Safety Lifting Clamps
Operating and Maintenance Instructions

Document P/N: 2L29635
Release Date: 12/3/2014
SAFETY INFORMATION

WARNING

IMPORTANT SAFETY INFORMATION ENCLOSED. READ THIS OPERATING AND MAINTENANCE INSTRUCTIONS MANUAL BEFORE OPERATING PRODUCT.

IT IS THE RESPONSIBILITY OF THE EMPLOYER TO PLACE THE INFORMATION IN THIS MANUAL INTO THE HANDS OF THE OPERATOR. FAILURE TO READ, UNDERSTAND AND FOLLOW THE OPERATING AND MAINTENANCE INSTRUCTIONS MANUAL COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

Lifting Devices can be harmful or fatal to the operator. Follow all recommendations regarding safe lifting practices:

• Do not exceed the rated load or lifting loads specified by Weir SPM
• Do not operate the Lifting Clamp with damaged or missing parts
• Do not lift personnel
• Do not lift loads over personnel
• Do not leave suspended loads unattended
• Do not use the lifting clamp without having read and understood this manual
• Do not make alterations to clamp and its components

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I. Product Description:

Flow Iron is used daily in the Oil & Gas Industry. Typically a crane and a spotter is utilized when handling heavy products such as flow iron, increasing the possibility of a mishap occurring. Most often there is not a safe way to complete this simple operation of moving iron from a truck to the ground during rig set up & break down.

Weir SPM’s Safety Lifting Clamps allow effective lifting of Fracturing Iron Pipe. The safety lifting clamps will provide the following advantages to the Oil & Gas Industry:

- Increased employee efficiency
- Ideal solution for lifting loads where headroom is critical
- Adds stability to lift
- Load test certificate qualifying Clamp Assembly up to 125% its rated load
- Designed and manufactured to ASME B30.20-2010
- Lifting capacity verified with destructive testing
- Creates a safe working environment by preventing accidents
- Weir SPM Engineered design
- Compatible with Weir SPM and all major suppliers (3” & 4” Iron)
- Engineered to Weir SPM’s Quality Assurance System, and to ASME B30.20-2010, the Safety Lifting Clamps are completely traceable.

II. List of Components

The following is a list of the Safety Lifting Clamp assembly as shown in Figure 1:

1. Lifting clamp (8620 Grade Q13 per ASTM A732)
   - Compliant with NACE MR0175
2. U-Bolts (ASME 307)
3. Hex Nut Flange (Grade 8)

III. Sizes Available

Weir SPM offers 4 different assemblies to fit pipe ranging from 3.50” to 6.50” O.D. Using the appropriate assembly number to the respective pipe size will guarantee the best fit.

<table>
<thead>
<tr>
<th>Pipe Size O.D. (inches)</th>
<th>Assembly No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.50 - 4.00</td>
<td>2A29635</td>
</tr>
<tr>
<td>4.06 - 4.56</td>
<td>2A29636</td>
</tr>
<tr>
<td>5.00 - 5.50</td>
<td>2A29637</td>
</tr>
<tr>
<td>6.00 - 6.50</td>
<td>2A29638</td>
</tr>
</tbody>
</table>

Figure 1: Drawing 2L29634
Available sizes and parts are shown

Figure 2: Pipe Size and respective Assembly Number

The main clamp (as shown in Figure 3 above) has identification marking per ASME B30.20-2010.

- Manufacture’s name
- Manufacture’s Model (Part Number)
- Size of piping specific to Clamp
- Rated Load
- ASME BTH-1 Design Category
- ASME BTH-1 Design Class
Weir SPM’s Safety Lifting Clamps allow effective lifting of moving pipe around a frac site was unsafe. Prior to the availability of Weir SPM’s SPM Engineering offers a document, which details the location of the Safety Lifting Clamps. This is achieved by noting the distance from the main clamp (as shown in Figure 3 on page 3) has identification marking per ASME B30.20-2010. Each clamp component is fully traceable with the manufacturer’s name, heat code, and operational testing will be completed before being placed back into service.

Operational Tests
Before the assembly is recertified it must undergo operational testing. This will consist of the following:

1. Attack the Safety Lifting Clamp to the respective pipe.
2. Hold the assembly a sufficient distance to ensure that the load is supported by the lifter and that the center of gravity is achieved.
3. After the lift test is completed, a visual inspection of the assembly for any deformation cracks or excessive wear on any bolts or nuts of the assembly, they will be placed out of service and replaced with new bolts and nuts.

IV. Identification:
Each clamp component is fully traceable with the manufacturer’s name, heat code, and working load limits; allowing 100% traceability of the Safety Lifting Clamp. The following information is given in good faith and should be consulted if any questions arise.

Weir SPM offers a variety of 4 different assemblies to fit pipe ranging from 3.50” to 6.50”. Using the appropriate assembly number to the respective pipe size will guarantee the best fit.

The following are the installation instructions once the clamp is properly installed with reference to Weir SPM’s Standard 4S29749.

a. Structural deformation, cracks or excessive wear on any bolts or nuts (i.e. Clamp, U-bolts, Nuts).

b. Dings exceeding 1/4" on the Lifting Clamp body.

c. Damaged thread profile on the U-bolts, i.e. gibbing at the threads.

d. Excessive wear indications on lifting clamp assembly that would impact the design or manufacturing of the safety lift.

If it is determined that the damage has only affected the bolts or nuts of the assembly, they will be placed out of service and replaced with new bolts and nuts.

The assembly is inspected and re-mounted back onto the piping assembly operational testing will be completed before being placed back into service.

Recertification Records
To ensure a safe and reliable maintenance program, Weir SPM will maintain the recertification records and will be made available to the respective company’s Safety Maintenance Supervisor. This will consist of the following:

• Recertification reports
• Operational test reports
• Periodic inspection reports
• Documentation of replaced parts

VII. Recertification
A complete recertification inspection will be conducted by Weir SPM every 5 years for normal service, 4 years for heavy service and 3 months interval for severe service. Any newly used or replaced U-bolts are also inspected. The Safety Lifting Clamp will be made whether they constitute a hazard. Inspection records will be documented to provide the basis for a continuing evaluation. If the inspection deems that the main clamp is not safe for operation, it will be placed out of commission.

SPM will maintain the recertification records and will be made available to the respective company’s Safety Maintenance Supervisor. This will consist of the following:

• Recertification records
• Operational test reports
• Periodic inspection reports
• Documentation of replaced parts
Weir SPM’s Safety Lifting Clamps allow effective lifting of moving pipe around a frac site was unsafe. Prior to the availability of Weir SPM’s products or long lengths of pipe, typically a crane and a pulling system or long lengths of pipe, typically a crane and a pulling system was necessary. The use of iron in various sizes is essential to daily maintenance and inspection. Weir SPM Engineering should be contacted if any additional configurations of iron need to be considered for placement of the Safety Lifting Clamps. This information is not meant to replace any existing Company’s safety policies or practices, which should be strictly followed.

V. Identification

Each clamp component is fully traceable with the manufacturer’s name, heat code, and working load limit; allowing 100% traceability of the Safety Lifting Clamping Equipment. The customer’s maintenance and inspection environment and facilities is improved to keep track of maintenance and inspection.

1. Weir SPM offers 4 different assemblies to fit pipe ranging from 3.50” to 6.50” O.D. Using the appropriate assembly number to the respective pipe size will guarantee the best fit.

II. List of Components

The following is a list of the Safety Lifting Clamp assembly as shown in Figure 1:

The main clamp (as shown in Figure 3 on page 3) has identification marking per ASME B30.20-2010. This information is given in good faith and should aid in the safe use of your Weir SPM product. The following information is given in good faith and should aid in the safe use of your Weir SPM product.

1. Compliant with NACE MR0175
2. Lifting clamp (8620 Grade Q13 per ASTM A732)
3. U-Bolts (ASME 307)
4. Hex Nuts Flange

The following is a list of the Safety Lifting Clamp assembly as shown in Figure 3:

<table>
<thead>
<tr>
<th>PART NO</th>
<th>“A” P/N</th>
<th>“B” P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>P29622</td>
<td>08.00 - 06.50</td>
<td>P29312</td>
</tr>
<tr>
<td>P29617</td>
<td>08.00 - 06.50</td>
<td>P29516</td>
</tr>
<tr>
<td>P29615</td>
<td>05.10 - 05.50</td>
<td>P29526</td>
</tr>
<tr>
<td>P29616</td>
<td>05.10 - 05.50</td>
<td>P29526</td>
</tr>
</tbody>
</table>

Figure 1: Drawing 2P29622

Available sizes and parts are shown as shown in Figure 2:

Figure 2: Pipe Size and respective Assembly number

Table 1:

<table>
<thead>
<tr>
<th>PIPE SIZE (INCHES)</th>
<th>PART NO</th>
<th>“A” P/N</th>
<th>“B” P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.50-4.00</td>
<td>P29311</td>
<td>6-56</td>
<td>2P29257</td>
</tr>
<tr>
<td>4.06-4.56</td>
<td>P29330</td>
<td>6-56</td>
<td>2P29320</td>
</tr>
<tr>
<td>5.00-5.50</td>
<td>P29332</td>
<td>6-56</td>
<td>2P29326</td>
</tr>
<tr>
<td>6.00-6.50</td>
<td>P29332</td>
<td>6-56</td>
<td>2P29326</td>
</tr>
</tbody>
</table>

Figure 3: Marking requirements per ASME B30.20-2010

III. Sizes Available

Weir SPM offers 4 different assemblies to fit pipe ranging from 3.50” to 6.50” O.D. Using the appropriate assembly number to the respective pipe size will guarantee the best fit.

<table>
<thead>
<tr>
<th>ASSY NO</th>
<th>PART NO</th>
<th>“A” P/N</th>
<th>“B” P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>2A29622</td>
<td>08.00 - 06.50</td>
<td>P29312</td>
<td>P29515</td>
</tr>
<tr>
<td>2A29617</td>
<td>08.00 - 06.50</td>
<td>P29516</td>
<td>P29526</td>
</tr>
<tr>
<td>2A29615</td>
<td>05.10 - 05.50</td>
<td>P29526</td>
<td>P29531</td>
</tr>
<tr>
<td>2A29616</td>
<td>05.10 - 05.50</td>
<td>P29526</td>
<td>P29531</td>
</tr>
</tbody>
</table>

Figure 4: Center arrow feature of clamp used to align the clamp in the center of the pipe assembly.

IV. Installation

The following information is given in good faith and should aid in the safe use of your Weir SPM product.

1. New and reinstalled Weir SPM Safety Lifting Clamp

Weir SPM recommends the following inspection procedures and guidelines based on ASME B30.20-2010; September 2020:

Assembly. Identification with traceability promotes a safer environment. Proper distance is determined on the pipe:

1. Measure the distance from the union end (as specified in 423740) to the center of the pipe.
2. Align the center of the clamp arrow feature (as shown in Figure 4 below) to the center of the pipe.
3. Install the two U-Bolts through each hole on the main clamp.
4. Tighten the (4) nuts onto the U-bolts.
5. Torque each nut equally to 60 ft-lbs.

The following is a list of the Safety Lifting Clamp assembly as shown in Figure 3:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART NO</th>
<th>“A” P/N</th>
<th>“B” P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. U-Bolts</td>
<td>ASME 307</td>
<td>2P29257</td>
<td>P29320</td>
</tr>
<tr>
<td>2. Flange</td>
<td>Lifting Clamp</td>
<td>P29326</td>
<td>P29326</td>
</tr>
<tr>
<td>3. Hex Nut Flange</td>
<td>&quot;A&quot;</td>
<td>P29312</td>
<td>P29312</td>
</tr>
<tr>
<td>4. Hex Nut Flange</td>
<td>&quot;B&quot;</td>
<td>P29316</td>
<td>P29316</td>
</tr>
<tr>
<td>5. Pipe Size O.D.</td>
<td>(Inches)</td>
<td>P29316</td>
<td>P29316</td>
</tr>
</tbody>
</table>

Figure 4: Center arrow feature of clamp used to align the clamp in the center of the pipe assembly.

V. Inspection

Weir SPM recommends the following inspection procedures and guidelines based on ASME B30.20-2010; September 2020:

Initial Inspection

1. New and reinstalled Weir SPM Safety Lifting Clamp

Weir SPM recommends the lifting clamp be inspected prior to use as shown in Figure 3:

1. Visual examination of the Lifting Clamp Assembly by the operator before and during each lift made by the lifter. This will include special attention to the lifting clamp assembly for any deformation cracks or other defects will be completed. The following information is given in good faith and should aid in the safe use of your Weir SPM product.

a. Visible examination of the Lifting Clamp Assembly by the operator before and during each lift made by the lifter. This will include special attention to the lifting clamp assembly for any deformation cracks or other defects will be completed.

b. Structural deformation, cracks or excessive wear on any part of the assembly (i.e. Clamp, U-bolts, Nuts)

1. If any above referenced damage or defects are discovered during use, the appropriate management shall be notified and the Safety Clamp Assembly removed from service and lifted Weir SPM for further inspection. (Heavy and/or severe inspection procedures shall be made available to the respective company’s Safety/Maintenance Supervisor. This will consist of the following:

Recertification Records

To ensure a safe and reliable maintenance program, Weir SPM will maintain the recertification records and will not be made available to the respective company’s Safety/Maintenance Supervisor. This will consist of the following:

- Recertification reports
- Operational test reports
- Periodic inspection reports
- Documentation of replaced parts

VII. Recertification
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