



Excellent
Oil & Gas
Solutions



Safety Lifting Clamps

Operating and Maintenance Instructions



SAFETY INFORMATION



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

Contents

Product Description.....	3
List of Components.....	3
Sizes Available.....	3
Identification.....	3
Installation.....	4
Inspection.....	4
Recertification.....	5

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.

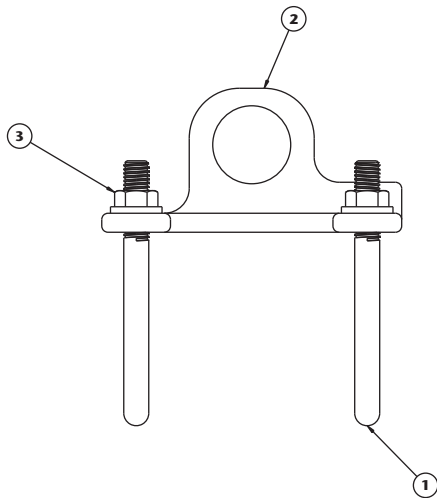
Weir SPM's Safety Lifting Clamps allow effective lifting of Fracturing Iron Pipe. The safety lifting clamps will provide the following advantages to the Oil & Gas Industry:

- 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)



ITEM	QTY	PART NO	DESCRIPTION
3	4	P29623	½ ~13 HEX NUT FLANGE
2	1	"B"	LIFTING CLAMP
1	2	"A"	U-BOLT

2A29638	Ø6.00 - Ø6.50	P29332	2P29331
2A29637	Ø5.00 - Ø5.50	P29327	2P29326
2A29636	Ø4.06 - Ø4.56	P29330	2P29320
2A29635	Ø3.50 - Ø4.00	P29317	2P29257
ASSY NO.	O.D.SIZE	"A" P/N	"B" P/N

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

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.

Pipe Size O.D. (inches)	Assembly No.
3.50 - 4.00	2A29635
4.06 - 4.56	2A29636
5.00 - 5.50	2A29637
6.00 - 6.50	2A29638

Figure 2: Pipe Size and respective Assembly Number

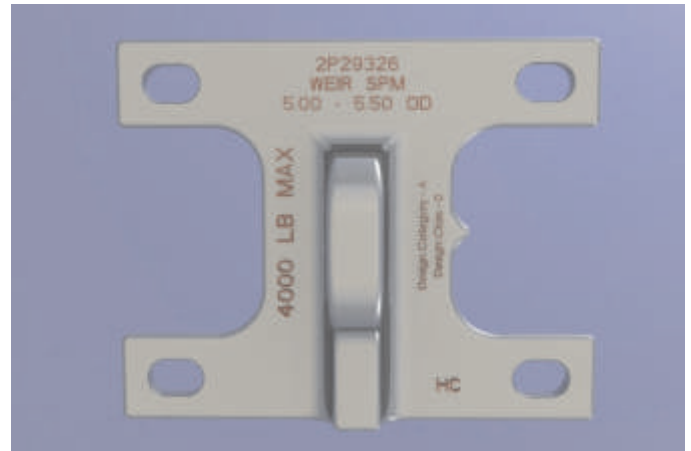


Figure 3: Marking requirements per ASME B30.20-2010

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

- Manufacturer's name
- Manufacturer's Model (Part Number)
- Size of piping specific to Clamp
- Rated Load
- ASME BTH-1 Design Category
- ASME BTH-1 Design Class

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

- Manufacturer's name
- Manufacturer's Model (Part Number)
- Size of piping specific to Clamp
- Rated Load
- ASME BTH-1 Design Category
- ASME BTH-1 Design Class

V. Installation

The following information is given in good faith and should aid in the safe use of your Weir SPM product. This information is not meant to replace any existing Company's safety policies or practices, which should be strictly followed.

Safety Lifting Clamps will create a stable lifting platform for all 3" and 4" piping. However, effort must be made to ensure that the center of gravity for each pipe assembly is located between the two mounting u-bolts. Failure to comply with this requirement may result in unbalanced loads during lifting.

Weir SPM offers a document, which details the location of the center of gravity for all common 3" and 4" pipe assemblies. This is achieved by notating the distance from the end of each pipe, to the center point of each lifting clamp. Contact your local Weir SPM service center and request 4S29749 for additional installation information.

Weir SPM Engineering should be contacted if any additional configurations of iron need to be considered for placement of the Safety Lifting Clamps.

The following are the installation instructions once the proper distance is determined on the pipe:

1. Measure the distance from the union end (as specified in 4S29749) 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 component.
4. Hand tighten the (4) nuts onto the U-bolts.
5. Torque each nut equally to 60 ft-lbs.

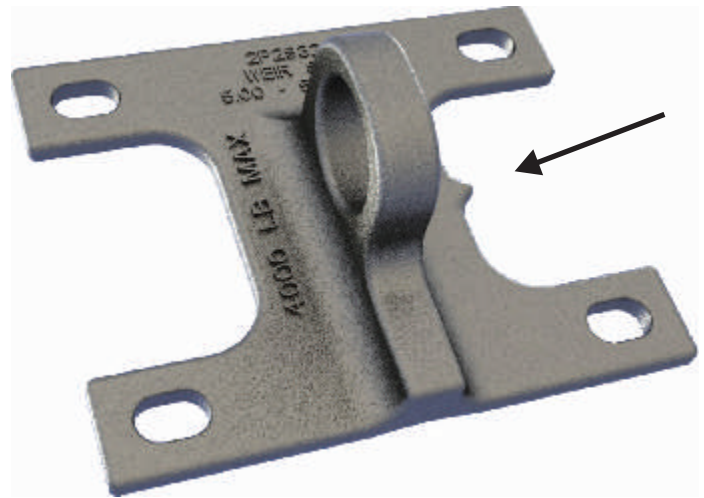


Figure 4: Center arrow feature of clamp used to align the clamp in the center of the pipe assembly.

VI. Inspection

Weir SPM recommends the following Inspection procedures and guidelines based on ASME B30.20-2010 standard:

Initial Inspection

1. New and reinstalled Weir SPM Safety Lifting Clamp Assemblies shall be inspected by a designated person for proper installation with reference to Weir SPM's Standard 4S29749.

Every Lift Inspection

Weir SPM recommends the lifting clamp be inspected prior to each use as specified in ASME B30.20-2010:

- 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 following:
 - o Verifying proper assembly
 - o Cracks or deformations on the Lifting Clamp body
 - o Dings exceeding 1/4 in on the Lifting Clamp body
 - o Damaged thread profile on the U-Bolts, i.e. galling of the threads

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 sent into Weir SPM for further inspection.

(Heavy and Severe Service inspection procedures shall be referenced to ASME B30.20-2010.)

VII. Recertification

A complete recertification inspection will be conducted by Weir SPM yearly for normal service, 6-month intervals for heavy service and 3 month intervals for severe service. Any deficiencies shall be examined and a determination 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.

(Per ASME B30.20-2010 Normal Service items consist of devices that are used within the rated load limit, or uniform loads less than 65% of the rated load. Heavy service involves operation within the rated load limit which exceeds normal service. Severe service involves normal or heavy service with abnormal operating conditions.)

Recertification for Normal Service Items

Items such as the following shall be inspected by Weir SPM for any indication of damage resulting from:

- a. Structural deformation, cracks or excessive wear on any part of the assembly (i.e. Clamp, U-bolts, Nuts)
- b. Dings exceeding 1/4" in on the Lifting Clamp body
- c. Damaged thread profile on the U-Bolts, i.e. galling of the threads
- d. Excessive wear indications on lifting clamp assembly that would hinder its safe operation in field operations.

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.

Once the assembly is inspected and re-mounted back onto the piping assembly 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. Attach the Safety lifting Clamp Assembly to the respective pipe.
2. Hoist 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 other defects will be completed.

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
- Load test reports
- Documentation of replaced parts

SAFETY INFORMATION



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.

Weir SPM

7601 Wyatt Drive
Fort Worth
TX 76108
USA

Tel: (817) 246 2461
Fax (817) 246 6324
www.weiroilandgas.com

