

THE
BARRETO
MODEL 912HM
HYDRAULIC TRENCHER OWNER'S MANUAL

CONGRATULATIONS!

You are now the proud owner of the BARRETO trencher. The OPERATOR'S MANUAL is attached to the machine. Please study it and this manual to become familiar with the trencher, its characteristics, and method of operation. Pay particular attention to the safety and operating instructions to prevent personal injury or equipment damage.

If you have any questions or need any replacement parts in the future, please contact us at your convenience. Our toll-free phone number, fax and email are listed below.

THANK YOU for your patronage and confidence in BARRETO equipment.

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Web Site: <http://www.barretomfg.com>

Machine Identification Record

Machine model number _____

Machine serial number _____

Engine manufacturer _____

Engine model number _____

Engine serial number _____

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TRENCHER DELIVERY AND ASSEMBLY INSTRUCTIONS

Upon delivery, check for freight damage and any missing items. Report any damage immediately to the carrier and Barreto Manufacturing and take pictures if possible. Remove trencher from shipping crate.

When documentation refers to “right side” or “left side”, it is relative to the operator’s position with both hands on the handlebars.

Install cushion pad, boom cushion, and boom. **CAUTION!!** The boom is heavy. You may want help to lift it into place. Push boom on as far as it will go onto the boom mount (part of the chain motor housing weldment). Be sure adjuster screw is backed out.

SERVICE INFORMATION

- Your trencher should arrive with 9.5 gallons of hydraulic fluid in the tank. Check reservoir level using the sight glass on the right side of the tank. Shipping regulations may prohibit shipping with the hydraulic fluid. If required, add tractor transmission / hydraulic fluid to the reservoir. For machine use in ambient temperatures between +32°F (0°C) and +90°F (32°C) hydraulic fluid ISO 68 is recommended with anti-foaming additives. If the machine is operated at temperatures below +32°F (0°C) then hydraulic fluid ISO 46 is recommended.
- Recheck oil level after trencher has been run and oil has circulated through the components. Routinely check the level thereafter.
- Change hydraulic fluid filter after the first 50 hours of use. Change it every 200 hours thereafter.
- Add approximately one quart (1 liter) of hydraulic fluid to the reservoir with each filter change.
- Discard the old filter according to environmental standards in your geographic area.
- Check all hydraulic fittings for leaks and tighten if necessary.
- The grease zerk on chain shaft housing should be greased after every 4 to 8 hours of use.
- The grease zerk in the front wheel should be greased after every 8 hours of use.
- Grease zerks on cylinder rod end and boom pivot should be greased daily.
- Grease zerks on each side of the boom cylinder and on front wheel hub should be greased once a week..
- Grease zerks on the wheel hubs and hub lock screws should be greased and freewheeled once a week or so, depending upon free wheel use.
- The grease zerk in the chain roller bearing should be greased after every 4 to 8 hours of use.
(See page 10 for illustrations of lubrication points.)

IMPORTANT: The engine on the Barreto trencher is normally serviced prior to shipping. However, shipping regulations may prohibit shipping with fuel or oil in the machine. Check levels and add oil and fuel as required before starting engine. Service the engine according to the engine manual before starting.

IMPORTANT: If the couplers between the engine and the pump are moved or removed for any reason, it is **CRITICAL** that they have a 1/16” gap between them when reinstalled. Failure to have this gap will result in rapid wear and failure of your pump!

NOTE: It is very important to move the fuel shutoff lever to the closed position after stopping the engine. Failure to do so could cause fuel to leak down into the cylinder and crankcase. Damage resulting from this will void your engine warranty and not be covered.

WARNING: Running the trencher without hydraulic oil will cause serious damage to the hydraulic pump. **INSURE THAT THE RESERVOIR OIL LEVEL IS TO THE SIGHT GLASS BEFORE STARTING THE MACHINE.**

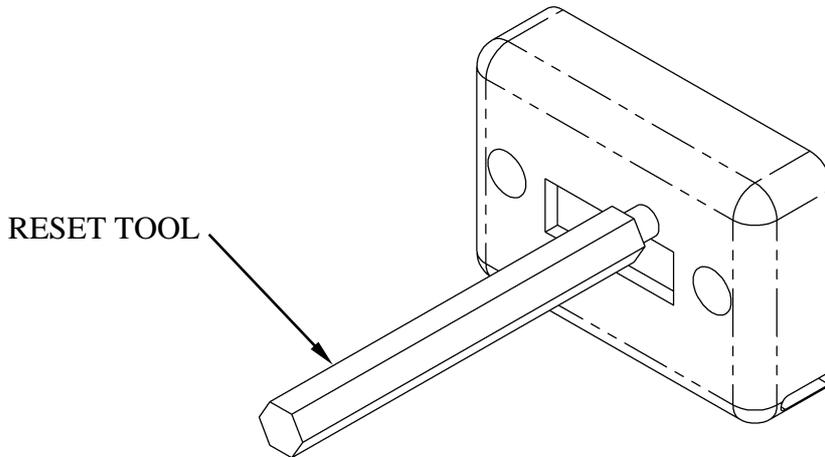
HOUR METER

The **DGI® TACH/HOUR** hour meter tracks the hours of machine operation in order for routine maintenance to be performed on a timely basis.

Your **DGI®** hour meter is pre-set at the **DGI®** factory to go into **Flash Alert** mode at 25-hour intervals. Although the engine manufacturer does not require changing engine oil this often, **due to heavy-duty use and extreme conditions inherent to tiller use, Barreto Manufacturing strongly recommends frequent oil changes.**

Refer to this manual for equipment service requirements and to the **Engine Manual** for other engine service requirements.

While **Flash Alert** is active, hold the tip of the RESET TOOL (Key Kancel Wand) against the meter as shown. Within several seconds, the display will stop flashing indicating the Service Interval has been reset. If the wand gets lost, a small mechanic's pick-up magnet will work.

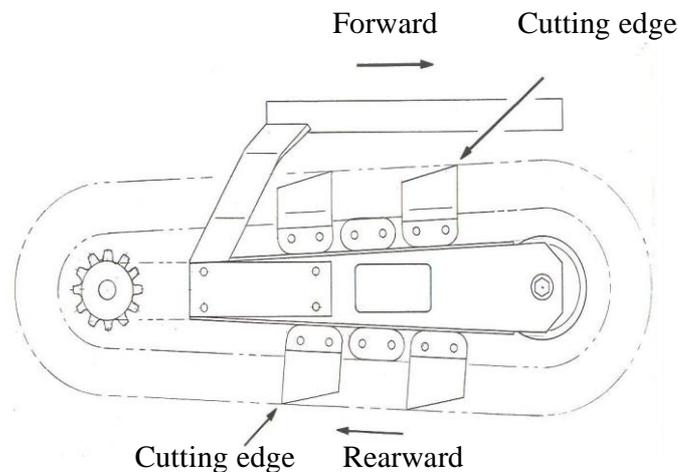


TRENCHER INTENDED USE

This machine is designed for digging trenches in “normal” ground of reasonably soft dirt and stones up to 6” (15cm) in diameter. Ground with larger stones, high clay content, very hard packed, very dry, or in a frozen condition may be unsuitable for normal trenching. Consider using a backhoe or other heavier equipment for such conditions.

CHAIN INSTALLATION

1. Slide chain under sprocket, with teeth in the correct cutting direction. Properly installed, the cutting edges of the chain will face forward on the top of the boom and rearward on the bottom of the boom (see diagram below).
2. Push digging boom control lever forward to lower boom onto the chain.
3. Wrap chain around boom and sprocket. Install chain master link or link pin.
4. Use boom adjuster screw to tighten chain. Chain should have enough slack to allow approximately 1" to 2" of space between middle of boom and chain when boom and chain are straight out in a horizontal position.
5. Tighten adjuster screw locknut.



MAINTENANCE PREPARATION

Only trained & qualified personnel should perform maintenance or repairs of the trencher. Before performing any service, maintenance, adjustments, repairs, or off-season long-term storage, follow the SHUT DOWN PROCEDURE in the OPERATOR'S MANUAL.

Do not touch the engine, muffler, or any of the hydraulic components until cool.



WARNING: Muffler and engine get hot enough to cause serious burns. For the safety of yourself and others, allow enough time for the engine, muffler, and the hydraulic fluid to cool completely before performing any cleaning or maintenance.

Avoid contact with hydraulic fluid.



WARNING: When machine is operating, hydraulic fluid is under extreme pressure and can get under skin and burn or poison.



If you need to lower the dig chain boom without power, do the following:

1. Position a pan under the trencher to catch hydraulic fluid.
2. Support the boom front end with a hoist or forklift.



WARNING: The boom with dig chain is heavy. Manpower alone is not recommended, but if necessary, use a team of two strong workers to support the boom, and a third worker to loosen the hose.

3. Loosen the hose at the rod end (front) port of the boom cylinder and lower the boom.
4. If it still will not lower, then loosen the hose at the back end port of the boom cylinder.

BARRETO MANUFACTURING, INC. EQUIPMENT WARRANTY

Barreto Manufacturing, Inc. warrants all **BARRETO** equipment to be free of defects in material and workmanship for a period of one (1) year. All **BARRETO** fuel components, fuel tank, cap, lines & fittings are warranted for two (2) years. Warranty period begins on date of delivery to the original user.

This warranty is in lieu of all other warranties, whether written or implied, and is limited to:

1. Replacement of parts returned to the dealer and/or factory and determined defective upon inspection. (Replacement for parts to dealers shall be at dealer cost plus shipping charges.)
2. Time for pick-up and/or delivery, transportation of service calls by dealers is excluded. Manufacturer reserves the right to determine reasonable time required for repair.

Warranty does not apply to damage caused by abuse or neglect. Time and materials required for normal maintenance and service are also excluded from warranty coverage.

Engines, engine attached fuel tanks, engine accessories, batteries and tires are warranted by the original manufacturer and are not covered by the Barreto Equipment Warranty.

Wear parts such as dig chains, dig teeth, sprockets, chain rollers, bearings, bushings etc. are excluded unless it can be determined that a defect has contributed to premature wear.

ROUTINE MAINTENANCE

Routinely check the condition and clean, tighten, repair, or replace as necessary the following:

- Dig chain boom guard, muffler guard, hydraulic hoses and fittings
- Fuel lines, fasteners, Safety decals

Clean safety decals often using soap and water. **Do not use** abrasive cleaners or solvents such as mineral spirits that may damage the decals. Replace any damaged (unreadable) or missing decals. If you replace a machine part that has one or more decals affixed to it, replace the decals also. Replacement parts and decals can be purchased from Barreto Manufacturing, Inc. When attaching decals, the temperature of the mounting surface must be at least 40°F (5°C) and must be clean and dry.

Service the engine according to the engine owner's manual. Follow the directions for all aspects of service including air filter change, oil level checking, filling, draining, disposal of engine oil, disposal of petrol/gasoline, and off-season long-term storage.

Off-season long-term storage of the trencher can be at any ambient temperature.

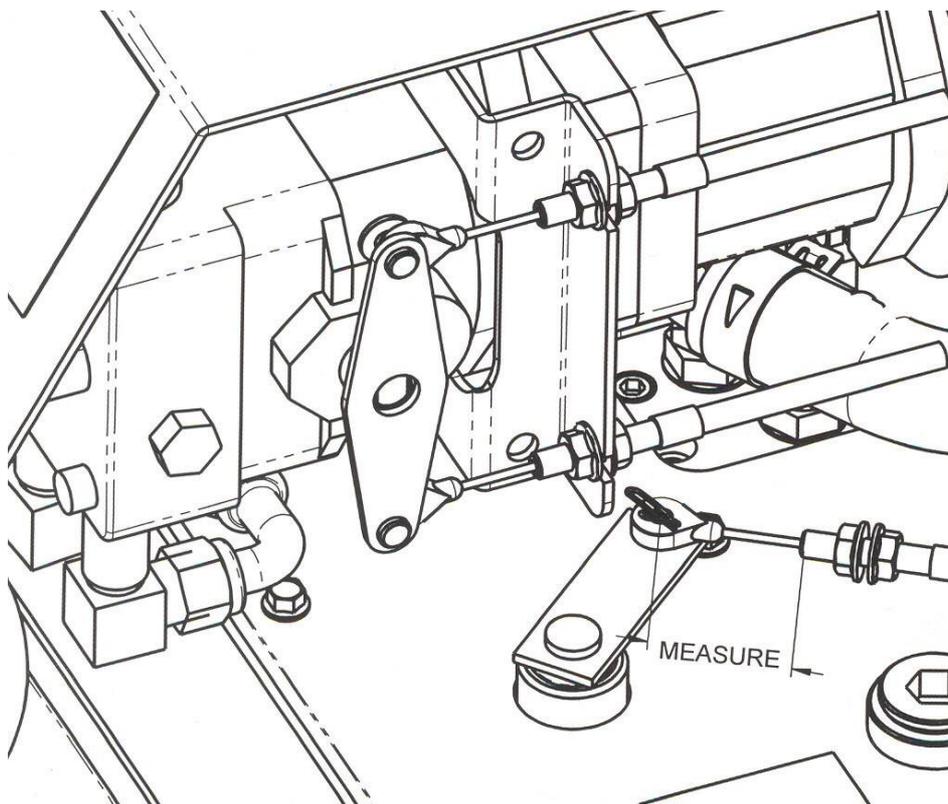


WHEEL DRIVE VALVE CABLE ADJUSTMENT

The clutch cable and lever must have some free play. The cable will stretch and occasionally needs adjustment.

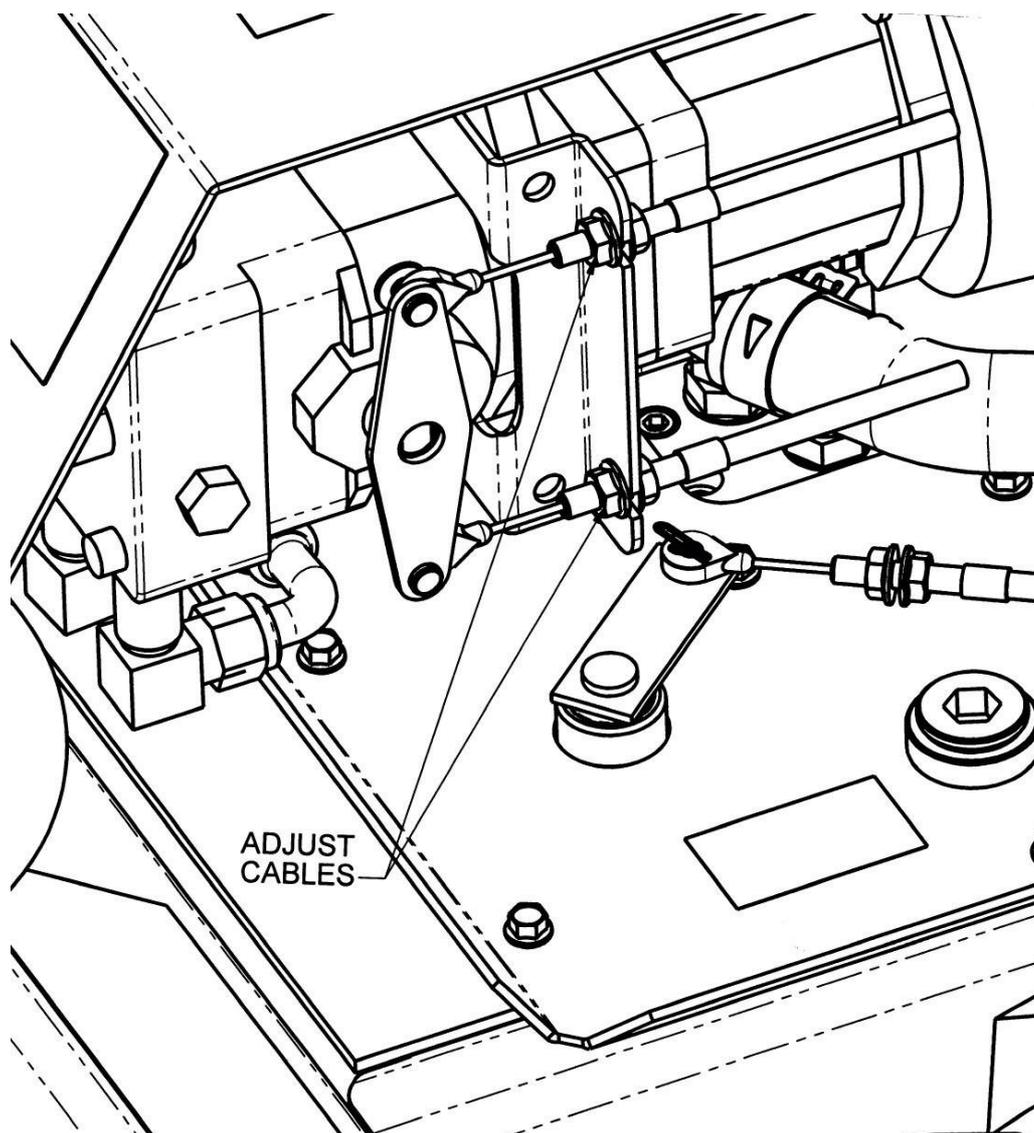
1. Rotate the actuator arm clockwise, by hand, to take up any free play. Measure the distance from the pin of the actuator arm to the end of the cable housing.
2. Pull the clutch lever all the way up until it touches the handle bar grip. With the lever pulled up, again measure the distance from the pin of the lever to the cable housing. Calculate the difference.
3. Adjust the cable for 7/16" to 1/2" movement of the actuator arm at the pin. Do not include any lever free play in the measurements.

To see a video on how to do this adjustment, enter the following address in your browser URL window: <https://www.youtube.com/watch?v=utUdozpYBcg&feature=youtu.be>



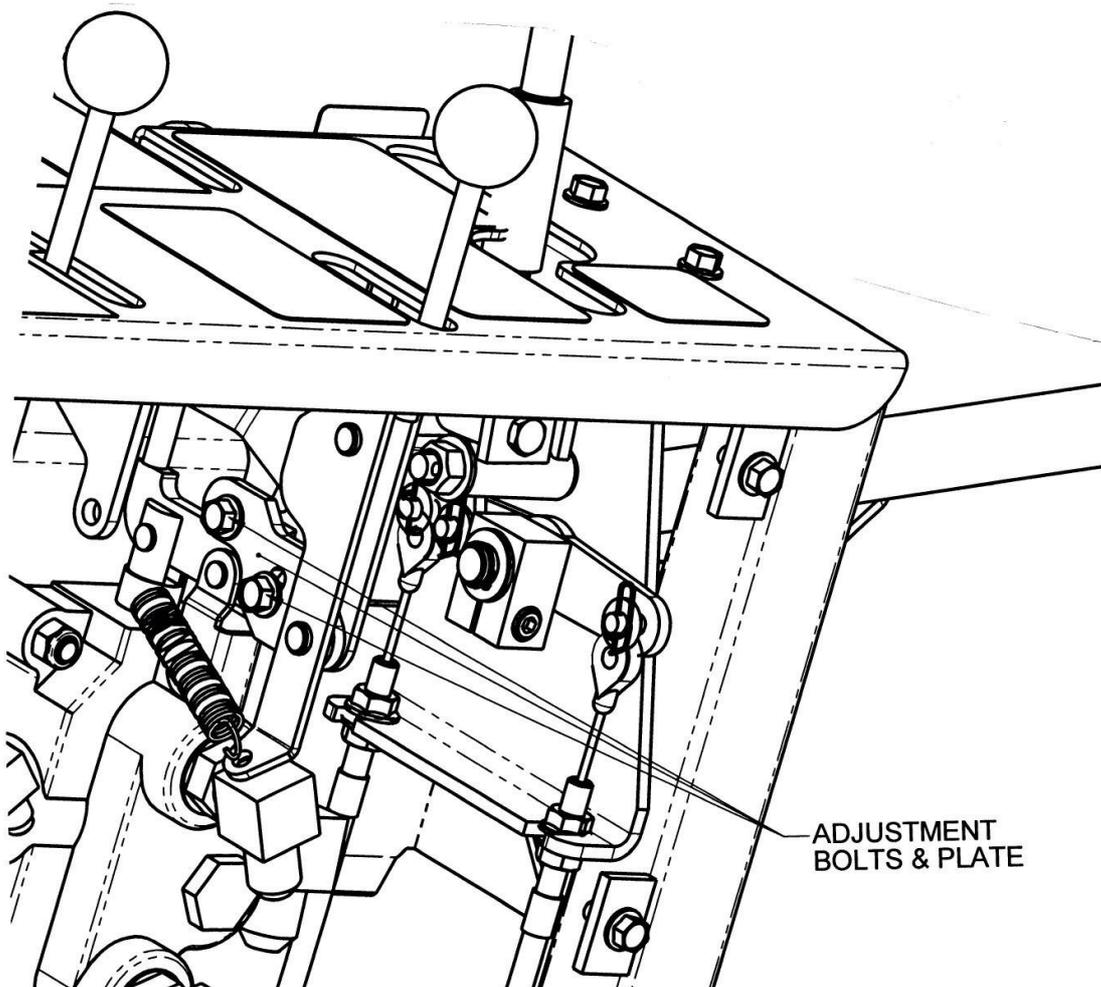
WHEEL DRIVE NEUTRAL ADJUSTMENT

The speed control cables may need to be adjusted after some use. If the machine creeps while the speed control is in neutral, the speed cables will need adjustment. Adjust the cables to bring the pump cable arm to the neutral position (vertical) when the speed control also is in neutral. Adjust the cables to eliminate slack, but do not over tighten them so they are extremely tight against each other.



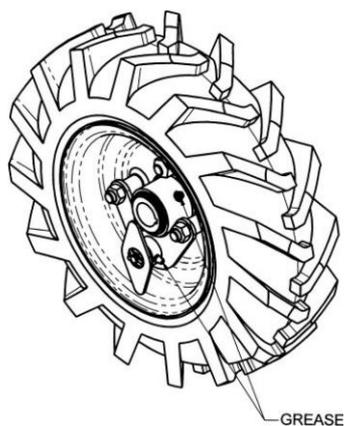
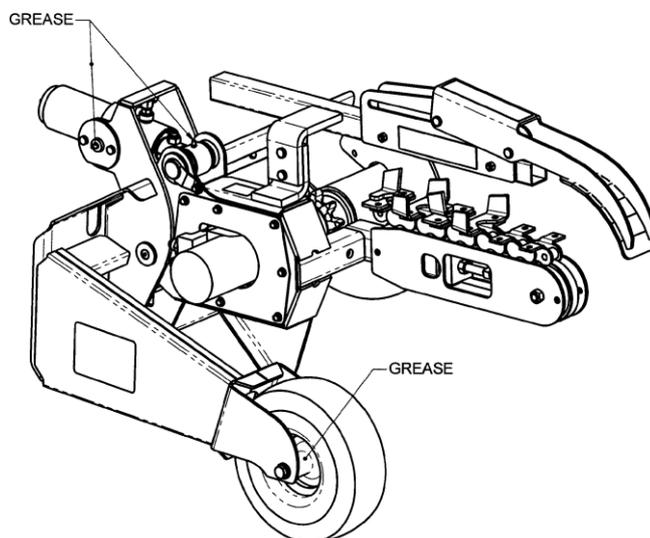
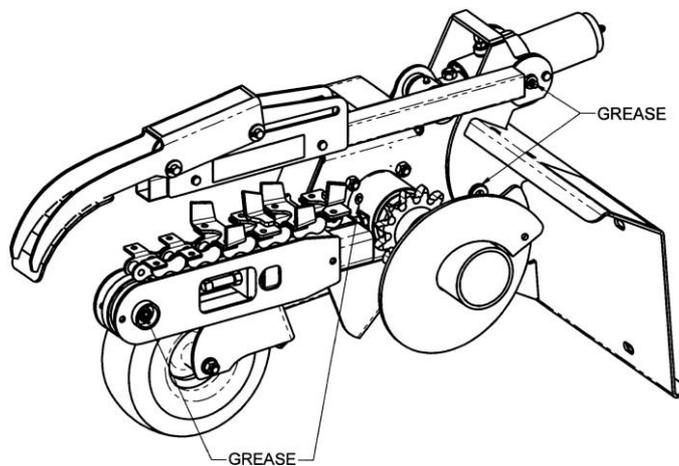
CHAIN VALVE ADJUSTMENT

The chain valve control should be adjusted to completely activate the chain valve when the dig chain control is in the ON' position. To check this adjustment, put the chain on/off control in ON position (with engine stopped). Pull the clutch lever on left handlebar up until it touches the handgrip. While holding clutch lever up, push on the chain forward/neutral/reverse lever. It should be at the end of its stroke, thus not move down any more. If the chain F/N/R lever can be pushed down more, the valve spool lever should be adjusted. To adjust, remove back cover from the control panel. Loosen the 2 bolts on valve lever and rotate the lever plate down about 1/16". Re-tighten the bolts and check the lever stroke. Adjust so the valve lever comes to the end of its stroke just as the clutch lever touches the handgrip when chain valve control is in ON position.



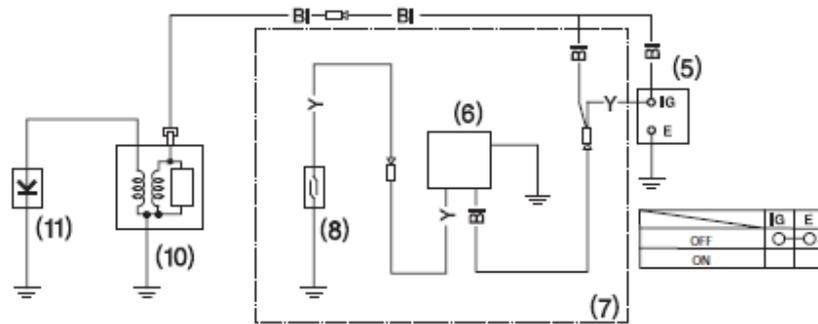
DAILY LUBRICATION REQUIREMENTS

Be sure to grease all lubrication points as outlined on page 3 of this manual.



ELECTRICAL SCHEMATIC - HONDA GX270

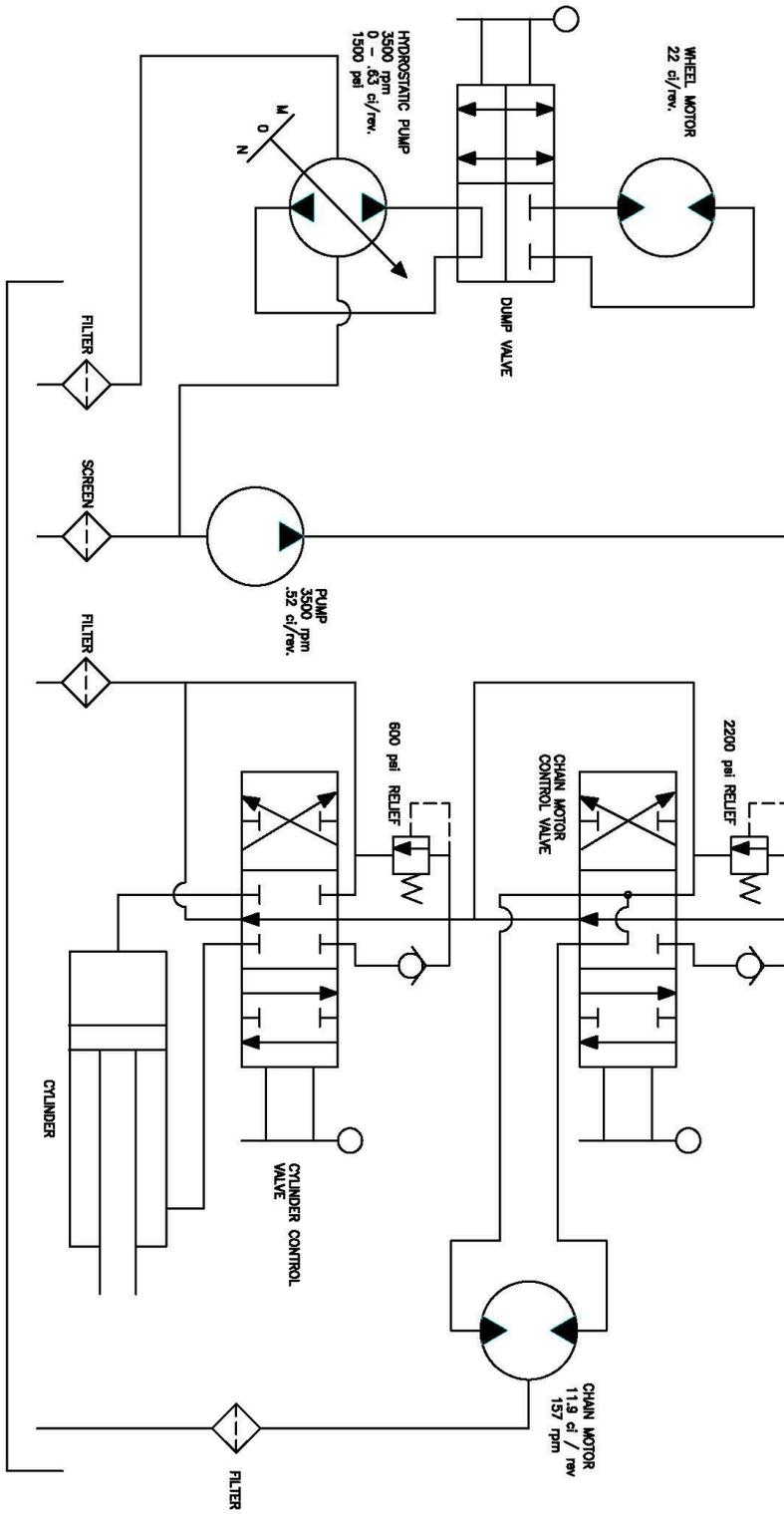
With Oil Alert® and Without Electric Starter



- | | |
|------------------------------|-----------------------|
| (1) CONTROL BOX | (8) OIL LEVEL SWITCH |
| (2) RECTIFIER | (9) CHARGING COIL |
| (3) FUSE | (10) IGNITION COIL |
| (4) CIRCUIT BREAKER | (11) SPARK PLUG |
| (5) ENGINE SWITCH | (12) STARTER MOTOR |
| (6) OIL ALERT UNIT | (13) STARTER SOLENOID |
| (7) Type with Oil Alert unit | (14) BATTERY (12 V) |

Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

HYDRAULIC SCHEMATIC



BARRETT

912 HYDRAULIC SCHEMATIC

SPECIFICATIONS

MODEL NUMBER**912HM****DIMENSIONS**

Weight	620 lb. (281.23kg)
Height	43" (1.09m)
Length	81" (2.06m)
Width	28" (711.2mm)
Wheel Base	30" (762.25mm)

ENGINE

Engine Options	Honda GX270
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Fuel	Gasoline
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Power: hp (kW) at 3600 RPM	8.5 hp (6.34kW)
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Fuel Capacity	0.95 U.S. gallons (3.6 liters)
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Engine Oil Capacity	0.63 quarts (.60 liters)
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Hour Meter	Standard
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HYDRAULIC SYSTEM

Reservoir Capacity	9.5 U.S. gallons (35.96 liters)
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OPERATIONS

Ground Drive, Forward	132 feet per minute (40.23m/min)
Digging Chain Speed	227 feet per minute (69.19m/min)
Ground Drive, Reverse	58 feet per minute (17.68m/min)

BOOM / CHAIN OPTIONS

Depths	12", 18" or 24"**(30.48cm, 45.72cm or 60.96cm)
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Widths	Standard 4" (101.60mm), Maximum 6" (152.4mm)
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Chain Types	Skip Cup, Double Cup, Bolted Shark, Combo Shark, Welded Shark
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**NOTE: 24" Depth only available in 4" width.

912 TRENCHER TROUBLE SHOOTING GUIDE

CAUTION!! Always use extreme care when trouble shooting or making adjustments on the trencher. Stay clear of the chain and auger when the engine is running. Stop the engine before disassembling any component.

A. Entire hydraulic system does not operate and the engine is not under load.

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| 1. Broken or improperly adjusted clutch (actuator) cable | See clutch cable and actuator arm adjustment. Adjust or replace cable. |
| 2. Low hydraulic oil in tank | Add oil until it shows in sight gauge. |
| 3. Hydraulic pump-to-engine coupler has slipped. | Check for wear and replace both coupler halves and rubber spider, as needed. |

B. Engine lugs down or dies and wheels and chain do not turn.

- | | |
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| 1. Rocks or other obstructions stopping chain. | Reverse chain momentarily to free it from obstruction. Raise boom and stop chain. See if obstruction can be removed from trench. |
| 2. Trenching depth or speed too great for soil conditions. | Decrease ground speed or trenching depth. |
| 3. Engine improperly tuned or maintained. | See engine manual and correct as needed. |
| 4. Low oil alert causes engine to shut down. | This may occur when trenching on hills. Level trencher, check oil and allow oil alert to reset. |
| 5. Engine losing power due to wear. | See engine manual. |

C. Chain fails to rotate, but wheel drive works.

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| 1. Chain motor worn. | Rebuild motor or replace. New motors are available from Barreto Manufacturing. |
| 2. Chain Control Relief Valve malfunctioning. | Adjust Relief Valve to 2200 psi or replace relief spring if needed. |
| 3. Sprocket spindle spline teeth worn or broken. | Replace spindle. |

912 TRENCHER TROUBLE SHOOTING GUIDE (Continued)

CAUTION!! Always use extreme care when trouble shooting or making adjustments on the trencher. Stay clear of the chain and auger when the engine is running. Stop the engine before disassembling any component.

D. Wheels fail to turn, but chain rotates.

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|---|--|
| 1. Hubs unlocked. | Lock the hubs. |
| 2. Wheel axle key sheared. | Replace key and other parts as needed. |
| 3. Wheel Drive Valve not fully activated. | Adjust valve cable as shown on page 8. |
| 4. Speed Cable broken or disconnected. | Replace or re-connect cable. |
| 5. Pump Cable Lever loose on shaft. | Tighten setscrew on Pump Lever. |

E. Oil leaks in hydraulic system.

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| 1. Fittings are loose. | Tighten fittings on hoses and adapters. |
| 2. Worn or broken hoses. | Replace damaged hoses. |
| 3. Oil around chain motor or shaft. | Inspect motor for leaking shaft seal. Rebuild or replace motor. New motors are available from Barreto Manufacturing. |

F. Foaming hydraulic oil coming from breather hose.

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|--------------------------|---|
| 1. Improper oil used. | Verify that hydraulic fluid used had antifoaming additives. Tractor transmission / hydraulic fluid ISO 68 is recommended for use in temperatures above +32°F. |
| 2. Air leaking into oil. | Inspect and tighten fittings and clamps on pump and hoses. |

G. Boom does not lift, or does not lower into ground.

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| 1. Boom lift relief valve malfunctioning | Adjust relief to 500 psi. This may require a replacement spring in valve. |
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