

McGard, LLC

SPECIAL PRODUCTS DIVISION

3875 California Road · Orchard Park, New York 14127 · (888)888-9192 · FAX (716)662-8985

DURASHIELD MANHOLE LOCK SPECIFICATION

1.0 Required Function

The Durashield Manhole Lock is a multi-piece lock assembly, designed to protect against unauthorized access to vaults below existing manhole covers. A special operating key is required to open and remove the lock to gain access.

2.0 Overall Design Criteria

The Durashield lock assembly is designed so that installation into the manhole frame can be accomplished by simply removing the existing manhole cover, placing the Durashield into the frame, releasing the locking mechanism, and then replacing the manhole cover into the frame. The installation does not require modification to the manhole cover or frame.

3.0 Specific Design Criteria

A. Durashield Lock Assembly

The Durashield Lock assembly is comprised of multiple assemblies, those assemblies include the spin formed and welded shield unit, the center drive assembly and 3 spring-loaded cartridge assemblies.

1. Shield Unit; Spin Formed & Welded

- a) Basic Shield
 - (1) Made from 12ga (0.105") 304SS for both its resistance to corrosion and its durability.
 - (2) Spin formed to a shape matching a wide variety of manhole frames and covers in a number of basic sizes; ex. 24", 26", 32"...
- b) Center Hub
 - (1) Machined from a solid piece of 304SS, includes drainage holes for water and debris that might fall into the recessed pattern area.
 - (2) Fits into a mating area in the spin formed shield and is welded completely to the shield.
- c) Cartridge Housing
 - (1) Made from 12ga (0.105") 304SS for both its resistance to corrosion and its durability.
 - (2) Identical halves formed and welded to together to provide structure for mounting spring-loaded cartridges.
 - (3) Welded to shield with multiple skip welds.
- d) Latch Catch Bracket
 - (1) Made from 12ga (0.105") 304SS for both its resistance to corrosion and its durability.
 - (2) Formed to provide a secure location for the latch bracket to be engaged by the MP T-Key or shipping bracket.
 - (3) Welded to shield with multiple skip weld

2. Center Drive Assembly

- a) Drive Bolt
 - (1) Machined from 17 Series Stainless Steel, heat treated to provide maximum security.
 - (2) Milled with Custom drive pattern registered to each individual customer.
- b) Bronze Bushing
 - (1) Made from High Strength Bronze, Oil-Impregnated to provide maintenance free operation.
- c) Tri-Wing Drive Plate
 - (1) Made from 12ga (0.105") 17 Series Stainless Steel and heat treated for maximum strength.
 - (2) Configured to provide connection point between drive bolt and spring-loaded cartridges.
- d) Wishbone Latch Bracket
 - (1) Made from 12ga (0.105") 17 Series Stainless Steel and heat treated for maximum strength.
 - (2) Designed and manufactured to provide multiple functions, latching and lifting.

3. Spring-Loaded Cartridge Assembly

- a) Lock Shaft
 - (1) Made from 304SS for both its resistance to corrosion and its durability.
 - (2) Connected to Tri-Wing Drive Plate w/ Connector Wire Form
- b) Hardened Point
 - (1) Machined from 17 Series Stainless Steel, heat treated for maximum strength.
 - (2) Milled to a point to create bite into manhole frame.
 - (3) Installed into external end of Lock Shaft.
- c) Locking Spring
 - (1) Made from 17 Series Stainless Steel, heat treated for maximum strength.
 - (2) Provides force to drive Lock Shaft into manhole frame.
- d) Connecting Wire Form
 - (1) Made from 17 Series Stainless Steel, heat treated for maximum strength.
 - (2) Connects Tri-Wing Drive Plate to 3 Spring-Loaded Cartridge Assemblies.

B. MP T-Key Assembly

The Durashield MP T-Key is a multi-piece assembly designed to perform various functions, which includes locking and unlocking, as well as providing a means to lift the Durashield from the manhole frame.

1. Basic Frame Assembly

- a) Main & Cross Shafts
 - (1) Made from Alloy Steel for strength and powder coated for corrosion protection.
- b) Cross Joint
 - (1) Machined from Alloy Steel to create geometry between main and cross shafts.
 - (2) Electroplated to provide excellent corrosion resistance.
- c) Lower Handle
 - (1) Manufactured from durable plastic material, to provide a secure grip when removing the Durashield from the manhole frame.
- d) Horseshoe Bracket
 - (1) Made from Alloy Steel for strength and powder coated for corrosion protection.
 - (2) Configured to provide mounting location for MP End.
- e) Key Head
 - (1) Made from Alloy Steel w/mating pattern to drive bolt & heat treated for maximum strength.
 - (2) Electroplated to provide excellent corrosion resistance.
- f) Handle Extras
 - (1) Single Key storage on one handle end.
 - (2) Screwdriver conveniently located in other end, used to remove protective caps off drive bolt.

2. MP (MultiPurpose) End

- a) Pivot Block
 - (1) Machined from Alloy Steel to create ability to switch between lift and release studs.
 - (2) Electroplated to provide excellent corrosion resistance.
- b) Threaded Lift Stud
 - (1) Made from Alloy Steel and heat treated to provide durability.
 - (2) Electroplated to provide excellent corrosion resistance.
 - (3) Threaded to mate with Durashield Wishbone, used for lifting Durashield from manhole frame.
- c) Solid Release Stud
 - (1) Made from Alloy Steel and heat treated to provide durability.
 - (2) Electroplated to provide excellent corrosion resistance.
 - (3) Sized to mate with Durashield release hole, used to lock Durashield into manhole frame.

4.0 Preventative Maintenance Schedule

Cycle the Durashield every 6 months.

5.0 Recommended Spare Parts

There are no Recommended Spare Parts, contact Factory for any service related issues.

Specifications subject to change without notice. Please consult McGard LLC regarding specific questions or requirements at 1-888-888-9192.