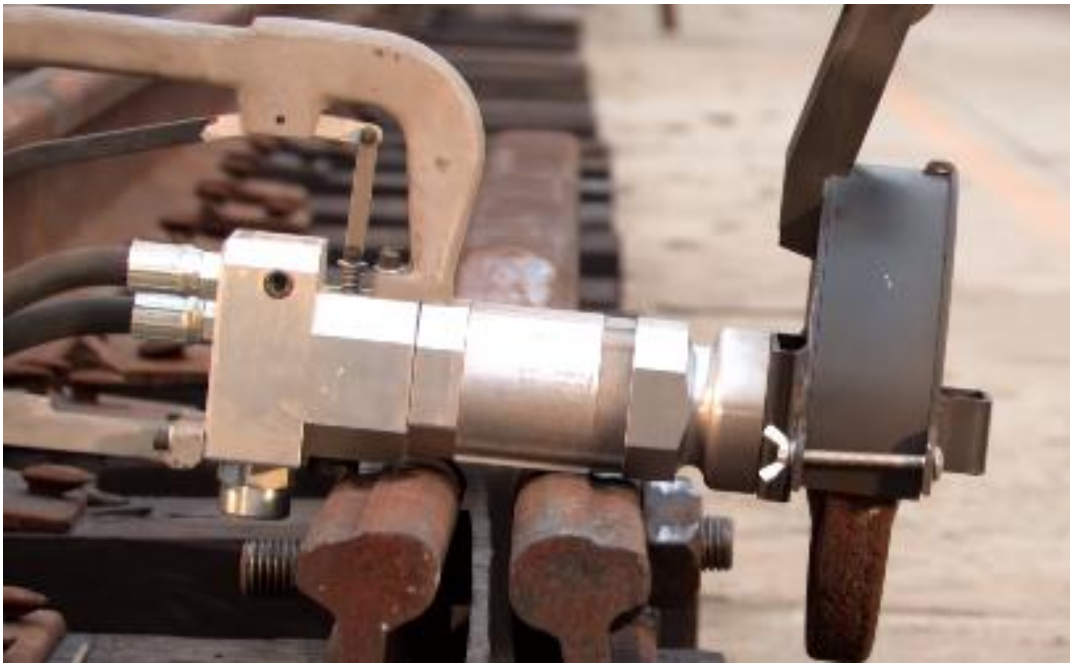
Back Handle Grinder

910114

Operating and Maintenance Manual



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Back Handle Grinder

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Record of Changes

Rev No.	Date	Description of Changes
Rev 1	11.2015	New product
Rev 2	10.2019	Content update with new branding
Rev 2.1	3.2023	Update Format, add environment section, update hydraulic fluid recommendation chart, at PPE section

Table of Contents

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Section 1: Overview and Safety

Back Handle Grinder Overview

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

The Back Handle Grinder used to remove excess weld from the rail, and to remove rust. The Back Handle Grinder requires a flow of 10 gpm (40 lpm) at 2000 psi (138 bar) for best performance. Use the tool on an open-center hydraulic system only with a maximum pressure of 2150 psi (148.3 bar).

Use only grinding wheel stones that are 8” diameter by 1” thick with a 5/8” diameter arbor with a minimum rpm rating of 3300 rpm.

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.

Don't 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 shut 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

Physical

Max Pressure..... 2000 psi / 150 bar

Max Flow ..... 10 gpm / 40 lpm

Length..... 21.0 in / 53.34 cm

Width..... 10.5 in / 25.40 cm

Height ..... 12.0 in / 30.48 cm

Weight..... 16.0 lbs / 7.26 kg (Without stone)

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

Back Handle Grinder Components

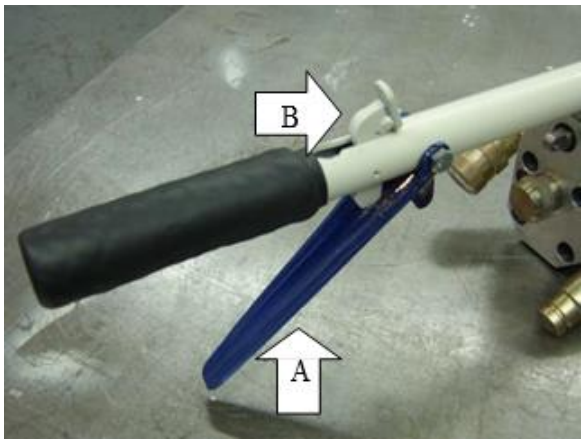
The Back Handle Grinder is operated from a T style handle.

The handle also has a trigger safety lock to avoid any unplanned operation of the grinder. (See arrow B).

A high-efficiency, pressure loaded motor provides maximum power while reducing heat and minimizing energy waste.

A large stone guard provides for optimum protection from sparks and broken stones. (See arrow A).

All wheels and rollers feature permanently lubricated ball bearings for smooth easy operations.



Installation Instructions

Unpacking Instructions

Upon receiving your Back Handle Grinder 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 Back Handle Grinder is shipped without a grinding stone. After the grinding stone has been installed the tool is ready for use, there is no additional preparation required.

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 centistokes) before use, when using recommended fluids. Using too thick of fluid may result in tool damage.

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.

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 Back Handle Grinder are:

1. Labeled and certified nonconductive.
   - This is the only hose authorized for use near electrical conductors.
2. Wire braided (conductive)
   - This hose is conductive and must never be used near electrical conductors.
3. Fabric braided (not certified or labeled non-conductive)
   - This hose is conductive and must never be used near electrical conductors.

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

Hose Connecting Procedures

1. Stop the engine before connecting the tool and or hoses to the OFF 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.

For Single Circuit Flows up to 10 gpm

Plumb hose and tool as illustrated in Figure 1.

The numbers are represented below as paragraph numbers.

Use adapters with threads that match tool port.

1. H.T.M.A. 3/8-inch Male Quick Acting Coupler with ½-inch NPT thread.
2. H.T.M.A. 3/8-inch Female Quick Acting Coupler with ½-inch NPT thread.

   At the tool this may be H.T.M.A. 3/8-inch Female Quick Acting Coupler with 3/8-inch NPT thread.
3. H.T.M.A. 3/8-INCH Female Quick Acting Coupler with ½-inch NPT thread.
4. H.T.M.A. 3/8-inch Male Quick Acting Coupler with ½-inch NPT thread.

   At the tool this may be 3/8-inch Male Quick Acting Coupler with 3/8-inch NPT thread.

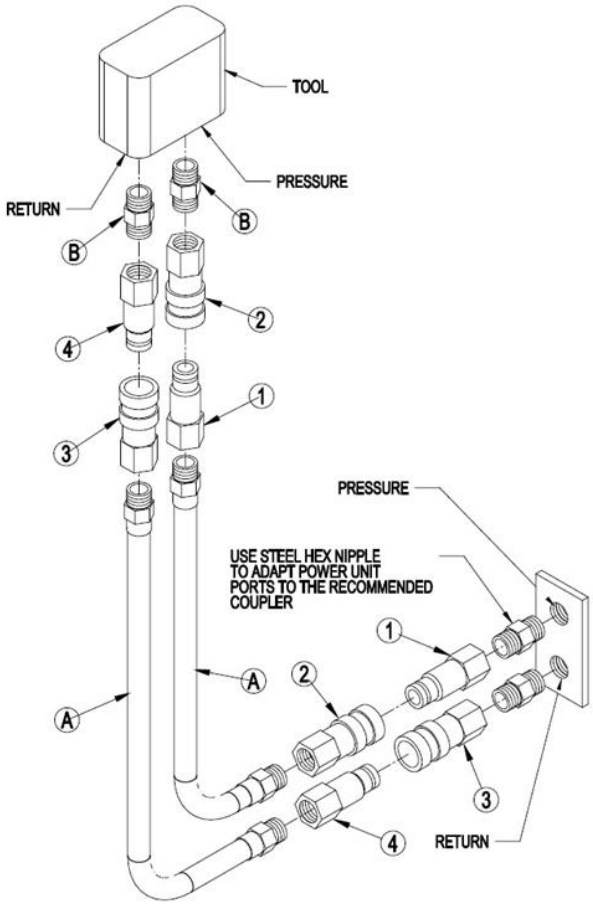


Figure 1

Disconnecting Hoses

1. Stop the hydraulic power source.
2. Depressurize the system.
3. Allow system and hydraulic fluid to cool.
4. Disconnect the supply (pressure) hose to the power source (pressure port) from the tool (IN port).
5. Disconnect the return (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 **If injury results from escaping hydraulic fluid, seek immediate medical attention. Serious bodily injury may occur if proper medical attention is not administered immediately.**

Do not attempt to locate hydraulic leaks by feeling around hoses and fittings with your 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.

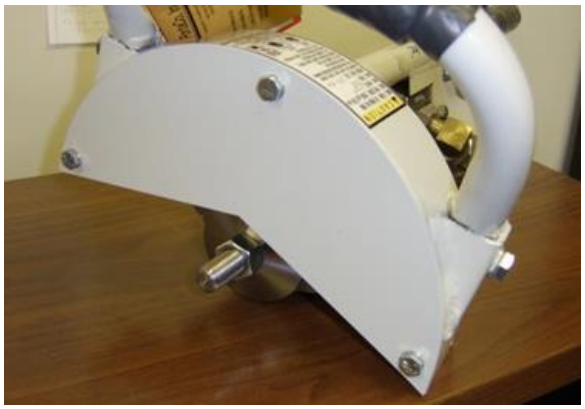
At a minimum, operators should wear the following Personal Protective Equipment:

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

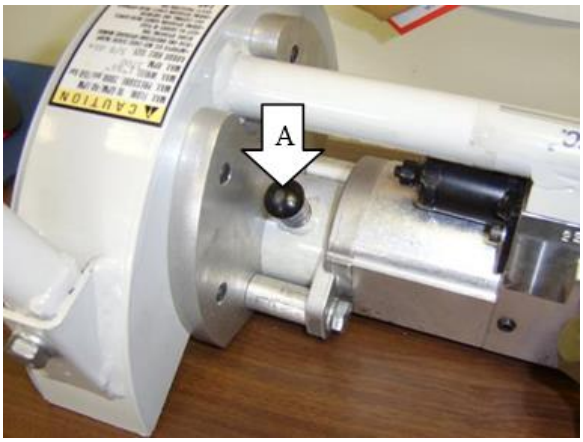
Stone Installation

Note: Thoroughly inspect the wheel before installation.

1. Remove the three bolts holding on the end plate.
2. Remove nut and backup.
3. When removing nut, press and hold the shaft locking pin to keep from rotating. See arrow A.
4. Remove old stone and place new stone on shaft.
5. Place backup on outside of stone and tighten nut.
6. Attach end plate back into place.



Three bolts holding end plate.



Use blotters between the stone and backups. The blotters should be made from highly compressible material and should not be more than .025 inches thick.

Check that the backup is pressed all the way on the spindle shaft.

Note: The square on the spindle should slide into the square in the back of the backup.

After a new stone is installed, run the grinder at full speed for one minute before grinding.

Operation

Before operating the Back Handle Grinder, it is important to inspect the trigger linkage mechanism for obstructions. Make sure all sockets are securely mounted. Follow all safety precautions when inspecting tool.

Check that the trigger pulls to the handle easily. If it pulls hard check for and remove any obstructions. Make sure the grinding stone is screwed on tight and make sure that all stone guards are in place and tight.

- Connect the tool to the power source.
- Hold the impact by the handles resting it on the ground.
- When the trigger is pulled, the grinding stone should rotate.
- Release the trigger and allow the grinding stone to stop rotating.

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.

WARNING **Do not perform maintenance on the Lad Driver while the hydraulic power source motor is running or when hoses are connected.**

All maintenance must be done with the tool disconnected form power source.

Cleaning and Maintenance Recommendations

- Wipe all external surfaces after each use with a clean, lint free cloth to remove surface contaminants from the tool.
- To extend the life of the handle padding, do not allow sharp edges or foreign objects to rub on the padding.
- Store all tools in an enclosed area to prevent weather from contaminating their systems.

Safety Devices

When maintenance is complete, make sure the following:

- The hydraulic control valves are operable.
- The hydraulic quick couplers and hoses are safe to use.

Daily

WARNING **Do not attempt to locate hydraulic leaks by feeling around hoses and fitting with hand. Pin-Hole leaks can penetrate the skin.**

- Wipe all tool surfaces, fittings, and couplings free of grease, dirt, and foreign materials.
- Inspect the tool, hydraulic system, hoses, and fittings for signs of leaks, cracks, wear, and/or damage. Replace if necessary.
- To prevent contamination, always install dust caps over the hydraulic ports when disconnected.

Cold Weather Operation

Hydraulic fluids are thicker in cold weather; therefore, run the engine at low idle lone enough to bring the fluid temperature up to minimum of 10°C/50°F or until the top of the hydraulic tank feels warm, before operating tool.

Storage Preparation

The tool should be stored in a cool, dry environment which is not subjected to rapid temperature changes.

- Cover male and female hose whips.
- Store in the upright position.
- Secure tool to prevent it from being knocked over.
- Store the tool on a smooth level surface.

Grinding Wheel Care

Wheel Guard

Inspect the wheel guard and fastener for damage. Repair any damage before using the tool.

Do Not operate the tool without the wheel guard.

Wheel Backups

Inspect the backup hole and flange before installation.

The backup should be free of burrs and the bearing surfaces are flat and run true when mounted on the drive spindle.

Check the drive spindle threads for damage.

Wheel Inspection

Prior to mounting, all wheels will be visually inspected by the operator for damage and cracks.

Do not use damaged or cracked tool wheels.

The ring test may be used to check for cracks in the wheel which are not visible to the naked eye. To perform the test:

- Suspend the wheel from the hole on a small pin or finger.
- Tap the wheel gently with a non-metallic implement such as a screwdriver handle.
- The best spot to tap is about 45° either side of the vertical center line 1 or 2 from the periphery.
- An undamaged wheel will give a clear tone.
- If cracked there will be dead sound instead.

Check that the surface of the blotters and backups are free of dirt and other foreign contaminants.

Use only wheels which meet or exceed the requirements of the tool

Care of Abrasive Wheels

All abrasive wheels are breakable and therefore care should be exercised in handling and storage to prevent damage. All abrasive wheels should be stored in a dry area and not be subjected to exposure to water or other solvents.

Avoid freezing temperatures or humidity conditions which cause condensation on the wheels.

Thin organic bonded wheels, (rail saw blades or slotting discs used for cutting), should be laid flat on a flat surface of steel or similar rigid material away from excessive heat, moisture, and other liquids. If thin wheels are supplied with blotters attached, suitable separators should be used to preserve flatness.

Wheels used on cutoff saw carried on emergency vehicles should be removed after use and discarded or carefully stored as described in this section.

Wheel Breakage

If a wheel breaks during use, the operator should investigate to determine and correct the cause. If the operator cannot determine the cause, the wheel manufacturer should be consulted.

Wheels designed for use with handheld portable tools are reinforced and specifically manufactured for this application. They are extremely tough and difficult to break under normal use.

Troubleshooting

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, 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	Resolution
Tool will not run or runs slow.	Power source.	Check power source flows and pressure (5-10 GPM/20-38 LPM at 1500-2000 psi/100-140 bar).
	Coupler or hose.	Check for /remove obstruction.
	Mechanical failure.	Disassemble tool and check for damage.
Tool runs backwards.	Pressure and return hoses reversed.	Correct for proper flow direction. Motor shaft rotates clockwise as viewed from the end of the shaft.
Trigger hard to drew in..	Back pressure too high.	Should not exceed 250 psi/ 17 bar and 10 GPM /38 LPM.
	Pressure and return hoses reversed.	Correct for proper flow direction

Hydraulic Back Handle Grinder Common Spare Parts

Description	RRP Part Number
Seal Kit	25018844
Motor Seal Kit	25020790
Flat Stone	459651
Wrench	2501457

Section 5: Parts and Service Support

Technical Support & Service

Telephone and web-based technical support is available for current production models through our Technical 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)). Contact us at:

Phone: (262) 637-9681

E-mail: techserv@racinerailroad.com

Non-Warranty Technical or Field Service 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 Technical Service Department to coordinate Non-Warranty Technical or Field Service Support.

Warranty Technical or Field 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 Technical Service Department to coordinate Warranty Technical or Field Service Support.

Warranty Parts and Service

Warranty parts and service are coordinated through our Technical Service Department.

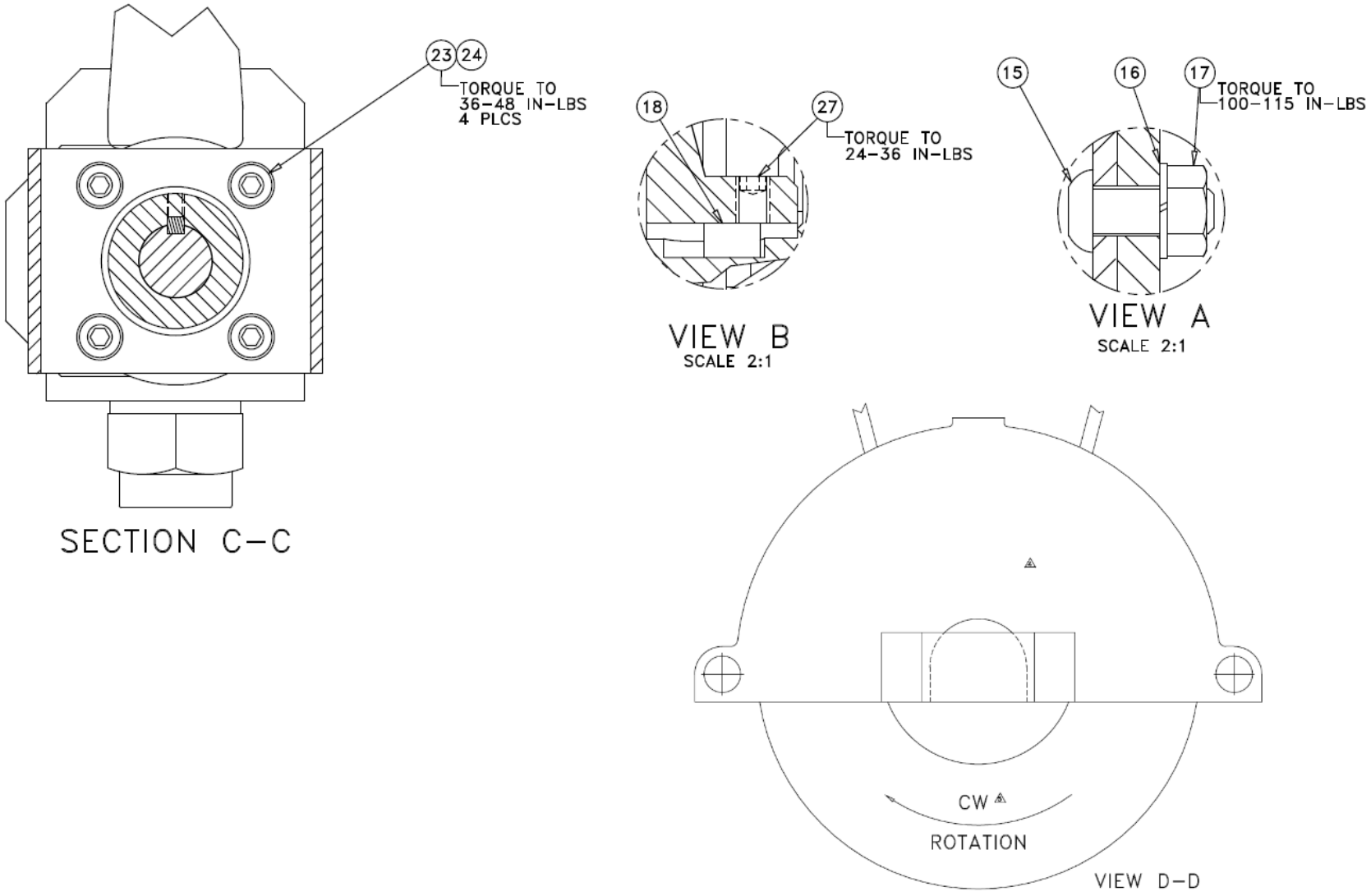
Warranty Parts Claims

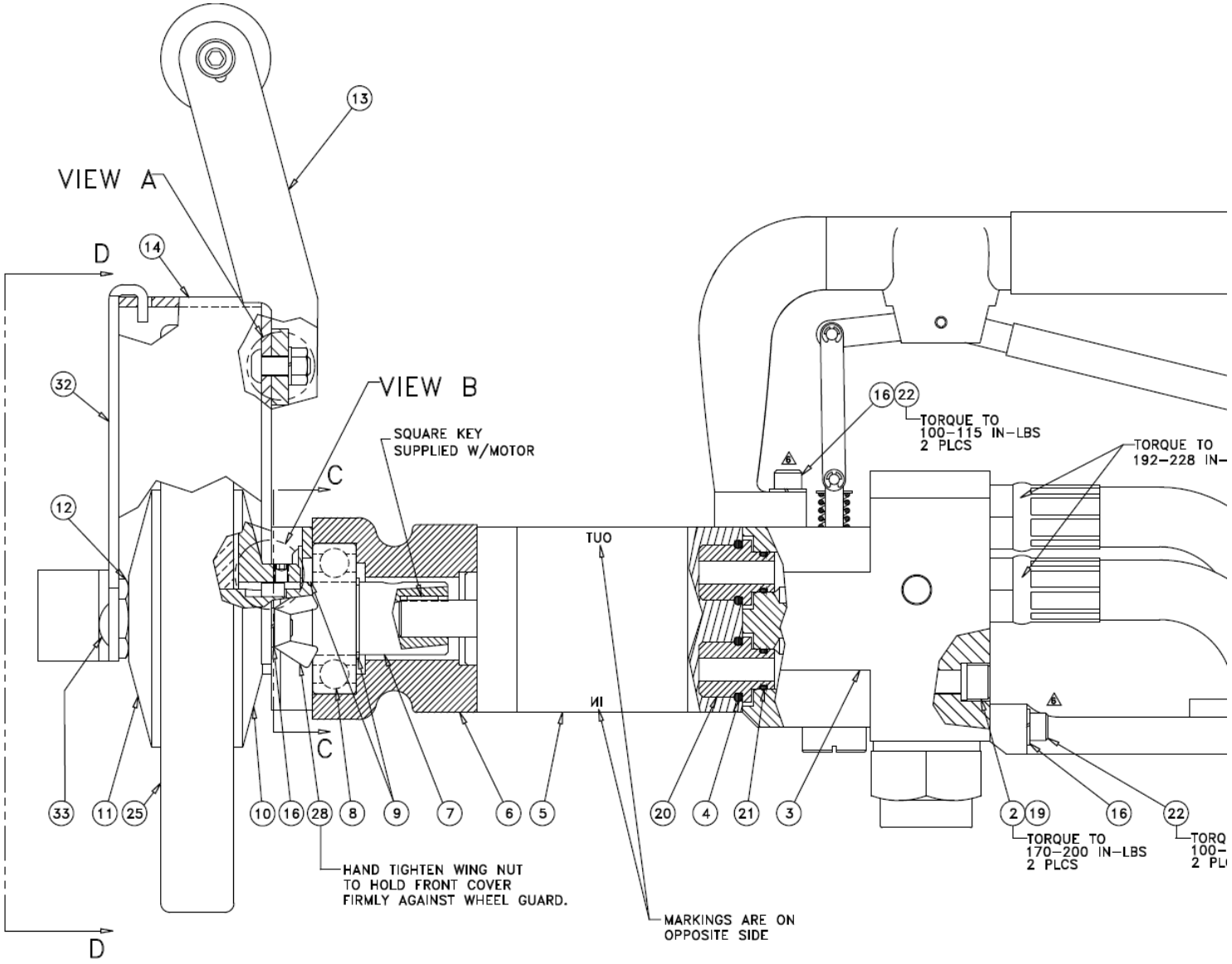
Material claimed to be defective must be returned to our factory for evaluation. Defective materials will be replaced, or your account will be credited if replacement materials have already been purchased. Please contact our Technical Service Department at the address provided below if you have any questions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

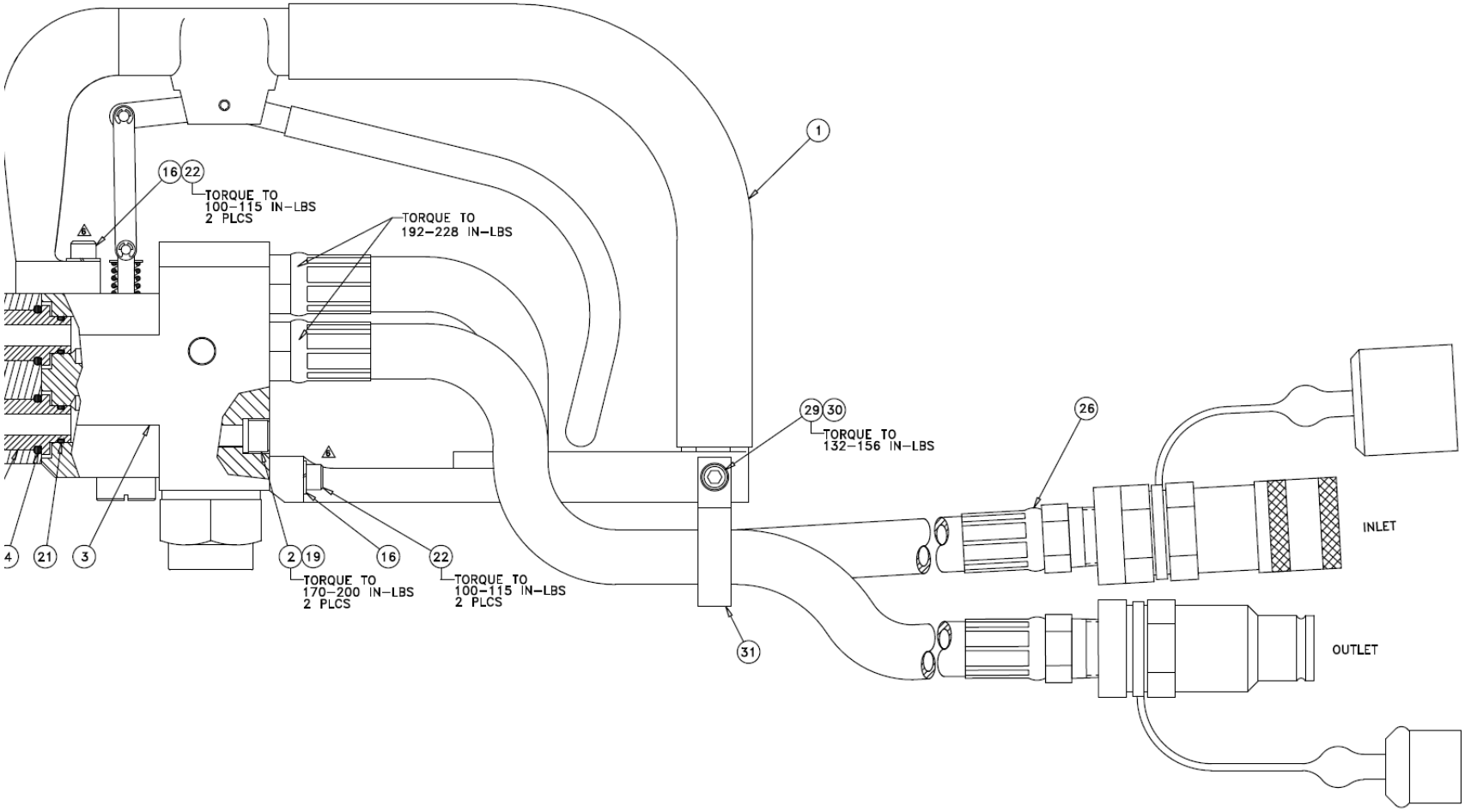
Warranty Service Support

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 Technical Service Department at the address provided below to coordinate Warranty Technical or Field Service Support.

Back Handle Grinder Assembly Drawing




VIEW A
VIEW B
D
C
SQUARE KEY
SUPPLIED W/MOTOR
TORQUE TO
100–115 IN–LBS
2 PLCS
TORQUE TO
192–228 IN–
TORQUE TO
170–200 IN–LBS
2 PLCS
HAND TIGHTEN WING NUT
TO HOLD FRONT COVER
FIRMLY AGAINST WHEEL GUARD.
MARKINGS ARE ON
OPPOSITE SIDE


1
16 22
TORQUE TO
100–115 IN–LBS
2 PLCS
TORQUE TO
192–228 IN–LBS
29 30
TORQUE TO
132–156 IN–LBS
26
INLET
OUTLET
4
21
3
2 19
TORQUE TO
170–200 IN–LBS
2 PLCS
16
22
TORQUE TO
100–115 IN–LBS
2 PLCS
31

Back Handle Grinder Parts List

ITEM NO.	PART NUMBER	QTY.	DESCRIPTION
1	10000146	1	HANDLE
2	25005479	2	SCR, SOC: .31–18 X 7
3	25006503	1	HOUSING, VALVE
4	405393	2	O–RING, .64 ID X .81 OD X .09 W
5	10000416	1	MOTOR, HYDRAULIC
6	25005477	1	HOUSING, FRONT
7	25006511	1	SHAFT
8	25006330	1	BRG, BALL: .98 ID
9	25005304	2	RING, RETAINING: .984 DIA EXT
10	25006515	1	DISC, GRINDER BACK
11	25005250	1	DISC, FRONT
12	491258	1	NUT, HEX: .62–11 LH
13	10000147	1	HANDLE, FRONT
14	25018051	1	GUARD, WHEEL
15	491451	4	SCR, SOC BUT: .25–20 X .75
16	400906	8	WASHER, LOCK: .25
17	407521	2	NUT, HEX: .25–2
18	25006445	1	KEY, SQ: .19 X .34
19	25005500	2	WASHER, LOCK: .31 HIGH COLLAR
20	25005473	2	TUBE, FLUIDIC
21	401272	2	O–RING, .38 ID X .50 OD X .06 W
22	400778	4	SCR, SOC: .25–20 X 1.0
23	491593	4	SCR, SOC BUT: 10–24 X .5
24	400905	4	WASHER, LOCK: #10
25	459651	1	WHEEL, GRINDING: 8" FLAT
26	26002504	1	HOSE, WHIP
27	25006441	1	SCR, SOC SET: 10–24 X .25
28	401058	2	NUT, WING: .25–20
29	404282	1	NUT, HEX ES JAM: .25–20 HVY
30	403886	1	SCR, SOC: .25–20 X 1.5
31	25015984	2	STRAP, LOOP
32	25018050	1	GUARD, FRONT
33	25006444	2	SCR, CARR: .25–20 X 2.5

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