

NAAMS FASTENERS

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Metric Fastener Standards

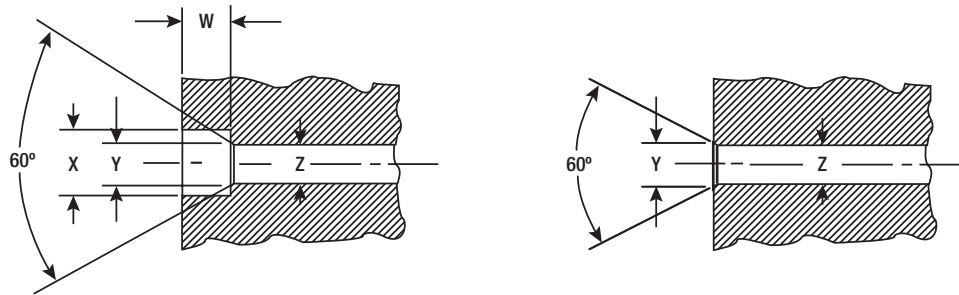
DIMENSIONAL & MATERIAL SPECIFICATIONS



DIMENSIONAL & MATERIAL SPECIFICATIONS		
Product	Dimensional Specification	Material Specification
Socket Head Cap Screws	ANSI B18.3.1M	ASTM A574M
Hex Head Cap Screws	ANSI B18.2.3.1M	ASTM F568M, Class 10.9
Base Leveling Screw	M24 x 2.0 x 150 HHCS	Property Class 10.9
Hex Nuts	ANSI B18.2.4.2M	ASTM A563M, Class 12
Lock Nuts	ANSI B18.16.3M	ASTM A563M, Class 12
Hex Jam Nuts	ANSI B18.2.4.5M	ASTM A563M, Class 04
Shoulder Screws	ANSI B18.3.3M	ANSI B18.3.3M
Socket Set Screws	ANSI B18.3.6M	Class 45H
Flat Head Cap Screws	ANSI B18.3.5M	ASTM F835M
Button Head Cap Screws	ANSI B18.3.4M	ASTM F835M
PullOut Dowel Pins	ISO 8735A	—
Flat Washers (M6 – M10) (M12 and Larger)	— ASTM F436M	Rc 38-45 through hardened ASTM F436M

Metric Fastener Standards

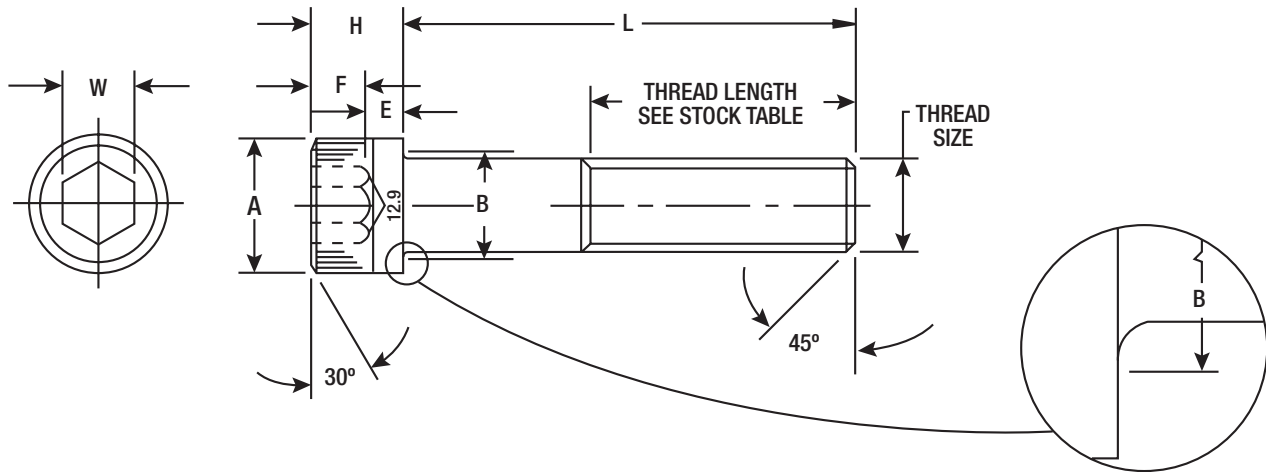
HOLE SIZES



HOLE SIZES					
Screw Size	Tap Drill Size (Class 6H Threads)	X Counterbore Dia.	Y Countersink Dia.	Z Body Drill Size for Counterbore Through Hole	W Counterbore Depth
M3 x 0.5	2.5	6.5	3.6	3.4	5.0
M4 x 0.7	3.3	8.0	4.9	4.5	6.0
M5 x 0.8	4.2	10.0	5.9	5.5	8.0
M6 x 1.0	5.0	11.0	7.1	6.6	9.0
M8 x 1.25	6.7	15.0	9.8	9.0	11.0
M10 x 1.5	8.5	18.0	11.8	11.0	14.0
M12 x 1.75	10.2	20.0	14.7	13.0	16.0
M16 x 2.0	14.0	26.0	18.7	17.0	21.0
M20 x 2.5	17.5	33.0	23.6	21.0	26.0
M24 x 3.0	21.0	40.0	27.6	25.0	32.0

PREVAILING TORQUE REQUIREMENTS FOR NYLON PATCH SCREWS				
Nominal Thread Diameter & Pitch	Clamp Load (kN)	Prevailing Torque Maximum (Nm)	1st Removal Prevailing Torque Minimum (Nm)	5th Removal Prevailing Torque Minimum (Nm)
M6 x 1.0	15.6	3.0	0.45	0.30
M8 x 1.25	28.4	10	0.90	0.58
M10 x 1.5	45.0	14	1.8	1.1
M12 x 1.75	65.4	21	2.6	1.5
M16 x 2.0	122	40	5.0	3.4
M20 x 2.5	190	60	8.0	5.5

Note: These values are in accordance with IFI 524.



DIMENSIONS							
Thread Size Nom.	Pitch	A Max.	B Max.	H Max.	W Nom.	E Min.	F Min.
M3	0.5	5.5	3.6	3.0	2.5	1.02	1.5
M4	0.7	7.0	4.7	4.0	3.0	1.52	2.0
M5	0.8	8.5	5.7	5.0	4.0	1.90	2.5
M6	1.0	10.0	6.8	6.0	5.0	2.28	3.0
M8	1.25	13.0	9.2	8.0	6.0	3.2	4.0
M10	1.5	16.0	11.2	10.0	8.0	4.0	5.0
M12	1.75	18.0	14.2	12.0	10.0	4.8	6.0
M16	2.0	24.0	18.2	16.0	14.0	6.4	8.0
M20	2.5	30.0	22.4	20.0	17.0	8.0	10.0
M24	3.0	36.0	26.4	24.0	19.0	9.6	12.0

*For hole dimensions see p F-2.1

NOTES & SPECIFICATIONS:

Material, class 12.9

ANSI B18.3.1M

ASTM A574M

Socket Head Cap Screw Coding

F01 SERIES (UNCOATED)



Thread Size Nom.	Stock Sizes																																																							
	5	6	8	10	12	16	20	25	30	35	40	45	50	55	60	65	70	75	80	90	100	110	120	130	140	150	160	170	180	190	200																									
M3																																																								
M4																																																								
M5																																																								
M6																																																								
M8																																																								
M10																																																								
M12																																																								
M16																																																								
M20																																																								
M24																																																								

- Lengths to the left of heavy line (■) threaded to head.
- Lengths to the right of heavy line (■) have standard minimum thread lengths of two times the nominal thread diameter plus 12 mm.

NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length
F010304	M3 x 0.5 x 5	F010505	M5 x 0.8 x 6	F010613	M6 x 1.0 x 35	F010816	M8 x 1.25 x 50
F010305	M3 x 0.5 x 6	F010506	M5 x 0.8 x 8	F010614	M6 x 1.0 x 40	F010817	M8 x 1.25 x 55
F010306	M3 x 0.5 x 8	F010507	M5 x 0.8 x 10	F010615	M6 x 1.0 x 45	F010818	M8 x 1.25 x 60
F010307	M3 x 0.5 x 10	F010508	M5 x 0.8 x 12	F010616	M6 x 1.0 x 50	F010819	M8 x 1.25 x 65
F010308	M3 x 0.5 x 12	F010509	M5 x 0.8 x 16	F010617	M6 x 1.0 x 55	F010820	M8 x 1.25 x 70
F010309	M3 x 0.5 x 16	F010510	M5 x 0.8 x 20	F010618	M6 x 1.0 x 60	F010821	M8 x 1.25 x 75
F010310	M3 x 0.5 x 20	F010511	M5 x 0.8 x 25	F010619	M6 x 1.0 x 65	F010822	M8 x 1.25 x 80
F010311	M3 x 0.5 x 25	F010512	M5 x 0.8 x 30	F010620	M6 x 1.0 x 70	F010823	M8 x 1.25 x 90
F010312	M3 x 0.5 x 30	F010513	M5 x 0.8 x 35	F010621	M6 x 1.0 x 75	F010824	M8 x 1.25 x 100
F010313	M3 x 0.5 x 35	F010514	M5 x 0.8 x 40	F010622	M6 x 1.0 x 80	F010825	M8 x 1.25 x 110
F010404	M4 x 0.7 x 5	F010515	M5 x 0.8 x 45	F010623	M6 x 1.0 x 90	F010826	M8 x 1.25 x 120
F010405	M4 x 0.7 x 6	F010516	M5 x 0.8 x 50	F010624	M6 x 1.0 x 100	F010827	M8 x 1.25 x 130
F010406	M4 x 0.7 x 8	F010517	M5 x 0.8 x 55	F010625	M6 x 1.0 x 110	F010828	M8 x 1.25 x 140
F010407	M4 x 0.7 x 10	F010518	M5 x 0.8 x 60	F010626	M6 x 1.0 x 120	F010829	M8 x 1.25 x 150
F010408	M4 x 0.7 x 12	F010519	M5 x 0.8 x 65	F010807	M8 x 1.25 x 10	F010830	M8 x 1.25 x 160
F010409	M4 x 0.7 x 16	F010520	M5 x 0.8 x 70	F010808	M8 x 1.25 x 12	F010831	M8 x 1.25 x 170
F010410	M4 x 0.7 x 20	F010606	M6 x 1.0 x 8	F010809	M8 x 1.25 x 16	F010832	M8 x 1.25 x 180
F010411	M4 x 0.7 x 25	F010607	M6 x 1.0 x 10	F010810	M8 x 1.25 x 20	F010833	M8 x 1.25 x 190
F010412	M4 x 0.7 x 30	F010608	M6 x 1.0 x 12	F010811	M8 x 1.25 x 25	F010834	M8 x 1.25 x 200
F010413	M4 x 0.7 x 35	F010609	M6 x 1.0 x 16	F010812	M8 x 1.25 x 30	F011007	M10 x 1.5 x 10
F010414	M4 x 0.7 x 40	F010610	M6 x 1.0 x 20	F010813	M8 x 1.25 x 35	F011008	M10 x 1.5 x 12
F010415	M4 x 0.7 x 45	F010611	M6 x 1.0 x 25	F010814	M8 x 1.25 x 40	F011009	M10 x 1.5 x 16
F010416	M4 x 0.7 x 50	F010612	M6 x 1.0 x 30	F010815	M8 x 1.25 x 45	F011010	M10 x 1.5 x 20



Socket Head Cap Screw Coding

F01 SERIES (UNCOATED)

NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length
F011011	M10 x 1.5 x 25	F011223	M12 x 1.75 x 90	F012017	M20 x 2.5 x 55
F011012	M10 x 1.5 x 30	F011224	M12 x 1.75 x 100	F012018	M20 x 2.5 x 60
F011013	M10 x 1.5 x 35	F011225	M12 x 1.75 x 110	F012019	M20 x 2.5 x 65
F011014	M10 x 1.5 x 40	F011226	M12 x 1.75 x 120	F012020	M20 x 2.5 x 70
F011015	M10 x 1.5 x 45	F011227	M12 x 1.75 x 130	F012021	M20 x 2.5 x 75
F011016	M10 x 1.5 x 50	F011228	M12 x 1.75 x 140	F012022	M20 x 2.5 x 80
F011017	M10 x 1.5 x 55	F011229	M12 x 1.75 x 150	F012023	M20 x 2.5 x 90
F011018	M10 x 1.5 x 60	F011230	M12 x 1.75 x 160	F012024	M20 x 2.5 x 100
F011019	M10 x 1.5 x 65	F011231	M12 x 1.75 x 170	F012025	M20 x 2.5 x 110
F011020	M10 x 1.5 x 70	F011232	M12 x 1.75 x 180	F012026	M20 x 2.5 x 120
F011021	M10 x 1.5 x 75	F011233	M12 x 1.75 x 190	F012027	M20 x 2.5 x 130
F011022	M10 x 1.5 x 80	F011234	M12 x 1.75 x 200	F012028	M20 x 2.5 x 140
F011023	M10 x 1.5 x 90	F011613	M16 x 2.0 x 35	F012029	M20 x 2.5 x 150
F011024	M10 x 1.5 x 100	F011614	M16 x 2.0 x 40	F012030	M20 x 2.5 x 160
F011025	M10 x 1.5 x 110	F011615	M16 x 2.0 x 45	F012031	M20 x 2.5 x 170
F011026	M10 x 1.5 x 120	F011616	M16 x 2.0 x 50	F012032	M20 x 2.5 x 180
F011027	M10 x 1.5 x 130	F011617	M16 x 2.0 x 55	F012033	M20 x 2.5 x 190
F011028	M10 x 1.5 x 140	F011618	M16 x 2.0 x 60	F012034	M20 x 2.5 x 200
F011029	M10 x 1.5 x 150	F011619	M16 x 2.0 x 65	F012415	M24 x 3.0 x 45
F011030	M10 x 1.5 x 160	F011620	M16 x 2.0 x 70	F012416	M24 x 3.0 x 50
F011031	M10 x 1.5 x 170	F011621	M16 x 2.0 x 75	F012417	M24 x 3.0 x 55
F011032	M10 x 1.5 x 180	F011622	M16 x 2.0 x 80	F012418	M24 x 3.0 x 60
F011033	M10 x 1.5 x 190	F011623	M16 x 2.0 x 90	F012419	M24 x 3.0 x 65
F011034	M10 x 1.5 x 200	F011624	M16 x 2.0 x 100	F012420	M24 x 3.0 x 70
F011208	M12 x 1.75 x 12	F011625	M16 x 2.0 x 110	F012421	M24 x 3.0 x 75
F011209	M12 x 1.75 x 16	F011626	M16 x 2.0 x 120	F012422	M24 x 3.0 x 80
F011210	M12 x 1.75 x 20	F011627	M16 x 2.0 x 130	F012423	M24 x 3.0 x 90
F011211	M12 x 1.75 x 25	F011628	M16 x 2.0 x 140	F012424	M24 x 3.0 x 100
F011212	M12 x 1.75 x 30	F011629	M16 x 2.0 x 150	F012425	M24 x 3.0 x 110
F011213	M12 x 1.75 x 35	F011630	M16 x 2.0 x 160	F012426	M24 x 3.0 x 120
F011214	M12 x 1.75 x 40	F011631	M16 x 2.0 x 170	F012427	M24 x 3.0 x 130
F011215	M12 x 1.75 x 45	F011632	M16 x 2.0 x 180	F012428	M24 x 3.0 x 140
F011216	M12 x 1.75 x 50	F011633	M16 x 2.0 x 190	F012429	M24 x 3.0 x 150
F011217	M12 x 1.75 x 55	F011634	M16 x 2.0 x 200	F012430	M24 x 3.0 x 160
F011218	M12 x 1.75 x 60	F012013	M20 x 2.5 x 35	F012431	M24 x 3.0 x 170
F011219	M12 x 1.75 x 65	F012014	M20 x 2.5 x 40	F012432	M24 x 3.0 x 180
F011220	M12 x 1.75 x 70	F012015	M20 x 2.5 x 45	F012433	M24 x 3.0 x 190
F011221	M12 x 1.75 x 75	F012016	M20 x 2.5 x 50	F012434	M24 x 3.0 x 200
F011222	M12 x 1.75 x 80				

Socket Head Cap Screw Coding

F01 SERIES (BLUE COATED)



Thread Size Nom.	Stock Sizes																			
	5	6	8	10	12	16	20	25	30	35	40	45	50	55	60	65	70	75	80	90
M3																				
M4																				
M5																				
M6																				
M8																				
M10																				
M12																				
M16																				
M20																				
M24																				

- Lengths to the left of heavy line (■) threaded to head.
- Lengths to the right of heavy line (■) have standard minimum thread lengths of two times the nominal thread diameter plus 12 mm.

NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length
F010304B	M3 x 0.5 x 5	F010505B	M5 x 0.8 x 6	F010613B	M6 x 1.0 x 35	F010816B	M8 x 1.25 x 50
F010305B	M3 x 0.5 x 6	F010506B	M5 x 0.8 x 8	F010614B	M6 x 1.0 x 40	F010817B	M8 x 1.25 x 55
F010306B	M3 x 0.5 x 8	F010507B	M5 x 0.8 x 10	F010615B	M6 x 1.0 x 45	F010818B	M8 x 1.25 x 60
F010307B	M3 x 0.5 x 10	F010508B	M5 x 0.8 x 12	F010616B	M6 x 1.0 x 50	F010819B	M8 x 1.25 x 65
F010308B	M3 x 0.5 x 12	F010509B	M5 x 0.8 x 16	F010617B	M6 x 1.0 x 55	F010820B	M8 x 1.25 x 70
F010309B	M3 x 0.5 x 16	F010510B	M5 x 0.8 x 20	F010618B	M6 x 1.0 x 60	F010821B	M8 x 1.25 x 75
F010310B	M3 x 0.5 x 20	F010511B	M5 x 0.8 x 25	F010619B	M6 x 1.0 x 65	F010822B	M8 x 1.25 x 80
F010311B	M3 x 0.5 x 25	F010512B	M5 x 0.8 x 30	F010620B	M6 x 1.0 x 70	F010823B	M8 x 1.25 x 90
F010312B	M3 x 0.5 x 30	F010513B	M5 x 0.8 x 35	F010621B	M6 x 1.0 x 75	F010824B	M8 x 1.25 x 100
F010313B	M3 x 0.5 x 35	F010514B	M5 x 0.8 x 40	F010622B	M6 x 1.0 x 80	F010825B	M8 x 1.25 x 110
F010404B	M4 x 0.7 x 5	F010515B	M5 x 0.8 x 45	F010623B	M6 x 1.0 x 90	F010826B	M8 x 1.25 x 120
F010405B	M4 x 0.7 x 6	F010516B	M5 x 0.8 x 50	F010624B	M6 x 1.0 x 100	F010827B	M8 x 1.25 x 130
F010406B	M4 x 0.7 x 8	F010517B	M5 x 0.8 x 55	F010625B	M6 x 1.0 x 110	F010828B	M8 x 1.25 x 140
F010407B	M4 x 0.7 x 10	F010518B	M5 x 0.8 x 60	F010626B	M6 x 1.0 x 120	F010829B	M8 x 1.25 x 150
F010408B	M4 x 0.7 x 12	F010519B	M5 x 0.8 x 65	F010807B	M8 x 1.25 x 10	F010830B	M8 x 1.25 x 160
F010409B	M4 x 0.7 x 16	F010520B	M5 x 0.8 x 70	F010808B	M8 x 1.25 x 12	F010831B	M8 x 1.25 x 170
F010410B	M4 x 0.7 x 20	F010606B	M6 x 1.0 x 8	F010809B	M8 x 1.25 x 16	F010832B	M8 x 1.25 x 180
F010411B	M4 x 0.7 x 25	F010607B	M6 x 1.0 x 10	F010810B	M8 x 1.25 x 20	F010833B	M8 x 1.25 x 190
F010412B	M4 x 0.7 x 30	F010608B	M6 x 1.0 x 12	F010811B	M8 x 1.25 x 25	F010834B	M8 x 1.25 x 200
F010413B	M4 x 0.7 x 35	F010609B	M6 x 1.0 x 16	F010812B	M8 x 1.25 x 30	F011007B	M10 x 1.5 x 10
F010414B	M4 x 0.7 x 40	F010610B	M6 x 1.0 x 20	F010813B	M8 x 1.25 x 35	F011008B	M10 x 1.5 x 12
F010415B	M4 x 0.7 x 45	F010611B	M6 x 1.0 x 25	F010814B	M8 x 1.25 x 40	F011009B	M10 x 1.5 x 16
F010416B	M4 x 0.7 x 50	F010612B	M6 x 1.0 x 30	F010815B	M8 x 1.25 x 45	F011010B	M10 x 1.5 x 20



Socket Head Cap Screw Coding

F01 SERIES (BLUE COATED)

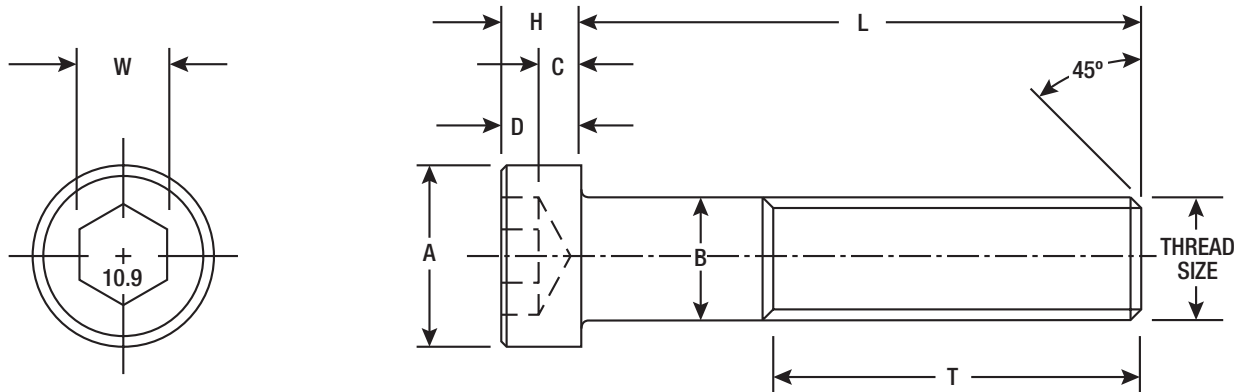
NAAMS Code	Nom. Size, Pitch & Length
F011011B	M10 x 1.5 x 25
F011012B	M10 x 1.5 x 30
F011013B	M10 x 1.5 x 35
F011014B	M10 x 1.5 x 40
F011015B	M10 x 1.5 x 45
F011016B	M10 x 1.5 x 50
F011017B	M10 x 1.5 x 55
F011018B	M10 x 1.5 x 60
F011019B	M10 x 1.5 x 65
F011020B	M10 x 1.5 x 70
F011021B	M10 x 1.5 x 75
F011022B	M10 x 1.5 x 80
F011023B	M10 x 1.5 x 90
F011024B	M10 x 1.5 x 100
F011025B	M10 x 1.5 x 110
F011026B	M10 x 1.5 x 120
F011027B	M10 x 1.5 x 130
F011028B	M10 x 1.5 x 140
F011029B	M10 x 1.5 x 150
F011030B	M10 x 1.5 x 160
F011031B	M10 x 1.5 x 170
F011032B	M10 x 1.5 x 180
F011033B	M10 x 1.5 x 190
F011034B	M10 x 1.5 x 200
F011208B	M12 x 1.75 x 12
F011209B	M12 x 1.75 x 16
F011210B	M12 x 1.75 x 20
F011211B	M12 x 1.75 x 25
F011212B	M12 x 1.75 x 30
F011213B	M12 x 1.75 x 35
F011214B	M12 x 1.75 x 40
F011215B	M12 x 1.75 x 45
F011216B	M12 x 1.75 x 50
F011217B	M12 x 1.75 x 55
F011218B	M12 x 1.75 x 60
F011219B	M12 x 1.75 x 65
F011220B	M12 x 1.75 x 70
F011221B	M12 x 1.75 x 75
F011222B	M12 x 1.75 x 80
F011223B	M12 x 1.75 x 90

NAAMS Code	Nom. Size, Pitch & Length
F011224B	M12 x 1.75 x 100
F011225B	M12 x 1.75 x 110
F011226B	M12 x 1.75 x 120
F011227B	M12 x 1.75 x 130
F011228B	M12 x 1.75 x 140
F011229B	M12 x 1.75 x 150
F011230B	M12 x 1.75 x 160
F011231B	M12 x 1.75 x 170
F011232B	M12 x 1.75 x 180
F011233B	M12 x 1.75 x 190
F011234B	M12 x 1.75 x 200
F011613B	M16 x 2.0 x 35
F011614B	M16 x 2.0 x 40
F011615B	M16 x 2.0 x 45
F011616B	M16 x 2.0 x 50
F011617B	M16 x 2.0 x 55
F011618B	M16 x 2.0 x 60
F011619B	M16 x 2.0 x 65
F011620B	M16 x 2.0 x 70
F011621B	M16 x 2.0 x 75
F011622B	M16 x 2.0 x 80
F011623B	M16 x 2.0 x 90
F011624B	M16 x 2.0 x 100
F011625B	M16 x 2.0 x 110
F011626B	M16 x 2.0 x 120
F011627B	M16 x 2.0 x 130
F011628B	M16 x 2.0 x 140
F011629B	M16 x 2.0 x 150
F011630B	M16 x 2.0 x 160
F011631B	M16 x 2.0 x 170
F011632B	M16 x 2.0 x 180
F011633B	M16 x 2.0 x 190
F011634B	M16 x 2.0 x 200
F012013B	M20 x 2.5 x 35
F012014B	M20 x 2.5 x 40
F012015B	M20 x 2.5 x 45
F012016B	M20 x 2.5 x 50
F012017B	M20 x 2.5 x 55
F012018B	M20 x 2.5 x 60
F012019B	M20 x 2.5 x 65

NAAMS Code	Nom. Size, Pitch & Length
F012020B	M20 x 2.5 x 70
F012021B	M20 x 2.5 x 75
F012022B	M20 x 2.5 x 80
F012023B	M20 x 2.5 x 90
F012024B	M20 x 2.5 x 100
F012025B	M20 x 2.5 x 110
F012026B	M20 x 2.5 x 120
F012027B	M20 x 2.5 x 130
F012028B	M20 x 2.5 x 140
F012029B	M20 x 2.5 x 150
F012030B	M20 x 2.5 x 160
F012031B	M20 x 2.5 x 170
F012032B	M20 x 2.5 x 180
F012033B	M20 x 2.5 x 190
F012034B	M20 x 2.5 x 200
F012415B	M24 x 3.0 x 45
F012416B	M24 x 3.0 x 50
F012417B	M24 x 3.0 x 55
F012418B	M24 x 3.0 x 60
F012419B	M24 x 3.0 x 65
F012420B	M24 x 3.0 x 70
F012421B	M24 x 3.0 x 75
F012422B	M24 x 3.0 x 80
F012423B	M24 x 3.0 x 90
F012424B	M24 x 3.0 x 100
F012425B	M24 x 3.0 x 110
F012426B	M24 x 3.0 x 120
F012427B	M24 x 3.0 x 130
F012428B	M24 x 3.0 x 140
F012429B	M24 x 3.0 x 150
F012430B	M24 x 3.0 x 160
F012431B	M24 x 3.0 x 170
F012432B	M24 x 3.0 x 180
F012433B	M24 x 3.0 x 190
F012434B	M24 x 3.0 x 200

Socket Head Cap Screw

LOW PROFILE F02 SERIES



DIMENSIONS								
Thread Size Nom.	Pitch	A Max.	B Max.	C Min.	D Min.	H Max.	T Min.	W Nom.
M4	0.7	7.0	4	1.06	1.48	2.8	20	3
M5	0.8	8.5	5	1.39	1.85	3.5	22	4
M6	1.0	10.0	6	1.65	2.09	4.0	24	5
M8	1.25	13.0	8	2.24	2.48	5.0	28	6
M10	1.5	16.0	10	2.86	3.36	6.5	32	8
M12	1.75	18.0	12	3.46	4.26	8.0	36	10
M16	2.0	24.0	16	4.91	4.76	10.0	44	12
M20	2.5	30.0	20	6.10	6.07	12.5	52	14

Thread Size Nom.	Stock Sizes (L)																								
	8	10	12	16	20	25	30	35	40	45	50	55	60	70	80	90	100	110	120						
M4																									
M5																									
M6																									
M8																									
M10																									
M12																									
M16																									
M20																									

- Lengths to the left of heavy line (■) threaded to head.
- Lengths to the right of heavy line (■) have standard minimum thread lengths of two times the nominal thread diameter plus 12 mm.

NOTES & SPECIFICATIONS:

Material, class 10.9



Socket Head Cap Screw

LOW PROFILE F02 SERIES (UNCOATED)

NAAMS Code	Nom. Size, Pitch & Length
F020406	M4 x 0.7 x 8
F020407	M4 x 0.7 x 10
F020408	M4 x 0.7 x 12
F020409	M4 x 0.7 x 16
F020410	M4 x 0.7 x 20
F020411	M4 x 0.7 x 25
F020412	M4 x 0.7 x 30
F020506	M5 x 0.8 x 8
F020507	M5 x 0.8 x 10
F020508	M5 x 0.8 x 12
F020509	M5 x 0.8 x 16
F020510	M5 x 0.8 x 20
F020511	M5 x 0.8 x 25
F020512	M5 x 0.8 x 30
F020513	M5 x 0.8 x 35
F020514	M5 x 0.8 x 40
F020606	M6 x 1.0 x 8
F020607	M6 x 1.0 x 10
F020608	M6 x 1.0 x 12
F020609	M6 x 1.0 x 16
F020610	M6 x 1.0 x 20
F020611	M6 x 1.0 x 25
F020612	M6 x 1.0 x 30
F020613	M6 x 1.0 x 35
F020614	M6 x 1.0 x 40
F020615	M6 x 1.0 x 45

NAAMS Code	Nom. Size, Pitch & Length
F020616	M6 x 1.0 x 50
F020808	M8 x 1.25 x 12
F020809	M8 x 1.25 x 16
F020810	M8 x 1.25 x 20
F020811	M8 x 1.25 x 25
F020812	M8 x 1.25 x 30
F020813	M8 x 1.25 x 35
F020814	M8 x 1.25 x 40
F020815	M8 x 1.25 x 45
F020816	M8 x 1.25 x 50
F020820	M8 x 1.25 x 70
F021009	M10 x 1.5 x 16
F021010	M10 x 1.5 x 20
F021011	M10 x 1.5 x 25
F021012	M10 x 1.5 x 30
F021013	M10 x 1.5 x 35
F021014	M10 x 1.5 x 40
F021015	M10 x 1.5 x 45
F021016	M10 x 1.5 x 50
F021018	M10 x 1.5 x 60
F021020	M10 x 1.5 x 70
F021022	M10 x 1.5 x 80
F021023	M10 x 1.5 x 90
F021024	M10 x 1.5 x 100
F021210	M12 x 1.75 x 20
F021211	M12 x 1.75 x 25

NAAMS Code	Nom. Size, Pitch & Length
F021212	M12 x 1.75 x 30
F021213	M12 x 1.75 x 35
F021214	M12 x 1.75 x 40
F021215	M12 x 1.75 x 45
F021216	M12 x 1.75 x 50
F021218	M12 x 1.75 x 60
F021220	M12 x 1.75 x 70
F021222	M12 x 1.75 x 80
F021223	M12 x 1.75 x 90
F021224	M12 x 1.75 x 100
F021612	M16 x 2.0 x 30
F021613	M16 x 2.0 x 35
F021614	M16 x 2.0 x 40
F021615	M16 x 2.0 x 45
F021616	M16 x 2.0 x 50
F021618	M16 x 2.0 x 60
F021620	M16 x 2.0 x 70
F021622	M16 x 2.0 x 80
F022014	M20 x 2.5 x 40
F022016	M20 x 2.5 x 50
F022018	M20 x 2.5 x 60
F022020	M20 x 2.5 x 70
F022022	M20 x 2.5 x 80

Socket Head Cap Screw Coding

LOW PROFILE F02 SERIES (BLUE COATED)

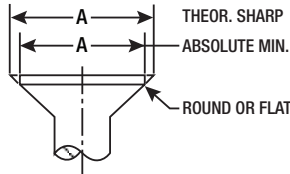
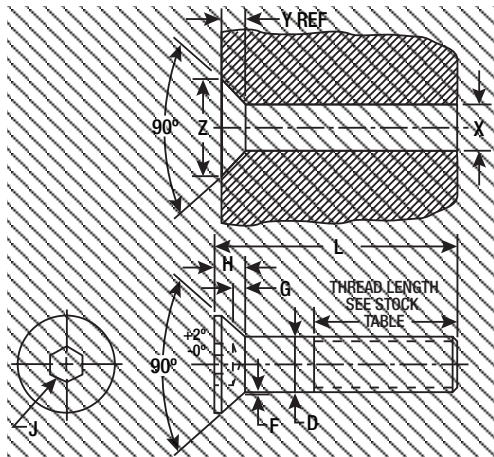


NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length
F020406B	M4 x 0.7 x 8	F020615B	M6 x 1.0 x 45	F021210B	M12 x 1.75 x 20
F020407B	M4 x 0.7 x 10	F020616B	M6 x 1.0 x 50	F021211B	M12 x 1.75 x 25
F020408B	M4 x 0.7 x 12	F020808B	M8 x 1.25 x 12	F021212B	M12 x 1.75 x 30
F020409B	M4 x 0.7 x 16	F020809B	M8 x 1.25 x 16	F021213B	M12 x 1.75 x 35
F020410B	M4 x 0.7 x 20	F020810B	M8 x 1.25 x 20	F021214B	M12 x 1.75 x 40
F020411B	M4 x 0.7 x 25	F020811B	M8 x 1.25 x 25	F021215B	M12 x 1.75 x 45
F020412B	M4 x 0.7 x 30	F020812B	M8 x 1.25 x 30	F021216B	M12 x 1.75 x 50
F020506B	M5 x 0.8 x 8	F020813B	M8 x 1.25 x 35	F021218B	M12 x 1.75 x 60
F020507B	M5 x 0.8 x 10	F020814B	M8 x 1.25 x 40	F021220B	M12 x 1.75 x 70
F020508B	M5 x 0.8 x 12	F020815B	M8 x 1.25 x 45	F021222B	M12 x 1.75 x 80
F020509B	M5 x 0.8 x 16	F020816B	M8 x 1.25 x 50	F021223B	M12 x 1.75 x 90
F020510B	M5 x 0.8 x 20	F020818B	M8 x 1.25 x 60	F021224B	M12 x 1.75 x 100
F020511B	M5 x 0.8 x 25	F021009B	M10 x 1.5 x 16	F021612B	M16 x 2.0 x 30
F020512B	M5 x 0.8 x 30	F021010B	M10 x 1.5 x 20	F021613B	M16 x 2.0 x 35
F020513B	M5 x 0.8 x 35	F021011B	M10 x 1.5 x 25	F021614B	M16 x 2.0 x 40
F020514B	M5 x 0.8 x 40	F021012B	M10 x 1.5 x 30	F021615B	M16 x 2.0 x 45
F020606B	M6 x 1.0 x 8	F021013B	M10 x 1.5 x 35	F021616B	M16 x 2.0 x 50
F020607B	M6 x 1.0 x 10	F021014B	M10 x 1.5 x 40	F021618B	M16 x 2.0 x 60
F020608B	M6 x 1.0 x 12	F021015B	M10 x 1.5 x 45	F021620B	M16 x 2.0 x 70
F020609B	M6 x 1.0 x 16	F021016B	M10 x 1.5 x 50	F021622B	M16 x 2.0 x 80
F020610B	M6 x 1.0 x 20	F021018B	M10 x 1.5 x 60	F022014B	M20 x 2.5 x 40
F020611B	M6 x 1.0 x 25	F021020B	M10 x 1.5 x 70	F022016B	M20 x 2.5 x 50
F020612B	M6 x 1.0 x 30	F021022B	M10 x 1.5 x 80	F022018B	M20 x 2.5 x 60
F020613B	M6 x 1.0 x 35	F021023B	M10 x 1.5 x 90	F022020B	M20 x 2.5 x 70
F020614B	M6 x 1.0 x 40	F021024B	M10 x 1.5 x 100	F022022B	M20 x 2.5 x 80

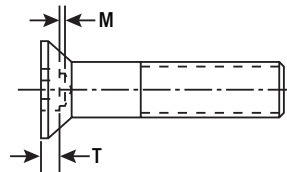


Socket Flathead Cap Screw

F03 SERIES



ENLARGED VIEW OF HEAD



Screw Size Nom.	X	Y	Z
	Body Drill Size	C'sink Depth (Ref)	C'sink Dia Min
M3	3.4	1.61	6.72
M4	4.5	2.18	8.96
M5	5.6	2.60	11.20
M6	6.8	3.22	13.44
M8	8.8	4.46	17.92
M10	10.8	5.45	22.40
M12	12.8	6.69	26.88
M16	16.75	7.8	33.60
M20	20.75	8.96	40.32

NOTES & SPECIFICATIONS:

Material, Class 12.9

ANSI B18.3.5M

ASTM F835M

Thread Size Nom.	D		A		H		J	T	G	F	M
	Body Diameter		Head Diameter		Head Height		Hex. Soc. Size	Key Engagement	Wall Thk.	Fillet Ext. Above D	Drill Allowance
	Max	Min	Theo. Sharp Max	Abs. Min	Ref	Flushness Tol.	Nom	Min	Min	Max	Max
M3 x 0.5	3.00	2.86	6.72	5.35	1.86	0.30	2.0	1.1	0.25	0.25	0.3
M4 x 0.7	4.00	3.82	8.96	7.80	2.48	0.30	2.5	1.5	0.45	0.35	0.4
M5 x 0.8	5.00	4.82	11.20	9.75	3.10	0.35	3.0	1.9	0.66	0.40	0.5
M6 x 1	6.00	5.82	13.44	11.70	3.72	0.35	4.0	2.2	0.70	0.50	0.6
M8 x 1.25	8.00	7.78	17.92	15.65	4.96	0.40	5.0	3.0	1.16	0.60	0.8
M10 x 1.5	10.00	9.78	22.40	19.50	6.20	0.50	6.0	3.6	1.62	0.80	0.9
M12 x 1.75	12.00	11.73	26.88	23.40	7.44	0.60	8.0	4.3	1.80	0.90	1.2
M16 x 2	16.00	15.73	33.60	23.76	8.80	0.80	10.0	4.8	2.20	1.00	1.5
M20 x 2.5	20.00	19.67	40.32	34.60	10.16	1.00	12.0	5.6	2.20	1.20	1.5

Thread Size Nom.	Stock Sizes (L)																		
	6	8	10	12	16	20	25	30	35	40	45	50	55	60	70	80	90	100	
M3																			
M4																			
M5																			
M6																			
M8																			
M10																			
M12																			
M16																			
M20																			

- Lengths to the left of heavy line (■) threaded to head.
- Lengths to the right of heavy line (■) have standard minimum thread lengths of two times the nominal thread diameter plus 12 mm.

Socket Flathead Cap Screw Coding

F03 SERIES (UNCOATED)



NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length
F030305	M3 x 0.5 x 6	F030612	M6 x 1.0 x 30	F031211	M12 x 1.75 x 25
F030306	M3 x 0.5 x 8	F030613	M6 x 1.0 x 35	F031212	M12 x 1.75 x 30
F030307	M3 x 0.5 x 10	F030614	M6 x 1.0 x 40	F031213	M12 x 1.75 x 35
F030308	M3 x 0.5 x 12	F030615	M6 x 1.0 x 45	F031214	M12 x 1.75 x 40
F030309	M3 x 0.5 x 16	F030616	M6 x 1.0 x 50	F031215	M12 x 1.75 x 45
F030310	M3 x 0.5 x 20	F030807	M8 x 1.25 x 10	F031216	M12 x 1.75 x 50
F030311	M3 x 0.5 x 25	F030808	M8 x 1.25 x 12	F031217	M12 x 1.75 x 55
F030312	M3 x 0.5 x 30	F030809	M8 x 1.25 x 16	F031218	M12 x 1.75 x 60
F030406	M4 x 0.7 x 8	F030810	M8 x 1.25 x 20	F031220	M12 x 1.75 x 70
F030407	M4 x 0.7 x 10	F030811	M8 x 1.25 x 25	F031222	M12 x 1.75 x 80
F030408	M4 x 0.7 x 12	F030812	M8 x 1.25 x 30	F031223	M12 x 1.75 x 90
F030409	M4 x 0.7 x 16	F030813	M8 x 1.25 x 35	F031224	M12 x 1.75 x 100
F030410	M4 x 0.7 x 20	F030814	M8 x 1.25 x 40	F031612	M16 x 2.0 x 30
F030411	M4 x 0.7 x 25	F030815	M8 x 1.25 x 45	F031613	M16 x 2.0 x 35
F030412	M4 x 0.7 x 30	F030816	M8 x 1.25 x 50	F031614	M16 x 2.0 x 40
F030413	M4 x 0.7 x 35	F030817	M8 x 1.25 x 55	F031615	M16 x 2.0 x 45
F030414	M4 x 0.7 x 40	F030818	M8 x 1.25 x 60	F031616	M16 x 2.0 x 50
F030506	M5 x 0.8 x 8	F030820	M8 x 1.25 x 70	F031617	M16 x 2.0 x 55
F030507	M5 x 0.8 x 10	F031008	M10 x 1.5 x 12	F031618	M16 x 2.0 x 60
F030508	M5 x 0.8 x 12	F031009	M10 x 1.5 x 16	F031620	M16 x 2.0 x 70
F030509	M5 x 0.8 x 16	F031010	M10 x 1.5 x 20	F031622	M16 x 2.0 x 80
F030510	M5 x 0.8 x 20	F031011	M10 x 1.5 x 25	F031623	M16 x 2.0 x 90
F030511	M5 x 0.8 x 25	F031012	M10 x 1.5 x 30	F031624	M16 x 2.0 x 100
F030512	M5 x 0.8 x 30	F031013	M10 x 1.5 x 35	F032014	M20 x 2.5 x 40
F030513	M5 x 0.8 x 35	F031014	M10 x 1.5 x 40	F032015	M20 x 2.5 x 45
F030514	M5 x 0.8 x 40	F031015	M10 x 1.5 x 45	F032016	M20 x 2.5 x 50
F030515	M5 x 0.8 x 45	F031016	M10 x 1.5 x 50	F032017	M20 x 2.5 x 55
F030516	M5 x 0.8 x 50	F031017	M10 x 1.5 x 55	F032018	M20 x 2.5 x 60
F030606	M6 x 1.0 x 8	F031018	M10 x 1.5 x 60	F032020	M20 x 2.5 x 70
F030607	M6 x 1.0 x 10	F031020	M10 x 1.5 x 70	F032022	M20 x 2.5 x 80
F030608	M6 x 1.0 x 12	F031022	M10 x 1.5 x 80	F032023	M20 x 2.5 x 90
F030609	M6 x 1.0 x 16	F031023	M10 x 1.5 x 90	F032024	M20 x 2.5 x 100
F030610	M6 x 1.0 x 20	F031024	M10 x 1.5 x 100		
F030611	M6 x 1.0 x 25	F031210	M12 x 1.75 x 20		



Socket Flathead Cap Screw Coding

F03 SERIES (BLUE COATED)

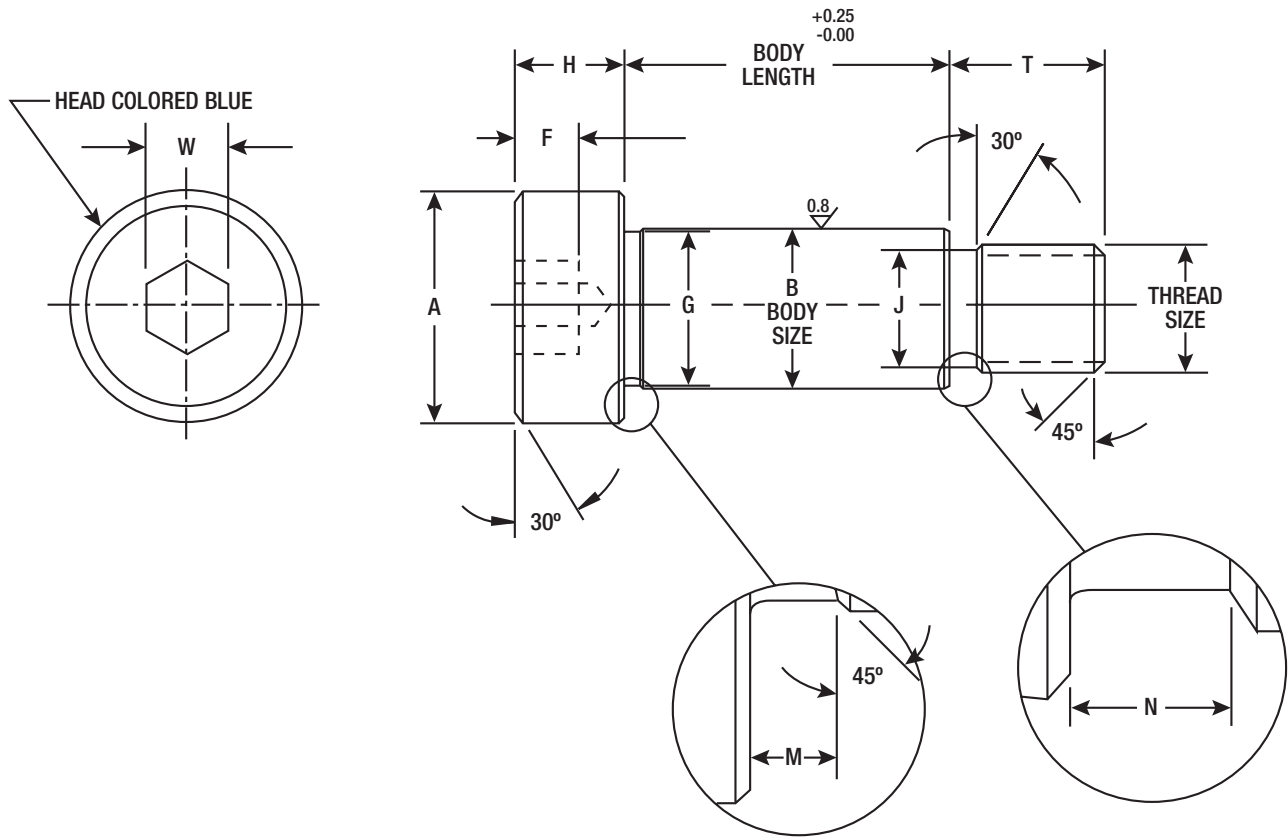
NAAMS Code	Nom. Size, Pitch & Length
F030305B	M3 x 0.5 x 6
F030306B	M3 x 0.5 x 8
F030307B	M3 x 0.5 x 10
F030308B	M3 x 0.5 x 12
F030309B	M3 x 0.5 x 16
F030310B	M3 x 0.5 x 20
F030311B	M3 x 0.5 x 25
F030312B	M3 x 0.5 x 30
F030406B	M4 x 0.7 x 8
F030407B	M4 x 0.7 x 10
F030408B	M4 x 0.7 x 12
F030409B	M4 x 0.7 x 16
F030410B	M4 x 0.7 x 20
F030411B	M4 x 0.7 x 25
F030412B	M4 x 0.7 x 30
F030413B	M4 x 0.7 x 35
F030414B	M4 x 0.7 x 40
F030506B	M5 x 0.8 x 8
F030507B	M5 x 0.8 x 10
F030508B	M5 x 0.8 x 12
F030509B	M5 x 0.8 x 16
F030510B	M5 x 0.8 x 20
F030511B	M5 x 0.8 x 25
F030512B	M5 x 0.8 x 30
F030513B	M5 x 0.8 x 35
F030514B	M5 x 0.8 x 40
F030515B	M5 x 0.8 x 45
F030516B	M5 x 0.8 x 50
F030606B	M6 x 1.0 x 8
F030607B	M6 x 1.0 x 10
F030608B	M6 x 1.0 x 12
F030609B	M6 x 1.0 x 16
F030610B	M6 x 1.0 x 20
F030611B	M6 x 1.0 x 25

NAAMS Code	Nom. Size, Pitch & Length
F030612B	M6 x 1.0 x 30
F030613B	M6 x 1.0 x 35
F030614B	M6 x 1.0 x 40
F030615B	M6 x 1.0 x 45
F030616B	M6 x 1.0 x 50
F030807B	M8 x 1.25 x 10
F030808B	M8 x 1.25 x 12
F030809B	M8 x 1.25 x 16
F030810B	M8 x 1.25 x 20
F030811B	M8 x 1.25 x 25
F030812B	M8 x 1.25 x 30
F030813B	M8 x 1.25 x 35
F030814B	M8 x 1.25 x 40
F030815B	M8 x 1.25 x 45
F030816B	M8 x 1.25 x 50
F030817B	M8 x 1.25 x 55
F030818B	M8 x 1.25 x 60
F030820B	M8 x 1.25 x 70
F031008B	M10 x 1.5 x 12
F031009B	M10 x 1.5 x 16
F031010B	M10 x 1.5 x 20
F031011B	M10 x 1.5 x 25
F031012B	M10 x 1.5 x 30
F031013B	M10 x 1.5 x 35
F031014B	M10 x 1.5 x 40
F031015B	M10 x 1.5 x 45
F031016B	M10 x 1.5 x 50
F031017B	M10 x 1.5 x 55
F031018B	M10 x 1.5 x 60
F031020B	M10 x 1.5 x 70
F031022B	M10 x 1.5 x 80
F031023B	M10 x 1.5 x 90
F031024B	M10 x 1.5 x 100
F031210B	M12 x 1.75 x 20

NAAMS Code	Nom. Size, Pitch & Length
F031211B	M12 x 1.75 x 25
F031212B	M12 x 1.75 x 30
F031213B	M12 x 1.75 x 35
F031214B	M12 x 1.75 x 40
F031215B	M12 x 1.75 x 45
F031216B	M12 x 1.75 x 50
F031217B	M12 x 1.75 x 55
F031218B	M12 x 1.75 x 60
F031220B	M12 x 1.75 x 70
F031222B	M12 x 1.75 x 80
F031223B	M12 x 1.75 x 90
F031224B	M12 x 1.75 x 100
F031612B	M16 x 2.0 x 30
F031613B	M16 x 2.0 x 35
F031614B	M16 x 2.0 x 40
F031615B	M16 x 2.0 x 45
F031616B	M16 x 2.0 x 50
F031617B	M16 x 2.0 x 55
F031618B	M16 x 2.0 x 60
F031620B	M16 x 2.0 x 70
F031622B	M16 x 2.0 x 80
F031623B	M16 x 2.0 x 90
F031624B	M16 x 2.0 x 100
F032014B	M20 x 2.5 x 40
F032015B	M20 x 2.5 x 45
F032016B	M20 x 2.5 x 50
F032017B	M20 x 2.5 x 55
F032018B	M20 x 2.5 x 60
F032020B	M20 x 2.5 x 70
F032022B	M20 x 2.5 x 80
F032023B	M20 x 2.5 x 90
F032024B	M20 x 2.5 x 100

Socket Head Shoulder Screw

F04 SERIES



Nom. Body Size	Stock Sizes													
	Body Lengths													
	10	12	16	20	25	30	40	50	60	70	80	90	100	120
6														
8														
10														
12														
16														
20														
24														

NOTES & SPECIFICATIONS:

Material, heat treated alloy steel. Ultimate min. tensile 1100MPa, single shear strength 660MPa.
ANSI B18.3.3M



Socket Head Shoulder Screw Coding

F04 SERIES (UNCOATED)

Body Size	Nom. Thread Size	Pitch	A	F	B _{sh}		G	H
			Max	Min	Max	Min	Min	Max
6	M5	0.8	10.00	2.4	6.0	5.982	5.42	4.50
8	M6	1.0	13.00	3.3	8.0	7.978	7.42	5.50
10	M8	1.25	16.00	4.2	10.0	9.978	9.42	7.00
12	M10	1.5	18.00	4.9	12.0	11.973	11.42	8.00
16	M12	1.75	24.00	6.6	16.0	15.973	15.42	10.00
20	M16	2.0	30.00	8.8	20.0	19.967	19.42	14.00
24	M20	2.5	36.00	10.0	24.0	23.967	23.42	16.00

Body Size	J	M	N	T	W	Recommended Seating Torque Nm	Tap Drill Size
	Min	Max	Max	Max	Nom		
6	3.68	2.5	2.40	9.75	3	7	4.2
8	4.40	2.5	2.60	11.25	4	12	5.0
10	6.03	2.5	2.80	13.25	5	29	6.75
12	7.69	2.5	3.00	16.40	6	57	8.5
16	9.35	2.5	4.00	18.40	8	100	10.25
20	12.96	2.5	4.80	22.40	10	240	14
24	16.30	3.0	5.60	27.40	12	470	17.5

NAAMS Code	Body Size x Body Length	NAAMS Code	Body Size x Body Length	NAAMS Code	Body Size x Body Length	NAAMS Code	Body Size x Body Length
F040607	6 x 10	F040820	8 x 70	F041216	12 x 50	F042014	20 x 40
F040608	6 x 12	F041009	10 x 16	F041218	12 x 60	F042016	20 x 50
F040609	6 x 16	F041010	10 x 20	F041220	12 x 70	F042018	20 x 60
F040610	6 x 20	F041011	10 x 25	F041222	12 x 80	F042020	20 x 70
F040611	6 x 25	F041012	10 x 30	F041223	12 x 90	F042022	20 x 80
F040612	6 x 30	F041014	10 x 40	F041224	12 x 100	F042023	20 x 90
F040614	6 x 40	F041016	10 x 50	F041612	16 x 30	F042024	20 x 100
F040616	6 x 50	F041018	10 x 60	F041614	16 x 40	F042026	20 x 120
F040808	8 x 12	F041020	10 x 70	F041616	16 x 50	F042416	24 x 50
F040809	8 x 16	F041022	10 x 80	F041618	16 x 60	F042418	24 x 60
F040810	8 x 20	F041209	12 x 16	F041620	16 x 70	F042420	24 x 70
F040811	8 x 25	F041210	12 x 20	F041622	16 x 80	F042422	24 x 80
F040812	8 x 30	F041211	12 x 25	F041623	16 x 90	F042423	24 x 90
F040814	8 x 40	F041212	12 x 30	F041624	16 x 100	F042424	24 x 100
F040816	8 x 50	F041214	12 x 40	F041626	16 x 120	F042426	24 x 120

Socket Head Shoulder Screw Coding

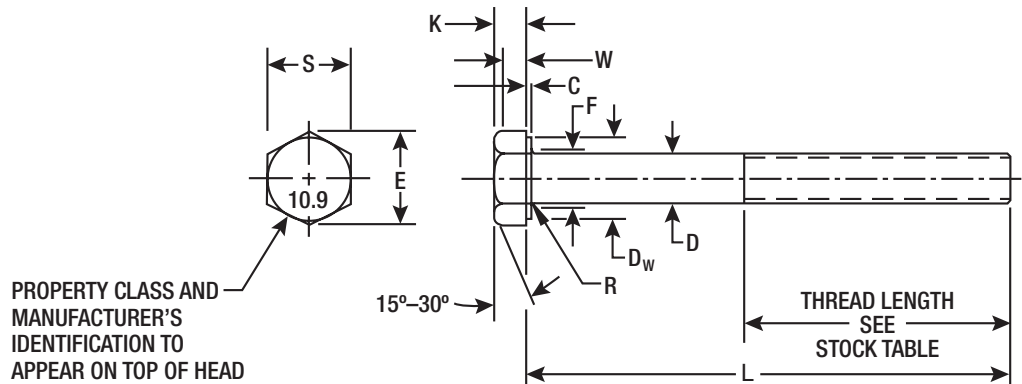
F04 SERIES (BLUE COATED)



Body Size	Nom. Thread Size	Pitch	A	F	B _{h8}		G	H
			Max	Min	Max	Min	Min	Max
6	M5	0.8	10.00	2.4	6.0	5.982	5.42	4.50
8	M6	1.0	13.00	3.3	8.0	7.978	7.42	5.50
10	M8	1.25	16.00	4.2	10.0	9.978	9.42	7.00
12	M10	1.5	18.00	4.9	12.0	11.973	11.42	8.00
16	M12	1.75	24.00	6.6	16.0	15.973	15.42	10.00
20	M16	2.0	30.00	8.8	20.0	19.967	19.42	14.00
24	M20	2.5	36.00	10.0	24.0	23.967	23.42	16.00

Body Size	J	M	N	T	W	Recommended Seating Torque Nm	Tap Drill Size
	Min	Max	Max	Max	Nom		
6	3.68	2.5	2.40	9.75	3	7	4.2
8	4.40	2.5	2.60	11.25	4	12	5.0
10	6.03	2.5	2.80	13.25	5	29	6.75
12	7.69	2.5	3.00	16.40	6	57	8.5
16	9.35	2.5	4.00	18.40	8	100	10.25
20	12.96	2.5	4.80	22.40	10	240	14.0
24	16.30	3.0	5.60	27.40	12	470	17.5

NAAMS Code	Body Size x Body Length	NAAMS Code	Body Size x Body Length	NAAMS Code	Body Size x Body Length	NAAMS Code	Body Size x Body Length
F040607B	6 x 10	F040820B	8 x 70	F041216B	12 x 50	F042014B	20 x 40
F040608B	6 x 12	F041009B	10 x 16	F041218B	12 x 60	F042016B	20 x 50
F040609B	6 x 16	F041010B	10 x 20	F041220B	12 x 70	F042018B	20 x 60
F040610B	6 x 20	F041011B	10 x 25	F041222B	12 x 80	F042020B	20 x 70
F040611B	6 x 25	F041012B	10 x 30	F041223B	12 x 90	F042022B	20 x 80
F040612B	6 x 30	F041014B	10 x 40	F041224B	12 x 100	F042023B	20 x 90
F040614B	6 x 40	F041016B	10 x 50	F041612B	16 x 30	F042024B	20 x 100
F040616B	6 x 50	F041018B	10 x 60	F041614B	16 x 40	F042026B	20 x 120
F040808B	8 x 12	F041020B	10 x 70	F041616B	16 x 50	F042416B	24 x 50
F040809B	8 x 16	F041022B	10 x 80	F041618B	16 x 60	F042418B	24 x 60
F040810B	8 x 20	F041209B	12 x 16	F041620B	16 x 70	F042420B	24 x 70
F040811B	8 x 25	F041210B	12 x 20	F041622B	16 x 80	F042422B	24 x 80
F040812B	8 x 30	F041211B	12 x 25	F041623B	16 x 90	F042423B	24 x 90
F040814B	8 x 40	F041212B	12 x 30	F041624B	16 x 100	F042424B	24 x 100
F040816B	8 x 50	F041214B	12 x 40	F041626B	16 x 120	F042426B	24 x 120



Nominal Screw Dia. & Thread Pitch	D		S		E		K		W	F	R	C		D _w
	Body Diameter		Width Across Flats		Width Across Corners		Head Height		Wrenching Height	Fillet Transition Dia.	Radius of Fillet	Washer Face Thickness		Washer Face Dia.
	Max	Min	Max	Min	Max	Min	Max	Min	Min	Max	Max	Max	Min	Min
M12 x 1.75	12.00	11.73	18.00	17.73	20.78	20.03	7.76	7.24	5.2	13.7	0.6	0.6	0.3	16.6
M14 x 2	14.00	13.73	21.00	20.67	24.25	23.35	9.09	8.51	6.2	15.7	0.6	0.6	0.3	19.6
M16 x 2	16.00	15.73	24.00	23.67	27.71	26.75	10.32	9.68	7.0	17.7	0.6	0.8	0.4	22.5
M20 x 2.5	20.00	19.67	30.00	29.16	34.64	32.95	12.88	12.12	8.8	22.4	0.8	0.8	0.4	27.7
M24 x 3	24.00	23.67	36.00	35.00	41.57	39.55	15.44	14.56	10.5	26.4	0.8	0.8	0.4	33.2
M30 x 3.5	30.00	29.67	46.00	45.00	53.12	50.85	19.48	17.92	13.1	33.4	1.0	0.8	0.4	42.7
M36 x 4	36.00	35.61	55.00	53.80	63.51	60.79	23.38	21.62	15.8	39.4	1.0	0.8	0.4	51.1

Thread Size Nom.	Stock Sizes (L)																																							
	20	25	30	35	40	45	50	55	60	65	70	75	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	240	260	280	300	320	330	340						
M12																																								
M14																																								
M16																																								
M20																																								
M24																																								
M30																																								
M36																																								

- Lengths to the left of heavy line (■) threaded to head.
- Lengths to the right of heavy line (■) have standard minimum thread lengths of two times the nominal thread diameter plus 12 mm.

NOTES & SPECIFICATIONS:

ANSI B18.2.3.1M

ASTM F568M

CLASS 10.9

For screws smaller than M12, see pages F-11.5 and F-11.6.

Hex Head Screw Coding

F05 SERIES (UNCOATED)



(CLASS 10.9)

NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length
F051210	M12-1.75 x 20	F051625	M16-2.0 x 110	F052436	M24-3.0 x 220
F051211	M12-1.75 x 25	F051626	M16-2.0 x 120	F052437	M24-3.0 x 240
F051212	M12-1.75 x 30	F052014	M20-2.5 x 40	F052438	M24-3.0 x 260
F051213	M12-1.75 x 35	F052015	M20-2.5 x 45	F052439	M24-3.0 x 280
F051214	M12-1.75 x 40	F052016	M20-2.5 x 50	F052440	M24-3.0 x 300
F051215	M12-1.75 x 45	F052018	M20-2.5 x 60	F052442	M24-2.0 x 330
F051216	M12-1.75 x 50	F052020	M20-2.5 x 70	F052443	M24-3.0 x 340
F051217	M12-1.75 x 55	F052022	M20-2.5 x 80	F053018	M30-3.5 x 60
F051218	M12-1.75 x 60	F052023	M20-2.5 x 90	F053019	M30-3.5 x 65
F051219	M12-1.75 x 65	F052024	M20-2.5 x 100	F053020	M30-3.5 x 70
F051220	M12-1.75 x 70	F052025	M20-2.5 x 110	F053022	M30-3.5 x 80
F051221	M12-1.75 x 75	F052026	M20-2.5x 120	F053023	M30-3.5 x 90
F051222	M12-1.75 x 80	F052027	M20-2.5 x 130	F053024	M30-3.5 x 100
F051223	M12-1.75 x 90	F052028	M20-2.5 x 140	F053025	M30-3.5 x 110
F051224	M12-1.75 x 100	F052029	M20-2.5 x 150	F053026	M30-3.5x 120
F051225	M12-1.75 x 110	F052030	M20-2.5 x 160	F053027	M30-3.5 x 130
F051226	M12-1.75 x 120	F052031	M20-2.5 x 170	F053028	M30-3.5x 140
F051411	M14-2.0 x 25	F052032	M20-2.5 x 180	F053029	M30-3.5x 150
F051412	M14-2.0 x 30	F052033	M20-2.5 x 190	F053030	M30-3.5 x 160
F051413	M14-2.0 x 35	F052034	M20-2.5 x 200	F053031	M30-3.5 x 170
F051414	M14-2.0 x 40	F052036	M20-2.5 x 220	F053032	M30-3.5 x 180
F051415	M14-2.0 x 45	F052037	M20-2.5x 240	F053033	M30-3.5 x 190
F051416	M14-2.0 x 50	F052038	M20-2.5 x 260	F053034	M30-3.5 x 200
F051417	M14-2.0 x 55	F052039	M20-2.5 x 280	F053035	M30-3.5 x 210
F051418	M14-2.0 x 60	F052040	M20-2.5 x 300	F053036	M30-3.5 x 220
F051420	M14-2.0 x 70	F052043	M20-2.5x 340	F053037	M30-3.5 x 240
F051422	M14-2.0 x 80	F052416	M24-3.0 x 50	F053038	M30-3.5 x 260
F051423	M14-2.0 x 90	F052418	M24-3.0 x 60	F053040	M30-3.5 x 300
F051424	M14-2.0 x 100	F052420	M24-3.0 x 70	F053041	M30-3.5 x 320
F051425	M14-2.0 x 110	F052422	M24-3.0 x 80	F053622	M36-4.0 x 80
F051613	M16-2.0 x 35	F052424	M24-3.0 x 100	F053623	M36-4.0 x 90
F051614	M16-2.0 x 40	F052425	M24-3.0 x 110	F053624	M36-4.0 x 100
F051615	M16-2.0 x 45	F052426	M24-3.0x 120	F053626	M36-4.0 x 120
F051616	M16-2.0 x 50	F052427	M24-3.0 x 130	F053627	M36-4.0 x 130
F051617	M16-2.0 x 55	F052428	M24-3.0 x 140	F053628	M36-4.0 x 140
F051618	M16-2.0 x 60	F052429	M24-3.0x 150	F053629	M36-4.0 x 150
F051620	M16-2.0 x 70	F052430	M24-3.0 x 160	F053630	M36-4.0 x 160
F051621	M16-2.0 x 75	F052431	M24-3.0 x 170	F053631	M36-4.0 x 170
F051622	M16-2.0 x 80	F052432	M24-3.0 x 180	F053634	M36-4.0 x 200
F051623	M16-2.0 x 90	F052433	M24-3.0 x 190		
F051624	M16-2.0 x 100	F052434	M24-3.0 x 200		

For screws smaller than M12, see pages F-11.5 and F-11.6.



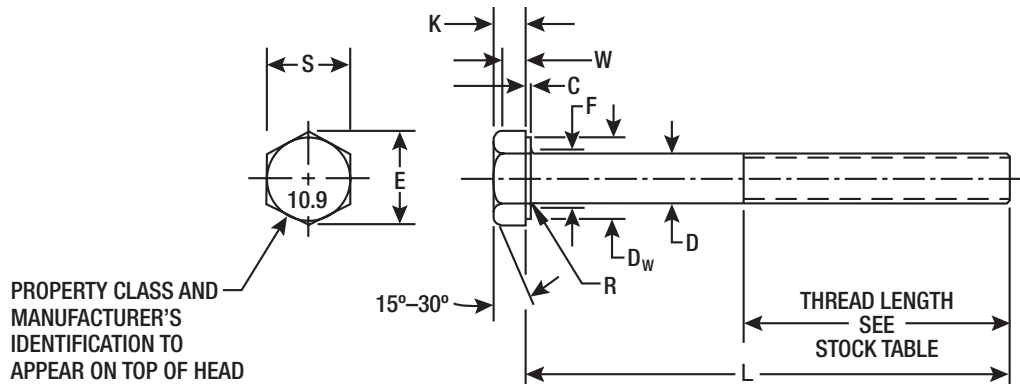
(CLASS 10.9)

NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length
F051210B	M12-1.75 x 20	F051625B	M16-2.0 x 110	F052436B	M24-3.0 x 220
F051211B	M12-1.75 x 25	F051626B	M16-2.0 x 120	F052437B	M24-3.0 x 240
F051212B	M12-1.75 x 30	F052014B	M20-2.5 x 40	F052438B	M24-3.0 x 260
F051213B	M12-1.75 x 35	F052015B	M20-2.5 x 45	F052439B	M24-3.0 x 280
F051214B	M12-1.75 x 40	F052016B	M20-2.5 x 50	F052440B	M24-3.0 x 300
F051215B	M12-1.75 x 45	F052018B	M20-2.5 x 60	F052442B	M24-2.0 x 330
F051216B	M12-1.75 x 50	F052020B	M20-2.5 x 70	F052443B	M24-3.0 x 340
F051217B	M12-1.75 x 55	F052022B	M20-2.5 x 80	F053018B	M30-3.5 x 60
F051218B	M12-1.75 x 60	F052023B	M20-2.5 x 90	F053019B	M30-3.5 x 65
F051219B	M12-1.75 x 65	F052024B	M20-2.5 x 100	F053020B	M30-3.5 x 70
F051220B	M12-1.75 x 70	F052025B	M20-2.5 x 110	F053022B	M30-3.5 x 80
F051221B	M12-1.75 x 75	F052026B	M20-2.5x 120	F053023B	M30-3.5 x 90
F051222B	M12-1.75 x 80	F052027B	M20-2.5 x 130	F053024B	M30-3.5 x 100
F051223B	M12-1.75 x 90	F052028B	M20-2.5 x 140	F053025B	M30-3.5 x 110
F051224B	M12-1.75 x 100	F052029B	M20-2.5 x 150	F053026B	M30-3.5x 120
F051225B	M12-1.75 x 110	F052030B	M20-2.5 x 160	F053027B	M30-3.5 x 130
F051226B	M12-1.75 x 120	F052031B	M20-2.5 x 170	F053028B	M30-3.5x 140
F051411B	M14-2.0 x 25	F052032B	M20-2.5 x 180	F053029B	M30-3.5x 150
F051412B	M14-2.0 x 30	F052033B	M20-2.5 x 190	F053030B	M30-3.5 x 160
F051413B	M14-2.0 x 35	F052034B	M20-2.5 x 200	F053031B	M30-3.5 x 170
F051414B	M14-2.0 x 40	F052036B	M20-2.5 x 220	F053032B	M30-3.5 x 180
F051415B	M14-2.0 x 45	F052037B	M20-2.5x 240	F053033B	M30-3.5 x 190
F051416B	M14-2.0 x 50	F052038B	M20-2.5 x 260	F053034B	M30-3.5 x 200
F051417B	M14-2.0 x 55	F052039B	M20-2.5 x 280	F053035B	M30-3.5 x 210
F051418B	M14-2.0 x 60	F052040B	M20-2.5 x 300	F053036B	M30-3.5 x 220
F051420B	M14-2.0 x 70	F052043B	M20-2.5x 340	F053037B	M30-3.5 x 240
F051422B	M14-2.0 x 80	F052416B	M24-3.0 x 50	F053038B	M30-3.5 x 260
F051423B	M14-2.0 x 90	F052418B	M24-3.0 x 60	F053040B	M30-3.5 x 300
F051424B	M14-2.0 x 100	F052420B	M24-3.0 x 70	F053041B	M30-3.5 x 320
F051425B	M14-2.0 x 110	F052422B	M24-3.0 x 80	F053622B	M36-4.0 x 80
F051613B	M16-2.0 x 35	F052424B	M24-3.0 x 100	F053623B	M36-4.0 x 90
F051614B	M16-2.0 x 40	F052425B	M24-3.0 x 110	F053624B	M36-4.0 x 100
F051615B	M16-2.0 x 45	F052426B	M24-3.0x 120	F053626B	M36-4.0 x 120
F051616B	M16-2.0 x 50	F052427B	M24-3.0 x 130	F053627B	M36-4.0 x 130
F051617B	M16-2.0 x 55	F052428B	M24-3.0 x 140	F053628B	M36-4.0 x 140
F051618B	M16-2.0 x 60	F052429B	M24-3.0x 150	F053629B	M36-4.0 x 150
F051620B	M16-2.0 x 70	F052430B	M24-3.0 x 160	F053630B	M36-4.0 x 160
F051621B	M16-2.0 x 75	F052431B	M24-3.0 x 170	F053631B	M36-4.0 x 170
F051622B	M16-2.0 x 80	F052432B	M24-3.0 x 180	F053634B	M36-4.0 x 200
F051623B	M16-2.0 x 90	F052433B	M24-3.0 x 190		
F051624B	M16-2.0 x 100	F052434B	M24-3.0 x 200		

For screws smaller than M12, see pages F-11.5 and F-11.6.

Hex Head Screw

F05 SERIES



Nominal Screw Dia. & Thread Pitch	D		S		E		K		W	F	R	C		D _w
	Body Diameter		Width Across Flats		Width Across Corners		Head Height		Wrenching Height	Fillet Transition Dia.	Radius of Fillet	Washer Face Thickness		Washer Face Dia.
	Max	Min	Max	Min	Max	Min	Max	Min	Min	Max	Max	Max	Min	Min
M5 x 0.8	5.00	4.82	8.00	7.78	9.24	8.79	3.65	3.35	2.4	5.7	0.2	0.5	0.2	7.0
M6 x 1.0	6.00	5.82	10.00	9.78	11.55	11.05	4.15	3.85	2.8	6.8	0.25	0.5	0.2	8.9
M8 x 1.2	8.00	7.78	13.00	12.73	15.01	14.38	5.50	5.10	3.7	9.2	0.4	0.6	0.3	11.6
M10 x 1.5	10.00	9.78	16.00	15.73	18.48	17.77	6.63	6.17	4.5	11.2	0.4	0.6	0.3	14.6

Thread Size Nom.	Stock Sizes (L)																			
	6	8	10	12	16	20	25	30	35	40	45	50	55	60	65	70	75	80	90	100
M5 x 0.8																				
M6 x 1.0																				
M8 x 1.2																				
M10 x 1.5																				

- Lengths to the left of heavy line (■) threaded to head.
- Lengths to the right of heavy line (■) have standard minimum thread lengths of two times the nominal thread diameter plus 12 mm.

NOTES & SPECIFICATIONS:

ANSI B18.2.3.1M

ASTM F568M

CLASS 10.9

For screws larger than M10, see pages F-11.2 thru F-11.4.



(CLASS 10.9)

NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length	NAAMS Code	Nom. Size, Pitch & Length
F050510	M5-0.8 x 6	F050623	M6-1.0 x 65	F050831	M8-1.25 x 140
F050511	M5-0.8 x 8	F050624	M6-1.0 x 70	F051012	M10-1.5 x 16
F050512	M5-0.8 x 10	F050625	M6-1.0 x 75	F051013	M10-1.5 x 20
F050513	M5-0.8 x 12	F050626	M6-1.0 x 80	F051014	M10-1.5 x 25
F050514	M5-0.8 x 16	F050627	M6-1.0 x 90	F051015	M10-1.5 x 30
F050515	M5-0.8 x 20	F050628	M6-1.0 x 100	F051016	M10-1.5 x 35
F050516	M5-0.8 x 25	F050629	M6-1.0 x 110	F051017	M10-1.5 x 40
F050517	M5-0.8 x 30	F050630	M6-1.0 x 120	F051018	M10-1.5 x 45
F050518	M5-0.8 x 35	F050810	M8-1.25 x 10	F051019	M10-1.5 x 50
F050519	M5-0.8 x 40	F050811	M8-1.25 x 12	F051020	M10-1.5 x 55
F050520	M5-0.8 x 45	F050812	M8-1.25 x 16	F051021	M10-1.5 x 60
F050521	M5-0.8 x 50	F050813	M8-1.25 x 20	F051022	M10-1.5 x 65
F050522	M5-0.8 x 55	F050814	M8-1.25 x 25	F051023	M10-1.5 x 70
F050523	M5-0.8 x 60	F050815	M8-1.25 x 30	F051024	M10-1.5 x 75
F050524	M5-0.8 x 65	F050816	M8-1.25 x 35	F051025	M10-1.5 x 80
F050525	M5-0.8 x 70	F050817	M8-1.25 x 40	F051026	M10-1.5 x 90
F050610	M6-1.0 x 8	F050818	M8-1.25 x 45	F051027	M10-1.5 x 100
F050611	M6-1.0 x 10	F050819	M8-1.25 x 50	F051028	M10-1.5 x 110
F050612	M6-1.0 x 12	F050820	M8-1.25 x 55	F051029	M10-1.5 x 120
F050613	M6-1.0 x 16	F050821	M8-1.25 x 60	F051030	M10-1.5 x 130
F050614	M6-1.0 x 20	F050822	M8-1.25 x 65	F051031	M10-1.5 x 140
F050615	M6-1.0 x 25	F050823	M8-1.25 x 70	F051032	M10-1.5 x 150
F050616	M6-1.0 x 30	F050824	M8-1.25 x 75	F051033	M10-1.5 x 160
F050617	M6-1.0 x 35	F050825	M8-1.25 x 80	F051034	M10-1.5 x 170
F050618	M6-1.0 x 40	F050826	M8-1.25 x 90	F051035	M10-1.5 x 180
F050619	M6-1.0 x 45	F050827	M8-1.25 x 100	F051036	M10-1.5 x 190
F050620	M6-1.0 x 50	F050828	M8-1.25 x 110	F051037	M10-1.5 x 200
F050621	M6-1.0 x 55	F050829	M8-1.25 x 120		
F050622	M6-1.0 x 60	F050830	M8-1.25 x 130		

For screws smaller than M12, see pages F-11.5 and F-11.6.

Socket Set Screw

F21, F22 & F23 SERIES

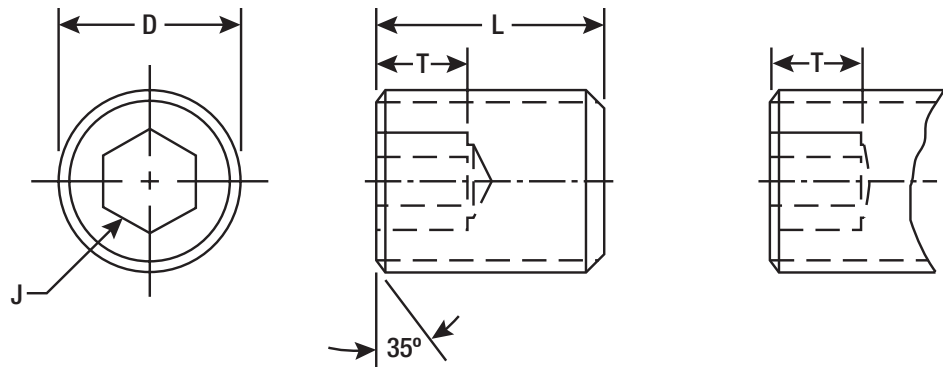


NOTES & SPECIFICATIONS:

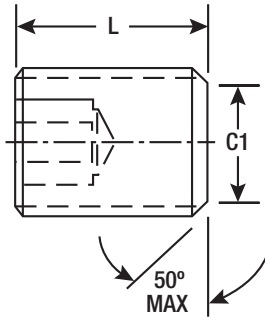
ANSI B18.3.6M

CLASS 45H

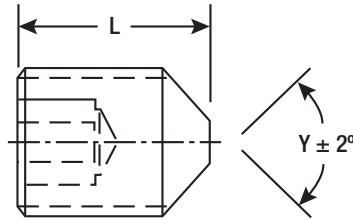
See individual point styles for applicable DIN and ISO specifications.



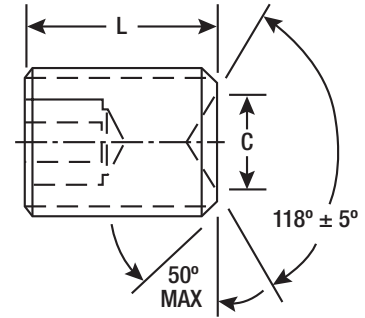
NAAMS Code			D	J	L	T
Flat Point Style	Cone Point Style	Cup Point (Type 1) Style	Nominal Size of Basic Screw Ø x Pitch	Hexagon Socket Size	Nominal Screw Lengths	For Cup & Flat Points
				Nom.		Min
F210504	—	—	5 x 0.8	2.5	4	2.0
F210505	F220505	F230505			5	2.7
F210506	F220506	F230506			6	2.7
F210508	F220508	F230508			8	2.7
F210604	—	—	6 x 1	3	4	1.8
F210605	F220605	F230605			5	2.5
F210606	F220606	F230606			6	3.0
F210608	F220608	F230608			8	3.0
F210806	F220806	F230806	8 x 1.25	4	6	2.5
F210808	F220808	F230808			8	4.0
F210810	F220810	F230810			10	4.0
F211006	—	—			6	2.0
F211008	F221008	F231008	10 x 1.5	5	8	3.6
F211010	F221010	F231010			10	5.0
F211012	F221012	F231012			6	5.0
F211208	—	—			8	3.0
F211210	—	F231210	12 x 1.75	6	10	4.5
F211212	F221212	F231212			12	6.0
F211216	F221216	F231216			8	6.0
F211616	F221616	F231616	16 x 2	8	16	8.0
F211620	F221620	F231620			20	8.0
F212020	F222020	F232020			20	9.0
F212025	F222025	F232025			25	10.0
F212425	F222425	F232425	24 x 3	12	25	12.0
F212430	F222430	F232430			30	12.0



**FLAT POINT
(F21)**



**CONE POINT
(F22)**



**CUP POINT
TYPE 1 (F23)**

D	C		C		Y
Nominal Size of Basic Screw Ø	Cup Point Ø Type 1		Flat Point Ø		Cone Point Angle 90° for These Lengths & Over; 118° for Shorter Lengths
	Max	Min	Max	Min	
5	2.50	2.25	3.50	3.20	6
6	3.00	2.75	4.00	3.70	8
8	5.00	4.70	5.50	5.20	10
10	6.00	5.70	7.00	6.64	12
12	8.00	7.64	8.50	8.14	16
16	10.00	9.64	12.00	11.57	20
20	14.00	13.57	15.00	14.57	25
24	16.00	15.57	18.00	17.57	30

NOTES & SPECIFICATIONS:

Material Hardness 45H

Must conform to:

ANSI B18.3.6M

Thread Class 4g 6g

Cup Point: DIN 916, ISO 4029, ANSI B18.3.6M

Flat Point: DIN 913, ISO 4026, ANSI B18.3.6M

Cone Point: DIN 914, ISO 4027, ANSI B18.3.6M

Hexagon Nut

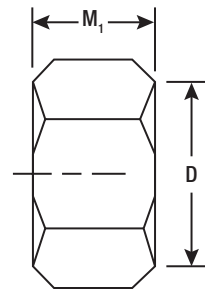
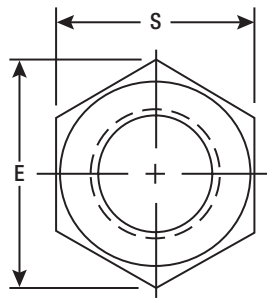
FINE: F39 SERIES



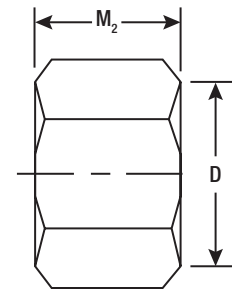
FINE THREADS

NOTES & SPECIFICATIONS:

F41 Series Discontinued
ASTM A563M
Class 12



STYLE 1



STYLE 2

NAAMS Code	Nominal Nut Ø & Thread Pitch	S		E		M ₁		M ₂		D
		Width Across Flats		Width Across Corners		Thickness ANSI B18.2.4.1M		Thickness ANSI B18.2.4.2M		Bearing Face Ø
		Max	Min	Max	Min	Max	Min	Max	Min	Min
F392436	M24 x 2	36.00	35.00	41.57	39.55	23.90	22.60	23.90	22.60	33.2

NOTE: F41 Series was discontinued 09/18/1998.

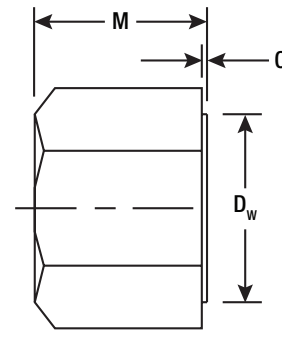
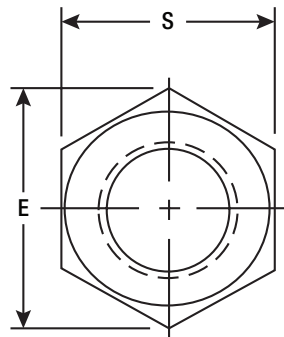
Hexagon Nut Washer Face

F42 SERIES

COARSE THREADS

NOTES & SPECIFICATIONS:

ANSI B18.2.4.2M
ASTM A563M
Class 12



NAAMS Code	Nominal Nut Ø & Thread Pitch	S		E		M		D _w	C	
		Width Across Flats		Width Across Corners		Thickness ANSI B18.2.4.2M		Bearing Face Ø	Washer Face Thickness	
		Max	Min	Max	Min	Max	Min	Max	Max	Min
F420508	M5 x 0.8	8.00	7.78	9.24	8.79	5.10	4.80	6.9	—	—
F420610	M6 x 1	10.00	9.78	11.55	11.05	5.70	5.40	8.9	—	—
F420813	M8 x 1.25	13.00	12.73	15.01	14.38	7.50	7.14	11.6	—	—
F421016	M10 x 1.5	16.00	15.73	18.48	17.77	9.30	8.94	14.6	—	—
F421218	M12 x 1.75	18.00	17.73	20.78	20.03	12.00	11.57	16.6	—	—
F421624	M16 x 2	24.00	23.67	27.71	26.75	16.40	15.70	22.5	—	—
F422030	M20 x 2.5	30.00	29.16	34.64	32.95	20.30	19.00	27.7	0.8	0.4
F422436	M24 x 3	36.00	35.00	41.57	39.55	23.90	22.60	33.2	0.8	0.4
F423046	M30 x 3.5	46.00	45.00	53.12	50.85	28.60	27.30	42.7	0.8	0.4
F423655	M36 x 4	55.00	53.80	63.51	60.79	34.70	33.10	51.1	0.8	0.4

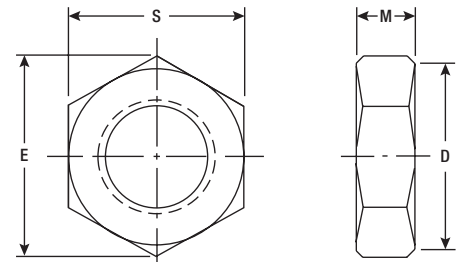


Hexagon Jam Nut

FINE: F45 SERIES, COARSE: F47 SERIES

NAAMS Code	Nominal Nut Ø & Thread Pitch	S		E		M		D _w
		Width Across Flats		Width Across Corners		Thickness		Bearing Face Ø
		Max	Min	Max	Min	Max	Min	Max
F451017	M10 x 1.25	17	—	—	—	5	—	—
F451219	M12 x 1.25	19	—	—	—	6	—	—
F451624	M16 x 1.5	24	—	—	—	8	—	—
F452030	M20 x 1.5	30	—	—	—	10	—	—
F452436	M24 x 2	36	—	—	—	13.5	—	—
F452741	M27 x 2	41	—	—	—	13.5	—	—
F453650	M36 x 2	50	—	—	—	16	—	—
F470508	M5 x 0.8	8.00	7.78	9.24	8.79	2.70	2.45	6.9
F470610	M6 x 1	10.00	9.78	11.55	11.05	3.20	2.90	8.9
F470813	M8 x 1.25	13.00	12.73	15.01	14.38	4.00	3.70	11.6
F471016	M10 x 1.5	16.00	15.73	18.48	17.77	5.00	4.70	14.6
F471218	M12 x 1.75	18.00	17.73	20.78	20.03	6.00	5.70	16.6
F471624	M16 x 2	24.00	23.67	27.71	26.75	8.00	7.42	22.5
F472030	M20 x 2.5	30.00	29.16	34.64	32.95	10.00	9.10	27.7
F472436	M24 x 3	36.00	35.00	41.57	39.55	12.00	10.90	33.2
F473046	M30 x 3.5	46.00	45.00	53.12	50.85	15.00	13.90	42.7
F473655	M36 x 4	55.00	53.80	63.51	60.79	18.00	16.90	51.1

COARSE & FINE THREADS



NOTES & SPECIFICATIONS:

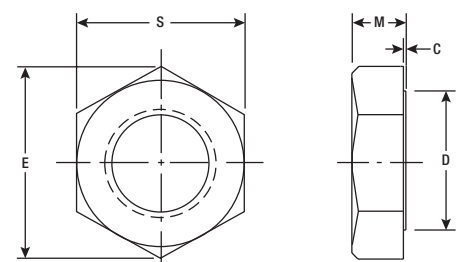
ANSI B18.2.4.5M
ASTM A563M
CLASS 04

Hexagon Jam Nut with Washer Face

FINE: F46 SERIES, COARSE: F48 SERIES

NAAMS Code	Nominal Nut Ø & Thread Pitch	S		E		M		D	C	
		Width Across Flats		Width Across Corners		Thickness		Bearing Face Ø	Washer Face Thickness	
		Max	Min	Max	Min	Max	Min	Max	Max	Min
F480508	M5 x 0.8	8.00	7.78	9.24	8.79	2.70	2.45	6.9	—	—
F480610	M6 x 1	10.00	9.78	11.55	11.05	3.20	2.90	8.9	—	—
F480813	M8 x 1.25	13.00	12.73	15.01	14.38	4.00	3.70	11.6	—	—
F461017	*M10 x 1.25	17	—	—	—	5	—	—	—	—
F481016	M10 x 1.5	16.00	15.73	18.48	17.77	5.00	4.70	14.6	—	—
F461219	*M12 x 1.25	19	—	—	—	6	—	—	—	—
F481218	M12 x 1.75	18.00	17.73	20.78	20.03	6.00	5.70	16.6	—	—
F461624	*M16 x 1.5	24	—	—	—	8	—	—	—	—
F461624	M16 x 2	24.00	23.67	27.71	26.75	8.00	7.42	22.5	—	—
F462030	*M20 x 1.5	30	—	—	—	10	—	—	—	—
F482030	M20 x 2.5	30.00	29.16	34.64	32.95	10.00	9.10	27.7	0.8	0.4
F482436	M24 x 3	36.00	35.00	41.57	39.55	12.00	10.90	33.2	0.8	0.4
F462741	*M27 x 2	41	—	—	—	13.5	—	—	—	—
F483046	M30 x 3.5	46.00	45.00	53.12	50.85	15.00	13.90	42.7	0.8	0.4
F463650	*M36 x 2	50	—	—	—	16	—	—	—	—
F483655	M36 x 4	55.00	53.80	63.51	60.79	18.00	16.90	51.1	0.8	0.4

COARSE & FINE THREADS



NOTES & SPECIFICATIONS:

ANSI B18.2.4.5M
ASTM A563M
Class 04

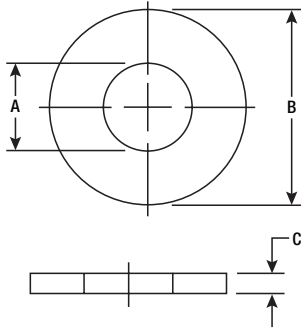
*Fine thread series (F46 Series).

Hardened Washer

F62 SERIES



(ASTM F436M)



NOTES & SPECIFICATIONS:

M6–M10: Rc 38–45 through Hardened
(except as noted)

M12 & Larger: ASTM F436M

NAAMS Code	Nominal Washer	A		B		C	
		Inside Ø		Outside Ø		Thickness	
		Max	Min	Max	Min	Max	Min
F620614	6	7.3	7.0	13.6	12.6	4.0	2.7
F620818	8	9.8	9.0	18.4	17.1	4.0	2.7
F621022	10	11.8	11.0	22.0	20.7	4.0	2.7
F621025*	10	10.8	10.2	25.3	24.7	5.0	4.0
F621227	12	14.4	14.0	27.0	25.7	4.6	3.1
F621634	16	18.4	18.0	34.0	32.4	4.6	3.1
F622042	20	22.5	22.0	42.0	40.4	4.6	3.1
F622244	22	24.5	24.0	44.0	42.4	4.6	3.4
F622450	24	26.5	26.0	50.0	48.4	4.6	3.4
F622756	27	30.5	30.0	56.0	54.1	4.6	3.4
F623060	30	33.6	33.0	60.0	58.1	4.6	3.4
F623672	36	39.6	39.0	72.0	70.1	4.6	3.4

*Special purpose for locating pin retainer assemblies 1020 H.R.S. carb & harden 1.0 deep 38-45 Rc

Pull Dowel Pin

F91 SERIES

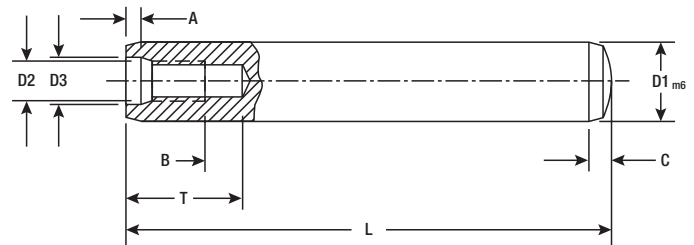
NOTES & SPECIFICATIONS:

Material, case hardened alloy steel – shear strength: 825 MPa (120ksi)

ANSI B18.8.5M

Precision ground

Provide for air release (e.g., machine a flat, spiral, etc.)



D1 Dia.	6	8	10	12	16	20	25
C	2.1	2.6	3	3.8	4.6	6	6
D2 Max.	M4 x 0.7	M5 x 0.8	M6 x 1	M6 x 1	M8 x 1.25	M10 x 1.5	M16 x 2
B	6	8	10	12	16	18	24
D3	4.3	5.3	6.4	6.4	8.4	10.5	17
A	1	1.2	1.2	1.2	1.5	1.5	2
T Min.	10	12	16	20	25	28	35
L	16	•					
	20	•	•				
	25	•	•	•			
	30	•	•	•			
	35	•	•	•	•		
	40	•	•	•	•	•	
	50	•	•	•	•	•	•
	60	•	•	•	•	•	•
	70		•	•	•	•	•
	80		•	•	•	•	•
	90			•	•	•	•
	100			•	•	•	•
	120			•	•	•	•



Pull Dowel Pin Coding

F91 SERIES

NAAMS Code	Nom. Size & Length	Notes
F910616	6 x 16	
F910620	6 x 20	
F910624	6 x 24	DISCONTINUED
F910625	6 x 25	
F910628	6 x 28	DISCONTINUED
F910632	6 x 32	
F910635	6 x 35	
F910640	6 x 40	
F910650	6 x 50	
F910660	6 x 60	
F910820	8 x 20	
F910824	8 x 24	DISCONTINUED
F910825	8 x 25	
F910828	8 x 28	DISCONTINUED
F910830	8 x 30	
F910832	8 x 32	DISCONTINUED
F910835	8 x 35	
F910840	8 x 40	
F910850	8 x 50	
F910860	8 x 60	
F910870	8 x 70	
F910880	8 x 80	
F911024	10 x 24	DISCONTINUED
F911025	10 x 25	
F911028	10 x 28	DISCONTINUED
F911030	10 x 30	
F911032	10 x 32	DISCONTINUED
F911035	10 x 35	
F911040	10 x 40	
F911050	10 x 50	
F911060	10 x 60	
F911070	10 x 70	
F911080	10 x 80	
F911090	10 x 90	
F911010	10 x 100	
F911228	12 x 28	DISCONTINUED

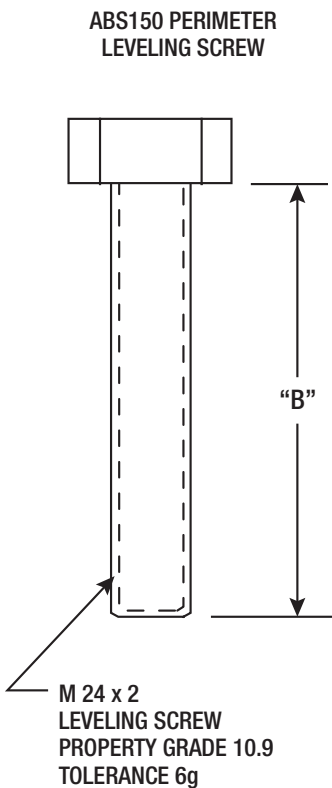
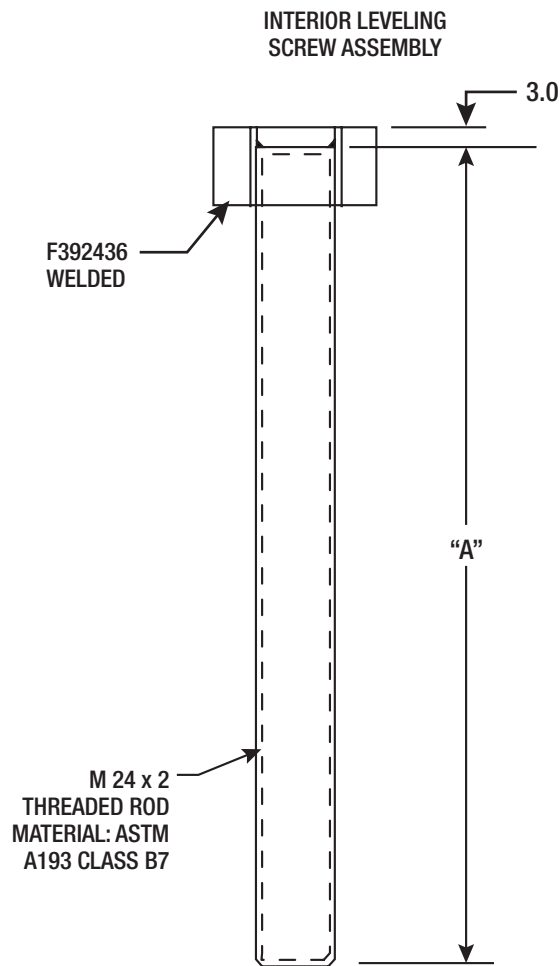
NAAMS Code	Nom. Size & Length	Notes
F911230	12 x 30	
F911232	12 x 32	DISCONTINUED
F911235	12 x 35	
F911240	12 x 40	
F911250	12 x 50	
F911260	12 x 60	
F911270	12 x 70	
F911280	12 x 80	
F911290	12 x 90	
F911210	12 x 100	
F911212	12 x 120	
F911632	16 x 32	DISCONTINUED
F911635	16 x 35	
F911640	16 x 40	
F911650	16 x 50	
F911660	16 x 60	
F911670	16 x 70	
F911680	16 x 80	
F911690	16 x 90	
F911610	16 x 100	
F911612	16 x 120	
F912040	20 x 40	
F912050	20 x 50	
F912060	20 x 60	
F912070	20 x 70	
F912080	20 x 80	
F912090	20 x 90	
F912010	20 x 100	
F912012	20 x 120	
F912550	25 x 50	
F912560	25 x 60	
F912570	25 x 70	
F912580	25 x 80	
F912590	25 x 90	
F912510	25 x 100	
F912512	25 x 120	

Leveling Screw Assemblies

F91 SERIES



NAAMS Fasteners



NAAMS Code	Dim "B"	Wt. kg
ABS100	100.0	0.43
ABS150	150.0	0.59