



Standard Parts

Number:	CM-020
Date Issued:	B-OCT05

ELECTRONIC DOCUMENT IN THE VIEWER IS CONTROLLED. PRINTED COPY IS AN UNCONTROLLED DOCUMENT.

HEXAGON SOCKET HEAD CAP SCREWS (Superseded)

This standard has been superseded by CNH Standard Parts, STPC520 (87355934), Hex Socket Head Cap Screws Metric - Preferred and Non-Preferred.

The controlled versions of CNH specifications and standards are published on the CNH Intranet site.

The documents are also available on the CNH electronic viewing system (e.g. eViewer). Suppliers are able to access these documents on CSCN (CNH Supplier Communications Network).

The superseded standard remains available for viewing following this page if needed.

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GENERAL SPECIFICATIONS

GENERAL: This specification contains the essentials of the following standards:

International Organization for Standardizations: ISO 4762
German Institute of Standardization: DIN 912
American National Standards Institute: ANSI B18.3.1M

This standard may differ in some respects with certain segments of ISO and national standards. In recognition of these differences, the sizes and tolerance ranges used were established in an effort to enable the use of commercially available items, dimensionally interchangeable worldwide.

DIMENSIONS: All dimensions in this standard are in millimetres. All unspecified detail shall conform to one or more of the above listed standards.

PREFERRED PARTS POLICY: Preferred parts are so designated to reduce variety of parts and assure maximum availability, interchangeability and cost savings.

Thread: Metric Standard (coarse) series
Material and Finish: Class 8.8 Zinc with Chromate (ZND)
Class 12.9 Phosphate coated (PHC) or black oxide (BLO)

Nominal Sizes and Length Incrementation:

Lengths mm	M4	M5	M6	M8	M10	M12	M16	M20	M24
6	X								
8	X	X							
10	X	X	X						
12	X	X	X	X					
16	X	X	X	X	X				
20	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	X
45		X	X	X	X	X	X	X	X
50		X	X	X	X	X	X	X	X
55			X	X	X	X	X	X	X
60			X	X	X	X	X	X	X
65				X	X	X	X	X	X
70				X	X	X	X	X	X
80				X	X	X	X	X	X
90					X	X	X	X	X
100					X	X	X	X	X
110						X	X	X	X
120						X	X	X	X
130							X	X	X
140							X	X	X
150							X	X	X
160								X	X
180								X	X
200								X	X

Lengths above the heavy line are threaded to the head within 3P.

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HEADS: Unless otherwise specified, knurling on heads shall be optional with the manufacturer providing the diameter across the tops of the knurl and the diameter of the head before knurling or of the unknurled portion are within the tabulated maximum and minimum head diameter limits, respectively.

HEAD MARKING: All socket head cap screws of 5 mm size and larger shall be permanently marked to identify the property class. In addition, screws shall be marked with the manufacturer's identification symbol. Markings may be placed on the side of the head or on the top of the head.

THREADS: Thread form, diameters, and associated pitches are in accordance with ISO Standards. Threads shall be tolerance class 5g6g for class 12.9 and 6g for other classes, before plating. Threads with tolerance class 4g6g are an acceptable alternate for class 12.9 as specified in ANSI B18.3.1M.

MATERIAL: Class 8.8 or 12.9, alloy steel. Class 10.9 is not recommended for new design because of lack of worldwide availability.

FINISH: Screws shall be furnished plated or coated in accordance with Case Engineering Materials Specification:

Black Oxide Coating (BLO)	Thermal or chemical and oiled
Phosphate Coating (PHC)	MS 91
Zinc Dichromate (ZND)	MS 201, class 4A or 5A
Black Zinc (BZN)	MS 203
Black Teflon (PTF)	MS 61

FOR ADDITIONAL FINISHES SEE STANDARD STPA020 (87026717)

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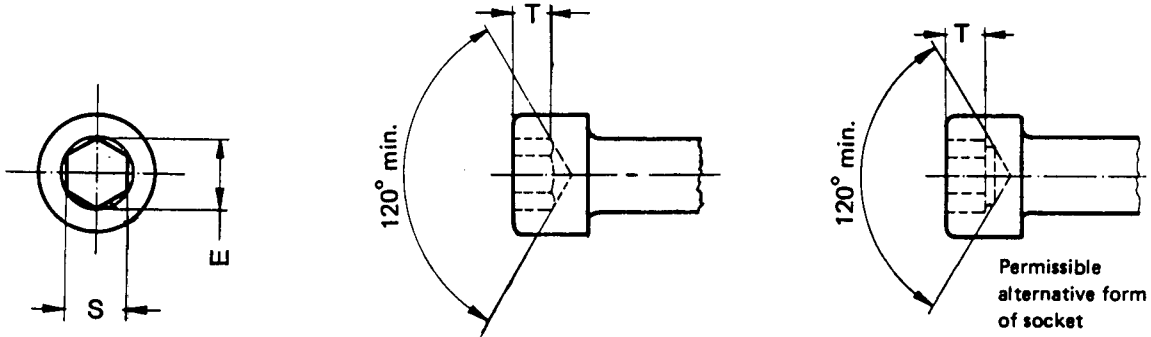
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Nominal Size	S			E	T
	Across Flats			Across Corners	Depth of Key Engagement
	nom.	max.	min.	min.	min. (ref.)
M3	2.5	2.58	2.52	2.87	1.3
M4	3	3.08	3.02	3.44	2
M5	4	4.09	4.02	4.58	2.5
M6	5	5.14	5.02	5.72	3
M8	6	6.14	6.02	6.86	4
M10	8	8.175	8.02	9.15	5
M12	10	10.175	10.02	11.43	6
M14*	12	12.212	12.03	13.72	7
M16	14	14.212	14.03	16	8
M18*	14	14.212	14.03	16	9
M20	17	17.23	17.05	19.44	10
M22*	17	17.23	17.05	19.44	11
M24	19	19.275	19.06	21.73	12
M27*	19	19.275	19.065	21.73	13.5
M30	22	22.275	22.065	25.15	15

* Non-Preferred Size

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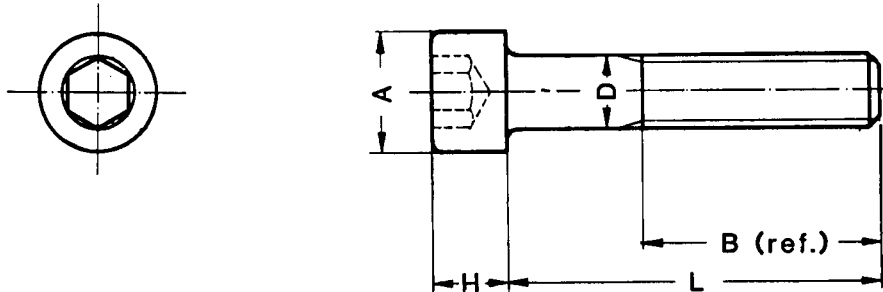
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Nominal Size			M3	M4	M5	M6	M8	M10	M12
A	Head Diameter	max.	5.68	7.22	8.72	10.22	13.27	16.27	18.27
		min.	5.32	6.78	8.27	9.74	12.70	15.67	17.63
B	Thread Length	ref.	18	20	22	24	28	32	36
D	Body Diameter	max.	3	4	5	6	8	10	12
		min.	2.86	3.82	4.82	5.82	7.78	9.78	11.73
H	Head Height	max.	3	4	5	6	8	10	12
		min.	2.86	3.83	4.82	5.7	7.64	9.64	11.57
	Pitch, nom.	Coarse	0.5	0.7	0.8	1	1.25	1.5	1.75
		Fine	---	---	---	---	1	1.25	1.5
		Ex Fine	---	---	---	---	---	1	1.25

Nominal Size			M14*	M16	M18*	M20	M22*	M24	M27	M30
A	Head Diameter	max.	21.33	24.33	27.33	30.33	33.39	36.39	40	45.39
		min.	20.6	23.58	26.67	29.53	32.61	35.48	39.61	44.42
B	Thread Length	ref.	40	44	48	52	56	60	66	72
D	Body Diameter	max.	14	16	18	20	22	24	27	30
		min.	13.73	15.73	17.73	19.67	21.67	23.67	26.67	29.67
H	Head Height	max.	14	16	18	20	22	24	27	30
		min.	13.57	15.57	17.57	19.48	21.48	23.48	26.48	29.48
	Pitch, nom.	Coarse	2	2	2.5	2.5	2.5	3	3	3.5
		Fine	1.5	1.5	2	2	2	2	2	2
		Ex Fine	---	---	1.5	1.5	1.5	---	---	---

* Non-Preferred Size

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