



MORTORQ® SUPER SPIRAL DRIVE SYSTEM

DRIVER SIZES

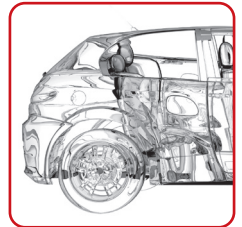
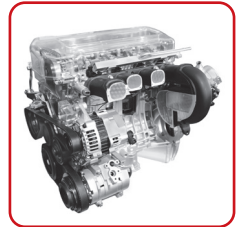
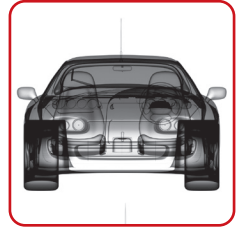
MTS-000 THRU MTS-8

SCREW SIZES

M2 (#2) THRU M20 (7/8 IN)

APPLICATIONS

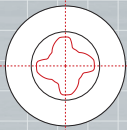
- TRANSMISSIONS
- TRANS-AXLES
- DIFFERENTIALS
- INSTRUMENT PANELS
- MACHINE SCREWS
- SUSPENSION COMPONENTS
- INTERIOR COMPONENTS
- DOOR PANELS & ATTACHMENTS
- DOOR FRAMES & HINGES
- SEATS & RESTRAINT SYSTEMS
- ACCESSORIES & ATTACHMENTS
- BODY COMPONENTS & ATTACHMENTS
- ENGINE & DRIVE TRAIN COMPONENTS
- THREAD-CUTTING SCREWS
- THREAD-FORMING SCREWS



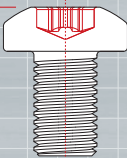
Low-profile head with super high-strength recess offers elegance and functionality

The **MORTORQ® SUPER** high-strength spiral drive system is the most advanced industrial drive system available today for use in automotive/transportation 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 automotive products.

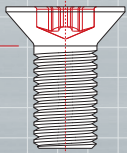
Phillips supports multiple head-style options in various screw sizes and thread types



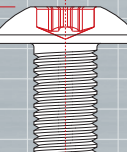
PAN HEAD



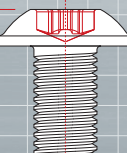
FLAT HEAD



TRUSS HEAD



FLAT-TOP, ROUNDWASHER HEAD



FEATURES

- Low-profile head
- Super high-strength recess
- Full driver contact of recess
- Phillips Screw Company quality inspections

BENEFITS

- Eliminates clearance problems
- Promotes lighter weight assemblies
- Reduces component materials costs
- Contributes to greener automotive products
- Offers extreme high-torque capabilities
- Aids in disassembly for more effective maintenance and service
- Assures global system quality and compatibility

For additional information on genuine Phillips Drive Systems and our licensed manufacturers, contact one of our technical representatives at (781)-224-9750





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 Spiral Drive vs. Hex Socket vs. TORX® Plus

Example Application: M6 Socket Head Cap Screw, Alloy Steel

SYSTEM	MORTORQ® SUPER	Hex Socket	TORX® Plus
Screw	M6	M6	M6
Drive Size	MTS-1	5	30IP
Reference Diameter "A" (mm)	6.11	5.77	5.61
Head Diameter (mm)	10.00	10.00	10.00
Head Height (mm)	4.60	5.93	5.93
Head Volume (cm³)	0.3097	0.3720	0.3996
Penetration "D" (mm)	1.62	3.36	2.67
Penetration Factor (D:A%)	27%	58%	48%
Surface Area In Contact With Drive Wall (mm²)	5.548 (4 places)	3.290 (6 places)	2.452 (6 places)
Surface Area In Contact With Removal Wall (mm²)	10.968 (4 places)	3.290 (6 places)	2.452 (6 places)

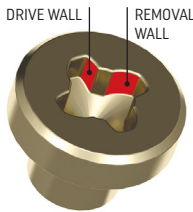
Table above shows the increase in drive contact surface area while decreasing head height. Savings result in less materials usage in the screw and in mating components around tightly packed subassemblies. Removal torque capability is increased due to even larger removal wall surface area in contact with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



MORTORQ® SUPER Drive Size	Approximate Fastener Diameter Range Inch (mm)	Minimum Ultimate Driver Bit Torque* (in-Lbf)	Minimum Ultimate Driver Bit Torque* (mm)
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
MTS-5	5/8 (14)	2871	324
MTS-6	9/16, 5/8 (15)	4698	531
MTS-7	3/4 (18)	10440	1180
MTS-8	7/8, 1 (20)	14000	1582

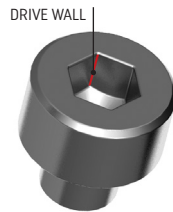
*For optimum bit life, Phillips recommends NOT exceeding 50% of Minimum Ultimate Driver Bit Torque. Contact Phillips for appropriate drive size selection.

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 System

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



MORTORQ® SUPER Spiral Drive System vs. Hex Socket

- 23% Less Head Weight
- 17% Less Head Volume
- 52% Less Penetration



MORTORQ® SUPER Spiral Drive System vs. TORX® Plus

- 23% Less Head Weight
- 22% Less Head Volume
- 39% Less Penetration

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