



## Unbrako Flange Button Head Socket Screws

The larger bearing area under the Unbrako Flange Button Head makes this suitable for softer material such as aluminum, brass, copper, bronze, etc. These screws allow the covering of large diameter holes making them ideal for installing joining strips, cover plates, and sheet metal housings.

### PRODUCT ATTRIBUTES

Flange Button Head has a streamlined appearance suitable for cover plates and sheet metal housings.

Precision forged head for continuous grain flow and maximum strength.

Radiused root runout increases fatigue life.

Fully formed radiused threads rolled to maintain continuous grain flow for greater tensile & fatigue strength.

Flange Head distributes greater load.

### WHERE YOU WILL FIND OPPORTUNITY

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

### THIS PRODUCT IS OFTEN CALLED...

Flange Button Head Screw  
 Flange Button Socket Screw  
 Hex Socket Flange Button Head Cap Screw  
 Button Head Flange Screw

**Unbrako.**



### ADDITIONAL UNBRAKO SOCKET PRODUCTS

Socket Head Cap Screws  
 Socket Low Head Cap Screws  
 Socket Head Shoulder Screws  
 Button Head Socket Screws  
 Flat Head Countersunk 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 FLANGE BUTTON HEAD SOCKET SCREWS - INCH & METRIC

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

**INCH** ASME B18.3

**METRIC** ISO 7380  
ASME B18.3.4M

## UNBRAKO FLANGE BUTTON HEAD SOCKET SCREWS - INCH

### Chemical Composition:

CARBON (C)		PHOSPHORUS (P)	SULFUR (S)
Min	Max	Max	Max
0.30	0.48	0.035	0.040

### Alloy:

CONTAINS ONE OF THE FOLLOWING ALLOYS
Mn, Cr, Mo, Ni, V

### Hardness:

ROCKWELL HARDNESS
HRC 40/43

### Tensile Strength:

160,000 psi min
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## Torque Tightening - Inch

THREAD SIZE	INSTALLATION TORQUE		TENSILE LOAD - MIN	
	UNRC	UNRF	UNRC	UNRF
Nominal	in-lb	in-lb	lbs	lbs
-				
#4	8.9	10	960	1040
#5	13.0	14	1120	1280
#6	16.0	19	1440	1620
#8	30.0	32	2220	2240
#10	44.0	51	2780	3180
1/4	100.0	120	5070	5790
5/16	210.0	240	8350	9250
3/8	380.0	430	12400	14000
7/16	600.0	680	16900	18900
1/2	930.0	1050	22800	25600
5/8	1800.0	2000	36000	40800
3/4	3200.0	3560	53200	59300

## THREADS

Thread acceptance per ASME B1.3 System 21

**INCH** Thread requirements per ASME B1.1  
Class 3A

**METRIC** Thread requirements per ISO 261  
Class 5g6g

## PLATING

Black Oxide

Custom plating available

## UNBRAKO FLANGE BUTTON HEAD SOCKET SCREWS - METRIC

### Chemical Composition:

CARBON (C)		PHOSPHORUS (P)	SULFUR (S)
Min	Max	Max	Max
0.20	0.50	0.035	0.035

### Alloy:

CONTAINS ONE OF THE FOLLOWING ALLOYS
Mn, Cr, Mo, Ni, V

### Hardness:

ROCKWELL HARDNESS
HRC 39/44

### Tensile Strength:

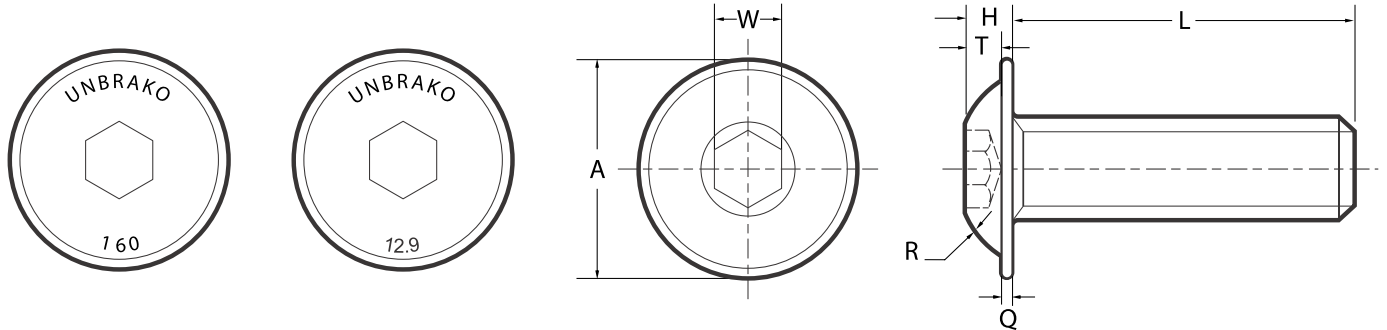
1040 MPa min
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## Torque Tightening - Metric

THREAD SIZE	INSTALLATION TORQUE		TENSILE LOAD
	Nm	in-lb	kN
Nominal			
M3	1.96	18	5.23
M4	4.52	40	9.13
M5	9.08	80	14.77
M6	15.40	138	20.90
M8	36.80	330	38.06
M10	72.30	650	60.32
M12	126.00	1134	87.67

\*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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**UNBRAKO FLANGE BUTTON HEAD SOCKET SCREWS - INCH & METRIC DIMENSIONS**

**INCH DIMENSIONS**

SIZE NOMINAL	THREADS PER INCH		HEAD DIAMETER (A)	HEX SOCKET SIZE (W)	HEAD HEIGHT (H)	SOCKET DEPTH (T)	FLANGE THICKNESS (Q)	HEAD RADIUS (R)
	UNC	UNF	MAX	MIN	MAX	MIN	MAX	NOM
#4	40	48	0.240	0.0625	0.059	0.035	0.025	0.140
#6	32	40	0.292	0.0781	0.073	0.044	0.028	0.163
#8	32	36	0.357	0.0937	0.087	0.052	0.031	0.190
#10	24	32	0.407	0.1250	0.101	0.070	0.036	0.218
1/4	20	28	0.560	0.1562	0.132	0.087	0.046	0.254
5/16	18	24	0.680	0.1875	0.166	0.105	0.058	0.314
3/8	16	24	0.810	0.2187	0.199	0.122	0.069	0.373
1/2	13	20	1.070	0.3125	0.265	0.175	0.094	0.486

**METRIC DIMENSIONS**

SIZE NOMINAL	THREADS PER INCH	HEAD DIAMETER (A)	HEX SOCKET SIZE (W)	HEAD HEIGHT (H)	SOCKET DEPTH (T)	FLANGE THICKNESS (Q)	HEAD RADIUS (R)
	COARSE	MAX	MIN	MAX	MIN	MAX	NOM
M3	0.50	7.12	2.0	1.65	1.05	0.70	3.00
M4	0.70	9.29	2.5	2.20	1.35	0.80	4.20
M5	0.80	11.40	3.0	2.75	1.92	0.90	5.20
M6	1.00	13.59	4.0	3.30	2.08	1.20	5.60
M8	1.25	17.00	5.0	4.40	2.75	1.30	7.50
M10	1.50	20.80	6.0	5.50	3.35	1.75	10.00
M12	1.75	24.69	8.0	6.60	4.16	2.40	11.00

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## Unbrako Flange Button Head Socket Screws - Inch

SIZE	THREAD	PITCH	MATERIAL	FINISH	UNBRAKO PART #	EARNEST PART #
#8-32x1/4	Full	Coarse	Alloy Steel	Black Oxide	116376	960285
#8-32x3/8	Full	Coarse	Alloy Steel	Black Oxide	116379	960294
#8-32x1/2	Full	Coarse	Alloy Steel	Black Oxide	116381	960279

#10-24x3/8	Full	Coarse	Alloy Steel	Black Oxide	116391	960201
#10-24x1/2	Full	Coarse	Alloy Steel	Black Oxide	116393	960186
#10-24x5/8	Full	Coarse	Alloy Steel	Black Oxide	116395	960210
#10-24x3/4	Full	Coarse	Alloy Steel	Black Oxide	116398	960198

#10-32x3/8	Full	Coarse	Alloy Steel	Black Oxide	116392	960237
#10-32x1/2	Full	Coarse	Alloy Steel	Black Oxide	116394	960222
#10-32x5/8	Full	Coarse	Alloy Steel	Black Oxide	116397	960240
#10-32x3/4	Full	Coarse	Alloy Steel	Black Oxide	116400	960228

1/4-20x3/8	Full	Coarse	Alloy Steel	Black Oxide	116406	960027
1/4-20x1/2	Full	Coarse	Alloy Steel	Black Oxide	116408	960015
1/4-20x3/4	Full	Coarse	Alloy Steel	Black Oxide	116413	960021
1/4-20x1	Full	Coarse	Alloy Steel	Black Oxide	116418	960000

5/16-18x3/8	Full	Coarse	Alloy Steel	Black Oxide	116421	960081
5/16-18x1/2	Full	Coarse	Alloy Steel	Black Oxide	116423	960069
5/16-18x5/8	Full	Coarse	Alloy Steel	Black Oxide	116425	960087
5/16-18x3/4	Full	Coarse	Alloy Steel	Black Oxide	116427	960075
5/16-18x1	Full	Coarse	Alloy Steel	Black Oxide	116432	960060

3/8-16x1/2	Full	Coarse	Alloy Steel	Black Oxide	116434	960129
3/8-16x3/4	Full	Coarse	Alloy Steel	Black Oxide	116439	960135
3/8-16x1	Full	Coarse	Alloy Steel	Black Oxide	116444	960111
3/8-16x1 1/4	Full	Coarse	Alloy Steel	Black Oxide	116446	960117



## Unbrako Flange Button Head Socket Screws - Metric

SIZE	THREAD	PITCH	CLASS	FINISH	UNBRAKO PART #	EARNEST PART #
M3-0.5x6	Full	Coarse	ISO 12.9	Black Oxide	404977	960360

M4-0.7x8	Full	Coarse	ISO 12.9	Black Oxide	404982	960381
M4-0.7x10	Full	Coarse	ISO 12.9	Black Oxide	400983	960387
M4-0.7x12	Full	Coarse	ISO 12.9	Black Oxide	404984	960393
M4-0.7x16	Full	Coarse	ISO 12.9	Black Oxide	404986	960402

M5-0.8x10	Full	Coarse	ISO 12.9	Black Oxide	404988	960414
M5-0.8x12	Full	Coarse	ISO 12.9	Black Oxide	404989	960420
M5-0.8x16	Full	Coarse	ISO 12.9	Black Oxide	404991	960429
M5-0.8x20	Full	Coarse	ISO 12.9	Black Oxide	404992	960438
M5-0.8x25	Full	Coarse	ISO 12.9	Black Oxide	404994	960447

M6-1x10	Full	Coarse	ISO 12.9	Black Oxide	180079	960459
M6-1x12	Full	Coarse	ISO 12.9	Black Oxide	404997	960465
M6-1x16	Full	Coarse	ISO 12.9	Black Oxide	404999	960474
M6-1x20	Full	Coarse	ISO 12.9	Black Oxide	405001	960483
M6-1x25	Full	Coarse	ISO 12.9	Black Oxide	405003	960489
M6-1x30	Full	Coarse	ISO 12.9	Black Oxide	405004	960495

M8-1.25x10	Full	Coarse	ISO 12.9	Black Oxide	405005	960501
M8-1.25x12	Full	Coarse	ISO 12.9	Black Oxide	405007	960507
M8-1.25x16	Full	Coarse	ISO 12.9	Black Oxide	405009	960516
M8-1.25x20	Full	Coarse	ISO 12.9	Black Oxide	405011	960522
M8-1.25x25	Full	Coarse	ISO 12.9	Black Oxide	405012	960528
M8-1.25x30	Full	Coarse	ISO 12.9	Black Oxide	405013	960534
M8-1.25x40	Full	Coarse	ISO 12.9	Black Oxide	405015	960543

M10-1.5x16	Full	Coarse	ISO 12.9	Black Oxide	405016	960306
M10-1.5x20	Full	Coarse	ISO 12.9	Black Oxide	405017	960312
M10-1.5x25	Full	Coarse	ISO 12.9	Black Oxide	405018	960318
M10-1.5x30	Full	Coarse	ISO 12.9	Black Oxide	405019	960324