

EXTERNAL MORTORQ® SUPER SPIRAL DRIVE SYSTEM

APPLICATIONS

SOCKET SIZES: MTS-X1 THRU MTS-X44

BOLT SIZES: #8 (M4) THRU 2 IN (M50)

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

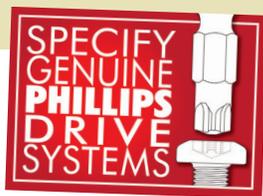
OVERVIEW

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 light weight low height design. Tighter design clearances result in overall weight reductions for bolts and structures yielding the greatest possible efficiency for todays and tomorrows vehicles.



→ For additional information on genuine Phillips Drive Systems and our licensed manufacturers, contact one of our technical representatives at +1 (781) 224-9750.



FEATURES

-  Patented curved wings
-  High damage tolerance
-  Lower head height
-  Thicker drive wings
-  Larger socket-to-head clearance
-  High removal torque
-  PSC 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

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EXTERNAL MORTORQ® SUPER SPIRAL DRIVE SYSTEM

EXTERNAL MORTORQ SUPER Spiral Common Sizes

BOLT SIZES	DRIVE & SOCKET SIZES
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
BOLT	1/2	1/2	1/2
HEAD FLANGE DIAMETER	0.844	0.750	1.070
HEAD HEIGHT	0.347 minimum	0.469 minimum	0.499 minimum
HEAD VOLUME	1.1934-01 in ³	1.3474-01 in ³	2.7912-01 in ³
SURFACE OF CONTACT AREA (DRIVE WALL)	8.4913-03 in ² (Drive Wall x6)	6.2736-03 in ² (Drive Wall x12)	7.5738-03 in ² (Drive Wall x6)
SURFACE OF CONTACT AREA (REMOVAL WALL)	15.6274-03 in ² (Removal Wall x6)	6.2736-03 in ² (Removal Wall x12)	7.5738-03 in ² (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.

<p>DRIVE WALL REMOVAL WALL</p>	<p>DRIVE WALL REMOVAL WALL</p>	<p>DRIVE WALL REMOVAL WALL</p>
<p>EXTERNAL MORTORQ SUPER Spiral Drive System</p> <ul style="list-style-type: none"> • High-strength socket • Full socket-to-wing contact • Reduced weight • Lower socket stress • Fast engagement • Lower head height 	<p>EXTERNAL MORTORQ SUPER Spiral Drive System VS. 12-Point Flange</p> <p>EXTERNAL MORTORQ SUPER delivers:</p> <ul style="list-style-type: none"> • 11% less head volume • 20% lower head height • 1.4 times more drive wall surface contact • 2.5 times more removal wall surface contact 	<p>EXTERNAL MORTORQ SUPER Spiral Drive System VS. Hex Flange</p> <p>EXTERNAL MORTORQ SUPER delivers:</p> <ul style="list-style-type: none"> • 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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