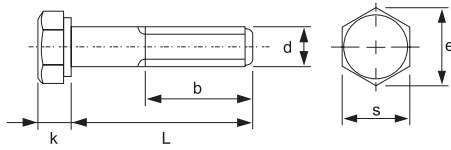


## Hexagon Head Bolt, Steel (Partial Threaded)

### Metric Series



### Product Specifications

Grade	8.8, 10.9
Standard	BS EN ISO 898
Specification	BS 3692 / BS 4190 / DIN 931 / ISO 4014
Finishing	Zinc Plated to ISO 4042 Hot Dip Galvanized to ISO 1461

### Mechanical & Physical Properties

Property Class	8.8		10.9
	d ≤ 16mm	d > 16mm	
Tensile Strength (N/mm <sup>2</sup> )	nom.	800	1000
	min.	800	830
Stress at 0.2% non - proportional elongation (N/mm <sup>2</sup> )	nom.	640	900
	min.	640	660

\* Refer to ISO898 for details

### Dimensions

	Nominal Size d	Nominal stress area (mm <sup>2</sup> )	Thread pitch (coarse)	Width across flats	Width across corners	Height of head	Diameter of unthreaded shank	Length of thread	Length of thread	Length of thread	Length range* L
				s max.	e min.	k max.	d max.	b L ≤ 25	b 125 < L ≤ 200	b L > 200	
BS 3692	M6	20.1	1.00	10.0	11.05	4.15	6.0	18	-	-	6-90
	M8	36.6	1.25	13.0	14.38	5.65	8.0	22	-	-	8-110
	M10	58	1.50	17.0	18.90	7.18	10.0	26	32	-	8-160
	M12	84.3	1.75	19.0	21.10	8.18	12.0	30	36	-	10-180
	M16	157	2.00	24.0	26.75	10.18	16.0	38	44	57	12-220
	M20	245	2.50	30.0	33.53	13.22	20.0	46	52	65	16-220
	M24	353	3.00	36.0	39.98	15.22	24.0	54	60	73	16-220
	M30	561	3.50	46.0	51.28	19.26	30.0	66	72	85	35-400
BS 4190	M6	20.1	1.00	10.0	10.89	4.24	6.0	18	24	-	12-140
	M8	36.6	1.25	13.0	14.20	5.74	8.0	22	28	-	12-140
	M10	58	1.50	17.0	18.72	7.29	10.0	26	32	-	12-190
	M12	84.3	1.75	19.0	20.88	8.29	12.0	30	36	49	16-280
	M16	157	2.00	24.0	26.17	10.29	16.0	38	44	57	25-280
	M20	245	2.50	30.0	32.95	13.35	20.0	46	52	65	25-280
	M24	353	3.00	36.0	39.55	15.35	24.0	54	60	73	30-280
	M30	561	3.50	46.0	50.85	19.42	30.0	66	72	85	35-500
DIN 931 / ISO 4014	M6	20.1	1.00	10.0	11.05	4.15/4.24	6.0	18	24	-	6-150
	M8	36.6	1.25	13.0	14.38	5.45/5.54	8.0	22	28	-	8-150
	M10	58	1.50	17.0/16.0	18.90/17.77	6.58/6.69	10.0	26	32	45	10-200
	M12	84.3	1.75	19.0/18.0	21.10/20.03	7.68/7.79	12.0	30	36	49	12-200
	M16	157	2.00	24.0	26.75	10.18/10.29	16.0	38	44	57	16-300
	M20	245	2.50	30.0	33.53	12.72/12.85	20.0	46	52	65	20-300
	M24	353	3.00	36.0	39.98	15.22/15.35	24.0	54	60	73	30-300
	M30	561	3.50	46.0	50.85	19.12	30.0	66	72	85	50-300
M36	817	4.00	55.0	60.79	22.92	36.0	78	84	97	50-300	

Standard length (L) in mm

6, 8, 10, 12, 14, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 100  
110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 220, 240, 260, 280, 300, 325, 350, 375, 400, 425, 450, 475, 500  
\* check stock length before order; other sizes and lengths available on request

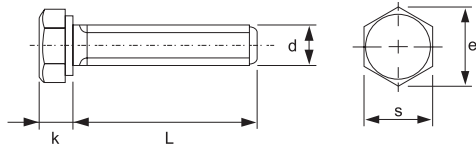
all unit in mm unless specified

### Ordering Example

Part No.	Description
M10X0050PBZP88	M10x50mm Partial Threaded Hexagon Head Bolt, Grade 8.8, Zinc Plated (ZP)
M10X0050PBHDG88	M10x50mm Partial Threaded Hexagon Head Bolt, Grade 8.8, Hot Dip Galvanized (HDG)

# Hexagon Head Bolt, Steel (Fully Threaded)

## Metric Series



### Product Specifications

Grade	8.8, 10.9
Standard	BS EN ISO 898
Specification	BS 3692 / BS 4190 / DIN 933 / ISO 4017
Finishing	Zinc Plated to ISO 4042 Hot Dip Galvanized to ISO 1461

### Mechanical & Physical Properties

Property Class	8.8		10.9
	d ≤ 16mm	d > 16mm	
Tensile Strength (N/mm <sup>2</sup> )	nom.	800	1000
	min.	800	1040
Stress at 0.2% non - proportional elongation (N/mm <sup>2</sup> )	nom.	640	900
	min.	640	940

\* Refer to ISO898 for details

### Dimensions

	Nominal Size	Nominal stress area	Thread pitch (coarse)	Width across flats	Width across corners	Height of head	Length range*
	d	(mm <sup>2</sup> )		s max.	e min.	k max.	L
BS 3692	M6	20.1	1.00	10.0	11.05	4.15	6-90
	M8	36.6	1.25	13.0	14.38	5.65	8-110
	M10	58	1.50	17.0	18.90	7.18	8-160
	M12	84.3	1.75	19.0	21.10	8.18	10-180
	M16	157	2.00	24.0	26.75	10.18	12-220
	M20	245	2.50	30.0	33.53	13.22	16-220
	M24	353	3.00	36.0	39.98	15.22	16-220
	M30	561	3.50	46.0	51.28	19.26	35-400
BS 4190	M6	20.1	1.00	10.0	10.89	4.24	12-140
	M8	36.6	1.25	13.0	14.20	5.74	12-140
	M10	58	1.50	17.0	18.72	7.29	12-190
	M12	84.3	1.75	19.0	20.88	8.29	16-280
	M16	157	2.00	24.0	26.17	10.29	25-280
	M20	245	2.50	30.0	32.95	13.35	25-280
	M24	353	3.00	36.0	39.55	15.35	30-280
	M30	561	3.50	46.0	50.85	19.42	35-500
DIN 933 / ISO 4017	M6	20.1	1.00	10.0	11.05	4.15	6-150
	M8	36.6	1.25	13.0	14.38	5.45	8-150
	M10	58	1.50	17.0/16.0	18.90/17.77	6.58	10-200
	M12	84.3	1.75	19.0/18.0	21.10/20.03	7.68	12-200
	M16	157	2.00	24.0	26.75	10.18	16-300
	M20	245	2.50	30.0	33.53	12.72	20-300
	M24	353	3.00	36.0	39.98	15.22	30-300
	M30	561	3.50	46.0	50.85	19.12	50-300
M36	817	4.00	55.0	60.79	22.92	50-300	

all unit in mm unless specified

Standard length (L) in mm

6, 8, 10, 12, 14, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 100  
110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 220, 240, 260, 280, 300, 325, 350, 375, 400, 425, 450, 475, 500

\* check stock length before order; other sizes and lengths available on request

### Ordering Example

Part No.	Description
M10X0050FBZP88	M10x50mm Fully Threaded Hexagon Head Bolt, Grade 8.8, Zinc Plated (ZP)
M10X0050FBHDG88	M10x50mm Fully Threaded Hexagon Head Bolt, Grade 8.8, Hot Dip Galvanized (HDG)