BS 2A 266 to 2A 271:2016

BSI Standards Publication

AEROSPACE SERIES

Bolt, 100° Countersunk head, Hi-Torque speed drive recess, UNJF thread, split pin hole option, titanium alloy, various finishes, Classification: 80 Tf/in² (1 100 MPa) at T_A/+315 °C

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Contents

Summary of pages

This document comprises a front cover, an inside front cover, pages i to ii, pages 1 to 14, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 29 February 2016. It was prepared by Technical Committee ACE/12, *Aerospace fasteners and fastening*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

This British Standard supersedes BS A 266 to A 271:1977, which is withdrawn.

Information about this document

This British Standard has been prepared to provide a range of 80 Tf/in^2 (1 100 MPa) to 90 Tf/in^2 (1 250 MPa) titanium alloy bolts with UNJF profile threads and close tolerance shanks for aerospace use. The lengths of the bolts are in fractional increments. Dimensions for oversize shank diameters are also included.

When considering the use of cadmium plated titanium bolts, attention is drawn to Def Stan 00-970 Pt.1/12 Section 4 Leaflet 8, which recommends certain limitations on their use.

When bolts are drilled for split pins, they are suitable for use with hexagonal castle nuts specified in BS A 242 to 245.

This is a full revision of the standard, and introduces the following principal changes:

- updating and/or providing additional alternative reference document numbers;
- adding alternative materials to the existing BS TA 28;
- adding reference document numbers for flushness control and the drive recess; and
- specifying a temperature rating relating to the strength class.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

1 Scope

This British Standard specifies the materials, dimensions, finish and inspection requirements for titanium alloy bolts with 100° countersunk heads and UNJF threads for aerospace use.

NOTE The values in Imperial British units are to be regarded as the standard.

CAUTION. A269 has cadmium as a plating material, which has been restricted and/or banned for use in many countries owing to environmental and health concerns; they should not be used in new product designs. Local officials should be consulted about any concerns on using cadmium-plated parts.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

AMS 4967, *Titanium alloy, bars, wire, forgings and rings, 6.0Al – 4.0V, annealed, heat treatable*

BS A 346 (ISO 3161), *UNJ threads – General requirements and limit dimensions*

BS A 101, *Specification for general requirements for titanium bolts*

BS A 242 to 245, *Specification for hexagonal castle nuts (of class 3B UNJ thread)*

BS A 272, *Specification for Hi-torque speed drive recesses – Dimensions and gauging for countersunk head fasteners*

BS A 273, *Specification for gauging practice for 100° countersunk head fasteners for flushness control*

BS EN 2133, *Cadmium plating of steels with specified tensile strength ≤ 1450 MPa, copper, copper alloys and nickel alloys*

BS EN 2808, *Anodizing of titanium and titanium alloys*

BS EN 3813, *Titanium alloy TI-P64001 (Ti-6AI-4V) – Annealed – Bar and wire for forged fasteners – $D_e \leq 50$ mm*

BS M 58 (ISO 8080), *Specification for anodic coating of titanium and titanium alloys by the sulphuric acid process*

BS TA 28, *Specification for forging stock and wire of titanium–aluminium–vanadium alloy (tensile strength 1100–1300 MPa) (limiting ruling section 20 mm)*

DTD 942, *Anodizing of titanium and titanium alloys*

SAE AMS 03-19, *Electro-deposition of cadmium*

SAE AS5272, *Lubricant, solid film, heat cured, corrosion inhibiting procurement specification*

SAE ITC RS678, *Fasteners, rolled threads, chamfers, lead threads and runouts*

3 General requirements

3.1 The bolts shall be manufactured, inspected and tested in accordance with the requirements of BS A 101.

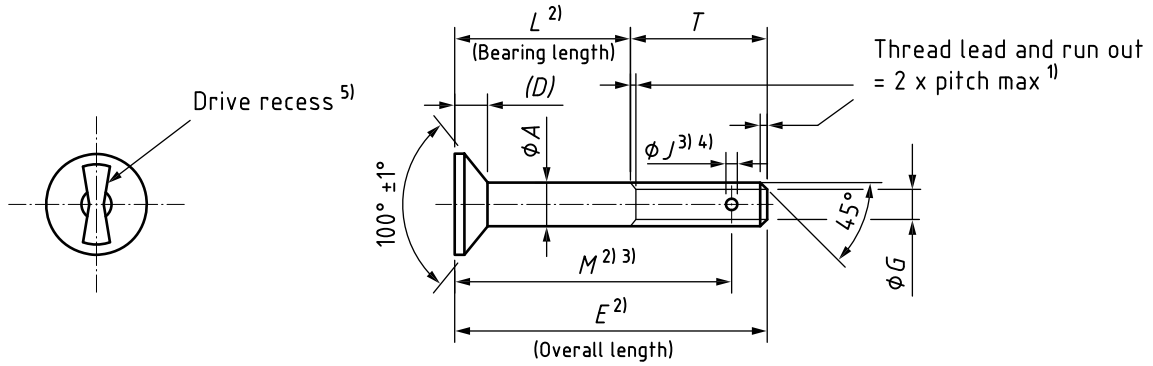
3.2 All bolts shall conform to the dimensions and tolerances given in Table 1, Table 2, Table 4 and Figure 1. Unless otherwise specified, the dimensions are those before the application of the protective finish.

3.3 The principles of flushness control and recommended gauging practice shall be in accordance with BS A 273.

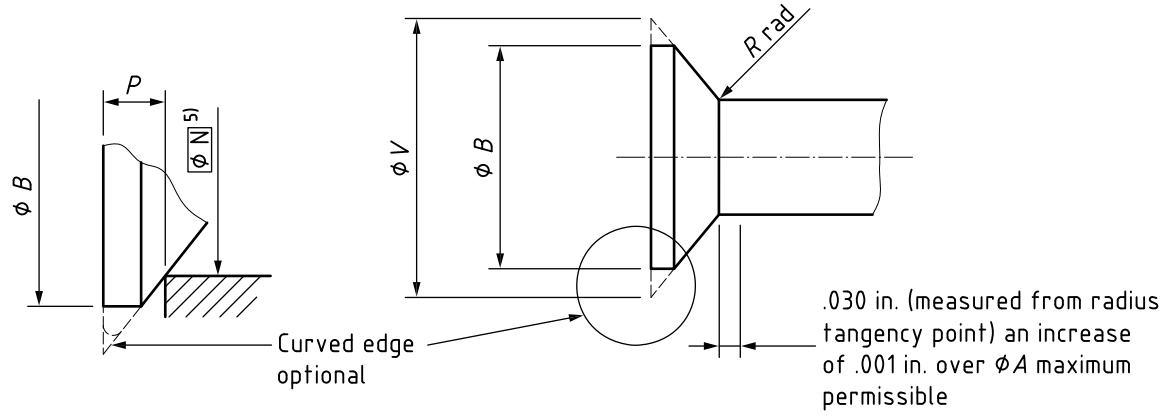
3.4 The dimensions of the Hi-torque speed drive recesses shall be as specified in BS A 272.

3.5 The material and protective finish requirements shall be as specified in Table 3.

Figure 1 **Basic dimensions**



a) Dimensions of bolt



b) Enlarged view of head

Notes

1) The thread lead and runout shall conform to the requirements of SAE ITC RS678.
2) See Figure 2 and Table 4 for length dimensions "E", "L" and "M".
3) The split pin hole option was originally designed to suit the hexagonal castle nuts specified in BS A 242 to 245.
4) Holes shall have the sharp edges removed.
5) For flushness control and gauging of head and drive recess, see BS A 272 and BS A 273.

Table 1 **Dimensions (standard shank diameters)** *(1 of 2)*

Dimensions in inches

1	2	3	4	5	6	7	8	9	10	11
Dia code	**Thread size** [A]	**Shank dia**	**ø*A***		**ø*A***		**2 × Pitch**	***T***	**ø*V***	
			Type:		**Type:**		**Thread lead & runout**	**Ref**		
			A 266		**A 269** [C]					
			A 267							
			A 268 [B]							
	UNJF	**Nom**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**
03	10–32	.190	.1895	.189	.1895	.1885	.063	.381	.385	.376
04	1/4–28	.250	.2495	.249	.2495	.2485	.071	.443	.507	.497
05	5/16–24	.3125	.312	.3115	.312	.311	.083	.506	.635	.625
06	3/8–24	.375	.3745	.374	.3745	.3735	.083	.615	.762	.752
07	7/16–20	.4375	.437	.4365	.437	.436	.100	.631	.890	.880
08	1/2–20	.500	.4995	.499	.4995	.4985	.100	.757	1.017	1.007

Table 1 **Dimensions (standard shank diameters)** *(2 of 2)*

12	13	14	15	16	17	18	19	20	21	22	23	24
Dia code	ø*B*	*D* [D]	ø*N* Gauging diameter	Head protrusion			*R*		ø*G* Cham	ø*J* hole		Driver and recess number
				Protrusion above gauging diameter *P*		Flushness tolerance						
	Absolute minimum	Ref	Basic	Max	Min		Max	Min	±.020		tol	
03	.328	.080	.3147	.029	.0263	.0027	.025	.015	.130	.073	+.0055	3
04	.449	.106	.4245	.0342	.0316	.0026	.025	.015	.184	.083	0	4
05	.577	.133	.5389	.0395	.037	.0025	.025	.015	.239	.104		5
06	.704	.160	.6532	.045	.0426	.0024	.025	.015	.302	.125	+.007	6
07	.832	.188	.7676	.0503	.0481	.0022	.025	.020	.354	.146	0	7
08	.959	.215	.882	.0557	.0537	.002	.025	.020	.416	.167		8

[A] The screw threads shall conform to the basic thread form, diameter and related pitches specified in BS A 346 for class 3A.
[B] Before application of protective finish.
[C] After application of protective finish.
[D] Applies to standard bolt shank diameter only. Head height dimensions are reduced with oversize shanks. Reduction is: .0065 in. for .05156 in. oversize bolts and .013 in. for .0312 in. oversize bolts.

Table 2 **Oversize shank diameters**

Dimensions in inches

1	2	3	4	5	6	7	8	9	10
Dia code	**Thread size**	**First oversize (code X)**				**Second oversize (code Y)**			
		øA		***øA***		***øA***		***øA***	
		Type:		**Type:**		**Type:**		**Type:**	
		A 266		**A 269** [B]		**A 266**		**A 269** [B]	
		A 267				**A 267**			
		A 268 [A]				**A 268** [A]			
	UNJF	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**
03	10–32	.2026	.2021	.2026	.2016	.2182	.2177	.2182	.2172
04	1/4–28	.2651	.2646	.2651	.2641	.2807	.2802	.2807	.2797
05	5/16–24	.3276	.3271	.3276	.3266	.3432	.3427	.3432	.3422
06	3/8–24	.3901	.3896	.3901	.3891	.4057	.4052	.4057	.4047
07	7/16–20	.4526	.4521	.4526	.4516	.4682	.4677	.4682	.4672
08	1/2–20	.5151	.5146	.5151	.5141	.5307	.5302	.5307	.5297

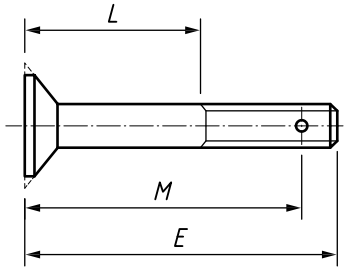
[A] Before application of protective finish.
[B] After application of protective finish.

Table 3 **Material and protective finish**

Basic BS number	Material	Mechanical properties	Protective finish
A266	Titanium alloy Ti-6Al-4V to BS TA 28 or BS EN 3813 or AMS 4967	0.2% proof stress: not less than 70 Tf/in^2 (970 MPa)	None
A267			Anodized in accordance with DTD 942 or BS EN 2808 or BS M 58 (ISO 8080)
A268		Tensile strength: not less than 80 Tf/in^2 (1 100 MPa) and not more than 90 Tf/in^2 (1 250 MPa)	Anodized in accordance with DTD 942 or BS EN 2808 or BS M 58 (ISO 8080) + MoS_2 dry film lube (heat cured) in accordance with SAE AS5272, Type 1 (Joint Services Designation ZX-34, NATO S-1738)
A269 [A]			Cadmium plated in accordance with SAE AMS 03-19 or BS EN 2133 on nickel strike
A270		Elongation on 5.65 $\sqrt{S_o}$ not less than 8%	Not yet allocated
A271			Not yet allocated

[A] Inactive for new design.

Figure 2 **Dimensions: length and optional hole position variables**



Unallocated diameter/length codes shall not be used.

Table 4 **Dimensions: lengths and optional hole position variables** *(1 of 6)*

Dimensions in inches

10–32 UNJF				1/4–28 UNJF				5/16–24 UNJF			
Dia/length code	*L* ±.010	*E* ±.015	*M* ±.010	Dia/length code	*L* ±.010	*E* ±.015	*M* ±.010	Dia/length code	*L* ±.010	*E* ±.015	*M* ±.010
0302	.125	.531	.396	–	–	–	–	–	–	–	–
0303	.188	.594	.459	0403	.188	.656	.491	0503	.188	.719	.549
0304	.250	.656	.521	0404	.250	.718	.553	0504	.250	.781	.611
0305	.312	.718	.583	0405	.312	.780	.615	0505	.312	.843	.673
0306	.375	.781	.646	0406	.375	.843	.678	0506	.375	.906	.736
0307	.438	.844	.709	0407	.438	.906	.741	0507	.438	.969	.799
0308	.500	.906	.771	0408	.500	.968	.803	0508	.500	1.031	.861
0309	.562	.968	.833	0409	.562	1.030	.865	0509	.562	1.093	.923
0310	.625	1.031	.896	0410	.625	1.093	.928	0510	.625	1.156	.986
0311	.688	1.094	.959	0411	.688	1.156	.991	0511	.688	1.219	1.049
0312	.750	1.156	1.021	0412	.750	1.218	1.053	0512	.750	1.281	1.111
0313	.812	1.218	1.083	0413	.812	1.280	1.115	0513	.812	1.343	1.173
0314	.875	1.281	1.146	0414	.875	1.343	1.178	0514	.875	1.406	1.236
0315	.938	1.344	1.209	0415	.938	1.406	1.241	0515	.938	1.469	1.299
0316	1.000	1.406	1.271	0416	1.000	1.468	1.303	0516	1.000	1.531	1.361
0317	1.062	1.468	1.333	0417	1.062	1.530	1.365	0517	1.062	1.593	1.423
0318	1.125	1.531	1.396	0418	1.125	1.593	1.428	0518	1.125	1.656	1.486
0319	1.188	1.594	1.459	0419	1.188	1.656	1.491	0519	1.188	1.719	1.549
0320	1.250	1.656	1.521	0420	1.250	1.718	1.553	0520	1.250	1.781	1.611
0321	1.312	1.718	1.583	0421	1.312	1.780	1.615	0521	1.312	1.843	1.673
0322	1.375	1.781	1.646	0422	1.375	1.843	1.678	0522	1.375	1.906	1.736
0323	1.438	1.844	1.709	0423	1.438	1.906	1.741	0523	1.438	1.969	1.799
0324	1.500	1.906	1.771	0424	1.500	1.968	1.803	0524	1.500	2.031	1.861
0325	1.562	1.968	1.833	0425	1.562	2.030	1.865	0525	1.562	2.093	1.923
0326	1.625	2.031	1.896	0426	1.625	2.093	1.928	0526	1.625	2.156	1.986
0327	1.688	2.094	1.959	0427	1.688	2.156	1.991	0527	1.688	2.219	2.049
0328	1.750	2.156	2.021	0428	1.750	2.218	2.053	0528	1.750	2.281	2.111
0329	1.812	2.218	2.083	0429	1.812	2.280	2.115	0529	1.812	2.343	2.173
0330	1.875	2.281	2.146	0430	1.875	2.343	2.178	0530	1.875	2.406	2.236

Table 4 **Dimensions: lengths and optional hole position variables** *(2 of 6)*

Dimensions in inches

10–32 UNJF				1/4–28 UNJF				5/16–24 UNJF			
Dia/length code	***L* ±.010**	***E* ±.015**	***M* ±.010**	**Dia/length code**	***L* ±.010**	***E* ±.015**	***M* ±.010**	**Dia/length code**	***L* ±.010**	***E* ±.015**	***M* ±.010**
0331	1.938	2.344	2.209	0431	1.938	2.406	2.241	0531	1.938	2.469	2.299
0332	2.000	2.406	2.271	0432	2.000	2.468	2.303	0532	2.000	2.531	2.361
0334	2.125	2.531	2.396	0434	2.125	2.593	2.428	0534	2.125	2.656	2.486
0336	2.250	2.656	2.521	0436	2.250	2.718	2.553	0536	2.250	2.781	2.611
0338	2.375	2.781	2.646	0438	2.375	2.843	2.678	0538	2.375	2.906	2.736
0340	2.500	2.906	2.771	0440	2.500	2.968	2.803	0540	2.500	3.031	2.861
0342	2.625	3.031	2.896	0442	2.625	3.093	2.928	0542	2.625	3.156	2.986
0344	2.750	3.156	3.021	0444	2.750	3.218	3.053	0544	2.750	3.281	3.111
0346	2.875	3.281	3.146	0446	2.875	3.343	3.178	0546	2.875	3.406	3.236
0348	3.000	3.406	3.271	0448	3.000	3.468	3.303	0548	3.000	3.531	3.361
0350	3.125	3.531	3.396	0450	3.125	3.593	3.428	0550	3.215	3.656	3.486
0352	3.250	3.656	3.521	0452	3.250	3.718	3.553	0552	3.250	3.781	3.611
0354	3.375	3.781	3.646	0454	3.375	3.843	3.678	0554	3.375	3.906	3.736
0356	3.500	3.906	3.771	0456	3.500	3.968	3.803	0556	3.500	4.031	3.861
0358	3.625	4.031	3.896	0458	3.625	4.093	3.928	0558	3.625	4.156	3.986
0360	3.750	4.156	4.021	0460	3.750	4.218	4.053	0560	3.750	4.281	4.111
0362	3.875	4.281	4.146	0462	3.875	4.343	4.178	0562	3.875	4.406	4.236
0364	4.000	4.406	4.271	0464	4.000	4.468	4.303	0564	4.000	4.531	4.361
0366	4.125	4.531	4.396	0466	4.125	4.593	4.428	0566	4.125	4.656	4.486
0368	4.250	4.656	4.521	0468	4.250	4.718	4.553	0568	4.250	4.781	4.611
0370	4.375	4.781	4.646	0470	4.375	4.843	4.678	0570	4.375	4.906	4.736
0372	4.500	4.906	4.771	0472	4.500	4.968	4.803	0572	4.500	5.031	4.861
0374	4.625	5.031	4.896	0474	4.625	5.093	4.928	0574	4.625	5.156	4.986
0376	4.750	5.156	5.021	0476	4.750	5.218	5.053	0576	4.750	5.281	5.111
0378	4.875	5.281	5.146	0478	4.875	5.343	5.178	0578	4.875	5.406	5.236
0380	5.000	5.406	5.271	0480	5.000	5.468	5.303	0580	5.000	5.531	5.361
0382	5.125	5.531	5.396	0482	5.125	5.593	5.428	0582	5.125	5.656	5.486
0384	5.250	5.656	5.521	0484	5.250	5.718	5.553	0584	5.250	5.781	5.611
0386	5.375	5.781	5.646	0486	5.375	5.843	5.678	0586	5.375	5.906	5.736

Table 4 **Dimensions: lengths and optional hole position variables** *(3 of 6)*

Dimensions in inches

10–32 UNJF				1/4–28 UNJF				5/16–24 UNJF			
Dia/length code	***L* ±.010**	***E* ±.015**	***M* ±.010**	**Dia/length code**	***L* ±.010**	***E* ±.015**	***M* ±.010**	**Dia/length code**	***L* ±.010**	***E* ±.015**	***M* ±.010**
0388	5.500	5.906	5.771	0488	5.500	5.968	5.803	0588	5.500	6.031	5.861
0390	5.675	6.031	5.896	0490	5.625	6.093	5.928	0590	5.625	6.156	5.986
0392	5.750	6.156	6.021	0492	5.750	6.218	6.053	0592	5.750	6.281	6.111
0394	5.875	6.281	6.146	0494	5.875	6.343	6.178	0594	5.875	6.406	6.236
0396	6.000	6.406	6.271	0496	6.000	6.468	6.303	0596	6.000	6.531	6.361

Table 4 **Dimensions: lengths and optional hole position variables** *(4 of 6)*

Dimensions in inches

3/8–24 UNJF				7/16–20 UNJF				1/2–20 UNJF			
Dia/length code	***L* ±.010**	***E* ±.015**	***M* ±.010**	**Dia/length code**	***L* ±.010**	***E* ±.015**	***M* ±.010**	**Dia/length code**	***L* ±.010**	***E* ±.015**	***M* ±.010**
0604	.250	.891	.676	0704	.250	.906	.741	–	–	–	–
0605	.312	.954	.739	0705	.312	.968	.803	0805	.312	1.094	.904
0606	.375	1.016	.801	0706	.375	1.031	.866	0806	.375	1.157	.967
0607	.438	1.079	.864	0707	.438	1.094	.929	0807	.438	1.220	1.030
0608	.500	1.141	.926	0708	.500	1.156	.911	0808	.500	1.282	1.092
0609	.562	1.203	.988	0709	.562	1.218	1.053	0809	.562	1.334	1.144
0610	.625	1.266	1.051	0710	.625	1.281	1.116	0810	.625	1.407	1.217
0611	.688	1.329	1.114	0711	.688	1.344	1.179	0811	.688	1.470	1.280
0612	.750	1.391	1.176	0712	.750	1.406	1.241	0812	.750	1.532	1.342
0613	.812	1.453	1.238	0713	.812	1.468	1.303	0813	.812	1.594	1.404
0614	.875	1.516	1.301	0714	.875	1.531	1.366	0814	.875	1.657	1.467
0615	.938	1.579	1.364	0715	.938	1.594	1.429	0815	.938	1.720	1.530
0616	1.000	1.641	1.426	0716	1.000	1.656	1.491	0816	1.000	1.782	1.592
0617	1.062	1.703	1.488	0717	1.062	1.718	1.553	0817	1.062	1.844	1.654
0618	1.125	1.766	1.551	0718	1.125	1.781	1.616	0818	1.125	1.907	1.717
0619	1.188	1.829	1.614	0719	1.188	1.844	1.679	0819	1.188	1.970	1.780
0620	1.250	1.891	1.676	0720	1.250	1.906	1.741	0820	1.250	2.032	1.842
0621	1.312	1.953	1.738	0721	1.312	1.968	1.803	0821	1.312	2.094	1.904
0622	1.375	2.016	1.801	0722	1.375	2.031	1.866	0822	1.375	2.157	1.967
0623	1.438	2.079	1.864	0723	1.438	2.094	1.929	0823	1.438	2.220	2.030
0624	1.500	2.141	1.926	0724	1.500	2.156	1.991	0824	1.500	2.282	2.092
0625	1.562	2.203	1.988	0725	1.562	2.218	2.053	0825	1.562	2.344	2.154
0626	1.625	2.266	2.051	0726	1.625	2.281	2.116	0826	1.625	2.407	2.217
0627	1.688	2.329	2.114	0727	1.688	2.344	2.179	0827	1.688	2.470	2.280
0628	1.750	2.391	2.176	0728	1.750	2.406	2.241	0828	1.750	2.532	2.342
0629	1.812	2.453	2.238	0729	1.812	2.468	2.303	0829	1.812	2.594	2.404
0630	1.875	2.516	2.301	0730	1.875	2.531	2.366	0830	1.875	2.657	2.467
0631	1.938	2.579	2.364	0731	1.938	2.594	2.429	0831	1.938	2.720	2.530
0632	2.000	2.641	2.426	0732	2.000	2.656	2.491	0832	2.000	2.782	2.592

Table 4 **Dimensions: lengths and optional hole position variables** *(5 of 6)*

Dimensions in inches

3/8–24 UNJF				7/16–20 UNJF				1/2–20 UNJF			
Dia/length code	***L* ±.010**	***E* ±.015**	***M* ±.010**	**Dia/length code**	***L* ±.010**	***E* ±.015**	***M* ±.010**	**Dia/length code**	***L* ±.010**	***E* ±.015**	***M* ±.010**
0634	2.125	2.766	2.551	0734	2.125	2.781	2.616	0834	2.125	2.907	2.717
0636	2.250	2.891	2.676	0736	2.250	2.906	2.741	0836	2.250	3.032	2.842
0638	2.375	3.016	2.801	0738	2.375	3.031	2.866	0838	2.375	3.157	2.967
0640	2.500	3.141	2.926	0740	2.500	3.156	2.991	0840	2.500	3.282	3.092
0642	2.625	3.266	3.051	0742	2.625	3.281	3.116	0842	2.625	3.407	3.217
0644	2.750	3.391	3.176	0744	2.750	3.406	3.241	0844	2.750	3.532	3.342
0646	2.875	3.516	3.301	0746	2.875	3.531	3.366	0846	2.875	3.657	3.467
0648	3.000	3.641	3.426	0748	3.000	3.656	3.491	0848	3.000	3.782	3.592
0650	3.125	3.766	3.551	0750	3.125	3.781	3.616	0850	3.125	3.907	3.717
0652	3.250	3.891	3.676	0752	3.250	3.906	3.741	0852	3.250	4.032	3.842
0654	3.375	4.016	3.801	0754	3.375	4.031	3.866	0854	3.375	4.157	3.967
0656	3.500	4.141	3.926	0756	3.500	4.156	3.991	0856	3.500	4.282	4.092
0658	3.625	4.266	4.051	0758	3.625	4.281	4.116	0858	3.625	4.407	4.217
0660	3.750	4.391	4.176	0760	3.750	4.406	4.241	0860	3.750	4.532	4.342
0662	3.875	4.516	4.301	0762	3.875	4.531	4.366	0862	3.875	4.657	4.467
0664	4.000	4.641	4.426	0764	4.000	4.656	4.491	0864	4.000	4.782	4.592
0666	4.125	4.766	4.551	0766	4.125	4.781	4.616	0866	4.125	4.907	4.717
0668	4.250	4.891	4.676	0768	4.250	4.906	4.741	0868	4.250	5.032	4.842
0670	4.375	5.016	4.801	0770	4.375	5.031	4.866	0870	4.375	5.157	4.967
0672	4.500	5.141	4.926	0772	4.500	5.156	4.991	0872	4.500	5.282	5.092
0674	4.625	5.266	5.051	0774	4.625	5.281	5.116	0874	4.625	5.407	5.217
0676	4.750	5.391	5.176	0776	4.750	5.406	5.241	0876	4.750	5.532	5.342
0678	4.875	5.516	5.301	0778	4.875	5.531	5.366	0878	4.875	5.657	5.467
0680	5.000	5.641	5.426	0780	5.000	5.656	5.491	0880	5.000	5.782	5.592
0682	5.125	5.766	5.551	0782	5.125	5.781	5.616	0882	5.125	5.907	5.717
0684	5.250	5.891	5.676	0784	5.250	5.906	5.741	0884	5.250	6.032	5.842
0686	5.375	6.016	5.801	0786	5.375	6.031	5.866	0886	5.375	6.157	5.967
0688	5.500	6.141	5.926	0788	5.500	6.156	5.991	0888	5.500	6.282	6.092
0690	5.625	6.266	6.051	0790	5.625	6.281	6.116	0890	5.625	6.407	6.217

Table 4 **Dimensions: lengths and optional hole position variables** *(6 of 6)*

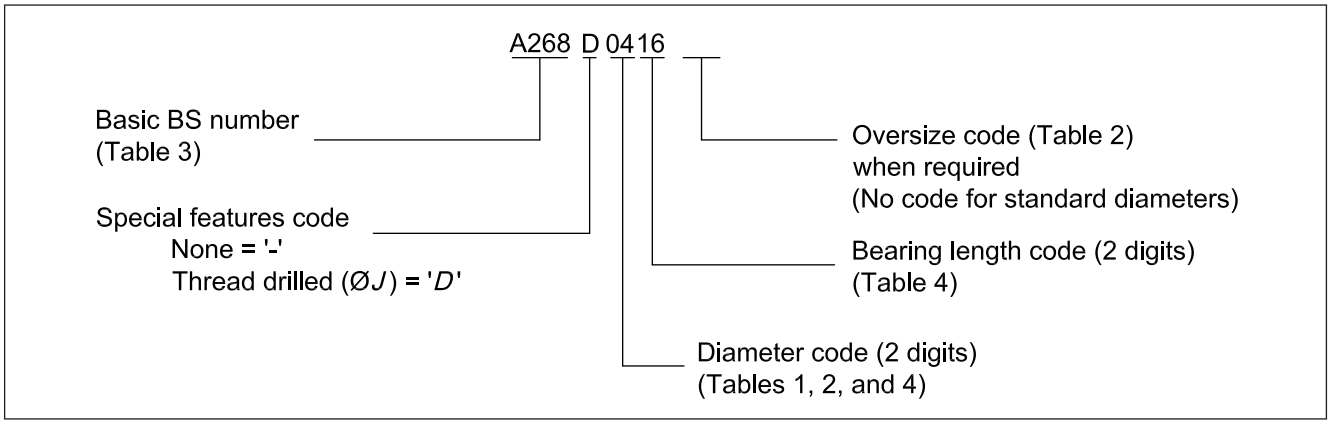
Dimensions in inches

3/8–24 UNJF				7/16–20 UNJF				1/2–20 UNJF			
Dia/length code	***L* ±.010**	***E* ±.015**	***M* ±.010**	**Dia/length code**	***L* ±.010**	***E* ±.015**	***M* ±.010**	**Dia/length code**	***L* ±.010**	***E* ±.015**	***M* ±.010**
0692	5.750	6.391	6.176	0792	5.750	6.406	6.241	0892	5.750	6.532	6.342
0694	5.875	6.516	6.301	0794	5.875	6.531	6.366	0894	5.875	6.657	6.467
0696	6.000	6.641	6.426	0796	6.000	6.656	6.491	0896	6.000	6.782	6.592

4 BS part number

Part No. shall be contiguous (i.e. no spaces), for example A268D0416X (see Figure 3).

Figure 3 **Example of part number call up**



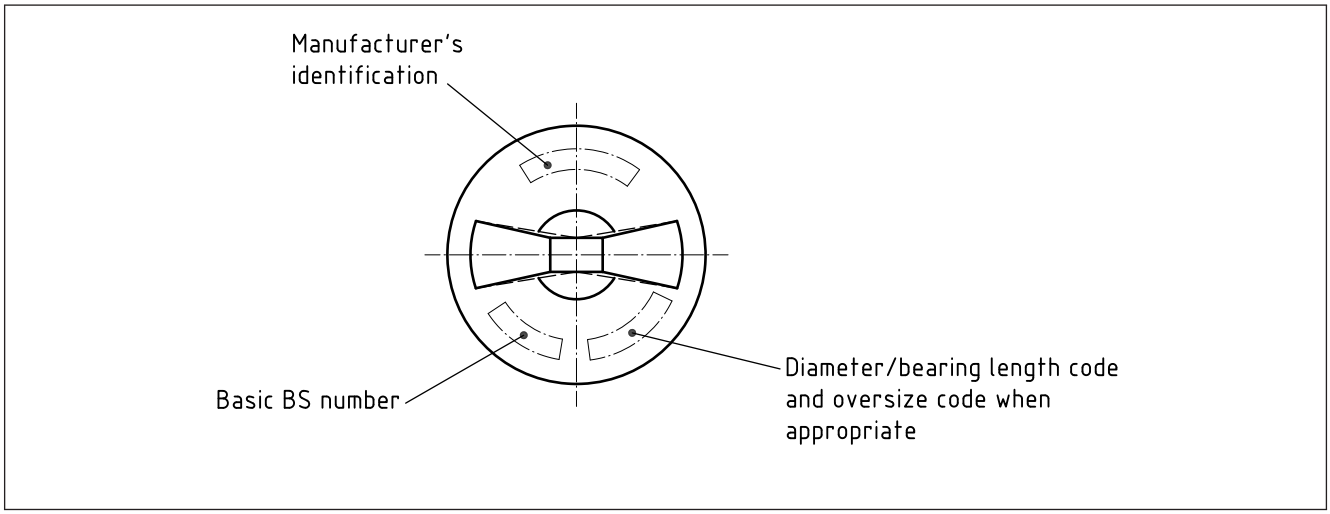
5 Indentification and marking

5.1 The bolts shall have the manufacturer's identification and BS part number applied to the upper face of the head, except for the 10–32 UNJF size, in which case the diameter code (03) may be omitted. The special features code shall be omitted, as it is physically apparent.

5.2 The method of marking bolts and packages shall be as specified in BS A 101.

NOTE Figure 4 shows a typical dispersion of the various markings.

Figure 4 **Typical dispersion of the various markings**



Bibliography

Further reading

Def Stan 01-5, *Fuels, lubricants and associated products*

Def Stan 00-970 Pt.1/12 Section 4 Leaflet 8, *Protection of structure – the penetration of titanium alloys by solid cadmium*

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