Associated Steel Corp. offers an excellent selection of both alloy and stainless "heavy hollow" materials. **KROMITE® #3 Hollow Bar** and **MIR 50® Bushing Stock** are designed to provide a high degree of reliability for general maintenance applications depending upon your requirement. Our unique steels are engineered to extend service life, provide optimum performance and reduce downtime of your equipment. We offer a large stocking inventory and can cut to your exact length.

## ALLOY STEEL

**KROMITE® #3 HOLLOW BAR - 4140 (mod.)**

Quench & Tempered, High Strength Alloy

<table>
<thead>
<tr>
<th>Key Features</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Quench &amp; Tempered</td>
<td></td>
</tr>
<tr>
<td>Fatigue Resistant</td>
<td></td>
</tr>
<tr>
<td>High Strength</td>
<td></td>
</tr>
<tr>
<td>Ease of Machining &amp; Welding</td>
<td></td>
</tr>
<tr>
<td>Fine Grain Structure</td>
<td></td>
</tr>
<tr>
<td>Free of Hard &amp; Soft Spots</td>
<td></td>
</tr>
</tbody>
</table>

### Typical Mechanical Properties*

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardness</td>
<td>269/341 BHN</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>145 KSI</td>
</tr>
<tr>
<td>Yield Strength</td>
<td>110 KSI</td>
</tr>
</tbody>
</table>

### Sizes Available*

- 3” OD x 1-1/2” ID
- 3-1/2” OD x 1-1/2” ID
- 4” OD x 2” ID

*Supplied as a rough size (OD & ID); will not finish to its nominal size.

## STAINLESS STEEL

**MIR 50® BUSHING STOCK - (mod.) Custom 450® Non-Galling, Corrosion Resistant PH Stainless**

<table>
<thead>
<tr>
<th>Key Features</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent Toughness</td>
<td></td>
</tr>
<tr>
<td>Corrosion Resistant, Like 316</td>
<td></td>
</tr>
<tr>
<td>2X Stress Relieved</td>
<td></td>
</tr>
<tr>
<td>Ease of Machining &amp; Welding</td>
<td></td>
</tr>
<tr>
<td>Galling Resistance</td>
<td></td>
</tr>
<tr>
<td>Low Memory</td>
<td></td>
</tr>
</tbody>
</table>

### Typical Mechanical Properties*

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardness</td>
<td>258/294 BHN</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>140 KSI</td>
</tr>
<tr>
<td>Yield Strength</td>
<td>108 KSI</td>
</tr>
</tbody>
</table>

### Sizes Available*

- 2-1/2” OD x 1” ID
- 3” OD x 1-1/2” ID
- 3-1/2” OD x 1-1/2” ID
- 4” OD x 2” ID
- 4-1/2” OD x 2-1/2” ID

*Rough machined with allowance for proper clean-up.

Contact our office for other sizes and configurations. Standard lengths available are 18”.

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**Heavy Hollow Alloy and Stainless**
ALLOY STEEL

KROMITE® #3 HOLLOW BAR - 4140 (mod.)
Quench & Tempered, High Strength Alloy

Kromite #3 Hollow Bar is a high quality, electric furnace melt, vacuum degassed, fatigue resistant alloy. This product was created to offer heavy industry a reliable material that could handle the rigors of repeated wear, torque, and flex for general purposes maintenance applications. Used in place of many of your commercial alloy grades including 4130, 4140, 4150, and 4340. Machinability rating is approximately 60%, depending on actual hardness. Typical surface hardness of this material is 269/341 BHN.

High Speed
Depth of Cut .150”
Speed 70 fpm
Feed .015 inch/revolution
Tooling C6

Carbide
Depth of Cut .150”
Speed 260 brazed, 330 throw-away
Feed .015 inch/revolution
Tooling C6 (Cutting Fluid: Soluble Oil 1:20)

Drilling
Point Angle 118°, relief 12°
Helix Angle 29° point: plan
Feed .005 inch/revolution

Note: In all cases, a certain degree of caution should be exercised when working with hardened alloys or PH stainless materials. Use equipment of sufficient capacity that is in good condition. Utilize machine operators that are properly trained and experienced in working with these materials. Appropriate safety gear should be utilized at all times.

Custom 450® is a registered trademark of Carpenter Technology Corporation.

STAINLESS STEEL

MIR 50® BUSHING STOCK - (mod.) Custom 450®
Non-Galling, Corrosion Resistant PH Stainless

Mir 50 Bushing Stock is a high performance, non-galling, corrosion resistant PH stainless. This product exhibits unique mechanical characteristics similar to 4140 and 4340 commercial grade metals, but with the corrosion resistance of a 316 austenitic stainless. Should be considered for applications where 304L, 316L, 410 and/or 416 stainless are currently utilized.

Use high speed tools.

Turning Single Point, and box.
Speed 70/90 fpm
Feed .015/.007 inch/revolution

Turning and Cut-off
Speed 70 fpm
Feed .015 inch/revolution

Drilling
1/4” Diameter
3/4” Diameter
Speed 50 fpm
Speed 70 fpm
Feed .004 inch/revolution
Feed .0015 inch/revolution

Milling
1/4” Diameter
3/4” Diameter
Speed 85 fpm
Speed 70 fpm
Feed .004 inch/revolution
Feed .0015 inch/revolution

Tap
Speed 12/25 fpm