



EXTERNAL MORTORQ® SUPER SPIRAL DRIVE SYSTEM

Ultimate torque in a lightweight design where clearance and capability are optimized

The **EXTERNAL MORTORQ® SUPER** Spiral Drive System provides the maximum torque in a lightweight, low height design. Tighter design clearances result in overall weight reductions for bolts and structures yielding the greatest possible efficiency for today's and tomorrow's vehicles.



SOCKET SIZES

MTS-X1 THRU MTS-X44

BOLT SIZES

M4 (#8) THRU M50 (2 IN)

APPLICATIONS

- AIRCRAFT ENGINES
- AUTOMOTIVE ENGINES
- AIRFRAME STRUCTURAL BOLTS
- AUTOMOTIVE STRUCTURAL BOLTS
- SUSPENSION COMPONENTS
- BODY COMPONENTS & ATTACHMENTS
- ENGINE & DRIVE TRAIN COMPONENTS
- DOOR FRAMES & HINGES
- SEATS & RESTRAINT SYSTEMS
- TRANSMISSIONS
- TRANS-AXLES
- DIFFERENTIALS
- MINE BOLTS
- NAVAL STRUCTURES
- BRIDGE BOLTS

FEATURES

- ⊕ Patented curved wings
- ⊕ High damage tolerance
- ⊕ Lower head height
- ⊕ Thicker drive wings
- ⊕ Larger socket-to-head clearance
- ⊕ High removal torque
- ⊕ Phillips Screw Company quality inspections

BENEFITS

- ⊕ Full socket-to-bolt head contact
- ⊕ Lower contact surface loading for zero deformation
- ⊕ Optimum torque transfer
- ⊕ Ability to remove damaged, corroded or seized fasteners
- ⊕ Eliminates drill outs and grinding off heads
- ⊕ Maintains head strength with reduced clearance
- ⊕ Reduces weight
- ⊕ Stronger drive and tool engagement
- ⊕ Enables off-angle driving
- ⊕ Ability to remove fasteners even with heavy paint build up
- ⊕ Assures removal of fastener under severe conditions
- ⊕ 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





EXTERNAL MORTORQ® SUPER SPIRAL DRIVE SYSTEM

EXTERNAL MORTORQ® SUPER Spiral Common Sizes

Bolt Size	Overall Length
10"	MTS-X8
1/4"	MTS-X10
5/16"	MTS-X12
3/8"	MTS-X14
7/16"	MTS-X16
1/2"	MTS-X18
9/16"	MTS-X20
5/8"	MTS-X24
3/4"	MTS-X29



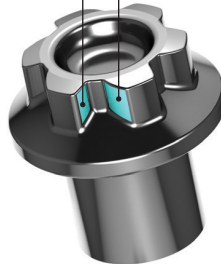
EXTERNAL MORTORQ® SUPER Spiral Drive vs. 12-Point vs. Hex Flange

Example Application: 1/2" Diameter Bolt Comparison

SYSTEM	EXTERNAL MORTORQ® SUPER	12-POINT FLANGE	HEX FLANGE
Screw	1/2"	1/2"	1/2"
Head Flange Diameter	0.844"	0.750"	1.070"
Head Height (minimum)	0.347"	0.469"	0.499"
Head Volume (Inch ³)	1.1934x10 ¹	1.3474x10 ¹	2.7912x10 ¹
Surface Area In Contact With Drive Wall (Inch ²)	8.4913x10 ³ (Drive Wall x6)	6.2736x10 ³ (Drive Wall x12)	7.5738x10 ³ (Drive Wall x6)
Surface Area In Contact With Removal Wall (Inch ²)	15.6274x10 ³ (Removal Wall x6)	6.2736x10 ³ (Removal Wall x12)	7.5738x10 ³ (Removal Wall x6)

The benefits of the **EXTERNAL MORTORQ® SUPER** Spiral Drive are its lighter weight and lower head height combined with greater torque capability resulting in significantly better performance over other drive systems. The **EXTERNAL MORTORQ® SUPER** Spiral Drive minimizes the clearance required between components while optimizing maintainability and recyclability for a truly green solution. The robust head to socket mating results in optimal torque transmission that assures clamp load while reducing installed weight. Whether you measure success in weight reduced, tighter clearance, or miles per gallon the **EXTERNAL MORTORQ® SUPER** Spiral Drive is the optimal solution.

DRIVE WALL | REMOVAL WALL



EXTERNAL MORTORQ® SUPER Spiral Drive System

- High-strength socket
- Full socket-to-wing contact
- Reduced weight
- Lower socket stress
- Fast engagement
- Lower head height

DRIVE WALL | REMOVAL WALL

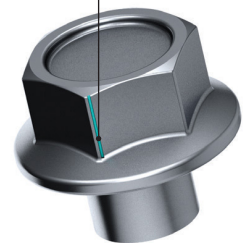


EXTERNAL MORTORQ® SUPER Spiral Drive System vs. 12-Point Flange

EXTERNAL MORTORQ® SUPER delivers:

- 11% less head volume
- 20% lower head height
- 1.4 times more drive wall surface contact
- 2.5 times more removal wall surface contact

DRIVE WALL | REMOVAL WALL



EXTERNAL MORTORQ® SUPER Spiral Drive System vs. Hex Flange

EXTERNAL MORTORQ® SUPER delivers:

- 57% less head volume
- 30% lower head height
- 1.1 times more drive wall surface contact
- 2.1 times more removal wall surface contact

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