

# High Speed Electric Rail Drill

## 910069

### Operating Manual





# High Speed Electric Rail Drill

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### Record of Changes

Rev No.	Date	Description of Changes
Rev 1	12.2011	Initial Release
Rev 2	9.2018	Update pictures & format change
Rev 3	1.2018	Add parts list. Update Logo / Branding
Rev 3.1	3.2023	Update Format, add Environmental section

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## Section 1: Overview and Safety

### High Speed Electric Rail Drill Overview

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

The RRP High Speed Electric Rail Drill is a quality product with unique features that make this the perfect solution for your entire rail drilling requirements.

- Easy to use and rugged design makes the RRP High Speed Electric Rail Drill a cost effective solution to drilling clean, accurately positioned holes in rail sections for bonds, and fishplates.
- Powered by a 110V motor with a speed of 430 rpm free speed.
- Can drill up to 36mm with annular broaching cutters.
- The new integral arbor support gives guaranteed hole tolerance and ensures no burring of hole.
- The totally enclosed cutter action ensures operator safety.
- The new and unique Tommy bar clamping system facilitates clamping in confined spaces such as check rail.
- The hard wearing and tough metal carry case provides protection for your drill in transit. The spacious design leaves enough room for all your tools and ancillaries.

**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**

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

**WARNING**

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

**CAUTION**

**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

**WARNING**

**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.

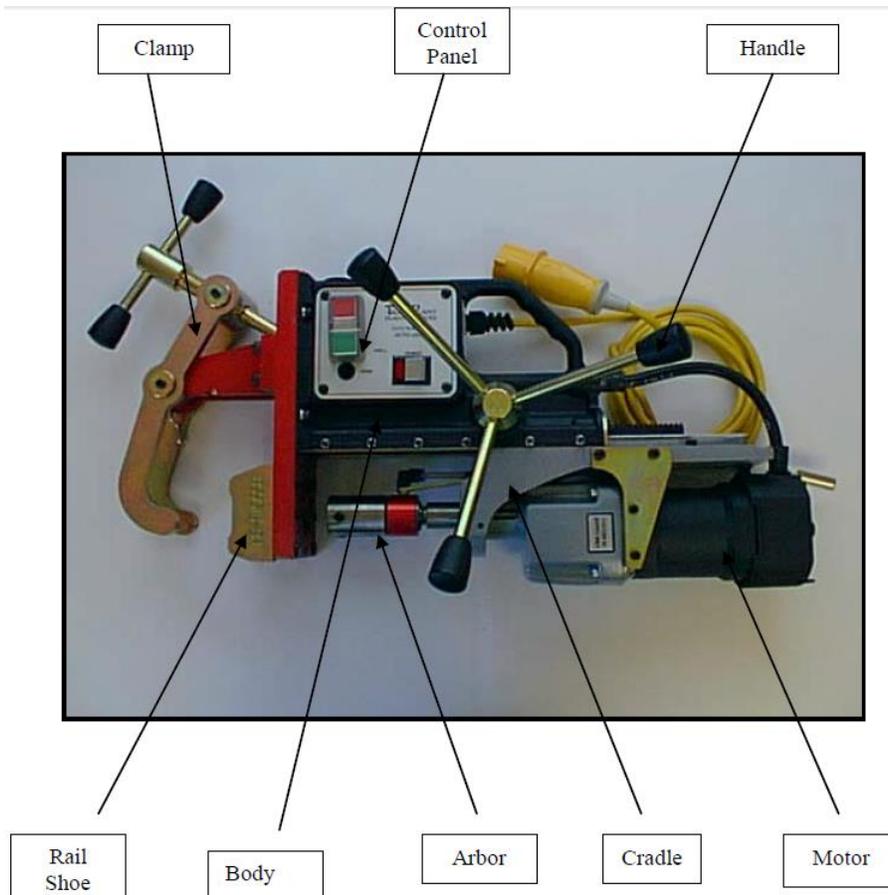
**Always** shut disconnect the power source and make sure that all controls are in a safe position and install all appropriate locking and safety devices before doing any of the following:

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

## Section 2: Specifications and Installation

### Getting to Know Your RRP High Speed Electric Rail Drill

Before you use your new RRP High Speed Electric Rail Drill please take the time to familiarize yourself with the functions and controls.



### Specifications

Motor: ..... 1150W 2 Speed  
Power Source:..... 110V  
No Load Speed: ..... 280rpm or 640rpm  
Overall Sizes: ..... H460mm x L600mm x W260mm  
Cutter Capacity: ..... Ø36mm  
Weight: ..... 19 kg  
HAV Readings:..... A(8) - <2.5m/s<sup>2</sup>  
Noise level:..... 78dBA at 1m

## **RRP High Speed Electric Rail Drill Ancillary Components/Equipment**

### **The Coolant Bottle**

The Pressurized Coolant System designed to give maximum coolant and lubrication will help to prolong cutter life. As well as ensuring a clean hole every time.

NB. Always use recommended cutting fluid.

### **Storage Case**

This hard wearing and tough metal carry case provides protection for your drill in transit. The spacious design leaves enough room for all your tools and ancillaries.

### **Index Drilling Plate**

Used to ensure holes are correctly distanced from end of rail and center to center, guaranteed to provide complete accuracy.

### **Rail Shoes**

Manufactured from aluminum, ensuring accuracy and repeatability.

### **Broaching Cutters**

Universal broaching cutters provide an unrivaled quality and accuracy allowing you to drill with confidence.

### **Chuck Adapter**

This Chuck adapter can be used to fit any standard stub drill to the RRP High Speed Electric Rail Drill giving you the ability to cut any hole up to a maximum diameter of 13mm.

## 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

### Installing a Broaching Cutter

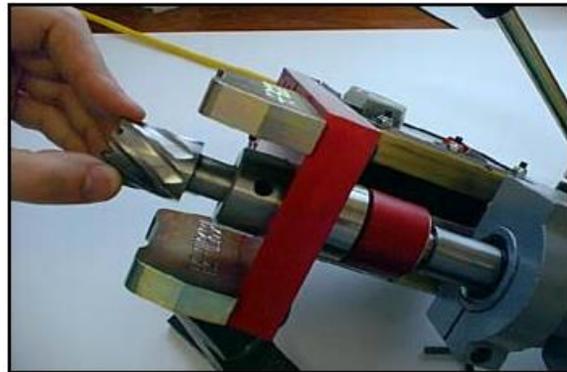
1. Disconnect machine from power supply.
2. Insert the pilot pin in the broaching cutter.

The main function of the pilot pin is to ensure ejection of the slug at the end of each drilling cycle.

3. Loosen the grub screws so the shank of the cutter fits neatly into the arbor.

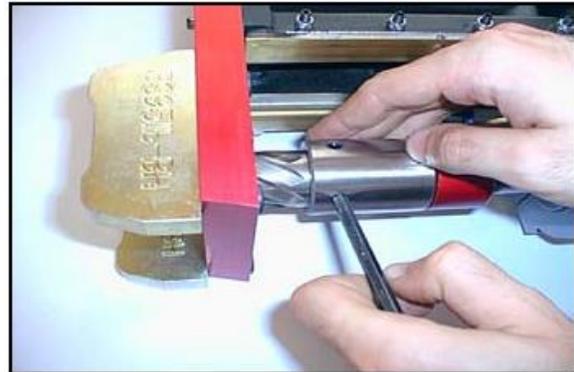
Align the flats of the cutter with the grub screws.

4. Insert the cutter firmly into the arbor compressing the internal spring until the shoulder of the cutter meets the end of the arbor and tighten the grub screws.
5. Always have damaged grub screws replaced.



## To Remove a Broaching Cutter

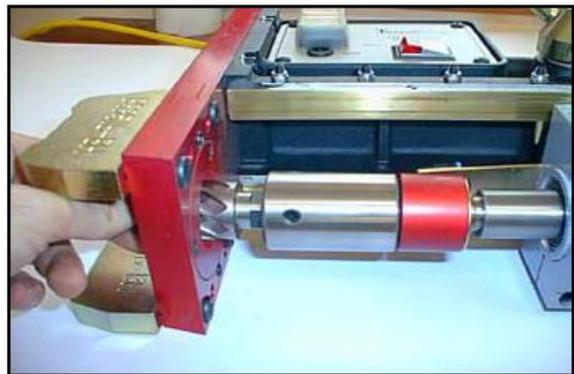
1. Loosen the grub screws.
2. The cutter will move out of the arbor under spring pressure.
3. Remove the cutter from the arbor
4. NB it is advisable to store the drill with the grub screws wound in.



## Problems

The cutter will not insert into the arbor.

- Check that the grub screws are wound out and the arbor is free from debris.
- Always make sure the screws clamp onto the flats.
- Failure to do so could result in the screws standing proud of the arbor and therefore causing damage to the guide bush.



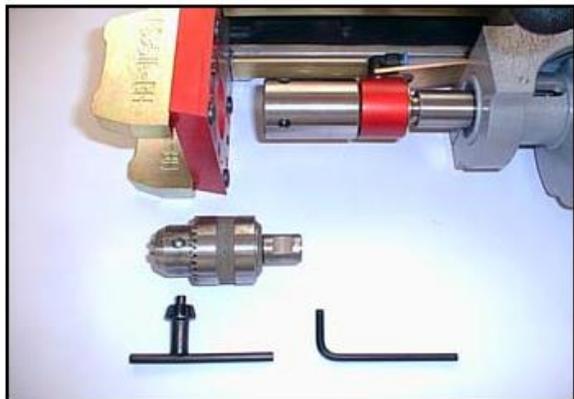
## Chuck Adapter

### Installing the Chuck Adapter

The chuck adapter is installed the same way as a broaching cutter.

### Using a Twist Drill in the Chuck Adapter

1. Insert the drill in the chuck.
2. • Tighten the chuck first by hand then using the chuck key provided.



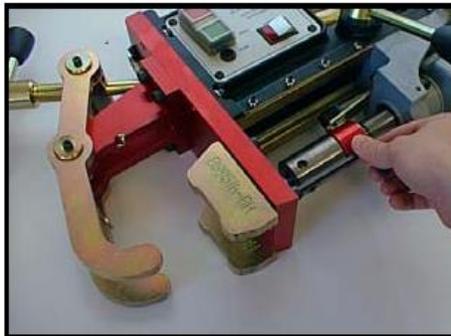
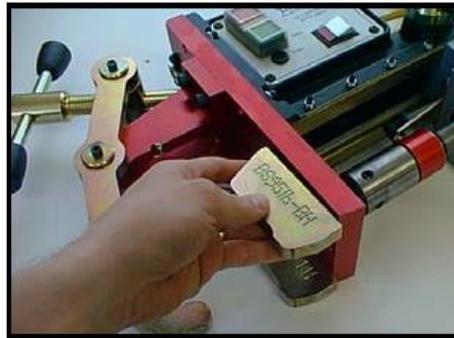
## Installing Rail Shoes

1. Ensure the ejector grub screw is wound back into the base plate.
2. Push the shoe firmly onto the locating pins.
3. Insert the 2 hex cap bolts and tighten.

## Removing Rail Shoes

1. Loosen and remove the two hex cap bolts.
2. Remove the rail shoe.

**Note:** If the shoe is tight use the ejector grub screw to force the rail shoe off.



## Coolant System

### Filling the pressurized sprayer bottle.

1. Remove the pump mechanism by turning the handle anticlockwise.
2. Fill with recommended lubricant.
3. Replace the pump mechanism and fasten clockwise

### Preparing the bottle for use.

1. Ensure the bottle has sufficient lubricant.
2. Pump the handle 4 to 5 times or until resistance is met.
3. Depress the handle and turn clockwise to lock.

### Attaching the Lubricant to the drill.

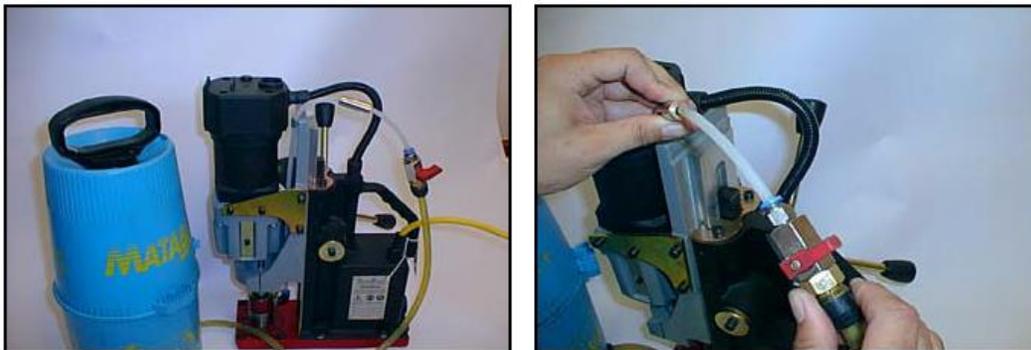
1. Push the pipe from the bottle into the coolant adapter.
2. Turn the valve on the pipe to the ON position to start coolant flow.

### Removing the lubricant from the drill.

1. Turn the valve on the pipe to OFF to stop the coolant flow.
2. Remove the pipe by pressing the release ring on the coolant adapter.

### Depressurizing the coolant bottle.

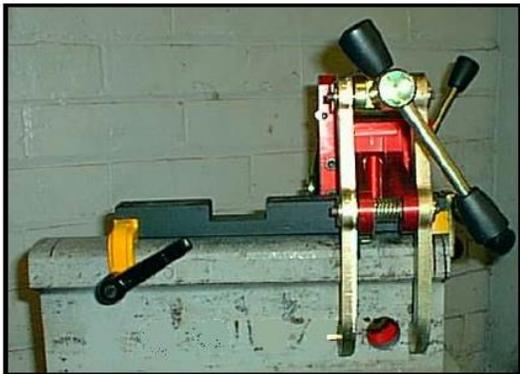
1. Turn the pressure release valve anticlockwise to release the pressure.
2. Close the valve by turning it clockwise.



## Using the Indexing Plate

The machine is normally used with hole positioning indexing plates for 113FB, 95LB, U69 and ALU rail

1. Fit to rail head.
2. Make sure the end stop is to end of rail.
3. Tighten locking screw.
4. Locate the Clevis arm into the index slot and clamp the Rail Drill as described in the *Attaching the Drill* section.
5. Drill the first hole
6. Un-clamp the Rail Drill as described in the *Removing the Drill* section.
7. Clean between the rail shoes with a hand brush to clear all swarf.
8. Repeat above procedure for drilling the second hole.



## Attaching the Drill

1. Before attaching the rail drill make sure that the rail surface is free from debris and swarf from previously drilled holes.
2. Place the rail drill over the rail section and locate the clevis arm into the first slot of the indexing plate (If used).
3. Locate the rail shoes correctly in the web of the rail.
4. Pull the tommy bar shaft away from the drill unit, turn and locate the end into its pocket on the locking block.
5. Secure the drill by rotating the tommy bar shaft clockwise, drawing machine firmly onto the rail.
6. Ensure that the rail shoes fit squarely into the rail web.



## Removing the Drill

1. Once a hole has been drilled, release the rail drill by turning the tommy bar shaft anti-clockwise until it is possible to pull the end of the shaft out of the locking block pocket.
2. Fold the tommy bar shaft back against the rail drill base plate and lift the drill clear of the rail or indexing strip. (If used)
3. Clear swarf  
After every hole is drilled, always make sure that the Nylube Bush is clean from any swarf, as it may cause the bush to wear. If the Arbor starts to wobble the Nylube Bush is ready for replacing.
4. Repeat from *Attaching the Drill* for second hole using second slot on indexing plate. (If used.)



## Drilling a Hole

1. Having fitted the indexing plate and clamped the machine to the rail.
2. Ensure the correct power supply is connected.
3. Switch on mains indicated by red neon.
4. Ensure the cutter is clear of rail web
5. Switch on coolant supply and check that no swarf is restricting the arbor movement through the nylube bush.
6. Switch on the motor.
7. Apply a small amount of drilling pressure until the cutter is engaged in rail web.
8. Increase pressure making sure not to overload the motor.
9. Check the slug has been ejected at the end of each drilling cycle.
10. Retract the cutter making sure the cutter is again clear of rail web.
11. Turn off the motor and coolant supply.

## 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.

### Slide Adjustment

After repeated use the cradle may become loose and need to be tightened.

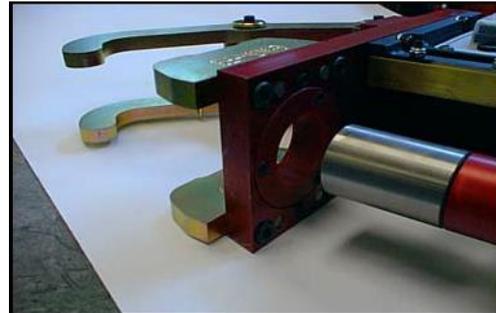
1. Put 2.5mm Allen Key into head of cradle retaining nuts, using 8mm Spanner undo the locking nuts anti-clockwise holding the Allen key without moving grub screws.
2. Using the Allen Key gently tighten screws in series until the cradle moves freely in the slide but does not allow the motor to wobble.
3. When adjustment is complete re-tighten locking nuts clockwise.



### Nylube Bush.

After every hole is drilled, always make sure that the Nylube Bush is clean from any swarf, as it may cause the bush to wear.

If the Arbor starts to wobble the Nylube Bush is ready for replacing.



### Storing and Packing the RRP High Speed Electric Rail Drill

1. Place the drill into the case
2. Put any cutters rail shoes etc. into the bottom of the case.
3. Place the indexing strips across the top of the drill.
4. Finally put the Pressure bottle across the top.



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## Section 5: Parts and Service Support

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)).

1955 Norwood Court  
Mount Pleasant, WI 53403  
Phone: (262) 637-9681  
Email: [custserv@racinerailroad.com](mailto:custserv@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 & 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.

## High Speed Electric Rail Drill Service Parts

FOR SERVICE ONLY			
ITEM	QTY	DESCRIPTION	PART NO.
1	1	PCB (LY2 110V)	466063
2	1	ADAPTER, .25 BSP(M) X 6 MM PUSH	466064
3	1	ARBOR, TM1000 ELECTRIC MT2	466375
4	1	WASHER, COOLANT	466377
5	1	SEAL, COOLANT	466378
6	1	HOLDER, COOLANT BOTTLE	467003
7	1	HOLDER, COMPLETE BRUSH	467285
8	1	BRUSH	467286
9	1	STATOR, COMPLETE	467287
10	1	BEARING, GROOVED BALL	467288
11	1	BEARING, GROOVED BALL	467289
12	1	ROTOR, COMPLETE	467290
13	1	CONDENSOR	467291
14	1	SWITCH, ACTUATOR	467629
15	1	BODY, MINIBOR	469226
16	1	PROTECTOR, SWITCH	469227
17	1	BASE PLATE, TM1000 ELECTRIC	469228
18	1	WASHER, FITTING	469229
19	1	BEARING, GROOVED BALL	469230
20	1	SPRING, FITTING	469231
21	1	PANEL, ELECTRIC	469341
22	1	HANDLE, 12MM SMALL ZINC	470196
23	1	UNI 2 DRILL 110 V EIBENSTOCK	470197
24	1	CASING, MOTOR	470198
25	1	BEARING, NEEDLE	470434
26	1	BEARING, GROOVED BALL	472991
27	1	SHAFT, 2 PINION	472992
28	1	SHAFT, CLUSTER	472993
29	1	GEAR, CLUSTER	472994
30	4	DOWEL	473657

## 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