



## Metric Steel Hex Cap Screw

DESCRIPTION: (C1C100A2)

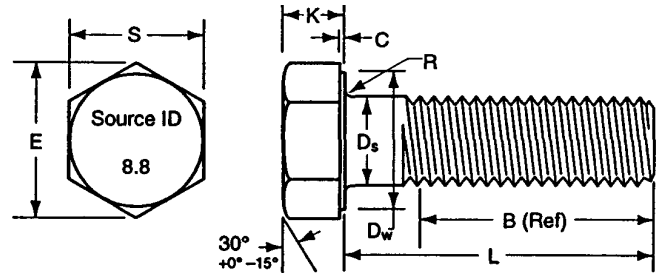
American National Standard metric hex head cap screw,  
ANSI/ASME B18.2.3.1.M ♣

MATERIAL: Medium carbon steel quenched and tempered,  
Property Class 8.8, conforming to ASTM F568M.

SCREW THREADS: Coarse metric threads, (ISO) Tolerance  
Class 6g - unplated

HARDNESS: Rockwell, 23 - 34 HRC  
Vickers, 255 - 336 HV

REFERENCE: ASME B18.2.3.1.M



HEAD MARKING: 8.8 and registered source ID.

All dimensions are in millimeters unless otherwise indicated.

THREAD SIZE			M4 (1)	M5♦	M6♦	M8♦
C Washer face thickness	max		0.40	0.50	0.50	0.60
	min		0.15	0.20	0.20	0.30
Ds Body diameter	max		4.00	5.00	6.00	8.00
	min		3.82	4.82	5.82	7.78
Dw Washer face diameter	min		5.88	6.90	8.90	11.60
E Width across corners	max		8.04	9.24	11.55	15.01
	min		7.66	8.79	11.05	14.38
K Overall head height	max		2.925	3.65	4.15	5.50
	min		2.675	3.35	3.85	5.10
R Fillet radius	min		0.20	0.20	0.30	0.40
S Width across flats	max		7.00	8.00	10.00	13.00
	min		6.78	7.78	9.78	12.73
B Thread length:			For lengths (L) above solid line, screws will be threaded full length.			
L ≤ 125		min	14	16	18	22
125 < L ≤ 200		min	20	22	24	28
L > 200		min	—	—	—	—
PITCH			0.7	0.8	1	1.25
L Length	Tol	PART NO. (For other lengths, last three digits are lengths in millimeters.) ♣♣				
Preferred lengths	8	± 0.3	12008	14008		
	10		12010	14010	15010	
	12		12012	14012	15012	17012
	14		12014	14014	15014	17014
	16	± 0.4	12016	14016	15016	17016
	20		12020	14020	15020	17020
	25		12025	14025	15025	17025
	30		12030	14030	15030	17030
	35	± 0.5	12035	14035	15035	17035
	40		12040	14040	15040	17040
	45		12045	14045	15045	17045
	50			14050	15050	17050
	60	± 0.6			15060	17060
	70					17070
	80					17080

FINISH: Other finishes available tabulated on L9991 - Finish suffix chart. If screws are electroplated, they must be PROCESSED TO MINIMIZE DANGER FROM HYDROGEN EMBRITTLEMENT per applicable EMPIS Finish specification

PT NO.  
SUFFIX

None  
B32

FINISH  
DESCRIPTION

Unplated  
0.005 zinc and blue dye

EMPIS FINISH  
REFERENCE

—  
F70B1A

♦ PREFERRED

♣ Metric Standards Cross-Reference Chart, L9992  
♣♣ Other lengths tabulated on L9990

PART NUMBER EXAMPLE: L14AP21050B32 identifies a M12 X 1.75 X 50 mm medium carbon steel hex cap screw with zinc plating and blue dye

(1) Size M4: dimensions shall be in accordance with EN ISO 4017.

This drawing and latest issue of the specification completely define the part.

SPECIFICATION	GENERAL ELECTRIC STANDARD		Drawing No.
	<b>Screw</b> Hex Cap		<b>L14A</b>
<b>C1C100</b>			Page 1 of 4

## Metric Steel Hex Cap Screw

### DESCRIPTION: (C1C100A2)

American National Standard metric hex head cap screw,  
ANSI/ASME B18.2.3.1.M ♣

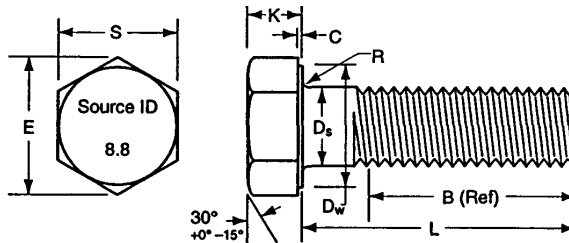
MATERIAL: Medium carbon steel quenched and tempered,  
Property Class 8.8, conforming to ASTM F568M.

SCREW THREADS: Coarse metric threads, (ISO) Tolerance  
Class 6g - unplated

HARDNESS: Rockwell, 23 - 34 HRC  
Vickers, 255 - 336 HV

HEAD MARKING: 8.8 and registered source ID.

### REFERENCE: ASME B18.2.3.1.M



All dimensions are in millimeters unless otherwise indicated.

THREAD SIZE			M10◆	M12◆	M14	M16◆
C	Washer face thickness	max	0.60	0.60	0.60	0.80
		min	0.30	0.30	0.30	0.40
D <sub>s</sub>	Body diameter	max	10.00	12.00	14.00	16.00
		min	9.78	11.73	13.73	15.73
D <sub>w</sub>	Washer face diameter	min	14.60	16.60	19.60	22.50
E	Width across corners	max	18.48	20.78	24.25	27.71
		min	17.77	20.03	23.35	26.75
K	Overall head height	max	6.63	7.76	9.09	10.32
		min	6.17	7.24	8.51	9.68
R	Fillet radius	min	0.40	0.60	0.60	0.60
S	Width across flats	max	16.00	18.00	21.00	24.00
		min	15.73	17.73	20.67	23.67
B Thread length: L ≤ 125 125 < L ≤ 200 L > 200		min min min	For lengths (L) above solid line, screws will be threaded full length.			
			26	30	34	38
			32	36	40	44
			—	—	—	57
PITCH			1.5	1.75	2	2
L	Length	Tol	PART NO. (For other lengths, last three digits are lengths in millimeters.) ♣♣			
Preferred lengths	16	± 0.4	19016		23020	
	20		19020	21020	23025	
	25		19025	21025	23030	
	30		19030	21030	23035	25030
	35	± 0.8	19035	21035	23035	25035
	40		19040	21040	23040	25040
	45		19045	21045	23045	25045
	50		19050	21050	23050	25050
	60	± 1.0	19060	21060	23060	25060
	70		19070	21070	23070	25070
	80		19080	21080	23080	25080
	90		19090	21090	23090	25090
	100	± 1.1	19100	21100	23100	25100
	110		19110	21110	23110	25110
	120		19120	21120	23120	25120
	130		19130	21130	23130	25130
	140	± 1.3	19140	21140	23140	25140
	150		19150	21150	23150	25150
	160		19160	21160	23160	25160
	170		19170	21170	23170	25170
	180		19180	21180	23180	25180
	190		19190	21190	23190	25190
	200		19200	21200	23200	25200
	210		19210	21210	23210	25210
	220		19220	21220	23220	25220
	230		19230	21230	23230	25230
	240		19240	21240	23240	25240

FINISH: See page 1

PT NO. SUFFIX: See page 1

PART NUMBER EXAMPLE: See page 1

♠ **PREFERRED**

♣ Metric Standards Cross-Reference Chart, L9992

♣♣ Other lengths tabulated on L9990

This drawing and latest issue of the specification completely define the part.

SPECIFICATION	GENERAL ELECTRIC STANDARD		Drawing No.
	<b>Screw</b> Hex Cap		<b>L14A</b>
<b>C1C100</b>			Page 2 of 4



### Metric Steel Hex Cap Screw

DESCRIPTION: (C1C100A2)

American National Standard metric hex head cap screw,  
ANSI/ASME B18.2.3.1.M ♣

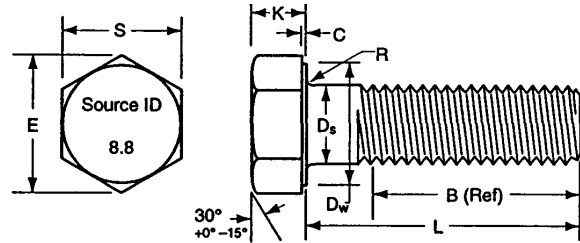
MATERIAL: Medium carbon steel quenched and tempered,  
Property Class 8.8, conforming to ASTM F568M.

SCREW THREADS: Coarse metric threads, (ISO) Tolerance  
Class 6g - unplated

HARDNESS: Rockwell, 23 - 34 HRC  
Vickers, 255 - 336 HV

HEAD MARKING: 8.8 and registered source ID.

REFERENCE: ASME B18.2.3.1.M



All dimensions are in millimeters unless otherwise indicated.

THREAD SIZE			M18 (2)		M20+	M22		M24+	M27		M30+		M36+	M39	
C	Washer face thickness	max	0.80		0.80	0.80		0.80	0.80		0.80	0.80		0.80	1.00
		min	0.40		0.40	0.20		0.40	0.20			0.40	0.40		0.30
D <sub>s</sub>	Body diameter	max	18.00		20.00	22.00		24.00	27.00		30.00		36.00		39.00
		min	17.73		19.67	21.67		23.67	26.48			29.67	35.61		38.38
D <sub>w</sub>	Washer face diameter	min	25.34		27.70	31.71		33.20	38.00		42.70		51.10		55.86
E	Width across corners	max	31.2		34.64	—		41.57	—			53.12	63.51		—
		min	30.14		32.95	37.72		39.55	45.20		50.85		60.79		66.44
K	Overall head height	max	11.715		12.88	14.215		15.44	17.35			19.48	23.38		25.42
		min	11.285		12.12	13.785		14.56	16.65		17.92		21.62		24.58
R	Fillet radius	min	0.6		0.80	0.80		0.80	1.00	1.00		1.00		1.00	
S	Width across flats	max	27.00		30.00	34.00		36.00	41.00		46.00	55.00		60.00	
		min	26.67		29.16	33.38		35.00	40.00	45.00		53.80		58.80	
B Thread length:			For lengths (L) above solid line, screws will be threaded full length.												
L	L ≤ 125 125 < L ≤ 200 L > 200	min	42		46	50		54	60		66		78	—	
		min	48		52	56		60	66		72	84		78	
		min	61		65	69		73	79			85	97		91
PITCH			2.5	1.5	2.5	1.5	2.5	3	3		3.5		2	4	4
L	Length	Tol	PART NO. (For other lengths, last three digits are lengths in millimeters.) ♣♣												
Preferred lengths	30	± 0.7			29030					± 1.5					
	35		27035	28035	29035	32035	31035	33035							
	40	± 1.3	27040	28040	29040	32040	31040	33040				37040	38040		
	45		27045	28045	29045	32045	31045	33045			37045	38045			
	50		27050	28050	29050	32050	31050	33050			37050	38050	41050		
	60	± 1.5	27060	28060	29060	32060	31060	33060		± 1.8	37060	38060	41060		
	70		27070	28070	29070	32070	31070	33070			37070	38070	41070		
	80		27080	28080	29080	32080	31080	33080			37080	38080	41080		
	90			27090	28090	29090	32090	31090	33090			37090	38090	41090	
	100	± 1.8	27100	28100	29100	32100	31100	33100	35100	± 2.0	37100	38100	41100		
	110		27110	28110	29110	32110	31110	33110	35110		37110	38110	41110		
	120		27120	28120	29120	32120	31120	33120	35120		37120	38120	41120		
	130			27130	28130	29130	32130	31130	33130		35130	37130	38130	41130	
	140	± 2.0	27140	28140	29140	32140	31140	33140	35140	± 2.3	37140	38140	41140		
	150		27150	28150	29150	32150	31150	33150	35150		37150	38150	41150	43150	
	160		27160	28160	29160	32160	31160	33160	35160		37160	38160	41160	43160	
	180			27180	28180	29180	32180	31180	33180		35180	37180	38180	41180	43180
	200	± 2.3	27200	28200	29200	32200	31200	33200	35200	± 3.0	37200	38200	41200	43200	
	220					32220	31220	33220	35220		37220	38220	41220	43220	
	240					32240	31240	33240	35240		37240	38240	41240	43240	
	260										35260	37260	38260	41260	43160
	280	± 3.0									37280	38280	41280	43280	
	300										37300	38300	41300	43300	

FINISH: Other finishes available tabulated on L9991 - Finish suffix chart. If screws are electroplated, they must be PROCESSED TO MINIMIZE DANGER FROM HYDROGEN EMBRITTLEMENT per applicable EMPIS Finish specification

PT NO.  
SUF  
FIX  
None  
B32

FINISH DESCRIPTION  
Unplated  
0.005 zinc and blue dye

EMPIS FINISH REFERENCE  
—  
F70B1A

♦ PREFERRED  
♣ Metric Standards Cross-Reference Chart, L9992  
♣♣ Other lengths tabulated on L9990

PART NUMBER EXAMPLE: L14AP21050B32 identifies a M12 X 1.75 X 50 mm medium carbon steel hex cap screw with zinc plating and blue dye

(2) Size M18: dimensions shall be in accordance with DIN EN ISO 4014

This drawing and latest issue of the specification completely define the part.

SPECIFICATION	GENERAL ELECTRIC STANDARD		Drawing No.	
	Screw Hex Cap		L14A	
C1C100			Page 3 of 4	

## Metric Steel Hex Cap Screw

**DESCRIPTION:** (C1C100A2)  
American National Standard metric hex head cap screw,  
ANSI/ASME B18.2.3.1.M ♣

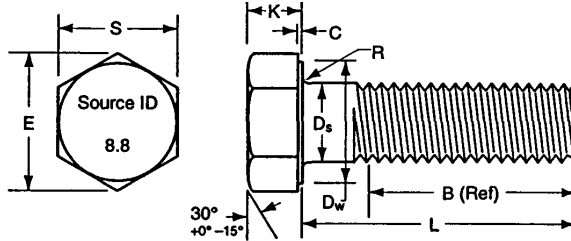
**MATERIAL:** Medium carbon steel quenched and tempered,  
Property Class 8.8, conforming to ASTM F568M.

**SCREW THREADS:** Coarse metric threads, (ISO) Tolerance  
Class 6g - unplated

**HARDNESS:** Rockwell, 23 - 34 HRC  
Vickers, 255 - 336 HV

**HEAD MARKING:** 8.8 and registered source ID.

**REFERENCE:** ASME B18.2.3.1.M



All dimensions are in millimeters unless otherwise indicated.

THREAD SIZE		M42♠	M48♠	M56♠	M64♠	M72♠	M80♠	M90♠	M100♠
<b>C</b> Washer face thickness	max	1.00	1.00	1.00	1.00	1.20	1.20	1.20	1.20
	min	0.50	0.50	0.50	0.50	0.60	0.60	0.60	0.60
<b>D<sub>s</sub></b> Body diameter	max	42.00	48.00	56.00	64.00	72.00	80.00	90.00	100.00
	min	41.38	47.38	55.26	63.26	71.26	79.26	89.13	99.13
<b>D<sub>w</sub></b> Washer face diameter	min	59.80	69.00	78.10	87.20	96.30	105.40	119.20	133.00
<b>E</b> Width across corners	max	75.06	86.60	98.15	109.70	121.24	132.79	150.11	167.43
	min	71.71	82.76	93.71	104.65	115.60	126.54	143.07	159.60
<b>K</b> Overall head height	max	26.97	31.07	36.20	41.32	46.45	51.58	57.74	63.90
	min	25.03	28.93	33.80	38.68	43.55	48.42	54.26	60.10
<b>R</b> Fillet radius	min	1.20	1.50	2.00	2.00	2.00	2.00	2.00	2.50
<b>S</b> Width across flats	max	65.00	75.00	85.00	95.00	105.00	115.00	130.00	145.00
	min	62.90	72.60	82.20	91.80	101.40	111.00	125.50	140.00
<b>B</b> Thread length:		For lengths (L) above solid line, screws will be threaded full length.							
<b>L</b> ≤ 125 125 < <b>L</b> ≤ 200 <b>L</b> > 200	min	90	102	—	—	—	—	—	—
	min	96	108	124	140	156	172	192	212
	min	109	121	137	153	169	185	205	225
<b>PITCH</b>		4.5	5	5.5	6	6	6	6	6
<b>L</b> Length		Tol	<b>PART NO.</b> (For other lengths, last three digits are lengths in millimeters.) ♣♣						
Preferred lengths	60	± 2.3	45060						
	70		45070	49070					
	80		45080	49080	53080				
	90	± 3.0	45090	49090	53090	57090			
	100		45100	49100	53100	57100	61100		
	110		45110	49110	53110	57110	61110	63110	
	120		45120	49120	53120	57120	61120	63120	65120
	130		45130	49130	53130	57130	61130	63130	65130
	140		45140	49140	53140	57140	61140	63140	65140
	150		45150	49150	53150	57150	61150	63150	65150
	160		45160	49160	53160	57160	61160	63160	65160
	180		45180	49180	53180	57180	61180	63180	65180
	200		45200	49200	53200	57200	61200	63200	65200
	220		45220	49220	53220	57220	61220	63220	65220
	240		45240	49240	53240	57240	61240	63240	65240
	260		45260	49260	53260	57260	61260	63260	65260
	280		45280	49280	53280	57280	61280	63280	65280
	300		45300	49300	53300	57300	61300	63300	65300

**FINISH:** Other finishes available tabulated  
on L9991 - Finish suffix chart. If screws  
are electroplated, they must be  
**PROCESSED TO MINIMIZE DANGER  
FROM HYDROGEN EMBRITTLEMENT**  
per applicable EMPIS Finish specification

**PT NO.  
SUFFIX**

None  
B32

**FINISH  
DESCRIPTION**

Unplated  
0.005 zinc and blue dye

**EMPIS FINISH  
REFERENCE**

—  
F70B1A

♠ **PREFERRED**

♣ Metric Standards Cross-Reference  
Chart, L9992

♣♣ Other lengths tabulated on L9990

PART NUMBER EXAMPLE: L14AP21050B32 identifies a M12 X 1.75 X 50 mm medium carbon steel hex cap screw with zinc plating and blue dye

This drawing and latest issue of the specification completely define the part.

SPECIFICATION	GENERAL ELECTRIC STANDARD		Drawing No.	
	Screw Hex Cap		L14A	
<b>C1C100</b>			Page 4 of 4	