



Socket & Allied

SCREWS LTD.

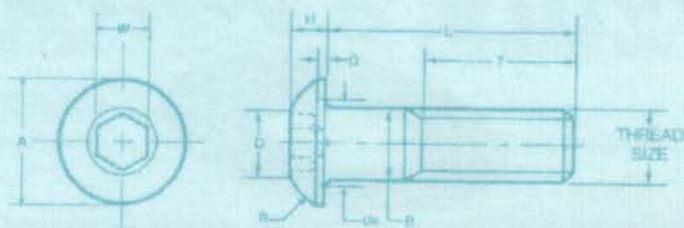


SAS

TECHNICAL GUIDE



- *Dimensional Tables*
- *Fractional / Decimal / Metric / Imperial*
- *Basic Socket Screw Dimensions*
- *Hardness Comparison Tables*
- *Material Comparisons*
- *and much, much more.....*



First Edition

**Socket Cap Screws
Metric**

THR D	PITCH	HEAD	HEAD	SKT	SKT	MIN
SIZE	(T.P.I.)	HGT	DIA	A/F	DPTH	T.L.
M1.6	0.35	1.6	3.0	1.5	0.7	15
M2	0.4	2.0	3.8	1.5	1.0	16
M2.5	0.45	2.5	4.5	2.0	1.1	17
M3	0.5	3.0	5.5	2.5	1.3	18
M4	0.7	4.0	7.0	3.0	2.0	20
M5	0.8	5.0	8.5	4.0	2.5	22
M6	1.0	6.0	10.0	5.0	3.0	24
M8	1.25	8.0	13.0	6.0	4.0	28
M10	1.5	10.0	16.0	8.0	5.0	32
M12	1.75	12.0	18.0	10.0	6.0	36
M14	2.0	14.0	21.0	12.0	7.0	40
M16	2.0	16.0	24.0	14.0	8.0	44
M20	2.5	20.0	30.0	17.0	10.0	52
M24	3.0	24.0	36.0	19.0	12.0	60
M30	3.5	30.0	45.0	22.0	15.5	72
M36	4.0	36.0	54.0	27.0	19.0	84
M42	4.5	42.0	63.0	32.0	24.0	96
M48	5.0	48.0	72.0	36.0	28.0	108
M56	5.5	56.0	84.0	41.0	34.0	124
M64	6.0	64.0	96.0	46.0	38.0	140

actual max max nom min min

*Dimensions in millimetres.

We carry tooling to produce Fine and Extra Fine Pitch Threads on all

These dimensions are for use as guide purposes only

Metric Low Head Cap Screws - Din 7984

THRDR	PITCH	HEAD	HEAD	SKT	SKT	MIN
SIZE	(T.P.I.)	HGT	DIA	A/F	DPTH	T.L.
M3	0.50	2.3	5.5	2.0	2.0	18
M4	0.70	2.8	7.0	2.5	2.3	20
M5	0.80	3.5	8.5	3.0	2.7	22
M6	1.00	4.0	10.0	4.0	3.0	24
M8	1.25	5.0	13.0	5.0	4.2	28
M10	1.50	6.0	16.0	7.0	4.8	32
M12	1.75	7.0	18.0	8.0	5.3	36
M14	2.00	8.0	21.0	10.0	5.5	40
M16	2.00	9.0	24.0	12.0	5.5	44
M18	2.50	10.0	27.0	12.0	7.5	48
M20	2.50	11.0	30.0	14.0	7.5	52
M22	2.50	12.0	33.0	14.0	8.0	56
M24	3.00	13.0	36.0	17.0	8.0	60
M27	3.00	15.0	40.0	17.0	9.0	66

actual max max nom min min

Metric Low Head Cap Screws - Din 6912

THRDR	PITCH	HEAD	HEAD	SKT	SKT	PILOT	PILOT	MIN
SIZE	(T.P.I.)	HGT	DIA	A/F	DPTH	DIA	DPTH	T.L.
M4	0.70	2.8	7.0	3.0	1.6	2.0	3.0	20
M5	0.80	3.5	8.5	4.0	2.0	2.5	4.0	22
M6	1.00	4.0	10.	5.0	2.5	3.0	5.0	24
M8	1.25	5.0	13.0	6.0	3.0	4.0	5.5	28
M10	1.50	6.5	16.0	8.0	3.5	5.0	7.5	32
M12	1.75	7.5	18.0	10.0	4.0	6.0	9.0	36
M14	2.00	8.5	21.0	12.0	4.5	7.0	10.0	40
M16	2.00	10.0	24.0	14.0	5.5	8.0	11.5	44
M18	2.50	11.0	27.0	14.0	6.0	8.0	12.5	48
M20	2.50	12.0	30.0	17.0	6.5	10.0	14.0	52
M22	2.50	13.0	33.0	17.0	7.0	10.0	15.0	56
M24	3.00	14.0	36.0	19.0	7.0	12.0	16.0	60
M27	3.00	16.0	40.0	19.0	8.5	12.0	17.0	66

actual max max nom nom nom min min

These dimensions are for use as guide purposes only

**Metric Socket Countersunk Dimensions
90 Degree Head Diameter**

THRD	PITCH	HEAD	HEAD	SKT	SKT	MIN
SIZE	(T.P.I.)	HGT	DIA	A/F	DPTH	T.L.
M3	0.50	1.86	5.54	2.0	1.1	18
M4	0.70	2.48	7.53	2.5	1.5	20
M5	0.80	3.10	9.43	3.0	1.9	22
M6	1.00	3.72	11.34	4.0	2.2	24
M8	1.25	4.96	15.24	5.0	3.0	28
M10	1.50	6.20	19.22	6.0	3.6	32
M12	1.75	7.44	23.12	8.0	4.3	36
M14	2.00	8.40	26.52	10.0	4.5	40
M16	2.00	8.80	29.01	10.0	4.8	44
M18	2.5	9.40	32.53	10.0	5.2	48
M20	2.5	10.16	36.05	12.0	5.6	52

actual max min nom min min

The head angle can now differ between 90 and 60 Degree

Below are dimensions to be used as a guide only

**Metric Socket Countersunk Dimensions
90 Degree Head Diameter**

THD	PITCH	HEAD	HEAD	SKT	SKT	MIN
SIZE	(T.P.I.)	HGT	DIA	A/F	DPTH	T.L.
M24	3.0	11.50	45.00	14.00	6.36	60
M30	3.5	14.75	53.00	17.00	7.65	72

actual ref actual nom min min

**Metric Socket Countersunk Dimensions
60 Degree Head Diameter**

THD	PITCH	HEAD	HEAD	SKT	SKT	MIN
SIZE	(T.P.I.)	HGT	DIA	A/F	DPTH	T.L.
M24	3.0	14.22	39.00	14.00	10.20	60
M30	3.5	21.65	48.00	17.00	12.00	72

actual ref actual nom min min

These dimensions are for use as guide purposes only

Socket Button Head Screws - Metric

THRDR	PITCH	HEAD	HEAD	SKT	SKT	MIN
SIZE	(T.P.I.)	HGT	DIA	A/F	DPTH	T.L.
M3	0.5	1.65	5.70	2.00	1.04	18.00
M4	0.7	2.20	7.60	2.50	1.30	20.00
M5	0.8	2.75	9.50	3.00	1.56	22.00
M6	1.0	3.30	10.50	4.00	2.08	24.00
M8	1.25	4.40	14.00	5.00	2.60	28.00
M10	1.5	5.50	17.50	6.00	3.12	32.00
M12	1.75	6.60	21.00	8.00	4.16	36.00
M14	2.0	7.70	24.5	8.00	4.67	40.00
M16	2.0	8.80	28.00	10.00	5.20	44.00
M20	2.5	11.0	35.00	12.00	6.40	52.00
M24	3.0	13.2	42.00	14.00	7.70	60.00

actual max max nom min min

Socket Set Screws - Metric

THRDR	PITCH	SKT	SKT	CUP	DOG	H.DOG	F.DOG	FLAT
SIZE	(T.P.I.)	A/F	DPTH	DIA	DIA	LTH	LTH	DIA
M1.6	0.35	0.7	1.5	0.8	0.8	0.65	1.05	0.8
M2	0.4	0.9	1.7	1.0	1.0	0.75	1.25	1.0
M2.5	0.45	1.3	2.0	1.2	1.5	0.88	1.50	1.5
M3	0.5	1.5	2.0	1.4	2.0	1.00	1.75	2.0
M4	0.7	2.0	2.5	2.0	2.5	1.25	2.25	2.5
M5	0.8	2.5	3.0	2.5	3.5	1.50	2.75	3.5
M6	1.0	3.0	3.5	3.0	4.0	1.75	3.25	4.0
M8	1.25	4.0	5.0	5.0	5.5	2.25	4.30	5.5
M10	1.5	5.0	6.0	6.0	7.0	2.75	5.30	7.0
M12	1.75	6.0	8.0	8.0	8.5	3.25	6.30	8.5
M14	2.0	6.0	9.0	9.0	10.0	3.75	7.30	10.0
M16	2.0	8.0	10.0	10.0	12.0	4.30	8.36	12.0
M20	2.5	10.0	12.0	14.0	15.0	5.30	10.36	15.0
M24	3.0	12.0	15.0	16.0	18.0	6.30	12.43	18.0

actual nom min max max max max max

These dimensions are for use as guide purposes only

**Socket Shoulder Screws
Metric**

NOM	MAX	MIN	THRD	NOM	SKT	SKT	HEAD	HEAD
DIA.	DIA	DIA	DIA	T.L.	DPTH	A/F	DIA	HGT
4	3.99	3.96	M3	7.0	1.8	2.0	8.0	3.5
5	4.99	4.96	M4	8.0	2.1	2.5	8.5	4.0
6	5.99	5.96	M5	9.5	2.4	3.0	10.0	4.5
8	7.987	7.951	M6	11.0	3.3	4.0	13.0	5.5
10	9.987	9.951	M8	13.0	4.2	5.0	16.0	7.0
12	11.984	11.941	M10	16.0	4.9	6.0	18.0	9.0
16	15.984	15.941	M12	18.0	6.6	8.0	24.0	11.0
20	19.980	19.928	M16	22.0	8.8	10.0	30.0	14.0
24	23.980	23.928	M20	27.0	10.0	12.0	36.0	16.0

max min nom nom min nom max max

Please remember that when ordering or enquiring for Socket Shoulder Screws, to state the Body Diameter followed by the Thread Diameter followed by the Shoulder Length.

We carry an extensive range of both Imperial and Metric Socket Shoulder Screws in Stainless Steel.

These dimensions are for use as guide purposes only

Socket Pressure Plugs - Metric

THRD	PITCH	SKT	SKT	SKT	O/ALL	WALL	END
SIZE	(T.P.I.)	A/F	A/C	DPTH	LTH	THICK	DIA
M8	1.0	4	4.6	4	8	2	7.350
M10	1.0	5	5.7	4	8	2	9.350
M12	1.5	6	6.9	5	10	2	11.026
M14	1.5	7	8	5	10	2	13.026
M16	1.5	8	9.2	5	10	2	15.026
M18	1.5	8	9.2	5	10	2	17.026
M20	1.5	10	11.4	5	10	2	19.026
M22	1.5	10	11.4	5	10	2	21.026
M24	1.5	12	13.7	6	12	2	23.026
M26	1.5	12	13.7	6	12	2	25.026
M27	2.0	12	13.7	6	12	2	26.026
M30	1.5	17	19.4	6	12	2	29.026
M30	2.0	17	19.4	6	12	2	29.026

actual nom nom min nom min basic

* Dimensions based on Din 906 Type.

Square Head Set Screws - Metric

THRD	PITCH	HEAD	HEAD	CUP	DOG	H.DOGE	F.DOGE
SIZE	(T.P.I.)	A/F	HGT	DIA	DIA	LTH	LTH
M5	0.80	5.0	5.0	2.5	3.5	1.50	2.75
M6	1.00	6.0	6.0	3.0	4.0	1.75	3.25
M8	1.25	8.0	8.0	5.0	5.5	2.25	4.30
M10	1.50	10.0	10.0	6.0	7.0	2.75	5.30
M12	1.75	12.0	12.0	8.0	8.5	3.25	6.30
M14	2.00	14.0	14.0	9.0	10.0	3.75	7.30
M16	2.00	16.0	16.0	10.0	12.0	4.30	8.36
M18	2.50	18.0	18.0	12.0	13.5	5.30	10.36
M20	2.50	20.0	20.0	14.0	15.0	6.30	12.43
M24	3.00	24.0	24.0	18.0	18.0	8.30	17.40

actual max max max max max max

* Dimensions based on Din 479 and similar.

These dimensions are for use as guide purposes only

1936 Series Socket Cap Screws (Unified)

UNC (Unified National Course) / **UNF** (Unified National Fine)

THRD	UNC	UNF	HEAD	HEAD	SKT	SKT	MIN
SIZE	PITCH	PITCH	HGT	DIA	A/F	DPTH	T.L.
No.3	48	56	.099	.161	5/64	.044	.625
No.4	40	48	.112	.183	5/64	.051	.750
No.5	40	44	.125	.205	3/32	.057	.750
No.6	32	40	.138	.226	3/32	.064	.750
No.8	32	36	.164	.270	1/8	.077	.875
No.10	24	32	.190	.312	5/32	.090	.875
1/4	20	28	.250	.375	3/16	.120	1.00
5/16	18	24	.312	.437	7/32	.151	1.125
3/8	16	24	.375	.562	5/16	.182	1.250
7/16	14	20	.437	.625	5/16	.213	1.375
1/2	13	20	.500	.750	3/8	.245	1.500
5/8	11	18	.625	.875	1/2	.307	1.750
3/4	10	16	.750	1.0	9/16	.370	2.000
7/8	9	14	.875	1.125	9/16	.432	2.250
1"	8	12	1.00	1.312	5/8	.495	2.500

actual actual max max nom min min

Avoid Confusion !

Socket Head Cap Screws produced to BS2470 1973 (1936 Series) generally contain both smaller head diameters and socket recesses when compared with ASME B18.3 1998 (1960 Series).

These dimensions are for use as guide purposes only

1960 Series Socket Cap Screws (Unified)

UNC (Unified National Course) / **UNF** (Unified National Fine)

THRD	UNC	UNF	HEAD	HEAD	SKT	SKT	MIN
SIZE	PITCH	PITCH	HGT	DIA	A/F	DPTH	T.L.
No.3	48	56	.099	.161	5/64	.044	.625
No.4	40	48	.112	.183	3/32	.051	.750
No.5	40	44	.125	.205	3/32	.057	.750
No.6	32	40	.138	.226	7/64	.064	.750
No.8	32	36	.164	.270	9/64	.077	.875
No.10	24	32	.190	.312	5/32	.090	.875
1/4	20	28	.250	.375	3/16	.120	1.00
5/16	18	24	.312	.469	1/4	.151	1.125
3/8	16	24	.375	.562	5/16	.182	1.250
7/16	14	20	.437	.656	3/8	.213	1.375
1/2	13	20	.500	.750	3/8	.245	1.500
5/8	11	18	.625	.938	1/2	.307	1.750
3/4	10	16	.750	1.125	5/8	.370	2.000
7/8	9	14	.875	1.312	3/4	.432	2.250
1"	8	12	1.00	1.500	3/4	.495	2.500

actual actual max max nom min min

Socket Cap Screws (Imperial)

BSF (British Standard Fine) / **BSW** (British Standard Whitworth)

THRD	BSF	BSW	HEAD	HEAD	SKT	SKT	MIN
SIZE	(T.P.I.)	(T.P.I.)	HGT	DIA	A/F	DPTH	T.L.
3/16	32	24	.187	.312	5/32	.089	7/8
1/4	26	20	.250	.375	3/16	.120	1"
5/16	22	18	.312	.437	7/32	.151	1.1/8
3/8	20	16	.375	.562	5/16	.182	1.1/4
7/16	18	14	.437	.625	5/16	.213	1.3/8
1/2	16	12	.500	.750	3/8	.245	1.1/2
5/8	14	11	.625	.875	1/2	.307	1.3/4
3/4	12	10	.750	1.00	9/16	.370	2"
7/8	11	9	.875	1.125	9/16	.432	2.1/4
1"	10	8	1.00	1.312	5/8	.495	2.1/2

actual actual max max nom min min

These dimensions are for use as guide purposes only

**CX Socket Cap Screws (Imperial)
BSW / BSF**

THRD	BSW	BSF	HEAD	HEAD	SKT	SKT	MIN
SIZE	PITCH	PITCH	HGT	DIA	A/F	DPTH	T.L.
1/4	20	26	.250	.437	3/16	.120	1.000
5/16	18	22	.312	.500	7/32	.151	1.125
3/8	16	20	.375	.625	5/16	.182	1.250
7/16	14	18	.437	.750	5/16	.213	1.375
1/2	12	16	.500	.875	3/8	.245	1.500
5/8	11	14	.625	1.00	1/2	.307	1.750
3/4	10	12	.750	1.125	9/16	.370	2.000
7/8	9	11	.875	1.312	9/16	.432	2.250
1	8	10	1.00	1.50	5/8	.495	2.500

actual actual max max nom min min

**Socket Cap Screws Low Head (Imperial)
BSW / BSF / UNC / UNF**

THRD	BSW	BSF	UNC	UNF	HEAD	HEAD	SKT	SKT
SIZE	PITCH	PITCH	PITCH	PITCH	HGT	DIA	A/F	DPTH
No.8	n/a	n/a	32	36	.082	.270	5/64	.060
No.10	n/a	n/a	24	32	.095	.312	3/32	.072
3/16	24	32	n/a	n/a	.095	.312	3/32	.072
1/4	20	26	20	28	.125	.375	1/8	.094
5/16	18	22	18	24	.156	.437	5/32	.120
3/8	16	20	16	24	.187	.562	3/16	.145
7/16	14	18	14	20	.218	.625	7/32	.164
1/2	12	16	13	20	.250	.750	1/4	.184
5/8	11	14	11	18	.312	.875	5/16	.240
3/4	10	12	10	16	.375	1.00	3/8	.276
1	8	10	8	12	.500	1.312	1/2	.338

actual actual actual actual max max nom min

These dimensions are for use as guide purposes only

**Socket Countersunk Screws (Imperial)
BA (British Association)**

THRD	PITCH	HEAD	HEAD	SKT	SKT	MIN	BODY
SIZE	(T.P.I.)	HGT	DIA	A/F	DPTH	T.L.	DIA.
8BA	59.14	.038	.147	.050	.030	.625	.087
6BA	47.91	.050	.189	.050	.040	.750	.110
5BA	43.08	.056	.215	1/16	.045	.750	.126
4BA	38.49	.063	.243	1/16	.050	.750	.142
3BA	34.81	.072	.277	5/64	.057	.875	.161
2BA	31.36	.083	.319	3/32	.065	.875	.185
1BA	28.23	.093	.360	3/32	.072	1.000	.209
0BA	25.4	.106	.408	1/8	.080	1.000	.236

actual ref min nom min min max

**Socket Cap Screws (Imperial)
BA (British Association)**

THRD	PITCH	HEAD	HEAD	SKT	SKT	MIN	BODY
SIZE	(T.P.I.)	HGT	DIA	A/F	DPTH	T.L.	DIA.
8BA	59.14	.087	.140	1/16	.039	.750	.087
7BA	52.92	.098	.163	1/16	.044	.750	.098
6BA	47.91	.110	.187	5/64	.050	.750	.110
5BA	43.08	.126	.219	3/32	.058	.750	.126
4BA	38.49	.142	.219	3/32	.066	.750	.142
3BA	34.81	.161	.250	1/8	.075	.875	.161
2BA	31.36	.187	.312	5/32	.089	.875	.185
1BA	28.23	.209	.312	5/32	.100	1.00	.209
0BA	25.4	.236	.375	3/16	.113	1.00	.236

actual max max nom min min max

*Socket & Allied Screws Stock
Non-Preferred BA Threads In*

These dimensions are for use as guide purposes only

**Socket Set Screws (Imperial)
BA (British Association)**

THRD	PITCH	SKT	SKT	CUP	H.DOG	H.DOG	FLAT
SIZE	(T.P.I.)	A/F	DPTH	DIA	DIA	LTH	DIA
8BA	59.14	.035	.030	.047	.057	.024	.047
6BA	47.91	.050	.040	.061	.075	.030	.061
5BA	43.08	1/16	.050	.067	.083	.033	.067
4BA	38.49	1/16	.050	.074	.092	.038	.074
3BA	34.81	5/64	.062	.087	.109	.043	.087
2BA	31.36	3/32	.075	.102	.127	.049	.102
1BA	28.23	3/32	.075	.115	.140	.059	.115
0BA	25.4	1/8	.100	.132	.156	.067	.132

actual nom min max max max max

**Socket Button Heads (Imperial)
BA (British Association)**

THRD	PITCH	HEAD	HEAD	SKT	SKT	MIN	BODY
SIZE	(T.P.I.)	HGT	DIA	A/F	DPTH	T.L.	DIA.
8BA	59.14	.046	.164	.050	.028	.500	.087
6BA	47.91	.059	.213	1/16	.035	.500	.110
5BA	43.08	.066	.238	5/64	.044	.500	.126
4BA	38.49	.073	.262	5/64	.044	.625	.142
3BA	34.81	.087	.312	3/32	.052	.750	.161
2BA	31.36	.101	.361	1/8	.070	1.000	.185
1BA	28.23	.114	.395	1/8	.078	1.000	.209
0BA	25.4	.132	.437	5/32	.087	1.000	.236

actual max max nom min min max

*Socket & Allied Screws Stock
Non-Preferred BA Threads In*

These dimensions are for use as guide purposes only

**Socket Button Head Screws
Imperial / Unified**

THRD	BSF	BSW	UNF	UNC	HEAD	HEAD	SKT	SKT
SIZE	(T.P.I.)	(T.P.I.)	(T.P.I.)	(T.P.I.)	HGT	DIA	A/F	DPTH
No.0	n/a	n/a	80	n/a	.032	.114	.035	.020
No.2	n/a	n/a	64	56	.046	.164	.050	.028
No.4	n/a	n/a	48	40	.059	.213	1/16	.035
No.5	n/a	n/a	44	40	.066	.238	5/64	.044
No.6	n/a	n/a	40	32	.073	.262	5/64	.044
No.8	n/a	n/a	36	32	.087	.312	3/32	.052
No.10	n/a	n/a	32	24	.101	.361	1/8	.070
1/4	26	20	28	20	.132	.437	5/32	.087
5/16	22	18	24	18	.166	.547	3/16	.105
3/8	20	16	24	16	.199	.656	7/32	.122
1/2	16	12	20	13	.265	.875	5/16	.175
5/8	14	11	18	11	.331	1.00	3/8	.210
3/4	12	10	16	10	.398	1.218	1/2	.255

actual actual actual actual max max nom min

**Socket Shoulder Screws
Unified / Imperial - UNF / UNC / BSW / BSF**

NOM	MAX	MIN	THRD	THD	SKT	SKT	HEAD	HEAD
DIA.	DIA	DIA	DIA	LTH	DPTH	A/F	DIA	HGT
1/4	.2480	.2460	No.10*	.375	.094	1/8	.375	.188
5/16	.3105	.3085	1/4	.438	.117	5/32	.438	.219
3/8	.3730	.3710	5/16	.500	.141	3/16	.563	.250
1/2	.4980	.4960	3/8	.625	.188	1/4	.750	.313
5/8	.6230	.6210	1/2	.750	.234	5/16	.875	.375
3/4	.7480	.7460	5/8	.875	.281	3/8	1.00	.500
1	.9980	.9960	3/4	1.000	.374	1/2	1.5/16	.625

max min nom max min nom max max

* For BSW / BSF this dimension is 3/16

These dimensions are for use as guide purposes only

Socket Countersunk Screws (Unified)

UNC (Unified National Course) / **UNF** (Unified National Fine)

THRD	UNC	UNF	HEAD	HEAD	SKT	SKT	MIN	HEAD
SIZE	PITCH	PITCH	HGT	DIA	A/F	DPTH	T.L.	ANG.
No.0	n/a	80	0.046	0.117	0.035	0.025	0.500	80/82
No.1	64	72	0.057	0.143	0.050	0.031	0.625	80/82
No.2	56	64	0.066	0.168	0.050	0.038	0.625	80/82
No.3	48	56	0.075	0.193	1/16	0.044	0.625	80/82
No.4	40	48	0.085	0.218	1/16	0.055	0.750	80/82
No.5	40	44	0.093	0.240	5/64	0.061	0.750	80/82
No.6	32	40	0.100	0.263	5/64	0.066	0.750	80/82
No.8	32	36	0.116	0.311	3/32	0.076	0.875	80/82
No.10	24	32	0.131	0.359	1/8	0.087	0.875	80/82
1/4	20	28	0.167	0.476	5/32	0.111	1.000	80/82
5/16	18	24	0.205	0.589	3/16	0.135	1.125	80/82
3/8	16	24	0.241	0.704	7/32	0.159	1.250	80/82
7/16	14	20	0.242	0.755	1/4	0.159	1.375	80/82
1/2	13	20	0.260	0.857	5/16	0.172	1.500	80/82
5/8	11	18	0.335	1.065	3/8	0.220	1.750	80/82
3/4	10	16	0.410	1.293	1/2	0.220	2.000	80/82

actual actual ref min nom min min actual

Socket Countersunk Screws (Imperial)

BSF (British Standard Fine) / **BSW** (British Standard Whitworth)

THRD	BSF	BSW	HEAD	HEAD	SKT	SKT	MIN	HEAD
SIZE	PITCH	PITCH	HGT	DIA	A/F	DPTH	T.L.	ANG.
1/8	48	40	.057	.215	1/16	.043	.750	89/91
3/16	32	24	.084	.323	3/32	.065	.875	89/91
1/4	26	20	.112	.432	5/32	.093	1.000	89/91
5/16	22	18	.140	.542	3/16	.105	1.125	89/91
3/8	20	16	.168	.651	7/32	.125	1.250	89/91
7/16	18	14	.196	.761	1/4	.145	1.375	89/91
1/2	16	12	.225	.870	5/16	.165	1.500	89/91
5/8	14	11	.281	1.089	3/8	.220	1.750	89/91
3/4	12	10	.337	1.308	3/8	.220	2.000	89/91

actual actual ref min nom min min actual

These dimensions are for use as guide purposes only

**Socket Set Screws
Unified / Imperial**

**All dimensions below relate to:
UNC / UNF / BSW / BSF**

THRD	BASIC	SKT	SKT	CUP	H.DOGE	H.DOGE	FLAT
SIZE	DIA	A/F	DPTH	DIA	DIA	LTH	DIA
No.0	.060	.028	.022	.033	.040	.017	.033
No.1	.073	.035	.028	.040	.049	.021	.040
No.2	.086	.035	.028	.047	.057	.024	.047
No.3	.099	.050	.040	.054	.066	.027	.054
No.4	.112	.050	.040	.061	.075	.030	.061
No.5	.125	1/16	.050	.067	.083	.033	.067
No.6	.138	1/16	.050	.074	.092	.038	.074
No.8	.164	5/64	.062	.087	.109	.043	.087
No.10	.190	3/32	.075	.102	.127	.049	.102
1/4	.250	1/8	.100	.132	.156	.067	.132
5/16	.312	5/32	.125	.172	.203	.082	.172
3/8	.375	3/16	.150	.212	.250	.099	.212
7/16	.437	7/32	.175	.252	.297	.114	.252
1/2	.500	1/4	.200	.291	.344	.130	.291
5/8	.625	5/16	.250	.371	.469	.164	.371
3/4	.750	3/8	.300	.450	.562	.196	.450
7/8	.875	1/2	.400	.530	.656	.227	.530
1	1.00	9/16	.450	.609	.750	.260	.609

nom nom min max max max max

Cone Point Socket Sets:

As a general rule, the cone point angle is **90** degrees.

This changes when the length is shorter than or equal to the thread diameter, for M3 and above.

The cone point angle then changes to **118** degrees.

These dimensions are for use as guide purposes only

**BSPT Socket Pressure Plugs
3/4 Taper**

THRD SIZE	PITCH (T.P.I.)	NOM O/D	SKT A/F	SKT DPTH	WALL THICK	NOM LTH
1/8	28	.399	3/16	.225	.081	3/8
1/4	19	.538	1/4	.255	.112	1/2
3/8	19	.679	5/16	.309	.161	9/16
1/2	14	.853	3/8	.357	.175	11/16
5/8	14	.933	1/2	.385	.175	3/4
3/4	14	1.072	9/16	.385	.238	13/16
1	11	1.352	5/8	.390	.238	1
1.1/4	11	1.703	3/4	.452	.350	1.1/4

actual nom nom min min nom

**NPTF Socket Pressure Plugs
3/4 Taper (Dry Seal) / 7/8 Taper (Flush Seal)**

THRD SIZE	PITCH (T.P.I.)	SKT A/F	SKT DPTH	WALL THICK	NOM O/D	NOM O/D	NOM LTH	NOM LTH
1/16	27	.156	.140	.062	.312	.307	5/16	1/4
1/8	27	.188	.140	.062	.405	.401	5/16	1/4
1/4	18	.250	.218	.073	.540	.529	7/16	13/32
3/8	18	.312	.250	.084	.675	.667	1/2	13/32
1/2	14	.375	.312	.095	.840	.830	9/16	17/32
3/4	14	.562	.312	.125	1.050	1.041	5/8	17/32
1	11.5	.625	.375	.125	1.315	1.302	3/4	21/32
1.1/4	11.5	.750	.437	.156	1.660	1.647	13/16	21/32

actual nom min min 3/4 7/8 3/4 7/8
Taper Taper Taper Taper
Dry Flush Dry Flush
Seal Seal Seal Seal

These dimensions are for use as guide purposes only

**Square Head Set Screws - Imperial / Unified
UNC / UNF / BSF / BSW**

THRD	HEAD	HEAD	CUP	DOG	DOG
SIZE	A/F	HGT	DIA	DIA	LTH
3/16	.188	.148	.102	.127	.045
1/4	.250	.196	.132	.156	.063
5/16	.312	.245	.172	.203	.078
3/8	.375	.293	.212	.250	.094
7/16	.437	.341	.252	.297	.109
1/2	.500	.389	.291	.344	.125
9/16	.562	.437	.332	.391	.140
5/8	.625	.485	.371	.469	.156
3/4	.750	.582	.450	.563	.188
7/8	.875	.678	.530	.656	.219
1	1.000	.774	.609	.750	.250
1.1/8	1.125	.870	.689	.844	.281
1.1/4	1.250	.966	.767	.938	.312
1.3/8	1.375	1.063	0.848	1.031	.344
1.1/2	1.500	1.159	0.926	1.125	.375

max max max max +/- 0.1

We can offer Square Head Set Screws, or more commonly described as Tool Post Screws, in most grades including both Case Hardening and Through Hardening materials.

These dimensions are for use as guide purposes only

Hardness Conversions For Steel

Brinell	Vickers	Rockwell	tonf / in2	kgf / mm2	Nmm2
534	569	53.5	120	*	*
514	547	52	117	*	*
495	528	51	114	*	*
477	508	49.5	105	*	*
461	491	48.5	101	160	1569
444	474	47	98	155	1520
429	455	45.5	95	150	1471
415	440	44.5	92	145	1422
401	425	43	88	139	1363
388	410	42	85	134	1314
375	396	40.5	82	129	1265
363	383	39	80	126	1236
352	372	38	77	121	1187
341	360	36.5	75	118	1157
331	350	35.5	73	114	1118
321	339	34.5	71	111	1089
311	328	33	68	107	1049
302	319	32	66	104	1020
293	309	31	64	101	990
285	301	30	63	99	971
277	292	29	61	96	941
269	284	27.5	59	93	912
262	276	26.5	58	91	892
255	269	25.5	56	89	873
248	261	24	55	87	853
241	253	23	53	84	824
235	247	22	51	81	794
229	241	20.5	50	79	775
223	235	20	49	77	755
217	228	19	48	76	745
212	223	18	46	73	716

HB HV HRC

These dimensions are for use as guide purposes only

Tensile Strength Ranges

Grade	ton / in2	HB	HRC
P	35-45	163-207	n/a
Q	40-50	187-229	12-20.5
R	45-55	207-248	17-24
S	50-60	229-277	20.5-29
T	55-65	248-302	24-32
U	60-70	277-321	29-34.5
V	65-75	302-341	32-36.5
W	70-80	321-363	34.5-39
X	75-85	341-388	36.5-42
Y	80-90	363-401	39-43
Z	100+	461+	48.5+

HB = Hardness Brinell / HRC = Hardness Rocwell C

Fastener Tensile Ranges

Grade	N / mm2	ton / in2	Hardness
3.6	300-420	27 max	116 HB max
4.6 / 4.8	400-520	26-34	111-156 HB
5.6 / 5.8	500-660	32-43	149-197
6.6 / 6.8	600-740	39-48	179-217
8.8	800-980	51-64	235-293
9.8	900-1025	58-66	262-302
10.9	1000-1150	65-75	293-341
12.9	1200-1375	77-88	352-401

Other Equivalents:

Nmm2 = MN / M2 = Mpa Kg / mm2 = Kp / mm2

These dimensions are for use as guide purposes only

Conversion Table (Metric - Inch)

mm.	inch	mm.	inch	mm.	inch
0.1	0.0039	12.5	0.4921	28.5	1.1221
0.2	0.0079	13.0	0.5118	29.0	1.1417
0.3	0.0118	13.5	0.5315	29.5	1.1614
0.4	0.0157	14.0	0.5512	30.0	1.1811
0.5	0.0197	14.5	0.5709	30.5	1.2008
0.6	0.0236	15.0	0.5906	31.0	1.2205
0.7	0.0276	15.5	0.6103	31.5	1.2402
0.8	0.0315	16.0	0.6299	32.0	1.2599
0.9	0.0354	16.5	0.6496	32.5	1.2796
1.0	0.0394	17.0	0.6693	33.0	1.2992
1.5	0.0591	17.5	0.6890	33.5	1.3189
2.0	0.0787	18.0	0.7087	34.0	1.3386
2.5	0.0984	18.5	0.7284	34.5	1.3583
3.0	0.1181	19.0	0.7480	35.0	1.378
3.5	0.1378	19.5	0.7677	35.5	1.3977
4.0	0.1575	20.0	0.7874	36.0	1.4173
4.5	0.1772	20.5	0.8071	36.5	1.4370
5.0	0.1968	21.0	0.8268	37.0	1.4567
5.5	0.2165	21.5	0.8465	37.5	1.4764
6.0	0.2362	22.0	0.8661	38.0	1.4961
6.5	0.2559	22.5	0.8858	38.5	1.5158
7.0	0.2756	23.0	0.9055	39.0	1.5354
7.5	0.2953	23.5	0.9252	39.5	1.5551
8.0	0.315	24.0	0.9449	40.0	1.5748
8.5	0.3347	24.5	0.9646	40.5	1.5945
9.0	0.3543	25.0	0.9843	41.0	1.6142
9.5	0.374	25.5	1.0040	41.5	1.6339
10.0	0.3937	26.0	1.0236	42.0	1.6536
10.5	0.4134	26.5	1.0433	42.5	1.6733
11.0	0.4331	27.0	1.0630	43.0	1.6929
11.5	0.4528	27.5	1.0827	43.5	1.7126
12.0	0.4724	28.0	1.1024	44.0	1.7323

These dimensions are for use as guide purposes only

Conversion Table (Fraction - Inch - Metric)

Fraction	inch	mm	Fraction	inch	mm.
1/64	0.01563	0.39690	33/64	0.51563	13.0969
1/32	0.03125	0.79380	17/32	0.53125	13.4938
3/64	0.04688	1.19060	35/64	0.54688	13.8906
1/16	0.06250	1.58750	9/16	0.56250	14.2875
5/64	0.07813	1.98440	37/64	0.57813	14.6844
3/32	0.09375	2.38120	19/32	0.59375	15.0812
7/64	0.10938	2.77810	39/64	0.60938	15.4781
1/8	0.12500	3.17500	5/8	0.62500	15.8750
9/64	0.14063	3.57190	41/64	0.64063	16.2719
5/32	0.15625	3.96880	21/32	0.65625	16.6688
11/64	0.17188	4.36560	43/64	0.67188	17.0656
3/16	0.18750	4.76250	11/16	0.68750	17.4625
13/64	0.20313	5.15940	45/64	0.70313	17.8594
7/32	0.21875	5.55620	23/32	0.71875	18.2562
15/64	0.23438	5.95310	47/64	0.73438	18.6531
1/4	0.25000	6.35000	3/4	0.75000	19.0500
17/64	0.26563	6.74690	49/64	0.76563	19.4469
9/32	0.28125	7.14380	25/32	0.78125	19.8438
19/64	0.29688	7.54060	51/64	0.79688	20.2406
5/16	0.31250	7.93750	13/16	0.81250	20.6375
21/64	0.32813	8.33440	53/64	0.82813	21.0344
11/32	0.34375	8.73120	27/32	0.84375	21.4312
23/64	0.35938	9.12810	55/64	0.85938	21.8281
3/8	0.37500	9.52500	7/8	0.87500	22.2250
25/64	0.39063	9.92190	57/64	0.89063	22.6219
13/32	0.40625	10.3188	29/32	0.90625	23.0188
27/64	0.42188	10.7156	59/64	0.92188	23.4156
7/16	0.43750	11.1125	15/16	0.93750	23.8125
29/64	0.45313	11.5094	61/64	0.95313	24.2094
15/32	0.46875	11.9062	31/32	0.96875	24.6062
31/64	0.48438	12.3031	63/64	0.98438	25.0031
1/2	0.50000	12.7000	1	1.00000	25.4000

These dimensions are for use as guide purposes only

Material Grade Comparisons				
En Grd.	BS 970	AISI/SAE	Werkstoff	Kurzname
En1A	220M07	1113	1.0711	9 S 20
En1B	240M07	n/a	1.0736	9 SMn 36
En3A	070M20	1023	1.0402	C 22
En3B	070M20	1023	1.0402	C 22
En5	080M30	1030	1.1178	Ck 30
En5A	080A27	1029	n/a	n/a
En6	080M30	1030	1.1178	Ck 30
En8	080M40	1040	1.1186	Ck 40
En8A	080A35	1035	1.1180	Cm 35
En8M	212M36	n/a	n/a	n/a
En16	605M36	n/a	n/a	n/a
En18	530M40	5140	1.7035	41 Cr 4
En19	709M40	n/a	1.7225	42 CrMo4
En24	817M40	4340	1.6565	40 NiCrMo 6
En25	826M31	n/a	1.6743	32 NiCrMo 10 4
En26	826M40	n/a	1.6745	40 NiMoCr 10 5
En32A	045M10	1010	1.0301	C 10
En32C	080M15	1016	n/a	n/a
En32M	210M15	1117	n/a	n/a
En42	070A78	n/a	n/a	n/a
En56A	410S21	410S	1.4006	X10 Cr 13
En56B	420S29	420	1.4021	X20 Cr 13
En56C	420S37	n/a	n/a	n/a
En56AM	416S21	416	1.4005	X12 Cr S 13
En56BM	416S29	n/a	n/a	n/a
En56CM	416S37	n/a	n/a	n/a
En57	431S29	431	1.4057	X22 CrNi 17
En58B	321S31	321	1.4541	X10 CrNiTi 18 9
En58E	304S15	304	1.4301	X5 CrNi 18 9
En58J	316S16	316L	1.4435	X2 CrNiMo 18 12
En58J	320S17	316Ti	1.4573	X10 CrNiMoTi 18 12
En58M	303S31	303	1.4305	X12 CrNiS 18 8
En60	430S17	430	1.4016	X8 Cr 17

These dimensions are for use as guide purposes only