



Standard Part

Round Head, Short Square Neck Bolts – Inch Coarse Thread – Non-Preferred

STPB260

87366885

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1. GENERAL

- 1.1 This standard conforms essentially to Round Head Short Square Neck Bolts described in ANSI B18.5. All dimensions in this standard are in inches. For dimensions not shown in this specification, refer to ANSI B18.5.
- 1.2 The Short Square Neck bolt is favored over Square Neck (Carriage) Bolts found in STPB250. Use the Square Neck Bolt when the longer neck length is needed to clear casting draft, to provide better engagement, or to engage more than one part.
- 1.3 Use of a non-plated square neck bolt is limited to welding applications only.

2. RELATED DOCUMENTS

2.1 REFERENCE STANDARDS

ANSI B18.5—Round Head Bolts (Inch Series)
 MAT0310—Zinc Plating
 STPA020—Fastener Finishes and Material Specifications
 Case MS-61—Fluorocarbon Coating
 Case MS-91—Zinc Phosphate Coating
 SAE J429—Mechanical and Material Requirements for Externally Threaded Fasteners

2.2 REPLACED STANDARDS

Case B-020—Round Head Square Neck Bolts (General Specifications)
 Case B-023—Round Head Short Square Neck Bolts Grade 5 UNC - Preferred
 Case B-024—Round Head Short Square Neck Bolts - Non-Preferred
 Case B-025—Round Head Square Neck Bolts - Specials - Non-Preferred
 FNHA 1-B-110.00—Bolt, Rd Hd Short Sq Neck, G5, ZnCr, Inch

3. PREFERRED PARTS POLICY

All standard parts measured in inches are considered non-preferred. See STPB770 for preferred parts (metric).

4. CROSS REFERENCE

For cross reference listing of company part numbers, go to [CNH Catalogue](#).

5. MATERIAL

Bolts shall conform to the chemical composition, mechanical properties, and heat treatment requirements for steel per SAE J429. Bolts may also be made of stainless steel (SST) Type 410.

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6. FINISH

Bolts shall be furnished plain (PLN), plated, or coated as designated by part number in accordance with CNH or former company Material Specifications.

7. HEAD MARKING

7.1 Bolts shall have legible, raised radial head markings to indicate bolt grade and a manufacturer's identification symbol recognized in the trade to indicate source. Refer to SAE J429 for standard grade marking symbols.

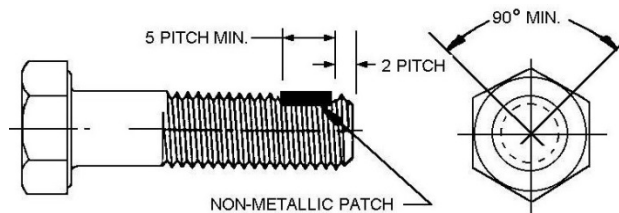
7.2 Grade 2 bolts are unmarked.

7.3 Head markings for bolt sizes 5/8 inch and smaller shall project not less than .005 inch above surface nor more than .015 inch over the specified maximum head height.

7.4 Markings for sizes larger than 5/8 inch shall raise at least the equivalent of .0075 times the basic diameter above the surface but not more than .030 inch over maximum head height..

8. Non-Metallic Patch

Prevailing torque bolts with non-metallic patch shall conform to IFI 124. These bolts are for applications where temperatures will not exceed 120° C (250° F). Bolts shall assemble one full turn by hand. The prevailing torque of bolts shall not exceed the maximum value specified in IFI 124. Illustration below is for reference purposes only concerning patch. Source approval by Materials Engineering is required for the coating.





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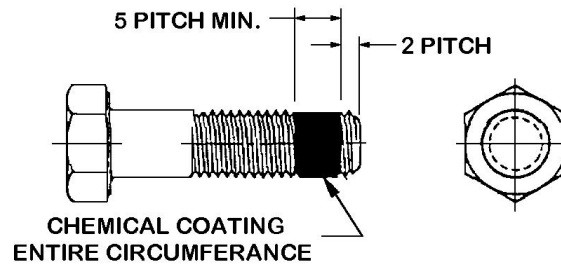
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9. Chemical Coating

Locking bolts with chemical coating shall conform to IFI 125 standard. These bolts are for applications where temperatures will not exceed 105°C (220°F).

Approved chemical coating: ND Microspheres 593S (Blue) or Precote 85

Bolts shall assemble one full turn by hand. The prevailing torque of lock bolts occurring during the first installation shall not exceed the prevailing torque specified. In addition, the break-away torque and the maximum prevailing off torque occurring during the first removal shall not be less than the minimum values specified.





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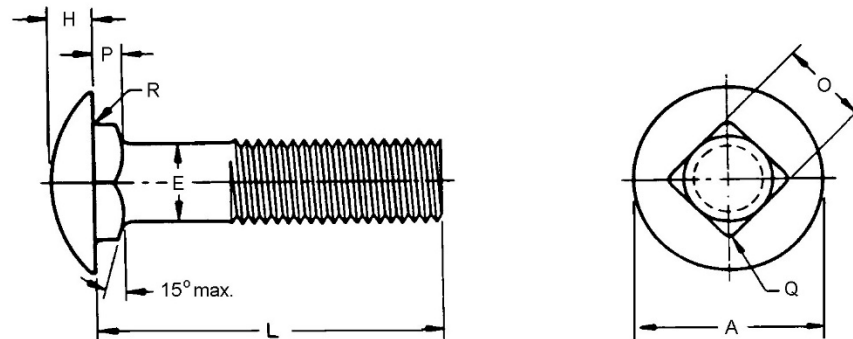


FIGURE 1: Round Head Short Square Neck Bolt

TABLE 1: Basic Dimensions in Inches

Nominal Size		E		A		H	
		Body Diameter		Head Diameter		Head Height	
		Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
1/4	0.250	.260	.213	.594	.563	.145	.125
5/16	0.312	.324	.272	.719	.688	.176	.156
3/8	0.375	.388	.329	.844	.782	.208	.188
7/16	0.438	.452	.385	.969	.907	.239	.219
1/2	0.500	.515	.444	1.094	1.032	.270	.250
5/8	0.625	.642	.559	1.344	1.219	.344	.313
3/4	0.75	.768	.678	1.594	1.469	.406	.375

* The minimum radius is 1/2 of the value shown

TABLE 2a: Additional Dimensions in Inches

Nominal Size		O		P		Q	R
		Square Width		Square Depth		Corner Radius	Fillet Radius
		Maximum	Minimum	Maximum	Minimum	Maximum	Maximum*
1/4	0.250	.260	.245	.124	.093	.031	.031
5/16	0.312	.324	.307	.124	.093	.031	.031
3/8	0.375	.388	.368	.156	.125	.047	.031
7/16	0.438	.452	.431	.156	.125	.047	.031
1/2	0.500	.515	.492	.156	.125	.047	.031
5/8	0.625	.642	.616	.218	.187	.078	.062
3/4	0.75	.768	.741	.218	.187	.078	.062



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TABLE 2b: Additional Dimensions in Inches

Nominal Size		Thread Length		Thread Length	
		L ≤ 6		L > 6	
		Maximum (1)	Minimum	Maximum (1)	Minimum
#10	0.190		.630		0.880
1/4	0.250	1.000	.750	1.250	1.000
5/16	0.312	1.153	.875	1.403	1.125
3/8	0.375	1.312	1.000	1.562	1.250
7/16	0.438	1.482	1.125	1.732	1.375
1/2	0.500	1.635	1.250	1.885	1.500
5/8	0.625	1.955	1.500	2.205	1.750
3/4	0.75	2.250	1.750	2.500	2.000
7/8	0.875	2.556	2.000	2.806	2.250
1	1.000	2.875	2.250	3.125	2.500

NOTE 1: Different from ANSI/ASME B18.5, which requires only a minimum thread length.



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TABLE 3: Inch Round Head Square Neck Bolts, Grade 5, ZND

Length L †	Nominal Bolt Diameter						
	1/4	5/16	3/8	7/16*	1/2	5/8	3/4
0.5	280700	280616					
0.625*		280647					
0.75	280638	280497	86508748		87034828		
0.875*			9849938				
1	280826	88992	80280503		280499	87034827	
1.25	9849630	280827	86508749	86508752	88707		
1.5	9849641	280623	280552	86508753	280502	280832	
1.75		280660	280646	86508754	280439	86508757	
2	9849634	280789	280745		280624	280834	
2**			87495290				
2.25		280645	280518		280436	280667	87538538
2.5	280931	86508747	280744	100170	88727	280466	
2.75			280824		280517	280560	
3			80280632		280958	280637	9602222
3.25			86508750		280654	280656	
3.5			280767		88419	86500112	
3.75							
4		280819	280828		86508756	280547	
4.5			90364820		280829	80280607	
5						280792	
5.5			90364821		9861091	9807522	
6							
6.5			86508751				
	1/4	5/16	3/8	7/16*	1/2	5/8	3/4
Coarse Thread Pitch	20	18	16	14	13	11	10

* Do not use these sizes in new designs **Thread to Neck

† Parts above broken heavy line are always fully threaded

Parts below solid heavy line adhere to basic thread length defined in ANSI B18.5 and have unthreaded shank

Parts in between broken and solid heavy lines may be fully threaded or have basic thread length, at the discretion of the manufacturer

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TABLE 4: Inch Round Head Short Square Neck Bolts, Grade 5, PLN

Nominal Diameter (E)	Coarse Thread Pitch	Length (L)	Basic Thread Length (L _T)	Grade	Part Number
5/16	18	0.875	FULL	5	88306
3/8	16	1	FULL	5	9849626
1/2	13	3.75	1.25	5	88177
1/2	13	1.25	FULL	5	280710
1/2	13	1.50	FULL	5	47631356
1/2	13	2.25	1.25	5	280714
1/2	13	4.5	1.25	5	80280396
5/8	11	0.75	FULL	5	9849621
5/8	11	3.25	1.5	5	88328
5/8	11	3.75	1.5	5	88420
3/4	10	2	FULL	5	9849642
3/4	10	2.5	FULL	5	9849625

TABLE 5: Inch Round Head Short Square Neck Bolts, Grade 5, DOR

Nominal Diameter (E)	Coarse Thread Pitch	Length (L)	Basic Thread Length (L _T)	Grade	Part Number
1/4	20	0.5	FULL	5	87342983
1/4	20	0.75	FULL	5	87342984
1/4	20	1	0.75	5	87342985
5/16	18	0.5	FULL	5	87342986
5/16	18	0.75	FULL	5	87342987
3/8	16	0.75	FULL	5	87342989
3/8	16	1.25	1	5	87342990
1/2	13	1.25	FULL	5	87343112

TABLE 6: Inch Round Head Short Square Neck Bolts, Grade 2

Nominal Diameter (E)	Coarse Thread Pitch	Length (L)	Basic Thread Length (L _T)	Grade/Finish	Part Number
5/16	18	0.75	FULL	2 ZND	87646107



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TABLE 7: Inch Round Head Short Square Neck Bolts, Grade 8

Nominal Diameter (E)	Coarse Thread Pitch	Length (L)	Basic Thread Length (L _T)	Grade/Finish	Part Number
1/2	13	1	FULL	8 ZND	84191689
1/2	13	1	FULL	8 ZND	#47534233
1/2	13	1.125	FULL	8 ZND	47718124
1/2	13	1.125	FULL	8 ZND	#47721950
1/2	13	1.25	FULL	8 ZND	84193279
1/2	13	1.375	FULL	8 ZND	#90415264
1/2	13	1.5	FULL	8 ZND	84198537
1/2	13	1.5	FULL	8 ZND	#47721980

with chemical coat per IFI 125