CATALOG FOR PRESSURE CONTROL EQUIPMENT

Supplement 2

LIFTING ACCESSORIES FOR BLOWOUT PREVENTERS
AND SNUBBING STACKS

This catalog supplement provides information on Lifting Plates and attachments to hoist Type U BOP’s and other assembled BOP stacks. Included you will find illustrations, installation instructions, application information and BOP weights.

TRADEMARK

WOODCO USA presents this catalog to gain your attention and secure your business
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1.0 General

1.1 Purpose

WOODCO USA presents this catalog to provide useful information about WOODCO USA Blowout Preventer Lifting Equipment. It describes the application, designates the applicable specification and reference standard, indicates the material specification, and provides a quality statement.

1.2 Application

Lifting Plates and Flanges provide a safe and convenient way to lift individual Blowout Preventers to assemble stacks, and then lift entire stacks using these same Lifting Plates to make efficient installation of the stack to the wellhead.

1.3 Reference Standards

The design of the WOODCO USA Lifting Plates meets or exceeds requirements stipulated in API Spec 8C for Drilling and Production Hoisting Equipment. The design permits the use of standard shackles and lifting equipment currently available and commonly used. Lifting plates also meet or exceed requirements for lifting devices as stipulated in API Spec 17D, Subsea Wellhead and Christmas Tree Equipment.

- API Spec 8C
- API Spec 17D
- ASTM A320 GR-L7
- ASTM A194 GR-2H

1.4 Material

WOODCO USA manufactures Lifting Equipment from material selected and inspected for this purpose.

Users should specify any temperature service requirement below -20°C (-4°F).

1.5 Quality

WOODCO USA defines “Product Quality” as conformance to specified requirements. We select suppliers on the basis of their ability to provide materials, products and/or services which conform to WOODCO USA and industry specifications. All individual units of Lifting Equipment must pass inspections during and after production, and all individual units must pass a final magnetic particle examination.

WOODCO USA offers, as an option, load testing of Lifting Equipment to 1.5 times rated capacity.

Users may have confidence that units will always support the rated capacity.

Caution:

Users should never perform field welding on any portion of Lifting Equipment. Field welding may crack or otherwise degrade the properties of the material. For other cautions and recommendations for in-service field inspections, see API RP 8B.
2.0 User Information

2.1 How To Use

Operators may lift type “U” BOP’s separately or as assembled stacks. Lifting Plates have capacities rated to lift assembled stacks, but operators must assure the complete stack weight does not exceed the capacity of the lifting equipment, from the plates through all connections to the hoisting mechanism.

Each new Lifting Plate has a rated capacity marked on the plate. This rated capacity requires specific torque for specified bolts and nuts securing the Lifting Plate to the BOP. These bolt and nut grades and torques appear in Table 3 of this document. See page 8 of this catalog.

Use plates only in pairs with 4 studs and 4 nuts for each plate. See page 9 of this catalog.

Figure 3 on the next page provides an example of an assembled BOP stack. Use the catalog listed weight of each BOP added together, plus any allowance for Spools, Adapters, bolting and other accessory equipment, for an estimated total weight for lifting. A properly sized spreader bar must minimize the angular pull of lifting lines. Operators must never lift assemblies that weigh more than the rated capacity of lifting components or connecting links.

Operators should always avoid shock loading of any lifting equipment or attachment points on equipment used for lifting. Accidental shock loading requires careful inspection of all connecting points and linkages subjected to the shock.

2.2 Other Lifting Options

WOODCO USA offers, other types of BOP Lifting Plates and Lifting Flanges for various applications. Different designs allow the location of the lifting point so that out of balance snubbing stacks with pressure equalizing loops hang perpendicular (see Figure 2 below).

Inquire with WOODCO USA for your particular needs.
Figure 3
STACK LIFT WORKSHEET
(MODIFY AS NECESSARY TO APPROXIMATE YOUR STACK)

CAUTION:
NEVER LIFT MORE TOTAL WEIGHT THAN THE RATED CAPACITY OF THE LIFTING COMPONENTS OR LINKS.

ALWAYS RIG LIFTING LINKAGE SO THAT LINES AND LINKAGES MAKE AN APPROXIMATE VERTICAL PULL.

SEE BOP WEIGHT TABLES 1 & 2.

SPREADER BAR
SPREADER BAR WIDTH MUST APPROXIMATE CENTER TO CENTER DISTANCE BETWEEN LIFTING PLATES. SEE TABLE 1 & 2 FOR WEIGHTS AND C TO C DIMENSIONS.

CENTER TO CENTER DISTANCE (SEE TABLE 2)

5° MAX.

ANNULAR
WT# __________

DOUBLE RAM TYPE “U”
WT# __________

SINGLE RAM TYPE “U”
WT# __________

DRILLING SPOOL
WT# __________

SINGLE RAM TYPE “U”
WT# __________

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**TABLE 1**

**ANNULAR BOP WEIGHT TABLES***

<table>
<thead>
<tr>
<th>HYDRIL GK ANNULAR BOP</th>
<th>SHAFER ANNULAR BOP BOLTED COVER (B)</th>
<th>CAMERON “D” ANNULAR BOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE AND WORKING PRESSURE (PSI)</td>
<td>WEIGHT (LBS)</td>
<td>SIZE AND WORKING PRESSURE (PSI)</td>
</tr>
<tr>
<td>7-1/16&quot; 3000</td>
<td>2,715</td>
<td>7-1/16&quot; 3000 (B)</td>
</tr>
<tr>
<td>7-1/16&quot; 5000</td>
<td>3,940</td>
<td>7-1/16&quot; 5000 (B)</td>
</tr>
<tr>
<td>9&quot; 3000</td>
<td>3,560</td>
<td>7-1/16&quot; 10000 (B)</td>
</tr>
<tr>
<td>9&quot; 5000</td>
<td>6,000</td>
<td>11&quot; 3000 (B)</td>
</tr>
<tr>
<td>11&quot; 3000</td>
<td>5,300</td>
<td>11&quot; 5000 (B)</td>
</tr>
<tr>
<td>11&quot; 5000</td>
<td>8,250</td>
<td>11&quot; 10000 (B)</td>
</tr>
<tr>
<td>13-5/8&quot; 3000</td>
<td>8,784</td>
<td>13-5/8&quot; 3000 (B)</td>
</tr>
<tr>
<td>13-5/8&quot; 5000</td>
<td>13,800</td>
<td>13-5/8&quot; 5000 (B)</td>
</tr>
<tr>
<td>16-3/4&quot; 2000</td>
<td>11,417</td>
<td>13-5/8&quot; 10000 (W)</td>
</tr>
<tr>
<td>16-3/4&quot; 3000</td>
<td>14,868</td>
<td>16-3/4&quot; 5000 (W)</td>
</tr>
<tr>
<td>16-3/4&quot; 5000</td>
<td>21,000</td>
<td>18-3/4&quot; 5000 (W)</td>
</tr>
<tr>
<td>21-1/4&quot; 5000</td>
<td>48,000</td>
<td>21-1/4&quot; 2000 (W)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HYDRIL MSP-2000 ANNULAR BOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE AND WORKING PRESSURE (PSI)</td>
</tr>
<tr>
<td>7-1/16&quot; 3000</td>
</tr>
<tr>
<td>9&quot; 2000</td>
</tr>
<tr>
<td>11&quot; 2000</td>
</tr>
<tr>
<td>21-1/4&quot; 2000</td>
</tr>
</tbody>
</table>

Note: These weight tables use published numbers taken from manufacturers’ catalogs. WOODCO USA provides this information for reference only. Anyone making use of the information presented does so at his own risk and assumes any and all liability resulting from such use.

* Consult manufacturer for sizes and weights not shown, or any observed discrepancy.
### TABLE 2

**RAM TYPE U BOP DIMENSIONS AND WEIGHTS**

<table>
<thead>
<tr>
<th>SIZE AND WORKING PRESSURE (PSI)</th>
<th>TYPE &quot;U&quot; BOP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WEIGHT (LBS)</td>
</tr>
<tr>
<td></td>
<td>SINGLE</td>
</tr>
<tr>
<td>7-1/16&quot; 3000</td>
<td>2,600</td>
</tr>
<tr>
<td>7-1/16&quot; 5000</td>
<td>2,800</td>
</tr>
<tr>
<td>7-1/16&quot; 10000</td>
<td>3,550</td>
</tr>
<tr>
<td>7-1/16&quot; 15000</td>
<td>3,800</td>
</tr>
<tr>
<td>11&quot; 5000</td>
<td>5,600</td>
</tr>
<tr>
<td>11&quot; 10000</td>
<td>6,400</td>
</tr>
<tr>
<td>11&quot; 15000 MOD.79</td>
<td>10,300</td>
</tr>
<tr>
<td>13-5/8&quot; 3000</td>
<td>7,200</td>
</tr>
<tr>
<td>13-5/8&quot; 5000</td>
<td>7,700</td>
</tr>
<tr>
<td>13-5/8&quot; 10000</td>
<td>10,300</td>
</tr>
<tr>
<td>16-3/4&quot; 5000 MOD. B</td>
<td>13,750</td>
</tr>
<tr>
<td>16-3/4&quot; 10000</td>
<td>23,300</td>
</tr>
<tr>
<td>20-3/4&quot; 3000</td>
<td>13,650</td>
</tr>
<tr>
<td>21-1/4&quot; 2000</td>
<td>13,250</td>
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<tr>
<td>21-1/4&quot; 5000</td>
<td>30,000</td>
</tr>
<tr>
<td>21-1/4&quot; 10000</td>
<td>34,650</td>
</tr>
</tbody>
</table>

* Consult manufacturer for sizes and weights not shown, or any observed discrepancy.

1 Lifting Plates always used in pairs, double capacity each for BOP or BOP stack lifting.

Note: Lift Plates for Type "U" BOP’s sold as pairs, identified by Lift Plate Number. Studs and Nuts sold separately, identified by part number and sized for the BOP identified in the first column of this table.

Note: These weight tables use published numbers taken from manufacturers’ catalogs. WOODCO USA provides this information for reference only. Anyone making use of the information presented does so at his own risk and assumes any and all liability resulting from such use.
### TABLE 3
**RAM TYPE U BOP LIFTING PLATE DIMENSIONS**

![Diagram of lifting plate]

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>CAPACITY EA. (TONS)¹</th>
<th>H (INCHES)</th>
<th>W (INCHES)</th>
<th>WEIGHT EA.² (LBS)</th>
<th>B7/L7 STUD DIAMETER³ (INCHES)</th>
<th>TIGHTENING TORQUE⁴ (FT.LBS.)</th>
<th>D (INCHES)</th>
<th>T (INCHES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLATE #1</td>
<td>20</td>
<td>14-1/2</td>
<td>8-3/8</td>
<td>43</td>
<td>1</td>
<td>474</td>
<td>2-1/8</td>
<td>2</td>
</tr>
<tr>
<td>PLATE #2</td>
<td>35</td>
<td>16</td>
<td>11-3/8</td>
<td>52</td>
<td>1-1/4</td>
<td>953</td>
<td>3</td>
<td>2-1/4</td>
</tr>
<tr>
<td>PLATE #3</td>
<td>55</td>
<td>18-1/2</td>
<td>13-7/8</td>
<td>108</td>
<td>1-1/2</td>
<td>1,677</td>
<td>3</td>
<td>2-3/4</td>
</tr>
<tr>
<td>PLATE #4</td>
<td>100</td>
<td>23-1/4</td>
<td>21</td>
<td>260</td>
<td>2</td>
<td>4,061</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

¹ Lifting Plates always used in pairs, double capacity each for BOP or BOP stack lifting.
² Lifting Plates always used in pairs, double weight each for weight of pair.
³ L7 Stud with 1 2H Hex Nut.
⁴ Torque Value assume the use of API RP 5A3 / ISO 13678 thread compound.

Note: Lift Plates sold as pairs, identified by Lift Plate Number. Studs and Nuts sold separately, identified by part number and sized for the BOP as identified in the first column of Table 2.

Lift Plates listed above fit the most common Ram Type U BOP’s in service today. All Manufacturers continually strive to improve their existing products and introduce new products to satisfy customer needs. UL and UM BOP types have entered the market and WOODCO USA also offers Lifting Plates, and Safety Hoist Rings, to fit these newer models.
2.3 Proper installation of replacement Tap End Studs, and Lifting Plates.

Remove the top four tap end studs that retain locking screw housing.

Install new (longer) tap end studs (see Table 3) making sure to lubricate and install the shorter thread end into the tapped hole in the BOP bonnet (make certain that the replacement stud screws into bonnet tapped hole a distance equal to the stud diameter).

![Figure 5](image)

Figure 5
Worksheet

PLACE NEW STUD IN HOLE AND TOUCH ENTRANCE TO TAPPED SURFACE.

ENTRANCE TO TAPPED SURFACE.

L' EXTENSION BEFORE THREAD ENGAGEMENT ____________

L' MINUS EXTENSION AFTER THREAD ENGAGEMENT ______________

DIFFERENCE IN L ____________ MUST EQUAL D +1/8" -0"

The new studs must engage an amount equal to their diameter. Use worksheet, Figure 2 above for convenience.

Install the Lifting Plate onto the longer tap end studs and secure the plate by tightening lubricated nuts (lubricate both threads and nut engagement faces) to the specified torque shown in Table 4.

All Lifting Plates manufactured by WOODCO USA receive 100% mag particle inspection.

WOODCO USA offers individual load testing of Lifting Plates at 1.5 x capacity at customer request and at additional cost.
2.4 Other Available Lifting Attachments

WOODCO USA offers other types of BOP Lifting Plates and Lifting Flanges for various applications. Different designs allow the location of the lifting point so that out of balance snubbing stacks with pressure equalizing loops hang perpendicular. Inquire with WOODCO USA for your particular needs.
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