THE RETO

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.

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

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.

<u>IMPORTANT:</u> If the couplers between the engine and the pump are moved or removed for any reason, it is <u>CRITICAL</u> 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!

<u>NOTE:</u> 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.

<u>WARNING:</u> 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.

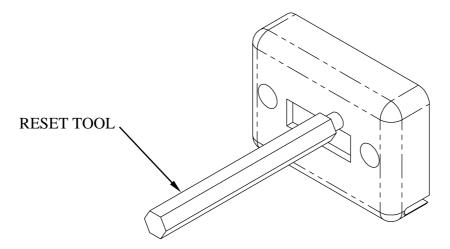
HOUR METER

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**, <u>Barreto Manufacturing strongly recommends frequent oil changes</u>.

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.



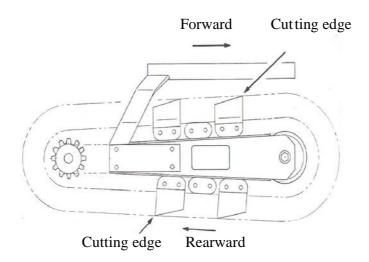
TRENCHER INTENDED USE

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.

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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, 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.







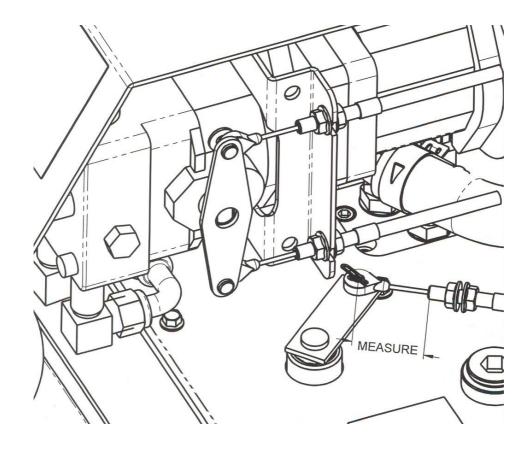
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WHEEL DRIVE VALVE CABLE ADJUSTMENT

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.

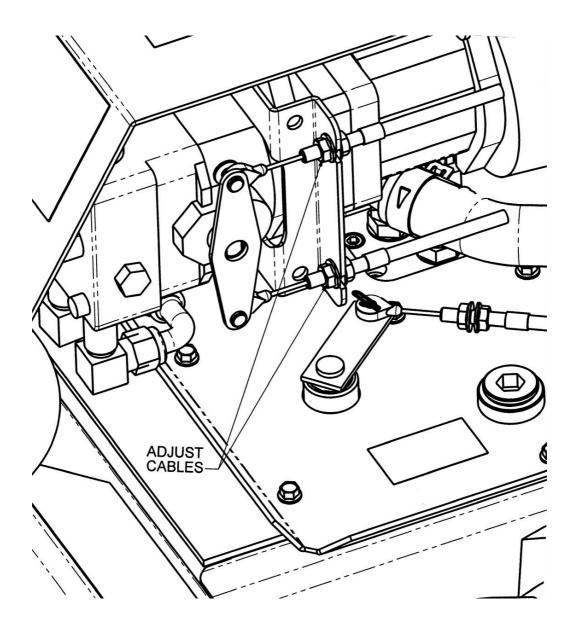
To see a video on how to do this adjustment, enter the following address in your browser URL window: https://www.youtube.com/watch?v=utUdozpYBcg&feature=youtu.be



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WHEEL DRIVE NEUTRAL ADJUSTMENT

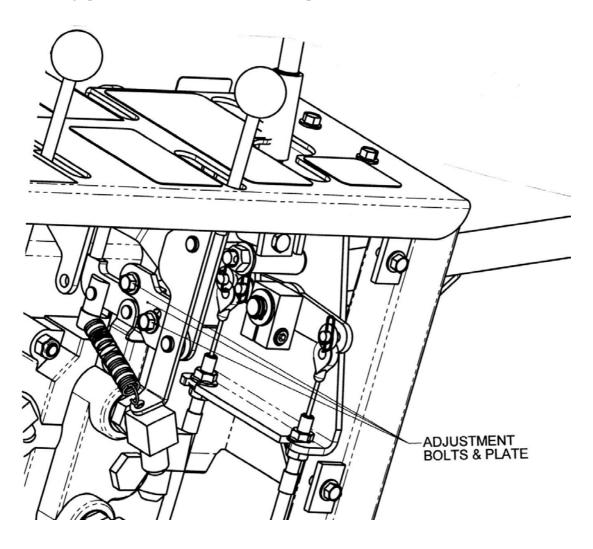
The speed control cables may need to be adjusted after some use. If the machine creeps while the speed control is in neutral, the speed cables will need adjustment. Adjust the cables to bring the pump cable arm to the neutral position (vertical) when the speed control also is in neutral. Adjust the cables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



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CHAIN VALVE ADJUSTMENT

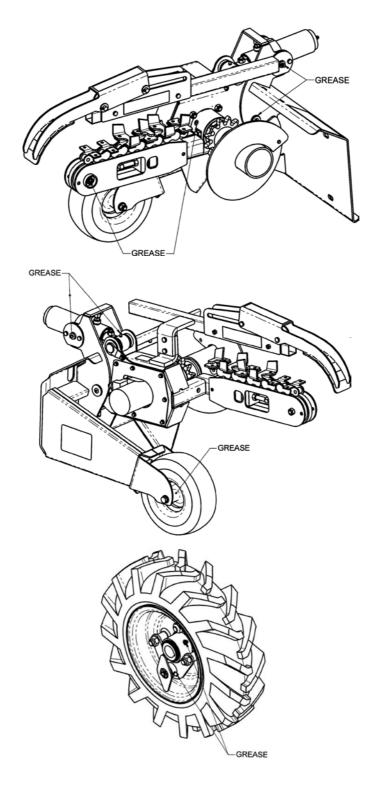
The chain valve control should be adjusted to completely activate the chain valve when the dig chain control is in the ON' position. To check this adjustment, put the chain on/off control in ON position (with engine stopped). Pull the clutch lever on left handlebar up until it touches the handgrip. While 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.



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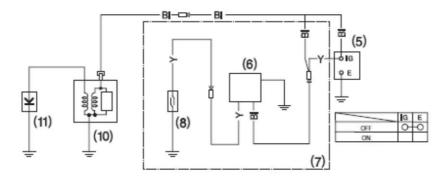
DAILY LUBRICATION REQUIREMENTS

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

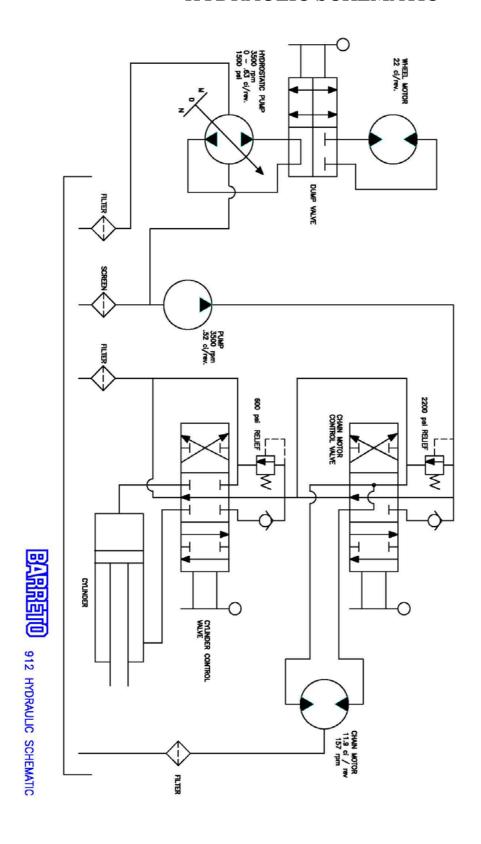


- (1) CONTROL BOX
- (2) RECTIFIER
- (3) FUSE
- (4) CIRCUIT BREAKER (11) SPARK PLUG (5) ENGINE SWITCH (12) STARTER MOTOR (6) OIL ALERT UNIT (13) STARTER SOLENOID

- (7) Type with Oil Alert unit (14) BATTERY (12 V)
- (8) OIL LEVEL SWITCH
 - (9) CHARGING COIL
- (10) IGNITION COIL

BI	Black	Br	Brown
Υ	Yellow	0	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	Р	Pink
W	White	Gr	Gray

HYDRAULIC SCHEMATIC



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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

Fuel Gasoline

Power: hp (kW) at 3600 RPM 8.5 hp (6.34kW)

Fuel Capacity 0.95 U.S. gallons (3.6 liters)

Engine Oil Capacity 0.63 quarts (.60 liters)

Hour Meter Standard

HYDRAULIC SYSTEM

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

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)

Widths Standard 4" (101.60mm),

Maximum 6" (152.4mm)

Chain Types Skip Cup, Double Cup, Bolted Shark,

Combo Shark, Welded Shark

**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.

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.

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.

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.

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.

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.

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 $+32^{\circ}F$.

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.

1. Boom lift relief valve Adjust relief to 500 psi. This may require a

malfunctioning replacement spring in valve.

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THE



HYDRAULIC TRENCHER OPERATOR'S MANUAL

TRENCHER INTENDED USE

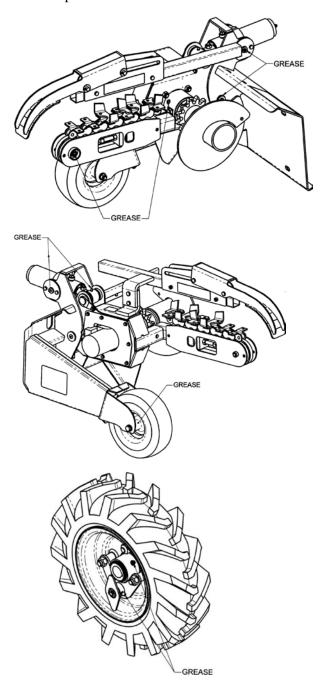
This machine is designed for digging trenches in "normal" ground of reasonably soft dirt and stones up to 6" (15cm) in diameter. Ground with larger stones, high clay content, very hard packed, very dry, or in a frozen condition may be unsuitable for normal trenching. Consider using a backhoe or other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

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DAILY LUBRICATION REQUIREMENTS

Be sure to grease all lubrication points as outlined below.



- 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.

SAFETY MESSAGES

General safety messages are listed in this Safety Messages section. Specific safety messages appear as appropriate in this manual where a potential hazard may occur if procedures or instructions are not followed correctly and completely.

SAFETY SYMBOL



This is the international safety alert symbol. This symbol is used in combination with a signal word and written message to warn you of a potential for bodily injury or death.

A signal word "DANGER", "WARNING", or "CAUTION" is used with the safety alert symbol.



DANGER: Imminent hazards, that if not avoided, will result in serious personal injury or death.



WARNING: Potential hazards or unsafe practices, that if not avoided, could result in serious personal injury or death.



CAUTION: Potential hazards or unsafe practices, that if not avoided, could result in minor personal injury, product damage, or property damage.

Safety decals with a signal word "DANGER", "WARNING", or "CAUTION" are affixed to the trencher near specific hazards.

Read this manual and study ALL decals on the trencher before operating the trencher.

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: wwwP65Warnings.ca.gov

SAFETY INSTRUCTIONS OVERVIEW

READ SAFETY AND OPERATING INSTRUCTIONS BEFORE OPERATING!

USE COMMON SENSE AND PLENTY OF IT!

The CLUTCH LEVER on the left handlebar is for the operator's protection. All motion stops when the lever is released.

DO NOT TAPE THE CLUTCH LEVER UP or otherwise by-pass this safety feature!

Call before you dig. If you do not call, you may cause an accident; suffer injuries or death; cause interruption of services; damage the environment; and/or incur project delays. Expect to be held liable for any damages caused, if you fail to call.



DANGER: Buried electric cables or gas lines can cause serious injury or death if struck with dig chain. Always determine location of utilities before trenching.



WARNING: Fiber optic cables convey laser light that can injure your eyesight.

STAY CLEAR of moving parts on the trencher.

DANGER: Digging chain, auger and other moving parts can cut off arms, legs, or fingers. Contact with the digging chain or auger while in operation will cause serious injury or even death.

Wear safety goggles and a hard hat while operating or observing!



WARNING: The dig chain may throw stones and debris.

Wear adequate hearing protection while operating or observing.



WARNING: Exposure to loud noise is cumulative and may permanently damage your hearing.

Wear safety boots and gloves. Wear close-fitting clothing. Contain long hair. Do not wear jewelry. Wear reflective clothing if working near traffic.

Only operate outdoors and avoid breathing engine exhaust and fumes.



WARNING: Engine exhaust contains carbon monoxide gas that is toxic. Breathing it can cause unconsciousness and death.

Adequate lighting is required, daylight or artificial, for safe operation of the trencher.

Allow adequate side and overhead clearances between trencher and buildings, fences, and trees.

WARNING: If the dig chain contacts an object the digging chain can climb upward quickly and tip the trencher toward the operator. Serious injury or death will result by operator contact with the moving chain. The digging chain can suddenly drag the machine forward if the trencher is forced too quickly into the ground or catches on a buried object.

Insure that the CHAIN FORWARD/NEUTRAL/REVERSE LEVER is in NEUTRAL when not actually trenching.

WARNING: Contact with the dig chain or auger while in operation will cause serious injury or even death. The teeth of the dig chain are sharp. Avoid contact even when the chain is not moving.





SAFETY INSTRUCTIONS OVERVIEW (continued)

Avoid inclines if at all possible.

WARNING: Navigating on any incline increases the danger of the trencher losing traction or rolling over, especially if the surface is wet. If you lose control get out of the way immediately to avoid personal injury. Navigation on inclines should be especially slow and turns very gradual. Refer to the incline diagram in the section, "GROUND TRANSPORT".



WARNING: The weight of the trencher or walking near the edge of the trench could cause collapse of the trench wall.

Avoid operating adjacent to drop-offs or embankments.

Keep away from tires to avoid getting crushed.



WARNING: Getting run over by the trencher will cause injury.

Always leave trencher parked on a level surface.



WARNING: Do not park on incline. Move the trencher to a level surface.

Do not leave trencher unattended with the engine running.

Do not operate trencher near any source of flammable dust or vapors.



WARNING: Sparks from the engine exhaust can cause an explosion or fire in a flammable or explosive atmosphere. Fuel fumes can catch fire or explode.

Do not operate trencher near flames or sparks.



WARNING: Fuel fumes can catch fire or explode.

Shut off engine and allow it to cool before refueling.



WARNING: Fuel fumes can catch fire or explode. Do not smoke when refueling. Do not refuel near a source of flames or sparks.

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.

Keep others away. If the job site is near a road or pedestrian path, warn and divert both motorized traffic and pedestrians. As appropriate, use traffic flag personnel, signs, cones, and lighting devices to insure safety.

WARNING: Someone could step into the trench by accident. Walking near the edge of the trench could cause collapse of the trench wall and possibly cause someone to fall onto the moving chain. Contact with the digging chain or auger while in operation will cause serious injury or even death.

Never allow anybody to ride on the trencher.

SAFETY INSTRUCTIONS OVERVIEW (continued)

Never lift trencher over any person at any time.

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WARNING: If trencher should fall it would crush anybody under it. The trencher is very heavy. DO NOT attempt to manually lift it.

We recommend having a fire extinguisher suitable for petrol fires in the operating area.

Attachments can change the center of mass and machine operations. Use only Barreto attachments.

912 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.

- FREE WHEELING HUBS: To engage either hub, turn the lock pin handle in (clockwise).
 This allows the spring-loaded pin to engage. Repeat for the other wheel. Push the trencher
 a bit if necessary until each pin finds a hole to drop into. The hubs are now locked.
 Disengaging one hub makes it much easier to turn the trencher when transporting under
 power.
- 2. ENGINE IGNITION: Must be in ON position to start the engine. Move to OFF position to stop the engine.
- 3. ENGINE THROTTLE: Controls engine speed. Operate at full throttle.
- 4. CLUTCH LEVER: Squeeze to activate the Wheel Drive and Dig Chain. All motion stops when the lever is released. It is located on the left handlebar.
- 5. WHEEL DRIVE CONTROL: Controls travel direction and speed. Very slow speed is required for trenching in most conditions. Begin trenching with the wheel control in neutral. Then adjust the reverse speed when trenching. NOTE: Be sure operator understands that the machine moves BACK when trenching, not forward.
- 6. DIG CHAIN ON/OFF CONTROL: To trench, hold the lever in the ON position while clutch lever is activated. 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 the FORWARD position.
- 7. CHAIN FORWARD/REVERSE LEVER; Use this lever to reverse chain to help clear debris from the chain. The clutch lever must be released to put the chain lever in reverse.
- 8. DIGGING BOOM CONTROL: Pull to raise the digging boom and push to lower the boom. During normal operation you will hear a relief valve working.

912 TRENCHER OPERATING INSTRUCTIONS (continued)

GETTING STARTED:

- 1. Start and warm up engine.
- 2. Put the Wheel Drive Control in neutral.
- 3. One wheel hub may be disengaged (free wheeling) for easier steering before driving machine to work location.
- 4. Squeeze the clutch lever and change the Wheel Direction Control to desired speed and direction.
- 5. 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.

COLD WEATHER OPERATIONS: Before operating in cold weather, refer to the Engine Owner's Manual for recommended engine oil. Do not spray starting fluid into the air cleaner as engine damage could result. If the machine is operated at temperatures below +32°F (0°C) then changing the hydraulic fluid to ISO 46 is recommended. If you do not want to change the hydraulic fluid but want to operate the machine at temperatures below +32°F (0°C), then do the following:

- Warm up engine at a low speed.
- Gradually increase engine speed, allowing **30 minutes for the hydraulic fluid to warm up**. Reduce the engine speed if the hydraulic pump whines. Pump noise may indicate a lack of hydraulic fluid flow that could damage the pump.

For frequent starts below 18°F consult your Barreto Manufacturing dealer.

TRENCHING PROCEDURE:

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

TRENCHING TIPS

THE PLUNGE CUT:

If the boom bounces when lowering it, use a more gradual "boom down" action. A little ground travel toward the operator during the plunge cut may help reduce bounce. Adjust the boom lowering speed for soil conditions as necessary.

Do not overload engine. If the engine lugs down or the digging chain slows down, raise the boom until speed increases, then continue lowering the boom slowly.

Do not attempt to force the boom down faster than the digging chain can remove the material!

OPERATOR PREPARATION

Each operator must:

- Become familiar with the controls and operation of the trencher, preferably under the supervision of an experienced operator.
- Be at least 18 yrs. of age and be mentally and physically capable of operating the trencher safely.
- Have studied the SAFETY AND OPERATING INSTRUCTIONS in this manual.

PERSONAL PROTECTION: For safety, trencher operator should wear personal protection equipment. Keep observers at a safe distance.

Wear safety eye goggles and a hard hat while operating or observing!



WARNING: The dig chain may throw stones and debris.

Wear safety boots and gloves. Wear close-fitting clothing. Contain long hair. Do not wear jewelry. Wear reflective clothing if working near traffic.

Wear adequate hearing (ear) protection while operating or observing.



WARNING: Exposure to loud noise is cumulative and may permanently damage your hearing.



SHUT DOWN PROCEDURE

1. Always leave trencher parked on a level surface.



WARNING: Do not park on incline.

Move the trencher to a level surface.

- 2. Unless loaded on a trailer, lower the boom to the ground.
- 3. Reduce the ENGINE THROTTLE to idle.
- 4. Move the IGNITION SWITCH to the OFF position to stop the engine.
- CLOSE THE FUEL SHUTOFF VALVE. Failure to close this valve could cause fuel to leak down into the cylinder & crankcase. Damage resulting from this <u>WOULD NOT</u> be covered by your engine warranty!



Shut off engine and allow it to cool before refueling.



WARNING: Fuel fumes can catch fire or explode. Do not smoke or allow flames or sparks in the area.

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.

GROUND TRANSPORT OF THE TRENCHER

Raise the digging chain boom.



WARNING: Contact with the dig chain or auger while in operation will cause serious injury or even death. The teeth of the dig chain are sharp. Avoid contact even when the chain is not moving.

Use the Wheel Drive Control to control travel direction. The Wheel Drive Engage Lever must be pulled and held to move the trencher.

- Pushing the Wheel Drive Control forward causes the machine to move forward.
- Pulling the Wheel Drive Control back causes the machine to move backward.
- If you are not experienced operating this trencher, a slow ground speed is recommended for your safety. Use half throttle for slower transport speed.



Keep away from tires to avoid getting crushed.

WARNING: Getting run over by the trencher will cause injury.

Never allow anybody to ride on the trencher.

Never make sudden changes in speed or direction.

Use extra caution on soft or uneven ground.

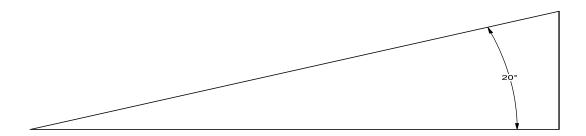
Avoid operating adjacent to drop-offs or embankments.

Avoid inclines if at all possible. Never use on any incline exceeding the angles shown below.



WARNING: Navigating on any incline increases the danger of the trencher losing traction or rolling over, especially if the surface is wet. If you lose control get out of the way immediately to avoid personal injury. Navigation on inclines should be especially slow and turns very gradual.

A 20° maximum incline is allowed. Honda engines have an Oil Alert system that will automatically stop the engine if tipped more than 20° .



DETERMINE LOCATION OF UNDERGROUND UTILITIES

OSHA CFR 29 1926.651 requires that the estimated location of underground utilities be determined before beginning excavation or an underground drilling operation. When the actual excavation or bore approaches an estimated utility location, the exact location of the underground installation must be determined by a safe, acceptable and dependable method. If any utility cannot be precisely located, the appropriate utility company must shut it off.

Call before you dig. If you do not call, you may cause an accident; suffer injuries or death; cause interruption of services; damage the environment; and/or incur project delays. Expect to be held liable for any damages caused, if you fail to call.



DANGER: Buried electric cables or gas lines can cause serious injury or death if struck with dig chain. Always determine location of utilities before trenching.



WARNING: Fiber optic cables convey laser light that can injure your eyesight.

CALL 1-888-258-0808 TO LOCATE UTILITIES BEFORE TRENCHING (US. OR CANADA). This free service will provide a "One-Call" number for the geographic area that you select. Before you start any digging project, be sure to call the local One-Call system in your area and any utility company that does not subscribe to the One-Call system. The One-Call representative will notify participating utility companies of your proposed digging activities. Utilities will then mark their underground facilities by using the following international marking codes:

Red Electric

Yellow Gas, oil, or petroleum

Orange Communication, telephone, television

Blue Potable water

Green/brown Sewer

White Proposed excavation

Pink Surveying

For areas not represented by One-Call Systems International, contact the appropriate utility companies to locate and mark the underground installations. Do not rely on visual evidence of underground utilities such as manhole covers or electrical drop boxes...CALL!

WORK SITE ASSESSMENT

Examine the work area for any conditions or obstructions that may inhibit trenching or create a safety hazard for the operator or others. Use the information in this manual combined with good judgment to identify any hazards to avoid.

In addition to calling to DETERMINE LOCATION OF UNDERGROUND UTILITIES (see previous section for details), the operator and/or job foreman should visually inspect the work site. Look for electrical drop boxes, notices of underground placements, manhole covers, recent trenching activity, any evidence of possible underground placements, banks, overhangs, drop-offs, rocks, tree limbs, wire, uneven terrain, any existing trenches or holes and toxic ground conditions.



Only operate trencher outdoors and avoid breathing engine exhaust and fumes.

WARNING: Engine exhaust contains carbon monoxide gas that is toxic. Breathing it can cause unconsciousness and death.



Do not operate trencher near any source of flammable dust or vapors.

WARNING: Sparks from the engine exhaust can cause an explosion or fire in a flammable or explosive atmosphere. Fuel fumes can catch fire or explode.

Allow adequate side and overhead clearances between trencher and any objects such as buildings, fences, and trees.



WARNING: If the digging chain contacts an object, the digging chain can climb upward quickly and tip the trencher toward the operator. Serious injury or death will result by operator contact with the moving chain or auger. The digging chain can suddenly drag the machine forward if the trencher is forced too quickly into the ground or catches on a buried object.

Adequate lighting is required, daylight or artificial, for safe operation of the trencher.

Keep others away. If the job site is near a road or pedestrian path, warn and divert both motorized traffic and pedestrians. As appropriate, erect barriers, use traffic flag personnel, signs, cones, and lighting devices to insure safety.



WARNING: Someone could step into the trench by accident. Walking near the edge of the trench could cause collapse of the trench wall and possibly cause someone to fall onto the moving chain. Contact with the digging chain or auger while in operation will cause serious injury or even death.

MACHINE FUNCTION CHECK: If the operator releases the WHEEL DRIVE or DIG CHAIN LEVERS, these functions should stop. This is intended for your safety and must be maintained in good functional condition. Contact your dealer or the factory if anything on the trencher does not function properly.

CONTACT WITH UNDERGROUND UTILITIES

After LOCATING UNDERGROUND UTILITIES and performing the WORK SITE ASSESSMENT, accidental dig chain contact with a buried utility might still occur. If it does, stop digging and call 911 for help.

If you cut a wire or cable, assume that you do not know what kind it is. It may be electrical or any one of several communication lines: telephone, television, or fiber optic. In any case, do not touch it or even look at the ends of it. Stop digging and call 911 for help. Do not dig any more until the appropriate utility company has assessed the situation, taken appropriate action, and informed you that is safe to proceed.

If you strike a pipe, it could be gas, oil, petroleum, water or sewer. In any case, stop digging, shut off the engine, and evacuate the area immediately. **Call 911 for help.**

Electrical wires or cables: If you think that you may have severed electrical wires, stop digging and call 911 for help. Keep yourself and other people away from the area.



DANGER: An electric shock could kill you. Assume that any severed wire or cable is HOT with voltage and do not touch it!

Gas lines: If you think that you may have struck a gas line, shut off the engine and evacuate the area immediately. Call 911 for help.



DANGER: A gas explosion could kill you. Sparks will likely occur from the dig chain scraping the metal pipe. If gas leaks out an explosion could easily occur.

Fiber optic cables: If you think that you may have severed a fiber optic cable, do not touch or even look at the ends of it.



WARNING: Fiber optic cables convey laser light that can injure your eyesight. Call 911 for help.

THE



HYDRAULIC TRENCHER EXPLODED VIEWS WITH PART NUMBERS

CONGRATULATIONS!

You are now the proud owner of a BARRETO trencher. The following pages have detailed views of your trencher, along with corresponding part numbers. 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 and parts may be ordered through any of these methods.

Thank you for your patronage and confidence in BARRETO equipment.

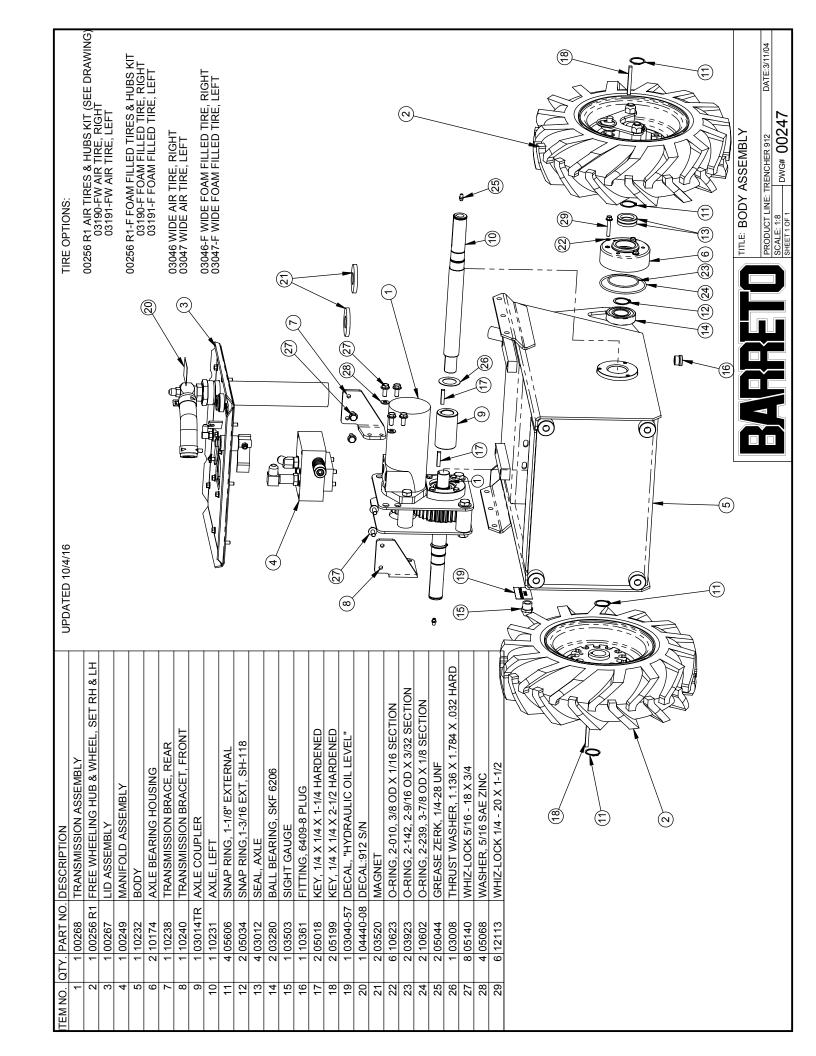
Barreto Manufacturing, Inc. Innovative Equipment Engineered to Last 66498 Highway 203 La Grande, OR 97850 1-800-525-7348 1-541-963-6755 Fax

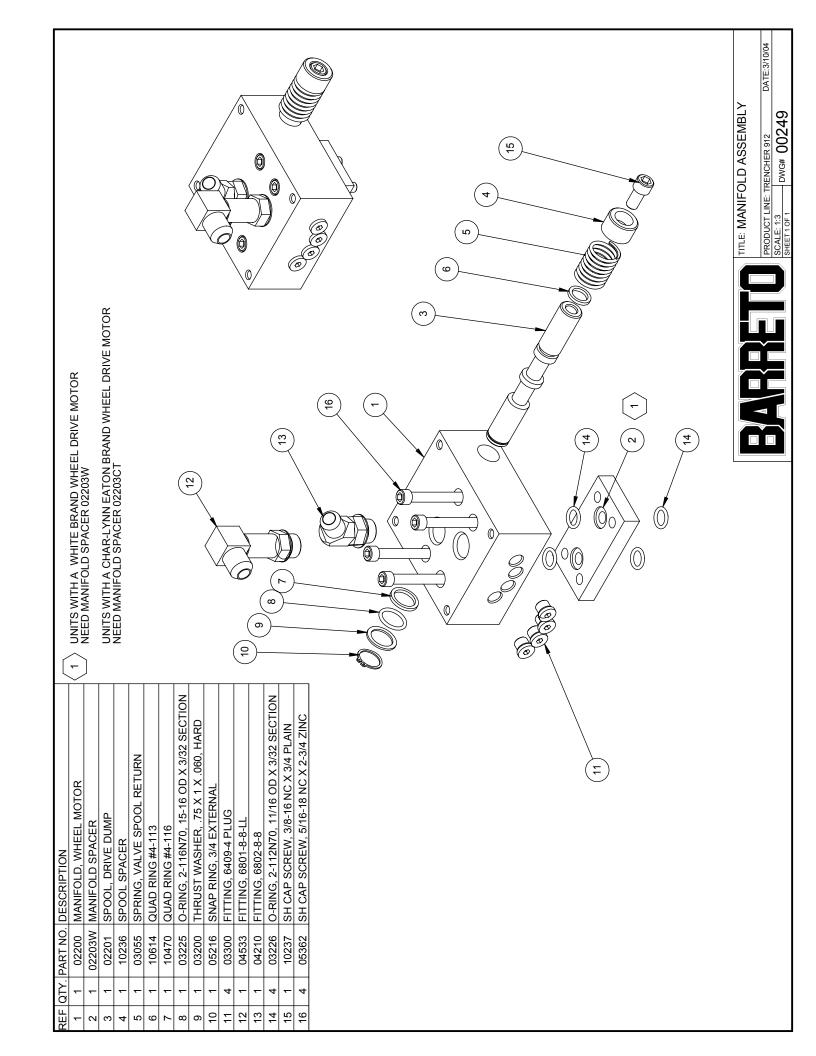
E-Mail: info@barretomfg.com

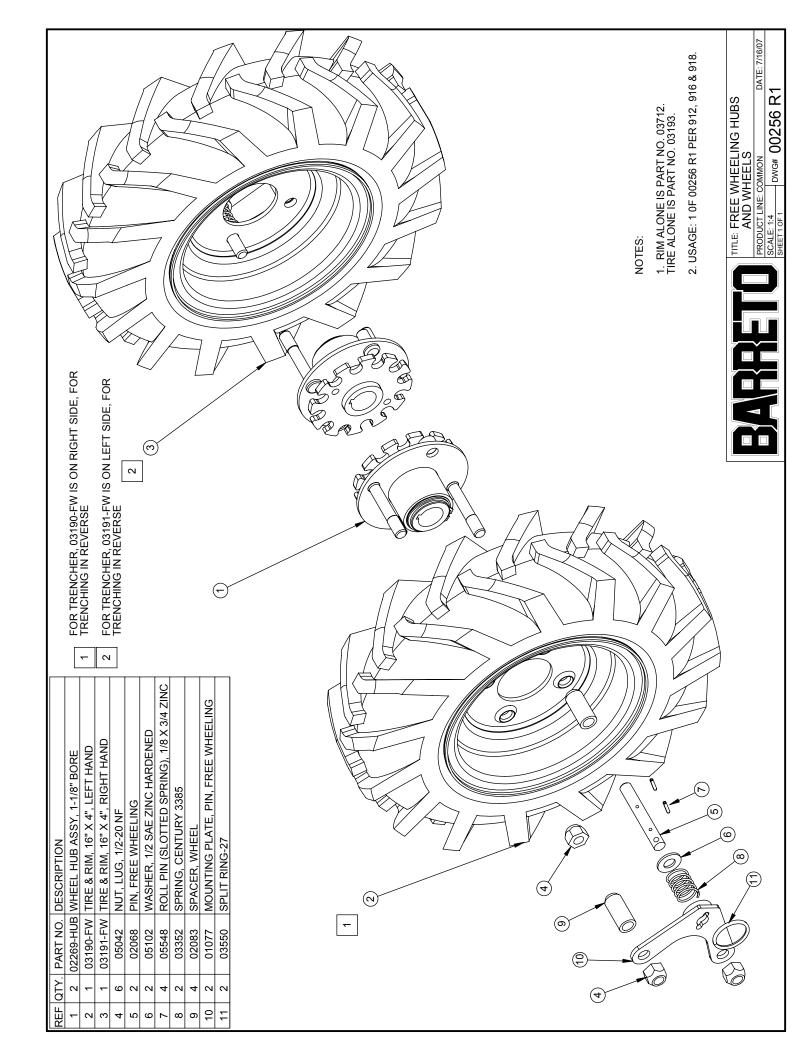
Web Site: http://www.barretomfg.com

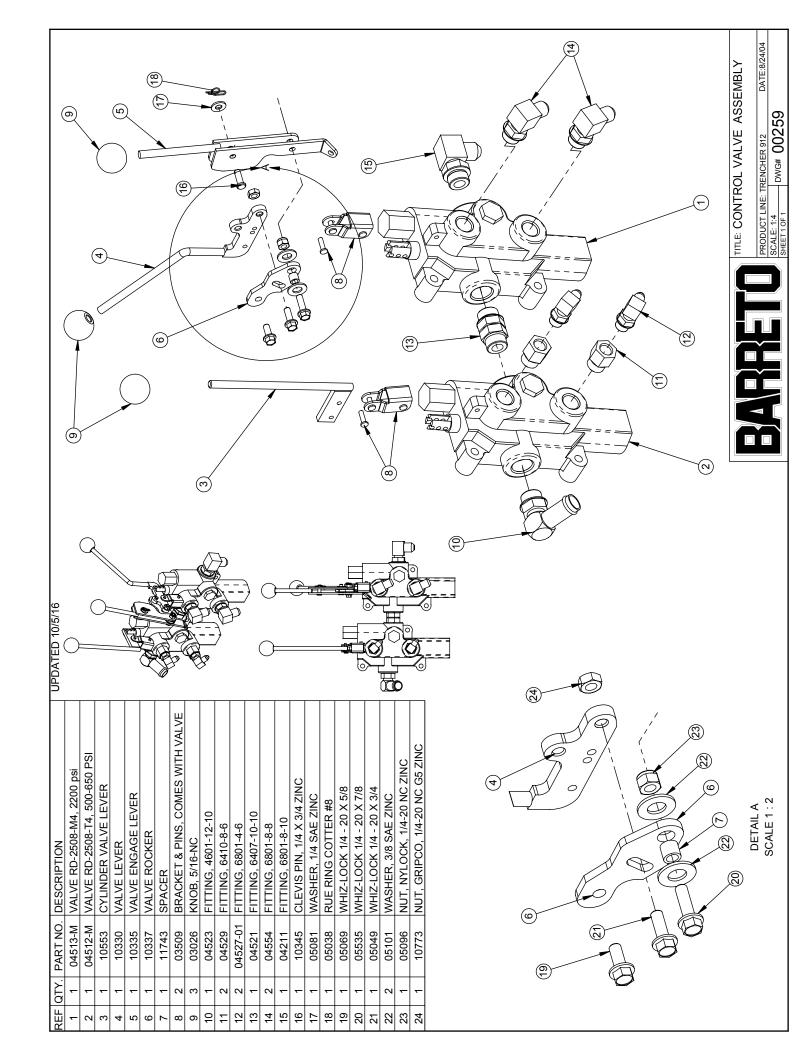
Machine Identification Record

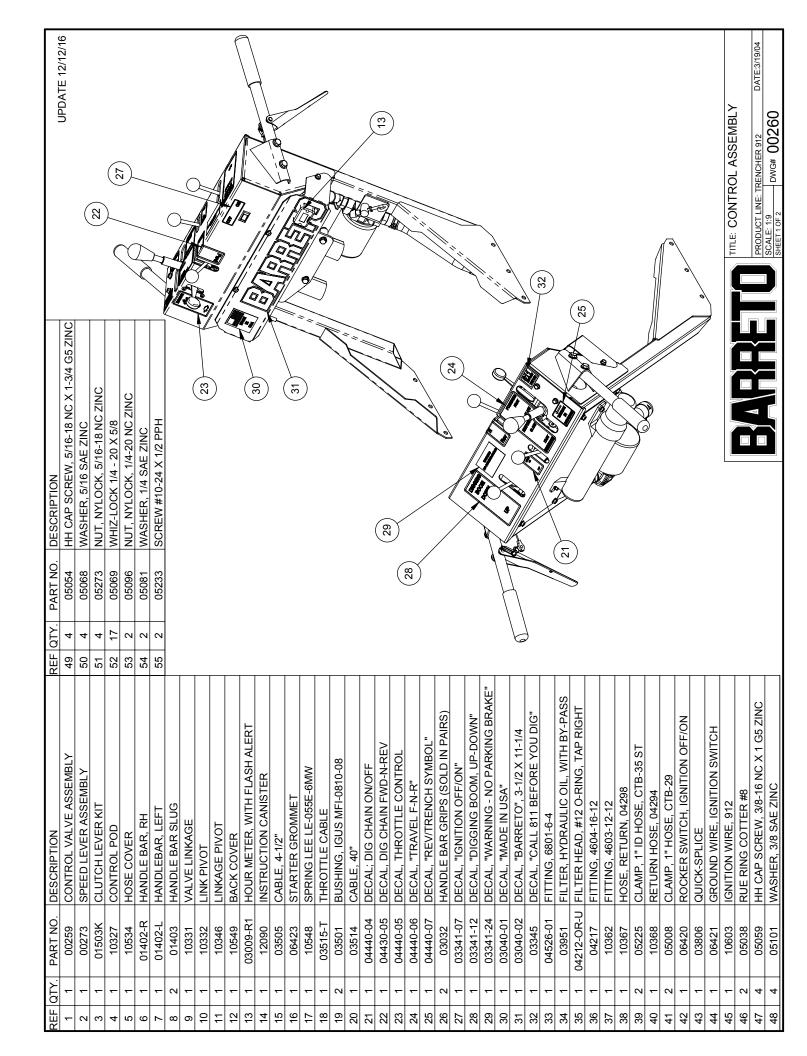
BARRETO Customer number	
Machine model number	
Machine serial number	
Engine manufacturer	
Engine model number	
Engine serial number	
Engine seriai number	

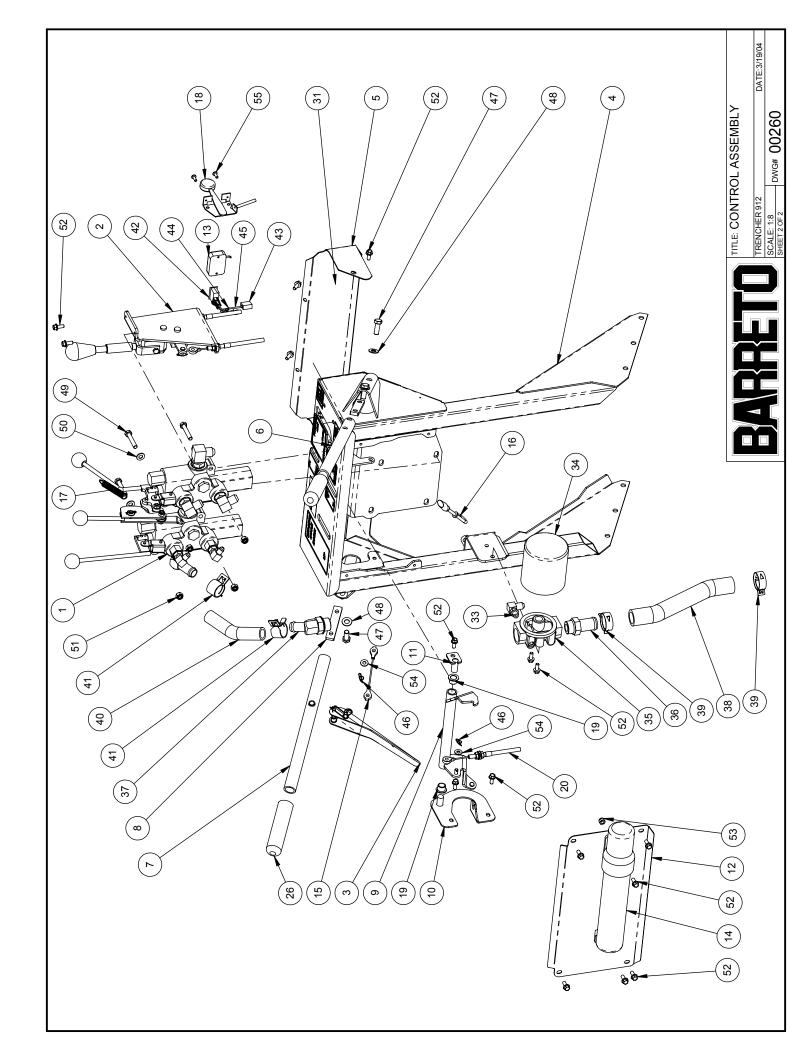


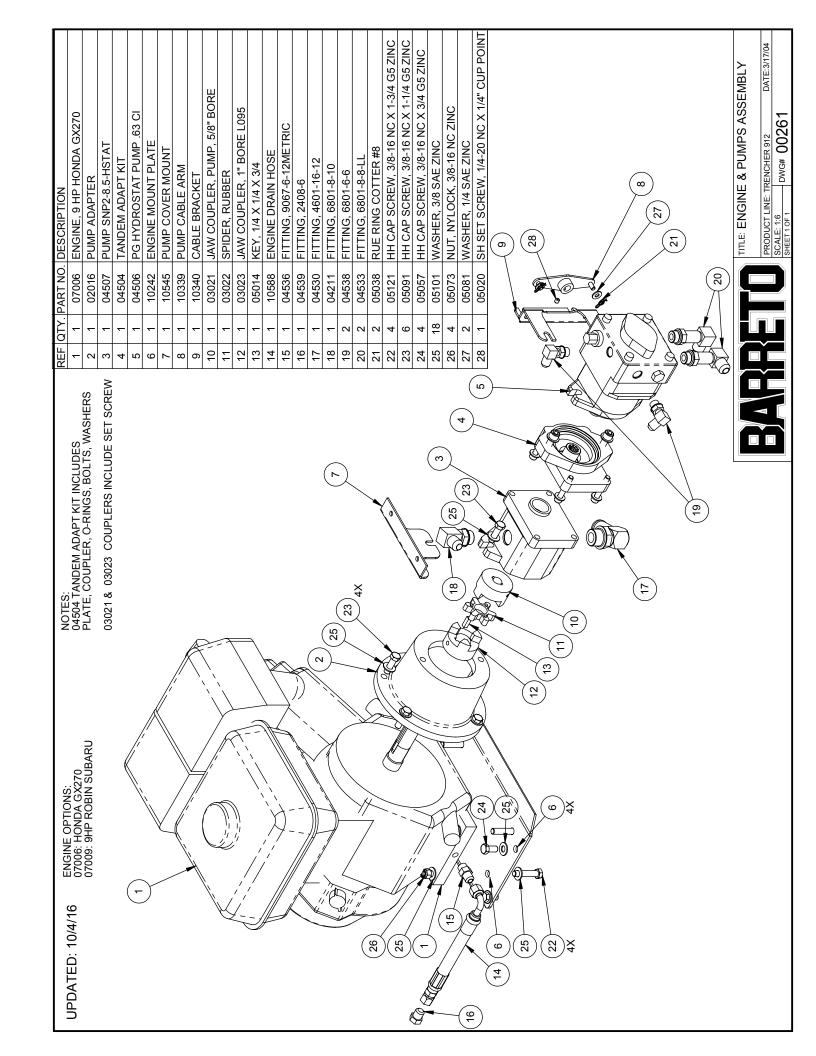




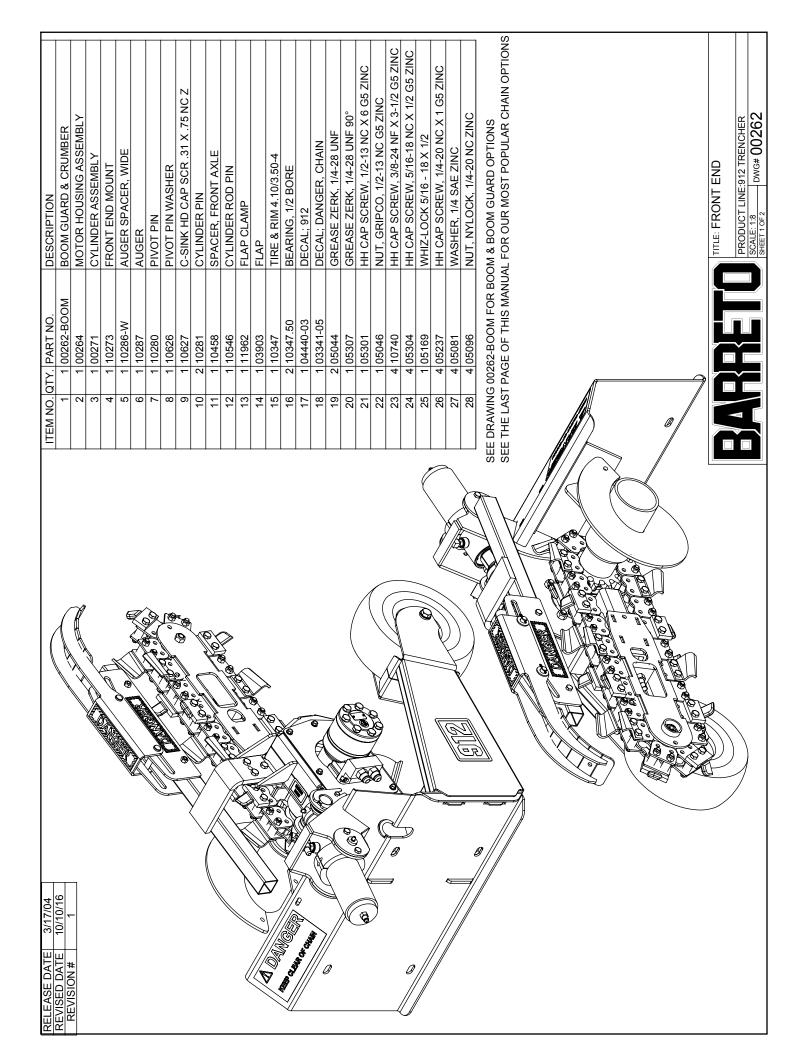


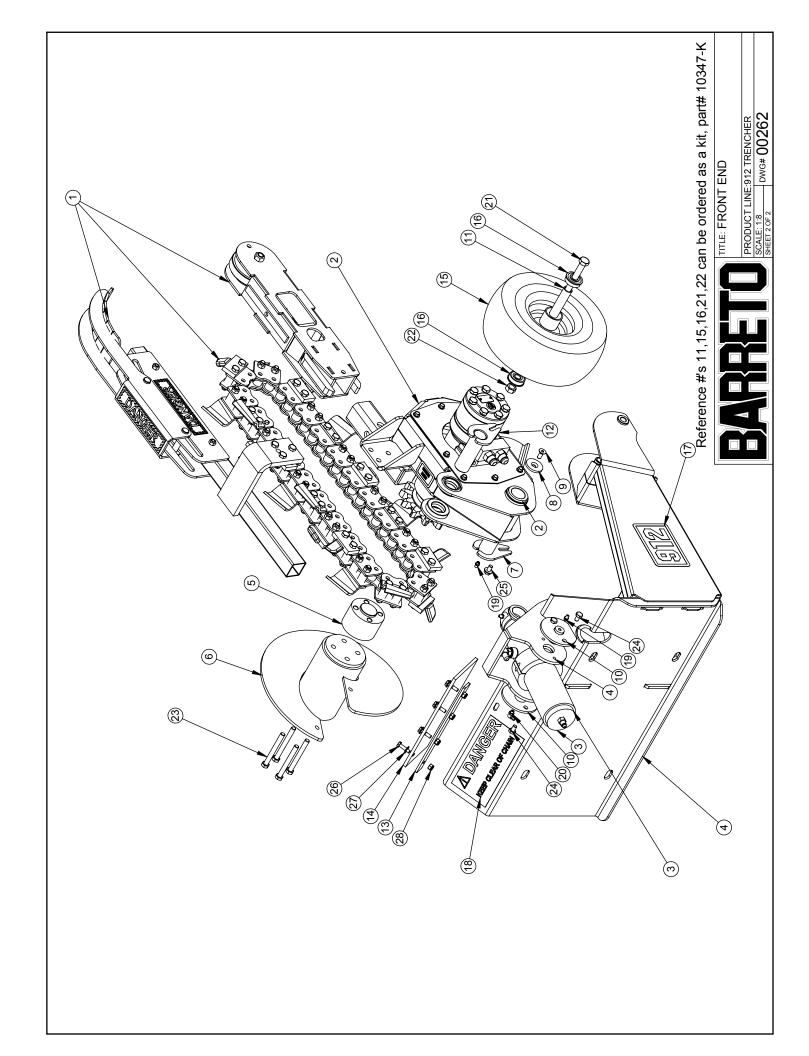


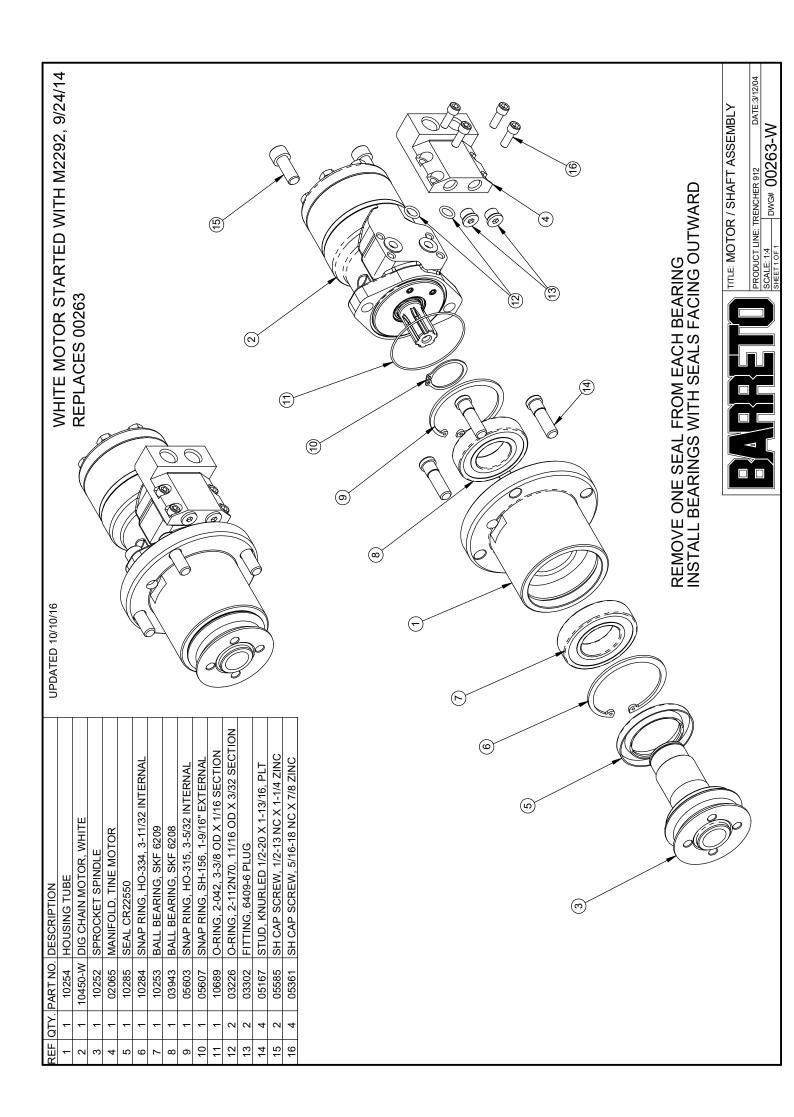


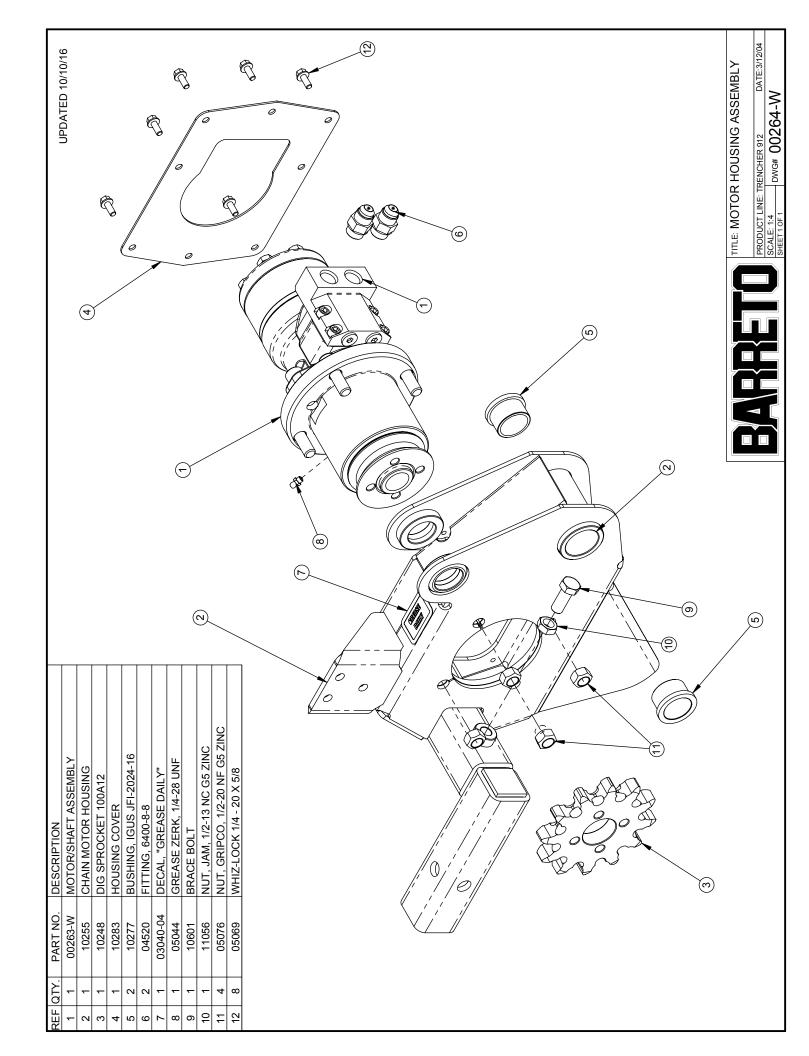


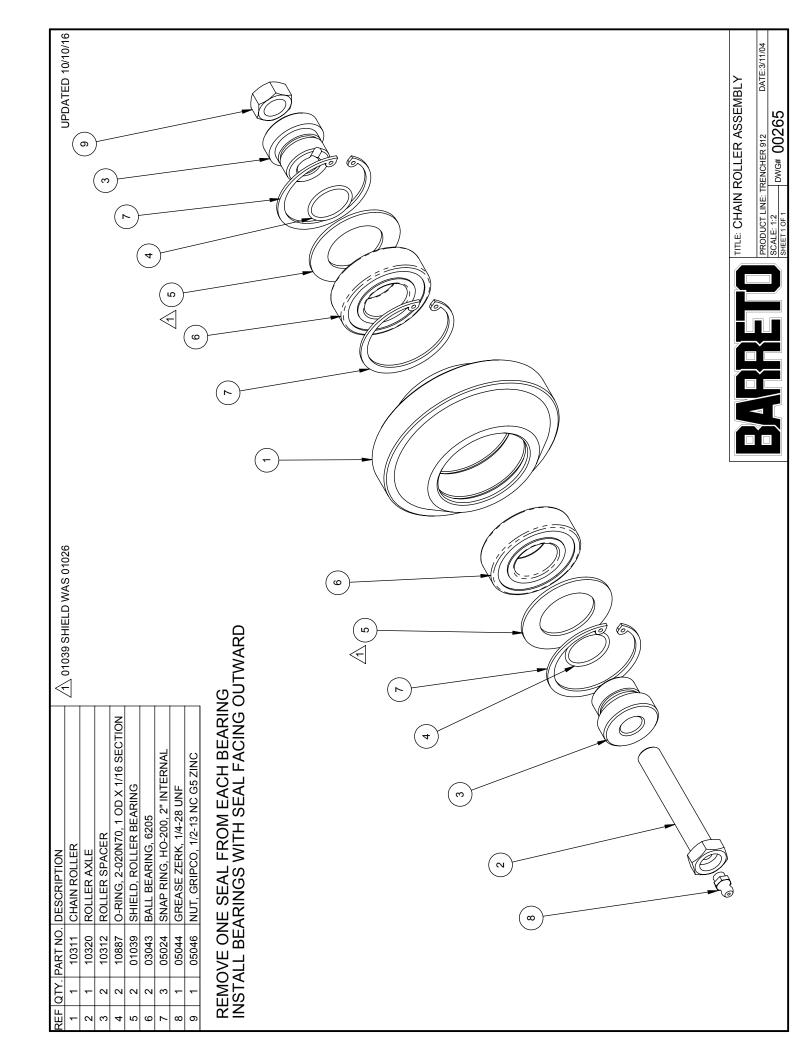
FOR OUR MOST POPULAR CHAIN OPTIONS SEE THE LAST PAGE OF THIS MANUAL RELEASE DATE 10/6/16			2)		(2)									_					BARRE INTER BOOM GUARD & CRUMBER BOOM GUARD & CRUMB
FOR OUR MOST POPULAR	UR CALL US AT 1-800-525-	DIG DEPTH:	12" BOOM GUARD 10325	18" BOOM GUARD 10650	24" BOOM GUARD 10866		12" BOOM 10316	18" BOOM 10649	24" BOOM 10865										
	ROLLER ASSEMBLY	DIG CHAIN CHAIN OPTIONS	BOOM GUARD 12"	BOOM - 12"	CRUMBER ARM	CRUMBER MOUNT	CUSHION, BOOM			CLEVIS PIN, 1/2 X 2-3/4 ZINC	WASHER, 1/2 SAE ZINC HARDENED	COTTER PIN 1/8 X 3/4	CHAIN TENSION SCREW	NUT, 1/2-13 NC G5 ZINC	HH CAP SCREW, 3/8-16 NC X 1-1/4 G5 ZINC	NUT, NYLOCK, 3/8-16 NC ZINC	HH CAP SCREW, 5/16-24 NF X 2-1/4 G5 ZINC	NUT, GRIPCO, 5/16-24 NF G5 ZINC	
TY. PART NO.		1 DIG CH/	1 10325	1 10316	1 10567	2 10564	1 10270	1 10318	3 04440-02	2 10586	2 05102	2 05222	1 10319	1 10326	3 05091	3 05073	2 05089	2 10462	
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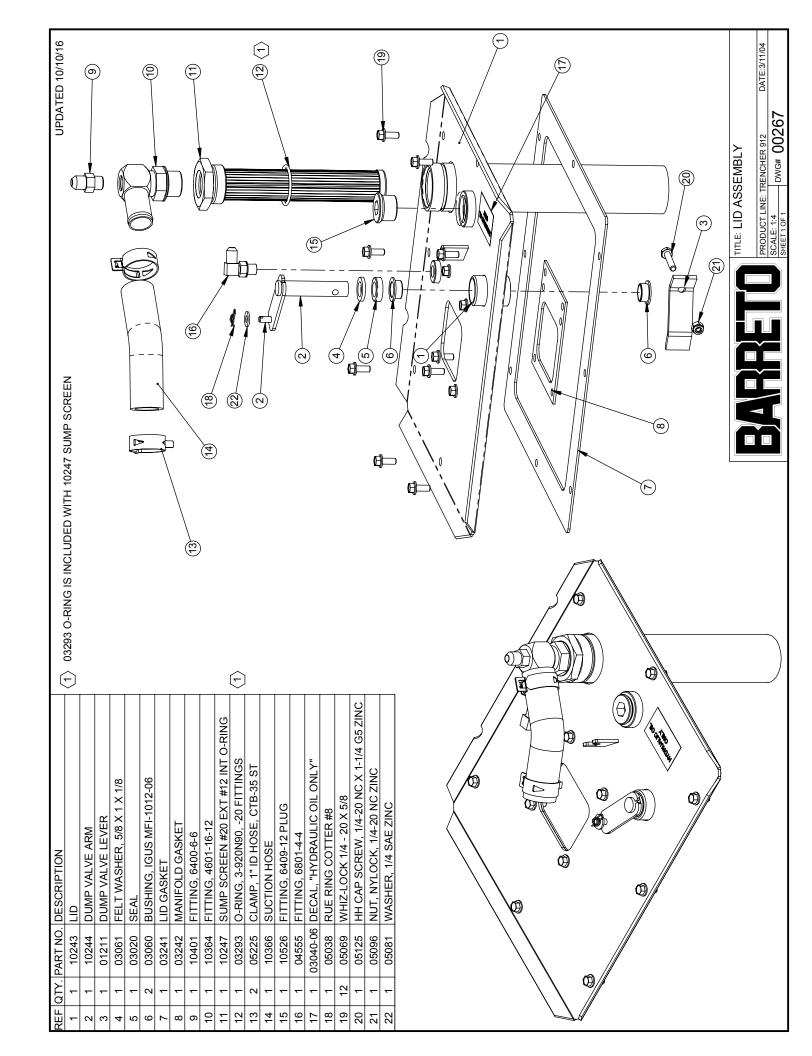


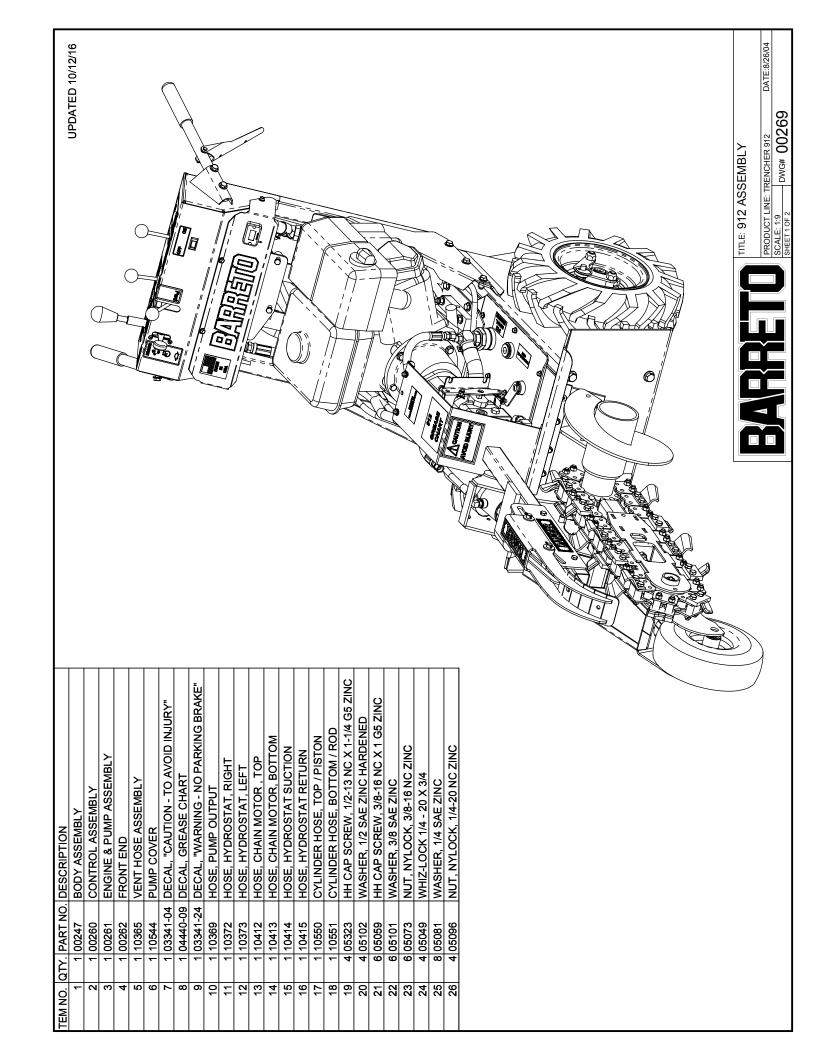


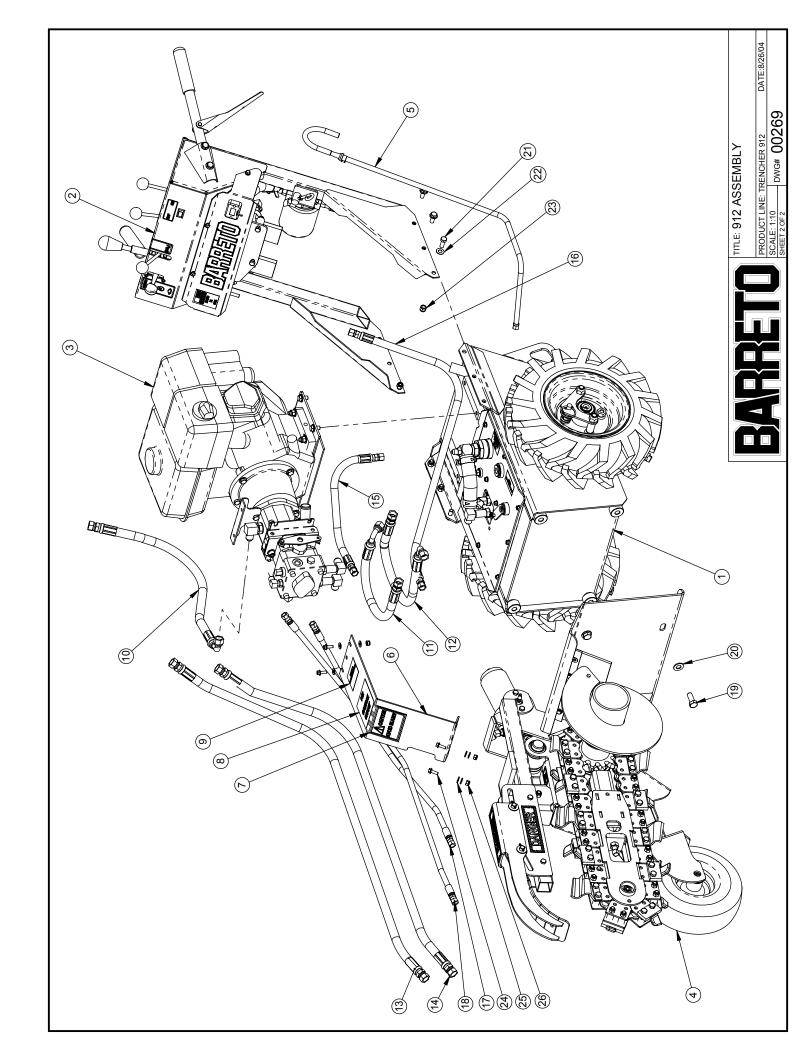


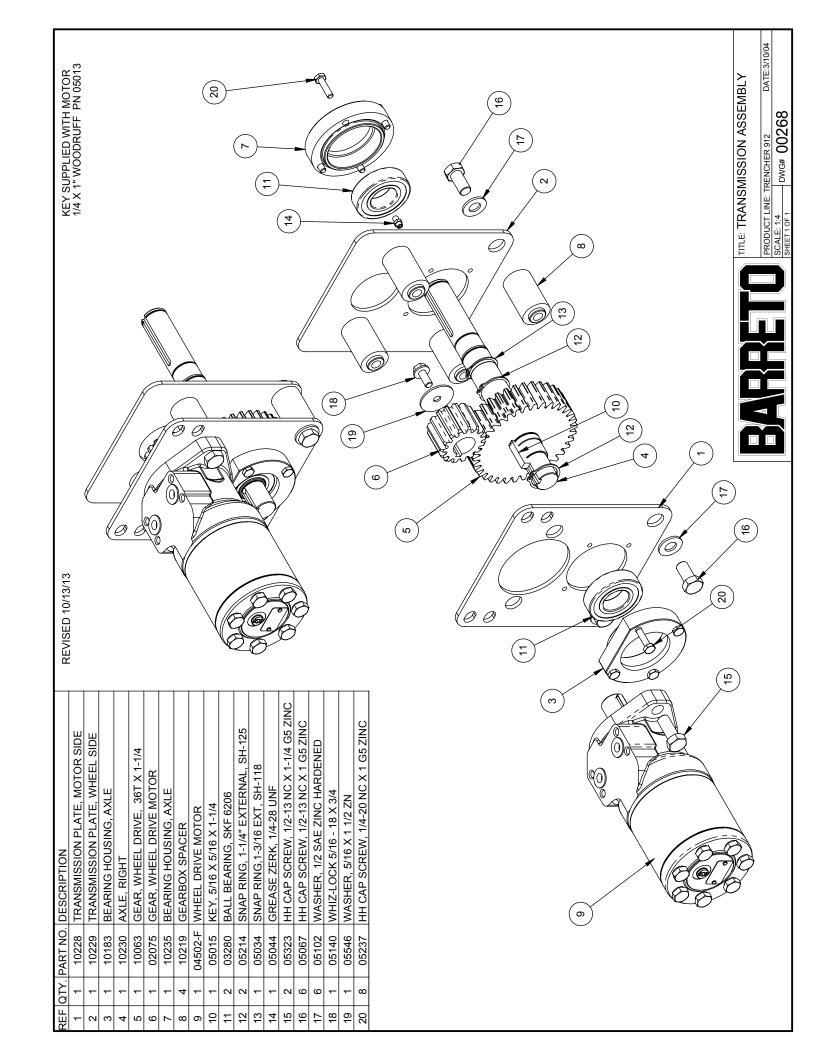


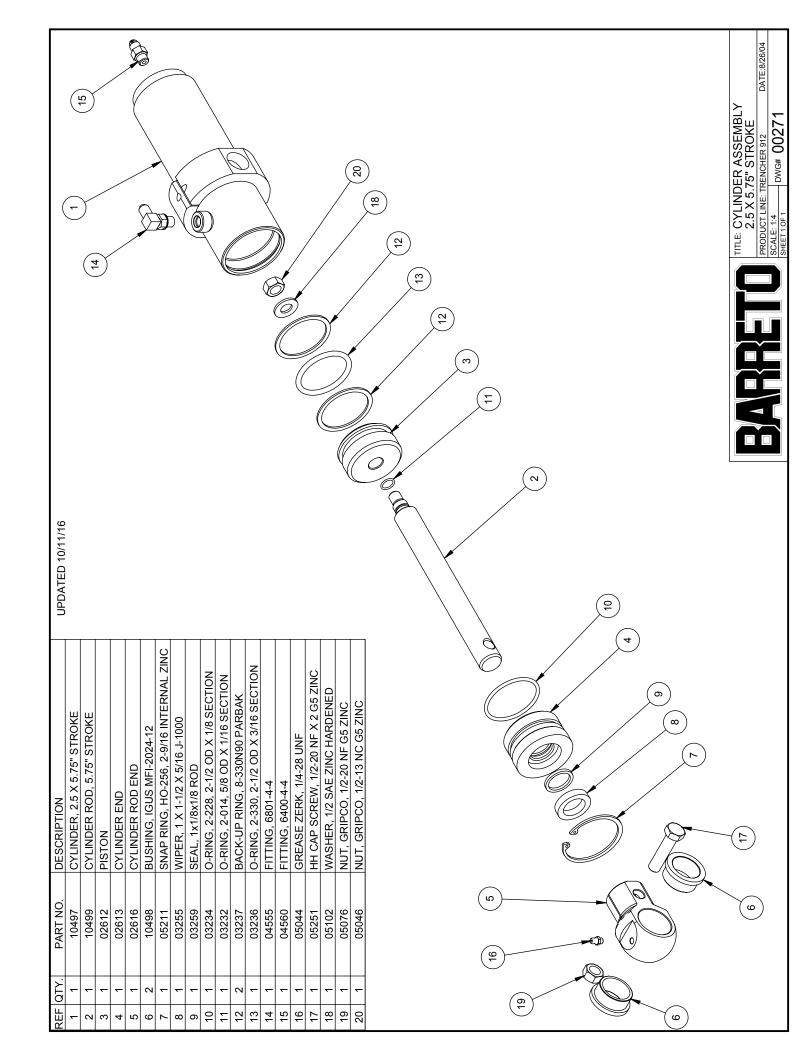


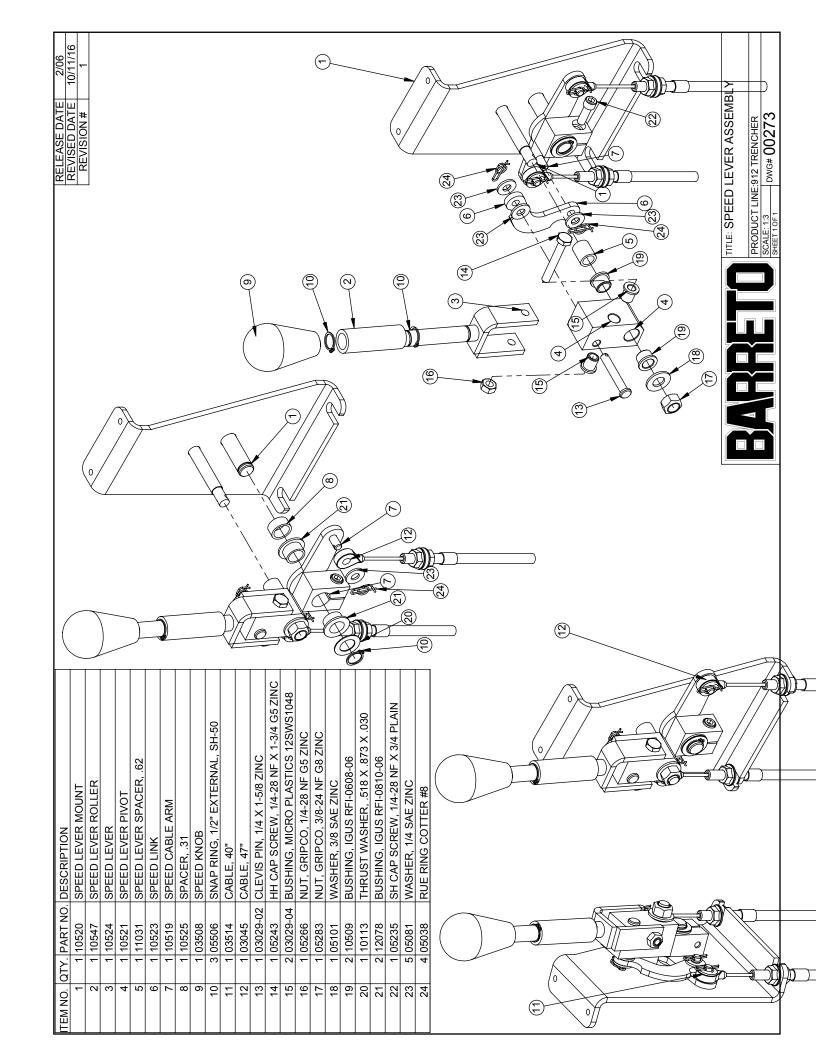


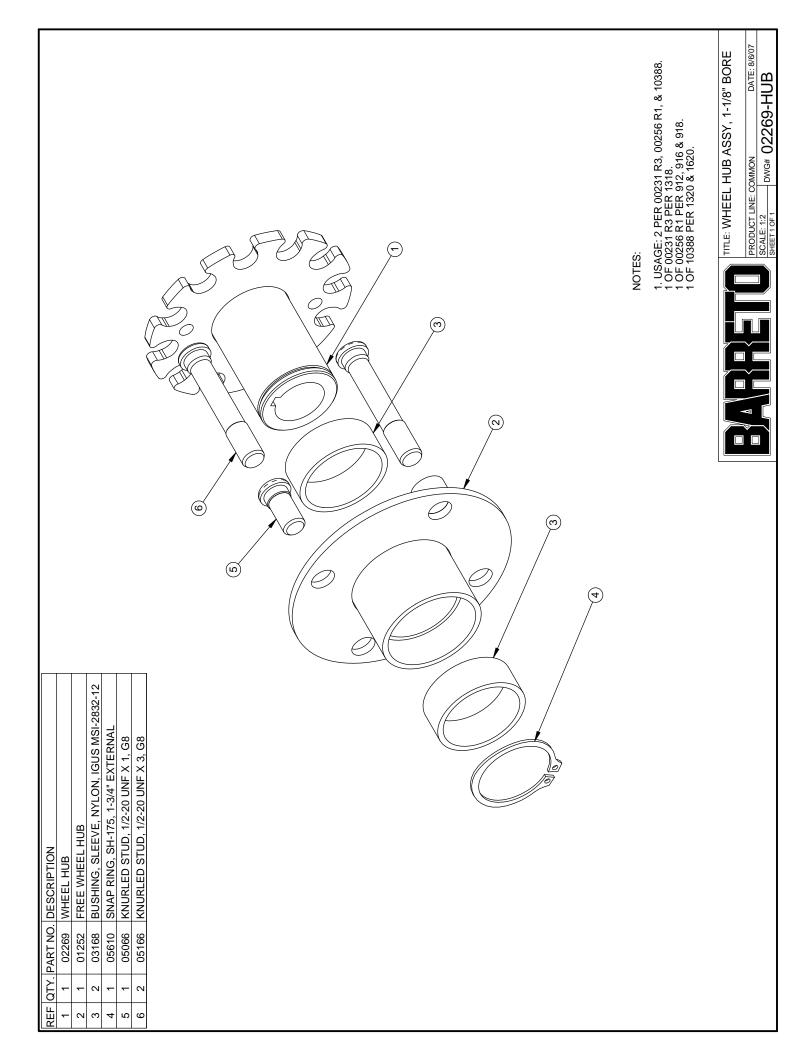


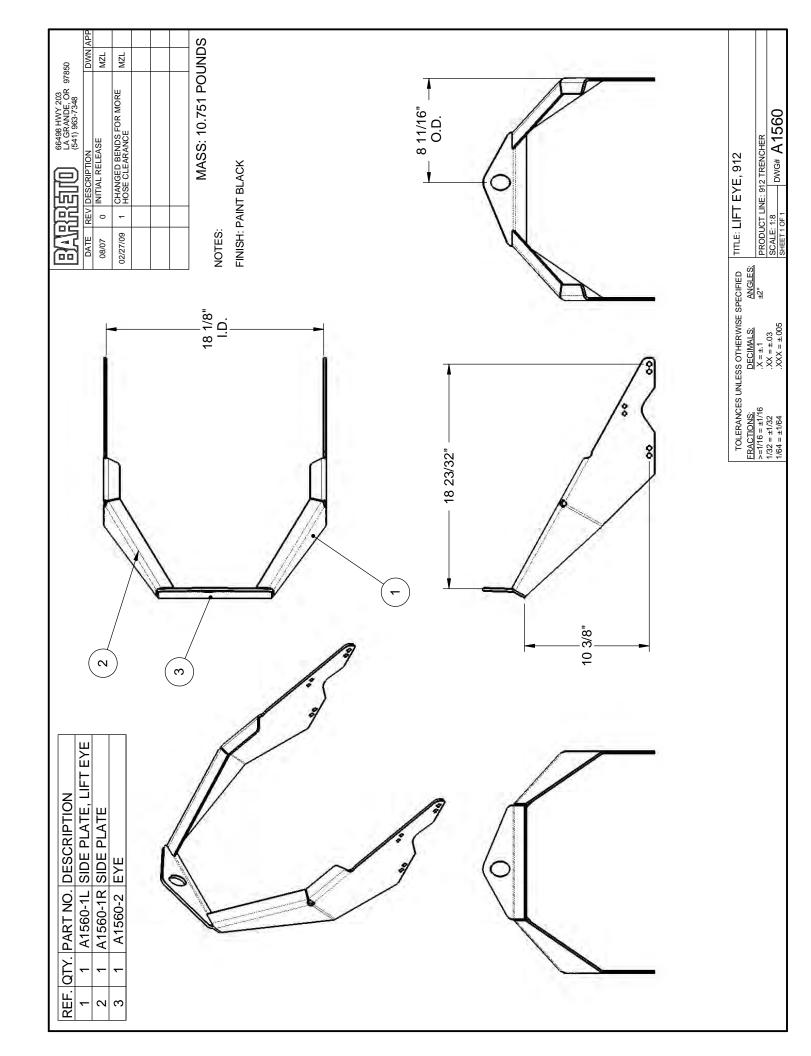












912 Trencher decals

P/N 03040-01



P/N 03040-02



P/N 03040-04



P/N 03040-06



P/N 03040-07



P/N 03040-57



P/N 03341-05



A DANGER

Moving digging chain can kill or cut off arm or leg. Stay away.

P/N 03341-07



P/N 03341-12



P/N 03341-24





P/N 04440-02



REV



P/N 04440-04



P/N 04440-05



P/N 04440-06



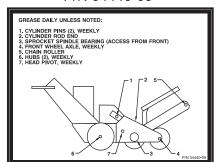
FAST

REVERSE

P/N 04440-07



P/N 04440-09



ORDER P/N K3341-912 FOR COMPLETE SET

BARRETO 712/912 TRENCHER CHAIN TYPES / DESCRIPTIONS

STANDARD CUP CHAIN (AKA Skip Tooth)

This chain has a cup tooth on every other link.

Where to use it

This chain is most effective in loamy soil - soil that is packable into clods. It is also more effective in clay or "gumbo" soil that is sticky and clings to the chain. The space between the cups allows the soil to let go instead of running around with the chain as a slurry which prevents effective diagina.

DOUBLE CUP CHAIN

This chain has a cup tooth on every link.

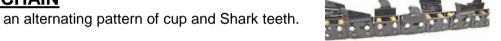
Where to use it

Where to use it.

This chain is best for sand and dry, loose soil that has a tendency to fall back into the trench. The extra cups provide for better clean-out.

COMBO/SHARK CHAIN

This chain has an alternating pattern of cup and Shark teeth.



Use this chain in pretty much the same conditions as the standard combo chain. Although not as aggressive, the Shark teeth last longer and do not fall off. This is our most popular chain.

SHARK CHAIN

The teeth on this chain are all Shark teeth that are welded onto the chain. Replacement teeth are not available for this chain.



Where to use it.

This chain can be used in the most adverse soils. It is good in rocky soil, "cliché", limestone, hard-pan and any other hard to dig soils. It does not clean out well in sandy or dry, loose, loamy soil. This is not the fastest but it is the most durable chain available. It is not uncommon for the teeth to outlast the chain rollers. When the rollers wear out, the complete chain must be replaced.

BOLT-ON SHARK CHAIN

This chain utilizes a standard chain blank and has Shark teeth that are bolted to the chain blank.



Where to use it.

This chain is good in all the conditions described for the Shark chain. The advantage is the teeth can be removed when the chain wears out and can be used on a new blank. It is not uncommon for the teeth to last through two chains.

NOTE: The 712 trencher chains are available in 12" & 18" lengths and 4" & 5" widths. The 912 chains are available in 12", 18", & 24" lengths and 4" & 6" widths.



