INSULATION FASTENERS
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CAPACITOR DISCHARGE (CD)

<table>
<thead>
<tr>
<th>PIN</th>
<th>STEEL</th>
<th>ALUM.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE</td>
<td>D</td>
<td>FD</td>
</tr>
<tr>
<td>14GA</td>
<td>.080</td>
<td>.160</td>
</tr>
<tr>
<td>12GA</td>
<td>.105</td>
<td>.180</td>
</tr>
<tr>
<td>3MM</td>
<td>.118</td>
<td>.190</td>
</tr>
<tr>
<td>10GA</td>
<td>.135</td>
<td>.195</td>
</tr>
</tbody>
</table>

**MATERIAL:** LOW CARBON STEEL
C - 0.23% max.  P - 0.04% max.
Mn - 0.90% max. S - 0.05% max.

**MECHANICAL PROPERTIES:**
Yield  Tensile  60,000 psi (min.)
50,000 psi (min.) request.
Elongation  20% (in 2 inches)

**PLATING:** Galvanized and Copper plating are available.

**ANNEALING:** Pins are annealed where required.

**MATERIAL:** ALUMINUM
Alloy - 1110-H14 std. Other alloys available upon request.

**APPLICATION:** This is the standard weld pin used for most applications.

**WASHERS:** Self-locking washers are available in a variety of sizes, shapes, and materials.

**TO ORDER OR SPECIFY, GIVE:**
1. Product Code ................................................................. WP
2. Size ..............................................................................
3. Length ......................................................................... L
4. Material ........................................................................
"POWER TIP" (CD)

**PIN**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>D</th>
<th>L</th>
<th>FD</th>
</tr>
</thead>
<tbody>
<tr>
<td>12GA</td>
<td>.105</td>
<td>AS REQUIRED</td>
<td>.171</td>
</tr>
<tr>
<td>10GA</td>
<td>.135</td>
<td>AS REQUIRED</td>
<td>.187</td>
</tr>
</tbody>
</table>

**MATERIAL:**

- **LOW CARBON “MILD” STEEL**
  - C - 0.23% max.
  - P - 0.04% max.
  - Mn - 0.90% max.
  - S - 0.05% max.

- **STAINLESS STEEL**
  - AISI grade - 302/304/305 std.
  - Other grades available upon request.

**MECHANICAL PROPERTIES:**

- Tensile: 60,000 psi (min.)
- Yield: 50,000 psi (min.)
- Elongation: 20% (in 2 inches)

**PLATING:**

- Galvanized and Copper plating are available.
- Values for various grades available upon request.

- Does not apply to Stainless.

**ANNEALING:**

- Can be annealed if required.
- Can be annealed if required.

**APPLICATION:**

- Ideally suited for welding to surfaces covered with mill scale, rust, or paint without costly preparation.

**WASHERS:**

- Self-locking washers are available in a variety of sizes, shapes, and materials.

**TO ORDER OR SPECIFY, GIVE:**

1. Product Code................................................................. PT
2. Size...................................................................................
3. Length ................................................................................
4. Material............................................................................
"SURE-FIRE" (CD)

<table>
<thead>
<tr>
<th>PIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>12GA</td>
</tr>
<tr>
<td>10GA</td>
</tr>
</tbody>
</table>

**MATERIAL:**

- LOW CARBON "MILD" STEEL
  - C - 0.23% max.
  - P - 0.04% max.
  - Mn - 0.90% max.
  - S - 0.05% max.

- STAINLESS STEEL
  - AISI grade - 302/304/305 std.
  - Other grades available upon request.

**MECHANICAL PROPERTIES:**

- Tensile: 60,000 psi (min.)
- Yield: 50,000 psi (min.)
- Elongation: 20% (in 2 inches)
- Values for various grades available upon request.

**PLATING:**

- Galvanized and Copper plating are available.
- Does not apply to Stainless.

**ANNEALING:**

- Can be annealed if required.
- Can be annealed if required.

**APPLICATION:** Ideally suited for welding to surfaces covered with mill scale, rust, or paint.

**WASHERS:** Self-locking washers are available in a variety of sizes, shapes, and materials.

**TO ORDER OR SPECIFY, GIVE:**

1. Product Code................................................................. SF
2. Size......................................................................................
3. Length .............................................................................. L
4. Material............................................................................

MIDWEST FASTENERS, INC
CONICAL TIP (CD)

<table>
<thead>
<tr>
<th>SIZE</th>
<th>D</th>
<th>L</th>
<th>FD</th>
</tr>
</thead>
<tbody>
<tr>
<td>12GA</td>
<td>.105</td>
<td>AS REQUIRED</td>
<td>.220</td>
</tr>
<tr>
<td>10GA</td>
<td>.135</td>
<td>AS REQUIRED</td>
<td>.250</td>
</tr>
</tbody>
</table>

**MATERIAL:** ALUMINUM

Alloy - 1100-H14 std. Other alloys available upon request.

**MECHANICAL PROPERTIES:**

Values for various alloys available upon request.

**APPLICATION:** Ideally suited for welding with production Stud Welding systems and for STUCCO embossed panels.

**WASHERS:** Self-locking washers are available in a variety of sizes, shapes, and materials.

**TO ORDER OR SPECIFY, GIVE:**

1. Product Code ................................................................................. CT
2. Size ..............................................................................................
3. Length ...........................................................................................
4. Material ........................................................................................
DOUBLE POINTED (ARC)

**PIN**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>D*</th>
<th>L</th>
<th>CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>10GA</td>
<td>.135</td>
<td>AS REQUIRED</td>
<td>F135</td>
</tr>
</tbody>
</table>

*Other diameters available upon request.

**MATERIAL:**

- **LOW CARBON STEEL**
  - C - 0.23% max.
  - P - 0.04% max.
  - Mn - 0.90% max.
  - S - 0.05% max.

- **STAINLESS STEEL**
  - AISI grade - 302/304/305 std.
  - Other grades available upon request.

**MECHANICAL PROPERTIES:**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile</td>
<td>60,000 psi (min.)</td>
</tr>
<tr>
<td>Yield</td>
<td>50,000 psi (min.)</td>
</tr>
<tr>
<td>Elongation</td>
<td>20% (in 2 inches)</td>
</tr>
</tbody>
</table>

Values for various grades available upon request.

**PLATING:**

- Galvanized and Copper plating are available.
- Does not apply to Stainless.

**ANNEALING:**

- Can be annealed where required.
- Can be annealed if required.

**APPLICATION:**

This is the standard weld pin used when only arc stud welding equipment is available.

**WASHERS:**

Self-locking washers are available in a variety of sizes, shapes, and materials.

**FERRULES:**

Ferrules are component parts of studs. Not sold separately.

**FERRULE**

<table>
<thead>
<tr>
<th>CODE</th>
<th>B</th>
<th>D</th>
<th>E</th>
<th>M</th>
<th>PART NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>F135</td>
<td>.281</td>
<td>.375</td>
<td>.156</td>
<td>.390</td>
<td>092 0005 04</td>
</tr>
</tbody>
</table>

**TO ORDER OR SPECIFY, GIVE:**

1. Product Code ................................................................. DP
2. Size .................................................................................
3. Length ............................................................................. L
4. Material ............................................................................

---

450 Richard St, Miamisburg, OH 45342  |  Toll Free: 800-852-8352  |  Fax: 937-866-4174  |  www.midwestfasteners.com
All information contained herein is subject to change without notice.

1-5
### “J”- HOOK

**PIN**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>D*</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>10GA</td>
<td>.135</td>
<td>AS REQUIRED</td>
</tr>
</tbody>
</table>

*Other diameters available upon request.

---

**MATERIAL:**

- **LOW CARBON STEEL**
  - C - 0.23% max.
  - P - 0.04% max.
  - Mn - 0.90% max.
  - S - 0.05% max.

- **STAINLESS STEEL**
  - AISI grade - 302/304/305 std.
  - Other grades available upon request.

**MECHANICAL PROPERTIES:**

- Tensile Yield: 60,000 psi (min.)
- 50,000 psi (min.) request.
- Elongation: 20% (in 2 inches)
- Values for various grades available upon request.

**PLATING:**

- Galvanized and Copper plating are available.
- Does not apply to Stainless.

**ANNEALING:**

- Can be annealed where required.
- Can be annealed if required.

**APPLICATION:**

This is the standard insulation fastener used to secure insulation to wire road mesh.

**WASHERS:**

Self-locking washers are available in a variety of sizes, shapes, and materials.

---

**TO ORDER OR SPECIFY, GIVE:**

1. Product Code.................................................................JH
2. Size...................................................................................
3. Length............................................................................L
4. Material............................................................................
CUP HEAD PIN (CD)

<table>
<thead>
<tr>
<th>TYPE</th>
<th>D</th>
<th>WD</th>
<th>L</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS12</td>
<td>.105</td>
<td>1.187</td>
<td>3/8</td>
<td>16&quot;</td>
</tr>
<tr>
<td>CS14</td>
<td>.080</td>
<td>1.187</td>
<td>3/16</td>
<td>16&quot;</td>
</tr>
<tr>
<td>CL12</td>
<td>.105</td>
<td>1.500</td>
<td>3/8</td>
<td>16&quot;</td>
</tr>
</tbody>
</table>

**PIN**

**MATERIAL:** LOW CARBON STEEL
- C - 0.23% max.
- Mn - 0.90% max.
- P - 0.04% max.
- S - 0.05% max.

**MECHANICAL PROPERTIES:**
Values available upon request.

**PLATING:**
- Galvanized is standard.
- Copper plating is available upon special request.

**BEVEL:**
Washer edge is beveled to prevent cutting of insulation material.

**STAINLESS STEEL:**
Not standard, but available by special order.

**PAPER INSULATING WASHERS:**
Available for welding through foil faced insulation.
Paper insulating washers can be ordered separately or factory installed.

**TO ORDER OR SPECIFY, GIVE:**
1. Product Code ................................................................. CHSW
2. Size ....................................................................................
3. Length ............................................................................... L
4. Material ..............................................................................

CUP HEAD PINS
CUP HEAD PIN

APPLICATION: This cup head pin is for use with Duro-Dyne auto feed resistance welding equipment.

<table>
<thead>
<tr>
<th>TYPE</th>
<th>D</th>
<th>WD</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM10</td>
<td>.135</td>
<td>1.000</td>
<td>3/8</td>
</tr>
</tbody>
</table>

**PIN**

**MATERIAL:** LOW CARBON STEEL

<table>
<thead>
<tr>
<th>Material</th>
<th>C</th>
<th>P</th>
<th>Mn</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Carbon Steel</td>
<td>0.23% max</td>
<td>0.04% max</td>
<td>0.90% max</td>
<td>0.05% max</td>
</tr>
</tbody>
</table>

**MECHANICAL PROPERTIES:**

Values available upon request.

**PLATING:**

Galvanized is standard. Copper plating is available upon special request.

**BEVEL:**

Washer edge is beveled to prevent cutting of insulation material. Flat washer style also standard. Both styles Auto-Feed quality.

**STAINLESS STEEL:**

Not standard, but available by special order.

**TO ORDER OR SPECIFY, GIVE:**

1. Product Code: CPMW
2. Washer Type: Beveled or Flat
3. Length: L
4. Material: Low Carbon Steel

---

MIDWEST FASTENERS, INC

All information contained herein is subject to change without notice.
SELF-LOCKING WASHERS (Square)

<table>
<thead>
<tr>
<th>Type</th>
<th>WA 250</th>
<th>WS 150</th>
<th>WA 125</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter</td>
<td>2-1/2 x 2-1/2</td>
<td>1-1/2 x 1-1/2</td>
<td>1-1/4 x 1-1/8</td>
</tr>
<tr>
<td>Thickness</td>
<td>.015 nom.</td>
<td>.015 nom.</td>
<td>.015 nom.</td>
</tr>
<tr>
<td>Material</td>
<td>Mild Steel</td>
<td>Mild Steel</td>
<td>Mild Steel</td>
</tr>
<tr>
<td>Edges / flat or beveled</td>
<td>beveled</td>
<td>beveled</td>
<td>beveled</td>
</tr>
<tr>
<td>Other materials available</td>
<td>Alum., S.S.</td>
<td>Alum., S.S.</td>
<td>Alum., S.S.</td>
</tr>
<tr>
<td>Packaged per carton</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
</tr>
</tbody>
</table>

**MIDWEST FASTENERS** Self-Locking Washers are used in conjunction with **MIDWEST FASTENERS** weld pins, insul-anchors and lacing anchors to fasten insulation in place. Simply press the self-locking washer onto the pin up to the insulation until the desired position is reached. Then clip off, (or bend over) the remaining portion of pin for a permanent attachment.

Both Round or Square self-locking washers are available as a matter of design or application preference. The domed, multi-lanced hole design provides for ease of locating washer on pin and positive locking. Most styles of washers are manufactured with a beveled edge to prevent the washer from cutting into the insulation facing.

**MIDWEST FASTENERS** Self-Locking Washers are available according to the chart above and with standard 10 GA, 12 GA, or 14 GA hole sizes off-the-shelf. Other material/plating combinations and hole sizes are available by special order.

**TO ORDER OR SPECIFY, GIVE:**
1. Product Code.........................................................WA, WS
2. Material ..........................................................MS, SS, AL
3. Type.................................................................250, 150, 125
4. Diameter of pin/stud on which washer is to be used .................
SELF-LOCKING WASHERS (Round)

<table>
<thead>
<tr>
<th>Type</th>
<th>WA 100</th>
<th>WA 120</th>
<th>WA 150</th>
<th>WA 200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter</td>
<td>1&quot;</td>
<td>1-3/16&quot;</td>
<td>1-1/2&quot;</td>
<td>2&quot;</td>
</tr>
<tr>
<td>Thickness</td>
<td>.015 nom.</td>
<td>.015 nom.</td>
<td>.015 nom.</td>
<td>.015 nom</td>
</tr>
<tr>
<td>Material</td>
<td>Mild Steel</td>
<td>Mild Steel</td>
<td>Mild Steel</td>
<td>Mild Steel</td>
</tr>
<tr>
<td>Edges / flat or beveled</td>
<td>beveled</td>
<td>beveled</td>
<td>beveled</td>
<td>beveled</td>
</tr>
<tr>
<td>Other materials available</td>
<td>Alum., S.S.</td>
<td>Alum., S.S.</td>
<td>Alum., S.S.</td>
<td>Alum., S.S.</td>
</tr>
<tr>
<td>Packaged per carton</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
</tr>
</tbody>
</table>

MIDWEST FASTENERS Self-Locking Washers are used in conjunction with MIDWEST FASTENERS weld pins, insul-anchors and lacing anchors to fasten insulation in place. Simply press the self-locking washer onto the pin up to the insulation until the desired position is reached. Then clip off, (or bend over) the remaining portion of pin for a permanent attachment.

Both Round or Square self-locking washers are available as a matter of design or application preference. The domed, multi-lanced hole design provides for ease of locating washer on pin and positive locking. Washers are manufactured with a beveled edge to prevent the washer from cutting into the insulation facing.

MIDWEST FASTENERS Self-Locking Washers are available according to the chart above and with standard 10 GA, 12 GA, or 14 GA hole sizes off-the-shelf. Other material/plating combinations and hole sizes are available by special order.

TO ORDER OR SPECIFY, GIVE:
1. Product Code .................................................................WA
2. Material .................................................................MS, SS, AL
3. Type .................................................................100, 120, 150, or 200
4. Diameter of pin/stud on which washer is to be used ............
MISCELLANEOUS INSULATION WASHERS

CAPPED SPEED WASHER

**APPLICATION:**
Designed to permanently lock on to weld pins or insul-anchors where appearance is a major factor, or where no sharp points or edges are permissible on the surface.

**MATERIAL:**
- Decorative Domed Cap—Aluminum
- Self-Locking Insert—Hardened Steel

**COLOR:**
Plain (bright aluminum) or painted white. Other painted colors are available by special order.

**TO ORDER OR SPECIFY, GIVE:**
1. Product Code .............................................. PCW
2. Size ......................................................... 10 GA, 12 GA or 14 GA
3. Color ............................................................

LACING WASHER & RING

**APPLICATION:**
Designed to be used with lacing wire to wrap insulation around irregular shapes.

**MATERIAL:**
- Washer—Aluminum or Stainless Steel
- Ring—Zinc alloy, bright zinc plated.

**NO-AB:**
Washe rs are available stamped ‘NO AB’ to indicate non-asbestos material.

**TO ORDER OR SPECIFY, GIVE:**
Lacing Washer
1. Product Code .............................................. L2H
2. Material ............................................................

Lacing Ring
1. Product Code .............................................. LRZA
2. Material ......................................................... Zinc Alloy
**NAVY STUDS – WASHERS, CAPS & NUTS**

**ANNULAR RING CAP (For annular ring studs)**

**APPLICATION:**
Designed to permanently lock on to Navy annular ring studs.

**MATERIAL:**
Aluminum, Mild Steel and Stainless Steel

**SIZE:**
For or 3/16" diameter studs.

**TO ORDER OR SPECIFY, GIVE:**
1. Product Code .............................................. MCAL
2. Size ............................................................... 

---

**KEY HOLE SLOTTED WASHER**

(For 3/16 dia. notched end studs)

**APPLICATION:**
Designed to lock on to Navy notched end studs.

**MATERIAL:**
Mild Steel—Galvanized.

**TO ORDER OR SPECIFY, GIVE:**
1. Product Code .............................................. WAK
2. Material ....................................................... 

---

**FLAT WASHERS & HEX NUTS (For all threaded studs)**

These “accessory” items can be ordered with Threaded Weld Studs for general application and to meet Military Specifications where required.
PANEL CAPS & NUTS

ANNULAR GROOVE CAP
(For annular groove shoulder studs)

APPLICATION:
Designed to permanently lock on to annular groove shoulder studs to hold panel in place against stud shoulder.

MATERIAL: Aluminum

SIZE: For 3/16 diameter annular groove

TO ORDER OR SPECIFY, GIVE:
1. Product Code.............................WAG AL

CAP SETTING TOOL (For installing WAG AL caps)

APPLICATION:
This tool is recommended for installing the Annular Groove Cap (above).

TO ORDER OR SPECIFY, GIVE:
1. Name..............................................Cap Setting Tool

PANEL NUT (For 1/4-20 threaded studs)

APPLICATION:
Designed to be threaded down through pre-drilled holes in the panel on to pre-welded studs providing firm, water resistant attachment.

MATERIAL: Aluminum & Neoprene Rubber.

SIZE: For 1/4-20 threaded studs.

TO ORDER OR SPECIFY, GIVE:
1. Product Code................................................PNAL
# WASHERS, CAPS & NUTS

## COMBINATION NUTS

### COMBINATION HEX-NUT and LOCK-WASHER ("OPEN")
for 10-24 threaded studs

**APPLICATION:** with 10-24 weld studs.
- One-piece washer-type locknut combination serving as hex nut, lockwasher and flat washer.
- Locking design eliminates back-off due to vibration and thermal stress.

**MATERIAL:** Mild Steel. Zinc Plated.

**SIZE:** For 10-24 threaded studs

**TO ORDER OR SPECIFY, GIVE:**
1. Product Code................................. PAL-NUT
2. Part Number................................. D010241

### COMBINATION HEX-NUT and LOCK-WASHER ("CLOSED")
for 10-24 threaded studs

**APPLICATION:** with 10-24 weld studs.
- One-piece washer-type locknut combination serving as hex nut, lockwasher and flat washer.
- Design encloses fastener when placed on stud.

**MATERIAL:** Mild Steel. Nickel Plated.

**SIZE:** For 10-24 threaded studs

**TO ORDER OR SPECIFY, GIVE:**
1. Product Code................................. CAP-NUT
2. Part Number................................. KD102410
SPINDLE

SIZE: D 12 GA (.105") is standard.
Other sizes available by special order only.

LENGTH: L 1", 1-5/8", 2", 2-1/2", 3-1/2", 4-1/2", 5-1/2", 6-1/2", 8" and 9" are standard. Other lengths available by special order.

PIN

MATERIAL: LOW CARBON STEEL

PLATING: Galvanized coating is standard.

OTHER MATERIALS

PLATE

MATERIAL: LOW CARBON STEEL

PLATING: Galvanized is standard.

OTHER MATERIALS

WASHERS: Self-locking washers are available in a variety of sizes, shapes, and materials.

TO ORDER OR SPECIFY, GIVE:

1. Product Code................................................................. IHSP
2. Size................................................................. 12 GA
3. Length .......................................................... L
4. Material ............................................................ (if other than standard)
## SELF-STICK

| SIZE: | D | 12 GA (.105") is standard.  
Other sizes available by special order only. |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LENGTH:</td>
<td>L</td>
<td>1&quot;, 1-5/8&quot;, 2&quot;, 2-1/2&quot;, 3-1/2&quot;, 4-1/2&quot;, 5-1/2&quot;, 6-1/2&quot;, 8&quot; and 9&quot; are standard. Other lengths available by special order.</td>
</tr>
</tbody>
</table>

### PIN

**MATERIAL:** LOW CARBON STEEL  
**PLATING:** Galvanized coating is standard.

### PLATE

| MATERIAL: | LOW CARBON STEEL | OTHER MATERIALS  
Also available by special order in all Stainless Steel or all Aluminum |
|-----------|------------------|------------------|

### WASHERS

Self-locking washers are available in a variety of sizes, shapes, and materials.

### TO ORDER OR SPECIFY, GIVE:

1. Product Code:.................................................................................................IHSS  
2. Size:..............................................................................................................12 GA  
3. Length:..........................................................................................................L  
4. Material .................................................................................................(if other than standard)
IMPORTANT NOTICE TO PURCHASER

All statements, technical information and recommendations contained herein are based on facts we believe to be reliable, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied.

Seller’s and manufacturer’s only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product.

Before using, user shall determine the suitability of the product for his intended use and user assumes all risk and liability whatsoever in connection therewith.

No statement or recommendation not contained herein shall have any force or effect unless in an agreement signed by officers of seller and manufacturer.

GUIDELINES FOR SELF STICK INSUL-ANCHORS

1. Must be applied to a clean, non-porous surface, that is free of all oil, film, dust, rust, etc.
2. Not generally recommended on painted surfaces, drywall, nor ceilings of metal buildings.
3. Best results are obtained when ambient temperature is above 40 degrees F. at time of application.
4. Temperature range for the foam tape is from -20 degrees to +180 degrees F.
5. Loading should not exceed 3 lbs. per anchor (.75 lb./sq. inch).
6. Base must be applied with firm pressure. Do not twist during application. Do not remove release (backing) paper until ready to use.
7. Insulation may be applied immediately after bond is made.
NYLON

**SIZE:**
- D 5/32" Standard

**LENGTH:**
- L 2-1/2" Standard

**MATERIAL:**
This is a one-piece insul-anchor of molded nylon.

**FEATURES:**
- Can be used for insulation up to 2" thick.
- Has a base area 14% larger than similar nylon anchors with a round base.
- Has 21% more perforated area for glue extrusion than similar nylon anchors.
- Uses 30% less adhesive than metal insul-anchors with a 2" round base.
- Will not conduct heat or cold.
- Lighter in weight than metal anchors for ease of handling.

**WASHERS:**
The self-locking washer for use with this insul-anchor is the WAMS-120-156. These washers are packed with anchors.

**TO ORDER OR SPECIFY, GIVE:**
1. Product Code.................................................................IHNY
ANNULAR RING ANCHOR-BOLT

SIZE: D 3/16 nominal. Actual ring diameter is .175".

LENGTH: L 7/8, 1-7/8, 2-7/8, and 3-7/8 are standard.
Other lengths available by special order.

<table>
<thead>
<tr>
<th>PLATE</th>
<th>BOLT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATERIAL: LOW CARBON STEEL</td>
<td>LOW CARBON STEEL</td>
</tr>
<tr>
<td>PLATING: Galvanized is standard.</td>
<td>Copper plating is standard.</td>
</tr>
</tbody>
</table>

OTHER MATERIALS:
Available by special order only.

RETAINING CAP:
The cap for use with this anchor-bolt is the MCAL part no. MCAL-625-875.

TO ORDER OR SPECIFY, GIVE:
1. Product Code.................................................................IHAB
2. Size.............................................................................D
3. Length .................................................................L
4. Material ......................................................(if other than standard)
**THREADED ANCHOR-BOLT**

<table>
<thead>
<tr>
<th>SIZE:</th>
<th>D</th>
<th>#10-24 is standard. Other sizes available by special order.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LENGTH:</td>
<td>L</td>
<td>3/4” to 3” long, in 1/4” increments as standard. Other lengths available by special order.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PLATE</th>
<th>BOLT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATERIAL:</td>
<td>LOW CARBON STEEL</td>
</tr>
<tr>
<td>PLATING:</td>
<td>Galvanized plating is standard.</td>
</tr>
</tbody>
</table>

**OTHER MATERIALS:** Available by special order only.

**HARDWARE:** Hex nuts, flat washers and lock washers are available in a variety of materials.

**TO ORDER OR SPECIFY, GIVE:**

1. Product Code..........................................................IA AB-THD
2. Size...............................................................D
3. Length .............................................................L
4. Material ......................................................(if other than standard)
**SAFING “Z” CLIP**

<table>
<thead>
<tr>
<th>SIZE:</th>
<th>2” x 3” x 3” x 1” standard size</th>
</tr>
</thead>
<tbody>
<tr>
<td>LENGTH:</td>
<td>20 Gauge, Mild Steel</td>
</tr>
<tr>
<td>PLATING:</td>
<td>Galvanized is standard.</td>
</tr>
</tbody>
</table>

**APPLICATION:** For use in installation of fire barrier and sound barrier safing insulations. This non-welded fastener is used as a support bracket to impale and secure Insulating materials between floor slab and spandrels at floor edge or anywhere that support for material is required.

**STANDARD PACKAGING:**
500 per carton (43lbs. carton weight - approximately)

**TO ORDER OR SPECIFY, GIVE:**

1. Product Code...............................................................ZCLIP
2. Size...............................................................................(if other than standard)
3. Material..........................................................................(if other than standard)
MIDWEST Fasteners
IHA-177 INSULATION HANGER ADHESIVE

Product Data:
MIDWEST Fasteners HANGER ADHESIVE is a high strength, heavy-bodied adhesive, specifically formulated for adhering anchors for hanging insulation.

IHA-177 HANGER ADHESIVE bonds metal and nylon anchors to metal, concrete or masonry surfaces. The product can also be used to install metal or ceramic wall fixtures and in tile applications.

MIDWEST Fasteners HANGER ADHESIVE is also available for use as a general-purpose construction adhesive in applications requiring a high strength bond, or in applications subjected to high temperatures.

Special Characteristics:
• Excellent thermal shock resistance
• High bond strength
• Water resistant
• Immediate grab
• Mildew resistant
• Non-slip formula

TYPICAL PHYSICAL PROPERTIES AND TECHNICAL INFORMATION:
Base: Thermoplastic Rubber
Type: Solvent
Solids Content: 64%
Color: Light Brown
Weight/gallon: 9.0 lbs./gal.
Shear Strength: Greater than 600 psi (AFG 01)
Water Resistance: Excellent
Consistency: Gun Grade Mastic
Application Temperature: 30°F to 120°F
Extrudability: Excellent (ASTM C 731)
Service Temperature: -30°F to 250°F
Shelf Life: 12 months
Storage Temp: Store at room temperature with cross ventilation.
Clean-up: Mineral Spirits, exercising safe practices
OSHA Class 1B liquid. Store per 29 CFR 1910, 106.
Coverage: 500-1000 anchors per gallon
Flammability: Flammable, Red Label
Flash point: (ASTM D 3828) -9°F
Open time: 15 minutes at 75°F and 50% relative humidity
MIDWEST Fasteners IHA-177 INSULATION HANGER ADHESIVE

DIRECTIONS FOR USE:

1. Use only after careful consideration of the warnings, directions, and first aid instructions given.

2. Surface Preparation: Surfaces to be bonded should be clean, dry and free of any dust, frost, wax, moisture, dirt, grease, oil, rust, or other contaminants. Do not use over painted surfaces. Many protective coatings are not compatible with Anchor Adhesive.

3. Adhesive Preparation: Adhesive should be stored at room temperature (60°F to 80°F) for at least 24 hours prior to use.

4. Working Temperature: For best results, adhesive and materials to be bonded should be 30°F to 120°F.

5. Adhesive Application: Do not apply at temperatures below 30°F. Prepare and install one anchor at a time. Apply a dab (the size of a small walnut) of adhesive to the anchor base with a putty knife and immediately (maximum open time is 10 minutes) press anchor firmly into place, with a slight twisting motion. For proper adhesion, insure that the film of adhesive covering the anchor base (after the anchor has been firmly pressed into place) is protruding.

6. Installing Anchor Adhesive to Concrete Surfaces: New concrete surfaces need to cure a minimum of 28 days in order to ensure best adhesion. All concrete surfaces should be high pressure water blasted or sand blasted to remove any surface curing agents and all foreign matter. Spread anchor adhesive on anchor base allowing solvent to flash off for several minutes before pressing anchor firmly into place with a slight twisting motion. Do not apply load until application is completely dry.

PACKAGING INFORMATION

<table>
<thead>
<tr>
<th>SIZE</th>
<th>PACKED</th>
<th>PART #</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>GALLON</td>
<td>4/carton</td>
<td>IHA-177-GA</td>
<td>39lbs. /carton</td>
</tr>
</tbody>
</table>

*MIDWEST Fasteners does not ship IHA-177 Adhesive by Air; standard shipments are UPS or Motor Freight. Also sold by MIDWEST only in carton-lot quantities.
CAUTIONARY INFORMATION
Contains: Toluene and Silica, Quartz

Warning: This product contains Silica, Quartz, a chemical known to the State of California to cause cancer. This product contains Toluene a chemical known to the State of California to cause birth defects or other reproductive harm. Cancer Hazard: Contains Crystalline Silica which may cause cancer. Risk of cancer depends on duration and level of exposure.

VAPOR HARMFUL, MAY AFFECT THE BRAIN OR NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. CAUSES EYE, SKIN, NOSE AND THROAT IRRITATION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN.

NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the content may be harmful or fatal. Use only with adequate ventilation: Vapors may ignite explosively. Do not breathe dust, vapors or spray mist. Ensure fresh air entry during application and drying. If you experience eye watering, headache or dizziness or if monitoring demonstrates vapor/mist levels are above applicable limits, wear an appropriate, properly fitted respirator (NIOSH/MSHA approved) during and after application. Follow respirator manufacturer’s directions for respirator use. Close container after each use. Keep away from heat, sparks and flame: Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and other sources of ignition during use and until all vapors are gone. Prevent build-up of vapors by opening all windows and doors to achieve cross-ventilation. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. VAPORS MAY CAUSE FLASH FIRE.

First Aid: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately. In case of eye contact, flush immediately with plenty of water for at least 15 minutes and get medical attention immediately; for skin, wash thoroughly with soap and water. If swallowed, do not induce vomiting. Call Poison Control Center, Hospital Emergency Room or Physician immediately. If spilled: Contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and Federal regulations.

KEEP OUT OF THE REACH OF CHILDREN  F#2100 L210v1

Notice to Purchaser: NO WARRANTIES, EXPRESS OR IMPLIED ARE MADE INCLUDING MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE. UNDER NO CIRCUMSTANCES SHALL THE MANUFACTURER BE LIABLE FOR ANY LOSS OR DAMAGE ARISING FROM THE PURCHASE, USE, OR INABILITY TO USE THIS PRODUCT, OR FOR ANY SPECIAL, INDIRECT INCIDENTAL, OR CONSEQUENTIAL DAMAGES. IF SUCH TESTING PROVES A PRODUCT DEFECT, THE USER’S SOLE AND EXCLUSIVE REMEDY IS EITHER REIMBURSEMENT OF THE PURCHASE PRICE OF THE PRODUCT OR REPLACEMENT OF THE CONTAINER OF PRODUCT. NO FABRICATOR, INSTALLER, DEALER, AGENT OR EMPLOYEE HAS THE AUTHORITY TO MODIFY THE OBLIGATIONS OR LIMITATION OF THIS WARRANTY.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state; therefore, some of the limitations stated above may not apply to you. It is to your benefit to save your documentation upon purchase of a product. Rev. 03-07
**LACING ANCHOR**

<table>
<thead>
<tr>
<th>SIZE:</th>
<th>D</th>
<th>12 GA &amp; 14 GA are standard. Other sizes are available by special order.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LENGTH:</td>
<td>L</td>
<td>2-1/2&quot; &amp; 4-1/2&quot; are standard. Other lengths available by special order.</td>
</tr>
<tr>
<td>MATERIAL:</td>
<td>LOW CARBON STEEL</td>
<td>STAINLESS STEEL</td>
</tr>
<tr>
<td>PLATING:</td>
<td>Zinc plating is standard.</td>
<td>Does not apply to stainless.</td>
</tr>
</tbody>
</table>

**OTHER MATERIALS:**
Available by special order only.

**WASHERS:**
Self-locking washers are available in a variety of sizes, shapes, and materials.

**TO ORDER OR SPECIFY, GIVE:**
1. Product Code.................................................................LA
2. Size.....................................................................................D
3. Length ................................................................................L
4. Material ..............................................................................(if other than standard)
# SLIM LACING ANCHOR

<table>
<thead>
<tr>
<th>SIZE:</th>
<th>D</th>
<th>12 GA &amp; 14 GA are standard. Other sizes are available by special order.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LENGTH:</td>
<td>L</td>
<td>2-1/2&quot; &amp; 4-1/2&quot; are standard. Other lengths available by special order.</td>
</tr>
<tr>
<td>MATERIAL:</td>
<td>LOW CARBON STEEL</td>
<td>STAINLESS STEEL</td>
</tr>
<tr>
<td>PLATING:</td>
<td>Zinc plating is standard.</td>
<td>Does not apply to stainless.</td>
</tr>
<tr>
<td>NO-AB:</td>
<td>Furnished stamped NO AB to indicate non-asbestos material.</td>
<td></td>
</tr>
</tbody>
</table>

## OTHER MATERIALS:
Available by special order only.

## WASHERS:
Self-locking washers are available in a variety of sizes, shapes, and materials.

### TO ORDER OR SPECIFY, GIVE:
1. Product Code ................................................................. LS
2. Size ................................................................. D
3. Length ................................................................. L
4. Material ...........................................................(if other than standard)
# LACING ANCHORS

## BERGEN HOOK

![Bergen Hook Diagram]

<table>
<thead>
<tr>
<th>SIZE:</th>
<th>Flat Stock</th>
<th>3/16” X 1/16” dimensions are standard.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LENGTH:</td>
<td>L</td>
<td>2-1/2” and 4” lengths are standard.</td>
</tr>
<tr>
<td>MATERIAL:</td>
<td>LOW CARBON STEEL</td>
<td>STAINLESS STEEL</td>
</tr>
<tr>
<td>PLATING:</td>
<td>Zinc plating is standard.</td>
<td>Does not apply to stainless.</td>
</tr>
<tr>
<td>OTHER MATERIALS:</td>
<td>Available by special order only, based on requirements and quantities.</td>
<td></td>
</tr>
<tr>
<td>WASHERS:</td>
<td>Self-locking washers are available in 1-3/16” round (K120) size for use with this anchor as shown below.</td>
<td></td>
</tr>
</tbody>
</table>

### TO ORDER OR SPECIFY, GIVE:

1. Product Code ................................................................................. BH
2. Length .............................................................................................. L
3. Material .............................................................................................

### PART NO. WAMS-120-BH

**SELF-LOCKING WASHER**

- **WASHER:** Sold separately, not a component part of anchor.
- **MATERIAL:** Mild Steel, Stainless Steel

![Self-Locking Washer Diagram]
### LACING ANCHORS

#### QUILTING PIN

![Quilting Pin Diagram]

**SIZE:**
- D: 12 GA & 14 GA are standard. Other sizes are available by special order.
- WD: 1.187" diameter washer is standard.

**LENGTH:**
- L: 2-1/2" & 4-1/2" are standard. Other lengths available by special order.

**MATERIAL:**
- LOW CARBON STEEL
- STAINLESS STEEL

**PLATING:**
- Does not apply to Low Carbon.
- Does not apply to stainless.

**OTHER MATERIALS:**
Available by special order only.

**WASHERS:**
Self-locking washers are available in a variety of sizes, shapes, and materials.

**TO ORDER OR SPECIFY, GIVE:**

1. Product Code.................................QP
2. Size ..................................................D
3. Length ..............................................L
4. Material ...........................................(if other than standard)
LACING ACCESSORIES

LA HOOK

**LACING HOOK**

**SIZE:** One size as shown.

**MATERIAL:** Stainless Steel.

**NO-AB:** Furnished stamped NO AB to indicate non-asbestos material.

**TO ORDER OR SPECIFY, GIVE:**
1. Product Code .................................................................LAH
2. Material ...............................................................................

LA L100

**L100 LACING WASHER**

**SIZE:** One size as shown.

**MATERIAL:** Aluminum or Stainless Steel

**NO-AB:** Available stamped NO AB to indicate non-asbestos material.

**TO ORDER OR SPECIFY, GIVE:**
1. Product Code ................................................................. L2H
2. Material ...............................................................................

LA RING

**LACING RING**

**SIZE:** One size as shown.

**MATERIAL:** Zinc alloy - bright zinc plated

**TO ORDER OR SPECIFY, GIVE:**
1. Product Code .................................................................LRZA
The MIDWEST ultralight pin welder--SureShotII -- welds Cupheads, Weld Pins and Weld Studs up to 5/16” weld base. Featuring Hybrid Power Technology and Dual Operating Power, SureShotII is the most up-to-date Capacitor Discharge pin welder for all applications. Lightweight and rugged, SureShotII has the power to apply virtually any fastener used in the CD Insulation market: with only 110volt (or 220volt) incoming power.

Weight: 18lbs. Dimensions: 13.7” W X 11.6” D X 6” H

MIDWEST Fasteners’ basic pin welder, is a solid-state Capacitor Discharge studwelder. Capable of welding Weld Pins and Weld Studs up to 1/4” weld base in Mild Steel, Stainless & Aluminum materials, EAGLE’s standard features make it both portable and flexible for all standard applications.

Weight: 26 lbs. Dimensions: 10” W X 13” D X 8-1/2” H

MIDWEST’s standard Cuphead portable, the TALON includes all the features of the EAGLE pin system, plus Cuphead components and capability making this one of the key Insulator machines in the MIDWEST line.

Weight: 29 lbs. Dimensions: 10” W X 13” D X 8-1/2” H

The mid-line portable from MIDWEST Fasteners, the CD80 targets jobshop users and field insulators where more power is required. With weld capacity up to a 5/16” weld base, the CD80 incorporates higher capacity welding in a Capacitor Discharge 110volt system.

Weight: 56 lbs. Dimensions: 13-1/2” W X 21” D X 9” H

One of MIDWEST’s heavy-duty portables, the CD700 is a 110volt Capacitor Discharge system capable of all-type Weld Pins, CD Weld Studs, and Cuphead through-Insulation fasteners. With weld base capacity including 3/8” diameter, the CD700 can also weld Power Base pins to rust covered or contaminated surfaces.

Weight: 66 lbs. Dimensions: 13-1/2” W X 21” D X 9” H

For jobshop or in-the-field use, MIDWEST’s CD100 is a heavy-duty portable Capacitor Discharge machine. With weld base capability including 3/8” diameter, the CD100 can affix Weld Studs and Weld Pins (including heavy-duty Power tips) in Mild Steel, Stainless & Aluminum, using only 110volt power.

Weight: 66 lbs. Dimensions: 13-1/2” W X 21” D X 9” H

450 Richard St. • Miamisburg, OH 45342
e-mail: sales@midwestfasteners.com
website: www.midwestfasteners.com
Toll Free: 800-852-8352 • Fax: 937-866-4174