


GENERAL ·

Trilobe Screw

THREAD FORMING SCREW

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1. Product Overview

Trilobe screws (also known as thread rolling screws, Taptite alternatives)feature a unique trilobed (triangular) body profile with machine screw threads. The trilobedesign provides superior thread forming capability with reduced driving torque.

Standard: DIN 7500 (Metric) | ASME B18.6.4 (Inch)

Head Styles Available

- Pan Head - Low profile, widely used
- Flat Head (Countersunk) - Flush mounting
- Truss Head - Extra wide, low height
- Hex Washer Head - Built-in washer, high torque

2. Drive Systems

Drive Type	Description	Advantages
Torx (Six-Lobe)	Star-shaped recess	High torque, reduced driver wear
Phillips/Pozi	Cross-shaped slot	Traditional, widely available
Hex Socket	Internal hex drive	Maximum torque capability

Available Drive Types

3. Trilobe Design Advantages

3.1 Reduced Driving Torque

The trilobed cross-section reduces contact area with the material, significantly lowering installation torque requirements.

3.2 Zero Clearance Fit

Radial pressure forms deep, smooth threads in the mating material, eliminating clearance gaps for secure fastening.

3.3 Self-Locking & Vibration Resistance

Elastic compression of the screw causes plastic deformation in the mating material, creating continuous radial pressure for permanent locking without washers or locknuts.

3.4 Chip-Free Installation

Cold flow principle forms threads through material displacement, not cutting. No debris or chips generated - ideal for electrical and precision assemblies.

3.5 Electrical Grounding

Thread forming action scrapes paint/coating from hole walls, ensuring low-resistance electrical connection to bare metal.

4. Applications

Industry	Application Examples
Automotive	Fluid reservoirs, ECUs, airbag sensors, body panels
Electrical	Grounding straps, backplanes, powder-coated enclosures
Appliances	Motor brackets, structural frames, 1200 RPM spin cycle
Telecommunications	Server racks, network enclosures
Industrial	Control panels, access doors, machinery housing

5. Metric Specifications (DIN 7500)

5.1 Pan Head Torx (DIN 7500)

Size	Pitch	dk (mm)	k (mm)	Drive	Torque (kgf·cm)
M2	0.40	4.0	1.6	T6	4.4
M2.5	0.45	5.0	2.1	T8	9.7
M3	0.50	5.6	2.4	T10	18
M4	0.70	8.0	3.1	T20	42
M5	0.80	9.5	3.7	T25	88
M6	1.00	12.0	4.6	T30	147
M8	1.25	16.0	6.0	T45	369

Pan Head Torx Dimensions - Unit: mm

5.2 Flat Head Torx (DIN 7500)

Size	dk (mm)	k (mm)	Drive
M2	3.8	1.2	T6
M2.5	4.7	1.5	T8
M3	5.5	1.65	T10
M4	8.4	2.7	T20
M5	9.3	2.7	T25
M6	11.3	3.3	T30
M8	15.8	4.65	T45

Flat Head Torx Dimensions - Unit: mm

5.3 Hex Flange Head (DIN 7500)

Size	d2 (mm)	k (mm)	S (mm)	Torque (kgf·cm)
M4	9.5	3.6	7	42
M5	11.2	4.6	8	88
M6	13.2	5.6	10	147
M8	17.5	7.0	13	369

Hex Flange Head Dimensions - Unit: mm

6. Inch Specifications (ASME B18.6.4)

6.1 Pan Head Torx

Size	dk (in)	k (in)	Drive
#2	0.167	0.062	T8
#4	0.219	0.080	T10
#6	0.270	0.097	T15
#8	0.322	0.115	T20
#10	0.373	0.133	T25
#12	0.425	0.151	T27
1/4"	0.492	0.175	T30

Pan Head Torx Dimensions - Unit: inch

6.2 Flat Head Torx

Size	dk (in)	k (in)	Drive
#2	0.162	0.051	T6
#4	0.212	0.067	T8
#5	0.237	0.075	T10
#6	0.262	0.083	T10
#8	0.312	0.100	T15
#10	0.362	0.116	T20
#12	0.412	0.132	T25
1/4"	0.477	0.153	T27

Flat Head Torx Dimensions - Unit: inch

6.3 Truss Head Torx

Size	dk (in)	k (in)	Drive
#4	0.257	0.069	T9
#6	0.321	0.086	T10
#8	0.384	0.102	T15
#10	0.448	0.118	T20
#12	0.511	0.134	T25
1/4"	0.557	0.146	T27

Truss Head Torx Dimensions - Unit: inch

7. Material & Surface Treatment

Material	Grade	Corrosion Resistance	Surface Treatment
Carbon Steel	Class 8.8	72h NSS (with plating)	Zinc Plated, Black Zinc, Nickel
Stainless Steel	A2 (304)	Excellent	Plain, Passivated
Stainless Steel	A4 (316)	Superior	Plain, Passivated

Material Specifications

8. Browse Our Products

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- Pan Head Trilobe Screw Metric (36 products)
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- Flat Head Trilobe Screw Metric/Inch

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