



Standard Part

Hexagon Socket Flat Countersunk Head Cap Screws

STPC525

87652885

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1. SCOPE

This specification contains the essentials of German Institute of Standardization, DIN 7991.

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TABLE 1: Nominal Sizes and Length Incrementation

TABLE 2: Dimensions of Hexagon Socket Flat Countersunk Head Cap Screws Metric

TABLE 3: Hole and Countersink Sizes for Flat Countersunk Head Cap Screws

TABLE 4: Hexagon Socket Flat Countersunk Head Cap Screws Metric

3. RELATED DOCUMENTS

3.1 RELATED STANDARDS

ANSI B18.3.5M — Hexagon Socket Flat Countersunk Head Cap Screws (Metric Series)

CNH MAT0310 — Zinc Plating

CNH STPA020 — Fastener Finishes and Material Specifications

DIN 7991— Hexagon Socket Countersunk Head Screws

Fiat 10355 — Hexagon Socket Countersunk Head Screws

ISO 10642 — Hexagon socket countersunk head screws

3.2 REPLACED DOCUMENTS

Case CM-018— Hexagon Socket Flat Countersunk Head Cap Screws - General Specifications

Case CM-019— Hexagon Socket Flat Countersunk Head Cap Screws - Preferred

4. REQUIREMENTS

4.1 APPLICATION

This product is designed and recommended for applications where a flush seating socket head screw is desired. Because of the head configuration, the critical cross-section is located below the hex socket and not in the thread. Screws should not be used for applications with high axial loads or where maximum fatigue resistance is required. When screws are tightened by the way of the socket, pre-stressing loads corresponding to about 80% of loads commonly used for Property Class 8.8 screws should be specified. The only purpose of using Property Class 10.9 screws is to increase the wear resistance of the sockets.

4.2 MATERIAL

Classes 8.8, 10.9 and 12.9 per ISO 898-1. Certain zinc electroplated and mechanical plated high hardness fasteners have been identified as being highly susceptible to Hydrogen Assisted Cracking (HAC). Use of these fasteners is restricted: they shall not be used in new designs after 01OCT2011.

A4-80 Stainless Steel per ISO 3506-1

ISSUED BY	APPROVED BY	ECO NO.	CNH INDUSTRIAL NUMBER
D RAVI 29JUN26	A KHAN 29JUN26	35529907	87652885

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4.3 FINISH

Cap screws will be furnished in accordance with MAT0310 and STPA020.

4.4 THREADS

Metric Standard (Coarse) Series. Thread form, diameters, and associated pitch shall be in accordance with ISO Standards. Thread shall be Tolerance Class 6g before plating.

5. CROSS REFERENCE

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

6. COMMENTARY

The hole and countersink sizes suggested in Table 3 in this standard are based on Reference Standard ANSI B18.3.5M and former Case Standards. Since these documents were published, there have been many improvements in manufacturing processes and new ones have been developed. Consequently, the sizes given in the tables may provide more clearance than what can be achieved through current production processes.

These dimensions in Table 3 are thus provided as a general guidance to hole and countersink size selection and are not to be construed as hard requirements. When a part design is reviewed by Engineering with Manufacturing and Purchasing for cost and other aspects, hole and countersink sizes should be selected based on cost impact and manufacturing capability. This can result in tighter or looser clearances than those listed in this standard.



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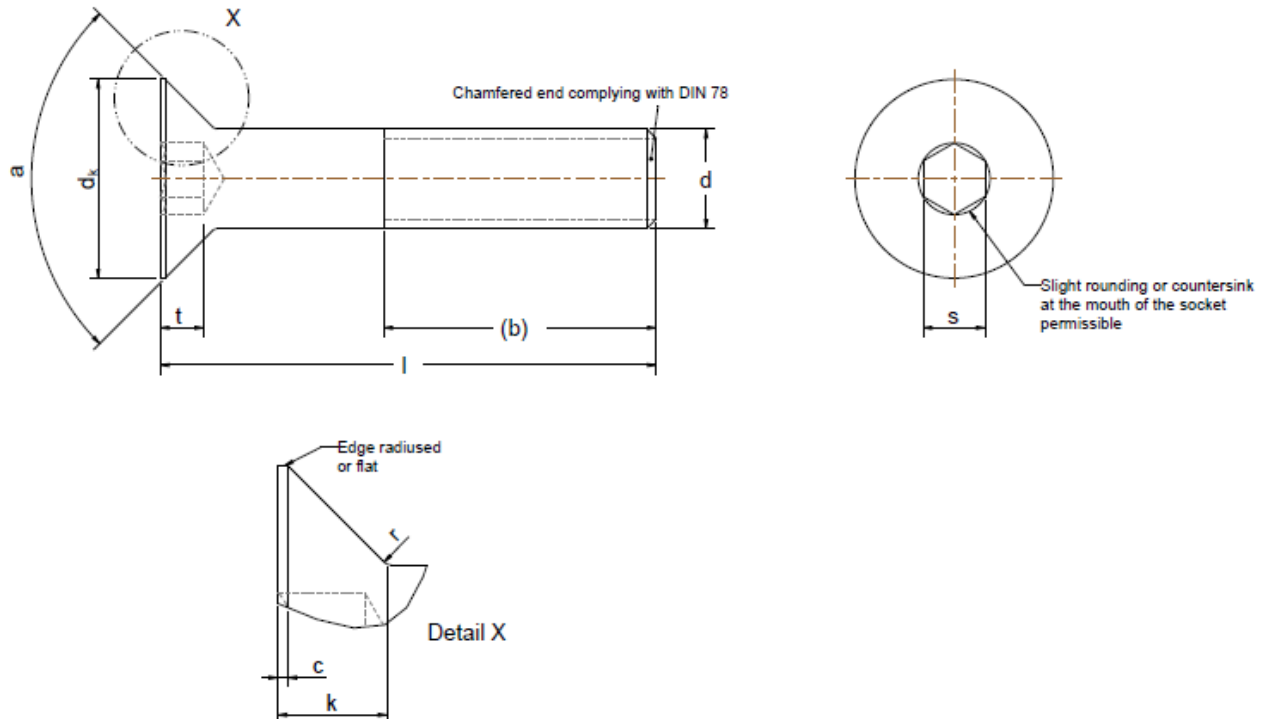
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TABLE 1: Nominal Sizes and Length Incrementation

Thread Size	M3	M4	M5	M6	M8	M10	M12	M14	M16	M20
Lengths L										
8	X	X	X	X						
10	X	X	X	X	X					
12	X	X	X	X	X	X				
16	X	X	X	X	X	X				
20	X	X	X	X	X	X	X			
25	X	X	X	X	X	X	X			
30	X	X	X	X	X	X	X		X	
35		X	X	X	X	X	X		X	X
40		X	X	X	X	X	X		X	X
50			X	X	X	X	X		X	X
60					X	X	X		X	X
70						X	X		X	X
80									X	X
90									X	X
100										X

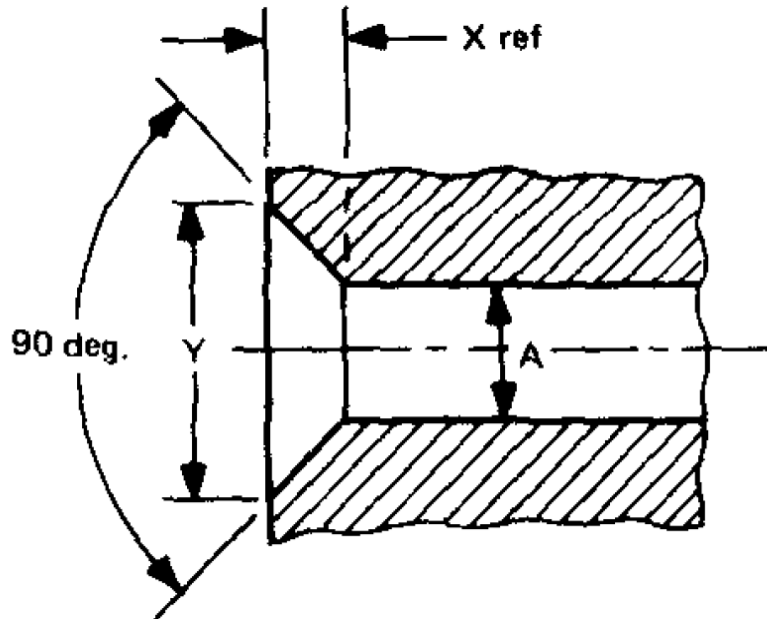
TABLE 2: Dimensions of Hexagon Socket Flat Countersunk Head Cap Screws Metric



Thread Size	M3	M4	M5	M6	M8	M10	M12	M14	M16	M20	M22	M24
Pitch (Coarse)	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5	3
a +2°/0	90°										60°	
b Ref *	12	14	16	18	22	26	30	34	38	46	50	54
c	0.2	0.3	0.3	0.3	0.4	0.5	0.5	0.5	0.5	0.5	1	1
D	Max	6	8	10	12	16	20	24	27	30	36	39
	Min	5.7	7.64	9.64	11.57	15.57	19.48	23.48	26.48	29.48	35.38	38.38
K	Max	1.7	2.3	2.8	3.3	4.4	5.5	6.5	7	7.5	8.5	13.1
S	Min	2.02	2.52	3.02	4.02	5.02	6.02	8.025	10.025	10.025	12.032	14.032
	Max	2.10	2.60	3.10	4.12	5.14	6.14	8.175	10.175	10.175	12.212	14.212
T	Max	1.2	1.8	2.3	2.5	3.5	4.4	4.6	4.8	5.3	5.9	8.8
	Min	0.95	1.55	2.05	2.25	3.2	4.1	4.3	4.5	5	5.6	8.44

* (For L up to 125mm)

TABLE 3: Hole and Countersink Sizes for Flat Countersunk Head Cap Screws
(Refer Section 6 Commentary)



D	A	X	Y
Nominal Screw Size	Nominal Hole Diameter	Countersink Depth (Ref)	Countersink Diameter Min.
M3	3.5	1.45	6.4
M4	4.5	2.05	8.6
M5	5.5	2.55	10.6
M6	6.8	2.90	12.6
M8	8.8	4.00	16.8
M10	10.8	5.10	21.0
M12	13.5	5.75	25.0
M14	15.5	6.25	28.0
M16	17.5	6.75	31.0
M20	21.5	7.75	37.0



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TABLE 4: Hexagon Socket Flat Countersunk Head Cap Screws Metric

Diameter	Pitch	Length	Material	Finish	Part Number
3	0.5	10	SST	PLN	92034122
4	0.7	8	8.8	ZND	92688736
4	0.7	10	8.8	DOR	90445005
4	0.7	10	8.8	BZN	14440027
4	0.7	12	8.8	PLN	84441797
4	0.7	16	8.8	ZND	47589570
4	0.7	16	8.8	BZN	47716156
4	0.7	16	8.8	DAC	90391716
4	0.7	20	8.8	BZN	14440327
4	0.7	35	8.8	ZND	87675518
4	0.7	40	8.8	ZND	51624480
5	0.8	8	8.8	ZND	920019309
5	0.8	10	8.8	ZND	14440521
5	0.8	10	10.9	PLN	9839047
5	0.8	10	10.9	BZN	86585759
5	0.8	12	8.8	DAC	14440624
5	0.8	12	10.9	ZND	86639303
5	0.8	12	10.9	BGM	92843049
5	0.8	16	8.8	ZND	14440721
5	0.8	16	10.9	BZN	48161255
5	0.8	16	10.9	DAC	14440734
5	0.8	16	A2	PLN	47490884
5	0.8	20 FULL	8.8	BZN	47399711
5	0.8	20 FULL	8.8	BZN	*92652554
5	0.8	20	8.8	DAC	14440824
5	0.8	20	10.9	ZND	73179318
5	0.8	25	8.8	ZND	725580
5	0.8	30	8.8	BZN	87021333
5	0.8	30 FULL	8.8	BZN	14441027
5	0.8	30	10.9	BZN	48161272
5	0.8	35	8.8	ZND	1909518
5	0.8	35	10.9	ZND	48158352
5	0.8	35	SST	PLN	84591611
6	1	10	8.8	ZND	14441121
6	1	10	10.9	PLN	412039
6	1	10	10.9	ZND	14441131
6	1	12	8.8	DAC	14441224
6	1	12	8.8	BZN	14441227
6	1	12	10.9	ZND	14441231

- #Refer to IFI 524 for bolts with non-metallic patch (see STPB840 for details)
- *Refer to IFI 525 for bolts with chemical coating (see STPB841 for details)
- & Do not use for new designs after 01OCT2011 – (Hydrogen Assisted Cracking-HAC)

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TABLE 4: Hexagon Socket Flat Countersunk Head Cap Screws Metric (Continued)

Diameter	Pitch	Length	Material	Finish	Part Number
6	1	12	10.9	ZND	*92726407
6	1	12	8.8	ZND	73171233
6	1	12	8.8	ZND	*2928455
6	1	14	8.8	BGM	90326341
6	1	14	8.8	ZND	14439021
6	1	14	8.8	DAC	14439024
6	1	14	10.9	ZND	47703871
6	1	16	8.8	BLO	47479085
6	1	16	8.8	BZN	14441327
6	1	16	8.8	ZND	14441321
6	1	16	10.9	ZND	14441331
6	1	16	SST	PLN	84470493
6	1	20	8.8	PLN	14441420
6	1	20	8.8	BGM	92046838
6	1	20	8.8	ZND	14441421
6	1	20	8.8	ZND	*92183832
6	1	20	8.8	BZN	14441427
6	1	20	10.9	ZND	14441431
6	1	20	10.9	BGM	91714012
6	1	25	8.8	ZND	14441521
6	1	25	8.8	DAC	14441524
6	1	25	8.8	ZND	*87698790
6	1	25	8.8	BZN	87654455
6	1	25	10.9	BGM	91714013
6	1	30	8.8	ZND	1520828
6	1	35	8.8	DAC	14441724
6	1	35	8.8	ZND	1589127
6	1	35	8.8	BZN	14441727
6	1	35	10.9	ZND	92718064
6	1	35	SST	PLN	47558900
6	1	40	10.9	PLN	84045574
6	1	50	10.9	PHC	87029021
8	1.25	10	10.9	ZND	91759392
8	1.25	12	10.9	ZND	*87646170
8	1.25	12	8.8	ZND	89509420
8	1.25	14	10.9	BZN	84319919
8	1.25	16	8.8	BZN	14441927
8	1.25	16	8.8	DAC	14441924
8	1.25	16	8.8	ZND	14441921

- #Refer to IFI 524 for bolts with non-metallic patch (see STPB840 for details)
- *Refer to IFI 525 for bolts with chemical coating (see STPB841 for details)
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TABLE 4: Hexagon Socket Flat Countersunk Head Cap Screws Metric (Continued)

Diameter	Pitch	Length	Material	Finish	Part Number
8	1.25	16	10.9	ZND	14441931
8	1.25	16	10.9	ZND	*47662064
8	1.25	16	10.9	BZN	14441937
8	1.25	16	10.9	DAC	47888923
8	1.25	16	A4-80	PLN	51572424
8	1.25	16	8.8	ZND	*92852608
8	1.25	18	8.8	DAC	91717042
8	1.25	20	8.8	DAC	14442024
8	1.25	20	8.8	ZND	14442021
8	1.25	20	8.8	ZND	#87613338
8	1.25	20	10.9	DAC	14442034
8	1.25	20	10.9	ZND	14442031
8	1.25	20	8.8	ZND	*92820597
8	1.25	20	10.9	ZND	*92672780
8	1.25	20	8.8	BZN	14442027
8	1.25	20	8.8	BGM	5182236
8	1.25	20	8.8	PLN	87313767
8	1.25	20	12.9	PLN	84488523
8	1.25	20	10.9	BLO	87654456
8	1.25	20	SST	PLN	92850440
8	1.25	22	8.8	DAC	14439124
8	1.25	25	8.8	BGM	90358853
8	1.25	25	8.8	BLO	47481273
8	1.25	25	8.8	DAC	14442124
8	1.25	25	8.8	ZND	73170208
8	1.25	25	8.8	ZND	*92042609
8	1.25	25	10.9	DAC	14442134
8	1.25	25	10.9	ZND	14442131
8	1.25	25	10.9	BZN	14442137
8	1.25	25	SST	PLN	920019521
8	1.25	30	8.8	ZND	14442221
8	1.25	30	8.8	BZN	14442227
8	1.25	30	10.9	ZND	14442231
8	1.25	30	10.9	ZND	*47855104
8	1.25	30	10.9	DAC	14442234
8	1.25	30	12.9	BZN	&84492994
8	1.25	35	10.9	ZND	14442331
8	1.25	35	8.8	BZN	87037492
8	1.25	35	8.8	BZN	*47516623

- #Refer to IFI 524 for bolts with non-metallic patch (see STPB840 for details)
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TABLE 4: Hexagon Socket Flat Countersunk Head Cap Screws Metric (Continued)

Diameter	Pitch	Length	Material	Finish	Part Number
8	1.25	35	8.8	BGM	5182238
8	1.25	35	8.8	BGM	#91890455
8	1.25	35	8.8	ZND	14442321
8	1.25	35	SST	PLN	920019522
8	1.25	40	8.8	BZN	14442427
8	1.25	40	8.8	ZND	14442421
8	1.25	40	10.9	DAC	14442434
8	1.25	40	10.9	PLN	14442430
8	1.25	40	10.9	ZND	14442431
8	1.25	45	8.8	ZND	87742349
8	1.25	45	8.8	BZN	84569274
8	1.25	45	10.9	ZND	84320291
8	1.25	50	8.8	BZN	47751976
8	1.25	50	8.8	ZND	87015625
8	1.25	50 Full Thread	8.8	ZND	84204179
8	1.25	50	SST	PLN	47968742
8	1.25	55	8.8	ZND	1768194
8	1.25	60	8.8	ZND	87015626
8	1.25	60 Full Thread	10.9	ZND	2930418
8	1.25	70	8.8	ZND	87015627
8	1.25	90	8.8	ZND	700702022
8	1.25	100	8.8	ZND	#90329582
8	1.25	120	8.8	ZND	2426369
10	1.25	20	8.8	PLN	14442520
10	1.25	20	8.8	DAC	14442524
10	1.25	25	8.8	ZND	14442621
10	1.25	25	8.8	BLO	47447176
10	1.25	25	10.9	ZND	14442631
10	1.25	30	8.8	ZND	14442721
10	1.25	50	10.9	PLN	14443130
10	1.5	20	8.8	ZND	725583
10	1.5	20	10.9	ZND	84383454
10	1.5	20	10.9	DOR	92785517
10	1.5	20	12.9	PLN	84488524
10	1.5	25	8.8	ZND	393698
10	1.5	25	10.9	BGM	91776678
10	1.5	25	10.9	ZND	920005402
10	1.5	30	8.8	PLN	84515785
10	1.5	30	8.8	ZND	320772

- #Refer to IFI 524 for bolts with non-metallic patch (see STPB840 for details)
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TABLE 4: Hexagon Socket Flat Countersunk Head Cap Screws Metric (Continued)

Diameter	Pitch	Length	Material	Finish	Part Number
10	1.5	30	10.9	ZND	84353731
10	1.5	30	10.9	ZND	*47639570
10	1.5	35	8.8	ZND	72181588
10	1.5	35	10.9	ZND	87381388
10	1.5	40	8.8	BZN	2900443
10	1.5	40	8.8	ZND	72182615
10	1.5	40	10.9	ZND	87019116
10	1.5	40 Full Thread	10.9	ZND	48006777
10	1.5	40	12.9	ZND	&84334564
10	1.5	45	8.8	ZND	1094592
10	1.5	45	10.9	BLO	47713258
10	1.5	50	8.8	ZND	933361
10	1.5	50	10.9	ZND	91861899
10	1.5	55	8.8	ZND	87654457
10	1.5	60	8.8	ZND	1590204
10	1.5	65	10.9	ZND	92251621
10	1.5	80	8.8	ZND	388654
10	1.5	80	SST	PLN	920019380
10	1.5	120	10.9	ZND	84359111
12	1.25	25	8.8	DAC	14443224
12	1.25	25	10.9	ZND	47502175
12	1.25	30	8.8	DAC	14443324
12	1.25	35	10.9	ZND	14443431
12	1.75	20	8.8	ZND	300500
12	1.75	25	10.9	ZND	87530646
12	1.75	25	10.9	ZND	*90451202
12	1.75	30	8.8	ZND	650906
12	1.75	35	8.8	ZND	80412525
12	1.75	35	10.9	ZND	92071665
12	1.75	40	8.8	PLN	300502
12	1.75	40	10.9	ZND	47530535
12	1.75	45	10.9	ZND	87654458
12	1.75	50	10.9	ZND	87654459
12	1.75	60	8.8	ZND	381527
12	1.75	60	10.9	ZND	48088060
12	1.75	70	10.9	ZND	84281051
12	1.75	90	8.8	ZND	87022707
12	1.75	100	10.9	DAC	84544447
12	1.75	120	8.8	ZND	47509913

- #Refer to IFI 524 for bolts with non-metallic patch (see STPB840 for details)
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TABLE 4: Hexagon Socket Flat Countersunk Head Cap Screws Metric (Continued)

Diameter	Pitch	Length	Material	Finish	Part Number
12	1.75	150	10.9	ZND	92673557
16	2	35	10.9	DAC	84411963
16	2	50	8.8	ZND	650908
16	2	60	8.8	ZND	919562
16	2	60	10.9	ZND	47809870
16	2	70	8.8	ZND	84569271
16	2	80	8.8	ZND	48119112
16	2	90	8.8	ZND	51445982
16	2	100	8.8	ZND	92649791
16	2	130	10.9	ZND	87021334
16	2	140	8.8	ZND	51436893
16	2	140	10.9	ZND	87021335
16	2	160	8.8	ZND	84180947
16	2	210	10.9	ZND	87021336
20	2.5	40	10.9	ZND	87303202
20	2.5	85	10.9	ZND	87599599
20	2.5	90	10.9	ZND	47737985
20	2.5	100 – Full Thread	10.9	ZND	84151600
20	2.5	120	10.9	BGM	92073590
24	3	50	8.8	ZND	1894496

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