



# TECHNICAL DATA

<u>Metric/Imperial Tables</u>	362-363
<u>Euroboor Technical Data</u>	364-365
<u>DIN Table</u>	366
<u>Tensile Table</u>	367
<u>Product Image Chart</u>	368-371

# IMPERIAL METRIC TABLE

METRIC - APPROX	METRIC - PRECISE	SCREW GAUGE	STANDARD WIRE GAUGE	SHEET GAUGE	RIVET NO. (DIAMETER)	INCH - DECIMAL	INCH - FRACTION	DRILLS USED FOR RIVETS
1	0.996			20		0.039		
1.2	1.22		18			0.048		
1.2	1.257			18		0.050		
1.6	1.587			16		0.0625	1/16	
1.6	1.63		16			0.064		
1.8	1.83		15			0.072		
2	1.994			14		0.079		
2	2.03		14			0.080		
2.4	2.381				3	0.0938	3/32	
2.5	2.517			12		0.099		
2.7	2.743	4				0.108		
3	3.099	5				0.122		
3.2	3.175			10	4	0.125	1/8	
	3.264					0.129		30
3.5	3.454	6				0.136		
3.8	3.81	7				0.150		
4	3.968				5	0.156	5/32	
	4.089					0.161		20
4.2	4.166	8				0.164		
	4.521	9				0.178		
4.8	4.762				6	0.187	3/16	
4.8	4.826	10				0.190		
	4.851					0.191		11
5.6	5.588	12				0.220		
6.3	6.299	14				0.248		
6.4	6.35				8	0.250	1/4	
	6.807	16				0.268		
	7.722	18				0.304		
8	7.937				10	0.312	5/16	
9.5	9.525				12	0.375	3/8	
11	11.11					0.4375	7/16	
12 or 13	12.7					0.500	1/2	
14	14.29					0.562	9/16	
16	15.88					0.625	5/8	
19 or 20	19.05					0.750	3/4	
22	22.23					0.875	7/8	
25	25.4					1.000	1"	
28	28.575					1.125	1 - 1/8	
32	31.75					1.250	1 - 1/4	
38	38.1					1.500	1 - 1/2	
45	44.45					1.750	1 - 3/4	
50	50.8					2.0	2"	
63	63.5					2.5	2 - 1/2	
75	76.2					3.0	3"	
100	101.6					4.0	4"	
115	114.3					4.5	4 - 1/2	
125	127.0					5.0	5"	
150	152.4					6.0	6"	

### Notes on gauges:

There are different gauge series for Screws, for sheet-metal, for Wire, for Rivets and for Drill Bits. There is no correlation between them. For Screws, the gauge is the major diameter of the thread. For Washers, it is the thickness of the metal (sheet gauge). For Nails, Brads, and Staples, it is the wire size (SWG) from which the item was formed.

A/F	THREAD DIAMETER AND PITCH TABLE													
METRIC	METRIC THREADS						IMPERIAL THREADS - PITCH IN THREADS PER INCH (TPI)							
COARSE		PITCH IN mm PER THREAD			MAJOR DIAMETER		UNIFIED (AMERICAN)				BRITISH			
BOLT HEADS	SIZE	ISO COARSE	FINE	EXTRA FINE	mm	INCH	SIZE	UNC	UNF	UNS	UN8	BSW	BSF	
					1.524	0.060	# 0		80					
3.2	M1.6	0.35	0.2		1.600	0.063								
					1.854	0.073	# 1		72					
4	M2	0.4	0.25		2.000	0.079								
					2.184	0.086	# 2	56	64					
5	M2.5	0.45			2.500	0.098								
					2.515	0.099	# 3	48	56					
					2.845	0.112	# 4	40	48					
5.5	M3	0.5	0.35		3.000	0.118								
					3.175	0.125	1/8" = # 5	40	44			40		
6	M3.5	0.6	0.35		3.500	0.138	# 6	32	40					
					3.969	0.156	5/32"					32		
7	M4	0.7	0.5		4.000	0.157								
					4.166	0.164	# 8	32	36					
					4.762	0.188	3/16"					24	32	
					4.826	0.190	# 10	24	32					
8	M5	0.8	0.5		5.000	0.197								
10	M6	1	0.75		6.000	0.236								
					6.350	0.250	1/4"	20	28			20	26	
11	M7	1			7.000	0.276								
					7.938	0.313	5/16"	18	24			18	22	
13	M8	1.25	1	0.75	8.000	0.315								
	M9	1.25			9.000	0.354								
					9.525	0.375	3/8"	16	24			16	20	
16	M10	1.5	1.25	1	10.000	0.394								
					11.112	0.438	7/16"	14	20			14	18	
18	M12	1.75	1.5	1.25	12.000	0.472								
					12.700	0.500	1/2"	13	20			12	16	
21	M14	2	1.5	1.25	14.000	0.551								
					14.288	0.563	9/16"	12	18					
					15.875	0.625	5/8"	11	18			11	14	
24	M16	2	1.5	1	16.000	0.630								
27	M18	2.5	2	1.5	18.000	0.709								
					19.050	0.750	3/4"	10	16			10	12	
30	M20	2.5	2	1.5	20.000	0.787								
33	M22	2.5	2	1.5	22.000	0.866								
					22.225	0.875	7/8"	9	14			9	11	
36	M24	3	2	1.5	24.000	0.945								
					25.400	1.000	1"	8	12	14		8	10	
41	M27	3	2	1.5	27.000	1.063								
					28.575	1.125	1-1/8"	7	12			8	7	9
46	M30	3.5	3	2	30.000	1.181								
					31.750	1.125	1-1/4"	7	12			8	7	9
50	M33	3.5	3	2	33.000	1.299								
					34.925	1.375	1-3/8"	6	12			8	6	
55	M36	4	3	2	36.000	1.417								
					38.100	1.500	1-1/2"	6	12			8	6	8
60	M39	4			39.000	1.535								
					41.275	1.625	1-5/8"	5-1/2	12			8		
65	M42	4.5	4	3	42.000	1.653								
					44.450	1.750	1-3/4"	5	12			8	5	7
					47.625	1.875	1-7/8"					8		
75	M48	5	4	3	48.000	1.890								
					50.800	2.000	2"	4-1/2	12			8	4-1/2	
85	M56	5.5			56.000	2.205								
					63.500	2.500	2-1/2"					8		
95	M64	6			64.000	2.520								
					69.850	2.750	2-3/4"					8		
105	M72	6			72.000	2.835								
					76.200	3.000	3"					8		
					82.550	3.250	3-1/4"					8		
					88.900	3.500	3-1/2"					8		
					101.600	4.000	4"					8		

Other A/F sizes may be used for JIS/Automotive, DIN, Metric Fine, and HSGFG bolts.

Note: Other threads not on this table are BSP, NPT, BA, BSB, CONDUIT, ACME.



TECHNICAL DATA	ECO .30	ECO .32	ECO 40.2	ECO 50.S
ANNULAR CUTTING	12 - 30 MM	12 - 32 MM	12 - 40 MM	12 - 50 MM
TWIST DRILLING	1 - 13 MM	1 - 13 MM	1 - 13 MM	1 - 23 mm
TWIST DRILLING (WELDON)	10 - 35 mm			
THREADING				
COUNTERSINKING		10 - 40 MM	10 - 45 MM	10 - 55 MM
IN-CORNER DRILLING 0°:				
IN-CORNER DRILLING 90°:				
IN-CORNER DRILLING 45°:				
LENGTH	275 MM	320 MM	320 MM	320 MM
WIDTH	190 MM	210 MM	210 MM	200 MM
HEIGHT	293 - 383 MM	370 - 512 MM	395 - 540 MM	445 - 615 MM
STROKE	90 MM	150 MM	150 MM	170 MM
WEIGHT	8,5 KG	12 KG	12 KG	11.2 KG
MAGNET (L X W X H)	160 X 80 X 37 MM	160 X 80 X 42 MM	160 X 80 X 42 MM	160 X 80 X 42 MM
MAGNETIC FORCE	1200 KG	1500 KG	1500 KG	1700 KG
MOTOR POWER	900 W	1000 W	1050 W	1250 W
TOTAL POWER	950 W	1050 W	1100 W	1100 W
SPEED (NO LOAD)	775 RPM	775 RPM	(I) 720 RPM (II) 1300 RPM	(I) 315 RPM (II) 690 rpm
SPEED (LOAD, 900 W)	400 RPM		440 rpm	
Speed (load 1000 W)		440 RPM		
SPEED (LOAD 1050 W)			(I) 315 RPM (II) 560 RPM	(I) 235 RPM (II) 425 RPM
Speed (load, 1240 W)				
Speed (load, 1700 W)				
Spindle (Weldon)	19,05 mm	19,05 mm	19,05 mm	MT3 19,05 mm
Voltage	110 - 120 V / 60 Hz	110 - 120 V / 60 Hz	110 - 120 V / 60 Hz	110 - 120 V / 60 Hz
	220 - 240 V / 50 - 60 Hz	220 - 240 V / 50 - 60 Hz	220 - 240 V / 50 - 60 Hz	220 - 240 V / 50 - 60 Hz



TECHNICAL DATA	ECO .30	ECO .32	ECO 40.2	ECO 50.S
ANNULAR CUTTING	12 - 36 MM	12 - 50 MM	12 - 80 MM	10 - 30 MM
TWIST DRILLING	1 - 14 MM	1 - 23 MM	1 - 31,75 MM	
TWIST DRILLING (WELDON)				1 - 13 MM
THREADING		M3 - M20		
COUNTERSINKING	10 - 40 MM	10 - 55 MM	10 - 85 MM	10 - 35 MM
IN-CORNER DRILLING 0°:	50 MM			
IN-CORNER DRILLING 90°:	53 MM			
IN-CORNER DRILLING 45°:	60 MM			
LENGTH	310 MM	320 MM	365 MM	275 MM
WIDTH	135 MM	210 MM	310 MM	185 MM
HEIGHT	165 MM	385 - 540 MM	510 - 710 MM	326 - 416 MM
STROKE	40 MM	170 MM	260 MM	90 MM
WEIGHT	10,3 KG	13,5 KG	28 KG	11 KG
MAGNET (L X W X H)	80X160X37 MM	170X85X48 MM	220X110X64 MM	187X165X83 MM
MAGNETIC FORCE	1200 KG	1850 KG	3000 KG	532 KG
MOTOR POWER	1050 W	1250 W	1700 W	900 W
TOTAL POWER	1100 W	1375 W	1800 W	950 W
SPEED (NO LOAD)	700 RPM	(I)100 - 280 RPM	(I) 200 RPM (II) 300 RPM (III) 415 RPM (IV) 650 RPM	775 RPM
SPEED (LOAD, 900 W)	700 RPM			400 RPM
Speed (load 1000 W)				
SPEED (LOAD 1050 W)	400 RPM			
Speed (load, 1240 W)		(I)250 RPM		
Speed (load, 1700 W)			(I) 150 RPM (II) 200 RPM (III) 275 rpm (IV) 400 pm	
Spindle (Weldon)	19,05 mm	MT2 19,05 mm	MT3 19,05 mm	19,05 mm
Voltage	110 - 120 V / 60 Hz	110 - 120 V / 60 Hz	110 - 120 V / 60 Hz	110 - 120 V / 60 Hz
	220 - 240 V / 50 - 60 Hz	220 - 240 V / 50 - 60 Hz	220 - 240 V / 50 - 60 Hz	220 - 240 V / 50-60 Hz

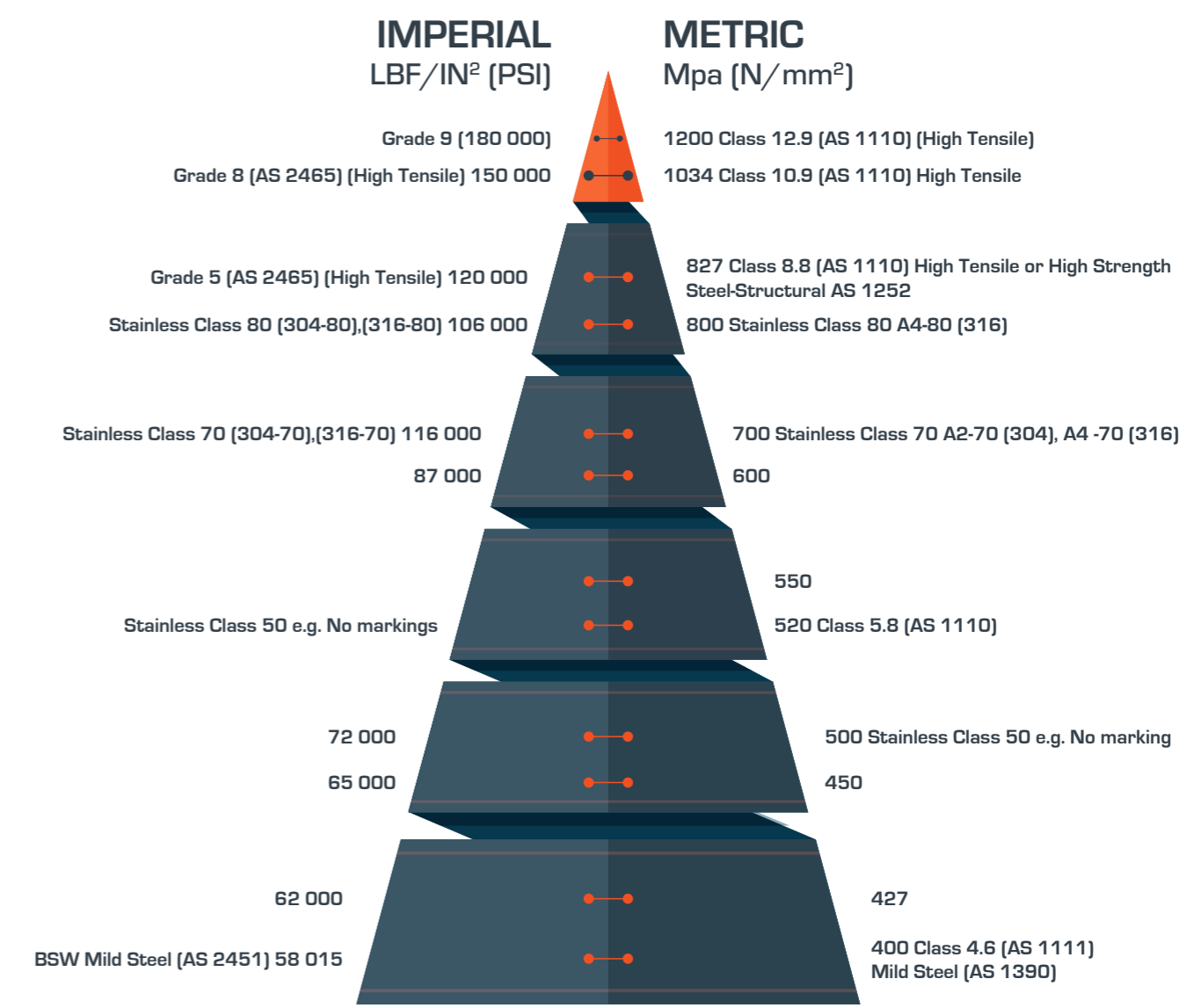




DIN 1	TAPER PIN	DIN 582	LIFTING EYE NUTS	DIN 71752G	CLEVISES	DIN 931	HEX HEAD BOLTS (PARTIALLY THREADED)
DIN 125A	FLAT WASHERS	DIN 603	CARRIAGE BOLTS	DIN 7343	STANDARD COILED PIN	DIN 933	HEX HEAD BOLTS (FULLY THREADED)
DIN 127B	SPRING LOCK WASHERS	DIN 609	HEX SHOULDER BOLT LONG THREAD	DIN 7349	HEAVY WASHERS	DIN 934	HEX NUTS
DIN 137B	WAVE WASHERS	DIN 6325	DOWEL PINS	DIN 7500	HEX HEAD THREAD FORMING SCREW	DIN 934L	HEX NUTS LEFT HAND THREAD
DIN 1440	FLAT WASHER FOR CLEVIS PIN	DIN 6331	COUPLING NUTS	DIN 7603	ALUMINIUM SEALING RING	DIN 934L	HEX NUTS LEFT HAND THREAD
DIN 1479	TURNBUCKLE NUTS	DIN 6340	WASHERS FOR CLAMPING DEVICE	DIN 7976C	SELF TAPPING HEX HEAD TAPPING SCREW	DIN 934MF	HEX NUTS
DIN 1481	SPRING PIN	DIN 6796	SERRATED LOCK WASHERS	DIN 7978A	TAPER PIN w/INTERNAL THREAD	DIN 936	HEX NUT LOW
DIN 1587	DOMED HEX NUT	DIN 6797A	LOCK WASHERS TOOTH	DIN 7979	PULL DOWEL PINS	DIN 936MF	HEX NUT LOW (FINE THREAD)
DIN 175	DRILL ROD	DIN 6797I	WASHERS	DIN 7980	COIL SPRING LOCK WASHERS	DIN 938	STUDS
DIN 2093A	SPRING DISCS	DIN 6797J	LOCK WASHERS TOOTH	DIN 7984	LOW HEAD SOCKET HEAD CAP SCREW	DIN 939	STUDS
DIN 315	WING NUT	DIN 6798	SERRATED LOCK WASHERS	DIN 7985	PHILIPS PAN HEAD MACHINE SCREW	DIN 94	COTTER PINS
DIN 316	WING SCREW	DIN 6798A	SERRATED LOCK WASHERS EXT TOOTH	DIN 7991	FLAT SOCKET HEAD CAP SCREW	DIN 960	HEX BOLTS FINE THREAD (PARTIALLY THREADED)
DIN 433	FLAT WASHERS REDUCED O.D.	DIN 6799	RETAINING WASHER	DIN 7993A	SNAP RING (FOR SHAFTS)	DIN 961	HEX BOLTS FINE THREAD (FULLY THREADED)
DIN 434	TAPER WASHERS 8%	DIN 6880	KEY STOCK	DIN 8140	AMECOIL	DIN 963	MACHINE SCREW FLAT HEAD SLOTTED
DIN 436	SQUARE WASHERS	DIN 6885	KEY STOCK ROUND END	DIN 84A	ROUND HEAD SLOT CHEESE HEAD MACHINE SCREW	DIN 965	MACHINE SCREW FLAT HEAD PHILIPS
DIN 439	HEX THIN (JAM) NUTS	DIN 6888	WOODRUF KEY	DIN 85A	ROUND HEAD SLOTTED PAN HEAD MACHINE SCREW	DIN 975	THREADED RODS
DIN 439MF	HEX THIN (JAM) NUTS FINE THREAD	DIN 6912	LOW HEAD SOCKET HEAD CAP SCREW	DIN 9021	WASHERS (FENDER)	DIN 975MF	THREADED RODS FINE THREADED
DIN 470	EXPANSION PLUG	DIN 6914	HEX BOLT	DIN 911	HEX (ALLAN) KEY	DIN 980V	LOCK NUT
DIN 471	RETAINING RINGS EXTERNAL	DIN 6915	NUT	DIN 912	SOCKET HEAD CAP SCREW	DIN 981	BEARING NUTS
DIN 472	RETAINING RINGS INTERNAL	DIN 6916	FLAT WASHERS	DIN 912	SOCKET HEAD CAP SCREW FULL THREAD	DIN 985	HEX LOCK NUTS
DIN 479	SQUARE HEAD SET SCREW	DIN 6921	HEX FLANGE BOLT	DIN 912MF	SOCKET HEAD CAP SCREW	DIN 985MF	HEX LOCK NUTS (FINE THREAD)
DIN 508	T SLOT NUTS	DIN 6923	SERRATED FLANGE HEX NUT	DIN 913	SOCKET SET SCREW FLAT POINT	DIN 988	RING
DIN 5406	BEARING WASHERS	DIN 6923MF	SERRATED FLANGE HEX NUT FINE THREAD	DIN 914	SOCKET SET SCREW CONE POINT	ISO 7379	SHOULDER SOCKET BOLTS
DIN 553	SET SCREW CONE POINT	DIN 6926	FLANGE NYLON INSERT LOCK NUT	DIN 915	SOCKET SET SCREW DOG POINT	ISO 7380	SOCKET BUTTON HEAD SCREW
DIN 557	SQUARE NUT	DIN 7	DOWEL PIN	DIN 916	SOCKET SET SCREW CUP POINT	JIS B1189	HEX HEAD FLANGE BOLT
DIN 571	HEX HEAD WOOD SCREW	DIN 71412	GREASE FITTINGS	DIN 916MF	SOCKET SET SCREW CUP POINT		
DIN 580	LIFTING EYE BOLTS	DIN 71752ES	CLEVISES	DIN 929	WELD NUT		

## Compare Tensile Strengths of Steel Grade and Class

- ▶ Imperial system uses Class
- ▶ Metric system uses Grades



Conversion Factor 1000 PSI (lbf/in<sup>2</sup>) = 6.8948 MPa  
 1 Mpa = 145.038 PSI(lbf/in<sup>2</sup>)

Information on this flyer is in good faith and no responsibility is taken for its accuracy. Please refer confirmation re technical certification/questions to your Qualified Engineers.

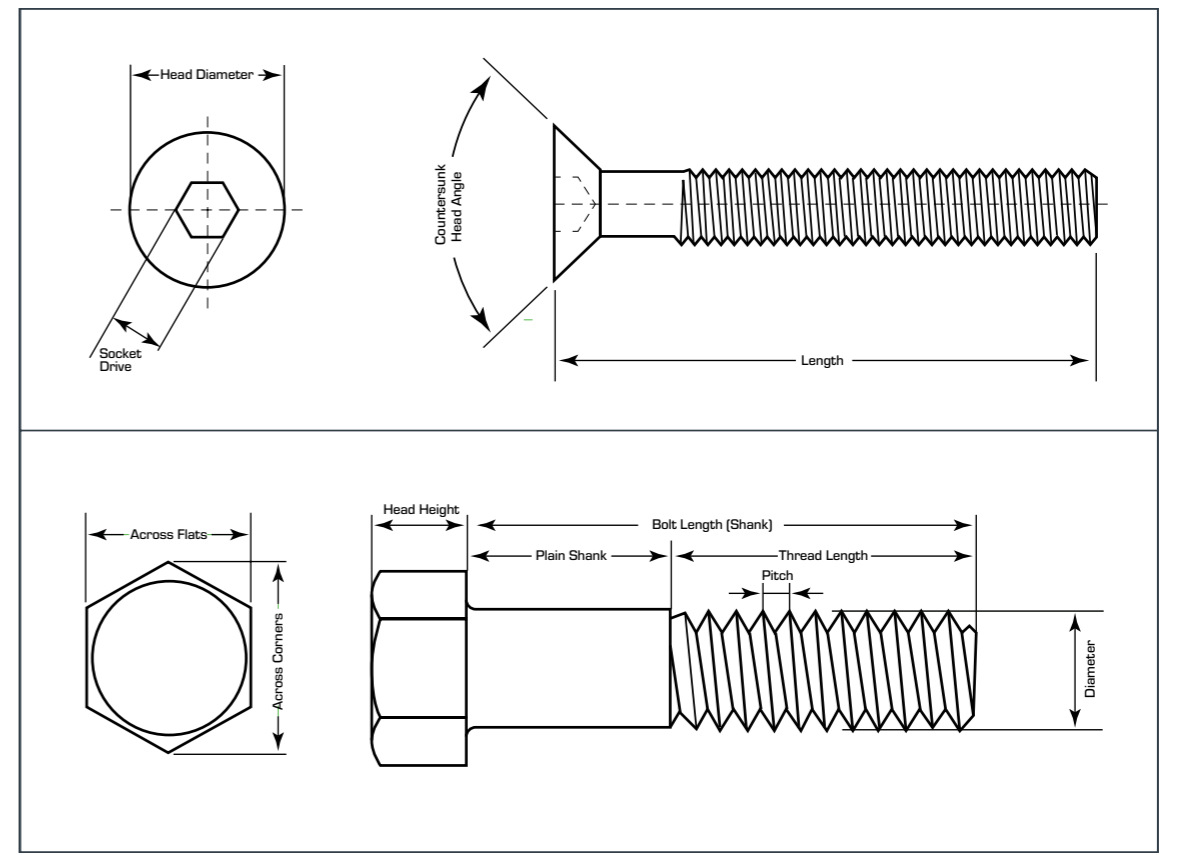
HEX HEAD BOLTS & NUTS	HEX HEAD BOLTS	SET SCREWS	PLOW BOLTS	SERRATED FLANGE BOLTS
COACH BOLTS & NUTS	COACH BOLTS ONLY	COACH SCREWS	HSFG BOLTS, NUTS & WASHERS	HSFG NUTS
HSFG WASHERS	THREADED RODS	HEX NUTS	CONELock NUTS	SERRATED FLANGED CONELock NUTS
FLANGED CONELock NUTS	NYLOC NUTS	NYLOC HALF NUTS	NYLOC DOME NUTS	NYLOC FLANGE NUTS
LOCK NUT HALF NUTS	LOCK NUTS	DOMe NUTS	SHEAR NUTS	CLINCH NUTS
CASTLE NUTS	WING NUTS	JOINT CONNECTOR CAP	SERRATED FLANGED NUTS	FLANGED NUTS
FLANGED INSERT NUTS	UNFLANGED INSERT NUTS	COUPLING NUTS	SPRING NUTS	WELD NUTS
BARREL NUTS	TEE NUTS	CAGE NUTS	SOCKET HEAD CAP SCREWS	LOW HEAD SOCKET CAP SCREWS

SHOULDER SOCKET CAP SCREWS	BUtTON HEAD SOCKET SCREWS	COUNTERSUNK SOCKET SCREWS	TAPER SOCKET PRESSURE PLUG	ALLEN WRENCHS
ALPHA TORX ALLEN KEY	SOCKET HEAD GRUB SCREWS	KNURLED SOCKET GRUB SCREWS	CONE POINT SOCKET GRUB SCREWS	T17 HWF WITHOUT NEO
T17 HWF WITH NEO	T17 BUGLE HEAD HEX DRIVE 5MM	T17 WAFER HEAD	SELF DRILLING HWF WITHOUT NEO	SELF DRILLING HWF WITH NEO
SELF DRILLING HWF	SELF DRILLING HWF EXT POINT NO.5	SELF DRILLING CSK SELF EMBEDDING	SELF DRILLING PAN HEAD	SELF DRILLING RIBBED CSK WINGED
SELF DRILLING CSK WINGED	SELF DRILLING BUtTON HEAD	SELF DRILLING CSK HEAD	SELF DRILLING CSK WINGTEK	SELF DRILLING CSK WINGTEK CL2
SELF DRILLING WAFER HEAD	SELF TAPPING PAN HEAD	SELF TAPPING T17 PAN HEAD	SELF TAPPING MUSHROOM HEAD	SELF TAPPING CSK HEAD
SELF TAPPING T17 CSK HEAD	SELF TAPPING TRUNCATED CSK HEAD	SELF TAPPING TYPE B CSK HEAD	SELF TAPPING BUtTON HEAD SECURITY	SELF TAPPING TWINFAST CSK HEAD
SUREFIX PAN HEAD	SUREFIX CSK HEAD	SUREFIX TWINFAST FULL THREAD CSK HEAD	SUREFIX T17 RIBBED CSK	SUREFIX RIBBED CSK



SUREFIX T17 UNRIBBED CSK	SUREFIX UNRIBBED CSK	JOINT CONNECTOR BOLT 15MM PAN	WING SCREW	WOOD SCREW CSK HEAD
GUTTER BOLT & NUT MUSHROOM HEAD	HAMMER DRIVE TYPE U	MACHINE PAN HEAD	MACHINE CSK HEAD	MACHINE SLOT ROUND HEAD
TRUCK DECK CSK HEAD	SLOT HANDLE MUSH WASHER HEAD	FLAT ROUND WASHERS	FENDER WASHERS	HEAVY WASHERS
SQUARE WASHERS	HARDENED WASHERS	TAPER WASHERS	HSFG WASHERS	SPRING WASHERS
NEOPRENE WASHER	STAR LOCK WASHERS	RED FIBRE WASHERS	NYLON WASHERS	NORDLOCK WASHERS
TOOTHLOCK WASHERS	SERRATED EXTERNAL WASHERS	CUP WASHERS	WEDGE ANCHORS	CHEM SET SEETING STUD
O HOOKS	C HOOKS	SLEEVE ANCHOR WITH HEX NUTS	CSK HEAD PHILLIPS	FLUSH HEAD WITH BOLTS
FLANGE HEX HEAD SCREW BOLTS	CSK HEAD SCREW BOLT	EYE BOLT SCREW ANCHOR	HOLLO BOLT	HOLLO BOLT FLUSH FIT

DROP - IN ANCHOR LIPPED	DROP - IN ANCHOR UNLIPPED	DROP-IN SETTING TOOL	CONCRETE CSK HEAD SCREWS	CONCRETE HEX HEAD SCREWS
METAL PIN MUSHROOM HEAD	NAIL-IN CSK HEAD	NAIL-IN MUSHROOM HEAD	NAIL-IN ROUND HEAD	SPLIT DRIVE MUSHROOM HEAD
SPLIT DRIVE CSK HEAD	HOLLOW WALL ANCHORS	WALL PLUG	WALL PLUG	WALL PLUG
CONCRETE VERTIGO SEISMIC INTERNAL THREAD	SDM VERTIGO INTERNAL THREAD	T17 VERTIGO INTERNAL HANGERS	VERTICAL HANGER DRIVER	T17 VERTIGO SIDE HOLE



**Note:** Length of countersunk products is measured overall, including the head.  
 Length of non-countersunk products is measured from the underside bearing face of the head.