

Twin-Fast™

SELF DRILLING SCREWS

BASE MATERIAL

Metal to metal

SIZE RANGE

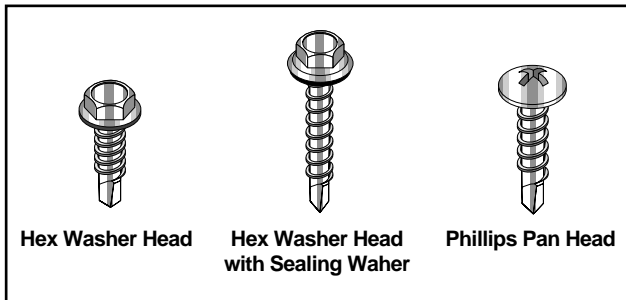
6-20 x 3/8" to 1/4-14 x 1"

ANCHOR MATERIAL

Heat Treated Carbon Steel

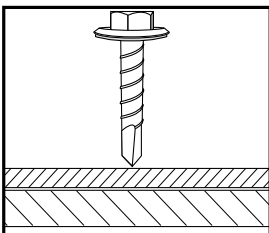
PRODUCT DESCRIPTION

Twin-Fast self-drilling screws are designed for applications requiring the fastening of fixtures, components, or sheet metal to thin gage metal.

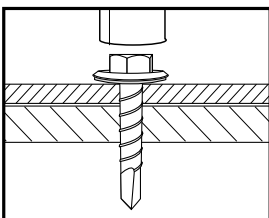


Twin-Fast self-drilling screws are formed from carbon steel which is case hardened to enable the screws to drill and tap in one driving operation. When selecting the screw length, the total thickness of materials to be fastened including voids or spaces between the material must be considered. It is important to select the proper screw length and point combination. For each screw size, a recommended drilling range is listed which based on the point style, screw diameter, and thread pitch. The point length must be equal to or greater than the total thickness of material to be drilled. If the total thickness of material to be drilled exceeds the recommended range, one option is to pre-drill a clearance hole in the fastened part or fixture larger than the screw threads. The combined thickness of material which can be fastened is limited by the thread or grip length of the screw. A maximum grip length is listed for each screw.

INSTALLATION PROCEDURE



Determine the total thickness of material to be drilled including any voids or insulation. Select the Twin-Fast screw (#2 or #3 point) to allow complete drilling prior to the start of the threading operation.



Drive the Twin-Fast screw until assembly is tight using a 2,500 rpm drill motor.

SCREW SIZES AND STYLES

To aid in the selection of a proper size Twin-Fast screw, metal gage conversion and fraction-decimal conversion tables are shown below.

METAL GAGE CONVERSION TABLE

GAGE NO.	ALUMINUM	SHEET STEEL
1	.2893	.2812
2	.2576	.2656
3	.2294	.2391
4	.2043	.2242
5	.1819	.2092
6	.1620	.1943
7	.1443	.1793
8	.1285	.1644
9	.1144	.1495
10	.1019	.1345
11	.0907	.1196
12	.0808	.1046
13	.0720	.0897
14	.0641	.0747
15	.0571	.0673
16	.0508	.0598
17	.0453	.0538
18	.0403	.0474
19	.0359	.0418
20	.0320	.0359
21	.0285	.0329
22	.0253	.0299
23	.0226	.0269
24	.0201	.0239
25	.0179	.0209
26	.0159	.0179
27	.0142	.0164
28	.0126	.0149

FRACTION - DECIMAL CONVERSION TABLE

FRACTION	DECIMAL	FRACTION	DECIMAL
1/64	0.0156	33/64	0.5156
1/32	0.0313	17/32	0.5312
3/64	0.0469	35/64	0.5469
1/16	0.0625	9/16	0.5625
5/64	0.0781	37/64	0.5781
3/32	0.0937	19/32	0.5937
7/64	0.1094	39/64	0.6094
1/8	0.1250	5/8	0.6250
9/64	0.1406	41/64	0.6406
5/32	0.1562	21/32	0.6562
11/64	0.1719	43/64	0.6719
3/16	0.1875	11/16	0.6875
13/64	0.2031	45/64	0.7031
7/32	0.2187	23/32	0.7187
15/64	0.2344	47/64	0.7344
1/4	0.2500	3/4	0.7500
17/64	0.2656	49/64	0.7656
9/32	0.2812	25/32	0.7812
19/64	0.2969	51/64	0.7969
5/16	0.3125	13/16	0.8125



FRACTION	DECIMAL	FRACTION	DECIMAL
21/64	0.3281	53/64	0.8281
11/32	0.3437	27/32	0.8437
23/64	0.3594	55/64	0.8594
3/8	0.3750	7/8	0.8750
25/64	0.3906	57/64	0.8906
13/32	0.4062	29/32	0.9062
27/64	0.4219	59/64	0.9219
7/16	0.4375	15/16	0.9375
29/64	0.4531	61/64	0.9531
15/32	0.4687	31/32	0.9687
31/64	0.4844	63/64	0.9844
1/2	0.5000	1	1.0000

TWIN-FAST SIZES AND STYLES

CAT. NO.	SIZE	HEAD STYLE	POINT STYLE	DRILLING RANGE (INCHES)	GRIP LENGTH (INCHES)	STD. BOX	STD. CTN.	WT./1000
2202	6-20 x 3/8"	PH	2	.035-.090	9/64"	250	2500	2-1/2
2204	6-20 x 1/2"	PH	2	.035-.090	17/64"	250	2500	2-5/8
2210	8-18 x 1/2"	PH	2	.035-.100	1/4"	250	2500	3-1/2
2212	8-18 x 1/2"	HX	2	.035-.100	1/4"	250	2500	4-1/4
2214	8-18 x 3/4"	PH	2	.035-.100	1/2"	100	1000	4-1/2
2216	8-18 x 3/4"	HX	2	.035-.100	1/2"	100	1000	5-1/4
2218	8-18 x 1"	HX	2	.035-.100	3/4"	100	1000	6-1/4
2219	8-18 x 1-1/4"	HX	2	.035-.100	15/16"	100	1000	7-1/4
2220	8-18 x 1-1/2"	HX	2	.035-.100	1-1/4"	100	1000	8-1/4
2221	8-18 x 5/8"	HX	3	.100-.140	3/8"	250	2500	4-1/2
2223	10-16 x 1/2"	HX	3	.110-.175	13/64"	100	1000	5-3/4
2225	10-16 x 3/4"	HX	3	.110-.175	13/32"	100	1000	7-1/4
2227	10-16 x 3/4"	PH	3	.110-.175	13/32"	100	1000	6-1/4
2229	10-16 x 1"	HX	3	.110-.175	21/32"	100	1000	8-1/2
2228	10-16 x 1-1/4"	HX	3	.110-.175	29/32"	100	1000	10
2230	10-16 x 1-1/2"	HX	3	.110-.175	1-5/32"	100	1000	12
2231	12-14 x 3/4"	HX	3	.110-.210	23/64"	100	1000	9
2233	12-14 x 1"	HX	3	.110-.210	37/64"	100	1000	11
2235	1/4-14 x 3/4"	HX	3	.110-.250	19/64"	100	1000	14
2237	1/4-14 x 1"	HX	3	.110-.250	35/64"	100	1000	16
2241	12-14 x 3/4"	SHX	3	.110-.210	13/64"	100	1000	14
2244	12-14 x 1"	SHX	2	.035-.140	29/64"	100	1000	15

PH=Phillips Pan Head, HX=Hex Washer Head, SHX= Hex Head with Sealing Washer

INSTALLATION SPECIFICATIONS

SCREW SIZE	6-20	8-18	10-16	12-14	1/4-14
Screw O.D.	0.138"	0.164"	0.190"	0.216"	0.250"
Hex Head Width	1/4"	1/4"	5/16"	5/16"	3/8"
Hex Head Height	3/32"	7/64"	1/8"	5/32"	3/16"
Washer O.D.	5/16"	21/64"	25/64"	27/64"	31/64"
Washer Thickness	1/64"	1/32"	1/32"	1/32"	3/64"
Nut Setter Size	1/4"	1/4"	5/16"	5/16"	3/8"
Phillips Head O.D.	1/4"	5/16"	3/8"	7/16"	1/2"
Phillips Head Height	3/32"	7/64"	1/8"	9/64"	11/64"
Phillips Bit Size	2	2	2	3	3

MATERIAL SPECIFICATIONS

ANCHOR COMPONENT MATERIAL

Screw Body Case Hardened AISI 1022

Plating ASTM B633, SC1, Type III (Fe/Zn 5)

PERFORMANCE DATA

TENSION (LBS.)

The tension load capacities listed below are based on installing the screw in the gages of steel deck listed. Since tests cannot be run for every combination of screw and materials, these capacities should be used as a guide.

SCREW THREAD	POINT STYLE	STEEL GAGE						
		20	18	16	14	13	12	10
6-20	2	285	470	585	875	1,065	-	-
8-18	2	300	525	660	950	1,215	1,540	-
12-14	2	340	605	850	1,180	1,365	1,545	-
8-18	3	-	-	-	-	-	1,330	1,840
10-16	3	-	-	-	-	-	1,450	1,970
12-14	3	-	-	-	-	-	1,545	2,180
1/4-14	3	-	-	-	-	-	1,743	2,285

SHEAR (LBS.)

The shear load capacities listed below are based on attaching two gages of steel deck which are within the standard thickness range for each screw size. The first deck thickness listed in each combination is the base material. Since tests cannot be run for every combination of screw and materials, these capacities should be used as a guide.

SCREW THREAD	POINT STYLE	STEEL THICKNESS (INCHES)					
		20-20	18-18	16-16	14-14	12-12	10-10
6-20	2	540	760	-	-	-	-
8-18	2	740	1,060	1,080	-	-	-
12-14	2	900	1,370	1,760	2,140	-	-
8-18	3	-	-	-	-	1,220	-
10-16	3	-	-	-	-	1,470	-
12-14	3	-	-	-	-	1,560	1,990
1/4-14	3	-	-	-	-	1,830	2,650

NOTE: The values listed above are ultimate load capacities which should be reduced by a minimum safety factor of 4 or greater to determine the allowable working load.

ULTIMATE LOAD CAPACITIES - ALUMINUM

SCREW THREAD	POINT STYLE	ALUMINUM 6030-T5 THICKNESS (IN)			
		TENSION (LBS)	1/8" SHEAR (LBS)	TENSION (LBS)	3/16" SHEAR (LBS)
10-16	3	850	1,460	2,070	1,865
12-14	3	890	1,785	1,700	2,060
1/4" - 20	3	850	2,030	2,070	2,535

ULTIMATE STRENGTHS FOR SCREW ONLY

Does Not Consider Base Material Thickness

SCREW SIZE	MINIMUM TORSIONAL STRENGTH (IN-LBS.)	MINIMUM TENSILE STRENGTH (LBS)	MINIMUM SHEAR STRENGTH (LBS)
6-20	25	1,125	740
8-18	42	1,575	1,050
10-16	61	2,100	1,400
12-14	92	2,800	1,875
1/4-14	150	3,850	2,590