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Innovative Access Solutions



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Innovative Access Solutions

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Opens with less than 35 lbs. of lifting force. With the mechanical strut, products like the ductile iron hinged hatch can be opened with minimal effort.

We create exceptional solutions.

Worldwide research and collaboration gives EJ the edge in creating the best infrastructure solutions—solutions that lead the industry, act as best-in-class benchmarks, and satisfy the most demanding customer expectations.

With a focus on safety, functionality, and ergonomics, the design teams at EJ present our Innovative Access Solutions.



Optimized Designs

Rethinking access designs to make products with the right balance of strength, weight, and durability.



Ease of Use

Each product is designed to improve the installation process and enhance the ease of access to critical underground infrastructure—with a blend of ergonomics and functionality.



Safety and Security

The safety of workers and pedestrians is the top priority of the innovative line. You will see this with designs that minimize the potential for injury and keep structures secured.

Optimized Designs

Years ago, castings were overbuilt to handle the inconsistencies of molding and iron quality. Now, with more controlled manufacturing processes and a better understanding of design practices, these antiquated designs can be updated.

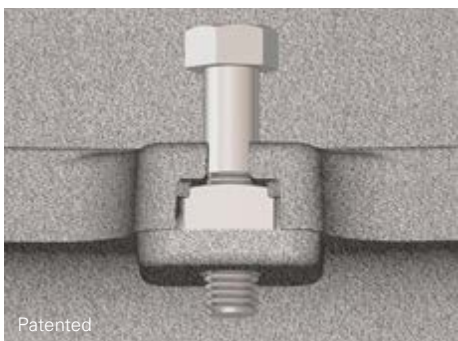
Our modern castings provide superior performance with reduced weight, saving energy and raw material.

Benefits

- Load ratings that exceed AASHTO M 306 proof load testing
- Reduced weight for ergonomic benefits
- Improved product functionality
- Added strength and durability
- Less raw material usage — a green product
- Interchangeability with your existing street castings



Stackable frames improve safety and conserve space during storage, in transit, and when handling.



EON LOCK® Bolting

EJ has developed a reliable, hassle-free way to ensure solid, long lasting security.



Ribbed modern cover design for ductile iron



Platen modern cover design for gray iron



Thinner wall thickness and stronger cover seating

Recessed region in flange design can reduce material and weight

Modern frame designs offer improved performance and safety. They are lighter weight and withstand higher load ratings.

Ease of Use

Whether it is an access point you need to get into daily, or only on an occasional basis, ease of entry to the chamber is key for authorized personnel.

Our designs incorporate features that improve reliability and ergonomics to make use simple and reduce effort.

Benefits

- Ergonomically engineered to minimize effort and reduce strain
- Intuitive operation that requires minimal training
- Multiple handling options that can accommodate your existing tools



Mechanical Strut

Mechanical strut greatly reduces the effort required to open the cover. For example, a 550 pound cover can be lifted using less than 35 pounds of force at the handle. The fully contained, corrosion-resistant stainless steel strut takes up minimal space and is superior to exposed spring lift assist systems.



Hinged Covers and Hatches

Ranging from standard manholes to large hatches, EJ offers a wide range of solutions to fit your application's proof load and usage needs (see page 9 for benefits of hinge cover designs).

EPIC® Pick Bar

EPIC pick bar solution improves stability and increases leverage in this patented, closed hole design.

MULTILEAF™ Hinged Covers

To withstand heavy loads, large openings typically required heavy covers. Innovations from EJ, such as the MULTILEAF, use a multi-cover design to distribute the weight between several covers, making opening the large cover area much easier while retaining strength.

Safety and Security

Personal safety for all of our customers and employees is imperative. We incorporate safe practices into every process, product and service we provide—from design and manufacture, through distribution and end use.

Adding to safety is security. Infrastructure security is a concern for all government entities both large and small. EJ offers different levels of infrastructure security. In most cases, the simplest security is appropriate, however the end user has several innovative options.

Benefits

- Intuitive safety features and options that provide physical and visual barriers to protect both workers and the public
- Wide range of security options to protect against accidental opening or closing and prevent unauthorized access or removal



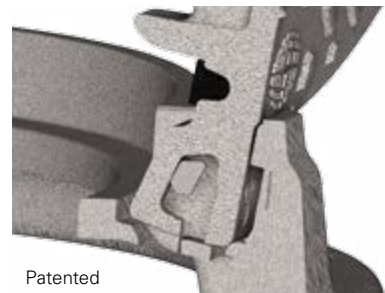
Safety Grate

Designed for fall through protection, safety grates offer access for visual inspections and limited maintenance while the safety grate is in place. When in the open position, the safety orange aluminum grates create a visual barrier around the pit. Safety grates can also be locked to prevent unauthorized entry.



Safety Bar

Self-engaging safety bar locks into place when the cover is fully opened and prevents accidental closure. The safety bar easily lifts up and out of the locking position, allowing the cover to close.



Safety Catch

Offered in our hinged manhole covers, the safety catch design helps prevent unintended closure. The design also allows for the cover to be removed and opened to angles greater than 90°, providing clear access to the structure below.

ADA Compliance

Provides safe walking and biking surfaces and equal access for all modes of transportation.





Cam Bolting

Available on the CAMPRESSION® series, the arrangement of cam bolting locks applies pressure to the cover and gasket for a tight seal. The design does not require the bolt to be removed to open the cover. Simply loosen the bolt enough to rotate the cam to the open position to remove the cover. Cam bolting eliminates loose and missing fasteners.

Other Bolting Options

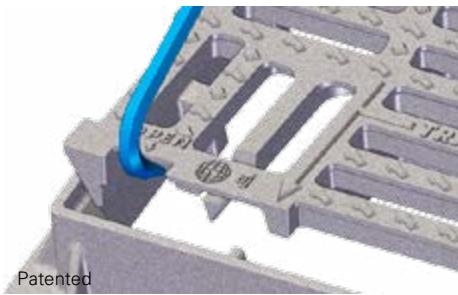


Standard Bolting—
The simplest way to secure covers or grates to the appropriate frame. Standard hex bolts or cap screws are the most common.



Pent Head Bolting—
Provides a bit more security over standard bolting. Pent head bolts are substituted for the standard hex head style. Tools for pent head bolts are commonly available.

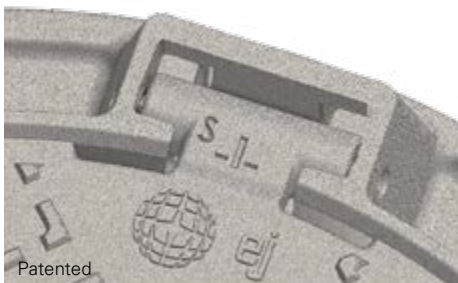
Missing and stolen covers are dangerous to pedestrians and motorists. Make sure they are properly secured against the hazards in their environment.



Patented

Slam Lock

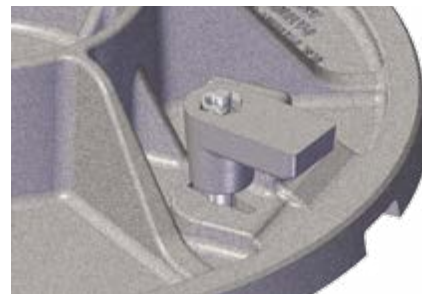
The self engaging slam lock feature automatically locks the cover/grate to the frame when closed. To the untrained eye, the unlocking technique for the slam lock is not easily recognizable. With a standard pry bar, the latch releases when the pry bar is applied to the right location.



Patented

Captive Hinge

Using a theft resistant hinge pin permanently secures the cover to the frame. This patented feature is referred to as our Captive Hinge design.



Cam or Keyed Locks

The cam lock provides improved security to frame and cover assemblies, while eliminating loose and missing fasteners. EJ offers various cam and lock options to fit your needs. (underside view shown)



Tamper Proof Bolting—
These type of bolts are used for situations that require special security above standard and pent head bolting. Tools required for removal are not as common.

Innovative Product Lines



Benefits of Hinged Manhole Assemblies

Functionality

- Ergonomics—Cover easily opens for access. Also works great in situations where a cover can't be dragged out of the way due to space restrictions or the elevation of the access point.
- Time Savings—For secured covers, users don't have to spend time moving/finding the right cover orientation on the frame to re-bolt the cover.

Safety




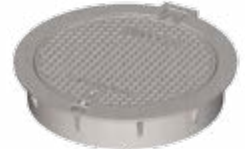




- Resting Open Cover—Hinge design allows cover to rest in an upright and open position for clear access. The cover also acts as a visible barrier to one side of the structure.
- Safety Catch—Safety catch helps prevent the cover from inadvertently closing.*

Security

- One-Point Security—Connecting one side to the frame via the hinge, only one security option is needed to secure the cover, simplifying locking/unlocking the structure during service.
- Range of Security Options—Standard bolting can keep the cover secured to the frame. Upgrading locks and special security bolting can deter theft.

EJ offers a wide range of hinged manhole solutions. Please use this table below for highlights and comparisons between our hinged manhole product lines.

Hinged Manhole Assembly Comparison

Product	ERGO® ACCESS ASSEMBLY	ERGO® XL ACCESS ASSEMBLY	CAPTIVE HINGE	HINGECO® FRAME AND COVER
				
Clear Opening	24" and 28"	30" and 36"	24"	24"
Frame Height	4" (for 24" clear opening) 6" (for 24" clear opening) 7" (for 24" clear opening) 7" (for 28" clear opening)	4 1/2" (for 30" clear opening) 5 1/2" (for 30" clear opening) 6" (for 36" clear opening)	4"	4" bottom flange—round 4" bottom flange—square 6" top flange
Hinge Detail				
Top Flange Available	—	—	—	Yes
Lift Assist Available	—	Yes	—	—
Grate Available	Yes	—	Yes	—
Security Options	Cam lock, bolts	Cam lock, bolts	Captive hinge pin, cam lock, bolts	Slam lock
Standard Iron Type	Ductile iron cover Gray iron frame	Ductile iron cover Gray iron frame	Ductile iron cover Ductile iron frame	Ductile iron cover Ductile iron frame
Load Rating	Heavy duty	Heavy duty	Heavy duty	Heavy duty†

*Complete removal of the cover is recommended when entering the access point.

†HINGECO is suggested for unintended vehicular traffic rated applications.

ERGO® ACCESS ASSEMBLY

The ERGO Access Solution has been designed with ergonomics in mind to optimize worker safety by incorporating a hinge feature.

The cover opens to 120°, where the cover securely rests and can be removed. The safety catch at 90° prevents accidental closure.

The ERGO access assembly is customizable to most city specifications with multiple frame openings and heights available. For clear openings greater than 28", please refer to the ERGO XL access assembly.

Standard Features

- Heavy duty
- Gasketed
- Patented hinge assembly
- Opens to 120°
- Safety catch and removal at 90°
- Hinge design allows for flood pressure relief — lid remains attached
- Ductile iron cover
- MPIC® multi-tool pick bar

Options

- Available on SELFLEVEL®
- Special lettered covers
- Custom logo covers
- Environmental messaging
- Grates available
- Cam lock security
- Bolted EON LOCK® design
- Water resistant
- Multiple frame openings and heights available (see table)



ERGO access assembly in the City of St. Cloud, FL.



Showing 24" ERGO with cam lock



Drainage grate available for 24" ERGO

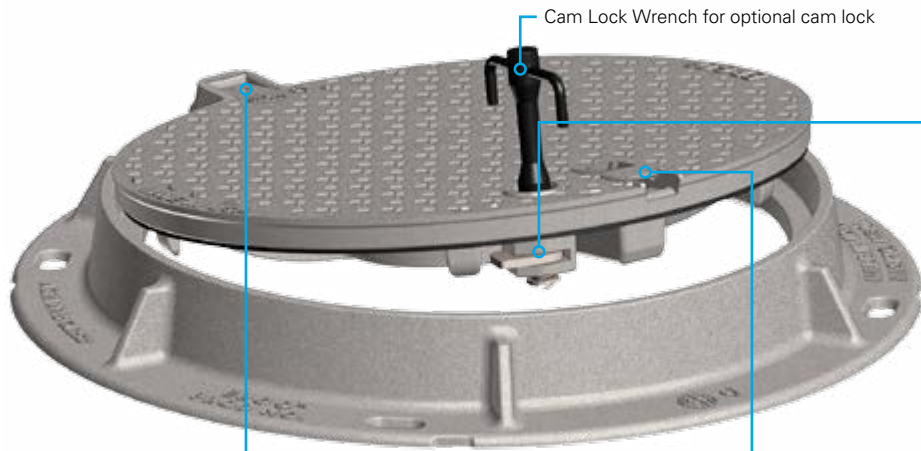


T-Gasket

The thick and durable gasket cushions traffic shock and resists water infiltration, making it the best gasket in the business.



Important Safety Information
Complete removal of the cover is recommended when entering the access point.



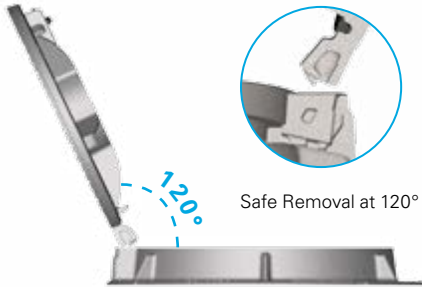
Cam Lock Wrench for optional cam lock

Cam Lock Security Option

The cam lock provides improved security to frame and cover assemblies, and also eliminates loose and missing fasteners. The cam lock wrench is only removable when the cover is in the locked position, ensuring it is engaged.



Safe Cover Removal



Safe Removal at 120°

The patented hinge design allows the cover to open up to 120°, where it rests in a safe and secure position. From the 120° position, the cover can be safely removed.

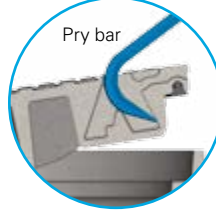
Safety Catch



Patented

Patented ERGO hinge design has a safety catch at 90° to prevent accidental closure.

MPIC® Multi-tool Pick Bar



Pry bar



Custom logo cover made from a photo of Mt. Edgecumbe, by local photographer Tim Shobe, for the City of Sitka, Alaska.

ERGO Frame Clear Openings and Heights

Clear Opening	Frame Height	Series No.
24	4	2404
24	6	2406
24	7	2407
28	7	2807

Note: All dimensions are in inches.



Visit our YouTube Channel for videos on this and other products at www.youtube.com/AccessInfrastructure

ERGO® XL ACCESS ASSEMBLY

The ERGO XL Access Assembly offers an advanced level of functionality and safety for 28" clear openings and above.

This product is easy to lift open, reduces excess strain, and promotes safe working conditions. To address ease of use, choose an optional stainless steel mechanical strut that reduces the lifting force to raise the cover to less than 50 pounds.

Standard Features

- Heavy duty
- Gasketed
- Patented hinge assembly
- Opens to 120°
- Safety catch and removal at 90°
- Hinge design allows for flood pressure relief — lid remains attached
- Ductile iron cover
- MPIC® multi-tool pick bar

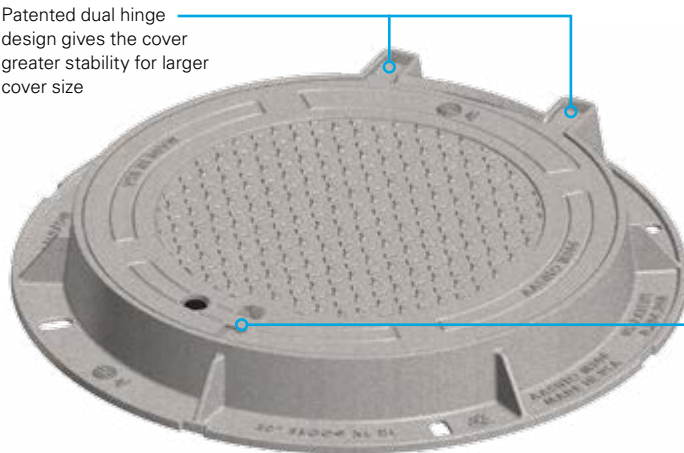
Options

- Airport extra heavy duty
- Special lettered covers
- Custom logo covers
- Environmental messaging
- Cam lock security
- Bolted EON LOCK® design
- Watertite seal
- Lift assist
- Multiple frame openings and heights available (see table)

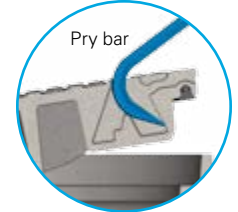


ERGO XL adds convenience to 30" and 36" access assemblies.

Patented dual hinge design gives the cover greater stability for larger cover size



MPIC® Multi-tool Pick Bar



ERGO XL Frame Clear Openings and Heights

Clear Opening	Frame Height	Series No.
30	4 1/2	3004
30	5 1/2	3005
36	6	3606

Note: All dimensions are in inches.

Important Safety Information
Complete removal of the cover is recommended when entering the access point.

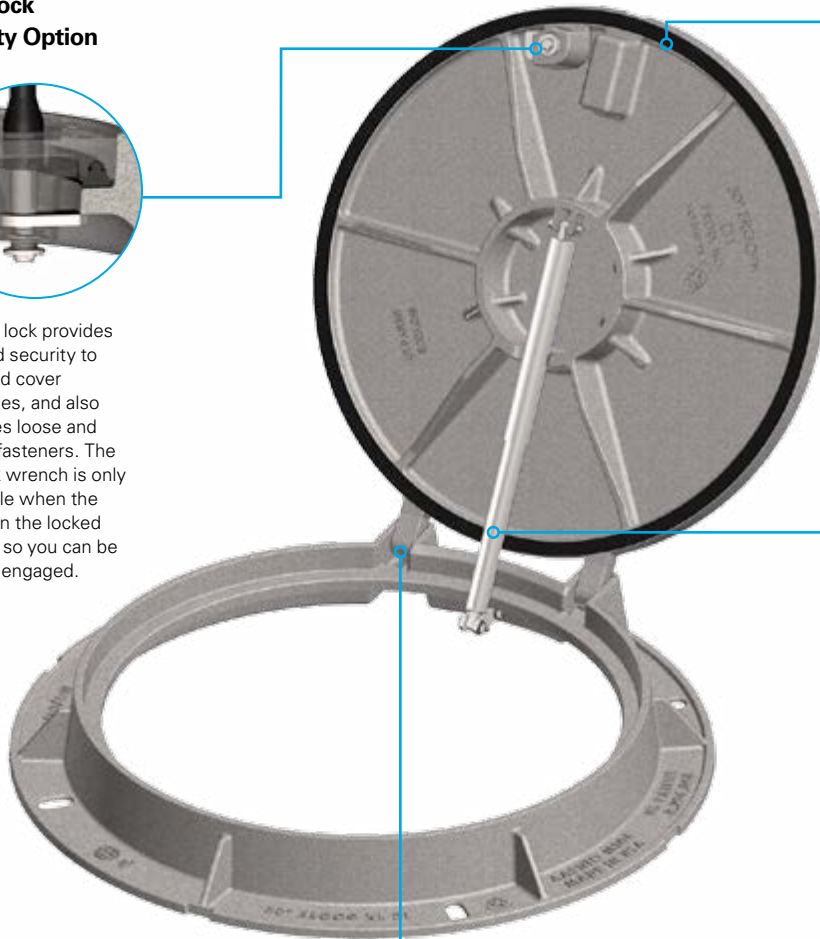
Cam Lock Security Option



The cam lock provides improved security to frame and cover assemblies, and also eliminates loose and missing fasteners. The cam lock wrench is only removable when the cover is in the locked position, so you can be sure it is engaged.

T-Gasket

The thick and durable gasket cushions traffic shock and resists water infiltration, making it the best gasket in the business.



Lift Assist

Optional lift assist is a corrosion-resistant stainless steel mechanical spring strut that reduces the lifting force of the cover to less than 35 pounds. It is available only on the ERGO® XL.

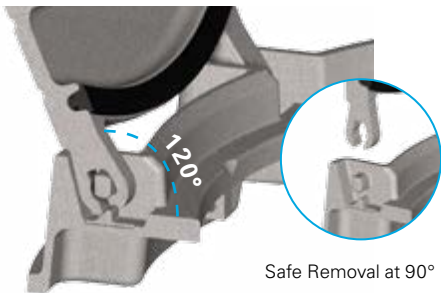
Mechanical Strut Lift Assist

The rugged design is clean and maintenance free. The strut takes up less space in the clear opening than a traditional spring assist. It is fully self-contained, protecting coils from exposure to the elements.

Made without internal gases or seals, the struts have an effective operating temperature range of -30° F to 400° F. The durability has been tested at over 150,000 cycles.



Opening Range and Safe Cover Removal



Our patented dual hinge design allows the cover to open up to 120°, where it rests in a safe and secure position. From the 90° position, the cover can be safely removed.



Visit our YouTube Channel for videos on this and other products at www.youtube.com/AccessInfrastructure

CAPTIVE HINGE ACCESS ASSEMBLY

The Captive Hinge Access Assembly is an advanced solution that addresses present concerns in the market such as cover theft, ergonomics, safety, pressure relief, and security. Once a cover with a captive hinge pin is installed, the cover cannot be removed.

Standard Features

- Heavy duty
- Gasketed
- Opens to 120°
- Safety catch at 90°
- Ductile iron frame and cover
- MPIC® multi-tool pick bar
- Patented hinge assembly
- Non-slip surface

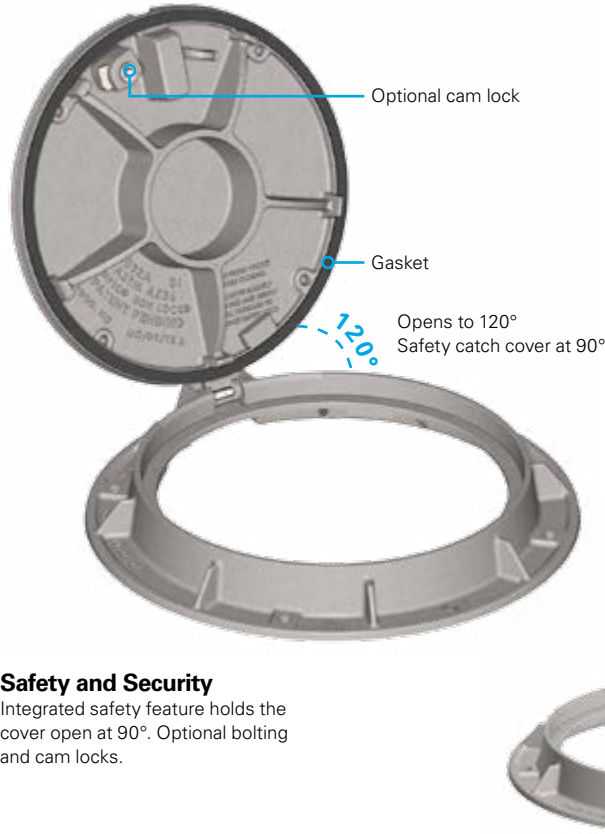
Options

- Drainage grates
- Special lettered covers
- Custom logos
- Environmental messaging
- Wireless remote monitoring
- Security — Cam lock, bolting
- Multiple frame openings and frame heights available
- Captive hinge optional pin makes cover non-removable



Important Safety Information

If used without an installed pin, complete removal of the cover is recommended when entering the access point.

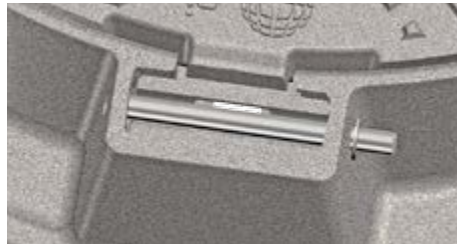


Safety and Security

Integrated safety feature holds the cover open at 90°. Optional bolting and cam locks.

Theft Resistance Hinge Pin

The end user has the option to permanently connect the cover to the frame to prevent cover theft. A cover can be made captive before delivery, during installation, or after installation.

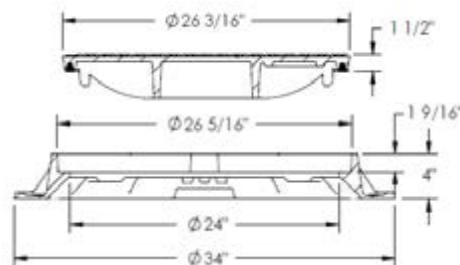


Option 1—Preinstalled (cutaway view shown)
Captive hinge pin installed during manufacturing by EJ.



Option 2—Retrofit (cutaway view shown)
The retrofitting captive hinge pin can be installed anytime if a preinstalled pin hasn't been used. The pin comes with a spring built within the pin, which sets during installation to permanently secure the hinge to the frame.

Note: The Captive Hinge pin is not a requirement for the function of this product.



Optional drainage grate with cam lock

HINGECO® FRAME AND COVER

Combine ergonomics and security with the HINGECO frame and cover assembly.

The design of this cover allows it to pivot on the hinge and holds it at 120° to provide unobstructed access to the clear opening of the frame. In combination with the slam lock, there is no need for multiple cam locks to secure the cover. One slam lock keeps the cover secured and can be unlocked with a standard pry bar.

Precasting the HINGECO frame and cover assemblies is made easy with the top flange version. By casting the assembly upside down, getting a smooth, flat surface is simplified during the pouring process.

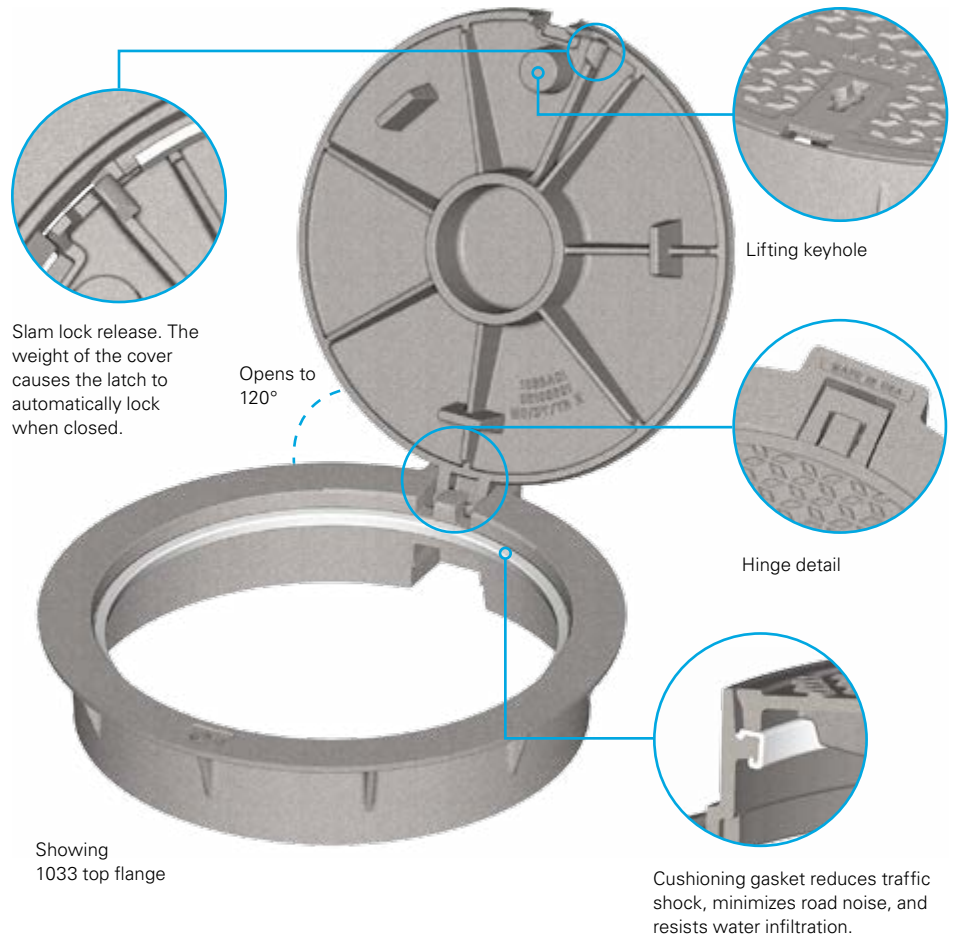
Standard Features

- Heavy duty
- Ductile iron frames and covers
- Proof load exceeds AASHTO M 306 40,000 lbs. requirement
- Hinged cover opens to 120°
- Cover locks in 90° open position, must be lifted to be released
- Cover removes at 90°
- Slam lock release feature, which automatically locks when closed

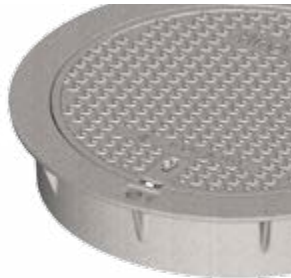
Options

- Round or square frames
- Special lettered and custom logo covers
- Cushioning gasket on bearing surfaces
- Lift handle
- Top flange available

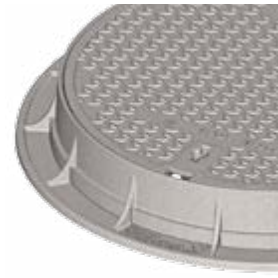
Note: HINGECO is suggested for unintended vehicular traffic rated applications.



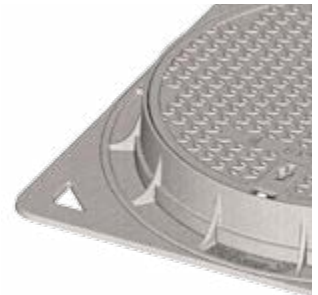
Frame Options



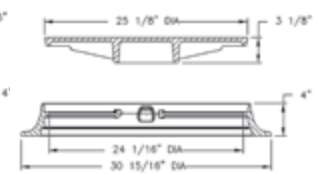
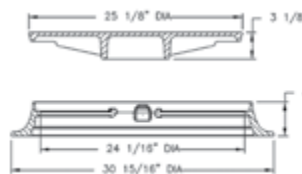
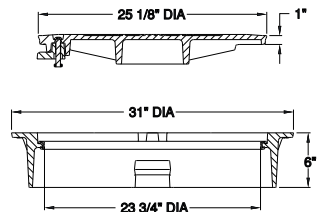
1033 top flange



1033 bottom flange



1034 bottom flange



Important Safety Information
Complete removal of the cover is recommended when entering the access point.

SELFLEVEL® ASPHALT ACCESS ASSEMBLY

The SELFLEVEL Access Assembly is a highly engineered infrastructure solution. Unlike traditional manhole units, its unique design allows for a range of movement that keeps the SELFLEVEL access assembly perfectly aligned with the finished road surface. This unit works for both retro fit and new installations.

Standard Features

- Heavy duty
- Upper frame is supported by road surface
- Unit stays level with the road surface, even when road heaves due to extreme temperature changes
- Up to 5° tip angle for top frame
- Proof load exceeds AASHTO M 306 standards
- Frame fits with existing manhole covers

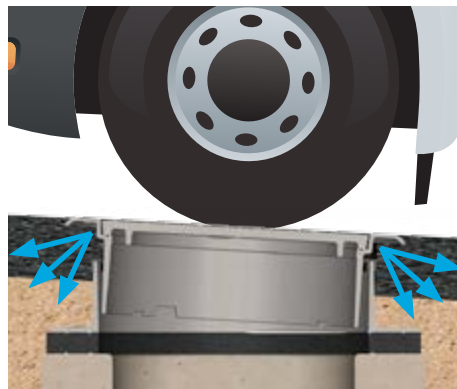
Options

- Special lettered covers
- Custom logo covers
- ERGO® SELFLEVEL assembly
- Transitional frame (square base to round top)
- EON LOCK®
- Cam lock
- Neoprene gasket for cover
- Watertite assembly
- INFRA-RISER® adjustment riser
- Multiple frame openings and heights available



After asphalt has been packed, the SELFLEVEL compacts level with the surrounding roadway for a smooth finish that will last longer than traditional manhole assemblies in situations where there can be frost heave and natural road settling.

Range To Move With Surface



Once installed, the unit will continue to move with the road surface. The road surface aids in absorption of traffic vibration and shock, further protecting the life of your infrastructure and critical underground structures.



SELFLEVEL has a range of motion of up to a 5° angle while still moving with surface

Reduce Surface Movement Issues



SELFLEVEL® Access Assembly Helps Eliminate:

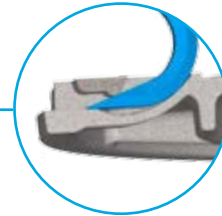
- Frost heave/uplift
- Manhole structure settling
- Site deterioration
- Pavement cracking

SELFLEVEL® Access Assembly also Provides:

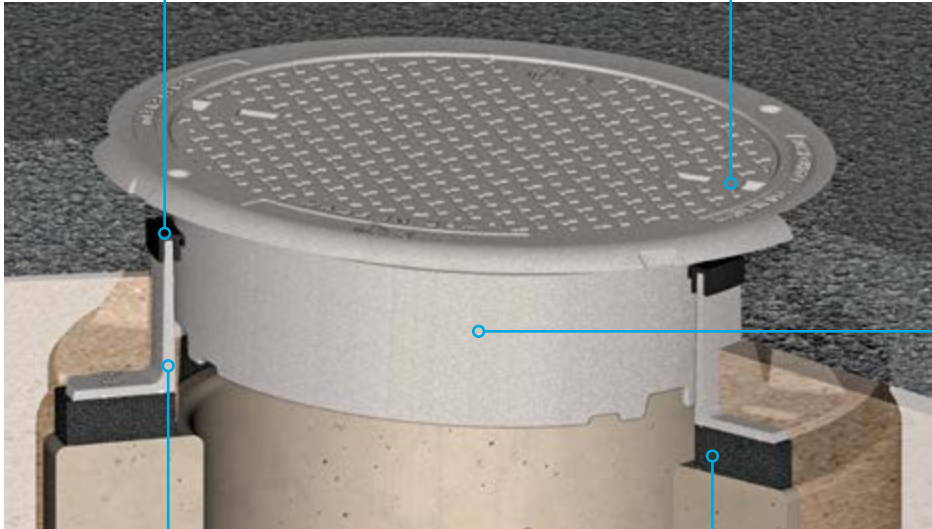
- Improved ride quality to meet smooth street initiatives
- Inclined installations

Multi-functional Seal

The multi-functional seal helps keep the upper frame centered within the guide frame, which prevents the two pieces from touching. It reduces water infiltration and protects against excess debris and material from entering the manhole.



EPIC® Pick Bar



Upper Frame

The upper frame of the SELFLEVEL assembly is supported by and moves with the surrounding road surface. This allows it to remain level with the road surface. This “floating” affect helps prevent road damage and protects the infrastructure underground by dispersing traffic vibrations and shock throughout the road surface, rather than into the structure below.

Guide Frame

This frame facilitates self-centering and keeps the upper frame centered over the manhole structure.

Optional INFRA-RISER adjustment riser



With backfill packed around the guide frame, this SELFLEVEL is prepared for asphalt at a new installation in Traverse City, Michigan.



ERGO SELFLEVEL for asphalt combines the ergonomic and security benefits of the hinged cover with the roadway leveling benefits of the SELFLEVEL frame.

SELFLEVEL Asphalt Assembly Sizes

Cover Size	Clear Opening	Series No.
26	24	1205, 1037, 3024
29 5/8	27 15/16	3028
32	30	1322, 3027

Note: All dimensions are in inches.



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SELFLEVEL® CONCRETE ACCESS ASSEMBLY

The concrete SELFLEVEL Access Solution has been designed specifically for concrete applications. By incorporating adjustment brackets into the design, the frame can be held up during the concrete installation. After the concrete cures, the brackets should be removed, and the upper frame will move with the pavement.

This product is ideal for environments with frost heave, as the frame floats with the surface. It also works well for communities with a smooth street initiative, or inclined installations.

Standard Features

- Heavy duty
- Upper frame is supported by road surface, and can be installed with a maximum tip of 5°
- Steel sleeve protects the unit (SELFLEVEL) from concrete interference
- Lifting handles on upper frame allow for easier handling during installation
- Lower frame is bolted to structure below.
- Proof load exceeds AASHTO M 306 standards
- Frame fits with existing manhole covers

Options

- Special lettered covers
- Custom logo covers
- ERGO® SELFLEVEL assembly
- Transitional frame (square base to round top)
- EON LOCK®
- Cam lock
- Neoprene gasket for cover
- Watertite assembly
- INFRA-RISER® adjustment riser
- Multiple frame openings and heights available



The SELFLEVEL® access assembly is a highly engineered infrastructure solution. It provides additional benefits that a traditional manhole unit cannot provide. Its unique design allows a range of movement, providing installations that are perfectly aligned with the finished road surface.

Reduce Surface Movement Issues



SELFLEVEL® Access Assembly Helps Eliminate:

- Frost heave/uplift
- Manhole structure settling
- Site deterioration
- Pavement cracking

SELFLEVEL® Access Assembly Also Provides:

- Improved ride quality to meet smooth street initiatives
- Inclined installations



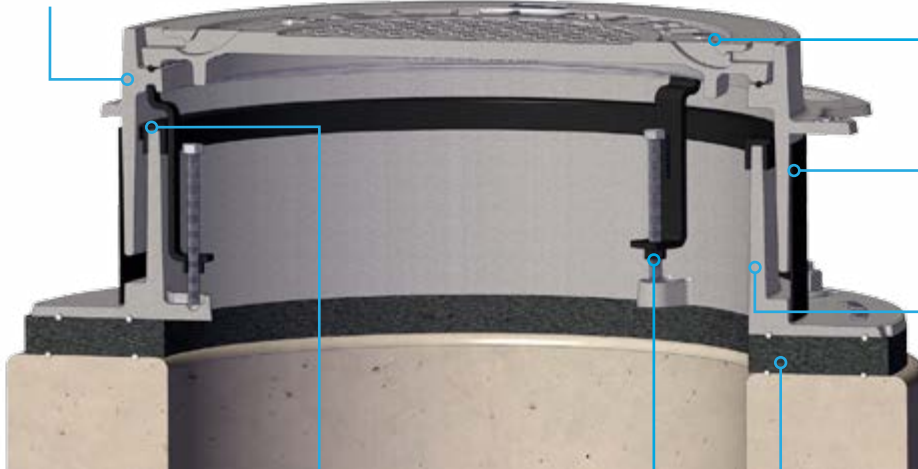
SELFLEVEL has a range of motion of up to a 5° tip angle while still moving with surface

Upper Frame

The upper frame of the SELFLEVEL assembly is supported by and moves with the surrounding road surface. This allows it to remain level with the road surface. This “floating” effect helps prevent road damage and protects the infrastructure underground by dispersing traffic vibrations and shock throughout the road surface, rather than into the structure below.



EPIC® Pick Bar



Steel Sleeve

Creates a void, while pouring concrete, to allow upper frame to float with the road surface.

Guide Frame

This frame facilitates self-centering. The guide frame comes with a multi-functional seal. It reduces water infiltration and protects against excess debris and material from entering the manhole.

Multi-functional Seal

The multi-functional seal helps keep the upper frame centered, which prevents the two pieces from touching.



Optional INFRA-RISER® Rubber Composite Adjustment Riser.



Adjustment Tab and Bracket

Adjustment bracket and bolt for raising the upper frame up off the lower frame during pouring, giving it clearance to ‘float’ when set in concrete. After concrete has cured, the bracket and bolt are removed and can be reused. Adjustment bolt tabs can be cut off for greater clear opening after installation.

SELFLEVEL Concrete Assembly Sizes

Cover Size	Clear Opening	Series No.
26	24	3025
32	30	3027

Note: All dimensions are in inches.



Visit our YouTube Channel for videos on this and other products at www.youtube.com/AccessInfrastructure

REVOLUTION® ACCESS ASSEMBLY

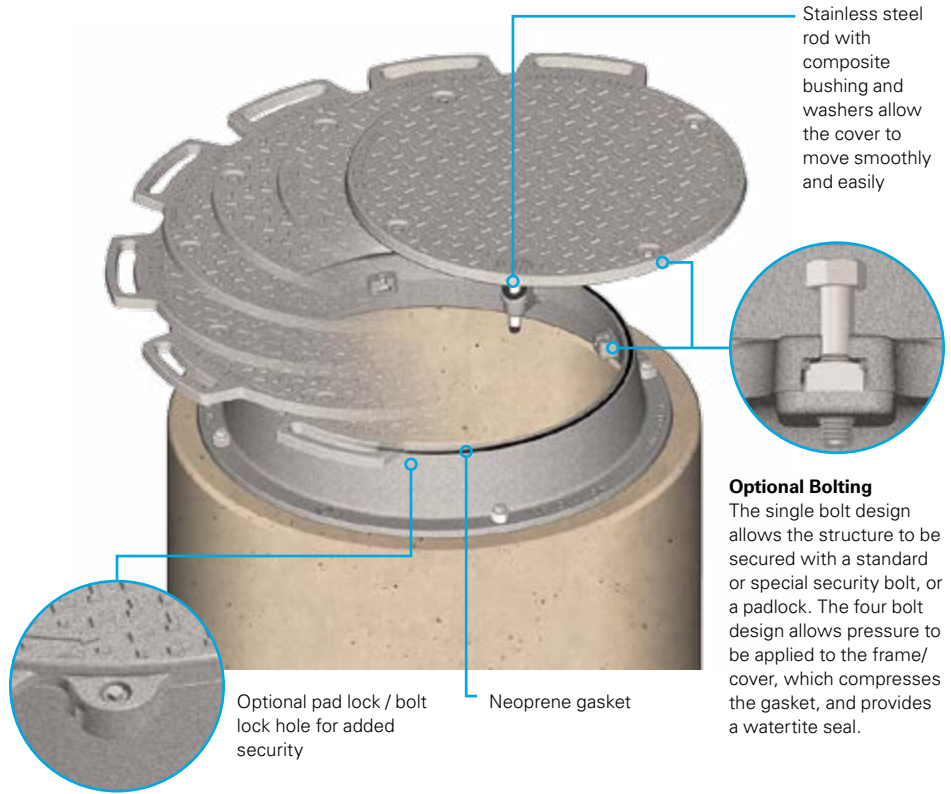
Discover the REVOLUTION Access Assembly — it is the perfect solution for elevated structures and raised access points. The cover pivots away from the hole opening, eliminating the need for manually raising or lowering the cover. It rotates in either direction on a cast-in stainless steel rod that ensures it remains attached to the frame. No special tools are required to open and close.

Features

- Non-traffic rated
- Lightweight cover — easy to open, no lifting required, and takes only one person to operate
- Cast in stainless steel cover rod
- Water resistant — cover overlaps frame
- A 1/4" round neoprene gasket is secured to prevent roll out and provides odor control
- 5" frame height

Options

- Special lettering
- Watertite
- Integrated hole for optional padlock
- EON LOCK®
- Security bolting



Optional Bolting
The single bolt design allows the structure to be secured with a standard or special security bolt, or a padlock. The four bolt design allows pressure to be applied to the frame/cover, which compresses the gasket, and provides a watertite seal.

Lift and Rotate Cover



To open the cover, slightly lift, and rotate the cover. The patented design provides cover lift and rotation with minimal effort. Worker safety is improved by eliminating the need to hoist heavy covers when opening or closing the elevated unit.

Resists Water Infiltration



The surface of the cover extends slightly past the edge of the frame, and the neoprene gasket helps seal the unit against water infiltration. A watertite seal can be achieved with the four bolt design.

REVOLUTION Size Options

Clear Opening Dia.	Series No.
24	1040 and 4138
28	1890
30	4142

Note: All dimensions are in inches.

Important Safety Information

Securely bolt the frame to manhole cone on 29 3/4" bolt circle
Do not subject cover to any load when in open position
Do not install in areas of vehicular traffic



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CAMPRESSION® WATERTITE ASSEMBLY

The CAMPRESSION Access Assembly solution minimizes water infiltration, controls odor and provides improved security. It is suitable for applications requiring a gas/steam/pressure tight seal.

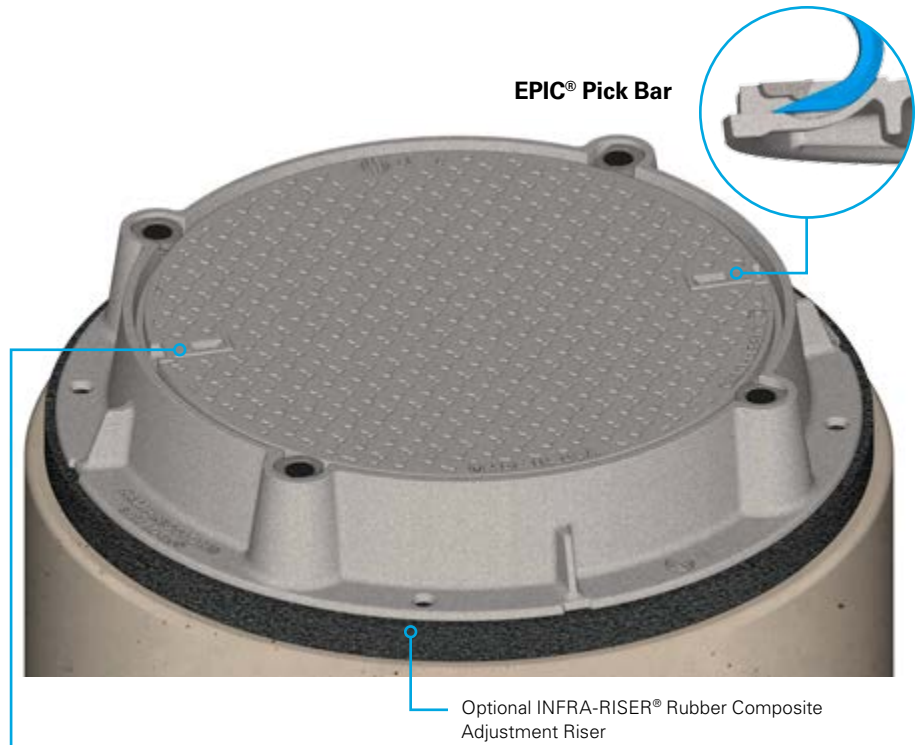
Evenly distributed cam locks apply pressure to the cover against a neoprene gasket, forming a tight seal to keep out water, or to contain the atmosphere in the structure.

Standard Features

- Heavy duty load application meets AASHTO M 306 certification
- Ductile iron cam locks with EON LOCK® bolts provide watertite and security features
- 1/4" round neoprene gasket
- EPIC® closed pick slots
- Lightweight ductile iron cover, per ASTM A 536
- 6" frame height

Options

- Custom logo cover
- Special lettered cover
- 2" adjustment riser available

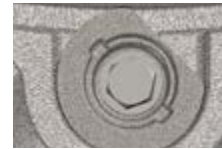


Cam Locks

Ductile iron cam locks rotate to open cover, and back to tighten and secure cover. No need to completely remove the bolts—just loosen bolts and rotate cam.



Closed with cap on

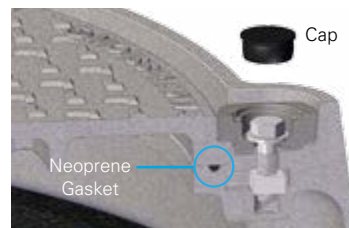


Cap off, loosen bolt, rotate cam



Rotate 90° to open

EON LOCK®



EON LOCK® replaceable threads.

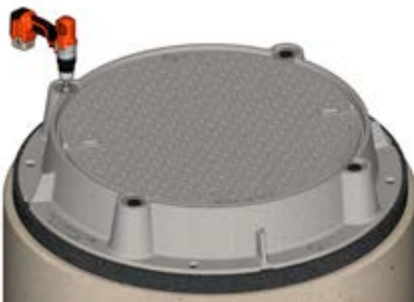
Stackable Frames



Frames stack to improve safety and conserve space during handling, transit, and storage.



24" three bolt design



30" four bolt design



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DUCTILE IRON HINGED HATCH ACCESS ASSEMBLY

Ductile iron access hatches have been designed for improved ergonomics, and are available in heavy duty and airport extra heavy duty applications.

On a cover that can weigh as much as 550 lbs, the lifting force required to open the cover is less than 35 lbs due to the uniquely designed mechanical strut.

The self-engaging safety bar provides added protection while the underground infrastructure is accessed, and safety grates can be specified for added fall through protection.



Features

- Ductile iron frame and cover
- Cover opens to 105°, safety catch and removal at 90°
- Self-engaging safety bar
- EON LOCK®
- MPIC® multi-tool pick bar
- Bolting

Options

- Mechanical lift assist (standard feature for airport rated models)
- Top and bottom flange designs
- Safety grate
- INFRA-RISER® adjustment riser
- Forming skirt

Wide Availability of Sizes

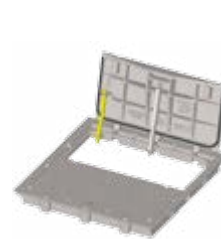
Shown below are just a sample of the various cover openings and sizes. See the table below for the full range of available clear opening sizes and load ratings.



8192 hinged hatch
24" x 36"



8198 hinged hatch
with dual lift assist
48" x 48"



8218 double assembly
48" x 48"



8196 double assembly
30" x 62"



8197 grate option
36" x 36"

Ductile Hinged Hatch Clear Opening Options

Clear Opening Size	Airport Extra Heavy Duty Series No.	Heavy Duty Series No.
24 x 24	8195	8215
24 x 36	8192	8212
30 x 30	8196	8216
30 x 62	8196—Double	8216—Double
36 x 36	8197	8217
36 x 74	—	8217—Double
48 x 48	8198	—
48 x 48	—	8218—Double

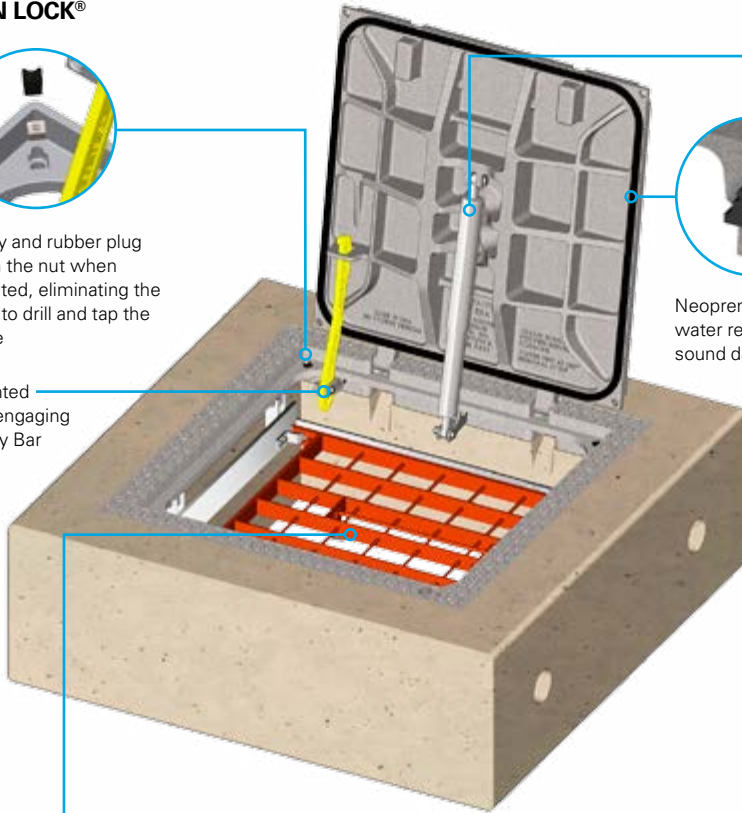
Note: All dimensions are in inches.

EON LOCK®



Cavity and rubber plug retain the nut when unbolted, eliminating the need to drill and tap the frame

Patented Self-engaging Safety Bar



Neoprene gasket for water resistance and sound dampening

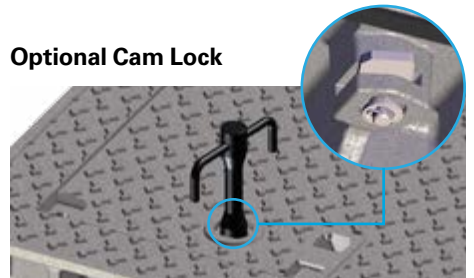
Lift Assist

Lift Assist is a corrosion-resistant stainless steel mechanical spring strut. The rugged design is clean and maintenance free. The strut takes up less space in the clear opening than a traditional spring assist. It is fully self-contained, protecting coils from exposure to the elements.

Made without internal gases or seals, the struts have an effective operating temperature range of -30° F to 400° F. The durability has been tested at over 150,000 cycles.



Optional Cam Lock



Security cam lock and wrench shown. Wrench is only removable when cover is in the locked position.

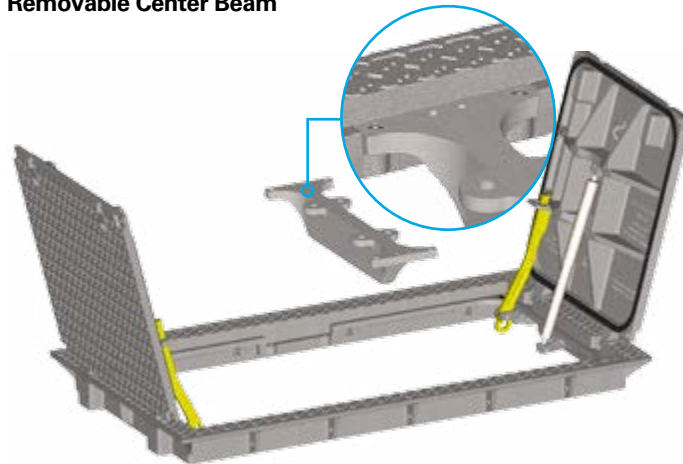
Optional Safety Grate

Provides additional safety features

- Doors cannot be closed unless the fall through protection has been put back in place (protecting the next operator).
- Visual inspections and limited maintenance can be done while safety grate is left in place.
- Orange safety grates create a visual barrier around the pit; an orange epoxy coating promotes an awareness of the hazard and provides a durable finish.
- Grate can be locked independently of the hatch, adding another level of security when needed.



Removable Center Beam

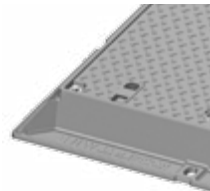


Removable center beam provides a much greater clear opening access on several double hatch models. Removal/replacement is simple with 4 bolts securing the beam to the frame.

Frame Options



Top flange frame



Bottom flange frame



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HINGED GRATE ASSEMBLY WITH SLAM LOCK

The heavy duty Hinged Gate Assembly works great for drainage inlets that require a higher level of security than a stand alone frame and grate.

The heavy duty ductile iron frame and hinged grate, a part of the 5624 series, is typically installed in high traffic areas. The patented slam lock closure feature prevents the grate from opening inadvertently and conceals the lock from unauthorized access. Self wedge seating allows traffic to push the grate into the frame — preventing the grate from rocking.

The lightweight grate opens to 115° and removes at 90°.

Standard Features

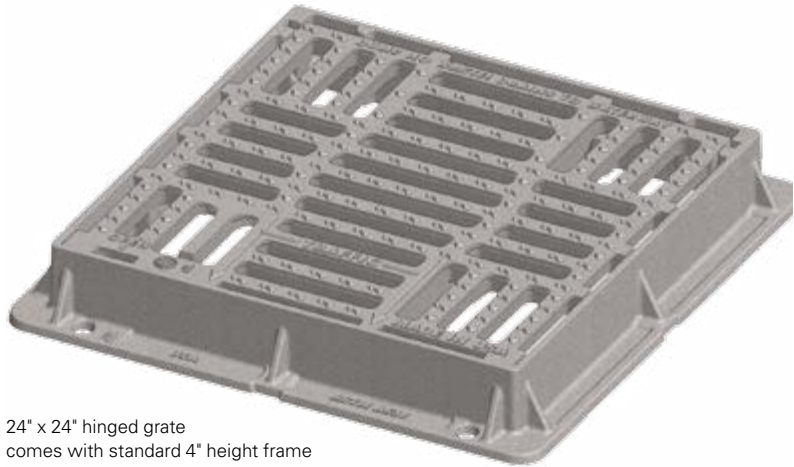
- Heavy duty
- Square grate 290 sq. in. open area
- Ductile iron frame and grate meet ASTM A 536 requirements
- Lightweight grate opens to 115° and removes at 90°
- Self wedging grate seating
- Slam lock (locking feature)

Options

- Top flange frame
- 3 flange (including left and right hand variations) and 4 flange frames available
- Special lettering



Grate includes directional instruction markings and anti-slip texture. Special lettering options (including environmental messaging) are available.

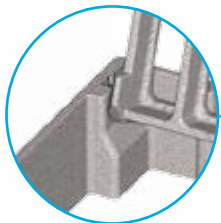


24" x 24" hinged grate comes with standard 4" height frame



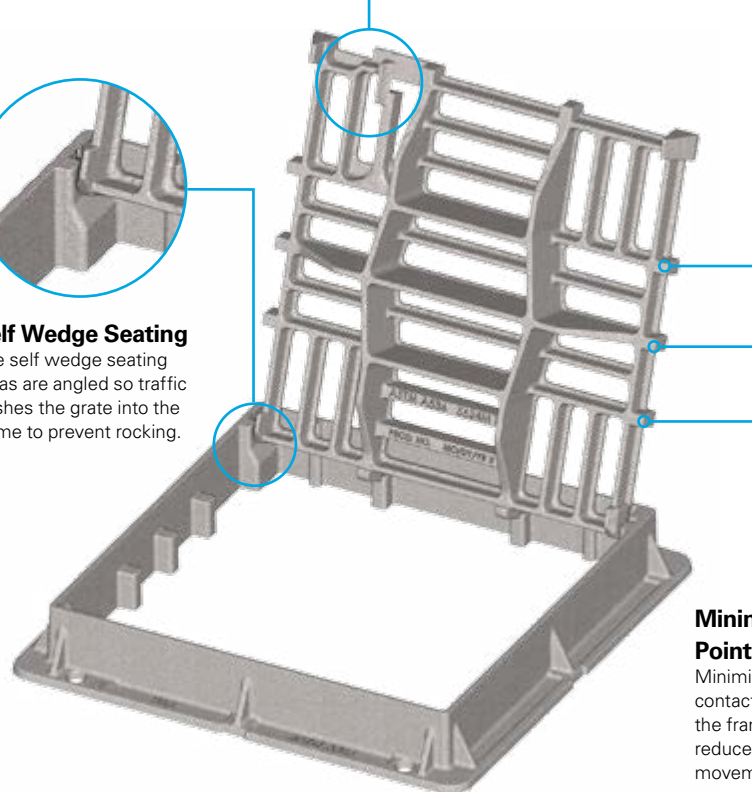
Slam Lock

Patented slam lock design is an integral arm that moves when the grate is shut preventing the grate from being opened inadvertently. When closed, the seamless design also makes the latch invisible to the untrained eye, providing greater security from unauthorized removal of the grate.



Self Wedge Seating

The self wedge seating areas are angled so traffic pushes the grate into the frame to prevent rocking.



Minimal Rest Points

Minimizing the contact points around the frame helps reduce noise and movement.



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ERMATIC® MODULAR COVERS

The ERMATIC Modular Cover system is a comprehensive and highly engineered range of access covers for a wide variety of underground services. This modular system can be customized to fit any underground vault dimension or cover configuration. The ERMATIC range leverages the global engineering and design experience within EJ, to enhance ergonomic design and security.

Features/Options

- Pedestrian to airport rated (or EN124 Standards – B125, C250, D400, E600, F900)
- Wide range of cover sizes from 24" x 24" and larger
- Water resistant
- Security locking
- Available with hinged and spring loaded struts for assisted opening
- Ergonomic lift handles for opening
- Available with safety grates and/or safety railings
- Cover options: solid cover with LLLL® slip resistant tread, recessed for concrete infill or brick pavers, or cover with removable inner hatch/cover
- Available with PREMARK® anti-skid coating

Project Applications

- Sewerage: inspection pits for sludge chambers, access shafts for large plants, etc.
- Telecommunications: cable jointing chambers, etc.
- Utility: lighting, signals, transformer pits, cable joint boxes, etc.

Project Types

- Airports and ports
- Railways
- Tunnels
- Power stations
- Water treatment and purification plants
- Manufacturing plants
- Exhibition centers, leisure parks, stadiums, and other public arenas

The ERMATIC range of modular covers are produced in France.



Modular Construction—The use of modular elements gives a vast range of sizes. Frame elements (side frames and end plates) are assembled using bolts and aluminium joints to provide linear openings for even the longest ducts. Above clear opening spans of 47 3/16" (1200 mm), ERMATIC units use removable beams supported in boxes which are fixed to the frames. This allows the construction of units to suit the largest openings.

Ultimate Protection

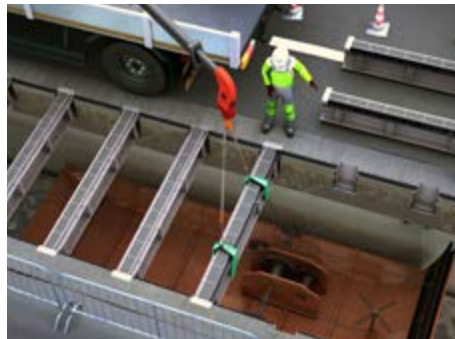
ERMATIC products assure protection against damage, debris or aggressive chemicals, and allow designers to conceal underground services.



1/2/3 covers unit



Continuous duct cover



Removable beams give unobstructed access to large vaults.



Modular design allows for infinite length to accommodate even the longest duct systems.

MULTILEAF™ HINGED COVERS

The MULTILEAF range of hinged and locked covers are suited for applications that require large, unobstructed access openings.

The hinged triangular cover design distributes the overall weight of the cover, reducing strain to open the covers. Each cover uses a 3 point contact with the frame seat to minimize rocking of the cover and reduces road noise.

Also designed into the MULTILEAF is the sequential overlapping cover design. Using strategically placed tabs on the covers, the first cover can secure all covers with just one lock.



The MULTILEAF range of hinged and locked covers are produced in France.

Features

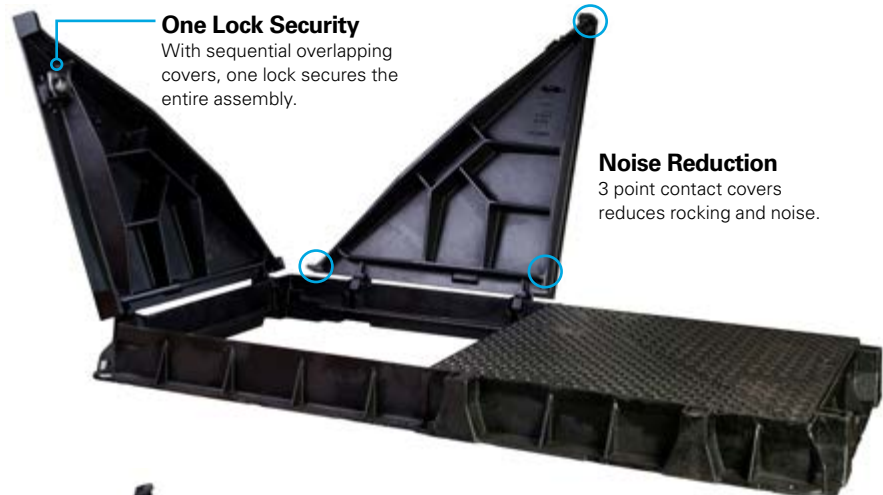
- Wide range of clear openings, cover configurations, and load ratings
- Medium duty to airport extra heavy duty proof load ratings
- Open to 105° (and greater, depending on series) for complete access to the opening
- 90° safety catch that prevents the covers from unintended closure
- Covers remove at 90°*

Options

- Ductile iron or gray iron frames
- Lift assist with gas spring struts to reduce effort for opening/closing
- Security lock options
- Fall through protection grates
- Available with PREMARK® anti-skid coating



Optional lift assist greatly reduces effort to open and close cover.



MULTILEAF distributes the weight of the large access cover over 2, 3, and 4 triangular shaped, hinged covers; minimizing strain when accessing the structure while retaining strength when closed.

Including the TI4S, TI9S, DT4S, and DT9S series, MULTILEAF offers a wide range of features to fit your application's needs.

*May require detaching any hinge pins, lift assist, or safety bars before removing

Company Overview



We Are EJ

EJ is the leader in the design, manufacture and distribution of access solutions for water, sewer, drainage, telecommunications and utility networks worldwide.

EJ offers the broadest range of high-quality infrastructure access solutions. Our distribution coverage continues to expand into new markets. As an entrepreneurial family-owned company, we have a long, successful heritage of meeting change with innovation.

Since our founding in 1883, we have grown by providing access solutions to meet the demands of the world’s growing infrastructure. Fueled by innovation, our design, manufacturing, and distribution processes continue to evolve—creating solutions that provide an unparalleled customer experience.

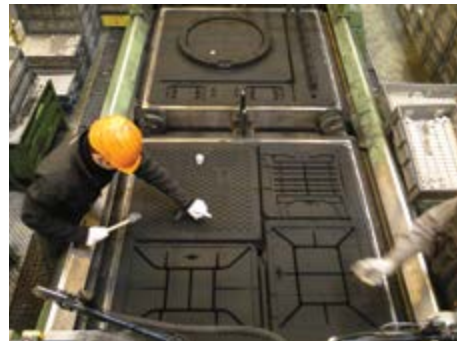
EJ is a family-owned company that has a long history of fostering strong customer relationships. These relationships are supported with personal contact from company representatives, a complete offering of product literature, a comprehensive web site (ejco.com), trade show exhibits, as well as seminars and training opportunities. All these services help to provide customers with the product information required for successful projects.

Wherever you are, EJ provides access solutions that adhere to the local specifications in a timely and competitive manner. We also work with our customers to produce access solutions to meet their specialized requirements. Our sales staff around the world understand the unique needs of your market.

Our people: our core strength. While working together, employees use their expertise, knowledge, and ability to achieve positive results. Core values at EJ include safety and security, honesty and integrity, environmental responsibility, respect for others, quality and excellence, and social responsibility. These core values are imbedded into our culture and are practiced daily throughout the organization.

Our state-of-the-art manufacturing plants employ world class machinery, systems, and processes to produce specified products efficiently and on time.

Wherever you are, whatever your specific requirement might be, EJ has the best access solutions for your infrastructure project.



Product Range

EJ offers a comprehensive portfolio of products and services, including municipal and construction castings, fabricated products, water distribution solutions, and other infrastructure access solutions.

Quality Manufacturing

Integrating technology, lean processes and over a century of experience in crafting metal castings and fabrications, keeps our facilities performing at peak efficiencies.

Distribution Network

Access solution products, including municipal and construction castings, are available worldwide at our internal stocking locations and from our extensive network of distribution partners.

A Legacy is Cast



William E. Malpass (standing back right, next to window) with employees during the 1920s.

The EJ legacy dates back to 1883 when William E. Malpass and his father-in-law Richard W. Round established a foundry on the shores of Lake Charlevoix, in the town of East Jordan, Michigan, USA. This foundry was called East Jordan Iron Works and originally produced cast parts for the lumber industry, machinery, ships, agricultural equipment and railroads.

In the 1920s, when the lumbering era came to a close, the company expanded into new markets allowing continued success in changing times and shifted to the production of street castings, water works valves, fire hydrants and various industrial castings.

During World War II the foundry produced castings for the war effort.

In the 1950s, semi-automation was introduced into the foundry. During the 60s, the third generation converted the foundry to an automated high-pressure molding line. By integrating automatic sand processing and mechanized casting handling systems, the company was operating the largest

automated molding line in the United States and maximized production capabilities.

Since the mid-1980s, the business has been led by the fourth generation descendants of the Malpass family. They have transformed the Midwest business into an international leader of construction castings.

In the 1990s, new acquisitions throughout the United States allowed the company to expand product lines, sales offices, distribution capabilities and customer service across North America. In 2001, a new foundry was built in Oklahoma, providing additional capacity to service the construction castings market.

The 21st century had barely introduced itself when East Jordan Iron Works began turning its attention to expansion in other parts of the world, including Cavanagh Foundry in Ireland (2000), Norinco in France (2004), McCoy Construction Castings in Canada (2006) and HaveStock in Australia (2010).

In 1999, the fifth generation of the Malpass family began joining the company to continue the strong family commitment to its success. Dedicated to maintaining the company's long-established culture and values, they are significantly involved in strategies and priorities, bringing a renewed energy and enthusiasm to the company.

In 2012, East Jordan Iron Works and its affiliated companies began doing business using the same name and brand, EJ. One global name and brand, supported by a single mission, vision and set of values has unified the company. This action leverages all company resources to improve internal operations, as well as provide superior product offerings and services to its valued customers. EJ has supplied products to infrastructure projects in over 140 countries around the world.

EJ continues to be 100% owned and operated by the Malpass family with corporate headquarters located in East Jordan, Michigan.

Product Lines

Street Castings

- Manhole Frames and Covers
- Curb Inlets and Frames
- Utility Castings
- Airport and Port Authority Castings
- Tree Grates
- Trench Grates
- Drainage Grates
- DURALAST® Detectable Warning Plates



Fabricated Products

- Grating
- Riser Rings
- INFRA-RISER® Adjustment Risers
- Aluminum Access Hatches
- Custom Fabrications



Water Products

- WaterMaster® Fire Hydrants
- FlowMaster® RW Gate Valves
- Valve Boxes
- Meter Boxes

Innovative Access Solutions

- Captive Hinge Grates/Covers
- ERGO® and ERGO® XL Access Assemblies
- Ductile Hinged Hatch Access Assemblies
- 5624 Heavy Duty Hinged Grates
- SELFLEVEL® Access Assemblies
- REVOLUTION® Access Assemblies
- ERMATIC® Modular Covers
- Multi-Leaf® Hinged Covers
- CAMPRESSION® Access Assemblies
- Composite Access Covers



Innovative Features

- LOCKEO® Security Feature
- Mechanical Strut Lift Assist
- Cam Lock
- EON LOCK® Designs
- EPIC® Pick Bar
- MPIC® Multi-tool Pick Bar



Capabilities

Service

- Employees with localized knowledge throughout the world
- On-site assistance
- Seminars and technical presentations
- Communicate new product innovations
- Assistance with specification process

Innovative Use of Technology

- Electronic invoicing
- EDI transactions
- ejco.com—comprehensive product database with advanced search and browsing capabilities
- Electronic certification of materials provided upon request
- CAD and PDF drawings available electronically

Quality Manufacturing

- Product research and development
- Commitment to reinvestment
- North America ISO 9001 certified facilities
- Europe ISO 9001, ISO 14001, OHSAS 18001 certified facilities
- Australia ISO 9001 certified facilities

Foundry Facilities

- East Jordan, Michigan
- Ardmore, Oklahoma
- Picardie/St. Crepin, France

Fabrication Facilities

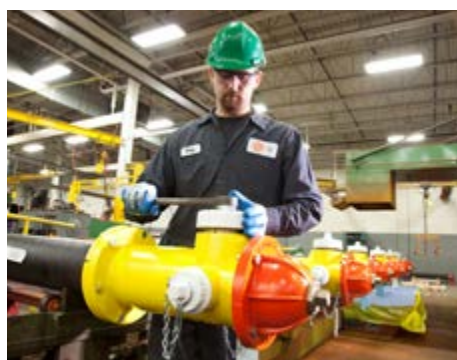
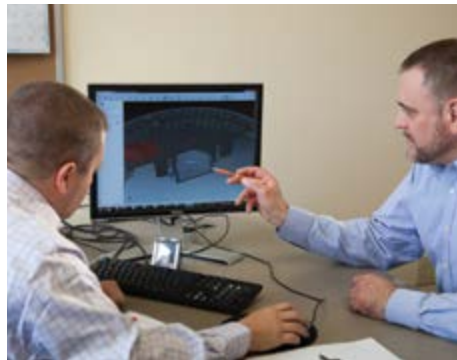
- Birr, Ireland
- Youngstown, Ohio
- Cicero, New York
- Tooele, Utah
- Ardennes/Bogny sur Meuse, France
- Geebung/Queensland, Australia

Water Products Manufacturing

- East Jordan, Michigan

Distribution

- Delivering products quickly and smoothly worldwide
- Stocking branch locations throughout U.S., Canada, Europe, and Australia
- Distribution centers located in Michigan, Oklahoma, Ireland, France, and Australia





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SELFLEVEL®