



## Unbrako Socket Low Head Cap Screws

Socket Low Head Cap Screws are high strength, precision fasteners, that are designed for applications where head height clearance is a problem. Typically, Low Heads are meant for a counterbored hole if you can't use the full thickness head, though using a low head versus a standard head is also dependent on design.



### PRODUCT ATTRIBUTES

Fillet under head increases fatigue life of head-to-shank junction.

Rolled threads with radiused root to increase fatigue life of threads by reducing stress concentrations and avoiding sharp corners where failures start.

Smooth, burr-free sockets, uniformly concentric and usable to full depth for correct wrench engagement.

Highest standards of quality, material, manufacture and performance.

### WHERE YOU WILL FIND OPPORTUNITY

Machine Building	Robotics & Automation
Stamping Presses	Mold Making
Tools Assembly	Aerospace
Petrochemical	Heavy Machinery
Military	Electronics

### THIS PRODUCT IS OFTEN CALLED...

Low Head Allen Screw  
Low Head Socket Screw

### ADDITIONAL UNBRAKO SOCKET PRODUCTS

Socket Head Cap Screws  
Socket Head Shoulder Screws  
Button Head Socket Screws  
Flat Head Countersunk Socket Screws  
Flange Button Head Socket Screws  
Hardened Ground Machine Dowel Pins  
Socket Set Screws  
Hexagon Wrenches  
Taper Pressure Plugs  
Pull Out Dowel Pins

### AVAILABLE VALUE ADDED SERVICES

Cross drilling and center drilling  
Custom plating

BACKED BY THE EARNEST

**Service**  
GUARANTEE

**The right part.  
The right quantity.  
On-time.  
Everytime.**

## UNBRAKO SOCKET LOW HEAD CAP SCREWS - INCH & METRIC

Unbrako Socket Low Head Cap Screws are manufactured in accordance with the latest revision of the following industry standards:

**ASME B18.3**

**DIN 7984/DIN 6912**

*(Except for Head & Socket Dims)*

## UNBRAKO SOCKET LOW HEAD CAP SCREWS - INCH Chemical Composition:

CARBON (C)	PHOSPHORUS (P)	SULFUR (S)
Min	Max	Max
0.33	0.035	0.040

### Alloy:

CONTAINS ONE OF THE FOLLOWING ALLOYS

Mn, Cr, Mo, Ni, V

### Hardness:

ROCKWELL HARDNESS

HRC 38/43

### Tensile Strength:

170,000 psi min

## Torque Tightening - Inch

THREAD SIZE	INSTALLATION TORQUE		TENSILE LOAD - MIN	
	UNRC	UNRF	UNRC	UNRF
Nominal	in-lb	in-lb	lbs	lbs
-	in-lb	in-lb	lbs	lbs
#8	25	27	2380	2500
#10	35	37	2980	3400
-	ft-lb	ft-lb	lbs	lbs
1/4	7	8	5410	6180
5/16	13	15	8910	9870
3/8	23	24	13200	14900
1/2	56	57	24100	27200

\*The specifications shown on this sheet are not intended to be used in the production of parts. Earnest Machine is not responsible or liable in any manner for any production errors and we certify the information present on this specification sheet is correct to the best of our knowledge.

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## THREADS

Inch: 3A UNRC and UNRF

Metric: 6g

## PLATING

Black Oxide

Custom plating available

## UNBRAKO SOCKET LOW HEAD CAP SCREWS - METRIC Chemical Composition:

CARBON (C)		PHOSPHORUS (P)	SULFUR (S)
Min	Max	Max	Max
0.20	0.55	0.035	0.035

### Alloy:

CONTAINS ONE OF THE FOLLOWING ALLOYS

Mn, Cr, Mo, Ni, V

### Hardness:

ROCKWELL HARDNESS

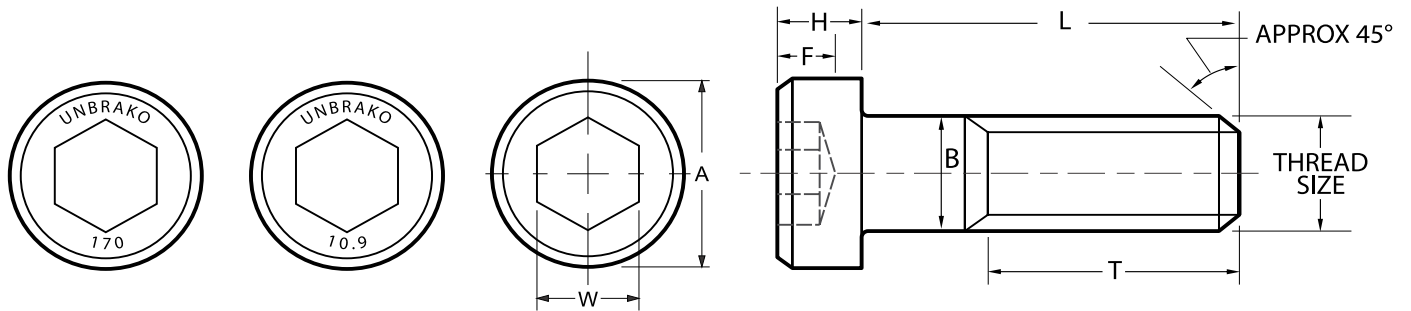
HRC 33/39

### Tensile Strength:

1040 MPa min

## Torque Tightening - Metric

THREAD SIZE	INSTALLATION TORQUE		TENSILE LOAD
	Nm	in-lb	kN
Nominal	Nm	in-lb	kN
M4	3.8	33.6	5.65
M5	8.0	70.8	9.20
-	Nm	ft-lb	kn
M6	13.0	10	13.00
M8	32.0	24	23.90
M10	64.0	47	38.00
M12	110.0	81	55.50
M16	275.0	203	105.00
M20	550.0	406	164.00

**UNBRAKO SOCKET LOW HEAD CAP SCREWS - INCH & METRIC DIMENSIONS**

**INCH DIMENSIONS**

SIZE NOMINAL	THREAD PITCH		HEAD DIAMETER (A)		BODY DIAMETER (B)	SOCKET SIZE (W)	HEAD HEIGHT (H)		SOCKET DEPTH (F)	THREAD LENGTH (T)
	UNRC	UNRF	MIN	MAX	MAX	MAX	MAX	MIN	MIN	MIN
#8	32	36	0.270	0.265	0.1640	0.0781	0.085	0.079	0.060	0.875
#10	24	32	0.312	0.307	0.1900	0.0938	0.098	0.092	0.072	0.875
1/4	20	28	0.375	0.369	0.2500	0.1250	0.127	0.121	0.094	1.000
5/16	18	24	0.437	0.431	0.3125	0.1562	0.158	0.152	0.110	1.125
3/8	16	24	0.562	0.556	0.3750	0.1875	0.192	0.182	0.115	1.250
1/2	13	20	0.750	0.743	0.5000	0.2500	0.254	0.244	0.151	1.500

**METRIC DIMENSIONS**

SIZE NOMINAL	THREAD PITCH	HEAD DIAMETER (A)		BODY DIAMETER (B)	SOCKET SIZE (W)	HEAD HEIGHT (H)		SOCKET DEPTH (F)	THREAD LENGTH (T)
	COARSE	MAX	MIN	MAX	MAX	MAX	MIN	MIN	MIN
M4	0.70	7	6.78	4.0	3	2.8	2.65	1.48	20
M5	0.80	8.5	8.28	5.0	4	3.5	3.35	1.85	22
M6	1.00	10	9.78	6.0	5	4.0	3.85	2.09	24
M8	1.25	13	12.73	8.0	6	5.0	4.85	2.48	28
M10	1.50	16	15.73	10.0	8	6.5	6.25	3.36	32
M12	1.75	18	17.73	12.0	10	8.0	8.75	4.26	36
M16	2.00	24	23.67	16.0	12	10.0	9.75	4.76	44
M20	2.50	30	29.97	20.0	14	12.5	12.25	6.07	52

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## Unbrako Socket Low Head Cap Screws - Inch

SIZE	THREAD	PITCH	MATERIAL	FINISH	UNBRAKO PART #	EARNEST PART #
#8-323x8	Full	Coarse	Alloy Steel	Black Oxide	100598	964078
#8-32x1/2	Full	Coarse	Alloy Steel	Black Oxide	100619	964072
#8-32x5/8	Full	Coarse	Alloy Steel	Black Oxide	100671	964081
#8-32x3/4	Full	Coarse	Alloy Steel	Black Oxide	100573	964075

#10-24x3/8	Full	Coarse	Alloy Steel	Black Oxide	100556	964054
#10-24x1/2	Full	Coarse	Alloy Steel	Black Oxide	100579	964048
#10-24x5/8	Full	Coarse	Alloy Steel	Black Oxide	100505	964057
#10-24x3/4	Full	Coarse	Alloy Steel	Black Oxide	100717	964051
#10-24x1	Full	Coarse	Alloy Steel	Black Oxide	100623	964045

#10-32x3/8	Full	Fine	Alloy Steel	Black Oxide	100575	964066
#10-32x1/2	Full	Fine	Alloy Steel	Black Oxide	100541	964060
#10-32x5/8	Full	Fine	Alloy Steel	Black Oxide	100542	964069
#10-32x3/4	Full	Fine	Alloy Steel	Black Oxide	100718	964063

1/4-20x3/8	Full	Coarse	Alloy Steel	Black Oxide	100506	964009
1/4-20x1/2	Full	Coarse	Alloy Steel	Black Oxide	100607	964003
1/4-20x5/8	Full	Coarse	Alloy Steel	Black Oxide	100507	964012
1/4-20x3/4	Full	Coarse	Alloy Steel	Black Oxide	100508	964006
1/4-20x1	Full	Coarse	Alloy Steel	Black Oxide	100719	964000

5/16-18x1/2	Full	Coarse	Alloy Steel	Black Oxide	100720	964024
5/16-18x3/4	Full	Coarse	Alloy Steel	Black Oxide	100543	964027
5/16-18x1	Full	Coarse	Alloy Steel	Black Oxide	100620	964015
5/16-18x1-1/4	Full	Coarse	Alloy Steel	Black Oxide	100686	964018
5/16-18x1-1/2	Full	Coarse	Alloy Steel	Black Oxide	100544	964021

3/8-16x1/2	Full	Coarse	Alloy Steel	Black Oxide	100608	964039
3/8-16x3/4	Full	Coarse	Alloy Steel	Black Oxide	100609	964042
3/8-16x1	Full	Coarse	Alloy Steel	Black Oxide	100509	964030
3/8-16x1-1/4	Full	Coarse	Alloy Steel	Black Oxide	100613	964033
3/8-16x1-1/2	Full	Coarse	Alloy Steel	Black Oxide	100565	964036

## Unbrako Socket Low Head Cap Screws - Metric

SIZE	THREAD	PITCH	CLASS	FINISH	UNBRAKO PART #	EARNEST PART #
M4-0.7x8	Full	Coarse	ISO 10.9	Black Oxide	106250	964168
M4-0.7x10	Full	Coarse	ISO 10.9	Black Oxide	106251	964171
M4-0.7x12	Full	Coarse	ISO 10.9	Black Oxide	106255	964174
M4-0.7x16	Full	Coarse	ISO 10.9	Black Oxide	106256	964177
M4-0.7x20	Full	Coarse	ISO 10.9	Black Oxide	106257	964180
M4-0.7x25	Full	Coarse	ISO 10.9	Black Oxide	106260	964183
M4-0.7x30	Partial	Coarse	ISO 10.9	Black Oxide	406185	964186

M5-0.8x8	Full	Coarse	ISO 10.9	Black Oxide	106262	964189
M5-0.8x10	Full	Coarse	ISO 10.9	Black Oxide	103500	964192
M5-0.8x12	Full	Coarse	ISO 10.9	Black Oxide	103501	964195
M5-0.8x15	Full	Coarse	ISO 10.9	Black Oxide	400790	964198
M5-0.8x16	Full	Coarse	ISO 10.9	Black Oxide	103502	964201
M5-0.8x20	Full	Coarse	ISO 10.9	Black Oxide	103597	964204
M5-0.8x25	Full	Coarse	ISO 10.9	Black Oxide	103503	964207
M5-0.8x30	Partial	Coarse	ISO 10.9	Black Oxide	103505	964210

M6-1x8	Full	Coarse	ISO 10.9	Black Oxide	106263	964213
M6-1x10	Full	Coarse	ISO 10.9	Black Oxide	103508	964216
M6-1x12	Full	Coarse	ISO 10.9	Black Oxide	103509	964219
M6-1x15	Full	Coarse	ISO 10.9	Black Oxide	400792	964222
M6-1x16	Full	Coarse	ISO 10.9	Black Oxide	103511	964225
M6-1x20	Full	Coarse	ISO 10.9	Black Oxide	103512	964228
M6-1x25	Full	Coarse	ISO 10.9	Black Oxide	103515	964231
M6-1x30	Full	Coarse	ISO 10.9	Black Oxide	103516	964234
M6-1x35	Partial	Coarse	ISO 10.9	Black Oxide	103517	964237
M6-1x40	Partial	Coarse	ISO 10.9	Black Oxide	103518	964240
M6-1x45	Partial	Coarse	ISO 10.9	Black Oxide	106264	964243

M8-1.25x12	Full	Coarse	ISO 10.9	Black Oxide	103519	964246
M8-1.25x15	Full	Coarse	ISO 10.9	Black Oxide	400791	964249
M8-1.25x16	Full	Coarse	ISO 10.9	Black Oxide	103520	964252
M8-1.25x20	Full	Coarse	ISO 10.9	Black Oxide	103521	964255
M8-1.25x25	Full	Coarse	ISO 10.9	Black Oxide	103525	964258
M8-1.25x30	Full	Coarse	ISO 10.9	Black Oxide	103526	964261
M8-1.25x35	Full	Coarse	ISO 10.9	Black Oxide	103528	964264
M8-1.25x40	Partial	Coarse	ISO 10.9	Black Oxide	103529	964267

## Unbrako Socket Low Head Cap Screws - Metric

SIZE	THREAD	PITCH	CLASS	FINISH	UNBRAKO PART #	EARNEST PART #
M10-1.5x16	Full	Coarse	ISO 10.9	Black Oxide	103532	964084
M10-1.5x20	Full	Coarse	ISO 10.9	Black Oxide	103533	964087
M10-1.5x25	Full	Coarse	ISO 10.9	Black Oxide	103534	964090
M10-1.5x30	Full	Coarse	ISO 10.9	Black Oxide	103535	964093
M10-1.5x35	Full	Coarse	ISO 10.9	Black Oxide	103536	964096
M10-1.5x40	Full	Coarse	ISO 10.9	Black Oxide	103538	964099
M10-1.5x45	Partial	Coarse	ISO 10.9	Black Oxide	106271	964102
M10-1.5x50	Partial	Coarse	ISO 10.9	Black Oxide	103541	964105
M10-1.5x55	Partial	Coarse	ISO 10.9	Black Oxide	106272	964108

M12-1.75x20	Full	Coarse	ISO 10.9	Black Oxide	103549	964111
M12-1.75x25	Full	Coarse	ISO 10.9	Black Oxide	103550	964114
M12-1.75x30	Full	Coarse	ISO 10.9	Black Oxide	103551	964117
M12-1.75x35	Full	Coarse	ISO 10.9	Black Oxide	103552	964120
M12-1.75x40	Full	Coarse	ISO 10.9	Black Oxide	103553	964123
M12-1.75x50	Partial	Coarse	ISO 10.9	Black Oxide	103554	964126
M12-1.75x60	Partial	Coarse	ISO 10.9	Black Oxide	103555	964129

M16-2x30	Full	Coarse	ISO 10.9	Black Oxide	103562	964132
M16-2x35	Full	Coarse	ISO 10.9	Black Oxide	103563	964135
M16-2x40	Full	Coarse	ISO 10.9	Black Oxide	103564	964138
M16-2x45	Full	Coarse	ISO 10.9	Black Oxide	106277	964141
M16-2x50	Full	Coarse	ISO 10.9	Black Oxide	103565	964144
M16-2x60	Partial	Coarse	ISO 10.9	Black Oxide	103566	964147
M16-2x90	Partial	Coarse	ISO 10.9	Black Oxide	103574	964150
M16-2x100	Partial	Coarse	ISO 10.9	Black Oxide	103575	964153

M20-2.5x40	Full	Coarse	ISO 10.9	Black Oxide	103578	964156
M20-2.5x50	Full	Coarse	ISO 10.9	Black Oxide	103580	964159
M20-2.5x60	Full	Coarse	ISO 10.9	Black Oxide	103581	964162
M20-2.5x100	Partial	Coarse	ISO 10.9	Black Oxide	103599	964165