RACINE RAILROAD PRODUCTS

Hydraulic Rail Weld Shear

910091

Operating Manual

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Record of Changes

Rev No.	Date	Description of Changes
1	10.2009	Initial release.
2	1.2019	Added assembly drawings and parts list
2.1	2.2020	Add Service Parts List
2.2	4.2021	Update Service Parts List: add 475782 Cylinder, Hydraulic
2.3	12.2022	Update Service Parts List (pg. 24) add #476843, 476846, & 476847
2.4	3.2023	Add environmental section, add PPE section, update hydraulic hose and recommended hyd oil chart
2.5	9.203	Update Technical Support & Service information

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Table of Contents

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Section 1: Overview and Safety

Hydraulic Rail Weld Shear Overview

Racine Railroad Products designs and manufactures equipment primarily for the repair and new construction of rail and railroad tie track maintenance.

The RRP Hydraulic Rail Weld-Shear utilizes a controlled shear speed with a rapid retract feature to properly shear rail welds utilizing a single lever control for ease of operation.

It is designed to remove the excess material when performing Thermit and Buta type welds. Its lightweight compact size allows for use inside rail pulling equipment. All hydraulic plumbing is protected by a one-piece guard to prevent damage and to contain any leaks if any damage occurs. When properly used, this tool will help reduce back strain and also reduce operator fatigue.

The unit is secured on the rail at four points with roller hold-downs for proper alignment and can operate at either 5 GPM or 10 GPM @ 2000 psi.

One of the lightest in the market place, it can easily be maneuvered to fit inside the RRP Rail Puller.

Do not use this machine for other than its intended purpose.

Please read these instructions when using this tool, which can only be used for the specified purpose. This instruction manual should be kept throughout the life of the tool.

The operator of this tool should:

- Have access to this operation instruction.
- Read and understand this operation instruction.

Note: Information in this document is subject to change without notice.

Environmental Protection

Comply with relevant national waste disposal laws and regulations. Waste electronic devices cannot be treated as household waste.

Equipment, accessories, and packaging shall be recyclable.

Do not throw the discarded equipment in trash cans.

Safety Information

For safe installation and operation of this equipment, carefully read and understand the contents of this manual. Improper operation, handling, or maintenance can result in equipment damage and personal injury.

Only trained and authorized personnel should be allowed to operate this machine. In addition, all personnel at the worksite should be aware of the safety concerns and their individual responsibilities prior to working this machine.

Please read and comply with all the safety precautions in this manual ***before*** operating this machine. Your safety is at risk.

Safety Terms

DANGER indicates a hazardous operating procedure, practice, or condition. If the hazardous situation is not avoided death or serious injury will occur.

WARNING indicates a hazardous operating procedure, practice, or condition. If the hazardous situation is not avoided death or serious injury could occur.

CAUTION indicates a potentially hazardous operating procedure, practice, or condition. If the hazardous situation is not moderate or minor injury could occur.

Machine Use and Safety Precautions

Failure to follow safety precautions when operating this equipment can result in serious injury or death to the operator or other persons in the area.
Observe the following precautions whenever you are operating, working on or near this equipment.

Do not use this machine for other than its intended purpose.

Do not make any modifications without authorization or written approval from Racine Railroad Products. Replace all Racine Railroad Products and OEM parts with genuine Racine Railroad Products and OEM parts. Using non-OEM parts may compromise the safety of the machine.

Do not wear loose clothing, jewelry, radio belts, etc., when operating, working on or near this equipment. They can be caught in moving parts and may result in severe injury.

Always wear appropriate personal protective clothing when operating this equipment: e.g., orange safety vest, hard hat, safety glasses with side shields, hearing protection, steel-toed safety boots, leather gloves, dust respirator, etc.

Always lift heavy objects with the knees and legs, not the arms and back.

Always keep hands, arms, feet, head, clothing, etc., out of the operating area and away from all rotating or moving components when operating, working on or near this machine.

Always make sure that all guards, covers, belts, hoses and operating components are in good working order and that all controls are in the appropriate position before starting the engine.

Always make sure that all safety equipment installed properly and are in good working order. Do not operate the machine until unsafe conditions have been corrected.

Always operate in a well-ventilated area and make sure that the air filters, air filter covers, and muffler are in good condition.

Always keep the machine clean and free of debris. Operate the machine in a safe and responsible manner. Exercise caution when fueling, working on or near rotating or moving components, hot components, and fuel systems. Be aware of potential fire hazards and prevent sparks, exhaust, etc., from starting fires on the machine and/or work area.

Always comply with all instructions provided on any decals or placards installed on the machine and with any relevant amplifying information provided in this manual or other general operating procedures.

Always disconnect the power source and make sure that all controls are in a safe position and install all appropriate locking and safety devices before doing any of the following:

- Lubricating
- Adjusting
- Installing Tooling
- Making Repairs
- Performing Service

Section 2: Specifications and Installation

Specifications

Hydraulic Rated Flow	5/10 GPM @ 2,000 psi / 20/40 LPM @ 140 bar
Length	29 in. [73.66 cm]
Width	19 in. [48.26 cm]
Height	9.75 in. [24.77 cm]
Weight (Dry0	94 lbs [42.7 kg]

Hydraulic Fluid Requirements [Viscosity (Fluid Thickness)]

USA	Metric
50° F 450 SSU Max	10° C 95 Centistokes
100° F 130-200 SSU	38° C 27-42 C.S.
140° F 85 SSU Min.	60° C 16.5 C.S., Min.

Pour Point ..... 10° F / 23° C Minimum (for cold startup)

Viscosity Index (ASTM D 2220)..... 140° F Minimum

Demulsibility (ASTM D-1401) ..... 30 Minutes Maximum

Flash Point (ASTM D-92) ..... 340° F / 171° C Minimum

Rust Inhibition (ASTM D-665 A & B) ... Pass

Oxidation (ASTM D943) ..... 1000 Hours Minimum

Pump Wear Test (ASTM D2882)..... 60 mg Maximum

Installation

Unpacking Instructions

Upon receiving your Hydraulic Rail Weld-Shear promptly remove it from the shipping container. Always keep top side of container up. Inspect unit for damage which may have incurred during shipping and report it to carrier for claim.

Tool Preparations

The Hydraulic Rail Weld-Shear requires some testing before use. If the tool is used in cold weather, preheat the hydraulic fluid by running power source at low engine speed.

Fluid temperature should be at or above 50° F/10° C (400-ssu / 82 centistroke) before use, when using recommended fluids. Using too thick of fluid may result in tool damage.

WARNING **Never stick foreign objects, fingers, or other extremities into moving mechanism. Failure to follow these instructions may lead to severe personal injury or tool damage.**

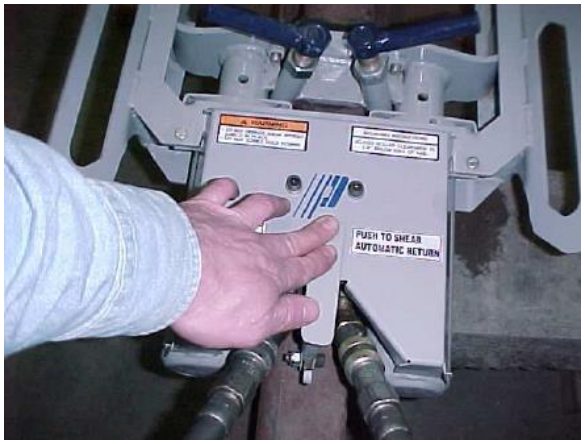
Testing

Before operating the Hydraulic Rail Weld-Shear it is important to inspect the shear blades for excessive wear or damage.

Replace the shear blades if required before operating the shear. Follow all safety precautions and procedures when inspecting tool.

1. To test the function of the shear, connect the hydraulic hoses to the tool. See *Hose Connecting Procedures* for details.
2. With the flow from the power source ON, press the control lever down and hold it there.

   The shear blades should close at a slow rate of speed.
3. Allow the blades to contact each other.
4. Release the lever and the shear blades should move to full open without touching the lever or any form of assistance.



Pressure Testing

1. To test the pressure exerted at the shear blades, disconnect the shear from the power source
2. Remove the shear blades from the frame.
3. Insert a pressure testing system between the frame and the ram end frame of the shear. A Tester Shear is recommended for this procedure.

   The Tester Shear can test most shears. It features a pressure gauge with and arrow indicating the optimum force applied.
4. Position tester while closing the shearing mechanism, aligning the pins in the frames with the holes in the tester.

Tester Shear

5. Hold the control lever down till the needle, on the pressure gauge, of the tester stops climbing.

   The needle should be within 500 psi of the red arrow.

   When testing follow the instructions provided with the test equipment.

Note: Other Tester Shears may instruct the technician to perform the test in a manner slightly different than the procedure just described.

Hose Requirements

It is not often necessary or advisable to use long hoses. All hoses must have an oil resistant inner surface and an abrasion resistant outer surface. Each hose must have male pipe ends for most application.

Longer hoses can be used when necessary but can affect the operation of the tool due to resistance in the hose.

If small diameter or long hoses are used, or if restrictive fittings are connected to the supply and return ports, the pressure required to push the fluid through the system and back to the tank will be higher. This will reduce tool power.

Important: Oil should always flow from the male coupler through the female coupler.

Note: The pressure increases in uncoupled hoses left in the sun. This may make them difficult to connect. When possible after use, connect the free ends of the operating hoses together.

Hose Types

Hydraulic hose types authorized for use with the tool are:

1. **Labeled and certified non-conductive**.
    - This is the only hose authorized for use near electrical conductors.
    - Constructed of thermoplastic or synthetic rubber inner tube, synthetic fiber braid reinforcement, and weather resistant thermoplastic or synthetic rubber cover.
2. **Wire braided** (conductive)
    - This hose is conductive and must ***never*** be used near electrical conductors.
    - Constructed of synthetic rubber inner tube, single or double wire braid reinforcement, and weather resistant synthetic rubber cover
3. **Fiber braided** (not certified or labeled non-conductive)
    - This hose is conductive and must ***never*** be used near electrical conductors.
    - Constructed of thermoplastic or synthetic rubber inner tube, synthetic fiber braid reinforcement, and weather resistant thermoplastic or synthetic rubber cover.

The rated working pressure of the hydraulic hose must be at least 175 bar (2500 psi).

Hydraulic Hose Recommendation

Hydraulic Hose Recommendation								
Flow Per Circuit		**Length Each Hose**		**Use**	**Inside Diameter**		**SAE Spec Hose (Wire Braid)**	**SAE Spec Hose (Fiber Braid)**
GPM	LPM	Feet	Meter		Inch	MM		
5 to 8	19 to 30	To 50	To 15	Both	1/2	13	SAE 100R1-8	100R7-8
5 to 8	19 to 30	51 to 100	15 to 30	Both	5/8	16	SAE 100R2-10	SAE 100R8-10
5 to 8	19 to 30	100 to 300	30 to 90	Pressure Return	5/8 3/4	16 19	SAE 100R2-10 SAE 100R1-12	SAE 100R8-10 SAE 100R7-12
9 to 12	34 to 45	To 50	To 15	Both	5/8	16	SAE 100R2-10	SAE 100R8-10
9 v 12	34 to 45	51 to 100	15 to 30	Pressure Return	5/8 3/4	16 19	SAE 100R2-10 SAE 100R3-12	SAE 100R8-10 SAE 100R7-12
9 to 12	24 to 45	100 to 200	30 to 60	Pressure Return	3/4 1	19 25.4	SAE 100R2-12 SAE 100R1-16	SAE 100R8-12 SAE100R7-16

The rated working pressure of the hydraulic hose must be at least 2500 psi / 173 bar.

Hydraulic Fluid Recommendation

Inspect hoses for cuts, crushing, leaks, or abrasion, which may be a safety hazard or reduce fluid flows.

The following fluids work well over a wide temperature range at startup, allow moisture to settle out, and resist biological growth likely in cool operating hydraulic circuits.

Others that meet or exceeds the specifications of these fluids may also be used.

Type	Hydraulic fluid
Amsoil	AWH ISO 32
Chevron	Rando HD Premium Oil MV ISO VG 32 Rando HDZ ISO 32
Gulf	Harmony AW ISO Multi-Grade 32
Mobil	DTE Oil Excel 32
Schaeffer	Dilex Supreme Hydraulic Fluid w/ Dynavis ISO 46.
Shell	Shell Tellus S2 VX 32
Sunoco	Sunvis 1032 HVI Hydraulic Oil

Tool Connecting Procedures

1. Stop the engine before connecting the tool and or hoses to the power unit, and when switching hoses or tools.
2. Turn the hydraulic on/off valve to the off position before starting the engine.

   Make sure all hoses are connected for correct flow direction to and from the tool being used.

   When routing hose in the work area, position them where personnel will not be at risk of tripping over them where vehicles can run over the hoses. Do not lay hose over sharp objects.

⚠WARNING **Pressurized fluid escaping from a damaged hose can penetrate the skin and be injected in the body causing injury or death.**

Do not pull on hoses to drag the power unit or tool.

Connecting Hoses

1. Wipe quick couplers with a clean lint free cloth before connecting them.
2. Depressurize the system.
3. Allow system and hydraulic fluid to cool if too hot to handle.
4. Securely connect the return (tank “R”) hose from the power source to the tool.
5. Securely connect the supply (pressure “P”) hose from the power source to the tool.

   It is recommended that you connect the return hoses first and disconnect last to minimize or avoid trapping pressure within the tool.

   When connecting the quick couplers, the flow should run from male coupler to the female coupler. The female coupler on the tool is the inlet. Quick couplers are marked with a flow direction arrow.

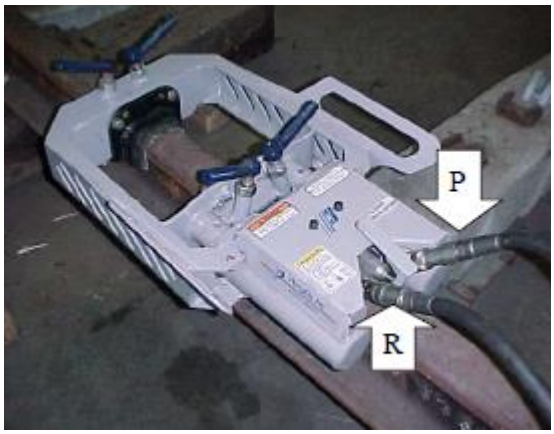
WARNING **Pressurized fluid escaping from a damaged hose can penetrate the skin and be injected in the body causing injury or death.**

Do not pull on hoses to drag the power unit or tool.

Note: When possible, connect the free ends of uncoupled hoses to prevent build up in the hoses. The sun can also increase pressure in the hoses and make connecting them difficult.

Disconnecting Hoses

1. Stop the hydraulic power source.
2. Depressurize the system.
3. Allow system and hydraulic fluid to cool.
4. Disconnect the supply [P] (pressure) hose to the power source (pressure port) from the tool (IN port).
5. Disconnect the return [R] (tank) hose to the hydraulic power source (return port) from the tool (OUT port).
6. To prevent contamination, always install dust caps over the hydraulic ports of the tool when disconnected.



WARNING **Do not attempt to locate hydraulic leaks by feeling around hoses and fitting with hands. Pinhole leaks can penetrate the skin.**

Section 3: Tool Operation

Personal Protective Equipment

Before operating this machine, make sure that all general safety precautions are observed, and that proper personal protective clothing is worn as described below.

At a minimum, operators should wear the following Personal Protective Equipment:

1. Safety Glasses
2. Hearing Protection
3. Hard Hat
4. High Visibility Safety Vest
5. Leather Work Gloves
6. Steel Toed Safety Shoes
7.

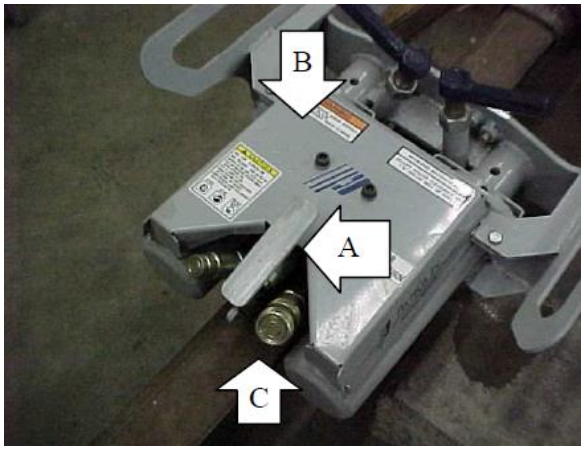
The RRP Hydraulic Rail Weld-Shear is intended to be used to shear Thermit and Buta type welds. Its light-weight construction and auto cycle valve reduce operator fatigue. The closing rate of the shear blades are limited to the industries standard and cannot be altered. When the control lever is release, the blades automatically retract at a more rapid rate to reduce shearing time.

The Hydraulic Rail Weld-Shear secures to the rail at four points. Adjustable roller holds downs provide a smooth shearing operation and guide the shear on worn rail. Hold down assemblies have been designed to be easily serviced in the field.

The RRP Diesel Power Unit is a versatile power unit that can meet the needs for most hydraulic tools used by the rail road industry. This power unit is capable of powering two tools simultaneously at 5 GPM (20 LPM) or one tool a 10 GPM (40 LPM) all the flows are at 138 bar (2000 psi). The maximum pressure of the hydraulic system is limited to 148.3 bar (2150 psi).

- The power source provides the required flow and pressure to operate HTMA type I 15-23 LPM (4-6 GPM) and type RR 34-40 LPM (9-10.5) tools. All which, are open-center tools required an operating pressure of 138 bar (2000 psi).
- The RRP Hydraulic Rail Weld-Shear features an auto cycle valve which returns the shearing blades to the full open position when the valve control lever is released (Arrow A).

  This reduces total shearing time and reduces the operator's exposure to the heat produced during the welding procedure.
- The control valve also limits the speed for shearing and provides a rapid retract for easy operation.
- The hydraulic plumbing is protected by a one-piece guard to prevent damage and to contain any leaks if any damage occurs (Arrow B).



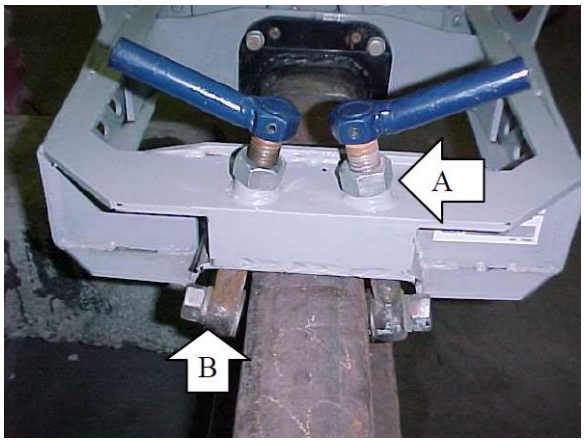
- The hydraulic quick connect couplers are located at the rear of the shear and directs the hoses along the rail out of the work area (Arrow C). The path of the hoses along the rail reduces the potential for a worker to trip on them.

- Roller hold-downs, provide a secure mount to the rail and allows smooth operation during the shearing process.

  The roller height is set with a jam nut providing a snug fit on any size rail (Arrow A).

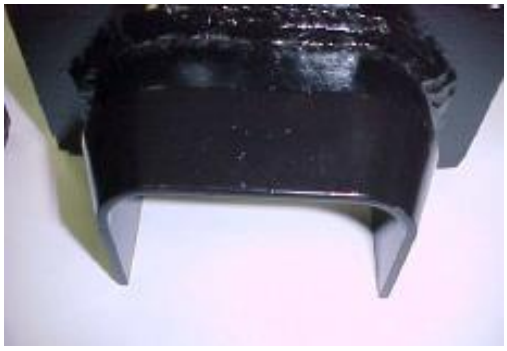
- The roller assembly is easily removed for replacement of any component of the hold-down assembly (Arrow B).

  Handles incorporated into the frame allow for even balance and level transportation for quick positioning on the rail.



Before Operating

Check that the guard is in position and securely fastened, and in good condition. Inspect the weld shear for any hydraulic oil leaks and repair as required. ***Do not*** operate the shear if a leak is present, hydraulic oil on the weld area is flammable.



Good Condition

Damaged – Needs replacing.

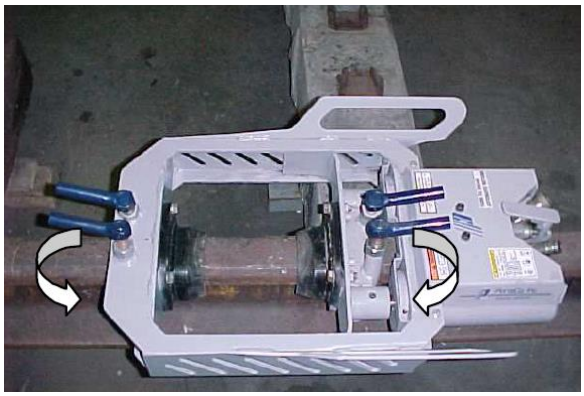
Inspect the hold down assemblies, make sure they all operate properly. Replace any damaged or severely worn components before operation. Hold downs which are not operating correctly may result in an inferior sheared weld.

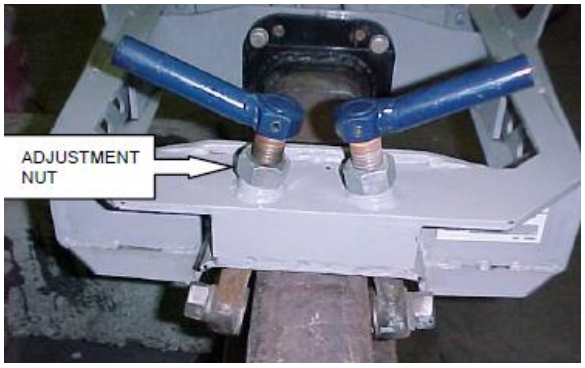
Inspect the shear blades and replace.

Do not use hoses, couplers, or fittings which are damaged, replace immediately.

Positioning on Rail

1. Place the shear over the weld, centering the weld between the shearing blades.
2. Turn the handle on all four rollers to position each roller under the rail.
3. Adjust the roller clearance to 1/8" below the ball of the rail using the nut to maintain the clearance.





4. Connect the hoses. See *Connecting Hoses* for details.

Operating

Hydraulic Rail Weld-Shear equipped with an auto cycle valve, and only requires the operator to close the jaws. Once the weld has been sheared the operator releases the lever and the jaws automatically return to full open.

1. Press the control lever down and hold until the jaws have completely closed.
2. Release the handle and the jaws will automatically return to full open.
3. Disconnect the hoses. See *Disconnecting Hoses* for details.
4. Turn the hold down to release the rail and lift the puller off.

Section 4: Maintenance

It is highly recommended to practice regular check-ups and maintenance in accordance with the usage frequency to keep your tool in better condition and reduces total running costs.

Wipe all external surfaces after each use with a clean, lint free cloth to remove surface contaminants from the tool.

Daily

1. Wipe all tool surfaces, fittings, and coupling free of grease, dirt, and foreign materials.

Do not attempt to locate hydraulic leaks by feeling around hoses and fitting with hands. Pinhole leaks can penetrate the skin.

2. Inspect the tool signs of leaks and worn, and/or damage couplers. Replace if necessary.
3. To prevent contamination, always install dust caps over the hydraulic ports when disconnected. Inspect shear blades

Monthly

Inspect the hold down assemblies for wear or damage and replace any components as necessary to maintain a good working condition.

Annually

Remove the hydraulic system guard and inspect fittings and tubing for damage and replace as required.

Check linkage between valve and lever for excessive wear and replace as required.

Note: Do not attempt to repair this product. Only properly trained person should perform any maintenance,

Trouble Shooting

The following chart can be used as a guide to correct any problem you may experience with the tool.

To determine the problem in operation of the lag driver always check that the hydraulic power source is supplying the correct hydraulic flow and pressure to the tool as listed in the table. Be sure you are using an accurate flow meter. Check the flow with the hydraulic fluid temperature at least 80° F / 27° C.

Note: Stop and depressurize the hydraulic system before connecting or disconnecting a tool.

Failure to follow these instructions can lead to severe personal injury. Read and follow the instructions in this manual for the proper way to connect and disconnect tools from the hydraulic systems.

Problem	Cause	Remedy
Shear binds or travels jerky.	Hold downs are too tight.	Adjust hold downs so rollers are 1/8" below the ball of the rail.
	Hold downs are damaged.	Check for damage to the hold down bolts or rollers. Replace if required.
	Air in system.	Run shear to full close and hold for 10 seconds to purge air.
If blades move but not enough power to shear weld.	Inspect shear blades for wear or damage.	Replace shear blades if required.
	Hydraulic system leak.	Check system for leaks and repair as required.
	Relief valve set to low on power source.	Test power source and repair or replace as required.
	Check lever linkage for wear.	If lever bottoms before full travel, replace or repair control lever.
	Leaky cylinder seal.	See the *Testing* section.
Blades do not retract or retract slowly.	Control valve not returning fully.	Check that lever or valve is returning completely. Repair/ replace as needed.
	Hydraulic system leak.	Check system for leaks and repair as required.
Blades do not retract or retract slowly.	Check valve malfunction.	Remove check valve and inspect for contamination. Replace if required.
Shear blades close completely but fails to shear weld	Damaged or worn shear blades.	Replace shear blades.
Shear runs opposite to control	Hoses hooked up to wrong ports.	Check that hoses are connect correctly.

Section 5: Parts and Service Support

Technical Support & Service

Telephone and web-based technical support is available for current production models through our Customer Service Department. Service Manuals and limited technical support may be available for models that are no longer in production.

Telephone and E-mail Technical Support

Telephone and e-mail technical support is available on normal U.S. business days from 8:00 AM to 5:00 PM U.S. Central Time Zone (GMT +6 (+5 Daylight Savings Time)).

Phone: (262) 637-9681
Email: custserv@racinerailroad.com

Racine Railroad Products
1955 Norwood Court
Mount Pleasant, WI 53403

Non-Warranty Technical Support

Depending upon the circumstances and availability of technical service personnel, we may provide technical assistance and/or field service support, *at the customer's expense*, to assist in the correction of non-warranty related problems. Contact our Customer Service Department to coordinate Non-Warranty Technical or Field Service Support.

Warranty Support Technical Support

Depending upon the circumstances and availability of technical service personnel, we may provide technical assistance and/or field service support, *at no charge to the customer*, to assist in the correction of warranty related problems. Contact our Customer Service Department to coordinate Warranty Technical or Field Service Support.

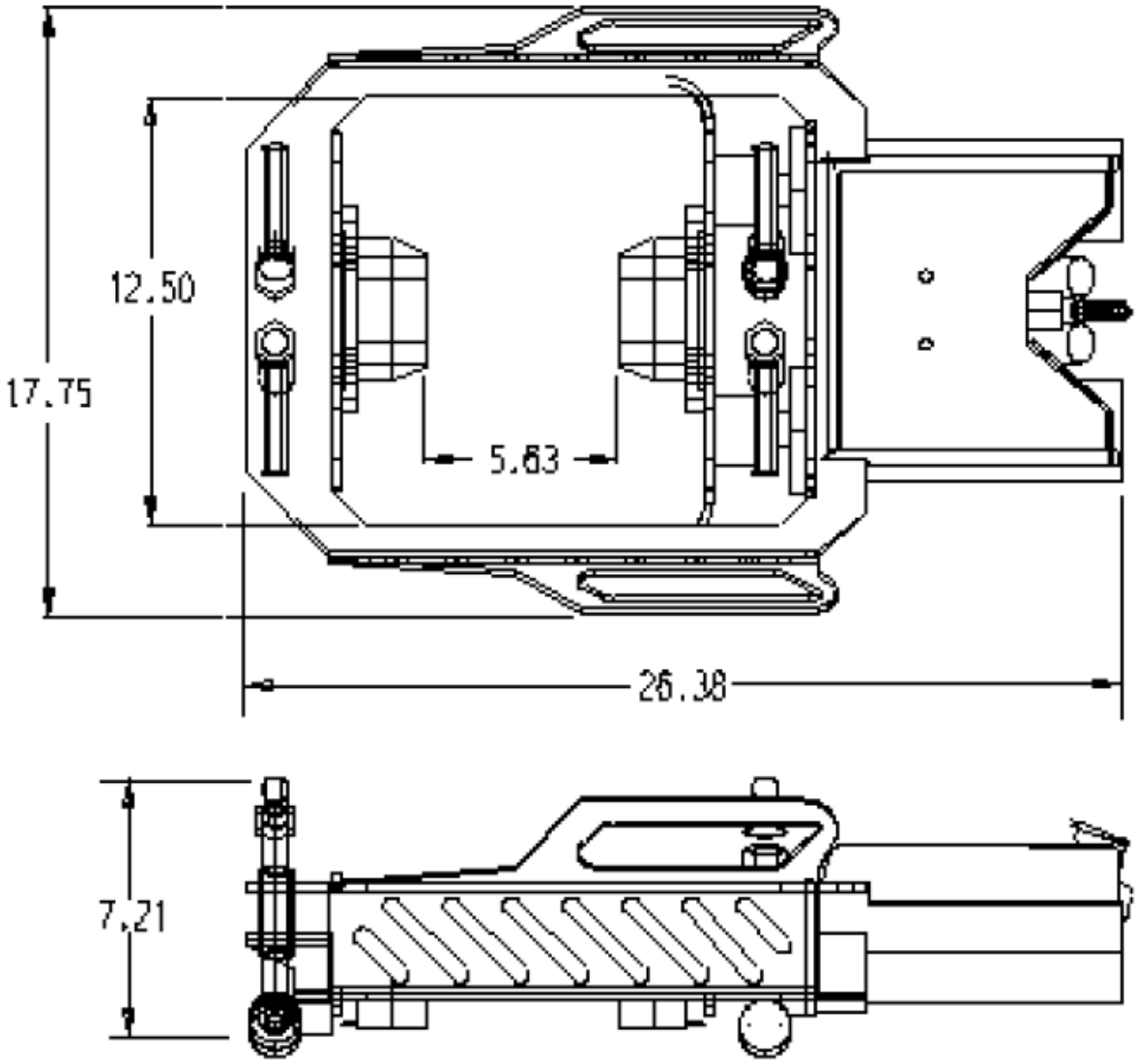
Warranty Parts Claims

Material claimed to be defective must be returned to our factory for evaluation. Defective materials will be replaced, or your account will be credited if replacement materials have already been purchased. Please contact our Customer Service Department at the address provided below if you have any questions or problems.

Warranty Service Support

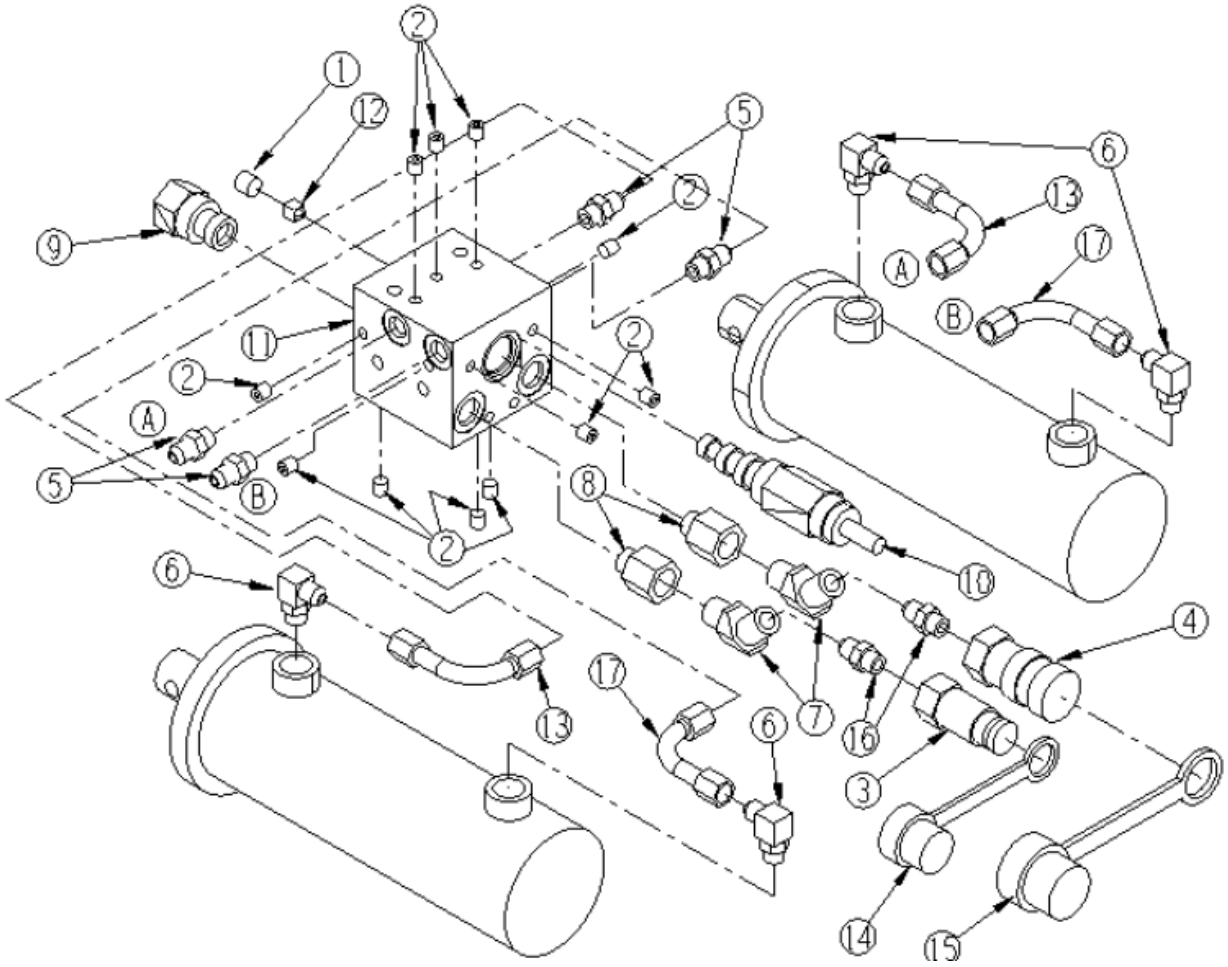
Depending upon the circumstances and availability of technical service personnel, we may provide technical assistance and/or field service support, at no charge to the customer, to assist in the correction of warranty related problems. Contact our Customer Service Department at the address provided above to coordinate Warranty Service Support.

Hydraulic Rail Weld-Shear Technical Specification



Weld Shear with blades	84-lbs/38.1 kg
Max Pressure	2000 psi/150 bar
Max Flow	10 gpm/40 lpm

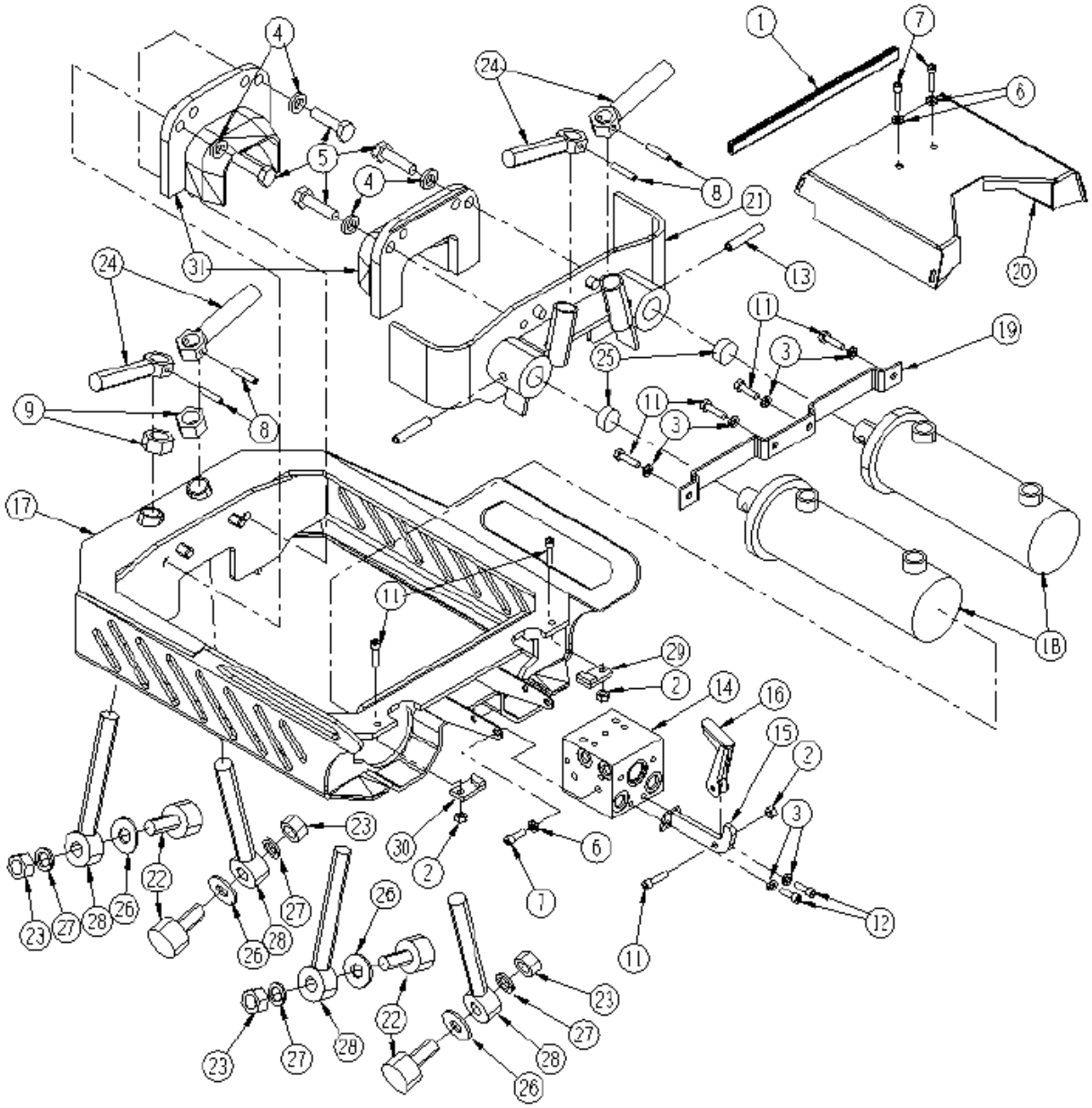
Hydraulic Rail Weld-Shear Assembly – Part 1



Hydraulic Rail Weld-Shear Parts List – Part 1

ITEM#	DESCRIPTION	QTY
1	PLUG 1/4 NPT HEX SOCKET	1
2	PLUG 1/16 NPT HEX SOCKET	11
3	COUPLER HYDRAULIC MALE	1
4	COUPLER HYDRAULIC FEMALE	1
5	FITTING -4OR -4MJIC STR.	4
6	FITTING -4OR -4MJIC 90°	4
7	FITTING -6MPT -6MPT 45°	2
8	FITTING -6OR -6FPT STR.	2
9	VALVE CHECK	1
10	VALVE ON/OFF	1
11	MANIFOLD HYDRAULIC	1
12	ORIFACE / CHECK	1
13	HOSE HYD. 18"-4 BRAIDED	2
14	DUST COVER MALE	1
15	DUST COVER FEMALE	1
16	FITTING	2
17	HOSE HYD. 12"-4 BRAIDED	2

Hydraulic Rail Weld-Shear Assembly – Part 2



Hydraulic Rail Weld-Shear Parts List – Part 2

ITEM#	DESCRIPTION	QTY
1	TRIM LOCK 1/16 X 10"	1
2	NUT 1/4nc nylock	3
3	LOCK WASHER 1/4	6
4	LOCK WASHER 7/16	4
5	BOLT 7/16nc X 1 1/2 HH #8	4
6	WASHER LOCK 5/16	6
7	BOLT 5/16nc X 3/4 SHCS	4
8	PIN SPRING .250 X 1.125	4
9	NUT 3/4nc HH	4
10		-
11	BOLT 1/4nc X 1 HH	7
12	BOLT 1/4nc X 3/4 SHCS	2
13	ROLL PIN 3/8 X 1 1/2	2
14	MANIFOLD HYDRAULIC	1
15	MOUNT TRIGGER	1
16	TRIGGER	1
17	FRAME	1
18	CYLINDER HYDRAULIC	2
19	RETAINER CYLINDER	1
20	GUARD VALVE	1
21	GUIDE RAM END	1
22	BEARING HOLD DOWN	4
23	NUT JAM 5/8nc	4
24	HANDLE HOLD DOWN	4
25	SPACER	1
26	WASHER FLAT 5/8	4
27	WASHER LOCK 5/8	4
28	HOLD DOWN EYE BOLT	4
29	STOP CYLINDER RIGHT	1
30	STOP CYLINDER LEFT	1
31	BLADES SHEAR 132# (2)	1

Hydraulic Rail Weld-Shear Service Parts List

FOR SERVICE ONLY

NO.	QTY	DESCRIPTION	PART NO.
1	REF	BLADE, WELD SHEAR	466904
2	REF	BOLT, HOLD DOWN EYE	470827
3	REF	CYLINDER, HYDRAULIC	475782
4	REF	DISCONNECT, FEMALE QUICK: #6 PARKER FF-371	470812
5	REF	DISCONNECT, MALE QUICK: #6 PARKER FF-372	470813
6	REF	FITTING, 90°	467790
7	REF	FITTING, ADAPTER	467791
8	REF	GUARD, VALVE	471463
9	REF	HANDLE, HOLD DOWN	471353
10	REF	HOLD DOWN, BEARING	471351
11	REF	HOSE	467789
12	REF	HOSE	469815
13	REF	HOSE	469816
14	REF	KIT, 115# SHEAR BLADE	476843
15	REF	KIT, 470813 SEAL	470814
16	REF	LEFT, HOLD DOWN	476846
17	REF	MOUNT, TRIGGER	471620
18	REF	NUT, HEX JAM: .62-11 HVY	401027
19	REF	NUT, HEX JAM: .75-10	401028
20	REF	PIN, ROLL: .25 X 1.12	401726
21	REF	RIGHT, HOLD DOWN	476847
22	REF	TRIGGER	471621
23	REF	TUBE, CONNECTOR	10000296
24	REF	VALVE, #10 ON/OFF	467723
25	REF	WASHER, FLAT 5/8	475029
26	REF	WASHER, LOCK: .62 SPLIT	400910

Section 6: Warranty Terms and Conditions

Warranty Period

Each new machine and new parts of our manufacture are warranted against defects in material and workmanship for one year from the date of shipment from our factory.

When contacting customer service for factory parts, service or warranty support please provide the:

- Racine Railroad Products Model
- Serial Number
- Any locally assigned identification

Vendor Parts Warranty Period

Other equipment and parts used, but not manufactured by Racine Railroad Products, Inc., are covered directly by the manufacturer's warranty for their products.

Warranty Parts and Service

We will repair or replace, without charge, F.O.B. factory, Racine, Wisconsin, USA, any part Racine Railroad Products manufactures which is proven to be defective during the warranty period.

Material claimed defective must be returned, if requested, to the factory within 30 days from the date of the claim for replacement. Ordinary wear and tear, abuse, misuse, and neglect are not covered by this warranty. Depending upon the circumstances, we may provide technical assistance and/or technical service support, without charge, to assist in the correction of warranty related problems.

Non-Warranty Parts and Service

Material damaged through normal wear and tear, abuse, misuse and/or neglect are not covered by our warranty and should be ordered directly from our Customer Service.

Note: Parts for models that are no longer in production may not be available.

Non-Warranty Parts Orders

When placing a parts order please provide the following information:

- Company Name and Billing Address
- Purchase Order Number and Issuing Authority
- Shipping Address
- Special Handling Instructions
- Contact Phone Number
- Machine Model and Serial Number
- Part Numbers and Quantities Being Ordered

Note: *Please use Racine Railroad Products part numbers when ordering parts.* Racine Railroad Products part numbers are shown in the parts lists and drawings of this manual and have only six (6) numbers.

Any part number with other than six numbers (e.g., contains alpha-numeric characters) is a Vendor Part Number and ***not*** a Racine Railroad Products part number.