1.25	2.0	15.8 / 15.4	4.6	4	T40
M10 x 1.5	2.3	18.3 / 17.8	5.0	4	T50

Custom sizes available.

Length	L
3	3.2 / 2.8
4	4.3 / 3.7
5	5.3 / 4.7
6	6.3 / 5.7
8	8.3 / 7.7
10	10.3 / 9.7
12	12.4 / 11.6
14	14.4 / 13.6
16	16.4 / 15.6
20	20.5 / 19.5
25	25.5 / 24.5
30	30.5 / 29.5
35	35.5 / 34.5

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 - PH	Slotted - Cross Recess
	PZ *	Pozi

- \* Same size for POZI Drive
- \*\* ISO 7047 has slightly tighter tolerances. Contact PENCOR® for more information on ISO, DIN, and JIS standards.

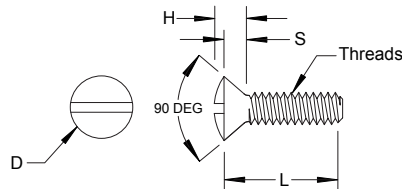
# Machine Screw

Slotted Oval Head  
Metric

Sample Part Number

M4 x 10MM SL - OVAL - MS - STL - Z  
Thread Length Drive Series Material Finish

ASME B18.6.7M\*\*



Thread	H Raised Head Height MAX	D Head Diameter	S Head Side Height MAX / REF
M2 x 0.4	0.5	3.8 / 3.5	1.2
M2.5 x 0.45	0.6	4.7 / 4.4	1.5
M3 x 0.5	0.7	5.5 / 5.2	1.7
M3.5 x 0.6	0.8	7.3 / 6.9	2.3
M4 x 0.7	1.0	8.4 / 8.0	2.7
M5 x 0.8	1.2	9.3 / 8.9	2.7
M6 x 1	1.4	11.3 / 10.9	3.3
M8 x 1.25	2.0	15.8 / 15.4	4.6
M10 x 1.5	2.3	18.3 / 17.8	5.0

Custom sizes available.

Length	L
3	3.2 / 2.8
4	4.3 / 3.7
5	5.3 / 4.7
6	6.3 / 5.7
8	8.3 / 7.7
10	10.3 / 9.7
12	12.4 / 11.6
14	14.4 / 13.6
16	16.4 / 15.6
20	20.5 / 19.5
25	25.5 / 24.5
30	30.5 / 29.5
35	35.5 / 34.5

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

- \*\* ISO 2010 has slightly tighter tolerances. Contact PENCOR® for more information on ISO, DIN, and JIS standards.

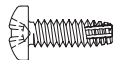




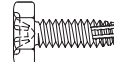
# Machine Screws, Thread Cutting

## Metric - Type F

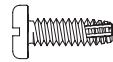
Pan Head	
Machine Screw, Pan Head	114
Machine Screw, Slotted Pan Head	114
Flat Head	
Machine Screw, 90 Deg Flat Head	115
Hex Head	
Machine Screw, Indented Hex Head	115
Machine Screw, Indented Hex Washer Head	116
Special Use Heads	
Machine Screw, Oval Head	116



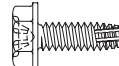
**Pan Head**  
Page 114



**Indented Hex Head**  
Page 115



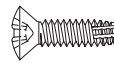
**Slotted Pan Head**  
Page 114



**Indented Hex Washer Head**  
Page 116



**90 Deg Flat Head**  
Page 115



**Oval Head**  
Page 116

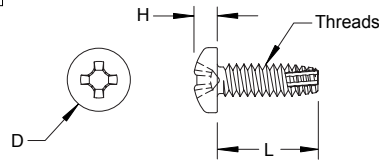
# Machine Screw, Thread Cutting

Pan Head  
Metric - Type F

Sample Part Number

M4 x 10MM PH - PN - F - STL - Z  
Thread Length Drive Series Material Finish

ASME B18.6.5M\*\*



Thread	H Height	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2 x 0.4	1.6 / 1.4	4.0 / 3.7	0	T6
M2.5 x 0.45	2.1 / 1.9	5.0 / 4.7	1	T8
M3 x 0.5	2.4 / 2.2	5.6 / 5.3	1	T10
M3.5 x 0.6	2.6 / 2.3	7.0 / 6.6	2	T15
M4 x 0.7	3.1 / 2.8	8.0 / 7.6	2	T20
M5 x 0.8	3.7 / 3.4	9.5 / 9.1	2	T20
M6 x 1	4.6 / 4.3	12.0 / 11.5	3	T30
M8 x 1.25	6.0 / 5.6	16.0 / 15.5	4	T40
M10 x 1.5	7.5 / 7.1	20.0 / 19.4	4	T50

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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
	PZ * Pozi

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

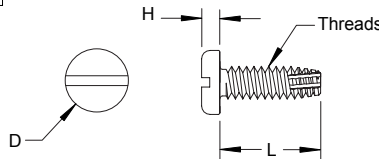
# Machine Screw, Thread Cutting

Slotted Pan Head  
Metric - Type F

Sample Part Number

M4 x 10MM SL - PN - F - STL - Z  
Thread Length Drive Series Material Finish

ASME B18.6.5M\*\*



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

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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

- \*\* ISO 1481 has slightly tighter tolerances. Contact PENCOM® for more information on ISO, DIN, and JIS standards.

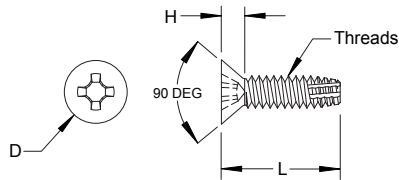
# Machine Screw, Thread Cutting

90 Deg Flat Head  
Metric - Type F

Sample Part Number

M4 x 10MM PH - FL - F - STL - Z  
Thread Length Drive Series Material Finish

ASME B18.6.5M\*\*



Thread	H Height MAX / REF	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2 x 0.4	1.2	3.8 / 3.5	0	T6
M2.5 x 0.45	1.5	4.7 / 4.4	1	T8
M3 x 0.5	1.7	5.5 / 5.2	1	T10
M3.5 x 0.6	2.3	7.3 / 6.9	2	T15
M4 x 0.7	2.7	8.4 / 8.0	2	T20
M5 x 0.8	2.7	9.3 / 8.9	2	T20
M6 x 1	3.3	11.3 / 10.9	3	T30
M8 x 1.25	4.6	15.8 / 15.4	4	T40
M10 x 1.5	5.0	18.3 / 17.8	4	T50

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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
	TX	6 - Lobe
	PZ *	Pozi

\* Same size for POZI Drive

\*\* ISO 7050 / 1482 has slightly tighter tolerances.  
Contact PENCOM® for more information on  
ISO, DIN, and JIS standards.

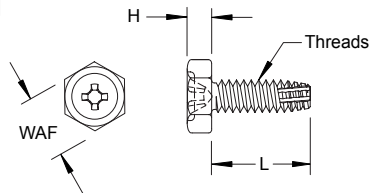
# Machine Screw, Thread Cutting

Indented Hex Head  
Metric - Type F

Sample Part Number

M4 x 10MM PH - INHX - F - STL - Z  
Thread Length Drive Series Material Finish

ASME B18.6.5M\*\*



Thread	H Height	WAF Width Across Flats	Drive Size Cross Recess
M2 x 0.4	1.6 / 1.3	3.20 / 3.02	0
M2.5 x 0.45	2.1 / 1.8	4.00 / 3.82	1
M3 x 0.5	2.3 / 2.0	5.00 / 4.82	1
M3.5 x 0.6	2.6 / 2.3	5.50 / 5.32	2
M4 x 0.7	3.0 / 2.6	7.00 / 6.78	2
M5 x 0.8	3.8 / 3.3	8.00 / 7.78	2
M6 x 1	4.7 / 4.1	10.00 / 9.78	3
M8 x 1.25	6.0 / 5.2	13.00 / 12.73	4
M10 x 1.5	7.5 / 6.5	16.00 / 15.73	4

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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

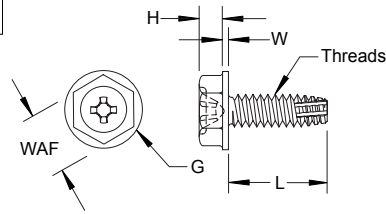
\*\* ISO 1479 has slightly tighter tolerances.  
Contact PENCOM® for more information on  
ISO, DIN, and JIS standards.

# Machine Screw, Thread Cutting

Indented Hex Washer Head  
Metric - Type F

Sample Part Number

M4 x 10MM PH - INHX - WA - F - STL - Z  
Thread Length Drive Series Material Finish



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

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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

Custom sizes available.

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

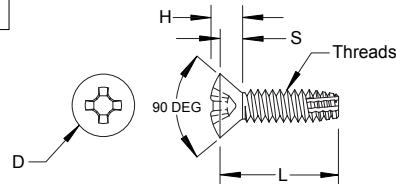
# Machine Screw, Thread Cutting

Oval Head  
Metric - Type F

Sample Part Number

M4 x 10MM PH - OVAL - F - STL - Z  
Thread Length Drive Series Material Finish

ASME B18.6.5M\*\*



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

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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
	PZ * Pozi

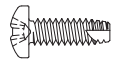
Custom sizes available.

\* Same size for POZI Drive  
 \*\* ISO 7051 / 1483 has slightly tighter tolerances.  
 Contact PENCOM® for more information on ISO, DIN, and JIS standards.

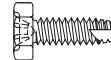
# Machine Screws, Thread Cutting

## Metric - Type 23

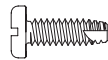
Pan Head	
Machine Screw, Pan Head	118
Machine Screw, Slotted Pan Head	118
Flat Head	
Machine Screw, 90 Deg Flat Head	119
Hex Head	
Machine Screw, Indented Hex Head	119
Machine Screw, Indented Hex Washer Head	120
Special Use Heads	
Machine Screw, Oval Head	120



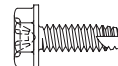
**Pan Head**  
Page 118



**Indented Hex Head**  
Page 119



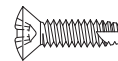
**Slotted Pan Head**  
Page 118



**Indented Hex Washer Head**  
Page 120



**90 Deg Flat Head**  
Page 119



**Oval Head**  
Page 120

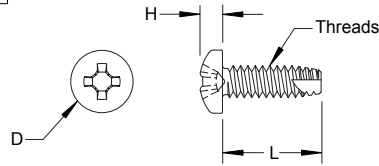
# Machine Screw, Thread Cutting

Pan Head  
Metric - Type 23

Sample Part Number

M4 x 10MM PH - PN - 23 - STL - Z  
Thread Length Drive Series Material Finish

ASME B18.6.5M\*\*



Thread	H Height	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2 x 0.4	1.6 / 1.4	4.0 / 3.7	0	T6
M2.5 x 0.45	2.1 / 1.9	5.0 / 4.7	1	T8
M3 x 0.5	2.4 / 2.2	5.6 / 5.3	1	T10
M3.5 x 0.6	2.6 / 2.3	7.0 / 6.6	2	T15
M4 x 0.7	3.1 / 2.8	8.0 / 7.6	2	T20
M5 x 0.8	3.7 / 3.4	9.5 / 9.1	2	T20
M6 x 1	4.6 / 4.3	12.0 / 11.5	3	T30
M8 x 1.25	6.0 / 5.6	16.0 / 15.5	4	T40
M10 x 1.5	7.5 / 7.1	20.0 / 19.4	4	T50




Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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
	PZ * Pozi

\* Same size for POZI Drive

\*\* ISO 7049 has slightly tighter tolerances.  
Contact PENCOR® for more information  
on ISO, DIN, and JIS standards.

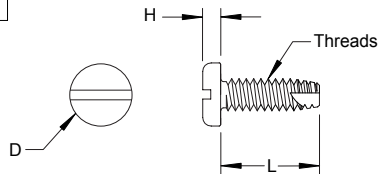
# Machine Screw, Thread Cutting

Slotted Pan Head  
Metric - Type 23

Sample Part Number

M4 x 10MM SL - PN - 23 - STL - Z  
Thread Length Drive Series Material Finish

ASME B18.6.5M\*\*



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

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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

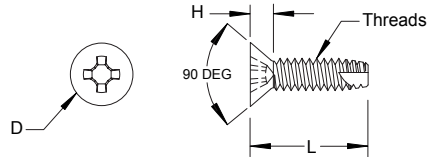
\*\* ISO 1481 has slightly tighter tolerances.  
Contact PENCOR® for more information  
on ISO, DIN, and JIS standards.

# Machine Screw, Thread Cutting

90 Deg Flat Head  
Metric - Type 23

Sample Part Number

M4 x 10MM PH - FL - 23 - STL - Z  
Thread Length Drive Series Material Finish  
 ASME B18.6.5M\*\*



Thread	H Height MAX / REF	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2 x 0.4	1.2	3.8 / 3.5	0	T6
M2.5 x 0.45	1.5	4.7 / 4.4	1	T8
M3 x 0.5	1.7	5.5 / 5.2	1	T10
M3.5 x 0.6	2.3	7.3 / 6.9	2	T15
M4 x 0.7	2.7	8.4 / 8.0	2	T20
M5 x 0.8	2.7	9.3 / 8.9	2	T20
M6 x 1	3.3	11.3 / 10.9	3	T30
M8 x 1.25	4.6	15.8 / 15.4	4	T40
M10 x 1.5	5.0	18.3 / 17.8	4	T50

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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
	TX	6 - Lobe
	PZ *	Pozi

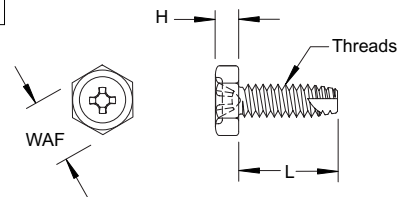
- \* Same size for POZI Drive
- \*\* ISO 7050 / 1482 has slightly tighter tolerances. Contact PENCOM® for more information on ISO, DIN, and JIS standards.

# Machine Screw, Thread Cutting

Indented Hex Head  
Metric - Type 23

Sample Part Number

M4 x 10MM PH - INHX - 23 - STL - Z  
Thread Length Drive Series Material Finish  
 ASME B18.6.5M\*\*



Thread	H Height	WAF Width Across Flats	Drive Size Cross Recess
M2 x 0.4	1.6 / 1.3	3.20 / 3.02	0
M2.5 x 0.45	2.1 / 1.8	4.00 / 3.82	1
M3 x 0.5	2.3 / 2.0	5.00 / 4.82	1
M3.5 x 0.6	2.6 / 2.3	5.50 / 5.32	2
M4 x 0.7	3.0 / 2.6	7.00 / 6.78	2
M5 x 0.8	3.8 / 3.3	8.00 / 7.78	2
M6 x 1	4.7 / 4.1	10.00 / 9.78	3
M8 x 1.25	6.0 / 5.2	13.00 / 12.73	4
M10 x 1.5	7.5 / 6.5	16.00 / 15.73	4

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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

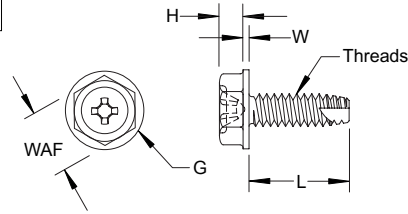
- \*\* ISO 1479 has slightly tighter tolerances. Contact PENCOM® for more information on ISO, DIN, and JIS standards.

# Machine Screw, Thread Cutting

Indented Hex Washer Head  
Metric - Type 23

Sample Part Number

M4 x 10MM PH - INHX - WA - 23 - STL - Z  
Thread Length Drive Series Material Finish



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

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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

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

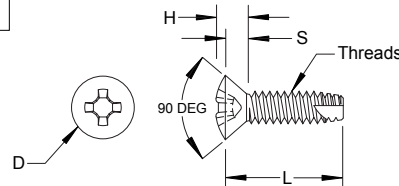
# Machine Screw, Thread Cutting

Oval Head  
Metric - Type 23

Sample Part Number

M4 x 10MM PH - OVAL - 23 - STL - Z  
Thread Length Drive Series Material Finish

ASME B18.6.5M\*\*



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

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

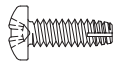
Drive	Description
	PH Cross Recess
	SL Slotted
	SL - PH Slotted - Cross Recess
	PZ * Pozi

\* Same size for POZI Drive  
 \*\* ISO 7051 / 1483 has slightly tighter tolerances.  
 Contact PENCOM® for more information on ISO, DIN, and JIS standards.

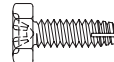


# Machine Screws, Thread Cutting Metric - Type 1

Pan Head	
Machine Screw, Pan Head	122
Machine Screw, Slotted Pan Head	122
Flat Head	
Machine Screw, 90 Deg Flat Head	123
Hex Head	
Machine Screw, Indented Hex Head	123
Machine Screw, Indented Hex Washer Head	124
Special Use Heads	
Machine Screw, Oval Head	124



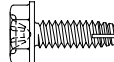
Pan Head  
Page 122



Indented Hex Head  
Page 123



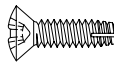
Slotted Pan Head  
Page 122



Indented Hex Washer Head  
Page 124



90 Deg Flat Head  
Page 123



Oval Head  
Page 124

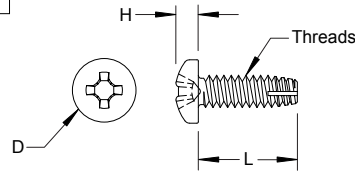
# Machine Screw, Thread Cutting

Pan Head  
Metric - Type 1

Sample Part Number

M4 x 10MM PH - PN - 1 - STL - Z  
Thread Length Drive Series Material Finish

ASME B18.6.5M\*\*



Thread	H Height	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2 x 0.4	1.6 / 1.4	4.0 / 3.7	0	T6
M2.5 x 0.45	2.1 / 1.9	5.0 / 4.7	1	T8
M3 x 0.5	2.4 / 2.2	5.6 / 5.3	1	T10
M3.5 x 0.6	2.6 / 2.3	7.0 / 6.6	2	T15
M4 x 0.7	3.1 / 2.8	8.0 / 7.6	2	T20
M5 x 0.8	3.7 / 3.4	9.5 / 9.1	2	T20
M6 x 1	4.6 / 4.3	12.0 / 11.5	3	T30
M8 x 1.25	6.0 / 5.6	16.0 / 15.5	4	T40
M10 x 1.5	7.5 / 7.1	20.0 / 19.4	4	T50

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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
	PZ * Pozi

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

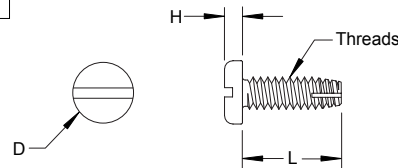
# Machine Screw, Thread Cutting

Slotted Pan Head  
Metric - Type 1

Sample Part Number

M4 x 10MM SL - PN - 1 - STL - Z  
Thread Length Drive Series Material Finish

ASME B18.6.5M\*\*



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

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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

\*\* ISO 1481 has slightly tighter tolerances.  
Contact PENCOR® for more information on ISO, DIN, and JIS standards.

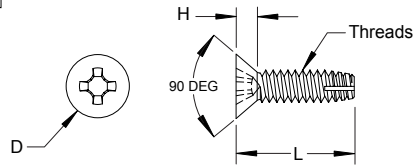
# Machine Screw, Thread Cutting

90 Deg Flat Head  
Metric - Type 1

Sample Part Number

M4 x 10MM PH - FL - 1 - STL - Z  
Thread Length Drive Series Material Finish

ASME B18.6.5M\*\*



Thread	H Height MAX / REF	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2 x 0.4	1.2	3.8 / 3.5	0	T6
M2.5 x 0.45	1.5	4.7 / 4.4	1	T8
M3 x 0.5	1.7	5.5 / 5.2	1	T10
M3.5 x 0.6	2.3	7.3 / 6.9	2	T15
M4 x 0.7	2.7	8.4 / 8.0	2	T20
M5 x 0.8	2.7	9.3 / 8.9	2	T20
M6 x 1	3.3	11.3 / 10.9	3	T30
M8 x 1.25	4.6	15.8 / 15.4	4	T40
M10 x 1.5	5.0	18.3 / 17.8	4	T50

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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
	TX 6 - Lobe
	PZ * Pozi

\* Same size for POZI Drive

\*\* ISO 7050 / 1482 has slightly tighter tolerances.  
Contact PENCOM® for more information on ISO,  
DIN, and JIS standards.

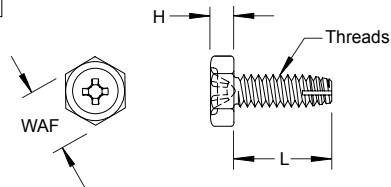
# Machine Screw, Thread Cutting

Indented Hex Head  
Metric - Type 1

Sample Part Number

M4 x 10MM PH - INHX - 1 - STL - Z  
Thread Length Drive Series Material Finish

ASME B18.6.5M\*\*



Thread	H Height	WAF Width Across Flats	Drive Size Cross Recess
M2 x 0.4	1.6 / 1.3	3.20 / 3.02	0
M2.5 x 0.45	2.1 / 1.8	4.00 / 3.82	1
M3 x 0.5	2.3 / 2.0	5.00 / 4.82	1
M3.5 x 0.6	2.6 / 2.3	5.50 / 5.32	2
M4 x 0.7	3.0 / 2.6	7.00 / 6.78	2
M5 x 0.8	3.8 / 3.3	8.00 / 7.78	2
M6 x 1	4.7 / 4.1	10.00 / 9.78	3
M8 x 1.25	6.0 / 5.2	13.00 / 12.73	4
M10 x 1.5	7.5 / 6.5	16.00 / 15.73	4

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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.

Drive	Description
	PH Cross Recess
	SL Slotted
	USL Unslotted

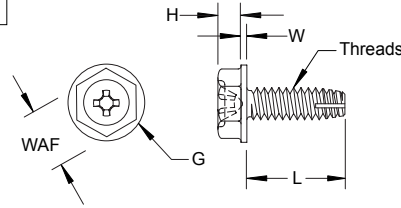
\*\* ISO 1479 has slightly tighter tolerances.  
Contact PENCOM® for more information  
on ISO, DIN, and JIS standards.

# Machine Screw, Thread Cutting

Indented Hex Washer Head  
Metric - Type 1

Sample Part Number

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



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

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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

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

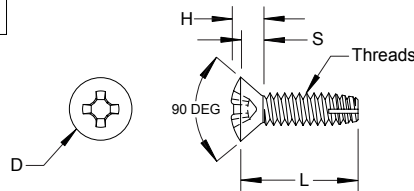
# Machine Screw, Thread Cutting

Oval Head  
Metric - Type 1

Sample Part Number

M4 x 10MM PH - OVAL - 1 - STL - Z  
Thread Length Drive Series Material Finish

ASME B18.6.5M\*\*



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

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

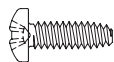
Drive	Description
	PH Cross Recess
	SL Slotted
	SL - PH Slotted - Cross Recess
	PZ * Pozi


\* Same size for POZI Drive  
\*\* ISO 7051 / 1483 has slightly tighter tolerances.  
Contact PENCOM® for more information on ISO, DIN, and JIS standards.

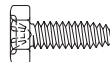
# Machine Screws, Thread Forming

## Metric - Type TA

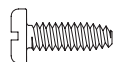
Pan Head	
Machine Screw, Pan Head	126
Machine Screw, Slotted Pan Head	126
Flat Head	
Machine Screw, 90 Deg Flat Head	127
Hex Head	
Machine Screw, Indented Hex Head	127
Machine Screw, Indented Hex Washer Head	128
Special Use Heads	
Machine Screw, Oval Head	128




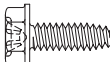
 Pan Head  
Page 126




 Indented Hex Head  
Page 127



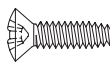
 Slotted Pan Head  
Page 126



 Indented Hex Washer Head  
Page 128



 90 Deg Flat Head  
Page 127



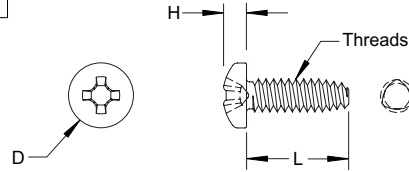
 Oval Head  
Page 128

# Machine Screw, Thread Forming

Pan Head  
Metric - Type TA

Sample Part Number

M4 x 10MM PH - PN - TA - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2 x 0.4	1.6 / 1.4	4.0 / 3.7	0	T6
M2.5 x 0.45	2.1 / 1.9	5.0 / 4.7	1	T8
M3 x 0.5	2.4 / 2.2	5.6 / 5.3	1	T10
M3.5 x 0.6	2.6 / 2.3	7.0 / 6.6	2	T15
M4 x 0.7	3.1 / 2.8	8.0 / 7.6	2	T20
M5 x 0.8	3.7 / 3.4	9.5 / 9.1	2	T20
M6 x 1	4.6 / 4.3	12.0 / 11.5	3	T30
M8 x 1.25	6.0 / 5.6	16.0 / 15.5	4	T40
M10 x 1.5	7.5 / 7.1	20.0 / 19.4	4	T50

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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
	PZ * Pozi

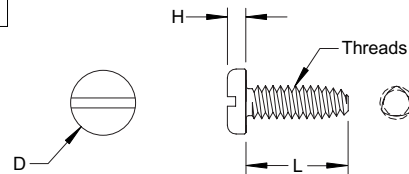
- \* Same size for POZI Drive
- \* Contact PENCOR® for more information on ISO, DIN, and JIS standards.

# Machine Screw, Thread Forming

Slotted Pan Head  
Metric - Type TA

Sample Part Number

M4 x 10MM SL - PN - TA - STL - Z  
Thread Length Drive Series Material Finish



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

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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

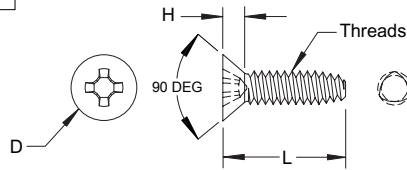
- \* Contact PENCOR® for more information on ISO, DIN, and JIS standards.

# Machine Screw, Thread Forming

90 Deg Flat Head  
Metric - Type TA

Sample Part Number

M4 x 10MM PH - FL - TA - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height MAX / REF	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2 x 0.4	1.2	3.8 / 3.5	0	T6
M2.5 x 0.45	1.5	4.7 / 4.4	1	T8
M3 x 0.5	1.7	5.5 / 5.2	1	T10
M3.5 x 0.6	2.3	7.3 / 6.9	2	T15
M4 x 0.7	2.7	8.4 / 8.0	2	T20
M5 x 0.8	2.7	9.3 / 8.9	2	T20
M6 x 1	3.3	11.3 / 10.9	3	T30
M8 x 1.25	4.6	15.8 / 15.4	4	T40
M10 x 1.5	5.0	18.3 / 17.8	4	T50

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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
	TX	6 - Lobe
	PZ *	Pozi

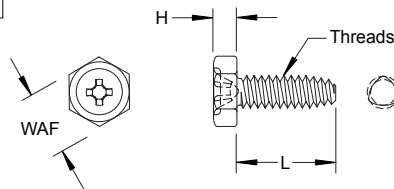
- \* Same size for POZI Drive
- \* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

# Machine Screw, Thread Forming

Indented Hex Head  
Metric - Type TA

Sample Part Number

M4 x 10MM PH - INHX - TA - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	WAF Width Across Flats	Drive Size Cross Recess
M2 x 0.4	1.6 / 1.3	3.20 / 3.02	0
M2.5 x 0.45	2.1 / 1.8	4.00 / 3.82	1
M3 x 0.5	2.3 / 2.0	5.00 / 4.82	1
M3.5 x 0.6	2.6 / 2.3	5.50 / 5.32	2
M4 x 0.7	3.0 / 2.6	7.00 / 6.78	2
M5 x 0.8	3.8 / 3.3	8.00 / 7.78	2
M6 x 1	4.7 / 4.1	10.00 / 9.78	3
M8 x 1.25	6.0 / 5.2	13.00 / 12.73	4
M10 x 1.5	7.5 / 6.5	16.00 / 15.73	4

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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

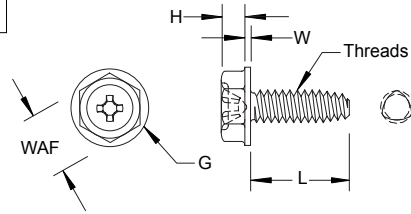
- \* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

# Machine Screw, Thread Forming

Indented Hex Washer Head  
Metric - Type TA

Sample Part Number

M4 x 10MM PH - INHX - WA - TA - STL - Z  
Thread Length Drive Series Material Finish



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

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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

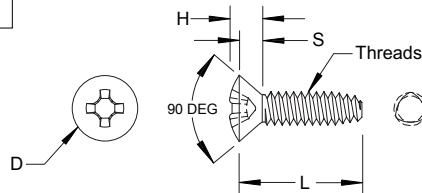
\* Contact PENCOR® for more information on ISO, DIN, and JIS standards.

# Machine Screw, Thread Forming

Oval Head  
Metric - Type TA

Sample Part Number

M4 x 10MM PH - OVAL - TA - STL - Z  
Thread Length Drive Series Material Finish



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

Custom sizes available.

Length	L
4	4.0 / 3.2
5	5.0 / 4.2
6	6.0 / 5.2
8	8.0 / 7.2
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

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
	PZ * Pozi

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

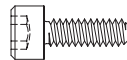


# Socket Screws

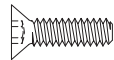
## Metric Type SOC

### Shoulder Screws

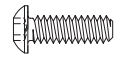
Socket Head Cap Screw	130
Flat Countersunk Head Cap Screw	130
Button Head Cap Screw	131



Socket Head Cap Screw  
Page 130



Flat Countersunk Head Cap Screw  
Page 130



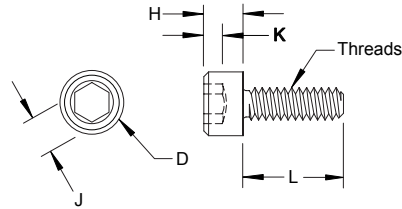
Button Head Cap Screw  
Page 131

# Socket Screws

## Socket Head Cap Screw Metric

Sample Part Number

M4 x 10MM SOC - CAP - SC - ALY - Z  
Thread Length Series Material Finish



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

Custom sizes available.

Length	L
4	4.3 / 3.7
5	5.3 / 4.7
6	6.3 / 5.7
8	8.3 / 7.7
10	10.3 / 9.7
12	12.3 / 11.7
16	16.3 / 15.7
20	20.4 / 19.6
25	25.4 / 24.6
30	30.4 / 29.6
35	35.4 / 34.6
40	40.4 / 39.6
45	45.4 / 44.6

Material	Description
ALY	Alloy Steel
SS	18 - 8 Stainless Steel

Finish	Description
BLK - OX	Black Oxide
Z	Zinc Clear

Other finishes available.

Drive	Description
	SOC Hex Socket

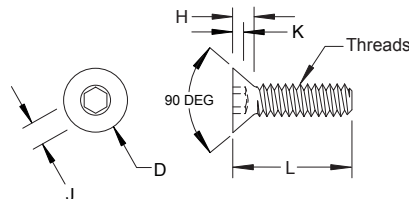
\* Contact PENCOR® for more information on ISO, DIN, and JIS standards.

# Socket Screws

## Flat Countersunk Head Cap Screw Metric

Sample Part Number

M4 x 10MM SOC - FL - CAP - SC - ALY - Z  
Thread Length Series Material Finish



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

Custom sizes available.

Length	L
4	4.3 / 3.7
5	5.3 / 4.7
6	6.3 / 5.7
8	8.3 / 7.7
10	10.3 / 9.7
12	12.3 / 11.7
16	16.3 / 15.7
20	20.4 / 19.6
25	25.4 / 24.6
30	30.4 / 29.6
35	35.4 / 34.6
40	40.4 / 39.6
45	45.4 / 44.6

Material	Description
ALY	Alloy Steel
SS	18 - 8 Stainless Steel

Finish	Description
BLK - OX	Black Oxide
Z	Zinc Clear

Other finishes available.

Drive	Description
	SOC Hex Socket

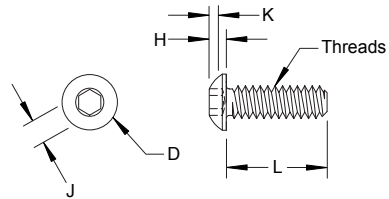
\* Contact PENCOR® for more information on ISO, DIN, and JIS standards.

# Socket Screws

Button Head Cap Screw  
Metric

Sample Part Number

M4 x 10MM SOC - BUT - CAP - SC - ALY - Z  
Thread Length Series Material Finish



Thread	H Height	D Head Diameter	J Hexagon Socket Size NOM	K Key Engagement MIN
M3 x 0.5	1.65 / 1.43	5.70 / 5.40	2.0	1.04
M4 x 0.7	2.20 / 1.95	7.60 / 7.24	2.5	1.30
M5 x 0.8	2.75 / 2.50	9.50 / 9.14	3.0	1.56
M6 x 1	3.30 / 3.00	10.50 / 10.07	4.0	2.08
M8 x 1.25	4.40 / 4.05	14.00 / 13.57	5.0	2.60
M10 x 1.5	5.50 / 5.20	17.50 / 17.07	6.0	3.12
M12 x 1.75	6.60 / 6.24	21.00 / 20.48	8.0	4.16
M16 x 2	8.80 / 8.44	28.00 / 27.48	10.0	5.20

Custom sizes available.

Length	L
4	4.3 / 3.7
5	5.3 / 4.7
6	6.3 / 5.7
8	8.3 / 7.7
10	10.3 / 9.7
12	12.3 / 11.7
16	16.3 / 15.7
20	20.4 / 19.6
25	25.4 / 24.6
30	30.4 / 29.6
35	35.4 / 34.6
40	40.4 / 39.6
45	45.4 / 44.6

Material	Description
ALY	Alloy Steel
SS	18 - 8 Stainless Steel

Finish	Description
BLK - OX	Black Oxide
Z	Zinc Clear

Other finishes available.

Drive	Description
	SOC Hex Socket

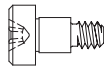
\* Contact PENCOM® for more information on ISO, DIN, and JIS standards.



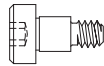
# Precision Shoulder Screw

## Metric Type PSHLD

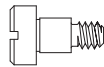
Precision Shoulder Screws	
Precision Cross Recess Head Shoulder Screw	134
Precision Socket Head Shoulder Screw	135
Precision Slotted Head Shoulder Screw	136



Precision Cross Recess Head Shoulder Screw  
Page 134



Precision Socket Head Shoulder Screw  
Page 135



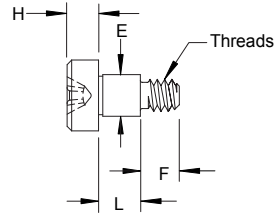
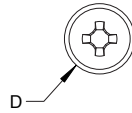
Precision Slotted Head Shoulder Screw  
Page 136

# 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  
Shoulder Length Basic Shoulder Diameter Thread Thread Drive Length Series Material Finish



Thread	H Height ±0.25	D Head Diameter ±0.1	F Thread Length ±0.13	E Basic Shoulder Diameter +0.000 -0.026	Drive Size Cross Recess
M3 x 0.5	3.18	6	4	3.16	1
M3.5 x 0.6	3.18	7	4.75	3.96	2
M4 x 0.7	3.96	8	4.75	4.75	2
M5 x 0.8	4.8	10	6.3	6.34	3
M6 x 1	5.5	11	9.4	7.93	3
M6 x 1	9.51	13	9.4	9.51	4

Custom sizes available.

Material	Description
ALY	Alloy Steel
SS	18 - 8 Stainless Steel

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

Drive	Description
PH	Cross Recess

L Shoulder Length	M3 x 0.5	M3.5 x 0.6	M4 x 0.7	M5 x 0.8	M6 x 1
3.18					
4.76					
6.35					
7.94					
9.52					
11.11					
12.70					
14.29					
15.87					
17.46					
19.05					
22.22					
25.40					

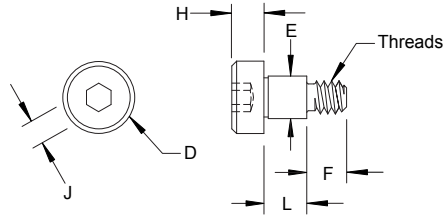
\* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

# 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  
Shoulder Length    Basic Shoulder Diameter    Thread Length    Thread Length    Drive    Series    Material    Finish



Thread	H Height ±0.25	D Head Diameter ±0.1	F Thread Length ±0.13	E Basic Shoulder Diameter +0.000 -0.026	J Drive Hex +0.053 -0.000
M3 x 0.5	3.18	6	4	3.16	2
M3.5 x 0.6	3.18	7	4.75	3.96	2.5
M4 x 0.7	3.96	8	4.75	4.75	2.5
M5 x 0.8	4.8	10	6.3	6.34	3
M6 x 1	5.5	11	9.4	7.93	4
M6 x 1	9.51	13	9.4	9.51	4

Custom sizes available.

Material	Description
ALY	Alloy Steel
SS	18 - 8 Stainless Steel

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

Drive	Description
	SOC Hex Socket

L Shoulder Length	M3 x 0.5	M3.5 x 0.6	M4 x 0.7	M5 x 0.8	M6 x 1
3.18					
4.76					
6.35					
7.94					
9.52					
11.11					
12.70					
14.29					
15.87					
17.46					
19.05					
22.22					
25.40					

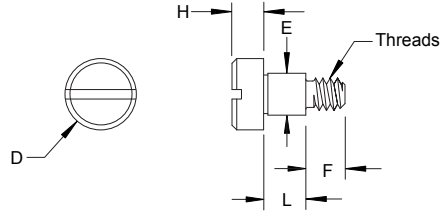
\* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

# 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  
Shoulder Length    Basic Shoulder Diameter    Thread    Thread Drive    Series    Material    Finish



Thread	H Height ±0.25	D Head Diameter ±0.1	F Thread Length ±0.13	E Basic Shoulder Diameter +0.000 -0.026
M3 x 0.5	3.18	6	4	3.16
M3.5 x 0.6	3.18	7	4.75	3.96
M4 x 0.7	4	8	4.75	4.75
M5 x 0.8	4.8	10	6.3	6.34
M6 x 1	5.5	11	9.4	7.93
M6 x 1	5.5	13	9.4	9.51

Custom sizes available.

Material	Description
ALY	Alloy Steel
SS	18 - 8 Stainless Steel

Finish	Description
BLK - OXI	Black Oxide
Z	Zinc Clear

Other finishes available.

Drive	Description
 SL	Slotted

L Shoulder Length	M3 x 0.5	M3.5 x 0.6	M4 x 0.7	M5 x 0.8	M6 x 1
3.18					
4.76					
6.35					
7.94					
9.52					
11.11					
12.70					
14.29					
15.87					
17.46					
19.05					
22.22					
25.40					

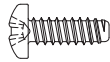
\* Contact PENCOM® for more information on ISO, DIN, and JIS standards.



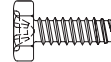
# Sheet Metal Screws, Thread Forming

## Metric - Type B

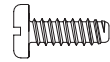
Pan Head		
Sheet Metal Screw, Pan Head		138
Sheet Metal Screw, Slotted Pan Head		138
Flat Head		
Sheet Metal Screw, 90 Deg Flat Head		139
Hex Head		
Sheet Metal Screw, Indented Hex Head		139
Sheet Metal Screw, Indented Hex Washer Head		140
Special Use Heads		
Sheet Metal Screw, Oval Head		140



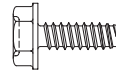
Pan Head  
Page 138



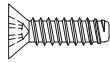
Indented Hex Head  
Page 139



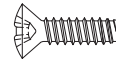
Slotted Pan Head  
Page 138



Indented Hex Washer Head  
Page 140



90 Deg Flat Head  
Page 139



Oval Head  
Page 140

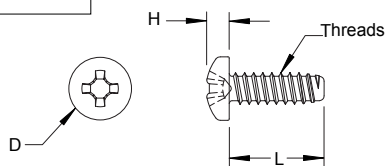
# Sheet Metal Screw, Thread Forming

Pan Head  
Metric - Type B

Sample Part Number

M2.2 x 4.5MM PH - PN - B - STL - Z  
Thread Length Drive Series Material Finish

ISO 7049



Thread	H Height	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2.2 x 0.8	1.6 / 1.4	4 / 3.7	0	T6
M2.9 x 1	2.4 / 2.15	5.6 / 5.3	1	T10
M3.5 x 1.3	2.6 / 2.35	7 / 6.4	2	T15
M4.2 x 1.4	3.1 / 2.8	8 / 7.64	2	T20
M4.8 x 1.6	3.7 / 3.4	9.5 / 9.14	2	T25
M5.5 x 1.8	4 / 3.7	11 / 10.57	3	T25
M6.3 x 1.8	4.6 / 4.3	12 / 11.57	3	T30
M8 x 2.1	6 / 5.6	16 / 15.57	4	T40
M9.5 x 2.1	7.5 / 7.1	20 / 19.48	4	T50

Custom sizes available.

Length	L
4.5	5.3 / 3.7
6.5	7.3 / 5.7
9.5	10.3 / 8.7
13	13.8 / 12.2
16	16.8 / 15.2
19	19.8 / 18.2
22	22.8 / 21.2
25	25.8 / 24.2
32	33.3 / 30.7
38	39.3 / 36.7
45	46.3 / 43.7
50	51.3 / 48.7

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
	PZ * Pozi
	TX 6 - Lobe

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

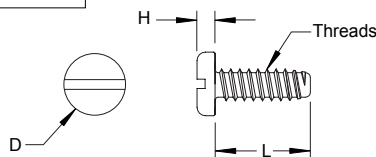
# Sheet Metal Screw, Thread Forming

Slotted Pan Head  
Metric - Type B

Sample Part Number

M2.2 x 4.5MM SL - PN - B - STL - Z  
Thread Length Drive Series Material Finish

ISO 1481



Thread	H Height	D Head Diameter
M2.2 x 0.8	1.3 / 1.1	4 / 3.7
M2.9 x 1	1.8 / 1.6	5.6 / 5.3
M3.5 x 1.3	2.1 / 1.9	7 / 6.6
M4.2 x 1.4	2.4 / 2.2	8 / 7.6
M4.8 x 1.6	3 / 2.7	9.5 / 9.1
M5.5 x 1.8	3.2 / 2.9	11 / 10.6
M6.3 x 1.8	3.6 / 3.3	12 / 11.6
M8 x 2.1	4.8 / 4.5	16 / 15.6
M9.5 x 2.1	6 / 5.7	20 / 19.5

Custom sizes available.

Length	L
4.5	5.3 / 3.7
6.5	7.3 / 5.7
9.5	10.3 / 8.7
13	13.8 / 12.2
16	16.8 / 15.2
19	19.8 / 18.2
22	22.8 / 21.2
25	25.8 / 24.2
32	33.3 / 30.7
38	39.3 / 36.7
45	46.3 / 43.7
50	51.3 / 48.7

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

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

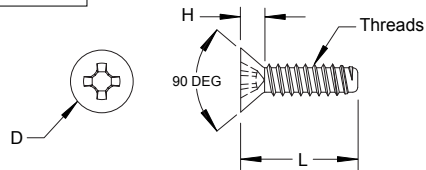
# Sheet Metal Screw, Thread Forming

90 Deg Flat Head  
Metric - Type B

Sample Part Number

M2.2 x 4.5MM PH - FL - B - STL - Z  
Thread Length Drive Series Material Finish

ISO 1482



Thread	H Height REF	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2.2 x 0.8	1.1	3.8 / 3.5	0	T6
M2.9 x 1	1.7	5.5 / 5.2	1	T10
M3.5 x 1.3	2.35	7.3 / 6.9	2	T15
M4.2 x 1.4	2.6	8.4 / 8	2	T20
M4.8 x 1.6	2.8	9.3 / 8.9	2	T25
M5.5 x 1.8	3	10.3 / 9.9	3	T25
M6.3 x 1.8	3.15	11.3 / 10.9	3	T30
M8 x 2.1	4.65	15.8 / 15.4	4	T40
M9.5 x 2.1	5.25	18.3 / 17.8	4	T50

Custom sizes available.

Length	L
4.5	5.5 / 3.7
6.5	7.3 / 5.7
9.5	10.3 / 8.7
13	13.8 / 12.2
16	16.8 / 15.2
19	19.8 / 18.2
22	22.8 / 21.2
25	25.8 / 24.2
32	33.3 / 30.7
38	39.3 / 36.7
45	46.3 / 43.7
50	51.3 / 48.7

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
	PZ * Pozi
	TX 6 - Lobe

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

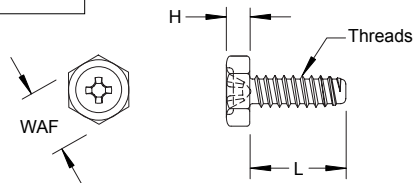
# Sheet Metal Screw, Thread Forming

Indented Hex Head  
Metric - Type B

Sample Part Number

M2.2 x 4.5MM PH - INHX - B - STL - Z  
Thread Length Drive Series Material Finish

ISO 1479



Thread	H Height	WAF Width Across Flats	Drive Size Cross Recess
M2.2 x 0.8	1.6 / 1.3	3.2 / 3.02	0
M2.9 x 1	2.3 / 2	5 / 4.82	1
M3.5 x 1.3	2.6 / 2.3	5.5 / 5.32	2
M4.2 x 1.4	3 / 2.6	7 / 6.78	2
M4.8 x 1.6	3.8 / 3.3	8 / 7.78	2
M5.5 x 1.8	4.1 / 3.6	8 / 7.78	3
M6.3 x 1.8	4.7 / 4.1	10 / 9.78	3
M8 x 2.1	6 / 5.2	13 / 12.73	4
M9.5 x 2.1	7.5 / 6.5	16 / 15.73	4

Custom sizes available.

Length	L
4.5	5.5 / 3.7
6.5	7.3 / 5.7
9.5	10.3 / 8.7
13	13.8 / 12.2
16	16.8 / 15.2
19	19.8 / 18.2
22	22.8 / 21.2
25	25.8 / 24.2
32	33.3 / 30.7
38	39.3 / 36.7
45	46.3 / 43.7
50	51.3 / 48.7

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

- \* Contact PENCOR® for more information on ISO, DIN, and JIS standards.

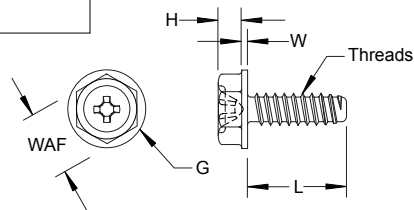
# Sheet Metal Screw, Thread Forming

Indented Hex Washer Head  
Metric - Type B

Sample Part Number

M2.9 x 6.5MM PH - INHX - WA - B - STL - Z  
Thread Length Drive Series Material Finish

DIN 6928



Thread	H Height MAX	G Washer Outside Diameter	W Washer Thickness MIN	WAF Width Across Flats	Drive Size Cross Recess
M2.9 x 1	2.8	6.3 / 5.8	0.4	4 / 3.82	0
M3.5 x 1.3	3.4	8.3 / 7.6	0.6	5.5 / 5.32	1
M3.9 x 1.3	3.4	8.3 / 7.6	0.6	5.5 / 5.32	2
M4.2 x 1.4	4.1	8.8 / 8.1	0.8	7 / 6.78	2
M4.8 x 1.6	4.3	10.5 / 9.8	0.9	8 / 7.78	2
M5.5 x 1.8	5.4	11 / 10	1	8 / 7.78	3
M6.3 x 1.8	5.9	13.5 / 12.2	1	10 / 9.78	3
M8 x 2.1	7	18 / 16.7	1.2	13 / 12.73	4

Length	L
6.5	7.3 / 5.7
9.5	10.3 / 8.7
13	13.8 / 12.2
16	16.8 / 15.2
19	19.8 / 18.2
22	22.8 / 21.2
25	25.8 / 24.2
32	33.3 / 30.7
28	39.3 / 36.7
45	46.3 / 43.7
50	51.3 / 48.7

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.

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

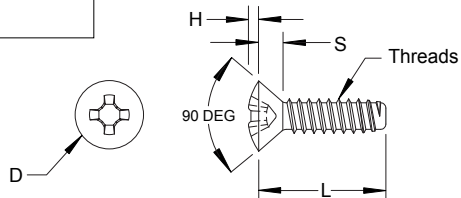
# Sheet Metal Screw, Thread Forming

Oval Head  
Metric - Type B

Sample Part Number

M2.2 x 6.5MM PH - OVAL - B - STL - Z  
Thread Length Drive Series Material Finish

ISO 7051



Thread	H Height	D Head Diameter	S Head Height REF	Drive Size	
				Cross * Recess	6 - Lobe
M2.2 x 0.8	1.1	3.8 / 3.5	0.5	0	T6
M2.9 x 1	1.7	5.5 / 5.2	0.7	1	T10
M3.5 x 1.3	2.35	7.3 / 6.9	0.8	2	T15
M4.2 x 1.4	2.6	8.4 / 8	1	2	T20
M4.8 x 1.6	2.8	9.3 / 8.9	1.2	2	T25
M5.5 x 1.8	3	10.3 / 9.9	1.3	3	T25
M6.3 x 1.8	3.15	11.3 / 10.9	1.4	3	T30
M8 x 2.1	4.65	15.8 / 15.4	2	4	T40
M9.5 x 2.1	5.25	18.3 / 17.8	2.3	4	T50

Custom sizes available.

Length	L
4.5	5.5 / 3.7
6.5	7.3 / 5.7
9.5	10.3 / 8.7
13	13.8 / 12.2
16	16.8 / 15.2
19	19.8 / 18.2
22	22.8 / 21.2
25	25.8 / 24.2
32	33.3 / 30.7
38	39.3 / 36.7
45	46.3 / 43.7
50	51.3 / 48.7

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

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

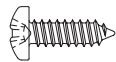
Drive	Description
	PH Cross Recess
	PZ * Pozi
	TX 6 - Lobe

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

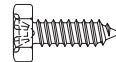
# Sheet Metal Screws, Thread Forming

## Metric - Type AB

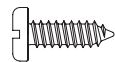
Pan Head		
Sheet Metal Screw, Pan Head		142
Sheet Metal Screw, Slotted Pan Head		142
Flat Head		
Sheet Metal Screw, 90 Deg Flat Head		143
Hex Head		
Sheet Metal Screw, Indented Hex Head		143
Sheet Metal Screw, Indented Hex Washer Head		144
Special Use Heads		
Sheet Metal Screw, Oval Head		144



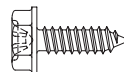
**Pan Head**  
Page 142



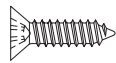
**Indented Hex Head**  
Page 143



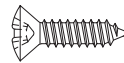
**Slotted Pan Head**  
Page 142



**Indented Hex Washer Head**  
Page 144



**90 Deg Flat Head**  
Page 143



**Oval Head**  
Page 144

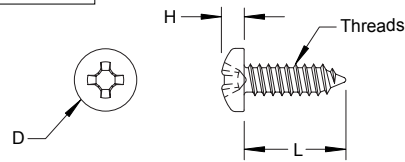
# Sheet Metal Screw, Thread Forming

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



Thread	H Height	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2.2 x 0.8	1.6 / 1.4	4 / 3.7	0	T6
M2.9 x 1	2.4 / 2.15	5.6 / 5.3	1	T10
M3.5 x 1.3	2.6 / 2.35	7 / 6.4	2	T15
M4.2 x 1.4	3.1 / 2.8	8 / 7.64	2	T20
M4.8 x 1.6	3.7 / 3.4	9.5 / 9.14	2	T25
M5.5 x 1.8	4 / 3.7	11 / 10.57	3	T25
M6.3 x 1.8	4.6 / 4.3	12 / 11.57	3	T30
M8 x 2.1	6 / 5.6	16 / 15.57	4	T40
M9.5 x 2.1	7.5 / 7.1	20 / 19.48	4	T50

Custom sizes available.

Length	L
4.5	5.3 / 3.7
6.5	7.3 / 5.7
9.5	10.3 / 8.7
13	13.8 / 12.2
16	16.8 / 15.2
19	19.8 / 18.2
22	22.8 / 21.2
25	25.8 / 24.2
32	33.3 / 30.7
38	39.3 / 36.7
45	46.3 / 43.7
50	51.3 / 48.7

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
	PZ * Pozi
	TX 6 - Lobe

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

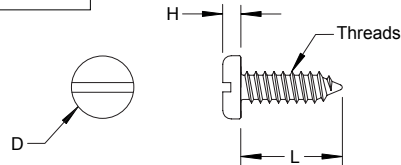
# Sheet Metal Screw, Thread Forming

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



Thread	H Height	D Head Diameter
M2.2 x 0.8	1.3 / 1.1	4 / 3.7
M2.9 x 1	1.8 / 1.6	5.6 / 5.3
M3.5 x 1.3	2.1 / 1.9	7 / 6.6
M4.2 x 1.4	2.4 / 2.2	8 / 7.6
M4.8 x 1.6	3 / 2.7	9.5 / 9.1
M5.5 x 1.8	3.2 / 2.9	11 / 10.6
M6.3 x 1.8	3.6 / 3.3	12 / 11.6
M8 x 2.1	4.8 / 4.5	16 / 15.6
M9.5 x 2.1	6 / 5.7	20 / 19.5

Custom sizes available.

Length	L
4.5	5.3 / 3.7
6.5	7.3 / 5.7
9.5	10.3 / 8.7
13	13.8 / 12.2
16	16.8 / 15.2
19	19.8 / 18.2
22	22.8 / 21.2
25	25.8 / 24.2
32	33.3 / 30.7
38	39.3 / 36.7
45	46.3 / 43.7
50	51.3 / 48.7

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

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

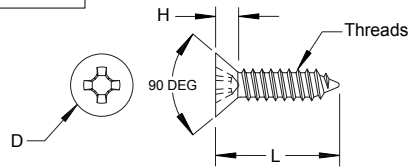
# Sheet Metal Screw, Thread Forming

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



Thread	H Height	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2.2 x 0.8	1.1	3.8 / 3.5	0	T6
M2.9 x 1	1.7	5.5 / 5.2	1	T10
M3.5 x 1.3	2.35	7.3 / 6.9	2	T15
M4.2 x 1.4	2.6	8.4 / 8	2	T20
M4.8 x 1.6	2.8	9.3 / 8.9	2	T25
M5.5 x 1.8	3	10.3 / 9.9	3	T25
M6.3 x 1.8	3.15	11.3 / 10.9	3	T30
M8 x 2.1	4.65	15.8 / 15.4	4	T40
M9.5 x 2.1	5.25	18.3 / 17.8	4	T50

Custom sizes available.

Length	L
4.5	5.5 / 3.7
6.5	7.3 / 5.7
9.5	10.3 / 8.7
13	13.8 / 12.2
16	16.8 / 15.2
19	19.8 / 18.2
22	22.8 / 21.2
25	25.8 / 24.2
32	33.3 / 30.7
38	39.3 / 36.7
45	46.3 / 43.7
50	51.3 / 48.7

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
	PZ *	Pozi
	TX	6 - Lobe

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

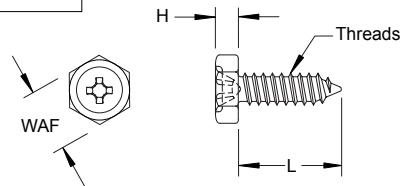
# Sheet Metal Screw, Thread Forming

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



Thread	H Height	WAF Width Across Flats	Drive Size Cross Recess
M2.2 x 0.8	1.6 / 1.3	3.2 / 3.02	0
M2.9 x 1	2.3 / 2	5 / 4.82	1
M3.5 x 1.3	2.6 / 2.3	5.5 / 5.32	2
M4.2 x 1.4	3 / 2.6	7 / 6.78	2
M4.8 x 1.6	3.8 / 3.3	8 / 7.78	2
M5.5 x 1.8	4.1 / 3.6	8 / 7.78	3
M6.3 x 1.8	4.7 / 4.1	10 / 9.78	3
M8 x 2.1	6 / 5.2	13 / 12.73	4
M9.5 x 2.1	7.5 / 6.5	16 / 15.73	4

Custom sizes available.

Length	L
4.5	5.5 / 3.7
6.5	7.3 / 5.7
9.5	10.3 / 8.7
13	13.8 / 12.2
16	16.8 / 15.2
19	19.8 / 18.2
22	22.8 / 21.2
25	25.8 / 24.2
32	33.3 / 30.7
38	39.3 / 36.7
45	46.3 / 43.7
50	51.3 / 48.7

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

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

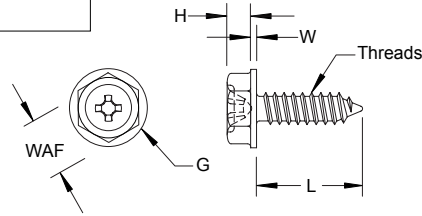
# Sheet Metal Screw, Thread Forming

Indented Hex Washer Head  
Metric - Type AB

Sample Part Number

M2.9 x 6.5MM PH - INHX - WA - AB - STL - Z  
Thread Length Drive Series Material Finish

DIN 6928





Thread	H Height MAX	G Washer Outside Diameter	W Washer Thickness MIN	WAF Width Across Flats	Drive Size Cross Recess
M2.9 x 1	2.8	6.3 / 5.8	0.4	4 / 3.82	0
M3.5 x 1.3	3.4	8.3 / 7.6	0.6	5.5 / 5.32	1
M3.9 x 1.3	3.4	8.3 / 7.6	0.6	5.5 / 5.32	2
M4.2 x 1.4	4.1	8.8 / 8.1	0.8	7 / 6.78	2
M4.8 x 1.6	4.3	10.5 / 9.8	0.9	8 / 7.78	2
M5.5 x 1.8	5.4	11 / 10	1	8 / 7.78	3
M6.3 x 1.8	5.9	13.5 / 12.2	1	10 / 9.78	3
M8 x 2.1	7	18 / 16.7	1.2	13 / 12.73	4

Length	L
6.5	7.3 / 5.7
9.5	10.3 / 8.7
13	13.8 / 12.2
16	16.8 / 15.2
19	19.8 / 18.2
22	22.8 / 21.2
25	25.8 / 24.2
32	33.3 / 30.7
38	39.3 / 36.7
45	46.3 / 43.7
50	51.3 / 48.7

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.

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

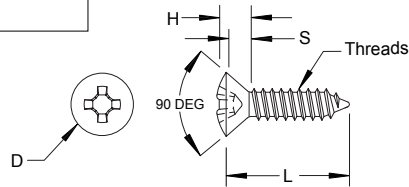
# Sheet Metal Screw, Thread Forming

Oval Head  
Metric - Type AB

Sample Part Number

M2.2 x 4.5MM PH - OVAL - AB - STL - Z  
Thread Length Drive Series Material Finish

ISO 7051



Thread	H Height	D Head Diameter	S Head Height REF	Drive Size	
				Cross * Recess	6 - Lobe
M2.2 x 0.8	1.1	3.8 / 3.5	0.5	0	T6
M2.9 x 1	1.7	5.5 / 5.2	0.7	1	T10
M3.5 x 1.3	2.35	7.3 / 6.9	0.8	2	T15
M4.2 x 1.4	2.6	8.4 / 8	1	2	T20
M4.8 x 1.6	2.8	9.3 / 8.9	1.2	2	T25
M5.5 x 1.8	3	10.3 / 9.9	1.3	3	T25
M6.3 x 1.8	3.15	11.3 / 10.9	1.4	3	T30
M8 x 2.1	4.65	15.8 / 15.4	2	4	T40
M9.5 x 2.1	5.25	18.3 / 17.8	2.3	4	T50




Custom sizes available.

Length	L
4.5	5.5 / 3.7
6.5	7.3 / 5.7
9.5	10.3 / 8.7
13	13.8 / 12.2
16	16.8 / 15.2
19	19.8 / 18.2
22	22.8 / 21.2
25	25.8 / 24.2
32	33.3 / 30.7
38	39.3 / 36.7
45	46.3 / 43.7
50	51.3 / 48.7

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
	PZ * Pozi
	TX 6 - Lobe

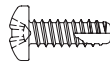
\* Same size for POZI Drive  
\* Contact PENCOM® for more information on ISO, DIN, and JIS standards.



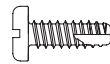
# Sheet Metal Screws, Thread Cutting

## Metric - Type 25

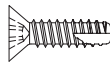
Pan Head	
Sheet Metal Screw, Pan Head	146
Sheet Metal Screw, Slotted Pan Head	146
Flat Head	
Sheet Metal Screw, 90 Deg Flat Head	147
Hex Head	
Sheet Metal Screw, Indented Hex Washer Head	147



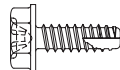
Pan Head  
Page 146



Slotted Pan Head  
Page 146



90 Deg Flat Head  
Page 147



Indented Hex Washer Head  
Page 147

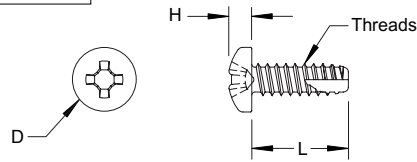
# Sheet Metal Screw, Thread Cutting

Pan Head  
Metric - Type 25

Sample Part Number

M2.2 x 4.5MM PH - PN - 25 - STL - Z  
Thread Length Drive Series Material Finish

ISO 7049



Thread	H Height	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2.2 x 0.8	1.6 / 1.4	4 / 3.7	0	T6
M2.9 x 1	2.4 / 2.15	5.6 / 5.3	1	T10
M3.5 x 1.3	2.6 / 2.35	7 / 6.4	2	T15
M4.2 x 1.4	3.1 / 2.8	8 / 7.64	2	T20
M4.8 x 1.6	3.7 / 3.4	9.5 / 9.14	2	T25
M5.5 x 1.8	4 / 3.7	11 / 10.57	3	T25
M6.3 x 1.8	4.6 / 4.3	12 / 11.57	3	T30
M8 x 2.1	6 / 5.6	16 / 15.57	4	T40
M9.5 x 2.1	7.5 / 7.1	20 / 19.48	4	T50

Custom sizes available.

Length	L
4.5	5.3 / 3.7
6.5	7.3 / 5.7
9.5	10.3 / 8.7
13	13.8 / 12.2
16	16.8 / 15.2
19	19.8 / 18.2
22	22.8 / 21.2
25	25.8 / 24.2
32	33.3 / 30.7
38	39.3 / 36.7
45	46.3 / 43.7
50	51.3 / 48.7

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
	PZ * Pozi
	TX 6 - Lobe

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

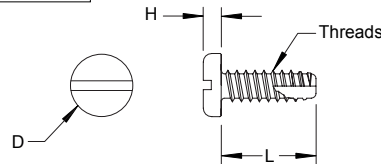
# Sheet Metal Screw, Thread Cutting

Slotted Pan Head  
Metric - Type 25

Sample Part Number

M2.2 x 4.5MM SL - PN - 25 - STL - Z  
Thread Length Drive Series Material Finish

ISO 1481



Thread	H Height	D Head Diameter
M2.2 x 0.8	1.3 / 1.1	4 / 3.7
M2.9 x 1	1.8 / 1.6	5.6 / 5.3
M3.5 x 1.3	2.1 / 1.9	7 / 6.6
M4.2 x 1.4	2.4 / 2.2	8 / 7.6
M4.8 x 1.6	3 / 2.7	9.5 / 9.1
M5.5 x 1.8	3.2 / 2.9	11 / 10.6
M6.3 x 1.8	3.6 / 3.3	12 / 11.6
M8 x 2.1	4.8 / 4.5	16 / 15.6
M9.5 x 2.1	6 / 5.7	20 / 19.5

Custom sizes available.

Length	L
4.5	5.3 / 3.7
6.5	7.3 / 5.7
9.5	10.3 / 8.7
13	13.8 / 12.2
16	16.8 / 15.2
19	19.8 / 18.2
22	22.8 / 21.2
25	25.8 / 24.2
32	33.3 / 30.7
38	39.3 / 36.7
45	46.3 / 43.7
50	51.3 / 48.7

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

- \* Contact PENCOR® for more information on ISO, DIN, and JIS standards.

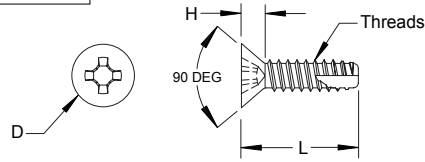
# Sheet Metal Screw, Thread Cutting

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



Thread	H Height	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2.2 x 0.8	1.1	3.8 / 3.5	0	T6
M2.9 x 1	1.7	5.5 / 5.2	1	T10
M3.5 x 1.3	2.35	7.3 / 6.9	2	T15
M4.2 x 1.4	2.6	8.4 / 8	2	T20
M4.8 x 1.6	2.8	9.3 / 8.9	2	T25
M5.5 x 1.8	3	10.3 / 9.9	3	T25
M6.3 x 1.8	3.15	11.3 / 10.9	3	T30
M8 x 2.1	4.65	15.8 / 15.4	4	T40
M9.5 x 2.1	5.25	18.3 / 17.8	4	T50

Custom sizes available.

Length	L
4.5	5.5 / 3.7
6.5	7.3 / 5.7
9.5	10.3 / 8.7
13	13.8 / 12.2
16	16.8 / 15.2
19	19.8 / 18.2
22	22.8 / 21.2
25	25.8 / 24.2
32	33.3 / 30.7
38	39.3 / 36.7
45	46.3 / 43.7
50	51.3 / 48.7

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
	PZ * Pozi
	TX 6 - Lobe

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

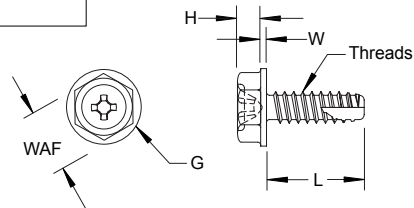
# Sheet Metal Screw, Thread Cutting

Indented Hex Washer Head  
Metric - Type 25

Sample Part Number

M2.2 x 4.5MM PH - INHX - WA - 25 - STL - Z  
Thread Length Drive Series Material Finish

DIN 6928



Thread	H Height MAX	G Washer Outside Diameter	W Washer Thickness MIN	WAF Width Across Flats	Drive Size Cross Recess
M2.9 x 1	2.8	6.3 / 5.8	0.4	4 / 3.82	0
M3.5 x 1.3	3.4	8.3 / 7.6	0.6	5.5 / 5.32	1
M3.9 x 1.3	3.4	8.3 / 7.6	0.6	5.5 / 5.32	2
M4.2 x 1.4	4.1	8.8 / 8.1	0.8	7 / 6.78	2
M4.8 x 1.6	4.3	10.5 / 9.8	0.9	8 / 7.78	2
M5.5 x 1.8	5.4	11 / 10	1	8 / 7.78	3
M6.3 x 1.8	5.9	13.5 / 12.2	1	10 / 9.78	3
M8 x 2.1	7	18 / 16.7	1.2	13 / 12.73	4

Custom sizes available.

Length	L
6.5	7.3 / 5.7
9.5	10.3 / 8.7
13	13.8 / 12.2
16	16.8 / 15.2
19	19.8 / 18.2
22	22.8 / 21.2
25	25.8 / 24.2
32	33.3 / 30.7
28	39.3 / 36.7
45	46.3 / 43.7
50	51.3 / 48.7

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



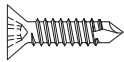
# Sheet Metal Screws, Self Drilling

## Metric - Type TEK2

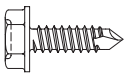
Pan Head		
Sheet Metal Screw, Pan Head		150
Flat Head		
Sheet Metal Screw, 90 Deg Flat Head		150
Hex Head		
Sheet Metal Screw, Indented Hex Washer Head		151



Pan Head  
Page 150



90 Deg Flat Head  
Page 150



Indented Hex Washer Head  
Page 151

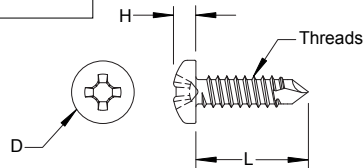
# Sheet Metal Screw, Self Drilling

Pan Head  
Metric - Type TEK2

Sample Part Number

M2.9 x 9.5MM PH - PN - TEK2 - STL - Z  
Thread Length Drive Series Material Finish

EN ISO 15481



Thread	H Height	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2.9 x 1.1	2.40 / 2.15	5.6 / 5.3	1	T6
M3.5 x 1.3	2.60 / 2.35	7.0 / 6.64	2	T10
M4.2 x 1.4	3.1 / 2.8	8.0 / 7.64	2	T15
M4.8 x 1.6	3.7 / 3.4	9.50 / 9.14	2	T20
M5.5 x 1.8	4.0 / 3.7	11.00 / 10.57	3	T25
M6.3 x 1.8	4.6 / 4.3	12.00 / 11.57	3	T30




Custom sizes available.

Length	L
9.5	10.25 / 8.75
13	13.9 / 12.1
16	16.9 / 15.1
19	20 / 18
22	23 / 21
25	26 / 24
32	33.25 / 30.75
38	39.25 / 36.75
45	46.25 / 43.75
50	51.25 / 48.75

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
	PZ * Pozi
	TX 6 - Lobe

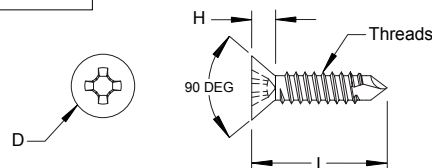
- \* Same size for POZI Drive
- \* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

# Sheet Metal Screw, Self Drilling

90 Deg Flat Head  
Metric - Type TEK2

Sample Part Number

M2.9 x 13MM PH - FL - TEK2 - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height MAX	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M2.9 x 1.1	1.7	5.5 / 5.2	1	T6
M3.5 x 1.3	2.35	7.3 / 6.9	2	T10
M4.2 x 1.4	6.2	8.4 / 8.0	2	T15
M4.8 x 1.6	2.6	9.3 / 8.9	2	T20
M5.5 x 1.8	3	10.3 / 9.9	3	T25
M6.3 x 1.8	3.15	11.3 / 10.9	3	T30




Custom sizes available.

Length	L
13	13.9 / 12.1
16	16.9 / 15.1
19	20 / 18
22	23 / 21
25	26 / 24
32	33.25 / 30.75
38	39.25 / 36.75
45	46.25 / 43.75
50	51.25 / 48.75

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
	PZ * Pozi
	TX 6 - Lobe

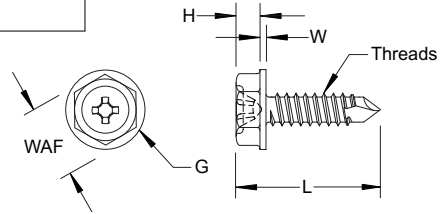
- \* Same size for POZI Drive
- \* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

# 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  
Thread Length Drive Series Material Finish



Thread	H Height	G Washer Outside Diameter	WAF Width Across Flats	W Washer Thickness
M2.9 x 1.1	2.8 / 2.5	6.3 / 5.8	4.00 / 3.82	0.4
M3.5 x 1.3	3.4 / 3.0	8.3 / 7.6	5.50 / 5.32	0.6
M4.2 x 1.4	4.1 / 3.6	8.8 / 8.1	7.00 / 6.78	0.8
M4.8 x 1.6	4.3 / 3.8	10.5 / 9.8	8.00 / 7.78	0.9
M5.5 x 1.8	5.4 / 4.8	11 / 10	8.00 / 7.78	1
M6.3 x 1.8	5.9 / 5.3	13.5 / 12.2	10.00 / 9.78	1



Custom sizes available.

Length	L
9.5	10.25 / 8.75
13	13.9 / 12.1
16	16.9 / 15.1
19	20 / 18
22	23 / 21
25	26 / 24
32	33.25 / 30.75
38	39.25 / 36.75
45	46.25 / 43.75
50	51.25 / 48.75

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.





# Screws For Plastic, Thread Forming

## Metric - Type PF

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



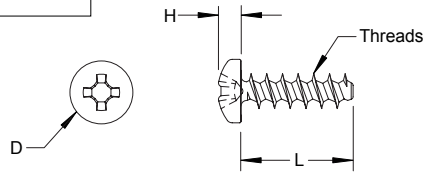
Indented Hex Washer Head  
Page 155

# Screws For Plastic, Thread Forming

Pan Head  
Metric - Type PF

Sample Part Number

K22 x 10MM PH - PN - PF - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	D Head Diameter	Drive Size	
			Cross Recess	6 - Lobe
K15	1.22 / 0.98	2.6 / 2.35	0	-
K18	1.32 / 1.08	3.2 / 2.9	0	-
K22	1.62 / 1.38	3.9 / 3.6	1	T6
K25	1.82 / 1.58	4.4 / 4.1	1	T7
K30	2.12 / 1.88	5.3 / 5.0	1	T10
K35	2.62 / 2.38	6.1 / 5.74	2	T10
K40	2.82 / 2.58	7.0 / 6.64	2	T20
K50	3.55 / 3.25	8.8 / 8.44	2	T20
K60	4.15 / 3.85	10.5 / 10.07	3	T25
K70	4.65 / 4.35	12.2 / 11.87	3	T30

Custom sizes available.

Length	L
6	6.38 / 5.62
7	7.45 / 6.55
8	8.45 / 7.55
10	10.45 / 9.55
12	12.55 / 11.45
14	14.55 / 13.45
16	16.55 / 15.45
18	18.55 / 17.45
20	20.65 / 19.35
25	25.65 / 24.35
30	30.65 / 29.35
35	35.80 / 34.20
40	40.80 / 39.20

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

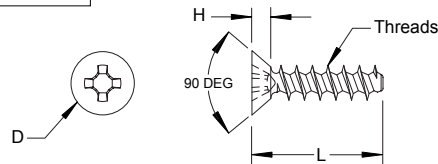
\* Contact PENCOR® for more information on ISO, DIN, and JIS standards.

# Screws For Plastic, Thread Forming

90 Deg Flat Head  
Metric - Type PF

Sample Part Number

K22 x 10MM PH - FL - PF - STL - Z  
Thread Length Drive Series Material Finish



Thread	D Head Diameter	Drive Size	
		Cross Recess	6 - Lobe
K22	3.6 / 3.3	1	T6
K25	4.7 / 4.4	1	T8
K30	5.5 / 5.2	2	T8
K35	7.3 / 6.94	2	T15
K40	8.4 / 8.04	2	T20
K50	9.3 / 8.94	2	T20
K60	11.3 / 10.87	2	T30
K70	13.6 / 13.17	3	T40

Custom sizes available.

Length	L
6	6.38 / 5.62
7	7.45 / 6.55
8	8.45 / 7.55
10	10.45 / 9.55
12	12.45 / 11.55
14	14.55 / 13.45
16	16.55 / 15.45
18	18.55 / 17.45
20	20.65 / 19.35
25	25.65 / 24.35
30	30.65 / 29.35
35	35.80 / 34.20
40	40.80 / 39.20

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

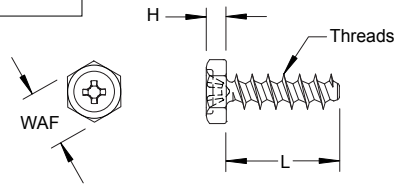
\* Contact PENCOR® for more information on ISO, DIN, and JIS standards.

# Screws For Plastic, Thread Forming

Indented Hex Head  
Metric - Type PF

Sample Part Number

K22 x 10MM PH - INHX - PF - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	WAF Width Across Flats REF
K25	1.42 / 1.18	3.2
K30	1.62 / 1.38	5.0
K35	2.42 / 2.18	5.5
K40	3.15 / 2.85	7.0
K50	3.15 / 2.85	8.0
K60	3.65 / 3.35	10.0
K70	4.65 / 4.35	10.0
K80	5.45 / 5.15	13.0

Custom sizes available.

Length	L
6	6.38 / 5.62
7	7.45 / 6.55
8	8.45 / 7.55
10	10.45 / 9.55
12	12.45 / 11.55
14	14.55 / 13.45
16	16.55 / 15.45
18	18.55 / 17.45
20	20.65 / 19.35
25	25.65 / 24.35
30	30.65 / 29.35
35	35.80 / 34.20
40	40.80 / 39.20

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

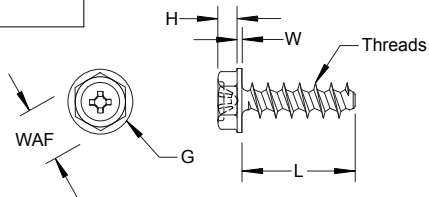
\* Contact PENCOR® for more information on ISO, DIN, and JIS standards.

# Screws For Plastic, Thread Forming

Indented Hex Washer Head  
Metric - Type PF

Sample Part Number

K22 x 10MM PH - INHX - WA - PF - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	G Washer Outside Diameter	WAF Width Across Flats REF	W Washer Thickness REF
K30	2.12 / 1.88	6.5	5.0	0.6
K35	2.42 / 2.18	7.0	5.5	0.7
K40	2.92 / 2.68	8.0	5.5	0.8
K50	3.65 / 3.35	10.0	7.0	0.8
K60	4.35 / 4.05	12.0	8.0	1.0
K70	5.15 / 4.85	14.0	8.0	1.2
K80	7.18 / 6.82	16.0	10.0	1.2

Custom sizes available.

Length	L
6	6.38 / 5.62
7	7.45 / 6.55
8	8.45 / 7.55
10	10.45 / 9.55
12	12.55 / 11.45
14	15.55 / 13.45
16	16.55 / 15.45
18	18.55 / 17.45
20	20.65 / 19.35
25	25.65 / 24.35
30	30.65 / 29.35
35	35.80 / 34.20
40	40.80 / 39.20

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

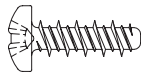
\* Contact PENCOR® for more information on ISO, DIN, and JIS standards.



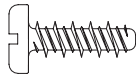
# Sheet For Plastic, Thread Forming

## Metric - Type HL

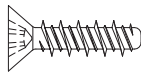
Pan Head	
Screws For Plastic, Pan Head	158
Screws For Plastic, Slotted Pan Head	158
Flat Head	
Screws For Plastic, 90 Deg Flat Head	159
Hex Head	
Screws For Plastic, Indented Washer Hex Head	159



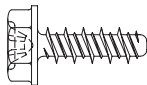
**Pan Head**  
Page 158



**Slotted Pan Head**  
Page 158



**90 Deg Flat Head**  
Page 159



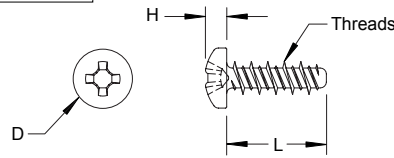
**Indented Hex Washer Head**  
Page 159

# 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



Thread	H Height	D Head Diameter	Drive Size	
			Cross Recess *	6 - Lobe
M3.5 x 1.34	2.46 / 2.21	6.45 / 6.10	2	T10
M4.0 x 1.34	2.46 / 2.21	6.86 / 6.50	2	T10
M4.2 x 1.41	4.46 / 2.21	6.86 / 6.50	2	T15
M4.8 x 1.59	2.92 / 2.67	8.18 / 7.77	2	T20
M5.3 x 1.59	3.38 / 3.10	9.47 / 9.07	2	T20
M5.5 x 1.59	3.38 / 3.10	9.47 / 9.07	3	T20
M6.0 x 1.59	3.84 / 3.53	10.80 / 10.34	3	T25
M6.3 x 1.69	4.45 / 4.11	12.50 / 12.01	3	T30
M7.2 x 1.59	4.45 / 4.11	12.50 / 12.01	3	T30
M7.5 x 1.59	5.54 / 5.16	15.62 / 15.09	4	T40
M8 x 1.81	5.54 / 5.16	15.62 / 15.09	4	T40

Length	L
8	8.0 / 6.8
10	10.0 / 8.8
12	12.0 / 10.8
14	14.0 / 12.8
16	16.0 / 14.8
20	20.0 / 18.8
25	25.0 / 23.8
30	30.0 / 28.4
35	35.0 / 33.4
40	40.0 / 38.4
45	45.0 / 43.4
50	50.0 / 48.4
60	60.0 / 58.4

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
	PZ * Pozi

Custom sizes available.

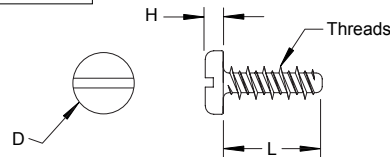
- \* Same size for POZI Drive
- \* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

# 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



Thread	H Height	D Head Diameter
M3.5 x 1.34	1.91 / 1.65	6.45 / 6.10
M4.0 x 1.34	2.08 / 1.83	6.86 / 6.50
M4.2 x 1.41	2.08 / 1.83	6.86 / 6.50
M4.8 x 1.59	2.44 / 2.16	8.18 / 7.77
M5.3 x 1.59	2.79 / 2.51	9.47 / 9.07
M5.5 x 1.59	2.79 / 2.51	9.47 / 9.07
M6.0 x 1.59	3.18 / 2.84	10.80 / 10.34
M6.3 x 1.69	3.66 / 3.30	12.50 / 12.01
M7.2 x 1.59	3.66 / 3.30	12.50 / 12.01
M7.5 x 1.59	4.52 / 4.11	15.62 / 15.09
M8 x 1.81	4.52 / 4.11	15.62 / 15.09

Length	L
8	8.0 / 6.8
10	10.0 / 8.8
12	12.0 / 10.8
14	14.0 / 12.8
16	16.0 / 14.8
20	20.0 / 18.8
25	25.0 / 23.8
30	30.0 / 28.4
35	35.0 / 33.4
40	40.0 / 38.4
45	45.0 / 43.4
50	50.0 / 48.4
60	60.0 / 58.4

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.

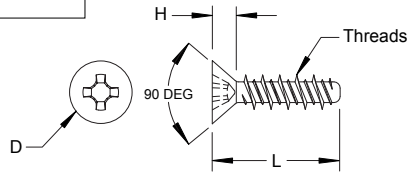
- \* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

# Screws For Plastic, Thread Forming

90 Deg Flat Head  
Metric - Type HL

Sample Part Number

M3.5 x 10MM PH - FL - HL - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height REF	D Head Diameter	Drive Size	
			Cross * Recess	6 - Lobe
M3.5 x 1.34	1.91	7.09 / 6.20	2	T10
M4.0 x 1.34	1.91	7.09 / 6.20	2	T10
M4.2 x 1.41	2.31	8.43 / 7.42	2	T15
M4.8 x 1.59	2.84	9.78 / 8.64	2	T20
M5.3 x 1.59	2.84	9.78 / 8.64	2	T20
M5.5 x 1.59	3.10	11.13 / 9.88	3	T20
M6.0 x 1.59	3.10	11.13 / 9.88	3	T25
M6.3 x 1.69	3.53	12.88 / 11.48	3	T30
M7.2 x 1.59	3.53	12.88 / 11.48	3	T30
M7.5 x 1.59	4.47	16.13 / 14.43	4	T40
M8 x 1.81	4.47	16.13 / 14.43	4	T40

Length	L
8	8.0 / 6.8
10	10.0 / 8.8
12	12.0 / 10.8
14	14.0 / 12.8
16	16.0 / 14.8
20	20.0 / 18.8
25	25.0 / 23.8
30	30.0 / 28.4
35	35.0 / 33.4
40	40.0 / 38.4
45	45.0 / 43.4
50	50.0 / 48.4
60	60.0 / 58.4

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
	PZ* Pozi

Custom sizes available.

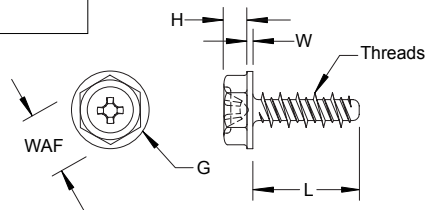
- \* Same size for POZI Drive
- \* Contact PENCOR® for more information on ISO, DIN, and JIS standards.

# Screws For Plastic, Thread Forming

Indented Hex Washer Head  
Metric - Type HL

Sample Part Number

M3.5 x 10MM PH - INHX - WA - HL - STL - Z  
Thread Length Drive Series Material Finish



Thread	H Height	G Washer Outside Diameter	WAF Width Across Flats	W Washer Thickness
M3.5 x 1.34	1.78 / 1.47	6.60 / 6.10	4.75 / 4.60	.64 / .38
M4.0 x 1.34	2.36 / 2.03	8.33 / 7.67	6.35 / 6.20	.64 / .38
M4.2 x 1.41	2.79 / 2.44	8.84 / 8.18	6.35 / 6.20	.64 / .38
M4.8 x 1.59	2.79 / 2.44	8.84 / 8.18	6.35 / 6.20	.79 / .48
M5.3 x 1.59	3.05 / 2.67	10.52 / 9.75	7.92 / 7.75	.79 / .48
M5.5 x 1.59	3.94 / 3.53	10.97 / 11.10	7.92 / 7.75	.99 / .56
M6.0 x 1.59	3.94 / 3.53	10.97 / 11.10	7.92 / 7.75	.99 / .56
M6.3 x 1.69	4.83 / 4.37	13.21 / 12.19	9.53 / 9.32	1.27 / .76
M7.2 x 1.59	4.83 / 4.37	13.21 / 12.19	9.53 / 9.32	1.27 / .76
M7.5 x 1.59	4.83 / 4.37	13.21 / 12.19	9.53 / 9.32	1.27 / .76
M8 x 1.81	4.83 / 4.37	13.21 / 12.19	9.53 / 9.32	1.27 / .76

Length	L
8	8.0 / 6.8
10	10.0 / 8.8
12	12.0 / 10.8
14	14.0 / 12.8
16	16.0 / 14.8
20	20.0 / 18.8
25	25.0 / 23.8
30	30.0 / 28.4
35	35.0 / 33.4
40	40.0 / 38.4
45	45.0 / 43.4
50	50.0 / 48.4
60	60.0 / 58.4

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

Custom sizes available.

- \* Contact PENCOR® for more information on ISO, DIN, and JIS standards.

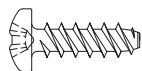




# Sheet For Plastic, Thread Forming


Metric - Type PLAST 48/2

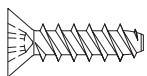
Pan Head	
Screws For Plastic, Pan Head	162
Screws For Plastic, Slotted Pan Head	162
Flat Head	
Screws For Plastic, 90 Deg Flat Head	163
Hex Head	
Screws For Plastic, Indented Hex Washer Head	163



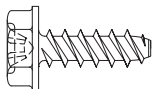
 Pan Head  
Page 162




 Slotted Pan Head  
Page 162



 90 Deg Flat Head  
Page 163



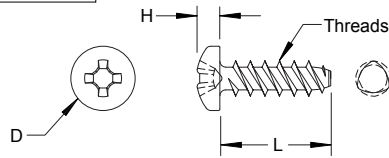
 Indented Hex Washer Head  
Page 163

# 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  
Thread Length Drive Series Material Finish



Thread	H Height	D Head Diameter	Drive Size	
			Cross Recess	6 - Lobe
M2.2 x 0.8	1.6 / 1.4	4.0 / 3.7	0	T6
M2.9 x 1.1	2.4 / 2.2	5.6 / 5.3	1	T6
M3.5 x 1.3	2.6 / 2.3	7.0 / 6	2	T15
M4.2 x 1.4	3.1 / 2.8	8.0 / 7.6	2	T20
M4.8 x 1.6	3.7 / 3.4	9.5 / 9.1	2	T25
M5.5 x 1.8	4.0 / 3.7	11.0 / 10.5	3	T25
M6.3 x 1.8	4.6 / 4.3	12.0 / 11.5	3	T30
M8 x 2.1	6.0 / 5.6	16.0 / 15.5	4	T40
M9.5 x 2.1	7.5 / 7.1	20.0 / 19.4	4	T50

Custom sizes available.

Length	L	
	M2.2 thru M6.3	M8 & M9.5
4.5	5.26 / 3.74	-
6.5	7.26 / 5.74	-
9.5	10.26 / 8.74	-
13	13.76 / 12.24	-
16	16.76 / 15.24	17.27 / 14.73
19	19.76 / 18.24	20.27 / 17.73
22	23.27 / 20.73	23.27 / 20.73
25	26.27 / 23.73	26.27 / 23.73
32	33.27 / 30.73	33.27 / 30.73
38	39.27 / 36.73	39.27 / 36.73
45	46.27 / 43.73	46.27 / 43.73
50	51.27 / 48.73	51.27 / 48.73

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
	PZ * Pozi

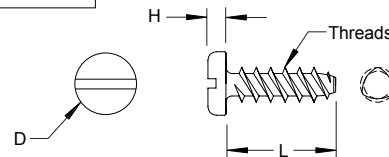
- \* Same size for POZI Drive
- \* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

# 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  
Thread Length Drive Series Material Finish



Thread	H Height	D Head Diameter
M2.2 x 0.8	1.3 / 1.1	4.0 / 3.7
M2.9 x 1.1	1.8 / 1.6	5.6 / 5.3
M3.5 x 1.3	2.1 / 1.9	7.0 / 6.6
M4.2 x 1.4	2.4 / 2.2	8.0 / 7.6
M4.8 x 1.6	3.0 / 2.7	9.5 / 9.1
M5.5 x 1.8	3.2 / 2.9	11.0 / 10.5
M6.3 x 1.8	3.6 / 3.3	12.0 / 11.5
M8 x 2.1	4.8 / 4.5	16.0 / 15.5
M9.5 x 2.1	6.0 / 5.7	20.0 / 19.4

Custom sizes available.

Length	L	
	M2.2 thru M6.3	M8 & M9.5
4.5	5.26 / 3.74	-
6.5	7.26 / 5.74	-
9.5	10.26 / 8.74	-
13	13.76 / 12.24	-
16	16.76 / 15.24	17.27 / 14.73
19	19.76 / 18.24	20.27 / 17.73
22	23.27 / 20.73	23.27 / 20.73
25	26.27 / 23.73	26.27 / 23.73
32	33.27 / 30.73	33.27 / 30.73
38	39.27 / 36.73	39.27 / 36.73
45	46.27 / 43.73	46.27 / 43.73
50	51.27 / 48.73	51.27 / 48.73

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

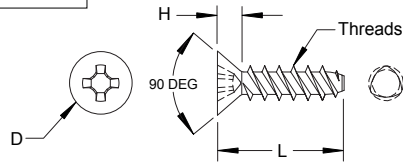
- \* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

# 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



Thread	H Height	D Head Diameter	Drive Size	
			Cross Recess	6 - Lobe
M2.2 x 0.8	1.1	3.8 / 3.5	0	T6
M2.9 x 1.1	1.7	5.5 / 5.2	1	T10
M3.5 x 1.3	2.3	7.3 / 6.9	2	T15
M4.2 x 1.4	2.6	8.4 / 8.0	2	T20
M4.8 x 1.6	2.8	9.3 / 8.9	2	T25
M5.5 x 1.8	3.0	10.3 / 9.9	3	T25
M6.3 x 1.8	3.1	11.3 / 10.9	3	T30
M8 x 2.1	4.6	15.8 / 15.4	4	T40
M9.5 x 2.1	5.2	18.3 / 17.8	4	T50

Custom sizes available.

Length	L	
	M2.2 thru M6.3	M8 & M9.5
4.5	5.26 / 3.74	-
6.5	7.26 / 5.74	-
9.5	10.26 / 8.74	-
13	13.76 / 12.24	-
16	16.76 / 15.24	17.27 / 14.73
19	19.76 / 18.24	20.27 / 17.73
22	23.27 / 20.73	23.27 / 20.73
25	26.27 / 23.73	26.27 / 23.73
32	33.27 / 30.73	33.27 / 30.73
38	39.27 / 36.73	39.27 / 36.73
45	46.27 / 43.73	46.27 / 43.73
50	51.27 / 48.73	51.27 / 48.73

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
	PZ *	Pozi

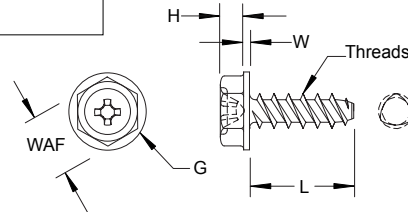
- \* Same size for POZI Drive
- \* Contact PENCOR® for more information on ISO, DIN, and JIS standards.

# 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



Thread	H Height Max.	G Washer Outside Diameter	W Washer Thickness Min.	WAF Width Across Flats	Drive Size Cross Recess
M2.2 x 0.8	2.2	4.5 / 4.1	0.3	3.00 / 2.84	0
M2.9 x 1.1	3.2	6.4 / 5.9	0.4	4.00 / 3.84	1
M3.5 x 1.3	3.8	7.5 / 6.9	0.5	5.00 / 4.82	2
M4.2 x 1.4	4.3	8.5 / 7.8	0.6	5.50 / 5.32	2
M4.8 x 1.6	5.2	10.0 / 9.3	0.6	7.00 / 6.78	2
M5.5 x 1.8	6.0	11.2 / 10.3	0.8	7.00 / 6.78	3
M6.3 x 1.8	6.7	12.8 / 11.8	1.0	8.00 / 7.78	3
M8 x 2.1	8.6	16.8 / 15.5	1.2	10.00 / 9.78	4
M9.5 x 2.1	10.7	21.0 / 19.3	1.4	13.00 / 12.72	4

Custom sizes available.

Length	L	
	M2.2 thru M6.3	M8 & M9.5
4.5	5.26 / 3.74	-
6.5	7.26 / 5.74	-
9.5	10.26 / 8.74	-
13	13.76 / 12.24	-
16	16.76 / 15.24	17.27 / 14.73
19	19.76 / 18.24	20.27 / 17.73
22	23.27 / 20.73	23.27 / 20.73
25	26.27 / 23.73	26.27 / 23.73
32	33.27 / 30.73	33.27 / 30.73
38	39.27 / 36.73	39.27 / 36.73
45	46.27 / 43.73	46.27 / 43.73
50	51.27 / 48.73	51.27 / 48.73

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

- \* Contact PENCOR® for more information on ISO, DIN, and JIS standards.



Nuts

Hex Nuts - Style 1	166
Hex Nuts - Style 2	166
Hex Jam Nuts	167
KPS Nuts	167
Conical Washer KPS Nuts	168
Hex Flange Nuts	168
Prevailing-Torque Hex Nuts	169
Prevailing-Torque Flange Nuts	169
Cap Nuts	170
Cage Nuts	171
Nylon Insert Locknuts	172
Jam Nylon Insert Locknuts	172



Hex Nuts - Style 1  
Page 166



Conical Washer KPS Nuts  
Page 168



Cap Nuts  
Page 170



Hex Nuts - Style 2  
Page 166



Hex Flange Nuts  
Page 168



Cage Nuts  
Page 171



Hex Jam Nuts  
Page 167



Prevailing-Torque Hex Nuts  
Page 169



Nylon Insert Locknuts -  
Regular Pattern  
Page 172



KPS Nuts  
Page 167



Prevailing-Torque Flange Nuts  
Page 169



Nylon Insert Locknuts -  
Heavy Pattern  
Page 172

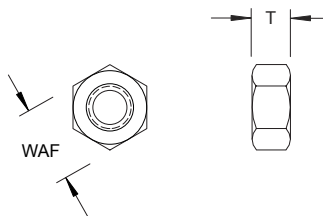
# Nuts

## Hex Nut - Style 1 Metric

Sample Part Number

M3 HX - STYLE1 - NU - CL5 - Z - IFI  
Thread Series Material Finish Standard

ASME B18.2.4.1M



Thread	T Thickness	WAF Width Across Flats
M1.6 x 0.35	1.30 / 1.05	3.20 / 3.02
M2 x 0.4	1.60 / 1.35	4.00 / 3.82
M2.5 x 0.45	2.00 / 1.75	5.00 / 4.82
M3 x 0.5	2.40 / 2.15	5.50 / 5.32
M3.5 x 0.6	2.80 / 2.55	6.00 / 5.82
M4 x 0.7	3.20 / 2.90	7.00 / 6.78
M5 x 0.8	4.70 / 4.40	8.00 / 7.78
M6 x 1.0	5.20 / 4.90	10.00 / 9.78
M8 x 1.25	6.80 / 6.44	13.00 / 12.73
M10 x 1.5	8.40 / 8.04	16.00 / 15.73

Material	Description
SS	18 - 8 Stainless Steel
CL5	Class 5 Steel
CL10	Class 10 Steel

Finish	Description
Z	Zinc Clear

Other finishes available.

Technical Data:

Property	Condition	Style of Hex Nut	Mating with Property Class
CL5	Non-Heat Treated	Style 1	5.8, 4.8 and 4.6
CL10	Heat Treated		10.9, 9.8, 5.8, 4.8 and 4.6

Custom sizes available.

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

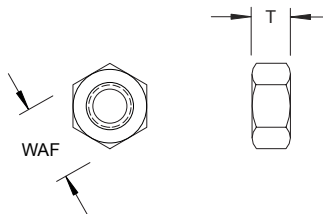
# Nuts

## Hex Nut - Style 2 Metric

Sample Part Number

M3.5 HX - STYLE2 - NU - CL9 - Z - IFI  
Thread Series Material Finish Standard

ASME B18.2.4.1M



Thread	T Thickness	WAF Width Across Flats
M3 x 0.5	2.90 / 2.65	5.50 / 5.32
M3.5 x 0.6	3.30 / 3.00	6.00 / 5.83
M4 x 0.7	3.80 / 3.50	7.00 / 6.78
M5 x 0.8	5.10 / 4.80	8.00 / 7.78
M6 x 1.0	5.70 / 5.40	10.00 / 9.78
M8 x 1.25	7.50 / 7.14	13.00 / 12.73
M10 x 1.5	9.30 / 8.94	16.00 / 15.73
M12 x 1.75	12.00 / 11.57	18.00 / 17.73
M14 x 2	14.10 / 13.40	21.00 / 20.67
M16 x 2	16.40 / 15.70	24.00 / 23.67

Material	Description
SS	18 - 8 Stainless Steel
CL9	Class 9 Steel
CL12	Class 12 Steel

Finish	Description
Z	Zinc Clear

Other finishes available.

Technical Data:

Property	Condition	Style of Hex Nut	Mating with Property Class
CL9	Non-Heat Treated	Style 2	9.8, 8.8, 4.8 and 4.6
CL12	Heat Treated		12.9, 10.9, 9.8, 8.8, 5.8, 4.8 and 4.6

Custom sizes available.

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

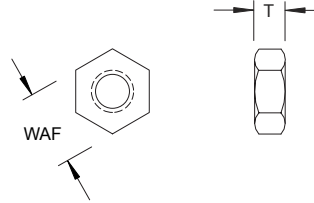
# Nuts

## Hex Jam Nut Metric

Sample Part Number

M3 HX - JAM - NU - STL - Z - IFI  
Thread Series Material Finish Standard

ASME B18.2.4.1M



Thread	T Thickness	WAF Width Across Flats
M5 x 0.8	2.70 / 2.45	8.00 / 7.78
M6 x 1.0	3.20 / 2.90	10.00 / 9.78
M8 x 1.25	4.00 / 3.70	13.00 / 12.73
M10 x 1.5	5.00 / 4.70	16.00 / 15.73
M12 x 1.75	6.00 / 5.70	18.00 / 17.73
M14 x 2	7.00 / 6.64	21.00 / 20.67
M16 x 2	8.00 / 7.64	24.00 / 23.67
M20 x 2.5	10.00 / 9.42	30.00 / 29.16
M24 x 3	12.00 / 11.30	36.00 / 35.00
M30 x 3.5	15.00 / 14.30	46.00 / 45.00

Finish	Description
Z	Zinc Clear

Other finishes available.

Material	Description
SS	18 - 8 Stainless Steel
CL4	Class 4 Steel
CL5	Class 5 Steel

Technical Data:

Property	Material	Condition
CL4	Class 4 Steel	Non-Heat Treated
CL5	Class 5 Carbon or Alloy Steel	Heat Treated

Custom sizes available.

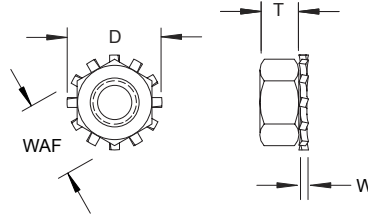
\* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

# Nuts

## KPS Nut Metric

Sample Part Number

M3 KPS - NU - STL - Z  
Thread Series Material Finish



Thread	T Thickness	D Diameter	W Washer Thickness	WAF Width Across Flats
M3 x 0.5	2.4	6.5	0.45	5.5
M4 x 0.7	3.2	8.2	0.45	7.0
M5 x 0.8	4.0	9.5	0.50	8.0
M6 x 1	5.0	11.5	0.60	10.0
M8 x 1.25	6.5	15.0	0.80	13.0
M10 x 1.5	8.0	19.0	0.90	17.0

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

Material	Description
Z	Zinc Clear

Custom sizes available.

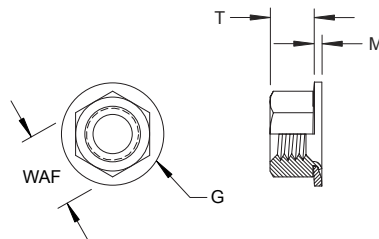
\* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

# Nuts

## Conical Washer KPS Nut Metric

Sample Part Number

M3 KPS - NU - CON - WA - STL - Z - IFI  
Thread Series Material Finish Standard



Thread	H Thickness REF	G Washer Outside Diameter REF	M Flange Thickness REF	WAF Width Across Flats REF
M4 x 0.7	3.2	10	0.5	7
M5 x 0.8	4	12	0.8	8
M6 x 1	5	14	1	10
M8 x 1.25	6.5	18	1.4	13
M10 x 1.5	8	22	1.6	17
M12 x 1.75	10	25.5	2.4	19

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.

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

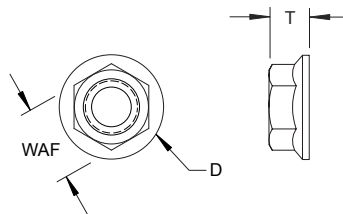
# Nuts

## Hex Flange Nut Metric

Sample Part Number

M3 HX - FLANGE - NU - STL - Z - IFI  
Thread Series Material Finish Standard

ANSI B18.2.4.4M



Thread	T Thickness	D Diameter MAX	WAF Width Across Flats
M5 x 0.8	5.00 / 4.70	11.8	8.00 / 7.78
M6 x 1	6.00 / 5.70	14.7	10.00 / 9.78
M8 x 1.25	8.00 / 7.60	17.9	13.00 / 12.73
M10 x 1.5	10.00 / 9.60	21.8	15.00 / 14.73
M12 x 1.75	12.00 / 11.60	26.0	18.00 / 17.73
M14 x 2	14.00 / 13.30	29.9	21.00 / 20.67
M16 x 2	16.00 / 15.30	34.5	24.00 / 23.67
M20 x 2.5	20.00 / 18.90	42.8	30.00 / 29.16

Custom sizes available.

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

Finish	Description
Z	Zinc Clear

Other finishes available.

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



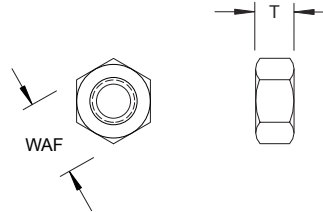
## Nuts

### Prevailing-Torque Hex Nut Metric - Steel Property Class 5 and 9

Sample Part Number

M3 HX - PREV - TORQ - STL - Z - IFI  
Thread Series Material Finish Standard

ASME B18.16.3M



Thread	T Thickness	WAF Width Across Flats	Prevailing-Torque, N-M (in. lb) Classes 5 and 9		
			1st Install. Max	1st Removal MIN	5th Removal MIN
M3 x 0.5	3.10 / 2.65	5.50 / 5.32	0.43 (3.81)	0.12 (1.06)	0.08 (0.71)
M4 x 0.7	4.00 / 3.50	7.00 / 6.78	0.90 (7.97)	0.18 (1.59)	0.12 (1.06)
M5 x 0.8	5.30 / 4.80	8.00 / 7.78	1.6 (14.16)	0.29 (2.57)	0.20 (1.77)
M6 x 1	5.90 / 5.40	10.00 / 9.78	3.0 (26.55)	0.45 (3.98)	0.30 (2.66)
M8 x 1.25	7.10 / 6.44	13.00 / 12.73	7.0 (61.96)	0.85 (7.52)	0.60 (5.31)
M10 x 1.5	9.00 / 8.04	16.00 / 15.73	10.5 (92.93)	1.5 (13.28)	1.0 (8.85)
M12 x 1.75	11.60 / 10.37	18.00 / 17.73	15.5 (137.18)	2.3 (20.36)	1.6 (14.16)
M14 x 2	13.20 / 12.10	21.00 / 20.67	24 (212.41)	3.3 (29.21)	2.3 (20.36)
M16 x 2	15.20 / 16.90	24.00 / 23.67	32 (283.22)	4.5 (39.83)	3.0 (26.55)
M20 x 2.5	19.00 / 16.90	30.00 / 29.16	54 (477.94)	7.5 (66.38)	5.3 (46.91)
M24 x 3	23.00 / 20.20	36.00 / 35.00	8.0 (708.05)	16.5 (101.78)	8.0 (70.81)

Custom sizes available.

Material	Description
SS	18 - 8 Stainless Steel
CL5	Class 5 Steel - Not Heat Treated
CL9	Class 9 Steel - Optional Heat Treating

Finish	Description
Z	Zinc Clear

Other finishes available.

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

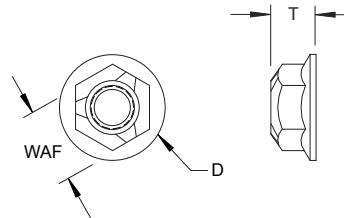
## Nuts

### Prevailing-Torque Flange Nut Metric - Steel Property Class 5 and 9

Sample Part Number

M3 PREV - TORQ - FLANGE - STL - Z - IFI  
Thread Series Material Finish Standard

ASME B18.16.3M



Thread	T Thickness	D Flange Diameter	WAF Width Across Flats	Prevailing-Torque, N-M (in. lb) Classes 5 and 9		
				1st Install. MAX	1st Removal MIN	5th Removal MIN
M6 x 1	7.30 / 5.70	14.2	10.00 / 9.78	3.0	0.45	0.30
M8 x 1.25	9.40 / 7.60	17.9	13.00 / 12.73	7.0	0.85	0.60
M10 x 1.5	11.40 / 9.60	21.8	15.00 / 14.73	10.5	1.5	1.0
M12 x 1.75	13.80 / 11.60	26.0	18.00 / 17.73	15.5	2.3	1.6
M14 x 2	15.90 / 13.30	29.9	21.00 / 20.67	24	3.3	2.3
M16 x 2	18.30 / 15.30	34.5	24.00 / 23.67	32	4.5	3.0
M20 x 2.5	22.40 / 18.90	42.8	30.00 / 29.16	54	7.5	5.3

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.

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

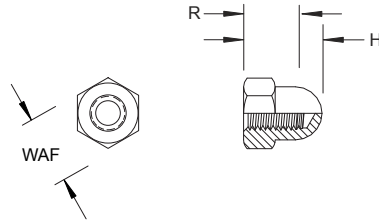
# Nuts

## Cap Nut Metric

Sample Part Number

M3 HX - CAP - NU - STL - Z - DIN 1587  
Thread Series Material Finish Standard

DIN 1587



Thread	H Height REF	R Height REF	WAF Width Across Flats REF
M3 x 0.5	6	3	5.5
M4 x 0.7	8	4	7
M5 x 0.8	10	5	8
M6 x 1	12	5	10
M8 x 1.25	15	6.5	13
M10 x 1.50	18	8	17
M12 x 1.75	22	10	19
M16 x 2	28	13	24
M20 x 2.5	34	16	30
M24 x 3	42	19	36

Custom sizes available.

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

Finish	Description
Z	Zinc Clear

Other finishes available.

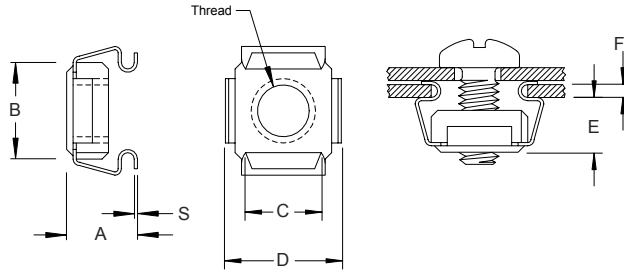
\* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

# Nuts

## Cage Nut Metric

Sample Part Number

M5 CAGE - NU - STL - Z  
Thread Series Material Finish



Thread	F Sheet Thickness	A ±0.5	B ±0.5	C ±0.5	D -0.6	E ±0.5	S	Hole	
								G ±0.1	Hole No.
M3 x 0.5	0.3 - 0.9 1 - 1.6	5.2 5.9	8.8 8.8	4.8 4.8	9.3 9.3	3.6 3.6	0.3 0.3	5.3 5.3	1
M4 x 0.7	0.3 - 0.9	5.2	8.8	4.8	9.3	3.6	0.3	5.3	1
	1 - 1.6	5.9	8.8	4.8	9.3	3.6	0.3	5.3	
	0.3 - 1.1	8.5	11.4	7.2	12	6	0.45	8.3	2
	1.2 - 1.6	9	11.4	7.2	12	6	0.45	8.3	
	0.7 - 1.6	9	12	8	13.2	6.2	0.45	9.5	
1.7 - 1.6	10	12	8	13.2	6.2	0.45	9.5	5	
M5 x 0.8	0.3 - 1.1	8.5	11.4	7.2	12	6	0.45	8.3	2
	1.2 - 1.6	9	11.4	7.2	12	6	0.45	8.3	
	0.7 - 1.6	9	12	8	13.2	6.2	0.45	9.5	5
	1.7 - 2.7	10	12	8	13.2	6.2	0.45	9.5	
M6 x 1	0.3 - 1.1	8.5	11.4	7.2	12	6	0.45	8.3	2
	1.2 - 1.6	9	11.4	7.2	12	6	0.45	8.3	
	0.7 - 1.6	9	12	8	13.2	6.2	0.45	9.5	5
	1.7 - 2.7	10	12	8	13.2	6.2	0.45	9.5	
M8 x 1.25	1 - 1.7	10.4	15.5	10.6	16.4	7.8	0.5	12.3	3
	1.8 - 3.2	12	15.5	10.6	16.4	7.8	0.5	12.3	
M10 x 1.75	1 - 1.7	10.4	15.5	10.6	16.4	7.8	0.5	12.3	
	1.8 - 3.2	12	15.5	10.6	16.4	7.8	0.5	12.3	

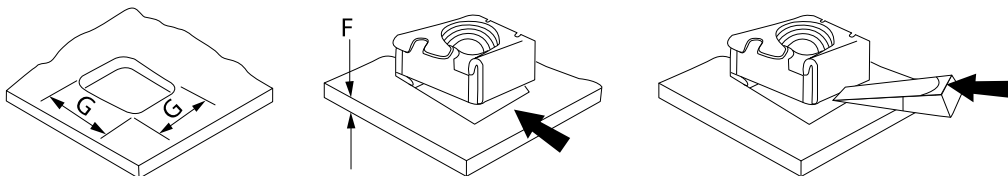
Material	Description
STL	Low Carbon Steel
SS	18 - 8 Stainless Steel

Finish	Description
Z - BLK	Zinc Black
Z	Zinc Clear

Other finishes available.

Custom sizes available.

### 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.

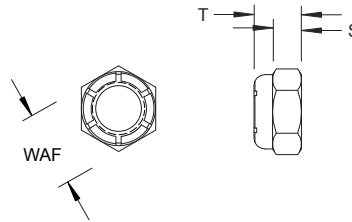
\* Contact PENCOM® for more information on ISO, DIN, and JIS standards.

# Nuts

## Nylon Insert Locknut - Regular Pattern Metric

Sample Part Number

M5 REG - HX - NY - IN - LK - NU - CL8 - Z  
Thread Series Material Finish



Thread	T Thickness	WAF Width Across Flats	S Wrenching Height MIN
M3 x 0.5	4.5 / 4.02	5.5 / 5.32	1.72
M4 x 0.7	6.00 / 5.52	7.00 / 6.78	2.32
M5 x 0.8	6.80 / 6.22	8.00 / 7.78	3.52
M6 x 1.0	8.00 / 7.42	10.00 / 9.78	3.92
M8 x 1.25	9.50 / 8.92	13.00 / 12.73	5.15
M10 x 1.5	11.9 / 11.2	16.00 / 15.73	6.43
M12 x 1.75	14.9 / 14.2	18.00 / 17.73	8.3
M16 x 2.0	19.1 / 17.8	24.00 / 23.67	11.28
M20 x 2.5	22.8 / 20.7	30.00 / 29.16	13.52
M24 x 3.0	27.1 / 25.0	36.00 / 35.00	16.16

Custom sizes available.

Material	Description
CL8	Class 8 Carbon Steel

Finish	Description
Z	Zinc Clear

Other finishes available.

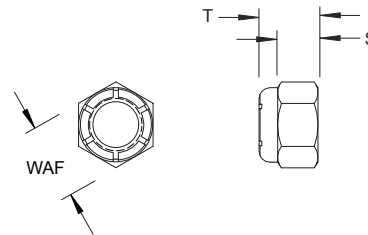
\* Contact PENCOR® for more information on ISO, DIN, and JIS standards.

# Nuts

## Nylon Insert Locknut - Heavy Pattern Metric

Sample Part Number

M5 HVY - HX - NY - IN - LK - NU - CL9  
Thread Series Material



Thread	T Thickness	WAF Width Across Flats	S Wrenching Height MIN
M5 x 0.8	7.20 / 6.62	8.00 / 7.78	3.52
M6 x 1.0	8.50 / 7.92	10.00 / 9.78	3.92
M8 x 1.25	10.2 / 9.5	13.00 / 12.73	5.15
M10 x 1.5	12.80 / 12.1	16.00 / 15.73	6.43
M12 x 1.75	16.1 / 15.4	18.00 / 17.73	8.3
M16 x 2.0	20.7 / 19.4	24.00 / 23.67	11.28
M20 x 2.5	25.1 / 23.0	30.00 / 29.16	13.52
M24 x 3.0	29.5 / 27.4	36.00 / 35.00	16.16
M30 x 3.5	35.6 / 33.1	46.00 / 45.00	19.44
M36 x 4	42.6 / 40.1	55.00 / 53.8	23.52

Custom sizes available.

Material	Description
CL9	Class 9 Carbon Steel

Finish	Description
Z	Zinc Clear

Other finishes available.

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

# Washers

## Metric

### 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



Lock Washer, External Tooth  
Page 174



Plain Washer  
Page 177



Lock Washer, Internal Tooth  
Page 175



Plain Washer - Product Grade A  
Page 178



Lock Washer, Internal External Tooth  
Page 176



Lock Washer, Split Lock Washer  
Page 179

# Washer

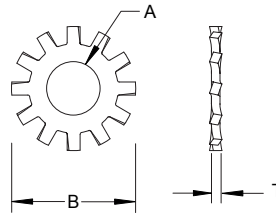
## Lock Washer - External Tooth Metric

Sample Part Number

M1.7 EXT - LK - WA - STL - Z - DIN - 1.7 ID / 3.3 OD / 0.3 THK

Nominal Washer Size Series Material Finish Inside Diameter Code Outside Diameter Code Thickness Code

DIN 6797



Nominal Washer Size	T Thickness MIN / Code	A Inside Diameter	Inside Diameter Code	B Outside Diameter	Outside Diameter Code
1.7	0.3	1.84 / 1.7	1.7	3.6 / 3.3	3.3
2.2	0.3	2.34 / 2.2	2.2	4.5 / 4.2	4.2
2.7	0.4	2.84 / 2.7	2.7	5.5 / 5.2	5.2
3.2	0.4	3.38 / 3.2	3.2	6.0 / 5.7	5.7
3.7	0.5	3.88 / 3.7	3.7	7.0 / 6.64	6.64
4.3	0.5	4.48 / 4.3	4.3	8.0 / 7.64	7.64
5.3	0.6	5.48 / 5.3	5.3	10.0 / 9.64	9.64
6.4	0.7	6.62 / 6.4	6.4	11.0 / 10.57	10.57
7.4	0.8	7.62 / 7.4	7.4	12.5 / 12.07	12.07
8.4	0.8	8.62 / 7.4	7.4	15 / 14.57	14.57
10.5	0.9	10.77 / 10.5	10.5	18 / 17.57	17.57
13	1	13.27 / 13	13	20.5 / 19.98	19.98
15	1	15.27 / 15	17	24 / 23.48	23.48
17	1.2	17.27 / 17	15	26 / 25.48	25.48
19	1.4	19.33 / 19	19	30 / 29.48	29.48
21	1.4	21.33 / 21	21	33 / 32.38	32.38

Custom sizes available.

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

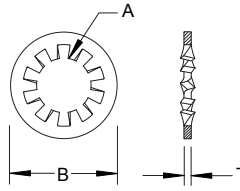
## Lock Washer - Type Internal Tooth Metric - Type WA

Sample Part Number

M1.7 INT - LK - WA - STL - Z - DIN - 1.7 ID / 3.3 OD / 0.3 THK

Nominal Washer Size	Series	Material	Finish	Inside Diameter Code	Outside Diameter Code	Thickness Code
M1.7	INT	LK	WA	STL	Z	DIN

DIN 6797



Nominal Washer Size	T Thickness MIN / Code	A Inside Diameter	Inside Diameter Code	B Outside Diameter	Outside Diameter Code
1.7	0.3	1.84 / 1.7	1.7	3.6 / 3.3	3.3
2.2	0.3	2.34 / 2.2	2.2	4.5 / 4.2	4.2
2.7	0.4	2.84 / 2.7	2.7	5.5 / 5.2	5.2
3.2	0.4	3.38 / 3.2	3.2	6.0 / 5.7	5.7
3.7	0.5	3.88 / 3.7	3.7	7.0 / 6.64	6.64
4.3	0.5	4.48 / 4.3	4.3	8.0 / 7.64	7.64
5.3	0.6	5.48 / 5.3	5.3	10.0 / 9.64	9.64
6.4	0.7	6.62 / 6.4	6.4	11.0 / 10.57	10.57
7.4	0.8	7.62 / 7.4	7.4	12.5 / 12.07	12.07
8.4	0.8	8.62 / 7.4	8.4	15 / 14.57	14.57
10.5	0.9	10.77 / 10.5	10.5	18 / 17.57	17.57
13	1	13.27 / 13	13	20.5 / 19.98	19.98
15	1	15.27 / 15	15	24 / 23.48	23.48
17	1.2	17.27 / 17	17	26 / 25.48	25.48
19	1.4	19.33 / 19	19	30 / 29.48	29.48
21	1.4	21.33 / 21	21	33 / 32.38	32.38

Custom sizes available.

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

Finish	Description
Z	Zinc Clear

Other finishes available.

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

# Washer

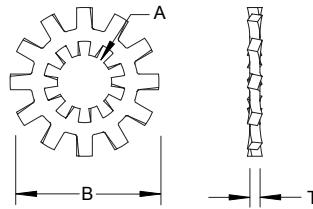
## Lock Washer - Internal External Tooth Metric

Sample Part Number

M4 - INT/EXT - LK - WA - STL - Z - IFI - 4.3 ID / 14.5 OD / 0.56 THK

Nominal Washer Size	Series	Material	Finish	Inside Diameter Code	Outside Diameter Code	Thickness Code
M4	INT/EXT - LK - WA	STL	Z	IFI	4.3 ID / 14.5 OD	0.56 THK

JIS B 1255



Nominal Washer Size	T Thickness	Thickness Code	A Inside Diameter	Inside Diameter Code	B Outside Diameter	Outside Diameter Code
4	0.64 / 0.56	0.56	4.5 / 4.3	4.3	15.0 / 14.5	14.5
5	0.64 / 0.56	0.56	5.5 / 5.3	5.3	15.0 / 14.5	14.5
6	0.85 / 0.75	0.75	6.7 / 6.4	6.4	17.5 / 17.0	17.0
8	0.95 / 0.85	0.85	8.7 / 8.4	8.4	22.5 / 21.9	21.9
10	1.055 / 0.945	0.945	10.9 / 10.5	10.5	26.0 / 25.4	25.4
12	1.055 / 0.945	0.945	12.9 / 12.5	12.5	29.0 / 28.4	28.4
14	1.265 / 1.135	1.135	14.9 / 14.5	14.5	32.0 / 31.2	31.2
16	1.47 / 1.33	1.33	16.9 / 16.5	16.5	35.0 / 34.2	34.2

Custom sizes available.

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

Finish	Description
Z	Zinc Clear

Other finishes available.

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



# Washer

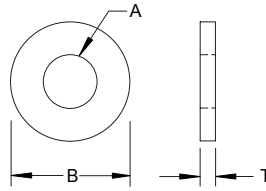
Plain Washer  
Metric

Sample Part Number

M2.5 - FL - WA - STL - Z - A - DIN125 - 2.70 ID / 6.00 OD / 0.50 THK

Nominal Washer Size Series Material Finish Inside Diameter Code Outside Diameter Code Thickness Code

DIN 125



Nominal Washer Size	T Thickness	Thickness Code	A Inside Diameter	Inside Diameter Code	B Outside Diameter	Outside Diameter Code
2	0.35 / 0.25	0.30	2.34 / 2.20	2.20	5.00 / 4.70	5.00
2.5	0.55 / 0.45	0.50	2.84 / 2.70	2.70	6.00 / 5.70	6.00
3	0.55 / 0.45	0.50	3.38 / 3.20	3.20	7.00 / 6.64	7.00
3.5	0.55 / 0.45	0.50	3.88 / 3.70	3.70	8.00 / 7.64	8.00
4	0.90 / 0.70	0.80	4.48 / 4.30	4.30	9.00 / 8.64	9.00
5	1.10 / 0.90	1.00	5.48 / 5.30	5.30	10.00 / 9.64	10.00
6	1.80 / 1.40	1.60	6.62 / 6.40	6.40	12.00 / 11.57	12.00
8	1.80 / 1.40	1.60	8.62 / 8.40	8.40	16.00 / 15.57	16.00
10	2.20 / 1.80	2.00	10.77 / 10.50	10.50	20.00 / 19.48	20.00
12	2.70 / 2.30	2.50	13.27 / 13.00	13.00	24.00 / 23.48	24.00
14	2.70 / 2.30	2.50	15.27 / 15.00	15.00	28.00 / 27.48	28.00
16	3.30 / 2.70	3.00	17.27 / 17.00	17.00	30.00 / 29.48	30.00
18	3.30 / 2.70	3.00	19.33 / 19.00	19.00	34.00 / 33.38	34.00
20	3.30 / 2.70	3.00	21.33 / 21.00	21.00	37.00 / 36.38	37.00

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

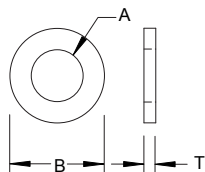
Plain Washer - Narrow, Regular, Wide  
Metric

Sample Part Number

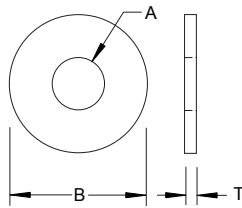
M1.6 NAR - FL - WA - STL - Z - IFI - 2.09 ID / 3.85 OD / 0.70 THK

Nominal Washer Size	Type Code	Series	Material	Finish	Inside Diameter Code	Outside Diameter Code	Thickness Code
M1.6	NAR	FL	WA	STL	Z	IFI	2.09 ID / 3.85 OD / 0.70 THK

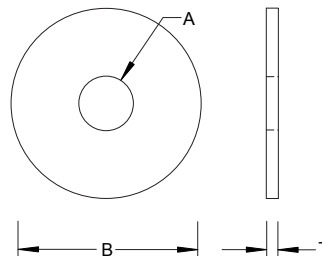
ANSI B18.22M



Narrow



Regular



Wide

Nominal Washer Size	Type	Type Code	T Thickness	Thickness Code	A Inside Diameter	Inside Diameter Code	B Outside Diameter	Outside Diameter Code
1.6	Narrow	NAR	0.70 / 0.50	0.60	2.09 / 1.95	2.02	4.00 / 3.70	3.85
	Regular	REG	0.70 / 0.50	0.60	2.09 / 1.95	2.02	5.00 / 4.70	4.85
	Wide	WIDE	0.90 / 0.60	0.75	2.09 / 1.95	2.02	6.00 / 5.70	5.85
2	Narrow	NAR	0.90 / 0.60	0.75	2.64 / 2.50	2.57	5.00 / 4.70	4.85
	Regular	REG	0.90 / 0.60	0.75	2.64 / 2.50	2.57	6.00 / 5.70	5.85
	Wide	WIDE	0.90 / 0.60	0.75	2.64 / 2.50	2.57	8.00 / 7.64	7.82
2.5	Narrow	NAR	0.90 / 0.60	0.75	3.14 / 3.00	3.07	6.00 / 5.70	5.85
	Regular	REG	0.90 / 0.60	0.75	3.14 / 3.00	3.07	8.00 / 7.64	7.82
	Wide	WIDE	1.20 / 0.80	1.00	3.14 / 3.00	3.07	10.00 / 9.64	9.82
3	Narrow	NAR	0.90 / 0.60	0.75	3.68 / 3.50	3.59	7.00 / 6.64	6.82
	Regular	REG	1.20 / 0.80	1.00	3.68 / 3.50	3.59	10.00 / 9.64	9.82
	Wide	WIDE	1.40 / 1.00	1.20	3.68 / 3.50	3.59	12.00 / 11.57	11.78
3.5	Narrow	NAR	1.20 / 0.80	1.00	4.18 / 4.00	4.09	9.00 / 8.64	8.82
	Regular	REG	1.40 / 1.00	1.20	4.18 / 4.00	4.09	10.00 / 9.64	9.82
	Wide	WIDE	1.75 / 1.20	1.47	4.18 / 4.00	4.09	15.00 / 14.57	14.78
4	Narrow	NAR	1.20 / 0.80	1.00	4.88 / 4.70	4.79	10.00 / 9.64	9.82
	Regular	REG	1.40 / 1.00	1.20	4.88 / 4.70	4.79	12.00 / 11.57	11.78
	Wide	WIDE	2.30 / 1.60	1.95	4.88 / 4.70	4.79	16.00 / 15.57	15.78
5	Narrow	NAR	1.40 / 1.00	1.20	5.78 / 5.50	5.64	11.00 / 10.57	10.78
	Regular	REG	1.75 / 1.20	1.47	5.78 / 5.50	5.64	15.00 / 14.57	14.78
	Wide	WIDE	2.30 / 1.60	1.95	5.78 / 5.50	5.64	20.00 / 19.48	19.47
6	Narrow	NAR	1.75 / 1.20	1.47	6.87 / 6.65	6.67	13.00 / 12.57	12.78
	Regular	REG	1.75 / 1.20	1.47	6.87 / 6.65	6.67	18.80 / 18.37	18.58
	Wide	WIDE	2.30 / 1.60	1.95	6.87 / 6.65	6.67	25.40 / 24.88	25.14
8	Narrow	NAR	2.30 / 1.60	1.95	9.12 / 8.90	9.01	18.80 / 18.37	18.58
	Regular	REG	2.30 / 1.60	1.95	9.12 / 8.90	9.01	25.40 / 24.48	24.93
	Wide	WIDE	2.80 / 2.00	2.40	9.12 / 8.90	9.01	32.00 / 31.38	31.69
10	Narrow	NAR	2.30 / 1.60	1.95	11.12 / 10.85	10.98	20.00 / 19.48	19.74
	Regular	REG	2.80 / 2.00	2.40	11.12 / 10.85	10.98	28.00 / 27.48	27.74
	Wide	WIDE	3.50 / 2.50	3.00	11.12 / 10.85	10.98	39.00 / 38.38	38.69
12	Narrow	NAR	2.80 / 2.00	2.40	13.57 / 13.30	13.43	25.40 / 24.88	25.14
	Regular	REG	3.50 / 2.50	3.00	13.57 / 13.30	13.43	34.00 / 33.38	33.69
	Wide	WIDE	3.50 / 2.50	3.00	13.57 / 13.30	13.43	44.00 / 43.38	43.69
14	Narrow	NAR	2.80 / 2.00	2.40	15.52 / 15.25	15.38	28.00 / 27.48	27.74
	Regular	REG	3.50 / 2.50	3.00	15.52 / 15.25	15.38	39.00 / 38.38	38.69
	Wide	WIDE	4.00 / 3.00	3.75	15.52 / 15.25	15.38	50.00 / 49.38	49.69
16	Narrow	NAR	3.50 / 2.50	3.00	17.52 / 17.25	17.39	32.00 / 31.38	31.69
	Regular	REG	4.00 / 3.00	3.75	17.52 / 17.25	17.39	44.00 / 43.38	43.69
	Wide	WIDE	4.60 / 3.50	4.05	17.52 / 17.25	17.39	56.00 / 54.80	55.40
20	Narrow	NAR	4.00 / 3.00	3.75	22.32 / 21.80	22.06	39.00 / 38.38	38.69
	Regular	REG	4.60 / 3.50	4.05	22.32 / 21.80	22.06	50.00 / 49.38	49.69
	Wide	WIDE	5.10 / 4.00	4.55	22.32 / 21.80	22.06	66.00 / 64.80	65.40

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

Finish	Description
Z	Zinc Clear

Other finishes available.

Custom sizes available.

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

# Washer

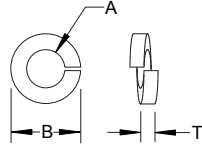
## Lock Washer - Split Lock Washer Metric

Sample Part Number

M2.5 - SPLT - LK - WA - STL - Z - DIN - 2.09 ID / 3.85 OD / 0.70 THK

Nominal Washer Size	Series	Material	Finish	Inside Diameter Code	Outside Diameter Code	Thickness Code
---------------------	--------	----------	--------	----------------------	-----------------------	----------------

DIN 127



Nominal Washer Size	T Thickness	Thickness	A Inside Diameter	Inside Diameter	B Outside Diameter MAX
2	0.6 / 0.4	0.5	2.4 / 2.1	2.25	4.4
2.5	0.7 / 0.5	0.6	2.9 / 2.6	2.75	5.1
3	0.8 / 0.6	0.7	3.4 / 3.1	3.25	6.2
3.5	0.8 / 0.6	0.7	3.9 / 3.6	3.75	6.7
4	1.0 / 0.8	0.8	4.4 / 4.1	4.25	7.6
5	1.1 / 0.9	1	5.4 / 5.1	5.25	9.2
6	1.4 / 1.2	1.3	6.5 / 6.1	6.3	11.8
8	1.7 / 1.5	1.6	8.5 / 8.1	8.3	14.8
10	1.9 / 1.7	1.8	10.7 / 10.2	10.45	18.1
12	2.25 / 1.95	2.10	12.7 / 12.2	12.45	21.1
14	2.55 / 2.25	2.4	14.7 / 14.2	14.45	24.1
16	2.95 / 2.65	2.8	17 / 16.2	16.6	27.4
18	2.95 / 2.65	2.8	19 / 18.2	18.6	29.4
20	3.4 / 3.0	3.2	21.2 / 20.2	20.7	33.6

Custom sizes available.

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.







**“Manufactured globally, supplied locally”**

For inquiries please contact: [sales@pencomsf.com](mailto:sales@pencomsf.com)  
or visit our website at [www.pencomsf.com](http://www.pencomsf.com)

