

TORX® Fastener Drive System

Overview

The TORX® Drive System was specifically designed to provide a simple, cost-effective solution to the problems inherent in the process of installing and removing fasteners. Used in a multitude of industries, the TORX® Drive System can enhance product reliability, increase productivity, and reduce total assembly costs – all of which are keys to remaining competitive in today’s marketplace.



Features and Benefits of the TORX® Drive System

15° Drive Angle

- Provides high torque transfer
- Radial forces are drastically reduced, resulting in a longer tool life

Straight, Vertical Sidewalls

- Increases tool engagement
- Unlike cruciform drive systems, no camout forces are created to push the driver up and out of the fastener
- Since camout is virtually eliminated, little or no end load is required
- Ergonomic studies have shown the TORX® Drive System can reduce fatigue and muscular stress during the manual assembly of fasteners
- Recess completely encloses drive bit, minimizing tool slippage and the damage and injuries it can cause

Broad Contact Surface

- Provides greater depth of lobe engagement between the driver and the fastener
- Allows driving forces to spread over a broader surface, as opposed to the point contact of many drive systems
- Allows more efficient torque transfer
- Extends tool life Inch and Metric in One Drive Tool
- Same-sized drive tool seats both inch- and metric-sized fasteners
- Add or convert to metrics later without a tooling change

Inch and Metric in One Drive Tool

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INTERNAL TORX PLUS® DRIVE SYSTEM STANDARD DRIVE SIZE SELECTION

Drive Size	Pan Head		Flat Head		Socket Head		Socket Button		Truss Head		Fillister
	Inch	Metric	Inch	Metric	Inch	Metric	Inch	Metric	Inch	Metric	Inch
1P	---	M0.9	---	M0.9 & M1	---	M0.9	---	---	---	---	---
2P	---	M1	---	M1.2	---	M1	---	---	---	---	---
3P	---	M1.2	#0	M1.4	---	M1.2	---	---	---	---	---
5P	#0	M1.4 & M1.6	#1	M1.6 & M1.8	---	M1.4 & M1.6	---	---	---	---	---
6P	#1	M2	#2	M2	#0	M2	#2	---	#2	---	#1
7P	#2	---	#3	---	#1	---	#3	---	#3	---	#2
8P	#3	M2.5	#4	M2.5	#2 & #3	M2.5	#4	M3	#4	---	#3
10P	#5	M3	#5 & #6	M3	#4 & #5	M3	#6	M3.5	#5 & #6	M3.5	#4 & #5
15P	#6	M3.5	#8	M3.5	#6	M3.5	#8	M4	#8	M4	#6
20P	#8	M4	#10	M4	#8	M4	#10	---	#10	M5	#8
25P	#10	M5	#12	M5	#10	M4.5	---	M5	#12	---	#10
27P	#12	---	---	---	---	M5	---	M6	1/4	---	#12
30P	1/4	M6	1/4	M6	1/4	M6	1/4	---	5/16	M6	1/4
40P	5/16	---	5/16	M8	---	M7	5/16	M8	3/8	M8	5/16
45P	3/8	M8	3/8 & 7/16	---	5/16	M8	3/8	M10	7/16	---	3/8
50P	7/16	M10	1/2	M10	3/8	M10	---	---	1/2	M10	7/16
55P	1/2	M12	9/16 & 5/8	M12	7/16 & 1/2	M12	1/2	M12 & M14	9/16 & 5/8	M12	1/2 & 9/16
60P	---	---	3/4	---	9/16	M14	5/8	M16	3/4	---	5/8
70P	---	---	---	---	5/8	M16	---	---	---	---	3/4
80P	---	---	---	---	3/4	M18	---	---	---	---	---
90P	---	---	---	---	---	M20	---	---	---	---	---
100P	---	---	---	---	7/16 & 1	M22 & M24	---	---	---	---	---

Variations of the TORX® Drive System:

External TORX® Drive

- Provides an excellent alternative to hex or 12-point drives
- External TORX sockets are smaller in diameter than standard hex sockets used for the same-size fastener
- Provides greater flexibility when designing for drive socket clearance

Other sizes and head styles not shown here may be available. Please contact your Textron Fastening Systems representative for more information.



The TORX PLUS Drive is available in a variety of sizes and styles to meet your specific needs.

EXTERNAL TORX PLUS LOW-PROFILE HEAD STANDARD DRIVE SIZE SELECTION



			Low-Profile		
Drive	Inch	Metric	Drive	Inch	Metric
H7EP	#0000	M0.6	14EP	5/16	M8
H4EP	#000	M0.8	16EP	3/8	M10
H3EP	---	M1.0	18EP	7/16	---
H2EP	#00	M1.2	20EP	---	M12
1EP	#0	M1.6	22EP	1/2	---
2EP	#1	M2	24EP	9/16	M14
4EP	#2 & #3	M2.5	26EP	5/8	M16
5EP	#4 & #5	M3	30EP	---	M18
6EP	#6	M3.5	32EP	3/4	M20
7EP	#8	M4	36EP	7/8	M22
8EP	#10	M4.5 & M5	40EP	---	M24
10EP	#12 & 1/4	M6	42EP	1	---
12EP	---	M7			

TORXSTEM® Double-End Studs

Since most double end studs lack a drive system, it is necessary to grip the threaded portion of the stud in order to drive it, which can result in thread damage. A special external TORX® configuration extruded onto one end of the TORXSTEM® double end stud simplifies driving.

- TORXSTEM® studs are installed using a TORX® socket to increase productivity and reduce thread damage and rework

Tamper-Resistant TORX® Drive

This unique TORX® variation incorporates a solid post formed in the center of the recess during the heading process.

- When combined with a countersunk or button head design, the fastener is extremely difficult to remove without a special tamper-resistant TORX® Drive tool.
- Unlike some other tamper-resistant fasteners, installation on the production line is easy with the proper tool

Dual Drive Systems

The TORX® Drive System can be combined with either an external hex or a slot to provide a dual drive system.

- Provides the option of driving or removing the fastener with commonly available TORX® tools or with a hex socket or slotted screwdriver
- Slotted TORX® recess has a slot which is enclosed at the ends, so the driver is less likely to slip out and damage surrounding surfaces