

High Speed Gas Rail Drill
Operating Manual
910068



High Speed Gas Rail Drill

910068

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 | 8.2022 | Add part number 501203 to drill assembly parts list: Item 37 |
| Rev 3.2 | 9.2022 | Update Gas High Speed Rail Drill Service Parts – add KEY, SQ: .19 X 1 RRP# 463101 Add Service Parts List for RRP# 464383 Gas Rail Drill |

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High Speed Gas Rail Drill Overview

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

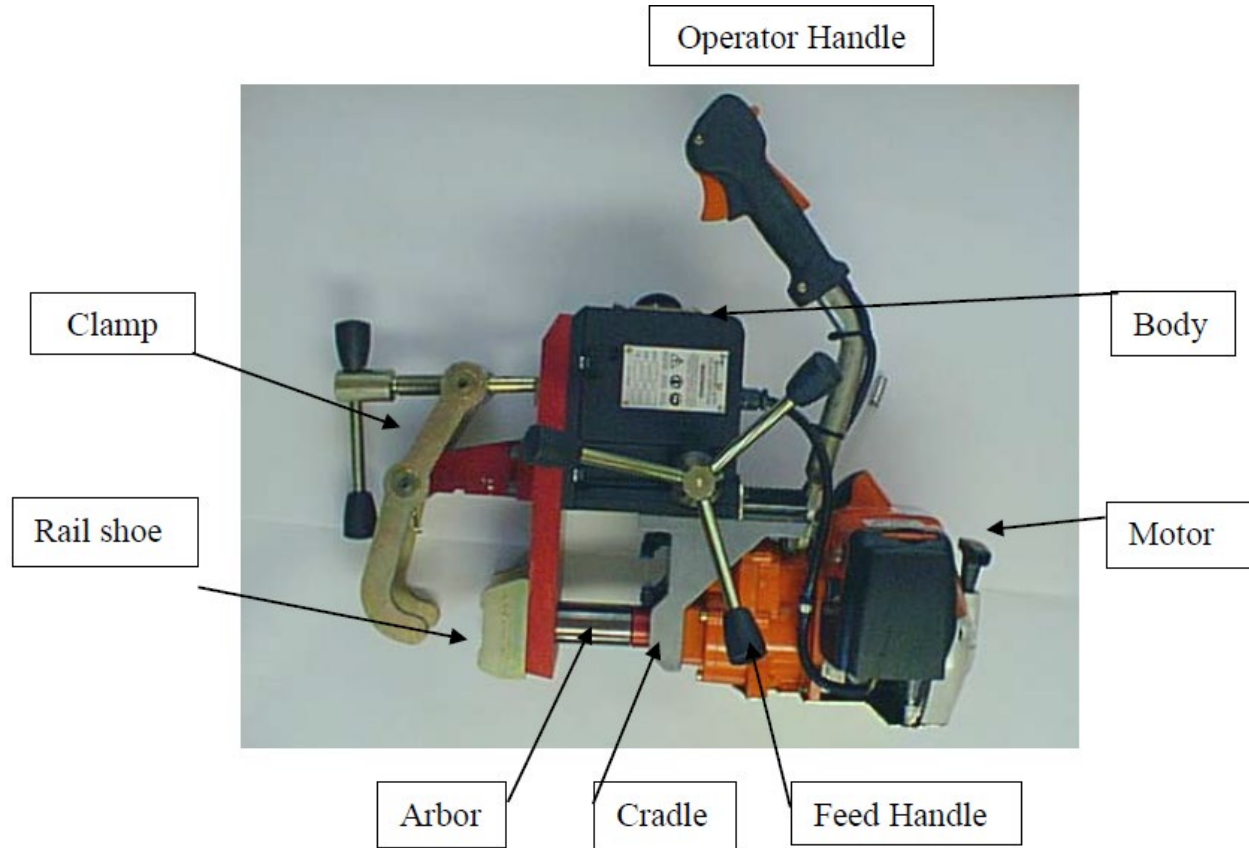
Our product line focuses on rail fastening application/removal/adjustment equipment, other tie material (OTM) reclamation, wood and concrete railway tie repair, and tie plate handling/distribution.

The RRP High Speed Gas 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 Gas Rail Drill a cost effective solution to drilling clean, accurately positioned holes in rail sections for bonds, and fishplates.
- Powered by a 1.3kW, 2-stroke gasoline engine.
- 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.

Getting to Know Your RRP High Speed Gas Rail Drill

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



RRP High Speed Gas 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 Gas Rail Drill giving you the ability to cut any hole up to a maximum diameter of 13mm.

Safety

Do not attempt to connect the machine to any power supply other than AC single phase.

Do not change a cutter with the machine connected to its power supply.

Do make sure that you have the correct rail shoes fitted for the rail section to be drilled and are using the correct hole positioning indexing plate.

Do make sure you have installed the correct size cutter for the rail section to be drilled.

Do make sure the cutter fitted is sharp without any of its cutting edges damaged.

Do not use unnecessary pressure to force the cutter through the rail. This may damage both the machine and the rail. It may also result in personal injury.

Do always use coolant when drilling holes.

Do not allow other persons into the area in which you are operating the machine.

Do remember the slug which is ejected at the end of the drilling process can cause injury. Keep the area clear at all times.

Do always wear the correct P.P.E. when operating the machine, including safety glasses/goggles.

Operating Instructions

Installing a Broaching Cutter

1. Make sure the engine is not running.
2. Insert the pilot pin in the broaching cutter.
The main function of the pilot pin is to make sure 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.
4. Align the flats of the cutter with the grub screws.
5. 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.

Always have damaged grub screws replaced.

Note: 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.

Removing a Broaching Cutter

1. Loosen the grub screws.
The cutter will move out of the arbor under spring pressure.
2. Remove the cutter from the arbor

Note: It is advisable to store the drill with the grub screws wound in.

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.



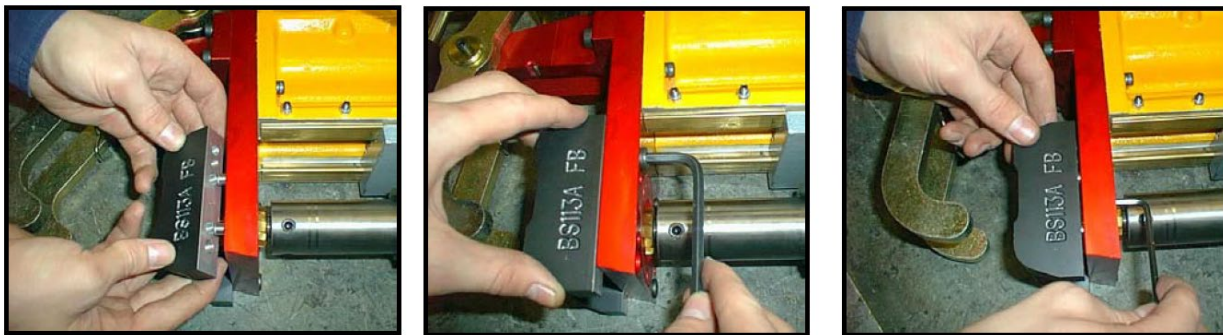
Installing Rail Shoes

1. Make sure 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.

Fill your coolant pump bottle in accordance with the manufacturers guidelines.

Preparing the bottle for use.

See manufacturers guidelines.

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.

See manufacturers guidelines.

Remove the pipe from the coolant tap adapter.

Using the Indexing Plate

1. The machine is normally used with hole positioning indexing plates for 113FB and 95LB, Bull head rail.
2. Fit to rail head.
3. Make sure the end stop is to end of rail.
4. Tighten locking screw.
5. Locate the Clevis arm into the index slot and clamp the Rail Drill as described in the *Attaching the Drill* section.
6. Drill the first hole
7. Un-clamp the Rail Drill as described in the *Removing the Drill* section.
8. Clean between the rail shoes with a hand brush to clear all swarf.
9. Repeat above procedure for drilling the second hole.



Attaching the Drill

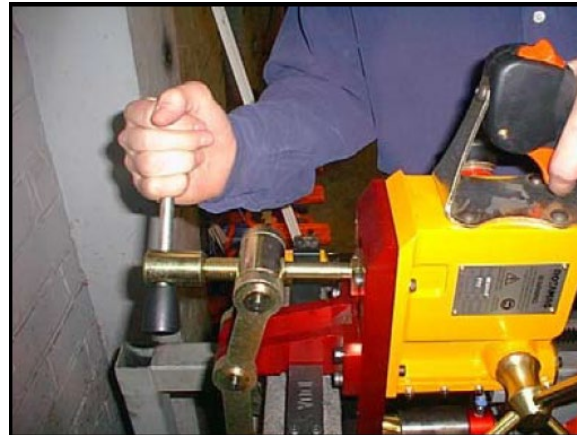
1. Before attaching the rail drill make sure that the rail surface is free from debris and swarf from previously drilled holes.
2. Place the rail drill over the rail section and locate the clevis arm into the first slot of the indexing plate (If used).
3. Locate the rail shoes correctly in the web of 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. Make sure that the rail shoes fit squarely into the rail web.



Tommy bar
& Handle

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.

Storing and Packing the RRP High Speed Gas 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.



Maintenance

Slide Adjustment

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

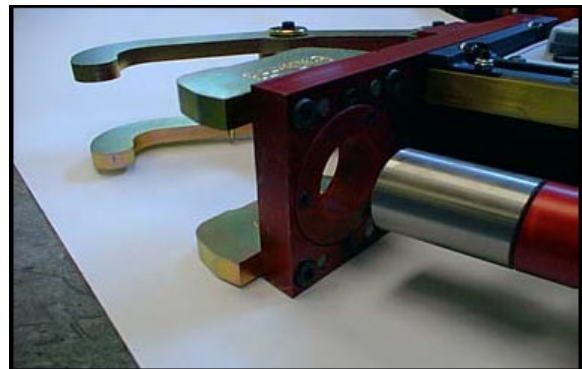
1. Put 2.5mm Allen Key into head of cradle retaining nuts, using 8mm Spanner undo the locking nuts anti-clockwise holding the Allen key without moving grub screws.
2. Using the Allen Key gently tighten screws in series until the cradle moves freely in the slide but does not allow the motor to wobble.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



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)). 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 & 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.

Common Spare Parts

| Description | RRP Part Number |
|--------------------|-----------------|
| Air Filter | 465201 |
| Engine | 792752 |
| Coolant | 464921SK |
| Coolant Bottle | 464172 |
| Crane Clamp Kit | 792599 |
| Girder Clamp Kit | 792590 |
| Pilot Pin | 464169 (469108) |
| Recoil Starter | 465200 |
| Spacer Kit (Crane) | 792599 |
| Spark Plug | 466221 |

Gas High Speed Rail Drill Service Parts

| NO. | QTY | DESCRIPTION | PART NO. |
|-----|-----|-------------------------------|----------|
| 1 | 1 | ARM, CLUTCH | 465091 |
| 2 | 2 | BOLT, SHOULDER | 465816 |
| 3 | 1 | CLUTCH, ARM BOSS | 466874 |
| 4 | 1 | DECAL, RRP PHONE AND WEBSITE | 464379 |
| 5 | 1 | DRILL, GAS RAIL | 464383 |
| 6 | 1 | HONDA GXH50 | 464673 |
| 7 | 1 | MANUAL, TM1000P4 GAS DRILL | 910068-M |
| 8 | 4 | SCR, HEX: M6-1 X 12 | 500066 |
| 9 | 2 | SCR, SOC SET M8-1.25 X 8 | 465774 |
| 10 | 4 | SCR, SOC: .25-28 X 1 | 400787 |
| 11 | 1 | SCR, THUMB SHLD: M8-1.25 X 30 | 467335 |
| 12 | 2 | SPACER, CLUTCH ARM | 465815 |
| 13 | 4 | WASHER, LOCK: .25 | 491701 |
| 14 | 1 | KEY, SQ: .19 X 1 | 463101 |

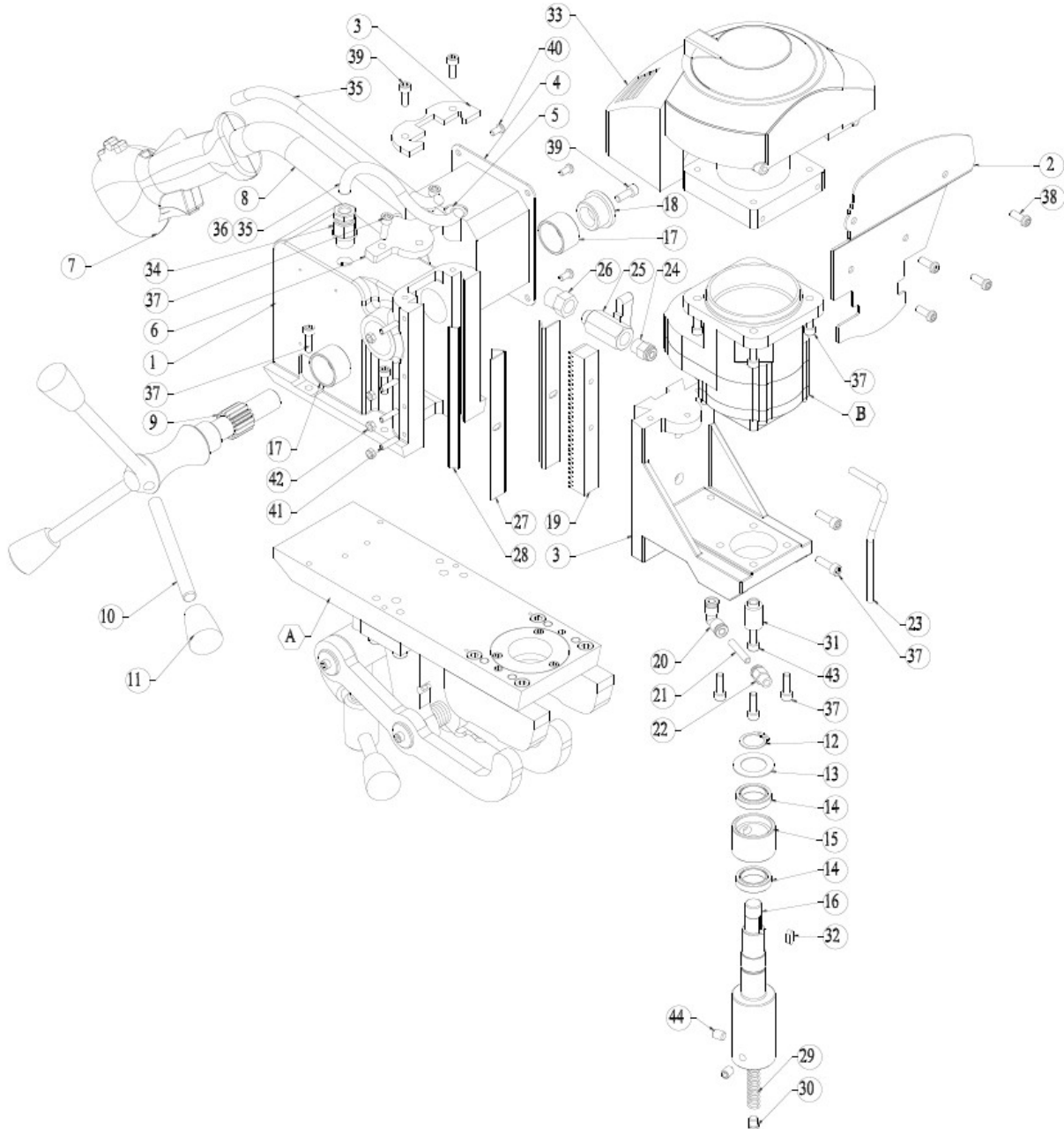
Service Parts for RRP# 464383 Gas Rail Drill

| FOR SERVICE ONLY | | | | FOR SERVICE ONLY | | | |
|------------------|------|----------------------------------|----------|------------------|------|--------------------------------|----------|
| NO. | QTY. | DESCRIPTION | PART NO. | NO. | QTY. | DESCRIPTION | PART NO. |
| 1 | REF | CRADLE | 464487 | 44 | REF | ARM, CLUTCH | 465091 |
| 2 | REF | SHIM, BRASS | 464488 | 45 | REF | HOLDER, COOLANT BOTTLE | 467003 |
| 3 | REF | GF STRIP | 464489 | 46 | REF | BEARING, BALL 6002 | 467010 |
| 4 | REF | PLATE, TOP | 464490 | 47 | REF | CIRCLIP, 15MM EXTERNAL | 467011 |
| 5 | REF | HANDLE, 12mm | 464491 | 48 | REF | CIRCLIP, 32MM INTERNAL | 467012 |
| 6 | REF | HANDLE, KNOB | 464492 | 49 | REF | SPACER RING, BEARING | 467013 |
| 7 | REF | CAP, DEEP END | 464493 | 50 | REF | HOLDER, COOLANT BOTTLE | 467003 |
| 8 | REF | PINION, BUSH | 464494 | 51 | REF | CHUCK W/KEY | 467170 |
| 9 | REF | WASHER, ARBOR COOLANT | 464495 | 52 | REF | HANDLE, RRP SPEC TOMMY BARR | 467281 |
| 10 | REF | RING, ARBOR COOLANT | 464496 | 53 | REF | SWITCH, OIL ALERT LEVEL | 466719 |
| 11 | REF | CIRCLIP, ARBOR COOLANT | 464497 | 54 | REF | PROTECTOR, OIL SWITCH SURGE | 466720 |
| 12 | REF | SEALS, ARBOR COOLANT | 464498 | 55 | REF | COVER, AIR CLEANER | 467311 |
| 13 | REF | BOTTLE | 464499 | 56 | REF | SPRING, ARBOR | 467318 |
| 14 | REF | ENGINE, 2.5 H.P. | 464673 | 57 | REF | PLUG, ARBOR EJECTION | 465312 |
| 15 | REF | KEY, A5X5X11 | 464501 | 58 | REF | COVER, COMPLETE CRANKCASE SIDE | 467465 |
| 16 | REF | ARBOR, GEARBOX | 465751 | 59 | REF | COVER, COMPLETE FAN | 467467 |
| 17 | REF | NUT, ACORN: .31-18 PLTD | 465765 | 60 | REF | STUD, BOLT A | 467468 |
| 18 | REF | SEAL, SHAFT | 465766 | 61 | REF | STUD, BOLT B | 467469 |
| 19 | REF | SCREW, COUNTERSINK M5 x 10 | 465767 | 62 | REF | TANK, FUEL | 467470 |
| 20 | REF | KEY, SPINDLE | 465768 | 63 | REF | RING, ARBOR COOLANT | 467480 |
| 21 | REF | RACK, TM1000 | 465771 | 64 | REF | CIRCLIP, 36MM EXTERNAL | 467481 |
| 22 | REF | SCREW, GRUB M8 X 8 | 465774 | 65 | REF | KEY: 8 X 7 X 32 | 467482 |
| 23 | REF | BUSHING, NYLUBE | 465371 | 66 | REF | ARM, .79 WIDE CLUTCH | 467532 |
| 24 | REF | SHOE, LOCKING | 465772 | 67 | REF | PIPE, COOLANT: 6MM | 467555 |
| 25 | REF | CAM, PIVOT PIN | 465773 | 68 | REF | PLATE, PETROL COVER | 467692 |
| 26 | REF | ARBOR, SPRING | 465776 | 69 | REF | HOUSING, UPPER GEAR BOX | 467792 |
| 27 | REF | SPACER, CLUTCH | 465815 | 70 | REF | RING, RETAINING: 15 X 1 | 467834 |
| 28 | REF | BOLT, SHOULDER | 465816 | 71 | REF | RING, RETAINING: 32 X 1.2 | 467835 |
| 29 | REF | FITTING, FLUSH | 465811 | 72 | REF | HOUSING, LOWER GEAR BOX | 467837 |
| 30 | REF | GEAR, SPUR: 15MM | 466156 | 73 | REF | HOUSING, UPPER GEAR BOX | 467792 |
| 31 | REF | GEAR, SPUR: 12MM | 466157 | 74 | REF | SCR, SOC: M5-0.8 X 50 | 501191 |
| 32 | REF | PINION, 9 TOOTH W/CLUTCH CUP | 466158 | 75 | REF | CABLE GLAND | 467958 |
| 33 | REF | 9 TOOTH PINION SHAFT, KEYED | 466170 | 76 | REF | FILTER, FUEL | 468297 |
| 34 | REF | INTEGRATED CRADLE & GEARBOX ASSY | 466171 | 77 | REF | RUBBER A, TANK MOUNTING | 468298 |
| 35 | REF | PLUG, SPARK | 466221 | 78 | REF | CAP, FUEL TANK | 468299 |
| 36 | REF | CLUTCH ARM BOSS | 466874 | 79 | REF | TUBE, A FUEL | 468300 |
| 37 | REF | SPRING, CHOKE | 466298 | 80 | REF | COLLAR, CANISTER MOUNT | 468301 |
| 38 | REF | SWITCH, IGNITION | 466381 | 81 | REF | CLIP, B8 TUBE | 468302 |
| 39 | REF | CARRY, HANDLE | 466388 | 82 | REF | CLIP, B12 TUBE | 468303 |
| 40 | REF | PETROL BODY DOOR ASSEMBLY | 466389 | 83 | REF | BOLT, 6 X 20 FLANGE | 468304 |
| 41 | REF | BRACKET, HANDLE T1000 | 466505 | 84 | REF | CAP, FUEL TANK | 468306 |
| 42 | REF | SCR, SOC BUT M6 X 16MM | 466506 | 85 | REF | CAP, GEAR LOCKING | 468547 |
| 43 | REF | SPRING, GOVERNOR | 466593 | 86 | REF | GASKET SET | 469131 |

| FOR SERVICE ONLY | | | |
|------------------|------|--|----------|
| NO. | QTY. | DESCRIPTION | PART NO. |
| 87 | REF | RUBBER B, TANK MOUNTING | 469132 |
| 88 | REF | GASKET, INSULATOR | 469133 |
| 89 | REF | GASKET, CARBURETOR | 469134 |
| 90 | REF | WASHER, FLAT: .26 | 462369 |
| 91 | REF | HOUSING, AIR CLEANER | 465203 |
| 92 | REF | SCR, SOC: M6 X 25 | 501203 |
| 93 | REF | SPRING, ARBOR (OLD STYLE) | 476777 |
| 94 | REF | PLUG, ARBOR EJECTION LARGE (OLD STYLE) | 476778 |

Gas High Speed Rail Drill / RRP# 910068

Drill Assembly



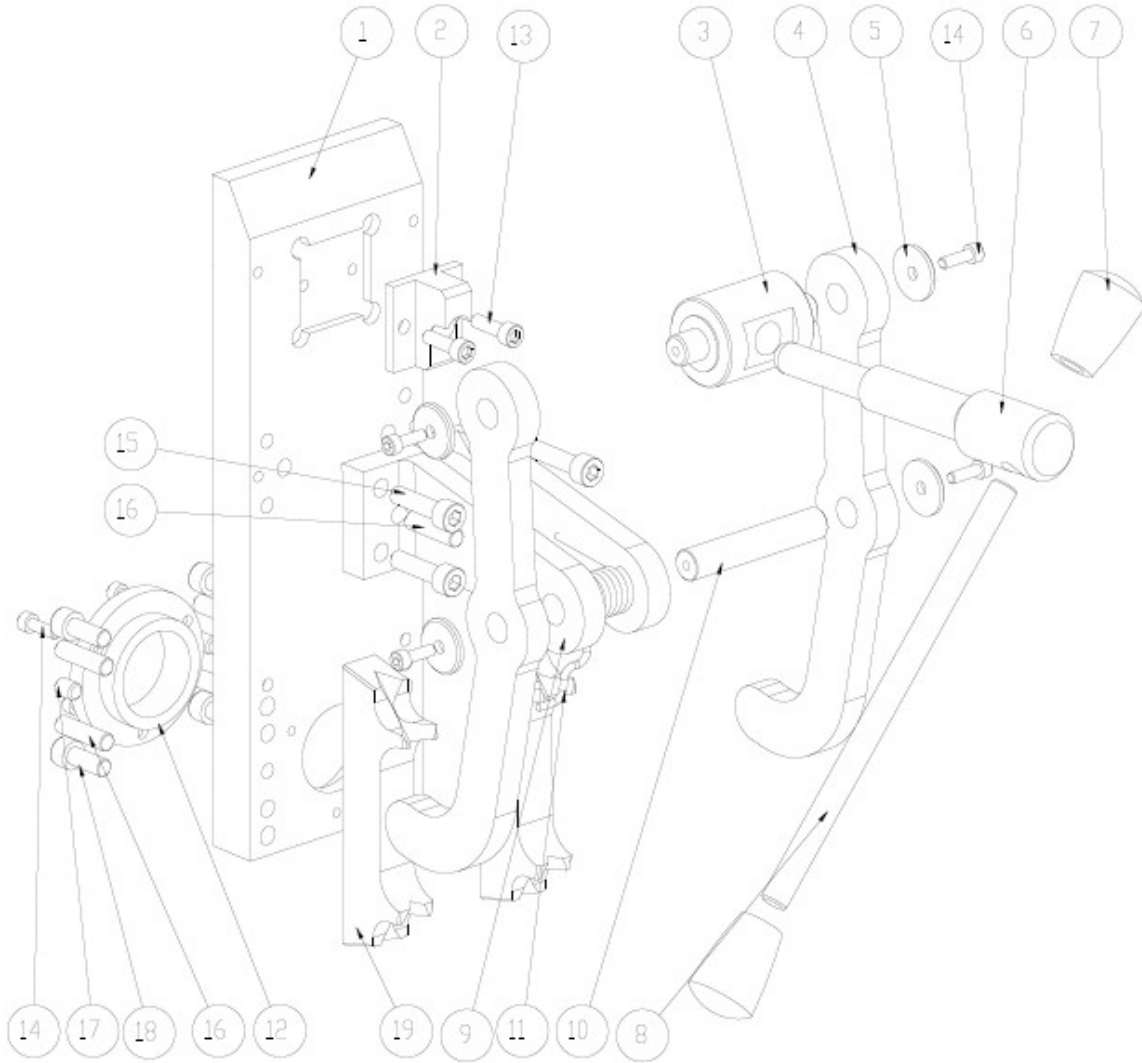
| NO | RRP No. | DESCRIPTION | QTY |
|----|---------|--------------------------------------|-----|
| 1 | 465626 | TM1000 BODY | 1 |
| 2 | | ENGINE COVER PLATE | 1 |
| 3 | 464490 | TOP PLATE (ZINC) | 1 |
| 4 | | TM1000 PETROL TANK | 1 |
| 5 | | TM1000 PETROL TANK FERRULE | 1 |
| 6 | | TM1000 HANDLE MOUNTING PLATE | 1 |
| 7 | | TM1000 TRIGGER HANDLE ASSEMBLY | 1 |
| 8 | | TM1000 TRIGGER HANDLE SHAFT | 1 |
| 9 | 465910 | TM1000 LARGE PINION (ZINC) | 1 |
| 10 | | TM1000 HANDLE SHAFT | 3 |
| 11 | 464492 | HANDLE KNOB (12mm KNOCK ON) | 3 |
| 12 | | 19mm EXTERNAL CIRCLIP | 1 |
| 13 | | ARBOR COOLANT WASHER | 1 |
| 14 | | ARBOR COOLANT SEAL | 2 |
| 15 | | ARBOR COOLANT RING | 1 |
| 16 | | TM1000 ARBOR | 1 |
| 17 | 464494 | PINION BUSH | 2 |
| 18 | 464493 | PINION END CAP | 1 |
| 19 | 465771 | TM1000 RACK | 1 |
| 20 | | 6mm - 6mm 90° ELBOW (STEEL) | 1 |
| 21 | | 6mm OIL PIPE (SHORT) | 1 |
| 22 | | 6mm to 1/8" BSP PUSH FITTING (STEEL) | 1 |
| 23 | | 6mm OIL PIPE (LONG) | 1 |
| 24 | | 6mm - 1/4" BSP PUSH FITTING (STEEL) | 1 |
| 25 | | OIL COOLANT TAP | 1 |
| 26 | | 1/4BSP - 18mm FITTING | 1 |
| 27 | 464488 | TM1000 ANGLED BRASS STRIP | 2 |
| 28 | 465623 | TM1000 GFS | 1 |
| 29 | 465776 | ARBOR SPRING | 1 |
| 30 | 465312 | ARBOR EJECT PLUG | 1 |
| 31 | | TM1000 EXTENSION PIECE | 1 |
| 32 | | ARBOR DRIVE KEY | 1 |

| | | | |
|----|--------|---------------------------|----|
| 33 | | STIHL BT120C PETROL MOTOR | 1 |
| 34 | 500531 | Cable Conduit Gland | 1 |
| 35 | | Conduit (Black) | 2 |
| 36 | | TM1000P Petrol pipe | 1 |
| 37 | 501203 | M6 X 20 CAP SCREW | 15 |
| 38 | 466506 | M6 X 16 BUTTON SCREW | 4 |
| 39 | 500531 | M6 X 16 CAP SCREW | 3 |
| 40 | 465886 | M5 X 10 BUTTON HEAD SCREW | 4 |
| 41 | | M5 X 20 GRUB SCREW | 4 |
| 42 | 501077 | M5 FULL NUT | 4 |
| 43 | | M6 X 40 CAP SCREW | 1 |
| 44 | | M8 X 10 GRUB SCREW | 2 |

Drill Assembly Legacy / Old Style Part Numbers

| NO | RRP No. | DESCRIPTION |
|----|---------|-----------------------------------|
| 2 | 466171 | Cradle & Gearbox Assembly |
| 9 | 465624 | TM1000 handle (zinc) |
| 13 | 465787 | TM1000 handle bracket |
| 15 | 466388 | TM1000 carry handle |
| 16 | 466389 | Petol body door assembly |
| 19 | 467555 | 6mm coolant pipe |
| 21 | 464801 | 6mm – 6mm straight connector |
| 22 | 466874 | Clutch arm boss |
| 23 | 465815 | Clutch arm spacer – Racine petrol |
| 24 | 465091 | Clutch arm – GXH50 thin |
| | 467532 | Clutch arm – thick |
| | 465091 | Comes with spring |
| 25 | 465092 | Clutch spring |
| 26 | 462192 | Motor drive key |
| 28 | 464673 | GXH50 Petrol motor |
| 29 | 500361 | M5 x 10mm grub screw |
| 30 | 465886 | M5 x 10mm button head screw |
| 31 | 500361 | M5 x 25mm grub screw |
| 36 | 466506 | M6 x 16mm button head screw |
| 38 | 465752 | M8 x 10mm grub screw |
| 40 | 465816 | M8 x 10 shoulder bolt |

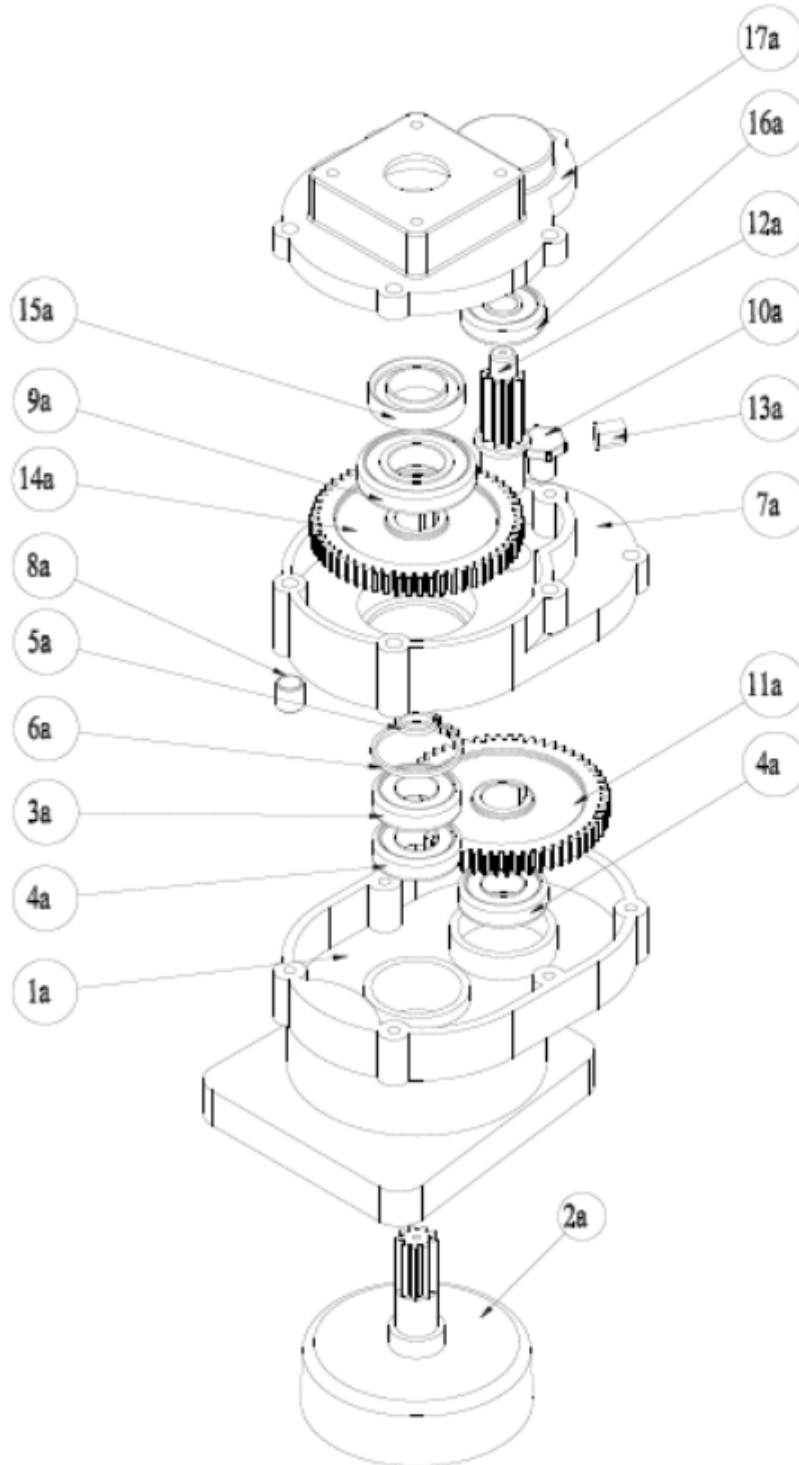
Clamp Assembly



Clamp Assembly Parts List

| No. | RRP No, | Description | Qty |
|-----|---------|---------------------------|-----|
| 1 | 465511 | TM1000 Petrol Base plate | 1 |
| 2 | 465772 | Screw clamp locking shoe | 1 |
| 3 | 464949 | Screw clamp pivot shaft | 1 |
| 4 | 465531 | TM1000 locking arm | 2 |
| 5 | 491538 | Cam pin end cap | 4 |
| 6 | 464948 | Screw clamp locking shaft | 1 |
| 7 | 464492 | 12mm knob | 2 |
| 8 | 465489 | Ø12 handle | 1 |
| 9 | | Locking arm clevis | 1 |
| 10 | 465773 | Cam pivot pin | 1 |
| 11 | 465704 | TM1000 leg release spring | 1 |
| 12 | 465371 | TM1000 Nylube bush | 1 |
| 13 | | M6x20 cap screw | 2 |
| 14 | 491637 | M5x16 cap screw | 7 |
| 15 | | M8x30 cap screw | 4 |
| 16 | | Ø8x30 Lg Dowel | 6 |
| 17 | | M8x10 Grub screw | 2 |
| 18 | 500550 | M8x20 cap screw | 4 |
| 19 | | Rail shoe | 2 |

Gearbox Assembly



Gearbox Parts list

| Item No. | RRP No. | Description | Quantity |
|----------|---------|---------------------------------|----------|
| 1a | | Clutch housing | 1 |
| 2a | | Clutch drum | 1 |
| 3a | 467010 | Grooved ball bearing 6002 | 2 |
| 4a | | Grooved ball bearing 6002-2z | 1 |
| 5a | 467011 | Retaining ring 15x1 | 1 |
| 6a | 467012 | Retaining ring 32x1.2 | 1 |
| 7a | | Gear housing | 1 |
| 8a | | Sleeve | 2 |
| 9a | | Grooved ball bearing 6004 | 2 |
| 10a | | Screw plug | 1 |
| 11a | | Drive gear | 1 |
| 12a | | Shaft | 1 |
| 13a | | Key A5x5x11 | 1 |
| 14a | | Drive gear | 1 |
| 15a | | Oil seal B35x20x7 | 1 |
| 16a | | Grooved ball bearing 6200 | 1 |
| 17a | | Cover | 1 |
| 18a | | Petrol gear bush (not shown) | 1 |
| 19a | | Petrol bearing bush (not shown) | 1 |

Gearbox Legacy / Old Style Part Numbers

| | |
|-----------------------------|--------|
| Lower gear box housing | 67837 |
| Bearing | 465765 |
| Bearing | 466202 |
| Shaft seal | 465766 |
| TM1000 arbor petrol gearbox | 465751 |
| 9 tooth pinion shaft keyed | 466170 |
| 12mm thick spur gear | 466157 |
| Bearing | 465684 |
| M5 x 10 countersunk screw | 491845 |
| Motor | 464673 |
| Upper gearbox housing | 467792 |
| Bearing spacer ring | 467013 |
| Flush fit 6 pipe fitting | 465811 |
| Gear drive key | 465768 |
| Carb | 715255 |