



SAI

STAINLESS STEEL FASTENERS



ISO-9002 CERTIFIED
100% LOT TRACEABLE



A Tradition of QUALITY

Sudhir Automotive Industries Pvt. Ltd. (IS/ISO-9002 Quality systems certified by BIS) is a leading manufacturer of Stainless Steel Fasteners having manufacturing capacity of 700 MT per year.

Quality Policy

Company's quality policy emphasises on customer satisfaction by following a well defined quality system in line with ISO-9002, meeting technical requirements and delivery schedules of customer. Minimization of in house rejection through preventive and corrective actions, optimum utilization of resources and updation of manufacturing, inspection and testing capabilities are its objectives.

Cost

The company is highly cost conscious and ensures optimum productivity along with minimum rejection, so that it can serve the customers better.

Strengths

- ◆ Genuine Raw Material
- ◆ Strict Quality Control
- ◆ Quality Product
- ◆ High Accuracy
- ◆ Certificate Of Inspection
- ◆ Prompt Reply To Query
- ◆ After Sales Feedback
- ◆ Team Spirit

Major Machinery

1. Bolt Makers (imported)
2. Headers
3. Thread Rolling Flat
4. Circular Rolling Machine
5. Traubs
6. Centerless Grinding M/cs (imported)
7. Shaker Hearth Furnace (GEC)
8. Tempering Furnace

About Testing Facilities

The inspection and testing ranging from raw material stage to the final inspection includes Profile Projector, Digital Micrometer, Slip Gauges, Universal Gauges and an adequately equipped Metallurgical Laboratory of its own. Spectro Analysis for raw material composition, tensile testing facility is provided by A2LA/NABL accredited laboratory of LPS, which is in the close proximity of factory premises.



Test and Measuring Instruments

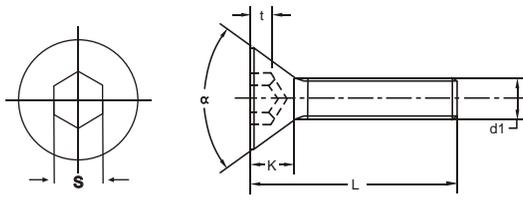
1. Profile Projectors
2. Vernier Calipers (6", 8, 12, 24')
3. Micrometer (0.001 mm) 0- 25 mm
4. Micrometer (0.001 mm) Digital
5. Dial Indicator (0.01, 0.001 mm)
6. Slip gauge Set
7. Height gauge
8. Pitch Micrometer
9. Ring gauge/ Plug gauges
10. PID Controllers
11. Temperature Controllers
12. Hardness Testers
13. Bore gauges
14. Tool Maker Microscope
15. Microscope
16. Magnetic Permeability Tester



DEAR CUSTOMER
SORRY WE DO NOT HAVE
202 LOW NICKLE
other manufacturers **contact**



COMPLETE SOLUTION FOR STAINLESS STEEL FASTENERS



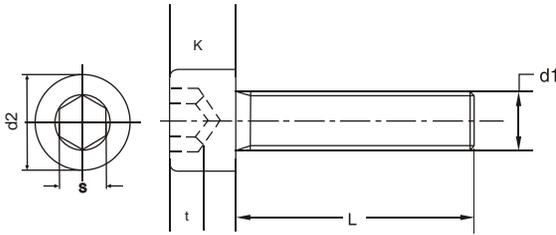
**ALLEN
CSK**

Dimensions : DIN 7991
 Tolerances : ISO 4759 & ISO 286-2
 Threads : 6g-1SO 965
 Tensile Strength : 700 N/mm²
 Material : AISI 304

(d1)	M3	M4	M5	M6	M8	M10	M12	
Head Height max (K)	1.7	2.3	2.8	3.3	4.4	5.5	6.5	
Head Dia max (d2)	6	8	10	12	16	20	24	
A/F (S)	2	2.5	3	4	5	6	8	
Socket Depth Min (t)	1.2	1.8	2.3	2.5	3.5	4.4	4.6	
Thread Gap Max	3.2	4.4	5.2	6.3	8.2	10	11.8	
Threads	6g							
Angle (α)	90	90	90	90	90	90	90	
L(LENGTH)	M3	M4	M5	M6	M8	M10	M12	
5	•							
6	•	•						
8	•	•	•					
10	•	•	•	•	•			
12	•	•	•	•	•			
16	•	•	•	•	•	•		
20	•	•	•	•	•	•		
25	•	•	•	•	•	•	•	
30	•	•	•	•	•	•	•	
35		•	•	•	•	•	•	
40		•	•	•	•	•	•	
45		•	•	•	•	•	•	
50		•	•	•	•	•	•	
60					•	•	•	
70					•	•	•	
75					•	•	•	
80					•	•	•	
90					•	•	•	
100					•	•	•	

• Available in 304 grade.
 Available in 316 grade.

All dimensions are in mm. Tolerances in the product will be as per reference standards.
 Unspecified lengths/sizes are available upon request.



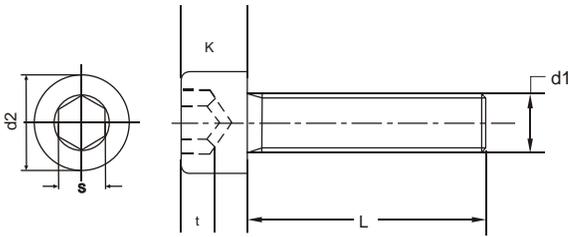
**SOCKET HEAD
CAP SCREW**

Dimensions : DIN 912/ISO 4762
 Tolerances : ISO 4759 & ISO 286-2
 Threads : 6g-1SO 965
 Tensile Strength : 700 N/mm²
 Material : AISI 304

(d1)	M3	M4	M5	M6	M8	M10	M12	M16
Head Dia (d2)	5.5	7	8.5	10	13	16	18	24
Head Height (K)	3	4	5	6	8	10	12	16
A/f (S)	2.5	3	4	5	6	8	10	14
Socket Depth (t)	1.3	2	2.5	3	4	5	6	8
Threads	6g	6g	6g	6g	6g	6g	6g	6g
L(LENGTH)	M3	M4	M5	M6	M8	M10	M12	M16
5	•							
6	•	•						
8	•	•	•					
10	•	•	•	•	•			
12	•	•	•	•	•			
16	•	•	•	•	•	•		
20	•	•	•	•	•	•	•	
25		•	•	•	•	•	•	
30		•	•	•	•	•	•	•
35		•	•	•	•	•	•	•
40		•	•	•	•	•	•	•
45		•	•	•	•	•	•	•
50		•	•	•	•	•	•	•
60			•	•	•	•	•	•
70				•	•	•	•	•
75				•	•	•	•	•
80				•	•	•	•	•
90				•	•	•	•	•
100				•	•	•	•	•

• Available in 304 grade.
 • Available in 316 grade.

All dimensions are in mm. Tolerances in the product will be as per reference standards. Unspecified lengths/sizes are available upon request.



ALLEN CAP SCREW

Dimensions : BS-2470-1973
 Tolerances : --
 Threads : BSW-M
 Tensile Strength : 700 N/mm²
 Material : AISI 304

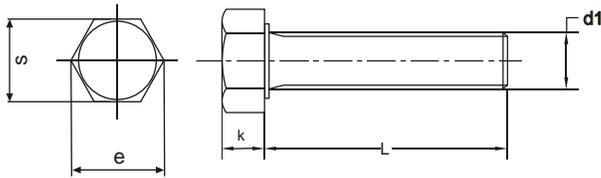
COMPLETE SOLUTION FOR STAINLESS STEEL FASTENERS

SHCS

(d1)		3/16"	1/4"	5/16"	3/8"			
Head Dia (d2)		7.72/7.9	9.32/9.58	10.90/11.09	14.05/14.27			
Head Height (K)		4.64/4.74	6.20/6.35	7.73/7.92	9.35/9.52			
A/F (S)		3.98/4.02	4.78/4.81	5.62/5.58	7.95/8.01			
U/Broach		1.65/2.36	2.85/3	3.48/3.63	4.47/4.62			
Threads		24-BSW M	20-BSW M	18-BSW M	16-BSW M			
L (LENGTH)		3/16"	1/4"	5/16"	3/8"			
3/16"								
1/4"		•						
5/16"		•	•					
3/8"		•	•	•				
1/2"		•	•	•	•			
5/8"		•	•	•	•			
3/4"		•	•	•	•			
1"		•	•	•	•			
1.1/4"		•	•	•	•			
1.1/2"		•	•	•	•			
1.3/4"		•	•	•	•			
2"		•	•	•	•			
2.1/2"			•	•	•			
3"			•	•	•			
3.1/2"			•	•	•			
4"								

• Available in 304 grade.

All dimensions are in mm. Tolerances in the product will be as per reference standards. Unspecified lengths/sizes are available upon request.



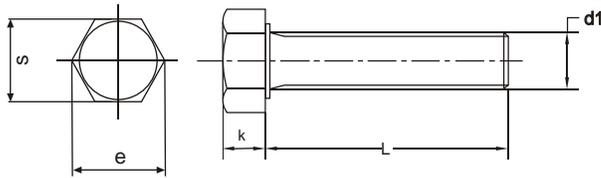
HEXAGON HEAD SCREW

Dimensions : DIN 933
 Tolerances : ISO 4759 & ISO 286-2
 Threads : 6g - ISO 965
 Tensile Strength : 700N/mm²
 Material : AISI 304

(d1)	M3	M4	M5	M6	M8	M10	M12	M16
Head Height (K)	2	2.8	3.5	4	5.3	6.4	7.5	10
Threads	6g	6g	6g	6g	6g	6g	6g	6g
A/F (S)	5.5	7	8	10	13	17	19	24
A. Corner (e)	6.01	7.66	8.79	11.05	14.38	18.90	21.10	26.75
L(LENGTH)	M3	M4	M5	M6	M8	M10	M12	M16
5	•							
6	•	•						
8	•	•	•	•				
10	•	•	•	•	•			
12	•	•	•	•	•	•		
16	•	•	•	•	•	•		
20	•	•	•	•	•	•	•	
25	•	•	•	•	•	•	•	
30	•	•	•	•	•	•	•	
35	•	•	•	•	•	•	•	
40	•	•	•	•	•	•	•	
45		•	•	•	•	•	•	
50		•	•	•	•	•	•	
60				•	•	•	•	
70				•	•	•	•	
75				•	•	•	•	
80				•	•	•	•	
90				•	•	•	•	
100				•	•	•	•	

• Available in 304 grade.
 Available in 316 grade.

All dimensions are in mm. Tolerances in the product will be as per reference standards.
 Unspecified lengths/sizes are available upon request.



HEXAGON HEAD SCREW

Dimensions : BS-1063
 Tolerances : --
 Threads : --
 Tensile Strength : 700 N/mm²
 Material : SS 304

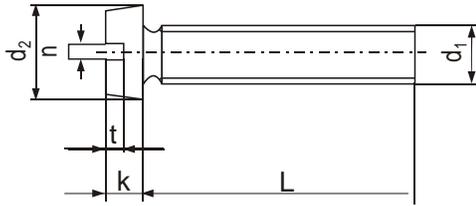
COMPLETE SOLUTION FOR STAINLESS STEEL FASTENERS

HHS

(d1)		3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	
Head Height (K)		3.02	4.34	5.41	6.48	8.58	10.46	
Threads		24-BSW-M	20-BSW-M	18-BSW-M	16-BSW-M	12-BSW-M	11-BSW-M	
A/F (S)		8.16	11.21	13.24	15.14	20.72	25.53	
L(LENGTH)		3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	
3/16"								
1/4"								
5/16"								
3/8"		•	•	•				
1/2"		•	•	•	•			
5/8"		•	•	•	•			
3/4"		•	•	•	•	•		
1"		•	•	•	•	•		
1.1/4"		•	•	•	•	•		
1.1/2"		•	•	•	•	•		
1.3/4"		•	•	•	•	•		
2"		•	•	•	•	•		
2.1/2"			•	•	•	•		
3"			•	•	•	•		
3.1/2"			•	•	•	•		
4"			•	•	•	•		

- Available in 304 grade.
- Available in 316 grade.

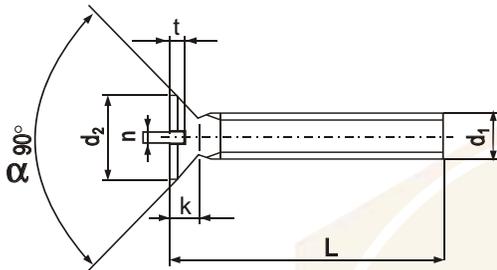
All dimensions are in mm. Tolerances in the product will be as per reference standards. Unspecified lengths/sizes are available upon request.



**SLOTTED
CH HEAD**

Dimensions : DIN 84/ISO 1207
 Tolerances : ISO 4759 & ISO 286-2
 Threads : 6g-1SO 965
 Tensile Strength : 700 N/mm²
 Material : AISI 304

(d1)	M2	M2.5	M3	M4	M5	M6	M8	M10
Head Dia (d2)	3.8	4.5	5.5	7	8.5	10	13	16
Head Height (K)	1.3	1.6	2	2.6	3.3	3.9	5	6
Slot Width (n)	0.5	0.6	0.8	1.2	1.2	1.6	2	2.5
Slot Depth min (t)	0.6	0.7	0.85	1.1	1.3	1.6	2	2.4
Threads	6g	6g	6g	6g	6g	6g	6g	6g

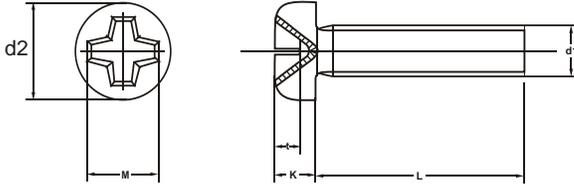


**SLOTTED
CSK**

Dimensions : DIN 963A/ISO 2009
 Tolerances : ISO 4759 & ISO 286-2
 Threads : 6g-1SO 965
 Tensile Strength : 700 N/mm²
 Material : AISI 304

(d1)	M2	M2.5	M3	M4	M5	M6	M8	M10
Head Dia (d2)	3.8	4.7	5.6	7.5	9.2	11	14.5	18
Head Height (K)	1.2	1.5	1.65	2.2	2.5	3	4	5
Slot Width (n)	0.5	0.6	0.8	1	1.2	1.6	2	2.5
Slot Depth min (t)	0.4	0.5	0.6	0.8	1	1.2	1.6	2
Threads	6g	6g	6g	6g	6g	6g	6g	6g
ANGLE α	90	90	90	90	90	90	90	90

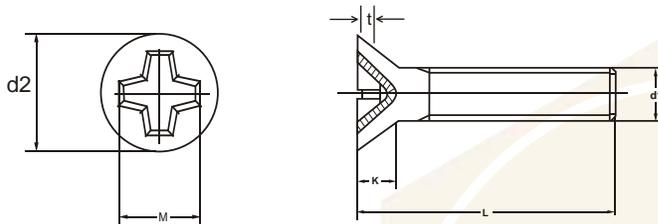
All dimensions are in mm. Tolerances in the product will be as per reference standards.
 Unspecified lengths/sizes are available upon request.



**PHILIPS
PAN HEAD**

Dimensions : DIN 7985/ISO 7045
 Tolerances : ISO 4759 & ISO 286-2
 Threads : 6g-1SO 965
 Tensile Strength : 700 N/mm²
 Material : AISI 304

(d1)	M2	M2.5	M3	M4	M5	M6	M8
Head Dia max (d2)	4	5	6	8	10	12	16
Head Height max (K)	1.72	2.12	2.52	3.25	3.95	4.75	6.15
M	2.5	2.7	3.1	4.6	5.3	6.8	9
Philips	1	1	1	2	2	3	4
(t) Min	1.1	1.3	1.7	2.04	2.77	3.03	4.18
(t) Max	1.4	1.6	2	2.54	3.27	3.53	4.68
Threads	6g						

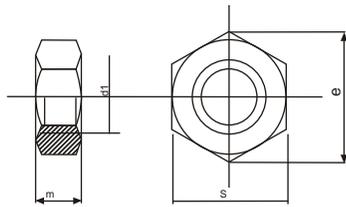


**PHILIPS
CSK**

Dimensions : DIN 965A/ISO 7046
 Tolerances : ISO 4759 & ISO 286-2
 Threads : 6g-1SO 965
 Tensile Strength : 700 N/mm²
 Material : AISI 304

(d1)	M2	M2.5	M3	M4	M5	M6	M8
Head Dia max (d2)	3.8	4.7	5.6	7.5	9.2	11	14.5
Head Height max (K)	1.2	1.5	1.65	2.2	2.5	3	4
M	2.35	2.7	2.9	4.4	4.6	6.6	8.7
Philips	1	1	1	2	2	3	4
(t) Min	0.95	1.25	1.5	1.9	2.1	2.8	3.9
(t) Max	1.25	1.55	1.8	2.4	2.6	3.3	4.4
Threads	6g	6g	6g	6g	6g	6g	6g

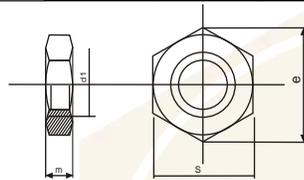
All dimensions are in mm. Tolerances in the product will be as per reference standards. Unspecified lengths/sizes are available upon request.



HEX NUT
NOMINAL H. 0.8D

Dimensions : DIN 934
 Tolerances : ISO 4759/DIN 267
 Threads : 6g-1ISO 965
 Property Class : A 270
 Material : AISI 304

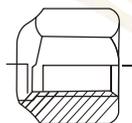
d1	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16
A/F (S)	4	5	5.5	7	8	10	13	17	19	24
A/C Main (e)	4.32	5.45	6.01	7.66	8.79	11.05	14.38	18.9	21.1	26.75
Head Height Max (M)	1.6	2	2.4	3.2	4	5	6.5	8	10	13



LOCK NUT
NOMINAL H. 0.5D

Dimensions : DIN 439
 Tolerances : ISO 4759/DIN 267
 Threads : 6g-1ISO 965
 Property Class : A 270
 Material : AISI 304

d1	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16
A/f (S)	4	5	5.5	7	8	10	13	17	19	24
A/c Main Min (e)	4.32	5.45	6.01	7.66	8.79	11.05	14.38	18.9	21.1	26.75
Head Height Max (M)	1.2	1.6	1.8	2.2	2.7	3.2	4.0	5	6	8

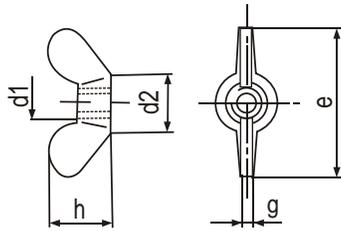


HEX NYLOCK NUT
WITH POLYAMIDE INSERT

Dimensions : DIN 985
 Tolerances : ISO 4759/DIN 267
 Threads : 1ISO 965
 Property Class : A 270
 Material : AISI 304

	M3	M4	M5	M6	M8	M10	M12	M16
A/F (S)	5.5	7	8	10	13	17	19	24
A/C (e)	6.01	7.66	8.79	11.05	14.38	18.9	21.1	26.75
Height (M)	2.4	2.9	3.2	4	5.5	6.5	8	10.5
Total Height (n)	4	5	5	6	8	10	12	16

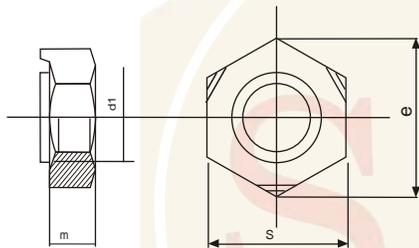
All dimensions are in mm. Tolerances in the product will be as per reference standards. Unspecified lengths/sizes are available upon request.



**WING
NUT**

Dimensions : DIN 315
 Tolerances : ISO 4759
 Threads : ISO 965
 Material : AISI 304

(d1)	M4	M5	M6	M8	M10	M12	M16
(d2) max	8	11	13	16	20	23	29
(e) max	20	26	33	39	51	65	73
(g) max	1.9	2.3	2.3	2.8	4.4	4.9	6.4
(n) max	10.5	13	17	20	25	33.5	37.5



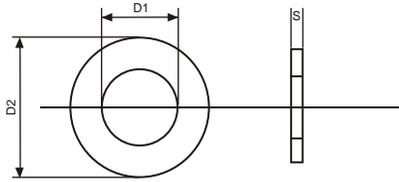
**HEX WELD
NUT**

Dimensions : DIN 929
 Tolerances : ISO 4759 / DIN 267
 Threads : ISO 965
 Material : AISI 304

	M3	M4	M5	M6	M8	M10
(d2)	4.5	6	7	8	10.5	12.5
(d3)	4.5	6	7	8	10.5	12.5
(n1)	0.55	0.65	0.7	0.75	0.9	1.15
(n2)	0.25	0.35	0.4	0.4	0.5	0.65
(n)	3	3.5	4	5	6.5	8
(s)	7.5	9	10	11	14	17

NUT

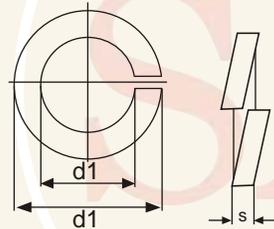
All dimensions are in mm. Tolerances in the product will be as per reference standards.
 Unspecified lengths/sizes are available upon request.



PLAIN WASHER
WITHOUT CHAMFER REG. TYPE

Dimensions : DIN 125A/ISO 7089
Tolerances : ISO 4759/DIN 267
Material : AISI 304

M	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16
Internal Dia (d1)	2.2	2.7	3.2	4.3	5.3	6.4	8.4	10.5	13	17
External Dia (d2)	5	6	7	9	10	12	16	20	24	30
Thickness (S)	0.3	0.5	0.5	0.8	1	1.6	1.6	2	2.5	3
M	M20	M24	M30							
Internal Dia (d1)	21	25	31							
External Dia (d2)	37	44	56							
Thickness (S)	3	4	4							

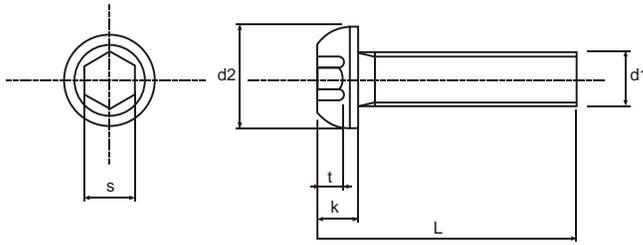


SPRING WASHER
FLAT SECTION

Dimensions : DIN 127B
Tolerances : ...
Material : AISI 304

M	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16
Internal Dia (d1)	2.1/2.4	2.6/2.9	3.1/3.4	4.1/4.4	5.1/5.4	6.1/6.5	8.1/8.5	10.2/10.7	12.2/12.7	16.2/17
External Dia (d2)	4.4	5.1	6.2	7.6	9.2	11.8	14.8	18.1	21.1	27.4
Thickness (S)	0.5	0.6	0.8	0.9	1.2	1.6	2	2.2	2.5	3.5
M	M20	M24	M30							
Internal Dia (d1)	20.2/21.2	24.5/25.5	30.5/31.7							
External Dia (d2)	33.6	40	48.2							
Thickness (S)	4	5	6							

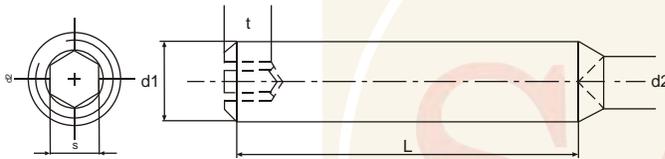
All dimensions are in mm. Tolerances in the product will be as per reference standards.
Unspecified lengths/sizes are available upon request.



**BUTTON HEAD
CAP SCREW**

Dimensions : ISO 7380
 Tolerances : ISO 4759 & ISO 286-2
 Threads : 6g-ISO 965
 Material : AISI 304

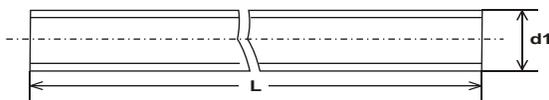
d1		M2	M2.5	M3	M4	M5	M6	M8	M10	M12
d2		3.5	4.5	5.7	7.6	9.5	10.5	14	17.5	21
k		1.3	1.5	1.65	2.2	2.75	3.3	4.4	5.5	6.6
s		1.3	1.5	2	2.5	3	4	5	6	8
t min.		0.6	0.8	1.04	1.3	1.56	2.08	2.6	3.12	4.16



**GRUB
SCREW**

Dimensions : DIN 916 / ISO 4029
 Tolerances : ISO 4759 & ISO 286-2
 Threads : 6g-ISO 965
 Tensile Strength : --
 Material : AISI 304

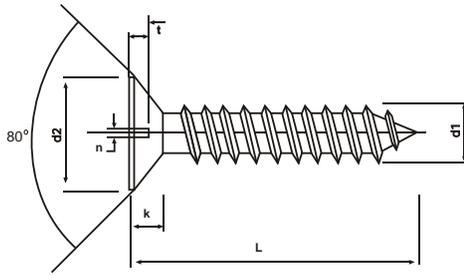
(d1)	M3	M4	M5	M6	M8	M10	M12	M16
Cu Dia (d2)	1.15 - 1.4	1.75 - 2	2.25 - 2.5	2.75 - 3	4.7 - 5	5.7 - 6	7.64 - 8	9.64 - 10
A/F (S)	1.5	2	2.5	3	4	5	6	8
(t) Min	above dash line	1.2	1.5	2	2	3	4.8	6.4
	below dash line	2	2.5	3	3.5	5	8	10
Threads	6g	6g	6g	6g	6g	6g	6g	6g



**THREADED
BAR**

Dimensions : DIN 975
 Tolerances : ...
 Threads : 6g-ISO 965
 Material : AISI 304

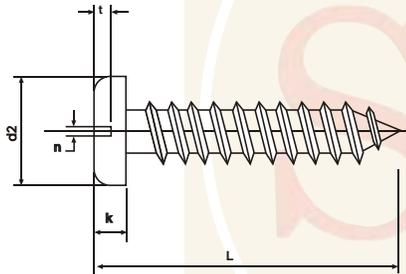
All dimensions are in mm. Tolerances in the product will be as per reference standards. Unspecified lengths/sizes are available upon request.



Dimensions : DIN 7972 / ISO 1482
 Tolerances : ISO 4759 & ISO 286-2
 Material : AISI 304

**SELF TAPPING
 CSK SLOTTED**

		ST 2.2 ⁽²⁾	ST 2.9 ⁽⁴⁾	ST 3.5 ⁽⁶⁾	ST 4.2 ⁽⁸⁾	ST 4.8 ⁽¹⁰⁾	ST 5.5 ⁽¹²⁾	ST 6.3 ⁽¹⁶⁾		
d2 max.		4.3	5.5	6.8	8.1	9.5	10.8	12.4		
K		1.3	1.7	2.1	2.5	3	3.4	3.8		
n		0.6	0.8	1	1.2	1.2	1.6	1.6		
t min.		0.4	0.5	0.6	0.75	0.85	1.0	1.7		

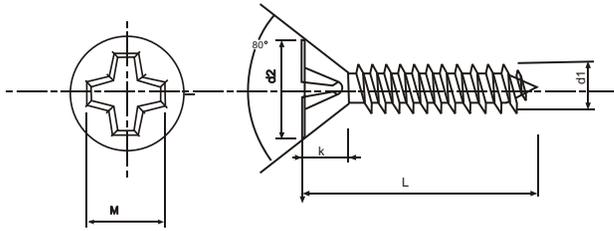


Dimensions : DIN 7971 / ISO 1481
 Tolerances : ISO 4759 & ISO 286-2
 Material : AISI 304

**SELF TAPPING
 PAN SLOTTED**

		ST 2.2 ⁽²⁾	ST 2.9 ⁽⁴⁾	ST 3.5 ⁽⁶⁾	ST 4.2 ⁽⁸⁾	ST 4.8 ⁽¹⁰⁾	ST 5.5 ⁽¹²⁾	ST 6.3 ⁽¹⁴⁾		
d2 max.		4.2	5.6	6.9	8.2	9.5	10.8	12.5		
k max.		1.35	1.75	2.1	2.45	2.8	3.2	3.65		
n		0.6	0.8	1	1.2	1.2	1.6	1.6		
t min.		0.55	0.75	0.95	1.15	1.35	1.55	1.8		

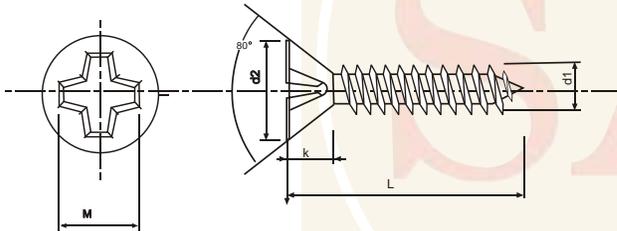
All dimensions are in mm. Tolerances in the product will be as per reference standards.
 Unspecified lengths/sizes are available upon request.



Dimensions : DIN 7982 / ISO 7050
 Tolerances : ISO 4759 & ISO 286-2
 Material : AISI 304

**SELF TAPPING
CSK PHILLIPS**

	ST 2.2 ⁽²⁾	ST 2.9 ⁽⁴⁾	ST 3.5 ⁽⁶⁾	ST 4.2 ⁽⁸⁾	ST 4.8 ⁽¹⁰⁾	ST 5.5 ⁽¹²⁾	ST 6.3 ⁽¹⁴⁾		
d2 max.	4.3	5.5	6.8	8.1	9.5	10.8	12.4		
k max.	1.3	1.7	2.1	2.5	3	3.4	3.8		
Phillips	1	1	2	2	2	3	3		
m	2.5	3	4.2	4.7	5.1	6.8	7.1		



Dimensions : DIN 7981 / ISO 7049
 Tolerances : ISO 4759 & ISO 286-2
 Material : AISI 304

**SELF TAPPING
PAN PHILLIPS**

	ST 2.2 ⁽²⁾	ST 2.9 ⁽⁴⁾	ST 3.5 ⁽⁶⁾	ST 4.2 ⁽⁸⁾	ST 4.8 ⁽¹⁰⁾	ST 5.5 ⁽¹²⁾	ST 6.3 ⁽¹⁴⁾		
d2 max.	4.2	5.6	6.9	8.2	9.5	10.8	12.5		
K	1.8	2.2	2.6	3.05	3.55	3.95	4.55		
n	1	1	2	2	2	3	3		
t min.	2.6	3	4.2	4.6	5	6.5	7.1		

All dimensions are in mm. Tolerances in the product will be as per reference standards.
 Unspecified lengths/sizes are available upon request.



STAINLESS STEEL MINI ENCYCLOPEDIA

AUSTENITIC - Refers to 300 series stainless, the most popular of stainless alloys accounting for 85-90% of stainless fasteners sold. Named for Sir Robert Williams Austen, an English metallurgist, austenitic steel is a crystal structure formed by heating steel, chromium, and nickel to a high temperature where it forms the characteristics of 300 series stainless steel. An AUSTENITE is a molecular structure where 8 atoms of iron surround one atom of carbon, thus limiting the corrosive effects of the carbon. Austenitic fasteners give high level of corrosion resistance in the stainless family, cannot be hardened by heat treatment, and are almost always non magnetic. Sometimes heat and friction in cold forming can cause austenitic stainless to take slight magnetism, but the corrosion resistant properties remains the same. Most commonly used grade is termed as 304. Typical industries using these fasteners include: food, dairy, wine, chemical, pulp and paper, pharmaceutical, boating, swimming pool, pollution control, electronic, medical and hospital equipment, computer, textiles.

Type 316 stainless has added nickel and added molybdenum. The molybdenum (called moly) increases corrosion resistance to chlorides and sulfates, including sulfurous acids in pulp industry. It has superior tensile strength at high temperatures compared to 304. Besides pulp and paper, typical industries using 316 are: photographic and other chemicals, ink, textile, bleach, rubber.

CARBIDE PRECIPITATION - Carbon that breaks loose from its bond within the stainless solution when material is heated between 800-1400 degrees. Under severe corrosive conditions, it can result in extra oxidation and surface corrosion.

CARBON - Adds strength to stainless steel, but also lowers corrosion resistance. The more carbon there is, the more chromium be added, because carbon offsets 17 times its own weight in chromium to form carbides, thus reducing chromium available for resisting corrosion.

CHROMIUM- A blue white metal, chromium is the most important element providing corrosion resistance in stainless steel. By adding 12% chromium to ordinary steel, stainless steel is formed. Chromium offsets the corrosive effects of carbon found in steel and is the primary factor in the ability of stainless to form a passive film on its surface providing corrosion resistance.

COLD FORMING OR COLD HEADING OR COLD WORKING - When fasteners are produced without heating or small heat below recrystallization temperature (so the raw material bond of stainless remains unchanged) by processing metal wire against various dies at high speed to form a fastener's head or basic shape. Cold working causes an increase in tensile strength and hardness (known as work hardening) and a decrease in ductility.

COPPER - A reddish metal that is an excellent conductor of heat and electricity. It is malleable, ductile and non magnetic with low to average strength and good corrosion resistance.

CREEP STRENGTH - A measure of the resistance of fasteners to stress under elevated temperatures. At higher temperatures, a fasteners can change in dimension under the same load, and is called creep. Creep can cause the loosening of fasteners as temperature increases.

DISCONTINUITIES - A variety of small or large disfigurements in a fastener such as pits, tool marks, voids, laps, folds, and seams and inclusions. Minor discontinuities are permissible in both commercial fasteners and those made to various specs.

DRAWING - Where raw material shaped like wire is pulled through a die to reduce its diameter to that needed for particular fastener being manufactured.

DUCTILITY- the ability of a fastener to deform before breaking (for example an elastic would be more ductile than a diamond). Ductility is a measurement similar to elongation.

ELONGATION - Stretching a fastener to the point that it breaks. The percentage of elongation at rupture (same as measure of ductility) is determined by dividing the total length after stretching to the original length. Elongation decreases as strength and hardness increases.

MAGNETISM - As related to stainless steel fasteners, 300 series stainless is non magnetic in its raw material condition. Cold working can sometimes induce traces of magnetism in 300 series, depending on the severity of cold working and chemical composition of the stainless. A rise in magnetism is related to increase in tensile strength and work hardening caused by the heat and friction of cold forming and does not reduce corrosion resistance or cause any molecular change in austenitic raw material. A higher portion of nickel can increase stability in stainless, thus decreasing work hardening and any possibilities of magnetism. Many stainless specs allow 2.0 magnetic permeability which translates to low/medium magnetism.



STAINLESS STEEL MINI ENCYCLOPEDIA

MANGANESE - A non magnetic metal which improves strength and hardness.

MOLYBDENUM - Nicknamed moly, molybdenum is a metal added to 316 stainless steel, sharply increasing its corrosion resistance to chlorides and sulfates, especially various sulfurous acids in the pulp industry. Molybdenum helps reduce hardness and increase tensile strength at higher temperatures.

NICKEL - A metal added to 300 series stainless to provide corrosion resistance, increased strength in both high and low temperatures, and increased toughness in low temperatures. Nickel lowers the effects of work hardening, thus reducing traces of magnetism caused by cold forming and making material flow more freely in manufacturing.

PASSIVATING - Technically, passivating is a process of dipping fasteners into a nitric acid solution to rapidly form a chromium oxide on the surface of the material, creating a passive film that protects stainless from further oxidation. The purpose of passivating is to remove both grease left from manufacturing and traces of steel particles which may have rubbed off manufacturing tools onto the fastener.

PASSIVE FILM - The major characteristic of stainless is its ability to form a thin layer of protection called a passive film on its outside surface. This film results from a continual process of low level oxidation, so oxygen from the atmosphere is needed for the passive film to exist. Once formed it prevents further oxidation or corrosion from occurring. Even if chipped or scratched, a new passive film on stainless will form.

PROOF LOAD - A test load that a fastener must undergo without showing significant deformation. It is usually 90% of yield strength.

STAINLESS STEEL - With the addition of 12 % chromium to iron, stainless steel is formed. The chromium protects the iron against most corrosion or red coloured rust; thus the term stainless steel. The ability of stainless to form a thin layer of protection on its outside surface, called a "passive film" is its most important characteristic in preventing corrosion.

The overriding purpose of stainless steel is to provide corrosion resistance against : (a) atmospheric conditions such as carbon dioxide, moisture, electrical fields, sulphur, salt and chloride compounds (b) natural and artificially produced chemicals (c) extremes weather where cold temperatures cause brittleness and hot temperatures reduce strength and increase corrosion.

TENSILE STRENGTH - A common measure to compare the strength of a fastener. It is the load needed to pull the fastener apart.

TORQUE OR TORSION STRENGTH - Torque is the force used in twisting, such as tightening a fastener. Torsion strength is the amount of force needed to twist a fastener apart. Both measures consider the amount of pressure applied to the fastener and the length of the wrench used in the application.

YIELD STRENGTH - The amount of pressure required to cause permanent deformity.

Chemical composition of S.S. Fasteners (% values in max unless otherwise stated).

Steel Group	C	Si	Mn	P	S	Cr	Mo	Ni	Cu
A2(304)	0.08	1.0	2.0	.050	.03	15-20	-	8-11	3.5
A4(316)	0.08	1.0	2.0	.045	.03	16-18.5	2-3	10-15	1

All Dimensional, Mechanical and Chemical properties are as per specified standards. The designation system comply with ISO 3506 standard. A270 donates A= Austenitic chromium-nickel steel, 2 = Cold heading steel alloyed with chromium and nickel normally called as 304 grade. 4 = cold heading steel alloyed with chromium, nickel and molybdenum. 70 = property class, i.e.: Tensile Strength which is 10 times of the denoted figure in N/mm² min.



SAI
SPECIALS

COMPLETE SOLUTION FOR STAINLESS STEEL FASTENERS

HALF - THREADED ITEMS	
<p>HEX HEAD : M3 TO M30</p> <p>ALLEN CAP SCREW : M3 TO M30</p> <p>ALLEN CSK : M3 TO M30</p>	
UNC/UNF THREADS	
<p>HEX HEAD : 3/16" to 1"</p> <p>ALLEN CAP SCREW : 3/16" to 1"</p> <p>ALLEN CSK : 3/16" to 3/4"</p>	
LONG LENGTH (UPTO 300 MM)	HOT FORGED (ABOVE 20 MM DIA)
HEX HEAD	HEX HEAD
ALLEN CSK	ALLEN CSK
ALLEN CAP SCREW	ALLEN CAP SCREW
MORE SPECIALS	
<p>Flange Bolt</p>	<p>Special with Drill Hole</p>
<p>Stud</p>	<p>Flat Slotted Wood Screw</p>

We have speciality in turned components



11 REASONS



WHY STAINLESS STEEL FASTENER IS THE LOGICAL CHOICE

ADVANTAGES	PREVENTS THE FOLLOWING PROBLEMS
Bright surface, good appearance	Rusting screws give a poor impression. The customer loses confidence in the product.
Safety	Corrosion reduces the stability and functionality of the fastening elements. They become weak points.
No red rust	Some Plastic or textile elements can become unusable due to contact with red rust.
No health risk	Blood poisoning can result from injuries from rusty elements.
Utilization for foodstuffs	Galvanised elements must never come into contact with foodstuffs.
No risk from sucking	Small children must not suck galvanised or cadmium plated elements.
Easy to clean, hygienic	Corrosive products which are difficult to eliminate form on bright or galvanised parts.
Nickel-Chrome steel has low magnetism	Magnetic fastening elements can upset measuring instruments. Magnetic parts attract metallic dust. Other corrosion problems occur.
High resistance to elevated temperatures	The Chromating of galvanised, chromated fastening elements deteriorates after 80°C. Corrosion resistance falls considerably.
The screws and nuts are bright and always easy to assemble	If the thickness of the coating of galvanised screw is excessive, the element can jam on assembly.
No problems during maintenance work	Rusting screws and nuts are difficult to loosen. It is sometimes necessary to damage them, which is generally problematic. Elements of the construction are often damaged.

Disclaimer : All the text carries information to give an understanding towards stainless steel, and does not impose any claim or responsibility of any kind whatsoever towards the manufacturer. Complete care has been taken to include maximum details in all respects. Any omission on our part shall be pardonable.

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.....working for a brighter tomorrow with stainless steel



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