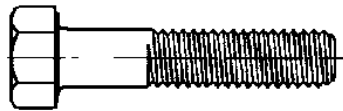


REFERENCE DOCUMENTS

CNH STPA020	Fastener Finishes and Material Specifications
EN 1665	Hexagon Bolts With Flange – Heavy series
ISO 4014	Hexagon head bolts – Product grades A and B
ISO 4017	Hexagon head bolts – Product grades A and B Full Thread
ISO 888	Bolts screws and studs – Nominal and thread lengths for general purpose bolts
ISO 898-1	Mechanical properties of fasteners made of carbon steel and alloy steel
IFI 524	Industrial Fasteners Institute – Test Procedure for Prevailing Torque Non-Metallic Lock Screws (Patch)
ISO 6157-3	Fasteners - Surface Discontinuities

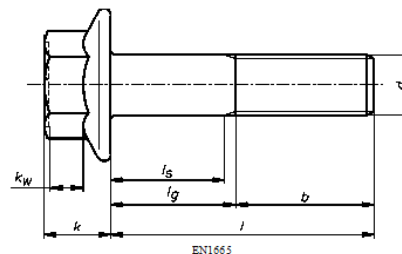
When a standard is referenced in a drawing or specification, it is understood that the reference is to the latest revision of the standard, unless stated otherwise.



ISO 4014 Bolt with shank



ISO 4017 Bolt fully threaded



EN1665

Thread Length: ISO 888
Specifications: ISO 4014, ISO 4017, EN 1665

Typical part description for BOM's and CAD drawings

BOLT, PREV TORQUE, M8X30 FULL 10.9 PHC

Bolts and screws shall be free from burrs, seams, laps, loose scale, irregular surfaces and any defects affecting their serviceability (ISO 6157-3). Bolts shall conform to ISO 4014 (with Shank), ISO 4017 (Fully Threaded) or EN1665 as appropriate.

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

AUTHOR	APPROVED BY	ECO	PART NUMBER
D RAVI	28SEP26	A KHAN	28SEP26
		35533713	87312804

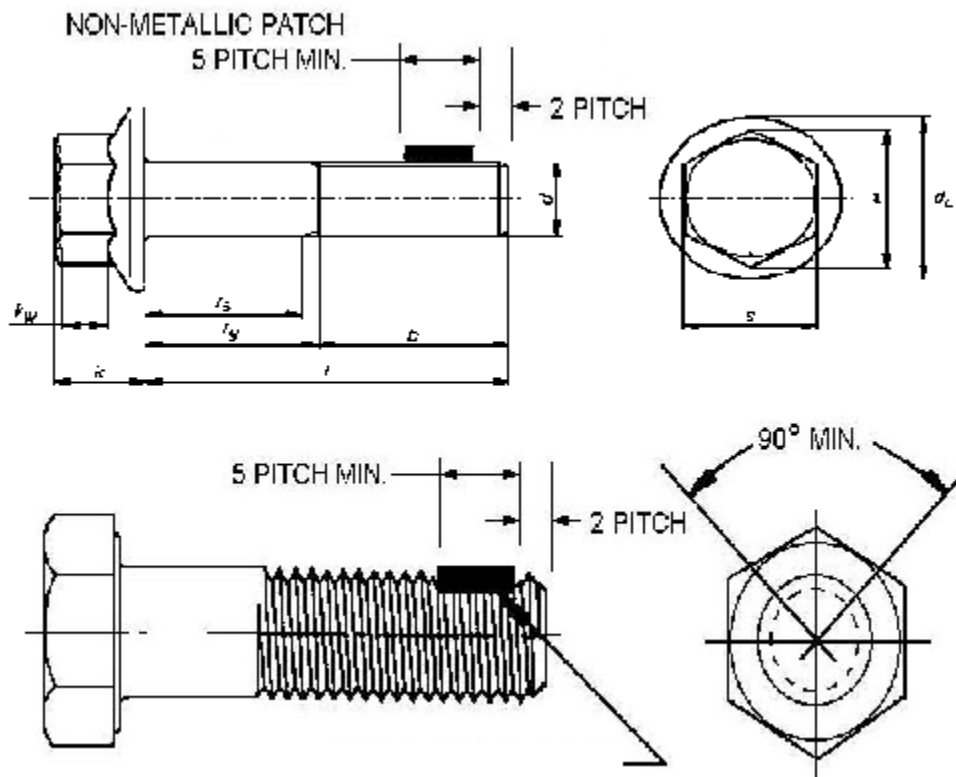
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1. Hex and Flange Head Prevailing Torque Bolts With Non-Metallic Patch per IFI 524. Thread Diameters M5 to M36 Inclusive.

Prevailing torque bolts with non-metallic patch shall conform to IFI 524 standard. IFI 524 states non-metallic locking element type prevailing-torque lock screws are metallic screws to which have been added a non-metallic insert or fused non-metallic substance in their threaded length. 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, or be less then the minimum value specified for any installation or removal. Source approval by Materials Engineering is required for coating.





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Table 1a. Prevailing Torque Bolt Performance Requirements per IFI 524

Nominal Diameter	Clamp Load 10.9 Bolt kN	Prevailing Torque		
		First Installation	First Removal	Fifth Removal
		Nm Max	Nm Min	Nm Min
M5	8.8	2.3	0.36	0.23
M6	12	3	0.45	0.30
M8	23	10	0.9	0.58
M10	36	14	1.8	1.1
M12	52	21	2.6	1.5
M16	98	40	5	3.4
M20	150	60	8	5.5
M24	220	90	13	8.5
M30	350	120	19	13
M36	510	150	28	18

2. Hex Bolt General Information per ISO 4014 (with Shank) and ISO 4017 (Fully Threaded)

	5	6	8	10	12	14	16	20	22	24	30	36
Bolt Nominal Diameter	5	6	8	10	12	14	16	20	22	24	30	36
Coarse Thread Pitch	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5	3	3.5	4
Length of thread for												
Bolt length to 125	16	18	22	26	30	34	38	46	50	54	66	-
Bolt length 126 to 200	22	24	28	32	36	40	44	52	56	60	72	84
Bolt length: >200	35	37	41	45	49	53	57	65	69	73	85	97
Width across flats nom./ max	8	10	13	16	18	21	24	30	34	36	46	55
Width across corners min.	8.79	11.05	14.38	17.77	20.03	23.36	26.75	32.95	37.72	39.55	50.85	60.79
Head height max.	3.65	4.16	5.45	6.58	7.68	8.98	10.18	12.72	14.35	15.22	19.12	22.92



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Table 2a. Prevailing Torque Hex Bolts with Non-Metallic Patch

Dia	Pitch	Length	Thread Length	Material	Finish	Part Number
5	0.8	30		8.8	ZND	84224890
5	0.8	35		8.8	ZND	87675521
6	1	12	FULL	10.9	ZND	47736896
6	1	14	FULL	8.8	ZND	84499091
6	1	16	FULL	8.8	ZND	87041331
6	1	35		10.9	ZND	86639143
8	1.25	16	FULL	10.9	PHC	86625007
8	1.25	20	FULL	10.9	PHC	86639144
8	1	25	FULL	8.8	ZND	9806833
8	1.25	25	FULL	8.8	ZND	87698794
8	1.25	25	FULL	10.9	PHC	86625008
8	1.25	30	FULL	10.9	PHC	87026277
8	1.25	40		10.9	PHC	86625009
8	1.25	50		10.9	PHC	86625010
8	1.25	50		10.9	ZND	47910931
8	1.25	55		10.9	ZND	51533274
8	1.25	60		10.9	ZND	51533276
10	1.5	25		10.9	PHC	87646180
10	1.5	25		10.9	ZND	47661424
10	1.5	30	FULL	10.9	PHC	86642317
10	1.5	40	FULL	10.9	ZND	47736898
10	1.5	80		10.9	ZND	47919371
10	1.5	110		10.9	ZND	47919372
12	1.25*	70	FULL	8.8	PLN	850125@
12	1.75	30	FULL	10.9	PHC	84523390
12	1.75	30	FULL	10.9	DAC	90358158
12	1.75	35	FULL	10.9	PHC	87015930
12	1.75	35	FULL	8.8	ZND	86566268&
12	1.75	40		10.9	ZND	87015314
12	1.75	40	FULL	10.9	ZND	84404454
12	1.75	40	FULL	10.9	DAC	90358162
12	1.75	60		10.9	ZND	87612749
12	1.75	65		10.9	ZND	47736899
12	1.75	90		10.9	ZND	87014323
14	2	30	FULL	8.8	ZND	47819650
14	2	50		10.9	ZND	90397990
16	2	40	FULL	10.9	ZND	90397991
16	2	60		10.9	ZND	87652887
16	2	100		10.9	ZND	87652888
20	2.5	35	FULL	10.9	ZND	90397992
20	2.5	80		10.9	PLN	87015933
20	2.5	80		10.9	ZND	84388492
20	2.5	130	95	10.9	ZND	47736901

* Fine Pitch

@ Per DIN 961 across flat 19, head thickness 8

& DIN Head. Across Flats 19mm.



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3. Hex Flange Bolt General Information per EN1665

Nominal Diameter		M6	M8	M10	M12	M16	M20
Pitch		1	1.25	1.5	1.75	2	2.5
d Body diameter	Max	6	8	10	12	16	20
	Min	5.82	7.78	9.78	11.73	15.73	19.67
s Width across flats	Max	10	13	16	18	24	30
	Min	9.78	12.73	15.73	17.73	23.67	29.67
e Width across corners	Min	10.95	14.26	17.62	19.86	26.51	33.23
d _c Flange diameter	Max	14.2	18.0	22.3	26.6	35	43
k _w Wrench height	Min	3.0	3.9	5.1	5.6	7.3	8.9
k Head height	Max	6.6	8.1	10.4	11.8	15.4	18.9
b Nominal thread length	l ≤ 125	18	22	26	30	38	46
	125 < l ≤ 200		28	32	36	44	52
	l > 200					57	65
	Fully threaded l ≤	25	30	35	40	50	60

Lengths (l): 10, 12, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 180, 200

Table 3a. Prevailing Torque Hex Flange Bolts with Non-Metallic Patch

Dia	Pitch	Length	Thread Length	Material	Finish	Part Number
6	1	12	FULL	8.8	BGM	92263134
6	1	12	FULL	8.8	ZND	47819060
6	1	12	FULL	8.8	ZN-NI-6	92267165
6	1	16	FULL	8.8	DOR	92816841
6	1	20	FULL	8.8	ZND	47819061
6	1	25	FULL	8.8	ZND	47450061
6	1	25	FULL	8.8	BZN	92879295
8	1.25	16	FULL	8.8	DAC	92216844
8	1.25	25	FULL	8.8	ZND	47819063
8	1.25	35		8.8	ZND	91859813
8	1.25	55		10.9	ZND	51533277
8	1.25	60		10.9	ZND	51533279
10	1.5	70		8.8	ZND	47888273
10	1.5	100		8.8	ZND	47888274