MORTORQ® SUPER SPIRAL DRIVE SYSTEM

APPLICATIONS

DRIVER SIZES: MTS-09 THRU MTS-8
SCREW SIZES: 0.6MM (0000) THRU M20 (7/8 IN)

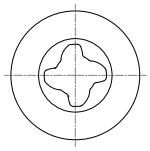
MOBILE MEDIA
PERSONAL COMPUTERS
LAPTOPS
NETBOOKS
SERVERS

TELECOMMUNICATIONS
MEDICAL ELECTRONICS
CONSUMER ELECTRONICS
AUDIO ELECTRONICS
HAND-HELD DEVICES

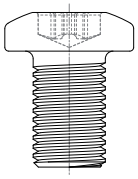
CELL PHONES
PDAS
GPS DEVICES
MP3 PLAYERS
DIGITAL CAMERAS

OVERVIEW

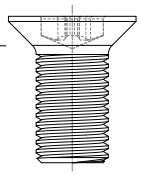
PHILLIPS SUPPORTS MULTIPLE HEAD-STYLE OPTIONS IN VARIOUS SCREW SIZES AND THREAD TYPES.



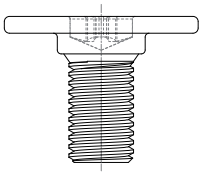
PAN HEAD



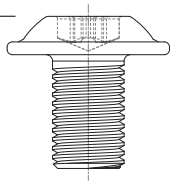
FLAT HEAD



SUPER-THIN, WAFER-SHOULDER HEAD



FLAT-TOP, ROUND-WASHER HEAD



Low-profile head with super high-strength recess offers elegance and functionality.

The MORTORQ® SUPER high-strength spiral drive system is the most advanced industrial drive system available today for use in technology and electronics manufacturing. Featuring an exceptionally shallow recess, it sets the standard for strength and functionality. Its recess geometry provides full driver contact over the entire mating surface of the recess wings. This results in extreme high-torquing capability without risk of damage to the fastener or surrounding head area. Minimal head height reduces the weight of fastened components. Made with less material and light in weight, MORTORQ SUPER contributes to greener technology products.

→ For additional information on genuine Phillips Drive Systems and our licensed manufacturers, contact one of our technical representatives at **877-806-1712**.

SPECIFY GENUINE PHILLIPS DRIVE SYSTEMS

FEATURES

- Low-profile head
- Super high-strength recess
- Elegant appearance while offering a higher level of security
- Full driver contact of recess

BENEFITS

- Eliminates clearance problems
- Offers extreme high-torque capabilities
- Promotes lighter weight assemblies
- Reduces component materials costs
- Aids in disassembly for more effective maintenance and service
- Speeds assembly while maximizing torque control
- Contributes to greener technology products

PHILLIPS SCREW COMPANY
INNOVATION IN FASTENER TECHNOLOGY

MORTORQ® SUPER SPIRAL DRIVE SYSTEM

Minimum Ultimate Torque

Bit strength is an important parameter in the design of internally driven fasteners. It's the starting point for determining appropriate fastener diameter, head style and size, and indicates the type of material to be used.

Increased recess removal wall contact area provides higher removal torque capabilities for service environment conditions where corrosion or galling affect the removal of screws.

Coatings in the drive recess can cause improper or misaligned bit engagement. With added clearance between the bit and recess, MORTORQ SUPER Spiral Drive System provides added robustness in the handling and assembly of screws.

MORTORQ® SUPER DRIVE SIZE	APPROXIMATE FASTENER DIAMETER RANGE (in (mm))	MINIMUM ULTIMATE DRIVER BIT TORQUE* (in-Lbf)	MINIMUM ULTIMATE DRIVER BIT TORQUE* (Nm)
MTS-09	#0000 (.8)	0.69	0.078
MTS-08	#000 (1)	1.14	0.13
MTS-07	#000 (1.2)	1.76	0.20
MTS-06	#00 (1.4)	2.49	0.28
MTS-05	#0 (1.5)	3.49	0.39
MTS-04	#0 (1.6, 1.8)	4.84	0.55
MTS-000	#2, #3 (2)	12	1.36
MTS-00	#4, #6 (2.5, 3)	54	6.10
MTS-0	#8, #10 (4, 5)	151	17.1
MTS-1	1/4 (6)	432	48.8
MTS-2	5/16 (8)	907	102
MTS-3	3/8 (10)	1362	154
MTS-4	1/2 (12)	2477	280

* For optimum bit life, Phillips recommends NOT exceeding 50% of Minimum Ultimate Driver Bit Torque. Contact Phillips for appropriate drive size selection.

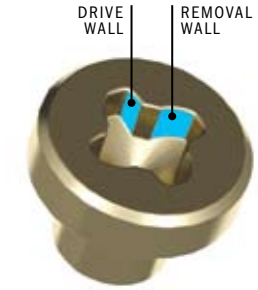
Values shown in the tables are to be used as a guide only. They are subject to change without notice. Please refer to the appropriate Phillips drive systems standards for current information.

MORTORQ® SUPER Spiral Drive VS. Hex Socket VS. TORX Plus®

Example Application: M3 Socket Head Cap Screw, 300 Series Stainless Steel

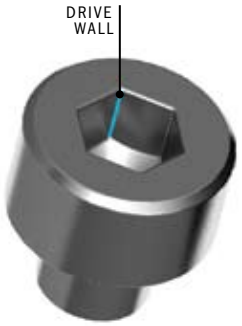
SYSTEM	MORTORQ® SUPER	Hex Socket	TORX® Plus
SCREW	M3	M3	M3
DRIVE SIZE	MTS-00	2.5	10IP
REFERENCE DIAMETER "A" (mm)	3.07	2.54	2.82
HEAD DIAMETER (mm)	5.50	5.50	5.50
HEAD HEIGHT (mm)	1.50	2.95	2.95
HEAD VOLUME (cm^3)	0.0288	0.0586	0.0621
PENETRATION "D" (mm)	0.77	1.74	1.34
PENETRATION FACTOR (D:A%)	25%	49%	48%
SURFACE AREA IN CONTACT WITH DRIVE WALL (mm^2)	0.3740 (4 places)	0.2794 (6 places)	0.2139 (6 places)
SURFACE AREA IN CONTACT WITH REMOVAL WALL (mm^2)	0.7487 (4 places)	0.2794 (6 places)	0.2139 (6 places)

Table above shows the increase in drive contact surface area while decreasing head height. Savings result in less materials usage in the screw and in mating components around tightly packed sub-assemblies. Removal torque capability is increased due to even larger removal wall surface area in contact with the driver bit.



MORTORQ® SUPER Spiral Drive System

- Low-profile head
- Super high-strength recess
- Elegant appearance
- Full driver contact of recess



MORTORQ® SUPER Spiral Drive System Vs. Hex Socket

- 49% Less Head Weight
- 51% Less Head Volume
- 56% Less Penetration

MORTORQ® SUPER Spiral Drive System Vs. Torx Plus®

- 49% Less Head Weight
- 54% Less Head Volume
- 43% Less Penetration

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Issue: 01/12