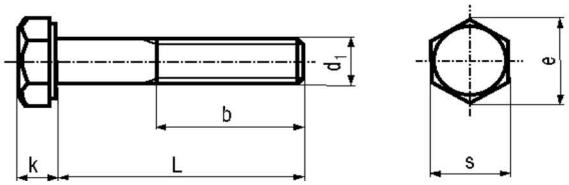
HEX HEAD CAP SCREWS - FINE PITCH ▪ DIN 960/961 / ISO 8765/8676 / JIS B1180

For Screws Not Fully Threaded, The Thread Length Shown Is Minimum



DIN 960 / ISO 8765 Partial Thread

DIN 961 / ISO 8675 Full Thread

Width Across Flats s	M8		M10		M12		(M14)		M16		(M18)		M20	
Fine Pitch	1		1.25		1.5		1.5		1.5		2		2	
Extra Fine Pitch			1		1.25		1.25		1		1.5		1.5	
Extra Extra Fine Pitch			0.75		1		1				1		1	
Standard	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
DIN 960/961 (1987)	12.73	13.00	16.73	17.00	18.67	19.00	21.67	22.00	23.67	24.00	26.67	27.00	29.67	30.00
ISO 8676/8765 (1988)	12.73	13.00	15.73	16.00	17.73	18.00	20.67	21.00	23.67	24.00	26.67	27.00	29.67	30.00
JIS B 1180 (1977)	11.75	12.00	13.75	14.00	16.65	17.00								
Head Height k	M8		M10		M12		(M14)		M16		(M18)		M20	
DIN 960/961 (1987)	5.150	5.450	6.220	6.580	7.320	7.680	8.620	8.980	9.820	10.180	11.280	11.720	12.280	12.720
ISO 8676/8765 (1988)	5.150	5.450	6.220	6.580	7.320	7.680	8.620	8.980	9.820	10.180	11.285	11.715	12.285	12.715
JIS B 1180 (1977)	5.350	5.650	6.800	7.200	7.800	8.200								

Comparable Thread Lengths For DIN - ISO - JIS - ANSI

DIN 960 (1987)	M8	M10	M12	(M14)	M16	(M18)	M20
Lengths ≤125mm	22	26	30	34	38	42	46
Lengths >125mm≤200mm	28	32	36	40	44	48	52
Lengths >200 mm	41	45	49	53	57	61	65
ISO 8765	M8	M10	M12	(M14)	M16	(M18)	M20
Lengths ≤125mm	22	26	30	34	38	42	46
Lengths >125mm≤200mm				40	44	48	52
Lengths >200 mm							
JIS 1180	M8	M10	M12	(M14)	M16	(M18)	M20
Lengths ≤125mm	22	26	30				
Lengths >125mm≤200mm							
Lengths >200 mm							

Width Across Flats s	(M22)		M24		(M27)		M30		(M33)		M36		(M39)	
Fine Pitch	2		2		2		3		3		3		3	
Extra Fine Pitch	1.5		1.5		1.5		2		2		2		2	
Extra Extra Fine Pitch	1		1		1		1.5		1.5		1.5		1.5	
Standard	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
DIN 960/961 (1987)	31.61	32.00	35.38	36.00	40.00	41.00	45.00	46.00	49.00	50.00	53.80	55.00	58.80	60.00
ISO 8676/8765 (1988)	33.38	34.00	35.38	36.00	40.00	41.00	45.00	46.00	49.00	50.00	53.80	55.00	58.80	60.00
Head Height k	(M22)		M24		(M27)		M30		(M33)		M36		(M39)	
DIN 960/961 (1987)	13.780	14.220	14.780	15.220	17.350	18.650	18.280	19.120	20.580	21.420	22.080	22.920	24.580	25.420
ISO 8676/8765 (1988)	13.785	14.215	14.785	15.215	16.650	17.350	18.280	19.120	20.580	21.420	22.080	22.920	24.580	25.420

Comparable Thread Lengths For DIN - ISO - JIS - ANSI

DIN 960 (1987)	(M22)	M24	(M27)	M30	(M33)	M36	(M39)
Lengths ≤125mm	50	54	60	66	72	78	84
Lengths >125mm≤200mm	56	60	66	72	78	84	90
Lengths >200 mm	69	73	79	85	91	97	103
ISO 8765	(M22)	M24	(M27)	M30	(M33)	M36	(M39)
Lengths ≤125mm	50	54	60	66			
Lengths >125mm≤200mm	56	60	66	72	78	84	90
Lengths >200 mm	69	73	79	85	91	97	103

FOR MORE DETAILED INFORMATION, PLEASE REFER TO COMPLETE DIN, ISO, OR JIS STANDARD, WHICH ARE THE GOVERNING STANDARDS

DIN 960/961 (1987) / ISO 8765/8676 (1988) / JIS B1180 (1977) - LFG 10/01/2016 REVISED

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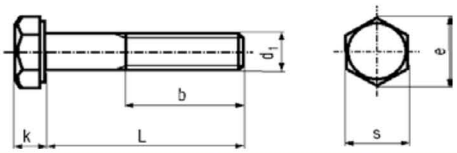
For Screws Not Fully Threaded, The Thread Length Shown Is Minimum



DIN 960 / ISO 8765 Partial Thread
DIN 961 / ISO 8675 Full Thread

Width Across Flats s	M42		(M45)		M48		(M52)		M56		(M60)		M64	
Fine Pitch	4		4		4		4		4		4		4	
Extra Fine Pitch	3		3		3		3		3		3		3	
Extra Extra Fine Pitch	2		2		2		2		2		2		2	
Standard	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
DIN 960/961 (1987)	63.1	65.0	68.1	70.0	73.1	75.0	78.1	80.0	82.8	85.0	87.8	90.0	92.8	95.0
ISO 8676/8765 (1988)	63.1	65.0	68.1	70.0	73.1	75.0	78.1	80.0	82.8	85.0	87.8	90.0	92.8	95.0
Head Height k	M42		(M45)		M48		(M52)		M56		(M60)		M64	
DIN 960/961 (1987)	25.58	26.42	27.58	28.42	29.58	30.42	32.50	33.50	34.50	35.50	37.50	38.50	39.50	40.50
ISO 8676/8765 (1988)	25.58	26.42	27.58	28.42	29.58	30.42	32.50	33.50	34.50	35.50	37.50	38.50	39.50	40.50

Comparable Thread Lengths For DIN - ISO - JIS - ANSI

DIN 960 (1987)	M42	(M45)	M48	(M52)	M56	(M60)	M64
Lengths ≤125mm	90	96	102				
Lengths >125mm≤200mm	96	102	108	116	124	132	140
Lengths >200 mm	109	115	121	129	137	145	153
ISO 8765	**M42**	**(M45)**	**M48**	**(M52)**	**M56**	**(M60)**	**M64**
Lengths ≤125mm							
Lengths >125mm≤200mm	96	102	108	116			
Lengths >200 mm	109	115	121	129	137	145	153

Property Class	8.8≤d 16mm		8.8≥d 16mm		10.9		
Tensile Strength	116000 psi		120350 psi		150800 psi		
Yield Strength	92800 psi		95700 psi		136300 psi		
Rockwell Hardness (HRC)	min.	max.	min.	max.	min.	max.	
	22	32	23	34	32	39	

Property Class	Steel 8.8 & 10.9
Finish	Furnace Black
Thread Tolerance	6g

Length Tolerance	DIN 960 / 961				ISO 8765 / 8675			
Product Grade	A		B		A		B	
Nominal Length L	min.	max.	min.	max.	min.	max.	min.	max.
35	34.500	35.500			34.50	35.50		
40	39.500	40.500			39.50	40.50		
45	44.500	45.500			44.50	45.50		
50	49.500	50.500			49.50	50.50		
55	54.400	55.600			54.40	55.60		
60	59.400	60.600			59.40	60.60		
65	64.400	65.600			64.40	65.60		
70	69.400	70.600			69.40	70.60		
(75)	74.400	75.600						
80	79.400	80.600			79.40	80.60		
(85)	84.300	85.700	83.25	86.75				
90	89.300	90.700	88.25	91.75	89.30	90.70	88.25	91.75
(95)	94.300	95.700	93.25	96.75				
100	99.300	100.700	98.25	101.75	99.30	100.70	98.25	100.75
110	109.300	110.700	108.25	111.75	109.30	110.70	108.25	111.75
120	119.300	120.700	118.25	121.75	119.30	120.70	118.25	121.75
130	129.200	130.800	128.00	132.00	129.20	130.80	128.00	132.00
140	139.200	140.800	138.00	142.00	139.20	140.80	138.00	142.00
150	149.200	150.800	148.00	152.00	149.20	150.80	148.00	152.00
160	159.200	160.800	158.00	162.00	159.20	160.80	158.00	162.00
(170)	169.200	170.800	168.00	172.00				
180	179.200	180.800	178.00	182.00	179.20	180.80	178.00	182.00
(190)	189.075	190.925	187.70	192.30				
200	199.075	200.925	197.70	202.30	199.08	200.92	197.70	202.30
220			217.70	222.30			217.70	222.30
240			237.70	242.30			237.70	242.30
260			257.40	262.60			257.40	262.60
280			277.40	282.60			277.40	282.60
300			297.40	302.60			297.40	302.60
320			317.15	322.85			317.15	322.85
340			337.15	342.85			337.15	342.85
360			357.15	362.85			357.15	362.85
380			377.15	382.85			377.15	382.85
400			397.15	402.85			397.15	402.85
420			416.85	423.15			416.85	423.15
440			436.85	443.15			436.85	443.15
460			456.85	463.15			456.85	463.15
480			476.85	483.15			476.85	483.15
500			496.85	503.15			496.85	503.15

JIS B 1180 Length Tolerance is the same as ISO 4014 / 4017 Product Grade A through 120 mm long.

Diameters & Lengths Shown in ( ) not recommended for new design.

The major difference between DIN, ISO and JIS is the smaller WAF.

The JIS standard for hex heads is only available in M8, M10, and M12.

With the exception of M8, M10, M12, M14 and M22, all standards are basically functional and interchangeable.

Width across corners (e) Is relative to Width Across Flats.

Thread tolerance for all standards is 6g before plating, and 6H after plating.

The DIN standard is still the most widely accepted standard worldwide except for the US Automotive Industry.

Some pitch / diameter combinations are only available in production quantities.

FOR MORE DETAILED INFORMATION, PLEASE REFER TO COMPLETE DIN, ISO, OR JIS STANDARD, WHICH ARE THE GOVERNING STANDARDS

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