Type THFE™ Heavy Duty Studs for Thin Sheets
For installation into sheets as thin as .031” / 0.8 mm

TYPE THFE™ HEAVY DUTY STUDS FOR THIN SHEETS

- Enlarged head diameter reduces stress on panel.
- Thicker head allows for larger hole in attached panels.
- Clinch design provides high-strength in sheets as thin as .031” / 0.8 mm.
- Recommended for use in steel or aluminum sheets HRB (Rockwell “B” Scale) 85 or less and HB (Hardness Brinell) 165 or less.

<table>
<thead>
<tr>
<th>Thread Size x Pitch</th>
<th>Type</th>
<th>Thread Code</th>
<th>Length Code “L” ±.015 (Length Code in 16ths of an inch)</th>
<th>Min. Sheet Thickness</th>
<th>Hole Size in Sheet ±.005</th>
<th>Max. Hole in Attached Parts</th>
<th>H ±.01</th>
<th>S Max. (1)</th>
<th>T Max.</th>
<th>Min. Dist. Hole To Edge</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIFIED</td>
<td>Steel</td>
<td>.250-20 (1/4-20)</td>
<td>THFE 0420 8 12 16 20 24 28 32 .031 .250 .340 .462 .109 .069 .446</td>
<td>.500 .750 1.00 1.25 1.75 2.00</td>
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<tr>
<td>METRIC</td>
<td>Steel</td>
<td>.313-18 (5/16-18)</td>
<td>THFE 0518 8 12 16 20 24 28 32 .031 .312 .402 .586 .117 .099 .596</td>
<td>.500 .750 1.00 1.25 1.75 2.00</td>
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</tr>
</tbody>
</table>

Tensile strength: 120 ksi

All dimensions are in inches.

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>M6 x 1</td>
<td>THFE</td>
<td>M6</td>
<td>15 20 25 30 35 40 50 .8 6 8.3 11.35 2.62 1.7 10.5</td>
<td>.8 .0 13 2.9 4 5.24</td>
<td>.15</td>
<td></td>
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</tr>
<tr>
<td>M8 x 1.25</td>
<td>THFE</td>
<td>M8</td>
<td>15 20 25 30 35 40 50 .8 8 10.3 15.3 2.9 2.54 15</td>
<td>.8 .13 2.9 4 5.24</td>
<td>.15</td>
<td></td>
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</tbody>
</table>

Tensile strength: 900 MPa

(1) Threads are gaugeable to within 2 pitches of the “S” Max. dimension. A class 3B/5H maximum material commercial nut shall pass up to the “S” Max. dimension.

Threads: External, ASME B1.1, 2A / ASME B1.13M, 6g
Material: Hardened carbon steel
Finish: ZI - Zinc plated, 5µm, colorless
For use in sheet hardness: HRB 85 / HB 165 or less
INSTALLATION

1. Prepare properly sized mounting hole in sheet. Do not perform any secondary operations such as deburring.
2. Insert stud through mounting hole (punch side) of sheet and into anvil hole.
3. With punch and anvil surfaces parallel, apply squeezing force on the punch sufficient only to embed the ribs on the head of the stud into the sheet.

Tooling for sheet thicknesses less than .052” / 1.31 mm with 1/4” / M6 thread sizes, and less than .067” / 1.71 mm with 5/16” / M8 thread sizes.

Tooling for sheet thicknesses .052” / 1.31 mm and greater with 1/4” / M6 and .067” / 1.71 mm thread sizes and greater with 5/16” / M8 threads.

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PERFORMANCE DATA

<table>
<thead>
<tr>
<th>Thread Code</th>
<th>Max. Nut Tightening Torque (ft. lbs.)</th>
<th>Test Sheet Thickness and Material (in.)</th>
<th>Sheet Hardness (HRB)</th>
<th>Installation (lbs.)</th>
<th>Pushout (lbs.)</th>
<th>Torque-out (in. lbs.)</th>
<th>Tensile Strength (lbs.)</th>
<th>Pull Thru (lbs.)</th>
<th>Test Bushing Hole Size For Pull Thru Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>M6</td>
<td>10</td>
<td>.08 mm Aluminum</td>
<td>38</td>
<td>39.2</td>
<td>550</td>
<td>7.3</td>
<td>18.1</td>
<td>13</td>
<td>.500</td>
</tr>
<tr>
<td>M8</td>
<td>21.7</td>
<td>.08 mm Cold-rolled Steel</td>
<td>47</td>
<td>60.1</td>
<td>886</td>
<td>13.4</td>
<td>18.1</td>
<td>14.3</td>
<td>.500</td>
</tr>
</tbody>
</table>

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(1) Published installation forces are for general reference. Actual set-up and confirmation of complete installation should be made by observing proper seating of fastener as described in the installation steps. Other performance values reported are averages when all proper installation parameters and procedures are followed. Variations in mounting hole size, sheet material, and installation procedure may affect performance. Performance testing this product in your application is recommended. We will be happy to provide technical assistance and/or samples for this purpose.

(2) Installation controlled by proper cavity depth in punch.

(3) Head size is adequate to ensure failure in threaded area.

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