



THE BARRETO

MODEL 712MT HYDRAULIC MICRO TRENCHER OWNER'S MANUAL

CONGRATULATIONS!

You are now the proud owner of a BARRETO trencher. The OPERATOR'S MANUAL is attached to the machine. Please study both this manual and the operator's manual to become familiar with the trencher, its characteristics and its 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.

Machine Identification Record

Machine model number _____

Machine serial number _____

Engine manufacturer _____

Engine model number _____

Engine serial number _____

TABLE OF CONTENTS

Assembly Instructions	3
Service Information	3
Hour Meter	4
Intended Use	5
Lubrication Requirements	5
Chain Installation	6
Operator Training	6
Warranty of Barreto Equipment	7
Maintenance Preparation	7
Routine Maintenance	8
Electrical Schematic - Honda GX200	99
Hydraulic Schematic	100
Wheel Drive Unloader Valve	111
Troubleshooting Guide	122
Specifications	144
Index	155

TRENCHER ASSEMBLY INSTRUCTIONS

Upon delivery, check for freight damage and/or missing items. Report any damage immediately to the carrier and Barreto Manufacturing. 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 (see exploded view drawing 00476). Push boom onto the boom mount as far as it can go (part of the chain motor housing weldment). Be sure the adjuster screw is backed out.

SERVICE INFORMATION

HYDRAULIC SYSTEM:

- Your trencher should arrive with approximately 1.5 U.S. gallons (5.68 liters) of tractor transmission/hydraulic fluid in the tank. Shipping regulations may prohibit shipping with the hydraulic fluid. Check the reservoir level using the sight gauge on the side of the tank. 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. If the machine is operated at temperatures below +32°F (0°C), hydraulic fluid ISO 46 is recommended.
- Recheck oil level after trencher has been running and oil has circulated through the components. Routinely check hydraulic fluid level.
- 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 reservoir with each filter change.
- Discard the old filter according to environmental standards in your geographic area.
- To drain hydraulic fluid, remove fitting on the underside of the trencher body.
- Check all hydraulic fittings for leaks and tighten if necessary.

WARNING - Running the trencher without hydraulic fluid will cause serious damage to the hydraulic pump. ENSURE THAT THE RESERVOIR FLUID LEVEL IS VISIBLE IN THE SIGHT GAUGE BEFORE STARTING THE MACHINE.

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.

IMPORTANT – Shipping regulations may prohibit shipping with fuel or oil in the engine. Check levels and add oil and fuel as required before starting engine. Service the engine according to the engine owner's manual before starting.

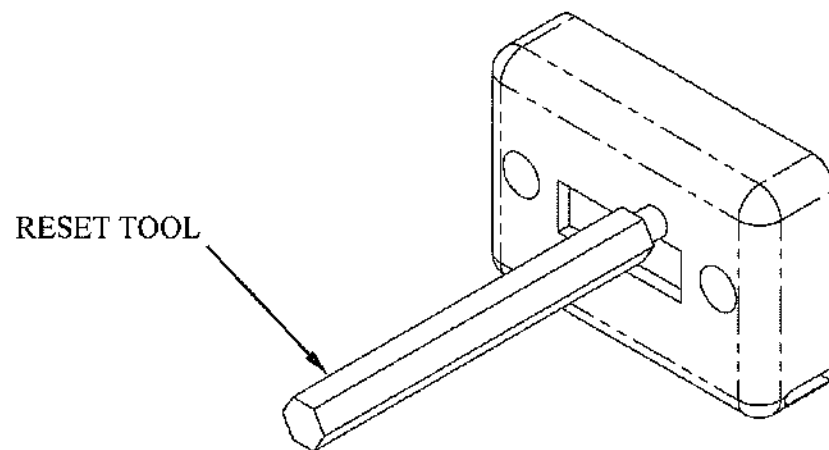
HOUR METER

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 trencher use, Barreto Manufacturing strongly recommends frequent oil changes.**

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

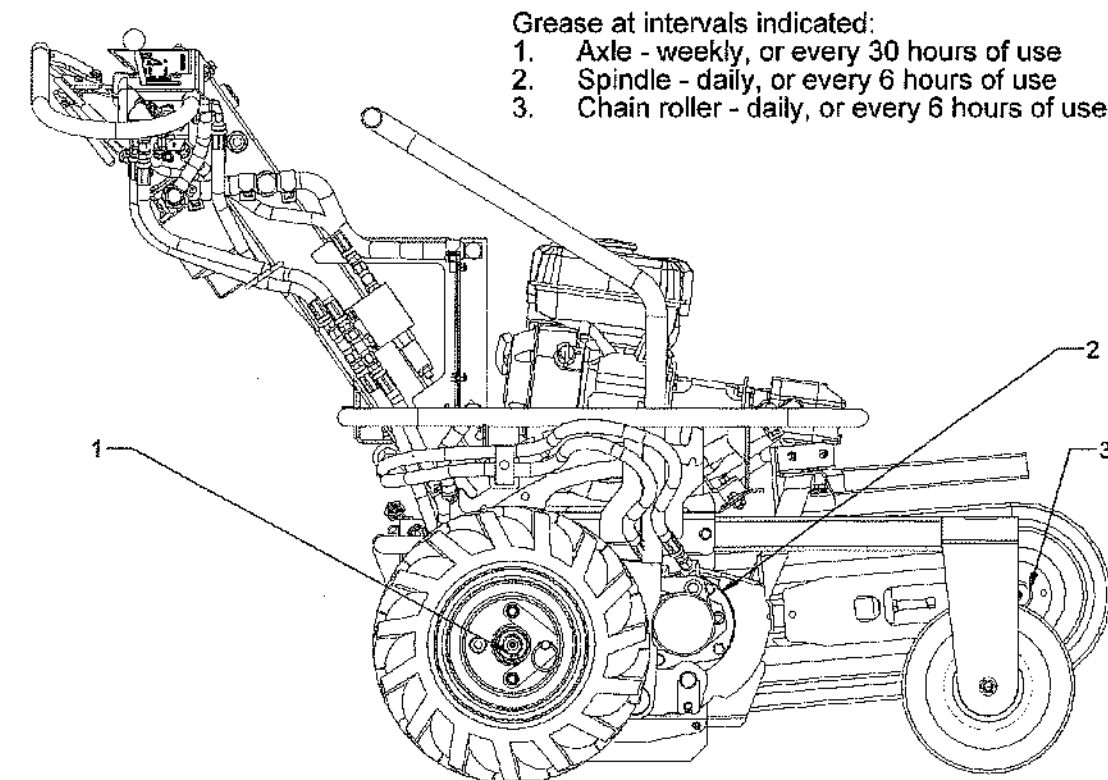


TRENCHER INTENDED USE

This machine is designed for digging trenches in "normal" ground of reasonably soft dirt and stones up to 3" (15cm) in diameter. Ground that is extremely hard packed, contains larger stones, high clay content or is in a very dry or frozen condition may be unsuitable for normal trenching. Consider using a larger trencher, backhoe or other heavy equipment for such conditions.

LUBRICATION REQUIREMENTS

Grease at the intervals indicated per the illustration of grease lubrication points. There is also a grease diagram decal on the machine.



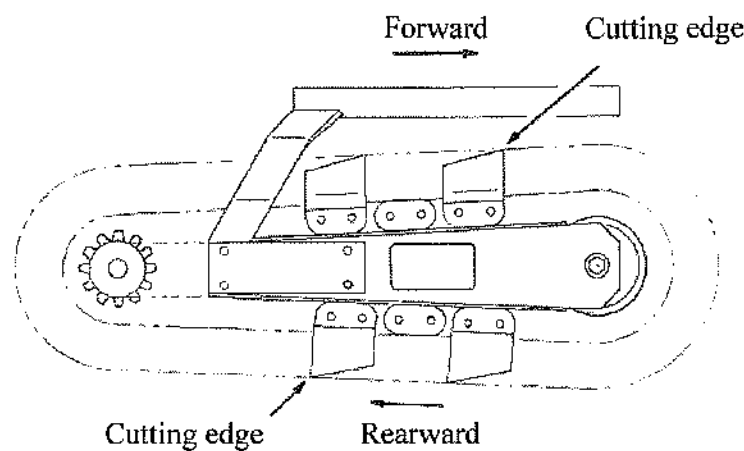
Grease at intervals indicated:

1. Axle - weekly, or every 30 hours of use
2. Spindle - daily, or every 6 hours of use
3. Chain roller - daily, or every 6 hours of use

CHAIN INSTALLATION

CAUTION!! The chain is quite heavy. You may want help to lift it.

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 lever forward to lower boom onto the chain.
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 1" (3.81cm) of space between middle of boom and chain when boom and chain are straight out in a horizontal position. Tighten adjuster screw locknut.



OPERATOR TRAINING

Rental companies should demonstrate all of the machine operations to each rental customer including:

- Starting the engine.
- Shutting off gas while transporting.
- Loading the trencher onto the trailer and securing it for road transport.
- Unloading the trencher from the trailer.
- Trenching procedure - Operation of the trencher.

WARRANTY OF BARRETO MANUFACTURING EQUIPMENT

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.

MAINTENANCE PREPARATION

Only trained and 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 hydraulic components until cool.



WARNING: Muffler and engine may be hot enough to cause serious burns. For the safety of yourself and others, allow enough time for the engine, muffler and 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.

ROUTINE MAINTENANCE

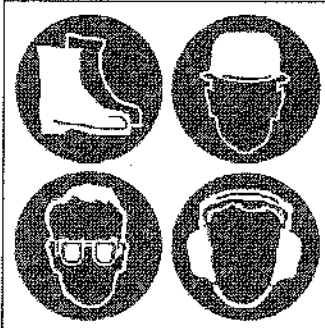
Routinely check the condition of the trencher. Clean, tighten, repair and replace the following as needed:

- 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 as they may damage the decals. Replace any damaged (unreadable) or missing decals. If you replace a machine part with one or more decals affixed to it, replace the decals as well. 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.



California Proposition

⚠ 65 Warning ⚠

WARNING: This product contains chemicals known to the State of California to cause cancer, and birth defects or other reproductive harm.

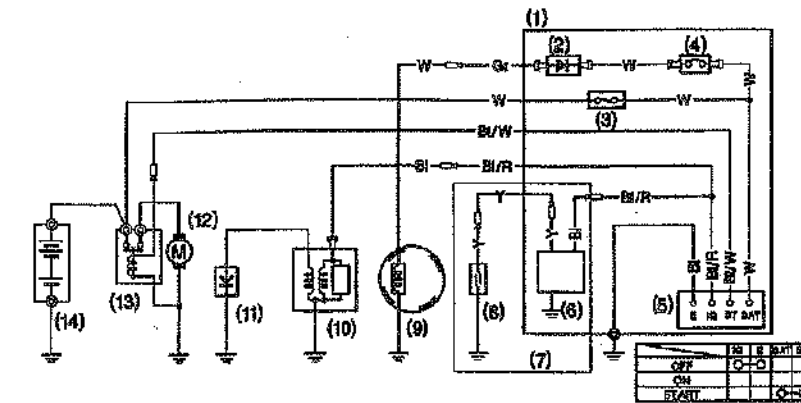
ADVERTENCIA: Este producto contiene productos químicos reconocidos por el estado de California que provocan cancer, defectos de nacimiento u otros daños reproductivos.

For more information: www.P65Warnings.ca.gov

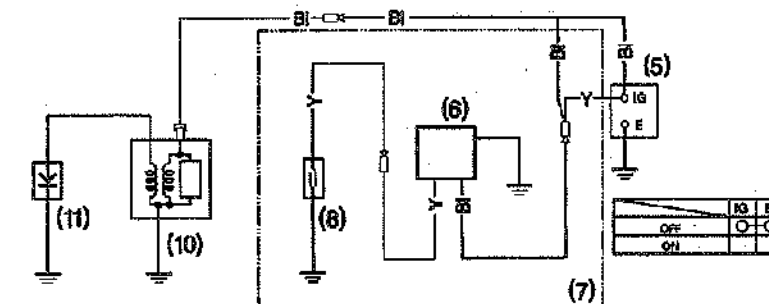
ELECTRICAL SCHEMATIC - HONDA GX200

Wiring Diagrams

With Oil Alert® and Electric Starter



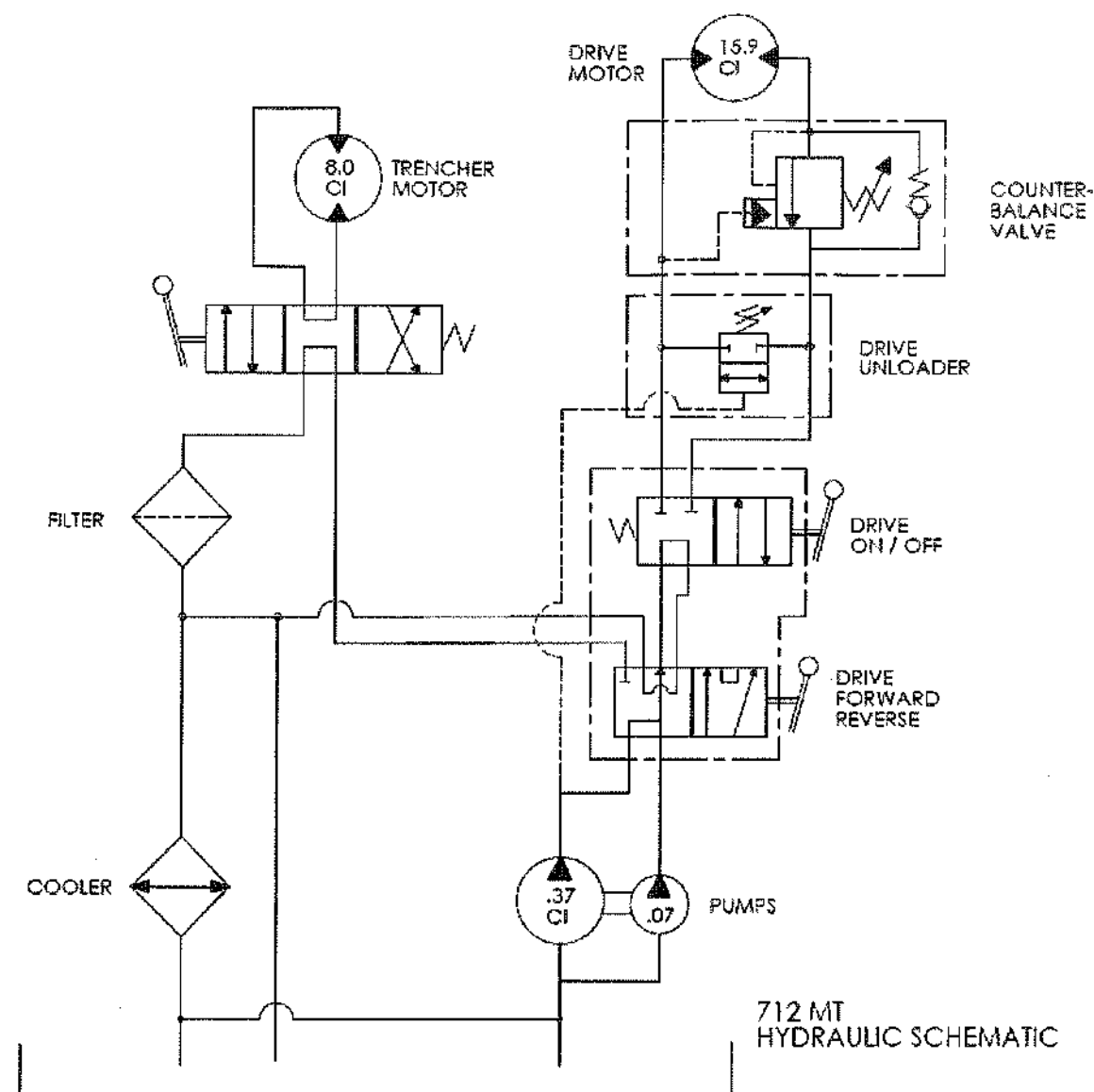
With Oil Alert® and Without Electric Starter



- | | |
|------------------------------|-----------------------|
| (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



WHEEL DRIVE UNLOADER VALVE

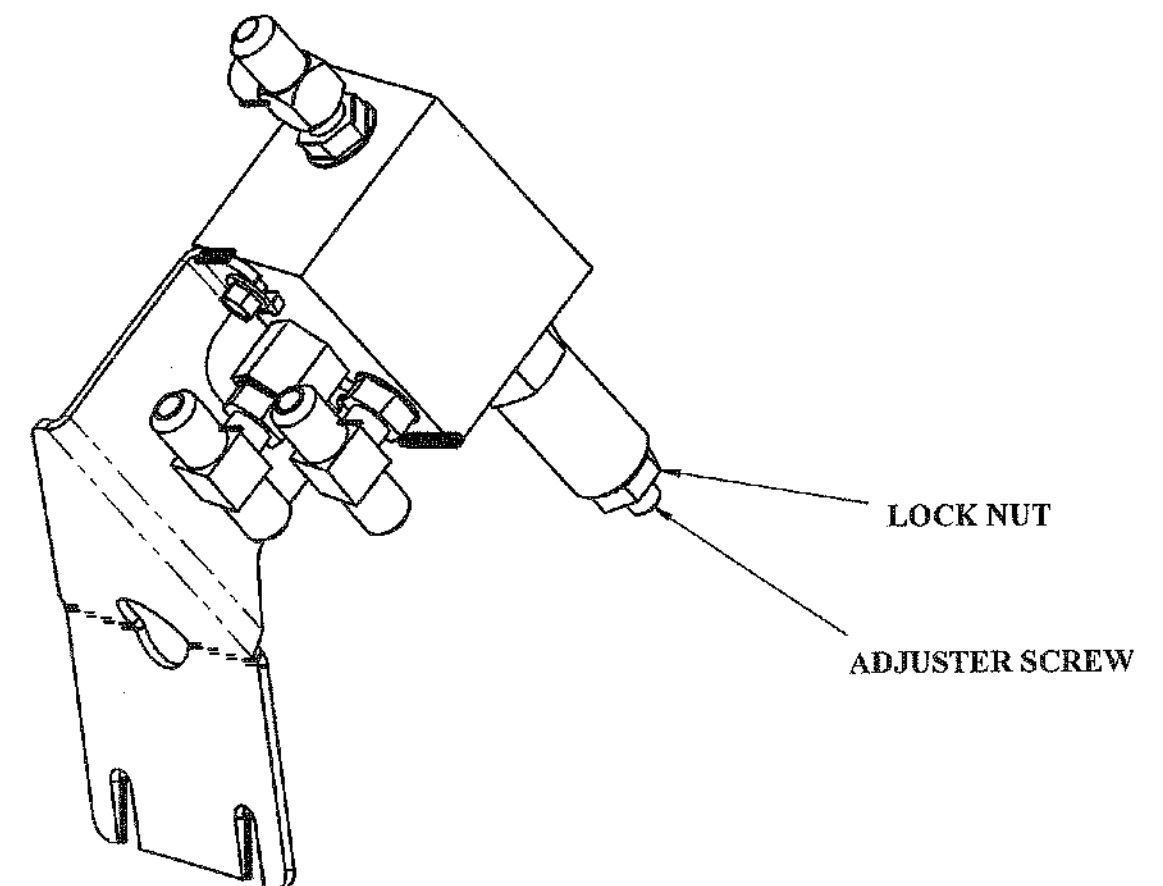
Wheel Drive Unloader Adjustment

The 712MT is equipped with an unloader valve designed to control the wheel speed while the machine is trenching. This valve is located on the right hand side of the machine behind the engine.

The valve is preset from the manufacturer. It will most likely need to be fine-tuned in the field according to the trenching conditions. If the wheels spin excessively, the unloader valve is set too high. Loosen the lock nut and turn the adjuster screw counter clockwise in small increments of $\frac{1}{4}$ to $\frac{1}{2}$ turns. Tighten the lock nut and test trench. Repeat the adjustment if wheel spin continues to occur.

If the machine progresses too slowly when trenching and the wheels do not spin, the unloader valve is set too low. Loosen the lock nut and turn the adjuster screw clockwise in small increments of $\frac{1}{4}$ to $\frac{1}{2}$ turns. Tighten lock nut and test trench. Repeat adjustment if necessary.

The unloader valve should be adjusted to have minimal wheel spin and the engine is worked, but not overloaded. Light pressure down on the handlebar will give the wheels more traction.



MICRO TRENCHER TROUBLESHOOTING GUIDE

CAUTION!! Always use extreme care when troubleshooting 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.

- | | |
|---|---|
| 1. Low hydraulic fluid in tank. | Add hydraulic fluid until it is visible in the sight gauge. |
| 2. Hydraulic pump-to-engine coupler has slipped. | Check for wear and replace both coupler halves and rubber spider as needed. |
| 3. Main pump suction is leaking air into pump intake. | Check main suction hoses and fittings for leaks and tighten fitting nuts. |

B. Engine lugs down or dies, but tires and chain are not turning.

- | | |
|--|--|
| 1. Rocks or other obstructions are stopping the chain. | Reverse chain momentarily to free it from the obstruction. Raise boom and stop chain. See if obstruction can be removed from trench. |
| 2. Trenching depth or speed too great for soil conditions. | Adjust unloader valve setting. See illustration on page 12 |
| 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 the trencher, check the 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.

- | | |
|-------------------------------------|--|
| 1. Relief valve is stuck or broken. | Check relief valve. It may need to be serviced or replaced. |
| 2. Chain motor is worn. | Rebuild or replace motor. New motors are available from Barreto Manufacturing. |
| 3. Chain drive pump is worn. | Replace pump. New pumps are available from Barreto Manufacturing. |

MICRO TRENCHER TROUBLESHOOTING GUIDE (continued)

D. Wheels fail to turn, but chain is rotating.

- | | |
|---|---|
| 1. Hubs are unlocked (most common). | Lock the hubs |
| 2. Sprocket key is sheared | Replace key and other parts as needed. |
| 3. Wheel Drive Unloader Valve not properly adjusted | See illustration on page 12. |
| 4. Wheel Control Valve not completely activated | Wheel Control Valve must be in REVERSE position. Adjust wheel drive on/off lever so valve spool is at full stroke when lever is pulled. |

E. Hydraulic fluid leaks in hydraulic system.

- | | |
|---|---|
| 1. Fittings are loose | Tighten fittings on hoses and adapters |
| 2. Worn or broken hoses | Replace damaged hoses |
| 3. Hydraulic fluid around chain motor or shaft. | Inspect motor for leaking shaft seal. Rebuild or replace motor. |

F. Foaming hydraulic fluid coming from breather hose.

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

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

- | | |
|--|--|
| 1. Rock or debris is jammed in lift mechanism. | Remove obstruction and inspect machine for damage. |
| 2. Boom pivot bushing seized. | Disassemble, inspect, clean and replace parts as required. |

SPECIFICATIONS

MODEL NUMBER	712MT
DIMENSIONS	
Weight	400 lb. (181.44 kg)
Height	43" (1.09 m)
Length	71.25" (1.81 m)
Width	30.5" (774.7 mm)
Wheel Base	25.25" (641.25 mm)
ENGINE	
Engine Options	Honda GX200
Fuel	Gasoline
Power: hp (kW) at 3600 RPM	5.5 hp (4.1kW)
Fuel Capacity	0.95 U.S. gallons (3.6 liters)
Engine Oil Capacity	0.63 quart (.60 liters)
Hour Meter	Standard
HYDRAULIC SYSTEM	
Reservoir Capacity	1.5 U.S. gallons (5.68 liters)
Oil Cooler	Standard
OPERATIONS	
Ground Drive, Forward	148 feet per minute (45.11 m/min)
Digging Chain Speed	200 feet per minute (60.96 m/min)
Ground Drive, Reverse	23 feet per minute (7.01 m/min)
BOOM / CHAIN OPTIONS	
Depths	12" and 18" (30.48 cm and 45.72 cm)
Widths	Standard 3.5" (88.9 mm) Max. 4.5" (114.3 mm)
Chain Types	Skip Cup, Double Cup Bolted Shark, Welded Shark Combo Shark

INDEX

Assembly Instructions, 3
 Boom, 3, 6
 Chain Installation, 6
 Decals, 8
 Electrical Schematic - Honda GX200, 10
 Engine, 3
 Filter, 3
 Grease, 5
 Hour Meter, 4
 Hydraulic Fluid, 3, 7
 Hydraulic Schematic, 11
 Lubrication, 5
 Maintenance, 7, 8
 Oil Filter. See Filter
 Operator Training, 6
 Service, 3
 Specifications, 15
 Starting, 3, 11
 Trailer, 6
 Transport, 6
 Trencher Intended Use, 5
 Trouble Shooting, 13
 Unloader Valve Adjustment, 12
 Warranty, 7