



FIT TIGHT FASTENERS



Technical Details

Dimensional Plan :



FLANGE SCREW					SOCKET HEAD CAP SCREW					CR PAN HEAD M/C SCREW					BOLT				
JIS-1189					IS-2269					JIS-B111:1974					IS-1364 Pt. 2				
Size	A/F 's'	Thick 'k'	Apx. Wt./100pcs.		Size	Broach A/F	Head Thick 'k'	Apx. Wt./100pcs.		Size	Head Dia 'd'	Head Thick 'k'	Apx. Wt./100pcs.		Size	A/F 's'	Thick 'k'	Apx. Wt./100pcs.	
			Head	Per mm. Length				Head	Per mm. Length				Head	Per mm. Length				Head	Per mm. Length
M5	8.00	5.00	0.250	0.012	M5	4.00	5.00	0.195	0.012	M3	5.50	2.15	0.024	0.004	M5	8.00	3.65	0.16	0.012
M6	10.00	6.00	0.485	0.017	M6	5.00	6.00	0.318	0.017	M4	7.00	2.75	0.032	0.008	M6	10.00	4.15	0.25	0.017
M8	12.00	8.00	0.866	0.031	M8	6.00	8.00	0.735	0.031	M5	9.00	3.45	0.106	0.012	M8	13.00	5.45	0.56	0.031
M10	14.00	10.00	1.454	0.049	M10	8.00	10.00	1.359	0.049	M6	10.50	4.10	0.170	0.017	M10	16.00	6.58	0.98	0.049
M12	17.00	11.50	2.510	0.071	M12	10.00	12.00	1.987	0.071	M8	14.00	5.40	0.480	0.031	M12	18.00	7.68	1.52	0.071

Metallurgical Plan

Bolt & Screw

Part	Spec. as per IS	Class	Size		Ten. Strength Min (Mandatory) N/mm ²		Hardness (Non Mandatory)			State HT/ NHT	Raw Material Preference	Elong. EL %	Max. Depth of Decarb E (mm)
							Vickers HV	Rockwell-Min					
								HRb	Hrc				
CR Pan Hd. Screw	1367 P. 3	4.6			400	120	67		NHT	1010-1015	22	-	
		4.8			420	130	71				14	-	
Hex Bolt Flange Bolt	1367 P. 3	6.8			600	190	89			HT	10B21-1541	8	-
		8.8	d _≤ 16	800	250		22	10B21-1541	12		1/2 H ₁		
			d _≤ 16	830	255		23						
			10.9		1040	320		32	15B41-4140		9	2/3 H ₁	
Allen Screw	1367 P. 3	12.9			1220	385		39		4135-4140	8	3/4 H ₁	
Self			Code No.	Dia. mm	C.C. depth Min. in mm	Tor * N-m	Surface HV	Core					
								Rb	Rc				
Tapping	1367 P. 3	4.8 C.C.	4	2.9	0.05	-	450	67	-	NHT	1010-1015	22	-
			10	4.8	0.10	-							
Screw	7178	8.8 C.C.	6	3.5	0.05	2.7			-	28	HT	1018-1020	12
			12	5.5	0.10	10							

● NHT - Non Hardened & Tempered, HT- Hardened & Tempered, C.C. - Case Carburised ● 'G'-Complete Decarb not allowed more than 0.015 mm

Chemical Composition Of Steel (in%)

Grades	C		Mn		Si		Al	P	S	Cr		Mo		B	
	Min	Max	Min	Max	Min	Max	Min	Max	Max	Min	Max	Min	Max	Min	Max
(A) COLD HEADING QUALITY (CHO) STEELS															
SAE 1010	0.08	0.13	0.30	0.60	-	0.15	-	0.030	0.03	-	-	-	-	-	-
SAE 1015	0.12	0.18	0.30	0.60	-	0.15	0.02	0.030	0.03	-	-	-	-	-	-
SAE 1020	0.18	0.23	0.30	0.60	0.15	0.30	-	0.040	0.04	-	-	-	-	-	-
SAE 1541	0.36	0.44	1.35	1.65	0.15	0.30	-	0.030	0.03	-	-	-	-	-	-
SAE 4135	0.33	0.38	0.70	0.90	0.15	0.30	-	0.035	0.04	0.80	1.10	0.15	0.25	-	-
SAE 4140	0.38	0.43	0.75	1.00	0.15	0.30	-	0.035	0.04	0.80	1.10	0.15	0.25	-	-
10B21	0.18	0.23	0.80	1.20	0.15	0.35	0.02	0.030	0.03	-	0.20	-	-	0.0005	0.0030
15B25	0.23	0.28	0.90	1.20	0.15	0.35	0.02	0.030	0.03	-	0.20	-	-	0.0005	0.0030
15B41	0.36	0.44	1.35	1.65	0.15	0.30	-	0.003	0.03	-	-	-	-	0.0005	0.0030
EN8D	0.40	0.45	0.70	0.90	0.10	0.35	-	0.040	0.04	-	-	-	-	-	-
(B) STEELS OTHER THAN CHQ															
EN8M	0.35	0.45	0.90	1.30	-	0.25	-	0.060	0.20	-	-	-	-	-	-
EN1A	0.07	0.15	0.80	1.20	-	0.10	-	0.070	0.30	-	-	-	-	-	-
En19	0.35	0.45	0.50	0.80	0.15	0.35	0.02	0.035	1.20	0.90	1.20	0.20	4.00	-	-

Miscellaneous

Thread Chart & Tolerance - Is 4218

Item	
Size	Major
	Min
M4 x 0.7	4.000
M5 x 0.8	5.000
M6 x 1	6.000
M8 x 1.25	8.000
M10 x 1.5	10.000
M12 x 1.75	12.000

Bolts & Screws				'6g'	
Major Dia.		Pitch Dia.		Minor Dia.	
Min	Max	Min	Max	Min	Max
3.838	3.978	3.433	3.523	2.979	3.119
4.826	4.976	4.361	4.456	3.842	3.995
5.794	5.974	5.212	5.324	4.563	4.747
7.760	7.972	7.042	7.160	6.230	6.438
9.732	9.968	8.862	8.994	7.888	8.128
11.701	11.966	10.679	10.829	9.543	9.819

Gauge Dimension & Tolerance

Size	Ring Gauge 6g			
	Go		Not Go	
	Pitch	Tol ± μ m	Pitch	Tol ± μ m
M4 x 0.7	3.521	7	3.426	7
M5 x 0.8	4.454	7	4.354	7
M6 x 1	5.322	7	5.205	7
M8 x 1.25	7.158	7	7.035	7
M10 x 1.5	8.986	9	8.853	9
M12 x 1.75	10.821	9	10.670	9

International Equivalents

Different Thread Sizes.

Size	TPI		Size	TPI	
	Coarse UNC	Fine UNF		Coarse BSW	Fine BSF
1/4"	20	28	1/4"	20	26
5/16"	18	24	5/16"	18	22
3/8"	16	24	3/8"	16	20
7/16"	14	20	7/16"	14	18

Property Class Nomenclature

BOLT		
Class	Digit 1 - Min Tensile Strength	Digit 2 - Ratio Min. Yield Stress Min. Ten. Strength
4.6	40	60
6.8	60	80
8.8	80	80
10.9	100	90

Different Strength Grades.

SAE	B.S.	IS/ISO/ DIN	UTS Kgf / mm ²	Hardness		
				BHN	HRb	HRc
	-	4.6	40.8	114/209	67/95	-
Grade 1	-	-	42.3	121/241	70/100	-
	-	4.8	42.8	124/209	71/95	-
Grade 2	-	-	52.1	154/241	80/100	-
	-	6.8	61.2	181/238	89/99	-
	R	-	71.0/86.8	201/285	-	-
	S	-	78.9/94.7	223/310	-	20/33
	-	8.8 ≤ M16	81.6	219/285	-	20/30
	-	8.8 < M16	84.6	242/319	-	23/34
Grade 5	-	-	84.6	266/318	-	25/34
	T	-	86.8/102.6	248/335	-	24/36
	U	-	94.7/110.5	269/331	-	28/36
	V	-	102.6/118.4	293/370	-	31/40
Grade 8	-	-	105.7	311/362	-	33/39
	-	10.9	106.0	295/362	-	31/39



FIT TIGHT FASTENERS

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