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ASTM A453 Grade 660 Class B / 12 Point Screws

ASTM A453 Grade 660 Class B 12 Point Screws

Marked A2B Drawing No.N733D Item Code C1F19A2

ASTM A453 Grade 660 Class B twelve point Screws often referred as 12 point flange bolts offered at TorqBolt are manufactured in accordance with IFI 115 standard in metric and imperial coarse and fine thread sizes with UNC, UN, UNF, UNEF, UNJF & ISO threads.

DESCRIPTION: (C1F19A2) Flanged twelve-point, external wrenching screw.

MATERIAL: Precipitation hardening steel conforming to ASTM A 453 Grade 660 Class B, 130 ksi tensile strength.

SCREW THREADS: Class 2A UNC, UNF or 8 UN series.

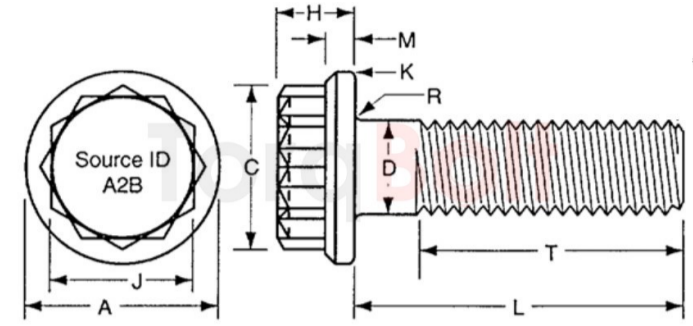
HARDNESS, BRINELL: 248 - 341 HB.

SURFACE TEXTURE: Threads, body under head fillet and bearing area 63 microinch.

HEAD MARKING: A2B as indicated and registered source ID.

FOR USE IN TEMPERATURE UP TO 1200 °F.

All dimensions are in inches unless otherwise indicated



DIMENSIONS

1/4" TO 3/8" 7/16" TO 3/4" 7/8" TO 1-1/2" 1-5/8" TO 2-1/2"

THREAD SIZE		1/4 (0.250)		5/16 (0.312)		3/8 (0.375)		
THREAD/INCH		20 UNC	28 UNF	18 UNC	24 UNF	16 UNC	24 UNF	
T Thread length	min	1.00		1.12		1.25		
	max	0.375		0.469		0.562		
A Flange diameter	min	0.365		0.457		0.550		
	max	0.250		0.312		0.375		
H Head height	min	0.244		0.306		0.368		
	max	0.253		0.3155		0.378		
J Width across flats	min	0.249		0.3115		0.370		
	max	0.284		0.356		0.422		
C Width across corners	min	0.284		0.356		0.422		
K Chamfer	max	0.008		0.008		0.008		
M Flange thickness	max	0.088		0.119		0.166		
	min	0.068		0.099		0.146		
R Fillet	max	0.015		0.015		0.020		
	min	0.010		0.010		0.015		
D Body diameter	max	0.2500		0.3120		0.3750		
	min	0.2435		0.3053		0.3678		
L Length	Tol	PART NO. (For other lengths, last three digits are lengths in 16ths.)						
Preferred Lengths	3/8 (0.375)	-0.03	21006	20006	23006	22008	25008	24008
	1/2 (0.500)		21008	20008	23008			
	5/8 (0.625)		21010	20010	23010	22010	25010	24010
	3/4 (0.750)		21012	20012	23012	22012	25012	24012
	7/8 (0.875)		21014	20014	23014	22014	25014	24014
	1 (1.000)	21016	20016	23016	22016	25016	24016	
	1 1/4 (1.250)	-0.04	21020	20020	23020	22020	25020	24020
	1 1/2 (1.500)		21024	20024	23024	22024	25024	24024
	1 3/4 (1.750)		21028	20028	23028	22028	25028	24028
	2 (2.000)		21032	20032	23032	22032	25032	24032
	2 1/4 (2.250)		21036	20036	23036	22036	25036	24036
	2 1/2 (2.500)	21040		23040	22040	25040	24040	
	2 3/4 (2.750)	21044		23044		25044		
	3 (3.000)	-0.06	21048		23048		25048	24048
	3 1/4 (3.250)				23052		25052	
3 1/2 (3.500)						25056		

FINISH: Unplated. Other finishes available, tabulated on K4015014 – Finish Suffix Chart.
 (1) Lengths above heavy line shall have a maximum of 2 imperfect threads under the head. Lengths below heavy line shall have minimum thread length as tabulated above.
 PART NUMBER EXAMPLE: N733DP52040 identifies a 1 3/4-8 x 2 1/2 inch flanged twelve-point nickel-chromium precipitation hardening alloy steel external wrenching screw.



4 (4.000)

4 1/2 (4.500)

5 (5.000)

23056

25064

25072

25080

FINISH: Unplated. Other finishes available, tabulated on K4015014 – Finish Suffix Chart.

(1) Lengths above heavy line shall have a maximum of 2 imperfect threads under the head. Lengths below heavy line shall have minimum thread length as tabulated above.

PART NUMBER EXAMPLE: N733DP52040 identifies a 1 3/4-8 x 2 1/2 inch flanged twelve-point nickel-chromium precipitation hardening alloy steel external wrenching screw.

THREAD SIZE		7/16 (0.438)		1/2 (0.500)		5/8 (0.625)		3/4 (0.750)			
THREAD/INCH		14 UNC	20 UNF	13 UNC	20 UNF	11 UNC	18 UNF	10 UNC			
T Thread length	min	1.38		1.50		1.75		2.00			
A Flange diameter	max	0.656		0.750		0.938		1.125			
	min	0.642		0.735		0.921		1.107			
H Head height	max	0.438		0.500		0.625		0.750			
	min	0.430		0.492		0.616		0.740			
J Width across flats	max	0.440		0.503		0.628		0.753			
	min	0.432		0.495		0.620		0.745			
C Width across corners	max	0.493		0.565		0.707		0.850			
K Chamfer	min	0.010		0.010		0.010		0.010			
M Flange thickness	max	0.197		0.228		0.275		0.338			
	min	0.177		0.208		0.255		0.318			
R Fillet	max	0.030		0.030		0.030		0.040			
	min	0.020		0.020		0.020		0.030			
D Body diameter	max	0.4380		0.5000		0.6250		0.7500			
	min	0.4294		0.4919		0.6163		0.7406			
L Lengths	Tol	PART NO. (For other lengths, last three digits are lengths in 16ths.)									
Preferred Lengths	1/2 (0.500)	-0.03	27008		29008						
	5/8 (0.625)		27010		29010						
	3/4 (0.750)		27012		29012						
	7/8 (0.875)		27014		29014						
	1 (1.000)	-0.06	27016		29016	28016	33016	32016	35020	34020	
	1 1/4 (1.250)		27020	26016	29020	28020	33020	32020	35024	34024	
	1 1/2 (1.500)		27024	26024	29024	28024	33024	32024	35028	34028	
	1 3/4 (1.750)		27028		29028	28028	33028	32028			
	2 (2.000)	26032	27032		29032	28032	33032	32032	35032	34032	
	2 1/4 (2.250)		27036		29036	28036	33036		35036	34040	
	2 1/2 (2.500)		27040		29040	28040	33040	32040	35040		
	2 3/4 (2.750)	-0.08	27044		29044	28048	33044		35044		
	3 (3.000)		27048		29048		33048		35048		
	3 1/4 (3.250)		27052		29052		33052		35052		
	3 1/2 (3.500)		27056		29056		33056		35056		
	4 (4.000)	27064			29064				35064		
	4 1/2 (4.500)				29072		33064		35072		
	5 (5.000)				29080		33072		35080		
	5 1/2 (5.500)				29088		33080		35088		
	5 1/2 (5.500)				29088		33088		35088		
6 (6.000)				29096		33088		35096			

FINISH: Unplated. Other finishes available, tabulated on K4015014 – Finish Suffix Chart.

(2) Sizes: Up to 5/8 (0.625) inch incl – Lengths above heavy line shall have a maximum of 2 imperfect threads under the head. Over 5/8 (0.625) inch – Lengths above heavy line shall be threaded as close to the head as practical. All sizes – Lengths below heavy line shall have a minimum thread length tabulated above.

PART NUMBER EXAMPLE: N733DP52040 identifies a 1 3/4-8 x 2 1/2 inch flanged twelve-point nickel-chromium precipitation hardening alloy steel external wrenching screw.

THREAD SIZE		7/8 (0.875)	1 (1.000)	1 1/8 (1.125)		1 1/4 (1.250)		1 3/8 (1.375)		1 1/2 (1.500)		
THREAD/INCH		9 UNC	8 UNC	7 UNC	8 UN	7 UNC	8 UN	6 UNC	8 UN	6 UNC	8 UN	
T Thread length		2.25	2.50	2.82		3.12		3.44		3.75		
A Flange diameter	max	1.312	1.500	1.684		1.871		2.058		2.245		
	min	1.293	1.479	1.665		1.852		2.038		2.224		
H Head height	max	0.875	1.000	1.125		1.250		1.375		1.500		
	min	0.864	0.988	1.111		1.236		1.360		1.485		
J Width across flats	max	0.879	1.004	1.129		1.254		1.379		1.505		
	min	0.868	0.993	1.117		1.241		1.366		1.491		
C Width across corners	max	0.990	1.134	1.276		1.418		1.561		1.705		
K Chamfer	min	0.015	0.015	0.015		0.015		0.015		0.015		
M Flange thickness	max	0.353	0.416	0.448		0.494		0.541		0.604		
	min	0.333	0.396	0.428		0.474		0.521		0.584		
R Fillet	max	0.045	0.050	0.055		0.060		0.065		0.070		
	min	0.035	0.040	0.045		0.050		0.055		0.060		
D Body diameter	max	0.8750	1.0000	1.125		1.250		1.375		1.500		
	min	0.8647	0.9886	1.109		1.234		1.357		1.482		
L Lengths	Tol	PART NO. (For other lengths, last three digits are lengths in 16ths.)										
Preferred Lengths	2 (2.000)	-0.10	37032	39032	42032	41032	45032	44032	48032	47032	51032	50032
	2 1/4 (2.250)		37036	39036	42036	41036	45036	44036	48036	47036	51036	50036
	2 1/2 (2.500)		37040	39040	42040	41040	45040	44040	48040	47040	51040	50040
	2 3/4 (2.750)		37044	39044	42044	41044	45044	44044	48044	47044	51044	50044
	3 (3.000)		37048	39048	42048	41048	45048	44048	48048	47048	51048	50048
	3 1/4 (3.250)		37052	39052	42052	41052	45052	44052	48052	47052	51052	50052
	3 1/2 (3.500)		37056	39056	42056	41056	45056	44056	48056	47056	51056	50056
	4 (4.000)		37064	39064	42064	41064	45064	44064	48064	47064	51064	50064

FINISH: Unplated. Other finishes available, tabulated on K4015014 – Finish Suffix Chart.

(3) Lengths above heavy line shall be threaded as close to head as practical. Lengths below heavy line shall have minimum thread length as tabulated above.

PART NUMBER EXAMPLE: N733DP52040 identifies a 1 3/4-8 x 2 1/2 inch flanged twelve-point nickel-chromium precipitation hardening alloy steel external wrenching screw.

4 1/2 (4.500)		37072	39072	42072	41072	45072	44072	48072	47072	51072	50072
5 (5.000)		37080	39080	42080	41080	45080	44080	48080	47080	51080	50080
5 1/2 (5.500)		37088	39088	42088	41088	45088	44088	48088	47088	51088	50088
6 (6.000)		37096	39096	42096	41096	45096	44096	48096	47096	51096	50096
Greater than (6.000)	-0.20										

FINISH: Unplated. Other finishes available, tabulated on K4015014 – Finish Suffix Chart.
(3) Lengths above heavy line shall be threaded as close to head as practical. Lengths below heavy line shall have minimum thread length as tabulated above.
PART NUMBER EXAMPLE: N733DP52040 identifies a 1 3/4-8 x 2 1/2 inch flanged twelve-point nickel-chromium precipitation hardening alloy steel external wrenching screw.

THREAD SIZE		1 5/8 (1.625)	1 3/4 (1.750)	2 (2.000)	2 1/4 (2.250)	2 1/2 (2.500)	
THREAD/INCH		8 UN	8 UN	8 UN	8 UN	8 UN	
T Thread length	min	4.07	4.38	5.00	5.62	6.25	
A Flange diameter	max	2.430	2.620	2.995	3.375	3.750	
	min	2.408	2.597	2.970	3.344	3.717	
H Head height	max	1.625	1.750	2.000	2.250	2.500	
	min	1.611	1.734	1.983	2.232	2.481	
J Width across flats	max	1.630	1.755	2.005	2.255	2.505	
	min	1.615	1.740	1.990	2.200	2.455	
C Width across corners	min	1.848	2.009	2.268	2.480	2.760	
K Chamfer	max	0.015	0.015	0.015	0.030	0.030	
M Flange thickness	max	0.651	0.760	0.885	1.010	1.119	
	min	0.631	0.740	0.865	0.990	1.099	
R Fillet	max	0.070	0.080	0.090	0.125	0.150	
	min	0.060	0.070	0.075	0.100	0.110	
D Body diameter	max	1.625	1.750	2.000	2.250	2.500	
	min	1.605	1.730	1.980	2.227	2.477	
L Lengths	Tol	PART NO. (For other lengths, last three digits are lengths in 16ths.)					
Preferred Lengths	2 (2.000)	-0.18	98032	52032	54032	56032	58032
	2 1/4 (2.250)		98036	52036	54036	56036	58036
	2 1/2 (2.500)		98040	52040	54040	56040	58040
	2 3/4 (2.750)	-0.20	98044	52044	54044	56044	58044
	3 (3.000)		98048	52048	54048	56048	58048
	3 1/4 (3.250)		98052	52052	54052	56052	58052
	3 1/2 (3.500)		98056	52056	54056	56056	58056
	4 (4.000)		98064	52064	54064	56064	58064
	4 1/2 (4.500)		98072	52072	54072	56072	58072
	5 (5.000)	98080	52080	54080	56080	58080	
	5 1/2 (5.500)	98088	52088	54088	56088	58088	
	6 (6.000)	98096	52096	54096	56096	58096	
	Greater than (6.000)	-0.24					

FINISH: Unplated. Other finishes available, tabulated on K4015014 – Finish Suffix Chart.
(4) Lengths above heavy line shall be threaded as close to head as practical. Lengths below heavy line shall have minimum thread length as tabulated above.
PART NUMBER EXAMPLE: N733DP52040 identifies a 1 3/4-8 x 2 1/2 inch flanged twelve-point nickel-chromium precipitation hardening alloy steel external wrenching screw.

Specifications

ASTM A453
ASTM A638
EN 10269
EN 10083-3
ISO 3506-5
DIN 267

Surface Treatments

Xylan 1070 / 1014 / 1400 / 1424
Xylar 2 / 101
SermaGard 1105 / 1280
Dacromet 320 / 500
TakeCoat 1000 Ceramic
Magnigard
MolyKote

Certifications

ISO 9001 - 2015 Certified
PED 2014/68/EC
API 6A ; API 20E; API 20F
NACE MR0175/ISO 15156-2
NORSOK M-650
DFAR
MERKBLATT AD 2000 W2/W7/W10

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