

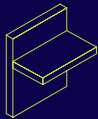
Precast Technical Manual

Concrete Construction Solutions Guide



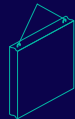
We imagine, model and make engineered products and innovative construction solutions that help turn architectural visions into reality and enable our construction partners to build better, safer, stronger and faster.

Our areas of expertise:



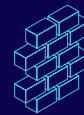
Structural Connections

Systems to form robust, efficient connections, and continuity of concrete reinforcement as necessary, between walls, slabs, columns, beams and balconies, providing structural integrity as well as enhanced thermal and acoustic performance.



Lifting & Bracing

Systems for the safe and efficient transportation, lifting and temporary bracing of cast concrete elements and tilt-up panels before permanent structural connections are made.



Façade Support & Restraint

Systems for the safe and thermally-efficient fixing of the external building envelope, including brick and natural stone, insulated sandwich panels, curtain walling and suspended concrete façades, and also the repair and strengthening of existing masonry installations.



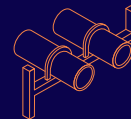
Anchoring & Fixing

Systems for fixing secondary fixtures to concrete, including anchor channels, bolts and inserts; also tension rod systems for roofs and canopies.



Formwork & Site Accessories

Non-structural accessories that complement our engineered solutions and help keep your construction environment operating safely and efficiently, including molds for casting standard and special concrete elements and construction essentials such as reinforcing bar spacers.



Industrial Technology

Mounting channels, pipe clamps and other versatile framing systems that provide safe fixing in a wide range of industrial applications.

Leviat product ranges:

Ancon | Aschwanden | Connolly | Halfen | Helifix | Isedio | Meadow Burke | Modersohn | Moment | Plaka | Scaldex | Thermomass

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Industry Leadership

Leviat is proud to be a member of a number of leading Precast Industry Associations, including:



Product Safety Considerations

Meadow Burke guarantees the products it manufactures when used by qualified, experienced and properly supervised workmen adhering to the safety factor standards detailed below. Misuse, misapplication or lack of proper supervision and/or inspection can result in serious accidents. If you have unusual applications or are uncertain about a product application, contact your Meadow Burke Service Center for clarification and carefully field test the application prior to general use.

When using a Meadow Burke product take time to carefully consider the application, applied loads, required safety factors, safe working loads and all field conditions to ensure complete safety of all persons involved.

PRODUCT SAFETY FACTORS

Safety factors are determined by the degree of risk involved in the use of the product and are established by the American Concrete Institute (ACI), Occupational Safety and Health Administration (OSHA) and American National Standards Institute (ANSI). Safety factors specific to precast concrete construction are shown in the following table, other safety factors may be shown.

| Safety Factor | Product Intended Use |
|---------------|--|
| 5 to 1 | Reusable Hardware for lifting and handling |
| 4 to 1 | Inserts/Anchors for lifting and handling |
| 3 to 1 | Permanent connections |
| 1.5 to 1 | Hold Downs for prestressing strands |

All products displayed in this publication have the applicable safety factor used to derive their safe working loads. This does not relieve the user of the responsibility to carefully calculate and determine the actual loads that will be applied in a specific product application. If the user determines that a safety factor differs from what is printed in this publication is needed, the following equation may be used to raise or lower a safe working load:

$$\text{Adjusted Safe Work Load} = \frac{\text{Published Safe Working Load (Published Safety Factor)}}{(\text{New Required Safety Factor})}$$

If there are any doubts, questions or concerns about safe working loads and/or safety factors, contact your Meadow Burke Service Center.

WELDING CONSIDERATIONS

Meadow Burke cannot control field conditions or field workmanship; therefore it cannot guarantee any Meadow Burke product that has been altered in any way after it has left the manufacturing facility. This includes welding, bending, filing, etc. Never weld to a casting unless authorized by a qualified engineer. Welding to a casting can cause localized embrittlement that greatly reduces the load-carrying capacity of the casting. Tack welding to wire products can have the same effect.

WORN WORKING PARTS

All construction-related working parts are subject to wear, misuse, overloading, corrosion, alteration, etc. which may affect the performance of the product. Therefore, all working parts must be regularly inspected to determine if the product can remain in service. The frequency of inspection is based on how often the product is used, period of use and the environment in which it is used.

PRODUCT DESIGN AND SAFE WORKING LOAD CHANGES

As a manufacturer of quality concrete accessories, Meadow Burke reserves the right to change product designs and/or product safe working load ratings at any time without prior notice to prospective users. Any such changes will only be made to improve the product or to increase product safety.

Product and Coating Finishes

Products manufactured by Meadow Burke can be supplied in several different coatings or finishes to meet specific corrosion resistance requirements. Note that if no coating or finish is specified when placing an order, the product will be supplied with the standard plain finish.

AVAILABLE FINISHES AND COATINGS

PLAIN – Unprotected steel sometimes referred to as black, basic or raw steel. It will corrode or rust when exposed to the elements.

ELECTRO-PLATE – A bright shiny or sometimes dull finish generally 0.0002 to 0.001 inch thick zinc coating. The degree of corrosion protection will vary based on the severity of the environment in which it is used. Meadow Burke electro-plated products comply with the ASTM B-633 standard.

| ASTM B-633 ELECTRO-PLATE COATING OF ZINC ON STEEL | | |
|---|-------------|-------------------|
| Service Condition | Exposure | Coating Thickness |
| SC-4 | Very Severe | 0.0010 inch |
| SC-3 | Severe | 0.0005 inch |
| SC-2 | Moderate | 0.0003 inch |
| SC-1 | Mild | 0.0002 inch |

HOT DIP GALVANIZE – Semi-bright to very dull finish. It is a much heavier coating than electro-plate. Hot dip galvanize (HDG) provides a higher degree of corrosion resistance than electro-plate, but is not suitable for threaded or tight-fitting products. Meadow Burke hot dip galvanized protected products comply with ASTM A-123 or ASTM A-153.

ASTM A-123 – Used for products that are fabricated from rolled, pressed, punched and forged steel shapes, plate, bar, wire or strips 0.125 inch thick and heavier. Zinc finish thickness will vary from 0.002 to 0.005 inch thick.

| ASTM A-123 HOT DIP GALVANIZE ON IRON AND STEEL | | |
|--|------------------------|-------------------|
| Product Type | Product Thickness | Coating Thickness |
| Wire | 0.142" to 0.186" dia. | 0.002 inch |
| Wire | 0.187" to 0.249" dia. | 0.003 inch |
| Wire | 0.250" dia. or larger | 0.004 inch |
| Steel or Plate | 0.030" to 0.062" thick | 0.002 inch |
| Steel or Plate | 0.063" to 0.124" thick | 0.003 inch |
| Steel or Plate | 0.125" or thicker | 0.004 inch |

ASTM A-153 – A coating process for iron and steel products that utilizes a spinning technique to remove excess zinc. Bolts may be processed under this ASTM specification. Coating will vary in thickness from 0.002 to 0.006 inch depending on the "class" specified by the user.

| ASTM A-153 HOT DIP GALVANIZE ON IRON AND STEEL HARDWARE | | |
|---|-------------------|-------------------|
| Product Type | Product Thickness | Coating Thickness |
| Castings | A | 0.0034 inch |
| 3/16" and over thickness and over 15" Length | B1 | 0.0034 inch |
| Under 3/16" thickness and over 15" Length | B2 | 0.0026 inch |
| Any thickness and 15" and under Length | B3 | 0.0022 inch |

WARNING: Products manufactured from high carbon steel that is electro-plated or hot dip galvanized must be properly heat treated to minimize embrittlement. Failure to properly heat-treat these products may cause a compromise of their safe working loads and result in a premature failure of the product.

Product Coatings and Finishes (cont.)

EPOXY COATING – A shiny epoxy coating applied to a finished product utilizing an electrostatic or fluidized bed. The coating thickness will vary from 0.005 to 0.012 inch. Epoxy coating is a very effective protection from hostile environments such as around or over salt water and chemically contaminated areas.

STAINLESS STEEL – Stainless steel offers high corrosion resistance in any environment. Type 304 stainless steel is generally used (unless otherwise specified) by Meadow Burke. It is non-magnetic and can be painted with no special preparation.

CAUTION: *Corrosion may occur on exposed metal products when architectural precast members are etched or acid washed. The amount of corrosion will be dependent on the acidity of the wash and/or the type of chemicals used.*

Embrittlement Information

Carbon steels, cold-worked steels and heat treated steels are susceptible to embrittlement in both electro-plating and hot dip galvanizing operations.

- A) Any severely cold-worked steel must be stress-relieved from strain aging by baking prior to electroplating or hot dip galvanizing.
- B) Any steel with significant high strength or high carbon content is susceptible to hydrogen embrittlement during electro-plating or hot dip galvanizing. It must be baked after the coating is applied to drive out excessive hydrogen.

WARNING: *Products manufactured from high carbon steel that is electro-plated or hot dip galvanized must be properly heat treated to minimize embrittlement. Failure to properly heat treat these products may cause a compromise of their safe working loads and result in a premature failure of the product.*

Applicable ASTM documents:

| | |
|------------|---|
| ASTM A-143 | “Safe Guarding Against Embrittlement” |
| ASTM A-153 | “Zinc Coating (hot dip) on Iron and Steel Hardware” |
| ASTM A-165 | “Electro-Deposited Coatings of Cadmium on Steel” |
| ASTM B-633 | “Electro-Deposited Coatings of Zinc” |

Example Coating Specifications:

Electro-Plate – “Electro-Plate to ASTM B-633 Specification. Service Condition SC-4.
Provide embrittlement relief, if necessary.
Hot Dip Galvanize – “Hot Dip Galvanize to ASTM A-153, Class A.
Provide embrittlement relief, if necessary.”

Safety and Technical

Failure of an insert/anchor or the concrete can occur in a variety of ways; such as concrete shear cone failure, insert mechanical failure, coil penetration failure and edge lifting failures.

CONCRETE SHEAR CONE FAILURE

The concrete shear cone is the area of concrete around the insert/anchor that fails due to the concrete's inability to contain the stresses of the applied load. The approximation of break strength in uncracked concrete assuming a full shear cone is given by the following formula for a single anchor:

$$N_{cb} = \frac{A_{Nc}}{A_{Nco}} \psi_{ed,N} \psi_{c,N} \psi_{cp,N} N_b \quad (D-4)$$

Where

$$A_{Nco} = 9h_{ef}^2 \quad (D-6)$$

$$N_b = k_c \lambda \sqrt{f_c} h_{ef}^{1.5} \quad (D-7)$$

$$N_b = 16 \lambda \sqrt{f_c} h_{ef}^{5/3} \quad (D-8)$$

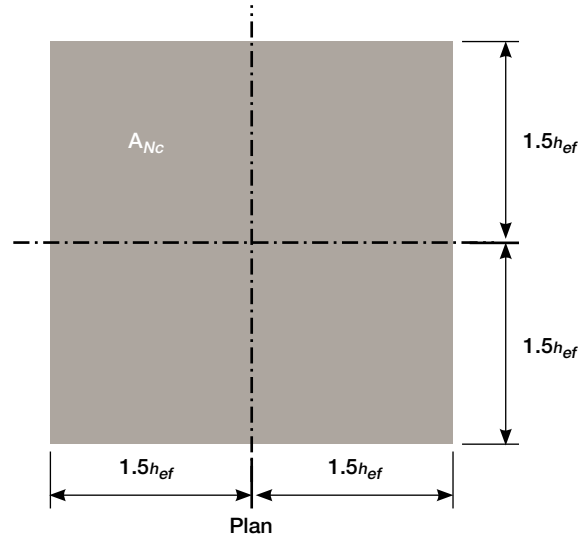
$\psi_{c,N} = 1.25$ for cast-in anchors

$$\psi_{cp,N} = 1.0 \quad (D-12)$$

$$\psi_{cp,N} = 0.7 + 0.3 \frac{C_{a, \min}}{1.5h_{ef}} \quad (D-11)$$

$$k_c = 24$$

$\lambda = 1.0$ for Normal Weight Concrete, 150 pcf



$$A_{Nc} = (2 \times 1.5h_{ef}) \times (2 \times 1.5h_{ef}) = 9h_{ef}^2$$

Figure RD.5.2.1

h_{ef} = effective depth of the anchor, use equation D-7 for anchors less than 11" and equation D-8 for anchors greater than or equal to 11"

The equation above is the ultimate pullout strength of an anchor in tension in uncracked concrete as given by ACI 318-08 Appendix D. Meadow Burke does not recommend the use of LRFD design methodology when designing anchors for lifting and forming.

LRFD design methodology is intended for in-service conditions only and not for temporary conditions such as lifting, forming and bracing. The end-user of the product will under design the lifting system using this method while over design a forming system. It is recommended that the above – pullout strength be reduced by the desired safety factor as recommended by page 2 of this catalog.

CONDITIONS AFFECTING SHEAR CONE CAPACITIES:

1. A shear cone is assumed to radiate a 35° cone. Field experience indicates that the cone may actually radiate as much as a 20° cone, which would increase the required corner distance to 2*Length of insert.
2. Sustained vibrations will reduce N_{cb} by thirty percent (30%).
3. N_{cb} decreases with decreasing unit weight of the concrete. For light weight concrete, 120 psf or less, $\lambda = 0.70$.
4. For cracked concrete conditions, reduce N_{cb} by 20%.

Insert and Concrete Failures (cont.)

INSERT/ANCHOR MECHANICAL FAILURES

Insert and anchor safe working loads (SWL) displayed in this publication are based on the mechanical properties of the product. Generally, it is the capacity of the insert wire or anchor body that determines the mechanical capacity.

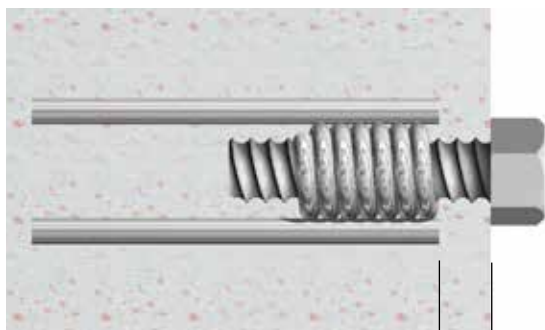
The user of Meadow Burke products must always check to ensure that enough concrete cover is available to provide a full shear cone and compare the mechanical strength of the insert/anchor to the available concrete shear cone. The lesser of the two values will determine the safe working load of that specific application.

| TYPICAL WIRE SIZES AND STRENGTHS | | | | | | | | | |
|----------------------------------|------|------------|-------------------|----------------------------|----|---------------------------|----|--------------------|----|
| Nominal Diameter | | Wire Grade | AISI & SAE Number | Approx. Min. Yield Tension | | Approx. Min. Ult. Tension | | Approx. Min. Shear | |
| inches | mm | | | lbs. | kN | lbs. | kN | lbs. | kN |
| 0.444 | 11.1 | MHC | C1035 | 10650 | 47 | 16000 | 71 | 16670 | 47 |
| 0.440 | 11.1 | LC | C1008 | 10650 | 47 | 13500 | 60 | 9000 | 40 |
| 0.375 | 9.5 | LC | C1018 | 7740 | 34 | 9600 | 43 | 6400 | 28 |
| 0.340 | 8.6 | MHC | C1035 | 6060 | 28 | 9000 | 40 | 6000 | 26 |
| 0.306 | 7.8 | LC | C1018 | 5150 | 23 | 7400 | 33 | 4930 | 22 |
| 0.306 | 7.8 | LC | C1008 | 5150 | 23 | 6750 | 19 | 4500 | 20 |
| 0.283 | 7.2 | LC | C1012 | 4410 | 20 | 5400 | 24 | 3600 | 16 |
| 0.262 | 6.6 | LC | C1008 | 3780 | 17 | 4350 | 18 | 2770 | 12 |
| 0.223 | 5.7 | MHC | C1035 | 2740 | 12 | 4600 | 20 | 3070 | 13 |
| 0.218 | 5.5 | LC | C1008 | 2620 | 12 | 3000 | 12 | 1870 | 8 |

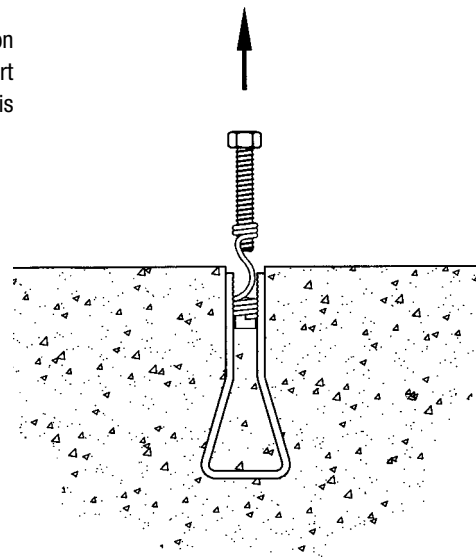
Wire displayed above and all wire used by Meadow Burke in the fabrication of inserts comply with ASTM-1064 standards, with a minimum yield strength from 70 ksi.

MINIMUM COIL BOLT PENETRATION FAILURES

The most common type of insert failure is caused by the lack of sufficient bolt penetration through the coil of the insert. Under applied load, inadequate bolt penetration of the insert coil will cause the upper part of the coil to unwind and pull out of the insert. This is commonly referred to as the “corkscrew” effect.



Minimum Coil Penetration Setback Typically 1/2"



Insert and Concrete Failures (cont.)

COIL BOLT CONSIDERATIONS

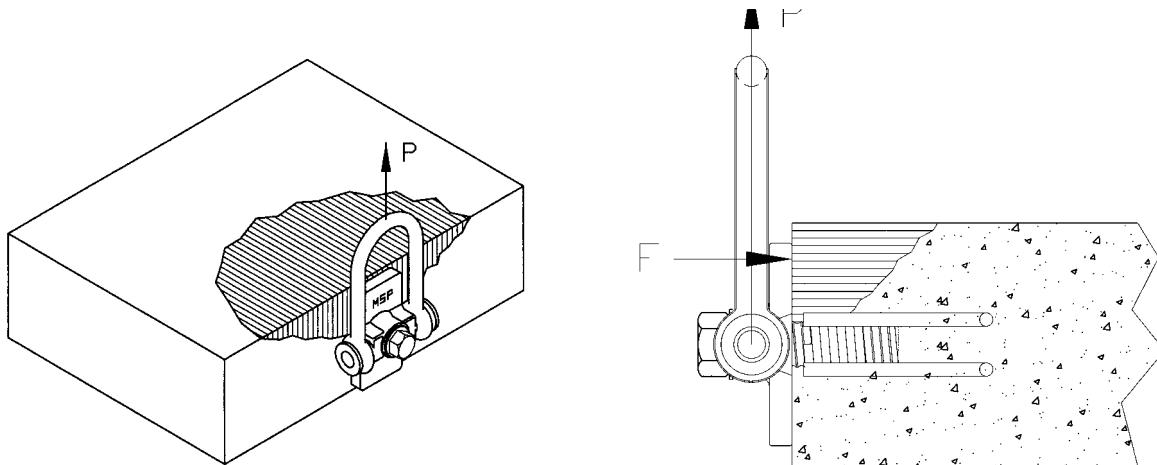
1. Failure to properly tighten a coil bolt can result in the inability of the coil bolt to fully penetrate the coil of the insert.
2. Excessive insert setback in the concrete can result in the inability of the coil bolt to fully penetrate the coil of the insert.
3. Worn threads on a coil bolt will render the bolt ineffective and will result in inadequate thread engagement.
4. A coil bolt of inadequate length to fully penetrate the insert coil will produce a corkscrew type of failure. The insert coil cannot carry the required load when only partially engaged.
5. Reference the Minimum Coil Penetration Table on page 90.

IMPORTANT: In precast concrete plant operations, coil bolts should be periodically inspected and replaced if signs of wear or bending are present. Worn or bent bolts should be immediately discarded. Never use a worn or bent bolt for any purpose and never attempt to straighten a bent bolt.

EDGE LIFTING FAILURES

When an insert/anchor is located in the edge of a concrete panel for the purpose of lifting and handling of the panel, the concrete on the topside of the insert/anchor will carry the entire applied load unless special provisions are implemented. The upward force on an insert, from the bolt and compressive force from the lifting plate, combine to quickly overload the concrete on the topside of the insert/anchor. The loss of the concrete above the insert/anchor can result in the insert breaking and loss of the panel.

One means of increasing edge lift capacity is to strengthen the concrete over the insert with shear bars or stirrup assemblies. This process will reinforce the concrete, preventing total loss of the concrete and allow the insert/anchor to remain in the panel. Always use the proper style and capacity insert/anchor for edge lifting. Never use a two-strut insert. A properly selected insert/anchor will not break if the concrete above it fails. This will allow the panel to be positioned with only minor patching required.



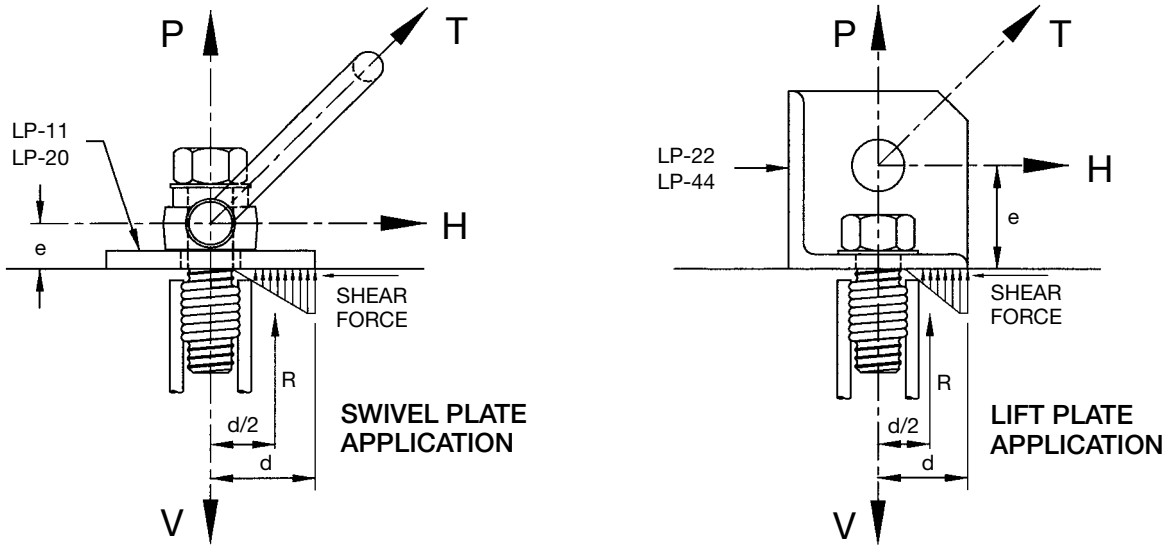
LIFTING HARDWARE CONSIDERATIONS

All lifting hardware is subject to wear, abuse, bending, overloading, alterations and corrosion. The user of these products must continually inspect the product to determine its usable condition. If the product shows any of the problems noted above or is not in good working condition, the product should be discarded or returned to Meadow Burke for repair and/or service. Based on how often the product is used, period of use and the environment in which it is used must determine the frequency of inspections.

Insert and Concrete Failures (cont.)

LIFTING PLATES

When using lifting plates in conjunction with cast-in-place inserts, a combination of forces with small lever arms become factors with which to be concerned. Reference the sketches shown below. Dimension “d” is an assumed constant subject to the location of “R”, the resultant force exerted by the reaction of the plate on the concrete.



Lifting Plates Considerations:

1. If the lifting plate is loosely tightened, the location of “R” will be at the extreme edge/corner of the plate and “d” becomes plate width divided by 2.
2. If the lifting plate is properly tightened down with the attachment bolt, the generally accepted stress pattern on the plate will be triangular or trapezoidal.
3. During initial and low loads the “R” force moves from the toe of the plate towards the center of the plate. As the load increases, the plate attempts to flex. The maximum movement is most likely to the midpoint of the plate, between the bolt centerline and the toe of the plate. Taking a conservative approach, “d divided by 2” is the theoretical location of the “R” force, thus resulting in a higher load to be added to the vertical component load.
4. Using basic equations, a pair of force couples must be equal to zero:
 $H(e) = V(d/2)$ and $V = (2e/d)H$
 V = vertical force on the insert.
 H = horizontal force on the lifting plate.

| Type of Lifting Plate | Bolt Diameter | | $(\frac{2e}{d})$ |
|-----------------------|---------------|-----|------------------|
| | in. | mm. | |
| LP-11 | ¾" | 19 | .80 |
| LP-11 | 1" | 25 | .80 |
| LP-20 | 1" | 25 | 1.0 |
| LP-20 | 1-¼" | 31 | .85 |
| LP-20 | 1-½" | 38 | .85 |
| LP-22 | ¾" | 19 | 3.25 |
| LP-22 | 1" | 25 | 3.25 |
| LP-44 | 1" | 25 | 2.36 |
| LP-44 | 1-¼" | 31 | 2.36 |
| LP-44 | 1-½" | 38 | 2.36 |

Example: If Meadow Burke Lift Plate Swivel (LP11), 1" diameter lifting plate is pulled at an angle producing 3000 lbs. vertical load and 3000 lbs. horizontal load, then applying the above information:

$$V = \left(\frac{2e}{d}\right) H = 0.8 (3000) = 2400 \text{ lbs. additional load on the insert due to the horizontal force component.}$$

$$\begin{aligned} \text{Total Applied Load} &= L_A = \text{Vertical component load} + \left(\frac{2e}{d}\right) H \\ L_A &= 3000 + 2400 \\ &= 5400 \text{ lbs. Total Tension Load} \end{aligned}$$

Must use an insert with a SWL greater than 5400 lbs.

Insert and Concrete Failures (cont.)

Lifting plate example calculation: Values for $(2e/d)$ H-Reference Table on page 8.

If a 1" diameter Meadow Burke Swivel Lift Plate (6440) is pulled at an angle producing 3,000 lbs. vertical load and 3,000 lbs. horizontal load, then the application of the information on the previous page would be as such:

$$V = (2e/d)H = 0.80 \times 3,000 = 2,400 \text{ lbs. additional load on the insert due to the horizontal force component.}$$

$$\text{Total applied load} = L_A$$

$$L_A = \text{vertical component load} + (2e/d)H$$

$$L_A = 3,000 + 2,400 \text{ lbs.}$$

$$L_A = 5,400 \text{ lbs. total tension load.}$$

In this example, an insert with a safe working load greater than 5,400 lbs. must be used.

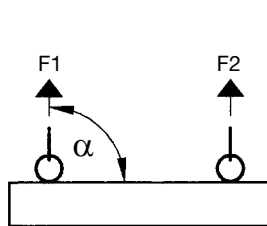
INCLINED SLINGS

When rigging is selected where the sling lines are inclined, it is important to measure the incline angle α (alpha). The angle will cause an increase in the anchor loading due to the horizontal force components.

Reference the sketched examples:

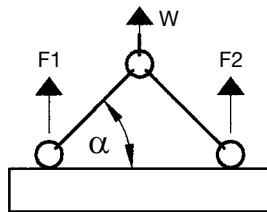
1. The incline angle is 90° and from the table below, the load factor is 1.0.
Therefore, F1 load = $1.0 \times$ weight of the concrete element divided by 2.
2. The incline angle is 45° and from the table below, the load factor is 1.42.
Therefore, F1 load = $1.42 \times$ weight of the concrete element divided by 2.
3. The incline angle is 60° and from the table below, the load factor is 1.16.
Therefore, F1 load = $1.16 \times$ weight of the concrete element divided by 2.

| SLING ANGLE LOAD FACTORS | | | | | |
|--------------------------|------------|------------|------------|------------|------------|
| Sling Angle α | 90° | 75° | 60° | 45° | 30° |
| Load Factor | 1.00 | 1.04 | 1.16 | 1.42 | 2.00 |



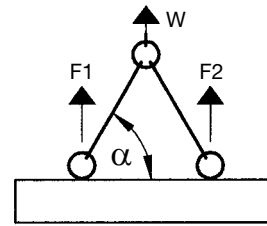
$\alpha = 90^\circ$

#1 - 90° Sling Angle



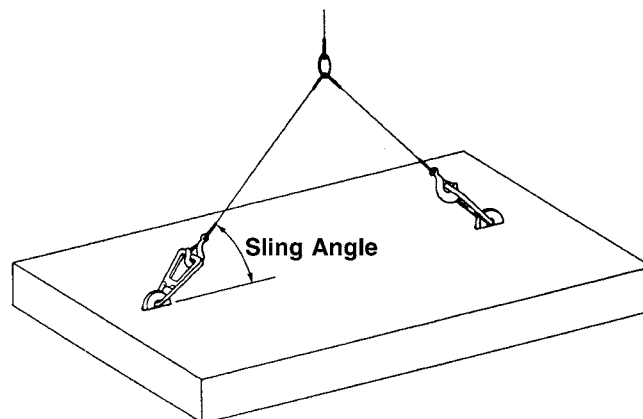
$\alpha = 90^\circ$

#2 - 45° Sling Angle



$\alpha = 90^\circ$

#3 - 60° Sling Angle



Insert and Concrete Failures (cont.)

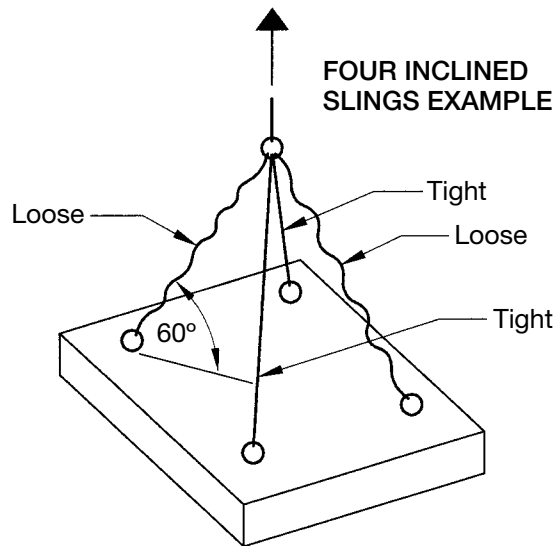
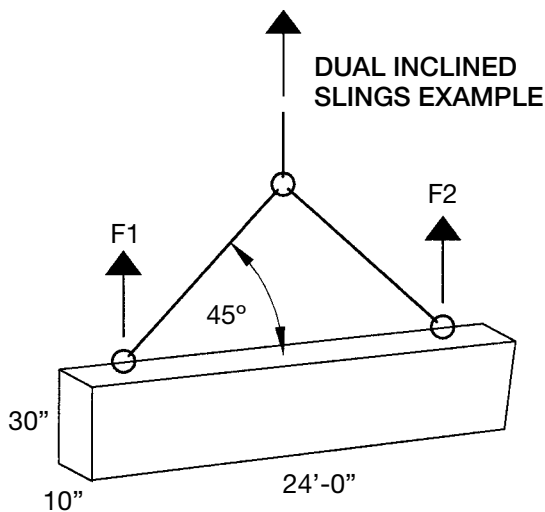
Example Dual Inclined Slings Calculations:

Determine the anchor load, anchor size and concrete psi required for a rectangular concrete beam 10" deep, 30" wide and 24' long. The beam has form adhesion at the bottom surface only and a sling incline angle of 45°.

| | | |
|----------------------|--------------------------------------|--------------|
| Concrete dead weight | = 10"/12" x 30"/12" x 24' x 150 lbs. | = 7,500 lbs. |
| Form adhesion | = 10"/12" x 24' x 25 lbs. | = 500 lbs. |
| Combined load (CL) | | = 8,000 lbs. |

Now apply the load factor for the 45° inclined sling angle and realizing that $F_1 = F_2 = CL/2$ then; $F_1 = 8,000/2 \times 1.42 = 5,680$ lbs. per anchor.

To adequately lift and handle, the example beam would require an anchor like the 4-ton x 5-1/2" long DogBone Anchor rated at 6,000 lbs. safe working load in 2,500 psi concrete.



Example Four Inclined Slings Attached at Slab Corners Calculations:

When four fixed length slings are used to lift and handle a concrete element, often one of the slings will be longer than the rest. This will force two of the embedded anchors to carry the total load and the other two anchors to do little more than keep the slab balanced.

Determine the anchor load, anchor size and concrete psi required for a slab 12' x 10' x 16" using a sling incline angle of 60° and having form adhesion at the bottom surface only.

| | | |
|---|-----------------------------|--------------------------|
| Concrete dead weight | = 12' x 10' x 16"/12" x 150 | = 24,000 lbs. |
| Form adhesion (concrete form) | = 12' x 10' x 20 lbs. | = 2,400 lbs. |
| Combined load (CL) | | = 26,400 lbs. |
| $F_1 = 26,400/2$ (only two anchors working) x 1.16 per anchor | | = 15,312 lbs. per anchor |

To adequately lift and handle, the example slab would require an anchor like the 8-ton x 13-3/8" long DogBone Anchor rated at 16,000 lbs. safe working load in 1,500 psi concrete.

Rapid Lift System



The Meadow Burke Rapid Lift System has proven itself to be a safe, trouble-free, quality precast lifting and handling system. It offers many advantages, such as a broad selection of anchors, easy installation and outstanding maneuverability to handle any precast application.

Rapid Lift Technical Information

INSPECTION/MAINTENANCE REQUIREMENTS

NEW RING CLUTCH INVENTORY – Generally inspect for overall appearance. Make sure there are no bent parts, welds or sign of excessive heating on any parts. Make sure ring clutches have stop pins and bushings. Make sure the ring clutch handle does not come out of the casting when rotated to the open position. Make sure product date stamps are 1978 or newer.

INVENTORY RETURNED FROM JOB SITE OR OTHER SOURCES – Generally inspect for overall appearance. Make sure there are no bent parts, welds or sign of excessive heating on any parts. A clutch handle that is slightly bent (15° or less) can be straightened cold. Make sure ring clutches have stop pins and bushings. Make sure the ring clutch handles do not come out of the casting when rotated to the open position. Make sure the lifting bail is not bent. Check lanyard for fraying. Make sure product date stamps are 1978 or newer.

ADDITIONAL INSPECTIONS FOR CABLE BAIL CLUTCHES – Check the wire rope for bends, kinks, loosening of outer layers in the free length, squeezing in the free length, squeezing in the support area, tuberculation, damage or wear of the rope or end connectors and excessive wire ruptures (4 ruptures in 3 diameters of the rope, 6 in 6 diameters, 16 in 30 diameters, etc).

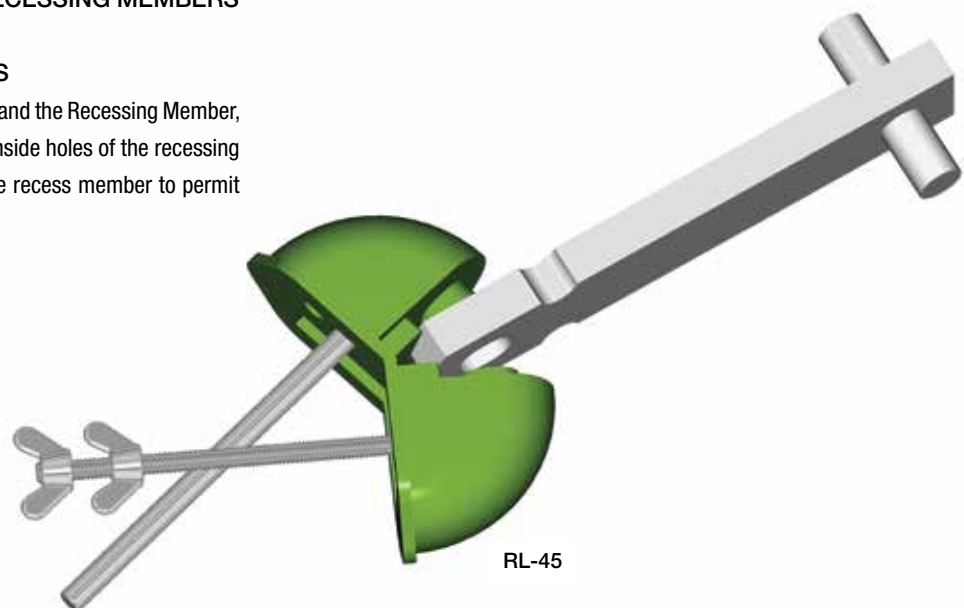
WHEN TO SCRAP RING CLUTCH/HANDLE – If the bail is bent more than 10° or shows evidence of having been straightened more than once, scrap the unit. If a weld cannot be repaired, the unit should be scrapped. If the clutch itself is bent, the clutch must be destroyed. Scrap the handle if it is bent more than 15° .

CABLE BAIL CLUTCHES – If the wire rope is compromised according to the inspection criteria listed above, it must be replaced. The replacement wire rope shall be of a similar or larger size as the original. It should be replaced, spliced, tested and certified for load equal to 4 times the rated load stamped on the clutch casting by a company specializing in wire rope replacement.

INSTALLING AND REMOVING RECESSING MEMBERS

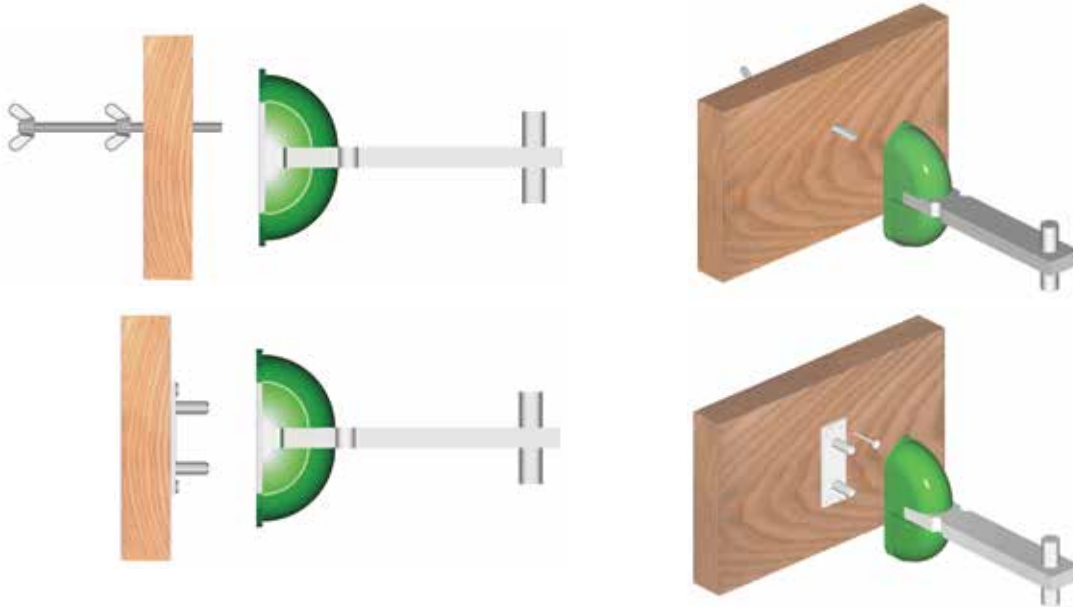
PLASTIC RECESSING MEMBERS

ASSEMBLY – To assemble the anchor and the Recessing Member, insert two rods or screwdrivers into the inside holes of the recessing member and scissor the rods to open the recess member to permit insertion of the anchor.



Rapid Lift Technical Information (cont.)

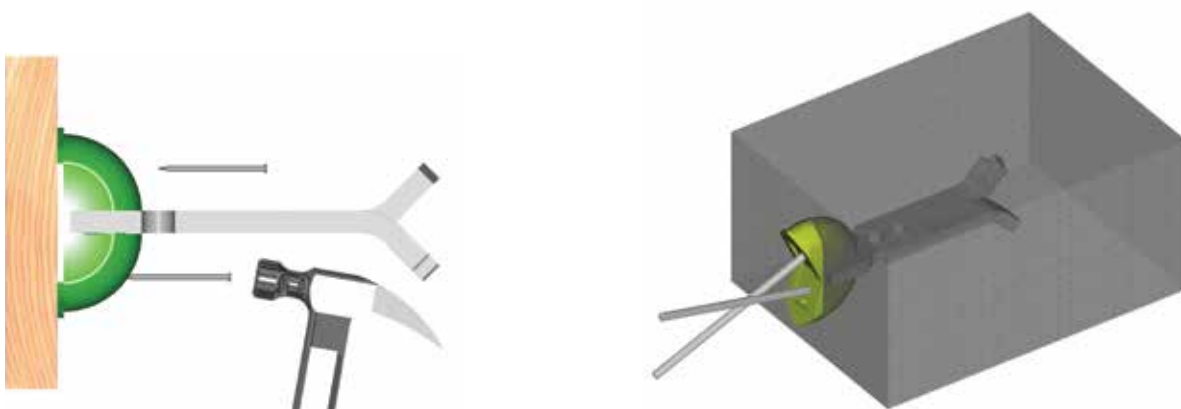
Nailing to formwork – Position the anchor/recessing member assembly in its assigned location and nail it to the formwork. The outside holes in the recessing member can be utilized for this purpose or a Holding Plate can be nailed to the formwork to support the assembly.



Holding Plate attachment – The anchor/recessing member assembly may be attached in four different methods using the Holding Plate: nailed, as noted above, bolted, welded or taped.

- Bolting the unit to the formwork requires a properly placed hole to be drilled in the formwork. A L-Rod or bolt/wing nut assembly is inserted through the drilled hole to securely attach the anchor/recess assembly to the form.
- On a multi-use metal form, the Holding Plate can be tack welded in its proper position to hold the anchor/recessing member.
- Taping the holding plate can be accomplished using a good quality, commercial grade double back tape.

Stripping – To strip a plastic recessing member, insert two rods or screwdrivers into the two innermost holes of the recessing member. A scissoring motion of the rods will lift one side of the recessing member and it can then be extracted from the concrete.



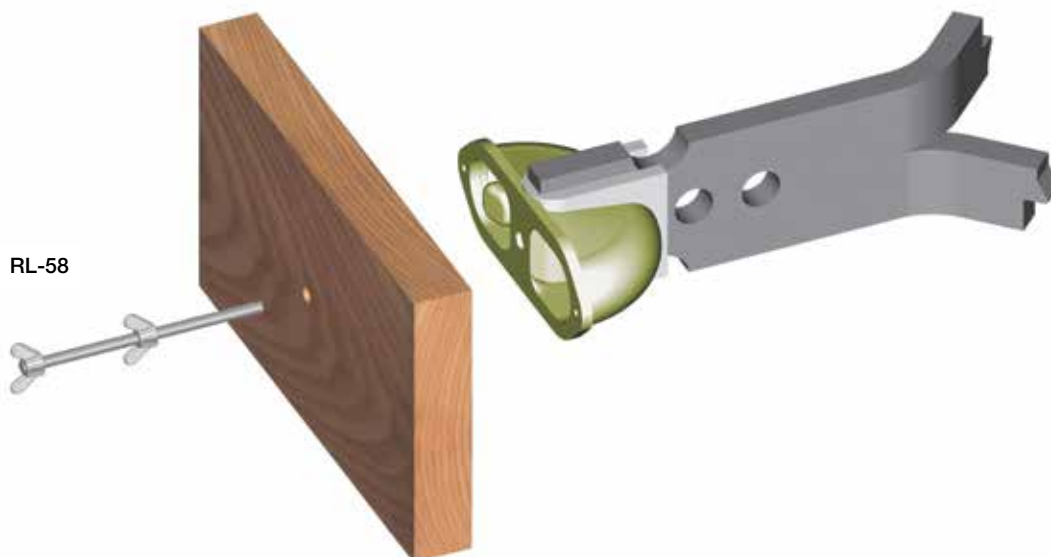
Rapid Lift Technical Information (cont.)

METAL RECESSING MEMBERS

ASSEMBLY – To assemble the anchor and metal recessing member, first fold the foam strip over the head of the anchor and then press the foam-covered head of the anchor into the recessing member slot. Insert the tapered end of the steel wedge into the top of the recessing member and through the eye of the anchor and wedge tightly.

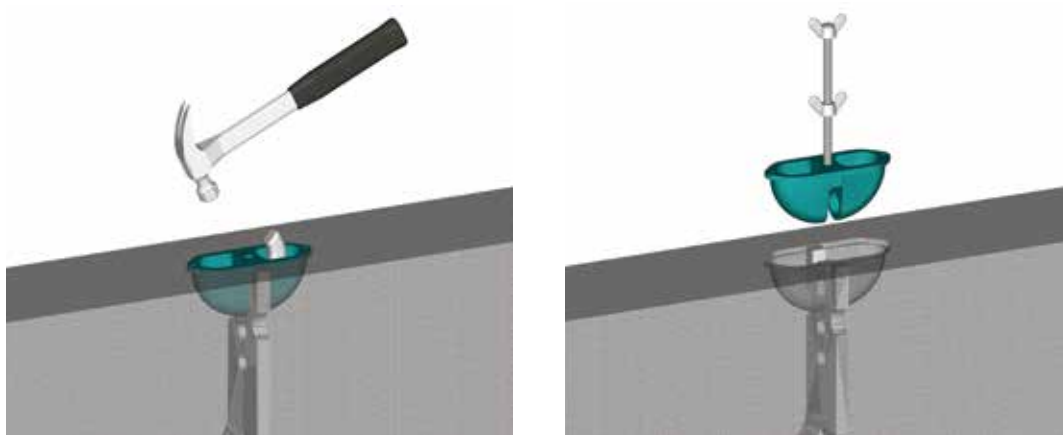


METAL RECESSING MEMBER PLACEMENT – A wing nut assembly can be effectively used to secure the metal recessing member/anchor assembly to the form. Drill a properly placed hole in the form and thread the bolt assembly through the hole. Screw the bolt in the center hole of the recessing member until it is tight against the head of the anchor. Secure the assembly against the form by turning the loose-running wing nut. Nailing the recessing member, using the holes provided on both ends of the unit, will prevent the assembly from turning during concrete placement. In applications using multi-use metal forms, the metal recessing member can be tack welded to the form. When constructing a multi-use metal form, it is important that an access hole is placed for the insertion/removal of the steel wedge (for easy placement of wedge steel recess member, the multi use must be cut out to accept the bolt).



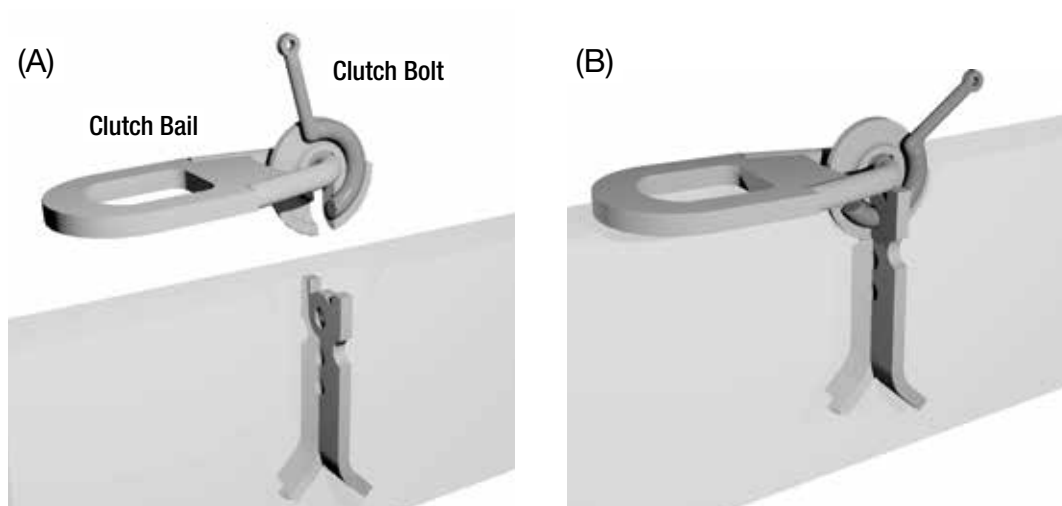
Rapid Lift Technical Information (cont.)

STRIPPING – Unscrew the bolt and strip the form to expose the recessing member. Tap the small end of the tapered wedge with a hammer to loosen the wedge so it can be withdrawn by hand. Now screw the setting bolt into the recessing member and continue screwing, using the fixed wing nut, until the recessing member is loosened from the anchor and can be removed.



RING CLUTCH INSTALLATION

ANCHOR ATTACHMENT – Make sure that the curved bolt handle is in the open position. Position the ring clutch above, and centered over the head of the anchor. Drop the ring clutch down into the void formed by the recessing member. Rotate the curved bolt through the anchor engagement hole into its closed position. Installation is complete, ready to lift.

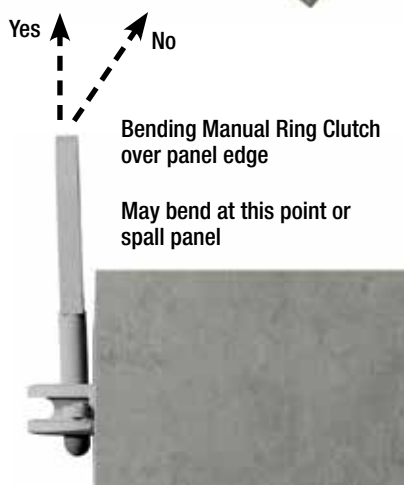
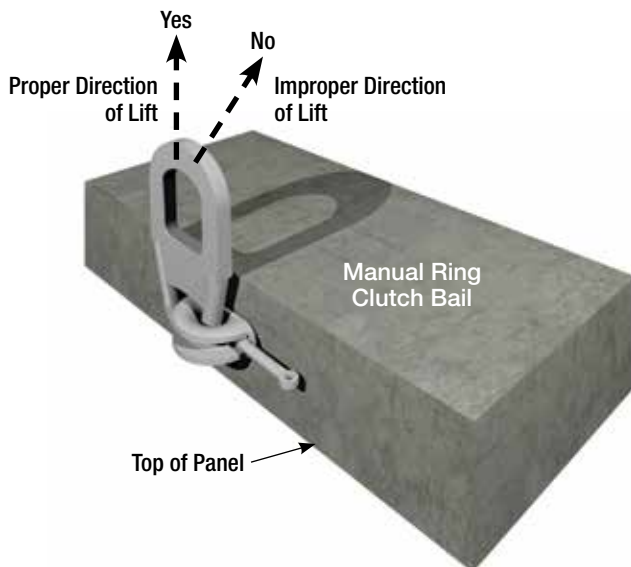


Rapid Lift Technical Information (cont.)

BAIL POSITIONING – Make sure that the bail does not get into a “locked” position under the ring clutch, as shown in the sketch. In this situation, the bail and/or ring clutch might bend under load and as the precast unit nears vertical, the bail can unlock itself and cause a severe impact load. Always position the lifting cable directly over the ring clutch to avoid alignment problems.

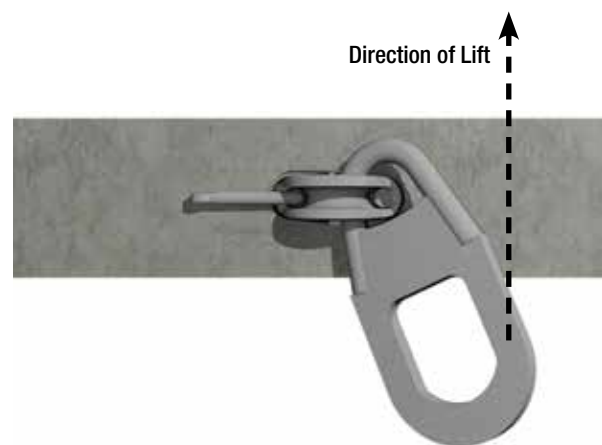
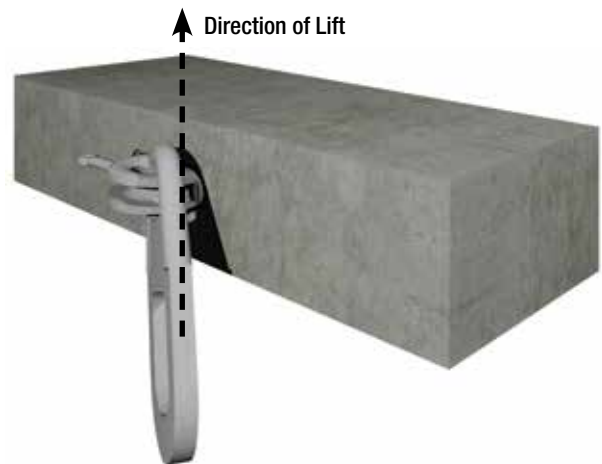
CORRECT

Correct – By not having the lift line directly over the Ring Clutch and a load is applied in a direction towards the bottom of the panel, the Clutch may bend over the panel edge.



WRONG

Wrong – The Clutch, if positioned below the ring clutch, as shown, may lock itself in a position preventing free movement of the unit. In this position the ball might bend during lift. As the panel is lifted the Clutch may bend. As the panel reaches a more vertical position, the Clutch will unlock itself resulting in an impact load.

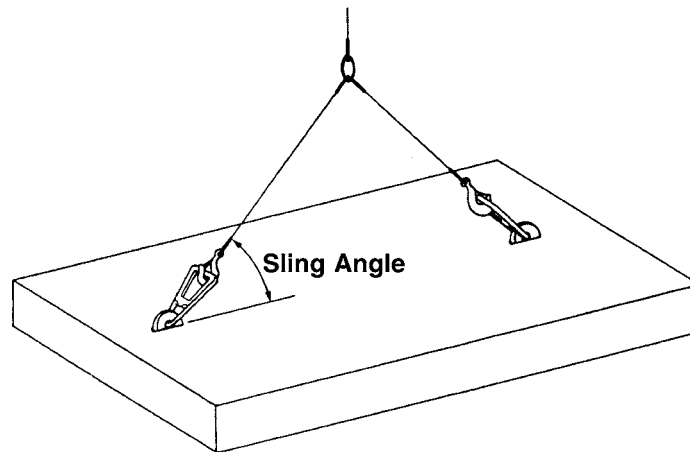


Rapid Lift Technical Information (cont.)

SLING ANGLE FACTOR

Additional forces come to bear on an anchor from oblique pulls caused by the sling angle. Sling angles at less than 90° from perpendicular, increase the load on the anchor. Angles less than 30° are not safe and must not be used. To calculate the load on the anchor, refer to the accompanying table. Move across the table to the sling angle being used and multiply the corresponding magnification factor by the dead load of the precast element.

| SLING ANGLE LOAD FACTORS | | | | | |
|--------------------------|------|------|------|------|------|
| Sling Angle | 90° | 75° | 60° | 45° | 30° |
| Load Factor | 1.00 | 1.04 | 1.16 | 1.42 | 2.00 |



ADJUSTING FOR CONCRETE STRENGTH

Note: These factors are for use with tension applications only. Do not use these factors for shear applications without consulting with the Meadow Burke Service Center to make sure there are no other limitations.

To convert the allowable tension load for an unreinforced anchor from listed concrete strength of 3,500 psi to a greater or lesser concrete strength, multiply 3,500 psi by the factor indicated below. Note: To maintain the needed 4:1 safety factor the new value must be less than 25% of the listed ultimate mechanical value of the selected anchor.

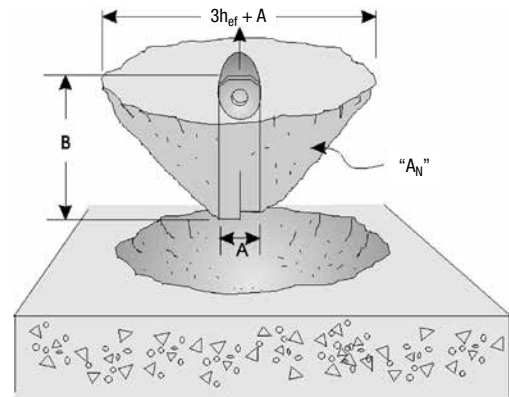
| SLING ANGLE LOAD FACTORS | |
|---|-------------|
| To Increase For Greater Concrete Strength | |
| CONVERT FROM | MULTIPLY BY |
| 3,500 PSI TO 4,000 PSI | 1.07 |
| 3,500 PSI TO 4,500 PSI | 1.13 |
| 3,500 PSI TO 5,000 PSI | 1.19 |
| To Decrease For Lesser Concrete Strength | |
| CONVERT FROM | MULTIPLY BY |
| 3,500 PSI TO 3,000 PSI | 0.92 |
| 3,500 PSI TO 2,500 PSI | 0.84 |
| 3,500 PSI TO 2,000 PSI | 0.75 |

Rapid Lift Technical Information (cont.)

SHEAR CONE CONDITIONS

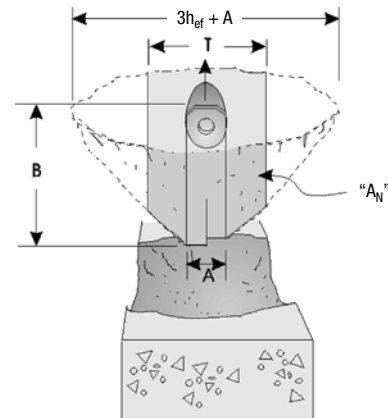
Condition 1: Full Shear Cone Condition – This applies to anchors located in a concrete panel at a distance of at least $(3h_{ef} + A)/2$ (full shear cone width) from the edges. Determine the A (width) and B (length) dimensions of your anchor using the Anchor Embedment Data Table on page 20. Then go to the Table of “ A_{Nc} ” Values on page 20. Move across the top row (Anchor Width A) to your anchor’s width dimension. Drop down to the next row (Anchor Depth h_{ef}) and find the length dimension of your anchor. Drop down one more row (A_{Nco} Values) and the value under your “ h_{ef} ” dimension is the “ A_{Nco} ” value for your anchor.

Plug the “ A_{No} ,” “ A_{Nco} ” value and concrete strength into the appropriate formula on page 5 to determine anchor’s ultimate pullout strength. Divide the pullout strength by four (4) to obtain the required 4:1 safety factor.



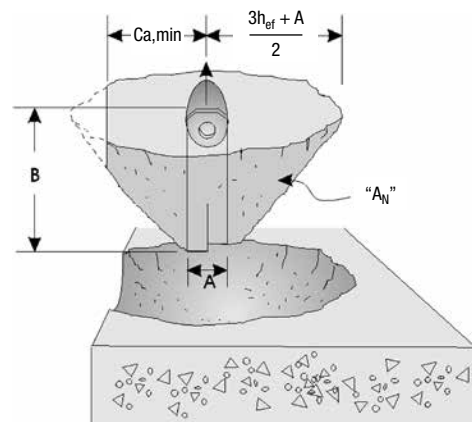
Condition 2: Partial Shear Cone – This applies to anchors located in a concrete panel at a distance of less than $(3h_{ef} + A)/2$ from the edges, as shown in condition 2 to the left. Determine the A (width), h_{ef} (length) and T (panel thickness) dimensions. Then go to the Table of “ A_{Nc} ” Values on page 20. Move across the top row (Anchor Width A) to your anchor’s width dimension. Drop down to the next row (Anchor Depth h_{ef}) and find the length dimension of your anchor. Drop down the column of “ A_{Nc} ” Values to the value opposite your T dimension. This is the “ A_{Nc} ” value for your anchor.

Plug the “ A_{No} ,” “ A_{Nco} ” value and the concrete strength into the appropriate formula on page 5 to determine anchor’s ultimate pullout strength. Divide the pullout strength by four (4) to obtain the required 4:1 safety factor.



Condition 3: Partial Shear Cone – This applies to anchors located in a concrete panel at a distance of more than $(3h_{ef} + A)/2$ from one edge, but at a lesser amount from another edge. Determine the A (width), h_{ef} (length) and T/2 dimensions from the anchor to the closest edge. Then go to the Table of “ A_{Nc} ” Values on page 20. Move across the top row (Anchor Width A) to your anchor’s width dimension. Drop down to the next row (Anchor Depth h_{ef}) and find the length dimension of your anchor. Drop down the column of “ A_{Nc} ” Values to the value opposite your T dimension. Read the value listed under the appropriate “T” column and the “ A_{Nco} ” value under the $3h_{ef} + A$ column. Add the two together and multiply by 0.5.

Plug the “ A_{Nc} ,” “ A_{Nco} ” value and the concrete strength into the appropriate formula on page 5 to determine anchor’s ultimate pullout strength. Divide the pullout strength by four (4) to obtain the required 4:1 safety factor.



Rapid Lift Technical Information (cont.)

EMBEDDED ANCHOR STRENGTH CALCULATIONS

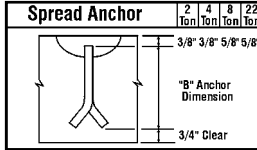
The embedded strength of many of the Rapid Lift anchors can be calculated using the tables and formulas on the following pages. Note that the Plate Anchor and Flat Foot Anchor will not obtain full ultimate mechanical strength if the recommended additional reinforcement is not used. Also note that it is not necessary to apply these formulas and tables to Two-Hole Anchors, Erection Anchors or Tech Erection Anchors utilizing extra reinforcement.

These anchor applications will achieve ultimate capacity at 1,500 psi. The following tabular data and formulas are based on industry accepted Precast Concrete Institute (PCI) calculations for pullout strength of embedded anchors. Some modification to the formulas has been done to more closely agree with actual testing of Rapid Lift anchors.

| TABLE DATA CALCULATION INFORMATION | | | | | |
|------------------------------------|-------------|--------------------|----------------------|-----------------------|---------------|
| Ring Clutch System | Clutch I.D. | Anchor Item Number | Anchor "A" Dimension | Anchor "B" Dimension | $3h_{ef} + A$ |
| SPREAD ANCHOR | | | | | |
| 1-Ton | 1.25T | 79050 | 1- $\frac{1}{4}$ " | 4- $\frac{3}{4}$ " | 16" |
| 2-Ton | 2.5T | 79110 | 1- $\frac{1}{4}$ " | 4" | 14" |
| 2-Ton | 2.5T | 79059 | 1- $\frac{1}{4}$ " | 5- $\frac{1}{2}$ " | 18" |
| 4-Ton | 5T | 79113 | 1- $\frac{1}{2}$ " | 4" | 14" |
| 4-Ton | 5T | 79114 | 1- $\frac{1}{2}$ " | 4- $\frac{3}{4}$ " | 16" |
| 4-Ton | 5T | 79115 | 1- $\frac{1}{2}$ " | 6- $\frac{3}{4}$ " | 21" |
| 4-Ton | 5T | 79116 | 1- $\frac{1}{2}$ " | 6- $\frac{1}{4}$ " | 22" |
| 4-Ton | 5T | 79117 | 1- $\frac{1}{2}$ " | 9- $\frac{1}{2}$ " | 30" |
| 8-Ton | 10T | 79319 | 2- $\frac{1}{2}$ " | 11" | 36" |
| 8-Ton | 10T | 79119 | 2- $\frac{1}{2}$ " | 11" | 36" |
| 22-Ton | 22T | 79172* | 3- $\frac{1}{8}$ " | 15" | 48" |
| 22-Ton | 22T | 79174* | 3- $\frac{1}{8}$ " | 18- $\frac{7}{8}$ " | 60" |
| ERECTION ANCHOR | | | | | |
| 1-Ton | 1.25T | 79046 | 1- $\frac{3}{16}$ " | 4- $\frac{3}{4}$ " | 16" |
| 2-Ton | 2.5T | 79047 | 2" | 8" | 26" |
| 4-Ton | 5T | 79048 | 2- $\frac{1}{2}$ " | 10- $\frac{1}{2}$ " | 34" |
| 8-Ton | 10T | 79349 | 3- $\frac{3}{4}$ " | 12- $\frac{13}{16}$ " | 43" |
| 8-Ton | 10T | 79049 | 3- $\frac{3}{4}$ " | 12- $\frac{13}{16}$ " | 43" |
| TECH ERECTION ANCHOR | | | | | |
| 2-Ton | 2.5T | 79527 | 2" | 8" | 26" |
| 4-Ton | 5T | 79548 | 2- $\frac{1}{2}$ " | 10- $\frac{1}{2}$ " | 34" |
| 8-Ton | 10T | 79589 | 3- $\frac{3}{4}$ " | 12- $\frac{13}{16}$ " | 43" |
| FLAT FOOT ANCHOR | | | | | |
| 2-Ton | 2.5T | 79052 | 1- $\frac{1}{4}$ " | 2- $\frac{3}{4}$ " | 10" |
| 2-Ton | 2.5T | 79053 | 1- $\frac{1}{4}$ " | 3- $\frac{3}{8}$ " | 12" |
| 2-Ton | 2.5T | 79058 | 1- $\frac{1}{4}$ " | 2- $\frac{3}{4}$ " | 10" |
| 2-Ton | 2.5T | 79400 | 1- $\frac{1}{4}$ " | 3- $\frac{3}{8}$ " | 12" |
| PLATE ANCHOR | | | | | |
| 2-Ton | 2.5T | 79128 | 1- $\frac{1}{4}$ " | 2- $\frac{1}{4}$ " | 8" |
| 4-Ton | 5T | 79044 | 1- $\frac{1}{2}$ " | 4- $\frac{3}{8}$ " | 15" |
| 8-Ton | 10T | 79042 | 2- $\frac{1}{2}$ " | 7- $\frac{1}{8}$ " | 24" |

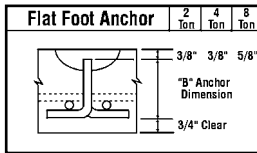
*Available on special order or limited quantities on hand.

Rapid Lift Technical Information (cont.)



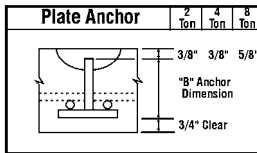
RL-23

| Ring Clutch System | Minimum Panel Thickness | Anchor Selection for Min Panel Thickness |
|--------------------|-------------------------|--|
| 2-Ton | 5-1/8" | 79110 |
| 4-Ton | 7-3/8" | 79116 |
| 8-Ton | 12-3/16" | 79119 |
| 22-Ton | 20-1/4" | 79774 |



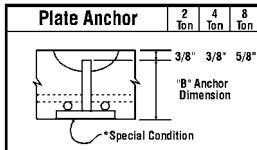
RL-21

| Ring Clutch System | Minimum Panel Thickness | Anchor Selection for Min Panel Thickness |
|--------------------|-------------------------|--|
| 2-Ton | 3-7/8" | 79058 |



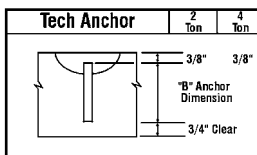
RL-24

| Ring Clutch System | Minimum Panel Thickness | Anchor Selection for Min Panel Thickness |
|--------------------|-------------------------|--|
| 2-Ton | 3-3/8" | 79128 |
| 4-Ton | 5-1/2" | 79044 |
| 8-Ton | 8-1/2" | 79042 |



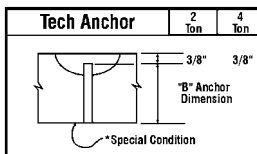
RL-24

| Ring Clutch System | Minimum Panel Thickness | Anchor Selection for Min Panel Thickness |
|--------------------|-------------------------|--|
| 2-Ton | 2-5/8" | 79128 |
| 4-Ton | 4-3/4" | 79044 |
| 8-Ton | 6-7/8" | 79042 |



RL-25

| Ring Clutch System | Minimum Panel Thickness | Anchor Selection for Min Panel Thickness |
|--------------------|-------------------------|--|
| 2-Ton | 3-5/8" | 79523 |
| 4-Ton | 4-3/8" | 79544 |



RL-25

| Ring Clutch System | Minimum Panel Thickness | Anchor Selection for Min Panel Thickness |
|--------------------|-------------------------|--|
| 2-Ton | 2-7/8" | 79523 |
| 4-Ton | 3-7/8" | 79544 |

GUIDE TO MINIMUM PANEL THICKNESS

Minimum Panel Thickness: The minimum thickness of concrete that is required to properly install Rapid-Lift Anchors (dimensions vary with anchor selection).

The minimum Panel Thickness is the sum of the following dimensions: The anchor length ("B" dimension), the surface to anchor dimension (3/8" for 2 and 4-ton series anchors, and 5/8" for the 8-ton series anchors) and the 3/4" minimum of concrete cover below the bottom of the anchor.

3/4" concrete cover beneath the feet of all types of spread anchors is required to obtain listed working loads.

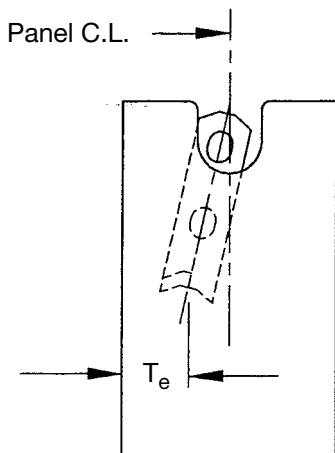
*The RL-25 Tech Anchor and RL-24 Plate Anchor may be placed directly on the form. These are the ONLY Rapid-Lift Anchors that may be installed in this manner. However, the anchor base plate will be visible and exposed after the precast member is removed from the form. Rust may occur if not galvanized.

Rapid Lift Technical Information (cont.)

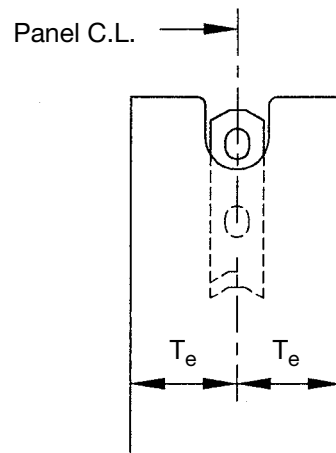
RAPID LIFT ANCHORS USED IN THIN WALL SECTIONS

Care must be taken when locating anchors in thin wall sections. Improper installation and/or misalignment can seriously reduce the safe working load of the anchor.

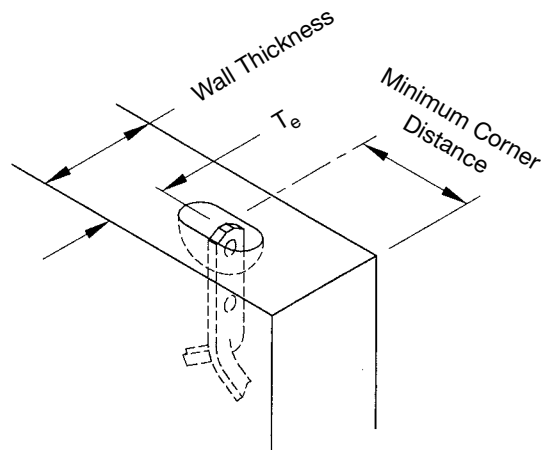
- Anchors must be positioned on the centerline of the panel.
- Use supports, spacers or tie the anchor to the rebar mat to make certain of proper positioning.



This sketch shows a misaligned, improperly positioned anchor. The actual edge distance (T_e) is considerably reduced so there must be a corresponding reduction in the safe working load of the anchor.



This sketch shows proper positioning of the anchor on the centerline of the panel. This allows the full wall thickness to be used in the safe working load selection.



T_e = Edge Thickness
($\frac{1}{2}$ Wall Thickness)

The sketch above shows an anchor application and corner relationship. Safe working loads for indicated corner distances are displayed in the table on page 34.

Rapid Lift Technical Information (cont.)

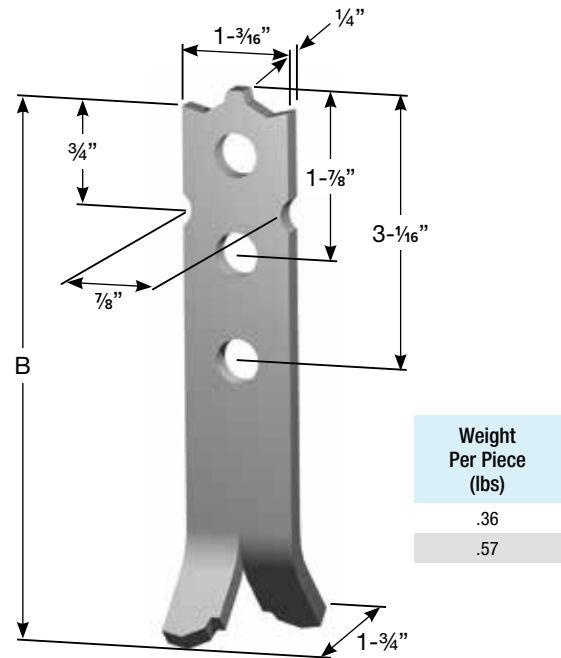
RL-2 ONE TON ERECTION ANCHOR 1-Ton Only

The RL-2 One Ton Anchor is specifically designed to lift and handle thin-wall precast concrete elements, such as architectural panels. The One Ton Anchor is designed to restrict the rotation of the ring clutch to prevent spalling of the concrete during the lifting process. **Hot dip galvanize is the only finish available on this anchor.**

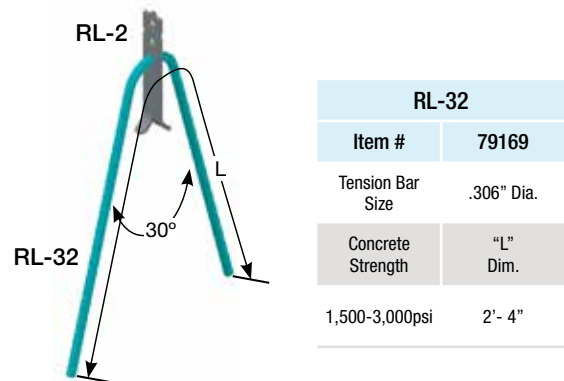
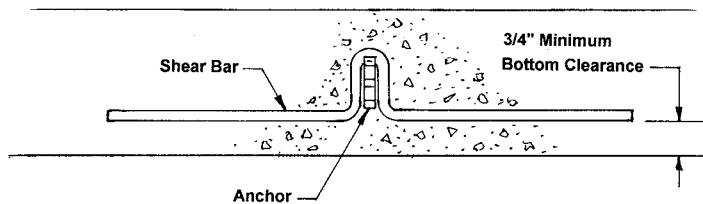
See the One Ton Ring Clutch on page 53, the One Ton Recessing Member on page 55.

Note: In order to achieve the shear values shown in the table, the use of an optional shear bar is required.

* The RL-2 One Ton Erection Anchor



The RL-31 Shear Bar (.375 ø) provides additional shear strength to prevent spalling.



The RL-32 Tension Bar provides simple and economical reinforcement for the erection anchor during tension lifts.

RL-2 RAPID LIFT ONE TON ANCHOR DATA

| Nominal Anchor Load | Clutch I.D. | Item Number | B (in.) | Minimum Panel Thickness (in.) | Shear 4:1 Safety Factor (lbs) | Tension w/o Tension Bar 4:1 Safety Factor (lbs) | Tension w/ Tension Bar 4:1 Safety Factor (lbs) | Minimum Corner Distance (in.) |
|---------------------|-------------|-------------|---------|-------------------------------|-------------------------------|---|--|-------------------------------|
| 1T | 1.25T | 79046G | 4-3/4 | 3 | 611 | 1160 | 2000 | 12 |

Table is based on dead load only, 150 PCF and a standard concrete compressive strength of 3,500 psi.

1. Given full embedment, reinforcement and 3,500 psi concrete, the One Ton Erection Anchor will achieve pullout strength equal to its ultimate mechanical strength.

To order, specify: quantity, name, item number and finish.

Rapid Lift System Anchors



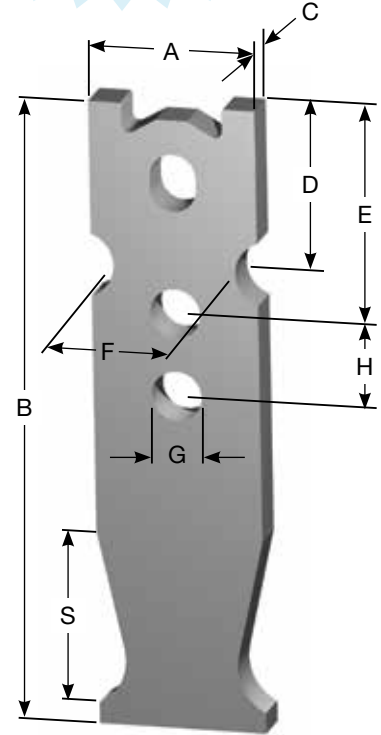
RL-3 TECH ERECTION ANCHOR 2-Ton, 4-Ton and 8-Ton

The RL-3 Rapid Lift Tech Erection Anchor is designed for safe edge lifting and rotation of thinwall precast elements. The anchor is designed with two ears on the head of the anchor to restrict the rotation of the ring clutch. As a result, lateral forces are transmitted directly to the anchor instead of to the concrete to prevent spalling.

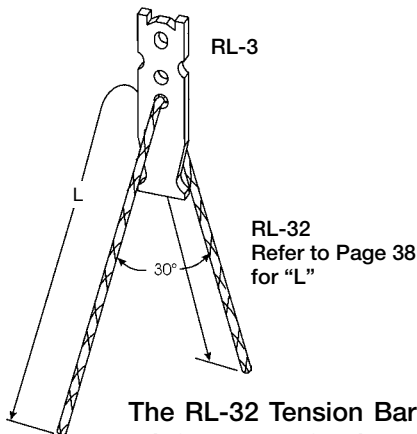
Due to the stress caused by the shear lift on the concrete; it is necessary to add reinforcement in the direction of the lift. The RL-31 Rapid Lift Shear Bar is designed for this purpose and is available. See sketch below. See additional Shear Bar information on page 38.

Anchor dimensions are shown in the table below. Safe working loads and other pertinent information is displayed in the table on the next page. The RL-3 Tech Erection Anchor is available in plain or hot dip galvanize finish.

See Ring Clutches on page 46, 47, and 48, the Recessing Members on 49, 50 and 53, and the Tension Bars on page 38.

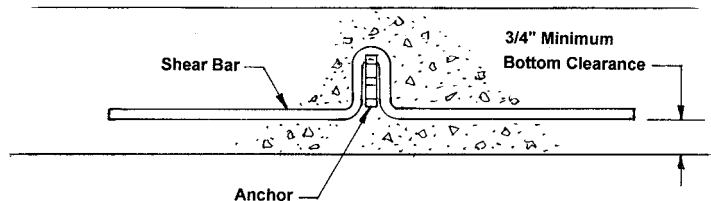


| RL-3 RAPID LIFT TECH ERECTION ANCHOR DIMENSIONS | | | | | | | | | | | | | |
|---|-------------|-------------|--------|---------|------|---------|---------|----------|-------|--------|--------|------------------------------|-------------------------|
| Ring Clutch System | Clutch I.D. | Item Number | A | B | C | D | E | F | G | H | S | Ultimate Mechanic Load (lbs) | Weight Each Piece (lbs) |
| 2T/2.5T | 2.5T | 79527 | 2" | 8" | 3/8" | 1-3/16" | 2-1/4" | 1-3/8" | 9/16" | 1-1/8" | 2" | 16,000 | 1.59 |
| 4T/5T | 5T | 79548 | 2-1/2" | 9-1/2" | 5/8" | 2-1/2" | 3-3/16" | 1-13/16" | 3/4" | 1-1/4" | 2-5/8" | 32,000 | 4.21 |
| 8T/10T | 10T | 79589 | 3-3/4" | 12-1/2" | 3/4" | 3-1/8" | 4" | 2-7/16" | 1" | 1-3/4" | 3-5/8" | 64,000 | 9.17 |



The RL-32 Tension Bar provides simple and economical reinforcement for the erection anchor during tension lifts.

The RL-31 Shear Bar (0.44 ø) provides additional shear strength to prevent spalling.



Rapid Lift System Anchors

RL-3 TECH ERECTION ANCHOR

| RL-3 2-TON, 4-TON, 8-TON | | | | | | | | |
|--------------------------|-------------|----------------------|----------------------|--|---|---|--|--------------------------|
| Ring Clutch System | Clutch I.D. | Standard Item Number | Panel Thickness (in) | Shear w/ Shear Bar 4:1 Safety Factor (lbs) | Tension w/o Tension Bar 4:1 Safety Factor (lbs) | Standard Tension w/ Tension Bar 4:1 Safety Factor (lbs) | High Capacity Tension w/ Tension Bar 4:1 Safety Factor (lbs) | Min Corner Distance (in) |
| 2T/2.5T | 2.5T | 79527 | 4" min. | 1,490 | 3,190 | 4,000 | 5,000 | 12 |
| 2T/2.5T | 2.5T | 79527 | 5" | 2,110 | 3,900 | 4,000 | 5,000 | 12 |
| 2T/2.5T | 2.5T | 79527 | 5-½" | 2,130 | 4,000 | 4,000 | 5,000 | 12 |
| 2T/2.5T | 2.5T | 79527 | 6" | 2,520 | 4,000 | 4,000 | 5,000 | 12 |
| 2T/2.5T | 2.5T | 79527 | 7" | 2,870 | 4,000 | 4,000 | 5,000 | 12 |
| 2T/2.5T | 2.5T | 79527 | 8" | 3,160 | 4,000 | 4,000 | 5,000 | 12 |
| 2T/2.5T | 2.5T | 79527 | 9" | 3,420 | 4,000 | 4,000 | 5,000 | 12 |
| 2T/2.5T | 2.5T | 79527 | 10" | 3,640 | 4,000 | 4,000 | 5,000 | 12 |
| 2T/2.5T | 2.5T | 79527 | 11" | 3,840 | 4,000 | 4,000 | 5,000 | 12 |
| 2T/2.5T | 2.5T | 79527 | 12" | 4,000 | 4,000 | 4,000 | 5,000 | 12 |
| 4T/5T | 5T | 79548 | 5-½" min. | 2,670 | 4,970 | 8,000 | 10,000 | 12 |
| 4T/5T | 5T | 79548 | 6" | 2,990 | 5,170 | 8,000 | 10,000 | 12 |
| 4T/5T | 5T | 79548 | 7" | 3,170 | 6,030 | 8,000 | 10,000 | 12 |
| 4T/5T | 5T | 79548 | 8" | 3,430 | 6,910 | 8,000 | 10,000 | 12 |
| 4T/5T | 5T | 79548 | 9" | 3,650 | 7,750 | 8,000 | 10,000 | 12 |
| 4T/5T | 5T | 79548 | 10" | 3,860 | 8,000 | 8,000 | 10,000 | 12 |
| 4T/5T | 5T | 79548 | 11" | 3,930 | 8,000 | 8,000 | 10,000 | 12 |
| 4T/5T | 5T | 79548 | 12" | 4,010 | 8,000 | 8,000 | 10,000 | 12 |
| 8T/10T | 10T | 79589 | 7-½" min. | 4,010 | 7,220 | 16,000 | 20,000 | 18 |
| 8T/10T | 10T | 79589 | 8" | 4,010 | 7,690 | 16,000 | 20,000 | 18 |
| 8T/10T | 10T | 79589 | 9" | 4,120 | 8,640 | 16,000 | 20,000 | 18 |
| 8T/10T | 10T | 79589 | 10" | 4,280 | 9,580 | 16,000 | 20,000 | 18 |
| 8T/10T | 10T | 79589 | 11" | 4,420 | 10,610 | 16,000 | 20,000 | 18 |
| 8T/10T | 10T | 79589 | 12" | 4,550 | 11,680 | 16,000 | 20,000 | 18 |

Table is based on dead load only, 150 PCF and a standard concrete compressive strength of 3,500 psi.

1. To obtain the shear values shown, it is necessary to use the appropriate Meadow Burke shear bar or equal.
2. Given full embedment, reinforcement and minimum compressive strength concrete; Tech Erection Anchors should achieve a pull out strength equal to their ultimate mechanical strength.
3. Minimum anchor spacing is double the corner distance for unreinforced anchors.

To order, specify: quantity, name, item number and finish.

Rapid Lift System Anchors

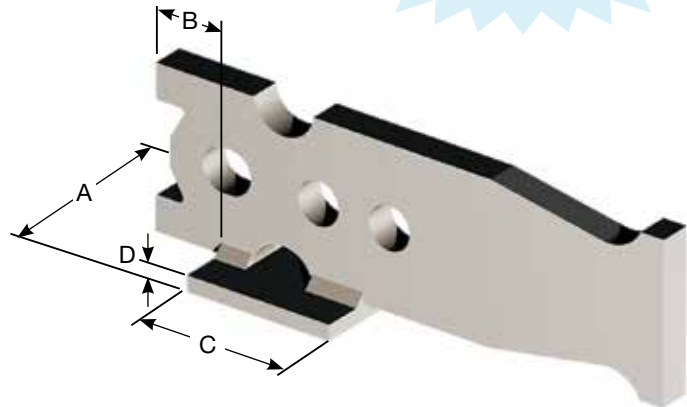


RL-4 RAPID LIFT TECH ERECTION ANCHOR WITH SHEAR PLATE

STD: 2-Ton, 4-Ton and 8-Ton

High Capacity: 2.5-Ton, 5-Ton and 10-Ton

The RL-4 Tech Erection Anchor with Plate is similar in design and use to the RL-3 Tech Erection Anchor, but has the added shear plate to eliminate the need for a shear bar. This design feature gives the anchor a smaller height envelope allowing it to be used in thinner concrete panels. This anchor is available in the sizes shown in the table and in plain or hot dip galvanize finish.



See Ring Clutches on page 46, 47, and 48, the Recessing Members on 49, 50 and 51, and the Tension Bars on page 38.

| RL-4 TECH ERECTION ANCHOR WITH PLATE | | | | | | | | | |
|--------------------------------------|-------------|----------------------|---------------------------|------|------|------|----|--------------|-------------------------|
| Ring Clutch System | Clutch I.D. | Item Number Standard | Item Number High Capacity | A | B | C | D | Weight (lbs) | Minimum Panel Thickness |
| 2T/2.5T | 2.5T | 79527SP | 79527SPHC | 2-½" | ¾" | 3" | ¼" | 2.12 | 3-½" |
| 4T/5T | 5T | 79548SP | 79548SPHC | 2-½" | 1-¼" | 3" | ⅜" | 4.93 | 4" |
| 8T/10T | 10T | 79589SP | 79589SPHC | 3" | 1-⅝" | 3-½" | ⅜" | 10.33 | 7" |

See Standard RL-3 Tech Erection Anchor for all other dimensions.

| RL-4 2-TON, 4-TON, 8-TON | | | | | | | | Standard | High Capacity | |
|--------------------------|-------------|----------------------|---------------------------|----------------------|----------------------------------|-------------------------------|---|--|--|--------------------------|
| Ring Clutch System | Clutch I.D. | Item Number Standard | Item Number High Capacity | Panel Thickness (in) | SHEAR 2.66:1 Safety Factor (lbs) | SHEAR 4:1 Safety Factor (lbs) | TENSION w/o Tension Bar 4:1 Safety Factor (lbs) | TENSION w/ Tension Bar 4:1 Safety Factor (lbs) | TENSION w/ Tension Bar 4:1 Safety Factor (lbs) | Min Corner Distance (in) |
| 2T/2.5T | 2.5T | 79527SP | 79527SPHC | 3-½" min. | 2150 | 1430 | 2640 | 4000 | 5000 | 12 |
| 2T/2.5T | 2.5T | 79527SP | 79527SPHC | 4" | 2930 | 1950 | 3190 | 4000 | 5000 | 12 |
| 2T/2.5T | 2.5T | 79527SP | 79527SPHC | 4-½" | 3040 | 2020 | 3550 | 4000 | 5000 | 12 |
| 2T/2.5T | 2.5T | 79527SP | 79527SPHC | 5" | 3160 | 2100 | 3900 | 4000 | 5000 | 12 |
| 4T/5T | 5T | 79548SP | 79548SPHC | 4" min. | 2710 | 1800 | 3400 | 8000 | 10,000 | 12 |
| 4T/5T | 5T | 79548SP | 79548SPHC | 4-½" | 3710 | 2470 | 3860 | 8000 | 10,000 | 12 |
| 4T/5T | 5T | 79548SP | 79548SPHC | 5" | 4000 | 2660 | 4730 | 8000 | 10,000 | 12 |
| 4T/5T | 5T | 79548SP | 79548SPHC | 5-½" | 4160 | 2770 | 4970 | 8000 | 10,000 | 12 |
| 4T/5T | 5T | 79548SP | 79548SPHC | 6" | 4290 | 2860 | 5170 | 8000 | 10,000 | 12 |
| 8T/10T | 10T | 79589SP | 79589SPHC | 7" min. | 6030 | 4010 | 7100 | 16,000 | 20,000 | 18 |
| 8T/10T | 10T | 79589SP | 79589SPHC | 7-½" | 6030 | 4010 | 7220 | 16,000 | 20,000 | 18 |
| 8T/10T | 10T | 79589SP | 79589SPHC | 8" | 6030 | 4010 | 7690 | 16,000 | 20,000 | 18 |

Table is based on dead load only, 150 PCF and a standard concrete compressive strength of 3,500 psi.

1. The 2.66:1 safety factor is commonly used for back stripping operations. Increased safety factor may be required for unusual live loads or cable magnification.
2. Given full embedment, reinforcement and minimum compressive strength concrete; Tech Erection Anchors should achieve a pullout strength equal to their ultimate mechanical strength.
3. Minimum anchor spacing is double the corner distance for unreinforced anchors.

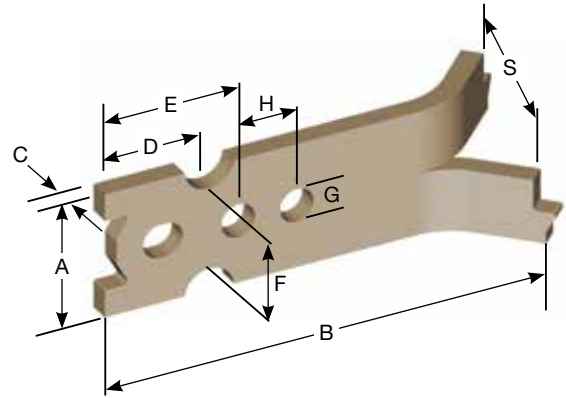
To order, specify: quantity, name, item number and finish.

Rapid Lift System Anchors

RL-6 ERECTION ANCHOR 2-Ton, 4-Ton and 8-Ton

The RL-6 Erection Anchor is similar in design and use to the standard RL-3 Tech Erection Anchor, but has a “split-foot” design to widely disperse applied loads and to enhance pullout capability. Refer to the accompanying Tables for size, availability and safe working loads. The RL-6 Erection Anchor is available in plain and hot dip galvanize finish.

See Ring Clutches on page 47,48, and 49, the Recessing Members on 50 and 51, and the Tension Bars on page 40.



RL-6 ERECTION HEAD ANCHOR

| Ring Clutch System | Clutch I.D. | Item Number | A | B | C | D | E | F | G | H | S | Ultimate Mechanical Load (lbs) | Weight Each Piece (lbs) |
|--------------------|-------------|-------------|--------|-----------|------|----------|---------|----------|-------|--------|--------|--------------------------------|-------------------------|
| 2T/2.5T | 2T/2.5T | 79047 | 2" | 8" | 3/8" | 1-13/16" | 2-1/4" | 1-3/8" | 9/16" | 1-1/8" | 2-3/4" | 16,000 | 1.59 |
| 4T/5T | 4T/5T | 79048 | 2-1/2" | 10-1/2" | 5/8" | 2-1/2" | 3-3/16" | 1-13/16" | 3/4" | 1-1/4" | 3-3/8" | 32,000 | 4.21 |
| 8T/10T | 8T/10T | 79049 | 3-3/4" | 12-13/16" | 5/8" | 3-1/8" | 4" | 2-7/16" | 1" | 1-3/4" | 5" | 48,000 | 7.64 |
| 8T/10T | 8T/10T | 79049 | 3-3/4" | 12-13/16" | 3/4" | 3-1/8" | 4" | 2-7/16" | 1" | 1-3/4" | 5" | 64,000 | 9.17 |

RL-6 2-TON, 4-TON, 8-TON

| Ring Clutch System | Clutch I.D. | Item Number | Panel Thickness in Inches | SHEAR w/ Shear Bar 2.66:1 Safety Factor | SHEAR w/ Shear Bar 4:1 Safety Factor | TENSION w/o Tension Bar 4:1 Safety Factor | TENSION w/ Tension Bar 4:1 Safety Factor | Min Corner Distance (in) |
|--------------------|-------------|-------------|---------------------------|---|--------------------------------------|---|--|--------------------------|
| 2T/2.5T | 2.5T | 79047 | 4" min. | 2250 lbs. | 1490 lbs. | 3190 lbs. | 4000 lbs. | 12 |
| 2T/2.5T | 2.5T | 79047 | 5" | 3160 | 2110 | 3900 | 4000 | 12 |
| 2T/2.5T | 2.5T | 79047 | 5-1/2" | 3460 | 2130 | 4000 | 4000 | 12 |
| 2T/2.5T | 2.5T | 79047 | 6" | 3780 | 2520 | 4000 | 4000 | 12 |
| 2T/2.5T | 2.5T | 79047 | 7" | 4000 | 2870 | 4000 | 4000 | 12 |
| 2T/2.5T | 2.5T | 79047 | 8" | 4000 | 3160 | 4000 | 4000 | 12 |
| 4T/5T | 5T | 79048 | 5-1/2" min. | 4020 | 2670 | 4970 | 8000 | 12 |
| 4T/5T | 5T | 79048 | 6" | 4490 | 2990 | 5170 | 8000 | 12 |
| 4T/5T | 5T | 79048 | 7" | 4670 | 3170 | 6030 | 8000 | 12 |
| 4T/5T | 5T | 79048 | 8" | 5140 | 3430 | 6910 | 8000 | 12 |
| 4T/5T | 5T | 79048 | 9" | 5490 | 3650 | 7750 | 8000 | 12 |
| 4T/5T | 5T | 79048 | 10" | 5790 | 3860 | 8000 | 8000 | 12 |
| 4T/5T | 5T | 79048 | 11" | 5910 | 3930 | 8000 | 8000 | 12 |
| 4T/5T | 5T | 79048 | 12" | 6030 | 4010 | 8000 | 8000 | 12 |
| 8T/10T | 10T | 79049 | 7-1/2" min. | 6030 | 4010 | 7220 | 12,000 | 18 |
| 8T/10T | 10T | 79049 | 8" | 6030 | 4010 | 7690 | 12,000 | 18 |
| 8T/10T | 10T | 79049 | 9" | 6190 | 4120 | 8640 | 12,000 | 18 |
| 8T/10T | 10T | 79049 | 10" | 6430 | 4280 | 9580 | 12,000 | 18 |
| 8T/10T | 10T | 79049 | 11" | 6650 | 4420 | 10,610 | 12,000 | 18 |
| 8T/10T | 10T | 79049 | 12" | 6850 | 4550 | 11,680 | 12,000 | 18 |
| 8T/10T | 10T | 79049 | 7-1/2" min. | 6030 | 4010 | 7220 | 16,000 | 18 |
| 8T/10T | 10T | 79049 | 8" | 6030 | 4010 | 7690 | 16,000 | 18 |
| 8T/10T | 10T | 79049 | 9" | 6190 | 4120 | 8640 | 16,000 | 18 |
| 8T/10T | 10T | 79049 | 10" | 6430 | 4280 | 9580 | 16,000 | 18 |
| 8T/10T | 10T | 79049 | 11" | 6650 | 4420 | 10,610 | 16,000 | 18 |
| 8T/10T | 10T | 79049 | 12" | 6650 | 4550 | 11,680 | 16,000 | 18 |

Table is based on dead load only, 150 PCF and a standard concrete compressive strength of 3,500 psi.

1. The 2.66:1 safety factor is commonly used for back stripping operations. Increased safety factor may be required for unusual live loads or cable magnification.
2. To obtain the shear values shown, it is necessary to use the appropriate Meadow Burke Shear Bar or equal.
3. Given full embedment, reinforcement and minimum compressive strength concrete; Erection Anchors should achieve a pullout strength equal to their ultimate mechanical strength.
4. Minimum anchor spacing is double the corner distance for unreinforced anchors.

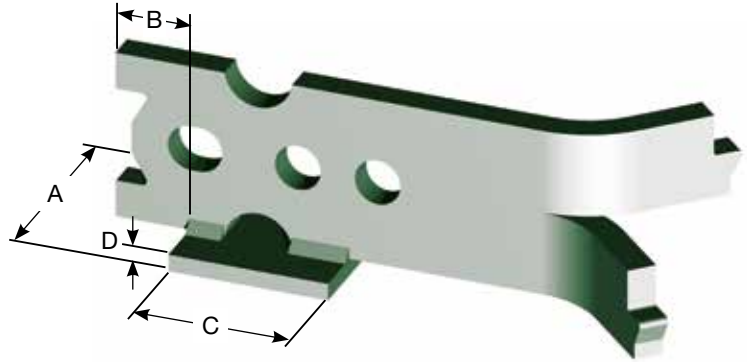
To order, specify: quantity, name, item number and finish.

Rapid Lift System Anchors

RL-7 ERECTION ANCHOR WITH SHEAR PLATE 2-Ton, 4-Ton and 8-Ton

The RL-7 Erection Anchor with Plate is similar in design and use to the RL-6 Erection Anchor, but has the added shear plate to eliminate the need for a shear bar. This design feature gives the anchor a smaller height envelope allowing it to be used in thinner concrete panels. The anchor is available in the sizes shown in the table in plain or hot dip galvanize finish.

See Ring Clutches on page 46, 47, and 48, the Recessing Members on 49, 50 and 53, and the Tension Bars on page 38.



RL-7 ERECTION ANCHOR WITH PLATE

| Ring Clutch System | Clutch I.D. | Item Number | A | B | C | D | Weight (lbs) | Minimum Panel Thickness |
|--------------------|-------------|-------------|--------|--------|--------|------|--------------|-------------------------|
| 2T/2.5T | 2.5T | 79147 | 2-1/2" | 3/4" | 3" | 1/4" | 2.12 | 3-1/2" |
| 4T/5T | 5T | 79148 | 2-1/2" | 1-1/4" | 3" | 3/8" | 4.93 | 4" |
| 8T/10T | 10T | 79149 | 3" | 1-5/8" | 3-1/2" | 3/8" | 8.30 | 7" |
| 8T/10T | 10T | 79149 | 3" | 1-5/8" | 3-1/2" | 3/8" | 10.33 | 7" |

See standard RL-6 Erection Anchor for all other applicable dimensions.

RL-7 2-TON, 4-TON, 6-TON, 8-TON

| Ring Clutch System | Clutch I.D. | Item Number | Panel Thickness (in) | SHEAR 2.66:1 Safety Factor (lbs) | SHEAR 4:1 Safety Factor (lbs) | TENSION w/o Tension Bar 4:1 Safety Factor (lbs) | TENSION w/ Tension Bar 4:1 Safety Factor (lbs) | Min Corner Distance (in) |
|--------------------|-------------|-------------|----------------------|----------------------------------|-------------------------------|---|--|--------------------------|
| 2T/2.5T | 2.5T | 79147 | 3-1/2" min. | 2150 | 1430 | 2640 | 4000 | 12 |
| 2T/2.5T | 2.5T | 79147 | 4" | 2930 | 1950 | 3190 | 4000 | 12 |
| 2T/2.5T | 2.5T | 79147 | 4-1/2" | 3040 | 2020 | 3550 | 4000 | 12 |
| 2T/2.5T | 2.5T | 79147 | 5" | 3160 | 2100 | 3900 | 4000 | 12 |
| 4T/5T | 5T | 79148 | 4" min. | 2710 | 1800 | 3400 | 8000 | 12 |
| 4T/5T | 5T | 79148 | 4-1/2" | 3710 | 2470 | 3860 | 8000 | 12 |
| 4T/5T | 5T | 79148 | 5" | 4000 | 2660 | 4730 | 8000 | 12 |
| 4T/5T | 5T | 79148 | 5-1/2" | 4160 | 2770 | 4970 | 8000 | 12 |
| 4T/5T | 5T | 79148 | 6" | 4290 | 2860 | 5170 | 8000 | 12 |
| 8T/10T | 10T | 79149 | 7" min. | 6030 | 4010 | 7100 | 12,000 | 18 |
| 8T/10T | 10T | 79149 | 7-1/2" | 6030 | 4010 | 7220 | 12,000 | 18 |
| 8T/10T | 10T | 79149 | 8" | 6030 | 4010 | 7690 | 12,000 | 18 |
| 8T/10T | 10T | 79149 | 7" min. | 6030 | 4010 | 7100 | 16,000 | 18 |
| 8T/10T | 10T | 79149 | 7-1/2" | 6030 | 4010 | 7220 | 16,000 | 18 |
| 8T/10T | 10T | 79149 | 8" | 6030 | 4010 | 7690 | 16,000 | 18 |

Table is based on dead load only, 150 PCF and a standard concrete compressive strength of 3,500 psi.

1. The 2.66:1 safety factor is commonly used for back stripping operations. Increased safety factor may be required for unusual live loads or cable magnification.
2. Given full embedment, reinforcement and minimum compressive strength concrete; Erection Anchors should achieve a pullout strength equal to their ultimate mechanical strength.
3. Minimum anchor spacing is double the corner distance for unreinforced anchors.

To Order, Specify: quantity, name, item number and finish.

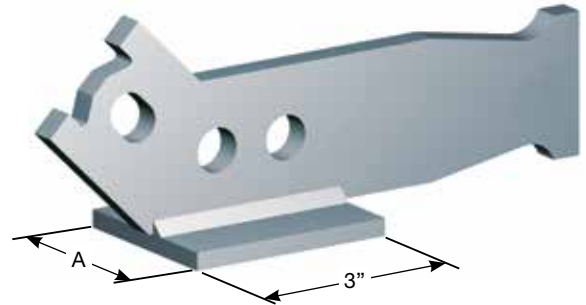
Rapid Lift System Anchors

RL-9 45° TECH ERECTION ANCHOR 2-Ton, 4-Ton and 8-Ton

The RL-9 Tech Erection Anchor - 45° is an adaptation of the regular Tech Erection Anchor for use with panels where the lifting edge is cast at a 45° angle. The anchor is available in the sizes shown in the table and in plain or hot dip galvanize finish.

NOTE: A RL-32 Tension Bar is required with this anchor.

See Ring Clutches on page 52, 53, and 54, the Recessing Members on 55, 56 and 59, and the Tension Bars on page 44.



RL-9 45° TECH ERECTION ANCHOR - 45° DATA

| Ring Clutch System | Clutch I.D. | Item Number | A | Panel Thickness (in) | Shear 4:1 Safety Factor | Tension w/ Tension Bar 4:1 Safety Factor | Min Corner Distance (in) |
|--------------------|-------------|-------------|------|----------------------|-------------------------|--|--------------------------|
| 2T/2.5T | 2.5T | 79527SP-45 | 2.5 | 6 1/2" | 2150 | 3400 | 12 |
| 4T/5T | 5T | 79548SP-45 | 2.75 | 8" | 3500 | 5400 | 12 |
| 8T/10T | 10T | 79589SP-45 | 3 | 9" | 5600 ^{3,4} | 7400 | 18 |

Table is based on dead load only, 150 PCF and a standard concrete compressive strength of 3,500 psi.

1. Given full embedment, reinforcement and minimum compressive strength concrete; Erection Head Anchors should achieve a pull out strength equal to their ultimate mechanical strength.
2. This insert requires 2" concrete below or underneath the shear plate.
3. Load based on 2500 PSI compressive concrete strength.
4. 4 Shear value can be increased by the ration of square roots of the compressive strength up to the maximum tension capacity of 7400 lbs.

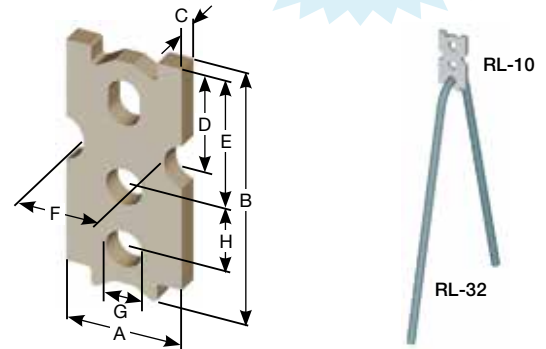
To Order, Specify: quantity, name, item number and finish.

High Capacity Available

RL-10 ERECTION HEAD ANCHOR 2-Ton, 4-Ton and 8-Ton

The RL-10 Erection Head Anchor is designed to be used in conjunction with the Tension Bar in thin-wall sections. It is an ideal choice for spall-free performance in A-frame or tilt table applications.

See Ring Clutches on page 52, 53, and 54, the Recessing Members on 55, 56 and 59, and the Tension Bars on page 44.



RL-10 ERECTION HEAD ANCHOR

| Ring Clutch System | Clutch I.D. | Standard Item Number | High Capacity Item Number | A | B | C | D | E | F | G | H | Standard Allowable Reinforced Tension Load SF 4:1 (lbs) | High Capacity Allowable Reinforced Tension Load SF 4:1 (lbs) | Weight Each Piece (lbs) | Min Panel Thickness (in) | Min Corner Distance (in) |
|--------------------|-------------|----------------------|---------------------------|--------|---------|------|----------|---------|---------|------|---------|---|--|-------------------------|--------------------------|--------------------------|
| 2T/2.5T | 2.5T | 79403 | 79403HC | 2" | 4 1/4" | 3/8" | 1 13/16" | 2 3/8" | 1 3/8" | 5/8" | 1 3/32" | 4000 | 5000 | 0.70 | 4 | 12 |
| 4T/5T | 5T | 79075 | 79075HC | 2 1/2" | 7 7/16" | 5/8" | 2 1/2" | 3 3/16" | 1 7/8" | 3/4" | 1 1/4" | 8000 | 10,000 | 2.76 | 5 | 12 |
| 8T/10T | 10T | 79385 | -- | 3 3/4" | 13 1/4" | 5/8" | 3 1/8" | 4" | 2 7/16" | 1" | 1 3/4" | 12,000 | -- | 7.64 | 7 | 18 |
| 8T/10T | 10T | 79185 | 79185HC | 3 3/4" | 13 1/4" | 3/4" | 3 1/8" | 4" | 2 7/16" | 1" | 1 3/4" | 16,000 | 20,000 | 9.17 | 7 | 18 |

Table is based on dead load only, 150 PCF and a standard concrete compressive strength of 3,500 psi.

1. Given full embedment, reinforcement and minimum compressive strength concrete; Erection Head Anchors should achieve a pull out strength equal to their ultimate mechanical strength.

To Order, Specify: quantity, name, item number and finish.

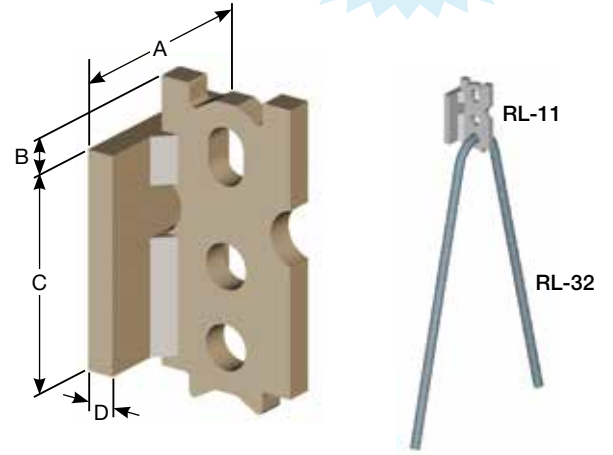
Rapid Lift System Anchors

High Capacity Available

RL-11 ERECTION HEAD ANCHOR WITH PLATE 2-Ton, 4-Ton and 8-Ton

The RL-11 Erection Head Anchor with Plate is similar in design and use to the RL-10 Erection Head Anchor, but has the added shear plate to provide additional shear capability and eliminate the need for a shear bar. This design feature gives the anchor a smaller height envelope allowing it to be used in thinner concrete panels. The anchor is available in the sizes shown in plain or hot dip galvanize finish.

See Ring Clutches on page 46, 47, and 48, the Recessing Members on 49, 50 and 53, and the Tension Bars on page 38.



RL-11 RAPID LIFT ERECTION HEAD WITH PLATE ANCHOR

| Ring Clutch System | Clutch I.D. | Item Number | High Capacity Item Number | A | B | C | D | Minimum Panel Thickness | Shear 4:1 S.F. (lbs)* | Min Corner Distance (in) |
|--------------------|-------------|-------------|---------------------------|--------|--------|--------|------|-------------------------|-----------------------|--------------------------|
| 2T/2.5T | 2.5T | 79403SP | 79403SPHC | 2 1/2" | 3/4" | 3" | 1/4" | 4" | 1235* | 12 |
| 4T/5T | 5T | 79075SP | 79075SPHC | 2 1/2" | 1 1/4" | 3" | 3/8" | 5 1/2" | 2670* | 12 |
| 8T/10T | 10T | 79185SP | 79185SPHC | 3" | 1 5/8" | 3 1/2" | 3/8" | 7" | 4010* | 18 |

Table is based on dead load only, 150 PCF and a standard concrete compressive strength of 3,500 psi.

1. Given full embedment, tension bar reinforcement, and minimum compressive strength concrete; Erection Head Anchors achieve a pull out strength equal to their ultimate mechanical strength.

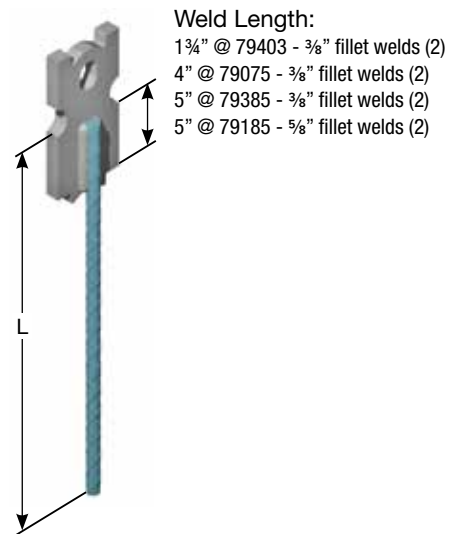
* Shear capacity is less than the standard erection anchor due to the shorter length. The 8-ton erection head two-hole anchor loads are equal to the standard erection anchor due to length.

To Order, Specify: quantity, name, item number and finish.

RL-10 ERECTION HEAD ANCHOR with WELDED REBAR

| Item Number | 79403 | 79075 | 79385 | 79185 |
|-------------------|---------------|-------|-------|-------|
| Rebar Size | Inch #5* | #7* | #8* | #10* |
| | Metric #16* | #22* | #25* | #32* |
| Concrete Strength | "L" Dimension | | | |
| 1,500 psi | 30" | 48" | 79" | 104" |
| 2,000 psi | 26" | 42" | 69" | 90" |
| 3,000 psi | 21" | 34" | 57" | 74" |

* Grade 60 Rebar



Rapid Lift System Anchors

RL-21 FLAT FOOT ANCHOR

2-Ton

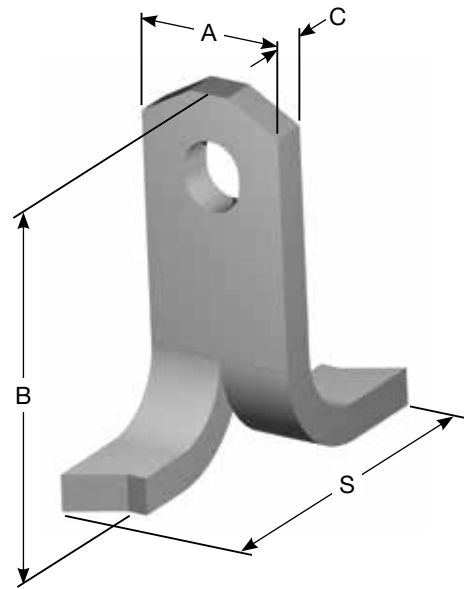
The RL-21 Flat Foot Anchor is designed for back stripping and lifting thin-wall precast elements. The legs of the anchor extend out sufficiently to accommodate recommended additional reinforcing steel. See recommended reinforcing method and sketch below. Refer to the table for anchor dimensions and safe working loads. The Flat Foot Anchor is available in the sizes shown in the table and in plain or hot dip galvanize finish.

See Ring Clutches on page 52, 53, and 54, the Recessing Members on 55, 56 and 59, and the Tension Bars on page 44.

Reinforcing Recommendation:

Crisscross the legs of the anchor with four (4) 18" lengths of #4 rebar as shown in the sketch.

NOTE: A minimum 3/4" concrete cover below the anchor is required to achieve posted working loads.



RL-21 FLAT FOOT ANCHOR DATA

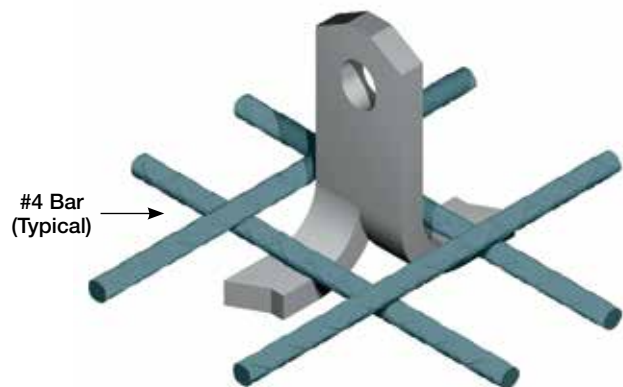
| Ring Clutch System | Clutch I.D. | Item Number | A | B | C | S | Allowable Unreinforced Tension Load 4:1 SF (lbs) ¹ | Allowable Reinforced Tension Load 4:1 SF (lbs) ² | Ultimate Mechanical Load Tension (lbs) | Weight Per Piece (lbs) |
|--------------------|-------------|-------------|---|--------|-------|----|---|---|--|------------------------|
| 2T/2.5T | 2.5T | 79052 | 1 1/4" | 2 3/4" | 3/16" | 4" | 1,325 | 2,000 | 8,000 | 0.32 |
| 2T/2.5T | 2.5T | 79053 | 1 1/4" | 3 3/8" | 3/16" | 4" | 1,893 | 2,000 | 8,000 | 0.36 |
| 2T/2.5T | 2.5T | 79058 | 1 1/4" | 2 3/4" | 3/8" | 4" | 1,325 | 4,000 | 16,000 | 0.46 |
| 2T/2.5T | 2.5T | 79400 | 1 1/4" | 3 3/8" | 3/8" | 4" | 1,893 | 4,000 | 16,000 | 0.56 |
| 4T/5T | 5T | 79157 | Discontinued: See Plate Anchor Item 45847, page 36. | | | | | | | |
| 8T/10T | 10T | 79055 | Discontinued: See Plate Anchor Item 79054, page 36. | | | | | | | |

1. Tension values shown are based on 3,500 psi standard weight concrete and a minimum edge distance of (2B+A)/2.
2. Tension values shown are based on 3,000 psi standard weight concrete, a minimum edge distance of 10" and #4 rebar cut to 18" lengths reinforcing the anchor as shown in the sketch.

To Order, Specify: quantity, name, item number and finish.

The "flat feet" of the anchor extend 2" or more on each side of the anchor to accommodate the recommended reinforcing steel.

NOTE: The flat foot anchor has allowable face shear loads that are equal to or greater than unreinforced face tension loads for anchors located in a panel or concrete unit at a distance of at least 2B+A from the edges.



Rapid Lift System Anchors

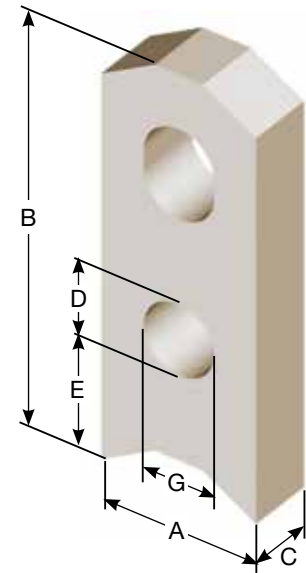
High Capacity Available

RL-22 TWO HOLE ANCHOR
 Standard: 2-Ton, 4-Ton, 8-Ton and 22-Ton
 High: 2.5-Ton, 5-Ton, 10-Ton

The RL-22 Two Hole Anchor is effectively used for stripping panels from tilt tables and transporting panels. It is also a good choice in applications where spread-type anchors can't be used and in panels constructed with lightweight concrete. It is designed with a secondary hole that can accept additional rebar or a Tension Bar to increase lifting capacity and to distribute lifting loads deep into the concrete. The Two Hole Anchor is available in the sizes shown in the table and in plain or hot dip galvanize finish.

Minimum reinforcing length (L) is needed to develop the full strength of the anchor.

See Ring Clutches on page 46, 47, and 48, the Recessing Members on 49, 50 and 53, and the Tension Bars on page 38.



| RL-22 RAPID LIFT TWO HOLE ANCHOR | | | | | | | | | | Standard | High Capacity | | |
|----------------------------------|-------------|-------------|---------------------------|--------|---------|------|----------|----------|---------|--|--|-------------------|------------------------------|
| Ring Clutch System | Clutch I.D. | Item Number | High Capacity Item Number | A | B | C | D | E | G | Allowable Reinforced Tension Load 4:1 SF (lbs) | TENSION w/ Tension Bar 4:1 Safety Factor (lbs) | Weight Each (lbs) | Minimum Panel Thickness (in) |
| 2T/2.5T | 2.5T | 79122 | 79122HC | 1 1/4" | 4" | 3/8" | 3/4" | 9/16" | 9/16" | 4,000 | -- | 0.46 | 2 3/4" |
| 2T/2.5T | 2.5T | 79190 | -- | 1 1/4" | 2 3/4" | 3/8" | 9/16" | 5/8" | 9/16" | 4,000 | -- | 0.40 | 2 3/4" |
| 4T/5T | 5T | 79124 | 79124HC | 1 1/2" | 5 1/2" | 5/8" | 1 3/16" | 1 3/16" | 1 1/16" | 8,000 | 10,000 | 1.30 | 4 |
| 8T/10T | 10T | 79125 | 79125HC | 2 1/2" | 7" | 3/4" | 1 3/16" | 1 7/16" | 1" | 16,000 | 20,000 | 3.06 | 5 |
| 22T/26T | 26T | 79176 | -- | 3 1/8" | 11 3/4" | 1" | 1 13/16" | 1 13/16" | 1 3/8" | 44,000 | -- | 8.80 | 7 |

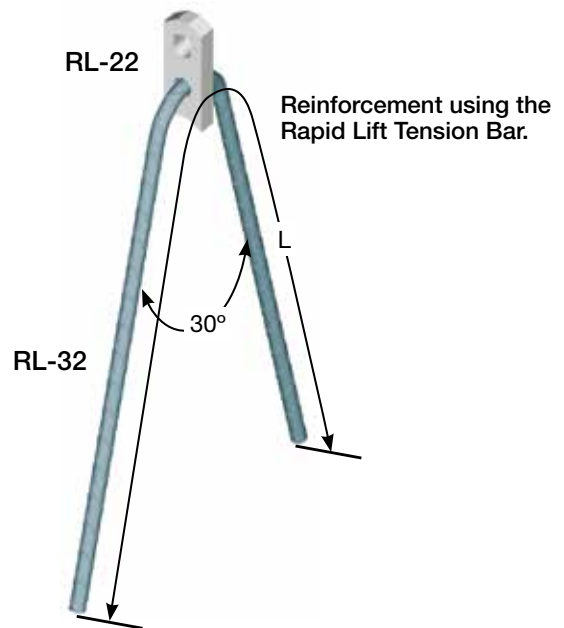
Table is based on dead load only, 150 PCF. Refer to table below for tension bar length at desired concrete strength. Minimum concrete compression strength = 1500 psi.

To Order, Specify: quantity, name, item number and finish.

TYPICAL TWO HOLE ANCHOR REINFORCEMENT RL-32 Tension Bar

RL-32 TENSION BAR for STANDARD and HIGH CAPACITY

| Load Group | 2-Ton | 2.5 Ton | 4-Ton | 5-Ton | 8-Ton | 10-Ton | 22-Ton |
|-------------------------|---|------------|------------|------------|------------|------------|------------|
| Rebar Size | Inch #3 | Inch #4 | Inch #4 | Inch #5 | Inch #6 | Inch #7 | Inch #9 |
| | Metric #10 | Metric #13 | Metric #13 | Metric #16 | Metric #19 | Metric #22 | Metric #29 |
| Concrete Strength (psi) | "L" Dimension (overall length of rebar) | | | | | | |
| 1,500 | 3'-0" | 4'-0" | 4'-0" | 4'-5" | 6'-0" | 7'-6" | 12'-0" |
| 2,000 | 2'-9" | 3'-6" | 3'-6" | 3'-10" | 5'-6" | 6'-7" | 9'-6" |
| 2,500 | 2'-8" | 3'-0" | 3'-0" | 3'-6" | 5'-0" | 6'-0" | 9'-3" |
| 3,000 | 2'-6" | 3'-0" | 3'-0" | 3'-3" | 4'-6" | 5'-6" | 9'-0" |
| 4,000 | 2'-0" | 2'-6" | 2'-6" | 3'-0" | 3'-7" | 4'-10" | 9'-0" |
| 5,000 | 2'-0" | 2'-2" | 2'-2" | 2'-6" | 3'-3" | 4'-5" | 9'-0" |



Rapid Lift System Anchors

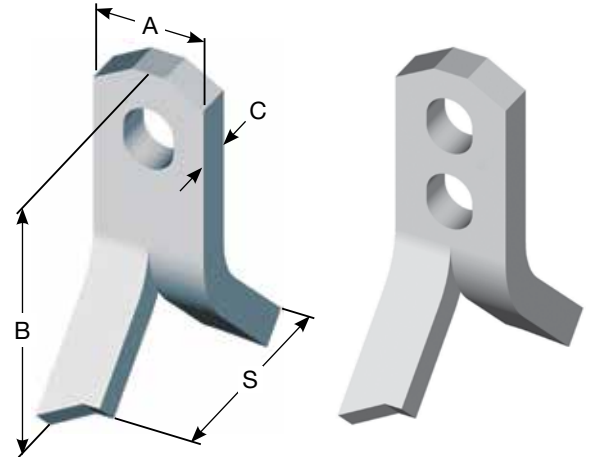
RL-23 SPREAD ANCHOR

2-Ton, 4-Ton, 8-Ton and 22-Ton

The RL-23 Spread Anchor is designed with a spread-foot that produces exceptional pull out capacity. This versatile anchor can be used in the face, back or edge of panels for back stripping and rotation from horizontal to vertical. This anchor can be pulled in any direction as long as minimum edge distance is maintained. However spalling may occur when pulling in shear perpendicular to the long side of the void. A minimum ¾" concrete cover below the anchor is recommended. The Spread Anchor is available in the sizes shown in the table and in plain or hot dip galvanize finish.

See Ring Clutches on page 52, 53, and 54, the Recessing Members on 55, 56 and 59, and the Tension Bars on page 44.

NOTE: The spread anchor has allowable face shear loads that are equal to or greater than the face tension loads for anchors located in a panel or concrete unit at a distance of $3B+A$ from the edge. In order to achieve these loads, shear has to be applied parallel to long side of void.



RL-23 SPREAD ANCHOR DATA

| Ring Clutch System | Clutch I.D. | Item Number | Additional Hole | A | B | C | S | Allowable Unreinforced Tension Load 4:1 SF (lbs) | Ultimate Mechanical Load Tension (lbs) | Weight Per Piece (lbs) |
|--------------------|-------------|-------------|-----------------|------|-------|----|------|--|--|------------------------|
| 2T/2.5T | 2.5T | 79050 | No | 1 ¼" | 4 ¾" | ¾" | 2 ¾" | 2,000 | 8,000 | 0.32 |
| 2T/2.5T | 2.5T | 79110 | No | 1 ¼" | 4" | ¾" | 2 ¾" | 2,530 | 16,000 | 0.49 |
| 2T/2.5T | 2.5T | 79059 | No | 1 ¼" | 5 ½" | ¾" | 2 ¾" | 4,000 | 16,000 | 0.73 |
| 4T/5T | 5T | 79113 | No | 1 ½" | 4" | ½" | 3 ¾" | 2,670 | 24,000 | 0.96 |
| 4T/5T | 5T | 79114 | No | 1 ½" | 4 ¾" | ½" | 3 ¾" | 3,590 | 24,000 | 1.12 |
| 4T/5T | 5T | 79115 | No | 1 ½" | 6 ¾" | ½" | 3 ¾" | 6,720 | 32,000 | 1.40 |
| 4T/5T | 5T | 79116 | No | 1 ½" | 6 ¼" | ⅝" | 3 ¾" | 5,850 | 32,000 | 1.61 |
| 4T/5T | 5T | 79117 | Yes | 1 ½" | 9 ½" | ⅝" | 3 ¾" | 8,000 | 32,000 | 2.48 |
| 8T/10T | 10T | 79319 | Yes | 2 ½" | 11" | ⅝" | 5 ¼" | 12,000 | 48,000 | 4.48 |
| 8T/10T | 10T | 79119 | Yes | 2 ½" | 11" | ¾" | 5 ¼" | 16,000 | 64,000 | 5.37 |
| 22T/26T | 26T | 79172 | Yes | 3 ⅝" | 15" | ¾" | 6 ¼" | 32,800 | 136,000 | 9.59 |
| 22T/26T | 26T | 79174 | Yes | 3 ⅝" | 18 ⅞" | 1" | 6 ¼" | 44,000 | 176,000 | 16.07 |

Table is based on dead load only, 150 PCF and a standard concrete compressive strength of 3,500 psi and a minimum edge distance of $(2B+A)/2$ for tension loads.

* In order to achieve these loads, shear has to be long side of void.

Refer to pages 40 and 41 for anchor capacities in thin wall applications.

To Order, Specify: quantity, name, item number and finish.

Rapid Lift System Anchors

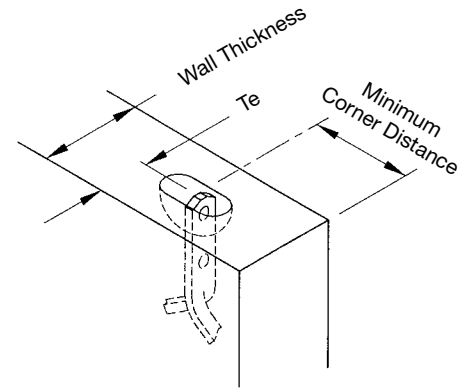
RAPID LIFT SPREAD ANCHORS USED IN THIN WALL SECTIONS

Care must be taken when locating anchors in thin wall sections. Improper installation and/or misalignment can seriously reduce the safe working load of the anchor.

- Anchors must be positioned on the centerline of the panel.
- Use supports, spacers or tie the anchor to the rebar mat to make sure of proper positioning.

This sketch shows proper positioning of the anchor on the centerline of the panel. This allows the full wall thickness to be used in the safe working load selection.

When used in conjunction with the RL-32 Tension Bar, the RL-23 Anchor will achieve the full mechanical capacity when installed in a thin wall.



Te = Actual Edge Thickness
(½ Wall Thickness)

SINGLE RL-23 SPREAD ANCHOR TENSILE CAPACITIES IN THIN WALLS (CONT.)

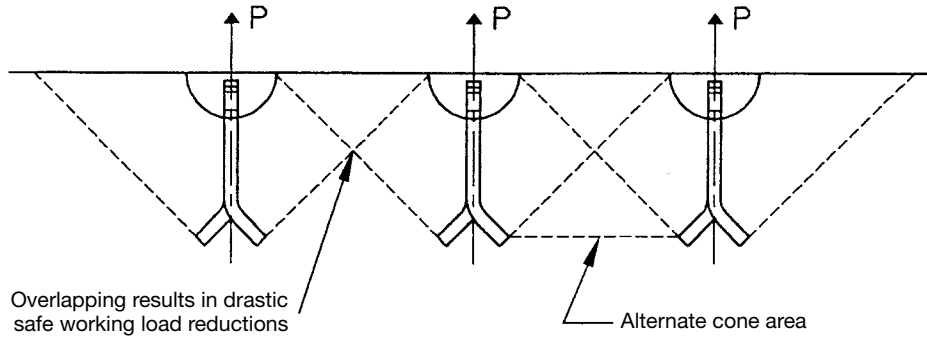
| RL-23 TENSILE CAPACITY | | | | | | | |
|-----------------------------------|----------------------------|-------------------------------|--------------------------------------|-----------|-----------|-----------|-----------|
| Rapid Lift Anchor Ton & Length | Critical Wall Thickness | Actual Edge Thickness (Te) | Tensile Safe Working Load Per Anchor | | | | |
| | | | Actual Corner Distance | | | | |
| | | | 8 Inches | 12 Inches | 18 Inches | 24 Inches | 30 Inches |
| 2 Ton X 4" | 4 | 2" | 1,400 lbs | 1,600 lbs | 1,600 lbs | 1,600 lbs | 1,600 lbs |
| | 5 | 2½" | 1,700 | 2,000 | 2,000 | 2,000 | 2,000 |
| | 6 | 3" | 2,000 | 2,200 | 2,300 | 2,300 | 2,300 |
| | 7 | 3½" | 2,200 | 2,500 | 2,600 | 2,600 | 2,600 |
| | 8 | 4" | 2,400 | 2,700 | 2,800 | 2,800 | 2,800 |
| 2 Ton X 5½" | 4 | 2" | 1,800 | 2,000 | 2,200 | 2,200 | 2,200 |
| | 5 | 2½" | 2,300 | 2,500 | 2,800 | 2,800 | 2,800 |
| | 6 | 3" | 2,700 | 2,900 | 3,300 | 3,300 | 3,300 |
| | 7 | 3½" | 3,100 | 3,400 | 3,700 | 3,700 | 3,700 |
| | 8 | 4" | 3,400 | 3,800 | 4,000 | 4,000 | 4,000 |
| 4 Ton X 6¼" | 4 | 2" | 2,100 | 2,300 | 2,500 | 2,500 | 2,500 |
| | 5 | 2½" | 2,600 | 2,900 | 3,200 | 3,200 | 3,200 |
| | 6 | 3" | 3,200 | 3,500 | 3,800 | 3,800 | 3,800 |
| | 7 | 3½" | 3,600 | 4,000 | 4,400 | 4,400 | 4,400 |
| | 8 | 4" | 4,100 | 4,500 | 4,900 | 4,900 | 4,900 |
| 4 Ton X 9½" | 4 | 2" | 3,000 | 3,200 | 3,400 | 3,600 | 3,800 |
| | 5 | 2½" | 3,800 | 4,000 | 4,300 | 4,500 | 4,800 |
| | 6 | 3" | 4,500 | 4,800 | 5,200 | 5,400 | 5,800 |
| | 7 | 3½" | 5,300 | 5,600 | 6,000 | 6,300 | 6,700 |
| | 8 | 4" | 6,000 | 6,400 | 6,800 | 7,200 | 7,600 |
| 6 Ton or 8 Ton X 11" | 4 | 2" | 3,000 | 3,200 | 3,400 | 3,600 | 3,800 |
| | 5 | 2½" | 4,000 | 4,600 | 4,800 | 5,100 | 5,400 |
| | 6 | 3" | 4,800 | 5,500 | 5,800 | 6,100 | 6,500 |
| | 7 | 3½" | 5,600 | 6,500 | 6,800 | 7,100 | 7,600 |
| | 8 | 4" | 6,400 | 7,400 | 7,800 | 8,200 | 8,700 |
| 6 Ton or 8 Ton X 11" | 9 | 4½" | 7,100 | 8,300 | 8,800 | 9,200 | 9,700 |
| | 10 | 5" | 7,900 | 9,200 | 9,700 | 10,000 | 10,800 |

Table is based on dead load only, 150 PCF and a standard concrete compressive strength of 4,500 psi concrete.

Rapid Lift System Anchors

MULTIPLE RL-23 SPREAD ANCHOR TENSILE CAPACITIES IN THIN WALLS

When multiple anchors are placed in a thin wall panel, caution must be exercised to prevent the anchor shear cone planes from overlapping. If overlapping is unavoidable, the anchor safe working load must be reduced. If a spacing of six times the length of the anchor or more is maintained, the anchor shear cones will not overlap and maximum tensile capacities can be achieved. Reference the following sketch and accompanying table.



| RL-23 TENSILE CAPACITY | | | | | | | |
|-----------------------------------|----------------------------|------------------------------------|--------------------------------------|-----------|-----------|-----------|-----------|
| Rapid Lift Anchor Ton & Length | Critical Wall Thickness | Actual Edge Thickness (T_e) | Tensile Safe Working Load Per Anchor | | | | |
| | | | Anchor Spacing | | | | |
| | | | 8 Inches | 24 Inches | 30 Inches | 36 Inches | 48 Inches |
| 2 Ton X 4" | 4 | 2" | 1,300 lbs | 1,500 lbs | 1,600 lbs | 1,600 lbs | 1,600 lbs |
| | 5 | 2½" | 1,600 | 1,900 | 2,000 | 2,000 | 2,000 |
| | 6 | 3" | 1,900 | 2,200 | 2,300 | 2,300 | 2,300 |
| | 7 | 3½" | 2,100 | 2,500 | 2,600 | 2,600 | 2,600 |
| | 8 | 4" | 2,200 | 2,600 | 2,700 | 2,700 | 2,700 |
| 2 Ton X 5½" | 4 | 2" | 1,600 | 1,800 | 2,000 | 2,200 | 2,200 |
| | 5 | 2½" | 2,000 | 2,200 | 2,500 | 2,700 | 2,700 |
| | 6 | 3" | 2,300 | 2,600 | 3,000 | 3,200 | 3,200 |
| | 7 | 3½" | 2,600 | 3,000 | 3,400 | 3,700 | 3,700 |
| | 8 | 4" | 2,900 | 3,400 | 3,800 | 4,000 | 4,000 |
| 4 Ton X 6¼" | 4 | 2" | 1,700 | 1,900 | 2,400 | 2,500 | 2,500 |
| | 5 | 2½" | 2,100 | 2,400 | 3,000 | 3,200 | 3,200 |
| | 6 | 3" | 2,500 | 2,800 | 3,500 | 3,800 | 3,800 |
| | 7 | 3½" | 2,900 | 3,300 | 4,100 | 4,400 | 4,400 |
| | 8 | 4" | 3,300 | 3,700 | 4,600 | 4,900 | 4,900 |
| 4 Ton X 9½" | 4 | 2" | 2,100 | 2,500 | 2,900 | 3,400 | 3,900 |
| | 5 | 2½" | 2,600 | 3,100 | 3,700 | 4,300 | 4,800 |
| | 6 | 3" | 3,100 | 3,700 | 4,400 | 5,100 | 5,800 |
| | 7 | 3½" | 3,600 | 4,300 | 5,100 | 5,900 | 6,700 |
| | 8 | 4" | 4,100 | 4,900 | 5,800 | 6,700 | 7,700 |
| 6 Ton or 8 Ton X 11" | 5 | 2½" | 2,400 | 3,500 | 4,000 | 4,500 | 5,100 |
| | 6 | 3" | 2,800 | 4,200 | 4,800 | 5,500 | 6,200 |
| | 7 | 3½" | 3,300 | 4,900 | 5,600 | 6,400 | 7,200 |
| | 8 | 4" | 3,800 | 5,600 | 6,400 | 7,300 | 8,200 |
| | 9 | 4½" | 4,200 | 6,300 | 7,200 | 8,200 | 9,200 |
| | 10 | 5" | 4,700 | 6,900 | 8,000 | 9,000 | 10,200 |

Table is based on dead load only, 150 PCF and a standard concrete compressive strength of 4,500 psi concrete.

Rapid Lift System Anchors

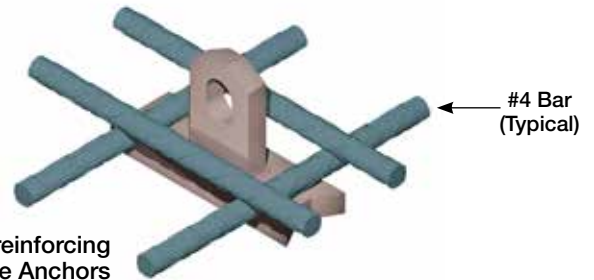
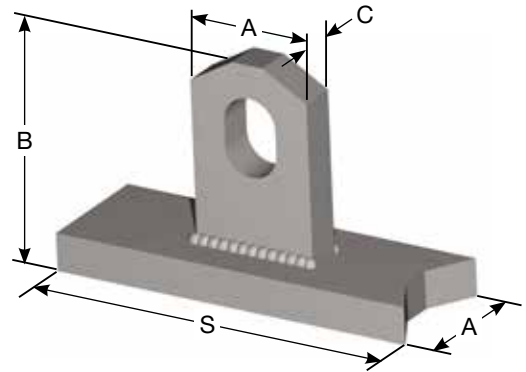
RL-24 PLATE ANCHOR 2-Ton, 4-Ton and 8-Ton

The RL-24 Plate Anchor is designed with a plate welded to the bottom to provide high pullout strength with a low profile. This design makes the anchor ideal for face and back lifts of thin-wall units and stripping, handling and erection applications. The Plate Anchor is available in the sizes shown in the table and in plain or hot dip galvanize finish.

See Ring clutches on page 46, 47, and 48, and the Recessing Members on page 49, 50 and 53.

Reinforcing Recommendation:

Crisscross the lower plate of the anchor with four (4) 18" long #4 rebar as shown in the sketch.



Typical method of reinforcing Plate Anchors

NOTE: The Plate Anchor has allowable face shear loads that are equal to or greater than the unreinforced face tension loads for anchors located in a panel or concrete unit at a distance of at least $3B+A$ from the edges.

RL-24 RAPID LIFT PLATE ANCHOR DATA

| Ring Clutch System | Clutch I.D. | Item Number | A | B | C | S | Allowable Unreinforced Tension Load 4:1 SF (lbs) ¹ | Allowable Reinforced Tension Load 4:1 SF (lbs) ² | Ultimate Mechanical Load Tension (lbs) | Weight Per Piece (lbs) |
|--------------------|-------------|--------------------|------|------|----|------|--|--|--|------------------------|
| 2T/2.5T | 2.5T | 79128 | 1 ¼" | 2 ¼" | ¾" | 3 ¾" | 952 | 4,000 | 16,000 | 0.71 |
| 4T/5T | 5T | 45846 ₃ | 1 ½" | 3" | ⅝" | 3" | 5,000 | 5,650 | 32,000 | 1.21 |
| 4T/5T | 5T | 45847 ₃ | 1 ½" | 3 ½" | ⅝" | 3" | 5,100 | 5,750 | 32,000 | 1.31 |
| 4T/5T | 5T | 79044 | 1 ½" | 4 ¾" | ⅝" | 3 ¾" | 6,500 | 7,300 | 32,000 | 1.91 |
| 8T/10T | 10T | 79054 | 2 ½" | 6 ½" | ¾" | 5" | 10,650 | 11,550 | 64,000 | 4.29 |
| 8T/10T | 10T | 79042 | 2 ½" | 7 ⅞" | ¾" | 5" | 13,600 | 14,450 | 64,000 | 5.55 |

1. Table is based on dead load only, 150 PCF and a standard concrete compressive strength of 3,500 psi and a minimum edge distance of $(3B+A)/2$.
2. Tension values shown are based on 3,000 psi standard weight concrete, a minimum edge distance of 10" and #4 rebar cut to 18" lengths reinforcing the anchor as shown in the sketch.
3. Available with plate anchor base.

To Order, Specify: quantity, name, item number and finish.

RL-60 PLATE ANCHOR BASE 4-Ton

The RL-60 Plate Anchor Base is a plastic base designed for use with specific RL-24 Plate Anchor 4-Ton units (item numbers 45846 and 45847) to hold and position the anchors in face lift applications.

To Order, Specify: quantity, name and item number.



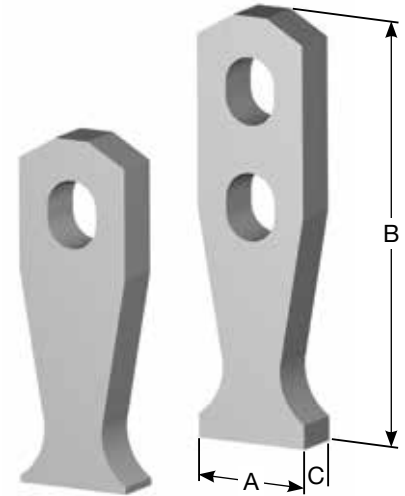
Rapid Lift System Anchors

RL-25 TECH ANCHOR 2-Ton and 4-Ton

The RL-25 Tech Anchor has been developed with a unique foot design to increase tension capacity without adding extra reinforcement. Longer sizes of the anchor are supplied with a secondary hole to accommodate the addition of a tension bar for use when required. The Tech Anchor is available in the sizes shown in the table and in plain or hot dip galvanize finish.

See Ring Clutches on page 52, 53, and 54, the Recessing Members on 55, 56 and 59, and the Tension Bars on page 44.

NOTE: The tech anchor has allowable face shear loads that are equal to or greater than the face tension loads for anchors located in a panel or concrete unit at a distance of $3B+A$ from the edge.

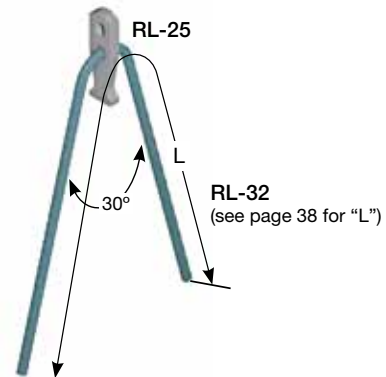


RL-25 TECH ANCHOR - FACE TENSION DATA

| Ring Clutch System | Clutch I.D. | Item Number | Extra Hole | A | B | C | Minimum Panel Thickness | Tension Load 2:1 SF (lbs) | Tension Load 4:1 SF (lbs) | Ultimate Mechanical Strength (lbs) | Weight Per Piece (lbs) |
|--------------------|-------------|-------------|------------|--------|----------|------|-------------------------|---------------------------|---------------------------|------------------------------------|------------------------|
| 2T/2.5T | 2.5T | 79523 | No | 1 1/4" | 2 7/16" | 3/8" | 3" | 4,955 | 2,480 | 12,000 | 0.17 |
| 2T/2.5T | 2.5T | 79524 | No | 1 1/4" | 3 7/16" | 3/8" | 4" | 5,000 | 2,885 | 16,000 | 0.3 |
| 2T/2.5T | 2.5T | 79525 | Yes | 1 1/4" | 4 15/16" | 3/8" | 5 1/2" | 5,000 | 4,000 | 16,000 | 0.5 |
| 4T/5T | 5T | 79544 | No | 1 1/2" | 3 7/16" | 5/8" | 4" | 8,610 | 4,305 | 32,000 | 0.6 |
| 4T/5T | 5T | 79545 | No | 1 1/2" | 4 7/16" | 5/8" | 5" | 10,000 | 5,445 | 32,000 | 0.9 |
| 4T/5T | 5T | 79546 | Yes | 1 1/2" | 5 7/16" | 5/8" | 6" | 10,000 | 7,215 | 32,000 | 1.1 |

Table is based on dead load only, 150 PCF and a standard concrete compressive strength of 3,500 psi normal weight and a minimum edge distance of $2B+A$. Anchors in edge tension that are reinforced with a tension bar will achieve the full rated load in 1,500 psi concrete.

To Order, Specify: quantity, name, item number and finish.



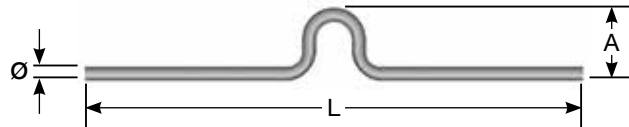
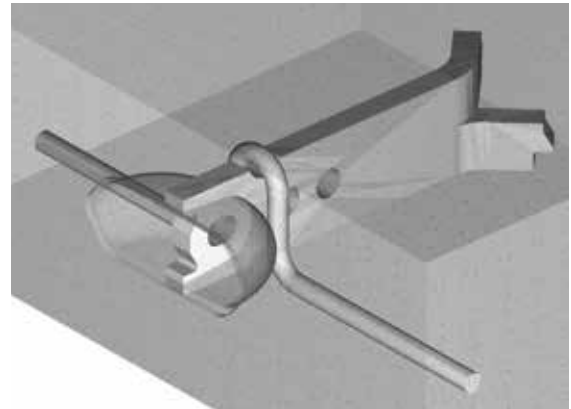
RL-25 TECH ANCHOR IN EDGE TENSION DATA

| Ring Clutch System | Clutch I.D. | Item Number | Extra Hole | A | B | C | Minimum Panel Thickness | Tension Load 2:1 SF (lbs) | Tension Load 4:1 SF (lbs) | Ultimate Mechanical Strength (lbs) | Weight Per Piece (lbs) |
|--------------------|-------------|-------------|------------|--------|--------|------|-------------------------|---------------------------|---------------------------|------------------------------------|------------------------|
| 2T/2.5T | 2.5T | 79529 | Yes | 1 1/4" | 9 1/2" | 3/8" | 3 1/2" | 6,560 | 3,280 | 16,000 | 1.1 |
| 2T/2.5T | 2.5T | 79529 | Yes | 1 1/4" | 9 1/2" | 3/8" | 4 1/2" | 7,600 | 3,800 | 16,000 | 1.1 |
| 2T/2.5T | 2.5T | 79529 | Yes | 1 1/4" | 9 1/2" | 3/8" | 5 1/2" | 8,000 | 4,000 | 16,000 | 1.1 |
| 4T/5T | 5T | 79549 | Yes | 1 1/2" | 9 1/2" | 5/8" | 4" | 5,340 | 2,670 | 32,000 | 2.2 |
| 4T/5T | 5T | 79549 | Yes | 1 1/2" | 9 1/2" | 5/8" | 5" | 8,950 | 4,475 | 32,000 | 2.2 |
| 4T/5T | 5T | 79549 | Yes | 1 1/2" | 9 1/2" | 5/8" | 6" | 12,660 | 6,330 | 32,000 | 2.2 |

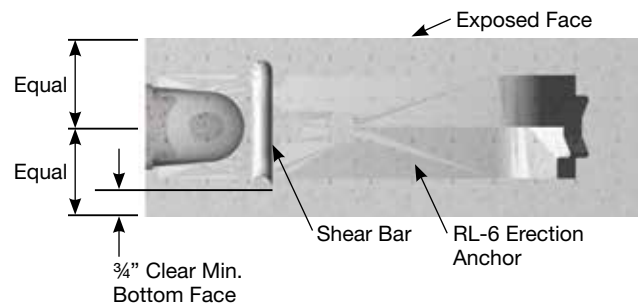
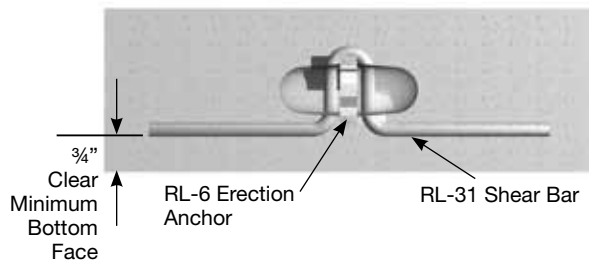
Rapid Lift System Anchors

RL-31 SHEAR BAR 1-Ton, 2-Ton, 4-Ton and 8-Ton

The RL-31 Shear Bar is used to provide simple and economical reinforcement for erection anchors during the rotation of edge-lifted panels. The unit fits over the anchor to spread the shear stress and prevent spalling of the concrete.



TOP VIEW



RL-31 SHEAR BAR DATA

| Ring Clutch System | Clutch I.D. | Item Number | Ø | A | L | Minimum Panel Thickness | Weight (lbs) |
|--------------------|-------------|-------------|--------|----------|---------|-------------------------|--------------|
| 1T/1.25T | 1.25T | 79139 | 0.375" | 1 5/8" | 13" | 3" | 0.44 |
| 2T/2.5T | 2.5T | 79140 | 0.44" | 2 7/16" | 14 1/8" | 4" | 0.98 |
| 4T/5T | 5T | 79141 | 0.44" | 3 1/4" | 14 1/8" | 5 1/2" | 1.07 |
| 8T/10T | 10T | 79142 | 0.44" | 4 15/16" | 14 1/8" | 5 1/2" | 1.23 |

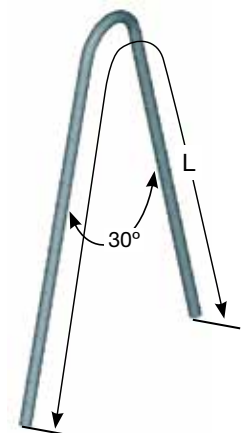
To Order, Specify: quantity, name and item number.

RL-32 TENSION BAR 2-Ton, 4-Ton, 8-Ton and 22-Ton

The RL-32 Tension Bar is used in conjunction with an erection anchor to increase tension-lifting capacity by transferring the tension loads deeply into the concrete member.

To Order, Specify: quantity, name, rebar size (inch) and length "L."

| RL-32 TENSION BAR for STANDARD and HIGH CAPACITY | | | | | | | | |
|--|---|---------|-------|--------|-------|--------|--------|-----|
| Load Group | 2-Ton | 2.5 Ton | 4-Ton | 5-Ton | 8-Ton | 10-Ton | 22-Ton | |
| Rebar Size | Inch | #3 | #4 | #4 | #5 | #6 | #7 | #9 |
| | Metric | #10 | #13 | #13 | #16 | #19 | #22 | #29 |
| Concrete Strength (psi) | "L" Dimension (overall length of rebar) | | | | | | | |
| 1,500 | 3'-0" | 4'-0" | 4'-0" | 4'-5" | 6'-0" | 7'-6" | 12'-0" | |
| 2,000 | 2'-9" | 3'-6" | 3'-6" | 3'-10" | 5'-6" | 6'-7" | 9'-6" | |
| 2,500 | 2'-8" | 3'-0" | 3'-0" | 3'-6" | 5'-0" | 6'-0" | 9'-3" | |
| 3,000 | 2'-6" | 3'-0" | 3'-0" | 3'-3" | 4'-6" | 5'-6" | 9'-0" | |
| 4,000 | 2'-0" | 2'-6" | 2'-6" | 3'-0" | 3'-7" | 4'-10" | 9'-0" | |
| 5,000 | 2'-0" | 2'-2" | 2'-2" | 2'-6" | 3'-3" | 4'-5" | 9'-0" | |



Rapid Lift System Anchors

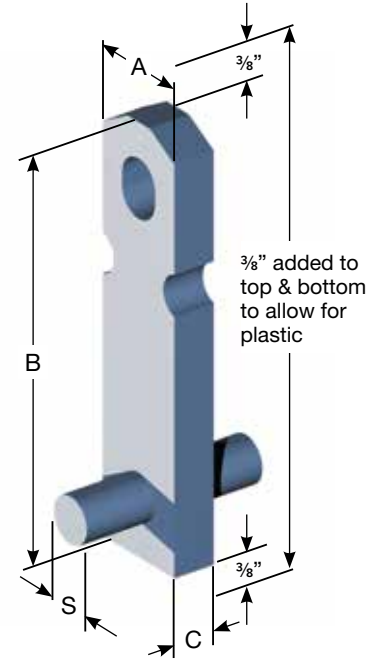
RL-26 T-BAR ANCHOR 4-Ton

The RL-26 T-Bar Anchor gets its name from the horizontal bar running through the bottom portion of the anchor to form an inverted T. This design produces exceptional pullout strength for use in back-stripping and panel rotation applications. The T-Bar Anchor is available in the sizes shown in the table and in plain or hot dip galvanize finish. This anchor uses the standard 4-Ton recess members and for face lift applications can be furnished assembled with the T-Bar Anchor Base/Void/Cover as seen below.

Note: The Base/Void/Cover package mentioned above can be purchased as a separate package or can be ordered and installed at the factory. If you want the package installed at the factory, it must be specified at the same time the anchor order is placed.

The T-Bar Anchor uses Rapid Lift 4-Ton or Super Lift II (Tilt-Up system) accessories. To use the T-Bar Anchor with the Anchor Base/Void/Cover package, order the anchors by panel thickness. For example: for a six-inch panel use a 5-1/4" anchor. The anchor plus 3/8" setback and the 3/8" for the base equals 6" for the slab thickness.

See Ring Clutches on page 52 and Recessing Members on 55, 56, and 59.



To order Super-Lift II Anchors, slab thickness should equal anchor height with plastic assembled.

RL-26 T-BAR ANCHOR DATA

| Ring Clutch System | Clutch I.D. | Item Number w/o Plastic RL-26 | Item Number Assembled RL-29 | A | B | C | S | Allowable Unreinforced Tension Load 4:1 SF (lbs) | Ultimate Mechanical Strength (lbs) | Weight Per Piece (lbs) | Weight Per Piece w/ Plastic (lbs) |
|--------------------|-------------|-------------------------------|-----------------------------|--------|--------|------|-------|--|------------------------------------|------------------------|-----------------------------------|
| 4T/5T | 5T | 45848 | 45SL050 | 1 1/2" | 4 1/4" | 5/8" | 1/16" | 5,500 | 32,000 | 1.16 | 1.49 |
| 4T/5T | 5T | 45850 | 45SL060 | 1 1/2" | 5 1/4" | 5/8" | 1/16" | 8,000 | 32,000 | 1.38 | 1.71 |
| 4T/5T | 5T | 45852 | 45SL070 | 1 1/2" | 6 1/4" | 5/8" | 1/16" | 8,000 | 32,000 | 1.64 | 1.97 |
| 4T/5T | 5T | 45854 | 45SL080 | 1 1/2" | 7 1/4" | 5/8" | 1/16" | 8,000 | 32,000 | 1.91 | 2.24 |

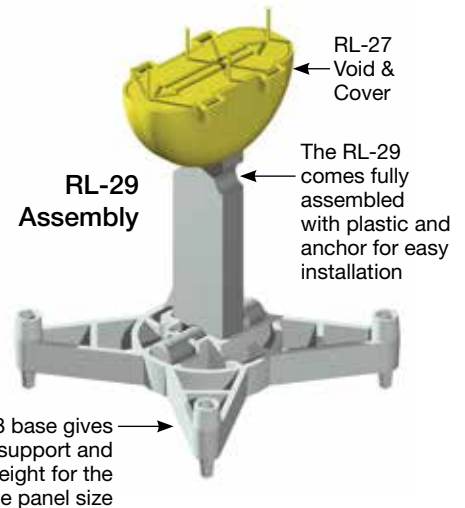
Tension values are based on 3,500 psi concrete and a minimum edge distance of (2B+A)/2.

To Order, Specify: quantity, name, item number and finish.

RL-31 SHEAR BAR

- The total assembly (RL-29) is available with the plastic installed at the factory.
- The plastic package (RL-41) base/void/cover is available without anchor.
- Each item (RL-26, RL-27, RL-28) is separately available from the factory.

To Order, Specify: quantity, name and item number.

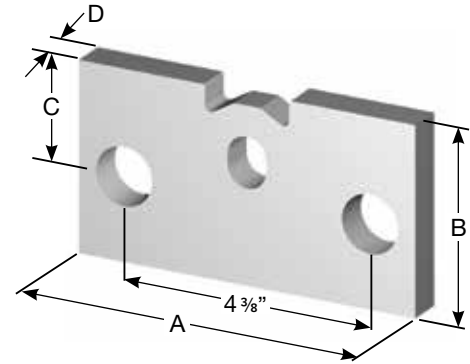


The RL-28 base gives stable support and proper height for the appropriate panel size

Rapid Lift System Anchors

RL-14 SANDWICH PANEL ERECTION ANCHOR 4-Ton and 8-Ton with Minimum 8" Panel Thickness

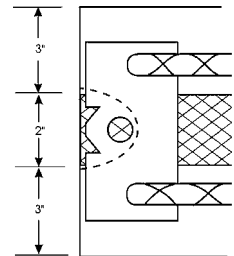
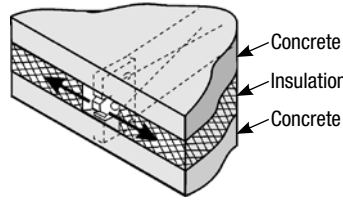
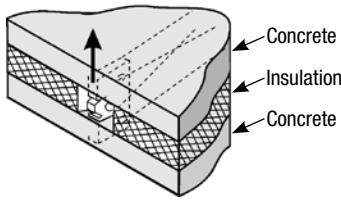
The RL-14 Sandwich Panel Erection Anchor is designed to effectively lift and handle precast concrete sandwich panels. The Sandwich Panel Erection Anchor is easy to install and requires no special lifting equipment, only the standard 4 or 8-Ton ring clutch. Its unique design distributes the lifting loads evenly into both wythes of the panel and absorbs shear loads without spalling the concrete. The Sandwich Panel Erection Anchor is available in the sizes shown in the table and in plain or hot dip galvanize finish. The Sandwich Panel Erection Anchor requires proper reinforcement, as shown in the product sketch. Refer to Sandwich Panel Erection Anchor Reinforcement Details on page 47.



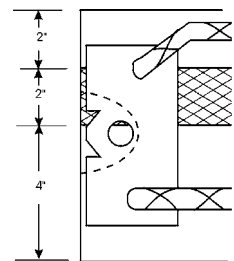
See Ring Clutches on page 52, 53, and 54, the Recessing Members on 55, 56 and 57.

RL-14 SANDWICH PANEL ERECTION ANCHOR DATA

| Ring Clutch System | Clutch I.D. | Item Number | A | B | C | D | Ultimate Mech. Load Tension (lbs) | Weight Per Piece (lbs) |
|--------------------|-------------|-------------|----|--------|----------|------|-----------------------------------|------------------------|
| 4T/5T | 5T | 79077 | 6" | 3 1/4" | 1 13/16" | 5/8" | 32,000 | 2.86 |
| 8T/10T | 10T | 79184 | 6" | 4 3/4" | 3 3/8" | 3/4" | 64,000 | 5.05 |



8" SANDWICH PANEL
(3" X 2" X 3")



8" SANDWICH PANEL
(4" X 2" X 2")

RL-14 8" SANDWICH PANEL (3" X 2" X 3")

| Ring Clutch System | Tension (lbs) | Shear Parallel to Anchor Width SF = 2.66:1 (lbs) | Shear Perpendicular to Anchor Width SF = 4:1 (lbs) |
|--------------------|---------------|--|--|
| 4T/5T | 8,000 | 5,170 | 8,000 |
| 8T/10T | 16,000 | 4,500 | 9,400 |

RL-14 8" SANDWICH PANEL (4" X 2" X 2")

| Ring Clutch System | Tension (lbs) | Shear Parallel to Anchor Width SF = 2.66:1 (lbs) | Shear Perpendicular to Anchor Width SF = 4:1 (lbs) |
|--------------------|---------------|--|--|
| 4T/5T | 8,000 | 4,950 | 8,000 |
| 8T/10T | 16,000 | 5,200 | 10,500 |

1. 4-Ton Anchors require 3,300 PSI concrete compressive strength to achieve shear strength.
2. 8-Ton Anchors require 4,500 PSI concrete compressive strength to achieve shear strength.

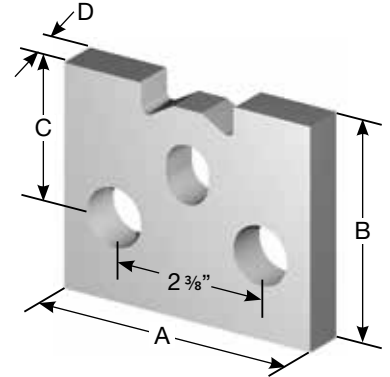
The 2.66:1 safety factor is commonly used for back stripping operations. Increased safety factor may be required for unusual live loads or cable magnification.
 4-Ton anchor: Given full embedment, reinforced with two #3 rebar 2'-6" long bent as shown on page 47 and minimum compressive strength of 3,300 psi concrete; the 4-Ton Sandwich Anchor should achieve a pullout strength equal to their ultimate mechanical strength.
 8-Ton anchor: Given full embedment, reinforced with two #5 rebar 3'-6" long bent as shown on page 47 and minimum compressive strength of 4,500 psi concrete; the 8-Ton Sandwich Anchor should achieve a pullout strength equal to their ultimate mechanical strength.

To Order, Specify: quantity, name, item number and finish.

Rapid Lift System Anchors

RL-15 SANDWICH PANEL ERECTION ANCHOR 4-Ton with 2" Maximum Insulation Thickness

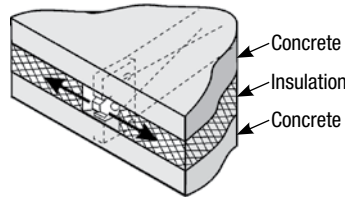
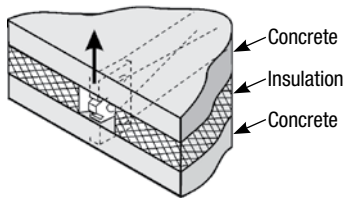
The RL-15 Sandwich Panel Erection Anchor is a smaller version of the sandwich anchor designed to effectively lift and handle precast concrete sandwich panels with a maximum insulation thickness of 2". It is easy to install and requires no special lifting equipment, only the standard 4-Ton ring clutch. Its unique design distributes the lifting loads evenly into both wythes of the panel and absorbs shear loads without spalling the concrete. The Sandwich Panel Erection Anchor is available in the sizes shown in the table and in plain or hot dip galvanize finish. The Sandwich Panel Erection Anchor requires proper reinforcement, as shown in the product sketch. Refer to Sandwich Panel Erection Anchor Reinforcement Details below.



See Ring Clutches on page 52, 53, and 54, the Recessing Members on 55, 56 and 59.

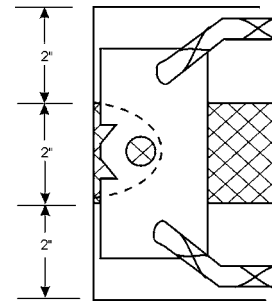
RL-15 SANDWICH PANEL ERECTION ANCHOR DATA

| Ring Clutch System | Clutch I.D. | Item Number | A | B | C | D | Ultimate Mech. Load Tension (lbs) | Weight Per Piece (lbs) |
|--------------------|-------------|-------------|----|--------|--------|------|-----------------------------------|------------------------|
| 4T/5T | 5T | 79217 | 4" | 3 1/4" | 2 1/8" | 5/8" | 32,000 | 1.95 |



6" SANDWICH PANEL (2" X 2" X 2")

| Ring Clutch System | Tension (lbs) | Shear Parallel to Anchor Width SF = 2.66:1 (lbs) | Shear Perpendicular to Anchor Width SF = 4:1 (lbs) |
|--------------------|---------------|--|--|
| 4T/5T | 6,500 | 1,125 | 3,750 |

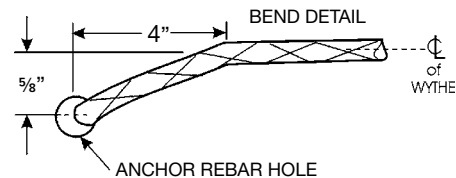
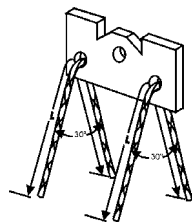


The 2.66:1 safety factor is commonly used for back stripping operations. Increased safety factor may be required for unusual live loads or cable magnification.

To Order, Specify: quantity, name, item number and finish.

SANDWICH PANEL ERECTION ANCHORS REINFORCEMENT DETAILS FOR RL-14 & RL-15

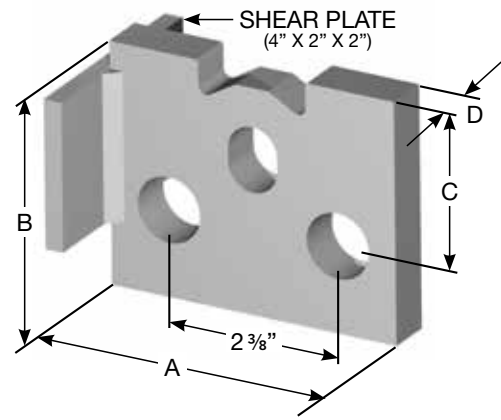
| Item Number | Ring Clutch System | Panel Thickness | | | Minimum Panel Thickness | Reinforcement Required | | |
|-------------|--------------------|-----------------|------------|-----------|-------------------------|------------------------|----------------------|-------------------|
| | | Bottom Wythe | Insulation | Top Wythe | | Rebar Size & Length | Bend Required Bottom | Bend Required Top |
| 79077 | 4T/5T | 3" | 2" | 3" | 8" | #3 X 2'-6" | NO | NO |
| 79077 | 4T/5T | 4" | 2" | 2" | 8" | #3 X 2'-6" | NO | YES |
| 79217 | 4T/5T | 2" | 2" | 2" | 8" | #3 X 7'-0" | YES | YES |
| 79184 | 8T/10T | 3" | 2" | 3" | 8" | #5 X 3'-6" | NO | YES |
| 79184 | 8T/10T | 4" | 2" | 2" | 8" | #5 X 3'-6" | NO | YES |



Rapid Lift System Anchors

RL-16 SANDWICH PANEL ERECTION ANCHOR WITH PLATE 4-Ton and 8-Ton with 2" Insulation Thickness

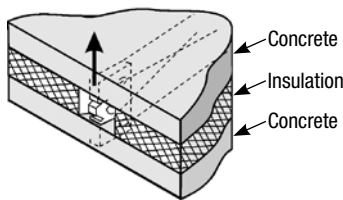
The RL-16 Sandwich Panel Erection Anchor with Plate is designed to effectively lift and handle 2" x 2" x 2" prestressed sandwich panels. Two shaped reinforcement bars distribute the tension stress evenly into both concrete wythes and the shear plate absorbs the shear stress without spalling the concrete. Refer to the reinforcement bar information shown below. The Sandwich Panel Erection Anchor with Plate is available in plain or hot dip galvanize finish.



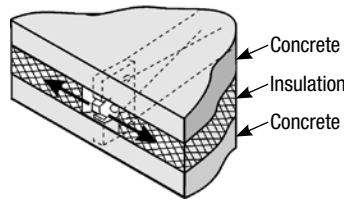
See Ring Clutches on page 46, 47, and 48, the Recessing Members on 49, 50 and 53.

RL-16 SANDWICH PANEL ERECTION ANCHOR W/PLATE DATA

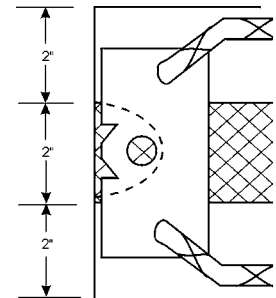
| Ring Clutch System | Clutch I.D. | Item Number | A | B | C | D | Ultimate Mech. Load Tension (lbs) | Weight Per Piece (lbs) |
|--------------------|-------------|-------------|----|--------|---------|------|-----------------------------------|------------------------|
| 4T/5T | 5T | 79220 | 4" | 3 1/4" | 2 1/16" | 5/8" | 32,000 | 2.38 |
| 8T/10T | 10T | 79184SP | 6" | 4 3/4" | 3 3/8" | 3/4" | 64,000 | 5.2 |



Shear Parallel to Anchor



Shear Perpendicular to Anchor



6" SANDWICH PANEL (2" X 2" X 2")

| Ring Clutch System | Concrete Strength (psi) | Tension (lbs) | Shear Parallel to Anchor Width SF = 2.66:1 (lbs) | Shear Perpendicular to Anchor Width SF = 4:1 (lbs) |
|--------------------|-------------------------|---------------|--|--|
| 4T/5T | 3,000 | 7,580 | 2,500 | 4,520 |
| 4T/5T | 3,500 | 7,580 | 2,700 | 4,890 |
| 4T/5T | 4,000 | 7,580 | 2,890 | 5,230 |

The 2.66:1 safety factor is commonly used for back stripping operations. Increased safety factor may be required for unusual live loads or cable magnification.

To Order, Specify: quantity, name, item number and finish.

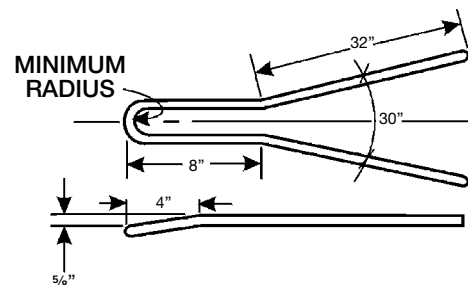
Load Table

| Panel Thickness | Safety Factor | SWL Tension in 4,500 psi Concrete | SWL Shear Perpendicular to Anchor | SWL Shear Parallel to Anchor |
|-----------------|---------------|-----------------------------------|-----------------------------------|------------------------------|
| 4x2x2 | 4:1 | 16,000 lbs | 10,500 lbs | 3,450 lbs |
| 3x2x3 | 4:1 | 16,000 lbs | 9,400 lbs | 2,950 lbs |

RL-16 SANDWICH PANEL ERECTION ANCHORS W/ PLATE REINFORCEMENT DETAILS

| Item Number | Ring Clutch System | Panel Thickness | | | Minimum Panel Thickness | Reinforcement Required | | |
|-------------|--------------------|-----------------|------------|-----------|-------------------------|------------------------|----------------------|-------------------|
| | | Bottom Wythe | Insulation | Top Wythe | | Rebar Size & Length | Bend Required Bottom | Bend Required Top |
| 79220 | 4T/5T | 2" | 2" | 2" | 6" | #3 X 7'-0" | YES | YES |
| 79184SP | 8T/10T | 3" | 2" | 3" | 8" | #6 X 3'-6" | NO | NO |

Reinforcement detail for 79217 & 79220



Rapid Lift System Anchors

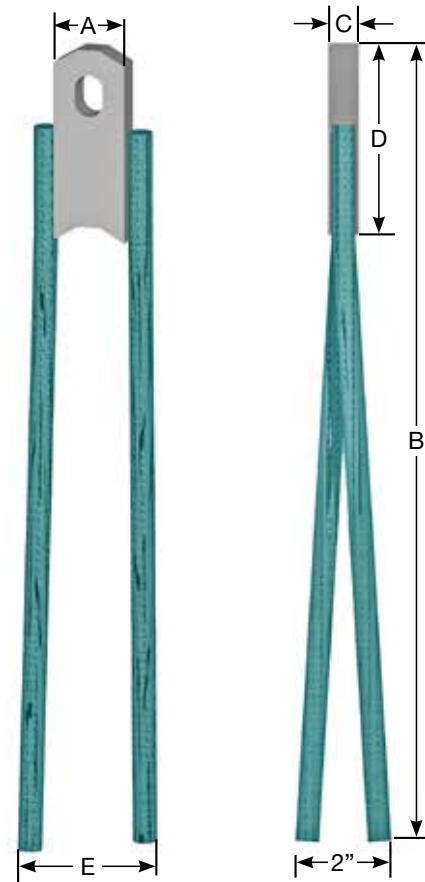
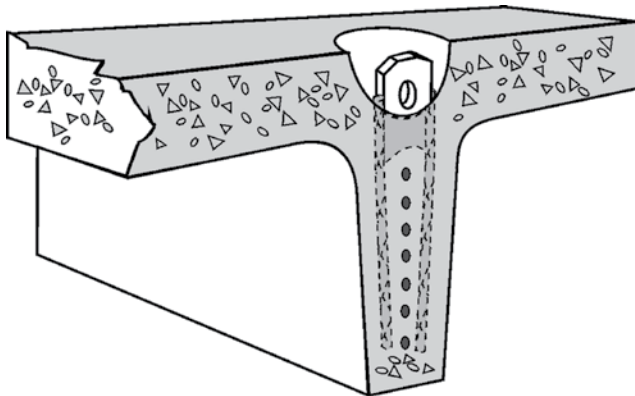
RL-61 DOUBLE-T ANCHOR

4-Ton, 8-Ton and 22-Ton

The RL-61 Double-T Anchor is designed mainly to lift and handle precast single or double tees, but can also be used effectively on columns, beams, girders, etc. The recessed anchor allows quick and easy finishing; no lifting strands to cut or burn off, only a simple patch of the recess. The Double-T Anchor is available in plain and hot dip galvanize finish. Refer to the table for standard sizes and safe working loads. Longer lengths are available on special order.

See Ring Clutches on page 52, 53, and 54, the Recessing Members on 55, 56 and 59.

Double-T Anchors are designed for use on 18" and deeper precast concrete Tee sections. Reference the table for standard sizes and dimensions. Longer legs can be provided on special order, but will not increase the allowable tension load of the anchor.



RL-61 RAPID LIFT DOUBLE-T ANCHOR DATA

| Ring Clutch System | Clutch I.D. | Item Number | A | B | C | D | E | Allowable Tension Load 4:1 SF (lbs) | Ultimate Mechanical Load Tension (lbs) | Weight Per Piece (lbs) |
|--------------------|-------------|-------------|--------|---------|------|----|--------|-------------------------------------|--|------------------------|
| 4T/5T | 5T | 79132 | 1 1/2" | 15 3/4" | 5/8" | 4" | 2 1/4" | 8,000 | 32,000 | 3.00 |
| 8T/10T | 10T | 79126 | 2 3/8" | 23 1/4" | 3/4" | 4" | 3 1/2" | 16,000 | 64,000 | 7.00 |
| 8T/10T | 10T | 79126HC | 2 3/8" | 23 1/4" | 3/4" | 4" | 3 3/4" | 20,000 | 80,000 | 7.00 |
| 22T/26T | 26T | 79179 | 3 3/8" | 30 3/4" | 1" | 4" | 5 1/8" | 28,000 | 112,000 | 9.00 |

Tension values are based on 3,500 psi standard weight concrete.

To Order, Specify: quantity, name, item number and finish.

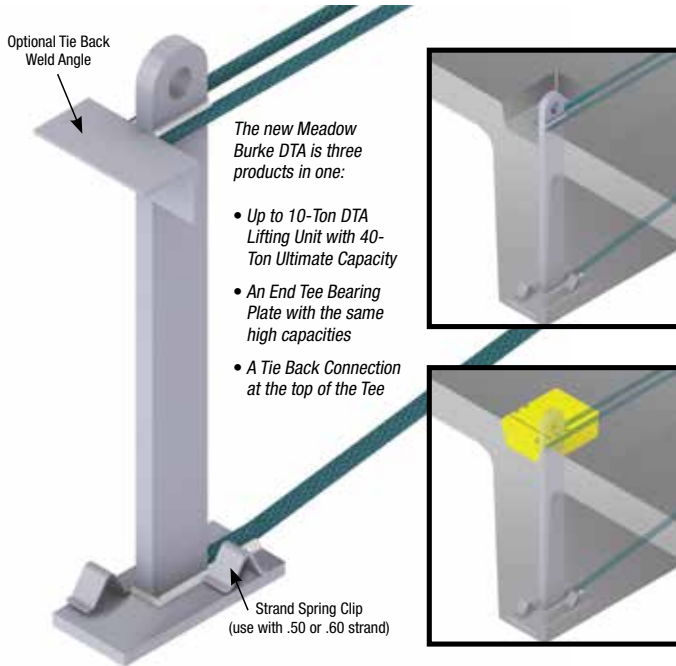
Optional Bullet T-Caps are available in bulk for field assembly or can be ordered installed on the anchor. For factory installation, it must be specified when ordering the anchors.



Optional Bullet T-Cap
Item no. 79030

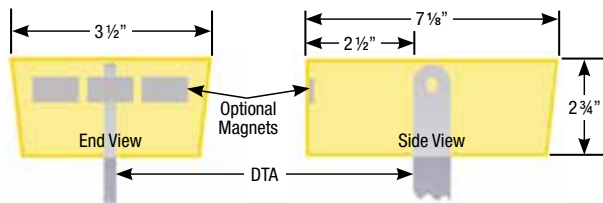
MB Double Tee Anchor

Double Tee 17 KIP and 20 KIP Anchor



DTA Recess Member and Accessories:

The DTA Recess Member is manufactured using durable reusable plastic. When installed, the recess locks into the DTA lift head eye opening, securing it in place during concrete placement. The DTA and recess assembly is positioned just below the top of the pour, allowing the finishing equipment to pass over without interference. To remove the recess, simply press down on the small lid section and open the large lid section. Then spread the locking fins away from the lifting head and lift out recess. The generous draft on the sides of the recess, facilitate easy removal.



DTA Recess Member Magnetic Option: the DTA Magnets can be added to aid in securing the recess to a steel bulkhead form. One, two or three magnets may be added depending on the conditions. These are permanent magnets that can be reused after the plastic recess requires replacement. Simply remove the magnets and insert into the new DTA Recess.

| DOUBLE TEE ANCHOR ACCESSORIES | | |
|------------------------------------|--------------|--------------|
| PRODUCT DESCRIPTION | PRODUCT CODE | WEIGHT (LBS) |
| Plastic Recess Member (48 per box) | DTARM | 32 (LBS) |
| DTA Magnet (20 per box) | 1101173 | 1 (LBS) |

The MB Double Tee Lifting Anchor (DTA) is a three in one solution for end bearing, lifting / erection and tie back connections.

- **Bearing:** The 1/2" base plate of the DTA is also used as a bearing plate for the double tee.
- **Lifting:** The DTA is capable of ultimate mechanical loads of 80,000# each, yielding 20,000# SWL.
- **Tie-Back:** The DTA lift head and the optional Weld Angle facilitates an easy and efficient tie-back connection. Custom angles available.

Additional Benefits:

- Standard and Custom Anchor Heights for any standard double tee or dapped tee.
- DTA Heights from 15.5" to 36" or more. Custom heights available.
- Full 80,000# ultimate all heights (Adequate tee end reinforcement design required – see test data).
- DTA is completely recessed below top of tee: easier pouring, storing and shipping.
- Self Draining recess is opened to the end of tee. End connections are also recessed.
- No cutting or patching: may be covered with a precast curb or grouted.
- May be used to lift beams, lintels and spandrels.

NOTE: Use with double row of strand only. For use with single row, convert to a stagger strand layout, by placing alternate stands on opposite sides of vertical lift plate of the DTA. To achieve the safe working load of the DTA, the double tee end must be properly reinforced to withstand loads from its own self-weight. A full test report is available online at

www.meadowburke.com/products/precast.aspx

Compatible Ring Clutches

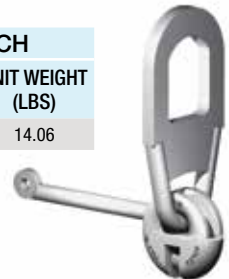
| RL-35 RING CLUTCH 8 / 10 TONS | | |
|-------------------------------|----------------------|-------------------|
| ITEM # | PRODUCT DESCRIPTION | UNIT WEIGHT (LBS) |
| 79003 | 8/10 Ton Ring Clutch | 19.87 |

(see page 52)



| SUPER-LIFT III RING CLUTCH | | |
|----------------------------|-------------------------------------|-------------------|
| ITEM # | PRODUCT DESCRIPTION | UNIT WEIGHT (LBS) |
| 45803 | Super-Lift III Ring Clutch Assembly | 14.06 |

(see page 54)

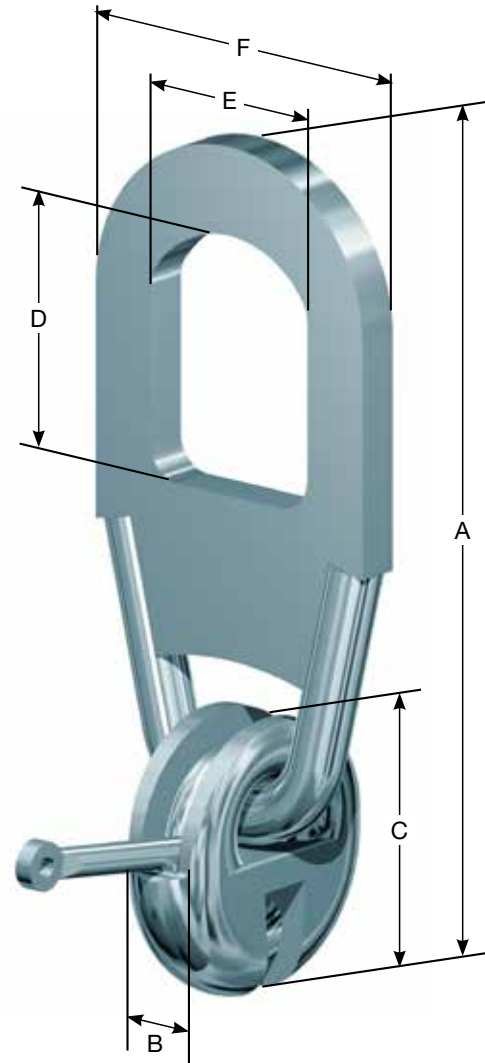


Rapid Lift System Ring Clutches

RL-35 RING CLUTCH

2/2.5-Ton, 4/5-Ton, 8/10-Ton and 22-Ton

The RL-35 Ring Clutch is an assembly consisting of a main clutch body, a curved bolt/handle and bail. The design of the ring clutch allows a full 360° rotation of the bail around the main body. The installation of the unit is quick and easy; simply rotate the curved bolt/handle to the open position, drop the main body into the anchor recess and rotate the bolt/handle to the closed position. See page 54 for ring clutch bolt. See page 18 for ring clutch maintenance information.



RL-35 RAPID LIFT RING CLUTCH DATA

| Ring Clutch System | Clutch I.D. | Item Number | A | B | C | D | E | F | Weight Per Piece (lbs) | Clutch Capacity (ton) |
|-----------------------|-------------|-------------|----------|---------|----------|---------|---------|----------|------------------------|-----------------------|
| 2T/2.5T | 2.5T | 79001 | 10 7/16" | 1 1/16" | 3 1/8" | 2 3/4" | 2 1/4" | 3 5/8" | 3.65 | 2.5 |
| 4T/5T ¹ | 5T | 79002 | 13" | 1 7/16" | 4 1/8" | 3 3/16" | 2 9/16" | 4 1/2" | 8.65 | 5 |
| 8T/10T ^{**} | 10T | 79003 | 16 3/4" | 2" | 5 15/16" | 4 9/16" | 3 9/16" | 5 13/16" | 19.87 | 10 |
| 22T/26T ^{*2} | 26T | 79170 | 23 7/8" | 2 3/16" | 8 1/4" | 7 1/4" | 4 3/4" | 8 13/16" | 55.0 | 22 |

1. Super Lift II Ring Clutch may be used, if a longer handle is required.
2. Available on special order or limited to quantity on hand. Special orders take 8 to 10 weeks.
** May be used with DTA (Double Tee Anchor), page 45.
3. Clutch capacities are rated at a 5:1 safety factor; and apply only to clutches manufactured after 1/1/2000.

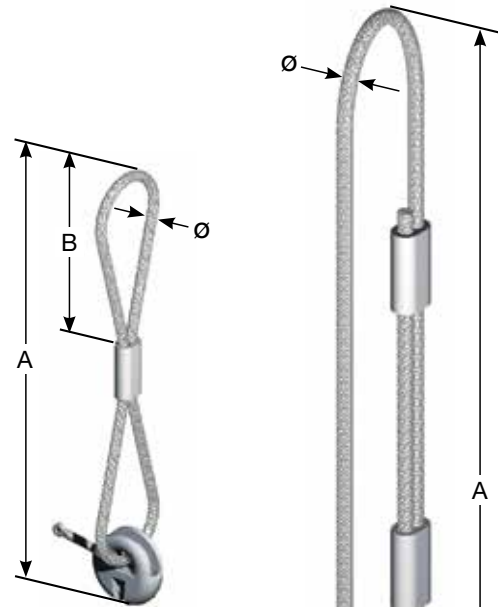
To Order, Specify: quantity, name and item number.

Rapid Lift System Ring Clutches

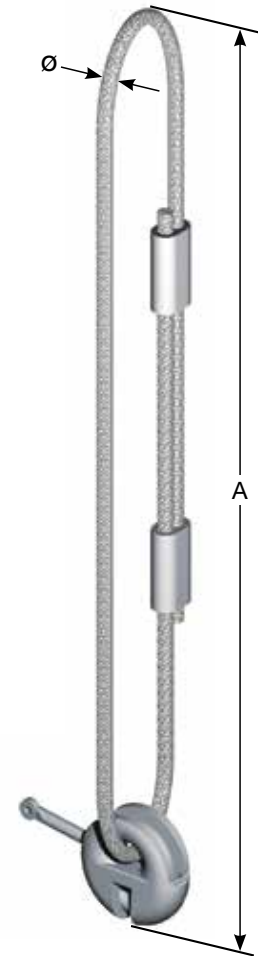
RL-38 CABLE RING CLUTCH

1-Ton, 2-Ton, 4-Ton and 8-Ton

The RL-38 Cable Ring Clutch is identical in use to the standard ring clutch, but is fabricated with a wire cable bail for more versatility. It is often an effective answer for difficult lifting and rotation challenges. See page 21 and 22 for additional ring clutch installation information. See page 18 for ring clutch maintenance information.



RL-38 Cable Ring Clutch
1-Ton, 2-Ton, 4-Ton
and 8-Ton



RL-39 Cable Ring Clutch
22-Ton

RL-39 CABLE RING CLUTCH

22-Ton

The RL-39 Cable Ring Clutch is a heavy duty version of the cable ring clutch for use where high loads are present. See page 21 and 22 for additional ring clutch installation information. See page 18 for ring clutch maintenance information.

RL-38 & RL-39 CABLE RING CLUTCH DATA

| Item | Ring Clutch System | Clutch I.D. | Item Number | A | B | Cable Diameter Ø | Weight per Piece | Clutch Capacity (ton) |
|--------|--------------------|-------------|-------------|---------|---------|------------------|------------------|-----------------------|
| RL-38 | 1T | 1.25T | 79216 | 12 1/2" | 8 1/4" | 8 mm | 2.0 lbs | 1 |
| RL-38 | 2T | 2.5T | 79001CB | 22" | 11 7/8" | 14 mm | 5.0 | 2 |
| RL-38 | 4T | 5T | 79002CB | 23 3/8" | 11 3/4" | 18 mm | 8.0 | 4 |
| RL-38 | 8T | 10T | 79003CB | 27 3/4" | 12 3/4" | 22 mm | 19.0 | 8 |
| RL-39* | 22T | 26T | 79170CB | 62" | N/A | 32 mm | 67.0 | 22 |

1. Available on special order or limited quantity on hand. Special orders take 8 to 10 weeks.
2. Not to be used with High Capacity System Anchors.
3. Clutch capacities are rated at a 5:1 safety factor.

To Order, Specify: quantity, name and item number.

Rapid Lift System Ring Clutches

RL-36 RING CLUTCH BOLT

1/1.25-Ton, 2/2.25-Ton, 4/5-Ton,
8/10-Ton and 22/26-Ton

The RL-36 Ring Clutch Bolt is available for replacement purposes, when required. Refer to the table for size and item number. Refer to page 18 for additional ring clutch maintenance information.



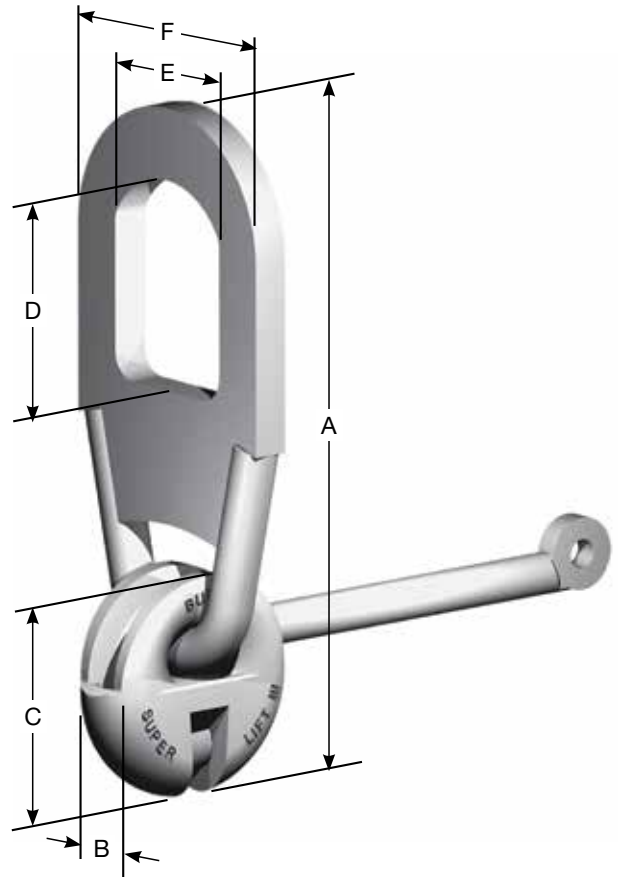
| RL-36 RING CLUTCH BOLT DATA | | |
|-----------------------------|-------------|-------------|
| Nominal Anchor Load | Clutch I.D. | Item Number |
| 1T/1.25T | 1.25T | 79165 |
| 2T/2.5T | 2.5T | 79005 |
| 4T & 5T | 5T | 79006 |
| 8T/10T | 10T | 79007 |
| 22T/26T | 26T | 79009 |

To Order, Specify: quantity, name and item number.

SUPER-LIFT III RING CLUTCH

The Super-Lift III Ring Clutch is an assembly consisting of a main clutch body, a curved bolt/handle and bail. It is very similar to the Rapid Lift Ring Clutch, but has a much longer handle. The installation of the unit is quick and easy; simply rotate the curved bolt/handle to the open position, drop the main body into the anchor recess and rotate the bolt/handle to the closed position. See pages 21 and 22 for additional ring clutch installation information. See page 18 for ring clutch maintenance information.

NOTE: May be used with DTA (Double Tee Anchors), page 51.



| SUPER LIFT III RING CLUTCH | | | | | | | | | | |
|----------------------------|-------------|-------------|-----|--------|----|--------|--------|----|-------------|-----------------|
| Ring Clutch System | Clutch I.D. | Item Number | A | B | C | D | E | F | Unit Weight | Clutch Capacity |
| SL-III | 22-Kip | 45803 | 14" | 1 7/8" | 5" | 3 3/8" | 2 3/4" | 5" | 14.06 | 11 Ton |

1. Clutch capacities are rated at a 5:1 safety factor.

To Order, Specify: quantity, name and item number.

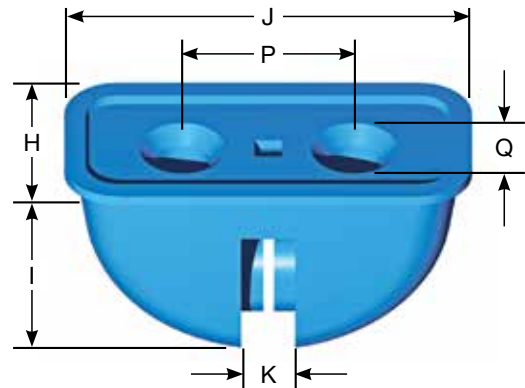
Rapid Lift System Recessing Members

RL-40 RECESS MEMBER – 2 HOLE

1-Ton and 1.25-Ton only – Blue Color

The RL-40 Recess Member – 2 Hole is a reusable plastic unit furnished for use with the 1-Ton Rapid Lift. Erection methods are designed for architectural precasters. As with all Recess Members, it functions to attach the anchor to the form, protect the anchor recess during concrete placement and form a void to allow the lifting clutch to engage the head of the anchor. See page 18 for typical recess member installation and stripping information.

To Order, Specify: quantity, name and item number.



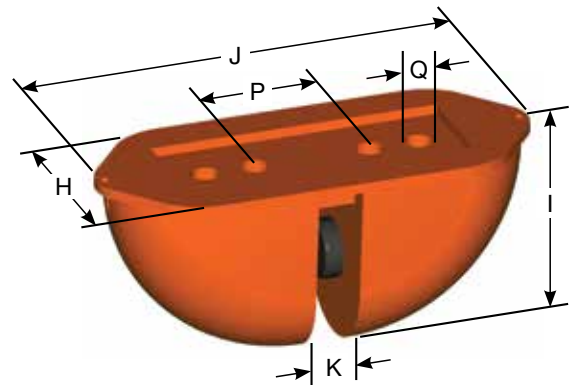
RL-40 RECESS MEMBER - 2 HOLE

| Ring Clutch System | Clutch I.D. | Item Number | Recess Color | H | I | J | K | P | Q | Weight Per Piece (lbs) |
|--------------------|-------------|-------------|--------------|--------|--------|--------|------|----|------|------------------------|
| 1T/1.25T | 1.25T | 79056 | Blue | 1 1/8" | 1 3/8" | 2 3/8" | 1/4" | 1" | 8 mm | 0.1 |

RL-45 RECESS MEMBER – 4 HOLE

2/2.25-Ton, 4/5-Ton,
8/10-Ton and 22/26-Ton

The RL-45 Recess Member – 4 Hole is the standard reusable plastic recess plug used in most Rapid Lift applications. Refer to the table for sizes and color-coding. Note that the 2-Ton narrow (Red) recess member is for use only with the 2-Ton Spread Anchor and the 2-Ton Flat Foot Anchor. See page 18 for typical recess member installation and stripping information.



RL-45 RECESS MEMBER - 4 HOLE

| Ring Clutch System | Clutch I.D. | Item Number | Recess Color | H | I | J | K | P | Q | Weight Per Piece (lbs) |
|----------------------|-------------|-------------|--------------|---------|---------|----------|-------|----------|-----------|------------------------|
| 2T/2.5T | 2.5T | 79200 | Yellow | 1 1/16" | 1 3/4" | 4 1/16" | 3/8" | 1 3/16" | 10 mm | 0.18 |
| 2T/2.5T ² | 2.5T | 79051 | Red | 1 1/16" | 1 3/4" | 4 1/16" | 3/16" | 1 3/16" | 10 mm | 0.19 |
| 4T/5T | 5T | 79062 | Orange | 2 1/16" | 2 5/16" | 5 3/16" | 5/8" | 1 11/32" | 10 mm | 0.44 |
| 8T/10T | 10T | 79121 | Green | 3 1/8" | 3 5/16" | 7 13/32" | 3/4" | 1 31/32" | 12 mm | 1.43 |
| 22T/26T ¹ | 22T | 79166 | Blue | 4 9/16" | 4 5/8" | 9 3/16" | 1" | 2 3/4" | 12mm/16mm | 3.96 |

1. Available on special order or limited quantity on hand.
2. Use with the 2-Ton Spread Anchor (79050), 2-Ton Flat Foot Anchors (79052) and (79053).

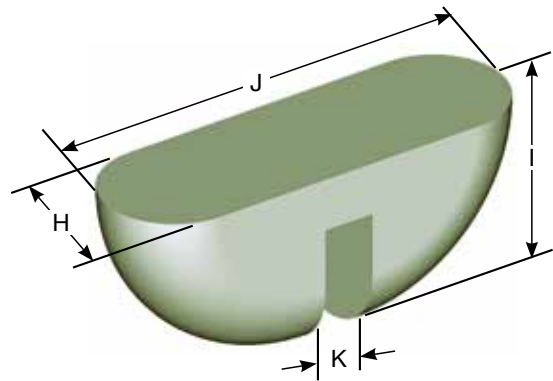
To Order, Specify: quantity, name and item number.

Rapid Lift System Recessing Members

RL-50 RECESS MEMBER – DISPOSABLE

4/5-Ton and 8-Ton/10-Ton

The RL-50 Recess Member-Foam is available for use with the 4/5 and 8/10-Ton Rapid Lift applications and is simply nailed in place on the form.



RL-50 FOAM DISPOSABLE RECESS MEMBER

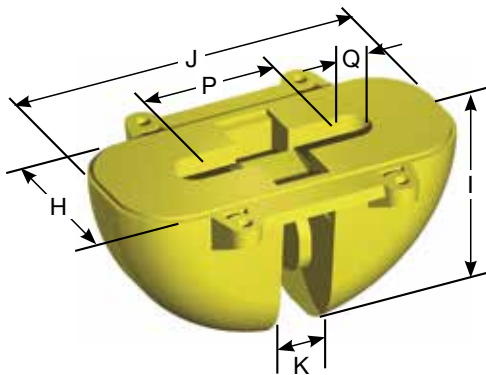
4/5-Ton and 8/10-Ton

| RL-50 FOAM DISPOSABLE RECESSING MEMBER DATA | | | | | | | |
|---|-------------|-------------|--------|--------|--------|------|------------------------|
| Ring Clutch System | Clutch I.D. | Item Number | H | I | J | K | Weight Per Piece (lbs) |
| 4T/5T | 5T | 79767 | 1 3/4" | 2 3/8" | 4 1/4" | 5/8" | 0.05 |
| 8T/10T | 10T | 79768 | 2 1/4" | 3 1/4" | 6 1/2" | 3/4" | 0.08 |

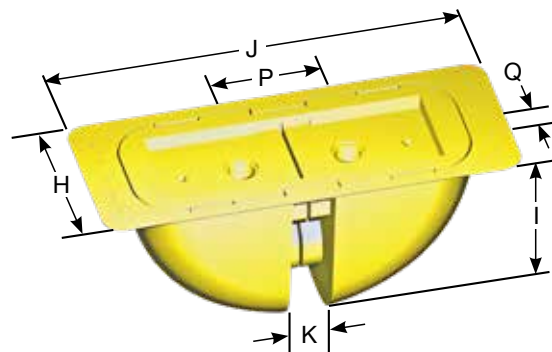
RL-53 RECESS MEMBER – DISPOSABLE

2/2.5-Ton, 4/5-Ton and 8/10-Ton

The RL-53 Recess Member – Disposable is available for use with the 2/2.5, 4/5 and 8/10-Ton Rapid Lift applications. 8/10 ton plastic disposable recess members utilize a 3/8" diameter coil nut embedded in the member for attachment purposes.



RL-53 Plastic Disposable Recess Member
2/2.5-Ton & 4/5-Ton



RL-53 Plastic Disposable Recess Member
8/10-Ton with 3/8" coil attachment nut and
magnetic holding plate.

| RL-53 PLASTIC DISPOSABLE RECESSING MEMBER DATA | | | | | | | | | | |
|--|-------------|-------------|--------------|--------|--------|---------|--------|----------|-------|------------------------|
| Ring Clutch System | Clutch I.D. | Item Number | Recess Color | H | I | J | K | P | Q | Weight Per Piece (lbs) |
| 2T/2.5 | 2.5T | 79066 | Yellow | 2" | 1 1/2" | 3 5/16" | 3/8" | 1 1/2" | 5/16" | 0.13 |
| 4T/5T* | 5T | 79067 | Yellow | 2 1/2" | 2 1/4" | 4 5/16" | 5/8" | 1 1/32" | 1/2" | 0.20 |
| 4T/5T | 5T | 79065 | Yellow | 2 7/8" | 2" | 4 1/4" | 5/8" | N/A | N/A | 0.30 |
| 8T/10T | 10T | 79063 | Yellow | 3 1/8" | 3 1/4" | 7 7/8" | 13/16" | 1 31/32" | 1/2" | 0.47 |

*Use with erection head anchors and tech erection anchors.

To Order, Specify: quantity, name and item number.

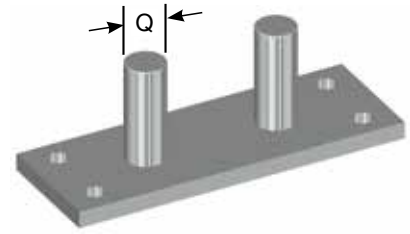
Rapid Lift System Accessories

RL-46 HOLDING PLATE

1/1.25-Ton, 2/2.25-Ton, 4/5-Ton,
8/10-Ton and 22/26-Ton

The RL-46 Holding Plate can be used in various ways to attach and firmly hold a recess member to the form. It can be nailed or screwed to the form utilizing the furnished holes in the plate. For a permanent, reusable application involving metal forms, the holding plate can be welded in place. For a quick once-off application, the holding plate can be held in place with a good commercial grade double-back tape.

Centering it over the protruding pins of the holding plate and sliding the recess member onto the pins, easily accomplishes recess member installation. See additional installation and stripping information on pages 18 and 19.



| RL-46 HOLDING PLATE DATA | | | | |
|--------------------------|-------------|-------------|-------|------------------|
| Ring Clutch System | Clutch I.D. | Item Number | Q | Weight Per Piece |
| 1T/1.25 | 1.25T | 79162 | 8 mm | 0.15 lbs |
| 2T/2.5 | 2.5T | 79160 | 10 mm | 0.16 |
| 4T/5T | 5T | 79144 | 10 mm | 0.26 |
| 8T/10 | 10T | 79111 | 12 mm | 0.60 |
| 22T/26T | 22T | 79177 | 16 mm | 1.30 |

To Order, Specify: quantity, name and item number.

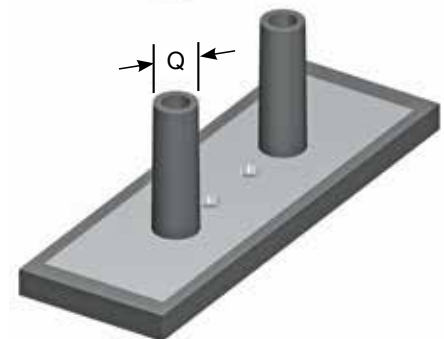
RAPID LIFT HOLDING PLATE – MAGNETIC

8/10-Ton

The Holding Plate – Magnetic is available to quickly set and securely hold a Rapid Lift anchor in a metal form without hole drilling or welding.

| RAPID LIFT HOLDING PLATE - MAGNETIC | | | | | |
|-------------------------------------|-------------|-------------|------|----------|--------------|
| Ring Clutch System | Clutch I.D. | Item Number | Q | Material | Weight (lbs) |
| 8T/10 | 10T | 79188 | 3/8" | Steel | 0.5 |

To Order, Specify: quantity, name and item number.



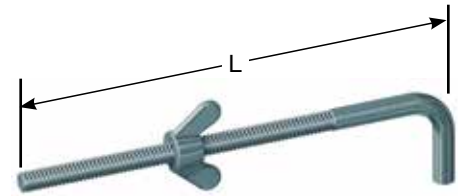
Rapid Lift System Accessories

RAPID LIFT BOLTS/WING NUTS

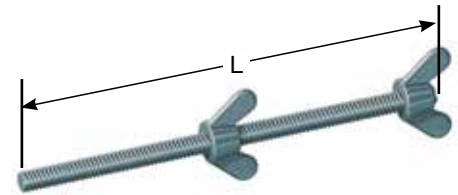
The Rapid Lift System provides various types of attachment bolts for attaching recess members to the form. Selection depends on application and/or personal preference.

RL-47 L-Rod Style is available for use with 1/1.25, 2/2.5, 4/5, 8/10 and 22/26-Ton plastic recess members. It functions much the same as the wing nut style above, but utilizes an “L” shaped handle to thread the unit. Refer to the table for applicable thread size.

RL-48 Wing Nut Style Bolt is available for use with 1/1.25, 2/2.5, 4/5, 8/10 and 22/26-Ton plastic recess members. It is installed by inserting the bolt through the form and threaded into the recess member. It also draws the recess member tight to the form utilizing the free-running wing nut. Refer to the table for applicable thread size.



RL-47



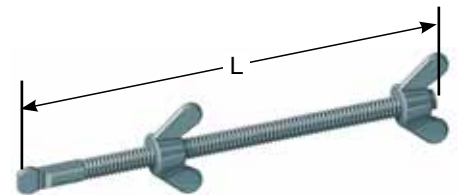
RL-48

RL-47 & RL-48 L-ROD/BOLT & WING NUT ASSEMBLY

| Ring Clutch System | Clutch I.D. | Item Number | L | D | Weight Per Piece (lbs) |
|--------------------|-------------|-------------|----------------------------------|------------------------------------|------------------------|
| 1T/1.25 | 1.25T | 79022 | 6 ³ / ₈ " | 8 mm | 0.15 |
| 2T/2.5 | 2.5T | 79202 | 5 ⁷ / ₈ " | ³ / ₈ " Coil | 0.50 |
| 4T/5T | 5T | 79202 | 5 ⁷ / ₈ " | ³ / ₈ " Coil | 0.50 |
| 8T/10 | 10T | 79404 | 5 ⁷ / ₈ " | 12 mm | 0.50 |
| 22T/26T | 22T | 79088 | 6 ¹ / ₁₆ " | 16mm | 0.86 |

To Order, Specify: quantity, name and item number.

RL-49 BAYONET STYLE BOLT is available for use with 2/2.5, 4/5, 8/10 and 22/26-Ton plastic recess members. It is installed by inserting the bolt through the form into the back of the recess member. It is given a 90° turn with the fixed wing nut at the end of the bolt and the recess member is drawn tight to the form with the free-running wing nut. Refer to the table for applicable thread size.



RL-49

RL-49 BOLT & WING NUT BAYONET ASSEMBLY

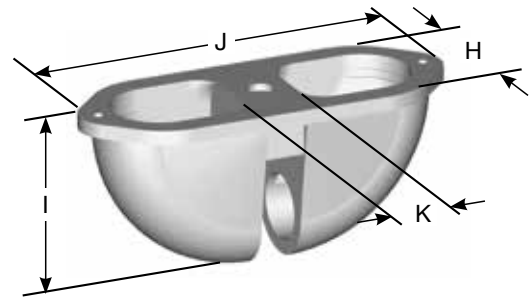
| Ring Clutch System | Clutch I.D. | Item Number | L | D | Weight Per Piece (lbs) |
|--------------------|-------------|-------------|---------------------------------|-------|------------------------|
| 2T/2.5 | 2.5T | 79102 | 6" | 8 mm | 0.18 |
| 4T/5T | 5T | 79102 | 6" | 8 mm | 0.18 |
| 8T/10 | 10T | 79129 | 6 ⁵ / ₈ " | 12 mm | 0.50 |
| 22T/26T | 22T | 79129 | 6 ⁵ / ₈ " | 12 mm | 0.50 |

To Order, Specify: quantity, name and item number.

Rapid Lift System Recessing Members

RL-55 RECESS MEMBER – STEEL 2/2.5-Ton, 4/5-Ton, 8/10-Ton and 22/26-Ton

The RL-55 Recess Member – Steel is designed for high re-use applications and/or where heavy pressure and temperatures are encountered. Replacement wedges and foam strips are available, see below. See typical installation and stripping information on page 20.



RL-55 RAPID LIFT STEEL/IRON RECESSING MEMBERS

| Ring Clutch System | Clutch I.D. | Item Number | H | I | J | K | Weight Per Piece (lbs) |
|--------------------|-------------|-------------|---------|----------|----------|-----------|------------------------|
| 2T/2.5 | 2.5T | 79078 | 1 7/16" | 1 11/16" | 4" | 1/2" Coil | 0.69 |
| 4T/5T | 5T | 79100 | 1 7/8" | 2 1/4" | 4 15/16" | 1/2" Coil | 1.25 |
| 8T/10 | 10T | 79015 | 2 3/4" | 3 1/4" | 7 1/4" | 16 mm | 3.50 |
| 22T/26T | 22T | 79171 | 4 1/2" | 4 3/4" | 8 7/8" | 16 mm | 13.0 |

To Order, Specify: quantity, name and item number.

RL-57 STEEL RECESS MEMBER WEDGE 2/2.5-Ton, 4/5-Ton, 8/10-Ton and 22/26-Ton

The RL-57 Wedge is available when replacement is required. It is used in conjunction with the steel recess member to firmly capture and hold the anchor in the recess member. See data below.

RL-57 RECESS MEMBER WEDGE DATA

| Ring Clutch System | Clutch I.D. | Item Number | Weight Per Piece (lbs) |
|--------------------|-------------|-------------|------------------------|
| 2T/2.5 | 2.5T | 79017 | 0.13 |
| 4T/5T | 5T | 79084 | 0.38 |
| 8T/10 | 10T | 79085 | 0.94 |
| 22T/26T | 22T | 79173 | 2.16 |



To Order, Specify: quantity, name and item number.

RL-59 STEEL RECESS MEMBER FOAM STRIP 2/2.5-Ton, 4/5-Ton, 8/10-Ton and 22/26-Ton

The RL-59 Foam Strip is available in bulk for use in conjunction with the steel recess member. Refer to page 14 for additional steel recess member installation information. Packaged and sold in carton lots only.

RL-59 RECESS MEMBER FOAM STRIP DATA

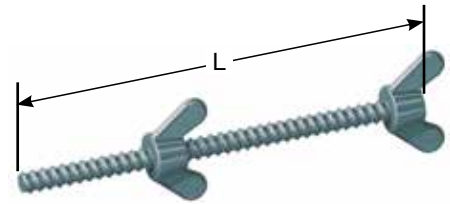
| Ring Clutch System | Clutch I.D. | Item Number | Pkg./Ctn. | Weight Per Package (lbs) |
|--------------------|-------------|-------------|-----------|--------------------------|
| 2T/2.5 | 2.5T | 79087 | 1000 | 5.00 |
| 4T/5T | 5T | 79069 | 1000 | 5.00 |
| 8T/10 | 10T | 79091 | 500 | 10.00 |
| 22T/26T | 22T | 79175 | 100 | 20.00 |

To Order, Specify: quantity, name and item number.

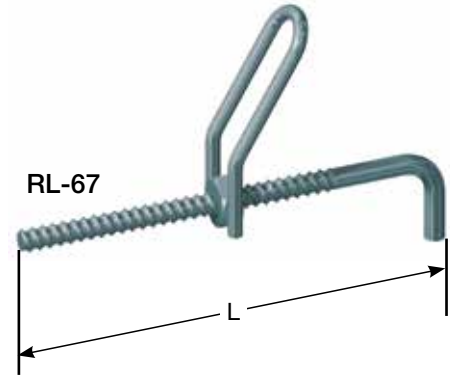
Rapid Lift Bolts/Wing Nuts

RL-58 Wing Nut Coil Bolt is used with 2/2.5, 4/5, 8/10 and 22/26-Ton steel recess members. It functions the same as the wing nut bolt above. Refer to the table on the following page for applicable thread size.

RL-67 L-Rod Coil Bolt is used with 2/2.5, 4/5, 8/10 and 22/26-Ton steel recess members. It functions the same as the Wing Nut Coil Bolt above. Refer to the table on the following page for applicable thread size.



RL-58



RL-67

| RL-58 & RL-67 COIL BOLT & BOLT WING NUT ASSEMBLY | | | | | |
|--|-------------|-------------|---------|-----------|------------------------|
| Ring Clutch System | Clutch I.D. | Item Number | L | D | Weight Per Piece (lbs) |
| 2T/2.5 | 2.5T | 79131 | 5 3/4" | 1/2" Coil | 0.50 |
| 4T/5T | 5T | 79131 | 5 3/4" | 1/2" Coil | 0.50 |
| 8T/10 | 10T | 79088 | 6 9/16" | 16 mm | 0.50 |
| 22T/26T | 22T | 79088 | 6 9/16" | 16 mm | 0.86 |

To Order, Specify: quantity, name and item number.

RAPID LIFT PRECAST PATCH 2/2.5-Ton, 4/5-Ton and 8/10-Ton

The Precast Patch is designed as a simple alternative to patching the recess formed by the anchor void. The plastic patch installs quickly and gives a long-lasting seal with a matte finish, in case painting is required. One size fits all, Item Number – 45612.

To Order, Specify: quantity, name and item number.



RAPID LIFT SEALING COVER 2/2.5-Ton, 4/5-Ton, 8/10-Ton and 22/26-Ton

The Rapid Lift Sealing Cover is a strong, lightweight plug available as a temporary cover for cast in place Rapid Lift anchors.

| RAPID LIFT SEALING COVER | |
|--------------------------|-------|
| 2T/2.5 | 79031 |
| 4T/5T | 79032 |
| 8T/10 | 79033 |
| 22T/26T | 79178 |

To Order, Specify: quantity, name and item number.



MB DogBone® Lifting System



The Meadow Burke DogBone Lifting System is a quality system designed to lift and handle the concrete elements quickly, safely and economically. This versatile system offers effortless lifter to anchor attachment and disconnect in a wide range of capabilities.

MB DogBone System Technical Information

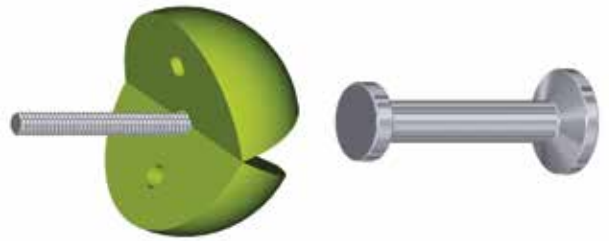
LIFTING BODY/CLUTCH MAINTENANCE

Meadow Burke recommends that users of the DogBone System schedule regular inspections to determine the safe usability of the lifting units. If any factor is present that may affect or compromise the safety performance of the unit, such as excess wear, overloading, misuse, alteration, application of heat, etc., the unit must be serviced or permanently removed from service. Under no circumstance should the unit be modified, heated, welded or filed.

Do not attempt to straighten a bent eye link. Bent eye links should be replaced with a new eye link and new pivot pin. Replacement parts are available through your nearest Meadow Burke office.

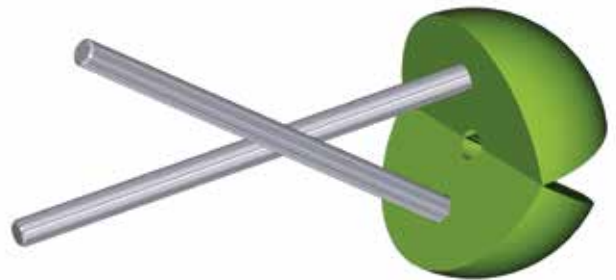
ASSEMBLING THE DOGBONE PLASTIC RECESS FORMER AND ANCHOR

Recess formers and anchors can easily be assembled. Simply squeeze the recess former across the flat surface to open the recess former in a clamshell effect. Insert the anchor into the opening and release the pressure on the recess former. This allows the recess former to close around the head of the anchor and securely hold it in place.



DOGBONE PLASTIC RECESS FORMER STRIPPING

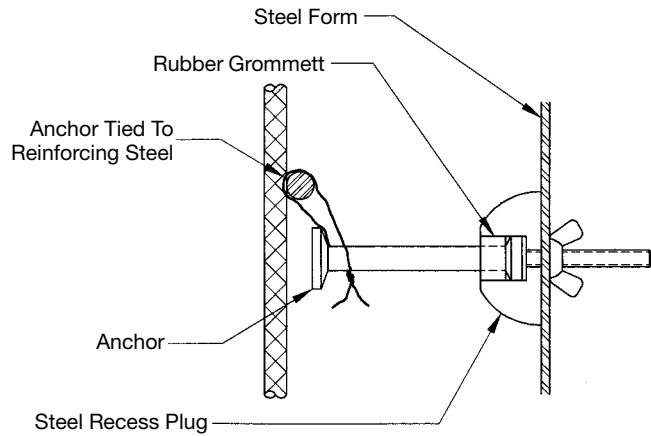
Once the form has been removed to expose the recess former, insert two small rods or two screw drivers into the two holes provided in the recess former. A scissoring action with the two implements will lift one side of the recess former. Grasp the lifted side of the recess former and pull the unit out of the concrete.



MB DogBone System Technical Information

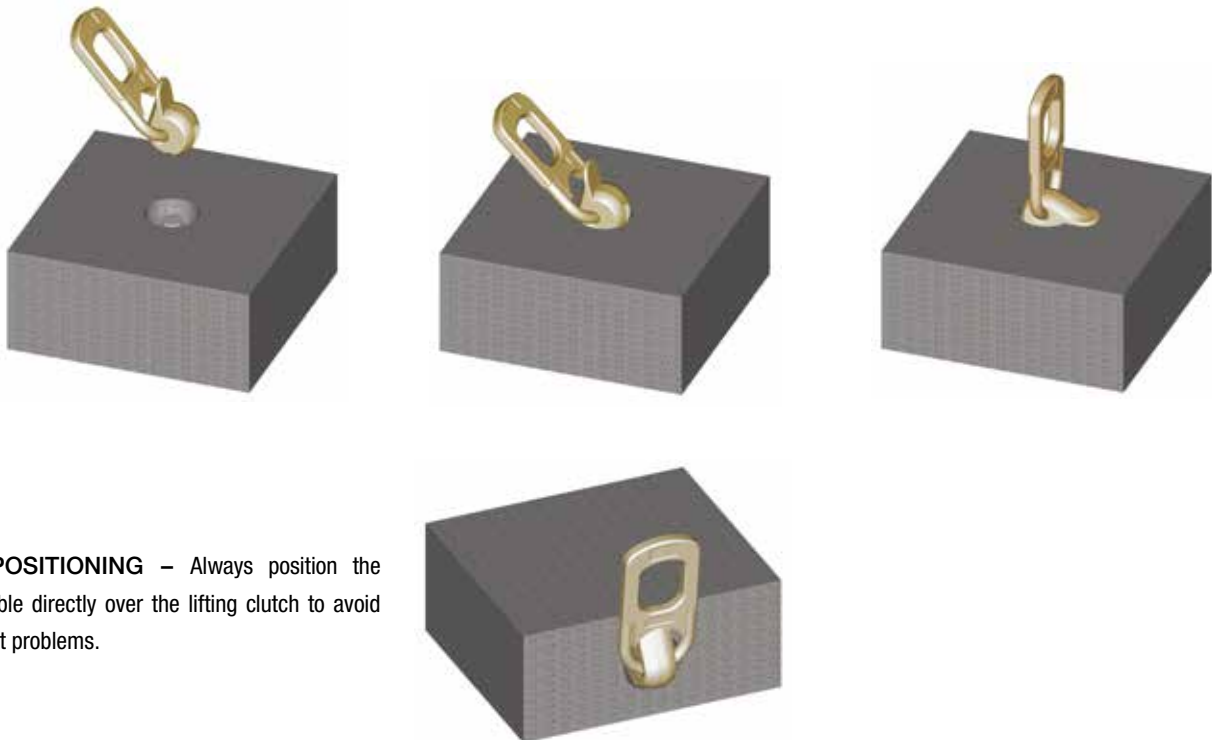
SETTING THE ANCHOR/RECESS FORMER ASSEMBLY

Run the recess former bolt through a properly placed drilled hole in the form. Draw the recess former bolt tight to the form with a free-running wing nut. The exposed end of the anchor can be tied to the rebar mat or supported by a rebar support.



LIFTING CLUTCH INSTALLATION

Anchor attachment – Turn the lifting clutch upside down, positioned and centered over the head of the anchor. Drop the lifting clutch down into the void formed by the recess former. Rotate the lifting unit around the head of the anchor until the unit contacts the surface of the concrete. Installation is complete, ready to lift.



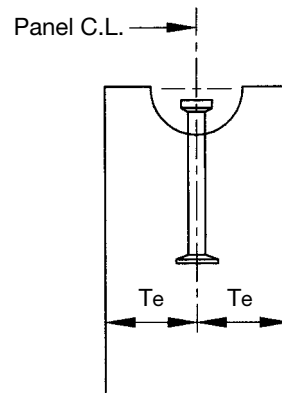
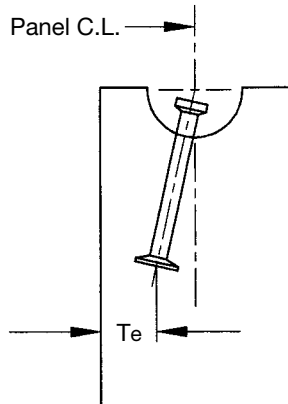
BAIL POSITIONING – Always position the lifting cable directly over the lifting clutch to avoid alignment problems.

MB DogBone System Technical Information

MB DOGBONE ANCHORS USED IN THIN WALL SECTIONS

Care must be taken when locating anchors in thin wall sections. Improper installation and/or misalignment can seriously reduce the safe working load of the anchor. A minimum concrete coverage underneath the foot of the anchor of 1" has to be established in order to achieve the published values.

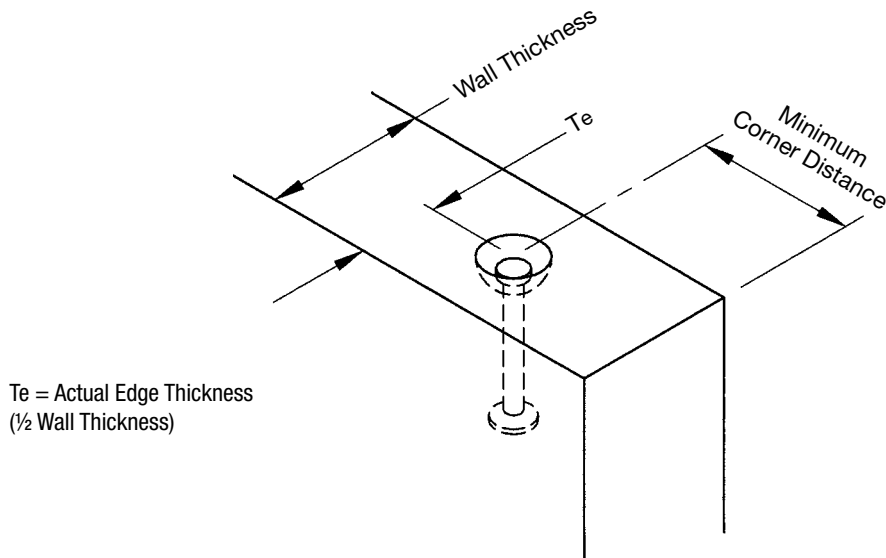
- Anchors must be positioned on the centerline of the panel.
- Use rebar supports, spacers or tie the anchor to the rebar mat to make certain of proper positioning.



This sketch shows a misaligned, improperly positioned anchor. The actual edge distance (T_e) is considerably reduced so there must be a corresponding reduction in the safe working load of the anchor.

This sketch shows proper positioning of the anchor on the centerline of the panel. This allows the full wall thickness to be used in the safe working load selection.

The sketch below shows an anchor application and corner relationship. Safe working loads for indicated corner distances are displayed in the following table.



MB DogBone System Anchors

DB 52 MB DOGBONE ANCHOR

1-Ton, 2-Ton, 4-Ton, 6-Ton, 8-Ton, 12-Ton and 16-Ton in Face Lift Applications

All DB-52 DogBone Anchors are manufactured from high quality, high strength steel. They are continually tested at a specified sampling rate during production and each anchor head is clearly marked with its safe working load.

The accompanying table shows standard anchor sizes and safe working loads in various concrete strengths. Note that in some cases the anchor does not reach full capacity in the lower strength concretes. This is an important consideration when selecting the proper anchor application. In general, concrete strengths of 2,100 psi to 3,500 psi are necessary to develop stated anchor safe working loads. The safe working loads displayed in the table applies for any directional loading. Loading on the anchor can be perpendicular, horizontal or any angle in between. Only available in hot-dipped galvanized.



DB-52 MB DOGBONE ANCHOR CAPACITIES WHEN USED IN FACE OF FLAT SLAB

| Anchor Size | Concrete Strength | | | | Edge Distance Tension (in) | Edge Distance Shear (in) |
|--------------|-------------------|----------|----------|----------|----------------------------|--------------------------|
| | 1500 PSI | 2500 PSI | 3500 PSI | 5000 PSI | | |
| 1T x 2 1/2 | 1600 | 2000 | 2000 | 2000 | 5 | 12 |
| 1T x 3 3/8 | 1900 | 2000 | 2000 | 2000 | 7 | 12 |
| 1T x 4 3/4 | 2000 | 2000 | 2000 | 2000 | 10 | 12 |
| 2T x 2 3/16 | 1550 | 1900 | 2350 | 2800 | 5 | 12 |
| 2T x 3 3/8 | 2100 | 2700 | 3250 | 3900 | 7 | 12 |
| 2T x 4 3/4 | 3250 | 4000 | 4000 | 4000 | 10 | 15 |
| 2T x 5 1/2 | 4000 | 4000 | 4000 | 4000 | 11 | 17 |
| 2T x 6 3/4 | 4000 | 4000 | 4000 | 4000 | 11 | 17 |
| 2T x 11 | 4000 | 4000 | 4000 | 4000 | 11 | 17 |
| 4T x 3 3/4 | 2550 | 3250 | 3950 | 4700 | 8 | 12 |
| 4T x 4 1/4 | 3000 | 3850 | 4550 | 5450 | 9 | 13 |
| 4T x 4 3/4 | 3650 | 4700 | 5600 | 6700 | 10 | 15 |
| 4T x 5 1/2 | 4550 | 5850 | 6950 | 8000 | 11 | 17 |
| 4T x 7 1/8 | 6900 | 8000 | 8000 | 8000 | 15 | 22 |
| 4T x 9 1/2 | 8000 | 8000 | 8000 | 8000 | 19 | 29 |
| 4T x 13 3/8 | 8000 | 8000 | 8000 | 8000 | 19 | 29 |
| 8T x 4 3/4 | 4050 | 5200 | 6200 | 7450 | 10 | 15 |
| 8T x 6 3/4 | 7000 | 9000 | 10,750 | 12,850 | 14 | 21 |
| 8T x 8 1/2 | 9300 | 12,000 | 14,250 | 16,000 | 15 | 24 |
| 8T x 10 | 11,450 | 14,750 | 16,000 | 16,000 | 20 | 30 |
| 8T x 13 3/8 | 16,000 | 16,000 | 16,000 | 16,000 | 27 | 41 |
| 16T x 9 7/8 | 11,750 | 15,150 | 17,950 | 21,500 | 20 | 30 |
| 16T x 19 3/8 | 32,000 | 32,000 | 32,000 | 32,000 | 40 | 48 |

1. All safety factors are approx. 4:1.
2. No safety factors in this table have been reduced to achieve higher working loads.
3. 16 ton SWL are at full 4:1 safety factors in compliance with ACI 347 and OSHA. Complies with ASTM-572.
4. Minimum corner distance = 1.5* edge distance for shear loaded towards the edge.

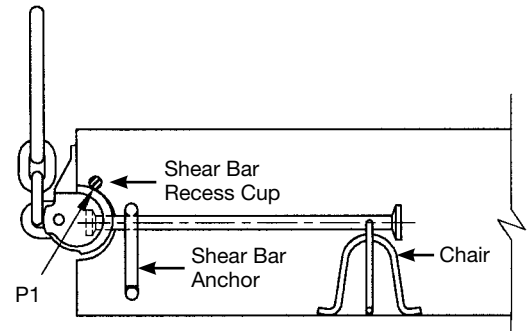
A minimum concrete coverage underneath the foot of the anchor of 1" has to be established in order to achieve the published values.

To order, specify: quantity, name, item number and finish.

MB DogBone System Anchors

DB-52 DOGBONE ANCHOR EDGE LIFT APPLICATIONS

In edge lift applications the DogBone Anchor must be used in combination with two properly installed shear bars. The shear bars (anchor and cup) transfer a portion of the shear stress back into the anchor and into the concrete panel. Note: in this application the sling angle must be perpendicular to the surface of the concrete.



DB-52 MB DOGBONE ANCHOR CAPACITIES WHEN USED IN FACE OF FLAT SLAB

| Anchor Size | Min. Anchor Length | Min. Wall Thickness | Top Edge Distance (T ^e) ² | Min. Corner Distance | Shear SWL 4:1 Safety Factor ¹ |
|-------------|--------------------|---------------------|--|----------------------|--|
| 2T | 6 3/4" | 4 | 2 1/2" | 18 | 3000 |
| | 6 3/4" | 5 | 3" | 24 | 3200 |
| | 6 3/4" | 6 | 3 1/2" | 24 | 3500 |
| 4T | 9 1/2" | 6 | 3 1/2" | 24 | 3500 |
| | 9 1/2" | 7 | 4" | 24 | 4000 |
| 8T | 13 3/8" | 7 | 4" | 24 | 4500 |
| | 13 3/8" | 8 | 4 1/2" | 24 | 5000 |

¹Minimum concrete strength at 4000 psi.

²See above for proper anchor location and required reinforcing.

A minimum concrete coverage underneath the foot of the anchor of 1" has to be established in order to achieve the published values.

SINGLE DOGBONE ANCHOR TENSILE CAPACITIES IN THIN WALL SECTIONS

DB-52 1-TON TENSILE CAPACITY

| DB Anchor Ton & Length | Critical Wall Thickness (in) | Actual Edge Thickness T _e (in) | Tensile Safe Working Load Per Anchor (lbs) | | | | |
|------------------------|------------------------------|---|--|-----------|-----------|-----------|-----------|
| | | | Corner Distance (in) | | | | |
| | | | 8 Inches | 12 Inches | 18 Inches | 24 Inches | 30 Inches |
| 1 Ton X 4 3/4" | 2 1/2" | 1 1/4" | 1000 lbs | 1200 lbs | 1300 lbs | 1300 lbs | 1300 lbs |
| | 2 3/4" | 1 3/8" | 1100 | 1300 | 1400 | 1400 | 1400 |
| | 3" | 1 1/2" | 1200 | 1400 | 1600 | 1600 | 1600 |
| | 3 1/2" | 1 3/4" | 1400 | 1700 | 1800 | 1800 | 1800 |
| | 4" | 2" | 1600 | 1900 | 2000 | 2000 | 2000 |
| | 4 1/2" | 2 1/4" | 1800 | 2000 | 2000 | 2000 | 2000 |

Safety Factor is approximately 4:1 in 4500 psi concrete.

A minimum concrete coverage underneath the foot of the anchor of 1" has to be established in order to achieve the published values.

DB-52 2-TON TENSILE CAPACITY

| DB Anchor Ton & Length | Critical Wall Thickness (in) | Actual Edge Thickness T _e (in) | Tensile Safe Working Load Per Anchor (lbs) | | | | |
|------------------------|------------------------------|---|--|-----------|-----------|-----------|-----------|
| | | | Corner Distance (in) | | | | |
| | | | 6 Inches | 12 Inches | 18 Inches | 24 Inches | 30 Inches |
| 2 Ton X 6 3/4" | 3" | 1 1/2" | 1700 lbs | 1800 lbs | 2000 lbs | 2200 lbs | 2200 lbs |
| | 3 1/4" | 1 5/8" | 1900 | 2000 | 2200 | 2400 | 2400 |
| | 3 1/2" | 1 3/4" | 2000 | 2200 | 2400 | 2600 | 2600 |
| | 4" | 2" | 2300 | 2500 | 2700 | 3000 | 3000 |
| | 5" | 2 1/2" | 2900 | 3100 | 3400 | 3700 | 3700 |
| | 6" | 3" | 3500 | 3700 | 4000 | 4000 | 4000 |
| 2 Ton X 11" | 3" | 1 1/2" | 2100 | 2700 | 2900 | 3100 | 3100 |
| | 3 1/4" | 1 5/8" | 2300 | 2900 | 3200 | 3400 | 3400 |
| | 3 1/2" | 1 3/4" | 2500 | 3200 | 3400 | 3600 | 3600 |
| | 4" | 2" | 2900 | 3600 | 3900 | 4000 | 4000 |
| | 5" | 2 1/2" | 3600 | 4000 | 4000 | 4000 | 4000 |
| | 6" | 3" | 4000 | 4000 | 4000 | 4000 | 4000 |

Safety Factor is approximately 4:1 in 4500 psi concrete.

A minimum concrete coverage underneath the foot of the anchor of 1" has to be established in order to achieve the published values.

MB DogBone System Anchors

DB-52 SINGLE DOGBONE ANCHOR TENSILE CAPACITIES IN THIN WALL SECTIONS (CONT.)

| DB-52 4-TON & 8-TON TENSILE CAPACITY (cont.) | | | | | | | |
|--|---------------------------------|--|--|-----------|-----------|-----------|-----------|
| DB Anchor Ton & Length | Critical Wall Thickness (in) | Actual Edge Thickness T _e (in) | Tensile Safe Working Load Per Anchor (lbs) | | | | |
| | | | Corner Distance (in) | | | | |
| | | | 10 Inches | 15 Inches | 20 Inches | 24 Inches | 30 Inches |
| 4 Ton X 9 ½" | 3 ¾" | 1 7/8" | 2900 lbs | 3200 lbs | 3400 lbs | 3500 lbs | 3800 lbs |
| | 4" | 2" | 3100 | 3400 | 3600 | 3600 | 4000 |
| | 5" | 2 ½" | 3600 | 4300 | 4600 | 4800 | 5100 |
| | 6" | 3" | 4600 | 5200 | 5500 | 5700 | 6100 |
| | 7" | 3 ½" | 5400 | 6000 | 6400 | 6700 | 7200 |
| 4 Ton X 13 ¾" | 3 ¾" | 1 7/8" | 3300 | 4200 | 4400 | 4500 | 4800 |
| | 4" | 2" | 3500 | 4500 | 4700 | 4900 | 5100 |
| | 5" | 2 ½" | 4400 | 5600 | 5900 | 6100 | 6400 |
| | 6" | 3" | 5300 | 6800 | 7100 | 7400 | 7700 |
| | 7" | 3 ½" | 6200 | 7900 | 8000 | 8000 | 8000 |
| 8 Ton X 6 ¾" | 4 ¾" | 2 ¾" | 3000 | 3300 | 3600 | 3700 | 3700 |
| | 5" | 2 ½" | 3200 | 3500 | 3800 | 3900 | 3900 |
| | 6" | 3" | 3800 | 4200 | 4600 | 4700 | 4700 |
| | 7" | 3 ½" | 4500 | 4900 | 5400 | 5500 | 5500 |
| | 8" | 4" | 5100 | 5600 | 6100 | 6200 | 6200 |
| 10" | 5" | 6300 | 6900 | 7500 | 7700 | 7700 | |

Safety Factor is approximately 4:1 in 4500 psi concrete.

A minimum concrete coverage underneath the foot of the anchor of 1" has to be established in order to achieve the published values.

| DB-52 8-TON & 16-TON TENSILE CAPACITY | | | | | | | |
|---------------------------------------|---------------------------------|--|--|-----------|-----------|-----------|-----------|
| DB Anchor Ton & Length | Critical Wall Thickness (in) | Actual Edge Thickness T _e (in) | Tensile Safe Working Load Per Anchor (lbs) | | | | |
| | | | Corner Distance (in) | | | | |
| | | | 12 Inches | 18 Inches | 24 Inches | 36 Inches | 45 Inches |
| 8 Ton X 13 ¾" | 5" | 2 ½" | 4800 lbs | 5800 lbs | 6100 lbs | 6700 lbs | 7200 lbs |
| | 6" | 3" | 5800 | 7000 | 7400 | 8100 | 8700 |
| | 7" | 3 ½" | 6800 | 8200 | 8600 | 9500 | 10,200 |
| | 8" | 4" | 7800 | 9300 | 9900 | 10,900 | 11,700 |
| | 10" | 5" | 9800 | 11,700 | 12,300 | 13,600 | 14,600 |
| 16 Ton X 9 ½" | 12" | 6" | 11,700 | 13,900 | 14,700 | 16,000 | 16,000 |
| | 6 ½" | 3 ¾" | 5000 | 6000 | 6400 | 7200 | 7200 |
| | 7" | 3 ½" | 6000 | 6500 | 6900 | 7700 | 7800 |
| | 8" | 4" | 6500 | 7400 | 7900 | 8900 | 9000 |
| | 10" | 5" | 8500 | 9300 | 9900 | 11,200 | 11,200 |
| 16 Ton X 19 ½" | 12" | 6" | 10,000 | 11,100 | 11,900 | 13,300 | 13,400 |
| | 14" | 7" | 11,500 | 12,600 | 13,700 | 15,400 | 15,400 |
| | 6 ½" | 3 ¾" | 7000 | 9000 | 10,500 | 11,500 | 12,200 |
| | 7" | 3 ½" | 8000 | 10,000 | 11,500 | 12,500 | 13,200 |
| | 8" | 4" | 9200 | 11,200 | 13,000 | 14,400 | 15,100 |
| 10" | 5" | 11,500 | 14,300 | 16,000 | 18,000 | 19,000 | |
| 12" | 6" | 14,000 | 17,300 | 20,000 | 21,500 | 22,800 | |
| 14" | 7" | 16,200 | 20,200 | 23,000 | 25,000 | 26,600 | |

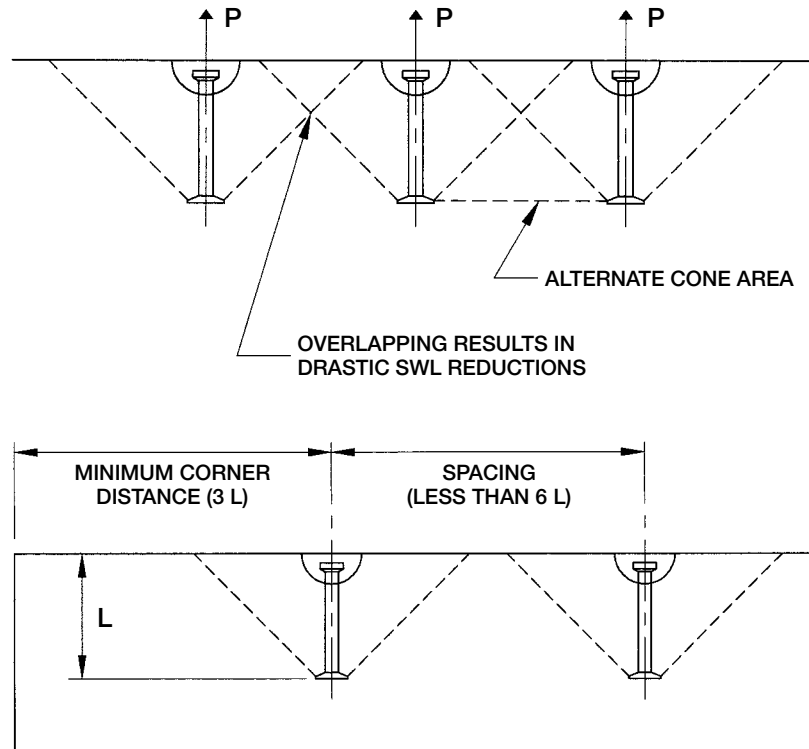
Safety Factor is approximately 4:1 in 4500 psi concrete.

A minimum concrete coverage underneath the foot of the anchor of 1" has to be established in order to achieve the published values.

MB DogBone System Anchors

MULTIPLE MB DOGBONE ANCHORS TENSILE CAPACITIES IN THIN WALL SECTIONS

When multiple anchors are placed in a thin wall panel, caution must be exercised to prevent the anchor shear cone planes from overlapping. If overlapping is unavoidable, the anchor safe working load must be reduced. If a spacing of six times the length of the anchor, or more, is maintained the anchor shear cones will not overlap and maximum tensile capacities can be achieved. Reference the following table.



CONCRETE REDUCTION FACTORS

All safe working loads shown in this section are based on 4,500 psi strength concrete. For use in lower strength concrete apply the appropriate reduction factor.

Multiply the calculated values from the following table by the appropriate reduction factor to arrive at the proper safe working load for the lower strength concrete.

| CONCRETE REDUCTION FACTORS DATA | | | |
|---------------------------------|--|-----|-------------------|
| Concrete Strength | | | Reduction Factors |
| PSI | | MPa | |
| 4500 | | 31 | 1.00 |
| 4000 | | 28 | .94 |
| 3500 | | 24 | .88 |
| 3000 | | 21 | .82 |
| 2500 | | 17 | .74 |
| 2000 | | 14 | .66 |

MB DogBone System Anchors

DB-52 MULTIPLE MB DOGBONE ANCHORS TENSILE CAPACITIES IN THIN WALL SECTIONS (CONT.)

| DB-52 1-TON TENSILE CAPACITY | | | | | | | |
|------------------------------|---------------------------------|--|--|---------|-----------|-----------|-----------|
| DB Anchor Ton & Length | Critical Wall Thickness (in) | Actual Edge Thickness T _E (in) | Tensile Safe Working Load Per Anchor (lbs) | | | | |
| | | | Corner Distance (in) | | | | |
| | | | Inches | Inches | 12 Inches | 18 Inches | 24 Inches |
| 1 Ton X 4 ¾" | 2 ½" | 1 ¼" | 800 lbs | 900 lbs | 1100 lbs | 1200 lbs | 1300 lbs |
| | 2 ¾" | 1 ⅜" | 900 | 1000 | 1200 | 1400 | 1400 |
| | 3" | 1 ½" | 1000 | 1100 | 1300 | 1500 | 1600 |
| | 3 ½" | 1 ¾" | 1100 | 1300 | 1500 | 1700 | 1800 |
| | 4" | 2" | 1300 | 1500 | 1800 | 2000 | 2000 |
| 4 ½" | 2 ¼" | 1400 | 1700 | 2000 | 2000 | 2000 | |

Safety Factor is approximately 4:1 in 4500 psi concrete.

A minimum concrete coverage underneath the foot of the anchor of 1" has to be established in order to achieve the published values.

| DB-52 2-TON TENSILE CAPACITY | | | | | | | |
|------------------------------|---------------------------------|--|--|----------|-----------|-----------|-----------|
| DB Anchor Ton & Length | Critical Wall Thickness (in) | Actual Edge Thickness T _E (in) | Tensile Safe Working Load Per Anchor (lbs) | | | | |
| | | | Corner Distance (in) | | | | |
| | | | Inches | Inches | 18 Inches | 24 Inches | 30 Inches |
| 2 Ton X 6 ¾" | 3" | 1 ½" | 1400 lbs | 1500 lbs | 1700 lbs | 1900 lbs | 2200 lbs |
| | 3 ¼" | 1 ⅝" | 1500 | 1700 | 1900 | 2100 | 2400 |
| | 3 ½" | 1 ¾" | 1600 | 1800 | 2000 | 2200 | 2600 |
| | 4" | 2" | 1900 | 2100 | 2300 | 2600 | 3000 |
| | 5" | 2 ½" | 2300 | 2600 | 2900 | 3200 | 3700 |
| 2 Ton X 11" | 6" | 3" | 2800 | 3200 | 3500 | 3800 | 4000 |
| | 3" | 1 ½" | 1400 | 2100 | 2300 | 2400 | 2800 |
| | 3 ¼" | 1 ⅝" | 1600 | 2300 | 2500 | 2600 | 3000 |
| | 3 ½" | 1 ¾" | 1700 | 2500 | 2700 | 2800 | 3200 |
| | 4" | 2" | 1900 | 2800 | 3000 | 3300 | 3700 |
| 5" | 2 ½" | 2400 | 3600 | 3600 | 4000 | 4000 | |
| 6" | 3" | 2900 | 4000 | 4000 | 4000 | 4000 | |

Safety Factor is approximately 4:1 in 4500 psi concrete.

A minimum concrete coverage underneath the foot of the anchor of 1" has to be established in order to achieve the published values.

| DB-52 4-TON & 8-TON TENSILE CAPACITY | | | | | | | |
|--------------------------------------|---------------------------------|--|--|----------|-----------|-----------|-----------|
| DB Anchor Ton & Length | Critical Wall Thickness (in) | Actual Edge Thickness T _E (in) | Tensile Safe Working Load Per Anchor (lbs) | | | | |
| | | | Corner Distance (in) | | | | |
| | | | Inches | Inches | 18 Inches | 24 Inches | 36 Inches |
| 4 Ton X 9 ½" | 3 ¾" | 1 ⅞" | 1800 lbs | 2400 lbs | 2800 lbs | 3200 lbs | 3700 lbs |
| | 4" | 2" | 1900 | 2600 | 3000 | 3500 | 3900 |
| | 5" | 2 ½" | 2400 | 3300 | 3800 | 4400 | 5000 |
| | 6" | 3" | 2900 | 3900 | 4600 | 5200 | 6000 |
| | 7" | 3 ½" | 3400 | 4600 | 5200 | 6100 | 7000 |
| 4 Ton X 13 ⅜" | 8" | 4" | 3900 | 5200 | 6100 | 7000 | 8000 |
| | 3 ¾" | 1 ⅞" | 1700 | 2400 | 3400 | 3800 | 4300 |
| | 4" | 2" | 1800 | 2600 | 3700 | 4100 | 4600 |
| | 5" | 2 ½" | 2200 | 3300 | 4600 | 5200 | 5700 |
| | 6" | 3" | 2700 | 4000 | 5600 | 6200 | 6900 |
| 8 Ton X 6 ¾" | 7" | 3 ½" | 3200 | 4600 | 6500 | 7300 | 8000 |
| | 8" | 4" | 3600 | 5300 | 7500 | 8000 | 8000 |
| | 4 ¾" | 2 ⅜" | 2400 | 2600 | 3100 | 3700 | 3900 |
| | 5" | 2 ½" | 2900 | 3200 | 3800 | 4500 | 4700 |
| | 6" | 3" | 3400 | 3700 | 4400 | 5300 | 5500 |
| 8 Ton X 13 ⅜" | 7" | 3 ½" | 3800 | 4200 | 5100 | 6000 | 6200 |
| | 8" | 4" | 4700 | 5200 | 6200 | 7400 | 7700 |
| | 10" | 5" | 5100 | 5700 | 6800 | 8000 | 8300 |
| | 5" | 2 ½" | 2100 | 3200 | 4600 | 5100 | 5700 |
| | 6" | 3" | 2600 | 3800 | 5600 | 6200 | 6900 |
| 8 Ton X 13 ⅜" | 7" | 3 ½" | 3000 | 4500 | 6500 | 7300 | 8000 |
| | 8" | 4" | 3500 | 5200 | 7500 | 8300 | 9200 |
| | 10" | 5" | 4400 | 6500 | 9300 | 10,400 | 11,500 |
| | 11" | 5 ½" | 4800 | 7100 | 10,300 | 11,400 | 12,600 |

Safety Factor is approximately 4:1 in 4500 psi concrete.

A minimum concrete coverage underneath the foot of the anchor of 1" has to be established in order to achieve the published values.

MB DogBone System Anchors

DB-52 MULTIPLE MB DOGBONE ANCHORS TENSILE CAPACITIES IN THIN WALL SECTIONS (CONT.)

| DB-52 16-TON TENSILE CAPACITY | | | | | | | |
|-------------------------------|---------------------------------|-------------------------------------|--|-----------|-----------|-----------|-----------|
| DB Anchor Ton & Length | Critical Wall Thickness (in) | Actual Edge Thickness T_e (in) | Tensile Safe Working Load Per Anchor (lbs) | | | | |
| | | | Corner Distance (in) | | | | |
| | | | 20 Inches | 24 Inches | 33 Inches | 42 Inches | 60 Inches |
| 16 Ton X 9 7/8" | 6 1/2" | 3 1/4" | 3300 lbs | 4300 lbs | 4800 lbs | 5300 lbs | 6400 lbs |
| | 7" | 3 1/2" | 3500 | 4700 | 5200 | 5700 | 6900 |
| | 8" | 4" | 4100 | 5300 | 6000 | 6600 | 7900 |
| | 10" | 5" | 5100 | 6700 | 7500 | 8300 | 9900 |
| | 12" | 6 5/8" | 6100 | 8000 | 9000 | 9900 | 11,900 |
| | 14" | 7" | 7100 | 9300 | 10,400 | 11,400 | 13,700 |
| 16 Ton X 19 5/8" | 6 1/2" | 3 1/4" | 2800 | 3600 | 5600 | 7800 | 9200 |
| | 7" | 3 1/2" | 3100 | 3900 | 6100 | 8500 | 9900 |
| | 8" | 4" | 3500 | 4500 | 7000 | 9700 | 11,400 |
| | 10" | 5" | 4400 | 5700 | 8800 | 12,200 | 14,300 |
| | 12" | 6" | 5300 | 6800 | 10,500 | 14,600 | 17,100 |
| | 14" | 7" | 6200 | 8000 | 12,300 | 17,100 | 20,000 |

Safety Factor is approximately 4:1 in 4500 psi concrete.

A minimum concrete coverage underneath the foot of the anchor of 1" has to be established in order to achieve the published values.

DB-53 MB DOGBONE EYE ANCHOR 1-Ton, 2-Ton, 4-Ton, 8-Ton, and 16-Ton in Edge Lift Applications

The DB-53 DogBone Eye Anchor is used in combination with a DB-60 DogBone Rebar Reinforcing Pin. This combination allows tension loads to be distributed deeply into the concrete element and produce high safe working loads in thin wall sections.

DogBone Eye Anchors must be installed properly, centered and plumb to avoid drastic reduction of safe working load.



| DB-53 MB DOGBONE Eye Anchor/Rebar Selection Table | | | | | | | | | | |
|---|--------------------|-----|-------------------------|-----|-------------------------|-----|------------------------------------|--------|------------------------|-----|
| Anchor Load Rating Tons | Anchor Length L | | Minimum Panel Thickness | | Minimum Corner Distance | | Safe Work Load Tension w/ Rebar | | Minimum Anchor Spacing | |
| | in. | mm | in. | mm | in. | mm | lbs. | kN | in. | mm |
| 1-Ton | 2 5/8" | 66 | 3 | 75 | 8 | 200 | 2000 | 8.90 | 16 | 400 |
| 2-Ton | 3 1/2" | 90 | 3 | 75 | 4 | 100 | 4000 | 17.80 | 8 | 200 |
| 4-Ton | 4 3/4" | 120 | 4 | 100 | 6 | 150 | 8000 | 35.60 | 12 | 300 |
| 8-Ton | 7 1/8" | 180 | 5 | 125 | 8 | 200 | 16,000 | 71.10 | 16 | 400 |
| 16-Ton | 9 7/8" | 250 | 6 1/2" | 165 | 10 | 250 | 32,000 | 142.20 | 18 | 500 |

Safety Factor is approximately 4:1.

1. Minimum concrete compressive strength, $f'_c = 2000$ psi (14 MPa).
2. Safe work loads shown are based on Anchors with DB-60 rebar reinforcing installed.

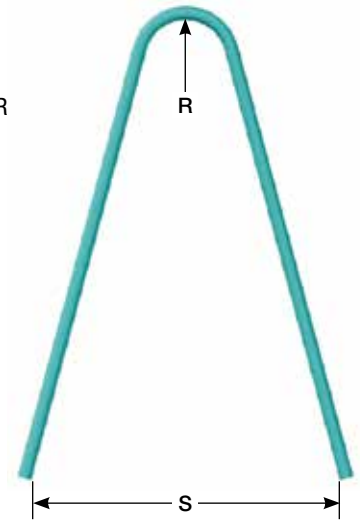
To order, specify: quantity, name, item number and finish.

MB DogBone System Anchors

DB-60 DOGBONE REBAR REINFORCING PIN 1-Ton, 2-Ton, 4-Ton, 8-Ton, and 16-Ton in Edge Lift Applications

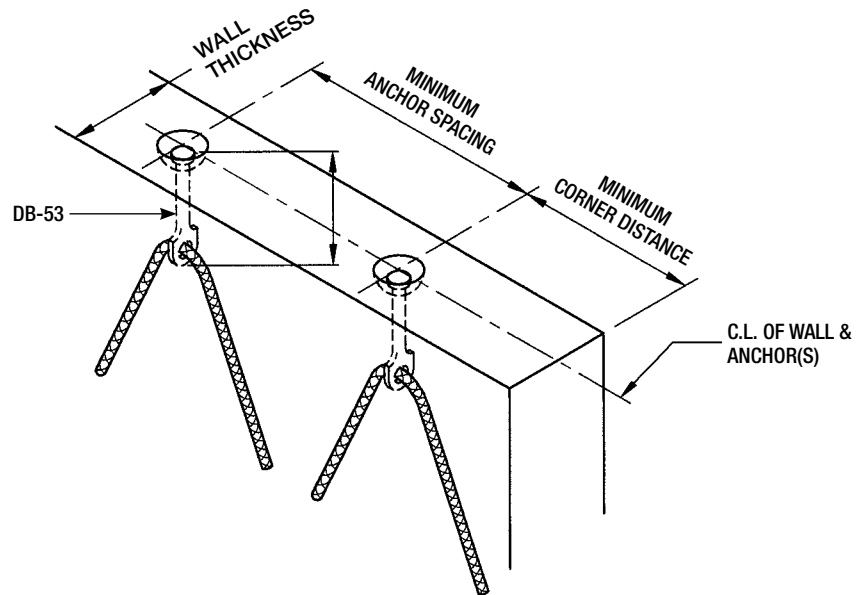
The DogBone Rebar Reinforcing Pin is used with the DB-53 DogBone Eye Anchor to distribute tension stress deeply R into the precast concrete panel.

| DB-60 MB DOGBONE REBAR REINFORCEMENT SPECIFICATIONS | | | | | | | | |
|---|-------------------------|-----|----------------------|------|----------------|-----|------------------------|----|
| Anchor Load Rating Tons | Rebar Grade 60 Diameter | | Rebar Overall Length | | Rebar Spread S | | Rebar Bending Radius R | |
| | in./std. | mm | in. | mm | in. | mm | in. | mm |
| 1-Ton | .306 | 7.8 | 36 | 900 | 12 | 300 | ¾ | 19 |
| 2-Ton | #3 | 9.5 | 24 | 600 | 6 | 150 | 1 ¼" | 31 |
| 4-Ton | #5 | 15 | 24 | 600 | 7 | 175 | 2 | 50 |
| 8-Ton | #6 | 20 | 48 | 1200 | 9 | 225 | 2 ½" | 62 |
| 16-Ton | #8 | 25 | 86 | 2150 | 12 | 300 | 3 | 75 |



To order, specify: quantity, name, item number and finish.

DB-60 DogBone Rebar Reinforcing Pins must be used with DB-53 DogBone Eye Anchors in order to achieve posted safe working loads.



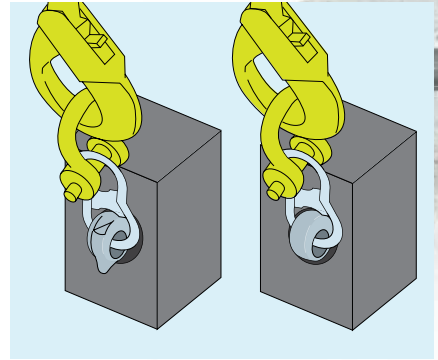
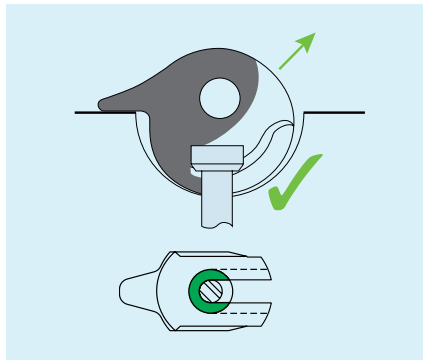
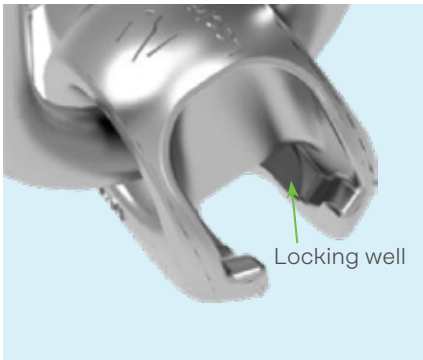
Anchors must be centered and plumb when installed. Any deviation can result in a reduction of safe working loads. See additional anchor installation information on page 70.

MB DB-1LK Locking Klaw DogBone Clutch

The MB DB-1LK Locking Klaw is a strong, safe and lightweight lifting clutch. The Locking Klaw's unique "locking well" prevents the Locking Klaw from rotating during the lifting process and ensures that the anchor head is always in the optimum position at the back of the slot.

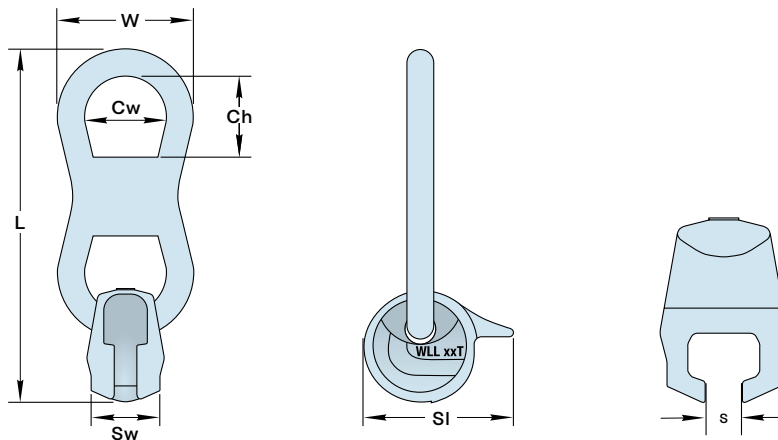
Tested: The MB Locking Klaw subject to an extensive and regular external and internal quality control process. The safe working loads provide an approximate 5:1 safety factor.

Safe & Versatile: The MB Locking Klaw safely connects in any direction, toward or away from the tail. The symmetrical chain link design centers the load and reduces hook, line and shackle damage. The MB Locking Klaw suits all spherical head anchors.



Dimensions – MB DB-1LK Locking Klaw

| Item Number | Lifting Body Mark | Safe Work Load | | | W | L | Sw | Cw | Ch | SI | S |
|-------------|-------------------|----------------|------------|----------|--------|---------|--------|--------|--------|--------|--------|
| MB590194 | 01LK | 1 Ton | 2,000 lbs | 8.9 kN | 2.599" | 6.693" | 1.299" | 1.575" | 1.732" | 2.835" | 0.433" |
| MB590196 | 02LK | 2 Ton | 4,000 lbs | 17.8 kN | 3.228" | 8.465" | 1.654" | 1.969" | 1.969" | 3.465" | 0.630" |
| MB590197 | 05LK | 4 Ton | 8,000 lbs | 35.6 kN | 4.331" | 10.630" | 2.244" | 2.756" | 2.441" | 4.449" | 0.866" |
| MB590198 | 10LK | 8 Ton | 16,000 lbs | 71.1 kN | 4.709" | 14.370" | 2.874" | 3.543" | 3.268" | 5.669" | 1.220" |
| MB590199 | 20LK | 16 Ton | 32,000 lbs | 142.2 kN | 6.929" | 21.969" | 4.331" | 2.992" | 4.724" | 7.677" | 1.535" |

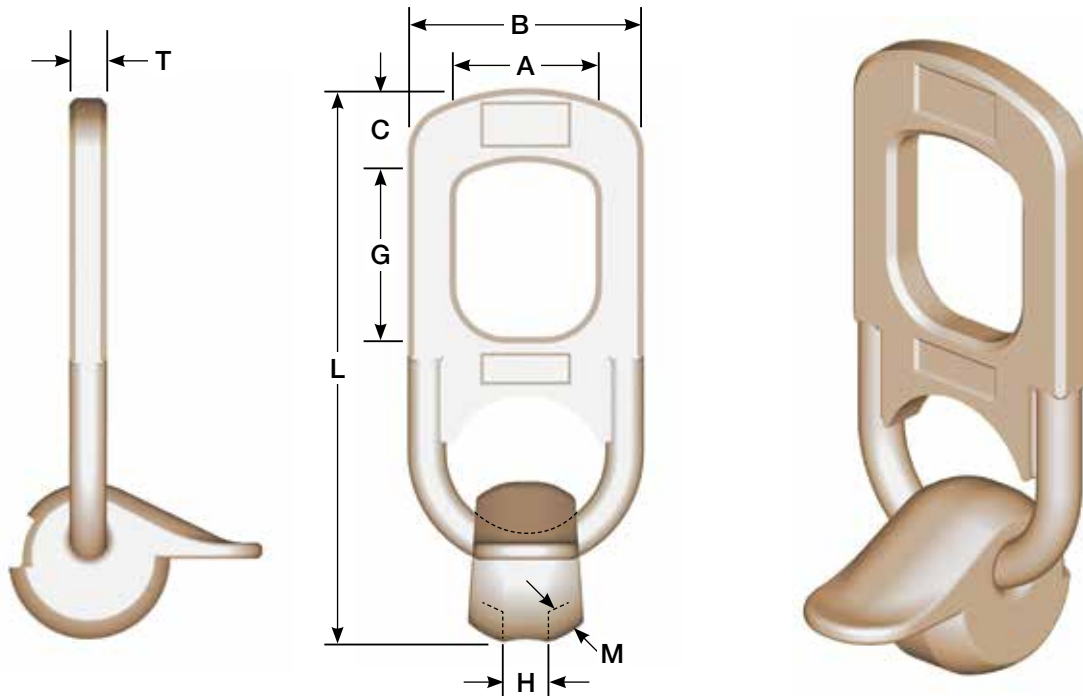


MB DogBone System Lifting Hardware

DB-1 DOGBONE LIFTING CLUTCH

1-Ton, 2-Ton, 4-Ton, 8-Ton, 16-Ton, 25-Ton and 36-Ton

The DB-1 MB DogBone Lifting Clutch consists of a round main body with a protruding lever arm and a high strength bail. The main body has a “T” slot that engages the head of a MB DogBone Anchor. The combined rotation capabilities of the main body and the bail allows a precast panel to be lifted, turned, tilted and/or rotated while under load.



DB-1 DOGBONE LIFTING CLUTCH

| Lifting Body Mark | Safe Work Load | | | A | | B | | C | | G | | H | | T | | L | | M | |
|-------------------|----------------|--------|-------|------|-----|-------|-----|------|-----|------|-----|------|----|------|----|-------|-----|------|------|
| | Tons | lbs. | kN | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm |
| 1-1.3 T | 1 | 2000 | 8.9 | 1.85 | 47 | 2.95 | 75 | 0.79 | 20 | 2.80 | 71 | 0.43 | 11 | 0.47 | 12 | 7.40 | 188 | 0.28 | 7.0 |
| 1.5-2.5 T | 2 | 4000 | 17.8 | 2.32 | 59 | 3.58 | 91 | 0.98 | 25 | 3.39 | 86 | 0.63 | 16 | 0.55 | 14 | 9.06 | 230 | 0.33 | 8.5 |
| 3.0-5.0 T | 4 | 8000 | 35.6 | 2.76 | 70 | 4.65 | 118 | 1.46 | 37 | 3.46 | 88 | 0.83 | 21 | 0.63 | 16 | 11.14 | 283 | 0.39 | 10.0 |
| 6.0-10.0 T | 8 | 16,000 | 71.1 | 3.46 | 88 | 6.30 | 160 | 1.97 | 50 | 4.53 | 115 | 1.18 | 30 | 0.98 | 25 | 15.79 | 401 | 0.55 | 14.0 |
| 12.0-20.0 T | 16 | 32,000 | 142.2 | 4.17 | 106 | 7.09 | 180 | 2.95 | 75 | 5.31 | 135 | 1.61 | 41 | 1.18 | 30 | 19.92 | 506 | 0.83 | 21.0 |
| 32 T ¹ | 25 | 50,000 | 225.0 | 6.77 | 172 | 10.71 | 272 | 3.94 | 100 | 7.44 | 189 | 2.05 | 52 | 1.57 | 40 | 24.80 | 630 | 1.12 | 28.5 |
| 45 T ¹ | 36 | 72,000 | 320.4 | 7.05 | 179 | 13.74 | 349 | 3.94 | 100 | 7.56 | 192 | 2.05 | 52 | 1.57 | 40 | 26.61 | 676 | 1.12 | 28.5 |

Safe working loads provide an approximate 5:1 safety factor.

1. Available on special order.

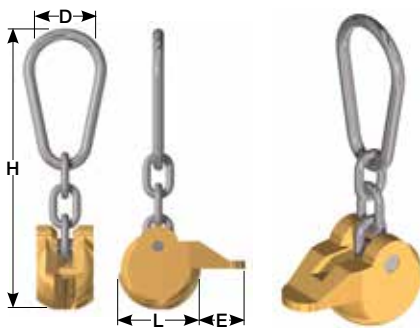
To order, specify: quantity, name, item number and finish.

MB DogBone System Lifting Hardware

DB-2 MB DOGBONE LIFTING BODY – CHAIN LINK

1-Ton, 2-Ton, 4-Ton, 8-Ton and 16-Ton

The DB-2 MB DogBone Lifting Body – Chain Link is similar to the eye link version, but utilizes a chain link arrangement to increase the unit’s versatility. The chain link allows the unit to be loaded in any direction.



| DB-2 DOGBONE LIFTING BODY - WITH CHAIN LINK | | | | | | | | | | | |
|---|----------------|--------|-------|-------|--------|--------|--------|-------|-------|--------|--------|
| Lifting Body Mark | Safe Work Load | | | D | | L | | E | | H | |
| | Tons | lbs. | kN | in. | mm | in. | mm | in. | mm | in. | mm |
| 1–1.3 T | 1 | 2000 | 8.9 | 1.625 | 41.28 | 2.125 | 53.98 | 1.125 | 28.58 | 8.625 | 136.53 |
| 1.5–2.5 T | 2 | 4000 | 17.8 | 2.375 | 60.33 | 2.500 | 63.50 | 1.438 | 36.53 | 9.875 | 169.88 |
| 3.0–5.0 T | 4 | 8000 | 35.6 | 2.438 | 61.93 | 3.250 | 82.55 | 2.003 | 50.80 | 10.125 | 201.63 |
| 6.0–10.0 T | 8 | 16,000 | 71.1 | 3.938 | 100.00 | 4.125 | 104.78 | 2.500 | 63.50 | 14.125 | 274.65 |
| 12.0 – 20.0 T | 16 | 32,000 | 142.2 | 4.750 | 120.65 | 5.5000 | 139.70 | 2.398 | 60.91 | 17.325 | 358.78 |

Safe working loads provide an approximate 5:1 safety factor.

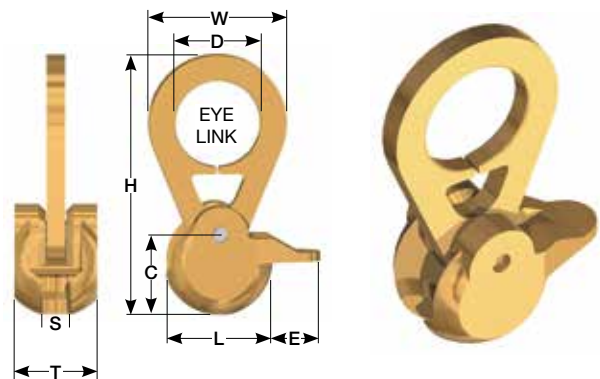
To order, specify: quantity, name, item number and finish.

MB DogBone System Lifting Hardware

DB-3 MB DOGBONE LIFTING BODY – EYE LINK

1-Ton, 2-Ton, 4-Ton, 8-Ton and 16-Ton

The DB-3 MB DogBone Lifting Body – Eye Link is designed with a “T” shaped slot in the body of the lifter that engages the head of a DogBone Anchor. Attached to the main body is the solid plate eye link. It rotates about a pin in the main body so rigging does not have to be reversed when rotating a panel.



| DB-3 DOGBONE LIFTING BODY – LIFTING BODY WITH LINK | | | | | | | | | | | | | | | | | | | |
|--|----------------|--------|-------|-------|--------|-------|--------|-------|--------|--------|--------|--------|-------|--------|--------|-------|-------|-------|--------|
| Lifting Body Mark | Safe Work Load | | | W | | D | | C | | L | | E | | H | | S | | T | |
| | Tons | lbs. | kN | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm |
| 1–1.3 T | 1 | 2000 | 8.9 | 2.500 | 63.50 | 1.625 | 41.28 | 1.750 | 44.45 | 2.125 | 53.98 | 1.125 | 28.58 | 5.375 | 136.53 | .438 | 11.13 | 1.344 | 34.14 |
| 1.5–2.5 T | 2 | 4000 | 17.8 | 3.500 | 88.90 | 2.375 | 60.33 | 1.875 | 47.63 | 2.500 | 63.50 | 1.438 | 36.53 | 6.688 | 169.88 | .688 | 17.48 | 1.563 | 39.70 |
| 3.0–5.0 T | 4 | 8000 | 35.6 | 3.938 | 100.00 | 2.438 | 61.93 | 2.563 | 65.10 | 3.250 | 82.55 | 2.0002 | 50.80 | 7.938 | 201.63 | .875 | 22.23 | 2.250 | 57.15 |
| 6.0–10.0 T | 8 | 16,000 | 71.1 | 5.813 | 147.65 | 3.938 | 100.00 | 3.000 | 76.20 | 4.125 | 104.78 | 2.500 | 63.50 | 10.813 | 274.65 | 1.165 | 29.59 | 2.875 | 73.03 |
| 12.0 – 20.0 T | 16 | 32,000 | 142.2 | 7.313 | 185.75 | 4.750 | 120.65 | 4.438 | 112.73 | 5.5000 | 139.70 | 2.398 | 60.91 | 14.125 | 358.78 | 1.625 | 41.28 | 4.500 | 114.30 |

Safe working loads provide an approximate 5:1 safety factor.

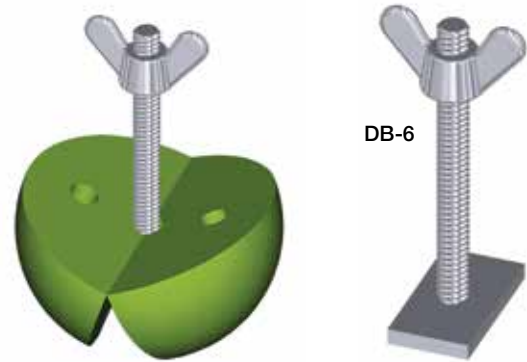
To order, specify: quantity, name, item number and finish.

MB DogBone System Recess Formers

DB-5 MB DOGBONE RECESS FORMER

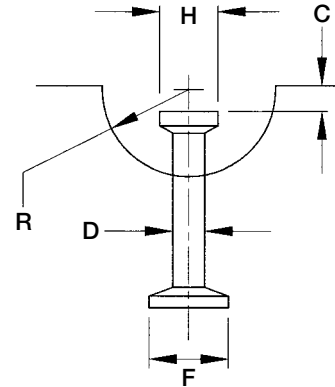
1-Ton, 2-Ton, 4-Ton, 8-Ton, 12-Ton and 16-Ton

The DB-5 DogBone Recess Former is a reusable unit furnished with a threaded stud and wing nut. The threaded stud extends through the form and the accompanying wing nut secures the unit to the form. Removal of the form is required to expose the embedded anchor.



DB-6 MB DOGBONE THREAD BOLT/PLATE

The DB-6 DogBone Thread Bolt/Plate is an available replacement for the threaded stud of the DB-5 DogBone Recess Former, shown above.



DB-5 ANCHOR & RECESS FORMER DIMENSIONAL DATA CHART

| DogBone Anchor Size | D Anchor Shank Diameter | | H Anchor Head Diameter | | F Anchor Foot Diameter | | C Cover | | Diameter of Recess Former | | Height of Recess Former (R) | |
|---------------------|----------------------------|----|---------------------------|----|---------------------------|----|------------|----|---------------------------|-----|-----------------------------|----|
| | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm |
| 1 Ton | 3/8" | 10 | 3/4" | 19 | 1 | 25 | 3/8" | 10 | 2 3/8" | 60 | 1 3/16" | 30 |
| 2 Ton | 9/16" | 14 | 1 1/32" | 26 | 1 3/8" | 35 | 7/16" | 11 | 3 | 75 | 1 9/16" | 37 |
| 4 Ton | 3/4" | 20 | 1 7/16" | 36 | 2 | 50 | 9/16" | 15 | 3 3/4" | 95 | 1 7/8" | 47 |
| 6 Ton | 5/16" | 24 | 1 7/8" | 47 | 2 3/8" | 60 | 9/16" | 15 | 4 3/4" | 120 | 2 5/16" | 59 |
| 8 Ton | 1 1/8" | 28 | 1 7/8" | 47 | 2 3/4" | 70 | 9/16" | 15 | 4 3/4" | 120 | 2 5/16" | 59 |
| 12 Ton | 1 3/8" | 34 | 2 3/4" | 70 | 3 3/8" | 85 | 9/16" | 15 | 6 3/8" | 162 | 3 1/8" | 80 |
| 16 Ton | 1 1/2" | 39 | 2 3/4" | 70 | 3 7/8" | 98 | 9/16" | 15 | 6 3/8" | 162 | 3 1/8" | 80 |

To order, specify: quantity, name, item number and finish.

MB DogBone System Recess Formers

DB-15 MB DOGBONE RECESS FORMER – MAGNETIC

1-Ton, 2-Ton and 4-Ton

The DB-15 DogBone Recess Former - Magnetic is available for quick and easy reusable applications where steel precast forms are being used.



To Order, Specify: quantity, name and system size.

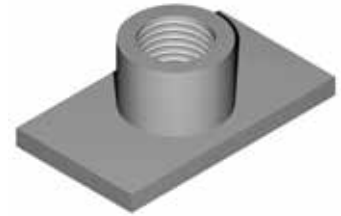
MB DogBone System Recess Formers

DB-24 MB DOGBONE THREADED NUT

1-Ton, 2-Ton, 4-Ton, 8-Ton, 12-Ton and 16-Ton

The DB-24 DogBone Threaded Nut is available as a replacement part for use on DB-19 Recess Former – Narrow W/Threaded Hole and DB-22 Recess Former – W/Inside Threads.

To Order, Specify: quantity, name and system size.



DB-25 MB DOGBONE STUD

1-Ton, 2-Ton, 4-Ton, 8-Ton, 12-Ton and 16-Ton

The DB-25 DogBone Stud is available for use with DB-19 Recess Former – Narrow W/Threaded Hole and DB-22 Recess Former – W/Inside Threads. It has one fixed wing nut and one free-running wing nut for easy attachment to the recess former and to draw the recess form tight to the form.

To Order, Specify: quantity, name and system size.



DB-26 MB DOGBONE WING NUT

1-Ton, 2-Ton, 4-Ton, 8-Ton, 12-Ton and 16-Ton

The DB-26 DogBone Wing Nut is available as a system replacement part.

To Order, Specify: quantity, name and system size.



(DB-31 MB DOGBONE SHEAR BAR – ANCHOR

DB-33 MB DOGBONE SHEAR BAR – CUP

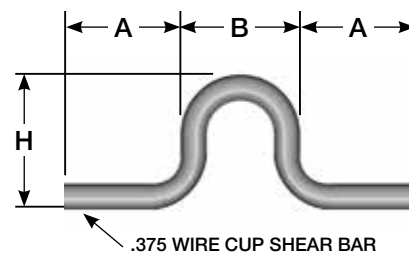
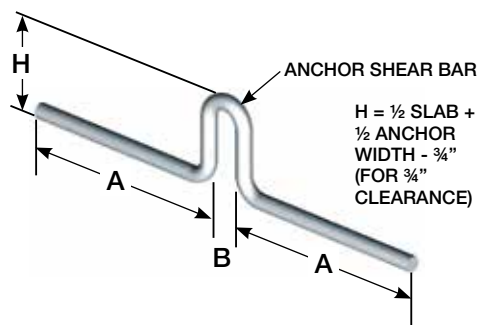
1-Ton, 2-Ton, 4-Ton, 6-Ton and 8-Ton

The DB-31 DogBone Shear Bar – Anchor and DB-33 DogBone Shear Bar – Cup are used in conjunction with the DB-52 DogBone Anchor when performing an edge lift. Without the shear bars, the lifting stress may be applied to the concrete above the anchor and cause concrete spalling. The properly installed shear bars transfer the lifting stress back into the anchor and the lower concrete, thus preventing the spalling.

| Anchor Rated Load | Slab Thickness | | A | | B | | H (Height) | | Deformed Wire Dia. | |
|-------------------|----------------|-----|-----|-----|---------|----|------------|-----|--------------------|-----|
| | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm |
| 1T | 5 | 125 | 8 | 200 | ½" | 13 | 1 15/16" | 49 | .375 | 9.5 |
| 2T | 5 | 125 | 8 | 200 | 1 1/16" | 17 | 2 1/8" | 54 | .375 | 9.5 |
| 2T | 6 | 150 | 10 | 250 | 1 1/16" | 17 | 2 5/8" | 66 | .375 | 9.5 |
| 4T | 7 1/2" | 188 | 12 | 300 | 7/8" | 22 | 3 7/16" | 87 | .375 | 9.5 |
| 6T | 7 1/2" | 188 | 12 | 300 | 1 1/16" | 27 | 3 1/2" | 89 | .375 | 9.5 |
| 8T | 10 | 250 | 14 | 400 | 1 1/4" | 31 | 4 3/8" | 124 | .375 | 9.5 |

| Anchor Rated Load | Slab Thickness | | A | | B | | H (Height) | | Deformed Wire Dia. | |
|-------------------|----------------|-----|-----|-----|--------|-----|------------|-----|--------------------|-----|
| | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm |
| 1T | 5 | 125 | 8 | 200 | 2 3/8" | 60 | 3 1/16" | 92 | .375 | 9.5 |
| 2T | 5 | 125 | 8 | 200 | 3 | 75 | 4 | 100 | .375 | 9.5 |
| 2T | 6 | 150 | 10 | 250 | 3 | 75 | 4 1/2" | 113 | .375 | 9.5 |
| 4T | 7 1/2" | 188 | 12 | 300 | 3 3/4" | 94 | 5 5/8" | 141 | .375 | 9.5 |
| 6T | 7 1/2" | 188 | 12 | 300 | 4 3/4" | 119 | 6 1/8" | 153 | .375 | 9.5 |
| 8T | 10 | 250 | 14 | 400 | 4 3/4" | 119 | 7 3/8" | 185 | .375 | 9.5 |

To Order, Specify: quantity, name and system size.



MB DogBone System Anchors with Recess Members

MB DOGBONE WITH DISPOSABLE RECESS MEMBER 2-Ton, 4-Ton and 8-Ton

The MB DogBone Anchor comes prepackaged with an installed disposable recess member for simpler installation. No longer will you need to keep up with a reusable member and maintain them prior to installation.

To Order, Specify: quantity, name and system size.



Utility Lifting System



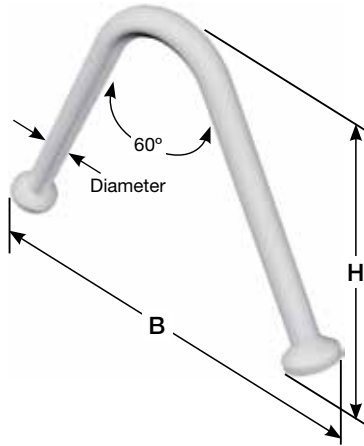
The Hook-Lift Utility Lifting System is simple in design and construction, yet is exceptionally strong and versatile in application. It can be used in face lift or edge lift applications and requires no additional reinforcement or special lifting hardware.

V-Anchor Lifting System Technical Information

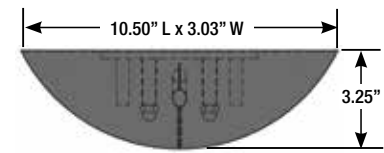
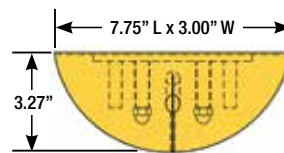
V-ANCHOR LIFTING SYSTEM

The MB V-Anchor System is the most thoroughly tested clutchless system available. Complete independent tests included various concrete strengths, slab thicknesses, shear and tension, and results with both the 5-Ton and the larger 7-Ton Hook Recess Members.

The MB V-Anchor System is the safest and most reliable clutchless system available. The testing ensures the engineer has the data and performance information needed for proper anchor and recess selection for the conditions of use. The MB V-Anchor System was developed and tested with considerations for all normal installations. Meadow Burke Engineering is available to assist with any unusual application or use. V-Anchors are available in plain and hot-dipped galvanized.



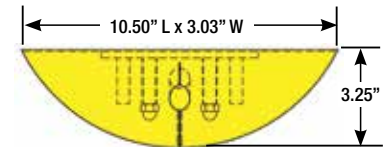
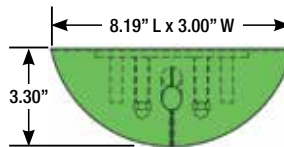
Optional Pipe Mesh Clips can be added to the V-Anchors to facilitate attachment to pipe mesh. Clip positioning is optimized and custom to plant specifications.



**V-Anchor
Wire Diameter 0.444"**

| MB Item | MB Description | Wire Diameter | Slab Thickness | Anchor Height (A) | Anchor Spread (B) | Safe Working Load (lbs) 4:1 | | | | Safe Working Load (lbs) 4:1 | | | |
|---------|----------------|---------------|----------------|-------------------|-------------------|---|-------|----------|-------|--|-------|----------|-------|
| | | | | | | 0.444 Ø V-Anchor Capacities Using 5-Ton Hook Recess Color: Orange | | | | 0.444 Ø V-Anchor Capacities Using 7-Ton Hook Recess Color: Black | | | |
| | | | | | | 2500 PSI | | 4000 PSI | | 2500 PSI | | 4000 PSI | |
| Tension | Shear | Tension | Shear | Tension | Shear | Tension | Shear | | | | | | |
| MBV4444 | MB V-Anchor | 0.444 | 4" | 3.125 | 5.25 | 1,970 | 3,900 | 2,490 | 4,940 | 1,720 | 2,160 | 2,170 | 2,730 |
| MBV5444 | MB V-Anchor | 0.444 | 5" | 3.75 | 6.00 | 3,020 | 5,140 | 3,820 | 6,510 | 2,720 | 4,720 | 3,440 | 5,970 |
| MBV6444 | MB V-Anchor | 0.444 | 6" | 4.75 | 7.19 | 4,290 | 6,450 | 5,430 | 8,170 | 3,430 | 5,680 | 4,350 | 7,180 |

1. Minimum edge distance for tension is 2X anchor depth and 18" for shear.
2. 5 ton and 7 ton recess void formers provide a 5/8" anchor setback from the concrete surface.



**V-Anchor
Wire Diameter 0.671"**

| MB Item | MB Description | Wire Diameter | Slab Thickness | Anchor Height (A) | Anchor Spread (B) | Safe Working Load (lbs) 4:1 | | | | Safe Working Load (lbs) 4:1 | | | |
|----------|----------------|---------------|----------------|-------------------|-------------------|--|---------|----------|---------|---|---------|----------|---------|
| | | | | | | 0.671 Ø V-Anchor Capacities Using 5-Ton Hook Recess Color: Green | | | | 0.671 Ø V-Anchor Capacities Using 7-Ton Hook Recess Color: Yellow | | | |
| | | | | | | 2500 PSI | | 4000 PSI | | 2500 PSI | | 4000 PSI | |
| Tension | Shear | Tension | Shear | Tension | Shear | Tension | Shear | | | | | | |
| MBV5671 | MB V-Anchor | 0.671 | 5" | 3.75 | 6.44 | 3,220 | 4,790 | 4,070 | 5,870 | 2,690 | 4,500 | 3,400 | 5,700 |
| MBV6671 | MB V-Anchor | 0.671 | 6" | 4.75 | 7.56 | 4,500 | 7,610 | 5,700 | 9,520 | 3,840 | 6,150 | 4,860 | 7,800 |
| MBV7671 | MB V-Anchor | 0.671 | 7" | 5.75 | 8.75 | 5,910 | 10,600* | 6,970 | 11,650* | 5,000 | 7,800 | 6,320 | 9,900 |
| MBV8671 | MB V-Anchor | 0.671 | 8" | 6.75 | 9.88 | 7,180 | 14,250* | 9,080 | 14,250* | 6,160 | 9,450 | 7,790 | 12,000 |
| MBV10671 | MB V-Anchor | 0.671 | 10" | 8.75 | 12.25 | 11,650* | 14,250* | 11,650* | 14,250* | 11,650 | 14,250* | 11,650 | 14,250* |

* The SWL of the MB V-Anchors in these conditions exceed the SWL of the hook.

V-Anchor Lifting System Technical Information

V-ANCHOR INSTALLATION

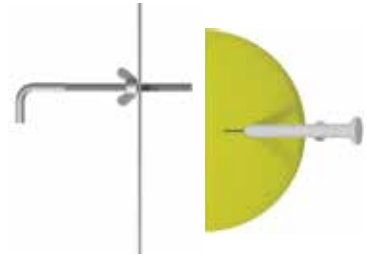
The V-Anchor can be set in various ways to satisfy job requirements, such as the functional shape of the precast element to be handled. An edge distance of two times the anchor depth must be maintained. Adjust anchor capacity if using concrete strength different than that referenced in the Load Data.



SETTING WITH A 3/8" Ø & 1/2" Ø WINGNUT STYLE BOLT

Installation with the 3/8" or 1/2" bolt requires a properly placed hole to be drilled in the form.

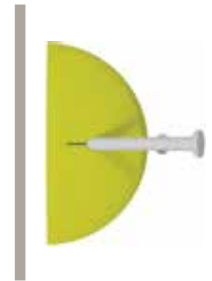
- Assemble the anchor/recess member.
- Insert the bolt through the previously drilled hole.
- Line up the bolt and the recess member and screw the bolt into the recess member.
Use the wing nut handle of the bolt to facilitate fastening of the units.
- Draw the recess member/anchor assembly tight to the form with the free-running wing nut on the bolt.



SETTING WITH V-ANCHOR HOLDING PLATE & MAGNETIC HOLDING PLATE

Installation without drilling holes in the form, can be accomplished using the holding plate.

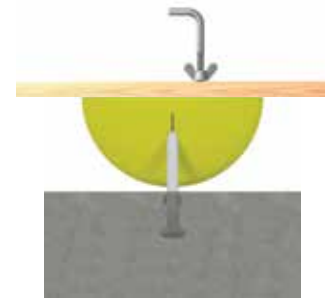
- Attach the holding plate to the form. It can be nailed, screwed, magnetically held or welded.
- Assemble the anchor/recess member.
- Center the recess member over the protruding pins of the holding plate and push the recess member onto the pins until the recess member is firmly against the form.



WET-SETTING THE V-ANCHOR ASSEMBLY

Wet-setting the V-Anchor/recess member assembly is easy to accomplish but care must be taken to ensure that the concrete is well consolidated around the legs of the anchor.

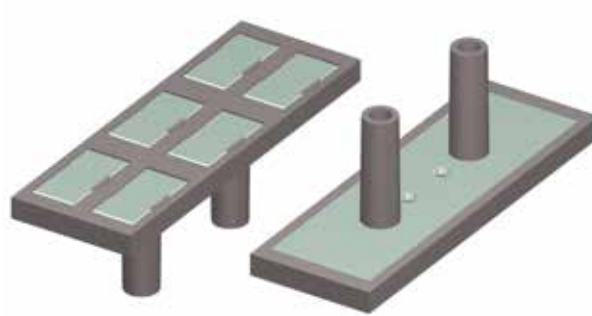
- Assemble the anchor/recess member.
- Use duct tape to seal the top cavities of the recess member.
- For added security, a Holding Plate can be added before the duct tape.
- Work the assembly down into the concrete until the top of the recess member is flush with the surface of the concrete. If necessary, a small piece of lumber can be attached to the recess member that will allow the assembly to "float" on the surface of the concrete.



V-Anchor Lifting System Technical Information

MB V-ANCHOR PLACEMENT OPTIONS:

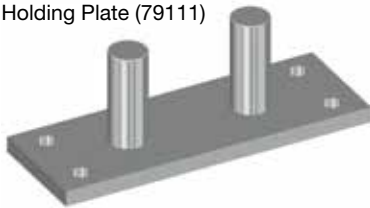
MB V-Anchor system versatility allows for many placement options. Using the mounting accessories listed here, the V-Anchor can be placed on the form face down, on the inside or outside form using through bolts or Holding Plates, or wet-set after the concrete has been placed. Once the position and load direction is determined, the capacity in shear or tension, or combination, will assist in proper MB V-Anchor and Recess Member selection.



Magnetic Holding Plate (79188)

| MB Number | MB Description | V-Anchor Wire Dia. | Hook Size | Length | Depth | Width | Color |
|-------------|--------------------|--------------------|-----------|--------|-------|-------|--------|
| MB-VRM5T444 | MB V-ANC RM 5T.444 | 0.444 | 5-Ton | 7.75" | 3.27" | 3.00" | Orange |
| MB-VRM7T444 | MB V-ANC RM 7T.444 | 0.444 | 7-Ton | 10.50" | 3.25" | 3.03" | Black |
| MB-VRM5T671 | MB V-ANC RM 5T.671 | 0.671 | 5-Ton | 8.19" | 3.30" | 3.00" | Green |
| MB-VRM7T671 | MB V-ANC RM 7T.671 | 0.671 | 7-Ton | 10.50" | 3.25" | 3.03" | Yellow |

Holding Plate (79111)



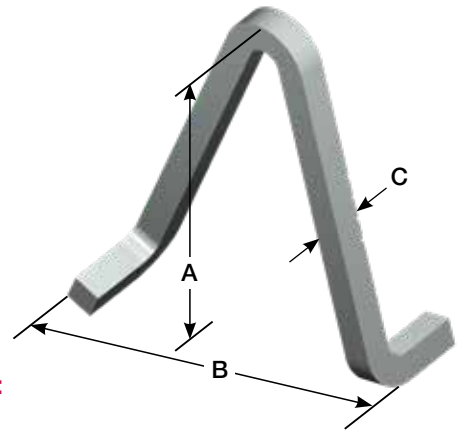
V-Anchor Recess has $\frac{3}{8}$ " ϕ and $\frac{1}{2}$ " ϕ coil nuts for easy installation and



Hook-Lift Lifting System Anchors

HOOK-LIFT ANCHOR

The Hook-Lift Anchor is unique in concept and design. It can be used very effectively in a wide variety of utility precast concrete applications. Wall segments, manholes, risers, flat slabs, bases, lids, boxes, vaults and concrete pipe can all be easily handled with the Hook-Lift Anchor. No additional reinforcement is required and lifting can be accomplished without special hardware. Hook-Lift Anchors are ordered by slab size. Refer to the table for slab sizes, anchor dimensions and safe working loads. The Hook-Lift Anchor is available in plain or hot dip galvanized finish. *Stainless steel available by special order.*



To Order, Specify: quantity, name and finish.

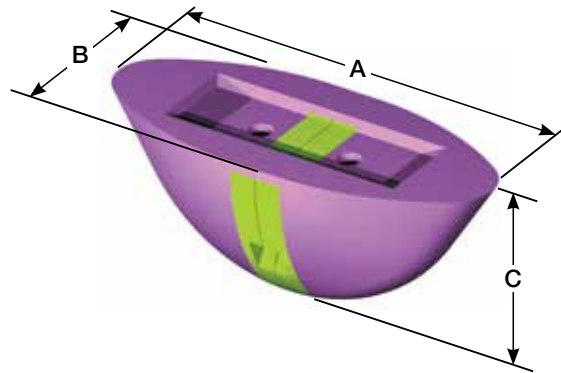
| PHYSICAL DATA | | | | | |
|---------------|--------------------------|------------|--------|--------|--------------|
| Item Number | Description | Dimensions | | | Weight (lbs) |
| | | A | B | C | |
| 79U40 | 4" Anchor | 3 1/8" | 6" | 5/8" | 1.01 |
| 79U50 | 5" Anchor | 4 1/8" | 6" | 5/8" | 1.35 |
| 79U55 | 5-1/2" Anchor | 4 5/8" | 6" | 5/8" | 1.50 |
| 79U60 | 6" Anchor | 5 1/8" | 6 5/8" | 5/8" | 1.65 |
| 79U80 | 8" Anchor | 7 1/8" | 8 1/2" | 5/8" | 2.30 |
| 79URM | Disposable Recess Member | 8 1/2" | 3 1/2" | 3 3/8" | 1.42 |
| 79URC-1 | Reusable Recess Member | 8 1/2" | 3 1/2" | 3 3/8" | 1.42 |

| LOAD CHART: EDGE INSTALL | | | | |
|--------------------------|--------------------|---------------|-------------|---------------------|
| Item Number Load | Concrete Thickness | Tension (lbs) | Shear (lbs) | Direction of Anchor |
| 79U80 | 10" | 8,000 | 3,569 | 10" |
| 79U80 | 10" | 5,000 | 2,478 | 10" |

Safety Factor is approximately 4:1 in 4000 PSI concrete

| LOAD CHART: FACE INSTALL | | | | |
|--------------------------|------------------------------|---------------|-------------|-----------|
| Item Number Load | Concrete Thickness in inches | Tension (lbs) | Shear (lbs) | 45° (lbs) |
| 79U40 | 4" | 1,800 | 2,300 | 2,025 |
| 79U50 | 5" | 3,750 | 6,000 | 4,400 |
| 79U55 | 5 1/2" | 5,000 | 7,800 | 5,200 |
| 79U60 | 6" | 5,700 | 9,520 | 6,100 |
| 79U80 | 8" | 9,840 | 12,000 | 10,000 |

Safety Factor is approximately 4:1 in 4000 PSI concrete
1.5*A+B/2 in tension and 18" in shear



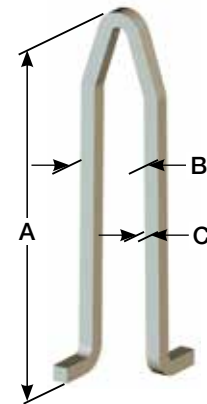
HOOK-LIFT EDGE ANCHOR

The Hook-Lift Edge Anchor is similar to the face lift anchor, but is a little different in profile to better handle the stresses involved in edge lifts. The Hook-Lift Edge Anchor is available in two sizes and in plain or hot dip galvanized finish.

| PHYSICAL DATA & LOAD CHART | | | | | | | | | |
|----------------------------|------------------------|------------|--------|------|--------------|-------------------------|--------------------|------------------|---------------------|
| Item Number | Description | Dimensions | | | Weight (lbs) | Concrete Thickness (in) | Edge Tension (lbs) | Edge Shear (lbs) | Edge 45° Load (lbs) |
| | | A | B | C | | | | | |
| 79UEL | Edge-Lift Anchor | 15" | 3 1/4" | 5/8" | 4.31 | 5" | 5,750 | N/A | N/A |
| 79UELS | Edge-Lift Anchor Short | 8" | 3 1/4" | 5/8" | 2.21 | 5" | 3,250 | N/A | N/A |

Safety Factor is approximately 4:1 in 4000 PSI concrete
1. Minimum edge distance is equal to 2 times anchor depth for tension values.

To order, specify: quantity, name and finish.



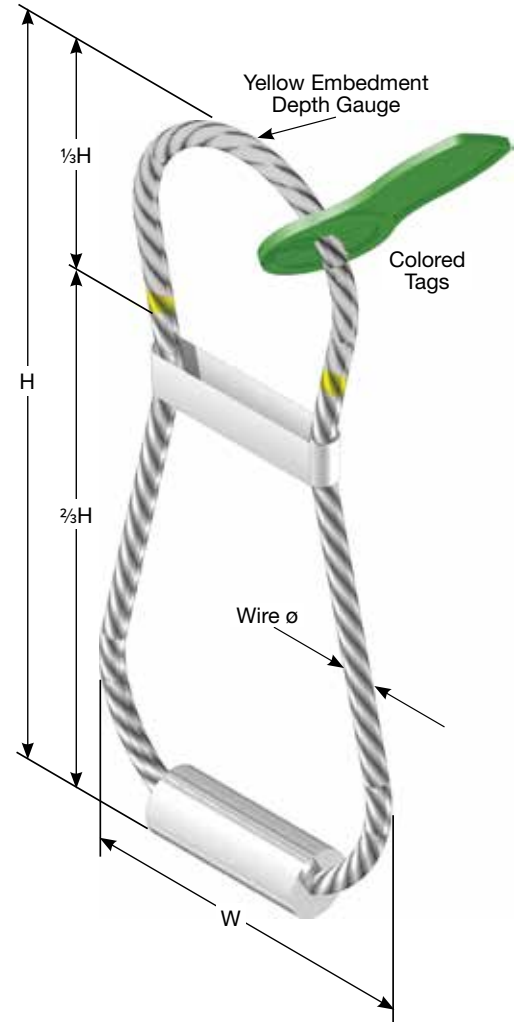
MB Cable Lift Loop + Plus System

MB CABLE LIFT LOOP + PLUS

MB Cable Lift Loop + Plus System was developed and tested as a high load system. Each lift loop in the Plus system was tested and approved to the listed loads. These tests were conducted domestically to ensure that the capacities meet the required 4:1 in 2,500 psi concrete. This strong and economical lifting solution may be used in many applications, including, but not limited to utility products, beams and columns. The wide selection of Plus System Loops available ensures the most economical lifting cable for the load requirements. The higher the capacity of the Plus System Loops means heavy units can be lifted without changing to a larger cable. For example, the capacity of the Plus System "White" Lift Loop is rated at 2,000# SWL, while the lesser systems are rated at 1,300#. All of the Plus System capacities listed are for tension or shear loads, and are available in hot dipped galvanized.

These capacities are based on the cable lift loop having an embedment depth of $\frac{2}{3}$ of the overall length. This means that $\frac{1}{3}$ of the lift loop is exposed and available for attachment to a lifting hook or shackle. To ensure that the cable is embedded to the correct depth, the top of each Plus System Loop is coated in yellow to the $\frac{1}{3}$ height mark. Place the loop into the concrete until only the yellow coated portion is exposed. This is visual assurance that at least $\frac{2}{3}$ of the cable is embedded. In addition, the yellow top and the special Plus System cable identification tag are indicators that the MB Cable Lift Loop + Plus System was used.

The MB Cable Lift Loop + Plus System is the only high capacity, fully tested system available. Add the embedment depth guide feature, and it becomes the safest system to use.



| MB CABLE LIFT LOOP + PLUS SYSTEM | | | | | | | | |
|----------------------------------|---|-------------|--------------------|--------|---------|-------|------------------------------------|--------------------------------------|
| MB Number | MB Plus System | | | Wire Ø | Height | Width | Minimum Edge Distance ³ | Minimum Corner Distance ⁴ |
| | Description | Color Tag | SWL ^{1,2} | | | | | |
| CLPS0.3K | Cable Lift Loop 1/8" x 6" Yellow | Yellow | 500 lbs | 1/8" | 6" | 2.36" | 6" | 7 1/2" |
| CLPS2K | Cable Lift Loop 1/4" x 8 1/4" White | White | 2,000 lbs | 1/4" | 8 1/4" | 3.94" | 8 1/2" | 10 1/2" |
| CLPS2.3K | Cable Lift Loop 9/32" x 8 7/8" Red | Red | 2,300 lbs | 9/32" | 8 7/8" | 4.31" | 9" | 11 1/2" |
| CLPS3K | Cable Lift Loop 5/16" x 9 1/4" Purple | Purple | 3,000 lbs | 5/16" | 9 1/4" | 4.75" | 9 1/2" | 12" |
| CLPS4.5K | Cable Lift Loop 3/8" x 11" Light Green | Light Green | 4,500 lbs | 3/8" | 11" | 5.13" | 11" | 14" |
| CLPS5.2K | Cable Lift Loop 25/64" x 12 3/8" Charcoal | Charcoal | 5,200 lbs | 25/64" | 12 3/8" | 5.50" | 12 1/2" | 15 1/2" |
| CLPS10.4K | Cable Lift Loop 5/8" x 15 3/8" Blue | Blue | 10,400 lbs | 5/8" | 15 3/8" | 7.69" | 15 1/2" | 19 1/2" |

Notes:

- Listed capacities have a 4:1 safety factor, tension or shear perpendicular to plane of loop.
- Listed capacities are based on normal weight concrete with minimum 2500psi compressive strength. Capacities shall not be increased for higher strength concrete.
- Measured perpendicular to the plane of the loop.
- Measured parallel to the plane of the loop, from the center of the loop.

Coil Lifting Inserts



Meadow Burke manufactures many coil inserts and accessories that are implemented and effectively used in the lifting and handling of precast concrete elements. Unusual and/or complicated lifting problems are often accomplished with a coil insert solution.

Coil Lifting Insert Technical Information

PROPER BOLT LENGTH

It is extremely important to make sure that attachment/lifting bolts are the proper length and do not bottom out against the concrete, preventing proper tightening of the lifting hardware.

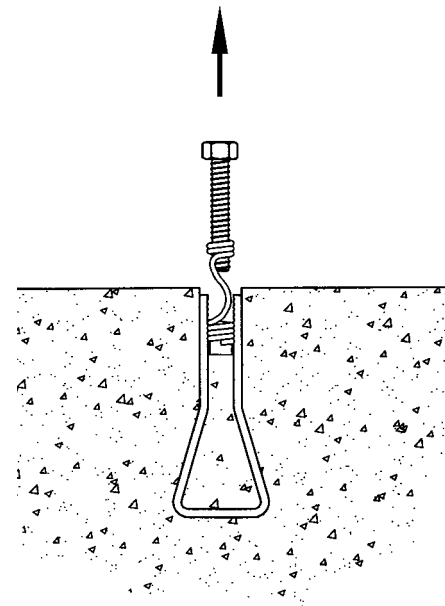
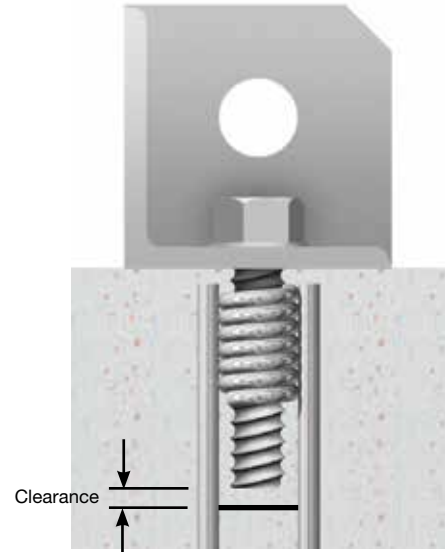
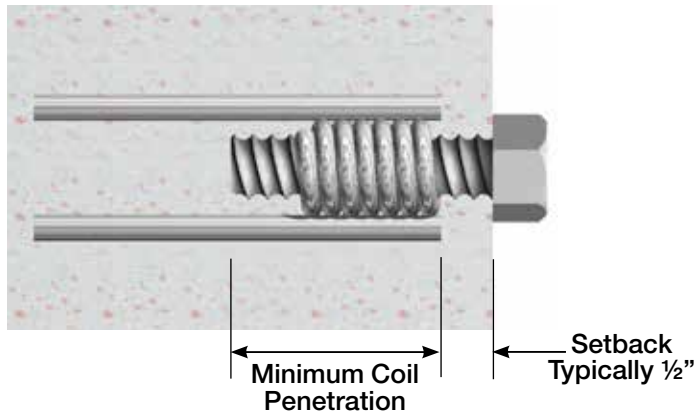
BOLT TORQUE

The user of this product should take precautions against “overtorque.” Torqueing a bolt leads to pretensioning the insert. The user should check torque specifications do not exceed the SWL of the insert. Snug-tight fit is generally all that is required when using the coil products. Tension due to the bolt torque may be estimated using the following equation:

$$F = T / (k_t \cdot d_b) \text{ where } T = \text{torque, } d_b = \text{bolt diameter, } k_t = 0.2$$

PROPER COIL PENETRATION

The most common type of insert failure is caused by the lack of sufficient bolt penetration through the coil of the insert. Under applied load, inadequate bolt penetration of the insert coil will cause the upper part of the coil to unwind and pull out of the insert. This is commonly referred to as the “corkscrew” effect.

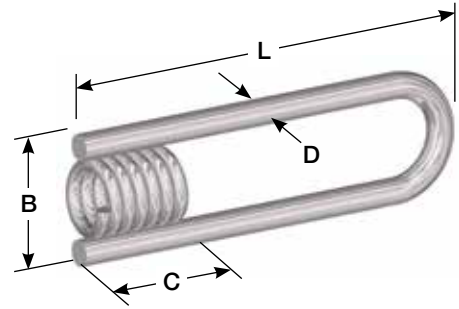


IMPORTANT: In precast concrete plant operations, coil bolts should be periodically inspected and replaced if signs of wear or bending are present. Worn or bent bolts should be immediately discarded. Never use a worn or bent bolt for any purpose and never attempt to straighten a bent bolt.

Coil Lifting Inserts

CX-2 COIL LOOP INSERT – STRAIGHT

The CX-2 Coil Loop Insert is one of the most widely used inserts in the precast industry, and used primarily to lift small precast sections. It is available in the sizes and strengths shown in the table and is also available in special or custom variations to meet a particular need. The Coil Loop Insert – Straight is available in plain, hot dip galvanize finish, or stainless steel finish. *The insert is not recommended as an edge lift insert by Meadow Burke.*



CX-2 COIL LOOP INSERT - STRAIGHT DATA

| Bolt Diameter in. | Insert Length L In. | Safe Work Load (Tension) lbs. | Safe Work Load (Shear) lbs. | B in. | Coil Length C in. | Wire Diameter D in. | Edge Distance (Tension) ³ in. | Edge Distance (Shear) ⁴ in. |
|----------------------|---------------------------|-------------------------------------|-----------------------------------|----------|-------------------------|---------------------------|--|--|
| ½ | 4 | 2250 | 2000 | 1 ⅜ | 1 ⅜ | .225 | 7 | 9 |
| ½ | 6 | 3600 | 3000* | 1 ⅜ | 1 ⅜ | .306 | 10 | 10 |
| ¾ | 4 | 3100 | 2800 | 1 ⅞ | 1 ⅞ | .306 | 7 | 10 |
| ¾ | 6 | 4500 | 4200 | 1 ⅞ | 1 ⅞ | .375 | 10 | 12 |
| 1 | 6 | 4500 | 4500 | 2 ⅞ | 2 ⅞ | .375 | 10 | 12 |
| 1 | 8 | 4500 | 4500 | 2 ⅞ | 2 ⅞ | .375 | 10 | 12 |
| 1 ¼ | 8 | 6000 | 6000 | 1 ½ | 2 ⅞ | .440 | 13 | 13 |

Table is based on minimum concrete strength of 3,000 psi and a 4:1 safety factor.

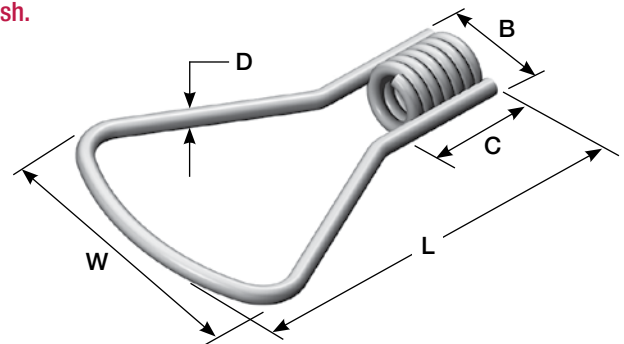
1. Inserts must have a ½" setback from the surface of the concrete and sufficient coil penetration by the lifting bolt.
2. Minimum edge distance apply to 2 edges only. All other edges require 2x length of insert.
3. Minimum corner distance shall be 1.5x minimum edge distance for shear when loaded towards the edge.
4. Minimum anchor spacing shall be 2X the edge distance for tension and 3X the edge distance for shear.
5. Anchors with the asterisks exceed the shear capacity of the coil rod.

To Order, Specify: quantity, name, bolt diameter, length (L dimension) and finish.

CX-4 COIL LOOP INSERT – FLARED

The CX-4 Coil Loop Insert – Flared is similar to the straight unit above, but has a flared loop for increased tensile capacity. This being a two-strut insert, it is not recommended for use as an edge lift insert. The Coil Loop Insert–Flared is available plain, hot dip galvanize finish, or stainless steel finish.

WARNING: This insert is not efficient as an edge lifting insert and is not recommended as such by Meadow Burke. This insert will usually fail when low strength concrete spalls on top of the insert and will generally result in loss of the panel.



CX-4 COIL LOOP INSERT - FLARED DATA

| Bolt Diameter in. | Insert Length L In. | Safe Work Load (Tension) lbs. | Safe Work Load (Shear) lbs. | W in. | B in. | Coil Length C in. | Wire Diameter D in. | Edge Distance (Tension) in. | Edge Distance (Shear) in. |
|----------------------|---------------------------|-------------------------------------|-----------------------------------|----------|----------|-------------------------|---------------------------|-----------------------------------|---------------------------------|
| ¾ | 6 | 4750 | 4300 | 3 ½ | 1 ⅞ | 1 ¾ | .375 | 10 | 12 |
| ¾ | 9 | 4750 | 4750 | 5 ½ | 1 ⅞ | 1 ¾ | .375 | 10 | 13 |
| 1 | 9 | 4750 | 4750 | 5 ½ | 2 | 2 ⅞ | .375 | 10 | 13 |
| 1 | 9 | 8000 | 7250 | 5 ¾ | 2 ½ | 2 ⅞ | .440 | 15 | 16 |
| 1 | 12 | 4750 | 4750 | 5 ½ | 2 | 2 ⅞ | .375 | 10 | 13 |
| 1 | 12 | 8000 | 7250 | 5 ¾ | 2 ½ | 2 ⅞ | .440 | 15 | 16 |
| 1 ¼ | 12 | 4750 | 4750 | 5 ¾ | 2 ½ | 2 ⅞ | .375 | 10 | 13 |
| 1 ¼ | 12 | 8000 | 7250 | 5 ¾ | 2 ½ | 2 ⅞ | .440 | 15 | 16 |
| 1 ½ | 12 | 8000 | 7250 | 5 ¾ | 2 ¾ | 2 ⅞ | .444 | 15 | 16 |

Table is based on minimum concrete strength of 3,000 psi and a 4:1 safety factor.

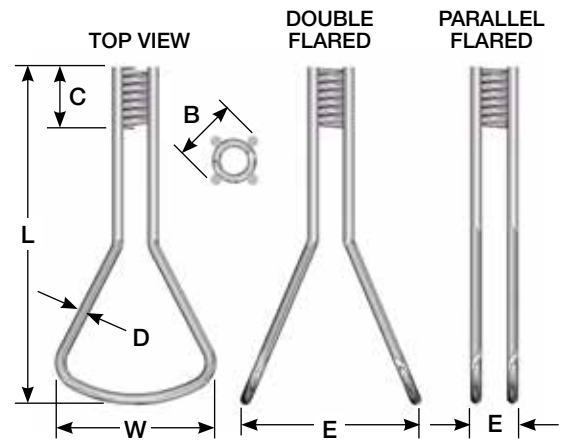
1. Inserts must have a ½" setback from the surface of the concrete and sufficient coil penetration by the lifting bolt.
2. Minimum edge distance apply to 2 edges only. All other edges require 2x length of insert.
3. Minimum corner distance shall be 1.5x minimum edge distance for shear when loaded towards the edge.
4. Minimum anchor spacing shall be 2X the edge distance for tension and 3X the edge distance for shear.

To Order, Specify: quantity, name, bolt diameter, length (L dimension) and finish.

Coil Lifting Inserts

CX-6 COIL LOOP INSERT – DOUBLE FLARED

The CX-6 Coil Loop Insert – Double Flared is a four-strut insert available in two styles: the standard flared struts version and the parallel struts version for more confined applications where space is lacking. The four-strut insert offers increased shear and tension capacities and is used effectively in many precast concrete lifting and handling applications. Standard length of the Coil Loop Insert – Double Flared is 12" in the bolt diameters shown in the table. It is available in plain, hot dip galvanize, or stainless steel finish.



CX-6 COIL LOOP INSERT - DOUBLE FLARED DATA

| Bolt Diameter in. | Insert Length L in. | Safe Work Load (Tension) lbs. | Safe Work Load (Shear) lbs. | B in. | Coil Length C in. | Wire Diameter D in. | W in. | E in. | Edge Distance (Tension) ³ in. | Edge Distance (Shear) ⁴ in. |
|-------------------|---------------------|-------------------------------|-----------------------------|--------|-------------------|---------------------|-------|-------|--|--|
| PARALLEL | | | | | | | | | | |
| 1 | 12 | 9500 | 9500 | 2 1/16 | 2 1/8 | .375 | 5 1/2 | 1 1/4 | 15 | 18 |
| 1 | 12 | 13,500 | 13,500* | 2 1/4 | 2 1/8 | .440 | 5 3/4 | 1 1/4 | 20 | 24 |
| 1 1/4 | 12 | 9500 | 9500 | 2 5/16 | 2 1/8 | .375 | 5 3/4 | 1 1/2 | 15 | 18 |
| 1 1/4 | 12 | 13,500 | 13,500* | 2 1/2 | 2 1/8 | .440 | 5 3/4 | 1 1/2 | 20 | 24 |
| DOUBLE | | | | | | | | | | |
| 1 | 12 | 9500 | 9500 | 2 1/16 | 2 1/8 | .375 | 5 1/2 | 5 1/2 | 15 | 18 |
| 1 | 12 | 13,500 | 13,500* | 2 1/4 | 2 1/8 | .440 | 5 3/4 | 5 3/4 | 20 | 24 |
| 1 1/4 | 12 | 9500 | 9500 | 2 5/16 | 2 1/8 | .375 | 5 3/4 | 5 3/4 | 15 | 18 |
| 1 1/4 | 12 | 13,500 | 13,500 | 2 1/2 | 2 1/8 | .440 | 5 3/4 | 5 3/4 | 20 | 24 |
| 1 1/2 | 12 | 9500 | 9500 | 2 9/16 | 2 1/8 | .375 | 5 3/4 | 5 3/4 | 15 | 18 |
| 1 1/2 | 12 | 13,500 | 13,500 | 2 3/4 | 2 1/8 | .440 | 5 3/4 | 5 3/4 | 20 | 24 |

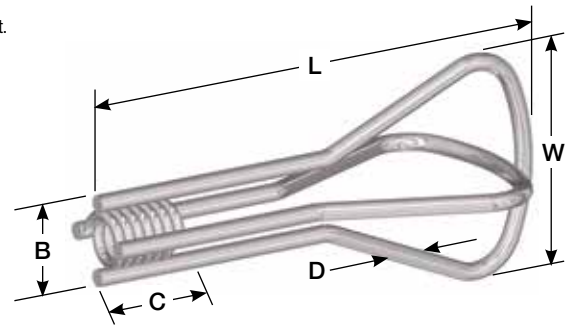
Table is based on minimum concrete strength of 3,000 psi and a 4:1 safety factor.

1. Inserts must have a 1/2" setback from the surface of the concrete and sufficient coil penetration by the lifting bolt.
2. Minimum edge distance apply to edges only. All other edges require 2x length of insert.
3. Minimum corner distance shall be 1.5x minimum edge distance for shear when loaded towards the edge.
4. Minimum anchor spacing shall be 2X the edge distance for tension and 3X the edge distance for shear.
5. Anchors with the asterisks exceed the shear capacity of the coil rod.

To Order, Specify: quantity, name, type, bolt diameter and finish.

CX-8 CRISS-CROSS INSERT – FLARED

The CX-8 Criss-Cross Insert – Flared is a compact designed four strut insert offering great versatility and strength. It is very effective in low strength concrete applications. The Criss-Cross Insert – Flared is available in plain, hot dip galvanize, or stainless steel finish.



CX-8 CRISS-CROSS INSERT - FLARED DATA

| Bolt Diameter in. | Insert Length L in. | Safe Work Load (Tension) lbs. | Safe Work Load (Shear) lbs. | B in. | Coil Length C in. | W in. | Wire Diameter D in. | Edge Distance (Tension) ³ in. | Edge Distance (Shear) ⁴ in. |
|-------------------|---------------------|-------------------------------|-----------------------------|--------|-------------------|-------|---------------------|--|--|
| 1 | 12 3/8 | 9500 | 9500 | 2 1/16 | 2 1/8 | 5 1/2 | .375 | 15 | 18 |
| 1 | 12 1/2 | 13,500 | 13,500* | 2 1/4 | 2 1/8 | 5 3/4 | .440 | 20 | 24 |
| 1 1/4 | 12 3/8 | 9500 | 9500 | 2 5/16 | 2 1/8 | 5 3/4 | .375 | 15 | 18 |
| 1 1/4 | 12 1/2 | 13,500 | 13,500 | 2 1/2 | 2 1/8 | 5 3/4 | .440 | 20 | 24 |
| 1 1/2 | 12 3/8 | 9500 | 9500 | 2 9/16 | 2 1/8 | 5 3/4 | .375 | 15 | 18 |
| 1 1/2 | 12 1/2 | 13,500 | 13,500 | 2 3/4 | 2 1/8 | 5 3/4 | .440 | 20 | 24 |

Table is based on minimum concrete strength of 3,000 psi and a 4:1 safety factor.

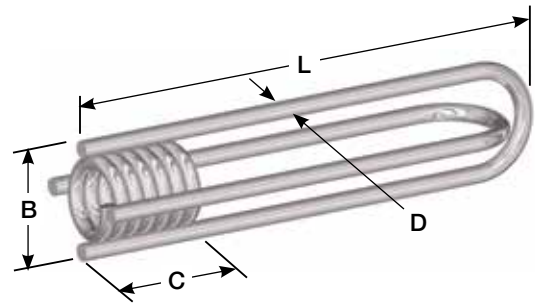
1. Inserts must have a 1/2" setback from the surface of the concrete and sufficient coil penetration by the lifting bolt.
2. Minimum edge distance apply to edges only. All other edges require 2x length of insert.
3. Minimum corner distance shall be 1.5x minimum edge distance for shear when loaded towards the edge.
4. Minimum anchor spacing shall be 2X the edge distance for tension and 3X the edge distance for shear.
5. Anchors with the asterisks exceed the shear capacity of the coil rod.

To Order, Specify: quantity, name, bolt diameter, length (L dimension) and finish.

Coil Lifting Inserts

CX-9 CRISS-CROSS COIL INSERT – STRAIGHT

The CX-9 Criss-Cross Coil Insert – Straight is a high strength four strut insert ideally suited for precast concrete edge lift applications. The four strut design and high safe working loads make this insert a good, safe choice for preventing panel failures. The Criss-Cross Coil Insert – Straight is available in plain, hot dip galvanize, or stainless steel finish. See load data below for thin slab edge and face lift.



CX-9 COIL LOOP INSERT - STRAIGHT (FACE LIFT INSTALLATION)

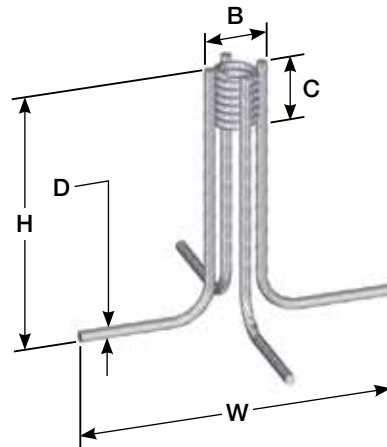
| Bolt Diameter in. | Insert Length L In. | Safe Work Load (Tension) lbs. | Safe Work Load (Shear) lbs. | B in. | Coil Length C in. | Wire Diameter D in. | Edge Distance (Tension) ⁵ in. | Edge Distance (Shear) ⁶ in. |
|-------------------|---------------------|-------------------------------|-----------------------------|--------|-------------------|---------------------|--|--|
| ¾ | 9 | 6750 | 6750 | 1 1/16 | 1 5/8 | .306 | 12 | 16 |
| ¾ | 12 | 6750 | 6750 | 1 1/16 | 1 5/8 | .306 | 12 | 16 |
| 1 | 9 | 6750 | 6750 | 2 1/8 | 2 1/8 | .306 | 12 | 16 |
| 1 | 12 | 6750 | 6750 | 2 1/8 | 2 1/8 | .306 | 12 | 16 |
| 1 | 9 | 9000 | 7850 | 2 1/8 | 2 1/8 | .375 | 16 | 16 |
| 1 | 12 | 9000 | 9000 | 2 1/8 | 2 1/8 | .375 | 16 | 16 |
| 1 1/4 | 9 | 13,500 | 9600 | 2 1/2 | 2 1/8 | .440 | 16 | 20 |
| 1 1/4 | 12 | 13,500 | 12,400 | 2 1/2 | 2 1/8 | .440 | 20 | 20 |

CX-9 COIL LOOP INSERT - STRAIGHT (EDGE LIFT INSTALLATION)

| Bolt Diameter in. | Insert Length L In. | Safe Work Load (Tension) lbs. | Safe Work Load (Shear) lbs. | B in. | Coil Length C in. | Wire Diameter D in. | Wall Thickness in. | Corner Distance in. |
|-------------------|---------------------|-------------------------------|-----------------------------|--------|-------------------|---------------------|--------------------|---------------------|
| ¾ | 9 | 3700 | 1500 | 1 1/16 | 1 5/8 | .306 | 4 | 24 |
| ¾ | 12 | 4600 | 1500 | 1 1/16 | 1 5/8 | .306 | 4 | 24 |
| 1 | 9 | 4500 | 2000 | 2 1/8 | 2 1/8 | .306 | 5 1/2 | 24 |
| 1 | 12 | 6500 | 2500 | 2 1/8 | 2 1/8 | .306 | 5 1/2 | 24 |
| 1 | 9 | 4500 | 2000 | 2 1/8 | 2 1/8 | .375 | 5 1/2 | 24 |
| 1 | 12 | 6500 | 2500 | 2 1/8 | 2 1/8 | .375 | 5 1/2 | 24 |
| 1 1/4 | 9 | 4700 | 3500 | 2 1/2 | 2 1/8 | .440 | 6 | 24 |
| 1 1/4 | 12 | 7500 | 3500 | 2 1/2 | 2 1/8 | .440 | 6 | 24 |

CX-24 THIN SLAB COIL INSERT

The CX-24 Thin Slab Coil Insert is a four strut insert fabricated with a wire coil and four deformed (ribbed) wire legs. This insert is applicable for face lift handling of precast panels, slabs and other similar types of precast elements. The Thin Slab Coil Insert is available in plain, hot dip galvanize, or stainless steel finish.



CX-24 THIN SLAB COIL INSERT

| Bolt Diameter in. | Insert Length L In. | Safe Work Load (Tension) lbs. | Safe Work Load (Shear) lbs. | B in. | Coil Length C in. | W in. | Wire Diameter D in. | Edge Distance (Tension) ³ in. | Edge Distance (Shear) ⁴ in. |
|-------------------|---------------------|-------------------------------|-----------------------------|-------|-------------------|-------|---------------------|--|--|
| ¾ | 3 | 2500 | 2000 | 1 5/8 | 1 3/4 | 7 1/8 | .306 | 9 | 9 |
| 1 | 4 | 3500 | 3500 | 1 7/8 | 2 1/8 | 9 1/2 | .306 | 12 | 13 |
| 1 1/4 | 4 | 4000 | 4000 | 2 1/4 | 2 1/8 | 9 3/4 | .375 | 12 | 14 |
| 1 1/2 | 4 | 4000 | 4000 | 2 1/2 | 2 1/8 | 10 | .375 | 12 | 14 |

1. SWL based on 3000 psi concrete compressive strength.
2. SWL includes a 4:1 safety factor.
3. Inserts must have a 1/2" setback.
4. Minimum edge distance apply to 2 edges only. All other edges require 2 x length of the insert.
5. Minimum corner distance shall be 1.5 x minimum edge distance for shear when loaded towards the edge.
6. Minimum anchor spacing shall be 2 x the edge distance for tension and 3 x the edge distance for shear.

1. SWL based on 3000 psi concrete compressive strength.
2. SWL includes a 4:1 safety factor.
3. Inserts must have a 1/2" setback.
4. Minimum edge distance apply to 2 edges only. All other edges require 2 x length of the insert.
5. Minimum corner distance shall be 1.5x minimum edge distance for shear when loaded towards the edge, unless noted otherwise.
6. Minimum anchor spacing shall be 2 x the edge distance for tension and 3 x the edge distance for shear.

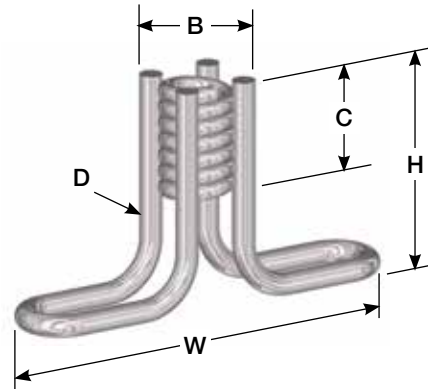
To Order, Specify: quantity, name, bolt diameter, length (L dimension) and finish.

To Order, Specify: quantity, name, bolt diameter and finish.

Coil Lifting Inserts

CX-28 COIL WINGNUT INSERT

The CX-28 Coil Wingnut Insert is designed for use in small envelope and small load applications. Small sections, architectural panels or thin slabs are applications best suited for this insert. The Coil Wingnut Insert is available in plain or hot dip galvanize finish.



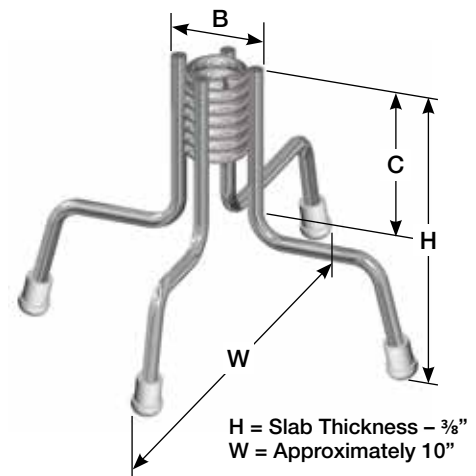
CX-28 COIL WINGNUT INSERT

| Bolt Diameter in. | Length H in. | Safe Work Load (Tension) ^{1,2} lbs. | Safe Work Load (Shear) ^{1,2} lbs. | B in. | Coil Length C in. | W in. | Wire Diameter D in. | Edge Distance (Tension) ⁵ in. | Edge Distance (Shear) ⁶ in. |
|-------------------|--------------|--|--|-------|-------------------|-------|---------------------|--|--|
| ½ | 2¼ | 950 | 1100 | 1¼ | 1¾ | 4½ | .225 | 4 | 6 |
| ¾ | 2¼ | 2000 | 1250 | 1½ | 1⅝ | 5 | .262 | 5 | 5 |
| ¾ | 3½ | 3400 | 2450 | 1⅝ | 1⅝ | 6 | .306 | 6 | 9 |
| 1 | 2½ | 2000 | 2000 | 2 | 2 | 6 | .306 | 5 | 6 |
| 1 | 4½ | 4750 | 3900 | 2 | 2 | 6 | .306 | 8 | 12 |

1. SWL based on 3000 psi concrete compressive strength.
2. SWL includes a 4:1 safety factor.
3. Inserts must have a ½" setback.
4. Minimum edge distance apply to 2 edges only. All other edges require 2 x length of the insert.
5. Minimum corner distance shall be 1.5 x minimum edge distance for shear when loaded towards the edge.
6. Minimum anchor spacing shall be 2 x the edge distance for tension and 3 x the edge distance for shear.

CX-41 COIL LIFTING INSERT – SINGLE

The CX-41 Coil Lifting Insert – Single is applicable for face lifting and handling flat panels, slabs, utility boxes, etc. It is fabricated with deformed wire legs for increased pullout strength and is available with or without locator plug and with or without plastic tipped feet. The Coil Lifting Insert – Single is available in the bolt diameters and slab thickness shown in the chart and in plain or hot dip galvanize finish.



CX-41 COIL LIFTING INSERT - SINGLE

| Bolt Diameter in. | Slab or Panel Thickness and Safe Work Load (Tension) | | | | | | | | | | | | Edge Distance (Tension) ⁵ in. | Edge Distance (Shear) ⁶ in. |
|-------------------|--|------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|--|--|
| | 4 in. | | 5 in. | | 5½ in. | | 6 in. | | 7 in. | | 8 in. | | | |
| | Tension lbs. | Shear lbs. | Tension lbs. | Shear lbs. | Tension lbs. | Shear lbs. | Tension lbs. | Shear lbs. | Tension lbs. | Shear lbs. | Tension lbs. | Shear lbs. | | |
| ¾ | 2000 | 2000 | 2800 | 2850 | 3350 | 3450 | 4000 | 4100 | - | - | - | - | 15 | 15 |
| 1 | 2500 | 2500 | 3200 | 3400 | 3750 | 3450 | 4500 | 4500 | 5700 | 5550 | 6500 | 6150 | 15 | 15 |
| 1¼ | - | - | 3500 | 4400 | 4200 | 4800 | 5200 | 5200 | 6000 | 5800 | 6800 | 6450 | 15 | 15 |
| 1½ | - | - | - | - | 4800 | 4950 | 5600 | 5600 | 6300 | 6000 | 7000 | 6650 | 18 | 15 |

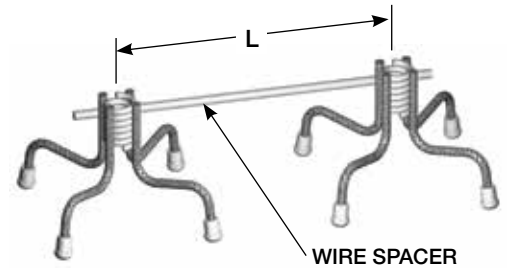
1. SWL based on 3000 psi concrete compressive strength.
2. SWL includes a 4:1 safety factor.
3. Inserts must have a 3/8" setback.
4. Minimum edge distance apply to 2 edges only. All other edges require 2 x length of the insert.
5. Minimum corner distance shall be 1.5 x minimum edge distance for shear when loaded towards the edge.
6. Minimum anchor spacing shall be 2 x the edge distance for tension and 3 x the edge distance for shear.

To Order, Specify: quantity, name, bolt diameter, slab thickness and finish.

Coil Lifting Inserts

CX-42 COIL LIFTING INSERT – DOUBLE

The CX-42 Coil Lifting Insert – Double is two single coil lifting inserts joined by a wire spacer. The insert is available in three bolt diameters, as shown in the table. Note that the 1” diameter unit has a center to center dimension of 12” and the 1-¼” and 1-½” units employ a 15” center-to-center dimension. The Coil Lifting Insert – Double is often used as a face lifting insert for heavy panels or slabs and is also an effective strongback insert. It is available in plain, hot dip galvanize or stainless steel finish.



| CX-42 COIL LIFTING INSERT - SINGLE | | | | | | | | | | | | | | |
|------------------------------------|--|------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|--|--|
| Bolt Diameter in. | Slab or Panel Thickness and Safe Work Load (Tension) | | | | | | | | | | | | Edge Distance (Tension) ⁵ in. | Edge Distance (Shear) ⁶ in. |
| | 4 in. | | 5 in. | | 5 ½ in. | | 6 in. | | 7 in. | | 8 in. | | | |
| | Tension lbs. | Shear lbs. | Tension lbs. | Shear lbs. | Tension lbs. | Shear lbs. | Tension lbs. | Shear lbs. | Tension lbs. | Shear lbs. | Tension lbs. | Shear lbs. | | |
| 1 | 3000 | 3000 | 4000 | 4850 | 5000 | 5250 | 5500 | 5650 | 6750 | 7000 | 8000 | 7750 | 15 | 15 |
| 1 ¼ | - | - | - | - | 5200 | 5950 | 6000 | 6400 | 7100 | 7700 | 8500 | 8000 | 15 | 15 |
| 1 ½ | - | - | - | - | - | - | 6500 | 6800 | 7500 | 7700 | 9000 | 8500 | 15 | 18 |

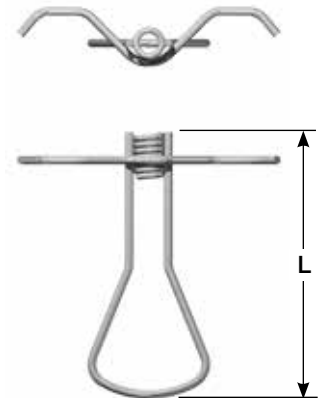
1. SWL based on 3000 psi concrete compressive strength.
2. SWL includes a 4:1 safety factor.
3. Inserts must have a ½” setback.
4. Minimum edge distance apply to 2 edges only. All other edges require 2 x length of the insert.
5. Minimum corner distance shall be 1.5 x minimum edge distance for shear when loaded towards the edge.
6. Minimum anchor spacing shall be 2 x the edge distance for tension and 3 x the edge distance for shear.

To Order, Specify: quantity, name, bolt diameter, slab thickness and finish.

CX-43 EDGE LIFT INSERT – SINGLE

The CX-43 Edge Lift Insert – Single is a light-duty edge lift insert similar to the CX-4 Coil Loop Insert – Flared, but has a shaped strut added to the top of the insert’s coil. This added wire strut helps to distribute shear loads into the concrete during the lifting process. The insert should always be set with the shear strut in the direction of the pull.

Note that for the insert to develop the posted working loads, the insert must be setback ½” from the concrete surface. Plywood cutouts or stacked cut washers can be utilized as setback spacers. The Edge Lift Insert – Single is available in ¾” and 1” bolt diameters in lengths shown in the table and in plain, hot dip galvanize or stainless steel finish.



WARNING: If concrete over insert fails, wire struts may break resulting in loss of panel.

| CX-43 EDGE LIFT INSERT - SINGLE DATA | | | | | | | | | | | | | | | | | |
|--------------------------------------|---------------|----|-----------------|-----|--------------|------------------|-----|--------|------|----------|------|----------------|------|----------|------|--------|------|
| Insert Type | Bolt Diameter | | Insert Length L | | Type Loading | (Edge Thickness) | | | | | | Safe Work Load | | | | | |
| | | | | | | 4 inch | | 5 inch | | 5 ½ inch | | 6 inch | | 7 ¼ inch | | 8 inch | |
| | in. | mm | in. | mm | | lbs. | kN | lbs. | kN | lbs. | kN | lbs. | kN | lbs. | kN | lbs. | kN |
| Single | ¾ | 19 | 9 | 225 | Tension | 1500 | 6.7 | - | - | - | - | - | - | - | - | - | - |
| Single | ¾ | 19 | 9 | 225 | Shear | 1250 | 6.6 | - | - | - | - | - | - | - | - | - | - |
| Single | 1 | 25 | 12 | 300 | Tension | - | - | 1300 | 13.6 | 3300 | 14.6 | 3600 | 16.0 | 4300 | 19.1 | 4800 | 21.3 |
| Single | 1 | 25 | 12 | 300 | Shear | - | - | 1350 | 6.0 | 1375 | 6.1 | 1400 | 6.2 | 1550 | 6.8 | 1600 | 7.1 |

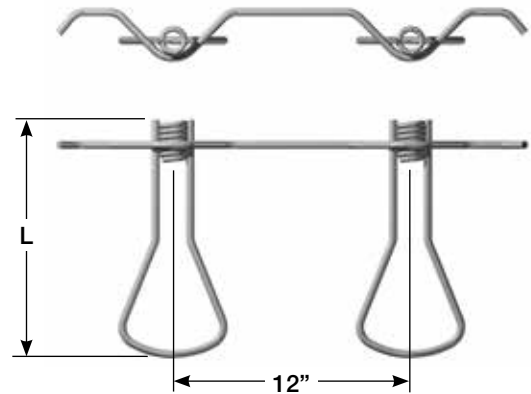
- Table is based on minimum concrete strength of 3,000 psi and a 4:1 safety factor.
1. Inserts must have a ½” setback from the surface of the concrete and sufficient coil penetration by the lifting bolt.

To Order, Specify: quantity, name, bolt diameter, slab thickness and finish.

Coil Lifting Inserts

CX-44 EDGE LIFT INSERT – DOUBLE

The CX-44 Edge Lift Insert – Double is like the single unit, but has a second insert attached with a shaped wire strut. The insert should always be set with the shear strut in the direction of the pull. Note that for the insert to develop the posted working loads, the insert must be setback $\frac{1}{2}$ " from the concrete surface. Plywood cutouts or stacked cut washers can be utilized as setback spacers. The Edge Lift Insert – Double is available in $\frac{3}{4}$ " and 1" bolt diameters and lengths shown in the table and is available in plain, hot dip galvanize, or stainless steel finish.



WARNING: If concrete over insert fails, wire struts may break resulting in loss of panel.

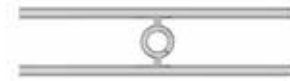
CX-44 EDGE LIFT INSERT - DOUBLE DATA

| Insert Type | Bolt Diameter | | Insert Length L | | Type Loading | (Edge Thickness) | | | | | | Safe Work Load | | | | | |
|-------------|---------------|----|-----------------|-----|--------------|------------------|-----|--------|------|----------|------|----------------|------|----------|------|--------|------|
| | | | | | | 4 inch | | 5 inch | | 5 ½ inch | | 6 inch | | 7 ¼ inch | | 8 inch | |
| | | | | | | lbs. | kN | lbs. | kN | lbs. | kN | lbs. | kN | lbs. | kN | lbs. | kN |
| Double | $\frac{3}{4}$ | 19 | 9 | 225 | Tension | 5500 | 6.7 | - | - | - | - | - | - | - | - | - | - |
| Double | $\frac{3}{4}$ | 19 | 9 | 225 | Shear | 1500 | 6.6 | - | - | - | - | - | - | - | - | - | - |
| Double | 1 | 25 | 12 | 300 | Tension | - | - | 4000 | 17.8 | 4400 | 19.5 | 4800 | 21.3 | 5800 | 25.7 | 6500 | 28.9 |
| Double | 1 | 25 | 12 | 300 | Shear | - | - | 2100 | 9.3 | 2250 | 10.0 | 2400 | 10.6 | 2800 | 12.4 | 3000 | 13.3 |

Table is based on minimum concrete strength of 3,000 psi and a 4:1 safety factor.

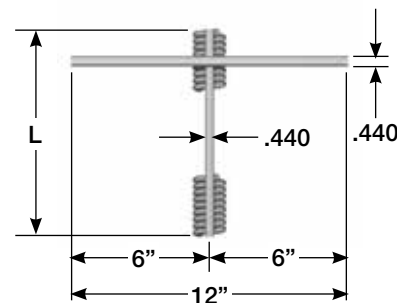
1. Inserts must have a $\frac{1}{2}$ " setback from the surface of the concrete and sufficient coil penetration by the lifting bolt.

To Order, Specify: quantity, name, bolt diameter and finish.



CX-45 EDGE PICKUP INSERT – SINGLE

The CX-45 Edge Pickup Insert – Single combines a strong coil tie and two horizontal struts to form a higher capacity edge lift insert. Note that for the insert to develop the posted working loads, the insert must be setback $\frac{1}{2}$ " from the concrete surface. Plywood cutouts or stacked cut washers can be utilized as setback spacers. The Edge Pickup Insert – Single is available in 1" and 1- $\frac{1}{4}$ " bolt diameters and lengths shown in the table and is available in plain, hot dip galvanize, or stainless steel finish.



CX-45 EDGE PICKUP INSERT - SINGLE DATA

| Bolt Size | | Insert Length L | | Minimum Edge Thickness | | Safe Work Load | | | |
|-----------|----|-----------------|-----|------------------------|-----|----------------|------|-------|-----|
| | | | | | | Tension | | Shear | |
| in. | mm | in. | mm | in. | mm | lbs. | kN | lbs. | kN |
| 1 | 25 | 9 | 228 | 5 ½ | 140 | 5200 | 23.1 | 1250 | 5.5 |
| 1 ¼ | 32 | 10 | 254 | 7 ¼ | 184 | 6500 | 28.9 | 2000 | 8.9 |

Table is based on minimum concrete strength of 3,000 psi and a 4:1 safety factor.

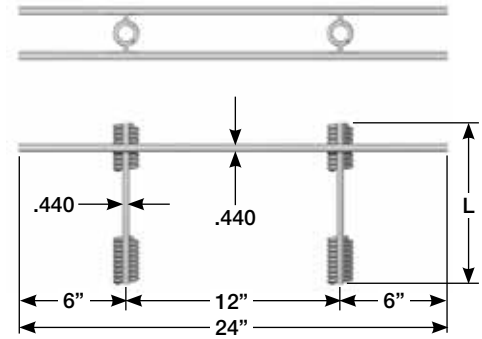
1. Inserts must have a $\frac{1}{2}$ " setback from the surface of the concrete and sufficient coil penetration by the lifting bolt.

To Order, Specify: quantity, name, bolt diameter and finish.

Coil Lifting Inserts

CX-46 EDGE PICKUP INSERT – DOUBLE

The CX-46 Edge Pickup Insert – Double is two single edge pick inserts spaced 12" apart by two horizontal wire struts resulting in higher lifting capacity. Note that for the insert to develop the posted working loads, the insert must be setback ½" from the concrete surface. Plywood cutouts or stacked cut washers can be utilized as setback spacers. The Edge Pickup Insert – Double is available in 1" and 1-¼" bolt diameters and lengths shown in the table and is available in plain, hot dip galvanize, or stainless steel finish.



| CX-46 EDGE PICKUP INSERT - DOUBLE DATA | | | | | | | | | |
|--|----|--------------------|-----|------------------------|-----|----------------|------|-------|------|
| Bolt Size | | Insert Length L | | Minimum Edge Thickness | | Safe Work Load | | | |
| | | | | | | Tension | | Shear | |
| in. | mm | in. | mm | in. | mm | lbs. | kN | lbs. | kN |
| 1 | 25 | 9 | 228 | 5 ½ | 140 | 9700 | 43.1 | 2300 | 10.2 |
| 1 ¼ | 32 | 10 | 254 | 7 ¼ | 184 | 12,000 | 53.3 | 3200 | 14.2 |

Table is based on minimum concrete strength of 3,000 psi and a 4:1 safety factor.

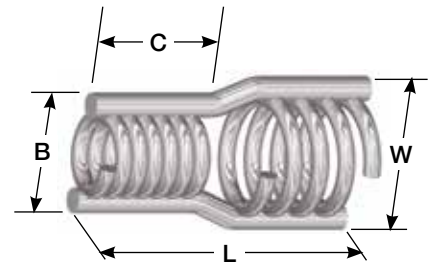
1. Inserts must have a ½" setback from the surface of the concrete and sufficient coil penetration by the lifting bolt.

To Order, Specify: quantity, name, bolt diameter and finish.

CX-51 OPEN COIL INSERT

The CX-51 Open Coil Insert is designed to enlarge and increase the shear cone surface area, which in effect increases the load capacity of the insert without increasing the insert's corresponding length. This is a very versatile insert used for many functions, lifting precast boxes, manholes or other utility shapes.

The CX-51 Open Coil Insert is available with an attached mounting washer welded to the front end of the insert. Mounting washers have 2 nail holes for nailing the insert to a wood form or bolting to a steel form. Standard sizes shown below. Custom sizes available upon request and is available in plain, hot dip galvanize, or stainless steel finish.



| CX-51 OPEN COIL INSERT DATA | | | | | | | | | | |
|-----------------------------|------------|--------------------|------------------|------------------|-------|---------------------|-------|-----------------------|-----------------------------|---------------------------|
| Bolt Diameter | Length (L) | SWL (Tension) lbs. | SWL (Shear) lbs. | Number of Struts | B in. | Coil Length (C) in. | W in. | Wire Diameter (D) in. | Edge Distance (Tension) in. | Edge Distance (Shear) in. |
| ¾ | 4 ½ | 4250 | 4250 | 2 | 1 ¾ | 1 ½ | 2 ½ | 0.375 | 7 | 12 |
| 1 | 5 ½ | 6250 | 6250 | 2 | 2 ¼ | 2 ½ | 2 ½ | 0.440 | 9 | 16 |
| 1 | 7 ½ | 10,000 | 12,000 | 4 | 2 ¼ | 2 ½ | 2 ¾ | 0.440 | 12 | 24 |
| 1 ¼ | 7 ½ | 12,000 | 12,000 | 4 | 2 ½ | 2 ½ | 3 | 0.440 | 12 | 24 |
| 1 ¼ | 9 ½ | 16,000 | 16,000 | 6 | 2 ½ | 2 ½ | 3 | 0.440 | 16 | 26 |
| 1 ½ | 9 ½ | 16,000 | 16,000 | 6 | 2 ¾ | 2 ½ | 3 | 0.440 | 16 | 26 |

1. SWL based on 3000 psi concrete compressive strength.

2. SWL includes a 4:1 safety factor.

3. Inserts must have a ½" setback.

4. Minimum edge distance apply to 2 edges only. All other edges require 2 x length of the insert.

5. Minimum corner distance shall be 1.5 x minimum edge distance for shear when loaded towards the edge.

6. Minimum anchor spacing shall be 2 x the edge distance for tension and 3 x the edge distance for shear.

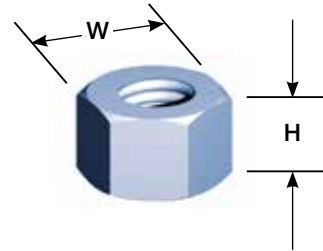
To Order, Specify: quantity, name, bolt diameter, slab thickness and finish.

Coil Lifting Insert Accessories

CN-5 COIL NUT

The CN-5 Standard Coil Nut is manufactured from hex stock and is available in 1/2" through 1-1/2" diameters. Dimensions are displayed in the table.

The Standard Coil Nut safe working loads are based on an approximate 5:1 safety factor for lifting applications.



| CN-5 STANDARD COIL NUT DATA | | | | | | | | | |
|-----------------------------|----|--------------------------|----|-----------------------|-----|--------------|----|----------------------|----|
| Bolt Size | | Safe Work Load (Tension) | | | | Nut Height H | | Width Across Flats W | |
| | | One CN-5 | | Two CN-5 or One CN-25 | | | | | |
| in. | mm | lbs. | kN | lbs. | kN | in. | mm | in. | mm |
| 1/2 | 13 | 2400 | 10 | 3600 | 16 | 1/2 | 13 | 7/8 | 22 |
| 3/4 | 19 | 4800 | 21 | 7200 | 32 | 5/8 | 15 | 1 1/8 | 28 |
| 1 | 25 | 7200 | 32 | 15,000 | 67 | 1 | 25 | 1 5/8 | 41 |
| 1 1/4 | 32 | 10,800 | 48 | 22,500 | 100 | 1 1/4 | 32 | 2 | 50 |
| 1 1/2 | 38 | 16,200 | 72 | 27,000 | 120 | 1 1/2 | 38 | 2 3/8 | 60 |

Table is based on a 5:1 safety factor for lifting applications.

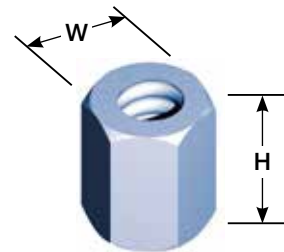
- Note that in order to achieve the published safe working loads of Coil Bolts, Coil Rods, etc., two (2) Standard Coil Nuts tightly locked together are required when using the Standard Coil Nut.

To Order, Specify: quantity, name and bolt diameter.

CN-25 COIL NUT – HEAVY

The CN-25 Heavy Coil Nut is manufactured from hex stock like the Standard Coil Nut, but is of sufficient length to develop the safe working load required for heavy form tying systems and precast lifting applications.

The Heavy Coil Nut safe working loads are based on an approximate 5:1 safety factor for lifting applications.



| CN-25 HEAVY COIL NUT DATA | | | | | | | |
|---------------------------|----|--------------------------|-----|--------------|----|----------------------|----|
| Bolt Size | | Safe Work Load (Tension) | | Nut Height H | | Width Across Flats W | |
| | | Two CN-5 or One CN-25 | | | | | |
| in. | mm | lbs. | kN | in. | mm | in. | mm |
| 1/2 | 13 | 3600 | 16 | 1/2 | 25 | 7/8 | 28 |
| 3/4 | 19 | 7200 | 32 | 1 1/2 | 38 | 1 1/8 | 28 |
| 1 | 25 | 15,000 | 67 | 2 | 50 | 1 5/8 | 41 |
| 1 1/4 | 32 | 22,500 | 100 | 2 1/2 | 64 | 2 | 50 |
| 1 1/2 | 38 | 27,000 | 120 | 3 | 76 | 2 3/8 | 60 |

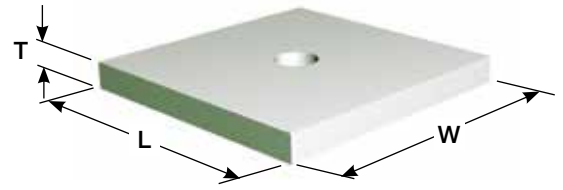
Table is based on a 5:1 safety factor for lifting applications.

To Order, Specify: quantity, name and bolt diameter.

Coil Lifting Insert Accessories

CW-4 FLAT WASHER

The CW-4 Flat Washers are manufactured from ASTM A36 flat steel plate and are designed to provide the required bearing against the form members. Flat Washers are available in many sizes in both standard and heavy versions. Refer to the table for dimensions.



| CW-4 FLAT WASHER DATA | | | | | | | | | |
|-----------------------|----|----------|-----|----|-----|-----|-----|-----|--|
| Bolt Size | | Type | T | | L | | W | | |
| in. | mm | | in. | mm | in. | mm | in. | mm | |
| ½ | 13 | Standard | ¼ | 6 | 4 | 100 | 3 | 75 | |
| ¾ | 19 | Standard | ¼ | 6 | 4 | 100 | 5 | 125 | |
| 1 | 25 | Standard | ½ | 13 | 5 | 125 | 5 | 125 | |
| 1 ¼ | 32 | Standard | ½ | 13 | 5 | 125 | 5 | 125 | |
| 1 ½ | 38 | Standard | ¾ | 19 | 5 | 125 | 5 | 125 | |
| ½ | 13 | Heavy | ¼ | 6 | 4 | 100 | 5 | 125 | |
| ¾ | 19 | Heavy | ½ | 13 | 5 | 125 | 5 | 125 | |
| 1 | 25 | Heavy | ¾ | 19 | 7 | 175 | 7 | 175 | |
| 1 ¼ | 32 | Heavy | ¾ | 19 | 7 | 175 | 7 | 175 | |
| 1 ½ | 38 | Heavy | ¾ | 19 | 7 | 175 | 7 | 175 | |

To Order, Specify: quantity, name and bolt diameter.

CR-4 COIL ROD

CR-4 Continuous Coil Rod is manufactured and stocked in 12'-0" lengths. Special lengths are available up to 20'-0".

Requires minimum two (2) Standard CN-5 Coil Nuts or one (1) Heavy CN-25 Coil Nut to develop full safe work load. Minimum coil thread penetration is same as shown for coil bolts. See Table on page 96 to assure minimum coil penetration. May be cut with carborundum blades without thread damage. Do not use cutting torch to cut coil rod.



| CR-4 HI-STRENGTH CONTINUOUS COIL ROD SELECTION TABLE | | | | | |
|--|----|----------------|-----|--------|----|
| Bolt Size | | Safe Work Load | | | |
| | | Tension | | Shear | |
| in. | mm | lbs. | kN | lbs. | kN |
| ½ | 13 | 3600 | 16 | 2400 | 11 |
| ¾ | 19 | 7200 | 32 | 4800 | 21 |
| 1 | 25 | 15,000 | 67 | 10,000 | 44 |
| 1 ¼ | 32 | 24,000 | 107 | 16,000 | 71 |
| 1 ½ | 38 | 28,000 | 124 | 18,000 | 83 |

Table is based on a 5:1 safety factor for lifting applications.

To Order, Specify: quantity, name, bolt diameter and length.

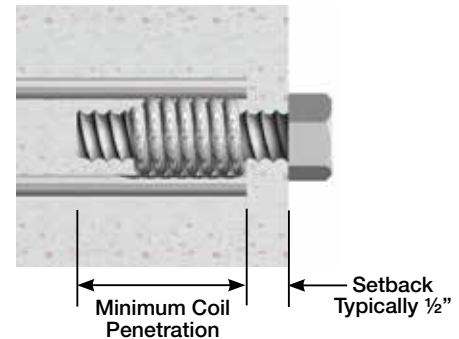
Coil Lifting Insert Accessories

CB-2 COIL BOLT

The CB-2 Coil Bolts are available in ½” through 1-½” diameters for use with Coil Ties, Coil Inserts and other Meadow Burke products furnished with coil threads. Coil Bolts are manufactured with the fast-threading, self-cleaning coil thread and are available in lengths as needed. Coil Bolts may be furnished with an integral forged head or with a hex nut welded to a length of continuous coil rod. Standard thread length of the integral forged head Coil Bolt is 4” on the ½” diameter and 4-½” on all other sizes.

Use of waterproof, stain resistant grease applied to the bolt shaft will aid in the bolt removal process. Note that Coil Bolts are subject to wear and misuse and should be continually inspected for wear, cracks, bends, overstressing, etc. If there is any indication of these types of problems, the bolt should be discarded.

WARNING: Minimum coil penetration is extremely important and must be adhered to when threading Coil Bolts into other coil-threaded products. Safe working loads are dependent on maintaining the appropriate minimum coil penetration; failure to do so can lead to a premature failure of the coil and compromise worker safety. Refer to the table for safe working loads and minimum coil penetration lengths.



CB-2 COIL BOLT DATA

| ½ in. (13 mm) Diameter Safe Work Load | | ¾ in. (13 mm) Diameter Safe Work Load | | | | 1 in. (25 mm) Diameter Safe Work Load | | | | 1 ¼ in. (31.5 mm) Diameter Safe Work Load | | | | 1 ½ in. (38 mm) Diameter Safe Work Load | | | |
|--|----|--|----|-------|------|--|----|--------|----|--|-----|--------|----|--|-----|--------|----|
| | | Tension | | Shear | | Tension | | Shear | | Tension | | Shear | | Tension | | Shear | |
| lbs. | kN | lbs. | kN | lbs. | kN | lbs. | kN | lbs. | kN | lbs. | kN | lbs. | kN | lbs. | kN | lbs. | kN |
| 3600 | 16 | 7200 | 32 | 4800 | 21.3 | 15,000 | 67 | 10,000 | 44 | 24,000 | 107 | 16,000 | 71 | 28,000 | 124 | 18,000 | 80 |
| Minimum Coil Penetration | | Minimum Coil Penetration | | | | Minimum Coil Penetration | | | | Minimum Coil Penetration | | | | Minimum Coil Penetration | | | |
| in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm |
| 2 | 51 | 2 ¼ | 57 | 2 ½ | 65 | 3 | 75 | 3 | 75 | 3 | 75 | 3 | 75 | 3 | 75 | 3 | 75 |
| 6 Threads / in. | | 4.5 Threads / in. | | | | 3.5 Threads / in. | | | | 3.5 Threads / in. | | | | 3.5 Threads / in. | | | |

Table is based on a 5:1 safety factor for lifting applications.

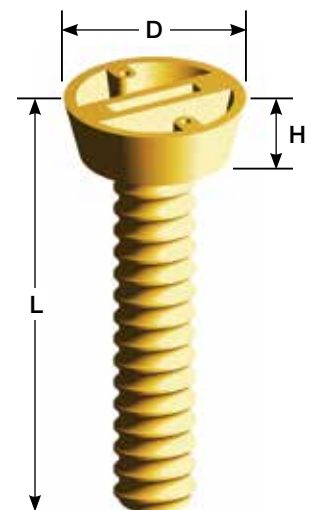
To Order, Specify: quantity, name and bolt diameter.

CP-2 COIL SETTING PLUG – PLASTIC

The CP-2 Coil Setting Plug – Plastic is available in ½”, ¾” and 1” diameters. They are effectively used to set inserts in the form by nailing the plug to the form face and then threading the coil insert onto the plug. The reusable plugs are easily removed from the concrete after the form has been stripped. The Coil Setting Plug can also be used as a temporary cap when another pour will be made at a later time.

To Order, Specify: quantity, name and bolt diameter.

| CP-2 Coil Setting Plug - Plastic | | | |
|----------------------------------|--------|---|--------|
| Bolt Diameter | D | H | L |
| ½ | 1 5/16 | ½ | 2 5/16 |
| ¾ | 2 | ¾ | 4 |
| 1 | 2 ¼ | ¾ | 5 ½ |



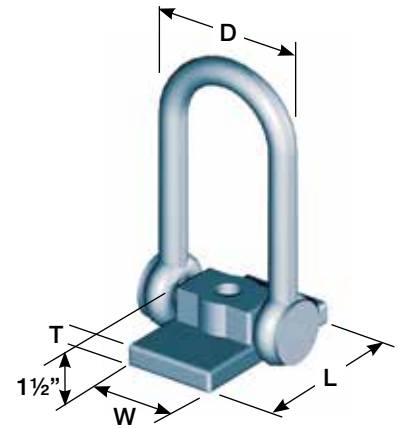
Coil Lifting Insert Accessories

LP-11 LIFT PLATE – SWIVEL

The LP-11 Lift Plate – Swivel is a high strength unit designed for use with ¾” or 1” bolt diameter single face or edge lift inserts. It’s made of forged steel and has a rated safe working load of 11,000 lbs with an approximate safety factor of 5:1.

Caution: The swivel lift plate must have full bearing on smooth, flat concrete and be securely tightened.

Note: SWL of Lift Plate requires installation of a standard flat washer underneath bolt head.



WARNING: Do not use any attachment bolt to fasten a swivel lift plate that shows excess wear, is bent or has any other factor that compromises its safe working load. Verify that the coil bolt is of proper length and properly penetrates the coil. Monitor the direction of pull on the lift plate’s bail. Do not permit a sideways pull. Any of the warnings, if not heeded, can result in serious injury.

| LP-11 LIFT PLATE - SWIVEL DATA | | | | | | | | | | | |
|--------------------------------|----|-----|-----|-----|----|-----|-----|-----|----|----------------------|-----|
| Bolt Size | | L | | W | | D | | T | | Minimum Bolt Length* | |
| in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm |
| ¾ | 19 | 5 | 125 | 2½ | 67 | 4¾ | 130 | ⅞ | 16 | 4 | 100 |
| 1 | 25 | 5 | 125 | 2½ | 67 | 4¾ | 130 | ⅞ | 16 | 5 | 125 |

Table is based on a 5:1 safety factor for lifting applications.

* Based on a 6½” turn coil and insert setback ½” from the surface of the concrete.

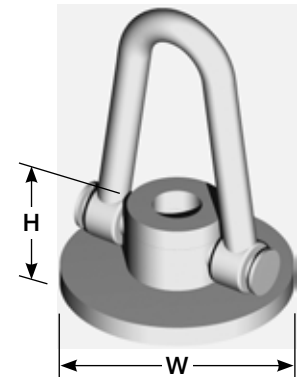
To Order, Specify: quantity, name and bolt diameter.

LP-20 LIFT PLATE – DOUBLE SWIVEL

The LP-20 Lift Plate – Double Swivel is designed to allow the bail to swivel 360° in the horizontal plane and 180° in the vertical plane. This feature allows the unit to rotate to the direction of the pull. It is available for use with 1”, 1¼” and 1½” bolt diameters. Refer to the table for dimensions and safe working loads.

Caution: The Lift Plate - Double Swivel must have full bearing on smooth, flat concrete and be securely tightened.

Note: SWL of Lift Plate requires installation of a standard flat washer underneath bolt head.



WARNING: Do not use any attachment bolt to fasten a swivel lift plate that shows excess wear, is bent or has any other factor that compromises its safe working load. Verify that the coil bolt is of proper length and properly penetrates the coil. Any of the warnings above, if not heeded, can result in serious injury.

| LP-20 LIFT PLATE - DOUBLE SWIVEL DATA | | | | | | | | | |
|---------------------------------------|----|----------------|----|-----|----|-----|-----|----------------------|-----|
| Bolt Diameter | | Safe Work Load | | H | | W | | Minimum Bolt Length* | |
| in. | mm | lbs. | kN | in. | mm | in. | mm | in. | mm |
| 1 | 25 | 9000 | 40 | 2¼ | 50 | 5 | 125 | 5 | 125 |
| 1¼ | 32 | 16,000 | 71 | 2¾ | 70 | 7 | 175 | 6 | 150 |
| 1½ | 28 | 16,000 | 71 | 2¾ | 70 | 7 | 175 | 6 | 150 |

Table is based on a 5:1 safety factor for lifting applications.

* Based on a 6½” turn coil and insert setback ½” from the surface of the concrete.

To Order, Specify: quantity, name and bolt diameter.

Coil Lifting Insert Accessories

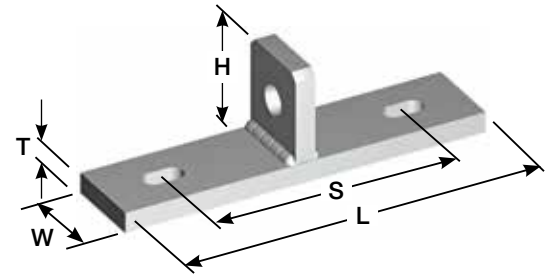
LP-22 LIFT PLATE - EDGE

The LP-22 Lift Plate – Edge is designed for edge lifting applications using ¾” or 1” bolt diameter double edge lift inserts that have a 12” center-to-center bolt pattern. Note: This lift plate is not intended for face lift applications.

Note: SWL of Lift Plate requires installation of washer below bolt head.

WARNING: Do not permit sideward loading on this lift plate.

Sideward loading can cause a premature failure resulting in serious injury.



LP-22 LIFT PLATE - EDGE DATA

| Bolt Size | | Safe Work Load | | T | | W | | L | | H | | S | |
|-----------|----|----------------|------|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|
| in. | mm | lbs. | kN | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm |
| ¾ | 19 | 8800 | 39.1 | 1 | 25 | 4 | 100 | 18" | 450 | 5 ½ | 140 | 12" | 300 |
| 1 | 25 | 8800 | 39.1 | 1 | 25 | 4 | 100 | 18" | 450 | 5 ½ | 140 | 12" | 300 |

Table is based on a 5:1 safety factor for lifting applications.

To Order, Specify: quantity and name.

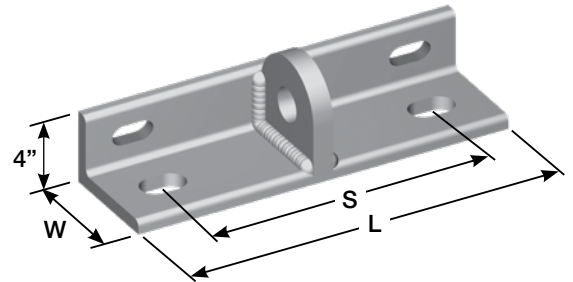
LP-44 LIFT PLATE – ANGLE

The LP-44 Lift Plate – Angle is designed for use with face lifting applications using the CX-42 Double Coil Lifting Insert. It can also be used on edge lift applications if the panel thickness is 6 inches or greater.

Note: SWL of Lift Plate requires installation of washer below bolt head.

WARNING: Do not permit sideward loading on this lift plate.

Sideward loading can cause a premature failure resulting in serious injury.



LP-44 LIFT PLATE - ANGLE DATA

| Bolt Size | | Safe Work Load | | Min. Bolt Length | | S | | T | | L | | W | |
|-----------|----|----------------|------|------------------|-----|-----|-----|-----|----|-----|-----|-----|-----|
| in. | mm | lbs. | kN | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm |
| 1 | 25 | 12,000 | 53.3 | 4 | 100 | - | - | ¾ | 19 | 21 | 533 | 6" | 150 |
| 1 ¼ | 32 | 18,000 | 80.0 | 4 | 100 | 15 | 381 | ¾ | 19 | 21 | 533 | 6" | 150 |
| 1 ½ | 38 | 18,000 | 80.0 | 4 | 100 | 15 | 381 | ¾ | 19 | 21 | 533 | 6" | 150 |

Table is based on a 5:1 safety factor for lifting applications.

To Order, Specify: quantity and name.

CX-47 COIL LOCATOR PLUG

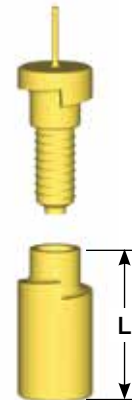
The CX-47 Coil Locator Plug is a two-piece unit used with face lift inserts to mark their position after screeding is completed. The lower portion of the plug provides proper bolt clearance under insert's coil to prevent bottoming of the attaching bolt.

CX-47 COIL LOCATOR PLUG DATA

| Bolt Size | | Safe Work Load | |
|-----------|----|----------------|----|
| in. | mm | in. | mm |
| ¾ | 19 | 1 ½ | 38 |
| 1 | 25 | 1 ⅝ | 41 |
| 1 ¼ | 32 | 1 ¾ | 44 |

Table is based on a 5:1 safety factor for lifting applications.

To Order, Specify: quantity, name and bolt diameter.



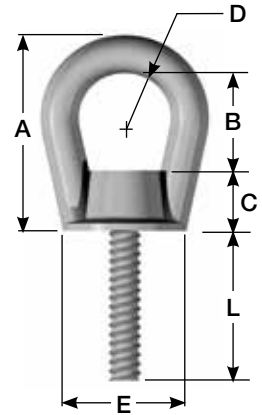
Coil Lifting Insert Accessories

CN-49 EYE BOLT

The CN-49 Eye Bolt is a cast ductile iron unit furnished with a specified length of high strength coil rod welded in place. The unit is available in the bolt diameters shown in the table and with any length of coil rod.

Caution: Extra care must be taken to ensure that the Eye Bolt is tightened securely against the concrete surface. Failure to do so may allow the coil rod to bend and precipitate a premature failure.

WARNING: Eye Bolts are intended for straight tension loading only. Angular loading severely reduces the safe workloads and must be avoided or properly considered. See reduction factors below.



| CN-49 EYE BOLT DATA | | | | | | | | | | | | | |
|---------------------|----|----------------|----|-----|-----|-----|----|-----|----|-----|----|-----|-----|
| Bolt Size | | Safe Work Load | | A | | B | | C | | D | | E | |
| in. | mm | lbs. | kN | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm |
| ½ | 13 | 2700 | 12 | 3¼ | 83 | 1⅝ | 41 | 1 | 25 | ¾ | 19 | 2 | 51 |
| ¾ | 19 | 3600 | 16 | 3½ | 89 | 1¾ | 44 | 1 | 25 | ¾ | 19 | 2 | 51 |
| 1 | 25 | 7200 | 32 | 5 | 127 | 2¾ | 70 | 1¼ | 32 | 1 | 25 | 3 | 76 |
| 1¼ | 32 | 10,800 | 53 | 6¼ | 159 | 3½ | 89 | 1½ | 38 | 1¼ | 32 | 4 | 100 |

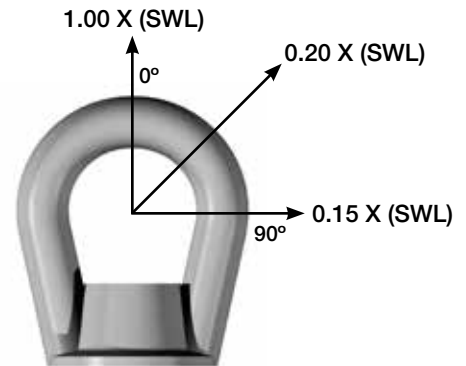
Table is based on a 5:1 safety factor for lifting applications.

To Order, Specify: quantity, name, bolt diameter and bolt length (“L” dimension).

CN-49 EYE BOLT REDUCTION FACTORS FOR ANGULAR LOADING

Reduction factors when an angle pull is required:

- Locate the safe workload in the table above for the Eye Bolt diameter that is being used.
- Multiply the safe working load shown in the table by the appropriate reduction factor shown in the schematic.

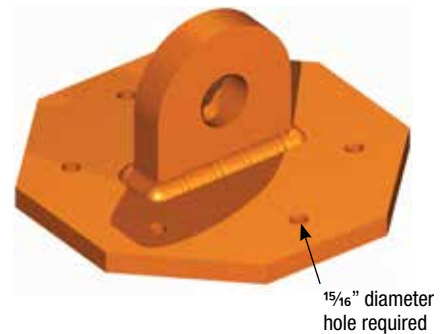


CN-49 Eye Bolts may be ordered without coilrod welded in as a CN-48 Eye Nut.

LIFT-IT PLATE

The Super-Lift III Lift-it Plate will lift panels with misplaced or displaced inserts. It requires the use of six MB Slam Anchors (for panels less than 9-¼”) or six MB Brace Bolts (for panels 9-¼” thick or greater).

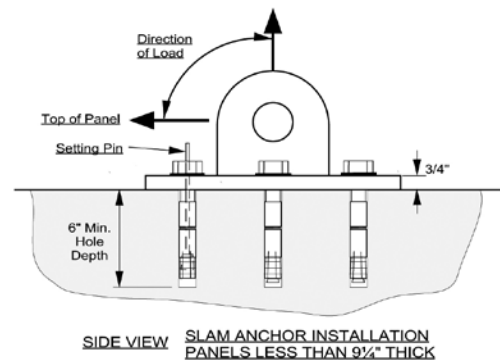
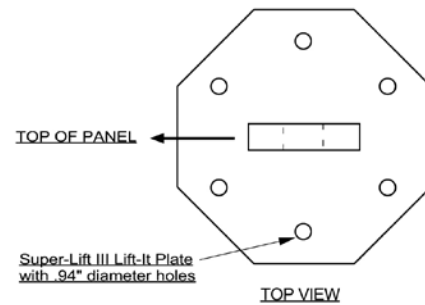
| Lift-It Plate | | |
|---------------|---------------------------|--------------------|
| Item Number | Ultimate Lifting Capacity | Unit Weight [lbs.] |
| 45,800 | 112,000 lbs. | 32 lbs. |



Lift-It Plate

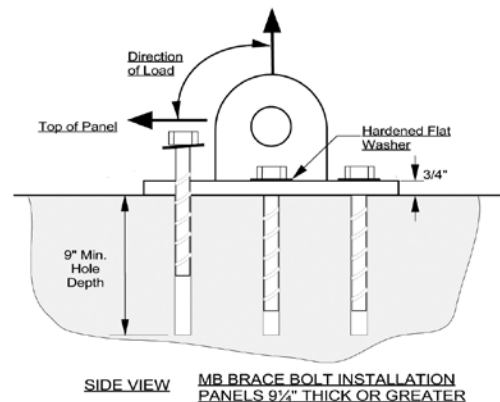
INSTALLATION (PANELS LESS THAN 9-1/4")

1. Drill 7/8" diameter hole to 6" deep (minimum) from tip of drill bit. Clean out dust. Use Lift-It Plate as template.
2. Place six bolt and drop-in assemblies through the Lift-it plate and into the 7/8" holes and tap until flush with the top of the plate.
3. Tap the bottom base of the Lift-it Plate towards the top of panel (about 1/16") to engage the plate to the bolts.
4. Insert a setting pin into the hole in the center of a bolt. Place the specially designed slammer setting tool over the pin and bolt and pound the ram on the setting tool all the way down.
5. Once the ram is driven all the way down use the Slammer setting tool to check that the Slam Anchor is tightened using approximately 1/8 (minimum) to 1/2 (maximum) turns. Do not use an impact wrench and no torque wrench is required.
6. Repeat steps 4 and 5 for remaining 5 bolts.



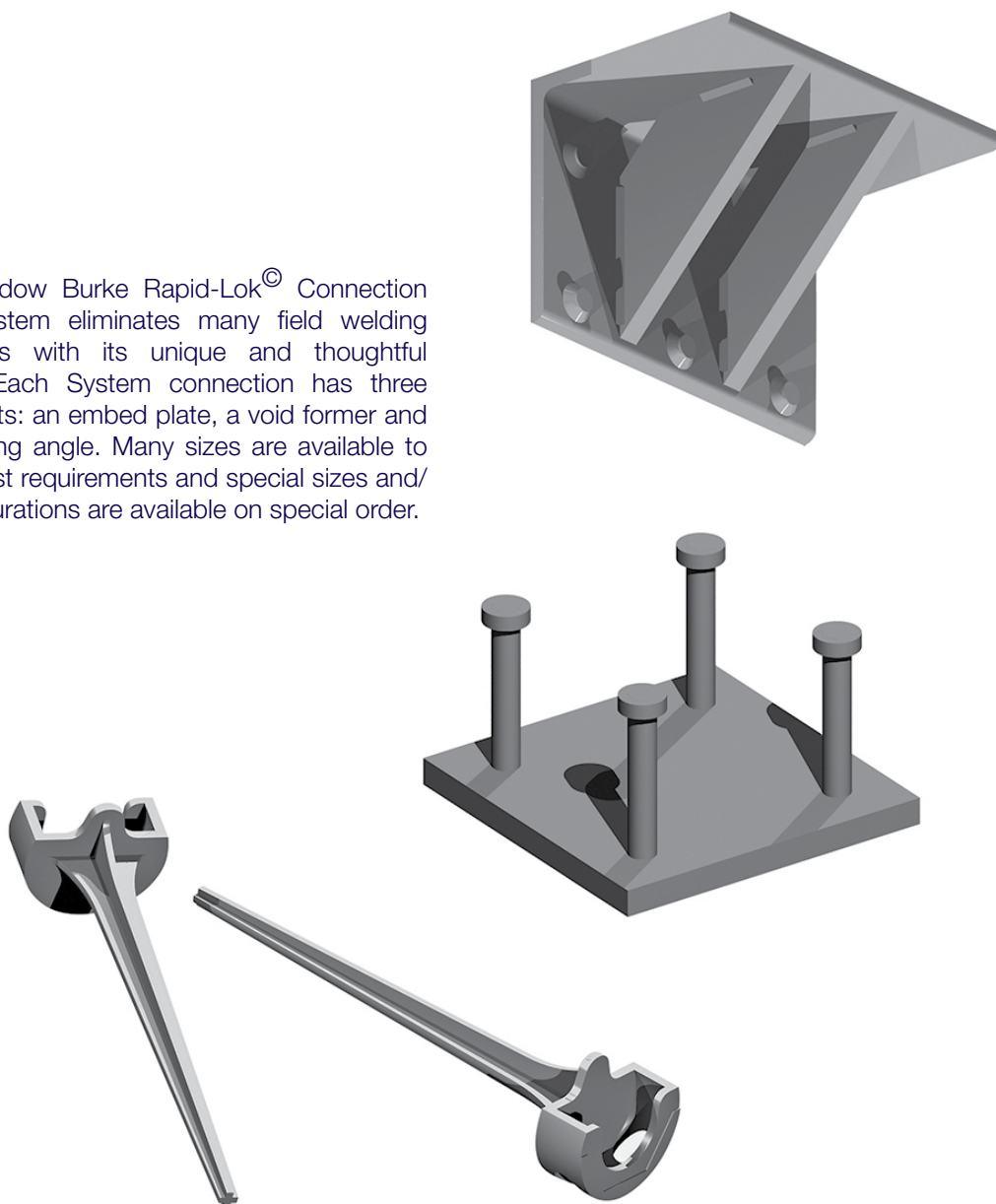
INSTALLATION (PANELS GREATER THAN 9-1/4")

1. Drill 20mm diameter hole to 9" deep (minimum) from tip of drill bit. Clean out dust. Use Lift-It Plate as template.
2. Place MB Brace Bolt into the hole through the hardened washer and the Liftit Plate as shown.
3. Turn bolt into the concrete using a large 3/4" impact wrench with a 30mm socket.
4. If it is necessary to remove the bolt and reinstall it, hand thread the bolt to start it in the original threads.

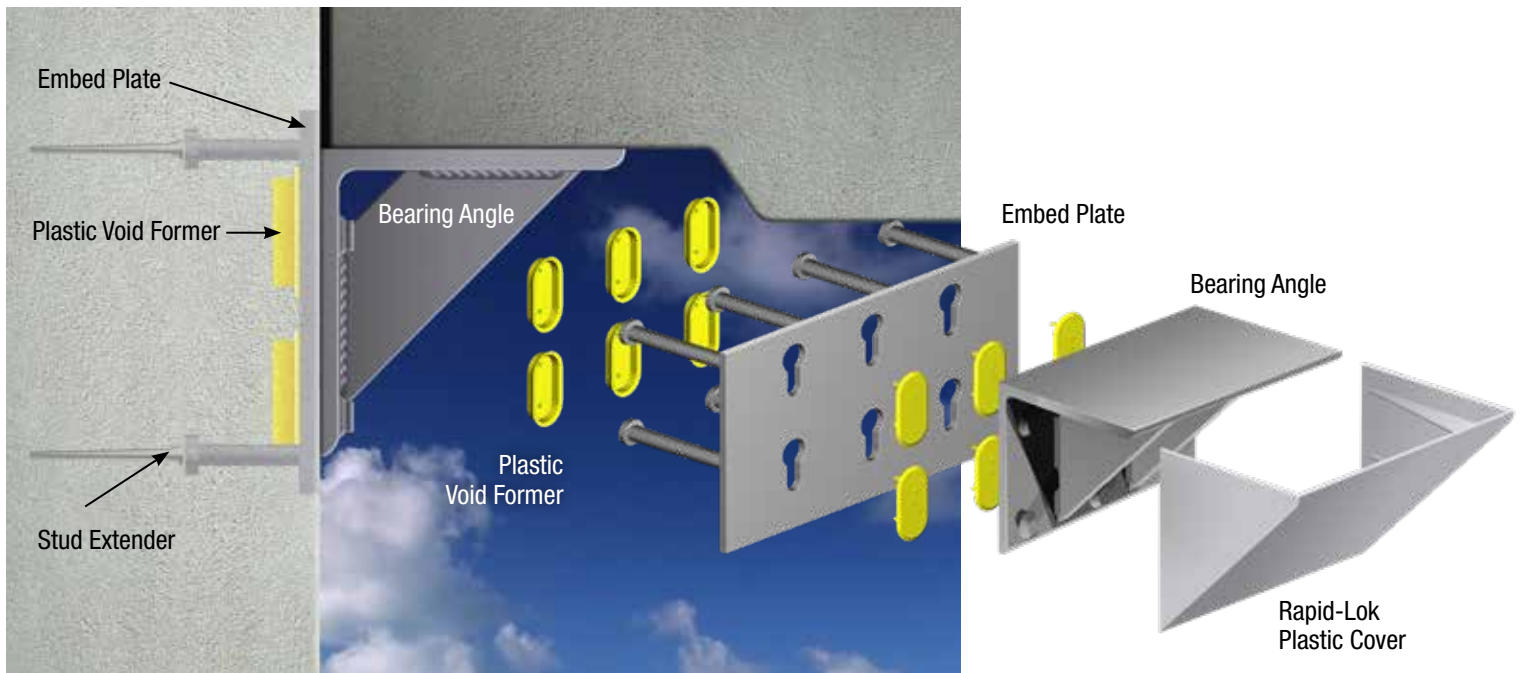


Rapid-Lok® Generation II Connection Plate System

The Meadow Burke Rapid-Lok® Connection Plate System eliminates many field welding operations with its unique and thoughtful design. Each System connection has three basic parts: an embed plate, a void former and the bearing angle. Many sizes are available to meet most requirements and special sizes and/or configurations are available on special order.



A Better Solution



What is the Rapid-Lok System?

Rapid-Lok System is used to eliminate conventional concrete corbels. Rapid-Lok System creates a steel projection in a structural wall, which acts as a shelf, able to carry the weight of a Double Tee, Stair, Beam or other precast elements.

Rapid-Lok System consists of a Bearing Angle, Steel Corbel or Concrete Replicated Bearing Corbel that locks into an Embed Plate cast into a structural wall.

How It Works:

The Embed Plate is cast into the structural wall at the precast plant, with the faceplate flush to the wall face. Once the precast structure is on site, the void formers attached to the face of the Embed Plate that create recesses are removed by the Erector to reveal 'keyholes.'

The Bearing Angle, Concrete Replicated Bearing Corbel's interlocking studs are then engaged into the keyholes of the Embedded Plate, securely locking them in place without requiring a weld. Selection of a Bearing Angle, Concrete Replicated Bearing Corbel is based upon load requirements, fire rating and aesthetic finish desired for the project.

Why is it Better?

Saves time and money:

- Reduces the risk of accidents in the precast plant by not having to position and place the heavy concrete corbels in the process of producing a panel or column.
- Forming and casting corbels in a precast panel is both time consuming and requires additional material costs. This is eliminated by using the Rapid-Lok Embed Plate at the precast plant and then engaging the Bearing Angle or Bearing Corbel onsite during erection.
- Eliminates the need for onsite welding and weld inspections as the connection to the face plate and angle are secured by interlocking studs.

Improves aesthetics:

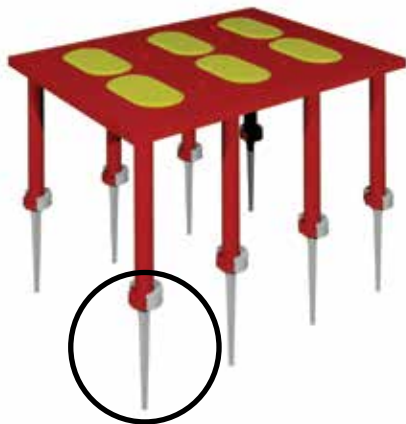
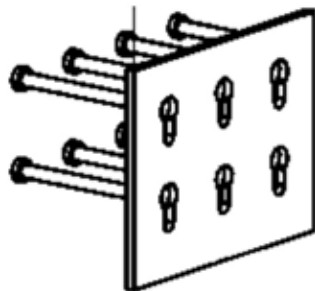
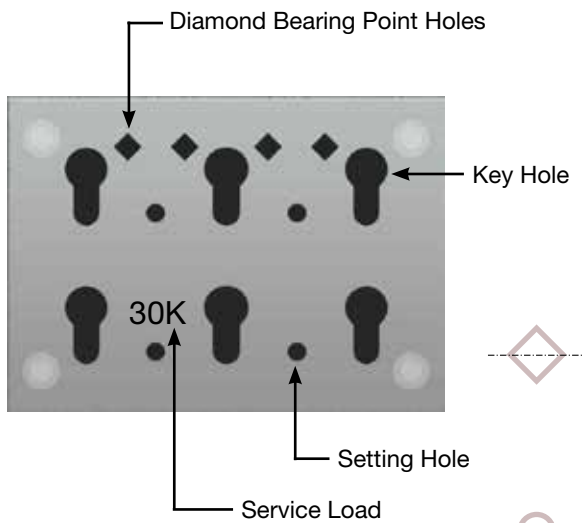
- Less obtrusive than a larger concrete corbel
- Offers an 'urban industrial' look to the structure if the steel of the Bearing Angle is left exposed
- The Bearing Angle can be covered with a concrete colored Rapid-Lok Plastic Cover
- When encased in concrete, the Bearing Angle recreates the finish and look of a traditional concrete corbel

Design the Rapid-Lok into a Project:

- Identify the live and dead loads of the weight the Rapid-Lok must hold
- Select either the Bearing Angle based on hours of fire rating required
- Select either the Bearing Angle based on aesthetics (exposed vs. encased finish)

The Embed Plate is cast into the structural wall at the precast plant, with the faceplate flush to the wall face.

Features



30K

Embed Plate

Selection of the Embed Plate size and configuration is determined by the selection of either Bearing Angle, Concrete Replicated Bearing Corbel.

- Manufactured from ASTM A36 steel, it is a durable long-term solution over using a concrete corbel
- Available in various size configurations to provide a performance range from 30 kip – 40 kip in service load
- Available in either plain or hot dipped galvanized finish

Diamond Holes

Knowing exactly where the “Bearing Point” is located has never been easier. Find the “Diamond Hole,” line up the correct elevation to the corners, and the Rapid-Lok is right on! Note that this is a through hole, visible from either side, even after galvanizing.

Setting Holes

Setting Holes aid in the installation process, are 0.562” in diameter and are consistently located for use with templates during production.

Service Load Stamp

The service load of the device is located on the face of the embed plate. This indicates the unit’s service load and is to be used only as a convenient indicator of the unit installed after concrete has been placed. Installation and location of the Rapid-Lok may reduce the service load.

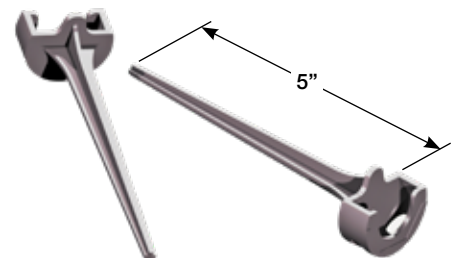
Plastic Void Former

Each Void Former is a plastic box which fits into the keyhole and is secured into place with locking stems, eliminating any concrete leakage, even when self consolidating concrete is used. This former creates a voided area, free of concrete behind the Embed Plate and permits the attachment of the Bearing Angle without interference.

Stud Extender

The MB Stud Extender (US PATENT NO. US7065930B2) is designed as an adjustable height support chair for embed/weld plates. The Stud Extender eliminates the tedious, labor-intensive wood forming or risky “wet setting” of embed plates in the top-face of a concrete panel.

- Easy to use
- Saves materials and time
- Eliminates wood framing
- Consistent accuracy
- Screed and finish panels easily



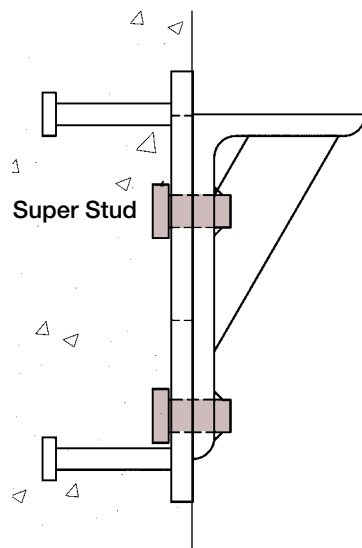
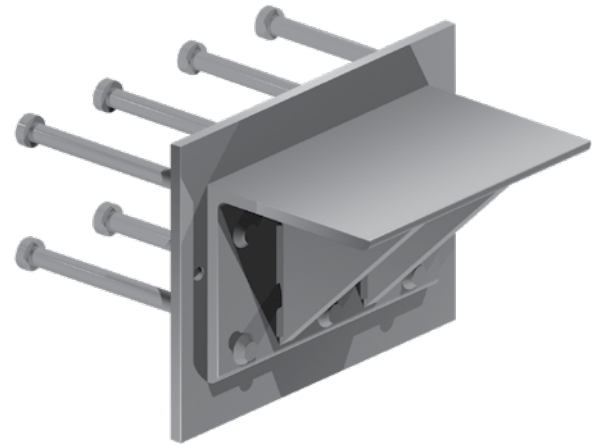
The Bearing Angle



Selection of a Rapid-Lok model is based on load requirements, fire rating and aesthetic finish desired for the project.

The Bearing Angle is used to create a shelf which acts as a traditional corbel replacement. The underside of the angle is left exposed or it is covered with the Rapid-Lok Plastic Cover.

- Available in various sizes to provide a performance range from 30 kip – 40 kip in service load.
- All sizes of Bearing Angles provide up to a 1-hour fire rating. The 30 kip provides 2-hour fire rating.
- The Rapid-Lok Plastic Cover is available for the 30 kip Bearing Angle models. It fits securely under the gusset of the Bearing Angle units to completely conceal all three of its open sides. Due to it replicating the color of concrete, it blends into the surrounding structure.



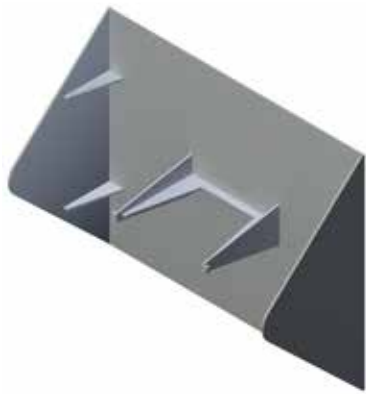
Super studs attached to the Bearing Angle have been “cold tested,” configured and sized for optimum performance in all weather conditions, ensuring the load bearing capacities are met.

Rapid-Lok Plastic Cover



Rapid-Lok Plastic Cover will completely conceal all three open sides of the Rapid-Lok Bearing Angle.

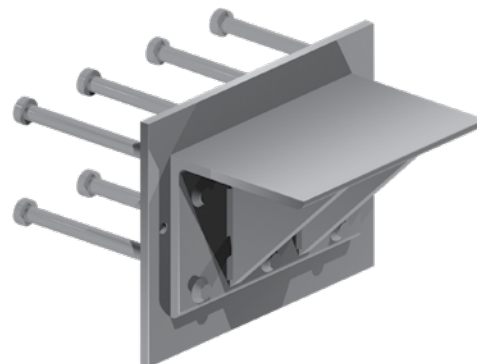
Fits 30 Kip Rapid-Lok



Rapid-Lok Plastic Cover will completely conceal all three open sides of the Rapid-Lok Bearing Angle, like that of a concrete corbel or concrete ledge in a conventional precast or cast-in-place scenario. Just simply snap the cover into place, fastening it to the gussets of the existing Rapid-Lok Bearing Angle Assembly.

A simple but effective concrete colored plastic cover that attaches to the existing angles of the 30 kip (MBRLC30) Rapid-Lok Bearing Angle Assembly. The Rapid-Lok Plastic Cover eliminates all the safety issues associated with installing a concrete corbel to a precast panel by reducing the weight and ergonomic concerns of hanging a large piece of concrete. The Rapid-Lok Plastic Cover was thoroughly tested to ensure that it will perform exceptionally well, even in extreme conditions. It holds its shape and resists impact damage at temperatures approaching zero and exceeding 125°F. Although it normally remains in place once installed, the cover can be detached and reattached dozens of times if needed without deforming.

| Item Number | Description |
|-------------|------------------------------------|
| MBRLC30 | Plastic Cover for 30 kip Rapid-Lok |

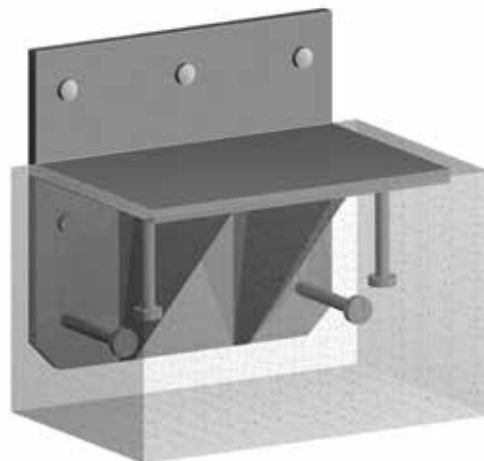


Concrete Replicated Bearing Corbel



Concrete Replicated Bearing Corbel is functionally identical to the Bearing Angle but has additional studs to form a frame, allowing the casting of concrete around the corbel. The underside angle is then encased in concrete to create a traditional concrete corbel finish.

- Available in various sizes to a performance range from 30 kip – 40 kip in service load
- The 30 kip and 40 kip units provide a 2-hour fire rating.



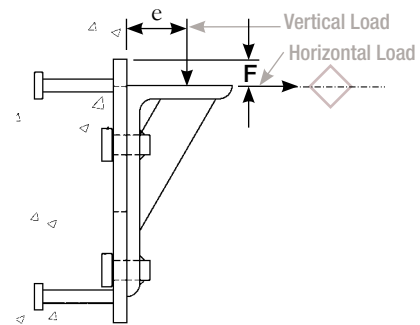
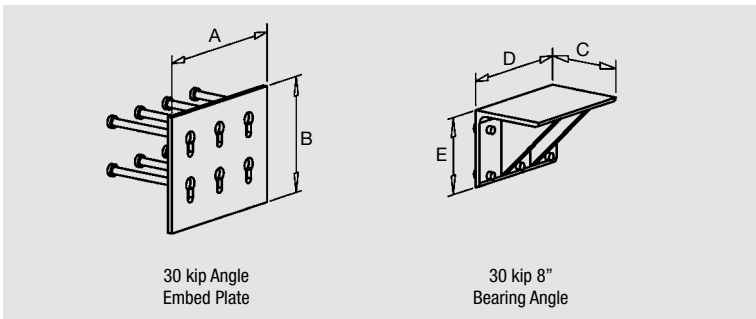
30 Kip Service Load

| Rapid-Lok Model | Finish | | Description | Vertical Service Load (kips) | Horizontal Service Load (kips) | Fire Rating Hours | Embed Plate Dim. | | Bearing Angle & Corbel Dim. | | | Bearing Point | | Embed Plate Stud Qty & Size | |
|------------------|--------------|-----------------------|---------------------------|------------------------------|--------------------------------|-------------------|------------------|------------|-----------------------------|------------|------------|---------------|------------|-----------------------------|--------------------|
| | Plain Finish | Hot Dipped Galvanized | | | | | A (inches) | B (inches) | C (inches) | D (inches) | E (inches) | F (inches) | e (inches) | # of Studs/Embed Plate | Stud Size (inches) |
| 30 kip 8" | 30RLA | 30RLAG | 30k 8" Bearing Angle | 30 kip | 18 kip | 2 Hour | 15.5" | 12" | 8" | 14" | 8" | 2" | 5" | 8 | 3/4" x 8" |
| | 30RLP12 | 30RLP12G | 30k Embed Plate | | | | 15.5" | 12" | 8" | 14" | 8" | 2" | 5" | | |
| 30 kip Thin Wall | 30RLA | 30RLAG | 30k 8" Bearing Angle | 30 kip | 18 kip | 2 Hour | 15.5" | 12" | 8" | 14" | 8" | 2" | 5" | 8 | 3/4" x 5" |
| | 30RLP12TW | 30RLP12TWG | 30k Thin Wall Embed Plate | | | | 15.5" | 12" | 8" | 14" | 8" | 2" | 5" | | |

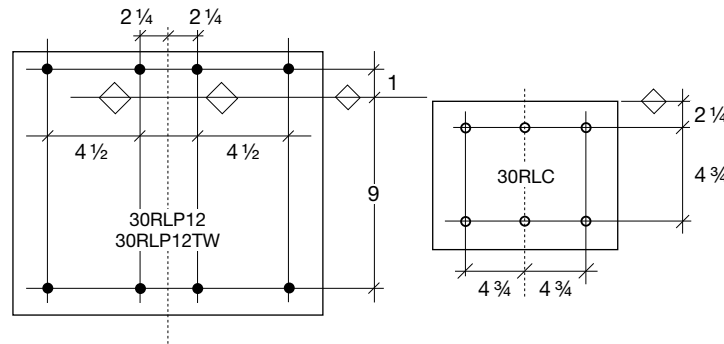
NOTE: Full vertical and horizontal service loads cannot be applied simultaneously. The following interaction equation should be used for controlling service load combinations.

1. Maximum in-plane eccentricity for load application is 2 3/8" from centerline
2. Products are fire tested per ASTM E119
3. All Hot Dipped Galvanized components are hot dipped galvanized per ASTM A153
4. 30 kip concrete corbel with 3 hour fire rating available on special order.

$$\left(\frac{\text{Horizontal Service Load}}{\text{Published Horizontal Service Load}} \right)^{5/3} + \left(\frac{\text{Vertical Service Load}}{\text{Published Vertical Service Load}} \right)^{5/3} \leq 1.0$$

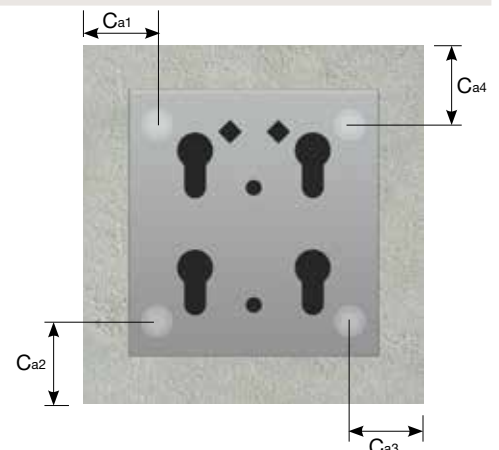


Stud Location (Units in Inches)



Minimum Edge Distance

| 30 Kip Service Load | | | | | |
|---------------------|-------------|-------------------------|-----------------|-----------------|-----------------|
| Rapid-Lok Model | Item Number | Edge Distances (Inches) | | | |
| | | C _{a1} | C _{a2} | C _{a3} | C _{a4} |
| 30 kip 8" | 30RLP12 | 12.25 | 10 | 12.25 | 18 |
| 30 kip Thin Wall | 30RLP12TW | 12.25 | 10 | 12.25 | 18 |



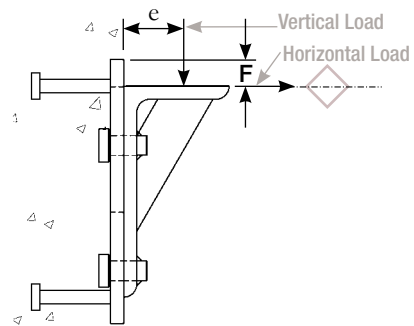
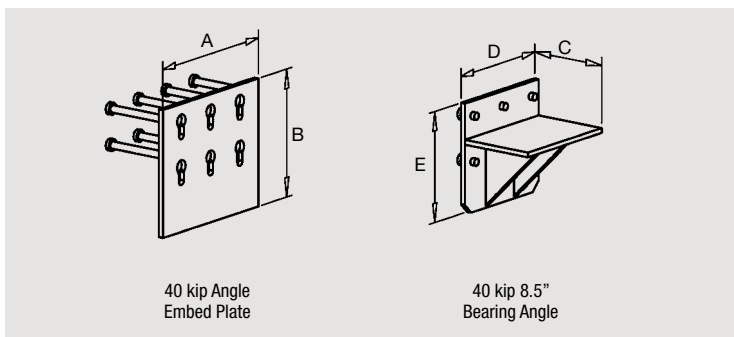
40 Kip Service Load

| Rapid-Lok Model | Plain Finish | Hot Dipped Galvanized | Description | Vertical Service Load (kips) | Horizontal Service Load (kips) | Fire Rating Hours | Embed Plate Dim. | | Bearing Angle & Corbel Dim. | | | Bearing Point | | Embed Plate Stud Qty & Size | |
|-----------------|--------------|-----------------------|--------------------------|------------------------------|--------------------------------|-------------------|------------------|------------|-----------------------------|------------|------------|---------------|------------|-----------------------------|--------------------|
| | Item Number | Item Number | | | | | A (inches) | B (inches) | C (inches) | D (inches) | E (inches) | F (inches) | e (inches) | # of Studs/Embed Plate | Stud Size (inches) |
| 40 kip 8 1/2" | 40RLA | 40RLAG | 40k 8 1/2" Bearing Angle | 40 kip | 26 kip | 1 Hour | | | 8.5" | 12" | 11.5" | 5.75" | 5" | | |
| | 40RLP | 40RLPG | 40k Embed Plate | | | | 15.5" | 13.25" | | | | | | 8 | 3/4" x 7" |

NOTE: Full vertical and horizontal service loads cannot be applied simultaneously. The following interaction equation should be used for controlling service load combinations.

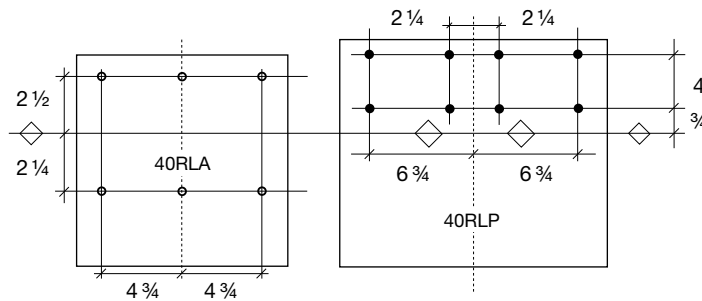
1. *Maximum in-plane eccentricity for load application is 2 3/8" from centerline
2. Products are fire tested per ASTM E119
3. All Hot Dipped Galvanized components are hot dipped galvanized per ASTM A153

$$\left(\frac{\text{Horizontal Service Load}}{\text{Published Horizontal Service Load}} \right)^{5/3} + \left(\frac{\text{Vertical Service Load}}{\text{Published Vertical Service Load}} \right)^{5/3} \leq 1.0$$



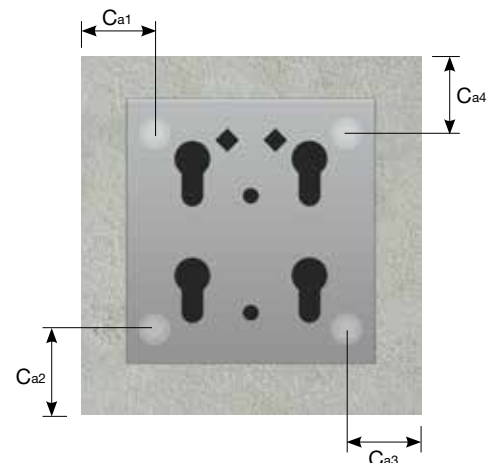
Stud Location

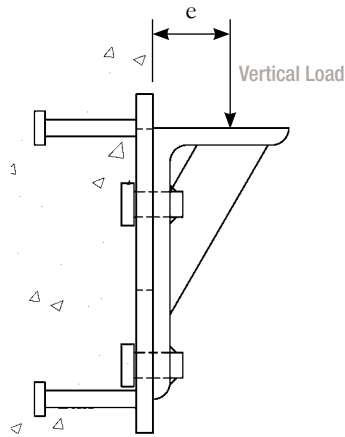
(Units in Inches)



Minimum Edge Distance

| 40 Kip Service Load | | | | | |
|---------------------|-------------|-------------------------|-----------------|-----------------|-----------------|
| Rapid-Lok Model | Item Number | Edge Distances (Inches) | | | |
| | | C _{a1} | C _{a2} | C _{a3} | C _{a4} |
| 40 kip 8 1/2" | 40RLP | 15.25 | 17.75 | 15.25 | 12.25 |





Ultimate Assembly Capacities as Tested in Concrete

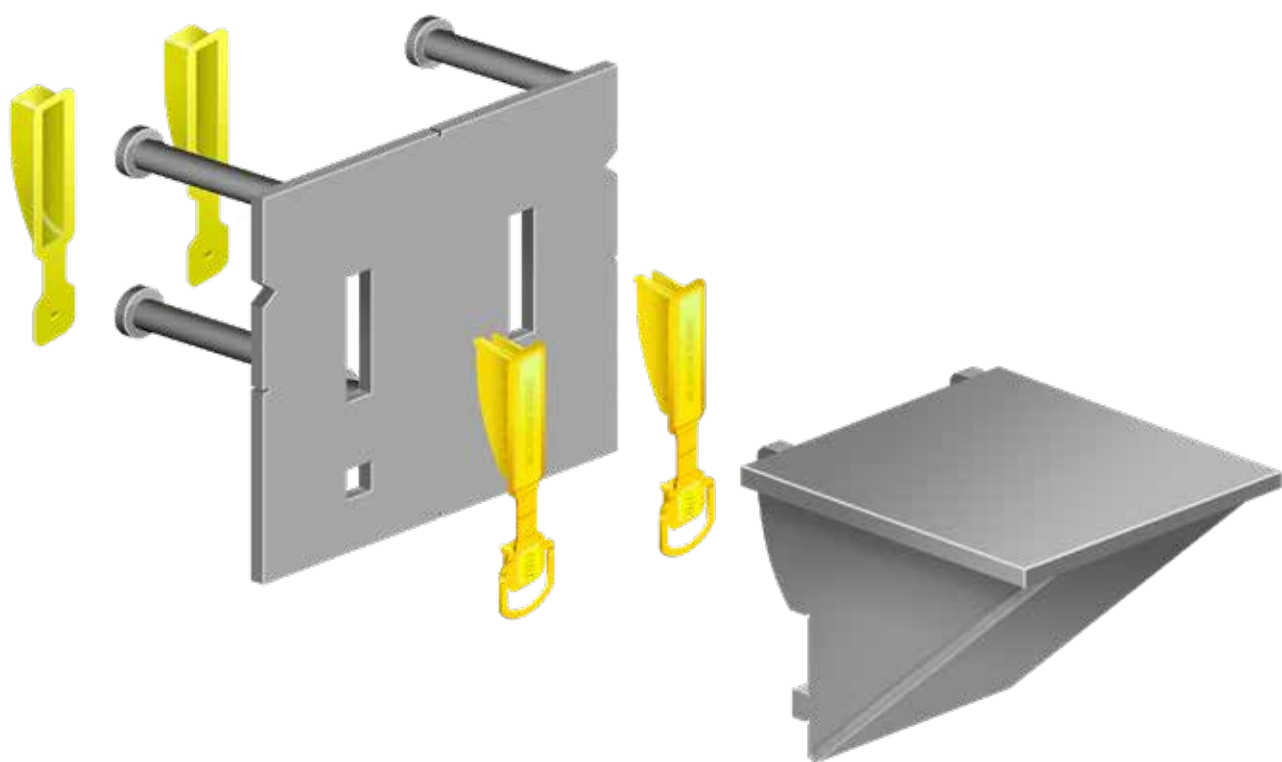
| Raw Material Information | MB Item Number | Rapid-Lok Assembly Type | Vertical Load Eccentricity "e" | Ultimate Load |
|--|--------------------|-------------------------|--------------------------------|---------------|
| U-stiffners, Embedment Plates and Angles $F_y=36,000$ psi Triangular Stiffeners $F_y=50,000$ psi Concrete Embedment Studs $f_{ut}=65,000$ psi Interconnecting Studs $f_{ut}=70,000$ psi | 30RLA 30RLP12 | 30 kip 8" | 5" | 90 kip |
| | 30RLA 30RLP12TW | 30 kip Thin Wall | 5" | 90 kip |
| | 40RLA 40RLP | 40 kip 8 1/2" | 5" | 120 kip |

This data is for designers using ultimate strength design per PCI, 8th edition or ACI 318. Meadow Burke does not recommend using or accept liability for Service Loads applied in excess of those listed as Service Loads in this document.

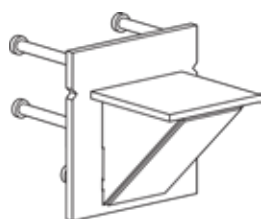
Note: Ultimate Loads are based on 5,000 psi concrete.

Note: Proper installation of the Rapid-Lok Bearing Angle and/or Corbel is indicated by the bearing surface being properly positioned at the center/corners of the Diamond Holes. No load is to be applied to the Rapid-Lok assembly until these units are fully and properly engaged.

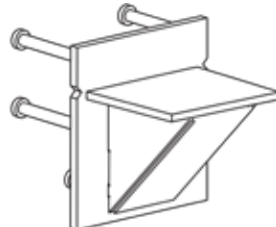
Rapid-Lok® Ultimate



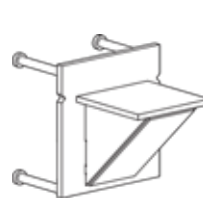
RLU-8



RLU-10



RLU-M



Available in three configurations

US Patent No. 10,883,265

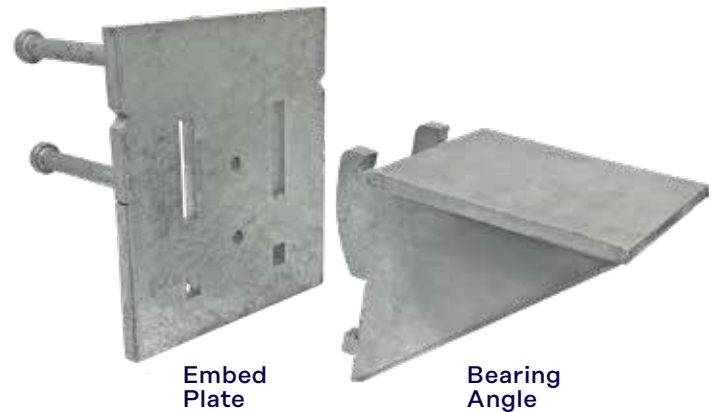
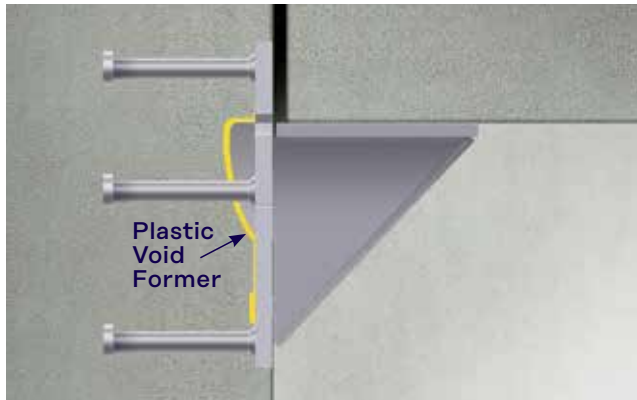
MB Rapid-Lok Ultimate

Overview

Leviat's MB Rapid-Lok Ultimate is an engineered steel corbel system that provides a permanent, durable, easy-to-install replacement for traditional concrete corbels and welded angles.

Rapid-Lok Ultimate is available in several sizes and capacities to support a variety of load-bearing elements, including double tees and precast stairs.

Installation is safe and simple. The Embed Plate is cast into the concrete column or panel at the precast plant with the face flush to the wall surface. Once the unit is on-site, the attached void formers are removed from the face of the embed plate to reveal recesses. The Bearing Angle ears are then engaged into the recesses of the Embed Plate, securely locking the entire assembly into place without requiring a weld.



Benefits

■ Structural Engineers

- Capacity rating using LFRD methodology
- Consolidation of models and capacity ranges for simpler design selection
- Load tested to ACI-318's 5% fractile to meet current code requirements
- Fire rating per ASTM-E119 and CAN/ULC-S101

■ Double Tee Producers

- Labor efficiencies from simplified panel forming
- Safety improvements by minimizing the risk of injuries
- Cost reductions in transportation and dunnage

■ Erectors

- More efficient installation by avoiding obstructions from preinstalled concrete corbels
- Lightweight Bearing Angle securely engages without requiring weld

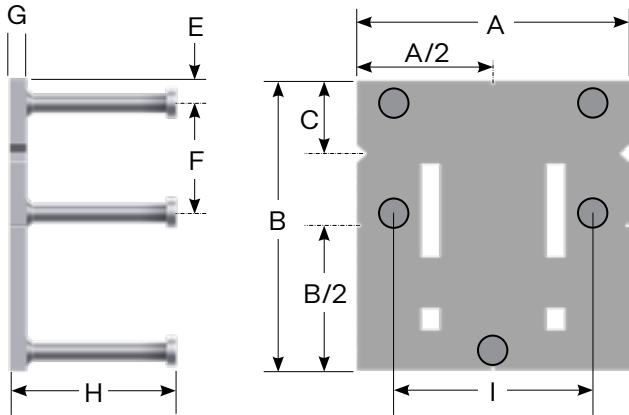
■ Architects and Consultants

- Fluid feature in the finished structure emulating a concrete cast corbel
- Discreet projection with a HDG finish
- Eliminates potential cracking problems with traditional concrete corbels

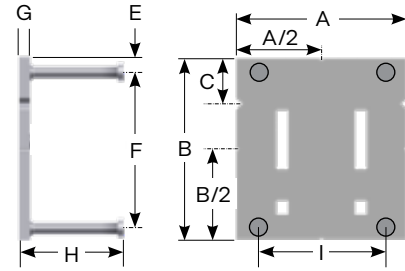
US Patent No. 10,883,265

Embed Plate & Bearing Angle

The Rapid-Lok Ultimate Embed Plate and Bearing Angle are manufactured from ASTM A572 and A36 steel. They have a hot-dip galvanized finish per ASTM A153.



RLU-8 & RLU-10



RLU-M

Dimensions - Embed Plate

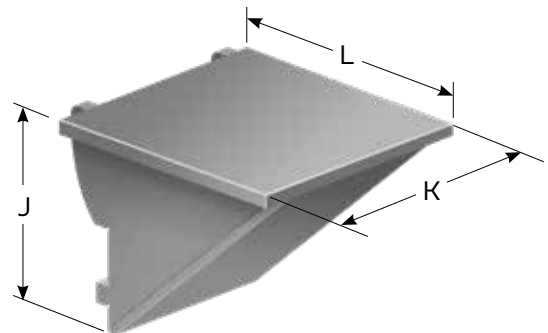
| Product | Item Number | A | B | C* | E | F | G | H | I | Number of Studs | Stud Size | Weight |
|----------------|-------------|-----|-----|-------|----|-------|-------|-------|-------|-----------------|------------|--------|
| RLU-8 & RLU-10 | MBRLUP8G | 11" | 12" | 3" | 1" | 4.50" | 0.63" | 6.81" | 9" | 5** | 0.75x6.13" | 26 lbs |
| RLU-M | MBRLUPMG | 6" | 6" | 1.63" | 1" | 4" | 0.50" | 5.69" | 4.50" | 4 | 0.50x5.19" | 6 lbs |

*Tri-cut at dimension C indicates the bearing surface of the angle.

**5th stud is non-structural; it provides stability during up-in-form installation.

Dimensions - Bearing Angle

| Product | Item Number | J | K | L | Weight |
|---------|-------------|-------|-----|----|--------|
| RLU-8 | MBRLUA8G | 8.40" | 8" | 8" | 25 lbs |
| RLU-10 | MBRLUA10G | 8.40" | 10" | 8" | 26 lbs |
| RLU-M | MBRLUAMG | 4.11" | 4" | 4" | 5 lbs |



Quality Assurance

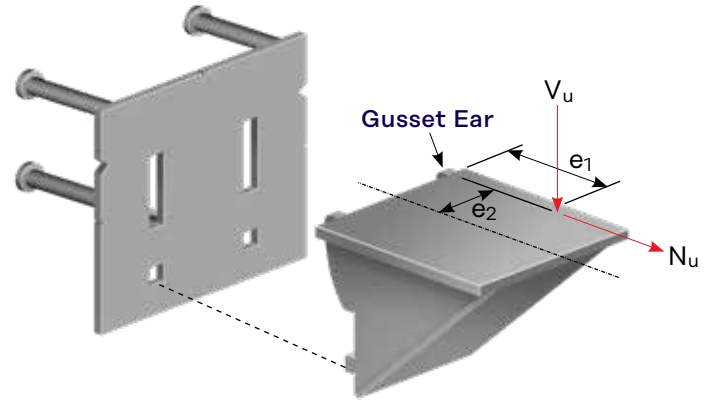
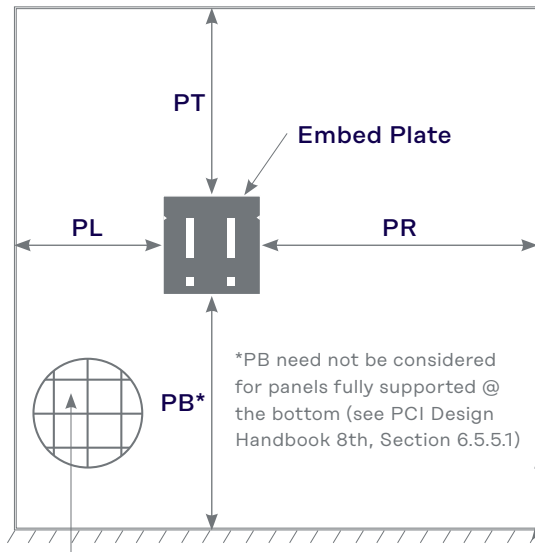
- **100% Dimensional Inspection:** Every unit undergoes rigorous dimensional checks to ensure compliance to specifications.
- **Full Traceability:** Each product is individually marked, ensuring all quality records are accessible.
- **Material & Strength Testing:** Our products undergo comprehensive testing to guarantee optimal performance and durability.



US Patent No. 10,883,265

RLU-8 & RLU-10 Panel Fully Supported at Bottom

Wall, Lite Wall, Column



One (1) #4 E.F. @ all edges

Panel supported at bottom

Min WWR 6x6 – W2.9 x W2.9 at Embed Face

RLU-8 & RLU-10 Capacities

Table values are based on physical tests using ACI's 5% Fractile Analysis and ACI 318 calculations. **Minimum member thickness = 8"**

1. Tabulated capacities must be coordinated with applicable support conditions
2. ASTM E119 fire duration for all assemblies is 3 hrs with $V_{service} = 30$ kips
3. Tables are only to be used by qualified structural engineers who understand and apply all applicable codes
4. Table values apply to fully factored ultimate loads (V_u and N_u)

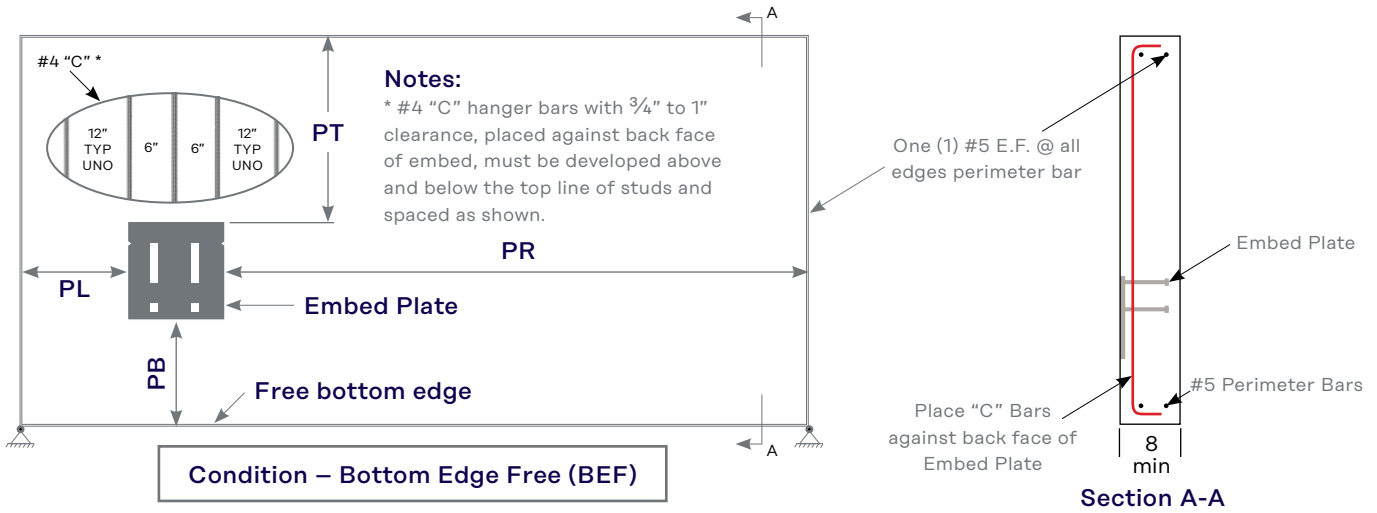
| Condition | Description | PL | PR | PT | PB | RLU-8 $e_1 \leq 6"$ and $e_2 \leq 2"$ | | | RLU-10 $e_1 \leq 6"$ and $e_2 \leq 3"$ | | |
|-----------|------------------------|-------------|-------------|-----------|-----|--|--------------------------|--------------|---|--------------------------|--------------|
| | | | | | | $\Phi V_{n,f}^{a,b,c}$ | $\Phi N_{n,f}^{a,b,c,d}$ | Failure Mode | $\Phi V_{n,f}^{a,b,c}$ | $\Phi N_{n,f}^{a,b,c,d}$ | Failure Mode |
| BES 1 | Not near a free edge | $\geq 9.5"$ | $\geq 9.5"$ | $\geq 9"$ | N/A | 42.1 kips | 5.3 kips | Steel | 42.1 kips | 5.3 kips | Steel |
| BES 2 | Free edge on two sides | $\geq 6.5"$ | $\geq 6.5"$ | $\geq 9"$ | N/A | 42.1 kips | 5.3 kips | Steel | 39.4 kips | 4.9 kips | Concrete |
| BES 3 | Free edge on one side | $\geq 2"$ | $\geq 9.5"$ | $\geq 9"$ | N/A | 37.8 kips | 4.7 kips | Concrete | 32.4 kips | 4.1 kips | Concrete |
| BES 4 | Top edge | $\geq 19"$ | $\geq 19"$ | $\geq 3"$ | N/A | 28.6 kips | 3.6 kips | Concrete | 27.1 kips | 3.4 kips | Concrete |

- A. Capacity values table BES use a Φ -factor = 0.70
 If the structural engineer determines a $\Phi = 0.75$ may be used, then the table values may be multiplied by a factor = $(0.75/0.70) = 1.071$,
but ΦV_n must not exceed the bearing angle's steel capacity of 42.1 kips. Typical ACI 318 Φ -factors are: (Reference ACI 318-14 Section 17.3.3)
 Φ -factor = 0.70 for members without confinement reinforcing
 Φ -factor = 0.75 for members with adequate confinement reinforcing
- B. All values apply to $f_c' = 5000$ psi. Concrete capacity values may be modified by $\sqrt{f_c'/5000 \text{ psi}}$, **but ΦV_n must not exceed the bearing angle's steel capacity of 42.1 kips.** Steel capacity includes $\Phi = 0.90$
- C. Capacity values for concrete failures may be increased by adding additional reinforcing, (Reference ACI 318-14 Section 17.4.2.9 and 17.5.2.9),
but ΦV_n must not exceed the bracket's steel capacity of 42.1 kips.
- D. Tested values N_u are based on 12.5% of V_u . The test loads were applied simultaneously.

US Patent No. 10,883,265

RLU-8 & RLU-10 Panel with Free Edge at Bottom

Spandrel, Wall Opening Below



RLU-8 & RLU-10 Capacities

Table values are based on physical tests using ACI's 5% Fractile Analysis and ACI 318 calculations. **Minimum member thickness = 8"**

1. Tabulated capacities must be coordinated with applicable support conditions
2. ASTM E119 fire duration for all assemblies is 3 hrs with $V_{service} = 30$ kips
3. Tables are only to be used by qualified structural engineers who understand and apply all applicable codes
4. Table values apply to fully factored ultimate loads (V_u and N_u)

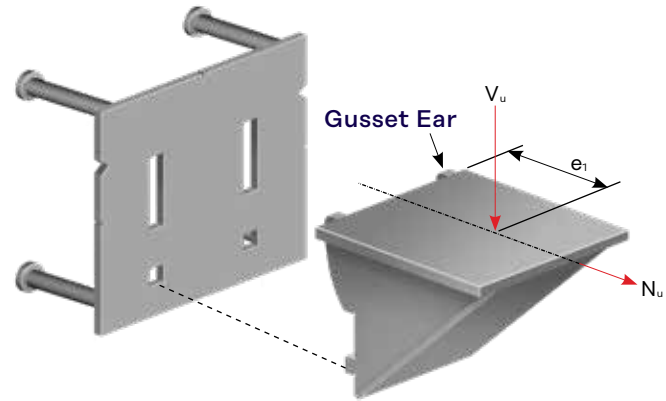
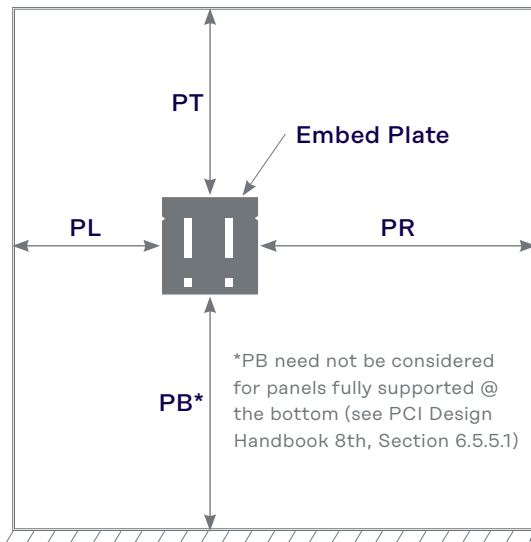
| | | | | | | RLU-8 $e_1 \leq 6"$ and $e_2 \leq 2"$ | | | RLU-10 $e_1 \leq 6"$ and $e_2 \leq 3"$ | | |
|--|------------------------------------|--------------|--------------|-----------|-------------|--|-------------------------|--------------|---|-------------------------|--------------|
| Condition | Description | PL | PR | PT | PB | ΦV_{nf} a,b,c,d | ΦN_{nf} a,b,c,d,e | Failure Mode | ΦV_{nf} a,b,c,d | ΦN_{nf} a,b,c,d,e | Failure Mode |
| Condition 1 Unreinforced | BEF 6 Bottom Edge | $\geq 22.5"$ | $\geq 22.5"$ | $\geq 9"$ | $\geq 4.5"$ | 17.6 kips | 2.2 kips | Concrete | 15.6 kips | 2.0 kips | Concrete |
| | BEF 7 Side Edge- Bottom Edge | $\geq 6"$ | $\geq 22.5"$ | $\geq 9"$ | $\geq 4.5"$ | 14.8 kips | 1.9 kips | Concrete | 13.1 kips | 1.6 kips | Concrete |
| Condition 2 Reinforced with #4 "C" Bars | BEF 8 Bottom Edge | $\geq 22.5"$ | $\geq 22.5"$ | $\geq 9"$ | $\geq 4.5"$ | 41.1 kips | 5.1 kips | Concrete | 36.4 kips | 4.6 kips | Concrete |
| | BEF 9 Side Edge- Bottom Edge | $\geq 12.5"$ | $\geq 22.5"$ | $\geq 9"$ | $\geq 4.5"$ | 40.8 kips | 5.1 kips | Concrete | 36.2 kips | 4.5 kips | Concrete |
| | BEF 10 Bottom Edge | $\geq 22.5"$ | $\geq 22.5"$ | $\geq 9"$ | $\geq 3"$ | 30.0 kips | 3.7 kips | Concrete | 26.5 kips | 3.3 kips | Concrete |

- A. Capacity values Condition 1 use a Φ -factor = 0.70
If the structural engineer determines a $\Phi = 0.75$ may be used, then the table values may be multiplied by a factor = $(0.75/0.70) = 1.071$,
but ΦV_n must not exceed the bearing angle's steel capacity of 42.1 kips. Typical ACI 318 -factors are: (Reference ACI 318-14 Section 17.3.3)
 Φ -factor = 0.70 for members without confinement reinforcing
 Φ -factor = 0.75 for members with adequate confinement reinforcing
- B. Capacity values Condition 2 use a Φ -factor = 0.75 due to use of confinement reinforcement
- C. All values apply to $f'_c = 5000$ psi. Concrete capacity values may be modified by $\sqrt{f'_c/5000 \text{ psi}}$, **but V_n must not exceed the bearing angle's steel capacity of 42.1 kips.** Steel capacity includes $\Phi = 0.90$
- D. Capacity values for concrete failures may be increased by adding additional reinforcing, (Reference ACI 318-14 Section 17.4.2.9 and 17.5.2.9),
but V_n must not exceed the bracket's steel capacity of 42.1 kips.
- E. Tested values N_u are based on 12.5% of V_u . The test loads were applied simultaneously

US Patent No. 10,883,265

RLU-M Panel Fully Supported at Bottom

Wall, Lite Wall, Column



One (1) #5 E.F. @ all edges

Panel supported at bottom

RLU-M Capacities

Table values are based on physical tests using ACI's 5% Fractile Analysis and ACI 318 calculations. **Minimum member thickness = 8"**

1. Tabulated capacities must be coordinated with applicable support conditions
2. Tables are only to be used by qualified structural engineers who understand and apply all applicable codes
3. Table values apply to fully factored ultimate loads (V_u and N_u)

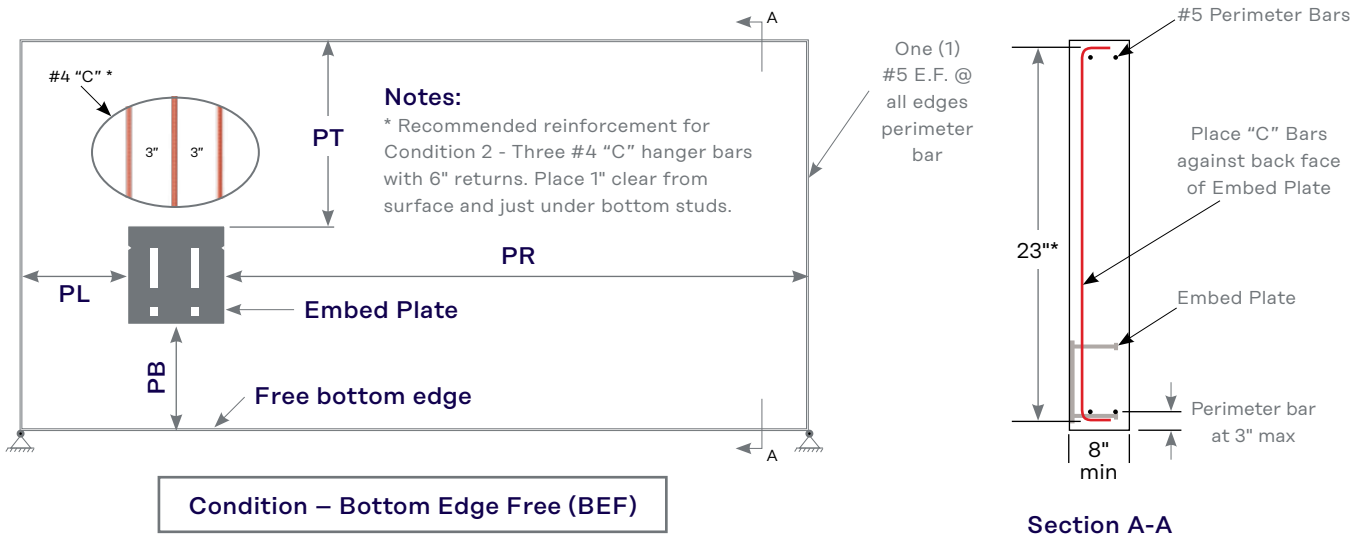
| Condition | Description | PL | PR | PT | PB | 2-Hour Fire Rating ASTM E119 $V_{service} = 7.5\text{kips}$ $e_1 \leq 3"$ | | | No Fire Rating $e_1 \leq 3"$ | | |
|-----------|---|------------|------------|-------------|-----|---|------------------------|---------------------------|---------------------------------|--------------------------|--------------|
| | | | | | | $\Phi V_{n,f}^{a,e}$ | $\Phi N_{n,f}^{a,d,e}$ | Failure Mode ^o | $\Phi V_{n,f}^{a,b,c}$ | $\Phi N_{n,f}^{a,b,c,d}$ | Failure Mode |
| BES 1 | Free edge on one side | ≥ 8.5 | ≥ 0.0 | ≥ 17.0 | N/A | 10.0 kips | 1.3 kips | N/A | 18.6 kips | 2.3 kips | Steel |
| BES 2 | Free edge on one side & Top edge (Top Corner) | ≥ 8.5 | ≥ 0.0 | ≥ 5.0 | N/A | 10.0 kips | 1.3 kips | N/A | 12.9 kips | 1.6 kips | Concrete |
| BES 3 | Top edge | ≥ 8.5 | ≥ 8.5 | ≥ 5.0 | N/A | 10.0 kips | 1.3 kips | N/A | 18.6 kips | 2.3 kips | Steel |

- A. Capacity values table BES use a Φ -factor = 0.70
If the structural engineer determines a $\Phi = 0.75$ may be used, then the table values may be multiplied by a factor = $(0.75/0.70) = 1.071$, **but ΦV_n must not exceed the bearing angle's steel capacity of 18.6 kips.** Typical ACI 318 Φ -factors are: (Reference ACI 318-14 Section 17.3.3)
 Φ -factor = 0.70 for members without confinement reinforcing
 Φ -factor = 0.75 for members with adequate confinement reinforcing
- B. All values apply to $f'_c = 5000$ psi. Concrete capacity values may be modified by $\sqrt{f'_c/5,000 \text{ psi}}$, **but ΦV_n must not exceed the bearing angle's steel capacity of 18.6 kips.** Steel capacity includes $\Phi = 0.90$
- C. Capacity values for concrete failures may be increased by adding additional reinforcing, (Reference ACI 318-14 Section 17.4.2.9 and 17.5.2.9), **but ΦV_n must not exceed the bracket's steel capacity of 18.6 kips.**
- D. Tested values N_u are based on 12.5% of V_u . The test loads were applied simultaneously.
- E. Design load capacity was reduced to match Fire Test load $V_{service} = 7.5$ kips

US Patent No. 10,883,265

RLU-M Panel with Free Edge at Bottom

Spandrel, Wall Opening Below



Condition – Bottom Edge Free (BEF)

RLU-M Capacities

Table values are based on physical tests using ACI's 5% Fractile Analysis and ACI 318 calculations. **Minimum member thickness = 8"**

1. Tabulated capacities must be coordinated with applicable support conditions
2. Tables are only to be used by qualified structural engineers who understand and apply all applicable codes
3. Table values apply to fully factored ultimate loads (V_u and N_u)

| | | | | | | | 2-Hour Fire Rating ASTM E119 $V_{service} = 7.5\text{kips}$ $e_1 \leq 3"$ | | | No Fire Rating $e_1 \leq 3"$ | | |
|--|-------|---------------------------|-------------|-------------|-------------|------------|---|------------------------|---------------------------|---------------------------------|--------------------------|--------------|
| Condition | | Description | PL | PR | PT | PB | $\Phi V_{n^t}^{a,e}$ | $\Phi N_{n^t}^{a,d,e}$ | Failure Mode ^g | $\Phi V_{n^t}^{a,b,c}$ | $\Phi N_{n^t}^{a,b,c,d}$ | Failure Mode |
| Condition 1 Unreinforced | BEF 5 | Spandrel - Bottom edge | ≥ 15.0 | ≥ 15.0 | ≥ 17.0 | ≥ 1.0 | 3.7 kips | 0.5 kips | Concrete | 3.7 kips | 0.5 kips | Concrete |
| Condition 2 Reinforced ^f | BEF 6 | Spandrel - Bottom edge | ≥ 15.0 | ≥ 15.0 | ≥ 17.0 | ≥ 1.0 | 10.0 kips | 1.3 kips | N/A | 18.6 kips | 2.3 kips | Steel |

- A. Capacity values Condition 1 use a Φ -factor = 0.70 If the structural engineer determines a $\Phi = 0.75$ may be used, then the table values may be multiplied by a factor = $(0.75/0.70) = 1.071$, **but ΦV_n must not exceed the bearing angle's steel capacity of 18.6 kips.**
 Typical ACI 318 -factors are: (Reference ACI 318-14 Section 17.3.3)
 Φ -factor = 0.70 for members without confinement reinforcing
 Φ -factor = 0.75 for members with adequate confinement reinforcing
- B. All values apply to $f_c' = 5000$ psi. Concrete capacity values may be modified by $\sqrt{f_c'/5,000 \text{ psi}}$, **but V_n must not exceed the bearing angle's steel capacity of 18.6 kips.** Steel capacity includes $\Phi = 0.90$
- C. Capacity values for concrete failures may be increased by adding additional reinforcing, (Reference ACI 318-14 Section 17.4.2.9 and 17.5.2.9), **but V_n must not exceed the bracket's steel capacity of 18.6 kips.**
- D. Tested values N_u are based on 12.5% of V_u . The test loads were applied simultaneously
- E. Design load capacity limited by Fire Test load $V_{service} = 7.5$ kips
- F. Increased capacities based on reinforcement calculations per ACI 318

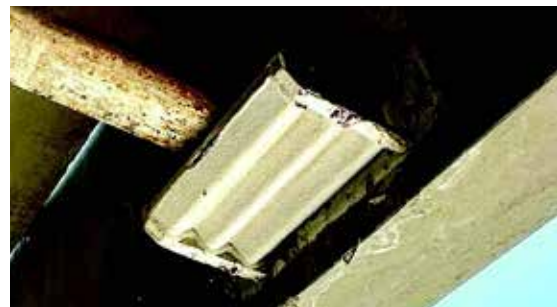
US Patent No. 10,883,265

MB Rapid-Lok Ultimate Saddle

Overview

Leviat's MB Rapid Lok Ultimate Saddle is an engineered steel saddle system that provides a permanent, durable, easy-to-install replacement to the traditional concrete ledge and dapped double tee construction method. Rapid-Lok Ultimate Saddle is designed to support double tees in spandrels and walls without requiring dapping the double tee or forming ledges in the panel.

Installation is safe and simple. The Embed Plate is cast into the concrete panel at the precast plant with face flush to the wall surface. Once the unit is on-site, the attached void formers are removed from the face of the embed plate to reveal recesses. The Bearing Saddle ears are then engaged into the recesses of the Embed Plate, securely locking the entire assembly into place without requiring a weld.

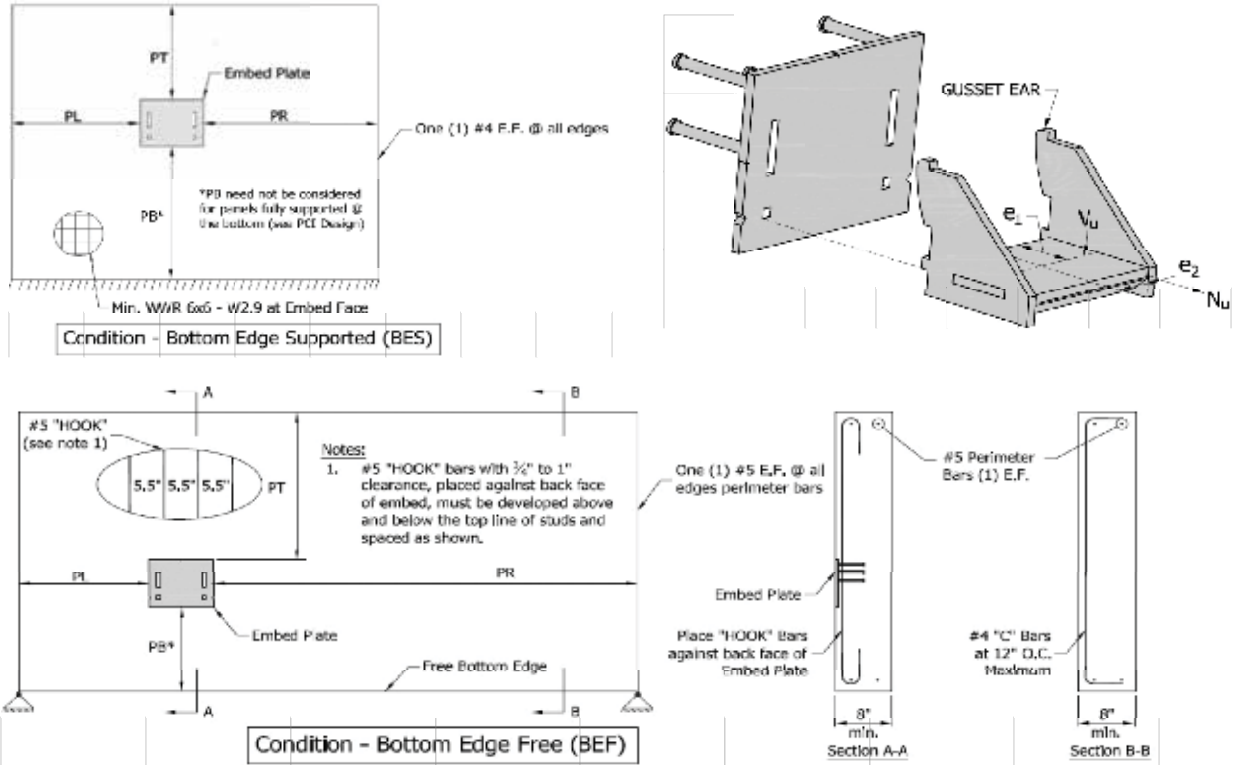


Benefits

- Eliminates need to dap tees: Permits use of standard double tee beams at spandrels and openings.
- Reduces complex rebar detailing of panel and double tee: Casting traditional ledges and dapped double tees require costly specialized equipment, forms and additional reinforcement detailing
- Permits use of standard panels with no irregular shapes: Simplifies production, storing and shipping walls and spandrels by removing protruding elements.
- Eliminates obstacles when erecting: No protruding elements to maneuver double tees around, provides straight drop in path for beam placement.



MB Rapid-Lok Ultimate Saddle



RLU-SA-10 Capacities

Table values are based on physical tests using ACI's 5% Fractile Analysis and ACI 318 calculations. **Minimum member thickness = 8"**

1. Tabulated capacities must be coordinated with applicable support conditions
2. ASTM E119 fire duration for all assemblies is 3 hrs with $V_{service} = 30$ kips
3. Tables are only to be used by qualified structural engineers who understand and apply all applicable codes
4. Table values apply to fully factored ultimate loads (V_u and N_u)

| | | | | | | | 2-Hour Fire Rating ASTM E119 $V_{service} = 7.5$ kips $e_1 \leq 3"$ | | |
|--|-------|----------------------------|-------------|-------------|-------------|------------|---|------------------------|--------------|
| Condition | | Description | PL | PR | PT | PB | $\Phi V_n^{a,b,c,d}$ | $\Phi N_n^{a,b,c,d,e}$ | Failure Mode |
| Condition 1 Unreinforced | BES 1 | Side Edge | ≥ 7.25 | ≥ 9.0 | ≥ 90 | N/A | 50.4 kips | 6.3 kips | Steel |
| Condition 2 Reinforced with (4) #4 "HOOK" Bars | BEF 2 | Side Edge - Bottom edge | ≥ 10.5 | ≥ 17.0 | ≥ 16.0 | ≥ 0.0 | 44.1 kips | 5.5 kips | Concrete |

- A. Capacity values Condition 1 use a Φ -factor = 0.70. If the structural engineer determines a $\Phi = 0.75$ may be used, then the table values may be multiplied by a factor = $(0.75/0.70) = 1.071$, **but ΦV_n must not exceed the bearing angle's steel capacity of 18.6 kips.**
Typical ACI 318 -factors are: (Reference ACI 318-14 Section 17.3.3)
 Φ -factor = 0.70 for members without confinement reinforcing
 Φ -factor = 0.75 for members with adequate confinement reinforcing
- B. Capacity values for BEF 2 use a Φ -factor = 0.75 due to use of confinement reinforcement.
- C. All values apply to $f_c' = 6000$ psi. Concrete capacity values may be modified by $\sqrt{f_c'/6,000 \text{ psi}}$, **but V_n must not exceed the bearing angle's steel capacity of 50.4 kips.** Steel capacity includes $\Phi = 0.90$
- D. Capacity values for concrete failures may be increased by adding additional reinforcing, (Reference ACI 318-14 Section 17.4.2.9 and 17.5.2.9), **but ΦV_n must not exceed the bracket's steel capacity of 50.4 kips.**
- D. Tested values N_u are based on 12.5% of V_u . The test loads were applied simultaneously

Rapid-Lok Bearing Angle Retention Wedge

Overview

The Rapid-Lok Bearing Angle Retention Wedge provides a temporary method to reduce the risk of pre-installed bearing angles from disconnecting from concrete panels during handling and transit.

Product Data - Rapid-Lok Bearing Angle Retention Wedge

| Item | Bundle Quantity | Carton Quantity |
|-----------|-----------------|-----------------|
| MBRLU-WDG | 36 | 576 |



Installation Guide



1. With the ribs of the retention wedge towards the embed plate, slide the thin end into the gap between the embed plate and bearing angle near the outer edge. Repeat the process using a second wedge at the opposite side of the bearing angle.



2. Using a small wooden block and hammer, tap the top of wedges down into the gap until they are both firmly seated.



3. After transporting the panels and placing, the wedges can be left in place or broken off flush with the bearing angle by simply pulling them towards the front of the bearing angle and down to the bearing angle face.

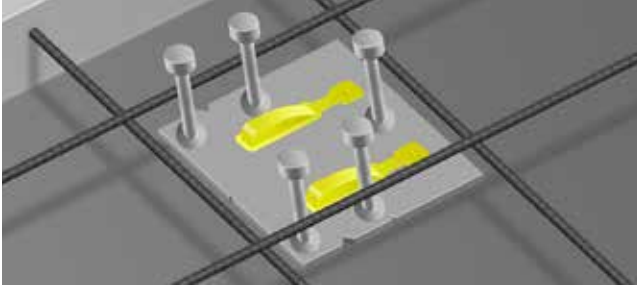
Wedge Removal

If removal is necessary, prior to breaking wedge flush, the retaining wedge can be completely removed by grabbing its top with pliers and pulling upward while simultaneously

pulling in a side-to-side motion in line with the embed plate to dislodge. Removal after breaking flush with bearing plate requires using a thin profile tool, such as piece of $\frac{1}{8}$ " thick bar steel

or standard blade screw driver, and driving wedge deeper into gap until it clears the bearing angle.

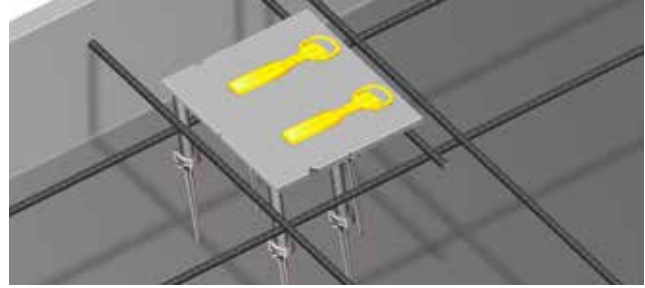
Installation Instructions



Down-in-Form Embed Plate Installation

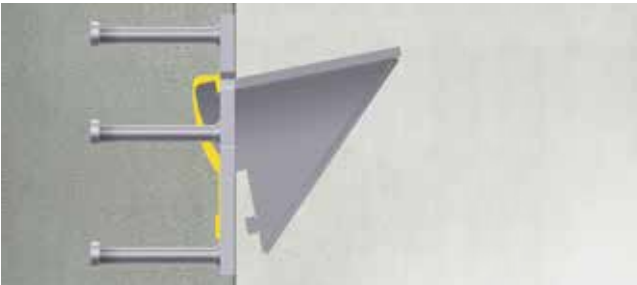
- Place the face of the Embed Plate upon the base of the casting bed, aligning the Tri-Cut to the correct bearing elevation of where the stem of the double tee or concrete element will sit
- Secure Embed Plate in place
- Caulk around the base of the Embed Plate to avoid concrete leakage underneath
- The plastic void formers cause the face of the embed plate to be approximately 1/8" off the form face
- Finish preparing the panel and pour concrete

WARNING: TO AVOID DAMAGE, DO NOT PLACE REINFORCING ON TOP OF VOID FORMERS



Up-in-Form Embed Plate Installation

- Attach Stud Extenders to the Embed Plate Round Head Studs. If necessary, adjust the height by cutting the legs of the Stud Extender to ensure the face of the Embed Plate lies flush to the panel surface
- Place the Round Head Studs down and position in the casting bed aligning the Tri-Cut to the correct bearing elevation where the double tee or concrete element will sit
- Secure Embed Plate to the rebar cage
- Finish preparing the panel and pour concrete



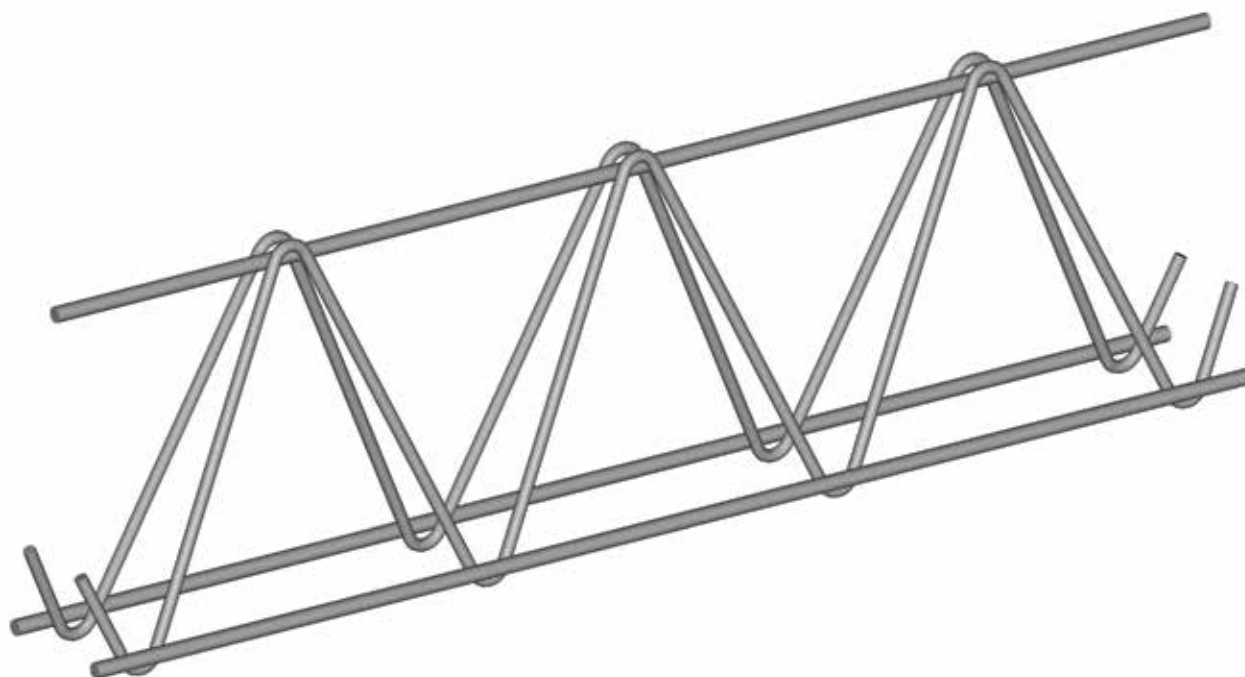
Bearing Angle Installation

- Prior to wall erection remove the plastic void former cover by pulling the plastic tabs
- Leading with the front of the Bearing Angle Ears, using a slotting motion, engage the Ears of the Bearing Angle into the Rectangular Openings of the Embed Plate
- Seat the bottom Square Posts of the Bearing Angle into the Square Openings of the Embed Plate
- The Rapid-Lok Ultimate is now ready for the double tee to be erected and placed upon the shelf of the Bearing Angle



US Patent No. 10,883,265

Welded Wire Girders for Composite Panels & Slabs



The need for more efficient construction has guided the concrete industry into designing more cost effective and energy efficient precast wall panels. This progress initiative has evolved into the composite panel design that allows both inner and outer concrete wythes to be load bearing. The key to a good composite action design is an effective shear and moment connection that will distribute the stresses to both wythes.

Welded Wire Girders for Composite Panels

“R” RATING

The “R” Rating is the measure of heat loss given for thermal transmissions. In the design of insulated concrete panels, one major hurdle to overcome is when breaks in the insulation allow concrete from the two wythes to flow together creating a thermal bridge and allowing major heat transmission through the panel. The use of the Welded Wire Girder System minimizes this thermal bridging.

INSULATED PANEL HEAT DELAMINATION

When the inside wall of an insulated concrete wall panel is exposed to fire or excess heat, the inside wythe will expand more rapidly than the outside concrete wythe. This action will cause the panel to bow inwardly and seriously decrease the strength of any reinforcing steel in the panel as the heat increases. Use of the Welded Wire Girder System adds structural reinforcement to the panel and helps to minimize wythe separation and/or delamination.

WELDED WIRE GIRDER INSTALLATION

Most precast panel producers will space the girders on two feet centers for easy reinforcement consideration and the availability of two-foot insulation board. Keeping the insulation at a two feet width consistency from panel to panel will reduce installation errors and standardize production.

INSTALLATION SEQUENCE

- Install bottom wythe reinforcing mesh, place the Welded Wire Girders and tie to the mesh.
- Pour the bottom wythe concrete. Lift or rotate the Welded Wire Girders to make sure two-thirds of the girder stands above the concrete wythe.
- Install the two-foot sections of insulation board. Press the insulation in and around the girder's diagonal wires. Tape or caulk any gaps in the insulation material to prevent concrete seepage.
- Install top wythe mesh. Tie the mesh to the girder and make sure it is positioned properly in the center of the wythe.
- Place the top wythe concrete.
- Installation is complete.

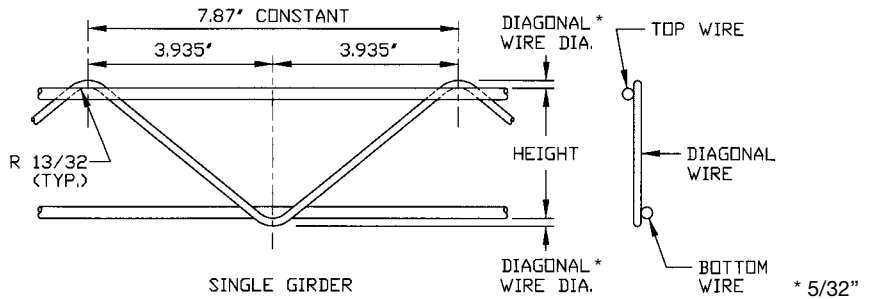
Single Welded Wire Girders for Composite Panels

WELDED WIRE GIRDER – SINGLE

Welded Wire Girder – Single is fabricated from two substantial wires laced together by a continuous diagonal wire. The girder is designed specifically to solve the need for an effective way to handle shear and movement in precast composite panels. The Welded Wire Girder – Single is available in heights from 2 3/4" to 9 1/2" and in lengths from 3'-11" to 35'-6". Welded Wire Girder – Single is available in plain or hot dip galvanize finish.

To Order, Specify: quantity, name, height, length and finish.

Ex. 60,000lf, MS030, H= 7", L= 10', Galvanized



WELDED WIRE GIRDER - SINGLE DATA

| W.W. Girder Type (single) | Top Wire | | | | Diagonal Wire | | | | Bottom Wire | | | |
|---------------------------|----------|-----|------------------|-----------------|---------------|-----|------------------|-----------------|-------------|-----|------------------|-----------------|
| | Diameter | | Wire Area As | | Diameter | | Wire Area As | | Diameter | | Wire Area As | |
| | in. | mm | in. ² | mm ² | in. | mm | in. ² | mm ² | in. | mm | in. ² | mm ² |
| MS 030 | .306 | 7.8 | 0.074 | 47.2 | .244 | 6.2 | .047 | 38.4 | .306 | 7.8 | .074 | 47.2 |
| MS 383 | .243 | 6.2 | 0.047 | 38.4 | .162 | 4.1 | .021 | 16.8 | .243 | 6.2 | .047 | 38.4 |
| MS 363 | .243 | 6.2 | 0.047 | 38.4 | .192 | 4.9 | .029 | 23.8 | .243 | 6.2 | .047 | 38.4 |
| MS343 | .243 | 6.2 | 0.047 | 38.4 | .225 | 5.7 | .040 | 32.5 | .243 | 6.2 | .047 | 38.4 |
| MS464 | .225 | 5.7 | 0.040 | 32.5 | .192 | 4.9 | .029 | 23.8 | .225 | 5.7 | .040 | 32.5 |

WELDED WIRE GIRDER – DOUBLE

The Welded Wire Girder – Double is fabricated from three substantial wires laced together by two continuous diagonal wires. The girder is designed specifically to solve the need for an effective way to handle shear and moment in precast composite floor panels. The Welded Wire Girder – Double is available in heights from 2 3/4" to 9 1/2" and in lengths from 3'-11" to 40'-0". Welded Wire Girder – Double is available in plain or hot dip galvanize finish.

To Order, Specify: quantity, name, height, length and finish.

Ex. 60,000lf, MS030, H= 7", L= 10', Galvanized

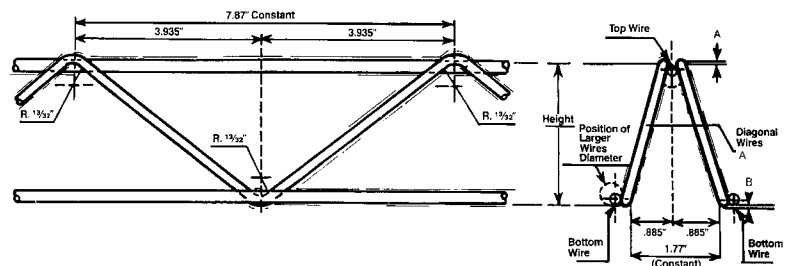
TOP WIRE
 Maximum Size: 6/0 Gauge - .461 inch diameter
 Minimum Size: 3 Gauge - .244 inch diameter

BOTTOM WIRE
 Maximum Size: 6/0 Gauge - .461 inch diameter
 Minimum Size: 8 Gauge - .163 inch diameter

DIAGONAL WIRE
 Maximum Size: 3 Gauge - .244 inch diameter
 Minimum Size: 8 Gauge - .163 inch diameter
 Maximum Size: 2 3/4" (2.76) High Girder - 6 Gauge - .192 inch diameter
 Minimum Size: 40% of area of top or bottom wire

HEIGHT OF GIRDER
 Maximum Height: 9 5/8" (9.84 inch)
 Minimum Height: 2 3/4" (2.76 inch)

LENGTH
 Standard Length: 40' 0" *
 Minimum Length: 3' 11"

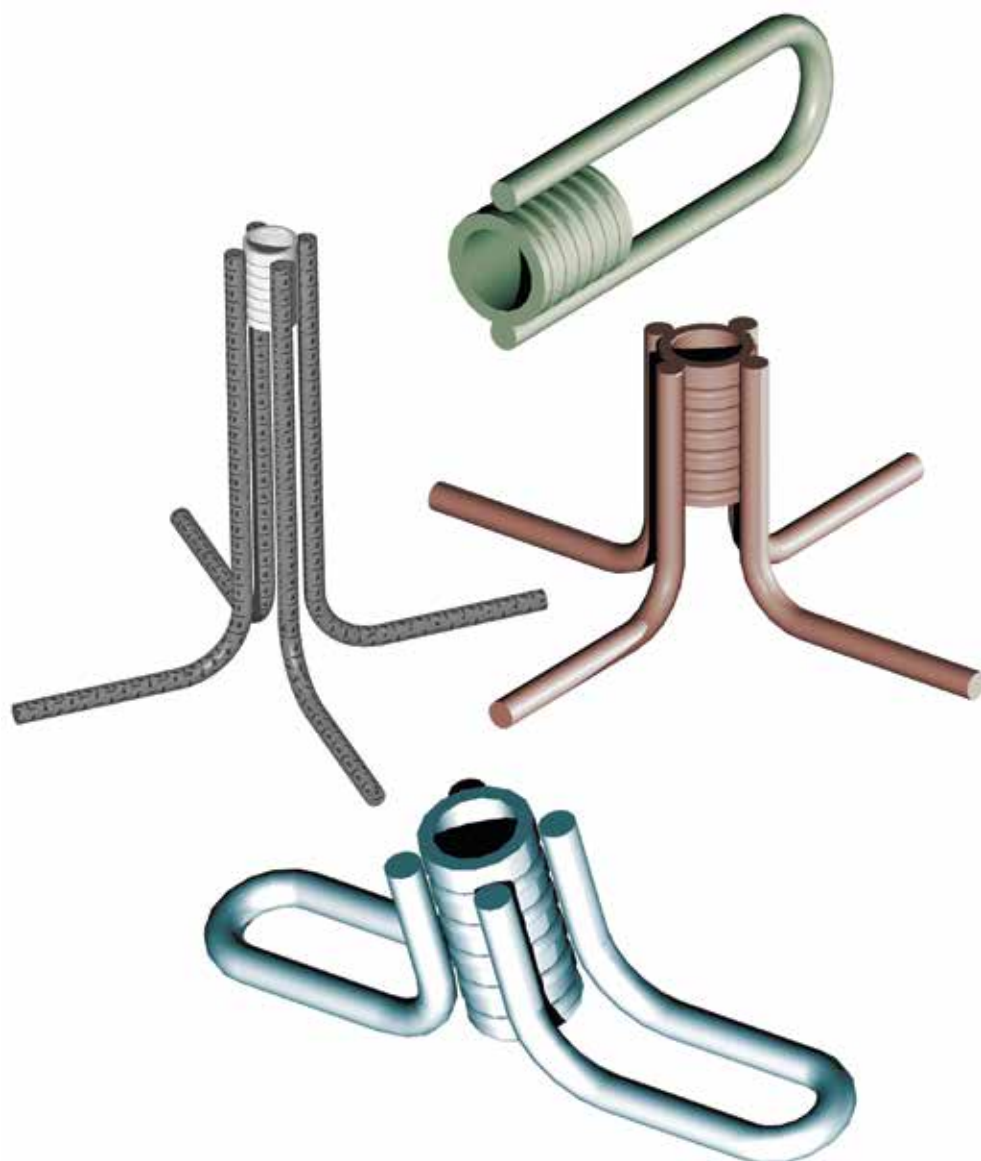


* For length over 40' 0" consult Meadow Burke.

Wire tensile strength exceeds ASTM A82-07 standards. May be designed for yield strength of 60 KSI.

A = dia. of diagonal wire ± 5/32"

Meadow Burke NC Threaded Inserts & Accessories



Meadow Burke NC threaded inserts and accessories are designed and manufactured to efficiently distribute bolt stresses into the concrete. Testing and field use have proven their performance. They provide the builder with confidence that their construction requirements will be met with quality structural connections.

Polymer Threaded Inserts

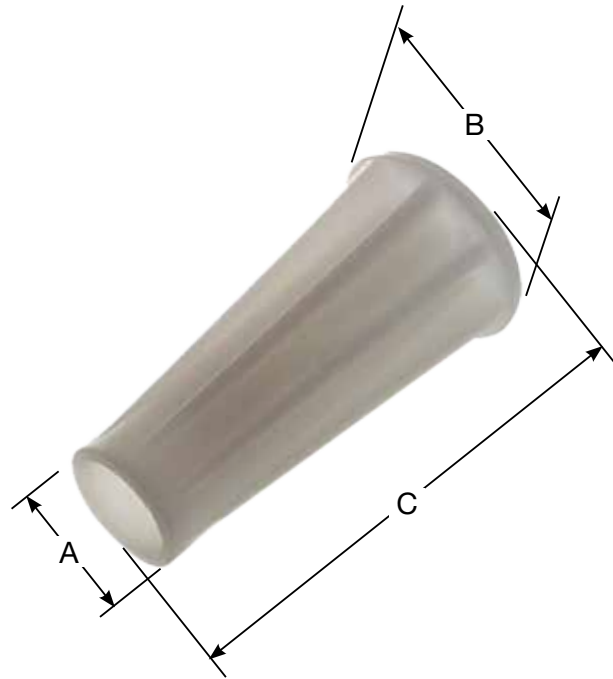
ADVANTAGES

Bowco Industries' Threaded Inserts are the most cost effective method for securing objects to precast and cast-in-place concrete.

- Corrosion Resistant
- Strong
- Lightweight
- Easy To Use
- Economical

VERSATILE APPLICATIONS

- Bolt equipment, racking or channel to vault walls
- Lift lightweight pieces
- Secure AC units and other equipment to concrete pads
- Bolt metal or cast iron frames to concrete lids
- Suspend pipe and conduit from concrete panels
- Secure handles to burial vaults
- Many other uses



| Item Number | Bolt Diameter | N.C. Thread | A (in.) | B (in.) | C (in.) | SWL (in.) |
|-------------|---------------|-------------|---------|---------|---------|-----------|
| BC140180 | ¼" | 20 | 0.75 | 1.00 | 1.50 | 1,000 |
| BC140220 | ⅜" | 16 | 0.75 | 1.00 | 1.50 | 1,000 |
| BC140110 | ½" | 13 | 0.75 | 1.25 | 1.50 | 1,000 |
| BC140150 | ½" | 13 | 0.75 | 1.25 | 1.50 | 1,200 |
| BC140130 | ½" | 13 | 0.75 | 1.25 | 2.50 | 2,500 |
| BC140250 | ⅝" | 11 | 0.95 | 1.38 | 2.95 | 3,000 |
| BC140200 | ¾" | 10 | 1.00 | 1.63 | 3.20 | 3,000 |

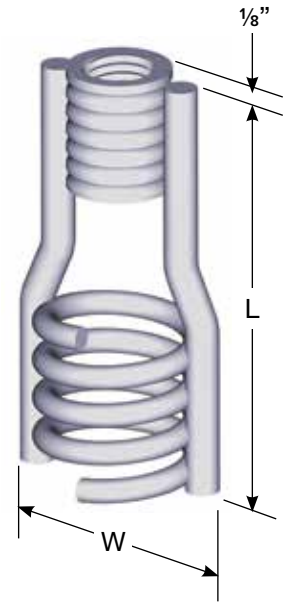
1. SWLs are based on 3,000 psi NWC, with FoS=3.
 2. Minimum edge distance = 1.5*C+B.

To order, specify: quantity, name and item number.

NC Threaded Inserts

FX-51 FERRULE INSERT – OPEN

The FX-51 Ferrule Insert – Open is a high strength, highly versatile insert available for numerous precast concrete applications. It is available in 3/4", 1", 1 1/4" and 1 1/2" bolt diameters and in the different lengths displayed in the table. The insert is constructed with a NC threaded coil, shaped struts (could be two, four or six depending on the model) and an expanded wire coil. The efficient design increases the shear cone surface area thus increasing the load capacity of the insert. The Ferrule Insert – Open is available with an optional mounting washer for easy nailing to the form. The insert is available in plain, electroplated, hot-dip galvanized, or stainless steel finish.



FX-51 FERRULE INSERT – OPEN DATA

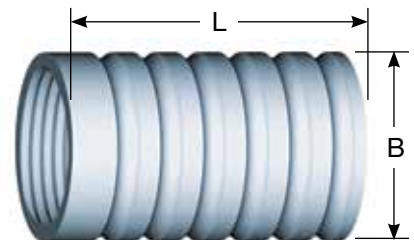
| Bolt Diameter | Length L | Safe Work Load (Tension) | Safe Work Load (Shear) | B | C | W | Wire Diameter D | Edge Distance (Tension) ⁴ | Edge Distance (Shear) ⁴ |
|---------------|----------|--------------------------|------------------------|---------|-------|-------|-----------------|--------------------------------------|------------------------------------|
| In. | In. | In. | In. | In. | In. | In. | In. | In. | In. |
| 3/4 | 4 1/2 | 5660 | 5660 | 1 11/16 | 1 5/8 | 2 3/8 | .375 | 7 | 12 |
| 7/8 | 5 1/2 | 8300 | 8300 | 2 3/16 | 1 5/8 | 2 7/8 | .440 | 9 | 16 |
| 1 | 5 1/2 | 8300 | 8300 | 2 3/16 | 1 5/8 | 2 7/8 | .440 | 9 | 16 |
| 1 | 7 1/2 | 16,000 | 16,000 | 2 3/16 | 1 5/8 | 2 7/8 | .440 | 12 | 24 |
| 1 1/4 | 7 1/2 | 16,000 | 16,000 | 2 1/2 | 2 1/2 | 3 1/8 | .440 | 13 | 24 |
| 1 1/4 | 9 1/2 | 21,650 | 21,650 | 2 1/2 | 2 1/2 | 3 1/8 | .440 | 16 | 26 |
| 1 1/2 | 9 1/2 | 21,650 | 21,650 | 2 13/16 | 2 1/2 | 3 1/8 | .440 | 16 | 26 |

1. SWL based on 3000 psi concrete compression strength.
2. SWL includes a 3:1 safety factor.
3. Inserts must have a 1/2" setback.
4. Minimum edge distance apply to 2 edges only. All other edges require 2x length of the insert.
5. Minimum corner distance shall be 1.5x minimum edge distance for shear when loaded towards the edge.
6. Minimum anchor spacing shall be 2x the edge distance for tension and 3x the edge distance for shear.

To order, specify: quantity, name, item number, optional washer and finish.

FS-2 FERRULE INSERT – STANDARD

The FS-2 Ferrule Insert – Standard is machined from solid 12L14 bar stock and is available in the bolt diameters shown in the table. All Meadow Burke ferrules have standard NC threads and have a closed end to prevent concrete seeping into the ferrule. Minimum bolt engagement for all standard ferrules is bolt diameter plus 1/8". Maximum bolt engagement for standard ferrules is shown in the table. The Ferrule Insert – Standard is available in plain and electroplated finish and in Type 304 stainless steel on special order.



Ferrules may be substituted in any standard coil product desired. There is no capacity reduction of an insert when this substitution is made. Ferrules and coils (of same diameter) will have the same load carrying capacities.

NOTE: ferrules with an open end and ferrules in lengths other than those shown in the table are available on special order. Contact your local Meadow Burke Service Center for more information.

FS-2 FERRULE INSERT - STANDARD DATA

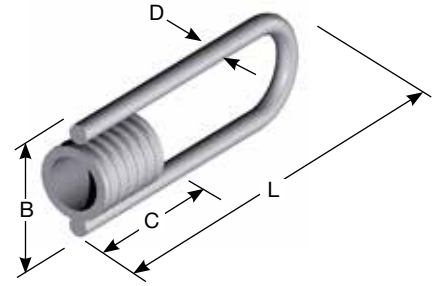
| Bolt Diameter in. | Threads in. | Max Bolt Engagement in. | L in. | B in. |
|-------------------|-------------|-------------------------|-------|---------|
| 3/8 | 16 | 3/4 | 1 1/4 | 9/16 |
| 1/2 | 13 | 1 | 1 3/8 | 11/16 |
| 5/8 | 11 | 1 1/8 | 1 5/8 | 7/8 |
| 3/4 | 10 | 1 1/8 | 1 5/8 | 1 |
| 7/8 | 9 | 1 1/8 | 1 5/8 | 1 3/8 |
| 1 | 8 | 1 1/8 | 1 5/8 | 1 3/8 |
| 1 1/4 | 7 | 2 | 2 1/2 | 1 11/16 |
| 1 1/2 | 6 | 2 | 2 1/2 | 2 |

To order, specify: quantity, name and item number.

NC Threaded Inserts

FX-2 FERRULE INSERT – STRAIGHT LOOP

The FX-2 Ferrule Insert – Straight Loop is a versatile insert commonly used for structural connections and as an anchor for suspension of pipes and/or other mechanical equipment. Refer to the table for bolt diameters and lengths available. The insert is available in plain, electroplated, hot-dip galvanized, or stainless steel finish.



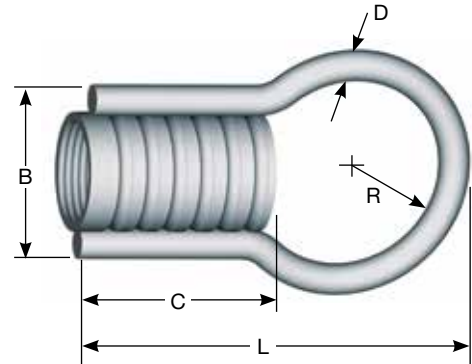
| FX-2 FERRULE INSERT - STRAIGHT LOOP DATA | | | | | | | | | | |
|--|----------|---------------|-------------|----------------|---------|-------|------------------|-----------------|-------------------------|-----------------------|
| Bolt Diameter | Length L | SWL (Tension) | SWL (Shear) | Mechanical SWL | B | C | Number of Struts | Wire Diameter D | Edge Distance (Tension) | Edge Distance (Shear) |
| In. | In. | lbs. | lbs. | lbs. | In. | In. | In. | In. | In. | In. |
| 1/2 | 4 1/8 | 3000 | 2600 | 3000 | 1 1/16 | 1 3/8 | 2 | 0.225 | 7 | 9 |
| 1/2 | 6 1/8 | 4000 | 4000 | 4900 | 1 1/4 | 1 3/8 | 2 | 0.306 | 10 | 10 |
| 5/8 | 4 1/8 | 3000 | 2600 | 3000 | 1 1/4 | 1 5/8 | 2 | 0.225 | 7 | 9 |
| 5/8 | 6 1/8 | 5000 | 4000 | 6000 | 1 9/16 | 1 5/8 | 2 | 0.375 | 10 | 10 |
| 3/4 | 4 1/8 | 3000 | 3000 | 4900 | 1 3/8 | 1 5/8 | 2 | 0.225 | 7 | 10 |
| 3/4 | 6 1/8 | 5000 | 5600 | 6000 | 1 11/16 | 1 5/8 | 2 | 0.375 | 10 | 12 |
| 7/8 | 6 1/8 | 5000 | 5600 | 6000 | 2 | 1 1/8 | 2 | 0.375 | 10 | 12 |
| 1 | 6 1/8 | 5000 | 6000 | 6000 | 2 1/8 | 1 5/8 | 2 | 0.375 | 10 | 12 |
| 1 | 8 1/8 | 6000 | 6000 | 6000 | 2 1/8 | 1 5/8 | 2 | 0.375 | 13 | 13 |

1. SWL based on 3000 psi concrete compression strength.
2. SWL includes a 3:1 safety factor.
3. Inserts must have a 1/2" setback.
4. Minimum edge distance apply to 2 edges only. All other edges require 2x length of the insert.
5. Minimum corner distance shall be 1.5x minimum edge distance for shear when loaded towards the edge.
6. Minimum anchor spacing shall be 2x the edge distance for tension and 3x the edge distance for shear.

To order, specify: quantity, name and item number.

FX-5 FERRULE INSERT – LOOP

The FX-5 Ferrule Insert – Loop is a versatile insert commonly used to make structural connections and to suspend pipes and/or other mechanical equipment. Refer to the table for bolt diameters and dimensions. The insert is available in plain, electroplated, hot-dip galvanized, or stainless steel finish.



| FX-5 FERRULE INSERT - LOOP DATA | | | | | | | | | |
|---------------------------------|----------|---|---------------------------------------|--------|-------|-------|-----------------|--------------------------------------|------------------------------------|
| Bolt Diameter | Length L | Safe Work Load (Tension) ^{1,2} | Safe Work Load (Shear) ^{1,2} | B | C | R | Wire Diameter D | Edge Distance (Tension) ⁴ | Edge Distance (Shear) ⁵ |
| In. | In. | lbs. | lbs. | In. | In. | In. | In. | In. | In. |
| 3/8 | 2 3/4 | 2000 | 2000 | 1 1/16 | 1 1/4 | 9/16 | .243 | 5 | 8 |
| 1/2 | 2 3/4 | 2000 | 2000 | 1 1/8 | 1 3/8 | 9/16 | .243 | 5 | 8 |
| 5/8 | 3 1/2 | 2300 | 2300 | 1 1/2 | 1 5/8 | 13/16 | .262 | 5 | 12 |
| 3/4 | 3 1/2 | 2400 | 2400 | 1 3/4 | 1 5/8 | 13/16 | .262 | 5 | 12 |
| 7/8 | 6 | 5300 | 5300 | 2 1/16 | 1 5/8 | 1 3/8 | .375 | 8 | 12 |
| 1 | 6 | 5300 | 5300 | 2 1/8 | 1 5/8 | 1 3/8 | .375 | 8 | 12 |

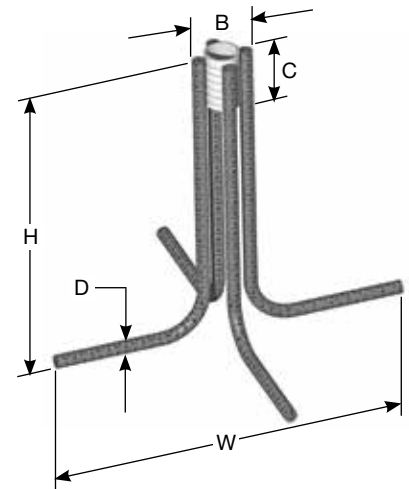
1. SWL based on 3000 psi concrete compression strength.
2. SWL includes a 3:1 safety factor.
3. Inserts must have a 1/2" setback.
4. Minimum edge distance apply to 2 edges only. All other edges require 2x length of the insert.
5. Minimum corner distance shall be 1.5x minimum edge distance for shear when loaded towards the edge.
6. Minimum anchor spacing shall be 2x the edge distance for tension and 3x the edge distance for shear.

To Order, Specify: quantity, name and item number.

NC Threaded Inserts

FX-14 FERRULE INSERT – THIN SLAB

The FX-14 Ferrule Insert – Thin Slab consists of a ferrule and four deformed wire struts. It is designed to attach thin panels to the building frame or to attach or suspend plumbing or mechanical equipment. The insert is available in ¾" and 1" bolt diameters and in plain, electro plated or stainless steel finish.



FX-14 FERRULE INSERT - THIN SLAB DATA

| Bolt Diameter | | Insert Height H | | Safe Work Load (Tension) | | B | | C | | W | | Wire Diameter D | | Minimum Edge Distance | |
|---------------|----|-----------------|-----|--------------------------|------|-----|----|-----|----|-----|-----|-----------------|-----|-----------------------|-----|
| in. | mm | in. | mm | lbs. | kN | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm |
| ¾ | 19 | 3 ½ | 80 | 3500 | 15.6 | 1 ¾ | 44 | 1 ⅝ | 41 | 7 | 175 | .306 | 7.8 | 8 | 175 |
| 1 | 25 | 4 ½ | 105 | 4500 | 20.0 | 2 ⅝ | 54 | 1 ⅝ | 41 | 9 ½ | 241 | .306 | 7.8 | 10 | 225 |

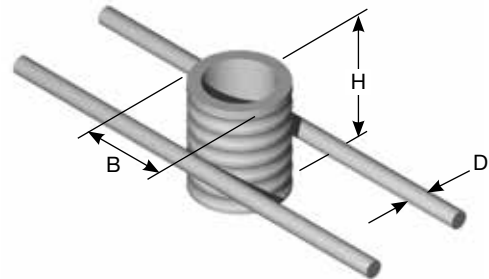
Safe working loads based on 3,000 psi concrete and a 3:1 safety factor.

1. Safe working load is based on the insert setback ½" from the concrete surface.
2. Minimum spacing between inserts is two times the minimum edge distance.

To order, specify: quantity, name and item number.

FX-16 FERRULE INSERT – THIN SLAB STRUT

The FX-16 Ferrule Insert – Thin Slab Strut is fabricated with two 4" wire struts welded to a standard ferrule. Sizes and dimensions are shown in the table. This insert is used effectively in small-envelope areas. The Ferrule Insert – Thin Slab Strut is available in plain, electroplated, hot-dip galvanized, or stainless steel finish.



FX-16 FERRULE INSERT - THIN SLAB STRUT DATA

| Bolt Diameter | | Safe Work Load (Tension) | | H | | B | | Wire Diameter (D) | |
|---------------|----|--------------------------|-----|-----|----|------|----|-------------------|-----|
| in. | mm | lbs. | kN | in. | mm | in. | mm | in. | mm |
| ¾ | 10 | 450 | 2.0 | 1 ¼ | 32 | 9/16 | 14 | .262 | 6.7 |
| ½ | 13 | 900 | 4.0 | 1 ⅜ | 35 | 1/4 | 17 | .262 | 6.7 |
| 5/8 | 16 | 1000 | 4.5 | 1 ½ | 41 | 7/8 | 22 | .262 | 6.7 |
| ¾ | 19 | 1600 | 7.1 | 1 ⅝ | 41 | 1 | 25 | .262 | 6.7 |
| 7/8 | 22 | 1600 | 7.1 | 1 ⅝ | 41 | 1 ⅜ | 35 | .262 | 6.7 |
| 1 | 25 | 1600 | 7.1 | 1 ⅝ | 41 | 1 ⅜ | 35 | .262 | 6.7 |

Safe working loads based on 3,000 psi concrete and a 3:1 safety factor.

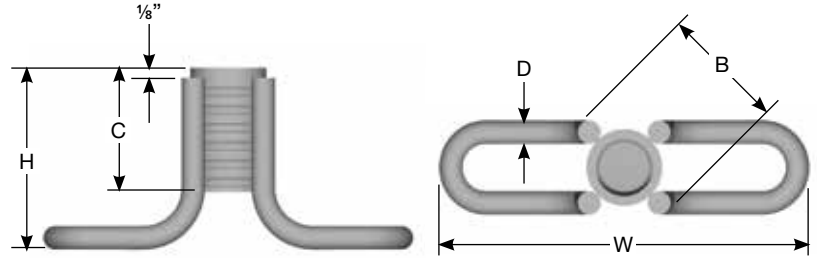
1. Safe working load is based on the insert setback ½" from the concrete surface.

To order, specify: quantity, name and item number.

NC Threaded Inserts

FX-19 FERRULE INSERT – WING

The FX-19 Ferrule Insert – Wing is also available for use where panel thickness is limited. This insert is available in 1/2" through 1" bolt diameters and offers better tension loads than other thin slab inserts. It is available in plain, electroplated, hot-dip galvanized, or stainless steel finish.



FX-19 FERRULE INSERT - WING DATA

| Bolt Diameter | H | Safe Work Load (Tension) | Safe Work Load (Shear) | W | B | C | Wire Diameter D | Edge Distance (Tension) | Edge Distance (Shear) |
|---------------|-------|--------------------------|------------------------|-------|-------|-------|-----------------|-------------------------|-----------------------|
| In. | In. | lbs. | lbs. | In. | In. | In. | In. | In. | In. |
| 1/2 | 1 3/8 | 1200 | 1200 | 4 1/2 | 1 1/8 | 1 3/8 | .225 | 4 | 6 |
| 3/4 | 2 3/8 | 2650 | 1650 | 4 7/8 | 1 3/4 | 1 5/8 | .306 | 5 | 5 |
| 3/4 | 3 1/2 | 4500 | 3250 | 4 7/8 | 1 3/4 | 1 5/8 | .306 | 6 | 9 |
| 1 | 3 1/2 | 4500 | 3200 | 5 1/8 | 2 1/8 | 1 5/8 | .375 | 6 | 9 |
| 1 | 4 1/2 | 6500 | 5200 | 5 1/8 | 2 1/8 | 1 5/8 | .375 | 8 | 12 |

1. SWL based on 3000 psi concrete compression strength.
2. SWL includes a 3:1 safety factor.
3. Inserts must have a 1/2" setback.
4. Minimum edge distance apply to 2 edges only. All other edges require 2x length of the insert.
5. Minimum corner distance shall be 1.5x minimum edge distance for shear when loaded towards the edge.
6. Minimum anchor spacing shall be 2x the edge distance for tension and 3x the edge distance for shear.

To order, specify: quantity, name and item number.

MX-25 PRECAST CONCRETE INSERT

The MX-25 Precast Concrete Insert is a handy, cast-in-place metal insert for many of the common attachment applications involving precast construction. It is available in bolt diameters from 1/4" through 3/4" and in a range of lengths to satisfy job requirements. Refer to the table for dimensions and safe working loads. This insert can be attached to the form using the MX-28 or FC-18 NC threaded plug shown below.

MX-25 MEADOW BURKE CONCRETE INSERT

| MB Item Number | General Reference Number | Bolt Size | A | B | L | Safe Work Load (lbs) | Weight Per 100 (lbs) | Edge Dist. (Tension) |
|----------------|--------------------------|-----------|--------|---------|----------|----------------------|----------------------|----------------------|
| 201819 | P15T | 1/4" - 20 | 3/8" | 13/16" | 1 1/2" | 575 | 4.72 | 3" |
| 201821 | P24T | 3/8" - 16 | 9/16" | 1" | 1" | 1,025 | 4.28 | 3" |
| 201823 | P25T | 3/8" - 16 | 9/16" | 7/8" | 1 3/8" | 1,200 | 6.84 | 3" |
| 201825 | P35T | 1/2" - 13 | 5/8" | 1 1/4" | 1 1/2" | 1,225 | 14.72 | 3" |
| 201827 | P36T | 1/2" - 13 | 9/16" | 1 3/8" | 2 7/8" | 2,025 | 29.90 | 3" |
| 201829 | P45T | 5/8" - 11 | 15/16" | 1 3/8" | 1 11/16" | 1,575 | 20.96 | 3" |
| 201831 | P46T | 5/8" - 11 | 13/16" | 1 1/2" | 2 7/8" | 2,500 | 35.80 | 3" |
| 201833 | P55T | 3/4" - 10 | 15/16" | 1 5/8" | 1 11/16" | 1,175 | 31.60 | 3 1/2" |
| 201835 | P56T | 3/4" - 10 | 15/16" | 1 9/16" | 3" | 3,125 | 47.60 | 3 1/2" |



1. Safe working loads based on 3,000 psi concrete and a 3:1 safety factor.
2. Minimum edge distance apply to 2 edges only. All other edges require 2x length of the insert.

To order, specify: quantity, name and item number.

NC Threaded Inserts

MX-28 PLUG – METAL NC THREAD

The MX-28 Plug – Metal NC Thread is available to fit all $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ " and $\frac{3}{4}$ " diameter NC threaded inserts. The plug has a nail hole in the center that allows it to be securely fastened to the form. An insert is then screwed on to the plug to complete the insert setting process. This plug provides a $\frac{1}{4}$ " setback.

To order, specify: quantity, name and diameter.



FC-18 PLUG – PLASTIC NC THREAD

The FC-18 Plug – Plastic NC Thread is the plastic version of the metal NC plug listed above. It functions as a setting plug and as a thread protection. This is an excellent and economical unit to use in inserts cast in place but not to be used until a later date. This plug provides a $\frac{1}{4}$ " setback.

To order, specify: quantity, name and diameter.



FC-17 CAP – PLASTIC FERRULE

The FC-17 Cap – Plastic Ferrule is a plastic plug that is press-fit into the threaded opening of the coil to protect the threads from the elements and from concrete seepage. It is available in $\frac{1}{8}$ " increments from $\frac{3}{8}$ " to 1" diameters.

To order, specify: quantity, name and diameter.



FC-19 TIE HOLE PLUG

The FC-19 Tie Hole Plug is a plastic plug available in $\frac{9}{16}$ " and $\frac{3}{4}$ " diameters used to temporarily fill holes in the formwork plywood. Tie Hole Plugs are sold in carton lots only.

To order, specify: quantity, name and diameter.

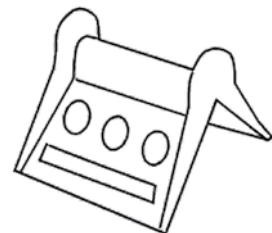


RL-71 CHAIN GUARD

The RL-71 Chain Guard is made from a durable plastic and is used to protect the edges of precast panels from spalling caused by transportation chains or strapping. The Chain Guard is available in the two sizes: $1\frac{3}{4}$ " and $4\frac{1}{4}$ ".

| RL-71 MEADOW BURKE CHAIN GUARD DATA | | | |
|-------------------------------------|----------------|--------------------|--------------------|
| Size | MB Item Number | Pieces Per Package | Weight Per Package |
| $1\frac{3}{4}$ " | 291534 | 100 | 10 |
| $4\frac{1}{4}$ " | 291535 | 50 | 11 |

To order, specify: quantity, name and size.



Precast Miscellaneous Products

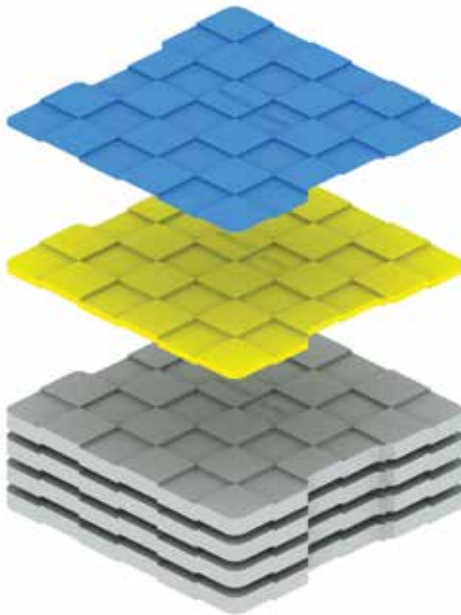
RL-73 PANEL PAD

The RL-73 Panel Pad is a 2 1/2" x 6" heavy-duty plastic spacer that is positioned between precast concrete panels during storage and/or transportation.

To order, specify: quantity and name.



MB Shims



RL-75 Checker Board



RL-76 / RL-77 Ridged Shim

The shims are designed to quickly and safely adjust for an uneven footing or panels. They provide excellent stability and will not rust or stain the concrete.

FEATURES

- Manufactured with extremely tough high-impact polystyrene
- Ultimate compressive strength of 8,000 psi per ASTM-D695 for up to 3" thick shims
- Manufactured by Meadow Burke in the USA

RL-75 Checker Board Shim Packs contain:

- One 1/16" (blue)
- One 1/8" (yellow)
- Four 1/4" (grey)

RL-77 Ridged Shim Packs contain:

- One 1/16" (black)
- Two 1/8" (black)
- Three 1/4" (black)

| Single Shims | | | | | |
|--------------|-------|-------------------|------------------|------------------|--------|
| Item Number | Type | Size | Pieces / Package | Weight Ea. (lbs) | Color |
| MB40204 | RL-75 | 2" x 3" x 1/2" | 125 | 0.01060 | Black |
| MB40203 | RL-75 | 2" x 3" x 1/4" | 250 | 0.050 | Grey |
| MB40202 | RL-75 | 2" x 3" x 1/8" | 500 | 0.020 | Yellow |
| MB40201 | RL-75 | 2" x 3" x 1/16" | 1,000 | 0.013 | Blue |
| MB45607 | RL-76 | 4" x 6" x 1/16" | 400 | 0.09 | Black |
| MB45608 | RL-76 | 4" x 6" x 1/8" | 200 | 0.19 | Black |
| MB45609 | RL-76 | 4" x 6" x 1/4" | 100 | 0.33 | Black |
| Shim Packs | | | | | |
| MB283120 | RL-75 | 3" x 3" x 1 3/16" | 50 | 0.368 | Mix |
| MB283122 | RL-75 | 6" x 6" x 1 3/16" | 20 | 1.545 | Mix |
| MB45604 | RL-77 | 4" x 6" x 1 3/16" | 30 | 1.1 | Black |

Prestressed Products



CAUTION: Meadow Burke Sure-Lock prestress chucks are precision manufactured devices that require maintenance and periodic inspection. Complete inspection and maintenance information is available from your Meadow Burke representative. Failure to read, understand and adhere to the inspection and maintenance instructions can result in hazardous situations for workers and possible damage to products and/or facilities.

All Meadow Burke Sure-Lock prestress chucks are manufactured to rigorous specifications from high quality, high strength steel. They are properly heat-treated, inspected (including a 100% magnaflux inspection) and tested to provide the user with a quality product they can use with confidence.

Prestress Chucks

SURE-LOCK SPLICE CHUCK – MULTIPLE USE

The Sure-Lock Splice Chuck – Multiple Use assembly includes the bodies, coupler, springs and jaws with rubber o-rings. Refer to the table for strand size and item number. Multi-use transition (splicing two strands of different sizes) splice chucks are available on request. Individual replacement parts are available and are shown in the table.



| SURE-LOCK SPLICE CHUCK - MULTIPLE USE DATA | | | | | | | |
|--|---------|-----------|----------------|-----------------|-------------|-----------------------|--------------|
| Strand Size | Chuck # | MB Item # | Jaw Assembly # | Coupling Part # | Body Part # | Back Plate & Spring # | Weight (lbs) |
| .6-.6 | F4600 | 206055 | F600J | F3CP | F11B | F3BP/F3S | 6.0 |
| 9/16-9/16 | F4562 | 206056 | F562J | F3CP | F11B | F3BP/F3S | 6.0 |
| 1/2-1/2 | F4500EL | 206057 | F500JEL | F2CP | F10B | F2BP/F2S | 4.0 |
| 7/16-7/16 | F4437 | 206058 | F437J | F2CP | F10B | F2BP/F2S | 4.0 |
| 3/8-3/8 | F4375 | 206059 | F375J | F2CP | F10B | F2BP/F2S | 4.0 |
| 11/32-11/32 | F4343 | 206060 | F343J | F1CP | F9B | F1BP/F1S | 4.0 |
| 5/16-5/16 | F4312 | 206061 | F312J | F1CP | F9B | F1BP/F1S | 2.5 |
| 1/4-1/4 | F4250 | 206062 | F250J | F1CP | F9B | F1BP/F1S | 2.5 |
| 7mm-7mm | F4276 | 206063 | F276J | F1CP | F9B | F1BP/F1S | 2.5 |
| 5mm-5mm | F4197 | 206064 | F197J | F1CP | F9B | F1BP/F1S | 2.5 |

To order, specify: quantity, name and item number.

SURE-LOCK STRAND CHUCK – MULTIPLE USE

The Sure-Lock Strand Chuck – Multiple Use assembly includes the bodies, coupler, springs and jaws with rubber o-rings. Refer to the table for strand size and item number. Multi-use transition (splicing two strands of different sizes) splice chucks are available on request. Individual replacement parts are available and are shown in the table.



| SURE-LOCK STRAND CHUCK - MULTIPLE USE DATA | | | | | | | | |
|--|---------|-----------|----------------|------------------|-------------|------------|---------------|--------------|
| Strand Size | Chuck # | MB Item # | Jaw Assembly # | Retaining Ring # | Body Part # | Cap Part # | Spring Part # | Weight (lbs) |
| 0.60 | F1600 | 206045 | F600J | F3R | F3B | F3C | F3S | 2.6 |
| 9/16 | F1562 | 206046 | F562J | F3R | F3B | F3C | F3S | 2.6 |
| 1/2 | F1500EL | 206047 | F500JEL | F2R | F2B | F2C | F2S | 2.0 |
| 7/16 | F1437 | 206048 | F437J | F2R | F2B | F2C | F2S | 2.0 |
| 3/8 | F1375 | 206049 | F375J | F2R | F2B | F2C | F2S | 2.0 |
| 11/32 | F1343 | 206050 | F343J | F1R | F1B | F1C | F2S | 1.0 |
| 9/16 | F1312 | 206051 | F312J | F1R | F1B | F1C | F1S | 1.0 |
| 1/4 | F1250 | 206052 | F250J | F1R | F1B | F1C | F1S | 1.0 |
| 7mm | F1276 | 206053 | F276J | F1R | F1B | F1C | F1S | 1.0 |
| 5mm | F1197 | 206054 | F197J | F1R | F1B | F1C | F1S | 1.0 |

To order, specify: quantity, name and item number.

Prestress Chucks

ANCHOR CHUCK – MULTIPLE USE

The Sure-Lock® Anchor Chuck – Multiple Use assembly includes the body and three-piece jaw with a rubber o-ring. Refer to the table for strand size and item number. Individual replacement parts are available and are shown in the table.

| SURE-LOCK ANCHOR CHUCK - MULTIPLE USE DATA | | | | | | |
|--|---------|-----------|----------------|------------------|-------------|--------------|
| Strand Size | Chuck # | MB Item # | Jaw Assembly # | Retaining Ring # | Body Part # | Weight (lbs) |
| 5mm | F2197 | 206074 | F197J | F1R | F4B | .75 |
| 7mm | F2276 | 206073 | F276J | F1R | F4B | .75 |
| ¼ | F2250 | 206072 | F250J | F1R | F4B | .75 |
| ⅝ | F2312 | 206071 | F312J | F1R | F4B | .75 |
| ⅞ | F2343 | 206070 | F343J | F1R | F4B | .75 |
| ¾ | F2375 | 206069 | F375J | F2R | F5B | 1.3 |
| 7/16 | F2437 | 206068 | F437J | F2R | F5B | 1.3 |
| ½ | F2500EL | 206067 | F500JEL | F2R | F5B | 1.3 |
| 9/16 | F2562 | 206066 | F562J | F3R | F6B | 1.9 |
| 0.60 | F2600 | 206065 | F600J | F3R | F6B | 1.9 |

All part numbers are trademarks of Precision Post Tension



SPLICE CHUCK – ONE TIME USE

Sure-Lock® Splice Chuck – One Time Use assembly includes the body, threaded end caps, spring spacer and two-piece wedges with wire rings. Refer to the table for strand size and item number. Multi-use transition (splicing two strands of different sizes) splice chucks are available on request. A clear zinc coating is available, if corrosion resistance is required.

| SURE-LOCK SPLICE CHUCK - ONE TIME USE DATA | | | | |
|--|---------|-----------|--------------|--------------|
| Strand Size | Chuck # | MB Item # | Description | Weight (lbs) |
| ¼ | F6250 | 206083 | Splice Chuck | 3.5 |
| ⅜ | F6375 | 206084 | Splice Chuck | 3.5 |
| 7/16 | F6437 | 206085 | Splice Chuck | 3.5 |
| ½ | F6500 | 206086 | Splice Chuck | 3.5 |
| 0.6 | F6600 | 206087 | Splice Chuck | 5.5 |



STRAND CHUCK – ONE TIME USE

The Sure-Lock® Strand Chuck – One Time Use assembly includes the body, two-piece wedges with or without wire rings. Three-piece wedges are also available in many sizes. Refer to the table for strand size and item number. Individual replacement parts are available and are shown in the table. A clear zinc coating is available, if corrosion resistance is required.

| SURE-LOCK STRAND CHUCK - ONE TIME USE DATA | | | | | | | |
|--|---------|-----------|--------------------------|-------------|--------------|------------------|--------------|
| Strand Size | Chuck # | MB Item # | Description | Body Part # | Wedge Part # | Description | Weight (lbs) |
| ¼ | F5250 | 206075 | Chuck / 2 piece w/o Ring | F8B | F250SL2 | 2-Piece w/o Ring | .75 |
| ⅜ | F5375 | 206076 | Chuck / 2 piece w/o Ring | F8B | F375SL2 | 2-Piece w/o Ring | .75 |
| 7/16 | F5437 | 206077 | Chuck / 2 piece w/o Ring | F8B | F437SL2 | 2-Piece w/o Ring | .75 |
| ½ | F5500 | 206078 | Chuck / 2 piece w/o Ring | F8B | F500SL2R | 2-Piece w/o Ring | .75 |
| ½ | F5500R2 | 206079 | Chuck / 2 piece w/o Ring | F8B | F500SL2R | 2-Piece w/ Ring | .75 |
| ½ | F5500R3 | 206080 | Chuck / 3 piece w/ Ring | F8B | F500SL3R | 3-Piece w/ Ring | .75 |
| 0.6 | F5600 | 206081 | Chuck / 2 piece w/o Ring | F13B | F600SL2 | 2-Piece w/o Ring | 1.5 |
| 0.6 | F5600R3 | 206082 | Chuck / 3 piece w/ Ring | F13B | F600SL3R | 3-Piece w/ Ring | 1.5 |



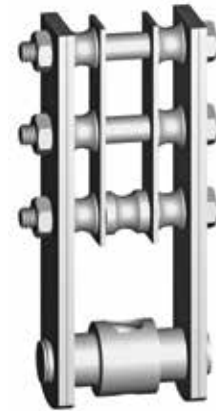
Prestress Strand Hold Downs

PRESTRESS HOLD DOWNS

Meadow Burke has been producing quality prestress strand hold down devices since 1978. All hold downs produced by Meadow Burke have dependable and predictable mechanical connections. There are no weld-dependent connections.

PRESTRESS HOLD DOWN TECHNICAL AND SAFETY DATA

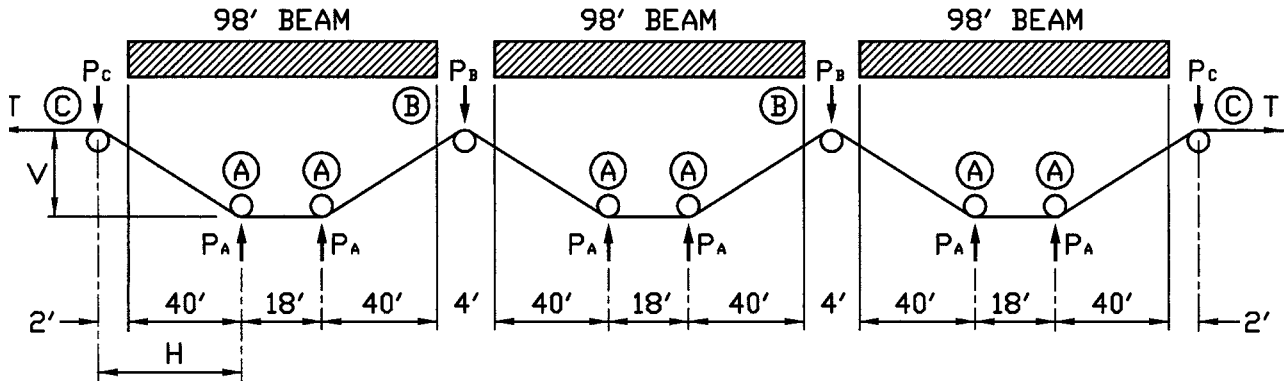
- All anticipated loads should be determined by a qualified structural engineer and should include an additional 5% for friction losses. Use the comparison of the total anticipated loading and the published safe working loads of the hold downs to select the appropriate hold down unit for the intended application.
- Exercise care in the hold down selection process. Hold downs are load rated by the unit and by individual strand. Both load ratings must be checked and compared. The lower of the two values is the controlling factor. Do not exceed either; use the next higher rated hold down, if necessary.
- The allowable number of strands per unit can be determined by dividing the unit's safe working load by the calculated individual strand load (include the 5% friction loss).
- It is extremely important for an engineer to verify loads when a hold down unit is used in a hold up application. This type of application usually produces a load double the hold down load and requires two "hold up" units to satisfy the safe work load requirement.
- It is imperative that high strength coil rod and heavy hex nuts be used in all hold down and hold up applications in order to ensure safe working loads.
- **IMPORTANT:** in prestress operations all working hardware must be periodically inspected and replaced if signs of wear or bending are present. Worn or bent bolts should be immediately discarded. Never use a worn or bent bolt for any purpose and never attempt to straighten a bent bolt. Discard any bolt or coil rod that is suspected of being used at loads of 70% or more of ultimate capacity.



Prestress Strand Hold Downs

TYPICAL HOLD DOWN LOADING CALCULATIONS

When calculating the forces at deflection points, additional attention must be given to the intermediate forces occurring at points "B" in the example diagram. These intermediate hold up forces are often double the hold down forces and will require two hold up units at each "B" point.



V = Rise in strand A to C = $67\frac{1}{2}'' = 5.625$ ft.

H = Horizontal distance A to C = 42 ft.

T = Tension in one strand = 41,000 lbs.

N = Number of deflected strands = 10 strands.

PA = Uplift at Points "A" due to all deflected strands.

PB = Down load at Points "B" due to all deflected strands.

The example illustrates the method of calculating Hold Down loads in a given prestress strand deflection diagram, and also addresses the condition at points B and C.

- A) To determine forces at points A : $PA = (V/H)(T \times N) = (5.625 \text{ ft.}/42 \text{ ft.}) (41,000 \text{ lbs.} \times 10 \text{ strands}) = 54,910 \text{ lbs.}$
- B) Add 5% for friction, $PA = 1.05 (54,910) PA = 57,660 \text{ lbs. uplift}$
- C) To determine forces at points B : Summation of all vertical forces must equal 0.
 $\sum FV = 0$
 Thus, $6 (PA) = 2 (PB) + 2 (PC)$
 where, $PC = PA$
 $6 PA = 2 PB + 2 PA$
 $PB = 2 PA = 2 (57,660)$
 $PB = 115,320 \text{ lbs. Down load @ B}$

- D) Use two (2) Hold Down units 62/68 KIP at each point B.
- E) Use one (1) Hold Down unit 62/68 KIP at points A.




CAUTION: When hold down units are used as hold up units, they should only be used one (1) time as such. After close inspection, they should be discarded or used a final time as a hold down.

Special hardness treatment can be obtained on special orders only, which may enable parts to be used more than once. Consult with Meadow Burke Engineering Department, Tampa, FL, for additional information.

Prestress Strand Hold Downs

STRAND HOLD DOWN 20K





0.6 Strand Rollers Standard on all Units and all Roller Bolts are Grade - 8 Hi-Strength.

| STRAND HOLD DOWN 20K DATA | | | | | | | | | | | | |
|---|---------|---------------------|-----------------------|--------------------------------|----------------------------|-------------------------------|---------------------------|--------------------------------|---------------------------|-------------------------|----------------------------|----------------------------|
| 20 KIP Series | Model | SWL per Unit (Kips) | SWL per Strand (Kips) | Number Vertical Rows of Strand | Coil Thread Diameter (in.) | Horizontal Strand Spacing (a) | Setback to 1st Strand (b) | 1st to 2nd Strand Spacing (c1) | Std. Vertical Spacing (c) | Overall Width (in.) (d) | Weight Per Min. Unit (lbs) | Add'l Wt. Strand Row (lbs) |
|  | SH-223 | 24 | 6 | 1 | ¾ | N/A | 2 | 2 | 2 | 2 ¾ | 1.13 | 0.62 |
|  | SH-224K | 24 | 5 | 2 | ¾ | 2 | 2 | 2 | 2 | 3 ¾ | 1.23 | 0.72 |
|  | SH-226K | 24 | 5 | 2 | 1 | 2 ¼ | 2 ¾ | 1 13/16 | 2 | 4 ¾ | 1.49 | 0.72 |

1. All 200 series hold downs will engage MB Hi-Strength Coil Rod. All orders will be shipped with restrainers installed, unless otherwise specified.
2. "B" dimensions are measured from the bottom of the form to the 1st strand. Actual "B" dimensions will be 1/16" less for clearance.

STRAND HOLD DOWN 40K

0.6 Strand Rollers Standard on all Units and all Roller Bolts are Grade - 8 Hi-Strength.





| STRAND HOLD DOWN 40K DATA | | | | | | | | | | | | |
|---|---------|---------------------|-----------------------|--------------------------------|----------------------------|-------------------------------|---------------------------|--------------------------------|---------------------------|-------------------------|----------------------------|----------------------------|
| 40 KIP Series | Model | SWL per Unit (Kips) | SWL per Strand (Kips) | Number Vertical Rows of Strand | Coil Thread Diameter (in.) | Horizontal Strand Spacing (a) | Setback to 1st Strand (b) | 1st to 2nd Strand Spacing (c1) | Std. Vertical Spacing (c) | Overall Width (in.) (d) | Weight Per Min. Unit (lbs) | Add'l Wt. Strand Row (lbs) |
|  | SH-453 | 48 | 7.5 | 1 | 1 | N/A | 2 ¾ | 1 13/16 | 2 | 3 ¼ | 3.78 | 1.11 |
|  | SH-456K | 48 | 7.5 | 2 | 1 | 2 | ¾ | 2 ½ | 2 | 4 ¾ | 4.59 | 1.31 |
|  | SH-458 | 48 | 7.5 | 2 | 1 | 2 | 2 ¾ | 1 13/16 | 2 | 4 ¾ | 5.27 | 1.26 |
|  | SH-455K | 48 | 6 | 3 | 1 | 2 | 2 ¾ | 1 13/16 | 2 | 6 ¾ | 3.32 | 1.88 |

1. All 400 series hold downs have standard 3 1/2 pitch thread in swivels and will engage MB Hi-Strength Coil Rod. All orders will be shipped with restrainers installed, unless otherwise specified.
2. "B" dimensions are measured from the bottom of the form to the 1st strand. Actual "B" dimensions will be 1/16" less for clearance.

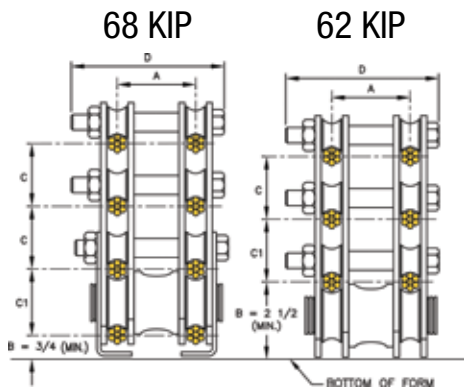
Prestress Strand Hold Downs

STRAND HOLD DOWN 60K

0.6 Strand Rollers Standard on all Units and all Roller Bolts are Grade - 8 Hi-Strength.

| STRAND HOLD DOWN 60K DATA | | | | | | | | | | | | |
|--|---------|---------------------|-----------------------|--------------------------------|----------------------------|-------------------------------|---------------------------|--------------------------------|---------------------------|-------------------------|----------------------------|----------------------------|
| 70 KIP Series | Model | SWL per Unit (Kips) | SWL per Strand (Kips) | Number Vertical Rows of Strand | Coil Thread Diameter (in.) | Horizontal Strand Spacing (a) | Setback to 1st Strand (b) | 1st to 2nd Strand Spacing (c1) | Std. Vertical Spacing (c) | Overall Width (in.) (d) | Weight Per Min. Unit (lbs) | Add'l Wt. Strand Row (lbs) |
|  | SH-653 | 68 | 9 | 1 | 1 | N/A | 2½ | 2 | 2 | ¾ | 4.78 | 1.12 |
|  | SH-656K | 68* | 7.5 | 2 | 1 | 2½ | ¾ | 2½ | 2 | 4¾ | 5.05 | 1.44 |
|  | SH-658 | 62 | 7.5 | 2 | 1 | 2½ | 2½ | 2 | 2 | 4¾ | 5.8 | 1.39 |
|  | SH-655K | 68 | 6 | 3 | 1 | 2¼ | 2½ | 2 | 2 | 6¾ | 3.65 | 2.07 |

1. Load of strands transferred to side frame material must not exceed 62 KIPS (see graphic below).
2. All 600 series hold downs have special 4 pitch thread in swivels and will engage only Meadow Burke Super 150 ksi Coil Rod. All units ordered will be shipped with restrainers installed.
3. "B" dimensions are measured from the bottom of the form to the 1st strand. Actual "B" dimensions will be ¼" less for clearance.



How To Order: Specify quantity, unit number, number of strands, "B" dimension, "C" dimension, and "C1" dimension if required.

Example: 50, SH-658, 10 strand, B=2 ½", C=2" (as shown in picture).

Caution:

Contact Engineering Department for ANY unit requiring a "B" dimension > 4 ¾"

Total strand load shall not exceed unit safe working load.

Prestress Products

DT-21 PUSHDOWN 0.5

The DT-21 Pushdown 0.5 is made of ductile iron and is designed to hold 0.5” strands. It is available in four sizes to hold 3 strands, 5 strands, 8 strands and 10 strands. A 3/4” diameter hole in the top of the unit is used in conjunction with a tapered rod to position and hold the pushdown in place. The tapered rod should have an integral shoulder to bear on the top of the pushdown. Note that this product is not load rated.



DT-21 PUSHDOWN 0.5 DATA (FOR 0.5 STRAND)

| Product Code Number | Item | Number of Strands | Slot Width (in.) | Slot Length (in.) | Top Hole Diameter (in.) | Top Hole Depth (in.) | Maximum Width (in.) |
|---------------------|----------|-------------------|------------------|-------------------|-------------------------|----------------------|---------------------|
| 650641 | DT-21 #5 | 5 | 0.565 | 2.411 | 0.770 | 1.36 | 2.000 |
| 650696 | DT-21 #8 | 8 | 0.565 | 4.011 | 0.770 | 1.545 | 2.437 |

To order, specify: quantity, name and item number.

CH-27 STRAND CLAMP

The CH-27 Strand Clamp is a ductile iron clamp used with 0.5” and 0.6” strands to position and hold bulkheads in place.

To order, specify: quantity, name and item number.



CH-29 STRAND RECESS PLUG

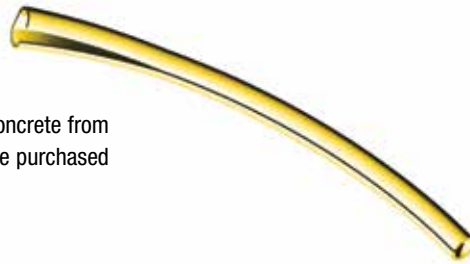
The CH-29 Strand Recess Plug is a handy foam plug used to fill prestress voids to facilitate the patching process. The foam plug is 1 1/8" x 1 1/8" x 3/4".

To order, specify: quantity, name and item number.



RD-28 DEBOND SPLIT TUBING

The RD-28 Debond Split Tubing is flexible polymer plastic tubing used to prevent concrete from bonding to the prestressing strands. The tubing is shipped in 10' lengths and can be purchased in split or unsplit versions.



CH-31 DEBOND STRAND SNAP

- Rigid two-piece construction
- High-Impact Plastic
- Patented design creates Tight "seal"
- Designed to be installed over tensioned strands
- Highly abrasive resistance
- Engineered rigidity maintains Shape to dissipate bursting stresses
- Fast and easy to install
- Available in 4', 10', and 20' lengths
- Installs on .5 and .6 strand sizes

To order, specify: quantity, name and item number.

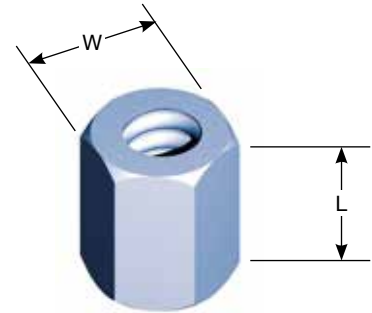


Prestress Working Parts

CN-25 COIL NUT – HEAVY

CN-33 COIL NUT – SUPER 150 HI STRENGTH

The CN-25 and CN-33 Coil Nuts are manufactured from hex stock like the Standard Coil Nut, but is of sufficient length to develop the safe working load required for prestress applications. CN-33 Coil Nut is used with CR-5 Super High Strength Coil Rod only.



CN-25 & CN-33 COIL NUT - HEAVY DATA

| Item Number | Type | Use with Hold Down Series | Strength | Nominal Diameter | Thread Pitch | SWL (KIPS) | Weight per 100 (lbs) | L (in.) | W (in.) |
|-------------|-------|---------------------------|-------------------|------------------|--------------|------------|----------------------|---------|---------|
| 207243 | CN-25 | 20 | Std. Hi Strength | ¾" | 4 ½" | 24 | 26 | 1 ½" | 1 ½" |
| 207230 | CN-25 | 20/40 | Std. Hi Strength | 1" | 3 ½" | 48 | 72 | 2" | 1 ½" |
| 207229 | CN-33 | 60 | Super Hi Strength | 1" | 4" | 72 | 72 | 2" | 1 ¾" |

Table is based on a 1.5:1 safety factor for prestress applications.

To order, specify: quantity, type and bolt diameter.

CW-4 FLAT WASHER

CW-4 Flat Washers are manufactured from high carbon flat steel plate and are designed to provide the required bearing against the form members. Refer to the table for dimensions and safe working loads.



CW-4 FLAT WASHER DATA

| Item Number | Type | Use with Hold Down Series | Strength | Nominal Diameter | Size | Weight per 100 (lbs.) |
|-------------|------|---------------------------|----------|------------------|--------------|-----------------------|
| 470151 | CW-4 | 20 | HVY | ¾" | ½" X 5" X 5" | 347 |
| 470180 | CW-4 | 40/60 | HVY | 1" | ¾" X 7" X 7" | 1160 |

Table is based on a 1.5:1 safety factor for prestress applications.

To order, specify: quantity, type, name and bolt diameter.

CR-4 COIL ROD – HI-STRENGTH

CR-5 COIL ROD – SUPER 150 HI-STRENGTH

Leviat supplies two different types of MB coil thread:

- 20 KIP and 40 KIP series uses standard hi-strength, 3 ½ threads per inch coil rod (CR-4).
- 60 KIP series uses Special Super 150 hi-strength, 4 threads per inch coil rod (CR-5).

They are not interchangeable and cannot be mismatched.

Use only MB coil rod for all hold down application. Meadow Burke will not guarantee the SWL of any coil rod which has been field welded, bent and/or has worn threads. Coil Rod Threads must protrude through top of swivel to achieve SWL. Use two CN-5 Coil Nuts or one CN-25/CN-33 Coil Nut to develop Coil Rod SWL.



CONTINUOUS COIL ROD

| Item Number | Type | Use with Hold Down Series | Strength | Nominal Dia. | Threads per Inch | Coil Rod SWL (KIPS) | Weight per CFL |
|-------------|------|---------------------------|------------------|--------------|------------------|---------------------|----------------|
| 400208 | CR-4 | 20 | Std. Hi Strength | ¾" | 4 ½" | 24 | 120 |
| 400213 | CR-4 | 20/40 | Std. Hi Strength | 1" | 3 ½" | 48 | 212 |
| 400211 | CR-5 | 60 | Super 150 | 1" | 4" | 72 | 212 |

Safety Factor is approximately 1.5:1

To order, specify: quantity, type, name, bolt diameter and length.

BT Couplers Type 1 & Type 2HS Rebar Splicing System



Mechanically connect rebar sections in segmental pours.

BT Couplers

Type 1 & Type 2HS Rebar Splicing System



BT Couplers are a versatile and robust mechanical rebar splicing system. BT Couplers are a Type 1 & Type 2HS Rebar Splicing System used to mechanically connect rebar sections in segmental pours as an alternative to traditional dowel bars. The three-part system consists of a Splice Bar, Coupler and Setting Bar that meets the mechanical splice strength requirements of ACI-318-19 when used to splice grade 60 rebar.

FEATURES

- Improved performance: Exceeds ACI-318-19 Type 1 & Type 2HS splice requirements and maintains reinforcing steel continuity independent of concrete cover.
- Saves time and money: Reduces costly form repairs by eliminating drilling of forms and simplifies form stripping.
- Available in standardized lengths (sizes #4 – #11) and configured to order.



BT COUPLERS SPLICING PERFORMANCE

| Bar Size | Nominal Area (inch ²) | Grade 60 Rebar Yield Strength (lbs) | Type 1 125% Yield Strength (lbs) | Type 2HS 90 KSI Tensile Strength (lbs)* |
|----------|-----------------------------------|-------------------------------------|----------------------------------|---|
| #4 | 0.20 | 12,000 | 15,000 | 18,000 |
| #5 | 0.31 | 18,600 | 23,250 | 27,900 |
| #6 | 0.44 | 26,400 | 33,000 | 39,600 |
| #7 | 0.60 | 36,000 | 45,000 | 54,000 |
| #8 | 0.79 | 47,400 | 59,250 | 71,100 |
| #9 | 1.00 | 60,000 | 75,000 | 90,000 |
| #10 | 1.27 | 76,200 | 95,250 | 114,300 |
| #11 | 1.56 | 93,600 | 117,000 | 140,400 |

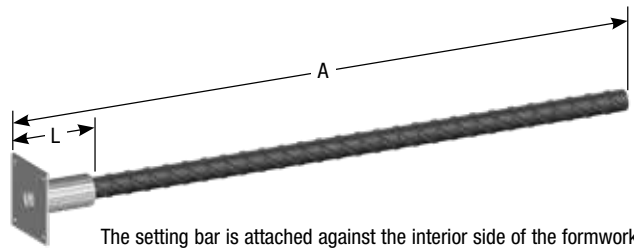
*ASTM A615 and A706 compliant

The Three-part Mechanical Connect System

STANDARD LENGTH SETTING BARS

| Type I Item Number | Type II Item Number | Rebar Size | Grade 60 Finish: Plain | "A" Length (inch) |
|--------------------|---------------------|------------|------------------------|-------------------|
| | MBR2610430F | #4 | RC-61-T2 Setting Bar | 30" |
| | MBR2610448F | #4 | RC-61-T2 Setting Bar | 48" |
| | MBR2610530F | #5 | RC-61-T2 Setting Bar | 30" |
| Contact | MBR2610536F | #5 | RC-61-T2 Setting Bar | 36" |
| Meadow Burke | MBR2610548F | #5 | RC-61-T2 Setting Bar | 48" |
| | MBR2610636F | #6 | RC-61-T2 Setting Bar | 36" |
| | MBR2610648F | #6 | RC-61-T2 Setting Bar | 48" |
| | MBR2610760F | #7 | RC-61-T2 Setting Bar | 60" |

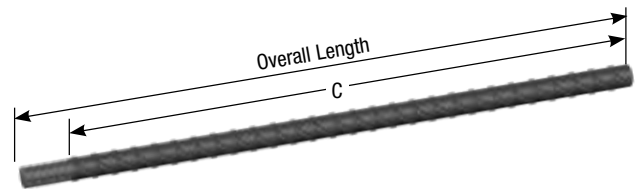
Additional lengths are available for Type I & II upon request



STANDARD LENGTH SPLICE BARS

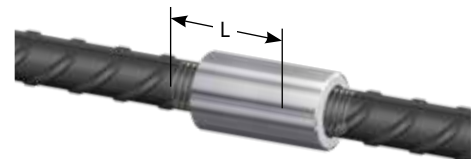
| Type I Item Number | Type II Item Number | Rebar Size | Grade 60 Finish: Plain | "C" Length (inch) |
|--------------------|---------------------|------------|------------------------|-------------------|
| | MBR2610430M | #4 | RC-61-T2 Splice Bar | 30" |
| | MBR2610448M | #4 | RC-61-T2 Splice Bar | 48" |
| | MBR2610530M | #5 | RC-61-T2 Splice Bar | 30" |
| Contact | MBR2610536M | #5 | RC-61-T2 Splice Bar | 36" |
| Meadow Burke | MBR2610548M | #5 | RC-61-T2 Splice Bar | 48" |
| | MBR2610636M | #6 | RC-61-T2 Splice Bar | 36" |
| | MBR2610648M | #6 | RC-61-T2 Splice Bar | 48" |
| | MBR2610760M | #7 | RC-61-T2 Splice Bar | 60" |

Additional lengths are available for Type I & II upon request



TYPE I COUPLER DETAIL

| Standard Coupler PN# (plain finish) | Flange Coupler PN# (plain finish) | Rebar Size | Couple Thread Size | "L" Length (inch) | Diameter (inch) | Weight (lbs.) |
|-------------------------------------|-----------------------------------|------------|--------------------|-------------------|-----------------|---------------|
| MB860501 | MB860502 | #4 | ½-13 UNC | 1.875 | 0.875 | 0.24 |
| MB860651 | MB860652 | #5 | ¾-11 UNC | 2.125 | 1.000 | 0.34 |
| MB860801 | MB860802 | #6 | ¾-10 UNC | 2.250 | 1.125 | 0.41 |
| MB860951 | MB860952 | #7 | ¾-9 UNC | 2.625 | 1.250 | 0.57 |
| MB861101 | MB861102 | #8 | 1-8 UNC | 3.250 | 1.500 | 1.08 |
| MB861251 | MB861252 | #9 | 1-½-7 UNC | 3.750 | 1.625 | 1.39 |
| MB861401 | MB861402 | #10 | 1-¼-7 UNC | 4.250 | 2.000 | 2.61 |
| MB861551 | MB861552 | #11 | 1-¾-6 UNC | 4.750 | 2.000 | 2.66 |



TYPE II COUPLER DETAIL

| Standard Coupler PN# (plain finish) | Flange Coupler PN# (plain finish) | Rebar Size | Couple Thread Size | "L" Length (inch) | Diameter (inch) | Weight (lbs.) |
|-------------------------------------|-----------------------------------|------------|--------------------|-------------------|-----------------|---------------|
| MB860551 | MB860552 | #4 | ¾-11 UNC | 1.250 | 1.000 | 0.17 |
| MB860681 | MB860682 | #5 | ¾-10 UNC | 1.625 | 1.125 | 0.25 |
| MB860851 | MB860852 | #6 | ¾-9 UNC | 2.250 | 1.250 | 0.40 |
| MB860981 | MB860982 | #7 | 1-8 UNC | 2.500 | 1.500 | 0.70 |
| MB861151 | MB861152 | #8 | 1-½-8 UN | 2.750 | 1.625 | 0.88 |
| MB861281 | MB861282 | #9 | 1-¼-8 UN | 3.000 | 2.000 | 1.70 |
| MB861451 | MB861452 | #10 | 1-7/16-8 UN | 3.250 | 2.125 | 1.84 |
| MB861581 | MB861582 | #11 | 1-9/16-8 UN | 3.625 | 2.250 | 2.19 |



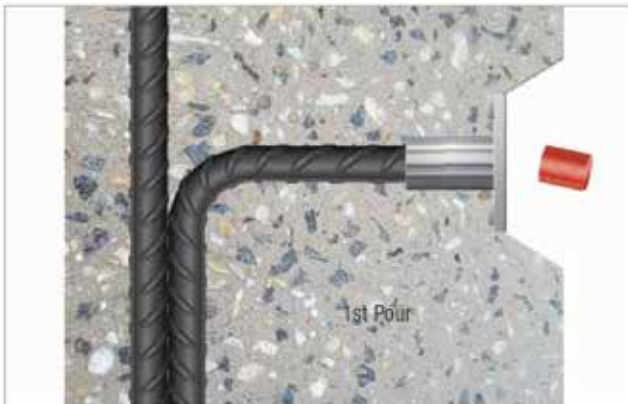
BT Couplers are sold as an engineered component system, proof tested and third party certified. Under no circumstances will Meadow Burke permit the mixing other manufactures splicing parts with genuine MB components.



STEP 1 Ensure you are installing the bar size as per plan. Be sure that the protective thread plug is installed in the end of the coupler.



STEP 2 Lay the BT Coupler Setting Bar dowel parallel with rebar to be spliced. Position coupler plate flush against formwork and tie the female BT Coupler to the rebar mat. Be sure the bars are properly supported. Note: Roofing nails can be used to assure the coupler plate stays flush against formwork. The plate on the coupler is not intended to support the weight of the bar, workmen or equipment.



STEP 3 After concrete is placed and forms are stripped, the protective thread plug and face plate of the coupler are visible. The protective thread plug can be easily removed using a screwdriver or pliers.



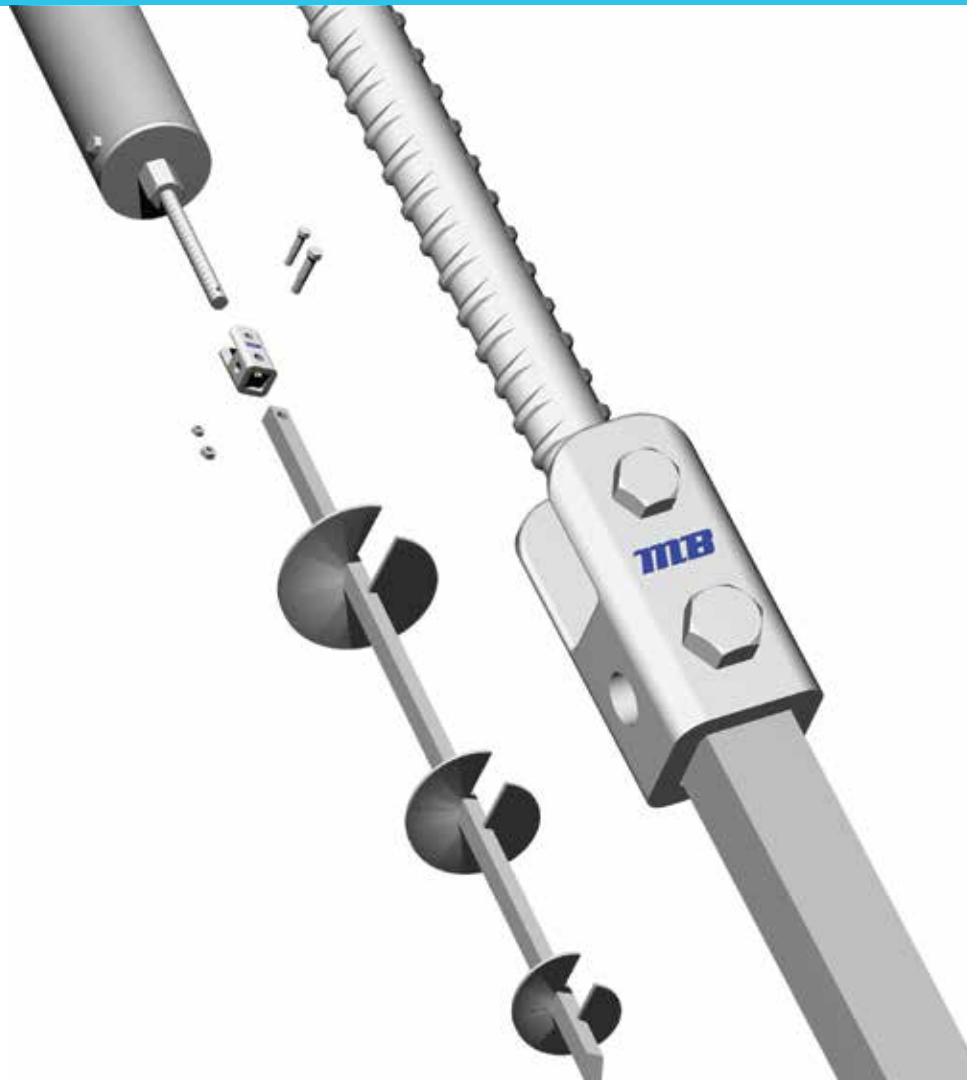
STEP 4 Remove the bar end protector from the male bar. Visually inspect the thread to make sure it is undamaged and free of rust or debris. If the threads need to be cleaned use a wire brush.



STEP 5 Thread a Splice Bar into Setting Bar until Splice Bar threads bottom out against Coupler Thread Stop, tighten hand tight (10 ft lbs.)

NOTE: In situations where proper positioning of setting or splice bar is not possible after hand tightening assembly, it is acceptable to unscrew one side up to 1 turn to correctly index hooks or bent bar in rebar cage.

Precast Bracing Hardware



The Meadow Burke DogBone Lifting System is a quality system designed to lift and handle the concrete elements quickly, safely and economically. This versatile system offers effortless lifter to anchor attachment and disconnect in a wide range of capabilities.

FORWARD

This Manual has been developed to provide a broad scope of technical information to the tilt-up Contractor/Erector. No publication, however comprehensive, is complete in every detail nor can one design for national use or account for local customs and practices. Consequently, when using this manual there is an absolute obligation to verify understandings or impressions with more experienced sales people, managers, engineering or other technical sources. We, at Meadow Burke, are confident you will find this manual an invaluable tool.

NOTICE

All of the Meadow Burke inserts and products have been fully tested for mechanical capabilities. In addition the inserts have been cast in concrete to test the actual pull-out capacities. Full size production braces have been tested in tension and compression to determine their failure loads. It is these loads, and not theoretical values determined from various equations that are published in this manual. Contact Meadow Burke Engineering for assistance in determining loads not listed.

Meadow Burke products must be properly used and maintained. Do not use any products that are worn, excessively corroded, deformed or altered. See the product maintenance manual for proper maintenance and inspection of rental hardware.

A precast panel is not a completed wall immediately upon lifting. Braces are necessary to resist wind forces until permanent connections are made.

A number of variables will effect the amount of force Meadow Burke braces must resist. The amount of lateral pressure on newly erected precast panels will vary with wind velocity, the surface area of the panel and the presence or absence of openings. The chart on this page shows the pressure gradient for a 72 m.p.h. wind exerted on the panel. Wind velocity and therefore pressure, will depend on the geographical location of the building and seasonal conditions. The amount of this force will rise further if the wind is supplemented with either driving rain, blowing snow, or windblown dust and sand.

Before selecting a brace type in the Bracing Tables, contact the local Meadow Burke Distributor to determine what equipment is available. When using the Bracing Tables, make certain the brace selected will reach between the available floor and wall panel without falling in an opening or conflicting with an obstruction.

The following Precast Brace Spacing Tables A, B, C were developed using a minimum construction period wind speed of 72 m.p.h. with exposure C, based on ASCE 7-95. This is the 90 m.p.h. basic wind speed modified by .8 to convert it to a one year mean recurrence interval for the construction period. The table incorporates minimum safety factors of 1.5 on the braces and 2.0 on the brace inserts. Contact Meadow Burke Engineering for assistance if site conditions or local codes require higher design wind pressure.

WARNING

Do not weld or modify products.

Do not substitute products or interchange components from other manufacturers.

Do not use non-authorized drill-in anchors as lifting or brace connections that have not been tested and approved by Meadow-Burke Engineering.

Do not use damaged or worn products.

Do not climb on or ride panels during erection.

Do not alter rigging, reinforcing steel or strongbacks.

Do not deviate from the information shown on the drawings without notifying Meadow-Burke Engineering.

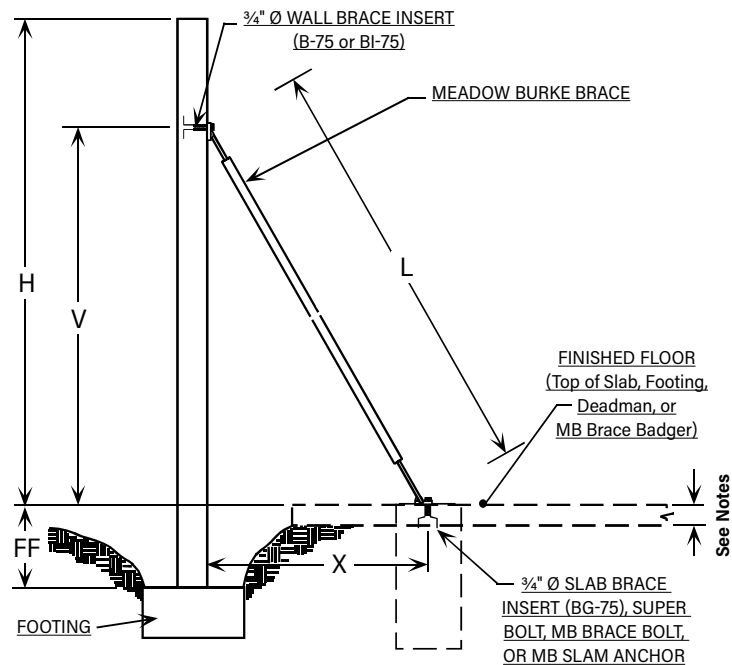
Meadow Burke braces are designed for use with the Meadow Burke Brace Badger, Slam Anchor, Super Bolt, MB Brace Bolt, or with cast-in-place B-75, BI-75 and BG-75 coil inserts only. The use of other types of inserts may reduce the capacity of the bracing system and therefore should not be used. In order to develop the full capacity of the brace inserts, the inserts must be embedded in concrete with 2,500 psi minimum concrete compressive strength, 5 inch minimum embedment and located 1 foot minimum from all concrete edges. Lesser embedments or lower concrete strengths will reduce the capacity of the brace insert and may reduce the allowable brace spacings shown in the tables or on the panel erection details. Meadow Burke does not recommend the use of expansion type inserts for attaching tilt-up braces and assumes no responsibility if used.

To achieve the spacings shown in the brace tables or on the panel erection details, the braces must be anchored to a concrete floor slab, footing or deadman with sufficient area, weight and strength to resist the applied brace loads. The braces are designed for attachment at top of floor slab elevation unless noted otherwise on the details. The floor slab has not been checked or designed by Meadow Burke. Using floor slabs, footings or deadmen of insufficient size or strength may result in failure of the brace system before the design wind load is reached. It is the users responsibility to have a qualified professional engineer design the floor slab, footing or deadman to insure that they are adequate to anchor the braces for this application. To assist the engineer, the applied design concentric brace load as determined by Meadow Burke Engineering for each brace is indicated on the panel detail sheets.

The brace information shown herein reflects spacings for the resistance of wind load only. The effect of construction live loads, soil backfill loads, vertical and lateral loads, etc., have not been considered in the design of the brace tables or brace information shown on the erection details. It is the responsibility of others to determine the effect of such loads and provide additional bracing as required to support the panels.

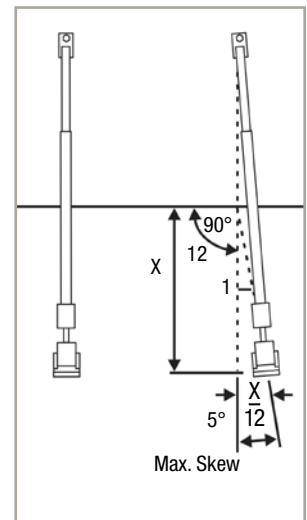
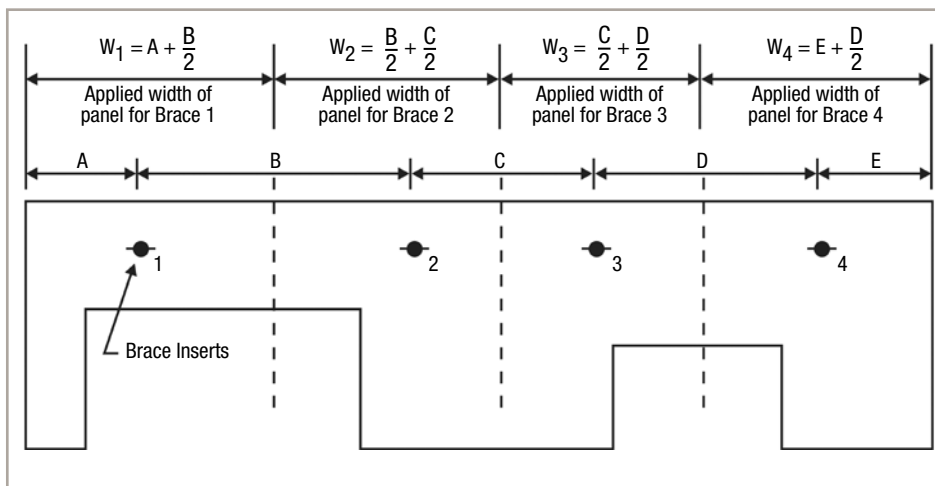
The vertical dimension of the wall brace insert above the floor slab, footing or deadman and the horizontal dimension to the floor brace insert from the face of the panel where the wall brace inserts are located is indicated in the brace tables for a specified panel height, or is shown on the panel erection details. Deviations from the dimensions shown in the tables or on the panel details may significantly reduce the indicated capacity of the braces.

The bracing recommendations contained herein apply to standard bracing situations for full height panels setting on footings and may not be applicable to all jobsite conditions. If this project has conditions that require a special brace design, the contractor should contact Meadow Burke Engineering for assistance.



Bracing Guidelines

1. Braces are designed to be placed in a plane at 90 degrees to the face of the panel. Skewing a brace will reduce the load carrying capacity of the brace. The maximum horizontal skew of the braces is limited to 5 degrees. A 5 degree skew is approximately equal to 1 inch skew for each 12 inches the brace insert is placed from the face of the wall (see detail at lower right). The brace spacing shown in the tables or on the panel details must be reduced when the braces are skewed more than 5 degrees. Even when the brace spacings are reduced to account for the increased brace load, never skew a brace more than 10 degrees.
2. Due to the increased suction created on the back side of a panel with openings; do not increase the brace spacing for panels with openings, unless a complete wind analysis to determine the effects of the wind passing through the openings is performed.
3. Locate brace inserts 1 foot or more from all concrete edges and floor slab joints.
4. Locate brace inserts to provide clearance between the lifting hardware and braces.
5. Locate brace inserts symmetrically about the panel's center line whenever possible.
6. Locate the first brace insert from each end of the panel at a distance no greater than 25 percent of the panel's width or 10 feet, whichever is less.
7. Locate brace inserts to provide an equal wind load to each brace where possible. Do not exceed the allowable maximum width of panel per brace. The allowable maximum width of panel per brace is the maximum brace spacing shown in the appropriate "S FF" column of the brace tables or as indicated on the panel detail sheets. For braces placed at nearly equal spacings, the actual width of panel applied to each brace (W_n) may be calculated using the method shown below. For panels requiring unequal or unusual brace spacings contact Meadow Burke Engineering for assistance.
8. Brace inserts should not be placed lower than 60% of the panel's height and not less than 5% of the panel's height above the panel's geometric centroid or mass center of gravity, whichever is greater.



Brace Table Legend

The following brace spacing tables have been designed for an 80 mph ultimate wind with a 1 year mean recurrence interval. Spacings are assuming a solid panel with a panel width not less than 20 feet. For more accurate spacings that factor in actual panel shape and openings contact Meadow Burke Engineering. The table should be used in conjunction with the notes and recommendations shown in the Brace Design Notes, on pages 78,79, & 80.

SFF = Maximum brace spacing for a panel with a height below floor (or top of deadman when used) equal to "FF" feet. [ie., the S 0 column yields the maximum spacing for a panel with no height below floor, the S2 column yields the maximum spacing for a panel 2 foot maximum height below floor, etc.]

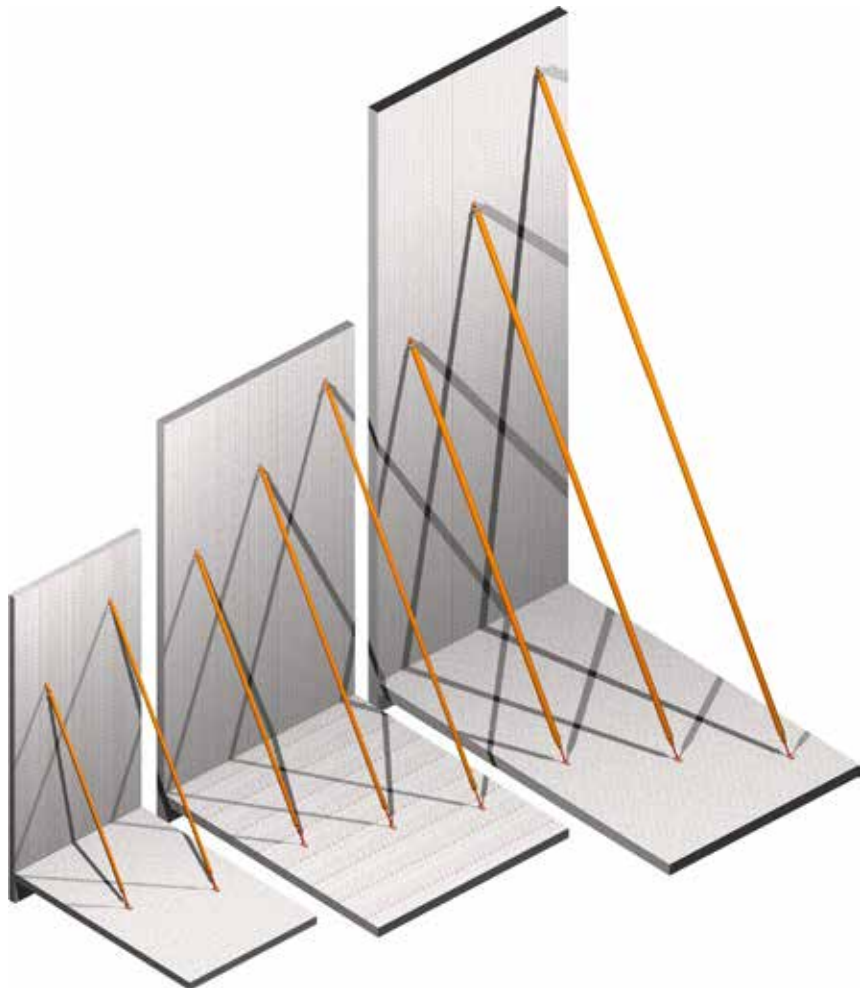
All dimensions are shown in units of feet. Always round the dimensions for the panel height below floor and the panel height above floor, to the next larger chart value. Reference brace detail on Brace Design Notes, on page 78.

H = Height of panel above floor or top of deadman when used.

V = Brace insert location from face of floor or top of deadman if used.

X = Horizontal dimension to floor brace insert from the face of the panel where the wall brace inserts are located.

L = Brace length for given V and X.



Brace Tables

For Brace Legend notes, please refer to page 175.

WARNING: Some braces may not be available at all distribution locations. Always check with your local distributor for brace availability prior to casting inserts in floor slab or wall panels.

| H | SUPER 52 L=52.00' | | | | | | SUPER 42 L=42.00' | | | | | |
|----|----------------------|-------|-------|-------|-------|-------|----------------------|-------|-------|-------|-------|-------|
| | V | X | S0 | S2 | S4 | S6 | V | X | S0 | S2 | S4 | S6 |
| 79 | 45.00 | 26.00 | | | | 4.33 | 36.37 | 21.00 | | | | 6.24 |
| 78 | 45.00 | 26.00 | | | | 4.44 | 36.37 | 21.00 | | | | 6.58 |
| 77 | 45.00 | 26.00 | | | | 4.57 | 36.37 | 21.00 | | | | 6.81 |
| 76 | 45.00 | 26.00 | | | 4.63 | 4.57 | 36.37 | 21.00 | | | | 7.05 |
| 75 | 45.00 | 26.00 | | 4.85 | 4.77 | 4.69 | 36.37 | 21.00 | | | | 7.20 |
| 74 | 44.40 | 27.06 | 5.08 | 4.99 | 4.91 | 4.82 | 36.00 | 21.63 | 7.78 | 7.62 | 7.45 | 7.30 |
| 73 | 43.80 | 28.02 | 5.67 | 5.57 | 5.47 | 5.37 | 35.40 | 22.60 | 8.30 | 8.13 | 7.95 | 7.78 |
| 72 | 43.20 | 28.94 | 5.96 | 5.86 | 5.75 | 5.65 | 34.80 | 23.52 | 8.83 | 8.64 | 8.45 | 8.27 |
| 71 | 42.60 | 29.82 | 6.26 | 6.15 | 6.03 | 5.92 | 34.20 | 24.38 | 9.36 | 9.16 | 8.96 | 8.75 |
| 70 | 42.00 | 30.66 | 6.55 | 6.44 | 6.32 | 6.20 | 33.75 | 25.00 | 9.86 | 9.64 | 9.42 | 9.21 |
| 69 | 41.75 | 31.00 | 6.81 | 6.68 | 6.55 | 6.43 | 33.75 | 25.00 | 10.27 | 10.03 | 9.79 | 9.56 |
| 68 | 41.75 | 31.00 | 7.04 | 6.90 | 6.77 | 6.63 | 33.75 | 25.00 | 10.71 | 10.44 | 10.18 | 9.92 |
| 67 | 41.75 | 31.00 | 7.28 | 7.13 | 6.99 | 6.84 | 33.75 | 25.00 | 11.17 | 10.88 | 10.59 | 10.31 |
| 66 | 41.75 | 31.00 | 7.54 | 7.38 | 7.22 | 7.06 | 33.75 | 25.00 | 11.67 | 11.34 | 11.03 | 10.72 |
| 65 | 41.75 | 31.00 | 7.81 | 7.63 | 7.46 | 7.29 | 33.75 | 25.00 | 12.19 | 11.84 | 11.49 | 11.15 |
| 64 | 41.75 | 31.00 | 8.09 | 7.90 | 7.71 | 7.53 | 33.75 | 25.00 | 12.75 | 12.36 | 11.98 | 11.61 |
| 63 | 41.75 | 31.00 | 8.39 | 8.18 | 7.98 | 7.79 | 33.75 | 25.00 | 13.36 | 12.92 | 12.50 | 12.10 |
| 62 | 41.75 | 31.00 | 8.70 | 8.48 | 8.26 | 8.05 | 33.75 | 25.00 | 14.02 | 13.51 | 13.05 | 12.61 |
| 61 | 41.75 | 31.00 | 9.03 | 8.79 | 8.56 | 8.33 | 33.75 | 25.00 | 14.71 | 14.16 | 13.64 | 13.16 |
| 60 | 41.75 | 31.00 | 9.37 | 9.12 | 8.86 | 8.62 | 33.75 | 25.00 | 15.46 | 14.85 | 14.27 | 13.74 |
| 59 | 41.75 | 31.00 | 9.74 | 9.46 | 9.19 | 8.93 | 33.75 | 25.00 | 16.27 | 15.59 | 14.95 | 14.36 |
| 58 | 41.75 | 31.00 | 10.13 | 9.82 | 9.53 | 9.25 | 33.75 | 25.00 | 17.13 | 16.38 | 15.68 | 15.02 |
| 57 | 41.75 | 31.00 | 10.54 | 10.21 | 9.89 | 9.59 | 33.75 | 25.00 | 18.06 | 17.23 | 16.46 | 15.74 |
| 56 | 41.75 | 31.00 | 10.97 | 10.61 | 10.27 | 9.95 | 33.75 | 25.00 | 19.07 | 18.15 | 17.30 | 16.51 |
| 55 | 41.75 | 31.00 | 11.43 | 11.04 | 10.67 | 10.33 | 33.75 | 25.00 | 20.16 | 19.13 | 18.20 | 17.33 |
| 54 | 41.75 | 31.00 | 11.92 | 11.50 | 11.10 | 10.72 | 33.75 | 25.00 | 21.33 | 20.20 | 19.16 | 18.21 |
| 53 | 41.75 | 31.00 | 12.43 | 11.98 | 11.55 | 11.14 | 33.75 | 25.00 | 22.61 | 21.35 | 20.20 | 19.16 |
| 52 | 41.75 | 31.00 | 12.98 | 12.49 | 12.02 | 11.58 | | | | | | |
| 51 | 41.75 | 31.00 | 13.57 | 13.03 | 12.52 | 12.05 | | | | | | |
| 50 | 41.75 | 31.00 | 14.19 | 13.61 | 13.06 | 12.55 | | | | | | |
| 49 | 41.75 | 31.00 | 14.87 | 14.22 | 13.62 | 13.07 | | | | | | |
| 48 | 41.75 | 31.00 | 15.60 | 14.87 | 14.23 | 13.63 | | | | | | |
| 47 | 41.75 | 31.00 | 16.37 | 15.58 | 14.87 | 14.22 | | | | | | |
| 46 | 41.75 | 31.00 | 17.21 | 16.34 | 15.55 | 14.85 | | | | | | |
| 45 | | | | | | | | | | | | |
| 44 | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | |
| 42 | | | | | | | | | | | | |
| 41 | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | |
| 39 | | | | | | | | | | | | |
| H | Install. Dims. | | | | | | Install. Dims. | | | | | |
| | SUPER 52 L=52.00' | | | | | | SUPER 42 L=42.00' | | | | | |

Tilt-up Brace Spacing Table C © 2018

Brace Load Table

| Brace Type | Brace Length [ft.] Min. / Max. | Ultimate Brace Buckling Load [kips] | Ultimate Brace Shoe Load [kips] |
|----------------------------------|-----------------------------------|--|------------------------------------|
| MB Precast Brace - (45218HD) | 8.00 / 14.00 | 518.54 / L ^{1.74} | 9.5 |
| MB Precast Brace - HD (45218EHD) | 8.00 / 14.00 | 48.75 – 3L | 13.5 |
| MB Precast Brace – HD (45217EHD) | 5.00 / 9.00 | 48.75 – 3L | 13.5 |
| Super 17 | 17.00 | 13.00 | 13.00 |
| Super 22 | 22.00 | 11.00 | 11.00 |
| Super 22 + 5' Extension | 27.00 | 8.85 | 11.00 |
| Super 22 + 10' Extension | 32.00 | 5.80 | 11.00 |
| Super 32 | 32.00 | 13.50 | 13.50 |
| Super 32 + 5' Extension | 37.00 | 10.36 | 13.50 |
| Super 32 + 10' Extension | 42.00 | 8.042 | 13.50 |
| Super 32 + 10' & 5' Extensions | 47.00 | 7.037 | 13.50 |
| Super 32 + 2-10' Extension | 52.00 | 5.778 | 13.50 |
| Super 37 | 37.00 | 10.36 | 13.50 |
| Super 42 | 42.00 | 17.87 | 17.87 |
| Super 52 | 52.00 | 16.05 | 17.87 |
| Super 62 | 62.00 | 16.05 | 17.87 |

Notes:

1. "L" is the total brace length in feet.
2. The equations above for ultimate buckling loads are based on test results performed on the braces when they were placed at an angle of 60 degrees to horizontal. For brace angles between 45 and 60 degrees to horizontal, multiply the buckling load derived from the equations above by the factor "K".

$$K = \frac{(1390 + 47 \theta)}{4210} \quad \text{Where } \theta = \text{Brace angle to horizontal in degrees.}$$

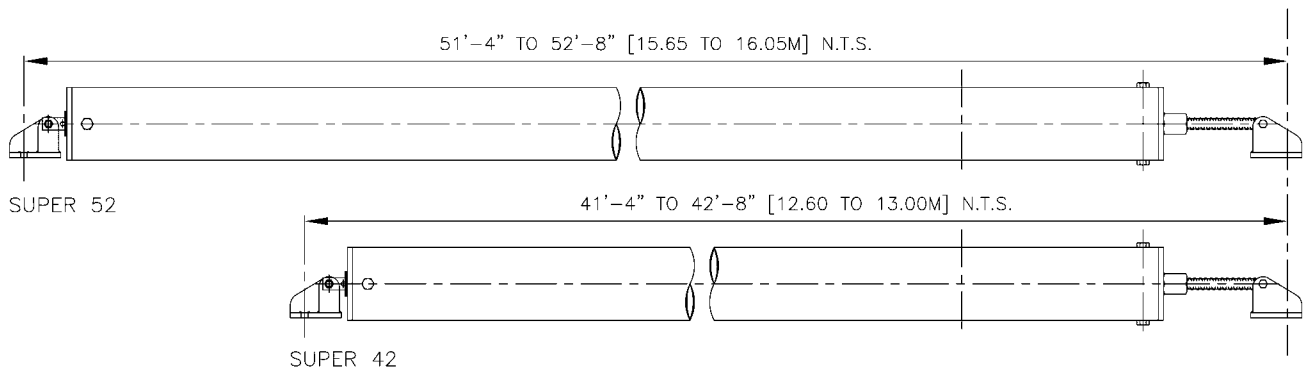
Exception: K = 1 may be used for all "Super Braces" except for the Super 22 + 10' Extension.

3. Do not use brace loads greater than the ultimate brace shoe loads above. Always use the smaller of the two loads.
4. To determine the concentric brace working load, divide the governing load (brace shoe or buckling load) by the desired safety factor. A 1.67 minimum safety factor is recommended for temporary wind bracing of concrete tilt-up wall panels. Braces when used for other purposes or different types of applied loads may require higher safety factors. Safety factor shall be determined by the user.

Meadow Burke Braces

SUPER 52 AND 42 BRACE

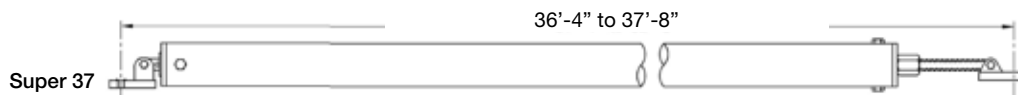
Meadow Burke's new Super 52 and Super 42 braces are 52 feet and 42 feet long, fixed-length braces with 18" of adjustment for final plumbing. These braces have an ultimate strength of 16,050 lbs which is nearly 2 times as strong as Super 32's with extensions attached. They are used to brace panels from 39 to 79 feet high without the need for secondary bracing. The Super 52 weighs 680 lbs and the Super 42 weighs 550 lbs.



Meadow Burke Braces

SUPER 37 BRACE

Meadow Burke's new Super 37 brace are 37 feet long, fixed-length braces with 18" of adjustment for final plumbing. These braces have an ultimate strength of 13,500 lbs. They are used to brace panels from 36 to 55 feet high without the need for secondary bracing. The Super 37 weighs 315 lbs.



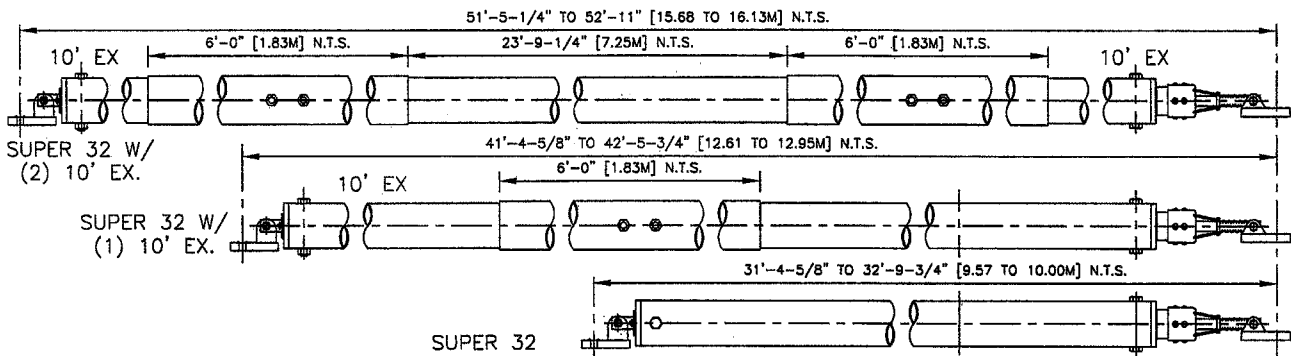
Meadow Burke Braces

SUPER 32 BRACE

The Super 32 Brace is a 32-foot long fixed-length brace with 18 inches of adjustment for final plumbing. The brace has an ultimate strength of 13,500 pounds, making it 2.24 times stronger as a Super 22 Brace with 10 foot extension. It is used to brace panels from 30 to 50 feet high without the need for secondary bracing or Bi-pods. Brace weight: 275 lbs.

There is a 10 foot extension available for the Super 32, which makes it 42 feet long and then weighs 400 pounds. At this length, the brace has an ultimate strength of 8,042 pounds and is used to brace panels up to 64 feet.

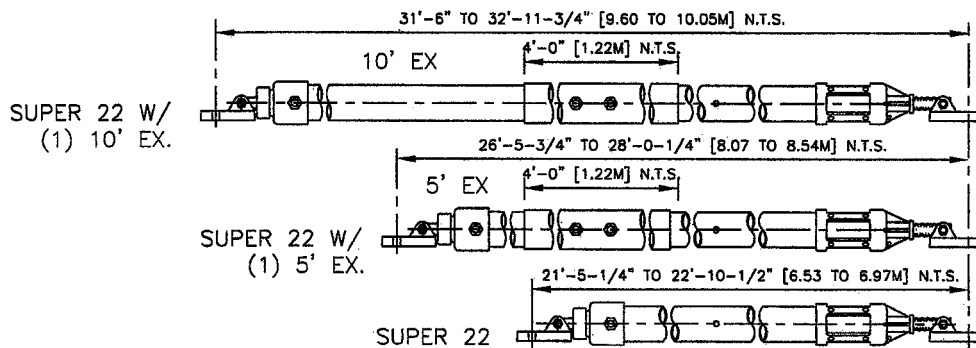
By placing a 10 foot long extension at each end of the Super 32 brace, it is possible to obtain a 52 foot long brace. In this configuration the brace weighs 520 pounds and has an ultimate strength of 5,778 pounds. It is used to brace panels up to 75 feet high. 5' extensions are also available to obtain 37' and 47' long braces.



Meadow Burke Braces

SUPER 22 BRACE

Meadow Burke Super Brace combines lightweight with high strength for easy handling and solid support of precast panels. Because of its tested strength, fewer braces and inserts per panel are required. Super Brace comes in 22 ft. (6.71 m) lengths. 5 and 10 ft. extensions are available that quickly and easily bolt onto the brace at the jobsite. Simply remove the swivel head from the Super Brace, slip the sleeved end of the extension onto the brace and bolt together. Then reattach the swivel head to the free end of the extension. Super Brace is easily adjusted for final plumbing of the panel. A predrilled hole near the foot of the brace accepts a scrap piece of rebar as a fine adjustment handle. Braces are normally set to provide 9" (229 mm) of adjustment in either direction for a total of 18" (457 mm) Brace weight: 136 lbs. (61.7 kg). 10' Extension weight: 88 lbs. (40 kg). 5' Extension weight: 52 lbs. (24 kg).



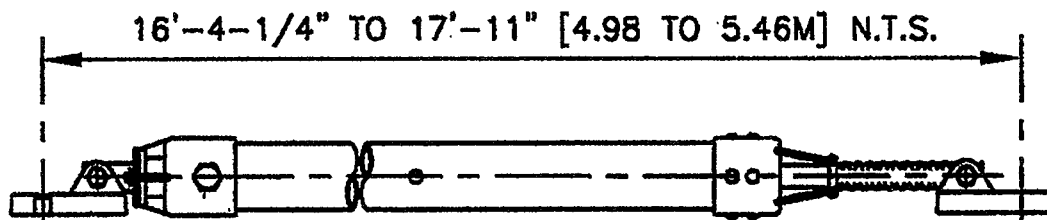
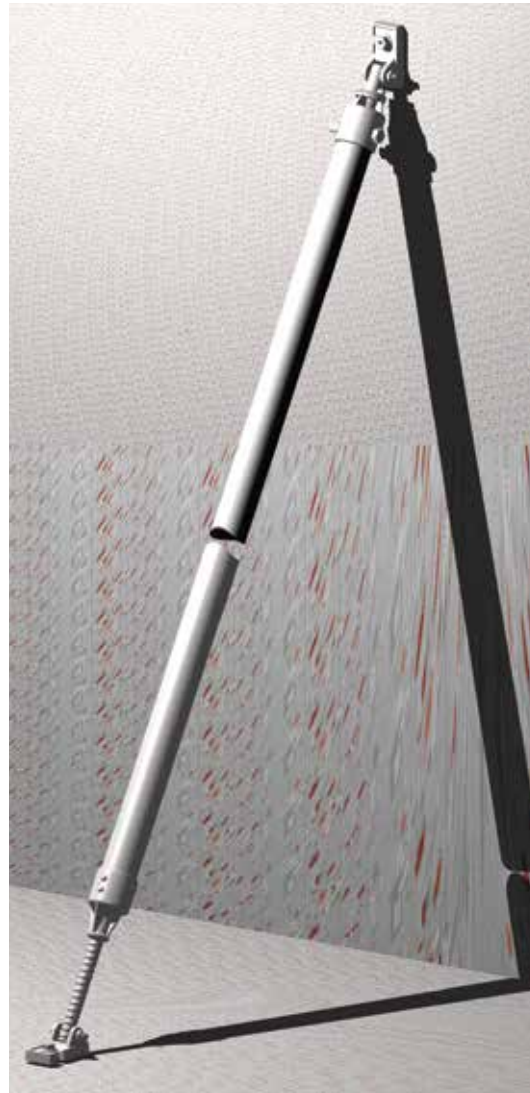
Meadow Burke Braces

SUPER 17 BRACE

The Super 17 Brace is a 17' long fixed length brace with 18 inches of adjustment for final plumbing. The brace has an ultimate strength of 13,000 lbs. The Super 17 can brace panels from 9' to 25' tall. Brace weight is 105 lbs.

MB 8-14 BRACE

This versatile, telescoping brace is adjustable from 8' to 14' lengths. It is best utilized in situations where a very short brace is required. Brace weight is 58 lbs.



**WORKING LOADS IN LBS. IN 2500 PSI
CONCRETE, 2.0:1 SAFETY FACTOR**

| Item Number | Conc. Thick. in inches | Face Tension | Face Shear |
|-------------|------------------------|--------------|------------|
| B75050 | 5" | 7,800 | 8,200 |
| B75055 | 5 ½" | 9,625 | 10,150 |
| B75060 | 6" | 10,150 | 10,150 |
| B75062 | 6 ¼" | 10,150 | 10,150 |
| B75065 | 6 ½" | 10,150 | 10,150 |
| B75070 | 7" | 10,150 | 10,150 |
| B75072 | 7 ¼" | 10,150 | 10,150 |
| B75075 | 7 ½" | 10,150 | 10,150 |
| B75080 | 8" | 10,150 | 10,150 |
| B75082 | 8 ¼" | 10,150 | 10,150 |
| B75085 | 8 ½" | 10,150 | 10,150 |
| B75090 | 9" | 10,150 | 10,150 |
| B75092 | 9 ¼" | 10,150 | 10,150 |
| B75095 | 9 ½" | 10,150 | 10,150 |
| B75100 | 10" | 10,150 | 10,150 |
| B75105 | 10 ½" | 10,150 | 10,150 |
| B75110 | 11" | 10,150 | 10,150 |
| B75112 | 11 ¼" | 10,150 | 10,150 |
| B75115 | 11 ½" | 10,150 | 10,150 |
| B75120 | 12" | 10,150 | 10,150 |

**WORKING LOADS IN LBS. IN 2500 PSI
CONCRETE, 2.0:1 SAFETY FACTOR**

| Item Number | Conc. Thick. in inches | Face Tension | Face Shear |
|-------------|------------------------|--------------|------------|
| BII75 | Inverted | 9,625 | 10,150 |

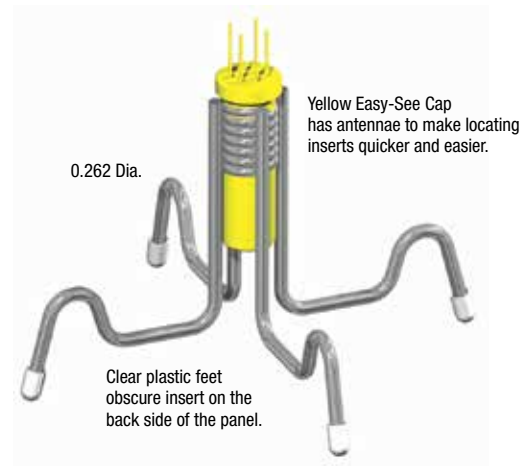
Coil Inserts

Meadow Burke's Brace Inserts have been an industry standard for the past three decades. These solid bolted connections have proven the strength and security of this system on thousands of job sites around the country.

For unshakable reliability the Meadow Burke Coil System is an excellent choice.

B-75 WALL BRACE INSERT

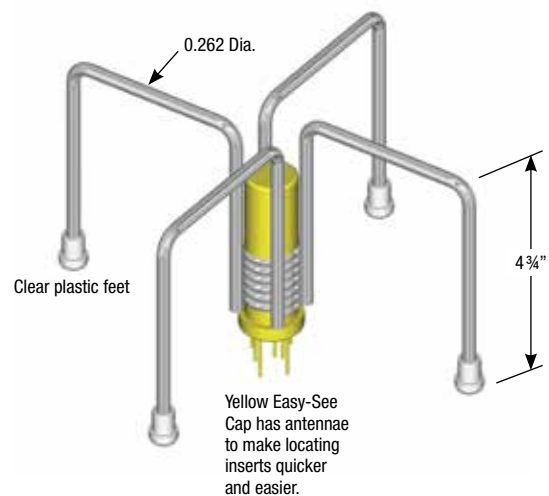
¾" diameter coil insert height is ½" less than panel thickness. Available in ½" increments from 5" through 12".



The minimum edge distance required to obtain the rated loads for face applications is 12 inches.

BII-75 INVERTED WALL BRACE INSERT

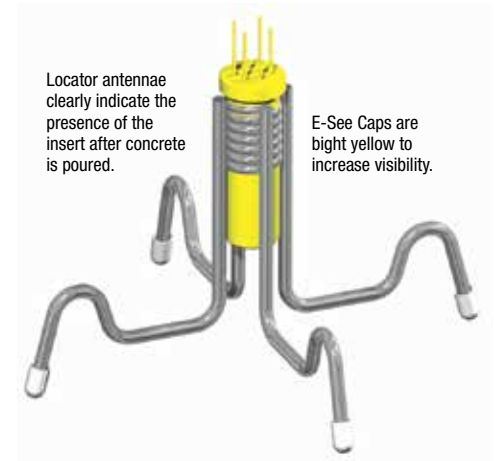
¾" diameter coil insert - Available in size shown only.



Insert Placement

E-SEE CAPS HELP WORKMEN PROTECT, INSPECT, AND DETECT INSERTS

Meadow Burke Inserts come equipped with distinctive, bright yellow E-See Caps. The shape of the cap will differ with the type of insert, but all of them have the easy-to-see yellow antennae. These locator antennae serve two purposes, 1.) they clearly signal the presence of the insert after concrete is poured, 2.) because the antennae are arranged in a circle or ellipse around the perimeter of the insert, they form a separate concrete plane which can be easily cracked and removed with minimum spalling of the surrounding concrete. Patching work is minimized. E-See cap antennae will not interfere with screeding, bull floating, or troweling. These highly flexible, polyethylene antennae merely flatten out during finishing work only to spring back up once finishing equipment has passed. Meadow Burke's resilient caps also protect the insert from seepage while creating a void for the easy entry of lifting equipment or bolts. Once their work is done, Meadow Burke's E-See Caps can be easily removed with a screw driver or other similar instrument.

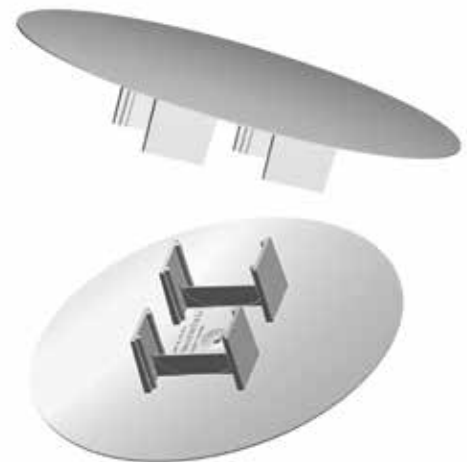


SPECIALLY DESIGNED BURKE INSERTS FACILITATE PLACEMENT

Meadow Burke Inserts are designed for stability and economy. The inserts should be tied securely to the rebar mesh. Location of the inserts in the panel should correspond exactly to their position on the engineering drawing. If for some reason they cannot be placed in their exact location, contact your Meadow Burke representative or the Meadow Burke Engineering Center. Bracing inserts should not be placed in a position where the attachment of braces prior to lifting would interfere with erection hardware or rigging. They should be placed no closer than 1 ft. (305 mm) away from all edges or openings. It is important that concrete around the anchors be properly consolidated. Care should be taken to assure that the vibrator's head does not hit the surface of the floor. This may cause chipping, mechanical bonding, and surface imperfection. Once the concrete has begun to stiffen, the vibrators should avoid striking the reinforcing rods. Vibration of the rods at this stage may break the existing bond between the concrete and the rods.

B-75 Patch Data

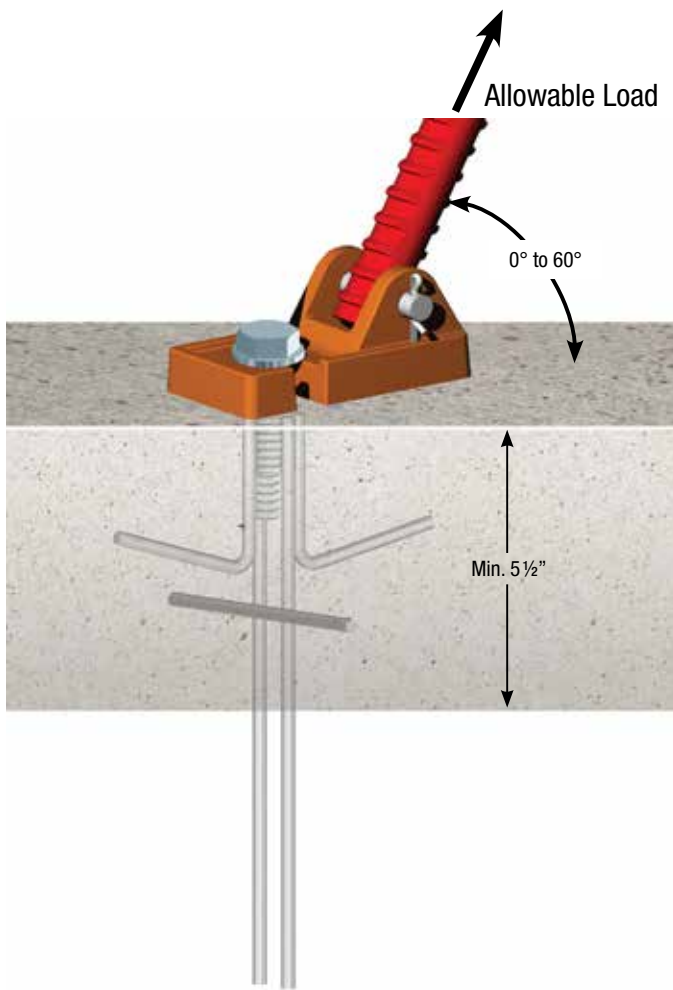
| Item Number | Description | Unit Weight (lbs.) |
|-------------|-------------|--------------------|
| 45611 | B-75 Patch | 0.05 lbs. |



CB-2 COIL GRADE 5 COIL BOLT

Product Code # 291247

*Use of coil bolts other than the MB C2 Coil Bolt may result in loss of brace stability



GROUNDING WALL BRACE INSERTS [BIG-75]

WORKING LOADS IN LBS. IN 2500 PSI CONCRETE, 2.0:1 SAFETY FACTOR

| Item Number | Min Conc. Thick. in inches | Allowable Angle | Allowable Load |
|-------------|----------------------------|-----------------|----------------|
| BIG75 | 5 1/2" | 0 to 60 | 9,470 |

Anchor Systems

Slam Anchor

BUILT FOR STRENGTH, SAFETY, SPEED

The Precast construction industry has long awaited the arrival of the most heralded brace-to-floor connection solution in recent years. The MB Slam Anchor was designed to address the shortcomings of existing brace-to-floor connectors.

STRENGTH

The objective was simply to create a brace-to-floor connection that will handle the maximum applied brace loads with a single bolt. The MB Slam Anchor carries a 9,000 lbs. load with a 2 to 1 safety factor.

SIMPLICITY AND SAFETY

We recognize that current brace-to-floor connections used in the field today can easily be improperly installed, resulting in serious safety hazards. Another objective with the Slam Anchor was to insure a virtually foolproof installation.

SPEED

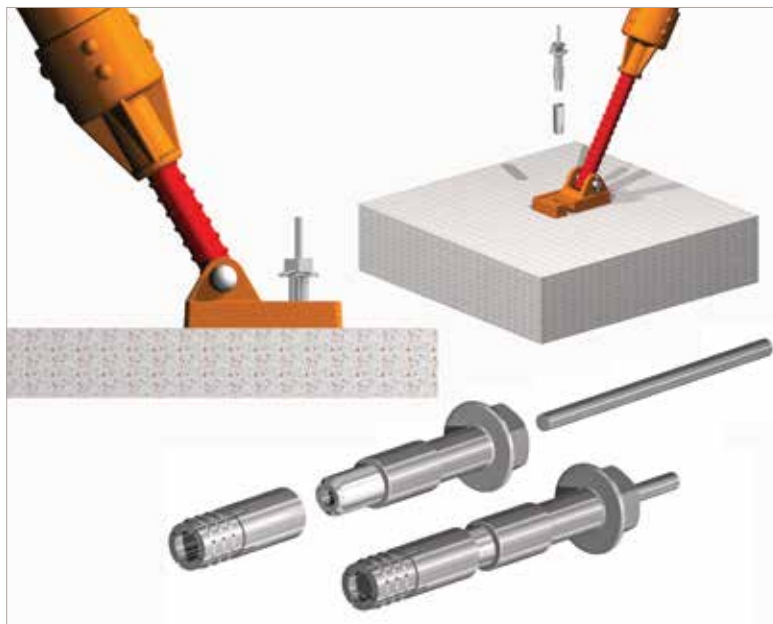
We know time is money. And with crane and crew waiting, we know that speed of installation is paramount.

NO TORQUE OR RETIGHTENING REQUIRED

The unique expansion mechanism is not a threaded connection, and therefore does not have a torque requirement and does not need to be retightened.

ECONOMICAL

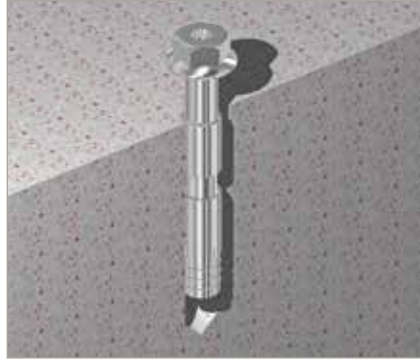
In addition to the savings in labor, the Slam Anchor is designed to be reusable. Only a small drop-in is expended at each use. We are confident that the Slam Anchor will be the brace-to-floor connection solution.





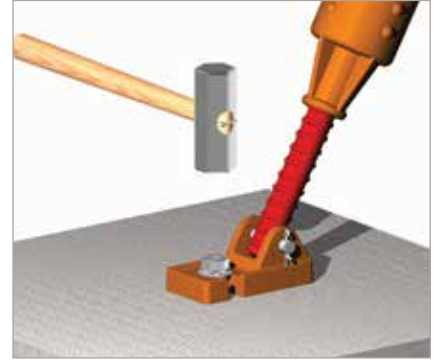
DRILL HOLE

- Determine the location of the brace shoe on the slab.
- Using a roto hammer, drill a 7/8" hole in the slab.
- Make sure that the hole is at least 6" deep or through the slab.
- If the hole does not completely penetrate the slab, make sure to clean it out completely.
- Screw "Drop-in" onto the end of the bolt, making sure to hand-tighten only. Do not over-tighten.
- Slab must be 5" thick minimum.

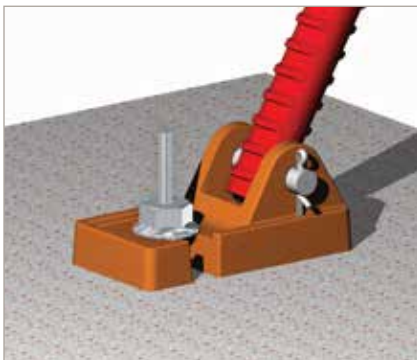


DROP MB SLAM ANCHOR IN HOLE

- Place bolt in the 7/8" hole and hammer until only the narrow (3/4") portion beneath the bolt head is visible.

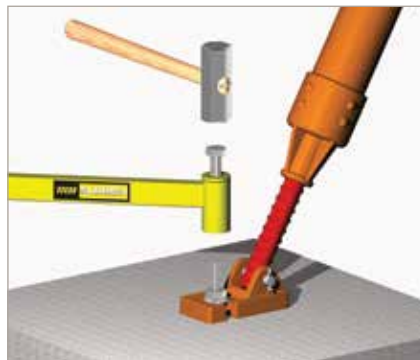


- Slide the brace shoe over the bolt.
- Drive the bolt the rest of the way down.

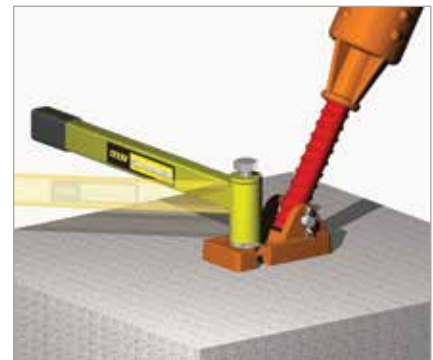


INSTALL SETTING PIN

- Insert pin into the hole in the center of the bolt.



- Place the specially designed MB SLAMMER setting tool over the pin and bolt, and pound the ram on the setting tool all the way down. A flush setting pin is assurance of a properly set anchor.



TIGHTEN BOLT

- Once the ram is driven all the way down, use the MB Slammer setting tool to check that the Slam Anchor is tightened down.
- This should be anywhere from an 1/8 to 1/4 of a turn. Remove the setting tool.

Eye protection should be worn during the installation of this product.

Setting pin should only be set using the MB Slammer setting tool.

MB BRACE BOLT

MB Brace Bolt safely and economically secures tilt-up braces to the slab without the inconvenience or uncertainty of cast-in-place inserts or expansion bolts. Pullout strength is equivalent to a cast-in-place insert without the problems of locating inserts and adjusting braces while the crane and crew wait. Convenience combines with economy in this reusable system. Nothing is left in the slab or wasted. When bracing is no longer needed, simply disengage the brace and remove bolt. The MB Brace Bolt can be used multiple times as long as the bolt continues to tighten up to the brace shoe but never more than 5 uses. Quality materials guarantee strength and durability.

INSTALLATION INSTRUCTIONS

1. Mark anchor location and drill a 20mm diameter straight hole at least 10" deep. Clean as much from the hole as possible by periodically lifting bit while drilling. The added depth is required to accommodate dust from drilling and thread cutting.
2. Turn bolt into the concrete to within 1" of the surface using a large $\frac{3}{4}$ " impact wrench with a 30mm socket.
3. Slide the Brace Shoe onto the bolt and continue tightening.

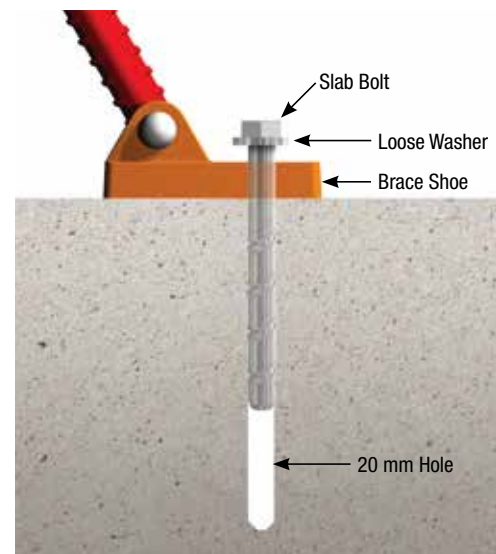
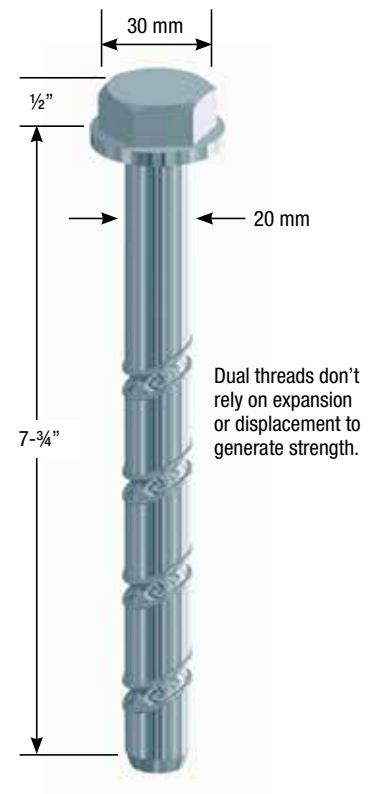
NOTES

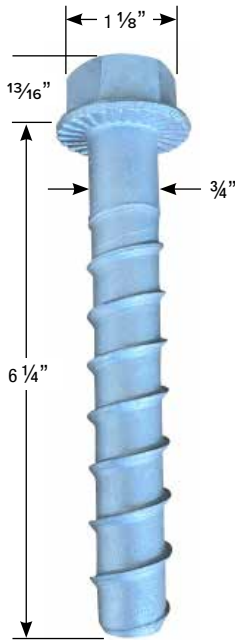
1. If it is necessary to remove the bolt and re-install it, hand thread the bolt to start it in the original threads. This way new threads will not be cut through the original ones.
2. The Brace Bolt does not rely on expansion or displacement to generate its strength and is, therefore, not dependent on torque applied during installation to set it. Once it is tight, it is set.
3. It is not necessary to re-tighten the bolt after high winds unless it is visibly loose.
4. The use of excessively worn or undersized drill bits may prevent the bolt from threading.
5. The use of oversized drill bits may result in incomplete threading and premature failure.
6. Use of under-powered drills +/- or impact wrenches may slow or prevent proper installation.

SLAB BRACE BOLT DATA

| Item Number | Description | Shear Safety Factor 2:1* | Tension Safety Factor 2:1* | Unit Weight [lbs.] |
|-------------|--------------------|--------------------------|----------------------------|--------------------|
| 45474 | MB Slab Brace Bolt | 14,435 lbs. | 8,950 lbs. | 1.15 lbs. |

*Values for shear and tension in 3,000 psi standard weight concrete at 6" thick.





MB RAPID BOLT

MB Rapid Bolt safely and economically secures tilt-up and precast braces to the slab or other anchor points. It eliminates the inconvenience or uncertainty of cast-in-place inserts or expansion bolts. MB Rapid Bolt is designed for quick and easy installation in single-use applications for tilt-up and precast concrete panels.

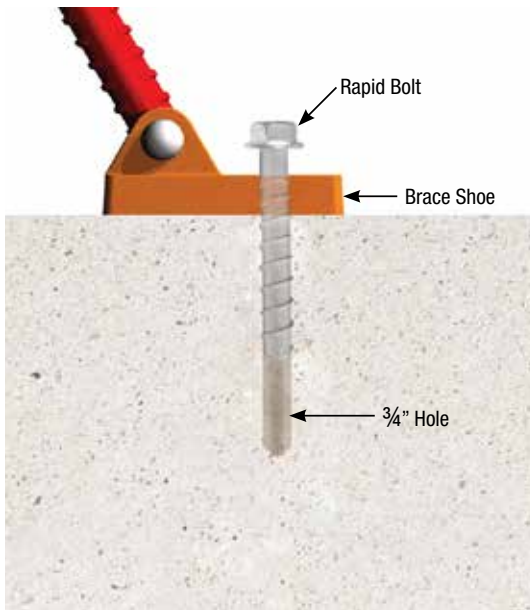
INSTALLATION INSTRUCTIONS

1. Mark anchor location and drill $\frac{3}{4}$ " diameter straight hole. Hole depth should accommodate full bolt penetration by the following methods:
 - a. 7" deep hole with hole cleaned to remove concrete fines.
 - b. Drill through slab.
2. Install the bolt through the brace shoe and drive the anchor down with a 200 FT-LB torque

WARNING: Over torquing can damage the anchor and reduce the capacities

NOTES

1. Refer to TCA Bracing Guidelines which suggest inspections of brace connections after jobsite experiences 35+MPH winds
2. The use of excessively worn or undersized drill bits may prevent the bolt from threading.
3. The use of oversized drill bits may result in incomplete threading and premature failure.
4. Use of under-powered drills +/- impact wrenches may slow or prevent proper installation.



Single Use MB Rapid Bolt ($\frac{3}{4}$ "x6")

| Item Number | Description | Slab Thickness | Brace Load at 3,000 psi concrete | Brace Load at 4,000 psi concrete | Unit Weight |
|-------------|---------------|----------------|----------------------------------|----------------------------------|-------------|
| MB45484 | MB Rapid Bolt | 4" | 4,300 lbs | 4,950 lbs | 1.05 lbs |
| | | 5" | 6,300 lbs | 7,300 lbs | |
| | | 6" | 8,100 lbs | 9,300 lbs | |

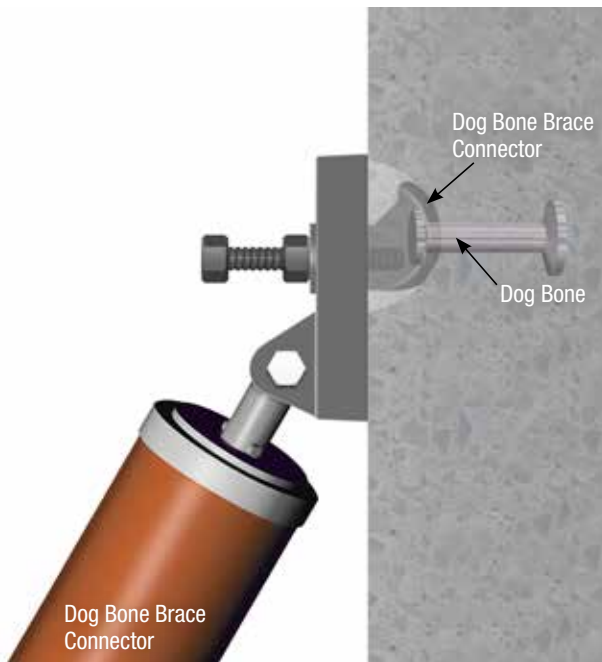
1. Values are based on a 2:1 SF
2. 12" minimum edge distance
3. Resultant determined with a 60° brace angle.
4. Requires use of MB Brace Shoe & MB Brace.
5. This bolt is approved for single use only



DOG BONE BRACE CONNECTOR

Meadow Burke is pleased to introduce the industry's first brace-to-dogbone connector.

The Dog Bone Brace Connector is the first product of its kind to connect a wall brace to a 4-ton Dog Bone Anchor. With the Dog Bone Brace Connector, erectors can securely and positively attach Meadow Burke wall braces to a wall panel through the use of a cast-in-concrete lifting anchor. The connector slides into the anchor void, and positions under the head of the dog bone in the same way a clutch is installed. The foot of the brace is positioned over the center of the shoe, aligning the center bolt holes. A 3/4" coil bolt (sold separately) is threaded into the Dog Bone Brace Connector. Once the bolt bottoms out, a preinstalled jam nut and washer is then tightened against the shoe. This connector is tested, safe, cost effective and easy to use.



Features of the Dog Bone Brace Connector:

- Eliminates need to inventory drill-in anchors
- Reduce install time. No drill and hammer at each anchor location
- Designed for use on 4-ton Dog Bone
- Shoe has been tested and will withstand loads required for any wall brace
- The Dog Bone Brace Connector is reusable
- Go/No Go Gauge also available for this product to check bolt and shoe wear

NOTE: Customer must verify the location of Dog Bone Anchor to be sufficient for use with the required brace locations prior to installation.

| Item Number | Description | Unit Weight |
|-------------|--------------------------|-------------|
| 45627 | Dog Bone Brace Connector | 1.22 lbs |

| Dog Bone Brace Connector Load Table | | | |
|-------------------------------------|-----------------------|-----------|-----------|
| 4 Ton DB-52 | Ultimate Load (lbs) @ | | |
| Length (in) | 2,500 PSI | 3,500 PSI | 5,000 PSI |
| 3.75 | 6,500 | 7,900 | 9,400 |
| 4.25 | 7,700 | 9,100 | 10,900 |
| 4.75 | 9,400 | 11,200 | 13,400 |
| 5.50 | 11,700 | 13,500 | 13,500 |
| 7.125 | 13,500 | 13,500 | 13,500 |
| 9.50 | 13,500 | 13,500 | 13,500 |
| 13.375 | 13,500 | 13,500 | 13,500 |

MB BRACE BADGER HELICAL ANCHOR SYSTEM

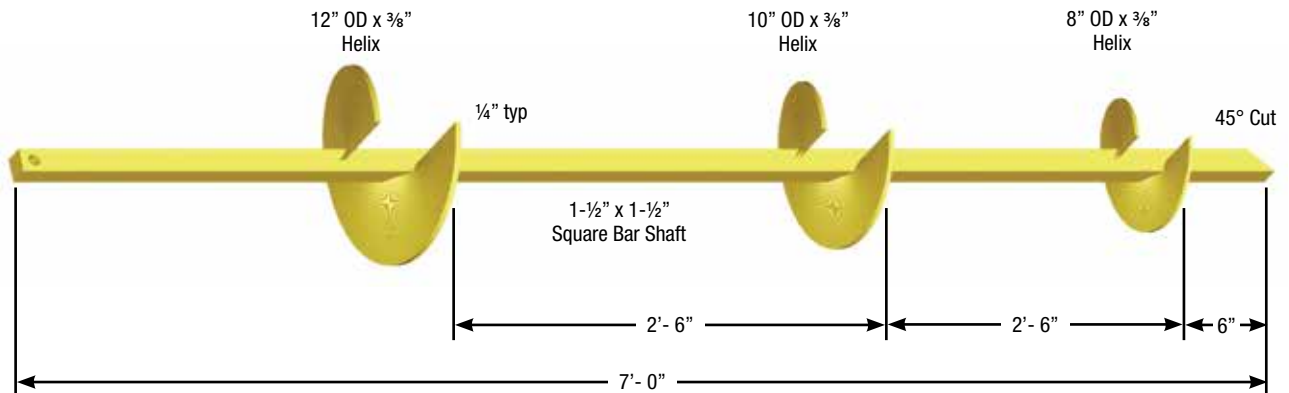
There are times in tilt-up construction when conventional bracing to floor slabs is not desired. Until now your option has been to construct expensive and time consuming concrete deadmen. The Meadow Burke Brace Badger™ is revolutionizing tilt-up construction by providing contractors with an economical and efficient alternative.

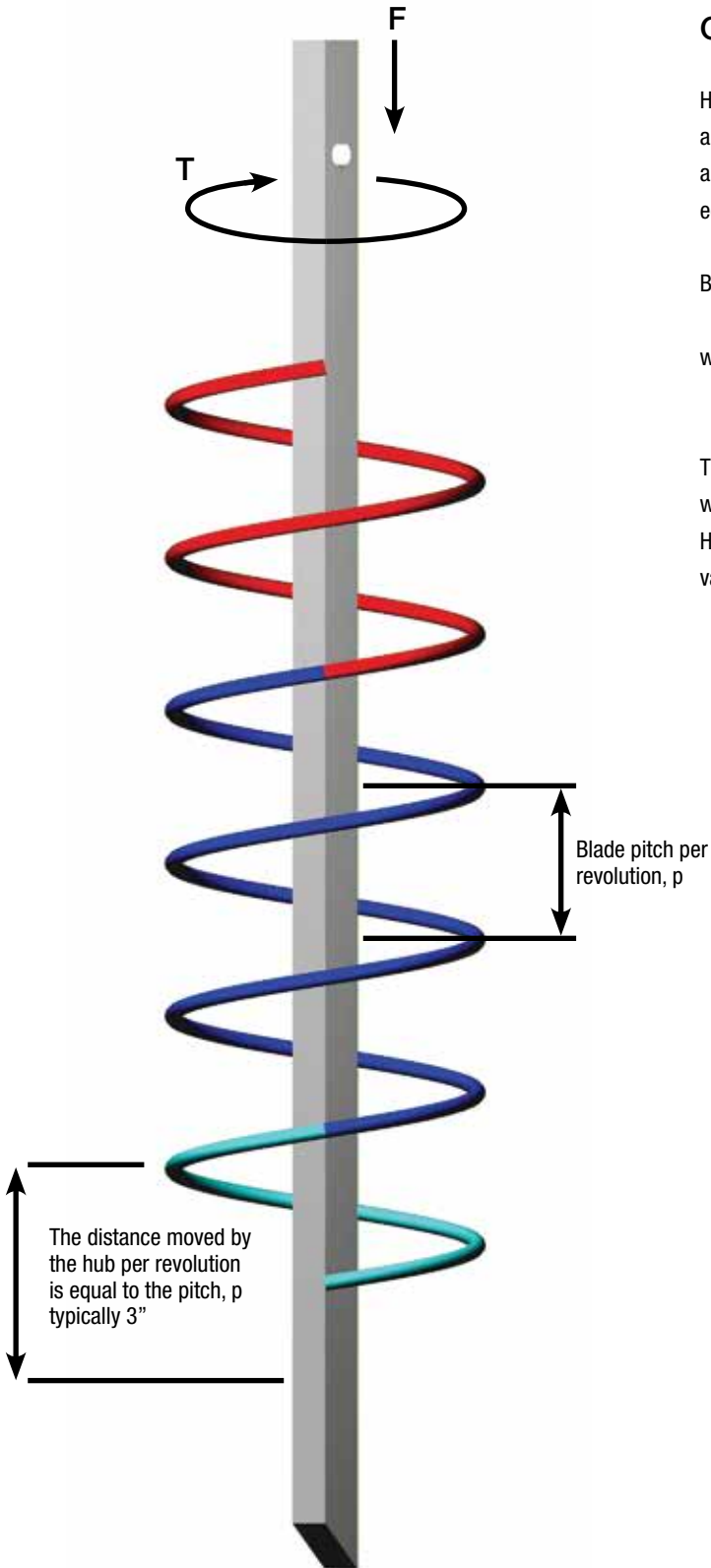
MB BADGER ADVANTAGES INCLUDE:

- eliminates concrete deadmen
- environmentally friendly
- offers quick installation and removal
- the strongest brace anchor available
- verifiable load capacity in all soil conditions
- works with ALL Meadow Burke braces
- reusable

PRODUCT SPECIFICATIONS:

The MB Brace Badger is pre-engineered for superior results in tilt-up applications. It consists of three helix plates welded to a 1-½" square bar shaft. Each helix plate is specially formed from ¾" x 44 ksi new steel plate. Our shaft steel has a typical yield strength of 95 ksi, and a typical tensile strength of 130 ksi, making it the strongest helical anchor available in the industry!





Capacity to Torque Ratio

Helical anchor installation involves screwing the anchor into the ground and applying a constant downward force. The holding capacity of the anchor is proportionate to the final installation torque. The following equation can be used to determine holding capacity.

$$\text{Badger Capacity} = K \times T$$

where K = Torque constant
 T = Final installation torque

The K value is reliant on the geometry of the helix pier. For helical anchors with square shaft dimensions less than 2", a value of 10 is suggested by Hoyt and Clemence (1989) and the Tilt-Up Concrete Association. This K value is applicable for all 1.50" square shaft anchors.

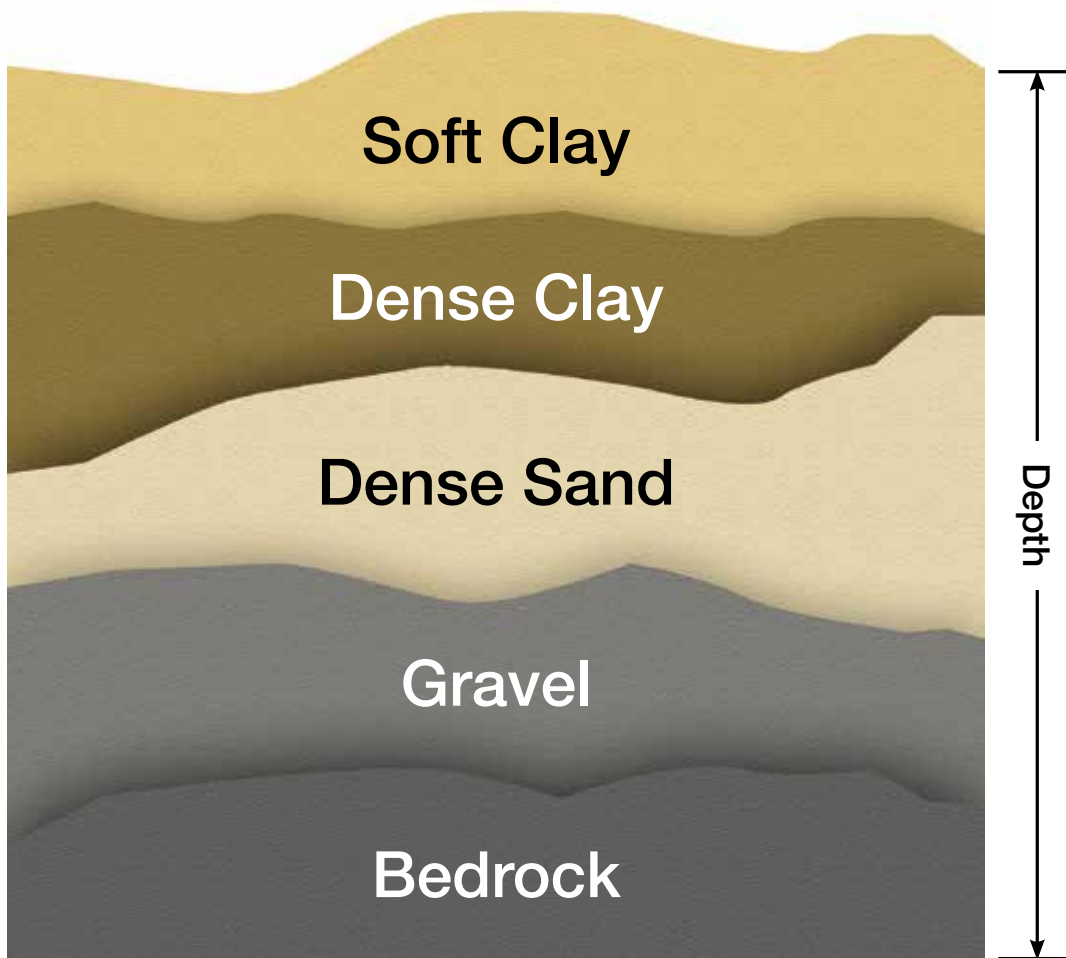


Typical MB Brace Badger Installation

Soil Mechanics

The capacity of the MB Brace Badger is the result of the strength of the surrounding soil because the loading force is transferred to the soil. There are typically two types of soils: cohesive and cohesionless. Cohesive soils are defined as soils whose internal angle of friction is approximately zero ($\phi = 0$) while cohesionless soils are those whose internal angle of friction is greater than zero ($\phi > 0$).

Soil naturally tends to develop in layers or strata, each with individual strength characteristics, and the figure above illustrates this stratification. As the Badger is drilled into the ground, it will pass through different layers. Because each layer has different characteristics, different torque values will be observed as the anchor passes through each layer. During an ideal installation, the torque values will be constantly increasing, indicating the anchor is being inserted into more dense soil. If a drop in torque is recorded, it is most likely that a soft layer (such as soft clay) was found. The Badger must then be installed through the soft layer until a more dense soil (i.e. higher torque) is found.



Installation



A variety of rotary hydraulic equipment can be used to install the MB Brace Badger including but not limited to: skidsteers, excavators, and boom mounted utility trucks.

The installer should maintain a continuous downward pressure on the MB Brace Badger to avoid auguring during installation.

Throughout the installation of each MB Brace Badger the torque is continuously monitored and recorded. There is a direct relationship between installation torque and Badger capacity. Continuous monitoring and recording of torque throughout installation gives a profile of the soil conditions.

A 5' extension can be added to install the Badger deeper to reach the stronger soils and attain the required load capacity. After the Badger is installed, a Badger Connector is bolted to the top of the Badger. The Super Brace shoe is removed and the Doka rod of the Super Brace is bolted between the ears of the connector. To remove the Badger, simply reverse the hydraulic motor and back it out of the ground. It is ready for immediate inspection and reuse.

INSTALLATION REQUIREMENTS

1. Installation is performed by a MB Brace Badger Systems trained installer.
2. Using a hydraulic drive head, Brace Badgers (Item #580002) are installed to a torque of 2,200 ft-lbs. If the minimum required torque is not achieved with a single anchor, please contact Meadow Burke engineering for assistance. A 5' extensions (Item #580006) may be added until the torque minimum torque requirement is achieved. It is recommended that preliminary soil logs at the site be obtained to help predict project requirements. In softer soils with Standard Penetration Test (SPT) blow counts (N) less than 10, an extension may be required. Installation in rocky soils with blow counts (N) greater than 30 is not recommended. Also, frozen soils may require pre-auguring so that the anchor can reach below the frost line.
3. Maximum allowable installation torque is 7,000 ft-lbs.
4. Records of required installation torque for each Badger are required.
5. Badgers to be installed in-line with the axis of the brace (+/- 5°).
6. Welding, cutting, or any modification of the Badger or its components is prohibited.
7. MB Badger Connector (item #580004) must be used for brace connection. To connect to brace, remove brace shoe and reuse 5/8" bolt for connector. Connector to Badger requires one 3/4"Ø x 3 1/2" grade 5 bolt.

SAFETY NOTES

1. The contractor shall locate all the subsurface structures and utilities. Any subsurface structure or utility in the vicinity of the Badger locations shall be clearly marked. Horizontal Clearance of anchor from any subsurface structure or utility shall be no less than 5'-0" at the depth of the utility Installation of Badgers underneath utilities or subsurface structures is strictly prohibited.
2. Do not use damaged or worn Brace Badgers. Failure to inspect and replace damaged anchors may result in anchor failure.
3. The contractor is to undergo preventive measures to mitigate soil erosion adjacent to installed anchors.
4. Any changes resulting from actual installation conditions of the Badger requires that the contractor contact Meadow Burke Engineering for further assistance to determine adequacy of anchor system.

CORRECT CONNECTION

Remove the brace shoe. Use the approved MB Badger Connector (item #580004) to attach bracing to the MB Brace Badger.

MB Super Brace

MB Badger Connector
(item #580004)

MB Brace Badger

WRONG!

DO NOT attach bracing to the MB Badger using the brace shoe. This connection is not approved by Meadow Burke.

Connections



Super Lynk

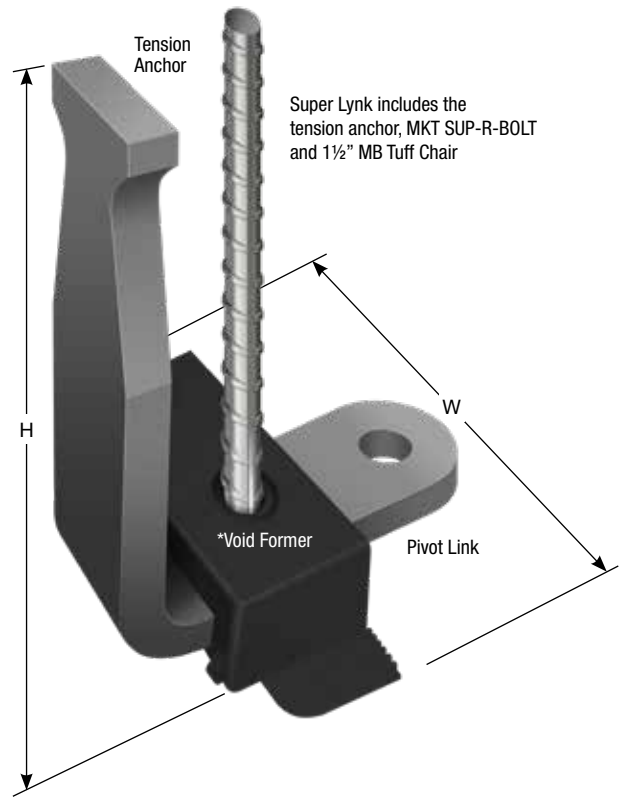
SUPER LYNK IS A PANEL-TO-FOUNDATION CONNECTION SYSTEM THAT ELIMINATES THE NEED FOR EPOXY OR GROUTED ANCHORS AND FIELD WELDS

HEIGHTENED PERFORMANCE AND REDUCED VISIBILITY

Super Lynk is a fast, strong and discrete way to permanently connect concrete panels to footings. It requires only a single bolt to make the connection and can easily be concealed within the normal grout line process.

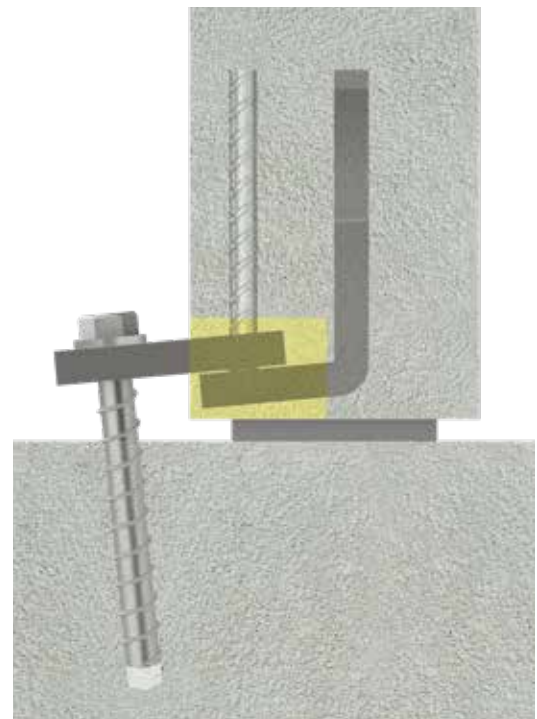
FEATURES:

- **Saves time and money:** The single bolt connection is simple and quick to install while eliminating the need for epoxy, grout and in-field welding, saving you time and money.
- **Improved performance:** The engineered, patented connection system has been developed by Meadow Burke's team of Tilt-Up experts to meet ACI 318-14 16.2.4.3 (b).
- **Improved aesthetics:** With a profile less than 2½", the Super Lynk is discrete relative to alternative connection systems and can easily be concealed by normal backfill and landscaping.



| SUPER LYNK DATA | | | | | |
|-----------------|--------------|------------|-------------|---------------------------|-----------------------|
| Item Number | Tension Load | Width (in) | Height (in) | Min. Panel Thickness (in) | Weight per Unit (lbs) |
| MBSLYNK | 10,000 lbs | 8" | 10" | 6" | 10.5 lbs |

1. Published Ultimate Load is based on 2,500 psi concrete
2. 8" Minimum edge distance for MKT SUP-R-Bolt.
3. Minimum edge distance to end of panel is 12". Minimum o.c. spacing is 24".
4. Super Lynk shipment includes one 1 ½" tall MB Tuff Chair, one ¾" x 10" MKT SUP-R-BOLT, and black void former



US PATENT 10,577,789

Super Lynk Installation



STEP 1 – Attach to the form

- Attach the anchor to the bottom corner of the concrete panel form with the use of screws or nails through the side tabs of the void and into the wood form.
- Use a plastic 1 ½" MB Tuff Chair to support the weight of the anchor and hold embossed side of the void flat to the bottom of the panel and tight to the form.



STEP 2 – Remove Void Cover

- Following panel erection, remove the void cover, revealing the Pivot Link.



STEP 3 – Access Pivot Link

- Rotate the Pivot Link until it protrudes outside of the panel face.



STEP 4 – Drill the anchor hole

- Mark the location for the drill hole beneath the eye of the Pivot Link.
- Using the proper drill bit size, drill a ¾" hole into the base material to the required depth of 9". The tolerances of the drill bit used should meet the requirements of ANSI standard B212.15.
- Remove dust and debris from hole during drilling (e.g. dust extractor, hollow bit) or following drilling (e.g. suction, forced air) to extract loose particles created during drilling.



STEP 5 – Anchor into the foundation

- Using a maximum torque of 150 ft-lbs, an impact wrench rating not exceeding 380 ft-lbs, and 1 ½" hex socket/driver, mount the Screw Anchor head into the socket.
- Drive the MKT SUP-R-BOLT until the head of the anchor comes in contact with the Lynk. The screw anchor washer head must be snug after installation. Do not spin the hex socket off the anchor head when disengaging.



STEP 6 – Panel is permanently connected to the foundation

- The normal grouting process around the bottom of the panel should be followed to include the Super Lynk and bolt head. This grout encasement will fill any gap between the Super Lynk and footing to provide a uniform finish, and avoid any potential for lateral movement.

Super Lynk SR with Shear Resistance

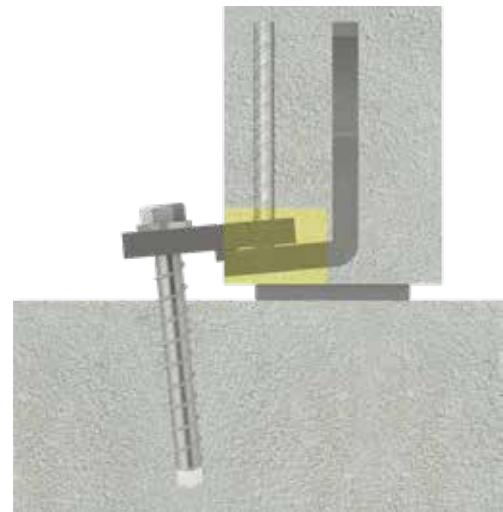
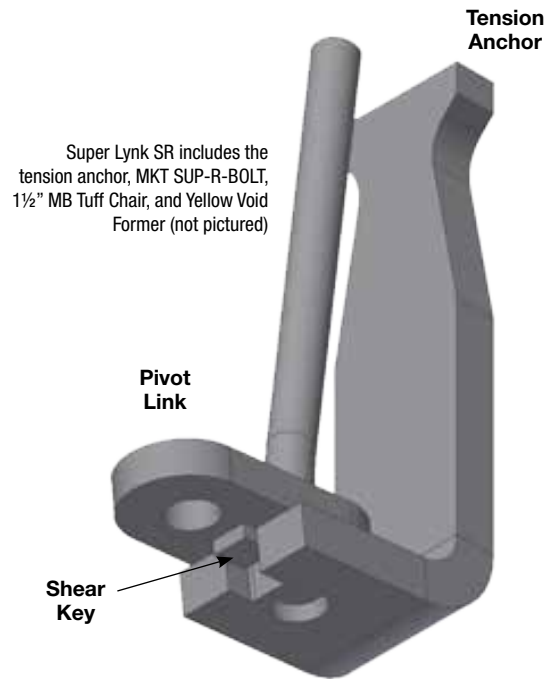
SUPER LYNK SR IS A PANEL-TO-FOUNDATION CONNECTION SYSTEM THAT ELIMINATES THE NEED FOR EPOXY OR GROUTED ANCHORS AND FIELD WELDS

HEIGHTENED PERFORMANCE AND REDUCED VISIBILITY

Super Lynk SR is a fast, strong, and discrete way to permanently connect concrete panels to footings. It requires only a single bolt to make the connection and can easily be concealed within the normal grout line process.

FEATURES:

- **Shear Resistance:** The advanced Shear Key design resists shear loads.
- **Saves time and money:** The single bolt connection is simple and quick to install while eliminating the need for epoxy, grout, and in-field welding, saving you time and money.
- **Improved performance:** The engineered, patented connection system has been developed by Leviat's team of Tilt-Up experts to meet ACI 318-14 16.2.4.3 (b).
- **Improved aesthetics:** With a profile less than 2½", Super Lynk is discrete relative to alternative connection systems and can easily be concealed by normal backfill and landscaping.



SUPER LYNK SR DATA

| Item Number | Void Former Color | Tension Load | In-plane Shear Load | Out-of-plane Shear Load | Min. Panel Thickness | Weight per Unit |
|-------------|-------------------|--------------|---------------------|-------------------------|----------------------|-----------------|
| MBSLYNKSR | YELLOW | 10,000 lbs | 7,000 lbs | 7,000 lbs | 6" | 10½ lbs |

1. Published Ultimate Load is based on 3,000 psi concrete
2. Published Ultimate Shear Loads are resultant capacity loads.
3. 8" Minimum edge distance for MKT SUP-R-Bolt.
4. Minimum edge distance to end of panel is 12". Minimum o.c. spacing is 24".
5. Super Lynk SR shipment includes one 1½" tall MB Tuff Chair, one ¾" x 10" MKT SUP-R-BOLT, and yellow void former.
6. Recommended strength reduction factor (Φ) for LRFD design: $\Phi = 0.65$ for both Tension and Shear.

US PATENT 10,577,789

Super Lynk SR Installation



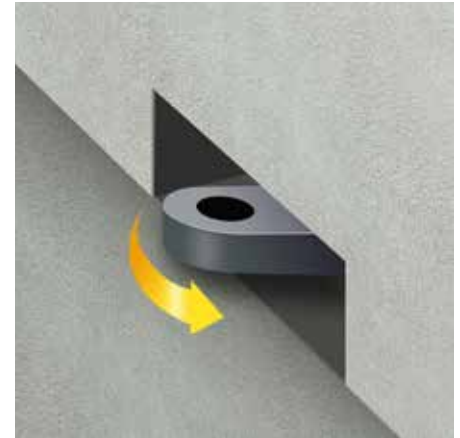
STEP 1 – Attach to the form

- Attach the anchor to the bottom corner of the concrete panel form with the use of screws or nails through the side tabs of the void and into the wood form.
- Use a plastic 1½” MB Tuff Chair to support the weight of the anchor and hold embossed side of the void flat to the bottom of the panel and tight to the form.



STEP 2 – Remove Void Cover

- Following panel erection, remove the void cover, revealing the Pivot Link.



STEP 3 – Access Pivot Link

- Rotate the Pivot Link until it protrudes outside of the panel face and the shear key has fallen into place.
- **Verify shear key is in place.**



STEP 4 – Drill the anchor hole

- Mark the location for the drill hole beneath the eye of the Pivot Link.
- Using the proper drill bit size, drill a ¾” hole into the base material to the required depth of 9”. The tolerances of the drill bit used should meet the requirements of ANSI standard B212.15.
- Remove dust and debris from hole during drilling (e.g. dust extractor, hollow bit) or following drilling (e.g. suction, forced air) to extract loose particles created during drilling.



STEP 5 – Anchor into the foundation

- Using a maximum torque of 150 ft-lbs, an impact wrench rating not exceeding 380 ft-lbs, and 1 ½” hex socket/driver, mount the Screw Anchor head into the socket.
- Drive the MKT SUP-R-BOLT until the head of the anchor comes in contact with the Lynk. The screw anchor washer head must be snug after installation. Do not spin the hex socket off the anchor head when disengaging.



STEP 6 – Panel is permanently connected to the foundation

- The normal grouting process around the bottom of the panel should be followed to include the Super Lynk and bolt head. This grout encasement will fill any gap between the Super Lynk and footing to provide a uniform finish, and avoid any potential for lateral movement.

Adjustable Bolted Corner Connection

LEVIAT'S BEST-IN-CLASS PORTFOLIO OF HALFEN ANCHOR CHANNELS AND T-BOLTS SPECIFICALLY ENGINEERED FOR PANEL CORNER CONNECTIONS.

BENEFITS OF ADJUSTABLE BOLTED CONNECTION:

- **REDUCED LABOR COST** – as bolted connections can be installed by the same crew members that erected the panels
- **NON-WELDABLE CONNECTION** – no need for a certified welder or welding inspection as only a torque wrench is required for installation
- **ADJUSTABLE CONNECTION** – which counteracts construction problems caused by foundation elevation issues or panel placement inconsistencies.
- **SIMPLIFIED CONNECTION** – channel connections are easily adjustable and can be made in any weather condition
- **REDUCED OVERALL CONSTRUCTION TIMES** – by eliminating the labor-intensive installation and time-consuming inspection procedures associated with traditional weld plates and field welding.

Halfen adjustable channel corner connection kits are available in two standard profiles for minimum wall panel thicknesses of 6" and 8".



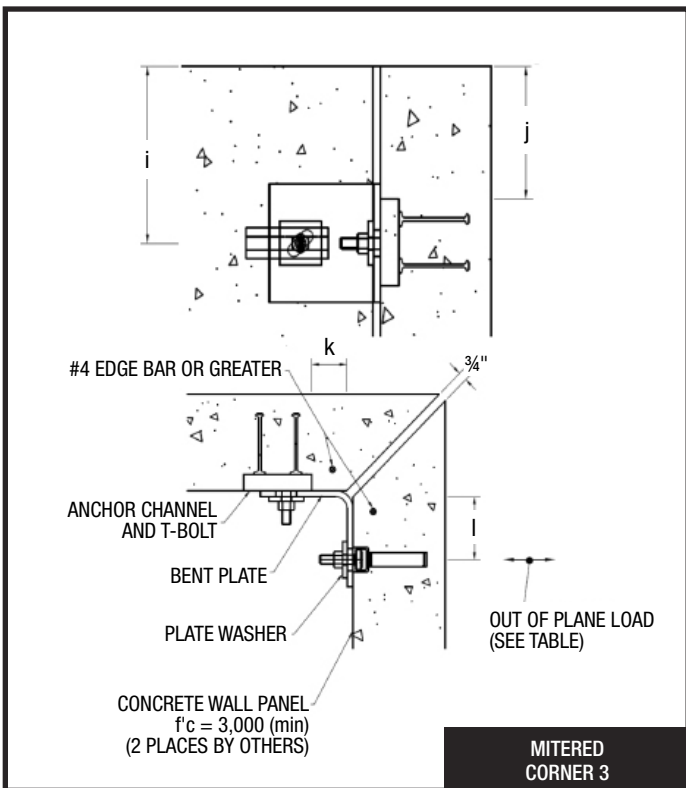
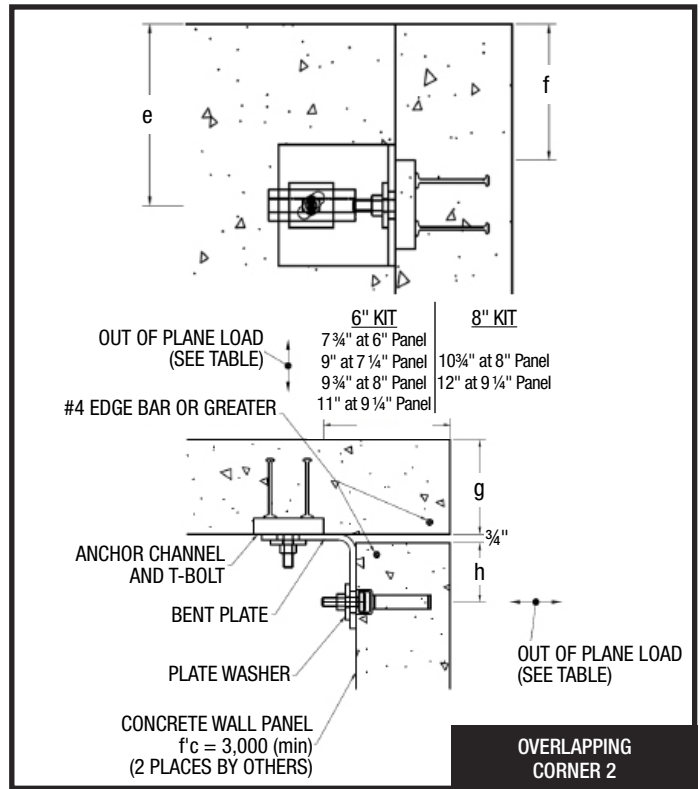
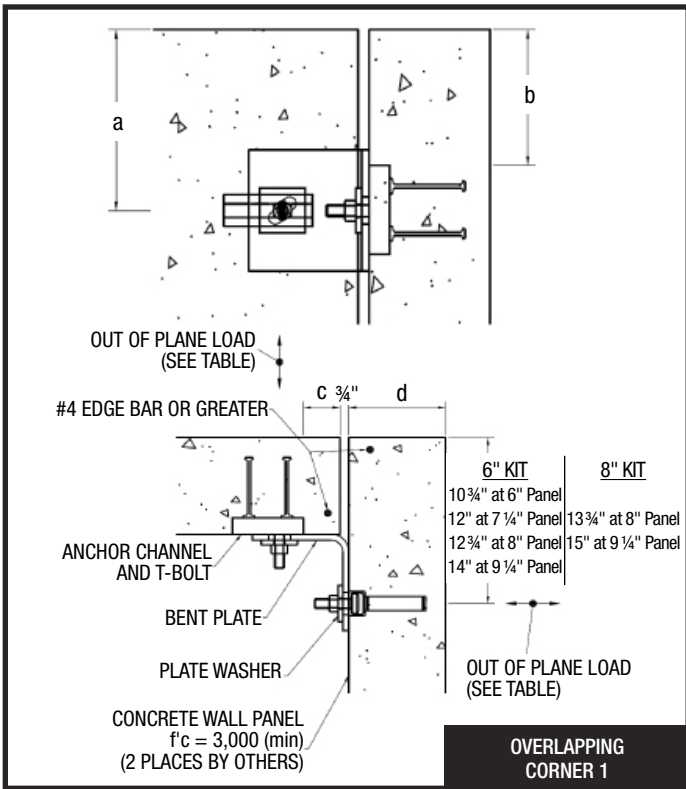
**HZA DYNAGRIP®
Toothed Anchor
Channel**



| Kit Item Name | Concrete Strength | Design Capacity | Kit Part Number | Kit Items | Kit Qty | Item Number |
|------------------------------------|-------------------|-----------------|-----------------|--------------------------------|---------|----------------|
| Corner Assembly 90 Degree 6" (Kit) | 3,000 psi | 1,500 lbs | 0105.899-00006 | L7x7x3/8x7" Bent Plate | 1 | 0105.899-00010 |
| | 4,000 psi | 1,750 lbs | | 3x3x3/8" plate washer, M16 | 2 | 0105.899-00020 |
| | 5,000 psi | 2,000 lbs | | HZA-BA 38/23-HDG- 150/2 | 2 | 2002.020-00502 |
| | | | | HZS 38/23 M16x 60 HDG 8.8 (US) | 2 | 0352.068-00202 |
| Corner Assembly 90 Degree 8" (Kit) | 3,000 psi | 2,600 lbs | 0105.899-00008 | 8x8x1/2x 8" Bent Plate | 1 | 0105.899-00015 |
| | 4,000 psi | 3,000 lbs | | 3x3x3/8" plate washer, M20 | 2 | 0105.899-00022 |
| | 5,000 psi | 3,400 lbs | | HZA 53/34 HDG-150 (US) | 2 | 0002.050-00501 |
| | | | | HZS 53/34 M20 x 65 GV-S8.8 | 2 | 0352.080-00003 |

For more information contact engineering support@leviat.us

Standard Corner Connections



| Dimension | 6" Kit | 8" Kit |
|-----------|----------|-----------|
| a | 9" (min) | 12" (min) |
| b | 6" (min) | 9" (min) |
| c | 2" | 3" |
| d | 6" (min) | 8" (min) |
| e | 9" (min) | 12" (min) |
| f | 6" (min) | 9" (min) |
| g | 6" (min) | 9" (min) |
| h | 4" | 5" |
| i | 9" (min) | 12" (min) |
| j | 6" (min) | 9" (min) |
| k | 2" | 3" |
| l | 4 1/4" | 5 1/4" |

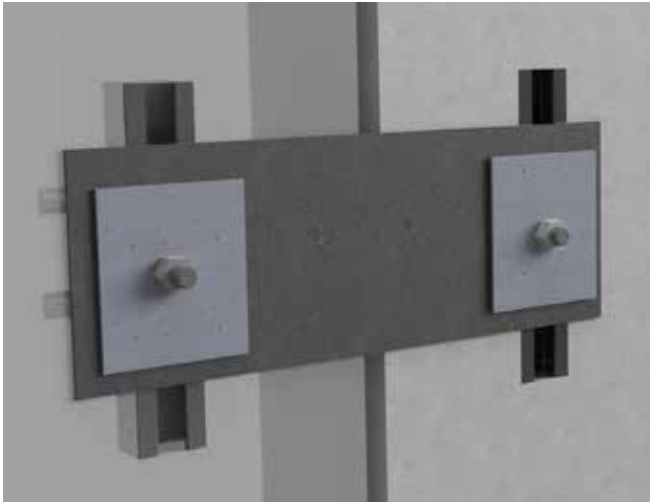
Engineer of Record to specify number of connections per joint and max connection spacing (min. connection spacing = 18" O.C. for 6" panel kit, 24" O.C. for 8" panel kit)

#4 Edge bar or greater required between anchor channel and edge.

NOTES:

1. Out of plane loads are assumed to act on one side of corner at any point in time.
2. Horizontal Anchor Channel allows for +/- 1" left/right tolerance.
3. Vertical Anchor Channel allows for +/- 2" up/down tolerance.
4. Each side of bracket allows for +/- 0.5" left/right & up/down tolerance.

For more information contact engineering support@leviat.us



Adjustable Bolted Inline Panel to Panel Connection

LEVIAT'S BEST-IN-CLASS PORTFOLIO OF HALFEN ANCHOR CHANNELS AND T-BOLTS SPECIFICALLY ENGINEERED FOR INLINE PANEL TO PANEL CONNECTIONS.

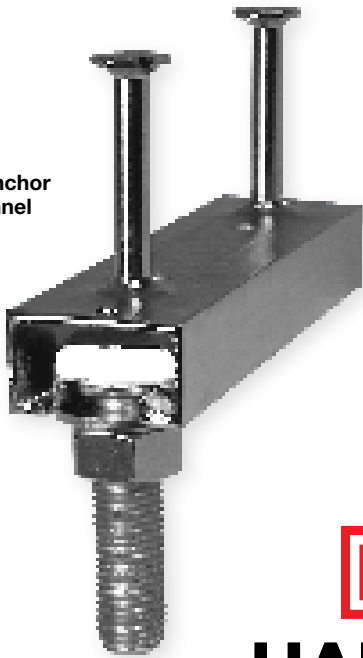
Occasionally, loading on the building envelope requires adjacent wall panels to be connected. Traditionally, this is accomplished through expensive and time-consuming welding operations.

BENEFITS OF ADJUSTABLE BOLTED CONNECTION:

- **REDUCED LABOR COST** – as bolted connections can be installed by the same crew members that erected the panels
- **NON-WELDABLE CONNECTION** – no need for a certified welder or welding inspection as only a torque wrench is required for installation
- **ADJUSTABLE CONNECTION** – which counteracts construction problems caused by foundation elevation issues or panel placement inconsistencies.
- **SIMPLIFIED CONNECTION** – channel connections are easily adjustable and can be made in any weather condition
- **REDUCED OVERALL CONSTRUCTION TIMES** – by eliminating the labor-intensive installation and time-consuming inspection procedures associated with traditional weld plates and field welding.

Halfen Inline Panel to Panel Connection Kit is available in a standard profile for minimum wall panel thicknesses of 6". Kit

HTA Anchor Channel



ESR 1008

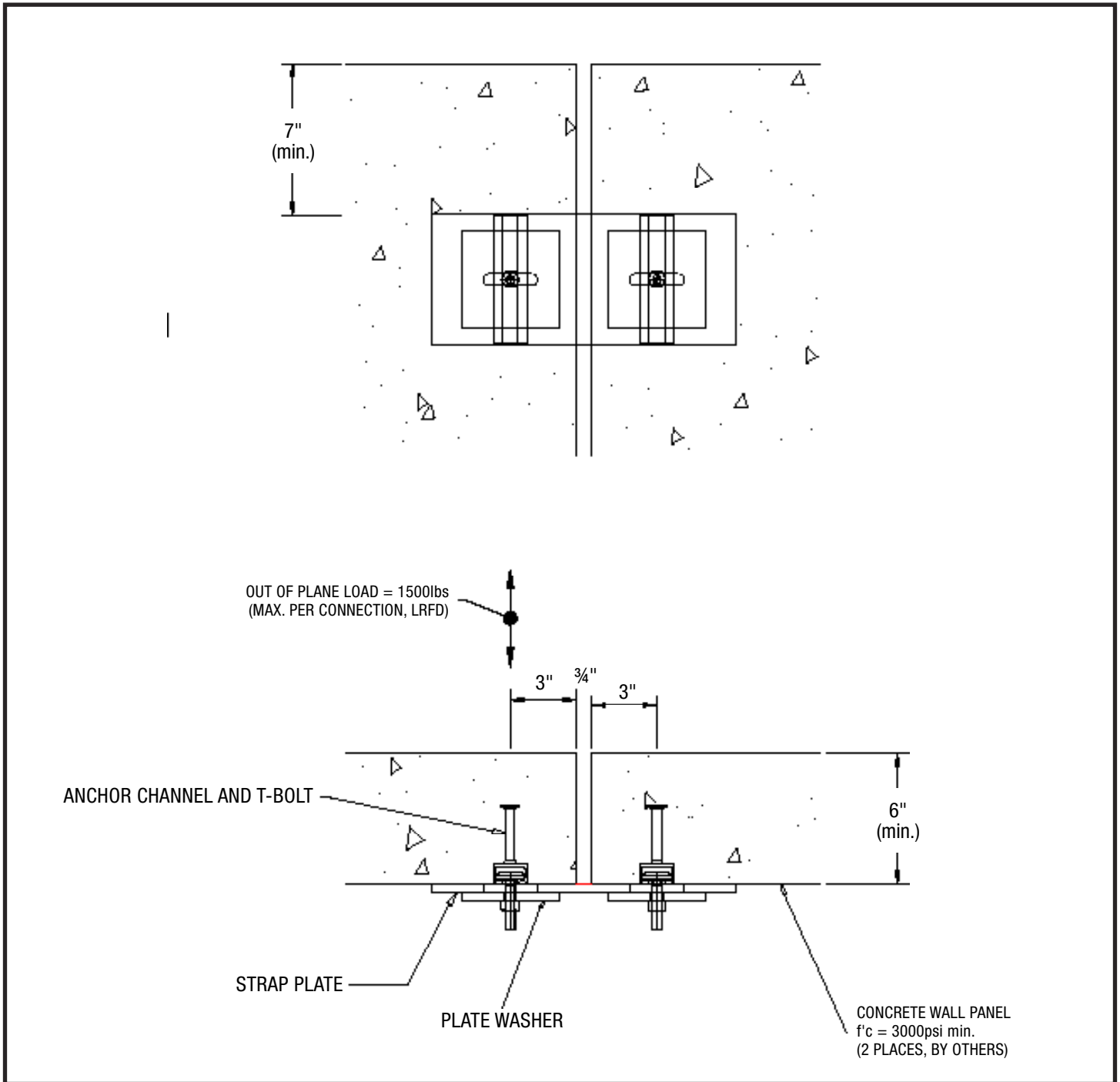


HALFEN

| Kit Item Name | Kit Part Number | Component Item Name | Qty | Item Codes |
|-------------------------|-----------------|---|-----|----------------|
| Panel to Panel 6" (Kit) | 0105.899-00030 | 14x6x $\frac{3}{8}$ " Plate, 14mm x 63mm Slot, A5 (HDG) | 1 | 0105.899-00018 |
| | | 4.5x4.5x $\frac{3}{8}$ " Plate Washer, M12 ASTM A36 (HDG) | 2 | 0105.899-00025 |
| | | HTA-BA 40/22-HDG- 150 (US) | 2 | 2001.730-00502 |
| | | HS 40/22 M12x 60 HDG 8.8 (US) (T-Bolt) | 2 | 0350.078-00201 |

For more information contact engineeringssupport@leviat.us

Standard Corner Connections



Engineer of Record to specify number of connections per joint and max. connection spacing
(min. connection spacing = 18" O.C. for 6" panel kit)

NOTES:

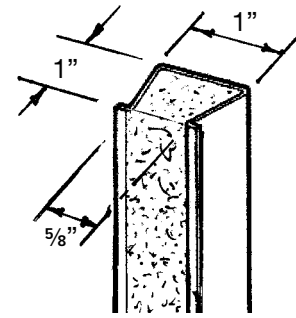
1. Out of plane loads are assumed to act on one side of corner at any point in time.
2. Anchor Channel allows for +/- 2" up/down tolerance.
3. Each side of bracket allows for +/- 1" left/right tolerance.

For more information contact engineeringsupport@leviat.us

Slotted Inserts

DS-5 DOVETAIL ANCHOR SLOT

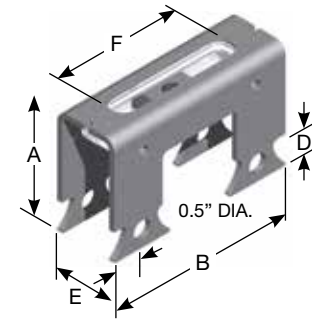
The DS-5 Dovetail Anchor Slot is available in two sizes, 26 gauge and 24 gauge galvanized metal. The units are 1" x 1" with a 5/8" opening and are furnished with nail holes for easy attachment to the form. The Dovetail Anchor Slot is sold in 10' lengths in 250' bundles. It can be readily cut to any length at the job site.



To order, specify: quantity, name and size.

MX-55 BURKE SLOT INSERT

The MX-55 Burke Slot Insert is a high strength precast insert designed for use with threaded straps. The unit has a sealed nut box to prevent concrete from leaking into the insert. Removal of the perforated slot-seal exposes the slot for quick connection of the strap. The insert is available furnished with a 3/4" NC threaded nut. Three insert heights are available: all are 6 1/2" long and are available in plain or hot dip galvanize finish.

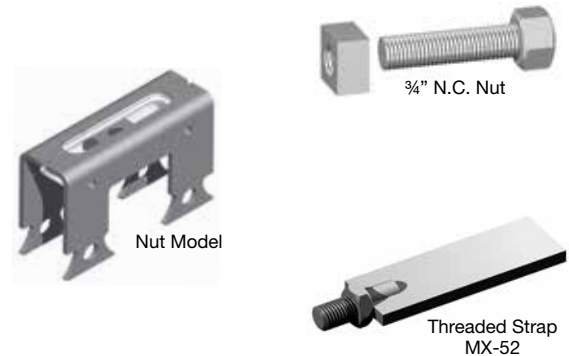


MX-55 SLOT INSERT DIMENSIONS

| Item Base Number | A | B | C | D | E | F |
|------------------|----|------|--------|--------|------|------|
| MB79621 | 2" | 6.5" | 2.125" | 0.625" | 1.0" | 4.5" |
| MB79631 | 3" | 6.5" | 2.125" | 0.625" | 1.0" | 4.5" |
| MB79641 | 4" | 6.5" | 2.125" | 0.625" | 1.0" | 4.5" |

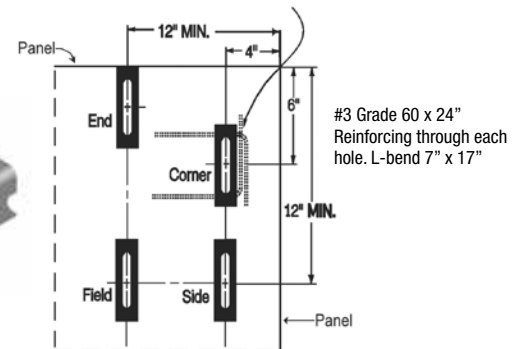
MX-55 SLOT INSERT MODELS

| Item Number | 3/4" N.C. NUT MODEL | | |
|-------------|---------------------|--------|----------|
| | A | Finish | Weight |
| MB79621Y | 2" | Mill | 1.6 lbs. |
| MB79621YG | 2" | Galv | 1.7 |
| MB79631Y | 3" | Mill | 2.3 |
| MB79631YG | 3" | Galv | 2.4 |
| MB79641Y | 4" | Mill | 3.1 |
| MB79641YG | 4" | Galv | 3.2 |



MX-55 SLOT INSERT LOAD CAPACITIES

| Insert Position | Type of Force | Ultimate Loads in Pounds | | |
|-----------------|---------------|--------------------------|-------------|-------------|
| | | 2" Depth | 3" Depth | 4" Depth |
| Field | Tension | 13,400 lbs. | 15,550 lbs. | 19,230 lbs. |
| Field | Shear | 18,170 | 20,000 | 20,000 |
| Side | Tension | 8,430 | 13,460 | 15,260 |
| Side | Shear | 9,080 | 10,500 | 10,500 |
| Corner | Tension | 7,950 | 13,790 | 17,950 |
| Corner | Shear | 9,000 | 9,930 | 11,320 |
| End | Tension | 4,200 | 10,310 | 14,011 |
| End | Shear | 15,453 | 16,583 | 18,000 |



1. Ultimate loads based on 5000 psi minimum concrete strength.
2. Loads tested at 3/4" eccentricity from concrete surface.

To order, specify: quantity, name and size.

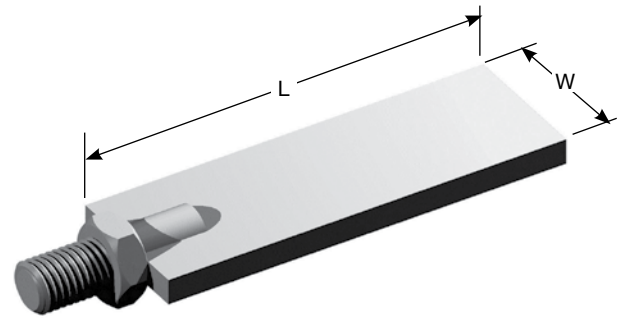
Slotted Inserts

MX-52 BURKE SLOT INSERT STUD STRAP

The MX-52 Slot Insert Stud Strap is used in conjunction with the Slot Insert supporting a 3/4" NC threaded nut. The Stud Strap is screwed into the insert's nut, rotated to the correct angle and then securely locked in position by the strap's free-running jam nut.

The MX-52 is manufactured with ASTM A572 grade 50 steel. The bolt used with the strap meets or exceeds the minimum physical material properties of A572 grade 50 steel.

| MX-52 BURKE STUD STRAP | | | | |
|------------------------|--------|-------|-----------|----------|
| Item Number | Length | Width | Thickness | Weight |
| 79706 (G) | 6" | 2" | .375" | 1.3 lbs. |
| 79708 (G) | 8" | 2" | .375" | 1.7 |
| 79710 (G) | 10" | 2" | .375" | 2.2 |
| 79712 (G) | 12" | 2" | .375" | 2.6 |



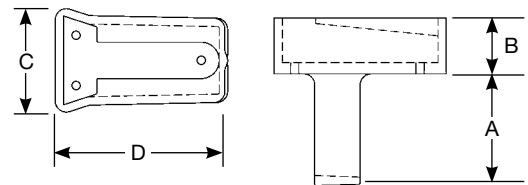
To order, specify: quantity, name and item number.



MX-7 SHELF INSERT

MX-7L SHELF INSERT – LONG

The MX-7 Shelf Insert and MX-7L Shelf Insert – Long are cast inserts designed with a built-in wedge for adjustment purposes. These inserts are used primarily for secondary connections and are not intended for use in attaching precast panels to the building's mainframe. The Shelf Inserts are used in conjunction with special shaped 3/4" bolt, nut and washers (shown below). Refer to the table for insert dimensions and safe working loads.



| MX-7 & MX-7L MEADOW BURKE SHELF INSERT | | | | | | | | | | |
|--|--------------------|--------------------|-----------|----------------------|--------------|----------------------|---------|---------|---------|--------|
| Item | Item Number (Mill) | Item Number (Galv) | Bolt Size | Safe Work Load (lbs) | Concrete PSI | Weight Per 100 (lbs) | A | B | C | D |
| MX-7 | 270461 | 270462 | 3/4" | 2,500 | 4,000 | 148 | 2 1/2" | 1 1/4" | 2 5/16" | 3 7/8" |
| MX-7L | 270459 | 270460 | 3/4" | 4,00 | 4,000 | 238 | 2 7/16" | 1 5/16" | 2 7/8" | 5 1/2" |

Safe working loads reflect a 3:1 safety factor in 4,000 psi concrete.

* Combined shear and tension load must be checked through interaction equations.

To order, specify: quantity, name and item number.

Slotted Inserts

MB-7 SHELF INSERT ASKEW HEAD BOLT

MN-7 SHELF INSERT HEX NUT

MW-7 SHELF INSERT ROUND WASHER

MS-7 SHELF INSERT SHIM WASHER

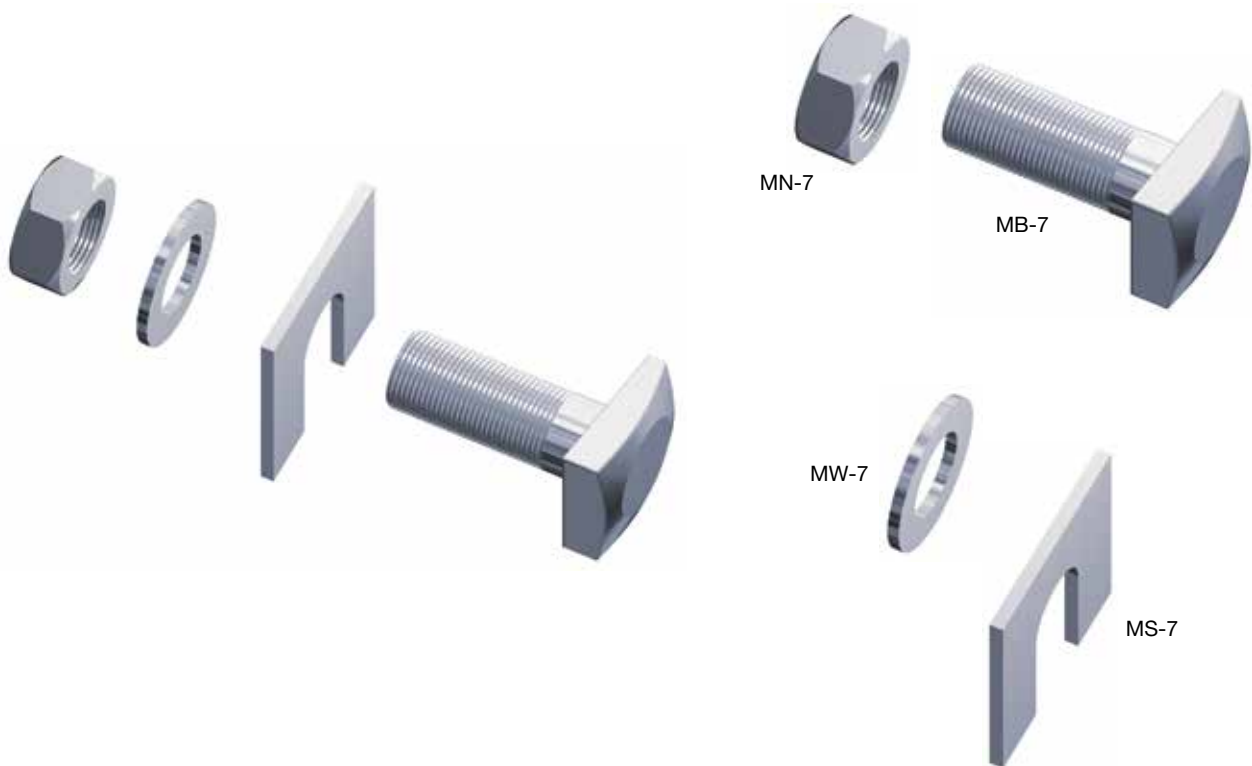
The MB-7 Shelf Insert Askew Head Bolt, MN-7 Hex Nut, MW-7 Round Washer and MS-7 Shim Washer are used in conjunction with the Shelf Inserts above. The $\frac{3}{4}$ " diameter Askew Head Bolt is manufactured with a special shaped head to match the slope of the insert's internal wedge. The bolt is available in five lengths: 1 $\frac{1}{2}$ ", 2", 2 $\frac{1}{2}$ ", and 3 $\frac{1}{2}$ ". Use caution with the bolt to avoid over-tightening.

The MN-7 Shelf Insert Hex Nut has a $\frac{3}{4}$ " diameter NC thread to match the Askew Head Bolt above.

The MW-7 Shelf Insert Round Washer is a $\frac{3}{4}$ " washer used under the Hex Nut.

The MS-7 Shelf Insert Shim Washer is used between the insert and attaching plate, when required to solidify the connection. The shim is available in $\frac{1}{8}$ " and $\frac{1}{4}$ " thickness.

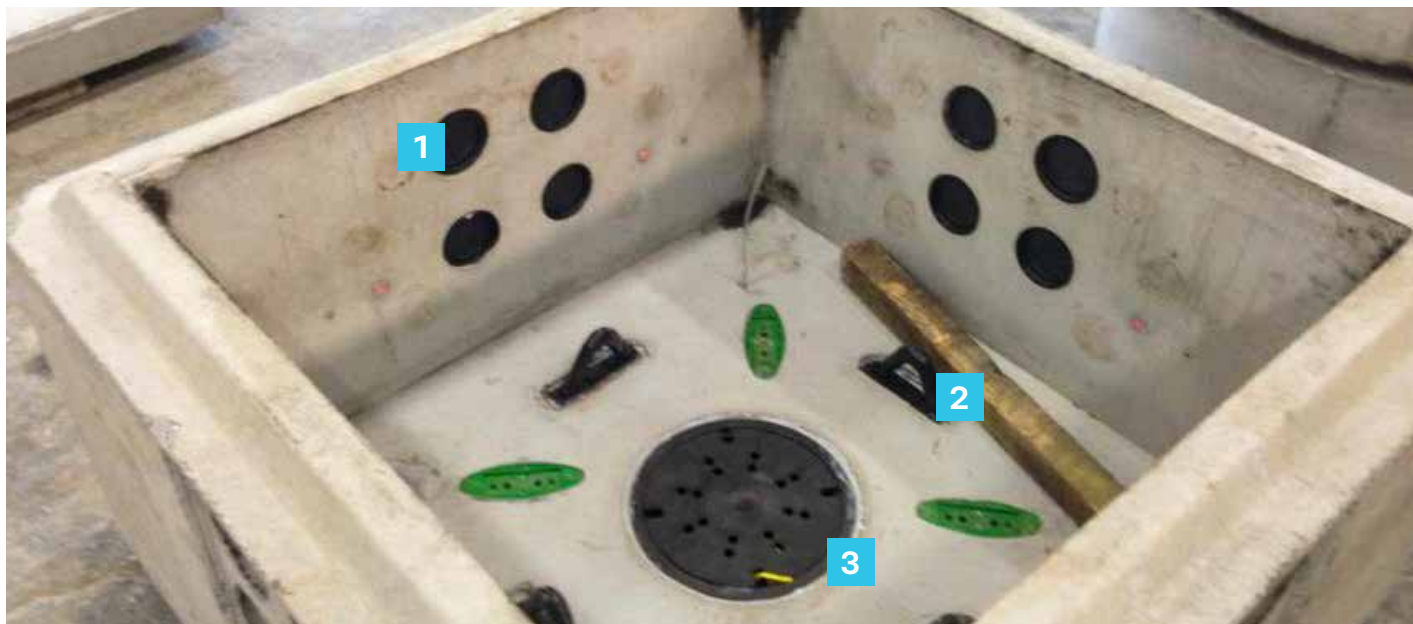
To order, specify: quantity and name, plus the length for the bolt and the thickness for the shim washer.



MB Bowco Products



Utility Connections



1 MB Bowco Duct Terminator

2 MB Bowco Pulling Irons

3 MB Bowco Sump Pan

Modern infrastructure depends on a variety of services supplied via underground systems to ensure efficient operations, adequate protection and minimal visual impact.

In turn, those systems carrying water, electrical, sewer, internet and telecom service to millions of homes and business rely extensively on precast concrete elements in the

form of vaults, culverts, and concrete pipes.

Creating robust, durable and easy-to-use accessories for these normally massive concrete units takes engineering innovation, attention to detail and a focus on safety that only a company like Leviat can supply.

From manhole steps to duct terminators, and threaded

connection inserts to septic filters; Leviat offers a complete portfolio of high-performance, corrosion-resistant solutions that not only enhance the durability and reliability of underground utility networks but also improve the safety of workers and expedite construction processes, ensuring long-term uninterrupted service for businesses and communities.

Leviat Offers...

Trusted, made-in-America products featuring decades of quality, reliability and performance.

A team of industry experts in utility precast product design, engineering, and manufacturing.

A culture of constant innovation that fosters engineered solutions for projects of any size or complexity.

MB Bowco Duct Terminator

Precision Utility Precast Connections

Overview

MB Bowco Duct Terminators play a vital role in connecting PVC electrical ducts with a secure and watertight seal within precast concrete structures. Leviat offers precision-manufactured terminators in a range of sizes to cater to your specific requirements.

For wider precast manholes and vaults, Leviat offers pre-assembled extended terminators. Terminator locators are also available for locating duct terminators in concrete vault walls.

When casting thicker walls or larger panel dimensions, MB Bowco Duct Terminators can be expertly assembled into brackets, creating custom panels. This service streamlines the manufacturing process, reducing labor requirements at the plant.

Leviat's custom panel system is available for most standard sizes, providing versatility to accommodate various configurations.

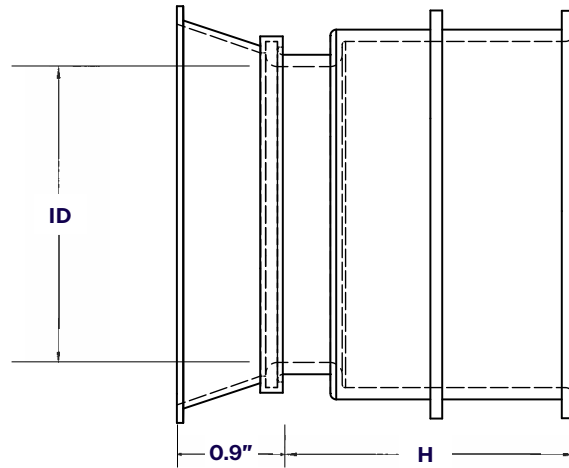
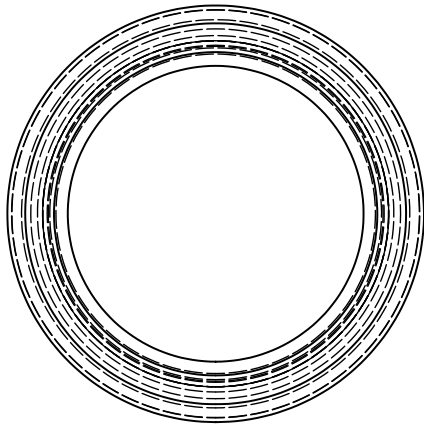
Features

- **Easy Installation:** Also available is a terminator bracket, specifically engineered to position terminators at 6" or 8" center-to-center intervals for special or custom applications.
- **Concrete Protection:** All sizes are available with a flexible seal ring designed to serve two important functions:
 - Prevent concrete from infiltrating the terminator opening during casting
 - Provide a smooth edge for seamless cable pulling operations, ensuring ease and efficiency



MB Bowco Duct Terminator

Precision Utility Precast Connections



Product Data - MB Bowco Duct Terminator

| Item Number | ID - Inside Diameter | H - Height | SCH 80 | SCH 80 Outside Diameter | SCH 40 | SCH 40 Outside Diameter | SCH 32.5 | SCH 32.5 Outside Diameter |
|-------------|----------------------|------------|--------|-------------------------|--------|-------------------------|----------|---------------------------|
| T2000 | 2.38" | 2.39" | 2 | 2.375" | 2 | 2.375" | 2 | 2.303" |
| T2001 | 2.38" | 3.45" | 2 | 2.375" | 2 | 2.375" | - | - |
| T2534 | 2.4" | 5.5" | 2 | 2.375" | 2 | 2.375" | - | - |
| T3000 | 3.51" | 3" | 3 | 3.5" | 3 | 3.5" | 3 | 3.388" |
| T3001 | 3.51" | 3.43" | 3 | 3.5" | 3 | 3.5" | - | - |
| T3534 | 3.52" | 5.5" | 3 | 3.5" | 3 | 3.5" | - | - |
| T4350 | 4.36" | 3.43" | - | - | - | - | - | - |
| T4000 | 4.51" | 3" | 4 | 4.5" | 4 | 4.5" | 4 | 4.358" |
| T4501 | 4.51" | 3.43" | 4 | 4.5" | 4 | 4.5" | - | - |
| T4504 | 4.51" | 2.5" | 4 | 4.5" | 4 | 4.5" | - | - |
| T4534 | 4.51" | 5.5" | 4 | 4.5" | 4 | 4.5" | - | - |
| T5000 | 5.57" | 2.22" | 5 | 5.563" | 5 | 5.63" | 5 | 5.391" |
| T5001 | 5.57" | 3.43" | 5 | 5.563" | 5 | 5.63" | - | - |
| T5534 | 5.57" | 5.64" | 5 | 5.563" | 5 | 5.63" | - | - |
| T5434 | 5.57" | 4.5" | 5 | 5.563" | 5 | 5.63" | - | - |
| T6000 | 6.63" | 3.43" | 6 | 6.625" | 6 | 6.25" | 6 | 6.424" |
| T6534 | 6.64" | 5.5" | 6 | 6.625" | 6 | 6.25" | - | - |
| T6734 | 6.64" | 7.5" | 6 | 6.625" | 6 | 6.25" | - | - |
| *T8000 | 8.63" | 5.75" | 7 | 8.625" | 7 | 8.625" | 7 | 8.355" |

* Seal ring not included

Product Data - STD Terminators for 4" Wall

| Item Number | ID - Inside Diameter | Packaging |
|-------------|---|-----------|
| BC101190 | T2000 w/S2 2" Duct Terminator w/ Seal Ring | 140/BX |
| BC101210 | T2001 w/S2 2" Duct Term w/Seal Ring | 105/BX |
| BC101240 | T3000 w/S3 3" Duct Term w/Seal Ring | 126/BX |
| BC101270 | T3001 w/S3 3" Duct Term w/Seal Ring | 126/BX |
| BC101300 | T4000 4" Duct Terminator w/Hard Seal Ring | 72/BX |
| BC101310 | T4000 4" Duct Terminator w/Seal Ring | 80/BX |
| BC101330 | T4350 w/S4 4.35" Duct Term w/Seal Ring | 90/BX |
| BC100070 | 4.35/4.5" Term-A-Duct w/SR | 90/BX |
| BC101380 | T4351 w/S4 4.35/4.5" Duct Term w/ Seal Ring | 90/BX |
| BC101430 | T4351HD w/S4 4.35/4.5" Duct Term w/SR | 90/BX |
| BC101490 | T4501 w/S4 4.5" Duct Terminator w/ SR | 90/BX |
| BC101550 | T4501HD w/S4 4.5" Duct Term w/ Seal Ring | 90/BX |
| BC101610 | T5001 w/S5 5" Duct Terminator w/ Seal Ring | 50/BX |
| BC100160 | 5" Term-A-Duct w/Membrane Seal Ring | 50/BX |
| BC101630 | T6000 w/S6 6" Duct Terminator w/ Seal Ring | 40/BX |
| BC101640 | T8000 8" Duct Terminator | - |
| BC100120 | DB2 107 mm Term-A-Duct w/ Seal Ring | - |

Product Data - Extended Terminators (molded)

| Item Number | ID - Inside Diameter | Packaging |
|-------------|--|-----------|
| BC100490 | T2534 2" Duct Term w/SR for 6" Wall | 75/BX |
| BC100580 | T3534 w/S3 3" Duct Term w/SR for 6" Wall | 84/BX |
| BC100790 | T4534 w/S4 4.5" Duct Term w/SR for 6" Wall | 60/BX |
| *BC10090 | T5534 w/S5 5" Duct Term w/SR NBKT 6" Wall | 40/BX |
| *BC101040 | T6534 w/S6 6" Duct Term w/SR NBKT 6" Wall | 28/BX |

* NOT BRACKET COMPATIBLE

Product Data - Extended Terminators (assembled)

| Item Number | ID - Inside Diameter | Packaging |
|-------------|---|-----------|
| BC100480 | T2434 2" Duct Term w/SR for 5" Wall | 105/BX |
| BC100500 | T2634 2" Duct Term w/SR for 7" Wall | - |
| BC100520 | T2734 2" Duct Term w/SR for 8" Wall | 50/BX |
| BC100530 | T2834 2" Duct Terminator w/Seal Ring for 9" Wall | - |
| BC100540 | T2934 w/S2 2" Duct Term w/SR for 10" Wall | 45/BX |
| BC100450 | T21134 2" Duct Term w/SR for 12" Wall | 35/BX |
| BC100545 | T2534 2" Duct Term w/SR for 19" Wall | - |
| BC100570 | T3434 w/S3 3" Duct Term w/SR for 5" Wall | 90/BX |
| BC100620 | T3734 w/S3 3" Duct Terminator w/Seal Ring for 8" Wall | - |
| BC100630 | T3834 w/S3 3" Duct Terminator w/Seal Ring for 9" Wall | - |
| BC100640 | T3934 w/S3 3" Duct Terminator w/Seal Ring for 10" Wall | - |
| BC100560 | T31134 w/S3 3" Duct Terminator w/Seal Ring for 12" Wall | - |
| BC100750 | T4434 w/S4 4.5" Duct Term w/SR for 5" Wall | 60/BX |
| BC100800 | T4634 w/S4 4.5" Duct Terminator w/Seal Ring for 7" Wall | - |
| BC100830 | T4734 w/S4 4.5" Duct Term w/SR for 8" Wall | 48/BX |
| BC100840 | T4834 w/S4 4.5" Duct Term w/SR for 9" Wall | 42/BX |
| BC100850 | T4934 w/S4 4.5" Duct Terminator w/Seal Ring for 10" Wall | - |
| BC100660 | T41134 w/S4 4" Duct Term w/SR for 12" Wall | 30/BX |
| BC100880 | T5434 w/S5 5" Duct Term w/SR for 5" Wall | 40/BX |
| BC100900B | T5534 w/S5 5" Duct Term w/SR for 6" Wall Bracket Compatible | - |
| BC100960 | T5734 w/S5 5" Duct Term w/SR for 8" Wall | 30/BX |
| BC100980 | T5934 w/S5 5" Duct Term w/SR for 10" Wall | 24/BX |
| BC100865 | 5" Terminator w/Seal Ring for 12" Wall w/PVC Pipe | - |
| BC101010 | T6434 w/S6 6" Duct Term w/SR for 5" Wall | 35/BX |
| BC101040B | T6534 w/S6 6" Duct Term w/SR for 6" Wall Bracket Compatible | - |
| BC101045 | T6634 w/S6 6" Duct Term w/SR for 7" Wall | 24/BX |
| BC101070 | T6734 w/S6 6" Duct Term w/SR for 8" Wall | 21/BX |
| BC101080 | T6834 w/S6 6" Duct Term w/SR for 9" Wall | 18/BX |
| BC101090 | T6934 w/S6 6" Duct Term w/SR for 10" Wall | 18/BX |
| BC101000 | T61134 w/S6 6" Duct Term w/SR for 12" Wall | 14/BX |
| BC101670 | T8X12 8" Duct Terminator for 12" Wall | - |
| BC101710 | T8X8 8" Duct Terminator for 8" Wall | - |
| BC101720 | T8X9 8" Duct Terminator for 9" Wall | - |

MB Bowco Manhole Step

Safe, Durable Underground Access

Overview

MB Bowco Manhole Steps feature injection-molded, copolymer polypropylene coated Grade 60, 1/2" rebar, for durable, corrosion-resistant, long-lasting access underground sewer and utility structures.

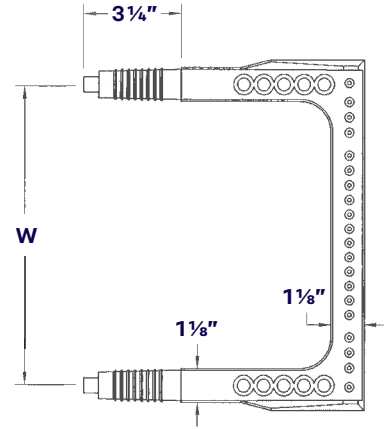
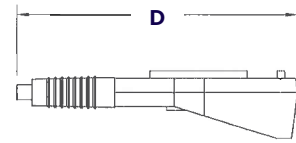
Updated Design: 10" MB Bowco Manhole Steps are double-faced for installation in either orientation.



Features

- **Strong:** Minimum pullout strength of 400lbs, in accordance with ASTM C-497. Withstands vertical loads of 800lbs, satisfying ASTM C-478
- **Easy Installation** using sockets and locator accessories, available separately
- **Established:** DOT approved in over 30 states under the Bowco product name
- **Durable:** Copolymer polypropylene coating provides corrosion resistance and ensures the manhole steps will exceed the useful life of the utility structure
 - Copolymer polypropylene conforms to ASTM D-41 01 under Type 2
 - Grade 60, 1/2" rebar meets ASTM A-615
- **Approved:** Conforms to AASHTO M 199M/M Standard Specification for Precast Reinforced Concrete Manhole Sections. Designed to meet OSHA STD 1910.24 (b).
- **Options:** Available in black or orange, in 10" (double-faced) and 13" widths, and in 8 1/2" and 9 3/8" step depths
- **Safe:** Durable, non-slip surface





Product Data - MB Bowco Manhole Step

| Item Number | Description | W | D | Packaging |
|-------------|----------------------------------|-----|--------|----------------------|
| BC110030 | 81213-R Black Step | 13" | 8 1/2" | 25 / box 600 / plt |
| BC110040 | 81213-R Orange Step | 13" | 8 1/2" | 25 / box 600 / plt |
| BC110140 | 93810-R Black Step Double-Faced | 10" | 9 3/8" | 25 / box 700 / plt |
| BC110150 | 93810-R Orange Step Double-Faced | 10" | 9 3/8" | 25 / box 700 / plt |
| BC110220 | 93813-R Black Step | 13" | 9 3/8" | 25 / box 600 / plt |
| BC110240 | 93813-R Orange Step | 13" | 9 3/8" | 25 / box 600 / plt |



SP Socket

- Works well with Dry Cast applications
- Excellent for vacuum testing
- Use removable pin to hold in place



OR Socket

- Works well with flat or round wall structures – Wet or Dry Cast
- Mounts to wood or steel forms using threaded holes in closed end



SPSL-1 Socket Locator

- The SPSL-1 adhesive step socket locator helps secure proper placement of the manhole step socket prior to concrete pouring



SSB Socket

- Works well for round wall forms
- Socket breaks away from form when stripping
- Inserts into pre-drilled holes in form
- Keyed to ensure correct installation



Sizing Pin

- Used to easily create installation locations

Product Data - MB Bowco Manhole Step Accessories

| Item Number | Description | Packaging |
|-------------|----------------|---------------------------|
| BC110390 | SP Socket | 400 / box |
| BC110420 | SSB Socket | 400 / box |
| BC110340 | OR Socket | 420 / box 10,080 / plt |
| BC110410 | SPSL-1 Locator | 250 / box |
| BC110380 | Sizing Pin | 200 / box |

MB Bowco Insert Locator

Cost-Effective Concrete Fastening

Overview

MB Bowco Polymer Threaded Inserts are a simple, strong and cost-effective method for anchoring railings, frames and similar fixtures to precast or cast-in-place concrete units. Available locator accessories apply easily to wood or metal forms to aid precision insert placement.

Light-weight and easy-to-install, Polymer Threaded Inserts will not corrode or rust and offer a clean, unobtrusive bolted connection point for post-installed hardware and equipment on almost any concrete surface.

Features

- **Easy Installation:** Polymer Threaded Inserts install quickly, especially when used in conjunction with Press-In, Tap-On, or Stick-On MB Bowco Insert Locators

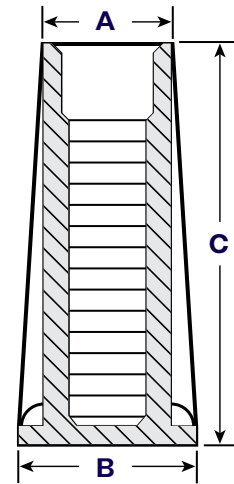


- **Versatile:** Ideal for a variety of uses, including:
 - Bolting equipment, racking or channels to vault walls
 - Securing HVAC units and other equipment to concrete pads
 - Bolting metal or cast-iron frames to concrete lids
 - Suspending pipes and conduit from concrete panels
 - Attaching handrails and railing posts
- **Reliable:** Superior mechanical strength and corrosion resistance for dependable, long-term performance
- **Lightweight:** Polymer Threaded Inserts are easy to handle and install
- **Convenient Sizes:** Available in various bolt diameters ranging from 1/4" to 3/4"



Product Data - MB Bowco Polymer Threaded Insert

| Item Number | Bolt Diameter | NC Threaded | A | B | C | SWL | Packaging |
|-------------|---------------|-------------|-------|-------|-------|-----------|-------------|
| BC140180 | ¼" | 20 | 0.75" | 1" | 1.5" | 1,000 lbs | 1,400 / box |
| BC140220 | ⅜" | 16 | 0.75" | 1" | 1.5" | 1,000 lbs | 1,400 / box |
| BC140110 | ½" | 13 | 0.75" | 1.25" | 1.5" | 1,000 lbs | 850 / box |
| BC140150 | ½" | 13 | 0.75" | 1.25" | 1.75" | 1,200 lbs | 700 / box |
| BC140130 | ½" | 13 | 0.75" | 1.25" | 2.5" | 2,500 lbs | 500 / box |
| BC140120 | ½" | 13 | 0.75" | 1.25" | 3.25" | 2,500 lbs | 400 / box |
| BC140200 | ¾" | 10 | 1" | 1.63" | 3.2" | 3,000 lbs | 225 / box |
| BC140240 | ⅝" | 11 | 0.95" | 1.38" | 2.95" | 3,000 lbs | 300 / box |



Product Data - MB Bowco Threaded Insert Locator

| Item Number | Description | Insert Diameter | Packaging |
|-------------|---|-----------------|-------------|
| BC140260 | PI12X38 Insert Locator-Press In ⅜" Hole | ½" | 1,500 / box |
| BC140280 | PI12X58 Insert Locator-Press In ⅝" Hole | ½" | 1,500 / box |
| BC140290 | PI12X58S Short Locator-Press In ⅝" Hole | ½" | 2,000 / box |
| BC140330 | PI38X38 Insert Locator-Press In ⅜" Hole | ¾" | 2,500 / box |
| BC140350 | PI58X58 Locator ⅝" Hole | ⅝" | 900 / box |
| BC140370 | SO12 Insert Locator - Stick On | ½" | 250 / box |
| BC140400 | SO12ESPC Insert Locator - Stick On | ½" | 500 / box |
| BC140420 | SO12SA Short Stick On Threaded Insert Locator | ½" | 500 / box |
| BC140440 | SO14 Insert Locator - Stick On | ¼" | 350 / box |
| BC140450 | SO34 Insert Locator - Stick On | ¾" | 200 / box |
| BC140460 | SO38 Insert Locator - Stick On | ⅜" | 250 / box |
| BC140470 | SO58 Insert Locator - Stick On | ⅝" | 250 / box |
| BC140480 | SO78 Insert Locator - Stick On | ⅞" | 200 / box |
| BC140490 | TO12 Insert Locator - Tap On with ⅜" Hole | ½" | Call |
| BC140500 | TO12 Insert Locator - Tap On with ¼" Hole | ½" | Call |



Press-In Locator



Stick-On Locator



Tap-On Locator

MB Bowco Pulling Iron

Durable Anchorage for Cable Installation

Overview

MB Bowco Pulling Irons are available in a variety of configurations, including shielded cable pulling irons, patented plastic-coated pulling irons and galvanized steel pulling irons.

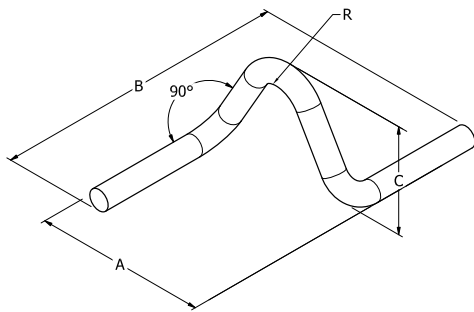
Void-former pockets, featuring our user-friendly patented Snap-N-Seal system, are also available. This innovative design allows the pulling iron to snap securely into place without the need for packing materials.

Features

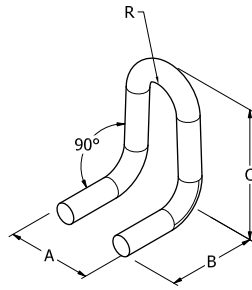
- **Secure Installation:** Effortlessly snaps into place, ensuring a stable and secure fit
- **No Packing Required:** Eliminates the need for additional packing materials to keep the pulling iron securely in place
- **Tight Seal:** A gasket between the pulling iron and pocket creates a watertight seal, preventing concrete ingress
- **No Tape Needed:** There's no need for tape to protect against concrete infiltration
- **Cost-Effective:** No extra materials or labor are necessary to guarantee proper performance

- **Flush Fit Pocket Lid:** The pocket lid fits flush, requiring no tape or cutting for installation
- **Reusable Lid:** The pocket lid can be reused multiple times, contributing to cost savings

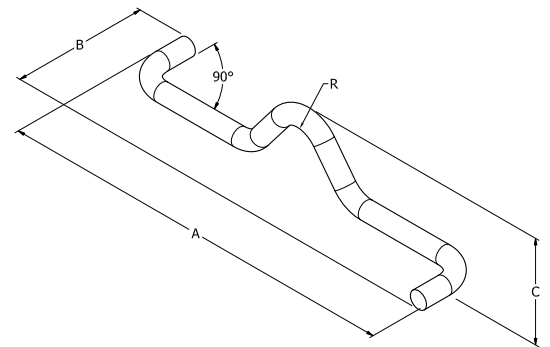




Type I



Type II

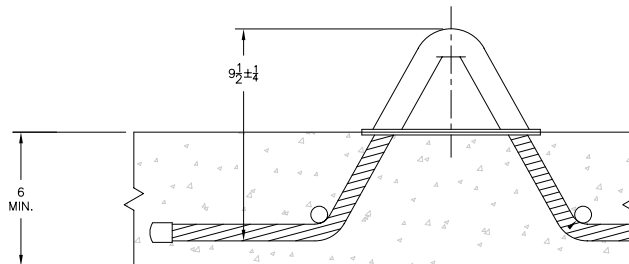


Type III

Product Data - MB Bowco Galvanized Pulling Iron

| Item Number | Description | Type | A | B | C | R | Diameter |
|-------------|-------------------------------|------|-------|-------|-------|-------|----------|
| BC153345 | B785573 Pulling Iron - UV CO. | II | 7.6" | 3.6" | 5.5" | 1.0" | 7/8" |
| BC153210 | B784212 Pulling Iron | I | 7.0" | 11.4" | 4.75" | 1.0" | 7/8" |
| BC153103 | B346232 Pulling Iron | II | 3.25" | 3.5" | 5.25" | 0.75" | 3/4" |
| BC153116 | B781055 Pulling Iron | II | 5.5" | 4.5" | 10.0" | 1.0" | 7/8" |
| BC153170 | B783519 Pulling Iron | III | 19.0" | 5.63" | 3.5" | 1.0" | 7/8" |
| BC153360 | B786010 Pulling Iron | I | 6.5" | 12.0" | 7.0" | 1.0" | 7/8" |

Cable Pulling Iron



Product Data - MB Bowco Cable Pulling Iron and Pocket

| Item Number | Description | Packaging |
|-------------|---|-------------------------|
| BC150000 | BPI-1 Plastic Coated Pulling Iron | 300 / plt |
| BC150020 | BPIL-1 Pulling Iron Pocket Lid | 150 / box 1,800 / plt |
| BC150030 | BPIP-01 Pulling Iron Pocket | 100 / box 1,200 / plt |
| BC150070 | BPIP-05 Pocket for 3/4" Bar for B342519 | Call |
| BC150090 | BPIP-06 Pocket for B783717 | Call |

Pocket

Lid



MB Bowco Sump Pan

Durable, Reliable Drainage Enclosure

Overview

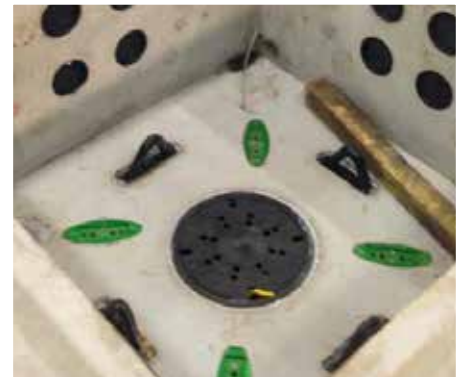
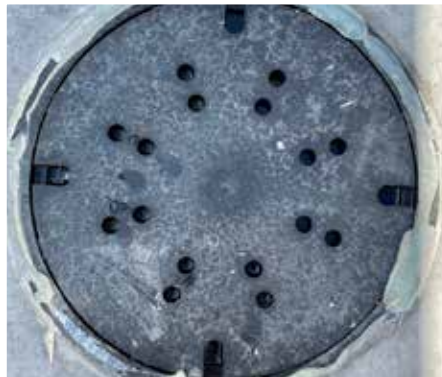
MB Bowco Sump Pans are designed for convenience, reliability and long-term performance.

Manufactured from high-strength plastic, MB Bowco Sump Pans are an ideal solution for creating sturdy, precise egress points that allow water drainage from utility boxes, communication enclosures, vaults, and other precast concrete elements.

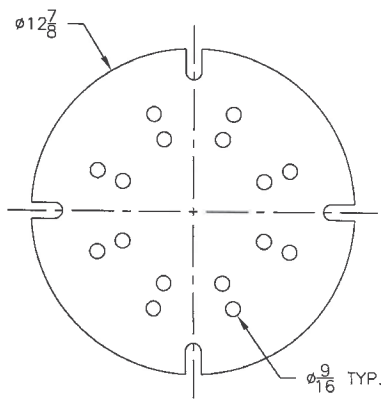
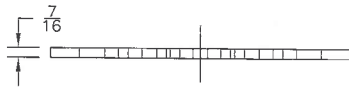


Features

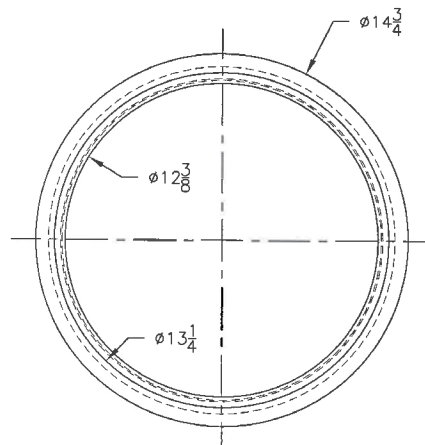
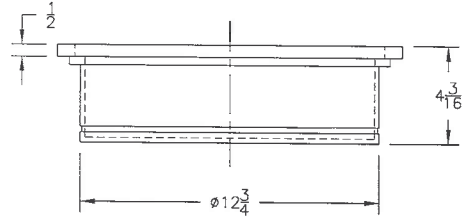
- **Durable:** Crafted from corrosion-free materials, ensuring longevity and durability.
- **Ease of Handling:** Lightweight construction makes it easy to handle and install.
- **Secure Lid:** Available for purchase separately, the sump pan lid is engineered to be heavier than water, preventing it from floating. It is attached with a durable plastic tether for added security.
- **Versatile:** Convenient size and durable construction make MB Bowco Sump Pans a good choice for any number of applications.



Lid



Sump Base



Product Data - MB Bowco Sump Pan

| Item Number | Description | Packaging |
|-------------|---|--------------|
| BC150100 | BSP-1 Sump Pan | Call |
| BC150110 | BSP-12 Sump Pan w/ Lid - 12" Deep | Call |
| BC150120 | BSP-2 Sump Pan w/ Lid -4" Deep | 48 / plt |
| BC150125 | BSP-2WO Sump Pan with Lid-No Bottom - 4" Deep | Call |
| BC150130 | BSP-8 Sump Pan with Lid - 8" Deep | Call |
| BC150150 | BSPL-1 Sump Pan Lid | 300 / bucket |

MB Bowco Pipe Seal

Watertight Pipe Capping

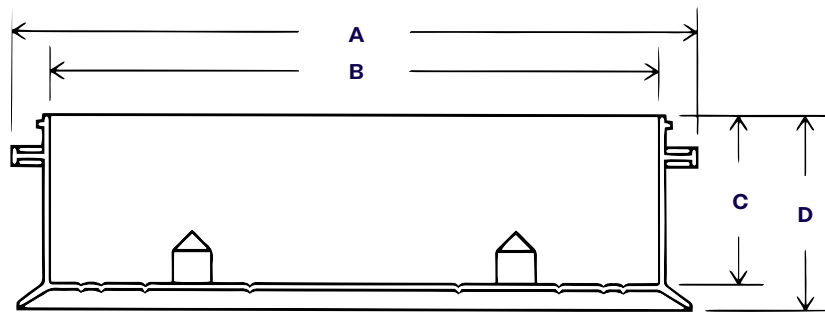
Overview

MB Bowco Pipe Seals are easy to install and remove. They are designed to fit a variety of pipe ends, allowing for maximum flexibility.

Pipe Seals cap unfinished openings and provide for future expansion or service access while preventing damage from moisture, debris and other elements.

Features

- **Simple Installation:** Eliminates the need for grouting, saving time
 - **Easy Conversion:** Mounts seamlessly onto existing locators
 - **Strong:** Ensures watertight seal capable of withstanding over 20 inches of mercury vacuum (10 PSI)
 - **Durable:** Crafted from corrosion-free materials, ensuring longevity and durability
 - **Ease of Handling:** Lightweight construction allows for simple handling and installation
- **Versatile:** Accommodates 4" SDR 35 pipe (HD35), 4" SCH 40 pipe (HD40), or 2" to 4" SCH 40 Pipe (LD-1)



Product Data - MB Bowco Pipe Seal

| Item Number | Description | A | B | C | D | Packaging |
|-------------|----------------|------|-------|-------|-------|-------------------------|
| BC146000 | POLY-SEAL HD35 | 5.5" | 4.85" | 1.42" | 1.67" | 170 / box |
| BC146010 | POLY-SEAL HD40 | 5.5" | 4.85" | 1.51" | 1.67" | 170 / box |
| BC147000 | POLY-SEAL LD1 | 5.5" | 4.85" | 1.42" | 1.67" | 170 / box 2,040 / plt |

MB Bowco Septic Filter

Simple, Effective Outlet Filtering

Overview

With over 235 feet of filtration, the MB Bowco EF-235 Septic Filter provides a simple, efficient solution for extending the life of the drain field by preventing suspended solids larger than $\frac{1}{16}$ " from leaving the septic tank. The filter extends below the scum line yet stays above the sludge layer, withdrawing effluent from the clear water zone of the tank.

Located in the outlet tee, the filter is rated for 1,500 gallons per day and is suitable for use in residential and light commercial applications.

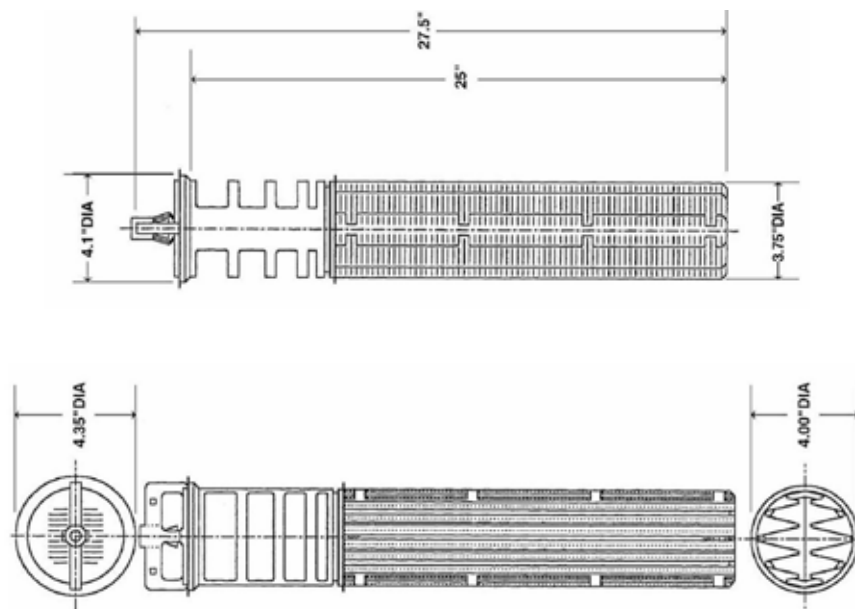
Features

- **Versatile:** Fits inside any 4" outlet tee for new or retrofit applications
- **Easy-to-Use:** Equipped with a $\frac{1}{2}$ " threaded insert to connect a detachable extension handle to ease in the installation and removal of filter. Unique 360-degree outflow design eliminates potential installation problems
- **Durable:** Manufactured using long-lasting, non-corrosive, virgin polymers



Product Data - MB Bowco Septic Filter

| Item Number | Description | Packaging |
|-------------|---|-----------|
| BC156020 | EF-235 Effluent Septic Filter Cartridge | 25 / box |



MB Bowco Tank Coupler

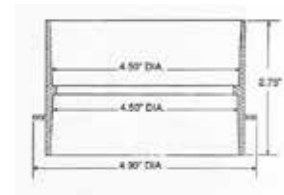
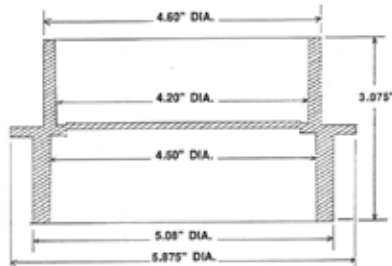
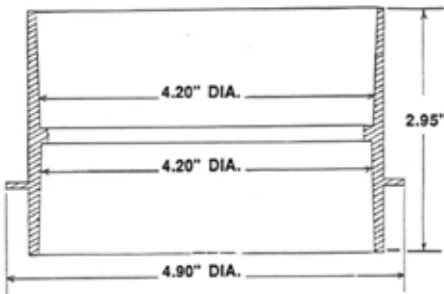
Internally Connect Pipe

Overview

The MB Bowco 4" tank couplers are used to internally connect pipe and are available for both SDR35 and SCH40 pipe and.

Features

- **Durable:** Couplers are made out of high impact polystyrene.



Product Data - MB Bowco Tank Coupler

| Item Number | Description | Packaging |
|-------------|----------------------|-----------|
| BC100220 | C3535 Coupler | 120 / box |
| BC100250 | C4035M Coupler Grey | 45 / box |
| BC100270 | C4040S Coupler Black | 138 / box |

MB Bowco Sight Glass & Ring

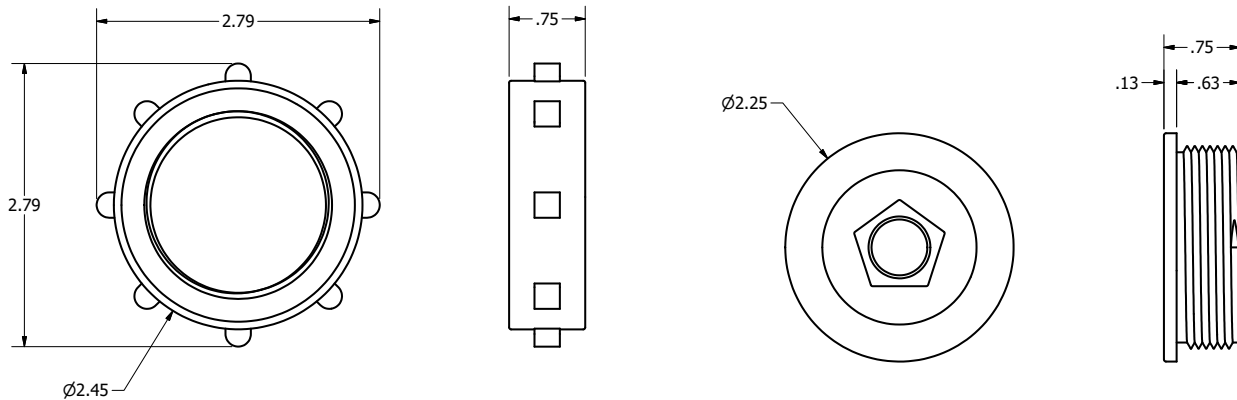
Quickly Read or View Meter Level

Overview

MB Bowco Sight Glass is threaded to securely install with the Sight Glass Ring for a watertight seal and made from durable and crystal-clear acrylic plastic. Sight glass is 2 ¼" in diameter and is about ¾" tall.

Features

- **Durable:** MB Bowco Sight Glass Ring is made from high impact polystyrene. Seal ring is 2 ½" in diameter.
- **Easy to Use:** MB Bowco Sight Glass provides a quick way to measure or read a meter through polymer panels and utility boxes.



Product Data - MB Bowco Sight Glass & Ring

| Item Number | Description | Packaging |
|-------------|------------------|-----------|
| BC103530 | Sight Glass | 250 / box |
| BC103540 | Sight Glass Ring | 250 / box |

MB Bowco Tube Channel

Pneumatic Hose Organization

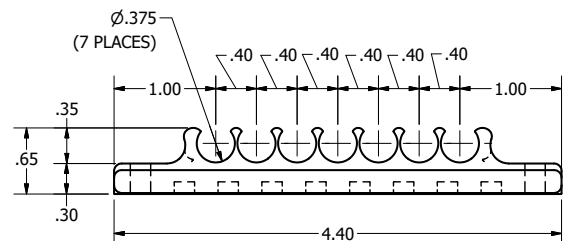
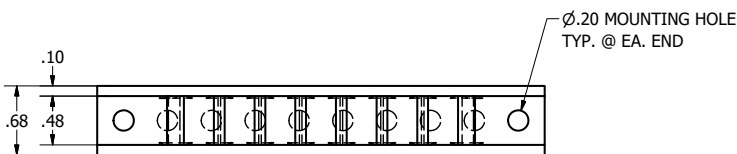
Overview

The MB BowcoTube Channels provide installers with a simple way of organizing and securing plastic tubing. When Tube Channels are used, future troubleshooting and repairs are conducted in an easier fashion.



Features

- Versatile:** MB Bowco Tube Channels are perfect for securing up to 7, 3/8" (OD) tubes, providing a solution for versatile tube management.
- Easy Installation:** Tube channels provide installers a convenient solution for securing and organizing plastic tubing effectively.
- Versatile:** Future troubleshooting or tube re-routing is effortlessly facilitated with the MB Bowco Tube Channel, allowing for seamless maintenance and modifications.



Product Data - MB Bowco Tube Channel

| Item Number | Description | Packaging |
|-------------|--|-------------|
| BC130130 | PTC6-7 Plastic Tube Channel(7)for 3/8 OD | 1,000 / box |

MB Bowco Pole Cap

Durable Utility Pole Top Protection

Overview

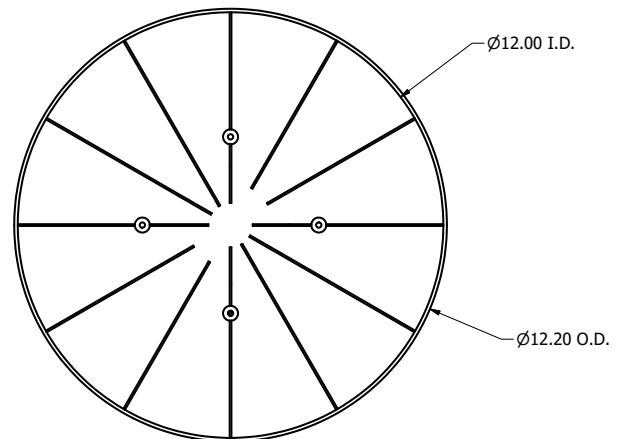
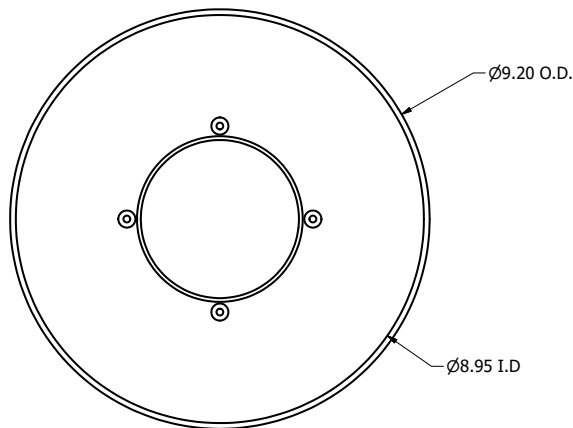
MB Bowco Pole Caps are made from Low-Density Polyethylene (LLDPE) and feature 4 pre-marked nail holes for easy and quick installation.

Pole caps ship with 4 16d 3 1/2" HDG Nails.

Features

- **Weather Resistant:** MB Bowco Pole Caps serve as a robust shield, effectively safeguarding against moisture and environmental factors, preserving the structural integrity of the utility pole.

- **Durable:** Manufactured from LLDPE, MB Bowco Pole Caps are highly resistant to UV degradation and weathering.
- **Easy Installation:** These pole caps offer enduring protection while ensuring easy installation using the provided HDG nails.



Product Data - MB Bowco Pole Cap

| Item Number | Description | Packaging |
|-------------|-----------------------|-----------|
| BC130000 | 12" Pole Cap Black | 25 / box |
| BC130020 | 9 1/2" Pole Cap Black | 25 / box |

North American Locations

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3611 E La Palma Ave
Anaheim CA 92806

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Boone IA 50036

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7000 Will Rogers Blvd
Fort Worth TX 76140

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Riverview FL 33578

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Canby OR 97013

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