

THE
BARRETO
MODEL 1324ST / 1624ST
HYDRAULIC TRENCHER

CONGRATULATIONS!

You are now the proud owner of the BARRETO trencher. Please take a moment of your time to look over the following information. Familiarize yourself with the trencher, its characteristics, and method of operation. Pay particular attention to the safety and operating instructions.

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.

Barreto Manufacturing, Inc.
Innovative Equipment Engineered to Last
66498 Hwy 203, La Grande, OR 97850
(800) 525-7348 (541) 963-7348
FAX (541) 963-6755
E-Mail: info@barretomfg.com
Web Site: <http://www.barretomfg.com>

TRENCHER ASSEMBLY INSTRUCTIONS

1. Remove trencher from shipping crate.
2. Install boom shim, boom cushion and boom onto boom pivot/mount (see 00304 Front End Assembly). Push boom on as far as it will go. Be sure adjuster screw is backed out.

SERVICE INFORMATION

1. Your trencher should arrive with 15 gallons of tractor transmission / hydraulic fluid in the tank. Check reservoir level using sight glass on the left side of the tank. If required, add to reservoir tractor transmission / hydraulic oil. (Shell DONAX THD FLUID or comparable.)
2. Recheck oil level after trencher has been run and oil has circulated through wheel and chain motors. Routinely check level thereafter.
3. Change hydraulic oil filter after the first 50 hours of use. Change it every 200 hours thereafter.
4. Add 1 quart of hydraulic oil to reservoir with each filter change.
5. Check all hydraulic fittings for leaks and tighten if necessary.
6. The grease zerk on auger support arm and on chain motor cover should be greased after every 4 to 8 hours of use.
7. The grease zerk in the front wheel hub should be greased after every 8 hours of use.
8. Grease zerks on hydraulic cylinder rod end should be greased every 12 hours of use.
9. Grease zerks on each side of the boom cylinder should be greased once a week

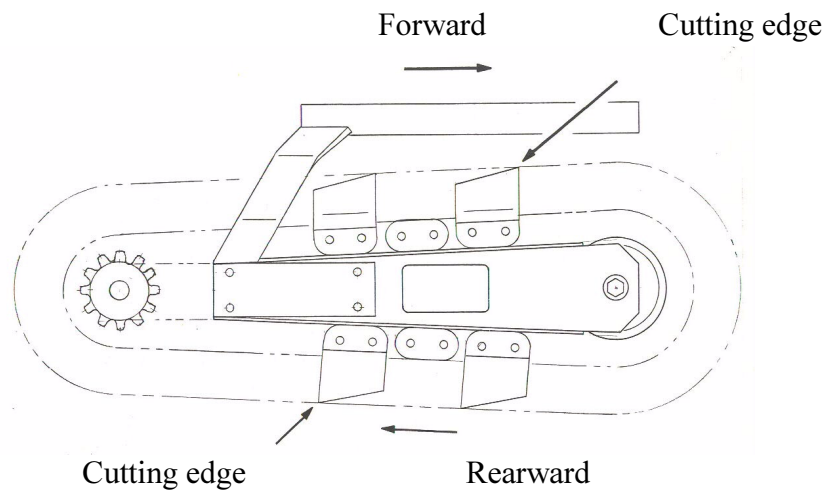
(See page 10 for illustrations of lubrication points.)

IMPORTANT: The engine on the Barreto trencher may or may not have been serviced prior to shipping. 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 engine according to the engine owners manual before starting.

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.

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. Start engine and push digging boom control lever forward to lower boom onto the chain. Stop engine.
3. Wrap chain around boom and sprocket. Install chain master link or link pin and cotter.
4. Use boom adjuster screw to tighten chain. Chain should have enough slack to allow approximately 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.



TRENCHER OPERATING INSTRUCTIONS

READ SAFETY INSTRUCTIONS BEFORE OPERATING!

Be sure that the engine oil, fuel and hydraulic oil are at proper levels before starting the engine.

STUDY AND UNDERSTAND CONTROLS BEFORE BEGINNING OPERATION.

1. **IGNITION:** Must be in ON position to start the engine. Move to OFF position to stop the engine.
2. **ENGINE:** This is the throttle - controls engine speed. Operate at full throttle (all the way forward).
3. **CLUTCH LEVER:** Located on left handlebar. Squeeze to activate the Wheel Drive and Dig Chain. All motion stops when the lever is released. **DIGGING CHAIN** control must be held in “ON” position as clutch lever is raised in order to activate Dig Chain.
4. **WHEEL CONTROLS:** Control travel direction and speed after clutch lever is raised. Left **WHEEL CONTROL** lever controls left wheel. Right **WHEEL CONTROL** lever controls right wheel. Steer the trencher with **WHEEL CONTROLS** by causing the wheel on one side to rotate at a different speed or direction than the opposite wheel. Very slow speed is required for trenching in most conditions. **NOTE:** Be sure operator understands that the machine moves **BACK** when trenching, not forward.
5. **DIG CHAIN ON/OFF CONTROL:** To trench, hold lever in ON position while clutch lever is raised. The ON/OFF lever will stay in position as long as the clutch lever is held. This automatically will activate the **CHAIN FORWARD/REVERSE LEVER** to FORWARD position.
6. **CHAIN FORWARD/REVERSE LEVER;** Use this lever to reverse chain to help clear debris from the chain. The **DIG CHAIN ON / OFF** lever must be in “OFF” position to put the **CHAIN F/N/R** lever in reverse.
7. **DIGGING BOOM CONTROL:** Pull to raise the digging boom and push to lower the boom. During normal operation you will hear the relief valve working.

GETTING STARTED:

1. Start and warm up engine.
2. Put Wheel Drive controls in neutral.
3. Squeeze the clutch lever and change the Wheel Direction Control to desired speed and direction.
4. Adjust the wheel speed and navigate the trencher to the starting position. The trencher is designed to dig toward the operator (with the Wheel Drive Control in reverse). With this in mind, position the machine to start the trench.

TRENCHING PROCEDURE:

1. Put Wheel Controls in neutral.
2. Have engine at full throttle (forward).
3. Hold Dig Chain On/Off Control in On position.
4. Squeeze the clutch lever.
5. Slowly lower the digging boom until the desired trench depth is achieved.
6. Put Wheel Controls in reverse. Start at slow speed.
7. Adjust the wheel speed until a workable speed is reached. Use a very slow speed for trenching and adjust for soil conditions as necessary. Adjust speed to avoid wheel spin or engine overloading. If objects such as rocks or roots jam in the chain, release the clutch lever, then reverse the chain to dislodge the debris. If necessary move the trencher forward a few inches and trench the area again.

BARRETO HYDRAULIC TRENCHER

SAFETY INSTRUCTIONS

- **READ SAFETY AND OPERATING INSTRUCTIONS BEFORE OPERATING!**
- **USE COMMON SENSE AND PLENTY OF IT!**
- Do not leave trencher unattended with the engine running.
- Always leave trencher parked on a level surface.
- The **SAFETY CLUTCH LEVER** on the left handle bar is for operator protection. **DO NOT TAPE LEVER UP** or otherwise bypass this safety feature.
- Objects may become airborne while operating trencher. Wear safety goggles and a hard hat while operating or observing!
- Digging chain, auger and other moving parts can cut off arms, legs, or fingers. **STAY CLEAR!**
- Buried cables or gas lines can cause serious injury or death if struck with dig chain. Contact local agencies for location before digging.
- Fuel exhaust and fuel fumes can cause illness or death. Operate outdoors and avoid breathing exhaust and fumes.
- Fuel fumes can catch fire or explode. Do not smoke or operate near flames or sparks.
- Hydraulic oil is under extreme pressure and can get under skin and burn or poison. Check for leaks with cardboard.
- Muffler and engine get hot enough to cause serious burns. Do not touch until cool.

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, dating from 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 or service calls by dealers is excluded. Manufacturer reserves the right to determine reasonable time required for repair.

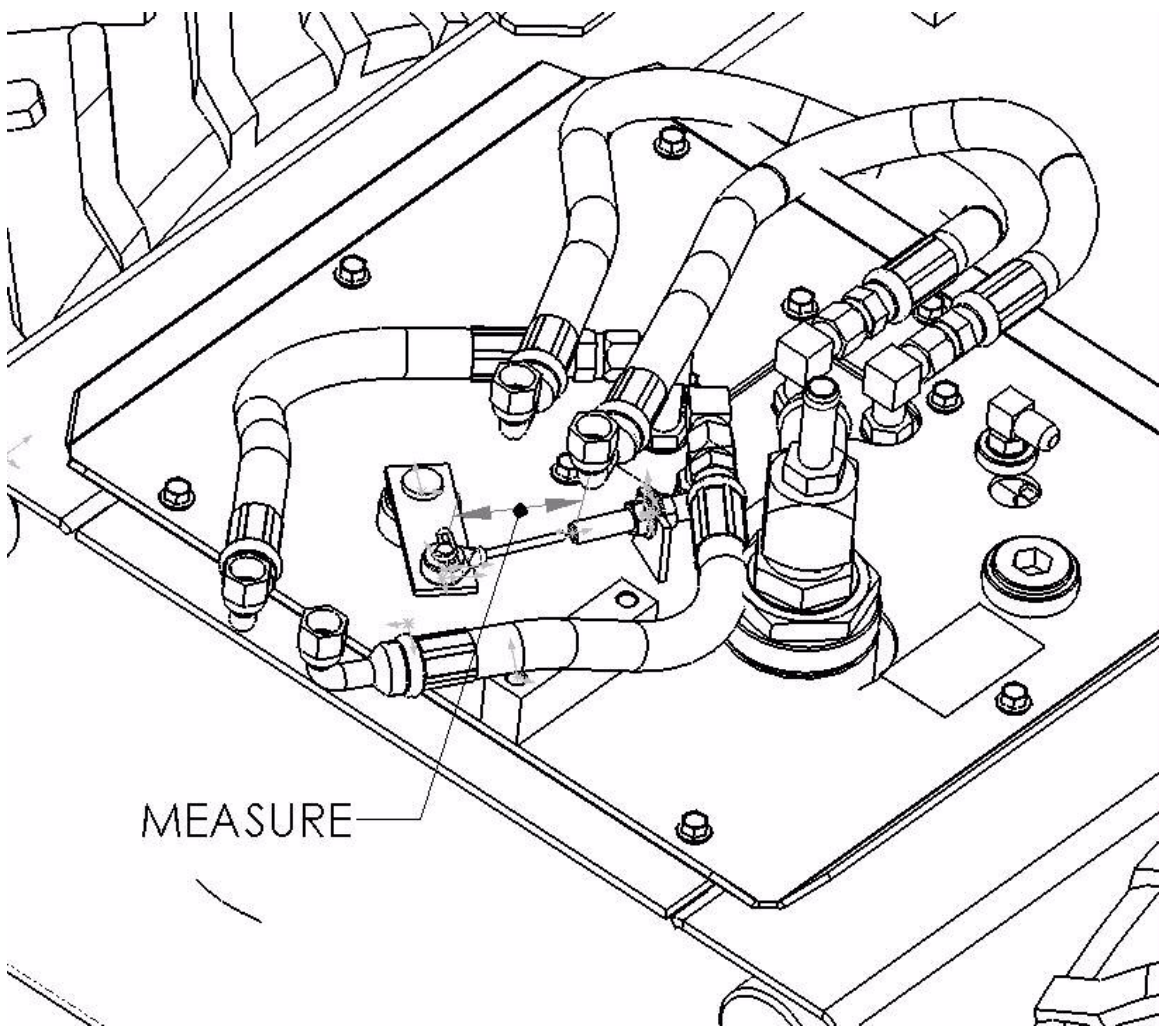
Warranty does not apply to damage caused by abuse or neglect. Time and materials required for normal maintenance and service are also excluded from warranty coverage.

Engines, engine accessories and tires are warranted by the original manufacturers and are not covered by the Barreto Equipment Warranty.

WHEEL DRIVE VALVE CABLE ADJUSTMENT

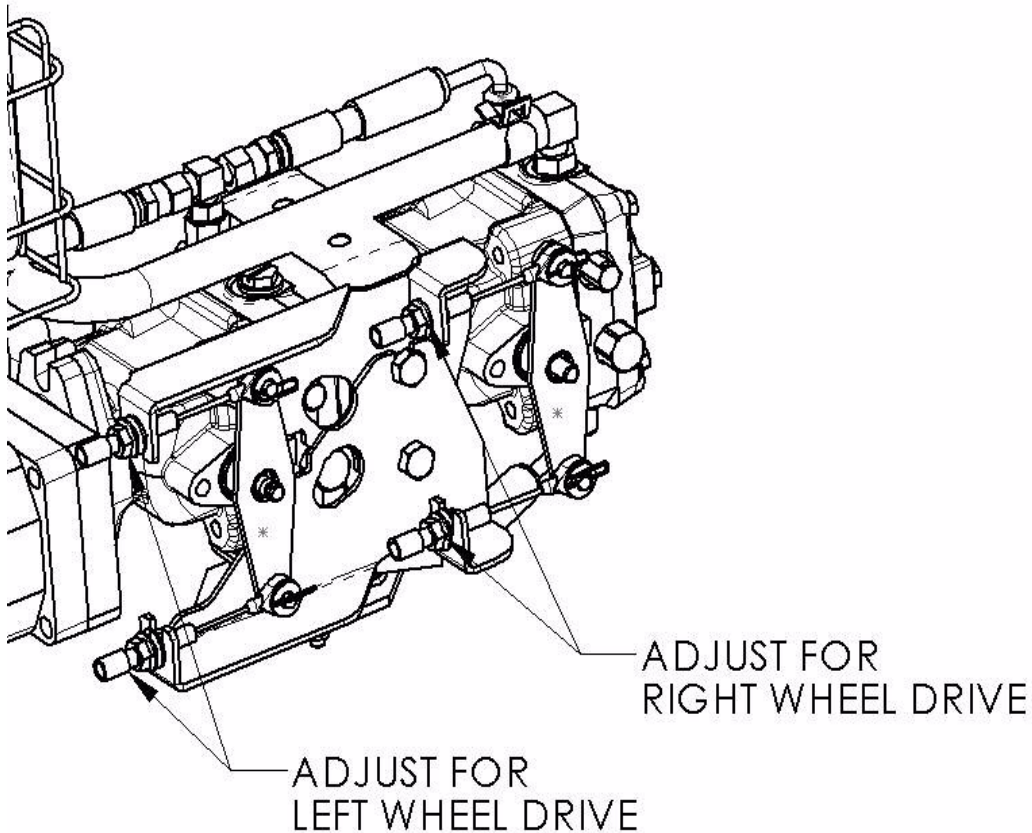
The clutch cable and lever must have some free play. The cable will stretch and occasionally needs adjustment.

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.



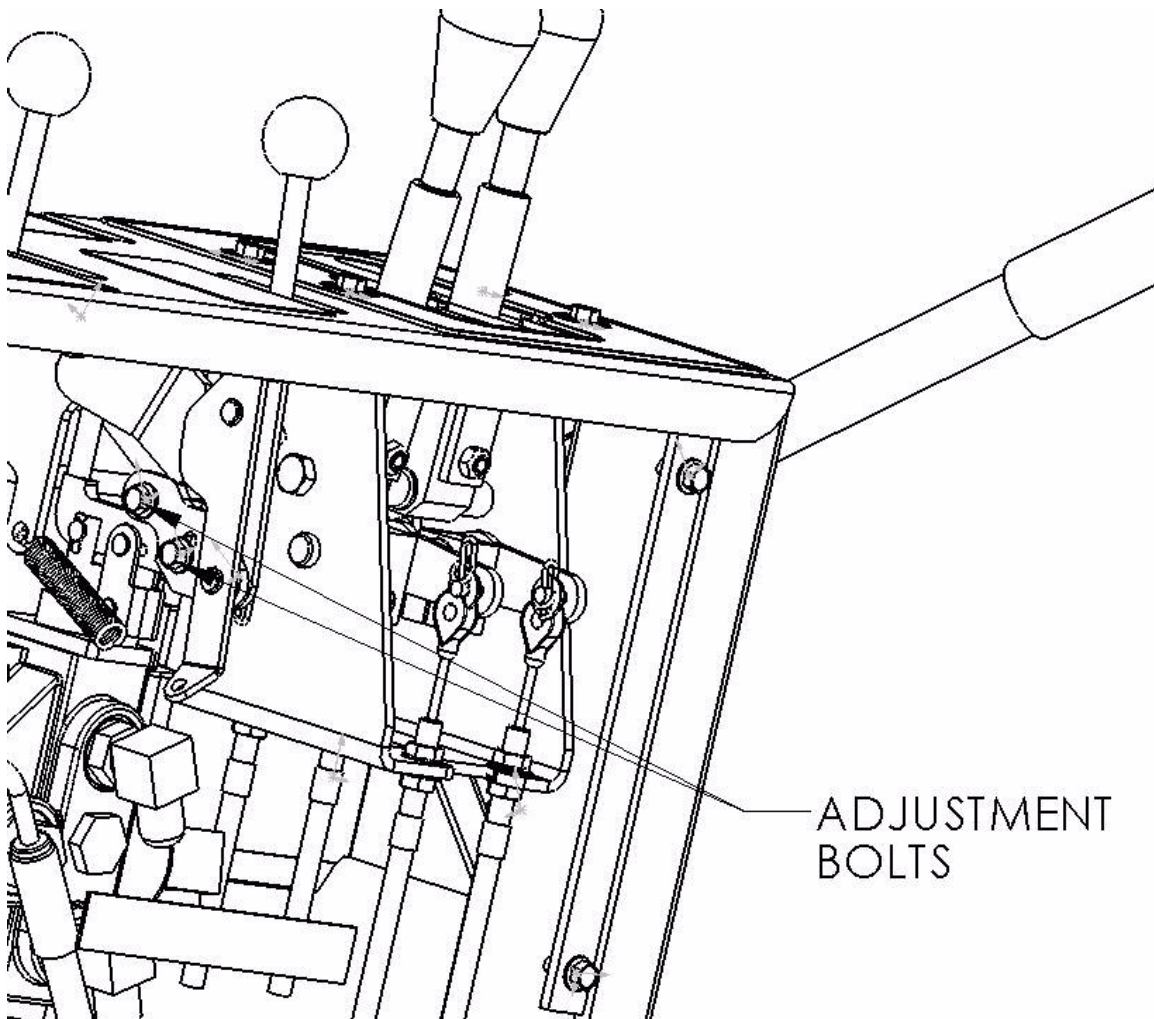
WHEEL DRIVE NEUTRAL ADJUSTMENT

The speed control cables may need to be adjusted after some use. If the machine creeps while the speed control is in neutral, or if the left and right wheels move at different speeds when wheel control levers are in same positions, the speed cables will need adjustment. Adjust the cables to bring the pump cable arms to the neutral position (vertical) when the wheel control levers are in neutral. Adjust the cables to eliminate slack, but do not over tighten them so they are extremely tight against each other. The front pump drives the right wheel, and rear pump drives left wheel. The control cables should be adjusted so both wheels are in neutral or move at same speed when wheel control levers are in the same position. Check by starting engine and activating clutch lever with wheel controls in neutral. Put your weight on the handlebars to raise front wheel. Adjust cables so both wheels are stationary or creep at same speed.



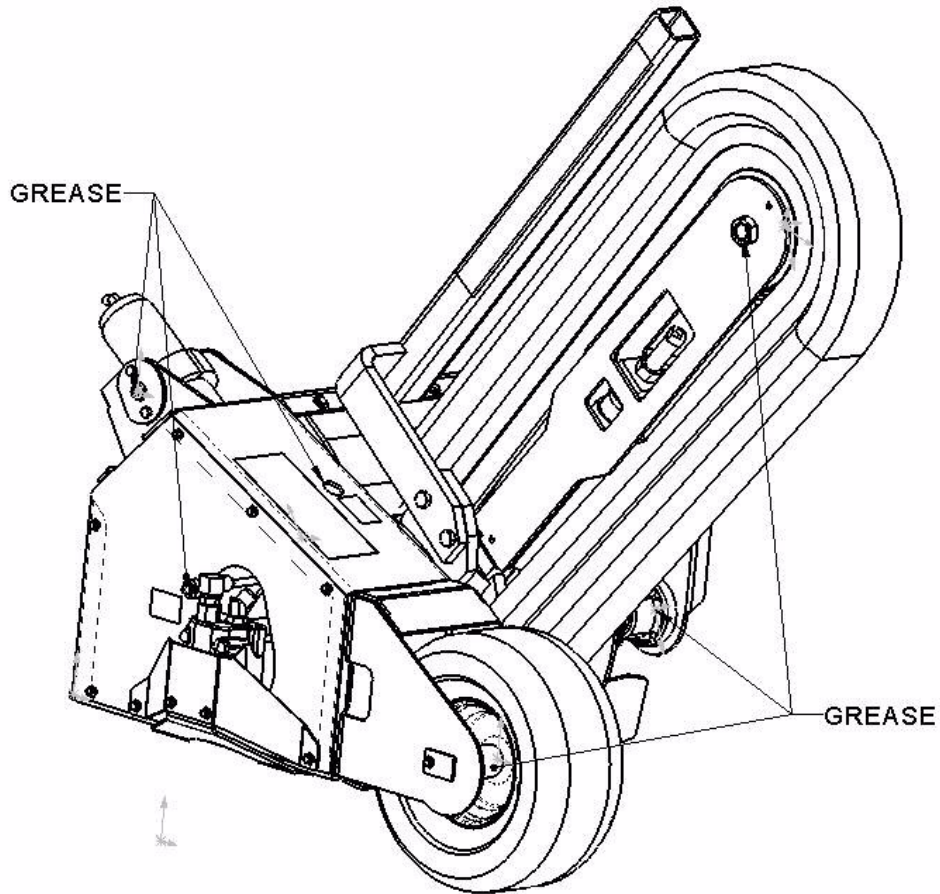
CHAIN VALVE ADJUSTMENT

The chain valve control should be adjusted to completely activate the chain valve when the dig chain control is in '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 2 of this manual.



TRENCHER TROUBLE SHOOTING GUIDE

CAUTION!! Always use extreme care when trouble shooting or making adjustments on trencher. Stay clear of chain and auger when engine is running. Stop 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. |
| 4. Main pump suction leaking air into pump intake. | Check main suction hoses and fittings for leaks and tighten fitting nuts |

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. |

TRENCHER TROUBLE SHOOTING GUIDE (Continued)

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

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

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| 1. Chain motor worn | Rebuild motor or replace with exchange motor. |
| 2. Chain Control Relief Valve Malfunctioning | Adjust Relief Valve to 3000 psi or replace relief spring if needed.
18 hp models relief at 3500 psi |
| 3. Chain drive pump worn | Replace pump |
| 4. Chain valve lever maladjusted | Adjust as shown in illustration |

D. Wheels fail to turn, but chain rotates.

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| 1. Wheel axle key sheared | Replace key and other parts as needed |
| 2. Wheel Drive Valve not fully activated | Adjust valve cable as shown |
| 5. Speed Cable broken or disconnected | Replace or re-connect cable |
| 6. 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 motor or replace with exchange motor |
| 4. Leak at axles | Check / replace wheel motor collar seals
Replace shaft seals in wheel motors |

TRENCHER TROUBLE SHOOTING GUIDE (Continued)

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

F. Foaming hydraulic oil coming from breather hose.

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| 1. Improper oil used. | Verify that hydraulic oil used had antifoaming additives. Recommended oil is tractor hydraulic. (Shell Donax TD or comparable) |
| 2. Air leaking into oil | Inspect and tighten fittings and clamps on pump intake 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 1000 psi. This may require a replacement spring in valve |
| 2. Boom cylinder piston seal damaged or rod bent. | Disassemble & replace parts as required |
| 3. Boom pivot bushing seized | Disassemble, inspect ,clean & replace parts as required. |