CATALOG
14

Section R

SPAENAUR

Fasteners Right Now®

CATALOG
14

SPAENAUR CATALOG 14

P: 1-800-265-8772 F: 1-888-252-6380 service@spaenaur.com

Reference & Conversion Charts

Tableaux de référence et de conversion

Inch & Metric Comparative Chart	Inch & Metric	R2	Pouce et métrique	Tableau comparatif des dimensions impériales et métriques
Inch & Metric Conversion Chart	Inch & Metric	R3	Pouce et métrique	Tableau de conversion des dimensions impériales et métriques
Fraction/Decimal Equivalents	Inch	R5	Pouce	Équivalences fractions/décimales
Inch & Metric Torque Conversion Chart	Inch & Metric	R6	Pouce et métrique	Tableau de conversion des valeurs de serrage impériales et métriques
Inch & Metric Tension Loads; Tightening Torques	Inch & Metric	R7	Pouce et métrique	Charges de tension; couples de serrage impériaux et métriques
Inch & Metric Thread Size Comparison Chart	Inch & Metric	R8	Pouce et métrique	Tableau de comparaison des diamètres de filets impériales et métriques
Inch Head Dimension Chart	Inch	R10	Pouce	Tableau des dimensions des têtes de vis impériales
Metric Head Dimension Chart	Metric	R11	Métrique	Tableau des dimensions des têtes de vis métriques
Tapping Screw Selector Guide	Inch	R12	Pouce	Guide de sélection des vis autotaraudeuses
Tapping Screw Recommended Drill & Hole Size	Inch	R13	Pouce	Diamètres recommandés des forets et des trous pour vis autotaraudeuses
Thread Cutting Screw Recommended Hole Size	Inch	R14	Pouce	Dimensions recommandées des trous de vis à filets coupants
Corrosion Guide	Inch	R15	Pouce	Guide de corrosion
Natural & Synthetic Rubber Selection Guide	Inch	R19	Pouce	Guide de sélection des caoutchoucs naturels et synthétiques
Plastic Properties Chart	Inch	R20	Pouce	Tableau des propriétés des plastiques
DIN / ISO Illustrated Index		R21		Index illustré DIN / ISO
DIN / ISO Cross Reference		R31		Référence croisée DIN / ISO

R

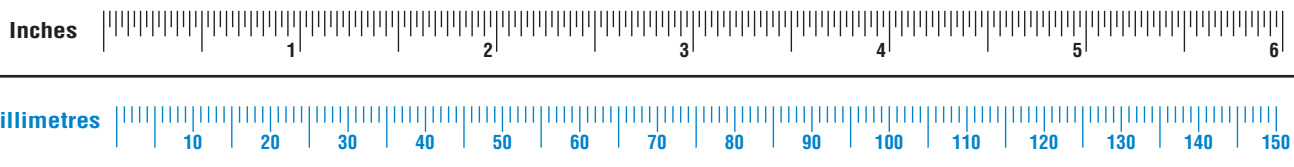
P: 1-800-265-8772 F: 1-888-252-6380 service@spaenaur.com

Comparisons are for size only. Do not substitute without proper engineering evaluation.

GAUGE or DIAMETER	DECIMAL (INCHES)	MILLIMETRES
No. 0000	0.021	.53
No. 000	0.034	.86
No. 00	0.047	1.19
No. 0	0.060	1.524
No. 1	0.073	1.854
No. 2	0.086	2.184
No. 3	0.099	2.515
No. 4	0.112	2.845
No. 5	0.125	3.175
No. 6	0.138	3.505
No. 8	0.164	4.166
No. 10	0.190	4.826
No. 12	0.216	5.484

FASTENER COMPARISON CHART

INCH		METRIC
INCH EQUIVALENT		METRIC SIZE - PITCH
UNC	UNF	ISO and IFI RECOMMENDED
1-64	1-72	M2 x 0.4
3-48	3-56	M2.5 x 0.45
4-40	4-48	M3 x 0.5
6-32	6-40	M3.5 x 0.6
8-32	8-36	M4 x 0.7
10-24	10-32	M5 x 0.8
1/4-20	1/4-28	M6 x 1
5/16-18	5/16-24	M8 x 1.25
3/8-16	3/8-24	M10 x 1.5
7/16-14	7/16-20	M12 x 1.75
1/2-13	1/2-20	M14 x 2
5/8-11	5/8-18	M18 x 2
3/4-10	3/4-16	M20 x 2.5
1-8	1-12	M24 x 3
1-1/4-7	1-1/8-12	M30 x 3.5
1-1/2-6	1-1/4-12	M36 x 4



P: 1-800-265-8772 F: 1-888-252-6380 service@spaenaur.com

Fractions, Decimals and Millimetres

Inches Fractions	Inches Decimals	MM	Inches Fractions	Inches Decimals	MM	Inches Fractions	Inches Decimals	MM	Inches Fractions	Inches Decimals	MM
-	.0004	.01	25/32	.781	19.844	-	2.165	55.	3-11/16	3.6875	93.663
-	.004	.10	-	.7874	20.	2-3/16	2.1875	55.563	-	3.7008	94.
-	.01	.25	51/64	.797	20.241	-	2.2047	56.	3-23/32	3.719	94.456
1/64	.0156	.397	**13/16**	.8125	20.638	2-7/32	2.219	56.356	-	3.7401	95.
-	.0197	.50	-	.8268	21.	-	2.244	57.	3-3/4	3.750	95.250
-	.0295	.75	53/64	.828	21.034	2-1/4	2.250	57.150	-	3.7795	96.
1/32	.03125	.794	27/32	.844	21.431	2-9/32	2.281	57.944	3-25/32	3.781	96.044
-	.0394	1.	55/64	.859	21.828	-	2.2835	58.	3-13/16	3.8125	96.838
3/64	.0469	1.191	-	.8661	22.	2-5/16	2.312	58.738	-	3.8189	97.
-	.059	1.5	**7/8**	.875	22.225	-	2.3228	59.	3-27/32	3.844	97.631
1/16	.0625	1.588	57/64	.8906	22.622	2-11/32	2.344	59.531	-	3.8583	98.
5/64	.0781	1.984	-	.9055	23.	-	2.3622	60.	3-7/8	3.875	98.425
-	.0787	2.	29/32	.9062	23.019	2-3/8	2.375	60.325	-	3.8976	99.
3/32	.094	2.381	59/64	.922	23.416	-	2.4016	61.	3-29/32	3.9062	99.219
-	.0984	2.5	**15/16**	.9375	23.813	2-13/32	2.406	61.119	-	3.9370	100.
7/64	.109	2.778	-	.9449	24.	2-7/16	2.438	61.913	3-15/16	3.9375	100.013
-	.1181	3.	61/64	.953	24.209	-	2.4409	62.	3-31/32	3.969	100.806
1/8	.125	3.175	31/32	.969	24.606	2-15/32	2.469	62.706	-	3.9764	101.
-	.1378	3.5	-	.9843	25.	-	2.4803	63.	**4**	4.000	101.600
9/64	.141	3.572	63/64	.9844	25.003	**2-1/2**	2.500	63.500	4-1/16	4.062	103.188
5/32	.156	3.969	**1**	1.000	25.400	-	2.5197	64.	4-1/8	4.125	104.775
-	.1575	4.	-	1.0236	26.	2-17/32	2.531	64.294	-	4.1338	105.
11/64	.172	4.366	1-1/32	1.0312	26.194	-	2.559	65.	4-3/16	4.1875	106.363
-	.177	4.5	1-1/16	1.062	26.988	2-9/16	2.562	65.088	4-1/4	4.250	107.950
3/16	.1875	4.763	-	1.063	27.	2-19/32	2.594	65.881	4-5/16	4.312	109.538
-	.1969	5.	1-3/32	1.094	27.781	-	2.5984	66.	-	4.3307	110.
13/64	.203	5.159	-	1.1024	28.	2-5/8	2.625	66.675	4-3/8	4.375	111.125
-	.2165	5.5	1-1/8	1.125	28.575	-	2.638	67.	4-7/16	4.438	112.713
7/32	.219	5.556	-	1.1417	29.	2-21/32	2.656	67.469	**4-1/2**	4.500	114.300
15/64	.234	5.953	1-5/32	1.156	29.369	-	2.6772	68.	-	4.5275	115.
-	.2362	6.	-	1.1811	30.	2-11/16	2.6875	68.263	4-9/16	4.562	115.888
1/4	.250	6.350	1-3/16	1.1875	30.163	-	2.7165	69.	4-5/8	4.625	117.475
-	.2559	6.5	1-7/32	1.219	30.956	2-23/32	2.719	69.056	4-11/16	4.6875	119.063
17/64	.2656	6.747	-	1.2205	31.	2-3/4	2.750	69.850	-	4.7244	120.
-	.2756	7.	**1-1/4**	1.250	31.750	-	2.7559	70.	4-3/4	4.750	120.650
9/32	.281	7.144	-	1.2598	32.	2-25/32	2.781	70.6439	4-13/16	4.8125	122.238
-	.2953	7.5	1-9/32	1.281	32.544	-	2.7953	71.	4-7/8	4.875	123.825
19/64	.297	7.541	-	1.2992	33.	2-13/16	2.8125	71.4376	-	4.9212	125.
5/16	.3125	7.938	1-5/16	1.312	33.338	-	2.8346	72.	4-15/16	4.9375	125.413
-	.315	8.	-	1.3386	34.	2-27/32	2.844	72.2314	**5**	5.000	127.000
21/64	.328	8.334	1-11/32	1.344	34.131	-	2.8740	73.	-	5.1181	130.
-	.335	8.5	1-3/8	1.375	34.925	2-7/8	2.875	73.025	5-1/4	5.250	133.350
11/32	.344	8.731	-	1.3779	35.	2-29/32	2.9062	73.819	**5-1/2**	5.500	139.700
-	.3543	9.	1-13/32	1.406	35.719	-	2.9134	74.	-	5.5118	140.
23/64	.359	9.128	-	1.4173	36.	2-15/16	2.9375	74.613	5-3/4	5.750	146.050
-	.374	9.5	1-7/16	1.438	36.513	-	2.9527	75.	-	5.9055	150.
3/8	.375	9.525	-	1.4567	37.	2-31/32	2.969	75.406	**6**	6.000	152.400
25/64	.391	9.922	1-15/32	1.469	37.306	-	2.9921	76.	6-1/4	6.250	158.750
-	.3937	10.	-	1.4961	38.	**3**	3.000	76.200	-	6.2992	160.
13/32	.406	10.319	**1-1/2**	1.500	38.100	3-1/32	3.0312	76.994	**6-1/2**	6.500	165.100
-	.413	10.5	1-17/32	1.531	38.894	-	3.0315	77.	-	6.6929	170.
27/64	.422	10.716	-	1.5354	39.	3-1/16	3.062	77.788	6-3/4	6.750	171.450
-	.4331	11.	1-9/16	1.562	39.688	-	3.0709	78.	**7**	7.000	177.800
7/16	.438	11.113	-	1.5748	40.	3-3/32	3.094	78.581	-	7.0866	180.
29/64	.453	11.509	1-19/32	1.594	40.481	-	3.1102	79.	-	7.4803	190.
15/32	.469	11.906	-	1.6142	41.	3-1/8	3.125	79.375	7-1/2	7.500	190.500
-	.4724	12.	1-5/8	1.625	41.275	-	3.1496	80.	-	7.8740	200.
31/64	.484	12.303	-	1.6535	42.	3-5/32	3.156	80.169	**8**	8.000	203.200
-	.492	12.5	1-21/32	1.6562	42.069	3-3/16	3.1875	80.963	-	8.2677	210.
1/2	.500	12.700	1-11/16	1.6875	42.863	-	3.1890	81.	8-1/2	8.500	215.900
-	.5118	13.	-	1.6929	43.	3-7/32	3.219	81.756	-	8.6614	220.
33/64	.5156	13.097	1-23/32	1.719	43.656	-	3.2283	82.	**9**	9.000	228.600
17/32	.531	13.494	-	1.7323	44.	3-1/4	3.250	82.550	-	9.0551	230.
35/64	.547	13.891	**1-3/4**	1.750	44.450	-	3.2677	83.	-	9.4488	240.
-	.5512	14.	-	1.7717	45.	3-9/32	3.281	83.344	9-1/2	9.500	241.300
9/16	.563	14.288	1-25/32	1.781	45.244	-	3.3071	84.	-	9.8425	250.
-	.571	14.5	-	1.8110	46.	3-5/16	3.312	84.1377	**10**	10.000	254.001
37/64	.578	14.684	1-13/16	1.8125	46.038	3-11/32	3.344	84.9314	-	10.2362	260.
-	.5906	15.	1-27/32	1.844	46.831	-	3.3464	85.	-	10.6299	270.
19/32	.594	15.081	-	1.8504	47.	3-3/8	3.375	85.725	**11**	11.000	279.401
39/64	.609	15.478	1-7/8	1.875	47.625	-	3.3858	86.	-	11.0236	280.
5/8	.625	15.875	-	1.8898	48.	3-13/32	3.406	86.519	-	11.4173	290.
-	.6299	16.	1-29/32	1.9062	48.419	-	3.4252	87.	-	11.8110	300.
41/64	.6406	16.272	-	1.9291	49.	3-7/16	3.438	87.313	**12**	12.000	304.801
-	.6496	16.5	1-15/16	1.9375	49.213	-	3.4646	88.	13	13.000	330.201
21/32	.656	16.669	-	1.9685	50.	3-15/32	3.469	88.106	-	13.7795	350.
-	.6693	17.	1-31/32	1.969	50.006	**3-1/2**	3.500	88.900	14	14.000	355.601
43/64	.672	17.066	**2**	2.000	50.800	-	3.5039	89.	15	15.000	381.001
11/16	.6875	17.463	-	2.0079	51.	3-17/32	3.531	89.694	-	15.7480	400.
45/64	.703	17.859	2-1/32	2.03125	51.594	-	3.5433	90.	16	16.000	406.401
-	.7087	18.	-	2.0472	52.	3-9/16	3.562	90.4877	17	17.000	431.801
23/32	.719	18.256	2-1/16	2.062	52.388	-	3.5827	91.	-	17.7165	450.
-	.7283	18.5	-	2.0866	53.	3-19/32	3.594	91.281	18	18.000	457.201
47/64	.734	18.653	2-3/32	2.094	53.181	-	3.622	92.	19	19.000	482.601
-	.7480	19.	2-1/8	2.125	53.975	3-5/8	3.625	92.075	-	19.6850	500.
3/4	.750	19.050	-	2.126	54.	3-21/32	3.656	92.869	20	20.000	508.001
49/64	.7656	19.447	2-5/32	2.156	54.769	-	3.6614	93.			

METRIC TABLES

LINEAR : One METRE (m) = 10 decimetre (dm) = 100 centimetre (cm) = 1000 millimetres (mm)
1000 metres = One kilometre (km)

SQUARE : One SQUARE METRE (m^2) = 100 sq. decimetres (dm^2) = 10000 sq. centimetres (cm^2) = 1000 000 sq. millimetres (mm^2)

CUBIC : One CUBIC METRE (m^3) = 1000 cu. decimetre (dm^3) = 1000 000 cu. centimetres (cm^3)

CAPACITY : One LITRE (L) = 10 decilitres (dL) = 1000 millilitres (mL)
100 litres = One hectolitre (hL)

WEIGHT : One KILOGRAM (kg) = 100 decagrams (dkg) = 1000 grams (g)
100 kilos = One metric cent (q)
1000 kilos = One ton (t)

PRESSURE : KILO PER SQUARE CENTIMETRE (kg/cm^2)
One kilo per sq. centimetre = One ATMOSPHERE (atm)

TEMPERATURE : CENTIGRADE degree (°C) = CELCIUS degree (°C)

METRIC CONVERSION EQUIVALENTS

LINEAR

INCH to METRIC			METRIC to INCH		
1 inch	=	25.400 millimetres	1 millimetre	=	.0393700 inches
1 inch	=	2.540 centimetres	1 centimetre	=	.393700 inches
1 foot	=	304.800 millimetres	1 metre	=	39.3700 inches
1 foot	=	30.480 centimetres	1 metre	=	3.2808 feet
1 foot	=	0.3048 metres	1 metre	=	1.0936 yards
1 yard	=	91.4400 centimetres	1 kilometre	=	.62137 miles
1 yard	=	0.9144 metres			
1 mile	=	1.609.35 metres			
1 mile	=	1.609 kilometres			

AREA

SQ. INCH to METRIC			METRIC to SQ. INCH		
1 sq. inch	=	645.16 sq. millimetres	1 sq. millimetre	=	.00155 sq. inches
1 sq. inch	=	6.4516 sq. centimetres	1 sq. centimetre	=	.1550 sq. inches
1 sq. foot	=	929.00 sq. centimetres	1 sq. metre	=	10.7640 sq. feet
1 sq. foot	=	.0929 sq. metres	1 sq. metre	=	1.196 sq. yard
1 sq. yard	=	.836 sq. metres	1 sq. kilometre	=	.38614 sq. miles
1 sq. mile	=	2.5889 sq. kilometres			

CUBIC

CU. INCH to METRIC			METRIC to CU. INCH		
1 cu. inch	=	16.387 cu. centimetres	1 cu. centimetre	=	.0610 cu. inches
1 cu. foot	=	.02832 cu. metres	1 cu. metre	=	35.314 cu. feet
1 cu. yard	=	.765 cu. metres	1 cu. metre	=	1.308 cu. yards

CAPACITY

IMPERIAL to METRIC			METRIC to IMPERIAL		
1 fluid ounce	=	28.413 millilitres	1 millilitre	=	0.035195 fluid oz.
1 fluid ounce	=	0.02841 litres	1 centilitre	=	0.35195 fluid oz.
1 pint	=	0.56826 litres	1 decilitre	=	3.5195 fluid oz.
1 quart	=	1.13652 litres	1 litre	=	0.88 quarts
1 gallon	=	4.546 litres	1 hectolitre	=	21.9969 gallons

WEIGHT

AVOIR DUPOIS to METRIC			METRIC to AVOIR DUPOIS		
1 grain	=	64.7989 milligrams	1 gram	=	15.432 grains
1 ounce	=	28.35 grams	1 dekogram	=	.353 ounces
1 pound	=	.4536 kilograms	1 kilogram	=	2.2046 pounds
1 short ton (2000 lbs.)	=	907.200 kilograms	1 metric cent	=	220.46 pounds
1 short ton (2000 lbs.)	=	9.072 metric cents	1 ton	=	2204.6 pounds
1 short ton (2000 lbs.)	=	.9072 ton	1 ton	=	1.102 short tons

PRESSURE

POUNDS/INCHES to METRIC			METRIC to POUNDS/INCHES		
1 pound per square inch	=	.0703 kilogram per square centimetre	1 kilogram/sq. centimetre	=	14.223 pounds/sq. inch
1 pound per square inch	=	.0703 atmosphere (metric)	1 kilogram/sq. centimetre	=	1 atmosphere

TEMPERATURE

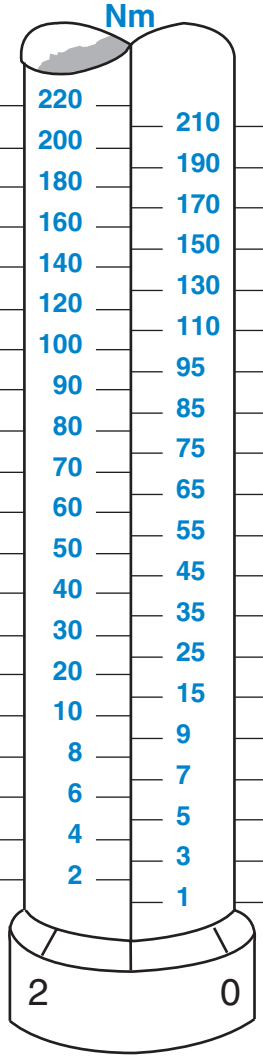
FAHRENHEIT to CELSIUS	CELSIUS to FAHRENHEIT
(_°F minus 32°) x .556 = _°Celsius	(1.8 x _°C) plus 32° = _°Fahrenheit

1/64	.015625
1/32	.03125
3/64	.046875
1/16	.0625
5/64	.078125
3/32	.09375
7/64	.109375
1/8	.125
9/64	.140625
5/32	.15625
11/64	.171875
3/16	.1875
13/64	.203125
7/32	.21875
15/64	.234375
1/4	.25
17/64	.265625
9/32	.28125
19/64	.296875
5/16	.3125
21/64	.328125
11/32	.34375
23/64	.359375
3/8	.375
25/64	.390625
13/32	.40625
27/64	.421875
7/16	.4375
29/64	.453125
15/32	.46875
31/64	.484375
1/2	.5
33/64	.515625
17/32	.53125
35/64	.546875
9/16	.5625
37/64	.578125
19/32	.59375
39/64	.609375
5/8	.625
41/64	.640625
21/32	.65625
43/64	.671875
11/16	.6875
45/64	.703125
23/32	.71875
47/64	.734375
3/4	.75
49/64	.765625
25/32	.78125
51/64	.796875
13/16	.8125
53/64	.828125
27/32	.84375
55/64	.859375
7/8	.875
57/64	.890625
29/32	.90625
59/64	.921875
15/16	.9375
61/64	.953125
31/32	.96875
63/64	.984375
1	1

Conversion Chart
Torque Values

ft./lbs.	Nm
1	1.4
2	2.7
3	4.1
4	5.4
5	6.8
6	8.1
7	9.5
8	10.9
9	12.2
10	13.6
15	20.4
20	27.1
25	33.9
30	40.7
35	47.5
40	54.3
45	61.1
50	67.8
60	81.4
70	95.0
80	108.5
90	122.1
100	135.6
120	162.7
140	190.0
160	217.0
180	244.1
200	271.2

kpm	ft./lbs.	Nm	ft./lbs.	kpm
22.4	162.1	220		
20.4	147.5	200		
18.4	133.1	180		
16.3	117.9	160		
14.3	103.4	140		
12.2	88.3	120		
10.2	73.7	100		
9.2	66.6	90		
8.2	59.3	80		
7.1	51.4	70		
6.1	44.2	60		
5.1	36.9	50		
4.1	29.7	40		
3.1	22.4	30		
2.1	15.2	20		
1.0	7.3	10		
0.8	5.8	8		
0.6	4.4	6		
0.4	2.9	4		
0.2	1.5	2		
		210	154.8	21.4
		190	140.3	19.4
		170	125.2	17.3
		150	110.7	15.3
		130	96.2	13.3
		110	81.1	11.2
		95	70.2	9.7
		85	62.9	8.7
		75	55.7	7.7
		65	47.8	6.6
		55	40.5	5.6
		45	33.3	4.6
		35	26.1	3.6
		25	18.8	2.6
		15	10.9	1.5
		9	6.6	0.9
		7	5.1	0.7
		5	3.7	0.5
		3	2.2	0.3
		1	0.7	0.1



1 Nm ≥ **0.1019 kpm**
1 kpm ≥ **9.807 Nm**
1 in-lbs = **.113 Nm**

1 ft/lbs. ≥ **1.3569 Nm**
1 Nm ≥ 0.7370 ft./lbs.
1 Nm = 8.9 in-lbs

Remarks

During continuous operation with Reversible Ratchet and square drive Insert Tools the max. torque values are limited as follows: square drive 1/4" max. **40 Nm**, 3/8" max. **80 Nm** and 1/2" max. **300 Nm**.
These values depend on the quality of the tool.

The max. torque values of Open End-, Flare Nut- and Box Wrenches depend on respective wrench size (DIN 899) and can be smaller than the max. torque value of the tool in operation.

Torque Wrench to be reset to smallest value after operation!

GRADE 5 Coarse Thread				GRADE 8 Coarse Thread			
Size	Clamp Load	Plain (ft. lbs.)	Plated	Size	Clamp Load	Plain (ft. lbs.)	Plated (ft. lbs.)
1/4-20 (.250)	2025	8	76 in lbs.	1/4-20 (.250)	2850	12	9
5/16-18 (.3125)	3338	17	13 ft lbs.	5/16-18 (.3125)	4725	25	18
3/8-16 (.375)	4950	31	23 ft lbs.	3/8-16 (.375)	6975	44	33
7/16-14 (.4375)	6788	50	37 ft lbs.	7/16-14 (.4375)	9600	70	52
1/2-13 (.500)	9075	76	57 ft lbs.	1/2-13 (.500)	12750	106	80
9/16-12 (.5625)	11625	109	82 ft lbs.	9/16-12 (.5625)	16350	153	115
5/8-11 (.625)	14400	150	112 ft lbs.	5/8-11 (.625)	20325	212	159
3/4-10 (.750)	21300	266	200 ft lbs.	3/4-10 (.750)	30075	376	282
7/8-9 (.875)	29475	430	322 ft lbs.	7/8-9 (.875)	41550	606	454
1-8 (1.000)	38625	644	483 ft lbs.	1-8 (1.000)	54525	909	682
1 1/8-7 (1.125)	42375	794	596 ft lbs.	1 1/8-7 (1.125)	68700	1288	966
1 1/4-7 (1.250)	53775	1120	840 ft lbs.	1 1/4-7 (1.250)	87225	1817	1363
1 3/8-6 (1.375)	64125	1470	1102 ft lbs.	1 3/8-6 (1.375)	103950	2382	1787
1 1/2-6 (1.500)	78000	1950	1462 ft lbs.	1 1/2-6 (1.500)	126450	3161	2371

GRADE 5 Fine Thread				GRADE 8 Fine Thread			
Size	Clamp Load	Plain (ft. lbs.)	Plated	Size	Clamp Load	Plain (ft. lbs.)	Plated (ft. lbs.)
1/4-28 (.250)	2325	10	87 in lbs.	1/4-28 (.250)	3263	14	10
5/16-24 (.3125)	3675	19	14 ft lbs.	5/16-24 (.3125)	5113	27	20
3/8-24 (.375)	5588	35	26 ft lbs.	3/8-24 (.375)	7875	49	37
7/16-20 (.4375)	7575	55	41 ft lbs.	7/16-20 (.4375)	10650	78	58
1/2-20 (.500)	10200	85	64 ft lbs.	1/2-20 (.500)	14400	120	90
9/16-18 (.5625)	12975	122	91 ft lbs.	9/16-18 (.5625)	18300	172	129
5/8-18 (.625)	16350	170	128 ft lbs.	5/8-18 (.625)	23025	240	180
3/4-16 (.750)	23775	297	223 ft lbs.	3/4-16 (.750)	33600	420	315
7/8-14 (.875)	32475	474	355 ft lbs.	7/8-9 (.875)	45825	668	501
1-12 (1.000)	42300	705	529 ft lbs.	1-12 (1.000)	59700	995	746
1-14 (1.000)	32275	721	541 ft lbs.	1-14 (1.000)	61125	1019	764
1 1/8-12 (1.125)	47475	890	668 ft lbs.	1 1/8-12 (1.125)	77025	1444	1083
1 1/4-12 (1.250)	59550	1241	930 ft lbs.	1 1/4-12 (1.250)	96600	2012	1509
1 3/8-12 (1.375)	72975	1672	1254 ft lbs.	1 3/8-12 (1.375)	118350	2712	2034
1 1/2-12 (1.500)	87750	2194	1645 ft lbs.	1 1/2-17 (1.500)	142275	3557	2668

Metric Torque Table						
Property Class	8.8		10.9		12.9 Socket	
Minimum Tensile Strength Mpa	M6-M16:800 M20-M30:830		1040		1220	
Nominal Size and Thread Pitch	Bolt Torque Specs in Foot Pounds or (Inch Pounds)					
	Plain	Plated	Plain	Plated	Plain	Plated
M5 x 0.80	(54)	(41)	(78)	(59)	(91)	(68)
M6 x 1.00	(92)	(69)	(133)	(99)	(156)	(116)
M7 x 1.00	(156)	(116)	(222)	(167)	(260)	(195)
M8 x 1.25	(225)	(169)	(333)	(242)	(377)	(284)
M10 x 1.50	37	28	53	40	62	47
M12 x 1.75	65	49	93	69	108	81
M14 x 2.00	104	78	148	111	173	130
M16 x 2.00	161	121	230	172	269	202
M18 x 2.50	222	167	318	238	372	279
M20 x 2.50	314	235	449	337	525	394
M22 x 2.50	428	321	613	460	716	537
M24 x 3.00	543	407	776	582	908	681
M27 x 3.00	796	597	1139	854	1331	998
M30 x 3.50	1079	809	1543	1158	1804	1353
M33 x 3.50	1468	1101	2101	1576	2455	1842
M36 x 4.00	1886	1415	2699	2024	3154	2366

This table is based on a torque coefficient, K=0.20 for non-plated steel fasteners and K=0.15 for plated fasteners. These Figures represent an estimate of torque (torque being the measurement of friction, not tension) required to induce given preload (clamp load) in a bolt for non-critical applications only. For critical or special applications where greater control is desired this should be experimentally determined. This applies to washer faced or double chamfered hex nuts (or bolts, if bolt is torqued) having a width across flats of approximately 1.5 times the nominal diameter and having threads free of interference. Because of the many interrelated variables that directly or indirectly affect friction, such as surface texture, type of coating or finish, lubrication, speed of tightening, human error, etc., it is possible to experience as much as ±25% deviation in preload (clamp load) with the use of a torque wrench

THREAD SIZE COMPARISON CHART

Comparisons are for size only. Do not substitute without proper engineering evaluation.

Major Dia.		NORTH AMERICAN						METRIC			BRITISH				
		Dia. Size Gauge	No. of Threads/Inch					Dia.	Thread Pitch in mm		Dia. Size Gauge	No. of Threads/Inch			
Inch	mm		UNC	UNF	UNEF	UNM	NPT	mm	Coarse	Fine		BA	BSW	BSF	BSP
.0118	0.30	0.30 mm				318									
.0138	0.35	0.35 mm				282									
.0157	0.40	0.40 mm				254									
.0177	0.45	0.45 mm				254									
.0189	0.48										20	211-3/4			
.0197	0.50	0.50 mm				203									
.0209	0.53	0000		160											
.0213	0.54										19	181-1/2			
.0217	0.55	0.55 mm				203									
.0236	0.60	0.60 mm				169									
.0244	0.62										18	169-1/4			
.0276	0.70	0.70 mm				145					17	149-1/2			
.0311	0.79										16	133-3/4			
.0315	0.80	0.80 mm				127									
.0340	0.86	000		120											
.0354	0.90	0.90 mm				113					15	121			
.0394	1.0	1.00 mm				102		M1	0.25	0.2	14	110-1/2			
.0433	1.10	1.10mm				102									
.0470	1.19	00		90	96										
.0472	1.20	1.20 mm				102		M1.2	0.25	0.2	13	101-1/2			
.0512	1.30										12	90-3/4			
.0551	1.40	1.40 mm				85		M1.4	0.3	0.2					
.0591	1.50							M1.5	0.3		11	82			
.0600	1.52	0		80											
.0629	1.60							M1.6	0.35	0.2					
.0669	1.70							M1.7	0.35	0.2, 0.25	10	72-1/2			
.0709	1.80							M1.8	0.35	0.2					
.0730	1.85	1	64	72											
.0748	1.90										9	65			
.0787	2.00							M2	0.40	0.25, 0.35					
.0860	2.18	2	56	64											
.0866	2.20							M2.2	0.45		8	59			
.0906	2.30							M2.3	0.4	.025, 0.35					
.0984	2.50							M2.5	0.45	0.35	7	53			
.0990	2.51	3	48	56											
.1024	2.60							M2.6	0.45	0.25, 0.35					
.1102	2.80										6	48			
.1120	2.84	4	40	48											
.1181	3.00							M3	0.5	0.35					
.1250	3.18	5	40	44							1/8"		40		
.1260	3.20										5	43			
.1380	3.50	6	32	40				M3.5	0.6	0.35					
.1417	3.60										4	38-1/2			
.1575	4.00							M4	0.7	0.5					
.1614	4.10										3	34-3/4			
.1640	4.17	8	32	36											
.1772	4.50							M4.5	0.75						
.1850	4.70										2	31-3/4			
.1875	4.76										3/16"		24	32	
.1900	4.83	10	24	32											
.1969	5.00							M5	0.8	0.5					
.2087	5.30										1	28-1/4			
.2160	5.49	12	24	28	32										
.2188	5.56										7/32"			28	
.2362	6.00							M6	1.0	0.75	0	25-1/2			
.2500	6.35	1/4"	20	28	32						1/4"		20	26	
.2756	7.00							M7	1.0						
.2812	7.14										9/32"			26	
.3125	7.94	5/16"	18	24	32						5/16"		18	22	
.3125	7.94	1/16"					27								
.3150	8.00							M8	1.25	1.0					
.3543	9.00							M9	1.25						
.3750	9.53	3/8"	16	24	32						3/8"		16	20	
.3830	9.73										1/8"				28
.3937	10.00							M10	1.5	1.25					
.4050	10.29	1/8"					27								
.4331	11.00							M11	1.5	1.0					
.4375	11.11	7/16"	14	20	28						7/16"		14	18	
.4724	12.00							M12	1.75	1.25, 1.5					
.5000	12.70	1/2"	13	20	28						1/2"		12	16	
.5180	13.16										1/4"				19
.5400	13.72	1/4"					18								
.5512	14.00							M14	2.0	1.5					

R

Thread Size Comparison Chart continued from facing page. **Comparisons are for size only. Do not substitute without proper engineering evaluation.**

Major Dia.		NORTH AMERICAN						METRIC			BRITISH				
		Dia. Size Gauge	No. of Threads/Inch					Dia.	Thread Pitch in mm		Dia. Size Gauge	No. of Threads/Inch			
Inch	mm		UNC	UNF	UNEF	8UN	NPT	mm	Coarse	Fine		BA	BSW	BSF	BSP
.5625	14.29	9/16"	12	18	24						9/16"		12	16	
.6250	15.88	5/8"	11	18	24						5/8"		11	14	
.6299	16.00							M16	2.0	1.0, 1.5					
.6560	16.66										3/8"				19
.6750	17.15	3/8"					18								
.6875	17.46	11/16"			24						11/16"		11	14	
.7087	18.00							M18	2.5	1.5, 2.0					
.7500	19.05	3/4"	10	16	20										
.7874	20.00							M20	2.5	1.5, 2.0					
.8124	20.64	13/16"			20						13/16"		1	12	
.8250	20.96										1/2"				14
.8400	21.34	1/2"					14								
.8661	22.00							M22	2.5	1.5, 2.0					
.8750	22.23	7/8"	9	14	20						7/8"		9	11	
.9020	22.91										5/8"				14
.9375	23.81	15/16"			20										
.9449	24.00							M24	3.0	1.5, 2.0					
1.000	25.40	1"	8	12, 14	20	8					1"		8	10	
1.0236	26.00							M26		1.5					
1.0410	26.44										3/4"				14
1.0500	26.67	3/4"					14								
1.062	26.99	1-1/16"			18										
1.063	27.00							M27	3.0	1.5, 2.0					
1.125	28.55	1-1/8"	7	12	18	8					1-1/8"		7	9	
1.1811	30.00							M30	3.5	1.5, 2.0					
1.187	30.16	13/16"			18										
1.189	30.20										7/8"				14
1.250	31.75	1-1/4"	7	12	18	8					1-1/4"		7	9	
1.2598	32.00							M32		1.5, 2.0					
1.2992	33.00							M33	3.5	1.5, 2.0					
1.309	33.25										1"				11
1.3125	33.34	1-5/16"			18										
1.3150	33.40	1"					11-1/2								
1.375	34.93	1-3/8"	6	12	18	8					1-3/8"			8	
1.3780	35.00							M35	4.0	1.5					
1.4173	36.00							M36	4.0	1.5, 3.0					
1.4375	36.51	1-7/16"			18										
1.4920	37.90										1-1/8"				11
1.500	38.10	1-1/2"	6	12	18	8					1-1/2"		6	8	
1.5354	39.00							M39	4.0	2.0, 3.0					
1.5625	39.69	1-9/16"			18										
1.56748	40.00							M40		2.0, 3.0					
1.625	41.28	1-5/8"			18	8					1-5/8"			8	
1.6500	41.91										1-1/4"				11
1.6535	42.00							M42	4.5	3.0					
1.6600	42.16	1-1/4"					11-1/2								
1.6875	42.86	1-11/16"			18										
1.745	44.32										1-3/8"				11
1.750	44.45	1-3/4"	5			8					1-3/4"		5	7	
1.7717	45.00							M45	4.5	3.0					
1.875	47.62	1-7/8"				8									
1.8820	47.80										1-1/2"				11
1.8898	48.00							M48	5.0	3.0					
1.900	48.26	1-1/2"					11-1/2								
2.000	50.80	2"	4-1/2			8					2"		4-1/2	7	
2.0472	52.00							M52	5.0	3.0					
2.2047	56.00							M56	5.5	4.0					
2.250	57.15	2-1/4"	4-1/2			8					2-1/4"		4	6	
2.347	59.61										2"				11
2.3622	60.00							M60	5.5	4.0					
2.375	60.33	2"					11-1/2								
2.500	63.50	2-1/2"	4			8					2-1/2"		4	6	
2.5197	64.00							M64	6.0	4.0					
2.677	68.00							M68	6.0	4.0					
2.750	69.85	2-3/4"	4			8									
2.835	72.00							M72		6.0					
2.992	76.00							M76		6.0					
3.000	76.20	3"	4			8									
3.149	80.00							M80		6.0					
3.250	82.55	3-1/4"	4			8									
3.346	85.00							M85		6.0					
3.500	88.90	3-1/2"	4			8									
3.543	90.00							M90		6.0					
3.750	95.25	3-3/4"	4			8									
3.937	100.00							M100		6.0					
4.000	101.60	4"	4			8									

Inch Series Head Dimension Chart

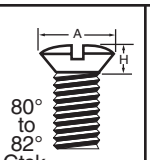
Tableau des dimensions des têtes de vis de série impériale

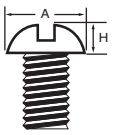
ASME B18.6.3 2013 For Reference Only

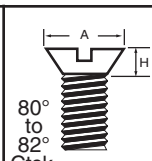
For Machine and Sheet Metal Screws with Slotted and Cross Recessed Drives.

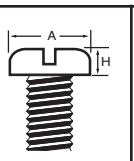
A= Head Dia. **H**= Overall Height of Head **A/F**= Across Flats

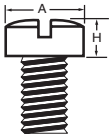
All Dimensions in Inches

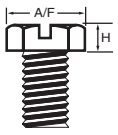












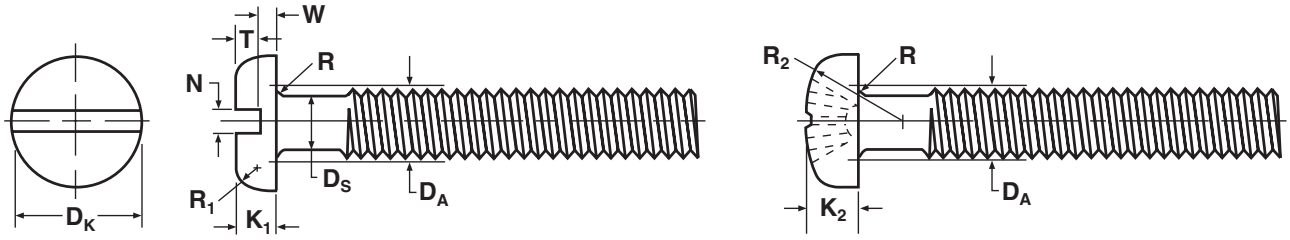
Nom. Screw DIA.		OVAL A	OVAL H	ROUND A	ROUND H	FLAT A	FLAT H	BINDING A	BINDING H	PAN A	PAN H	FILLISTER A	FILLISTER H	TRUSS A	TRUSS H	HEX A/F	HEX H
0000	Max.	–	–	0.041	0.022	0.040	0.011	0.046	0.014	0.042	0.016	0.038	0.025	0.049	0.014	–	–
(.021")	Min.	–	–	0.035	0.016	0.035	–	0.040	0.009	0.036	0.010	0.032	0.015	0.043	0.010	–	–
000	Max.	–	–	0.062	0.031	0.060	0.016	0.073	0.021	0.066	0.023	0.059	0.035	0.077	0.022	–	–
(.034")	Min.	–	–	0.056	0.025	0.055	–	0.067	0.015	0.060	0.017	0.053	0.027	0.071	0.018	–	–
00	Max.	0.093	0.042	0.089	0.045	0.087	0.028	0.098	0.028	0.090	0.032	0.082	0.047	0.106	0.030	–	–
(.047")	Min.	0.083	0.034	0.080	0.036	0.080	–	0.090	0.023	0.082	0.025	0.072	0.039	0.098	0.024	–	–
0	Max.	0.119	0.056	0.113	0.053	0.112	0.035	0.126	0.032	0.116	0.039	0.096	0.055	0.131	0.037	–	–
(.060")	Min.	0.099	0.041	0.099	0.043	0.096	–	0.119	0.026	0.104	0.031	0.083	0.047	0.119	0.029	–	–
1	Max.	0.146	0.068	0.138	0.061	0.137	0.043	0.153	0.041	0.142	0.046	0.118	0.066	0.164	0.045	0.125	0.044
(.073")	Min.	0.123	0.052	0.122	0.051	0.120	–	0.145	0.035	0.130	0.038	0.104	0.058	0.149	0.037	0.120	0.036
2	Max.	0.172	0.080	0.162	0.069	0.162	0.051	0.181	0.050	0.167	0.053	0.140	0.083	0.194	0.053	0.125	0.050
(.086")	Min.	0.147	0.063	0.146	0.059	0.144	–	0.171	0.043	0.155	0.045	0.124	0.066	0.180	0.044	0.120	0.040
3	Max.	0.199	0.092	0.187	0.078	0.187	0.059	0.208	0.059	0.193	0.060	0.161	0.095	0.226	0.061	0.188	0.055
(.099")	Min.	0.171	0.073	0.169	0.069	0.167	–	0.197	0.052	0.180	0.051	0.145	0.077	0.211	0.051	0.181	0.044
4	Max.	0.225	0.104	0.211	0.086	0.212	0.067	0.235	0.068	0.219	0.068	0.183	0.107	0.257	0.069	0.188	0.060
(.112")	Min.	0.195	0.084	0.193	0.075	0.191	–	0.223	0.061	0.205	0.058	0.166	0.088	0.241	0.059	0.181	0.049
5	Max.	0.252	0.116	0.236	0.095	0.237	0.075	0.263	0.078	0.245	0.075	0.205	0.120	0.289	0.078	0.188	0.070
(.125")	Min.	0.220	0.095	0.217	0.083	0.215	–	0.249	0.069	0.231	0.065	0.187	0.100	0.272	0.066	0.181	0.058
6	Max.	0.279	0.128	0.260	0.103	0.262	0.083	0.290	0.087	0.270	0.082	0.266	0.132	0.321	0.086	0.250	0.093
(.138")	Min.	0.244	0.105	0.240	0.091	0.238	–	0.275	0.078	0.256	0.072	0.208	0.111	0.303	0.074	0.244	0.080
8	Max.	0.332	0.152	0.309	0.120	0.287	0.100	0.344	0.105	0.322	0.096	0.270	0.156	0.384	0.102	0.250	0.110
(.164")	Min.	0.292	0.126	0.287	0.107	0.285	–	0.326	0.095	0.306	0.085	0.250	0.133	0.364	0.088	0.244	0.096
10	Max.	0.385	0.176	0.359	0.137	0.362	0.116	0.399	0.123	0.373	0.110	0.313	0.180	0.448	0.118	0.312	0.120
(.190")	Min.	0.340	0.148	0.334	0.123	0.333	–	0.378	0.112	0.357	0.099	0.292	0.156	0.425	0.103	0.305	0.105
12	Max.	0.438	0.200	0.408	0.153	0.412	0.132	0.454	0.141	0.425	0.125	0.357	0.205	0.511	0.134	0.312	0.155
(.216")	Min.	0.389	0.169	0.382	0.139	0.380	–	0.430	0.130	0.407	0.112	0.334	0.178	0.487	0.118	0.305	0.139
1/4"	Max.	0.507	0.232	0.472	0.175	0.477	0.153	0.525	.0165	0.492	0.144	0.414	0.237	0.573	0.150	0.375	0.190
(.250")	Min.	0.452	0.197	0.443	0.160	0.422	–	0.498	0.152	0.473	0.130	0.389	0.202	0.546	0.133	0.367	0.172
5/16"	Max.	0.635	0.290	0.590	0.216	0.597	0.191	0.656	0.209	0.615	0.178	0.518	0.295	0.698	0.183	0.500	0.230
(.313")	Min.	0.568	0.249	0.557	0.198	0.556	–	0.622	0.194	0.594	0.162	0.490	0.262	0.666	0.162	0.489	0.280
3/8"	Max.	0.762	0.347	0.708	0.256	0.717	0.230	0.788	0.253	0.740	0.212	0.622	0.355	0.823	0.215	0.562	0.295
(.375")	Min.	0.685	0.290	0.670	0.237	0.670	–	0.746	0.235	0.716	0.195	0.590	0.315	0.787	0.191	0.551	0.270
7/16"	Max.	0.812	0.345	0.750	0.328	0.760	0.223	–	–	0.863	0.247	0.625	0.368	0.948	0.248	–	–
(.438")	Min.	0.723	0.295	0.707	0.307	0.715	–	–	–	0.837	0.228	0.589	0.321	0.907	0.221	–	–
1/2"	Max.	0.875	0.354	0.813	0.355	0.815	0.223	–	–	0.987	0.281	0.750	0.412	1.073	0.280	–	–
(.500")	Min.	0.775	0.299	0.766	0.332	0.765	–	–	–	0.958	0.260	0.710	0.362	1.028	0.250	–	–
9/16"	Max.	1.000	0.410	0.938	0.410	0.932	0.260	–	–	1.041	0.315	0.812	0.466	1.198	0.312	–	–
(.563")	Min.	0.889	0.350	0.887	0.385	0.878	–	–	–	1.000	0.293	0.768	0.410	1.149	0.279	–	–
5/8"	Max.	1.125	0.467	1.000	0.438	1.050	0.298	–	–	1.172	0.350	0.875	0.521	1.323	0.345	–	–
(.625")	Min.	1.002	0.399	0.944	0.411	0.990	–	–	–	1.125	0.325	0.827	0.461	1.269	0.309	–	–
3/4"	Max.	1.375	0.578	1.250	0.547	1.285	0.372	–	–	1.435	0.419	1.000	0.612	1.573	0.410	–	–
(.750")	Min.	1.230	0.497	1.185	0.516	1.215	–	–	–	1.375	0.390	0.945	0.542	1.511	0.368	–	–
																Dimensions for hex regular slotted and unslotted head.	

R

Comparisons are for size only. Do not substitute without proper engineering evaluation.

All Dimensions in Millimetres	Slotted CHEESE DIN 84		Slotted PAN DIN 85		Slotted OVAL DIN 964		Slotted FLAT DIN 963		Unslotted HEX CAP DIN 933/931		Phillips FLAT DIN 965		Phillips OVAL DIN 966		Phillips RAISED CHEESE DIN 7985	
DIA.	**A**	**H**	**A**	**H**	**A**	**H**	**A**	**H**	**A**	**H**	**A**	**H**	**A**	**H**	**A**	**H**
M1	2	0.7			1.9	0.6	1.9	0.6								
M1.2	2.3	0.8			2.3	0.72	2.3	0.72								
M1.4	2.6	0.9			2.6	0.84	2.6	0.84								
M1.6	3	1			3	0.96	3	0.96	3.2	1.1	3	0.96	3	0.96	3.2	1.3
M1.7	3.2	1.1							3.5	1.2						
M1.8	3.4	1.2														
M2	3.8	1.3			3.8	1.2	3.8	1.2	4	1.4	3.8	1.2	3.8	1.2	4	1.6
M2.3	4.4	1.5							4.5	1.6						
M2.5	4.5	1.6			4.7	1.5	4.7	1.5	5	1.7	4.7	1.5	4.7	1.5	5	2
M2.6	5	1.7							5	1.8						
M3	5.5	2	6	1.8	5.6	1.65	5.6	1.65	5.5	2	5.6	1.65	5.6	1.65	6	2.4
M3.5	6	2.4	7	2.1	6.5	1.93	6.5	1.93	6	2.4	6.5	1.93	6.5	1.93	7	2.7
M4	7	2.6	8	2.4	7.5	2.2	7.5	2.2	7	2.8	7.5	2.2	7.5	2.2	8	3.1
M5	8.5	3.3	10	3	9.2	2.5	9.2	2.5	8	3.5	9.2	2.5	9.2	2.5	10	3.8
M6	10	3.9	12	3.6	11	3	11	3	10	4	11	3	11	3	12	4.6
M8	13	5	16	4.8	14.5	4	14.5	4	13	5.5	14.5	4	14.5	4	16	6
M10	16	6	20	6	18	5	18	5	17	7	18	5	18	5	20	7.5

MACHINE SCREWS - SLOTTED and PHILLIPS PAN HEAD
Head Style is to IFI 513, 1982



Nom Screw Size and Thread Pitch	D_S Body Dia.		D_K Head Dia.		K_1 Head Height Slotted Head		K_2 Head Height Phillips Head		R_1 Head Radius (Sltd.)	R_2 Head Radius (Phillips)	D_A Fillet Transition Dia.	R Fillet Radius	N Slot Width		T Slot Depth	W Unslotted Thickness
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Ref.	Max.	Min.	Max.	Min.	Min.	Min.
M2 x 0.4	2.00	1.65	4.0	3.7	1.3	1.1	1.6	1.4	0.8	3.2	2.6	0.1	0.7	0.5	0.5	0.4
M2.5 x 0.45	2.50	2.12	5.0	4.7	1.5	1.3	2.1	1.9	1.0	4.0	3.1	0.1	0.8	0.6	0.6	0.5
M3 x 0.5	3.00	2.58	5.6	5.3	1.8	1.6	2.4	2.2	1.2	5.0	3.5	0.1	1.0	0.8	0.7	0.7
M3.5 x 0.6	3.50	3.00	7.0	6.6	2.1	1.9	2.6	2.3	1.4	6.0	4.1	0.1	1.2	1.0	0.8	0.8
M4 x 0.7	4.00	3.43	8.0	7.6	2.4	2.2	3.1	2.8	1.6	6.5	4.7	0.2	1.5	1.2	1.0	0.9
M5 x 0.8	5.00	4.36	9.5	9.1	3.0	2.7	3.7	3.4	2.0	8.0	5.7	0.2	1.5	1.2	1.2	1.2
M6 x 1	6.00	5.21	12.0	11.5	3.6	3.3	4.6	4.3	2.5	10.0	6.8	0.3	1.9	1.6	1.4	1.4
M6.3 x 1	6.30	5.51	12.0	11.6	3.9	3.5	4.3	4.0	2.5	13	—	0.3	1.9	1.6	1.7	1.4
M8 x 1.25	8.00	7.04	16.0	15.5	4.8	4.5	6.0	5.6	3.2	13.0	9.2	0.4	2.3	2.0	1.9	1.9
M10 x 1.5	10.00	8.86	20.0	19.4	6.0	5.7	7.5	7.1	4.0	16.0	11.2	0.4	2.8	2.5	2.4	2.4

KIND OF MATERIAL	THREAD-FORMING				THREAD-ROLLING	THREAD-CUTTING					SELF DRILLING
	Type A and AB	Type B (Z)	Type C	Type U		Type F	Type BF	Type 1	Type 23	Type 25	TEKS®
ASME B18.6.3	A AB	B	C	U		F	BF	D	T	BT	
SHEET METAL .015" to .050" thick *(Steel, Brass, Aluminum, Monel, etc.)*											
SHEET STAINLESS STEEL .015" to .050" thick											
SHEET METAL .050" to .200" thick *(Steel, Brass, Aluminum, etc.)*											
STRUCTURAL STEEL .200" to 1/2" thick											
CASTINGS *(Aluminum, Magnesium, Zinc, Brass, Bronze, etc.)*											
CASTINGS *(Grey Iron, Malleable Iron, Steel, etc.)*											
FORGINGS *(Steel, Brass, Bronze, etc.)*											
PLASTICS: PLYWOOD, Resin Impregnated and Natural Woods											
PLASTICS: FIBERGLAS, etc.											
PLASTICS: PHENOL FORMALDEHYDE, Molded, Cast & Laminated											
PLASTICS: UREA FORMALDEHYDE and MELAMINE FORMALDEHYDE Molded											
PLASTICS: CELLULOSE ACETATES and NITRATES Acrylic and Styrene - Molded											
PLASTICS: NYLON and ACETEL, Molded											
PLASTICS: POLYCARBONATE and A.B.S. Molded											

TYPE DESIGNATIONS FOR TAPPING AND METALLIC DRIVE SCREWS

Thread-Forming

Type	Manuf.	ASME B18.6.3	Notes
	A	A	Being replaced by Type AB
	AB	AB	Type B with Gimlet Point
	B	B	
	BP	BP	Type B Thread with a Pointed Pilot
	C	C	
	SWAGE-FORM	SW	
	U	U	

Type	Manuf.	ASME B18.6.3	Notes
	F	F	Thread-Cutting
	BF	BF	
	1	D	
	23	T	
	25	BT	
	InFast	none	Self-Drilling
	Teks	none	
	TRS	TRS	Thread-Rolling

Note: We reserve the option to supply Type A Thread, wherever Type AB is shown in this catalog.

Performance in castings must be verified by testing in the actual casting

Diameter of Screw	IN SHEET STEEL: Thickness of Metal — No. of Gauge (U.S. Standard)	IN SHEET STEEL: Thickness of Metal — Thickness in Decimal Parts of an Inch	IN SHEET STEEL: Pierced Hole — Diameter Hole Required	IN SHEET STEEL: Drilled or Clean-Punched Hole — Diameter Hole Required	IN SHEET STEEL: Drilled or Clean-Punched Hole — Drill Size	IN SHEET ALUMINUM: Thickness of Metal — No. of Gauge (B. & S.)	IN SHEET ALUMINUM: Thickness of Metal — Thickness in Decimal Parts of an Inch	IN SHEET ALUMINUM: Pierced Hole — Diameter Hole Required	IN SHEET ALUMINUM: Drilled or Clean-Punched Hole — Diameter Hole Required	IN SHEET ALUMINUM: Drilled or Clean-Punched Hole — Drill Size	IN CASTINGS OF ALUMINUM, ZINC, WHITE METAL, ETC. — Diameter Hole Required	IN CASTINGS OF ALUMINUM, ZINC, WHITE METAL, ETC. — Drill Size
No. 2	28 26 24 22	.015" .018" .025" .031"		.063" .063" .067" .070"	No. 52 No. 52 No. 51 No. 50	22 20 18 16	.025" .031" .040" .050"		.063" .063" .063" .067"	No. 52 No. 52 No. 52 No. 51	.078"	No. 47
	20 18 16	.037" .050" .062"		.073" .073" .076"	No. 49 No. 49 No. 48	14	.064"		.070"	No. 50		
No. 4	28 26 24 22	.015" .018" .025" .031"	.086" .086" .093" .098"	.086" .086" .089" .093"	No. 44 No. 44 No. 43 No. 42	22 20 18 16	.025" .031" .040" .050"	.086" .093" .093"	.086" .086"	No. 44 No. 44 No. 44	.104"	No. 37
	20 18 16 14	.037" .050" .062" .078"	.100"	.093" .096" .099" .101"	No. 42 No. 41 No. 39 No. 38	14 12 10	.064" .080" .101"		.089" .089" .093"	No. 43 No. 43 No. 42		
No. 6	28 26 24 22 20	.015" .018" .025" .031" .037"	.106" .106" .106" .110" .110"	.104" .104" .106" .106" .110"	No. 37 No. 37 No. 36 No. 36 No. 35	22 20 18 16 14	.025" .031" .040" .050" .064"	.110" .110" .110" .113"	.104" .104" .104" .106"	No. 37 No. 37 No. 37 No. 36	.128"	No. 30
	18 16 14 12	.050" .062" .078" .109"		.111" .116" .120" .128"	No. 34 No. 32 No. 31 No. 30	12 10 8 6 1/4"	.080" .101" .128" .162" .250"		.110" .111" .113" .116" .120"	No. 35 No. 34 No. 33 No. 32 No. 31		
No. 7	26 24 22 20 18	.018" .025" .031" .037" .050"	.121" .121" .121" .121" .121"	.116" .116" .116" .116" .120"	No. 32 No. 32 No. 32 No. 32 No. 31	22 20 18 16 14	.025" .031" .040" .050" .064"	.121" .121" .121" .121"	.116" .116" .116" .120"	No. 32 No. 32 No. 32 No. 31	.144"	No. 27
	16 14 12	.062" .078" .109"		.128" .136" .140"	No. 30 No. 29 No. 28	12 10 8 6 1/4"	.080" .101" .128" .162" .250"		.128" .136" .136" .136" .140"	No. 30 No. 29 No. 29 No. 29 No. 28		
No. 8	26 24 22 20 18 16	.018" .025" .031" .037" .050" .062"	.131" .131" .131" .136" .140"	.116" .116" .116" .128" .136"	No. 32 No. 32 No. 32 No. 30 No. 29	22 20 18 16 14 12	.025" .031" .040" .050" .064" .080"	.120" .120" .131" .136"	.120" .128" .136" .140"	No. 31 No. 30 No. 29 No. 28	.152"	No. 24
	14 12 1/8" 10	.078" .109" .125" .140"		.140" .149" .149" .152"	No. 28 No. 25 No. 25 No. 24	10 8 6 1/4" 3/8"	.101" .128" .162" .250" .375"		.147" .149" .152" .152" .152"	No. 26 No. 25 No. 24 No. 24 No. 24		
No. 10	26 24 22 20 18 16	.018" .025" .031" .037" .050" .062"	.144" .144" .144" .147" .155"	.144" .144" .144" .144" .144" .152"	No. 27 No. 27 No. 27 No. 27 No. 27 No. 24	22 20 18 16 14 12	.025" .031" .040" .050" .064" .080"	.144" .144" .144" .144"	.144" .144" .144" .147"	No. 27 No. 27 No. 27 No. 26	.177"	No. 16
	14 12 1/8" 10 8	.078" .109" .125" .140" .171"		.157" .161" .169" .169" .173"	No. 22 No. 20 No. 18 No. 18 No. 17	10 8 6 1/4" 3/8"	.101" .128" .162" .250" .375"		.147" .154" .159" .166" .166"	No. 26 No. 23 No. 21 No. 19 No. 19		
No. 12	24 22 20 18 16 14	.025" .031" .037" .050" .062" .078"	.185" .185" .185" .185"	.166" .166" .166" .169" .177" .182"	No. 19 No. 19 No. 19 No. 18 No. 16 No. 14	22 20 18 16 14 12	.025" .031" .040" .050" .064" .080"	.161" .161" .161" .166"	.161" .166" .173"	No. 20 No. 19 No. 17	.199"	No. 8
	12 1/8" 10 8	.109" .125" .140" .171"		.185" .196" .196" .201"	No. 13 No. 9 No. 9 No. 7	10 8 6 1/4" 3/8"	.101" .128" .162" .250" .375"		.180" .182" .189" .193" .199"	No. 15 No. 14 No. 12 No. 10 No. 8		
No. 14	22 20 18 16 14 12	.031" .037" .050" .062" .078" .109"	.209" .209" .209"	.185" .185" .191" .199" .204" .209"	No. 13 No. 13 No. 11 No. 8 No. 6 No. 4	22 20 18 16 14 12	.025" .031" .040" .050" .064" .080"	.189" .189" .189" .199"	.199" .201"	No. 8 No. 7	.234"	15/64"
	1/8" 10 8 3/16" 6	.125" .140" .171" .187" .203"		.228" .228" .234" .234" .234"	No. 1 No. 1 15/64" 15/64" 15/64"	10 8 6 1/4" 3/8"	.101" .128" .162" .250" .375"		.204" .209" .213" .221" .228"	No. 6 No. 4 No. 3 No. 2 No. 1		

Thread Cutting Screws Approximate Hole Sizes for Steel Types D (1), F & T (23) Inch

Vis de coupe de filetage Tailles de trou approximatives pour les types d'acier D (1), F & T (23) Pouce

Screw Size / Thread per inch	Metal Thickness	IN STEEL Hole Diameter	IN STEEL Drill Size/ No	IN ALUMINUM ALLOY Hole Diameter	IN ALUMINUM ALLOY Drill Size/ No.
2-56	0.050	0.073	49	0.070	50
	0.060	0.073	49	0.073	49
	0.083	0.073	49	0.073	49
	0.109	0.073	49	0.073	49
	0.125	0.076	48	0.073	49
	0.140	0.076	48	0.073	49
3-48	0.050	0.081	46	0.078	5/64
	0.060	0.081	46	0.081	46
	0.083	0.082	45	0.082	45
	0.109	0.086	44	0.082	45
	0.125	0.086	44	0.082	45
	0.140	0.086	44	0.086	44
	0.187	0.089	43	0.086	44
4-40	0.050	0.089	43	0.089	43
	0.060	0.089	43	0.089	43
	0.083	0.094	42	0.089	43
	0.109	0.096	41	0.094	42
	0.125	0.098	40	0.094	42
	0.140	0.098	40	0.094	3/32
	0.187	0.102	38	0.098	40
5-40	0.050	0.106	36	0.102	38
	0.060	0.106	36	0.102	38
	0.083	0.106	36	0.104	37
	0.109	0.106	36	0.104	37
	0.125	0.109	7/64	0.106	36
	0.140	0.110	35	0.106	36
	0.187	0.116	32	0.110	35
	0.250	0.116	32	0.113	33
6-32	0.050	0.110	35	0.109	7/64
	0.060	0.113	33	0.109	7/64
	0.083	0.116	32	0.111	34
	0.109	0.116	32	0.113	33
	0.125	0.116	32	0.116	32
	0.140	0.120	31	0.116	32
	0.187	0.125	1/8	0.120	31
	0.250	0.125	1/8	0.125	1/8
8-32	0.050	0.136	29	0.136	29
	0.060	0.140	28	0.136	29
	0.083	0.140	28	0.136	29
	0.109	0.144	27	0.140	28
	0.125	0.144	27	0.140	28
	0.140	0.147	26	0.144	27
	0.187	0.150	25	0.147	26
	0.250	0.150	25	0.150	25
	0.312	0.150	25	0.150	25
10-24	0.050	0.152	24	0.150	25
	0.060	0.154	23	0.152	24
	0.083	0.161	20	0.154	23
	0.109	0.161	20	0.157	22
	0.125	0.166	19	0.159	21
	0.140	0.170	18	0.161	20
	0.187	0.173	17	0.166	19
	0.250	0.173	17	0.172	11/64
	0.312	0.173	17	0.173	17
	0.375	0.173	17	0.173	17
10-32	0.050	0.159	21	0.161	20
	0.060	0.166	19	0.161	20
	0.083	0.166	19	0.161	20
	0.109	0.170	18	0.166	19
	0.125	0.170	18	0.166	19
	0.140	0.170	18	0.166	19
	0.187	0.177	16	0.172	11/64
	0.250	0.177	16	0.177	16
	0.312	0.177	16	0.177	16
	0.375	0.177	16	0.177	16
12-24	0.060	0.180	15	0.177	16
	0.083	0.182	14	0.180	15
	0.109	0.188	3/16	0.182	14
	0.125	0.191	11	0.185	13
	0.140	0.191	11	0.188	3/16
	0.187	0.199	8	0.191	1
	0.250	0.199	8	0.199	8
	0.312	0.199	8	0.199	8
	0.375	0.199	8	0.199	8
	0.500	0.199	8	0.199	8
1/4"-20	0.083	0.213	3	0.206	5
	0.109	0.219	7/32	0.209	4
	0.125	0.221	2	0.213	3
	0.140	0.221	2	0.213	3
	0.187	0.228	1	0.221	2
	0.250	0.228	1	0.228	1
	0.312	0.228	1	0.228	1
	0.375	0.228	1	0.228	1
	0.500	0.228	1	0.228	1
1/4"-28	0.083	0.221	2	0.219	7/32
	0.109	0.228	1	0.221	2
	0.125	0.228	1	0.221	2
	0.140	0.234	A	0.221	2
	0.187	0.234	15/64	0.228	1
	0.250	0.234	15/64	0.234	15/64
	0.312	0.234	15/64	0.234	15/64
	0.375	0.234	15/64	0.234	15/64
	0.500	0.234	15/64	0.234	15/64
5/16"-18	0.109	0.277	J	0.266	H
	0.125	0.277	J	0.272	I
	0.140	0.281	9/32	0.272	I
	0.187	0.290	L	0.281	K
	0.250	0.290	L	0.290	L
	0.312	0.290	L	0.290	L
	0.375	0.290	L	0.290	L
	0.500	0.290	L	0.290	L
5/16"-24	0.109	0.290	L	0.281	K
	0.125	0.290	L	0.281	9/32
	0.140	0.290	L	0.281	9/3
	0.187	0.295	M	0.290	L
	0.250	0.295	M	0.295	M
	0.312	0.295	M	0.295	M
	0.375	0.295	M	0.295	M
	0.500	0.295	M	0.295	M
3/8"-16	0.125	0.339	R	0.328	21/64
	0.140	0.339	R	0.332	Q
	0.187	0.348	S	0.339	R
	0.250	0.358	T	0.348	S
	0.312	0.358	T	0.348	S
	0.375	0.358	T	0.348	S
	0.500	0.358	T	0.348	
3/8"-24	0.125	0.348	S	0.344	11/32
	0.140	0.348	S	0.344	11/32
	0.187	0.358	T	0.348	S
	0.250	0.358	T	0.358	T
	0.312	0.358	T	0.358	T
	0.375	0.358	T	0.358	T
	0.500	0.358	T	0.358	T

Decimals shown are standard drill sizes rounded to the nearest 0.001 inch.

R

CATALOG 14

SPAENAUR

Corrosion Guide

Buyers, metallurgists and engineers alike are continually faced with the question: "What material shall I use for this application?" This "Guide" is a helpful source of information in dealing with such questions.

It must be emphasized that while this guide provides useful basic information, it should not be regarded as the final word in choosing the best material for any given application. All environmental conditions should be carefully taken into account.

The input of most of the leading primary metal and plastic producers is reflected in this compilation. Where conflicting opinions were encountered, the lower corrosion rating has in each case been listed.

	Brass and Naval Bronze	Silicon Bronze	Monel Metal	Stainless Types 410, 416 and 430 (Magnetic)	Stainless Types 302, 303, 304 and 305 18-8 (A2)	Stainless Type 316 (A4)	Copper	Aluminum	Nylon
Acetate Solvents, Crude	Fair	Good	Good	Good	Excel	Excel	Good	Excel	Good
Acetate Solvents, Pure	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Acetate Acid, Crude	Fair[1]	Good	Good	Poor[2]	Good	Excel	Good	Good	Poor
Acetate Acid, Pure	Fair[1]	Good	Good	Poor[2]	Good	Excel	Good	Excel	Poor
Acetic Acid Vapors	Poor	Good	Fair	Poor	Good	Excel	Good	Good	Poor
Acetic Anhydride	Poor	Good	Good	Poor	Good	Excel	Good	Excel	Poor
Acetone	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Acetylene	[3]	Poor	Good	Excel	Excel	Excel	Poor	Excel	
Alcohols	Good	Excel	Excel	Excel	Excel	Excel	Excel	Good	Good
Aluminum Sulfate	Fair[1]	Good	Good	Poor	Fair	Good	Good	Fair	Poor
Alums	Fair[1]	Good	Good	Poor	Fair	Good	Good	Excel	Fair
Amonia Gas[4]	Poor[5,6]	[6]	[6]	Excel	Excel	Excel	[6]	Excel	Good[36]
Ammonium Chloride	Fair[1]	Good	Excel	Fair	Fair	Excel	Good	Poor	Fair
Ammonium Hydroxide	Poor	Poor	Fair	Excel	Excel	Excel	Poor	Good	Good[36]
Ammonium Nitrate	Poor	Fair	Fair	Excel	Excel	Excel	Fair	Excel	Fair
Ammonium Phosphate (Ammoniacal)	Poor	Poor	Good	Excel	Excel	Excel	Poor	Poor	Good
Ammonium Phosphate (Neutral)	Fair	Fair	Good	Good	Excel	Excel	Fair	Fair	Excel
Ammonium Phosphate (Acid)	Fair[1]	Fair	Good	Fair	Good	Excel	Fair	Fair	Fair
Ammonium Sulfate	Fair[1]	Fair	Good	Good	Excel	Excel	Fair	Good[35]	Fair
Asphalt	Good	Excel	Excel	Good	Excel	Excel	Excel	Excel	Excel
Beer	Good	Good	Excel	[7]	Excel	Excel	Good	Excel	Excel
Beet Sugar Liquors	Good	Excel	Excel	Good	Excel	Excel	Excel	Excel	Good
Benzene or Benzol[8]	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Benzine[8]	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Borax	Good	Good	Excel	Excel	Excel	Excel	Good	Good	Good
Boric Acid	Fair[1]	Good	Excel	Fair	Good	Excel	Good	Excel	Good
Butane, Butylene, Butadiene[9]	Excel[34]	Excel[34]	Excel	Excel[10]	Excel[10]	Excel[10]	Excel[34]	Excel	Excel
Calcium Bisulfite	Poor	Good	Poor	Poor	Good	Excel	Good	Poor	Good
Calcium Hypochlorite	Fair	Fair	Fair	Poor	Fair	Good	Fair	Poor	Fair
Cane Sugar Liquors	Good	Excel	Excel	Good	Excel	Excel	Excel	Excel	Good
Carbon Dioxide (Dry)	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel

Numerals refer to notes on page R18.

Continued ...

	Brass and Naval Bronze	Silicon Bronze	Monel Metal	Stainless Types 410, 416 and 430 (Magnetic)	Stainless Types 302, 303, 304 and 305 18-8 (A2)	Stainless Type 316 (A4)	Copper	Aluminum	Nylon
Carbon Dioxide (Wet & Aqueous)	Fair[11]	Good[11]	Good[11]	Excel[11]	Excel	Excel	Good[11]	Excel	Excel
Carbon Disulfide	Fair	Poor	Fair	Good	Excel	Excel	Poor	Excel	Excel
Carbon Tetrachloride[12]	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Good	Excel
Chlorine (Dry)	Good	Good	Excel	Good	Good	Good	Good	Poor	Poor
Chlorine (Wet)	Poor	Fair	Fair	Poor	Poor	Fair	Fair	Poor	Poor
Chromic Acid	Poor	Poor	Fair	Fair	Good	Excel	Poor	Poor	Poor
Citric Acid	Fair[1]	Good	Good	Fair	Good	Excel	Good	Good	Good
Coke Oven Gas	Fair	Fair	Good	Excel	Excel	Excel	Fair	Good	Fair
Sulfate	Poor	Fair	Fair	Excel	Excel	Excel	Fair	Poor	Fair
Core Oils	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Cottonseed Oil	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Creosote	Fair	Good	Excel	Excel	Excel	Excel	Good	Good	
Ethers	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Ethylene Glycol	Good	Excel	Excel	Excel	Excel	Excel	Excel	Good	Good
Ferric Chloride	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor
Ferric Sulfate	Poor	Fair	Fair	Excel	Excel	Excel	Fair	Good	Poor
Formaldehyde	Good	Good	Excel	Excel	Excel	Excel	Good	Good	Good
Formic Acid	Fair[1]	Good	Good	Poor	Good	Excel	Good	Poor	Poor
Freon	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Good	Excel
Furfural	Good	Good	Excel	Excel	Excel	Excel	Good	Excel	Excel
Gasoline (Sour)	Fair	Poor	Poor	Fair	Excel	Excel	Poor	Poor	Excel
Gasoline (Refined)	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Gelatin	Fair[13]	Excel[13]	Excel	Fair[13]	Excel	Excel	Excel[13]	Excel	Excel
Glucose	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Glue	Fair	Excel	Excel	Excel	Excel	Excel	Excel	Fair	Excel
Glycerine or Glycerol	Good	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Good
Hydrochloric Acid	Poor	Fair[14]	Fair[14]	Poor	Poor	Poor	Fair[14]	Poor	Poor
Hydrocyanic Acid (Hydrogen Cyanide)	Poor	Poor	Good	Fair	Excel	Excel	Poor	Excel	Excel
Hydrofluoric Acid	Poor	Fair	Excel	Poor	Poor	Poor	Fair	Poor	Poor
Hydrogen Fluoride	Fair	Good	Excel	Fair	Good	Good	Good	Poor	Poor
Hydrogen[9]	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Hydrogen Peroxide	Poor	Fair	Good	Excel	Excel	Excel	Fair	Good	Fair
Hydrogen Sulfide (Dry)	Fair[6]	Poor[6]	Fair[6]	Good	Excel	Excel	Poor[6]	Excel	Good[37]
Hydrogen Sulfide (Wet & Aqueous)	Fair	Poor	Fair	Fair[15]	Good	Excel	Poor	Excel	Good[37]
Lacquers and Lacquer Solvents	Fair	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Lime-Sulfur	Poor	Fair	Good	Good	Excel	Excel	Fair	Poor	Good
Magnesium Chloride	Fair	Good	Excel	Fair	Good	Excel	Good	Poor	Excel
Magnesium Hydroxide	Good	Excel	Excel	Excel	Excel	Excel	Excel	Fair	Good
Magnesium Sulfate	Good	Excel	Excel	Excel	Excel	Excel	Excel	Good	Excel
Mercuric Chloride	Poor	Poor	Poor	Poor	Poor	Fair[16]	Poor	Poor	
Mercury	Poor	Poor	Good	Excel	Excel	Excel	Poor	Poor	Excel
Milk	Fair	Fair	Fair	Good	Excel	Excel	Fair	Excel	Excel
Molasses	Good	Excel	Excel	Good	Excel	Excel	Excel	Excel	Excel

Numerals refer to notes on page R18.

Continued ...

	Brass and Naval Bronze	Silicon Bronze	Monel Metal	Stainless Types 410, 416 and 430 (Magnetic)	Stainless Types 302, 303, 304 and 305 18-8 (A2)	Stainless Type 316 (A4)	Copper	Aluminum	Nylon
Natural Gas	Good	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Nickel Chloride[17]	Poor	Fair	Good	Poor	Fair	Good	Fair	Poor	Poor
Nickel Sulfate[17]	Fair	Good	Excel	Fair	Good	Excel	Good	Poor	Poor
Nitric Acid	Poor	Poor	Poor	Good[18]	Good	Good	Poor	Fair	Poor
Oleic Acid	Fair[19]	Good[24]	Excel	Good[20]	Good[20]	Excel	Good[24]	Excel	Excel
Oxalic Acid	Fair	Good	Excel	Fair	Good	Excel	Good	Poor	Poor
Oxygen[9]	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Good
Palmitic Acid	Fair[19]	Good[24]	Excel	Good[20]	Good[20]	Excel	Good[24]	Excel	Excel
Petroleum Oils (Sour)	Fair	Poor	Poor	Fair	Excel	Excel	Poor	Poor	Excel
Petroleum Oils (Refined)	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Phosphoric Acid 25%	Poor	Good[21]	Good[22]	Poor	Fair[23]	Excel	Good[21]	Poor	Poor
Phosphoric Acid 25%, 50%	Poor	Good[21]	Good[22]	Poor	Poor	Good	Good[21]	Poor	Poor
Phosphoric Acid 50%, 85%	Poor	Good[21]	Good[22]	Poor	Poor	Good	Good[21]	Excel	Excel
Picric Acid	Poor	Poor	Poor	Good	Excel	Excel	Poor	Fair	Poor
Potassium Chloride	Fair	Good	Excel	Fair	Good	Excel	Good	Poor	Excel
Potassium Hydroxide	Poor	Fair	Excel	Excel	Excel	Excel	Fair	Poor	Good[38]
Potassium Sulfate	Good	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Propane[9]	Excel	Excel	Excel	Excel[10]	Excel[10]	Excel[10]	Excel	Excel	Excel
Rosin (Dark)	Good	Good	Excel	Excel	Excel	Excel	Good	Excel	Excel
Rosin (Light)	Poor	Poor	Good	Excel	Excel	Excel	Poor	Good	Excel
Shellac	Good	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Soda Ash (Sodium Carbonate)	Good	Good	Excel	Excel	Excel	Excel	Excel	Poor	Excel
Sodium Bicarbonate	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Good	Excel
Sodium Bisulfate	Fair[1]	Good	Excel	Poor	Poor	Excel	Good	Fair	Fair
Sodium Chloride	Fair	Good	Excel	Fair	Good	Excel	Good	Good	Excel
Sodium Cyanide	Poor	Poor	Good	Excel	Excel	Excel	Poor	Poor	Good
Sodium Hydroxide	Poor	Fair	Excel	Excel	Excel	Excel	Fair	Excel	Good[38]
Sodium Hypochlorite	Excel	Fair	Fair	Excel	Fair	Good	Fair	Excel	Fair
Sodium Metaphosphate	Fair	Good	Excel	Good	Excel	Excel	Good	Fair	Excel
Sodium Nitrate	Fair	Good	Excel	Excel	Excel	Excel	Good	Excel	Excel
Sodium Perborate	Fair	Good	Excel	Excel	Excel	Excel	Good	Fair	
Sodium Peroxide	Fair	Good	Excel	Excel	Excel	Excel	Good	Fair	Fair
Sodium Phosphate (Alkaline)	Fair	Good	Excel	Excel	Excel	Excel	Good	Poor	Good
Sodium Phosphate (Neutral)	Good	Excel	Excel	Excel	Excel	Excel	Excel	Poor	Excel
Sodium Phosphate (Acid)	Fair	Good	Excel	Poor	Good	Excel	Good	Poor	Fair
Sodium Silicate	Fair	Good	Excel	Excel	Excel	Excel	Good	Good	Good
Sodium Sulfate	Good	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Sodium Sulfide	Poor	Poor	Good	Excel	Excel	Excel	Poor	Poor	Good
Sodium Thiosulfate (Hypo)	Poor	Poor	Good	Excel	Excel	Excel	Poor	Excel	Good[39]
Sludge Acid	Poor	Good	Good	Poor	Poor	Fair	Good	Poor	
Stearic Acid	Fair[19]	Good[24]	Excel	Good[20]	Good[20]	Excel	Good[24]	Excel	Excel
Sulfate Liquors	Poor	Poor	Good	Poor	Poor	Poor	Excel	Excel	Good

Numerals refer to notes on page R18.

Continued ...

	Brass and Naval Bronze	Silicon Bronze	Monel Metal	Stainless Types 410, 416 and 430 (Magnetic)	Stainless Types 302, 303, 304 and 305 18-8 (A2)	Stainless Type 316 (A4)	Copper	Aluminum	Nylon
Sulfur	Fair	Fair	Fair	Excel	Excel	Excel	Fair	Excel	Good
Sulfur Chloride	Poor	Poor	Good	Poor	Fair	Good	Poor	Poor	Poor
Sulfur Dioxide (Dry)[9]	Fair	Excel	Excel	Excel	Excel	Excel	Excel	Good	Good
Sulfur Dioxide (Wet)	Poor	Good	Poor	Poor	Good	Excel	Good	Fair	Fair
Sulfuric Acid 10%	Poor	Good[25]	Good[25]	Poor	Poor	Good[25]	Good	Poor	Poor
Sulfuric Acid 10%, 75%	Poor	Fair	Good	Poor	Poor	Poor	Fair	Poor	Poor
Sulfuric Acid 75%, 95%	Poor	Fair[26]	Fair[26]	Fair[27]	Fair[27]	Good[27]	Fair[26]	Poor	Poor
Sulfuric Acid 95%	Poor	Fair	Poor	Good	Good	Good	Poor	Fair	Poor
Sulfurous Acid	Poor	Good	Poor	Poor	Fair	Good	Good	Poor	Fair
Tar	Good	Excel	Excel	Good	Excel	Excel	Excel	Excel	Excel
Tartaric Acid	Fair[1]	Good	Good	Fair	Good	Excel	Good	Good	Fair
Toluene or Toluol[8]	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Trichloroethylene[12]	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Good
Turpentine	Fair[28]	Excel	Excel	Good[28]	Excel	Excel	Excel	Excel	Excel
Varnish[29]	Good	Good	Excel	Excel	Excel	Excel	Good	Excel	Excel
Vegetable Oils[29]	Good	Good	Excel	Excel	Excel	Excel	Good	Excel	Excel
Vinegar[25]	Poor	Good	Good	Fair	Good	Excel	Good	Excel	Fair
Water (Acid Mine Water)	Poor	[30]	[30]	[31]	[31]	[31]	[30]	Fair	Good
Water (Fresh)	Fair[32]	Good	Excel	Excel	Excel	Excel	Good	Excel	Excel
Water (Salt)	Fair[32]	Good	Excel	Fair[33]	Good[33]	Good[33]	Good	Good	Excel
Whiskey	Good	Good	Good	Fair	Excel	Excel	Good	Fair	Excel
Wines	Good	Good	Good	Fair	Excel	Excel	Good	Fair	Excel
Xylene or Xylol[8]	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel	Excel
Zinc Chloride	Poor	Good	Excel	Poor	Poor	Good	Good	Poor	Good[39]
Zinc Sulfate	Fair	Good	Excel	Fair	Good	Excel	Good	Good	Good[39]

NOTES

1. Subject to dezincification and/or stress corrosion; especially at elevated temperatures and with concentrated solutions.
2. May be useful with cold dilute acid.
3. Alloys containing up to 60% copper acceptable; high copper alloys not acceptable.
4. Temperature assumed to be below that at which gas cracks and liberates nascent nitrogen.
5. Subject to stress corrosion with low concentrations.
6. Apparently resistant to dry gas at ordinary temperatures; attacked rapidly by moist gas and by hot gas.
7. Not recommended for use with beverage grade.
8. Chemicals used for treating in manufacture assumed to be absent.
9. Temperature assumed to be no higher than that normally encountered in compression, storage, and distribution.
10. Useful at elevated temperatures.
11. Not recommmended for use with carbonated beverages.
12. Water assumed to be absent.
13. Not recommended for use with edible grades.
14. Only with dilute or unaerated solutions.
15. Subject to stress corrosion by moist gas; and to severe general corrosion by saturated aqueous solution.
16. Subject to stress corrosion.
17. None of these materials recommended for use with nickel plating solutions.
18. Higher chromium alloys (over 18%) preferred.
19. Not recommended for temperature over **100° C** (212°F).
20. Alloys with less that 18% Cr. not recommended for temperatures over **100° C** (212° F). Others not recommended for temperatures over **200° C** (390° F).
21. Up to **60° C** (140° F).
22. Up to **90° C** (200° F).
23. At room temperature.
24. Not recommended for temperatures over **200° C** (390° F.)
25. Non-ferrous alloys preferred when unaerated and at temperatures above normal. Stainless Steel best when aerated and at normal to moderate temperatures.
26. With cold acid only.
27. In the absence of exposure to moist air.
28. Crude produce may contain acids which corrode these materials.
29. Some of these ratings may not apply when handling light colored products at elevated temperatures **(200° C)** (390° F).
30. Good with water containing no oxidizing salts; fair with water containing oxidizing salts.
31. Excellent with water containing oxidizing salts; not good with water containing no oxidizing salts.
32. Subject to dezincification with hot and/or aerated waters.
33. Subject to pitting attack.
34. Copper may act as a catalyst for undesirable reactions.
35. Free sulphuric acid absent.
36. Good at concentrations under 10% and below **38° C** (100° F).
37. Suitable for limited service at concentrations under 50% and below **38° C** (100° F).
38. Good only at concentrations under 10% and below **38° C** (100° F).
39. Good only at concentrations under 20% and below **38° C** (100° F).

COMPARATIVE PROPERTIES OF NATURAL AND SYNTHETIC RUBBERS
COMPARAISON DES PROPRIÉTÉS DES CAOUTCHOUCS NATURELS ET SYNTHÉTIQUES

Material	Neoprene Chloroprene	Nitrile Butadiene Acrylonitrile	EPDM Ethylene Propolene Polymer	Butadiene Styrene	NATURAL RUBBER Polyisoprene	SANTOPRENE® TPE
Solid Duro Range	40-80	40-80	40-90	60-80	40-60	35-87
ASTM Code	CR	NBR	EPDM	SBR	NR	-
Sponge Duro Range	20-80	-	20-80	-	-	-
Tensile Strength PSI	1500-2000	1000-1500	1000-2000	1000-2000	1500-3000	520-4000
Tear Resistance	good	fair	fair	fair	very good	fair
Abrasion Resistance	excellent	good	excellent	very good	excellent	very good
Compression Set	good	good	good	good	good	good
Acid Resistance	very good	good	excellent	fair to good	fair to good	excellent
Rebound - cold	very good	good	very good	good	excellent	very good
- hot	very good	good	very good	good	excellent	very good
Adhesion to Metals	excellent	excellent	good	very good	excellent	good
Resistance to Oxidation	very good	good	excellent	fair	good	excellent
Lubricating Oil	good	very good	poor	poor	poor	poor
Flame	good	poor	poor	poor	poor	good
Animal & Vegetable Oil	good	very good	good	good	good	good
Sunlight Aging	very good	poor	excellent	poor	poor	very good
Oil & Gasoline	good	excellent	poor	poor	poor	poor
Ozone	very good	fair	excellent	poor	fair	excellent
Water Absorption	good	good	very good	very good	excellent	very good

Material	HYPALON Chlorosulfonated Polyethylene	EPICHLORI-HYDRIN	SILICONE Polysiloxane Polymer	VITON Fluoroelastomer	CPE Chlorinated Polyethylene	EPDM NEOPRENE BLEND-SPONGE	FLEXIBLE POLYVINYL CHLORIDE
Solid Duro Range	70	60	30-80	75	-	-	40-90
ASTM Code	CSM	-	SI	FPM	CPE	EPDM-CR	PVC
Sponge Duro Range	-		50-80	80	50-80	20-80	-
Tensile Strength PSI	1500	1000-1500	900-1100	1400	-	-	1500-3500
Tear Resistance	fair	good	poor to good	fair	fair	good	good
Abrasion Resistance	excellent	good	poor	good	good	excellent	good
Compression Set	fair	fair	good	good	good	good	fair
Acid Resistance	very good	fair	good	excellent	very good	very good	very good
Rebound - cold	fair	good	excellent	good	fair	very good	fair
- hot	good	good	excellent	very good	good	very good	fair
Adhesion to Metals	excellent	fair	excellent	good	good	good	fair
Resistance to Oxidation	very good	good	excellent	excellent	excellent	excellent	very good
Lubricating Oil	very good	excellent	fair	excellent	good	fair	good
Flame	good	fair	good	excellent	good	fair	good
Animal & Vegetable Oil	good	excellent	very good	excellent	good	good	poor
Sunlight Aging	excellent	good	excellent	excellent	excellent	excellent	good
Oil & Gasoline	good	very good	fair	excellent	good	fair	fair
Ozone	excellent	very good	excellent	excellent	excellent	excellent	excellent
Water Absorption	very good	good	excellent	very good	very good	very good	good

Plastics / Insulating Washers Properties Chart

Tableau des propriétés des plastique / Rondelles isolantes

PROPERTIES	MATERIALS							
	Low Density Polyethylene	Medium Density Polyethylene	High Density Polyethylene	Polypropylene	Styrene	Nylon	Fiber Filled Nylon	Delrin®
SPECIFIC GRAVITY	0.910-0.925	0.926-0.940	0.941-0.965	0.902-0.906	0.98-1.1	1.13-1.15	1.17-1.52	1.425
TENSILE STRENGTH PSI	600-2,300	1,200-3,500	3,100-5,500	4,300-5,500	3,000-6,800	9,000-12,000	13,000-35,000	10,000-12,000
ELONGATION %	90-800	50-600	15-100	200-700	5-80	60-300	1.5-10	15
COMPRESSIVE STRENGTH PSI	-	-	3,200	5,500-8,000	4,000-9,000	6,700-12,500	13,000-24,000	18,000
FLEXURAL STRENGTH PSI	-	4,800-7,000	1,000	6,000-8,000	5,000-10,000	No Break	15,500-40,000	14,000-15,500
SPECIFIC HEAT CAL/°C/gm	0.55	0.55	0.55	0.46	0.32-0.35	0.4	0.3-0.35	0.35
RESISTANCE TO HEAT °F	180-200	220-250	250	250-320	140-175	180-300	300-400	185
HEAT DISTORTION TEMPERATURE °F	100-121 (66 PSI)	120-165 (66 PSI)	140-180 (66 PSI)	205-230 (66 PSI)	210 Max. (264 PSI)	360-365 (66 PSI)	400-510 (66 PSI)	338 (66 PSI)
WATER ABSORPTION % 24 HR. 1/8" THICKNESS	<0.01	0.01	0.01	0.01	0.05-0.6	1.5	0.2-2.0	0.25
EFFECT OF SUNLIGHT	Crazes rapidly unless black colour or ultraviolet inhibitor is used.			Crazes Rapidly	Some Strength Loss	Discolours Slightly	Discolours Slightly	Chalks Slightly
EFFECT OF WEAK ACIDS	Resistant	Very Resistant	Very Resistant	None	None	Resistant	Resistant	Resists Some
EFFECT OF STRONG ACIDS	Attacked by Oxidizing Acid	Attacked by Slowly Oxidizing Acids	Attacked by Slowly Oxidizing Acids	Attacked by Oxidizing Acids	Attacked by Oxidizing Acids	Attacked	Attacked	Attacked
EFFECT OF WEAK ALKALIES	Resistant	Very Resistant	Very Resistant	None	None	None	None	Resists Some
EFFECT OF STRONG ALKALIES	Resistant	Very Resistant	Very Resistant	Very Resistant	None	None	None	Resists Some
EFFECT OF ORGANIC SOLVENTS	Resistant Below (60°C)	Resistant Below (60°C)	Resistant Below (80°C)	Resistant Below (80°C)	Soluble in Some	Resists Most	Resists Most	Excellent Resistance
EFFECT OF OILS AND GREASES	Attacked by Some	Attacked by Some	Slight	Attacked by Some	-	None	None	None
IMPACT STRENGTH FT./LB./IN. NOTCH	No Break	0.5-16	1.5-20	.4	0.5-11.0	1.0-5.5	1.3-6	1.4

This information is for reference only. Independent verification with your engineering department or other authoritative citation should precede using it for any critical application

SPAENAUR cannot be held responsible for the accuracy of these figures.

VULCANIZED WASHERS

Vulcanized Washers offers flexibility, impact resistance, high tear strength and a smooth, abrasion resistant surface. It can be machined, punched, slit, threaded, formed, molded and wound into tubes for literally countless applications. It provides excellent electrical insulation values, and is arc and track resistant. Even though composed of cotton and wood pulp, standard VF can be used at operating temperatures of **110°C-120°C** and has a flame resistance rating of U.L. 94HB. The use of additives and/or coatings can provide a rating of 94VO, and laminating to polyester film will bring the U.L. thermal rating up to **130°C**. Vulcanized Fibre is impervious to most organic solvents, oils, and petroleum derivatives. This makes it an excellent choice for use in oil. Like wood, to which it is related, VF will absorb water, but will not delaminate in its presence. It will tend to "breath" or adjust its moisture content as the ambient moisture level changes.

TYPICAL PROPERTIES OF VULCANIZED FIBRE

Tensile Strength, PSI	6,000-12,000
Flexural Strength, PSI	12,000-20,000
Compressive Strength	20,000-30,000
Shear Strength, PSI	11,000-15,000
Impact Strength, ft/lbs per in.	4-8
Rockwell Hardness	R60-R100
Density, gm/cc	1.1-1.3
Dielectric Strength, VPM	150-400
Power Factor, 1000kc	.03-.08
Dielectric Constant	4-7
Water Absorption, 2hr,1/8",%	15
Thermal Conductivity, BTU/hr/sqft/F/in	3

About DIN and ISO

For many years, DIN (Deutsches Institut für Normung e.V.) standards have been the internationally recognized standard for metric fasteners. With the growing acceptance of The International Organization for Standardization (ISO), many products are also becoming standardized according to ISO specifications.

The Spaenaur catalog indicates the DIN standard for most of the metric fasteners in our product line. In the future, many DIN standards will be replaced by ISO standards.

As market availability of DIN and ISO standard products evolves, Spaenaur will adjust our product offering accordingly. The DIN/ISO Index cross references products to the Spaenaur catalog. For DIN items we also show the nearest ISO standard, and vice versa.

Please note that some DIN and ISO standard fasteners may be found across many pages. The page reference given is to direct you to the general area where that fastener will be found.

Please consult the product index for detailed page references.

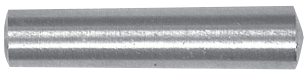
Au sujet des normes DIN et ISO

Les normes DIN (Deutsches Institut für Normung e.V.) ont été reconnues depuis longtemps comme étant le standard international en matière de normes métriques. Toutefois, l'influence sans cesse croissante sur l'industrie de l'Organisation internationale de normalisation (ISO) fait que de plus en plus de produits deviennent également conformes aux normes ISO.

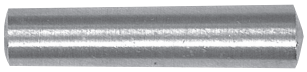
La plupart des produits métriques montrés dans le catalogue Spaenaur sont représentés sous les normes DIN. Il est prévu que plusieurs de ces normes DIN seront éventuellement remplacées par les normes ISO.

Par conséquent, Spaenaur devra reviser les produits qu'elle offre suivant ceux qui sont disponibles en normes DIN et ISO sur le marché. Le catalogue Spaenaur présente les produits sous un index DIN/ISO combiné. Les produits qui sont indiqués comme étant conformes à une norme DIN montrent aussi la plus proche norme ISO correspondante, et vice-versa.

Veuillez noter que certaines attaches satisfaisant aux normes DIN/ISO peuvent se retrouver à différents endroits. La page correspondante donnée vous indique l'endroit général où la pièce peut être trouvée. Veuillez consulter l'index des produits pour obtenir les pages correspondantes précises.



DIN 1A
Taper Pins – Hardened
Goupilles coniques
pg. E90-E92 ~ISO 2339

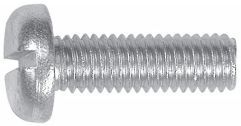


DIN 1B
Taper Pins – Not Hardened
Goupilles coniques
pg. E91-E92, ~ISO 2339

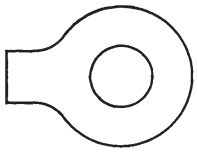
DIN 7
Dowel Pins –
Not Hardened
Goupilles cylindriques
pg. E86-E87 ~ISO 2338

DIN 9
Taper Pin Reamers
Alésoirs
pg. P45

DIN 84
Machine Screws - Slot Drive
– Cheese Head / Vis de
mécanique à tête fendue
pg. B29, B36-B56
~ISO 1207



DIN 85
Machine Screws - Slot Drive
– Pan Head / Vis de
mécanique à tête fendue
pg. B36, B38-B41, B44-B48, B50-B52
~ISO 1580



DIN 93
Long Tab Washers
Plaques d'arrêt à talon
pg. D28

DIN 94
Cotter Pins
Goupilles fendues
pg. E47-E48
~ISO 1234

DIN 125A
Flat Washers - Reg. Style
Rondelles sans chanfrein
pg. D12 ~ISO 7089/90

DIN 125B
Flat Washers –
Single Chamfer Style
Rondelles avec chanfrein
pg. D13 ~ISO 7089/90

DIN 126
Flat Washers – Coarse
Rondelles en acier
pg. D16 ~ISO 7091

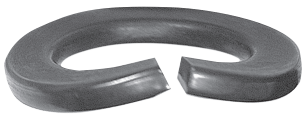
DIN 127A
Spring (Split) Lockwashers -
Barbed Ends, for use with
DIN 931 and DIN 933
Rondelles ressort
pg. D26

Continued on Next Page

R

P: 1-800-265-8772 F: 1-888-252-6380 service@spaenaur.com

DIN 127B
Spring (Split) Lockwashers - Plain Ends, for use with DIN 931 and DIN 933.
Rondelles ressort
pg. D25-D27



DIN 128A
Lockwashers – Split Bowed Type
Rondelles ressort
pg. D28

DIN 128B
Lockwashers – Split Twisted Type
Rondelles ressort
pg. D29

DIN 137A
Bowed Spring Washers
Rondelles tendeuses à ressort
pg. D66-D67

DIN 137B
Single Wave Spring Washers
Rondelles tendeuses à ressort
pg. D66-D67

DIN 175
Drill Rod Rounds
Acier en rondin
pg. E116

DIN 206
Hand Reamers with Parallel Shank and Squared End
Alésoirs
pg. P46

DIN 208
Machine Reamers with Morse Taper
Alésoirs
pg. P47

DIN 212
Machine Reamers with Parallel Shank
Alésoirs
pg. P48

DIN 223
Round Dies – Right Hand
Écrous taraudeur rond
pg. P66-P67

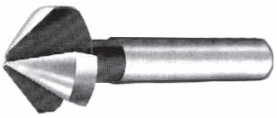
DIN 225
Die Stocks for Round Split Dies
Filière-à-coussinets
pg. P73

DIN 315
Heavy Wing Nuts
Écrous à oreilles
pg. C52

DIN 316
Wing Screws
Vis à oreilles

Greyed out standard no longer supported

DIN 327B
Slot Cutter, Short Series, with Parallel Shank Center Cutting
Fraises
pg. P43



DIN 335
Precisions – Countersinks, 90° with Parallel Shank and with Morse Taper shank
Fraise de précision
pg. P42

DIN 338
Straight Shank Twist Drills
Forets droits en acier rapide
pg. P33-P36,P38

DIN 345
Twist Drills with Morse Taper Shank
Forets
pg. P39

DIN 373
Counterbores with Parallel Shank and Solid Pilot for Through-Holes
Forets
pg. P44

DIN 374
Spiral Point, Long Reduced Shank Machine Taps – Fine Thread - Right Hand
Ficières
pg. P62

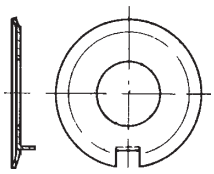
DIN 376
Spiral Point, Long Reduced Shank Machine Taps – Coarse Thread - Right Hand
Ficières
pg. P62

DIN 377
Tap Extensions
Outics pour ficières
pg. P72

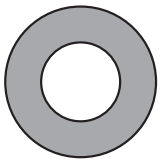
DIN 382
Hexagon Dies – Right Hand
Écrous taraudeur hexagone
pg. P69

P: 1-800-265-8772 F: 1-888-252-6380 service@spaenaur.com

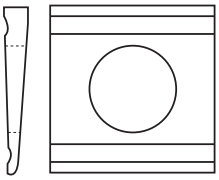
Greyed out standard no longer supported



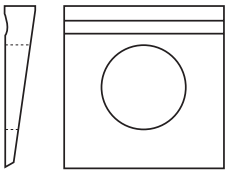
DIN 432
External Tab Washers
Plaques d'arrêt avec ergot
pg. D13



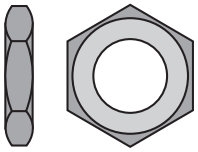
DIN 433
Flat Washers
with reduced O.D.
Rondelles en acier
pg. D17 ~ISO 7092



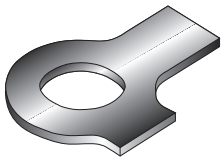
DIN 434
Square Beveled Washers – 8% Slope for "U" Beams
Plaquettes oblizues carreau
pg. D74



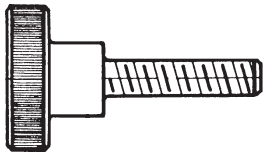
DIN 435
Square Beveled Washers – 14% Slope for "I" Beams
Plaquettes obliques carreau
pg. D74



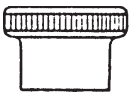
DIN 439B
Hexagon Low Nuts
Écrous hexagonaux
pg. C13-14 ~ISO 4035/4036



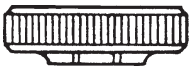
DIN 463
Tab Washers
with Long and Short Tab
Plaques d'arrêt à deux talons
pg. D29



DIN 464
Knurled Thumbscrews
Vis à tête moletée
pg. B282



DIN 466
Knurled Nuts - Open End
Ecrous moletés hauts
pg. C54

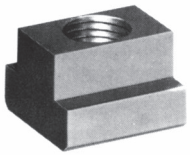


DIN 467
Flat Knurled Nuts - Open End
Ecrous moletés bas
pg. C54

DIN 471
Retaining Rings – External
Bagues de retenue - extérieur
pg. E131-E132

DIN 472
Retaining Rings – Internal
Bagues de retenue – Intérieur
pg. E133-E134

DIN 479
Square Head Set Screws - Short Dog Point
Vis de pression à tête carrée
pg. B253



DIN 508
T-Slot Nuts
Écrous à rainures "T"
pg. B300

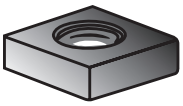
DIN 551
Headless - Set Screws - Slot Drive - Flat Pt. / Vis de pression fendues sans tête
pg. B247 ~ISO 4766

DIN 553
Headless - Set Screws - Slot Drive - Cone Pt. / Vis de pression fendues sans tête
pg. B247 ~ISO 7434

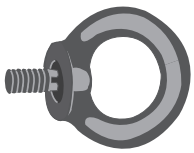
DIN 555
Hexagon Nuts Écrous hexagonaux
~ISO 4034

Greyed out standard no longer supported

DIN 557
Square Nuts
Écrous carré
pg. C20



DIN 562
Square Thin Nuts
Écrous carré
pg. C20



DIN 580
Drop Forged Eye Bolts
Boulons à oeil matricé
pg. B270 ~ISO 3266

R

Greyed out standard no longer supported

DIN 582
Drop Forged Eye Nuts
Boulons à oeil matricé
pg. B270

DIN 603 / 603 Mu
Carriage Bolts - Round Head Square Neck
Boulons de carrosserie
pg. B261 ~ISO 8677

DIN 609
Hexagon Head Fitting Bolts with long thread portion
Boulons hexagonaux
Greyed out standard no longer supported

DIN 787
T-Slot Bolts
Boulons à rainures "T"
pg. B300

DIN 835
Studs
Goujons
pg. B295

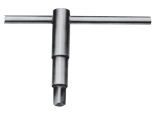
DIN 844
End Mills, Short Series, with Parallel Shank
Alésoirs
Greyed out standard no longer supported

DIN 859B
Adjustable Hand Reamers with Parallel Shank and Squared End
Alésoirs
Greyed out standard no longer supported

DIN 895
Double Open-End Wrench
Clés à fourches
pg. P89

DIN 904
Square Drive Wrench with T-Handle "Short series" (Female)
Clés femelle à carré conducteur avec poignée "T" - Série courte
P87

DIN 904L
Square Drive Wrench with T-Handle "Long series"(Female)
Clés femelle à carré conducteur avec poignée "T" - Série longue
pg. P87



DIN 905
Square Drive Wrench with T-Handle (Male)
Clés male à carré conducteur avec poignée "T" - Série courte
pg. P87

DIN 906
Hexagon Socket PipePlugs Short Type
Bouchon à 6 pans pour tuyau
pg. H9

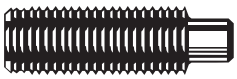
DIN 908
Hexagon Socket Screw Plugs with Shoulder
Bouchon à 6 pans pour tuyau
pg. H9

DIN 911
Hex Keys
Clés
pg. P9, P11 ~ISO 2936

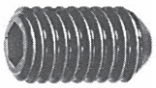
DIN 912
Hex Socket Cap Screws
Vis à tête cylindrique à 6 pans creux
pg. B211, B221, B226 ~ISO 4762

DIN 913
Hex Socket Set Screws - Flat Point
Vis de pression à 6 pans creux
pg. B251 ~ISO 4026

DIN 914
Hex Socket Set Screws – Cone Point
Vis de pression à 6 pans creux
pg. B250 ~ISO 4027

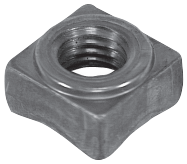


DIN 915
Hex Socket Set Screws - Dog Point
Vis de pression à 6 pans creux
pg. B252 ~ISO 4028



DIN 916
Hex Socket Set Screws – Cup Point
Vis de pression à 6 pans creux
pg. B248-249 ~ISO 4029

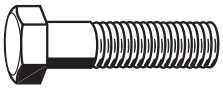
DIN 917
Low Profile Hex Cap Nuts
Écrous à chape
pg. C56



DIN 928
Square Weld Nuts
Écrous à souder
pg. C47

R

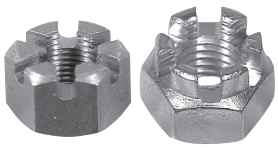
DIN 929
Hexagon Weld Nuts
Écrous à souder
pg. C47



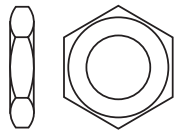
DIN 931
Hexagon Cap Screws – Partially threaded - Unslotted
Boulons de précision hexagonaux
pg. B158-B159, B161-B163,B169, B171, B173 ~ISO 4014

DIN 933
Hexagon Cap Screws - Fully threaded – Unslotted
Boulons de précision hexagonaux
pg. B156-157, B160, B162, D168, B170, B172-174 ~ISO 4017

DIN 934
Hexagon Nuts
Écrous hexagonaux
pg. C9-C12 ~ISO 4032/8673



DIN 935
Slotted and Castellated Hexagon Nuts
Écrous hexagonaux à créneaux
pg. C17 ~ISO 7035/7036/7037

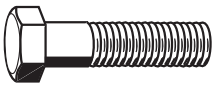


DIN 936
Hexagon Low Nuts
Écrous hexagonaux
pg. C15

DIN 937
Thin Slotted and Castellated Hexagon Nuts
Écrous hexagonaux à créneaux
pg. C18

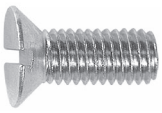
DIN 938
Studs
Goujons
pg. B295

DIN 939
Studs
Goujons
pg. B295

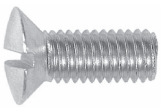


DIN 960
Hexagon Cap Screws – Partially Threaded Boulons de précision hexagonaux
pg. B165, B167, B171 ~ISO 8765

DIN 961
Hexagon Cap Screws - Fully Threaded
Boulons de précision hexagonaux
pg. B164, B166, B171 ~ISO 8675



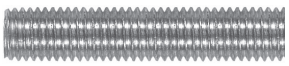
DIN 963
Machine Screws
Slot Drive – Flat Head
Vis de mécanique à tête fendue
pg. B37-B41, B44-B52 ~ISO 2009



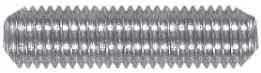
DIN 964
Machine Screws
Slot Drive – Oval Head Vis de mécanique à tête fendue
pg. B38-41, B46-48, B50-52 ~ISO 2010

DIN 965
Machine Screws - Phillips Drive - Flat Head / Vis mécanique à tête Phillips
pg. B56, B58 ~ISO 7046

DIN 966
Machine Screws - Phillips Drive – Oval Head / Vis mécanique à tête Phillips
pg. B56, B58 ~ISO 7047

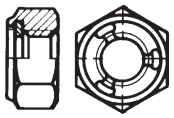


DIN 975
Threaded Rod
Tiges filetées
pg. B292-B293



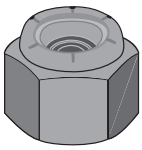
DIN 976B
Threaded Pins
Tiges filetées
pg. B295

DIN 980
Prevailing Torque Hex Locknuts
Écrous indesserrables
pg. C36 ~ISO 7042

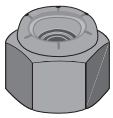


DIN 980M
Spring-Stop Hex Locknuts
Écrous auto-freines hexagonaux
pg. C36

DIN 980V
Prevailing Torque Hex Locknuts
Écrous indesserrables
pg. C33



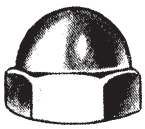
DIN 982
Heavy Nylon Insert Hex Locknut
Écrous à garniture en nylon
pg. C32



DIN 985
Nylon Insert Hex Locknuts
Écrous à garniture en nylon
pg. C30-C31 ~ISO 7040

R

P: 1-800-265-8772 F: 1-888-252-6380 service@spaenaur.com



DIN 986
Domed Hex Cap Nuts with Nylon Insert
Écrous à chape
pg. C56

DIN 988
Shim Washers
Rondelles d'espacement
pg. D75

DIN 1434 / 1435
Clevis Pin with Small Head
Goupilles cylindriques
Greyed out standard no longer supported

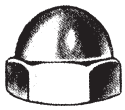
DIN 1440
Flat Washers for Clevis Pins
Rondelles en acier
pg. D19 ~ISO 8738

DIN 1471
Grooved Pins with Full Length Taper
Goupilles cylindriques
pg. E86 ~ISO 8744

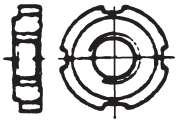
DIN 1472
Grooved Pins with Half Length Taper
Goupilles cylindriques
pg. E86 ~ISO 8745

DIN 1473
Grooved Pins – Full Length
Goupilles cylindriques
pg. E86 ~ISO 8740

DIN 1481
Spring Tension Pins
Goupilles tendeuses à ressort
pg. A18, A92, E96 ~ISO 8752



DIN 1587
Hex Dome Nuts
Écrous à chape
pg. C56



DIN 1804
Slotted Round Locknuts
Écrous indesserrables
pg. C56

DIN 1810A
Hook Spanner
Clés à crochet
pg. P86

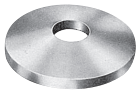
DIN 1810B
Pin Spanner
Clés à griffe
pg. P86

DIN 1814
Adjustable Tap Wrenches
Outils pour taraud
pg. P72

DIN 1869
Extra Long Straight Shank Twist Drills
Forets extra-long
pg. P38

DIN 1870
Extra Long Taper Shank Twist Drills
Forets extra-long
Greyed out standard no longer supported

DIN 1898A
Taper Pin Drills with Parallel Shank
Forets
Greyed out standard no longer supported



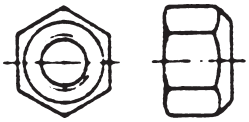
DIN 2093
Steel, Disc Springs
Rondelles "Belleville" en acier à ressort
D52-D61

DIN 2179
Quick Helix Taper Pin Reamers
Alésoirs
pg. P45

DIN 6319C
Spherical Seat Washers
Rondelles spérique à siège
pg. B302

DIN 6319D
Dished Washers
Rondelles à cuvette
pg. B302

DIN 6325
Rounded Dowel Pins – Hardened (Chamfered one end)
Goupilles cylindriques
pg. E83-E85 ~ISO 8734



DIN 6330B
Fixture Nuts
Écrous à pièce fixe
pg. B301

DIN 6331
Collar Nuts
Écrous à collet
pg. B301

DIN 6334
Coupling Nuts
Écrous hexagonaux
pg. C20, B293

DIN 6340
Flat Washers - Hardened
Rondelles en acier
pg. D18

R

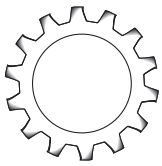
DIN 6368
Socket wrench
Clé à douille
pg. P87

DIN 6450
Parallel Pin Punches
Chasse - goupilles
pg. P90, N10

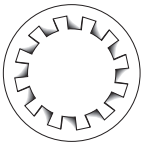
DIN 6451
Crosscut Chisels
Bédanes
pg P91, N9

DIN 6453
Flat Cold Chisels
Burins plat
pg. P91, N9

DIN 6458
Taper Punches
Chasse - pointes
pg. P90, N9



DIN 6797A
External Tooth Lockwashers
Flat
Rondelles de blocage dentées
pg. D32, D34



DIN 6797J
Internal Tooth Lockwashers
Flat
Rondelles de blocage dentées
pg. D32, D34

DIN 6797V
External Tooth Lockwashers
90° Countersunk
Rondelles de blocage dentées
pg. D32

DIN 6798A
External Overlap Tooth Lockwashers
Rondelles blocage dentées
pg. D33-D34

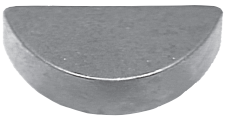
DIN 6798J
Internal Overlap Tooth Lockwashers
Rondelles de blocage dentées
pg. D33-D34, A15, A79

DIN 6798V
External Overlap Tooth Lockwashers - 90° Ctsk.
Rondelles de blocage dentées
pg. D33

DIN 6799
Retaining Rings - External
Bagues de retenue - extérieur
pg. E139

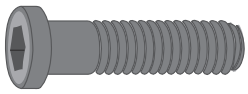
DIN 6880
Square and Rectangular Key Stock
Clavettes d'arbre
pg. E114

DIN 6885A
Shaft Keys
Clavettes d'arbre
pg. E111 ~ISO 2491

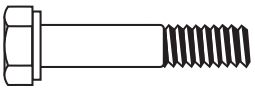


DIN 6888
Woodruff Keys
Clavettes «Woodruff»
pg. E109 ~ISO 3912

DIN 6911
Short Hex Key
with Pilot Point
Clé hexagonale courte
avec pointe-pilote
pg. P10

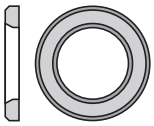


DIN 6912
Hex Socket Cap Screws – Low head style with pilot recess for wrench key
Vis à tête à 6 pans creux
pg. B218

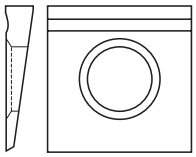


DIN 6914
High-Strength Hex Head Bolts
Boulons de précision hexagonaux
pg. B170 ~ISO 7412

DIN 6915
Heavy Hexagon Nuts
Écrous hexagonaux
pg. C20 ~ISO 7414

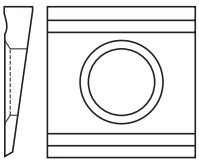


DIN 6916
Flat Washers - Hardened for use with DIN 6914
Rondelles en acier
pg. D18 ~ISO 7416

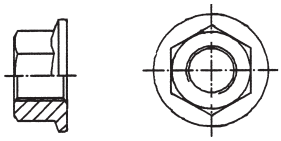


DIN 6917
Square Beveled Washers – 14% Slope for "I" Beams, Countersunk
Plaquettes obliques carreau
pg. D74

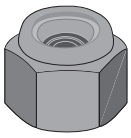
R



DIN 6918
Square Beveled Washers – 8% Slope for "U" Beams, Countersunk
Plaquettes obliques carreau
pg. D74



DIN 6923
Hex Flange Nuts
Écrous hexagonaux à bride
pg C38

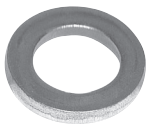


DIN 6924
Nylon Insert Hex Locknuts
Écrous indésserrables à garniture en nylon
pg. C32

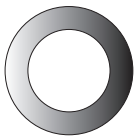
DIN 7250
Centre Punches
Pointeaux
pg. P90, N9

DIN 7256
Pointed Chisels
Burins pointu
pg. P91

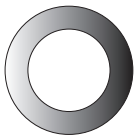
DIN 7343
Coiled Spring Pins
Goupilles à ressort en spirale
pg. E106-E107 ISO 8750



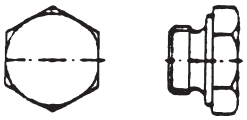
DIN 7349
Flat Washers - for use with DIN 1481
Rondelles en acier
pg. D16



DIN 7603A
Sealing Rings - Flat Gasket
Anneaux de scellage
pg. D20-D21



DIN 7603C
Sealing Rings - Packing Gasket
Anneaux de scellage
pg. D20-D21

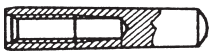


DIN 7604A
Hex Head Pipe Plugs with Shoulder / Bouchon hexagonaux pour tuyau
Adapteur interchangeable
pg. H10

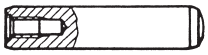
DIN 7967
"Buddy" Hexagon Locknuts
Écrous indesserrables hexagonaux
pg. C48

DIN 7968
Hexagon Head Fitting Bolt
Boulons hexagonaux
Greyed out standard no longer supported

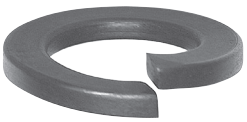
DIN 7977
Taper Pins with External Parallel Thread
Goupilles coniques
pg. E93 ~ISO 8737



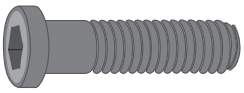
DIN 7978A
Taper Pins with Internal Thread
Goupilles coniques
pg. E94 ~ISO 8736



DIN 7979D
Flattened Dowel Pins with Internal Thread
Goupilles cylindriques
pg. E95 ~ISO 8733/35



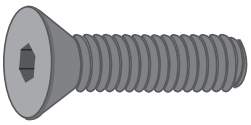
DIN 7980
Spring (Split) Lockwashers for use with DIN 912
Rondelles ressort
pg. D27



DIN 7984
Hex Socket Cap Screws Low Head Style
Vis à tête cylindrique à 6 pans creux
pg. B217

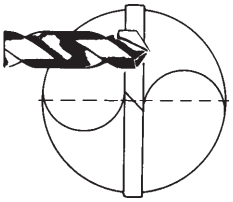
DIN 7985
Machine Screws - Phillips Drive - Raised Cheese Head
Vis de mécanique à tête Phillips
pg. B57-B58 ~ISO 7045

DIN 7989A
Flat Washers for Steel Construction
Rondelles en acier
pg. D18

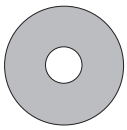


DIN 7991
90° Countersunk Flat head Hex Socket Cap Screws
Vis à tête à 6 pans creux
pg. B230-B232

DIN 8037
Carbide Tipped Straight Shank Twist Drills
Forets
Greyed out standard no longer supported



DIN 8039
Carbide Tipped Straight Shank Masonry Drills
Forets pour maçonnerie
pg. P40-P41



DIN 9021A

Fender Washers
Rondelles en acier

pg. D17 *~ISO 7093*

DIN 11023

Safety Lynch Pins
Clavettes d'essieu de sûreté

pg. E67

DIN 11024

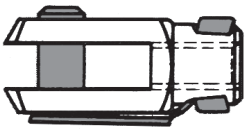
Hitch Pins –
Double Loop Style
Agrafes pour goupilles d'attelage

pg. E57

DIN 70615

Hexagon Nuts
with small A/F
Écrous hexagonaux

pg.C12



DIN 71752

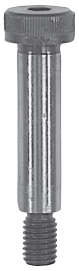
Metric Fork Heads
Fourehettes a tête métrique

pg. E94

ISO 529

Straight Flute Taps
Filières

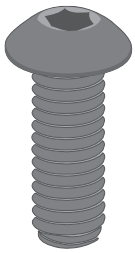
pg. P54-P55, P59-P61



ISO 7379

Hex Socket Shoulder Screws
Vis à tête à 6 pans creux

pg. B233 *~DIN 9841*



ISO 7380

Button Head Hex Socket
Cap Screws
Vis à tête à 6 pans creux

pg. B229

ISO 8750

Coiled Springs Pins
Goupilles à ressort en spirale

pg. E106-E107 *~DIN 7343*

ISO 8752

Spring Tension Pins
Goupilles tendeuses
à ressort

pg. E96 *~DIN 1481*

UNI 5587

Hex Thick Nuts
Class 6 & 8
Écrous hexagonaux épais

pg. C14

ISO 1207

Machine Screws - Slot Drive
- Cheese Head
Vis de mécanique
à tête fendue

pg. B28, B36-B56 *~DIN 84*

ISO 1234

Cotter Pins
Goupilles fendues

pg. E47-E48 *~DIN 94*

ISO 1580

Machine Screws - Slot Drive
- Pan Head
Vis de mécanique
à tête fendue

pg. B36, B38-B41, B44-B48, B50-B52 ~DIN 85

ISO 2009

Machine Screws
Slot Drive - Flat Head
Vis de mécanique
à tête fendue

pg. B37-B41, B44-B52 *~DIN 963*

ISO 2010

Machine Screws
Slot Drive - Oval Head
Vis de mécanique
à tête fendue

pg. B38-B41, B46-B48, B50-B52 ~DIN 964

ISO 2338

Dowel Pins -
Not Hardened
Goupilles cylindriques

pg. E86-E87 *~DIN 7*

ISO 2339

Taper Pins - Hardened
Goupilles coniques

pg. E-90-E92 *~DIN 1A*

ISO 2339

Taper Pins - Not Hardened
Goupilles coniques

pg. E91-E92 *~DIN 1B*

ISO 2491

Shaft Keys
Clavettes d'arbre

pg. E111 *~DIN 6885A*

ISO 2936

Hex Keys
Clés

pg. P9, P11 *~DIN 911*

ISO 3266

Drop Forged Eye Bolts
Boulons à oeil matricé

pg. B270 *~DIN 580*

ISO 3799

Grease Nipples
Graisseurs hyrauliques

pg. H14 *~DIN 71412*

ISO 3912

Woodruff Keys
Clavettes «Woodruff»

pg. E109 *~DIN 6888*

ISO 4014

Hexagon Cap Screws
Partially threaded - Unslotted
Boulons de précision
hexagonaux

pg. B158-B159, B161-B163, B169, B171, B173 *~DIN 931*

ISO 4017

Hexagon Cap Screws
Fully threaded - Unslotted
Boulons de précision
hexagonaux

pg. B156-157, B160, B162, B168, B170, B172-174 *~DIN 933*

ISO 4026

Hex Socket Set Screws
Flat Point
Vis de pression à
6 pans creux

pg. B251 *~DIN 913*

R

P: 1-800-265-8772 F: 1-888-252-6380 service@spaenaur.com

R

Greyed out standard no longer supported

DIN 7	ISO 2338	Parallel pins, of unhardened steel and austenitic stainless steel (ISO 2338:1997)
DIN 78	ISO 4753	Fasteners – Ends of parts with external ISO metric screw thread (ISO 4753: 1999)
DIN 84	ISO 1207	Slotted cheese head screws – Product grade A (ISO 1207:1992)
DIN 85	ISO 1580	Slotted pan head screws – Product grade A (ISO 1580:1994)
DIN 94	ISO 1234	Split pins (ISO 1234:1997)
DIN 125-1	ISO 7089	Plain washers – Normal series – Product grade A (ISO 7089:2000)
DIN 125-1	ISO 7090	Plain washers, chamfered – Normal series – Product grade A (ISO 7090: 2000)
DIN 125-2	ISO 7089	Plain washers – Normal series – Product grade A (ISO 7089:2000)
DIN 125-2	ISO 7090	Plain washers, chamfered – Normal series – Product grade A (ISO 7090: 2000)
DIN 126	ISO 7091	Plain washers – Normal series – Product grade C (ISO 7091:2000)
DIN 267-2	ISO 4759-1	Tolerances for fasteners – Part 1: Bolts, screws, studs and nuts – Product grades A, B and C (ISO 4759-1:2000)
DIN 267-3	ISO 898-1	Mechanical properties of fasteners made of carbon steel and alloy steel – Part 1: Bolts, screws and studs (ISO 898-1 : 1999)
DIN 267-5	ISO 3269	Fasteners – Acceptance inspection (ISO 3269:2000)
DIN 267-7	ISO 898-1	Mechanical properties of fasteners made of carbon steel and alloy steel – Part 1: Bolts, screws and studs (ISO 898-1 : 1999)
DIN 267-9	ISO 4042	Fasteners – Electroplated coatings (ISO 4042:1999)
DIN 267-10	ISO 10684	Fasteners – Hot dip galvanized coatings (ISO 10684:2004)
DIN 267-12	ISO 2702	Heat-treated steel tapping screws – Mechanical properties (ISO 2702: 1992)
DIN 267-15	ISO 2320	Prevailing torque type steel hexagon nuts – Mechanical and performance properties (ISO 2320: 1997)
DIN 267-15	ISO 3506-1	Mechanical properties of corrosion-resistant stainless steel fasteners – Part 1: Bolts, screws and studs (ISO 3506-1 : 1997)
DIN 267-15	ISO 3506-2	Mechanical properties of corrosion-resistant stainless steel fasteners – Part 2: Nuts (ISO 3506-2:1997)
DIN 267-15	ISO 3506-3	Mechanical properties of corrosion-resistant stainless steel fasteners – Part 3: Set screws and similar fasteners not under tensile stress (ISO 3506-3: 1997)
DIN 267-20	ISO 6157-2	Fasteners – Surface discontinuities – Part 2: Nuts (ISO 6157-2:1995)
DIN 267-21	ISO 10484	Widening test on nuts (ISO 10484:1997)
DIN 267-23	ISO 898-6	Mechanical properties of fasteners – Part 6: Nuts with fine pitch thread and specified proof load values (ISO 898-6:1994)
DIN 433-1	ISO 7092	Plain washers, small series – Product grade A (ISO 7092:2000)
DIN 433-2	ISO 7092	Plain washers, small series – Product grade A (ISO 7092:2000)
DIN 439-1	ISO 4036	Hexagon thin nuts (unchamfered) – Product grade B (ISO 4036:1999)
DIN 439-2	ISO 4035	Hexagon thin nuts (chamfered) – Product grades A and B (ISO 4035:1999)
DIN 439-2	ISO 8675	Hexagon thin nuts (chamfered) with metric fine pitch thread – Product grades A and B (ISO 8675: 1999)
DIN 427	ISO 2342	Slotted headless screws with shank (ISO 2342: 2003)
DIN 440	ISO 7094	Plain washers – Extra large series – Product grade C (ISO 7094: 2000)

Continues on Next Page

P: 1-800-265-8772 F: 1-888-252-6380 service@spaenaur.com

DIN 522	ISO 4759-3	Tolerances for fasteners – Part 3: Plain washers for bolts, screws and nuts – Product grades A and C (ISO 4759-3: 2000)
DIN 555	ISO 4034	Hexagon nuts – Product grade C (ISO 4034: 1999)
DIN 558	ISO 4018	Hexagon head screws – Product grade C (ISO 4018:1999)
DIN 601	ISO 4016	Hexagon head bolts – Product grade C (ISO 4016:1999)
DIN 912	ISO 21269	Hexagon socket head cap screws with metric fine pitch thread (ISO 21269: 2004)
DIN 912	ISO 4762	Hexagon socket head cap screws (ISO 4762:2004)
DIN 913	ISO 4026	Hexagon socket set screws with flat point (ISO 4026:2003)
DIN 914	ISO 4027	Hexagon socket set screws with cone point (ISO 4027: 2003)
DIN 915	ISO 4028	Hexagon socket set screws with dog point (ISO 4028: 2003)
DIN 916	ISO 4029	Hexagon socket set screws with cup point (ISO 4029: 2003)
DIN 931-1	ISO 4014	Hexagon head bolts – Product grades A and B (ISO 4014:1999)
DIN 933	ISO 4017	Hexagon head screws – Product grades A and B (ISO 4017:1999)
DIN 934	ISO 4032	Hexagon nuts, style 1 – Product grades A and B (ISO 4032: 1999)
DIN 934	ISO 8673	Hexagon nuts, style 1, with metric fine pitch thread – Product grades A and B (ISO 8673:1999)
DIN 960	ISO 8765	Hexagon head bolts with metric fine pitch thread – Product grades A and B (ISO 8765:1999)
DIN 961	ISO 8676	Hexagon head screws with metric fine pitch thread – Product grades A and B (ISO 8676: 1999)
DIN 963	ISO 2009	Slotted countersunk flat head screws (common head style) – Product grade A (ISO 2009: 1994)
DIN 964	ISO 2010	Countersunk slotted raised head screws (common head style) – Product grade A (ISO 2010:1994)
DIN 965	ISO 7046-1	Countersunk flat head screws (common head style) with type H or type Z cross recess, product grade A – Part 1: Steel of property class 4.8 (ISO 7046-1:1994)
DIN 965	ISO 7046-2	Cross recessed countersunk flat head screws (common head style) (grade A) – Part 2: Steel of property class 8.8, stainless steel and non-ferrous met- als (ISO 7046-2:1990)
DIN 966	ISO 7047	Countersunk raised head screws (common head style) with type H or type Z cross recess – Product grade A (ISO 7047:1994)
DIN 970	ISO 4032	Hexagon nuts, style 1 – Product grades A and B (ISO 4032: 1999)
DIN 971-1	ISO 8673	Hexagon nuts, style 1, with metric fine pitch thread – Product grades A and B (ISO 8673:1999)
DIN 971-2	ISO 8674	Hexagon nuts, style 2, with metric fine pitch thread – Product grades A and B (ISO 8674: 1999)
DIN 972	ISO 4034	Hexagon nuts – Product grade C (ISO 4034: 1999)
DIN 977	ISO 21670	Hexagon weld nuts with flange (ISO 21670: 2003)
DIN 980	ISO 10513	Prevailing torque type all-metal hexagon nuts, style 2, with metric fine pitch thread – Property classes 8, 10 and 12 (ISO 10513:1997)
DIN 980	ISO 7042	Prevailing torque type all-metal hexagon nuts, style 2 – Property classes 5, 8, 10 and 12 (ISO 7042:1997)
DIN 982	ISO 7040	Prevailing torque type hexagon nuts (with non-metallic insert), style 1 – Property classes 5, 8 and 10 (ISO 7040:1997)
DIN 982	ISO 10512	Prevailing torque type hexagon nuts (with non-metallic insert), style 1, with metric fine pitch thread – Property classes 6, 8 and 10 (ISO 10512:1997)
DIN 985	ISO 10511	Prevailing torque type hexagon thin nuts (with non-metallic insert) (ISO 10511 : 1997)

Continues on Next Page

P: 1-800-265-8772 F: 1-888-252-6380 service@spaenaur.com

DIN 1470	ISO 8739	Grooved pins, full-length parallel grooved, with pilot (ISO 8739:1997)
DIN 1471	ISO 8744	Grooved pins, full-length taper grooved (ISO 8744:1997)
DIN 1472	ISO 8745	Grooved pins, half-length taper grooved (ISO 8745:1997)
DIN 1473	ISO 8740	Grooved pins, full-length parallel grooved, with chamfer (ISO 8740:1997)
DIN 1474	ISO 8741	Grooved pins, half-length reverse-taper grooved (ISO 8741:1997)
DIN 1475	ISO 8742	Grooved pins, one-third-length centre grooved (ISO 8742:1997)
DIN 1476	ISO 8746	Grooved pins with round head (ISO 8746:1997)
DIN 1477	ISO 8747	Grooved pins with countersunk head (ISO 8747:1997)
DIN 1481	ISO 8752	Spring-type straight pins – Slotted, heavy duty (ISO 8752:1997)
DIN 6325	ISO 8734	Parallel pins, of hardened steel or martensitic stainless steel (Dowel pins) (ISO 8734:1997)
DIN 6900	ISO 10644	Screw and washer assemblies with plain washers – Washer hardness classes 200 HV and 300 HV (ISO 10644:1998)
DIN 6901	ISO 10510	Tapping screw and washer assemblies with plain washers (ISO 10510:1999)
DIN 6902	ISO 10673	Plain washers for screw and washer assemblies – Small, normal and large series – Product grade A (ISO 10673:1998)
DIN 6903	ISO 10669	Plain washers for tapping screw and washer assemblies – Normal and large series – Product grade A (ISO 10669:1999)
DIN 6924	ISO 10512	Prevailing torque type hexagon nuts (with non-metallic insert), style 1, with metric fine pitch thread – Property classes 6, 8 and 10 (ISO 10512:1997)
DIN 6924	ISO 7040	Prevailing torque type hexagon nuts (with non-metallic insert), style 1 – Property classes 5, 8 and 10 (ISO 7040:1997)
DIN 6925	ISO 10513	Prevailing torque type all-metal hexagon nuts, style 2, with metric fine pitch thread – Property classes 8, 10 and 12 (ISO 10513:1997)
DIN 6925	ISO 7042	Prevailing torque type all-metal hexagon nuts, style 2 – Property classes 5, 8, 10 and 12 (ISO 7042:1997)
DIN 7337	ISO 14589	Blind rivets – Mechanical testing (ISO 14589: 2000)
DIN 7337	ISO 15977	Open end blind rivets with break pull mandrel and protruding head – AIA/St (ISO 15977: 2002)
DIN 7337	ISO 15978	Open end blind rivets with break pull mandrel and countersunk head – AIA/ St (ISO 15978: 2002)
DIN 7337	ISO 15979	Open end blind rivets with break pull mandrel and protruding head – St/St (ISO 15979: 2002)
DIN 7337	ISO 15980	Open end blind rivets with break pull mandrel and countersunk head – St/St (ISO 15980: 2002)
DIN 7337	ISO 15981	Open end blind rivets with break pull mandrel and protruding head – AIA/AIA (ISO 15981:2002)
DIN 7337	ISO 15982	Open end blind rivets with break pull mandrel and countersunk head – AIA/ AIA (ISO 15982: 2002)
DIN 7337	ISO 15983	Open end blind rivets with break pull mandrel and protruding head – A2/A2 (ISO 15983: 2002)
DIN 7337	ISO 15984	Open end blind rivets with break pull mandrel and countersunk head – A2/ A2 (ISO 15984: 2002)
DIN 7337	ISO 16582	Open end blind rivets with break pull mandrel and protruding head – Cu/St or Cu/Br or Cu/SSt (ISO 16582: 2002)
DIN 7337	ISO 16583	Open end blind rivets with break pull mandrel and countersunk head – Cu/St or Cu/Br or Cu/SSt (ISO 16583:2002)
DIN 7337	ISO 16584	Open end blind rivets with break pull mandrel and protruding head – NiCu/St or NiCu/SSt (ISO 16584:2002)
DIN 7343	ISO 8750	Spring-type straight pins – Coiled, standard duty (ISO 8750:1997)

Continues on Next Page

P: 1-800-265-8772 F: 1-888-252-6380 service@spaenaur.com

DIN 7344	ISO 8748	Spring-type straight pins – Coiled, heavy duty (ISO 8748:1997)
DIN 7346	ISO 13337	Spring-type straight pins, slotted, light duty (ISO 13337: 1997
DIN 7500-1	ISO 7085	Mechanical and performance requirements of case hardened and tempered metric thread rolling screws (ISO 7085: 1999)
DIN 7504	ISO 10666	Drilling screws with tapping screw thread – Mechanical and functional prop- erties (ISO 10666:1999)
DIN 7504	ISO 15480	Hexagon washer head drilling screws with tapping screw thread (ISO 15480:1999)
DIN 7504	ISO 15481	Cross recessed pan head drilling screws with tapping screw thread (ISO 15481 : 1999)
DIN 7504	ISO 15482	Cross recessed countersunk head drilling screws with tapping screw thread (ISO 15482: 1999)
DIN 7504	ISO 15483	Cross recessed raised countersunk head drilling screws with tapping screw thread (ISO 15483:1999)
DIN 7962	ISO 4757	Cross recesses for screws (ISO 4757:1983)
DIN 7970	ISO 1478	Tapping screws thread (ISO 1478:1999)
DIN 7971	ISO 1481	Slotted pan head tapping screws (ISO 1481:1983)1)
DIN 7972	ISO 1482	Slotted countersunk (flat) head tapping screws (common head style) (ISO 1482:1983)1)
DIN 7973	ISO 1483	Slotted raised countersunk (oval) head tapping screws (common head style) (ISO 1483:1983) 1)
DIN 7976	ISO 1479	Hexagon head tapping screws (ISO 1479:1983) 1)
DIN 7979	ISO 8733	Parallel pins with internal thread, of unhardened steel and austenitic stain- less steel (ISO 8733:1997)
DIN 7979	ISO 8735	Parallel pins with internal thread, of hardened steel and martensitic stainless steel (ISO 8735: 1997)
DIN 7981	ISO 7049	Cross recessed pan head tapping screws (ISO 7049:1983) 1)
DIN 7982	ISO 7050	Cross recessed countersunk (flat) head tapping screws (common head style) (ISO 7050:1983) 1)
DIN 7983	ISO 7051	Cross recessed raised countersunk (oval) head tapping screws (ISO 7051:1983)1)
DIN 7985	ISO 7045	Pan head screws with type H or type Z cross recess – Product grade A (ISO 7045:1994)
DIN 7991	ISO 10642	Hexagon socket countersunk head screws (ISO 10642:2004)
DIN 9021	ISO 7093-1	Plain washers – Large series – Part 1: Product grade A (ISO 7093-1 : 2000)
DIN 9021	ISO 7093-2	Plain washers – Large series – Part 2: Product grade C (ISO 7093-2: 2000)

This information is for reference only. Independent verification with your engineering department or other authoritative citation should precede using it for any critical application
SPAENAUR cannot be held responsible for the accuracy of these figures.