THE

BARRETO

MODEL E30SGB

HYDRAULIC TRACK STUMP GRINDER
OWNER'S MANUAL – ORIGINAL INSTRUCTIONS

CONGRATULATIONS!

You are now the proud owner of the BARRETO stump grinder. The OPERATOR'S MANUAL is attached to the machine. Please study it and this manual to become familiar with the stump grinder, 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
U.S. Patent No. 10,260,567

Machine Identification Record

Machine model number _____

Machine serial number _____

Engine manufacturer _____

Engine model number _____

Engine serial number _____

TABLE OF CONTENTS

STUMP GRINDER INSTRUCTIONS UPON DELIVERY

Upon delivery, check for freight damage and any missing items. If there is damage, notify the carrier and Barreto Manufacturing immediately **and make sure to document there was damage on the delivery receipt.** Please take pictures of any damage immediately if possible before unpacking crate. Remove machine 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 controls.

SERVICE INFORMATION

HYDRAULIC SYSTEM:

- Your stump grinder should arrive with approximately 14 U.S. gallons (53 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) then hydraulic fluid ISO 46 is recommended.
- Recheck oil level after stump grinder has been run and oil has circulated through the components. Routinely check 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 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.

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

*****IMPORTANT: If the couplers between the engine and the cutter head pump are moved or removed for any reason, it is CRITICAL that they have a 1/16th inch 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.

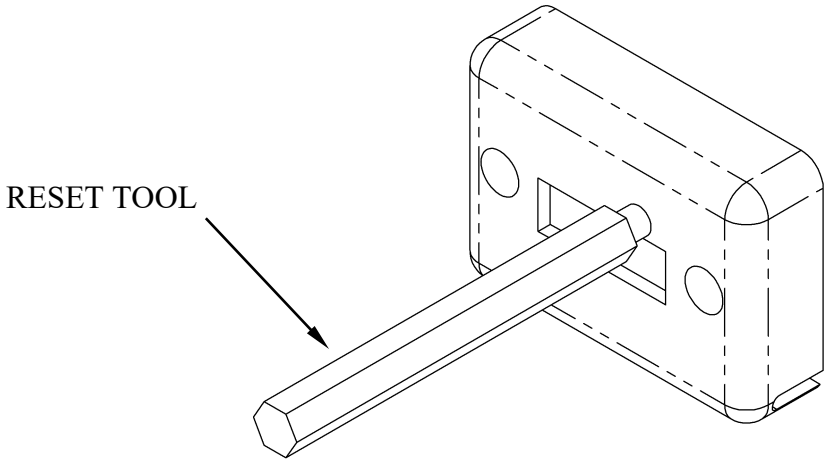
IMPORTANT - The engine on the Barreto stump grinder may or may not have been serviced prior to shipping. Shipping regulations may prohibit shipping with fuel or oil in the engine. Check levels and add oil and fuel as required before starting engine. Service the engine according to the engine owner's manual before starting.

NOTE: We recommend that the cutter teeth be tightened to 25 ft. lbs. after every use.

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. It can also show your engine RPM's by using the wand magnet to toggle the display. If the wand gets lost, a small mechanic's pick-up magnet will work.

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

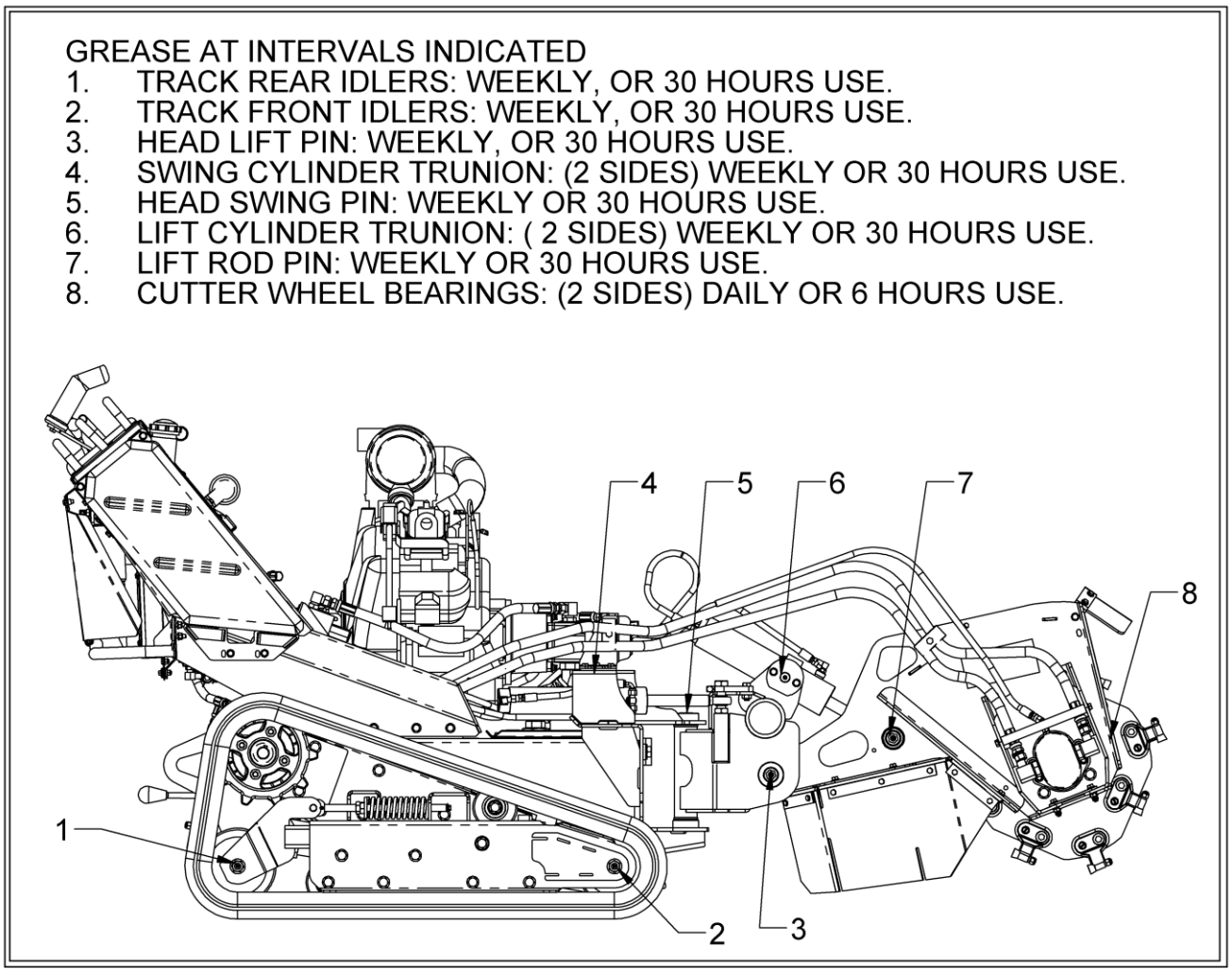


STUMP GRINDER INTENDED USE

The Barreto Stump Grinder is designed to remove in-ground tree stumps and exposed roots. It should not be used to cut any material other than wood stumps and the surface soil around the stumps or exposed roots.

LUBRICATION REQUIREMENTS

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



OPERATOR TRAINING

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

- Starting up the engine.
- Loading the stump grinder onto the trailer and securing it for road transport.
- Unloading the stump grinder from the trailer.
- Grinding procedure - Operation of the stump grinder.

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 cutter wheels and teeth, holders and bolts, 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 & qualified personnel should perform maintenance or repairs of the stump grinder. 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.

Read the BATTERY & ELECTRIC STARTER SAFETY INSTRUCTIONS. Disconnect the battery, removing the negative terminal first by loosening the wing nut where the cable end is secured to a post on the stump grinder frame. When ready to reattach the cables, reconnect the positive terminal first.

ROUTINE MAINTENANCE

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

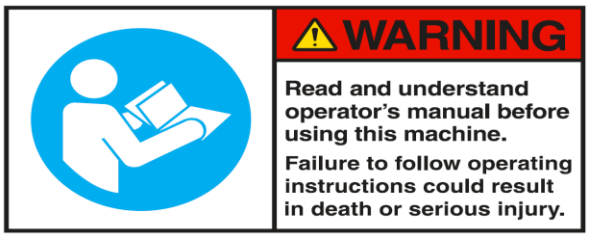
- Muffler guard
- Hydraulic hoses and fittings
- Fuel lines
- Fasteners
- Safety decals

Barreto recommends using genuine Barreto spare parts to ensure not only quality but also the health and safety of the operator.

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 stump grinder can be at any ambient temperature.



HYDRAULIC HOSE REPLACEMENT

- Make sure stump grinder is turned off and cooled down.
- Ensure the stump grinder is on a level and stable surface/ground.
- Identify the size of the tool needed for hose removal.
- Have shop rags/towels handy to absorb any fluid in the line.
- Make sure your replacement hose is the correct one.
- Once hose is replaced, make sure the fittings are tightened back up.
- Start machine and run all functions.
- Inspect hose(s) for leaks.
- Tighten fittings to spec as illustrated below.
- Make sure hydraulic fluid is filled to the top of the sight glass. (If low see page 3)

Thread Size	Assembly Torque (in-lb)	Assembly Torque (ft-lb)	Tube Connection FFFT	Swivel Nut or Hose FFFT
2	35 - 45	2 - 4	N/A	N/A
3	65 - 75	5 - 7	N/A	N/A
4	130 - 150	11 - 13	2	2
5	165 - 195	14 - 16	2	2
6	235 - 265	20 - 22	1.5	1.25
8	525 - 575	43 - 47	1.5	1
10	650 - 750	55 - 65	1.5	1
12	950 - 1050	80 - 90	1.25	1
14	1200 - 1300	100 - 110	1	1
16	1400 - 1500	115 - 125	1	1
20	1900 - 2100	160 - 180	1	1
24	2250 - 2550	185 - 215	1	1
32	3000 - 3400	250 - 290	1	1

CHANGING THE HYDRAULIC FLUID

- Lift machine high enough to place a container large enough to hold at least 15 gallons.
- Remove the drain plug using a 5/16” hex key wrench and allow to drain.
- Replace drain plug.
- Remove the fill plug using a 9/16” hex key wrench.
- Fill to the top of the sight glass using a suitable hydraulic fluid. (See page 3)
- Replace fill plug.
- Dispose of the used fluid according to your local laws and regulations.

BRIGGS/VANGUARD MAINTENANCE SCHEDULE

Maintenance Chart

First 5 Hours
• Change oil
Every 8 Hours or Daily
• Check engine oil level • Clean area around muffler and controls
Every 100 Hours or Annually
• Clean or change air filter * ▲ • Change engine oil and filter • Clean pre-cleaner (if equipped) * • Replace spark plug • Check muffler and spark arrester
Every 250 Hours or Annually
• Check valve clearance. Adjust if necessary.
Every 400 Hours or Annually
• Change air filter ▲ • Replace fuel filter • Clean air cooling system * • Clean oil cooler fins *
Every 600 Hours or Annually
• Change safety filter (if equipped)

* In dusty conditions or when airborne debris is present, clean more often.

▲ Every third air filter change, replace the inner safety filter (if equipped).

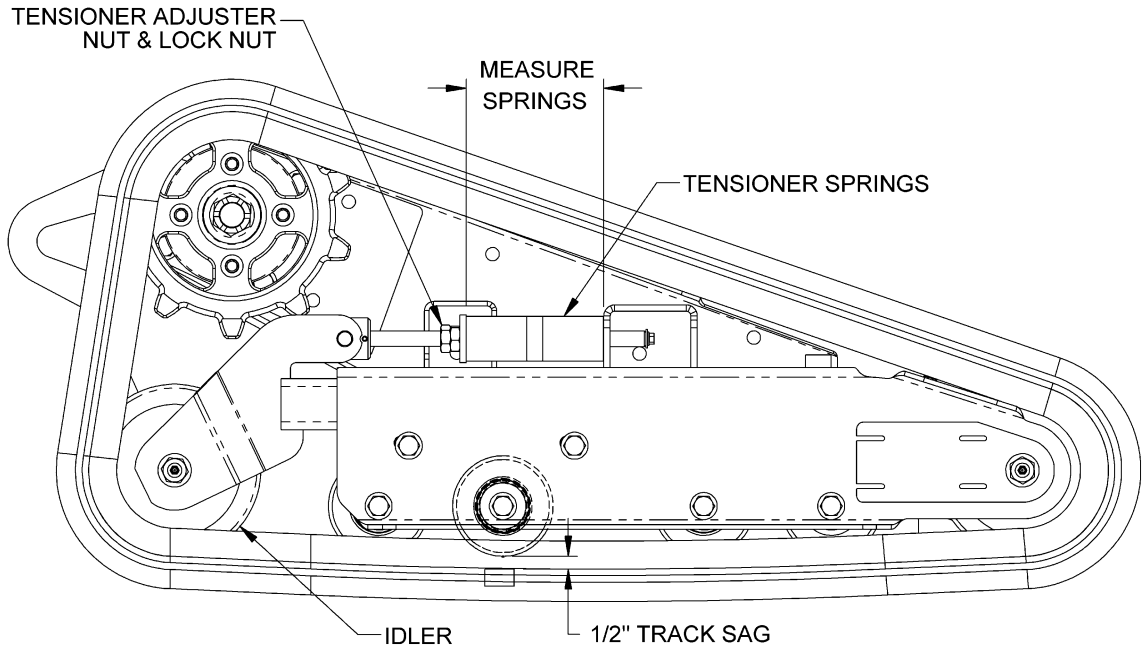
Please see your engine owner's manual for specific procedures and products to use for proper maintenance of your engine, as well as proper disposal of used parts/fluids.

TRACK TENSION ADJUSTMENT

Track must be tensioned enough to prevent de-tracking. Too much tension will cause increased wear on roller, sprockets and drive motor bearings. There are two methods of measuring correct tension: Measure the compression of the springs, or measure track sag.

To measure spring compression:

Loosen tension adjuster nut and lock nut completely. Measure free length of springs. Then tighten adjuster nut to compress tension spring pair to a length of 5/8” (16mm) less than free length. Tighten lock nut.



To measure track sag:

Lift the machine and raise the track off the ground. Measure the distance between either one of the central rollers and track metal core bars and adjust track tension to get 1/2” (13mm) track sag.

To remove/replace track:

1. Completely loosen tensioner nuts.
2. Retract idler completely.
3. Remove track from idler first, sprocket second and front roller last.
4. Reverse procedure to replace track.

Adjust track tension per instructions and illustration.

BATTERY MAINTENANCE

Follow the SHUT DOWN PROCEDURE in the OPERATOR'S MANUAL before doing any battery maintenance. For your safety always abide by the following:

Shield entire face, especially your eyes, and wear rubber gloves to avoid acid burns whenever doing anything with the battery. Battery caps must be tightly in place if the battery has removable caps.

WARNING: The battery contains sulfuric acid that can cause blindness and severe burns. Avoid contact with eyes, skin, and clothing. If acid contacts eyes, call 911 immediately and flush eyes with water for 15 minutes or until emergency medical help arrives. If acid contacts skin, flush area with plenty of water. If acid is ingested, drink large quantities of water or milk then follow with milk of magnesia, beaten egg, or vegetable oil, and get medical attention immediately.

Avoid contact with battery components. Wear rubber gloves and wash hands after handling any battery components.

WARNING: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to cause cancer and reproductive harm. Acid can cause blindness and severe burns if leaked from the battery.

Do not charge or jump-start the battery near flames or sparks, or while smoking.

WARNING: Battery fumes are flammable and explosive. Avoid explosion hazard that could blind and burn. Tools and jumper cable clamps can make sparks, so use them with care. Shield eyes and face, and wear rubber gloves.

ELECTROLYTE LEVEL: Check the battery electrolyte level every 25 hours of machine use and if necessary add distilled water following this procedure:

1. Disconnect the battery cables, removing the negative cable first.
2. Remove the battery from the machine.
3. Clean the battery exterior with paper towels.
4. If the battery posts and cable terminals are corroded, clean them with a wire brush cleaner tool. A solution of four parts water and one part baking soda is helpful.
5. Remove the battery caps.
6. Slowly pour distilled water into each battery cell until the electrolyte level is up to the full line indicated for each cell on the battery. **Do not overfill**. Overflow of electrolyte, which contains sulfuric acid, can cause severe corrosion to the stump grinder.
7. Reinstall the battery caps tightly in place.
8. Apply a light coating of grease to the battery terminals to help prevent corrosion.
9. Reinstall the battery securely into the stump grinder.
10. Reconnect the cables. Attach the positive cable first, then the negative one.

BATTERY MAINTENANCE (continued)

BATTERY VOLTAGE LEVEL: Check the voltage level using an appropriate meter. Always keep the battery fully charged and clean to help prolong battery life expectancy, especially when the temperature is below 32°F (0°C). For off-season long-term storage, we recommend removing the battery from the stump grinder and storing where the ambient temperature remains above freezing.

TO CHARGE THE BATTERY follow this procedure:

1. Disconnect the battery cables, removing the negative cable first.
2. Remove the battery from the machine.
3. Clean the battery exterior with paper towels.
4. If the battery posts and cable terminals are corroded, clean them with a wire brush cleaner tool. A solution of four parts water and one part baking soda is helpful.
5. Apply a light coating of grease to the battery terminals to prevent corrosion.
6. Check the battery electrolyte level (see procedure above).
7. Insure that the battery caps tightly in place.

Do not charge the battery near flames or sparks, or while smoking.

WARNING: Battery fumes are flammable and explosive. Avoid explosion hazard that could blind and burn. Tools and jumper cable clamps can make sparks, so use them with care. Shield eyes and face, and wear rubber gloves.

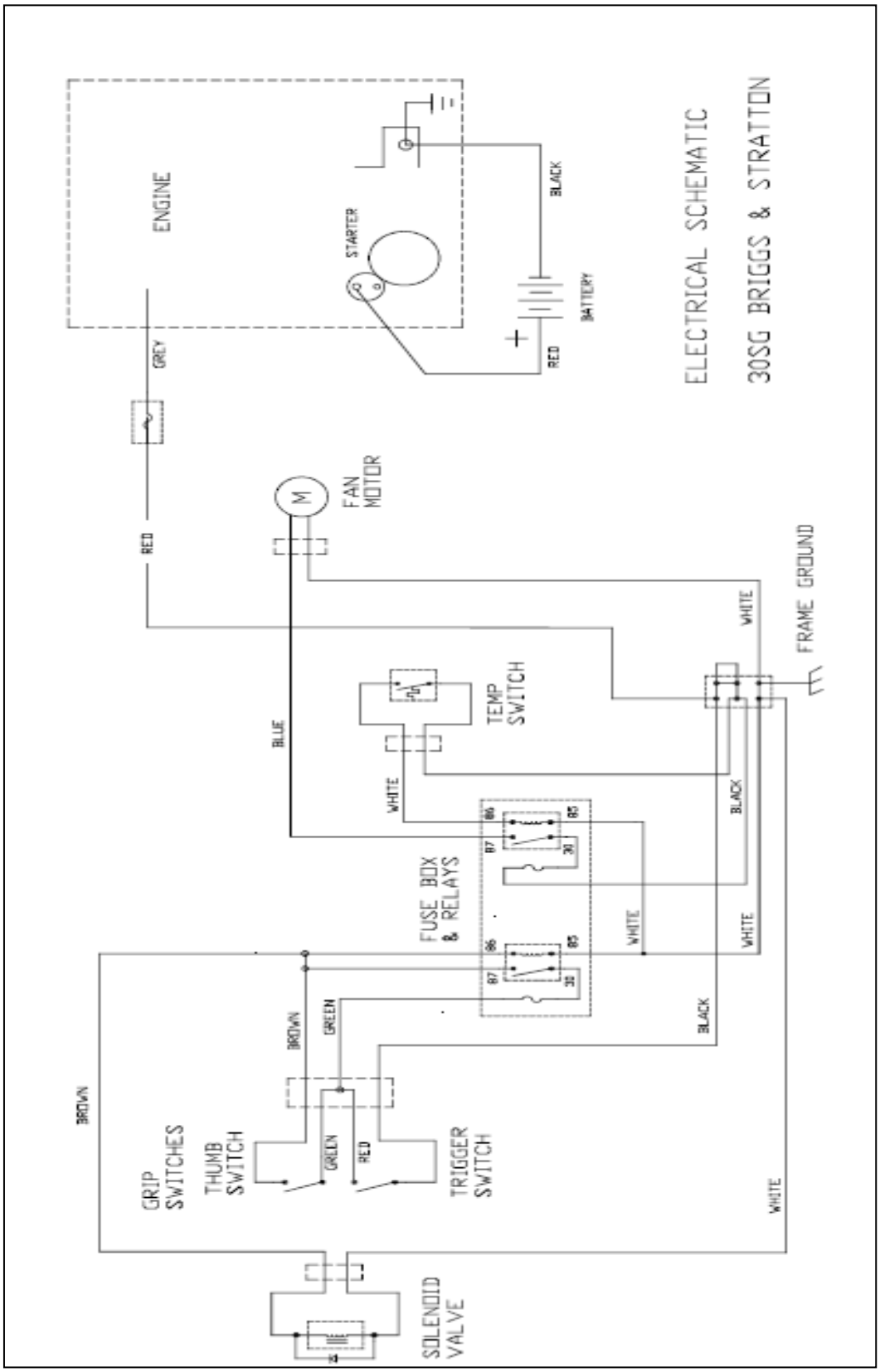
8. Connect a 12-volt DC battery charger and charge at 3 to 4 amperes for 4 to 8 hours. Do not overcharge.
9. When the battery is fully charged, turn off and unplug the charger from the electrical outlet, then disconnect the charger leads from the battery posts.
10. Reinstall the battery securely into the stump grinder.
11. Reconnect the cables. Attach the positive cable first, then the negative one.

CUTTER WHEEL TORQUE SPECS

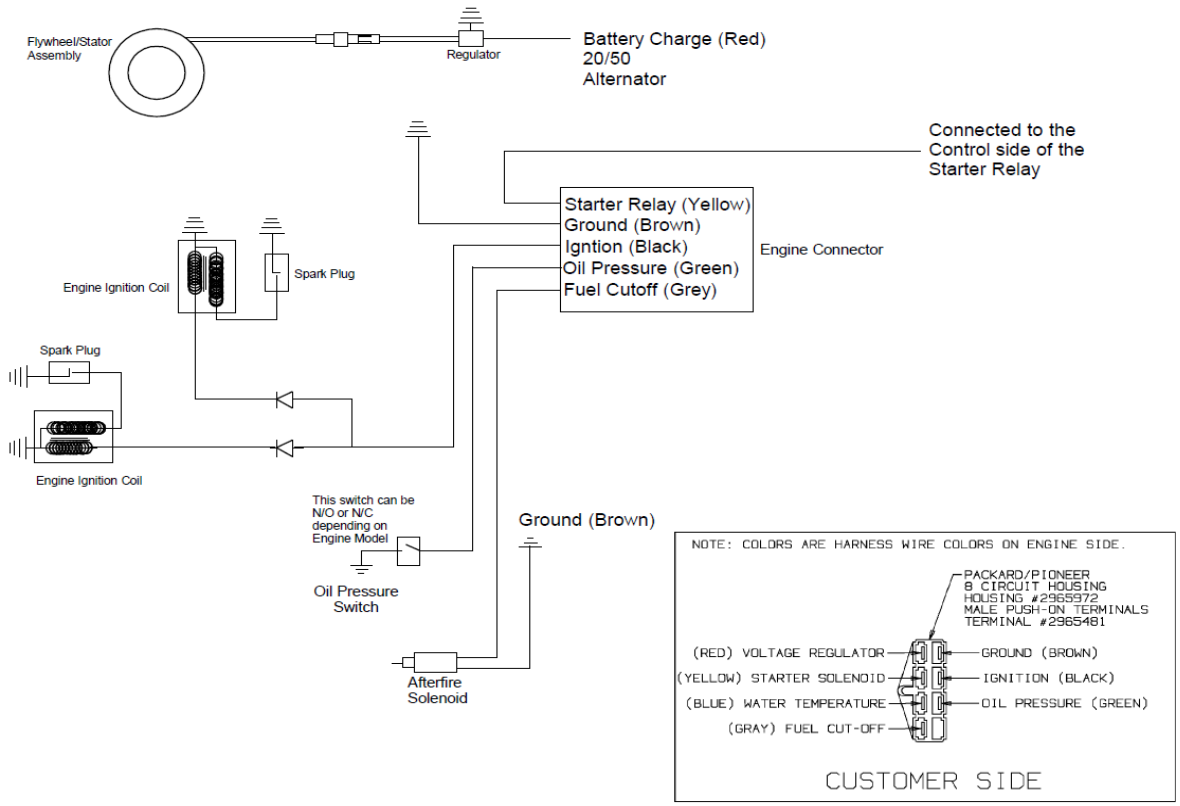
We recommend that the teeth and holders be inspected after every use to maximize the usable life of these high wear items.

- Cutter teeth have three sides and we recommend rotating them frequently to keep the cutting edges sharp. A torque wrench should be used to torque these down to 25 ft. lbs. A worn and unsharpened tooth will cause the holders to wear prematurely, resulting in poorer performance and increased maintenance costs.
- The holders should be inspected and torqued to 180 ft. lbs. using a torque wrench as well.
- The nuts that fasten the axle and drive stubs on the cutter wheel together should be torqued to 55 ft. lbs. using a torque wrench.

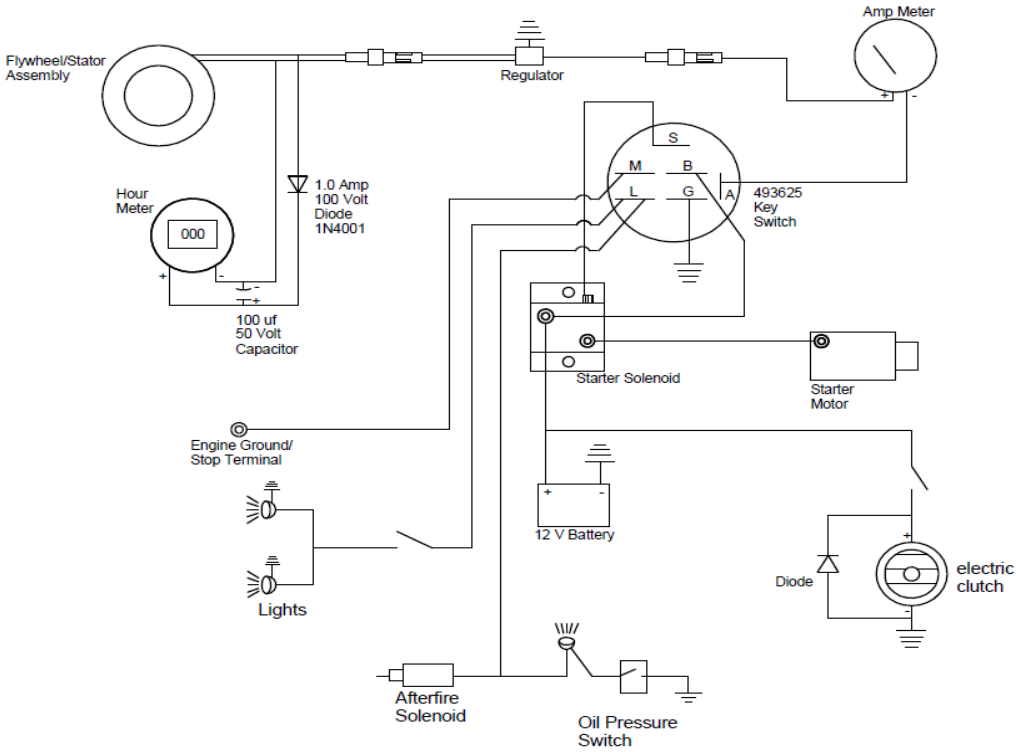
STUMP GRINDER ELECTRICAL SCHEMATIC WITH BRIGGS ENGINE



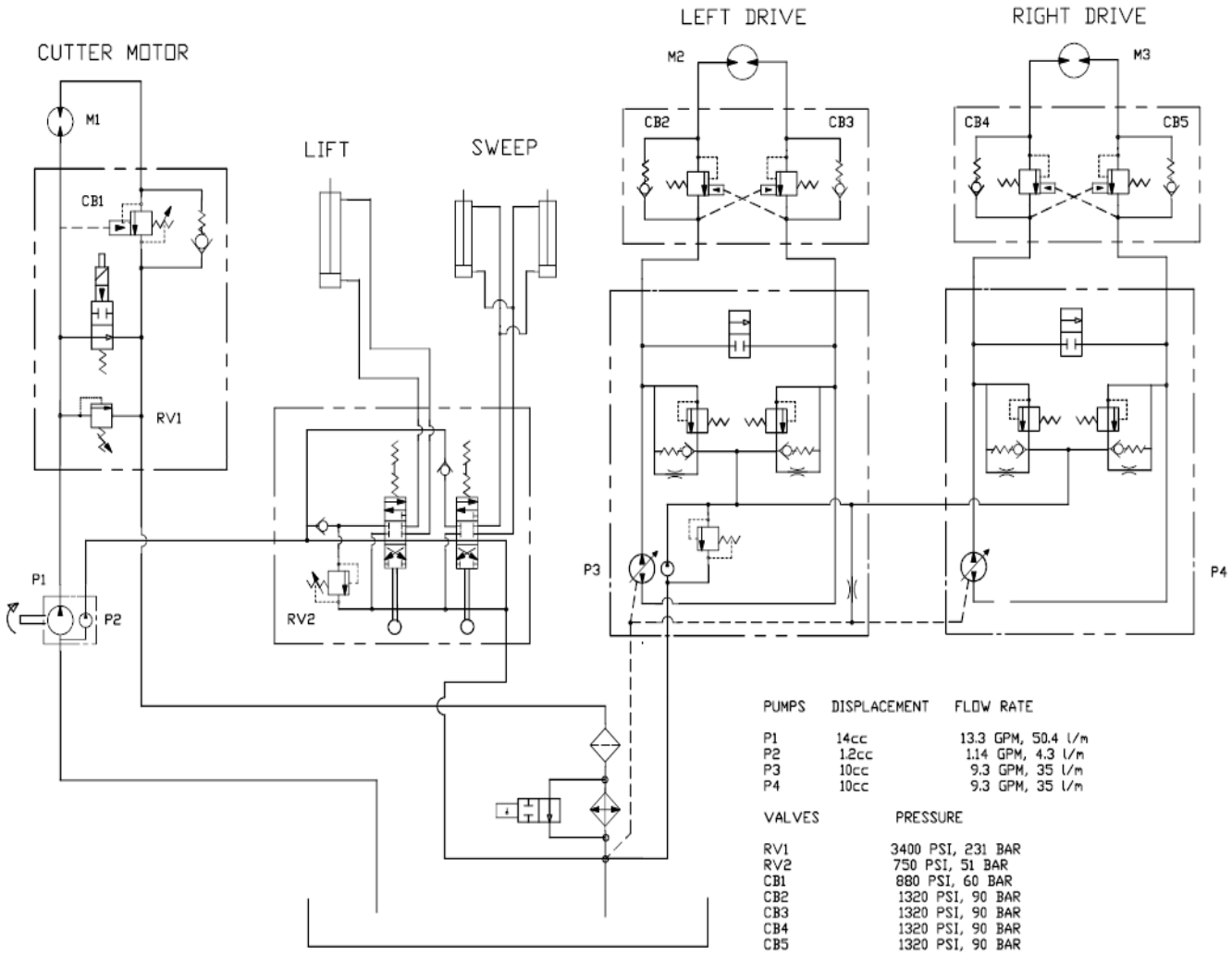
31 HP BRIGGS/VANGUARD ELECTRICAL SCHEMATIC



Typical Regulated Wiring Diagram



HYDRAULIC SCHEMATIC



STUMP GRINDER TROUBLESHOOTING GUIDE

CAUTION!! Always use extreme care when troubleshooting or making adjustments on stump grinder. Stay clear of cutter wheel 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 shows in 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 leaking air into pump intake.	Check main suction hoses and fittings for leaks and tighten fitting nuts

B. Engine lugs down or dies and tracks and cutter wheel do not turn.

1. Rocks or other obstructions jammed in cutter wheel housing.	Raise cutter head. See if obstruction can be removed from cutter housing.
2. Cut depth or swing speed too great.	Decrease sweep speed or cutting 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 grinding on hills. Level grinder, check oil and allow oil alert to reset.
5. Engine losing power due to wear.	See engine manual.

C. Cutter fails to rotate, but track drive works.

1. Cutter motor worn.	Rebuild or replace motor. New motors are available from Barreto Manufacturing.
2. Cutter Relief Valve malfunctioning.	Adjust Relief Valve to 3500 PSI or replace relief spring if needed.
3. Cutter drive pump worn.	Replace pump.

STUMP GRINDER TROUBLESHOOTING GUIDE (continued)

D. Tracks fail to turn, but cutter rotates.

1. Sprocket key sheared.	Replace key and other parts as needed.
2. Pump control linkage loose.	Tighten or replace bolts.

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 cutter motor or shaft.	Inspect motor for leaking shaft seal. Rebuild or replace motor. New motors are available from Barreto Manufacturing.

F. Foaming hydraulic fluid coming from breather hose.

1. Improper fluid 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 fluid.	Inspect and tighten fittings and clamps on pump intake hoses.

G. Cutter does not lift.

1. Lift relief valve malfunctioning.	Adjust relief to 1000 PSI. This may require a replacement spring in valve.
2. Lift cylinder piston seal damaged or rod bent.	Disassemble & replace parts as required.

SPECIFICATIONS

MODEL NUMBER	**E30SGB**
DIMENSIONS	**BRIGGS/VANGUARD**
Weight	1686 lb (764.76 kg)
Height	52.2” (1.32 m)
Length	92.5” (2.35 mm)
Width	35.5” (901.7 mm)
ENGINE	
Engines	Briggs/Vanguard
Fuel	Gasoline
Power: hp (kW) at 3600 RPM	31 hp (23.1 kW)
Fuel Capacity	3.2 U.S. gallons (12.1 liters)
Engine Oil Capacity	1.8 quarts (1.7 liters)
Electric Start	Standard
Hour Meter	Standard
HYDRAULIC SYSTEM	
Reservoir Capacity	14 U.S. gallons (53 liters)
Oil Cooler	Standard
TRACK SYSTEM	
Track Width	7.1” (180 mm)
Total Ground Contact	482.8” (.312 sq/m)
OPERATIONS	
Ground Drive, Forward	190 feet per minute (57.9 m/m)
Ground Drive, Reverse	90 feet per minute (27.4 m/m)

INDEX

THE

BARRETO

MODEL E30SGB

HYDRAULIC TRACK STUMP GRINDER
OPERATOR'S MANUAL – ORIGINAL INSTRUCTIONS

STUMP GRINDER INTENDED USE

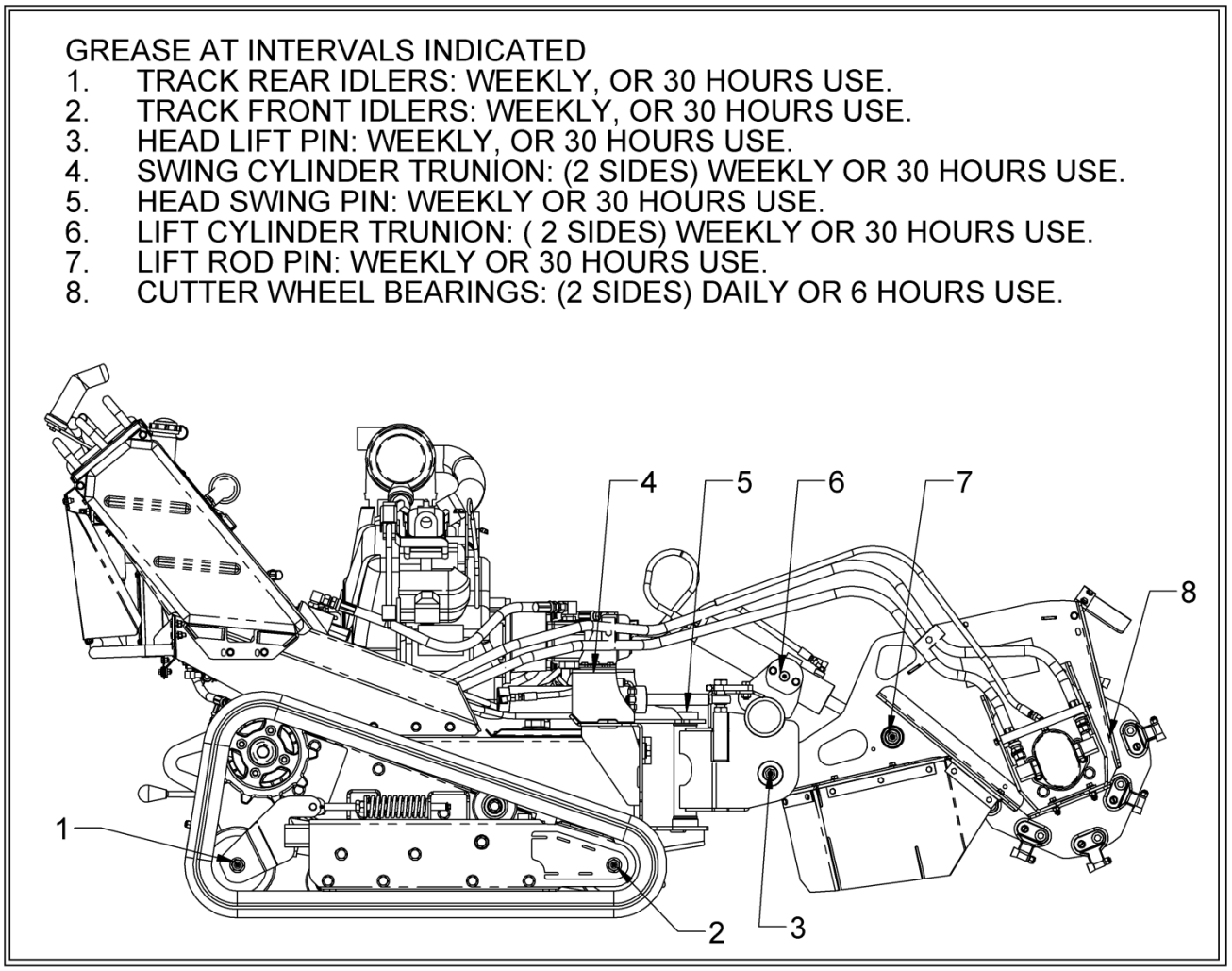
The Barreto Stump Grinder is designed to remove in-ground tree stumps and exposed roots. It should not be used to cut any material other than wood stumps and the surface soil around the stumps or exposed roots.

TABLE OF CONTENTS

U.S. Patent No. 10,260,567

LUBRICATION REQUIREMENTS

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



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 stump grinder near specific hazards.

This machine shall always be used in accordance with this manual. Study it and ALL decals on the stump grinder before operating the stump grinder.

ALWAYS make sure the engine is turned off before performing maintenance, cleaning, or transport by means other than under its own power.

Before using, always visually inspect to see that the tools are not worn or damaged. Replace worn or damaged elements and bolts in sets to preserve balance.

Use extreme caution when reversing the machine towards you.

Do not change the engine governor settings or over speed the engine.

SAFETY INSTRUCTIONS OVERVIEW

READ SAFETY AND OPERATING INSTRUCTIONS BEFORE OPERATING!

USE COMMON SENSE AND PLENTY OF IT!

Call before you cut. 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 cutter wheel. Always determine location of utilities before cutting.

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

STAY CLEAR of moving parts on the stump grinder.

DANGER: Cutter wheel and other moving parts can cut off arms, legs, or fingers. Contact with the cutter wheel while in operation will cause serious injury or even death. Stay in the operator's position at the controls when the cutter wheel is operating. Keep all observers and helpers at a safe distance from the machine. Stop the cutter wheel immediately if anyone gets too close to the operating machine.

Wear a face safety shield and hard hat while operating or observing!

WARNING: The cutter wheel may throw chips, rocks and debris into the area around the machine. Keep all bystanders at a safe distance from the machine. Always wear eye protection when operating or observing the machine in operation.

Wear adequate hearing protection while operating or observing.

WARNING: The machine and cutter wheel are loud when in operation. Wear ear protection when operating the machine. 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 stump grinder. Allow adequate side and overhead clearances between machine and buildings, fences, and trees.

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

Avoid inclines if at all possible.

WARNING: Navigating on any incline increases the danger of the machine 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".

Avoid operating adjacent to drop-offs or embankments.

Keep away from tracks to avoid being crushed.

WARNING: Being run over by the machine will cause injury.

Always leave machine parked on a level surface.

WARNING: Do not park on incline. Move the machine to a level surface and set the parking brake located behind the left hand track motor. Move the handle down to engage the brake.

Do not leave machine unattended with the engine running.

Do not operate machine 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 machine near flames or sparks.

WARNING: Fuel fumes can catch fire or explode. If fuel is spilled, do not attempt to start engine but move the machine away from the area of spillage and avoid creating any source of ignition until the vapors have dissipated.

Shut off engine and allow it to cool before refueling.

WARNING: Fuel fumes can catch fire or explode. Refuel outdoors and do not smoke when refueling. Do not refuel near a source flames or sparks. Always store fuel in containers specifically designed for this purpose. Add fuel before starting engine. Never remove the cap on the fuel tank or add fuel while the engine is running or when the engine is hot.

WARNING: Replace all fuel tank and container caps securely.

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.

WARNING: Stay clear of the articulation area while the engine is running.

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.

WARNING: Keep safety guards and shields in place while the engine is running and keep all operator protection systems in place and in operational condition.

WARNING: Never store the equipment with petrol in the tank inside a building where fumes can reach an open flame or spark. Allow the engine to cool before storing in an enclosure. To reduce fire hazard, keep the engine, muffler, battery compartment and fuel storage area free of any vegetative material and excessive grease.

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.

Never allow anybody to ride on the machine.

Never lift machine over any person at any time.

WARNING: If machine should fall, it would crush anybody under it.

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

BATTERY & ELECTRIC STARTER SAFETY INSTRUCTIONS

Shield entire face, especially your eyes, and wear rubber gloves to avoid acid burns whenever doing anything with the battery. Battery caps must be tightly in place if the battery has removable caps.

WARNING: The battery contains sulfuric acid that can cause blindness and severe burns. Avoid contact with eyes, skin, and clothing. If acid contacts eyes, call 911 immediately and flush eyes with water for 15 minutes or until emergency medical help arrives. If acid contacts skin, flush area with plenty of water. If acid is ingested, drink large quantities of water or milk then follow with milk of magnesia, beaten egg, or vegetable oil, and get medical attention immediately.

Avoid contact with battery components. Wear rubber gloves and wash hands after handling any battery components.

WARNING: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to cause cancer and reproductive harm. Acid can cause blindness and severe burns if leaked from the battery.

Do not charge or jump-start the battery near flames or sparks, or while smoking.

WARNING: Battery fumes are flammable and explosive. Avoid explosion hazard that could blind and burn. Tools and jumper cable clamps can make sparks, so use them with care. Shield eyes and face, and wear rubber gloves.

BATTERY MAINTENANCE is in the OWNER'S MANUAL.

STUMP GRINDER OPERATING INSTRUCTIONS

READ SAFETY INSTRUCTIONS BEFORE OPERATING! Both the SAFETY INSTRUCTIONS and OPERATING INSTRUCTIONS are in this manual.

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

STUDY AND UNDERSTAND CONTROLS BEFORE BEGINNING OPERATION.

CONTROLS

1. KEYED IGNITION SWITCH: Used to start and stop the engine with an electric starter.

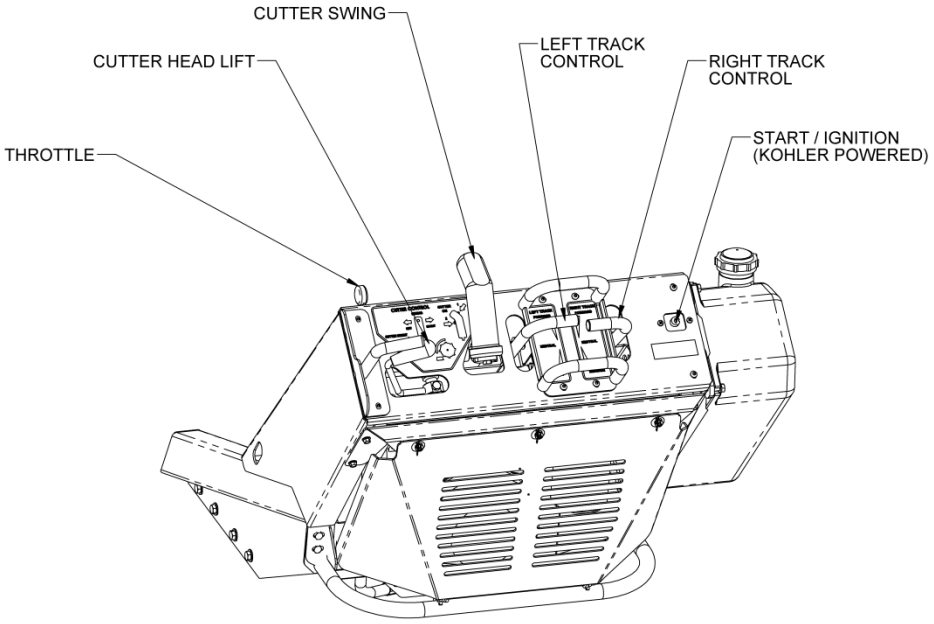
VANGUARD: The key switch is located on the engine adjacent to the choke and can be seen while standing behind the machine.

Refer to the ENGINE START UP PROCEDURE.

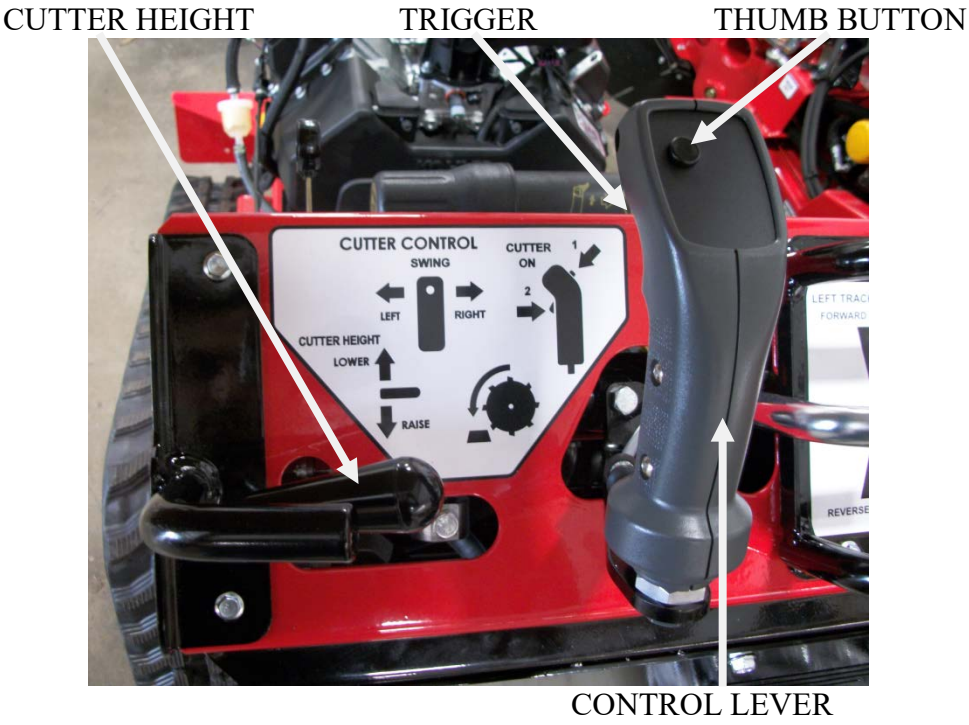
2. THROTTLE: Controls engine speed. Operate at full throttle when cutting (all the way forward).

3. TRACK CONTROL: Controls the travel direction and speed.

- Track controls are designed to be operated with two hands.
- Pushing the control handles forward from neutral position causes the machine to move forward.
- Pulling the control handles back from neutral position causes the machine to move backward.
- Moving the track control handles farther from the neutral position increases the speed.
- Steer the machine by moving one track control handle farther than the other handle. This causes the track on one side to rotate at a different speed than the opposite track. Pivot turns can be made by moving one control forward and the other control back.



4. CUTTER WHEEL CONTROL: To start the cutter wheel, hold down the thumb button on the control handle. Then pull the trigger back. After the wheel is started, **the thumb button can be released**, but the trigger must be held to keep the cutter wheel turned on. To raise the cutter head, pull the cutter height control bar back. To lower the cutter head, push the cutter height control bar forward. The cutter head swings to the left and right by moving the control lever left or right.



5. PARKING BRAKE: It is located behind the left hand track motor. Move the handle down to engage the brake, and up to disengage it.

ENGINE CONTROLS

FUEL SHUTOFF VALVE: Must be in OPEN position for engine to run.

CHOKE: Use while starting the VANGUARD engine, only needed if engine has not reached operating temperature. (Refer to the ENGINE START UP PROCEDURE)

THROTTLE: Controls engine speed. Operate at full throttle when cutting (all the way forward).

KEYED IGNITION SWITCH: Used to start and stop the engine with an electric starter.

VANGUARD: The key switch is located on the engine adjacent to the choke and can be seen while standing behind the machine.

FUEL SHUTOFF VALVE

VANGUARD CHOKE VANGUARD KEYED IGNITION SWITCH

ENGINE START UP PROCEDURE

Only operate machine 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. Avoid any areas or actions that expose you to carbon monoxide.

Check hydraulic oil level prior to operating the stump grinder. If the oil level is below the sight glass, see the SERVICE INFORMATION SECTION located in the OWNER'S MANUAL.

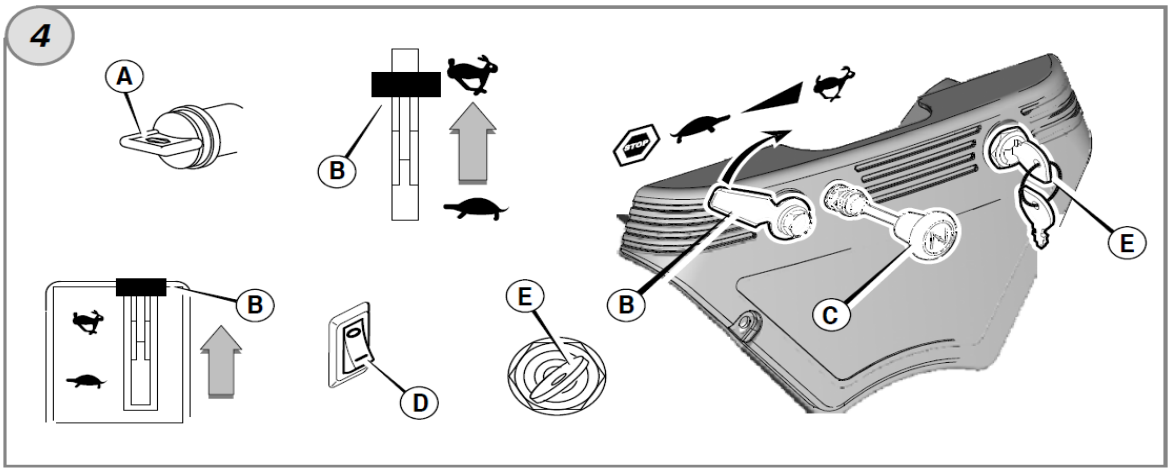
HYDRAULIC OIL LEVEL

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, Inc. dealer.



STARTING THE ENGINE

Note: Some engines and equipment have remote controls. See the equipment manual for location and operation of remote controls.

1. Check the engine oil level. See the How To Check/Add Oil section in the engine owner's manual.

2. Make sure equipment drive controls, if equipped, are disengaged.

3. Turn the fuel shut-off valve (A), if equipped, to the on position (Figure 4).

4. Move the throttle control (B) to the fast position. Operate the engine in the fast position.

5. Pull out the choke control (C), if equipped, to the choke position.

Note: To start the engine with a dry fuel system (first time starting or after running out of fuel), additional cranking time in the choke position will be required. This will give the fuel pump time to prime the fuel system.

6. Push the stop switch (D), if equipped, to the on position.

7. Turn the electric start switch (E) to the on/start position (Figure 4).

8. If the engine fires but will not continue to run, move the choke control (C) to the run position to start the engine.

NOTICE: To extend the life of the starter, use short starting cycles (five seconds maximum). Wait one minute between starting cycles. **Note**: If the engine does not start after repeated attempts, go to VanguardEngines.com or call 1-800-999-9333 (in USA).

9. As the engine warms up, move the choke control (C) to the run position.

Only operate the stump grinder 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. Avoid any areas or actions that expose you to carbon monoxide.

OPERATOR PREPARATION

Each operator must:

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

PERSONAL PROTECTION: For safety, stump grinder operator should wear personal protection equipment. Keep observers at a safe distance and do not operate if people are near, especially children and pets.

Wear a face safety shield and hard hat while operating or observing!

WARNING: The cutter wheel may throw wood chips, 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.

Wearing adequate hearing (ear) protection while operating or observing is recommended.

WARNING: Exposure to loud noise is cumulative

Hearing protection devices do not all provide the same level of protection. Those that completely surround each ear are better than earplugs. It is important to select a device that is adequate and appropriate for your specific work environment since the peak noise level varies. A local environmental noise specialist may help you to determine the level of hearing protection required.

NOISE EMISSION DATA

Machinery Directive declaration

DECLARED DUAL-NUMBER NOISE EMISSION VALUES in accordance with ISO 4871	
	Normal Operation
Measured A-weighted sound power level, L_{WA} (ref. 1pW) in decibels	104
Uncertainty, K_{WA}, in decibels	3
Measured A-weighted sound pressure level, L_{pA} (ref. 20µPa) at the operator's position in decibels	85
Uncertainty, K_{pA}, in decibels	4
Values determined according to noise test code given in BS EN ISO 4254-1 Annex B using the basic standard ISO 3744: 1994 NOTE 1 - The sum of a measured noise emission value and its associated uncertainty represents an upper boundary of the range of values, which is likely to occur in measurements.	

Values listed above are rounded to the nearest decibel according to ISO 4871

Noise Emissions Directive result.

Guaranteed sound power level	**107 dB**

NOTE - The guaranteed sound power level is calculated from unrounded values, and may differ from the values above

VIBRATION EMISSION DATA

Declared vibration emission value in accordance with EN 12096: the average measured vibration emission value is 2.0 m/s². The uncertainty in the measurement is 2.4 m/s². Safety gloves help to isolate the hands from the vibration, keep them warm and dry, maintain blood circulation, and make operators less susceptible to vibration induced injury.

The Barreto Stump Grinder, Model E30SG when operated in accordance with its instructions, and tested in accordance with EN 1033:1995, results in the following vibration emission declared in accordance with EN 12096:1996.

Average measured vibration emission value	**a_{hv}**	**2.0**	**m/s²**
Uncertainty	**K**	**2.4**	**m/s²**

These values are suitable for comparison with the vibration emission levels of other tools that have been obtained using the same test method.

Note: these figures represent the average value over 5 tests, with the figures in the x, y, and z axes combined in a vector sum ($a_{hv} = \sqrt{a_{hwx}^2 + a_{hwy}^2 + a_{hwz}^2}$). It is this sum that is averaged over all tests.

Since the value stated above is an average of several tests, and is based on data from all three exes, we consider it to be a reasonable approximation of the true value, particularly considering the uncertainty in the results (K).

This machine is unlikely to cause hand-arm vibration syndrome, as the average emission level is equal to or less than 2.5 m/s²

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 cut. 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 cutter wheel. Always determine location of utilities before operating the machine.

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

To locate utilities before beginning your grinding project, call 811 or 1-888-258-0808 (US. or Canada). This free service will provide a "One-Call" number for the geographic area that you select. Before you start any cutting 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 cutting 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!**

811®
Know what's below.
Call before you dig.

WORK SITE ASSESSMENT

Examine the work area for any conditions or obstructions that may inhibit cutting 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 cutting 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 stump grinder 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 stump grinder 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 stump grinder and any objects such as buildings, fences, and trees.

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

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.

CONTACT WITH UNDERGROUND UTILITIES

After LOCATING UNDERGROUND UTILITIES and performing the WORK SITE ASSESSMENT, accidental contact with a buried utility might still occur. If it does, stop 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 cutting and call 911 for help. Do not cut 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 cutting, 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 cutting 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 cutter head 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.

STUMP GRINDING PROCEDURE

1. Raise the cutter head and move the machine into position to cut. Position the machine so the cut head can swing across near the edge of the stump.
2. Have engine at full throttle (throttle lever forward).
3. Start cutter wheel.
4. Using the cutter head control lever, slowly swing the cutter wheel across the edge of the stump. Adjust cut depth and swing speed to prevent the engine from bogging and to prevent cutter wheel stall.
5. After the swing is complete, move the cutter wheel down a few inches, and repeat the cutter wheel swing.
6. Continue making a series of cuts down the edge of the stump until the edge is cut to below ground level or the teeth are cutting at a depth below half the wheel radius.
7. Depending on the diameter of the stump it may be necessary to move the stump grinder. After cutting the first edge move the machine forward and repeat the grinding procedure until the stump is completely cut to below ground level.

GRINDING TIPS

Clear the work area of debris, branches and rocks.

Operate the cutter with engine at full throttle.

Listen to engine speed and watch cutter wheel speed. Adjust swing speed and cut depth to maintain high engine and cutter speed. Avoid bogging the engine and stalling cutter wheel.

It is more efficient to cut the edge of the stump, rather than cutting a wide area. Once the teeth are cutting at a depth below half the wheel radius, lift the cutter and move the machine forward to begin cutting a new edge.

SHUT DOWN PROCEDURE

1. Always leave machine parked on a level surface.

WARNING: Do not park on incline. Move the machine to a level surface and set the parking brake located behind the left hand track motor, near decal shown. Move the handle down to engage the brake.

2. Unless loaded on a trailer, lower the cutter head to the ground.
3. Reduce the ENGINE THROTTLE to idle.
4. Move the IGNITION KEYED SWITCH to the OFF position to stop the engine, and remove the key.
5. Close the FUEL SHUTOFF VALVE.

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.

JUMP STARTING ENGINE WITH ELECTRIC STARTER

Shield entire face, especially your eyes, and wear rubber gloves to avoid acid burns whenever doing anything with the battery. Battery caps must be tightly in place if the battery has removable caps.

⚠ **WARNING**: The battery contains sulfuric acid that can cause blindness and severe burns. Avoid contact with eyes, skin, and clothing. If acid contacts eyes, call 911 immediately and flush eyes with water for 15 minutes or until emergency medical help arrives. If acid contacts skin, flush area with plenty of water. If acid is ingested, drink large quantities of water or milk then follow with milk of magnesia, beaten egg, or vegetable oil, and get medical attention immediately.

Avoid contact with battery components. Wear rubber gloves and wash hands after handling any battery components.

⚠ **WARNING**: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to cause cancer and reproductive harm. Acid can cause blindness and severe burns if leaked from the battery.

Do not jump start the battery near flames or sparks, or while smoking.

⚠ **WARNING**: Battery fumes are flammable and explosive. Avoid explosion hazard that could blind and burn. Tools and jumper cable clamps can make sparks, so use them with care. Shield eyes and face, and wear rubber gloves.

Do not jump-start or charge a battery that is frozen or low on electrolyte.

IMPORTANT: Use only a 12-volt system for jump-starting. Never allow the vehicle used to jump-start to contact the disabled machine. If the vehicles contact, a spark may occur when the positive jumper cable is connected or disconnected. If equipped with battery caps, they must be in place and tight to reduce risk of battery explosion.

JUMP STARTING PROCEDURE:

1. Turn ignition switch to OFF.
2. Connect jumper cables in the following order:
   a) Clamp one RED cable end to the discharged battery POSITIVE (+) terminal.
   b) Clamp the other end of the RED cable to the booster battery POSITIVE (+) terminal.
   c) Clamp one BLACK cable end to the booster battery NEGATIVE (-) terminal.
   d) Clamp the other end of the BLACK cable to the frame of machine with the discharged battery, away from battery.
3. Start the engine.
4. Disconnect the cables in reverse order of connection and cover each jumper cable terminal. To avoid sparks near the battery, never disconnect the red jumper cable without first disconnecting the black jumper cable.

GROUND TRANSPORT OF THE STUMP GRINDER

Raise the cutter head.

⚠ **WARNING**: Contact with the cutter wheel while in operation will cause serious injury or even death. The teeth of the cutter are sharp. Avoid contact even when the cutter is not moving.

TRACK CONTROL: Controls the travel direction and speed.

- Track controls are designed to be operated with two hands.
- Pushing the control handles forward from neutral position causes the machine to move forward.
- Pulling the control handles back from neutral position causes the machine to move backward.
- Moving the track control handles farther from the neutral position increases the speed.
- Steer the machine by moving one track control handle farther than the other handle. This causes the track on one side to rotate at a different speed than the opposite track. Pivot turns can be made by moving one control forward and the other control back.

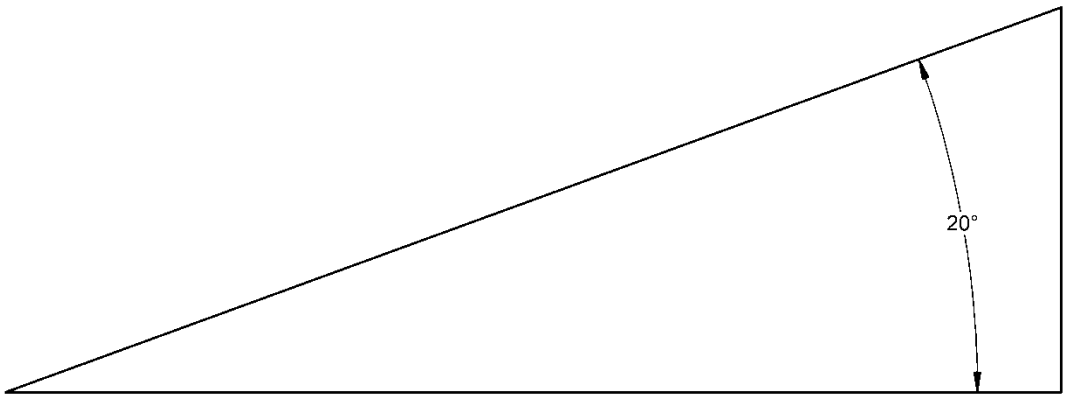
Keep away from tracks to avoid being crushed.

⚠ **WARNING**: Being run over by the stump grinder will cause injury.

Never allow anybody to ride on the machine.
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 machine 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.



EMERGENCY TOWING

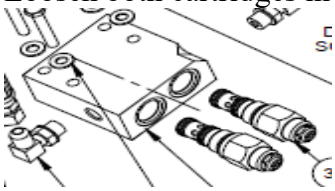
In case of engine failure there is a provision that allows the machine to be towed a short distance.

The drive tracks are driven by a set of tandem pumps. The front pump drives right track, and the other pump drives left track. The drive pump by-pass valves located on the side of the pump may be opened to allow the machine to be towed.

- Set the parking brake if on a slope to prevent rolling. It is located behind the left hand track motor. Move the handle down to engage the brake.

⚠ **WARNING**: Navigating on any slope increases the danger of the machine losing traction or rolling over, especially if the surface is wet. Stay out of the way to avoid personal injury.

- Loosen **(do not remove)** the by-pass plugs two complete turns counterclockwise, see bottom drawing.
- Loosen both cartridges in the counter balance valve on each track drive motor, see below.



Counter balance valve cartridges.

If loosening cartridges does not work, disconnect hydraulic hoses to motor.

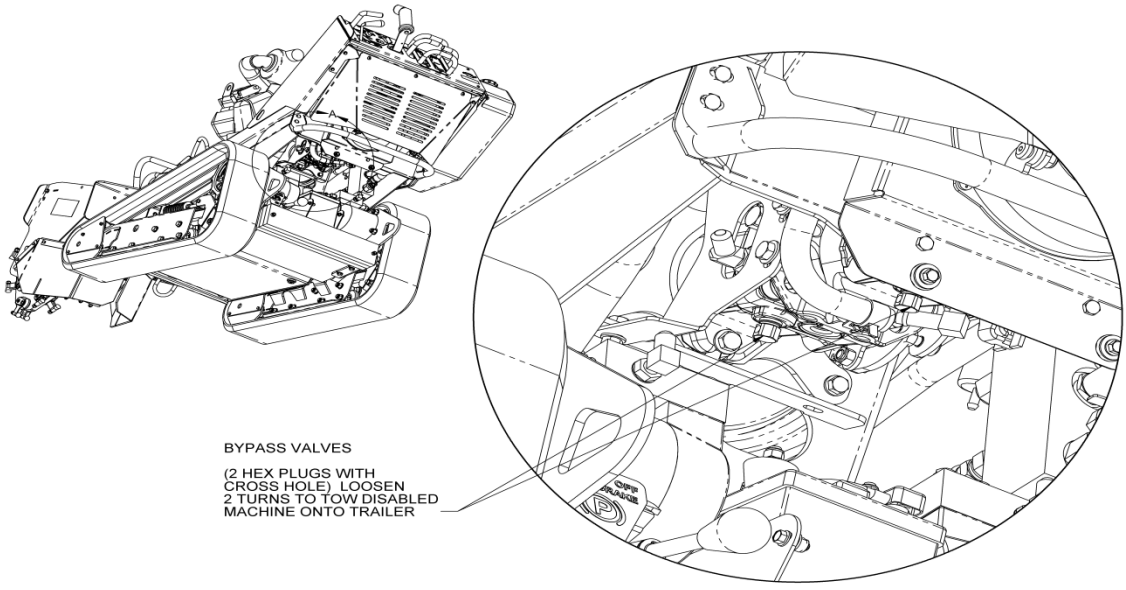
- Disengage the parking brake by moving the handle up.
- The machine may be towed short distance (1/8 mile or 1/4km) at slow speed, 2 mph or 200 feet per minute maximum (3kph or 60m per min).
- After towing, close both by-pass valves by closing the plugs with 10 foot-pounds torque.
- Use a trailer or truck for road transport.

If you need to raise the cutter head without power, do the following:

1. Use straps or chains to support the cutter head.
2. Loosen the hose at the back port of the lift cylinder and raise the cutter head end with a hoist or forklift if available.
3. If it still will not lift, then also loosen the hose at the front port of the lift cylinder.

⚠ **WARNING**: The cutter head is heavy. Manpower alone is not recommended, but if necessary, use a team of two strong workers to raise the head, and a third worker to tighten the hose(s) after the head is up.

4. Secure the head in the up position with a strap or chain on the cut head housing.



ROAD TRANSPORT OF THE STUMP GRINDER

The BEST way to transport the stump grinder over roads is with the **BARRETO E4X6 TILT BED TRAILER**.

Refer to the following checklist before towing:

- Towing vehicle should have a 2" (5cm) ball. Be sure it is in good repair and securely fastened to the vehicle.
- Securely fasten the hitch to the ball by tightening the hitch nut.
- Cross the chains under the trailer tongue to prevent the tongue from dropping to the ground if the trailer comes loose.
- Allow only enough slack in the chains to permit proper turning of the vehicle. Do not let the chains drag on the ground or be drawn up too tight. Slack strength should hold the tongue and coupler off the ground with the trailer loose.
- Attach the safety chain to the towing vehicle in such a way that it cannot come off accidentally.
- Check the hitch-to-ball connection after driving a few blocks and re-tighten if necessary.

Always exercise extreme caution and allow extra clearance while towing a trailer. **DRIVE SAFELY!**

LOADING PROCEDURE of the stump grinder onto the **Barreto E4X6 tilt bed trailer**:

1. Position the tow vehicle and attached trailer on level ground.
2. Unlatch the trailer tilt bed latch pin to tip up the trailer bed. Leave the latch pin where the spring-loaded action will engage the pin with the latch when the bed is leveled again.
3. Line up the stump grinder with the rear of the trailer. The cut head should be toward the trailer.
4. Drive the stump grinder slowly forward onto the trailer bed. As the weight of the stump grinder reaches the balance point the bed will level itself.

⚠ **WARNING**: Navigating on the inclined trailer bed increases the danger of the tracks losing traction, especially if the bed surface is wet. Stay out of the way to avoid personal injury if you lose control.

5. The chains of the 00340 TIE-DOWN KIT are long enough to adjust for desired trailer tongue weight.
6. Loop front chain through D-ring on front of stump grinder and into keyhole slot in mount.
7. Back up stump grinder until front chain is tight.
8. Throttle down and shut off the engine, then close the fuel shutoff valve. Refer to the SHUT DOWN PROCEDURE for details.
9. Loop rear chain through chain loops on rear of stump grinder and D-rings on trailer.
10. Hook to ratchet load binder and tighten.

The quick link is provided to prevent losing the chain when not in use. Attach it between chain links next to one of the trailer D-rings. Never apply the tie-down load to it.

Check that the trailer tilt bed latch pin is engaged with the latch.

UNLOADING PROCEDURE of the stump grinder from the **Barreto E4X6 tilt bed trailer**:

1. Position the tow vehicle and attached trailer on level ground.
2. Remove all chains or straps connecting the stump grinder to the trailer D-rings
3. Start the engine using the ENGINE START UP PROCEDURE.
4. Unlatch the trailer tilt bed latch pin and rotate the latch pin handle to lock it open.
5. Drive the stump grinder slowly backward. As the weight of the stump grinder reaches the balance point the trailer bed will tilt up. Continue backward until tracks are completely on the ground.

ROAD TRANSPORT OF THE STUMP GRINDER (continued)

⚠ **WARNING**: Navigating on the inclined trailer bed increases the danger of the tracks losing traction, especially if the bed surface is wet. If you lose control, get out of the way to avoid personal injury.

Move the trailer tilt bed latch pin handle so that the spring-loaded action will engage the pin with the latch when the bed is leveled.

LOADING PROCEDURE of the stump grinder onto a truck bed using ramps:

1. Position the truck and stump grinder on level ground.
2. Set up suitable ramps, insuring that they are **secure to the back of the truck bed**.
3. Line up the stump grinder with the ramps with the cutter head pointing away from the back of the truck. Drive the stump grinder slowly backward up the ramps onto the truck bed.

⚠ **WARNING**: Navigating on the ramps increases the danger of the stump grinder tracks losing traction, especially if the surface is wet. Stay out of the way to avoid personal injury if you lose control.

4. Throttle down and shut off the engine, then close the fuel shutoff valve. Refer to the SHUT DOWN PROCEDURE for details.
5. Chain or strap the stump grinder to the truck using the two chain loops at the rear of the stump grinder lower body and D-ring on front of stump grinder.

UNLOADING PROCEDURE of the stump grinder from a truck bed using ramps:

1. Position the truck on level ground.
2. Set up suitable ramps, insuring that they are **secure to the back of the truck bed**.
3. Remove all chains or straps connecting the stump grinder to the truck.
4. Start the engine using the ENGINE START UP PROCEDURE.
5. Drive the stump grinder slowly down the ramps onto the ground.

⚠ **WARNING**: Navigating on the ramps increases the danger of the stump grinder tracks losing traction, especially if the surface is wet. Stay out of the way to avoid personal injury if you lose control.

LOADING PROCEDURE of the stump grinder onto a truck bed using a hoist:
Never attempt to hoist the stump grinder unless suitable equipment is available to lift and lower machine onto the truck. If using a sling, the minimum required working load limit per sling leg is 1000 lb (450 kg). Minimum sling leg length is 6 ft (2 m).

1. Position the truck and stump grinder on level ground.
2. Follow the stump grinder SHUT DOWN PROCEDURE.
3. Attach lifting sling legs around both rear tie down loops and around the chain motor housing. Ensure machine weight is evenly distributed, then hoist onto the truck bed.

Never lift stump grinder over any person at any time.

⚠ **WARNING**: If stump grinder should fall it would crush anybody under it.

4. Chain or strap the stump grinder to the truck using the two chain loops at the rear of the stump grinder lower body and D-ring on front of the stump grinder.

INDEX

THE

MODEL E30SGB STUMP GRINDER

EXPLODED VIEWS WITH PART NUMBERS

CONGRATULATIONS!

You are now the proud owner of a BARRETO stump grinder. The following pages have detailed views of your machine, 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

U.S. Patent No. 10,260,567

Machine Identification Record

BARRETO Customer number _____

Machine model number _____

Machine serial number _____

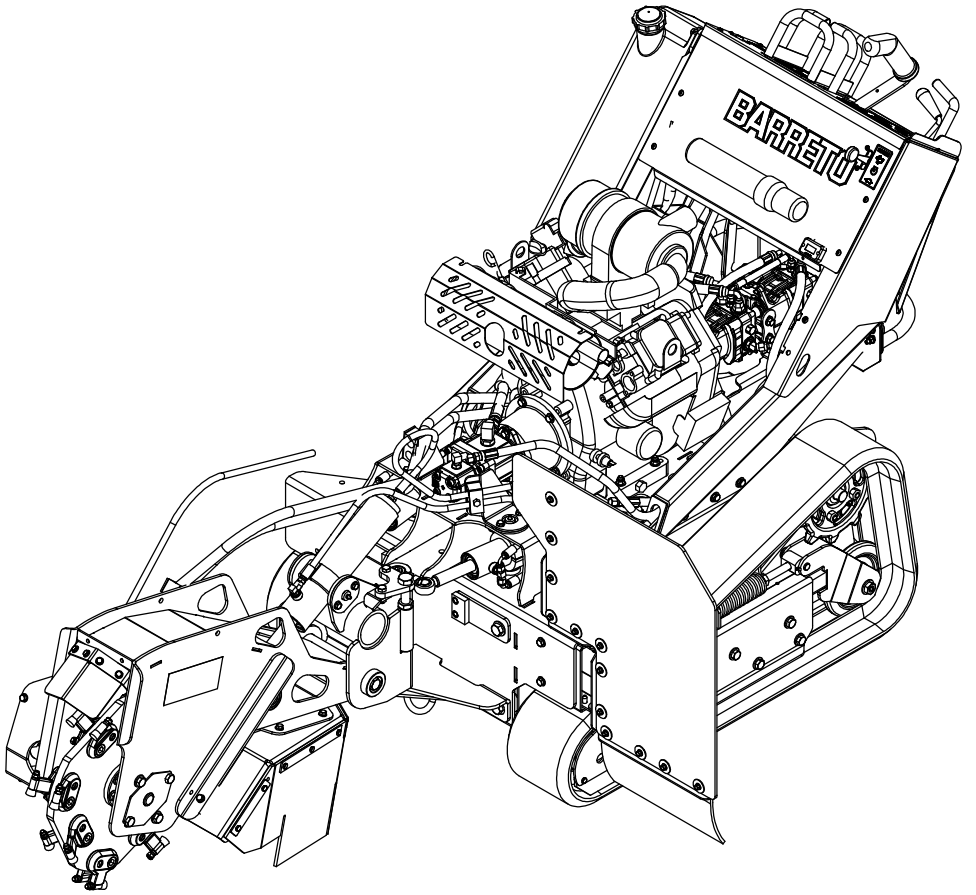
Engine manufacturer _____

Engine model number _____

Engine serial number _____

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	12364CP	HOSE, VALVE MID / MOTOR FRONT
2	1	00536	CUTTER HEAD ASSEMBLY
3	1	12385CP	HOSE, CASE DRAIN
4	2	04451-04	DECAL, "30-SG"
5	1	00537	CYLINDER ASSEMBLY
6	1	12365CP	HOSE, VALVE LOWER / MOTOR REAR
7	1	00535	PIVOT HEAD
8	2	10964	TRACK, 180 X 36 X 72
9	8	05042	NUT, LUG, 1/2-20 NF
10	2	10874	TRACK SPROCKET
11	1	00334-SG	CARRIAGE, RIGHT
12	1	12358T	HOSE, PUMP - CUTTER VALVE
13	13	05102	WASHER, 1/2 SAE ZINC HARDENED
14	8	05323	HH CAP SCREW, 1/2-13 NC X 1-1/4 G5 ZINC
15	2	00366	MID ROLLER ASSY
16	4	11155	ROLLER SPACER, SHORT
17	2	11447	HH CAP SCREW, 1/2-13 NC X 2-1/2 G5 ZN
18	4	05129	HH CAP SCREW, 1/2-13 NC X 1-3/4 G5 ZINC
19	1	00499CP	LID ASSEMBLY
20	1	11178	LID GASKET
21	1	03341-18	DECAL, S/N, 2WD
22	1	11239	VENT HOSE ASSEMBLY
23	1	00498-OBB	CONTROL ASSEMBLY
24	1	00326	WEIGHT & BATTERY OPTIONS
25	1	00333-SG	CARRIAGE, LEFT
26	1	03503	SIGHT GAUGE
27	1	10361	FITTING, 6409-8 PLUG
28	1	03040-57	DECAL, "HYDRAULIC OIL LEVEL"
29	1	01270S	FRAME, STUMP CUTTER
30	1	00541 R1	CHIP SHIELD
31	1	00390-OBB-BS30	ENGINE / PUMPS ASSEM.,B&S 30

RELEASE DATE	XX/XX/XXXX
REVISED DATE	NEW
REVISION #	0



BARRETO

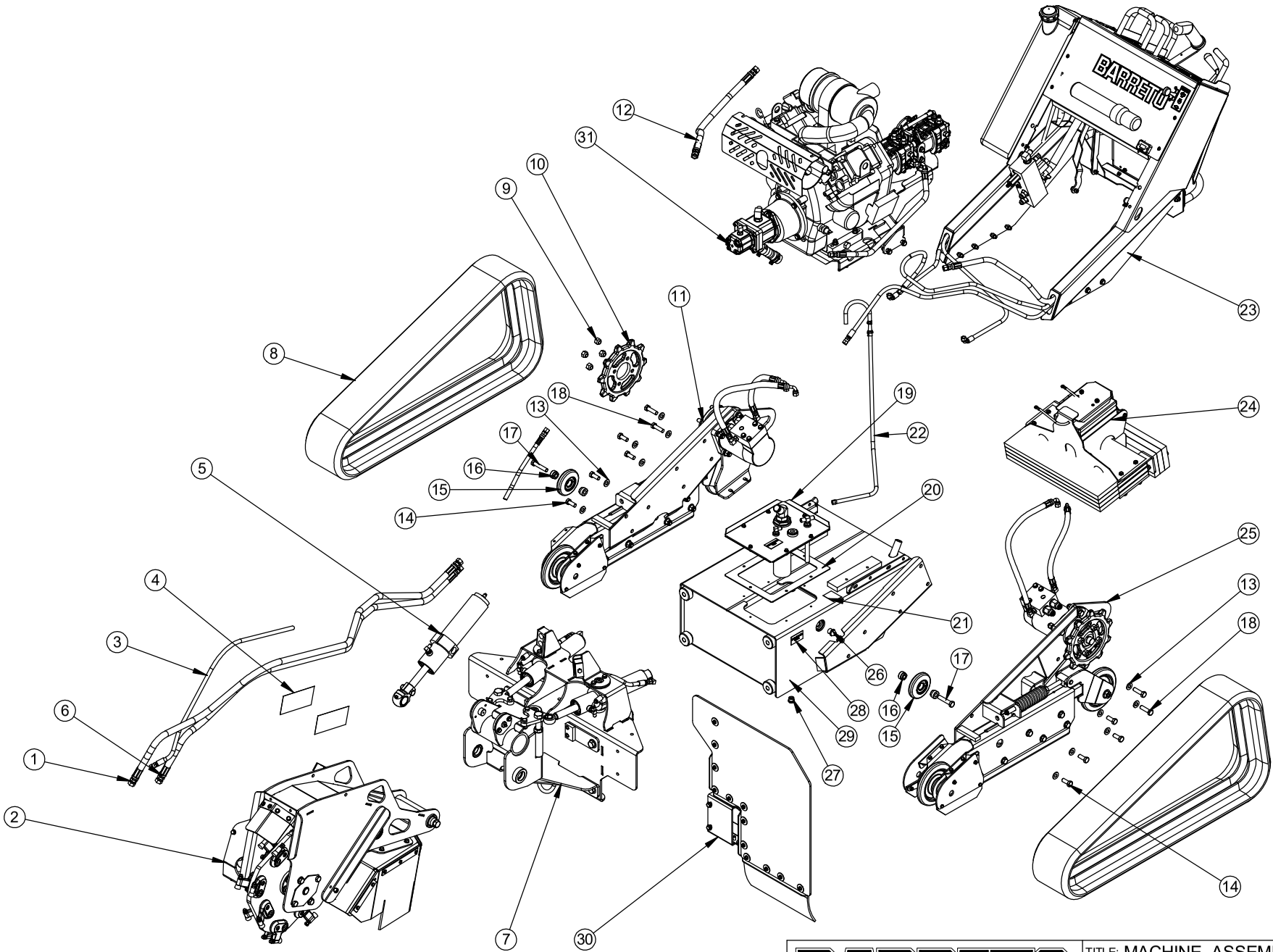
TITLE: MACHINE ASSEMBLIES

PRODUCT LINE: 30SG

SCALE: 1:16

SHEET 1 OF 2

DWG# E30SG-OBB



BARRETO

TITLE: MACHINE ASSEMBLIES X

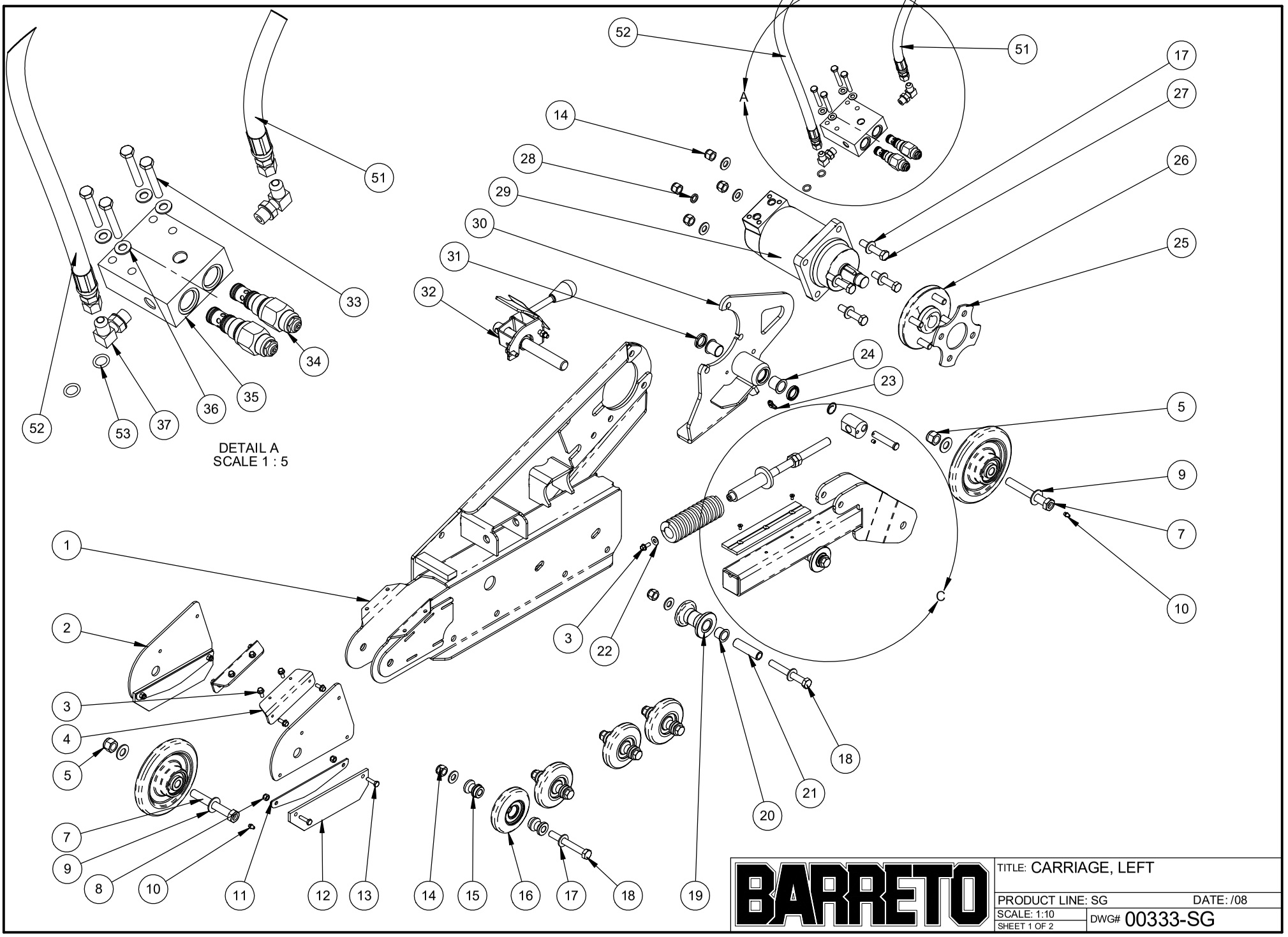
PRODUCT LINE: 30SG

DATE:

SCALE: 1:20

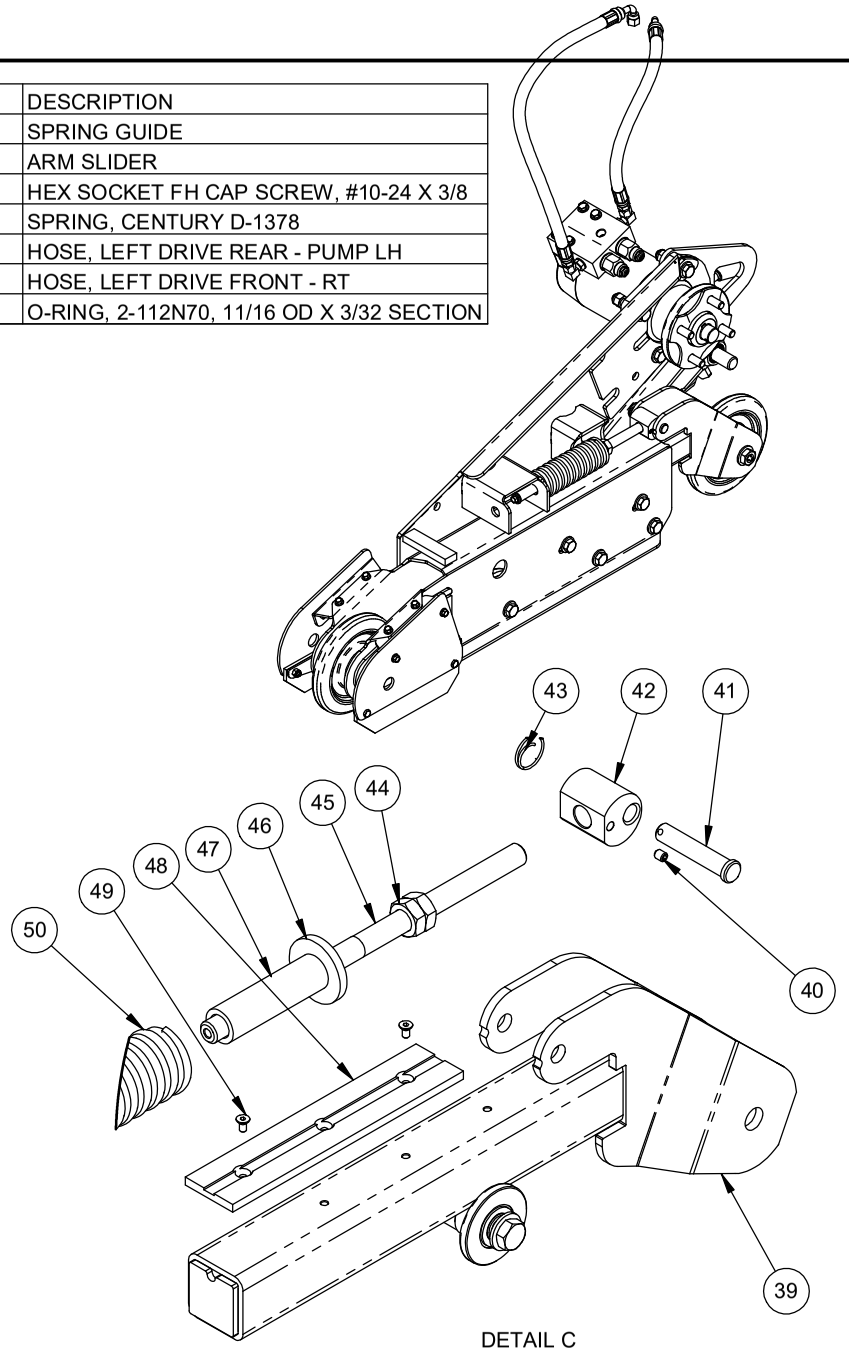
SHEET 2 OF 2

DWG# E30SG-OBB


DETAIL A
SCALE 1 : 5
BARRETO
TITLE: CARRIAGE, LEFT
PRODUCT LINE: SG
DATE: /08
SCALE: 1:10
SHEET 1 OF 2
DWG# 00333-SG

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	10849-L R1	LEFT CARRIAGE
2	2	11247	ROLLER GUARD
3	9	05069	WHIZ LOCK, 1/4-20 NC X 5/8 ZINC
4	2	11251	ROLLER GUARD MOUNT
5	2	05099	NUT, NYLOCK, 5/8-11 NC ZINC
6	2	00335	IDLER ASSEMBLY
7	2	11490	ROLLER AXLE, 5/8 X 4-1/2"
8	4	05096	NUT, NYLOCK, 1/4-20 NC ZINC
9	4	05272	WASHER, 5/8 SAE ZINC HARDENED
10	2	05044	GREASE ZERK, 1/4-28 UNF
11	2	11474	FLAP BACKING
12	2	11475	FLAP
13	4	05237	HH CAP SCREW, 1/4-20 NC X 1 G5 ZINC
14	10	05098	NUT, NYLOCK, 1/2-13 NC ZINC
15	8	11144	ROLLER SPACER
16	4	00366	MID ROLLER ASSY
17	19	05102	WASHER, 1/2 SAE ZINC HARDENED
18	6	05590	HH CAP SCREW, 1/2-13 NC X 4 G5 ZINC
19	2	10907	ARM ROLLER
20	4	10272	BUSHING, IGUS MFI-1214-12
21	2	10908	SPACER
22	1	05078	WASHER, 1/4 USS ZINC
23	1	05307	GREASE ZERK, 1/4-28 UNF 90°
24	2	11680	BUSHING, IGUS LFI-1416-16
25	1	12354	SPROCKET SHIM
26	1	10827	WHEEL HUB, 1-1/4" TAPERED, SOLID
27	4	11447	HH CAP SCREW, 1/2-13 NC X 2-1/2 G5 ZN
28	1	03290	SPACER WASHER, .532 X .750 X .125
29	1	04029	MOTOR, PARKER TF 0240WE080
30	1	11462-L	WEIGHT MOUNT, E-BRAKE
31	2	11711	ROD WIPER, .875 X 1.25 X .188
32	1	00458-SG	PARK BRAKE ASSEMBLY
33	4	05566	HH CAP SCREW, 5/16-18 NC X 2 G5 ZINC
34	2	04405	C-BALANCE CARTRIDGE, CB10-HV
35	1	12329	C-BALANCE MANIFOLD, SDC10-3S
36	4	05068	WASHER, 5/16 SAE ZINC
37	2	04538	FITTING, 6801-6-6
38	2	11159	SPRING, POLY-U, CENT#U1000-3000-80A
39	1	10876	IDLER ARM
40	1	05021	SET SCREW, 1/4-20 UNC X 5/16, CUP POINT
41	1	05250	CLEVIS PIN, 1/2 X 2-1/2 ZINC
42	1	11156	TENSIONER END
43	1	05039-7	CIRCLE COTTER, CC-7
44	2	10707	NUT, JAM, 5/8-11 NC ZINC
45	1	11170	TENSIONER STUD
46	1	11157	WASHER, TENSION SPRING

ITEM NO.	QTY.	PART NO.	DESCRIPTION
47	1	11470	SPRING GUIDE
48	1	10910	ARM SLIDER
49	2	05084	HEX SOCKET FH CAP SCREW, #10-24 X 3/8
50	1	11674	SPRING, CENTURY D-1378
51	1	12369	HOSE, LEFT DRIVE REAR - PUMP LH
52	1	12338	HOSE, LEFT DRIVE FRONT - RT
53	2	03226	O-RING, 2-112N70, 11/16 OD X 3/32 SECTION



DETAIL C
SCALE 1 : 5

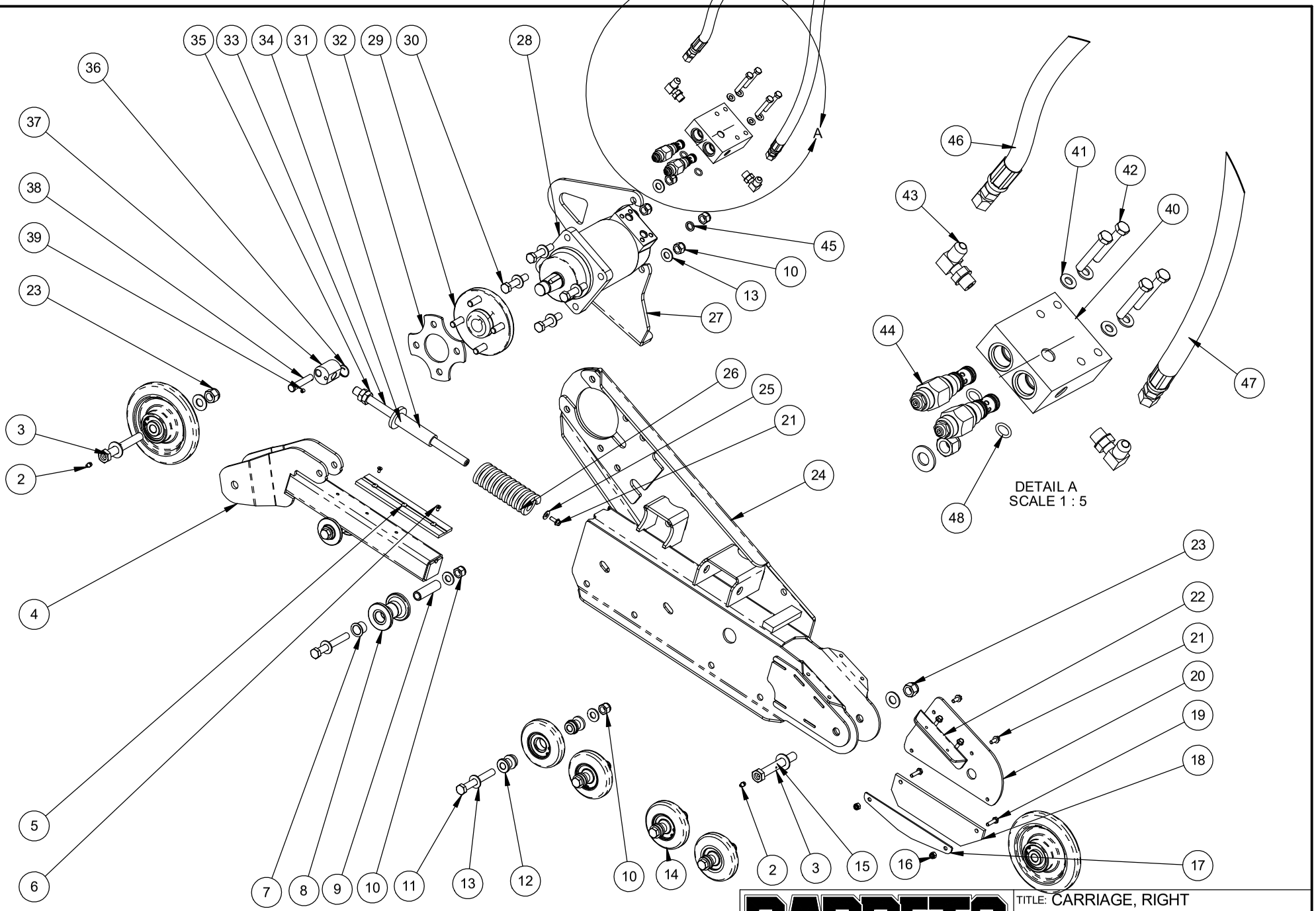
BARRETO

TITLE: LEFT CARRIAGE

PRODUCT LINE: STUMP CUTTER DATE: 12-12

SCALE: 1:10 SHEET 2 OF 2

DWG# 00333-SG



BARRETO

TITLE: CARRIAGE, RIGHT

PRODUCT LINE: STUMP GRINDER DATE: 7-12

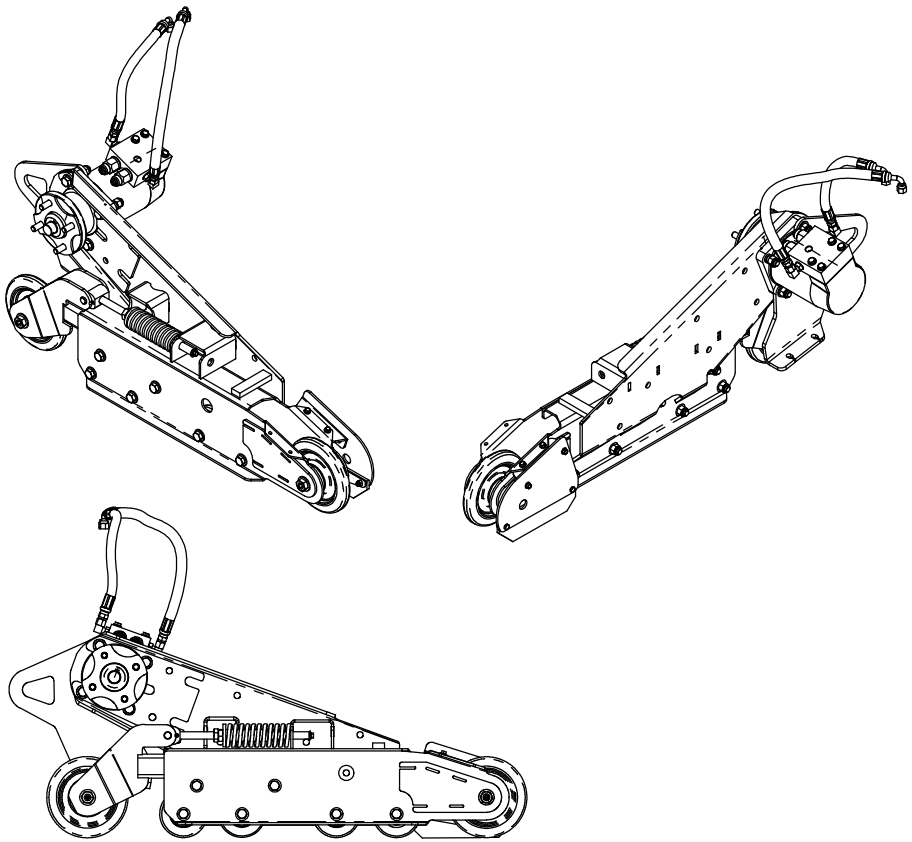
SCALE: 1:10

SHEET 1 OF 2

DWG# 00334-SG

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	2	00335	IDLER ASSEMBLY
2	2	05044	GREASE ZERK, 1/4-28 UNF
3	2	11490	ROLLER AXLE, 5/8 X 4-1/2"
4	1	10876	IDLER ARM
5	1	10910	ARM SLIDER
6	2	05084	HEX SOCKET FH CAP SCREW, #10-24 X 3/8
7	4	10272	BUSHING, IGUS MFI-1214-12
8	2	10907	ARM ROLLER
9	2	10908	SPACER
10	10	05098	NUT, NYLOCK, 1/2-13 NC ZINC
11	6	05590	HH CAP SCREW, 1/2-13 NC X 4 G5 ZINC
12	8	11144	ROLLER SPACER
13	19	05102	WASHER, 1/2 SAE ZINC HARDENED
14	4	00366	MID ROLLER ASSY
15	4	05272	WASHER, 5/8 SAE ZINC HARDENED
16	2	05096	NUT, NYLOCK, 1/4-20 NC ZINC
17	1	11474	FLAP BACKING
18	1	11475	FLAP
19	2	05237	HH CAP SCREW, 1/4-20 NC X 1 G5 ZINC
20	1	11247	ROLLER GUARD
21	5	05069	WHIZ LOCK, 1/4-20 NC X 5/8 ZINC
22	1	11251	ROLLER GUARD MOUNT
23	2	05099	NUT, NYLOCK, 5/8-11 NC ZINC
24	1	10849-R R1	RIGHT CARRIAGE
25	1	05078	WASHER, 1/4 USS ZINC
26	1	11674	SPRING, CENTURY D-1378
27	1	11462-R	WEIGHT MOUNT, RIGHT
28	1	04029	MOTOR, PARKER TF 0240WE080
29	1	10827	WHEEL HUB, 1-1/4" TAPERED, SOLID
30	4	11447	HH CAP SCREW, 1/2-13 NC X 2-1/2 G5 ZN
31	1	11470	SPRING GUIDE
32	1	12354	SPROCKET SHIM
33	1	11170	TENSIONER STUD
34	1	11157	WASHER, TENSION SPRING
35	2	10707	NUT, JAM, 5/8-11 NC ZINC
36	1	05039-7	CIRCLE COTTER, CC-7
37	1	11156	TENSIONER END
38	1	05250	CLEVIS PIN, 1/2 X 2-1/2 ZINC
39	1	05021	SET SCREW, 1/4-20 UNC X 5/16, CUP POINT
40	1	12329	C-BALANCE MANIFOLD, SDC10-3S
41	4	05068	WASHER, 5/16 SAE ZINC
42	4	05566	HH CAP SCREW, 5/16-18 NC X 2 G5 ZINC
43	2	04538	FITTING, 6801-6-6
44	2	04405	C-BALANCE CARTRIDGE, CB10-HV
45	1	03290	SPACER WASHER, .532 X .750 X .125

ITEM NO.	QTY.	PART NO.	DESCRIPTION
46	1	12368	HOSE, RT DRIVE, REAR - PUMP LH
47	1	12367	HOSE, SG30 RT DRIVE, FRONT- PUMP LH
48	2	03226	O-RING, 2-112N70, 11/16 OD X 3/32 SECTION



BARRETO

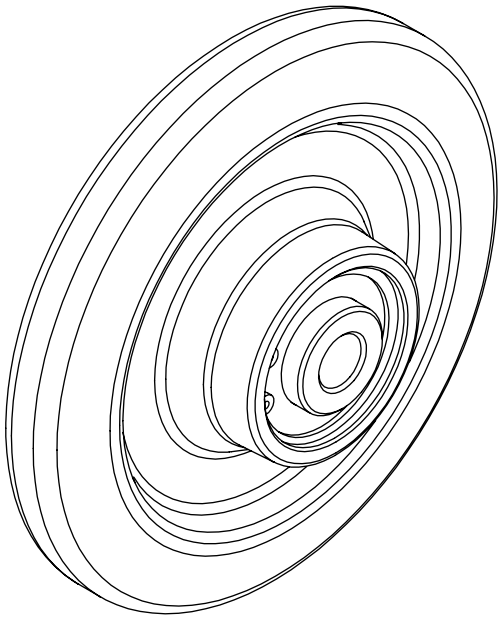
TITLE: RIGHT CARRIAGE

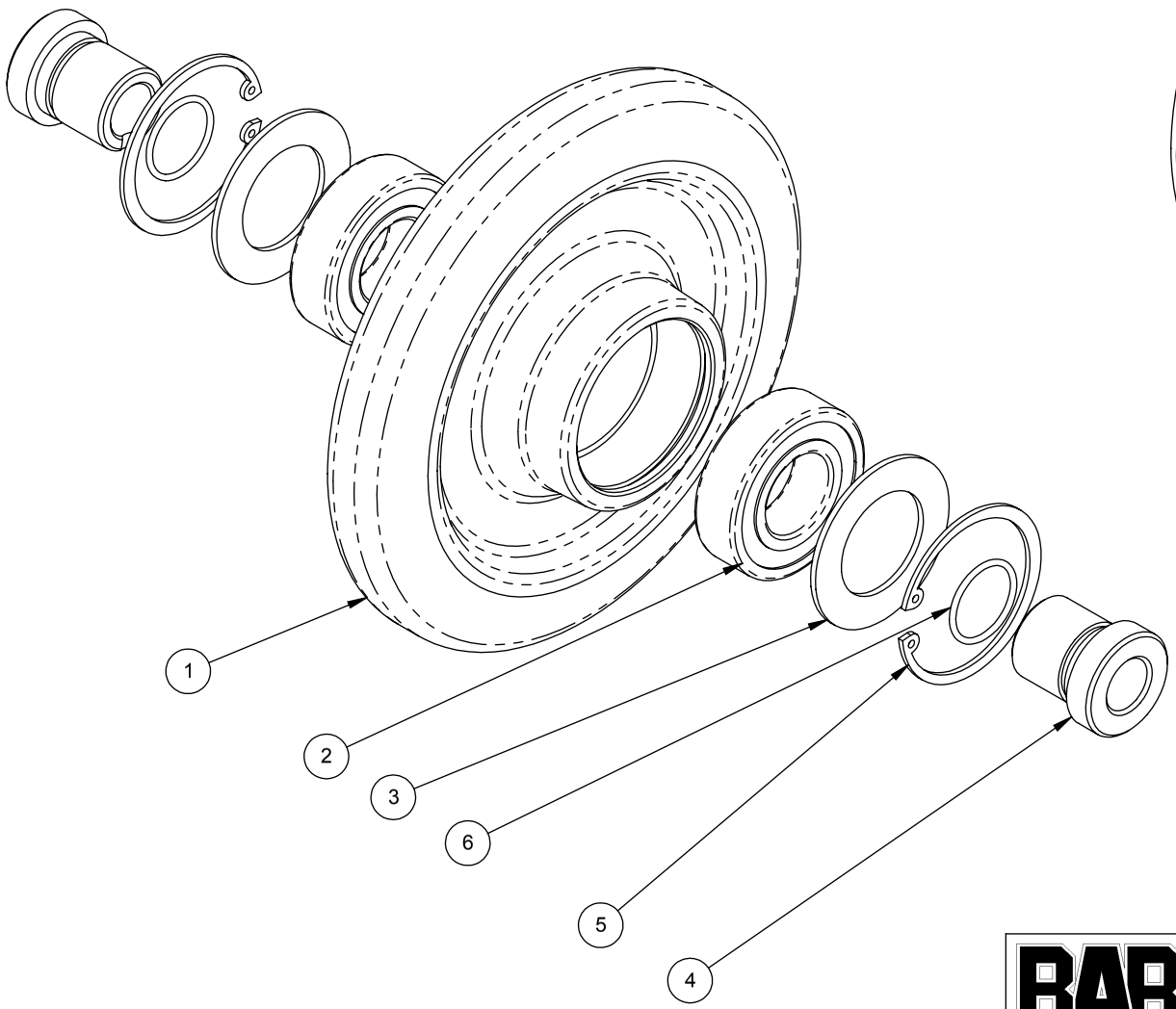
PRODUCT LINE: STUMP GRINDER DATE: 7-12

SCALE: 1:16 SHEET 2 OF 2 DWG# 00334-SG

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	10875	IDLER
2	2	03043-S1	BALL BEARING, 6205
3	2	01039	SHIELD, ROLLER BEARING
4	2	10878	IDLER SPACER
5	2	05024	SNAP RING, HO-200, 2" INTERNAL
6	2	10887	O-RING, 2-020N70, 1 OD X 1/16 SECTION

RELEASE DATE	11/2006
REVISED DATE	4/20/17





BARRETO

TITLE: IDLER ASSEMBLY

PRODUCT LINE: 30SG, 37SG, RTK, TK DATE: 11/06

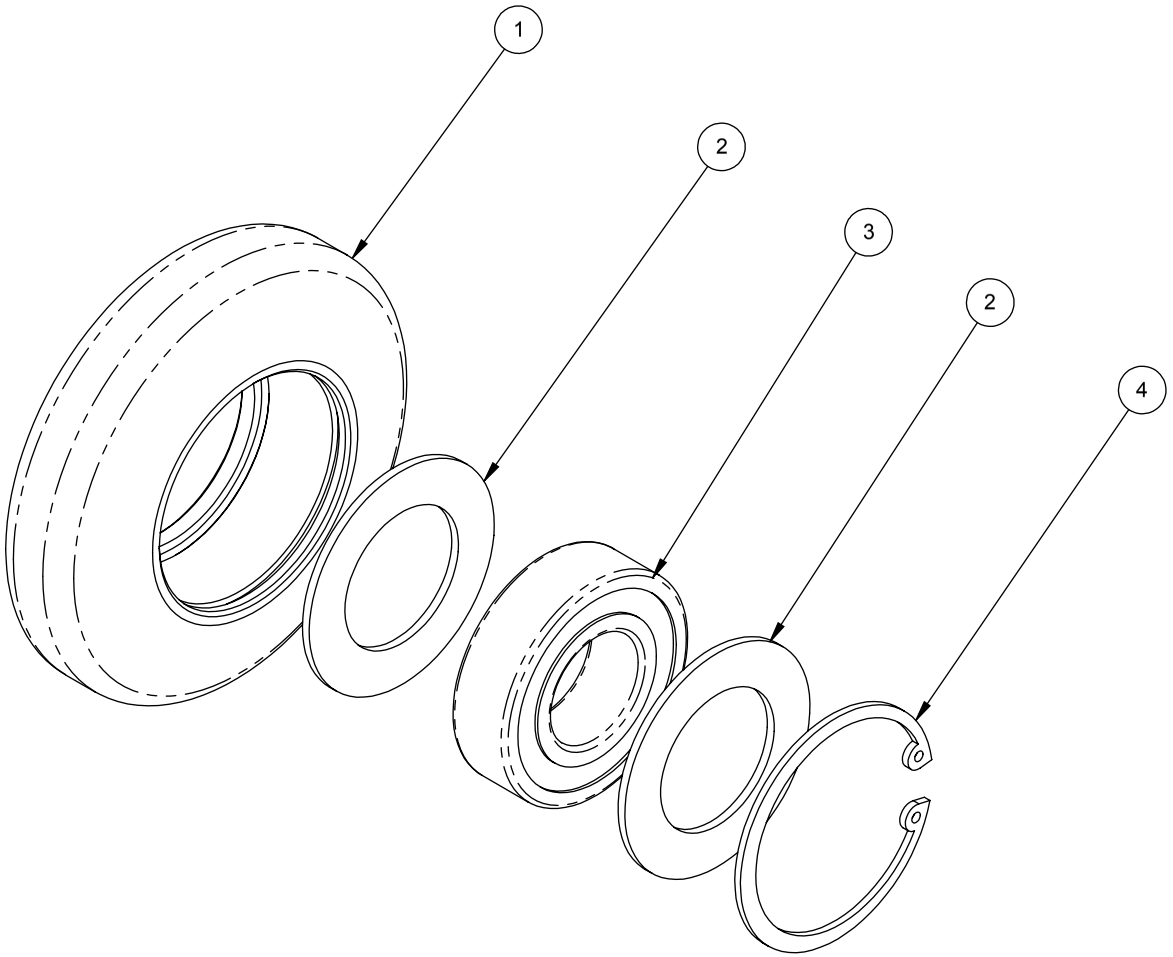
SCALE: 1:2

SHEET 1 OF 1

DWG# 00335

UPDATE 10/2/19

REF	QTY.	PART NO.	DESCRIPTION
1	1	11473	SUPPORT ROLLER
2	2	01039	SHIELD, ROLLER BEARING
3	1	03043-S2	BALL BEARING, 6205
4	1	05024	SNAP RING, HO-200, 2" INTERNAL



BARRETO

TITLE: MID ROLLER ASSEMBLY

PRODUCT LINE: 30SG, 37SG, RTK, TK DATE: 11/07

SCALE: 2:3

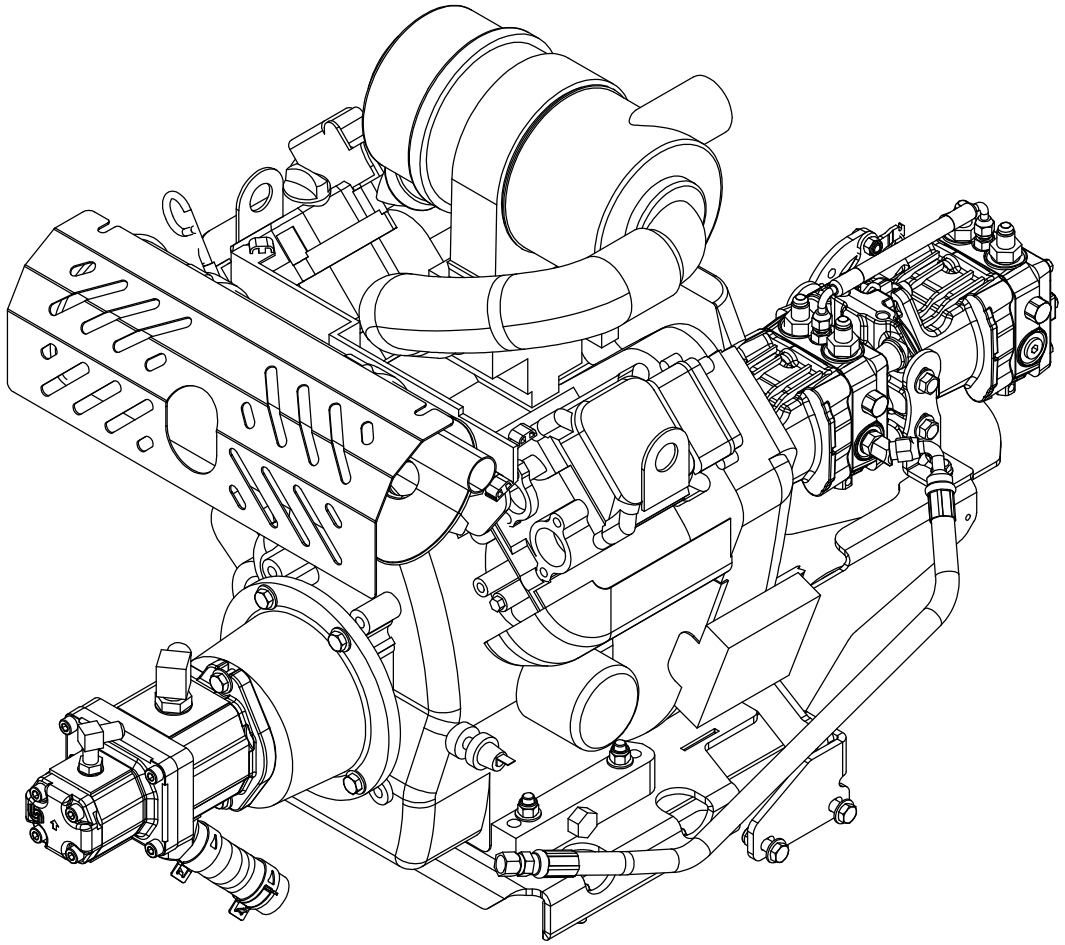
SHEET 1 OF 1

DWG# 00366

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	00605-B-SG	STUB SHAFT ASSEMBLY, BRIGGS
2	1	B&S-30	ENGINE, BRIGGS 31hp
3	1	07027-10	MUFFLER, B&S 31, CENTER EXIT
4	1	04021-C16	TANDEM PUMP, PNT-16+1.2, PARKER
5	1	12730	HYDRO PUMP, 10CC TANDEM
6	1	12809	MUFFLER SHIELD. BRIGGS
7	1	13228 R1	ENGINE BASE
8	2	13202	PUMP SUPPORT
9	2	12447T	EXTEND ARM
10	1	13229-L	BRACE MOUNT, LEFT
11	1	13229-R	BRACE MOUNT, RIGHT
12	2	13205	SQUARE NUT
13	1	12456	SPIDER, HYTREL, L-099
14	1	12454	JAW COUPLER, 1.125, L-099
15	1	12455	JAW COUPLER, 9T SAE A, L-099
16	1	05014	KEY, 1/4 X 1/4 X 3/4
17	1	12320	ENGINE DRAIN HOSE
18	1	12339 R2	HOSE, HYDROSTAT DRAIN
19	1	12715	SUMP HOSE, 1" X 4.3"
20	2	05225	CLAMP, 1" ID HOSE, CTB-35 ST
21	1	04215	FITTING, 9067-6-14 METRIC
22	1	04211	FITTING, 6801-8-10
23	1	04539	FITTING, 2408-6
24	1	11082	FITTING, 6801-6-6-L
25	1	12484	FITTING, 4603-16-16
26	1	11074	FITTING, 6802-6-6
27	1	11070	FITTING, 4601-8-6
28	4	04226	FITTING, 6400-6-8
29	4	05352	HH CAP SCREW, 3/8-16 NC X 2-1/4 G5 ZINC
30	12	05091	HH CAP SCREW, 3/8-16 NC X 1-1/4 G5 ZINC
31	6	05059	HH CAP SCREW, 3/8-16 NC X 1 G5 ZINC
32	4	05187	HHFS 3/8-16 X 3/4, G5, ZN
33	29	05101	WASHER, 3/8 SAE ZINC
34	10	05073	NUT, NYLOCK, 3/8-16 NC ZINC
35	2	05131	HHFS 5/16-18 X 3/4, G8, ZN
36	4	05247	HH CAP SCREW, 5/16-18 NC X 3/4 G5 ZINC
37	4	05273	NUT, NYLOCK, 5/16-18 NC ZINC
38	1	07027-21	WIRE GUARD
39	1	12047	FITTING, 6410-6-6
40	1	02016	PUMP ADAPTER

REPLACES 00390TT2-BS30

RELEASE DATE	6/17/16
REVISED DATE	11/14/16
REVISION #	1



BARRETO

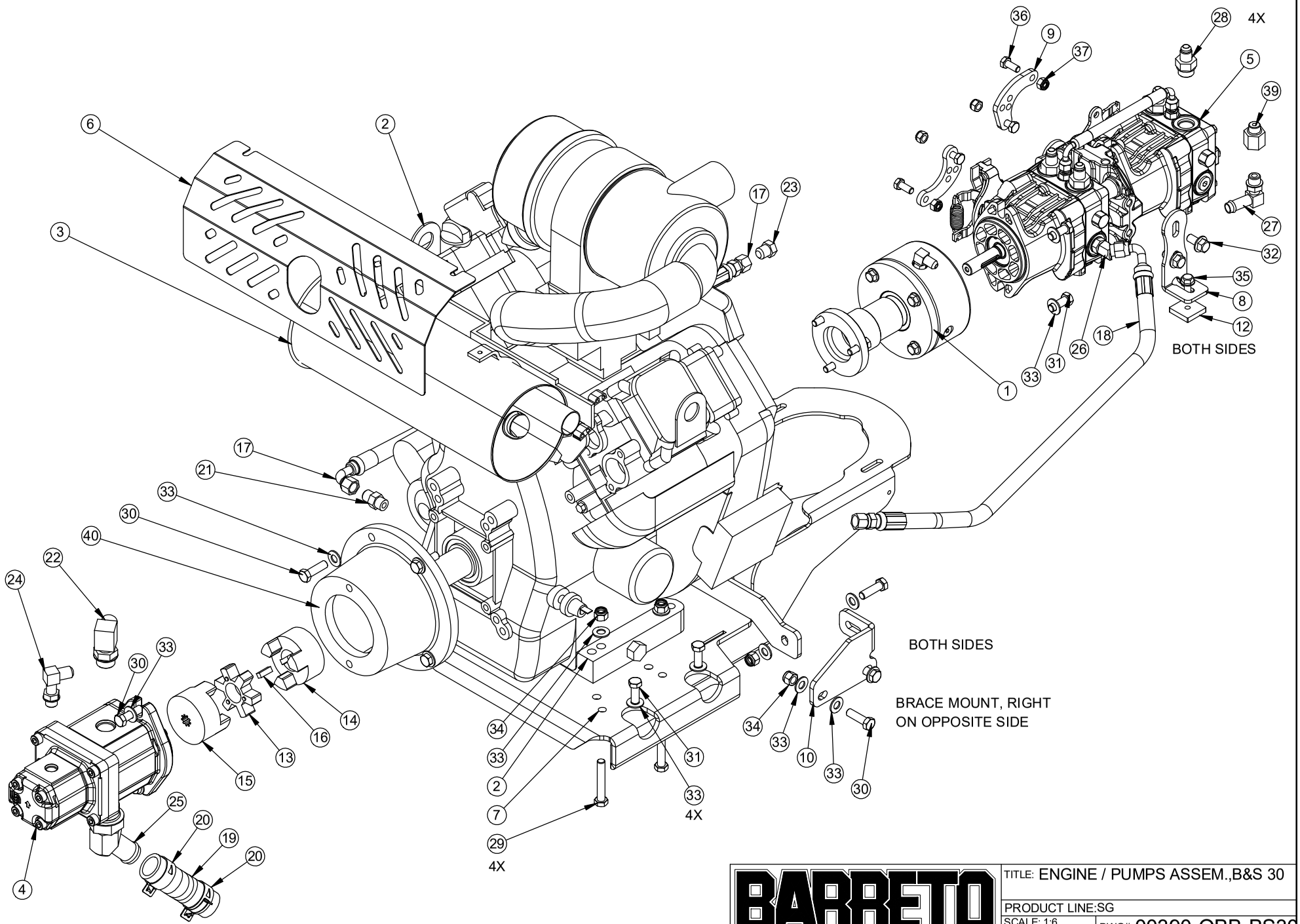
TITLE: ENGINE / PUMPS ASSEM.,B&S 30

PRODUCT LINE:SG

SCALE: 1:6

SHEET 1 OF 2

DWG# 00390-OBB-BS30



BARRETO

TITLE: ENGINE / PUMPS ASSEM.,B&S 30

PRODUCT LINE:SG

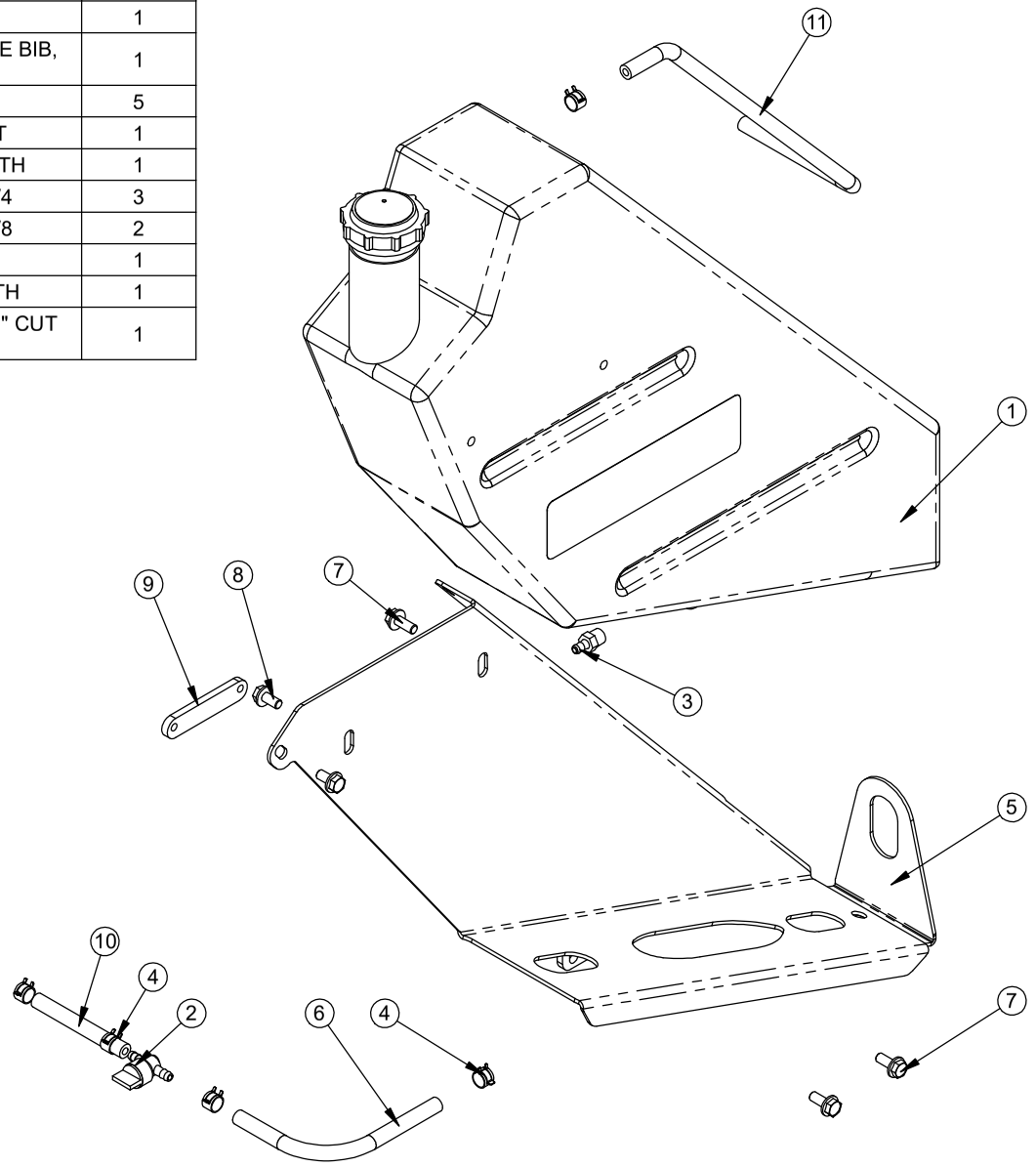
SCALE: 1:6

SHEET 2 OF 2

DWG# 00390-OBB-BS30

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	13435	FUEL TANK, 5GAL	1
2	03062-03	FUEL SHUT OFF VALVE	1
3	10559-1	FITTING, 1/4 NPT TO 1/4 HOSE BIB, STRAIGHT	1
4	03062-06	CLAMP, 1/4" FUEL LINE	5
5	13481	SG LARGE TANK MOUNT	1
6	13482	FUEL LINE, 21" CUT LENGTH	1
7	05140	WHIZ-LOCK 5/16 - 18 X 3/4	3
8	05186	WHIZ-LOCK 5/16 - 18 X 5/8	2
9	11643	NUT BAR	1
10	13485	FUEL LINE, 4" CUT LENGTH	1
11	13486	BREATHER-INTAKE HOSE, 32" CUT LENGTH	1

RELEASE DATE	02/26/2019
REVISED DATE	NEW
REVISION #	0



BARRETO

TITLE: SG30 5GAL TANK ASSY
Optional

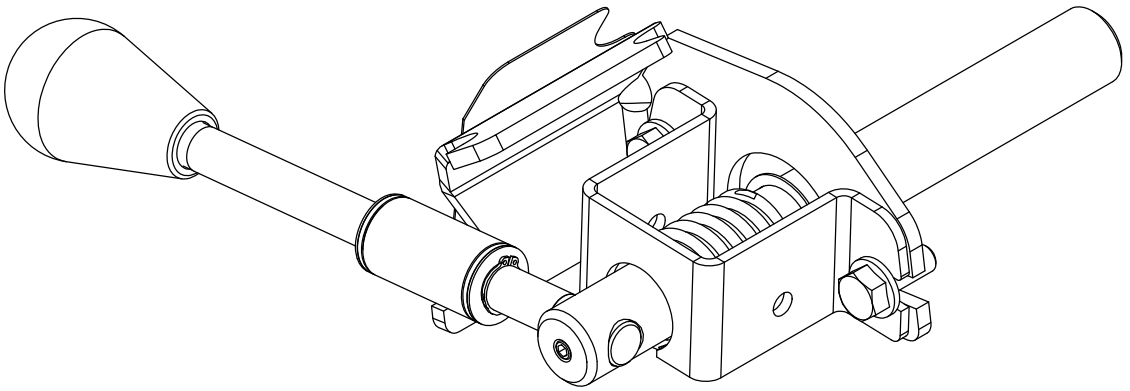
PRODUCT LINE:

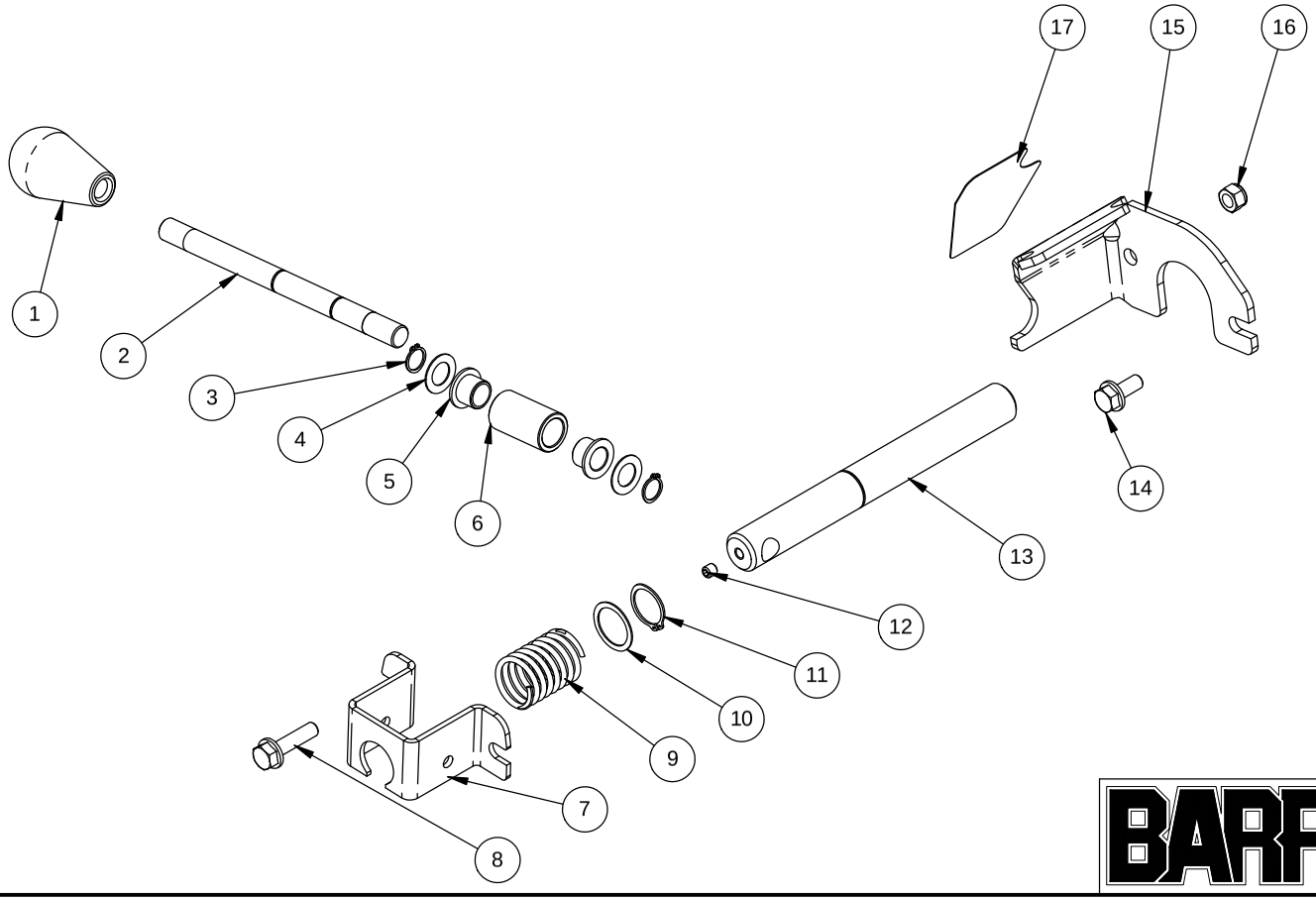
SCALE: 1:6

SHEET 1 OF 1

DWG# 00456-SG 5GAL

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	03508	SPEED KNOB
2	1	11709	PARK LEVER
3	2	05506	SNAP RING, 1/2" EXTERNAL, SH-50
4	2	10113	THRUST WASHER, .518 X .873 X .030
5	2	03501	BUSHING, IGUS MFI-0810-08
6	1	11708	ROLLER
7	1	11707	SPRING BASE
8	1	05138	HH FLANGE SCREW, 5/16-18 NC X 1-1/4 G8 ZINC
9	1	03354	SPRING, CENTURY 1539
10	1	10300	THRUST WASHER, .880 X 1.123 X .030, HARD
11	1	05602	SNAP RING, SH-87-P, 7/8" EXTERNAL
12	1	05143	SET SCREW .25 NF X .25 CUP
13	1	11705	BRAKE PIN
14	1	05131	HH FLANGE SCREW, 5/16-18 NC X 3/4 G8 ZINC
15	1	12355	CAM PLATE
16	1	05273	NUT, NYLOCK, 5/16-18 NC ZINC
17	1	04450-16	BRAKE DECAL





BARRETO

TITLE: PARK BRAKE ASSEMBLY

PRODUCT LINE: STUMP GRINDER DATE: 7-12

SCALE: 1:4

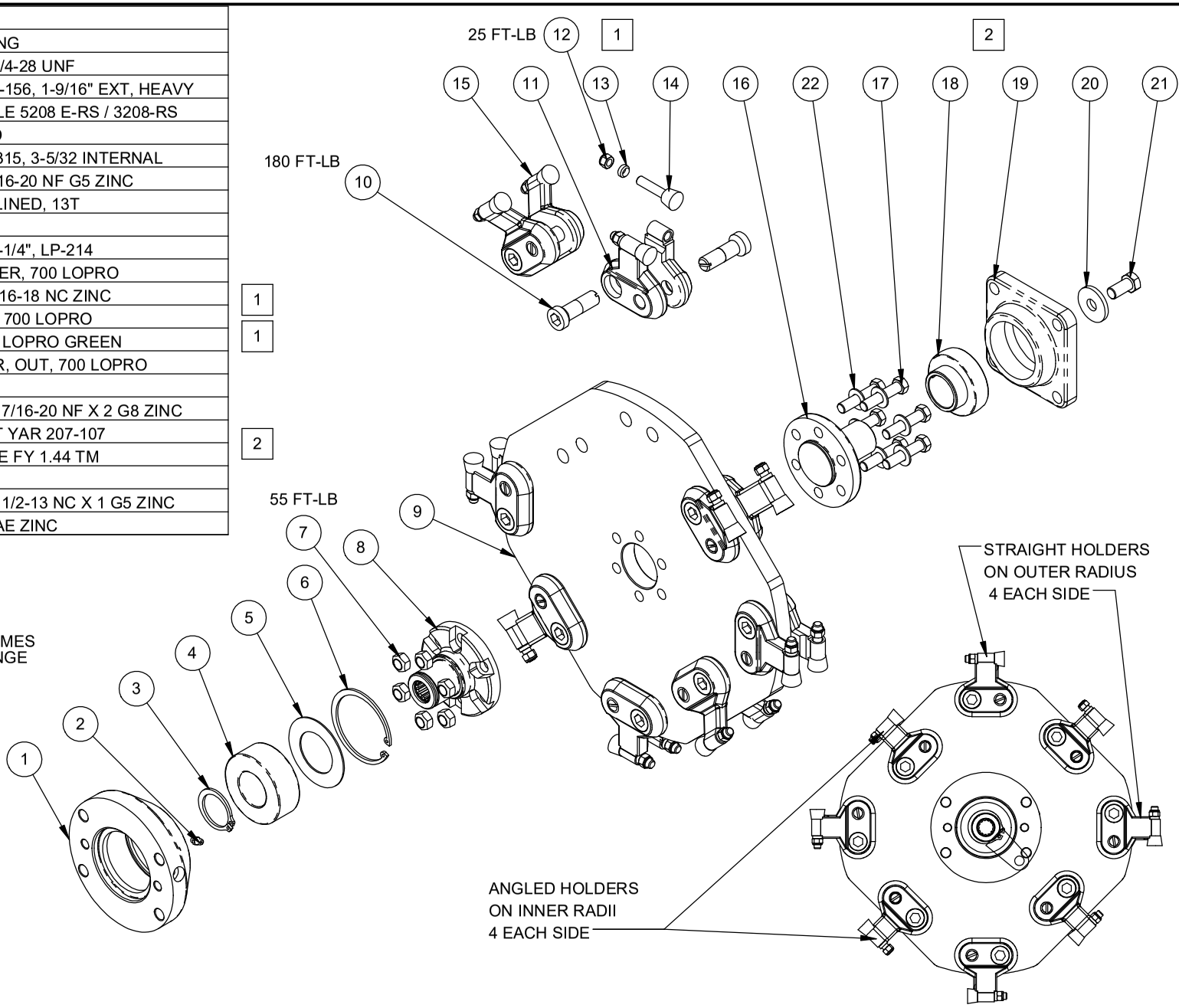
SHEET 1 OF 1

DWG# 00458-SG

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	12264	BEARING HOUSING
2	1	05044	GREASE ZERK, 1/4-28 UNF
3	1	05607-H	SNAP RING, SHR-156, 1-9/16" EXT, HEAVY
4	1	12382	BEARING, DOUBLE 5208 E-RS / 3208-RS
5	1	12266	BEARING SHIELD
6	1	05603	SNAP RING, HO-315, 3-5/32 INTERNAL
7	6	05355	NUT, GRIPCO, 7/16-20 NF G5 ZINC
8	1	12278	DRIVE STUB, SPLINED, 13T
9	1	12279	CUTTER WHEEL
10	16	12283	CUTTER BOLT, 2-1/4", LP-214
11	8	12281	STRAIGHT HOLDER, 700 LOPRO
12	16	05273	NUT, NYLOCK, 5/16-18 NC ZINC
13	15	12280E	TOOTH SPACER, 700 LOPRO
14	16	12280D	CUT TOOTH, 700 LOPRO GREEN
15	8	12282	ANGLED HOLDER, OUT, 700 LOPRO
16	1	12265	AXLE STUB
17	6	05354	HH CAP SCREW, 7/16-20 NF X 2 G8 ZINC
18	1	12383	BEARING INSERT YAR 207-107
19	1	12383	BEARING FLANGE FY 1.44 TM
20	1	11027	SHAFT WASHER
21	1	05067	HH CAP SCREW, 1/2-13 NC X 1 G5 ZINC
22	6	05544	WASHER, 7/16 SAE ZINC

[1] ITEMS 12, 13, 14 INCLUDED IN TOOTH REPLACEMENT KIT PART NO. 12280

[2] ITEMS 18, 19, PART NO. 12383 COMES WITH BEARING INSERT AND FLANGE



BARRETO

TITLE: CUT WHEEL ASSY

PRODUCT LINE: STUMP GRINDER DATE: 7/12

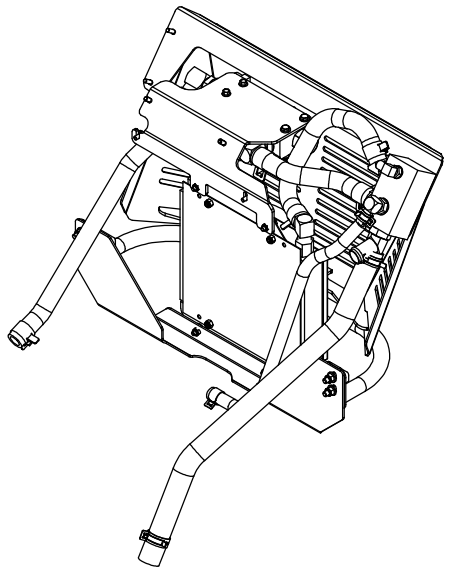
SCALE: 1:6

SHEET 1 OF 1

DWG# 00492

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	8	05557	HH CAP SCREW, 1/4-20 NC X 1/2 G5 ZINC
2	1	12316	COOLER / FILTER MOUNT
3	1	12727	HOSE, GRINDER VALVE / FILTER 3/4
4	8	05081	WASHER, 1/4 SAE ZINC
5	8	05008	CLAMP, 1" HOSE, CTB-29
6	2	04202	FITTING, 4601-12-12
7	1	04212-OR-TL	FILTER HEAD, #12 O-RING, TAP LEFT
8	1	04555	FITTING, 6801-4-4
9	6	05069	WHIZ LOCK, 1/4-20 NC X 5/8 ZINC
10	1	11546	THERMO ADAPTER
11	1	03225	O-RING, 2-116N70, 15-16 OD X 3/32 SECTION
12	1	11545	THERMOSTAT VALVE BODY
13	1	12463	TOP MOUNT
14	2	05560	HH CAP SCREW, 1/4-20 NC X 2-1/4 G5 ZINC
15	3	05359	CLIP NUT, 5/16-18
16	1	03952	FILTER, HYDRAULIC OIL, WITH BY-PASS
17	1	12335	HOSE, THERMO / JUNCTION, 3/4
18	1	12334	HOSE,FILTER / COOLER, 3/4
19	1	12464	TEMP SWITCH, ACT B4130FD607-P100
20	1	11544	THERMOSTAT VALVE, CT 1731
21	1	04523	FITTING, 4601-12-10
22	1	10362	FITTING, 4603-12-12
23	1	12336	HOSE, COOLER / JUNCTION, 3/4
24	1	04219	FITTING, 4604-12-12
25	1	04538	FITTING, 6801-6-6
26	1	04572	FITTING, 4601-8-8
27	1	12337	RETURN JUNCTION
28	1	10456	FITTING, 4603-16-12
29	2	12131	CLAMP, 1/2" HOSE, CTB-20
30	1	12370	PUMP FEED, LEFT
31	1	12356	RETURN HOSE, 1"
32	2	05225	CLAMP, 1" ID HOSE, CTB-35 ST
33	1	12460	FAN SHROUD
34	4	05193	RUBBER GROMMET, .62 X .38
35	4	11741	SPACER
36	10	05096	NUT, NYLOCK, 1/4-20 NC ZINC
37	4	05191	SCREW #12-24 X 1/2 PPH
38	1	04033	FAN, 7.5" PULLER
39	4	05190	NUT, NYLOCK, 12-24 NC ZINC
40	4	05535	WHIZ LOCK, 1/4-20 NC X 7/8 ZINC
41	4	05101	WASHER, 3/8 SAE ZINC
42	2	04227	FITTING, 4501-12-8
43	1	11533	OIL COOLER, B&M 70266
44	4	05567	HH FLANGE SCREW, 5/16-18 NC X 1" G8 ZINC
45	4	05068-HDN	WASHER, 5/16 HARDENED ZINC
46	1	12315-OBB	COOLER BRACKET
47	1	12461	COVER MOUNT
48	2	05111	BH SHOULDER SCREW, 3/8 X 3/8
49	6	05273	NUT, NYLOCK, 5/16-18 NC ZINC
50	1	12462	BACK COVER
51	3	05510	BUTTON HD SOCKET CAP SCR, 5/16-18 X 3/4

RELEASE DATE	6/21/16
REVISED DATE	5/22/17
REVISION #	1



BARRETO

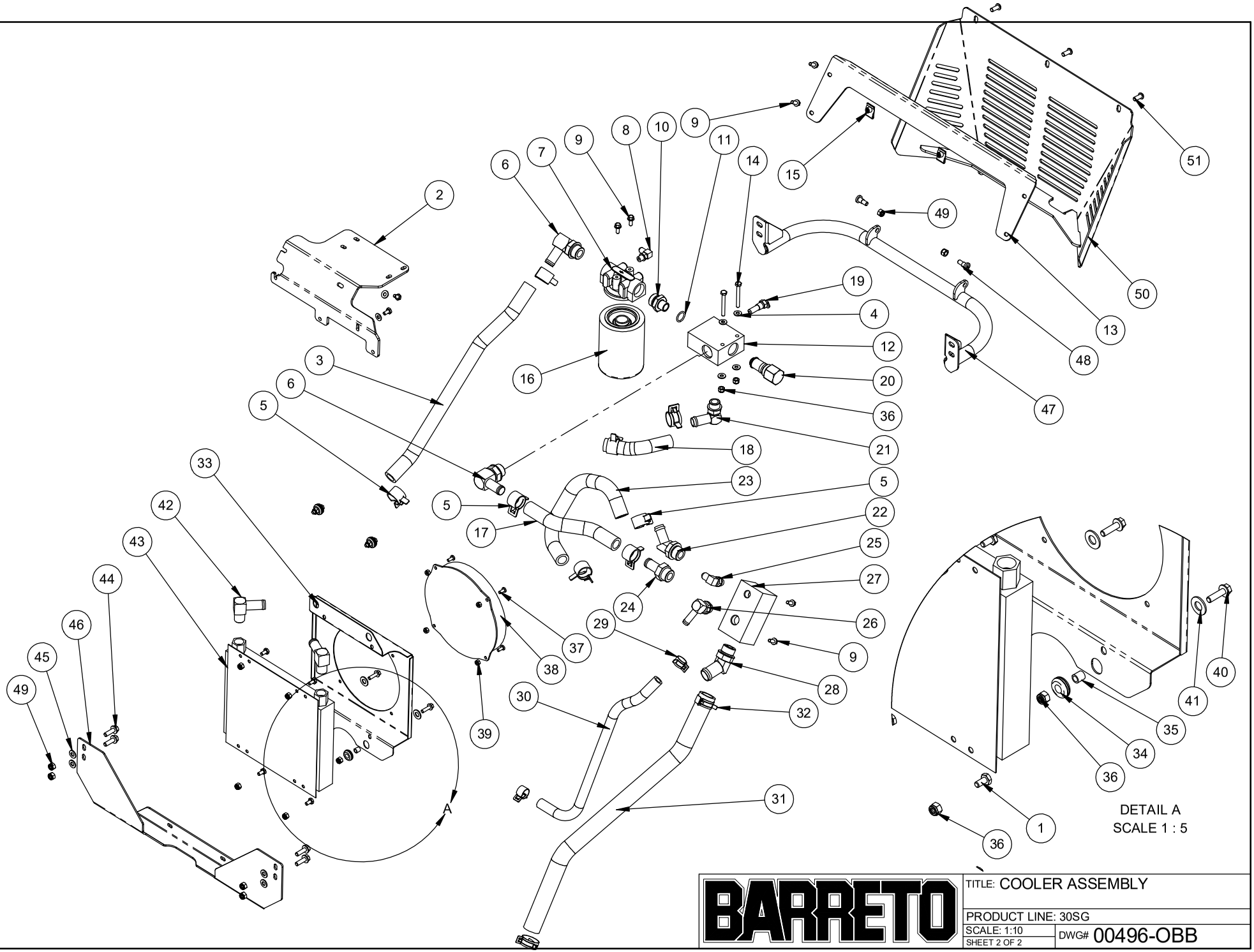
TITLE: COOLER ASSEMBLY

PRODUCT LINE: 30 SG

SCALE: 1:12

SHEET 1 OF 2

DWG# 00496-OBB



BARRETO

TITLE: COOLER ASSEMBLY

PRODUCT LINE: 30SG

SCALE: 1:10

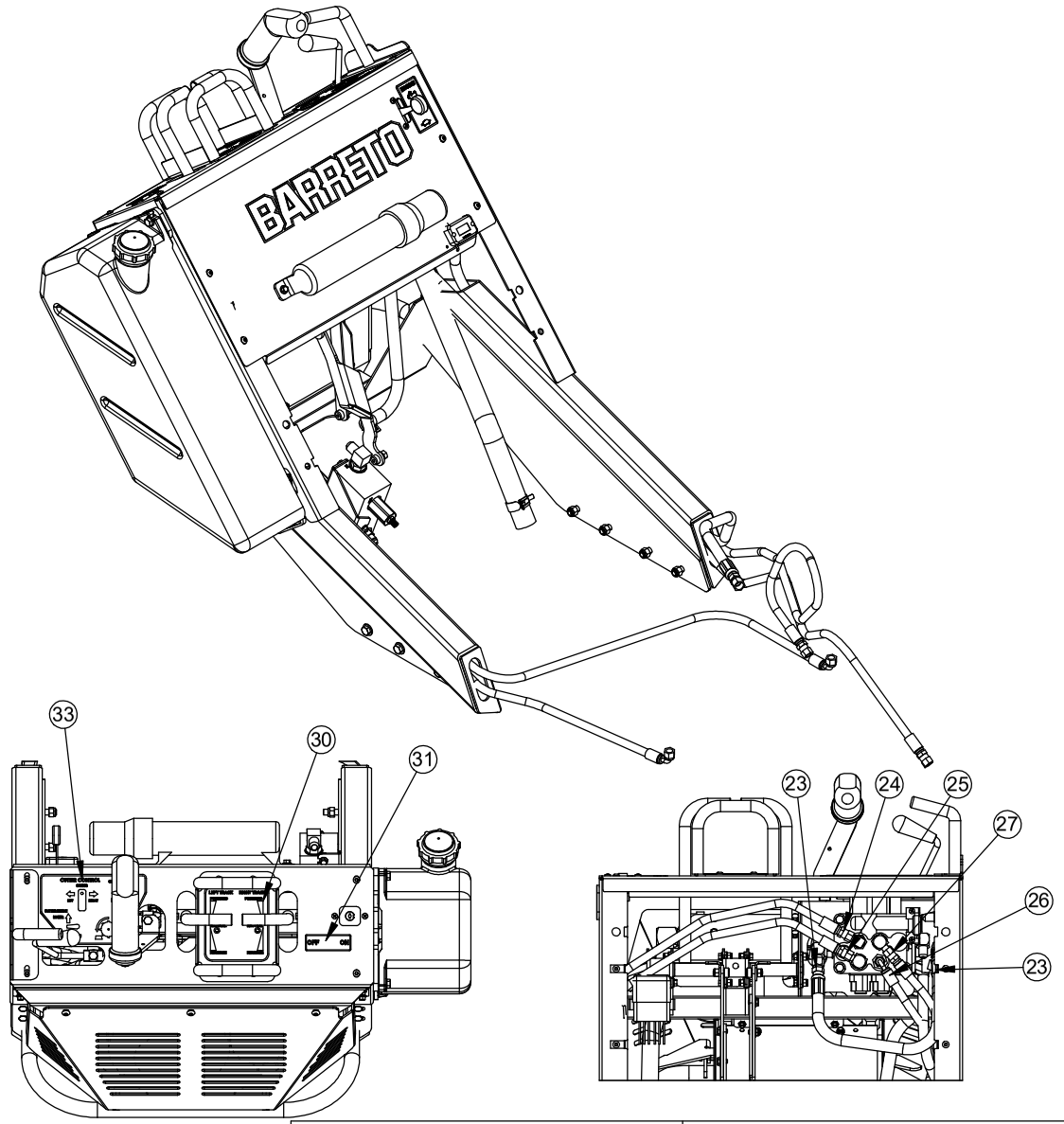
SHEET 2 OF 2

DWG# 00496-OBB

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	00497	CYLINDER VALVE ASSEM
2	1	00456-SG	FUEL TANK ASSEMBLY
3	1	00496-OBB	COOLER ASSEMBLY
4	1	12288T	CONTROL TOWER
5	1	13326	HAND REST
6	1	12311 R1	SPEED LEVER, LEFT
7	1	12312T R1	SPEED LEVER, RIGHT
8	1	12314-T	FRONT COVER
9	1	12775	LEFT HAND REST
10	2	12330	SPEED LINK, TOP
11	1	12331	SPEED LINK, LOWER, LEFT
12	1	12457T	SPEED LINK, LOWER RT
13	1	12332T	CONTROL PANEL
14	1	11627K	IGNITION SWITCH PLATE
15	1	07024-E1	IGNITION SWITCH, KOHLER ONLY
16	1	03009-R1	HOUR METER, WITH FLASH ALERT
17	1	12313D	CUTTER VALVE
18	4	12381	IGUS FLANGE JFL-20
19	1	03515-T	THROTTLE CABLE
20	1	07027-08	FUSE / RELAY HOLDER ASSEM
21	1	12090	INSTRUCTION CANISTER
22	1	12371T	HOSE, PUMP / CYLINDER VALVE
23	1	12340T	HOSE, CYLINDEDR VALVE - RETURN JCT
24	1	12723	HOSE, RT. A / LEFT SWING TEE
25	1	12724	HOSE, RT B / RT SWING TEE
26	1	12725	HOSE, LEFT B / LIFT ROD
27	1	12726	HOSE, LEFT A / LIFT PISTON
28	1	04554	FITTING, 6801-8-8
29	2	04520	FITTING, 6400-8-8
30	1	04451-TK	L - R TRACK DECAL
31	1	03341-07	DECAL, "IGNITION OFF/ON"
32	1	04440-05	DECAL, "THROTTLE CONTROL"
33	1	04451-CP-03	DECAL, CUTTER CONTROL
34	1	03040-02	DECAL, "BARRETO", 3-1/2 X 11-1/4
35	4	05292	HH CAP SCREW, 3/8-24 NF X 1-1/4 G5 ZINC
36	4	05056	HH CAP SCREW, 3/8-24 NF X 1 G5 ZINC
37	4	05351	SH SHOULDER SCREW, 3/8 X 1/4 x 5/16-18
38	8	05101	WASHER, 3/8 SAE ZINC
39	8	05073	NUT, NYLOCK, 3/8-16 NC ZINC
40	3	05175	HH CAP SCREW, 5/16-18 NC X 2-1/4 G5 ZINC
41	5	05273	NUT, NYLOCK, 5/16-18 NC ZINC
42	2	05002	NUT, GRIPCO, 5/16-18 NC G5 ZINC
43	13	05069	WHIZ-LOCK 1/4 - 20 X 5/8
44	12	05507	BUTTON HD SOCKET CAP SCR, 1/4-20 X 1/2
45	4	05557	HH CAP SCREW, 1/4-20 NC X 1/2 G5 ZINC
46	12	05081	WASHER, 1/4 SAE ZINC
47	6	05365	CLIP NUT, 1/4-20
48	10	05096	NUT, NYLOCK, 1/4-20 NC ZINC
49	4	05233	SCREW #10-24 X 1/2 PPH

RELEASE DATE	6/20/16
REVISED DATE	NEW
REVISION #	0

REPLACES 00498T



BARRETO

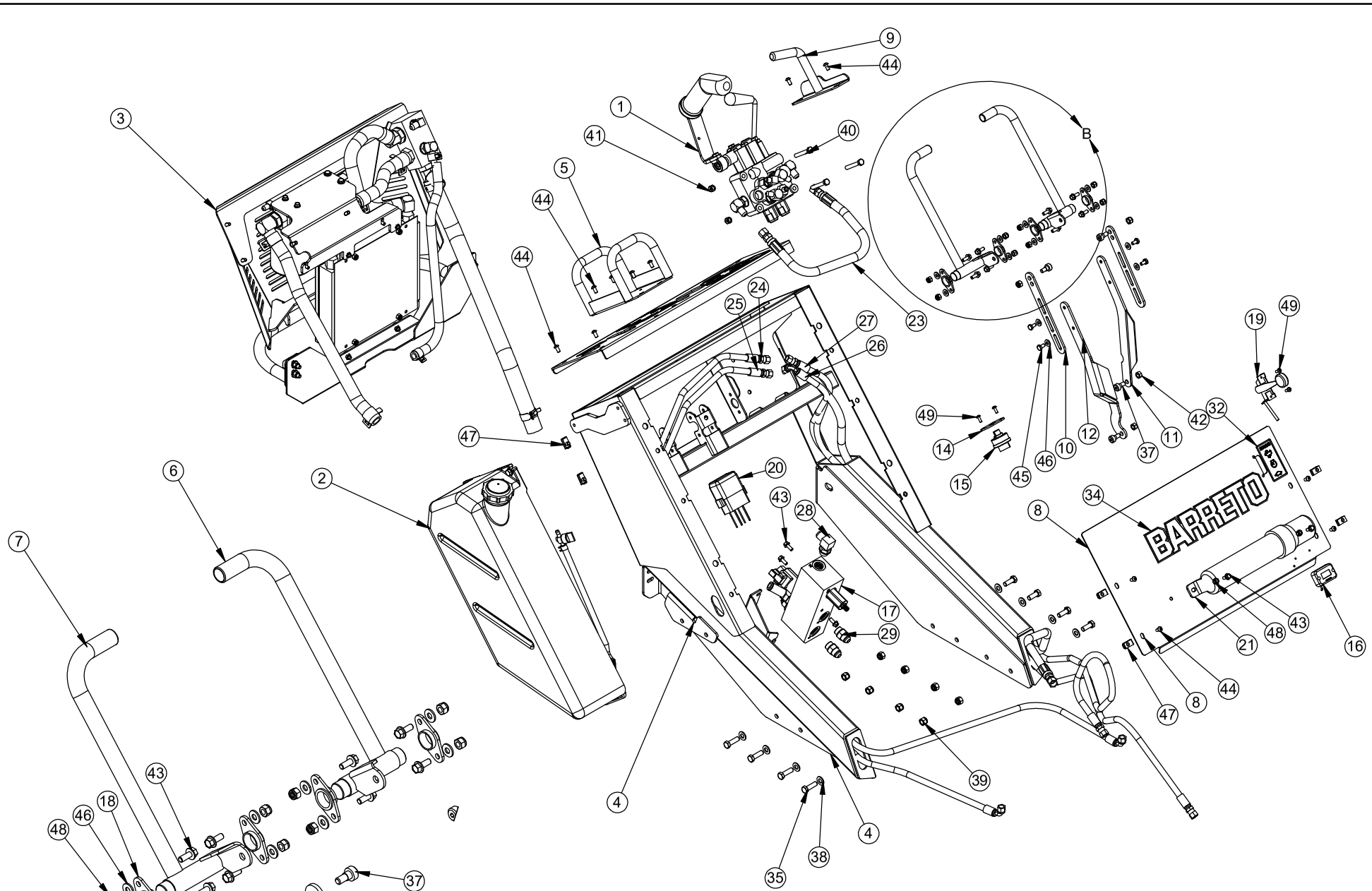
TITLE: CONTROL ASSEMBLY

PRODUCT LINE:SG

SCALE: 1:12

SHEET 1 OF 2

DWG# 00498-OBB



BARRETO

TITLE: CONTROL ASSEMBLY

PRODUCT LINE:SG

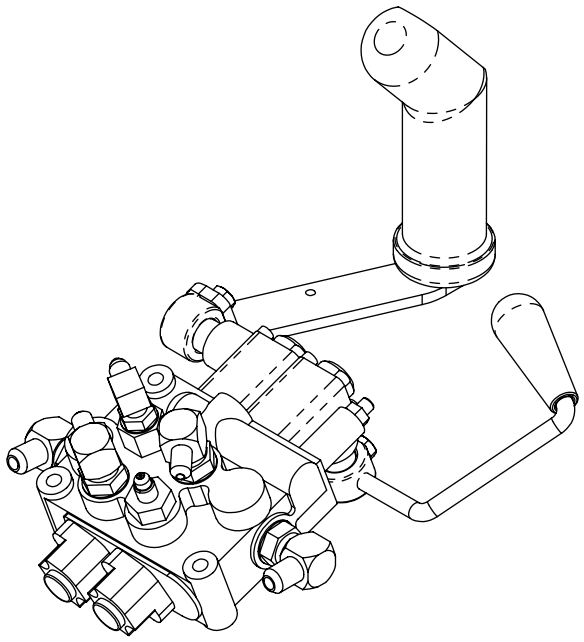
SCALE: 1:12

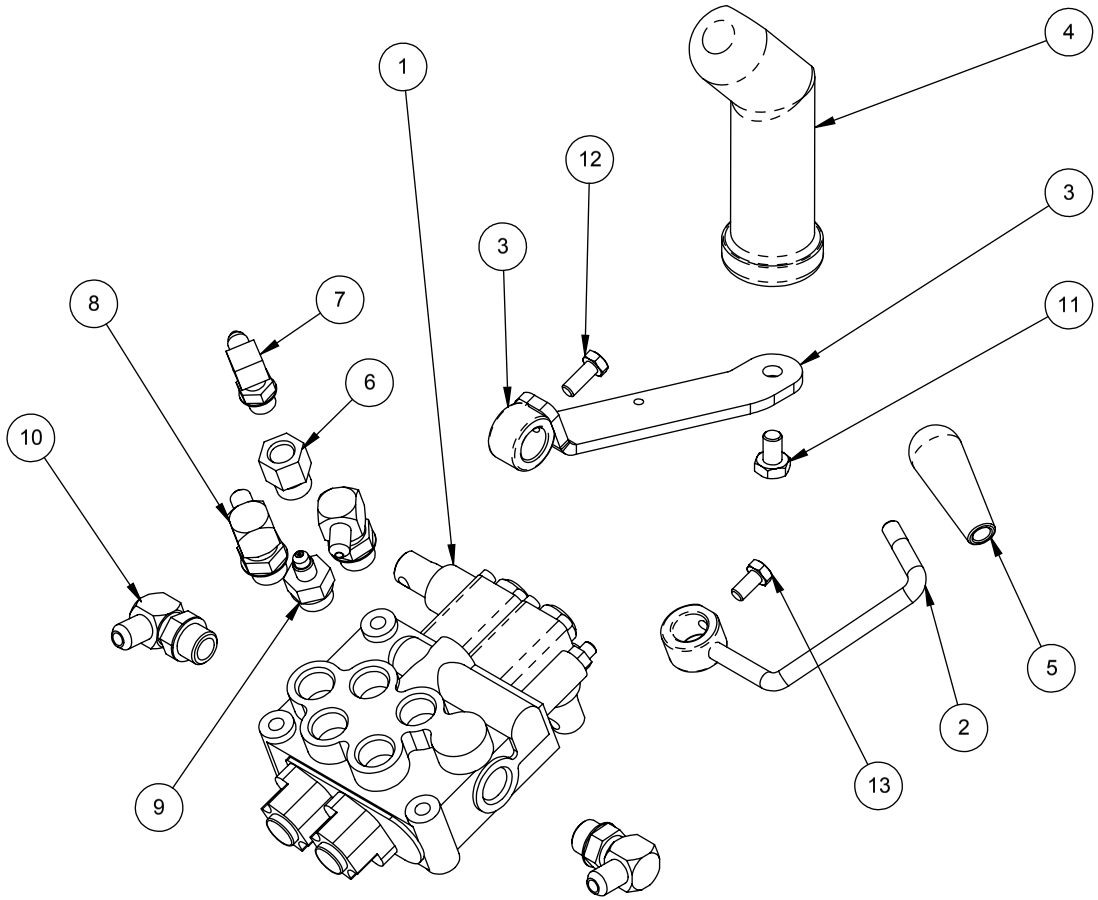
SHEET 2 OF 2

DWG# 00498-OBB

UPDATED 7/5/16

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	04022-W	VALVE, WOLVERINE
2	1	12776	LIFT LEVER
3	1	12777	SWING LEVER
4	1	12379-B1	JOYSTICK HANDLE, W/ TRIGGER
5	1	03542	SPEED KNOB
6	1	04529	FITTING, 6410-8-6
7	1	04527-01	FITTING, 6801-4-6
8	2	10403	FITTING, 6801-4-8
9	1	04568	FITTING, 6400-4-8
10	2	10404	FITTING, 6801-6-8
11	1	12466	HH CAP SCREW, M10-1.5 X 16mm, 8.8, ZINC
12	1	12782	HH CAP SCREW, M8-1.25 X 20MM ZINC
13	1	05406	HH CAP SCREW, M8-1.25 X 16MM ZINC





BARRETO

TITLE: CYLINDER VALVE ASSEM
2 LEVER CONTROL

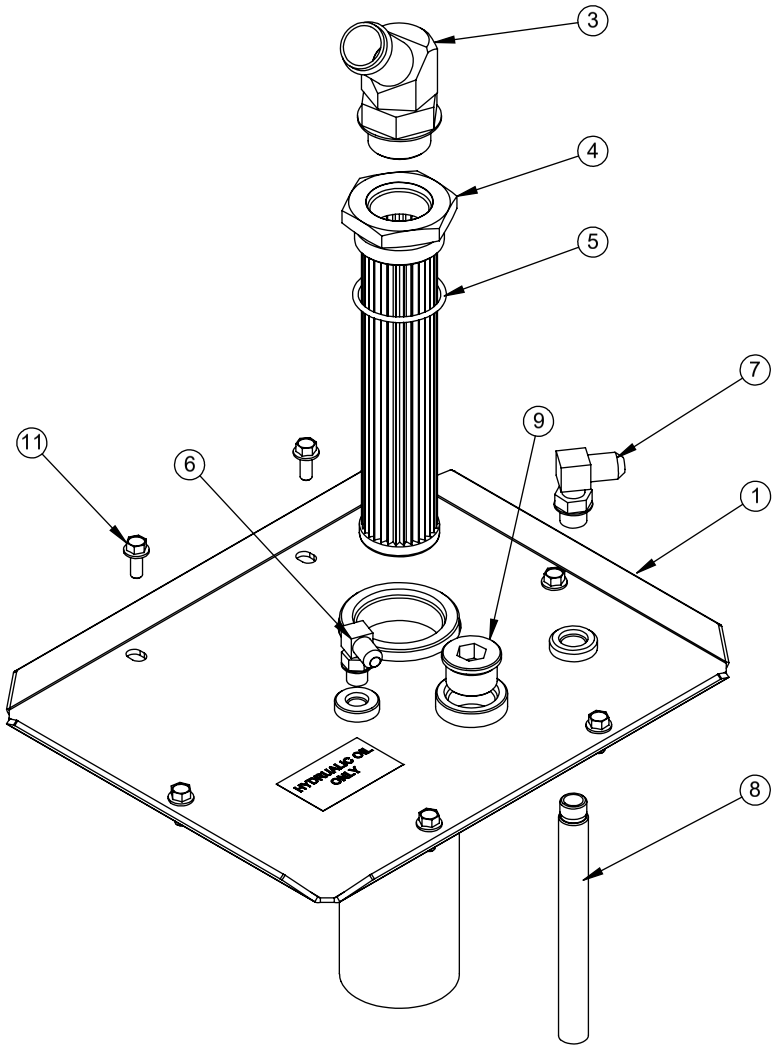
PRODUCT LINE: 30SG, 35SG DATE: 2-14

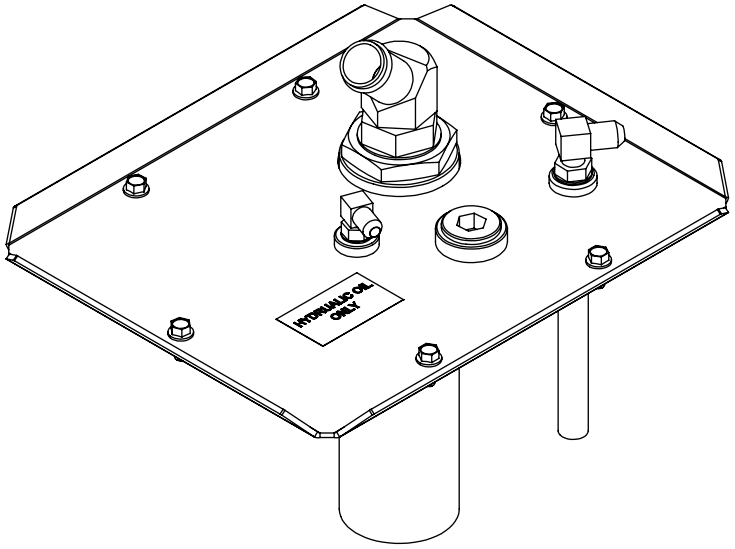
SCALE: 1:4
SHEET 1 OF 1

DWG# 00497

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	12720 R1	LID, STUMP GRINDER
2	1	12720K R1	LID, STUMP GRINDER, FOR KHOLER ENGINE
3	1	12484	FITTING, 4603-16-16
4	1	10636	SUMP SCREEN, W/ O-RING 03292
5	1	03292	O-RING, 3-924N90, -24 FITTINGS
6	1	04555	FITTING, 6801-4-4
7	1	04538	FITTING, 6801-6-6
8	1	12864	RETURN TUBE
9	1	10526	FITTING, 6409-12 PLUG
10	1	03040-06	DECAL, "HYDRAULIC OIL ONLY"
11	6	05069	WHIZ LOCK, 1/4-20 NC X 5/8 ZINC

(1) USE LID 12720K FOR KOHLER POWERED MACHINE ONLY





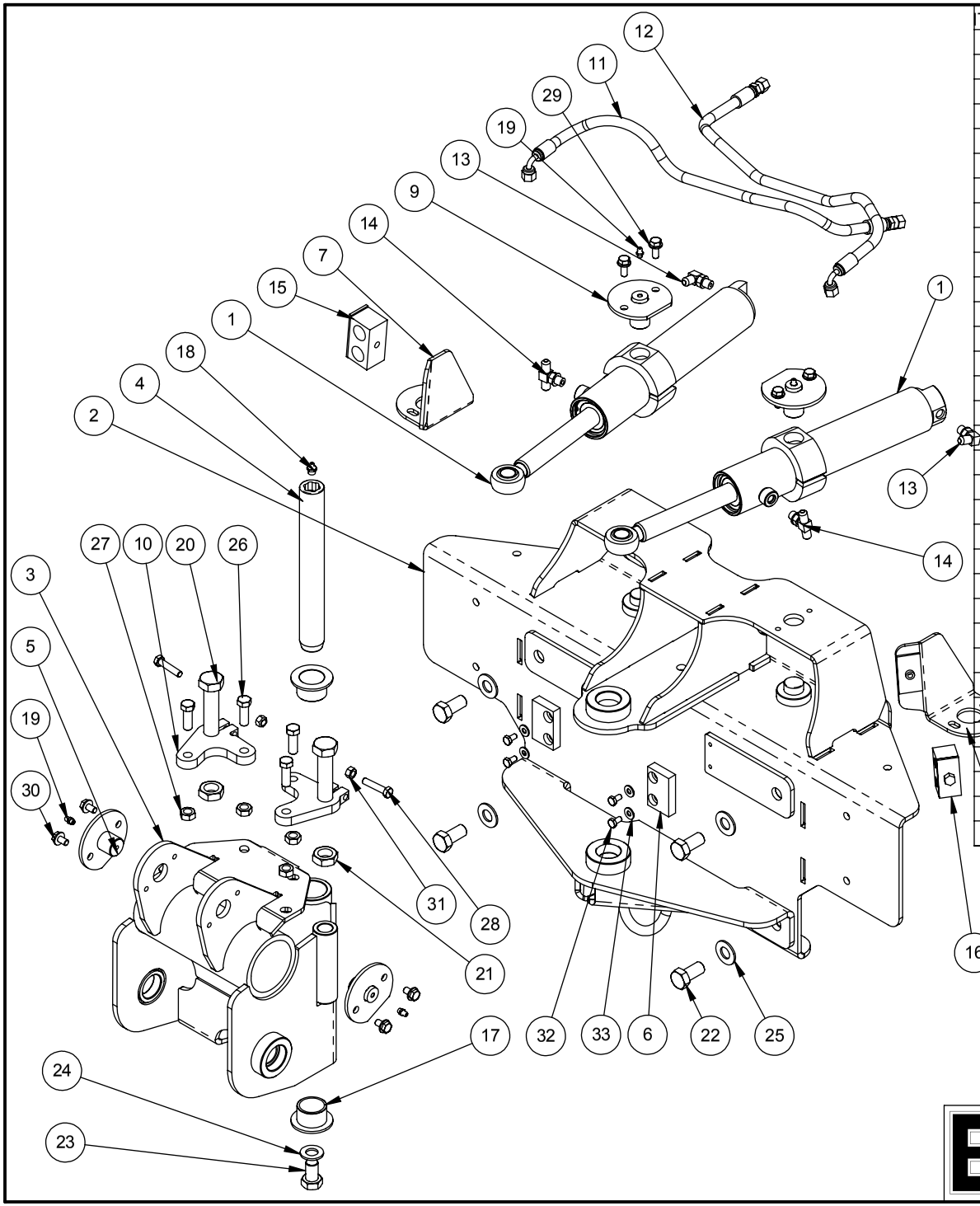
BARRETO

TITLE: LID ASSEMBLY
SG - 10cc / CP

PRODUCT LINE: 30SG DATE: 10/13

SCALE: 1:4 SHEET 1 OF 1

DWG# 00499CP



ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	2	00538	SWING CYLINDER ASSEMBLY
2	1	12705	MOUNT BASE, CP
3	1	12706	PIVOT HEAD, CP
4	1	12711	SWING PIN
5	2	10281	CYLINDER PIN
6	2	12714	SWING STOP
7	1	12728R	HOSE MOUNT, RT
8	1	12728L	HOSE MOUNT, LEFT
9	2	12262	TRUNION PIN
10	2	12794	PIN BRACE
11	1	12722	HOSE, SWING CROSSOVER, R, FRONT
12	1	12722	HOSE, SWING CROSSOVER, L, FRONT
13	2	04555	FITTING, 6801-4-4
14	2	04223	FITTING, 6803-4-4-4
15	1	11656	TUBE CLAMP
16	1	12359	HOSE CLAMP, 1/4"
17	2	12712	BUSHING, COMPOSITE, 1.265 X 1.514 X 1.0, FLANGE
18	1	05256	GREASE ZERK, 1/8 NPT
19	4	05044	GREASE ZERK, 1/4-28 UNF
20	2	05179	HH CAP SCREW, 3/4-16 NF X 3-1/2 G8 ZINC
21	2	05115	NUT, JAM, 3/4-16 NF ZINC
22	4	05260	HH CAP SCREW, 5/8-11 NC X 1-1/4 G5 ZINC
23	1	05178	HH CAP SCREW, 5/8-18 NF X 1 G5 ZINC
24	1	05100-B	WASHER, M 16 X 30
25	4	05272	WASHER, 5/8 SAE ZINC HARDENED
26	4	05063	HH CAP SCREW, 7/16-20 NF X 1-1/4 G8 ZINC
27	4	05355	NUT, GRIPCO, 7/16-20 NF G5 ZINC
28	2	05420	HH CAP SCREW, 5/16-18 NC X 1-1/2 G5 ZINC
29	4	05131	HH FLANGE SCREW, 5/16-18 NC X 3/4 G8 ZINC
30	4	05169	WHIZ-LOCK 5/16 - 18 X 1/2
31	2	10462	NUT, GRIPCO, 5/16-24 NF G5 ZINC
32	4	05557	HH CAP SCREW, 1/4-20 NC X 1/2 G5 ZINC
33	4	05081	WASHER, 1/4 SAE ZINC

BARRETO

TITLE: PIVOT HEAD
SG - CENTER PIVOT

PRODUCT LINE: 30SG - CP, 35SG DATE: 10/13

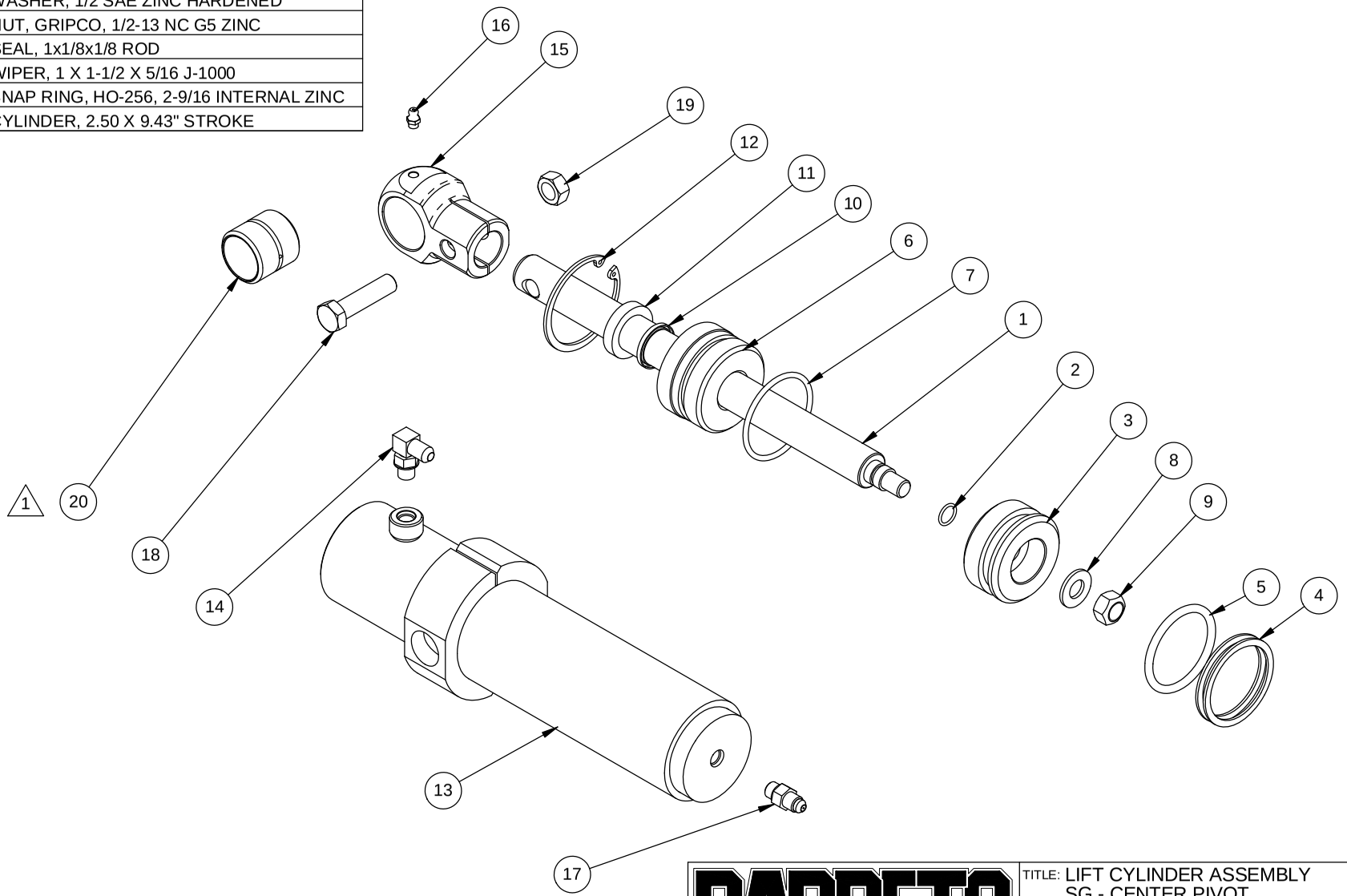
SCALE: 1:8
SHEET 1 OF 1

DWG# 00535

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	02701	CYLINDER ROD
2	1	03232	O-RING, 2-014, 5/8 OD X 1/16 SECTION
3	1	02612	PISTON
4	2	03237	BACK-UP RING, 8-330N90 PARBAK
5	1	03236	O-RING, 2-330, 2-1/2 OD X 3/16 SECTION
6	1	02613	CYLINDER END
7	1	03234	O-RING, 2-228, 2-1/2 OD X 1/8 SECTION
8	1	05102	WASHER, 1/2 SAE ZINC HARDENED
9	1	05046	NUT, GRIPCO, 1/2-13 NC G5 ZINC
10	1	03259	SEAL, 1x1/8x1/8 ROD
11	1	03255	WIPER, 1 X 1-1/2 X 5/16 J-1000
12	1	05211	SNAP RING, HO-256, 2-9/16 INTERNAL ZINC
13	1	10704	CYLINDER, 2.50 X 9.43" STROKE

ITEM NO.	QTY.	PART NO.	DESCRIPTION
14	1	04555	FITTING, 6801-4-4
15	1	02616	CYLINDER ROD END
16	1	05044	GREASE ZERK, 1/4-28 UNF
17	1	04560	FITTING, 6400-4-4
18	1	05251	HH CAP SCREW, 1/2-20 NF X 2 G5 ZINC
19	1	05076	NUT, GRIPCO, 1/2-20 NF G5 ZINC
20	1	03502	BUSHING, CONNEX 1.5X1.25X1

1 5-5-16 CHANGE TO STEEL BUSHING



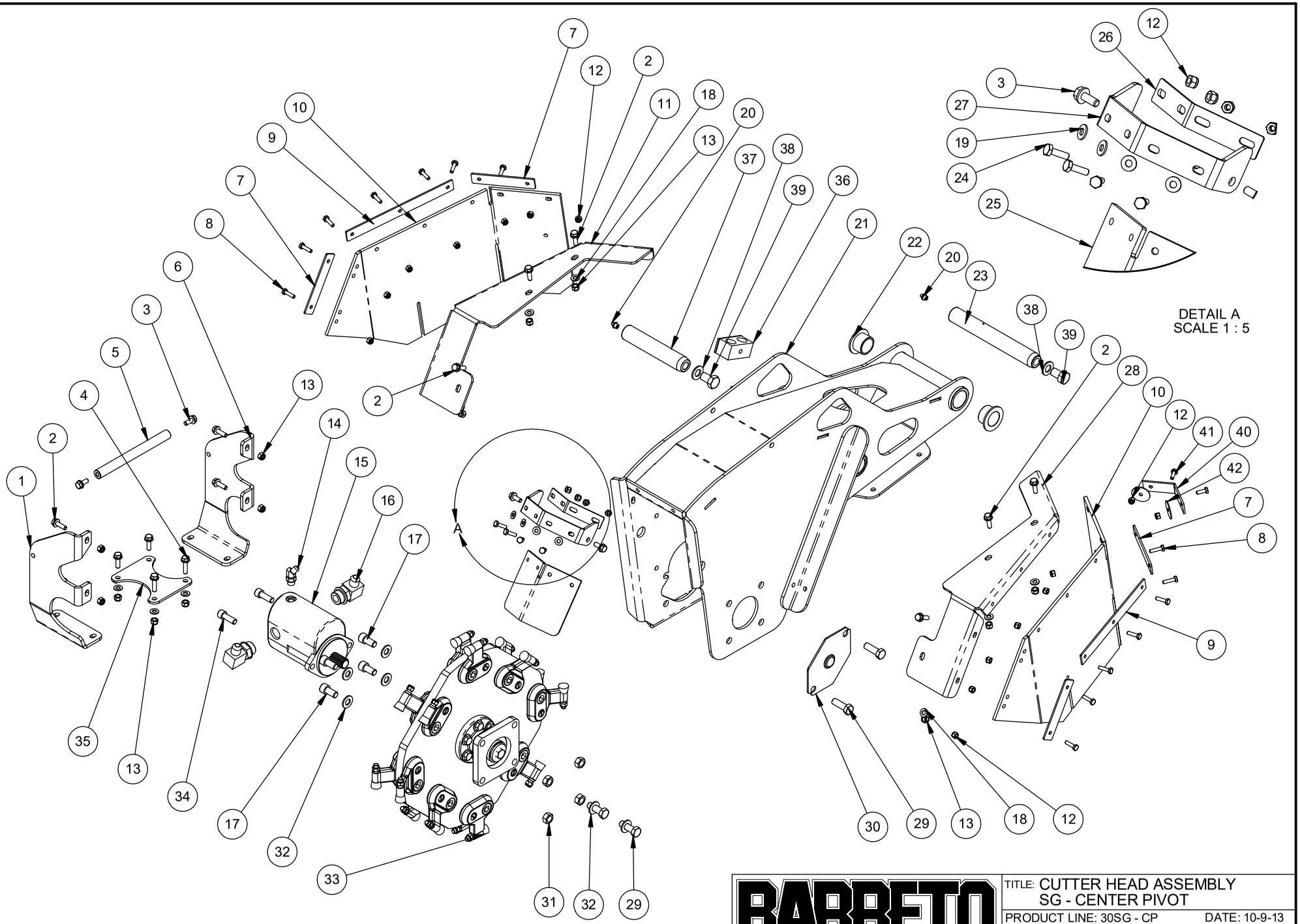
BARRETO

TITLE: LIFT CYLINDER ASSEMBLY
SG - CENTER PIVOT

PRODUCT LINE: 30SG - CP DATE: 10/13

SCALE: 1:4 DWG# 00537

SHEET 1 OF 1



BARRETO

TITLE: CUTTER HEAD ASSEMBLY
SG - CENTER PIVOT

PRODUCT LINE: 30SG - CP

DATE: 10-9-13

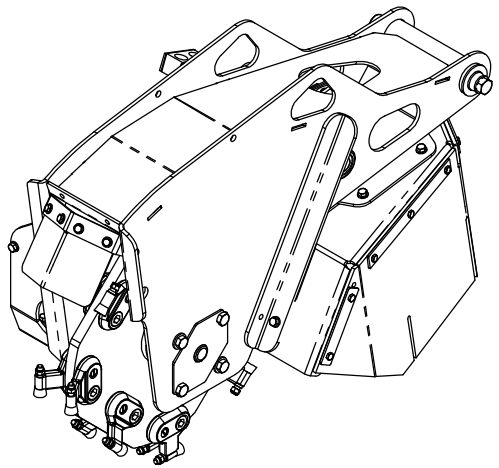
SCALE: 1:10

SHEET 1 OF 2

DWG# 00536

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	12270CP	MOTOR GUARD
2	12	05567	HH FLANGE SCREW, 5/16-18 NC X 1" G8 ZINC
3	4	05131	HH FLANGE SCREW, 5/16-18 NC X 3/4 G8 ZINC
4	2	05138	HH FLANGE SCREW, 5/16-18 NC X 1-1/4 G8 ZINC
5	1	12269	GUARD BRACE
6	1	12270CP-L	MOTOR GUARD, LEFT
7	4	12482	FLAP KEEPER
8	14	05237	HH CAP SCREW, 1/4-20 NC X 1 G5 ZINC
9	2	12276	LEFT FLAP STRAP
10	2	12721	SKIRT
11	1	12716R	SKIRT MOUNT, RIGHT
12	20	05096	NUT, NYLOCK, 1/4-20 NC ZINC
13	16	05273	NUT, NYLOCK, 5/16-18 NC ZINC
14	1	04218-1	FITTING, 6802-4-6
15	1	04030	GEAR MOTOR, 41cc
16	2	11038	FITTING, 6801-8-12
17	4	05569	SH CAP SCREW, 1/2-13 NC X 1 ZINC
18	10	05068	WASHER, 5/16 SAE ZINC
19	4	05081	WASHER, 1/4 SAE ZINC
20	2	05256	GREASE ZERK, 1/8 NPT
21	1	12707	CUTTER HEAD, CENTER PIVOT
22	2	12712	BUSHING, COMPOSITE FLANGE
23	1	12771	LIFT PIVOT PIN
24	4	05535	HH CAP SCREW, 1/4-20 NC X 7/8 G5 ZN

ITEM NO.	QTY.	PART NO.	DESCRIPTION
25	1	12478	FRONT FLAP
26	1	12479 R1	FRONT FLAP KEEPER
27	1	12477	FRONT FLAP MOUNT
28	1	12716L	SKIRT MOUNT, LEFT
29	4	05300-01	HH CAP SCREW, 1/2-13 NC X 1-1/2 G5 ZINC
30	1	12267	BEARING COVER
31	4	05046	NUT, GRIPCO, 1/2-13 NC G5 ZINC
32	6	05102	WASHER, 1/2 SAE ZINC HARDENED
33	1	00492	CUT WHEEL ASSY
34	2	05353	SH CAP SCREW, 7/16-20 NF X 1-1/4 ZINC
35	1	12710	GUARD BRACE
36	1	11656	TUBE CLAMP
37	1	12709T	LIFT ROD PIN
38	2	05100-B	WASHER, M 16 X 30
39	2	05178	HH CAP SCREW, 5/8-18 NF X 1 G5 ZINC
40	1	12778	FLAP TIE
41	2	05554	HH CAP SCREW, 1/4-20 NC X 3/4 G5 ZINC
42	2	05542	WASHER, 1/4 X 1 1/2 ZN



BARRETO

TITLE: CUTTER HEAD ASSEMBLY
SG - CENTER PIVOT

PRODUCT LINE: 30SG - CP

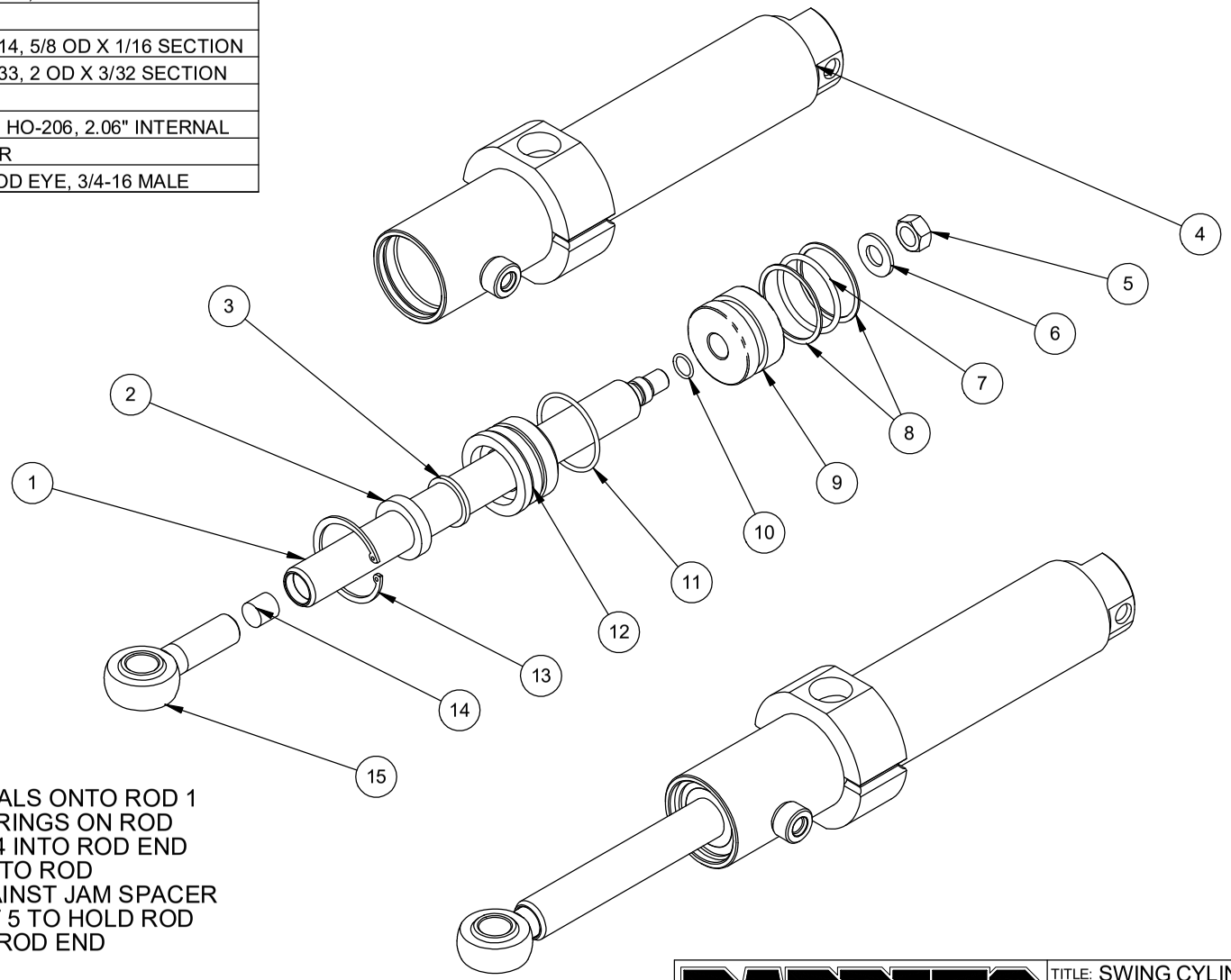
DATE: 10-13

SCALE: 1:12

SHEET 2 OF 2

DWG# 00536

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	12713	CYLINDER ROD
2	1	03255	WIPER, 1 X 1-1/2 X 5/16 J-1000
3	1	03259	SEAL, 1x1/8x1/8 ROD
4	1	12708	SWING CYLINDER, CP
5	1	05046	NUT, GRIPCO, 1/2-13 NC G5 ZINC
6	1	05102	WASHER, 1/2 SAE ZINC HARDENED
7	1	10492	O-RING, 2-224, 2 OD X 1/8 SECTION
8	2	10493	BACK-UP RING, 8-224N90 PARBAK
9	1	12255	PISTON, 2"
10	1	03232	O-RING, 2-014, 5/8 OD X 1/16 SECTION
11	1	10490	O-RING, 2-133, 2 OD X 3/32 SECTION
12	1	12257	END CAP
13	1	05445	SNAP RING, HO-206, 2.06" INTERNAL
14	1	12792	JAM SPACER
15	1	12791	SPHERIC ROD EYE, 3/4-16 MALE



TO ASSEMBLE ROD 1:
SLIDE CAP 12 WITH SEALS ONTO ROD 1
INSTALL PISTON 9 & O-RINGS ON ROD
INSERT JAM SPACER 14 INTO ROD END
SCREW ROD EYE 15 INTO ROD
TIGHTEN ROD EYE AGAINST JAM SPACER
USE A SOCKET ON NUT 5 TO HOLD ROD
USE RED LOCTITE ON ROD END
60 - 70 FT-LB

BARRETO

TITLE: SWING CYLINDER ASSEMBLY
CENTER PIVOT SG

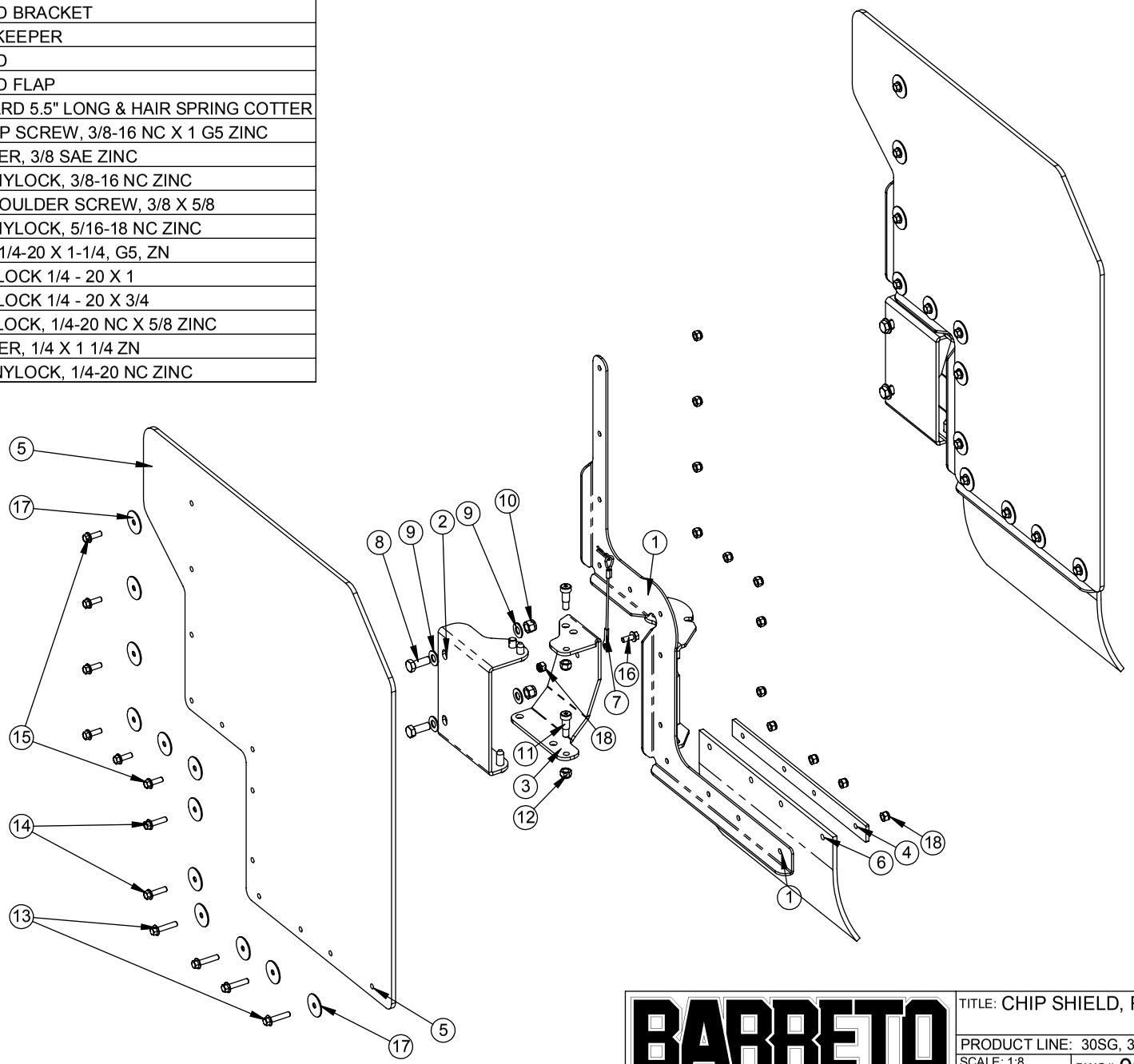
PRODUCT LINE: 30SG - CP DATE: /08

SCALE: 1:4 SHEET 1 OF 1

DWG# 00538

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	12785 R1	SHIELD FRAME
2	1	12788 R1	SHIELD MOUNT
3	1	12859	SHIELD BRACKET
4	1	12797	FLAP KEEPER
5	1	12786	SHIELD
6	1	12796	SHIELD FLAP
7	1	03351	LANYARD 5.5" LONG & HAIR SPRING COTTER
8	2	05059	HH CAP SCREW, 3/8-16 NC X 1 G5 ZINC
9	4	05101	WASHER, 3/8 SAE ZINC
10	2	05073	NUT, NYLOCK, 3/8-16 NC ZINC
11	2	05356	SH SHOULDER SCREW, 3/8 X 5/8
12	2	05273	NUT, NYLOCK, 5/16-18 NC ZINC
13	4	05403	HHFS 1/4-20 X 1-1/4, G5, ZN
14	2	05368	WHIZ-LOCK 1/4 - 20 X 1
15	6	05049	WHIZ-LOCK 1/4 - 20 X 3/4
16	1	05069	WHIZ LOCK, 1/4-20 NC X 5/8 ZINC
17	12	05545	WASHER, 1/4 X 1 1/4 ZN
18	13	05096	NUT, NYLOCK, 1/4-20 NC ZINC

RELEASE DATE	7/2014
REVISED DATE	5/31/14



BARRETO

TITLE: CHIP SHIELD, REMOVEABLE

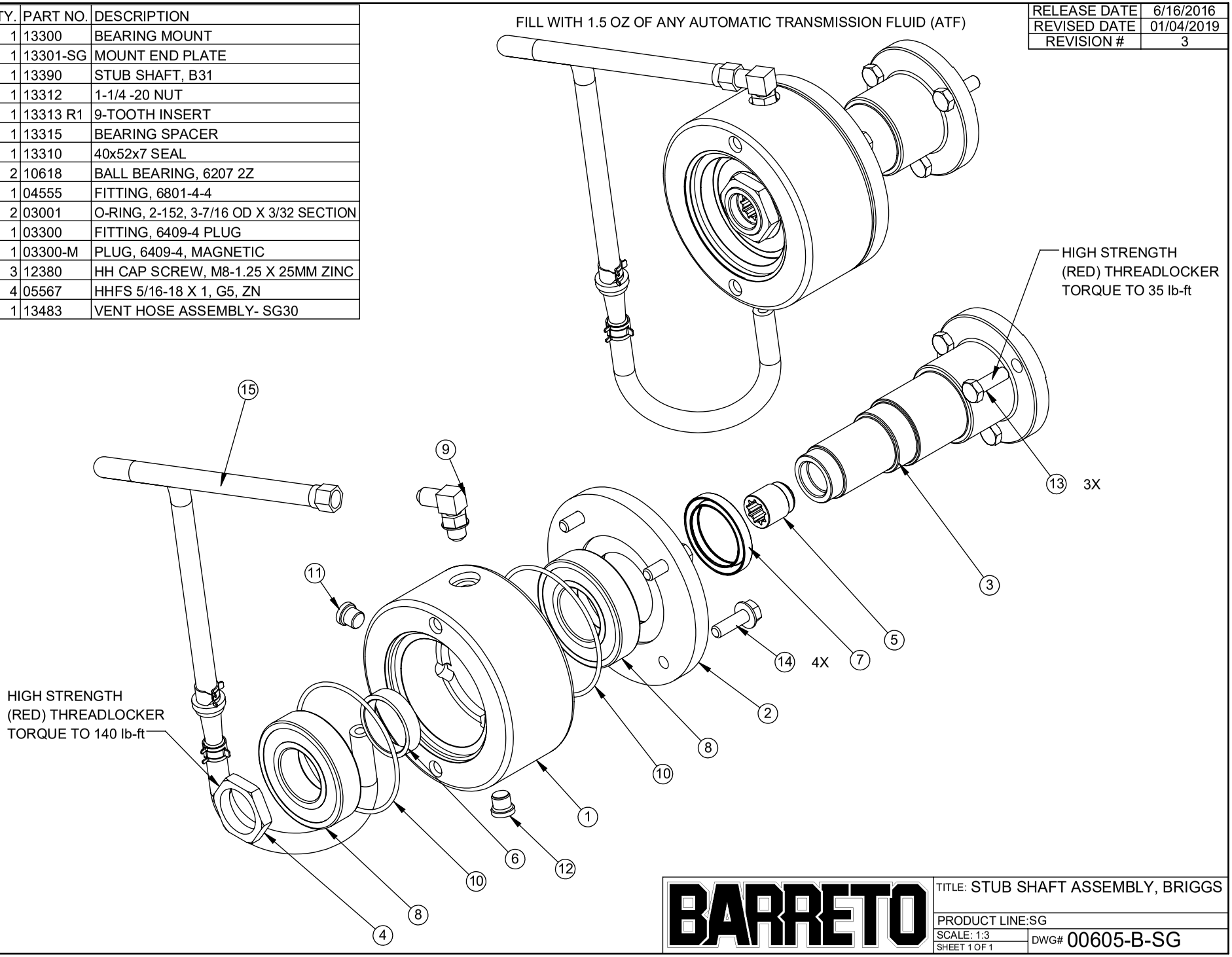
PRODUCT LINE: 30SG, 35SG DATE: 07-14

SCALE: 1:8 SHEET 1 OF 1

DWG# 00541 R1

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	13300	BEARING MOUNT
2	1	13301-SG	MOUNT END PLATE
3	1	13390	STUB SHAFT, B31
4	1	13312	1-1/4 -20 NUT
5	1	13313 R1	9-TOOTH INSERT
6	1	13315	BEARING SPACER
7	1	13310	40x52x7 SEAL
8	2	10618	BALL BEARING, 6207 2Z
9	1	04555	FITTING, 6801-4-4
10	2	03001	O-RING, 2-152, 3-7/16 OD X 3/32 SECTION
11	1	03300	FITTING, 6409-4 PLUG
12	1	03300-M	PLUG, 6409-4, MAGNETIC
13	3	12380	HH CAP SCREW, M8-1.25 X 25MM ZINC
14	4	05567	HHFS 5/16-18 X 1, G5, ZN
15	1	13483	VENT HOSE ASSEMBLY- SG30

RELEASE DATE	6/16/2016
REVISED DATE	01/04/2019
REVISION #	3



BARRETO

TITLE: STUB SHAFT ASSEMBLY, BRIGGS

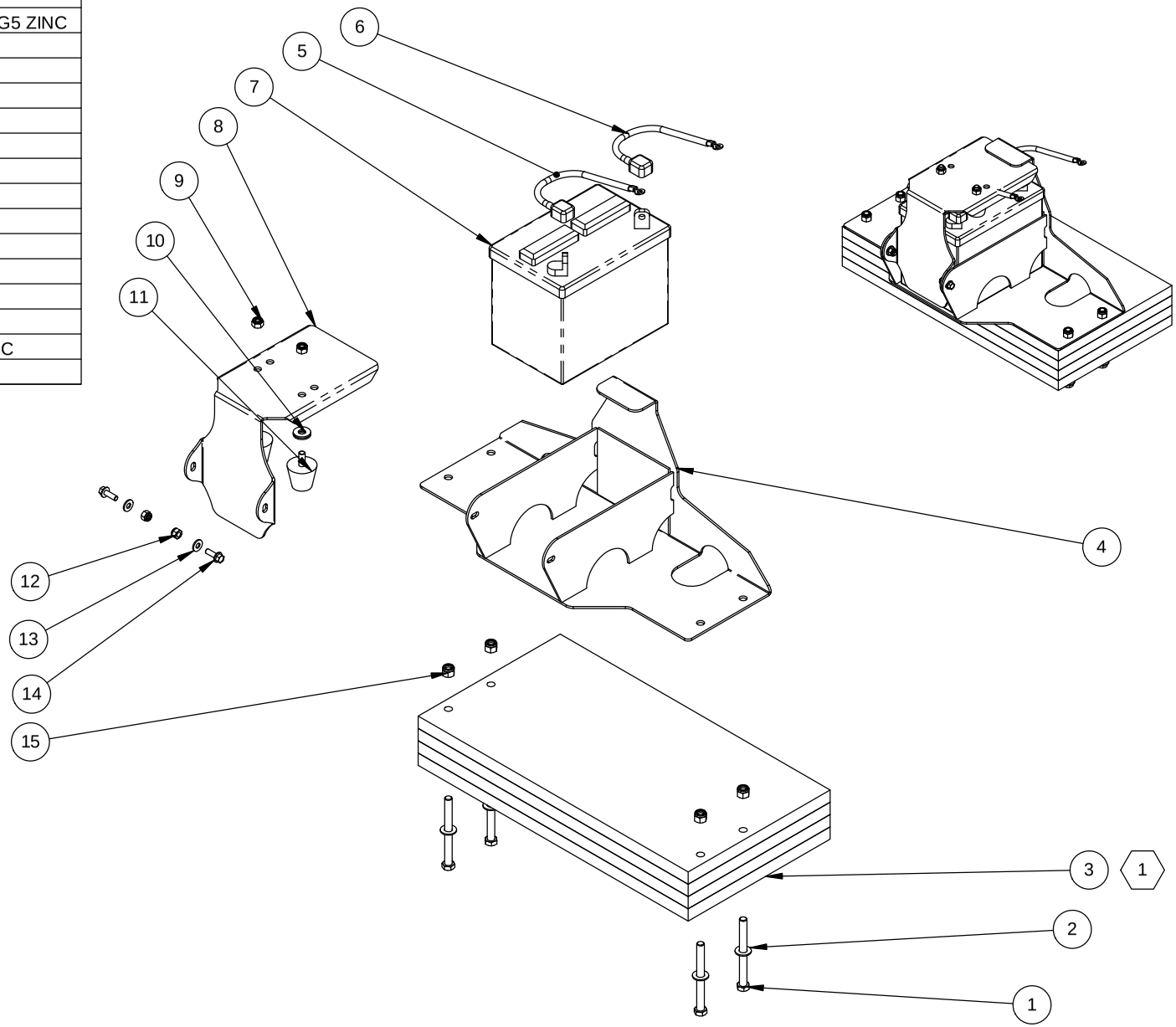
PRODUCT LINE:SG

SCALE: 1:3

SHEET 1 OF 1

DWG# 00605-B-SG

REF	QTY.	PART NO.	DESCRIPTION
1	4	10757	HH CAP SCREW, 3/8-16 NC X 4 G5 ZINC
2	4	05101	WASHER, 3/8 SAE ZINC
3	4	11634	WEIGHT , 3/4 X 10
4	1	11539	BATTERY MOUNT
5	1	11321	BATTERY CABLE, POS
6	1	11322	BATTERY CABLE, NEG
7	1	11537	BATTERY, GT-X U1 300
8	1	11542	BATTERY CAP, W/ PAD
9	2	05273	NUT, NYLOCK, 5/16-18 NC ZINC
10	4	10615	WASHER, 5/16 USS ZINC
11	2	11258	RUBBER BUMPER
12	2	05096	NUT, NYLOCK, 1/4-20 NC ZINC
13	2	05081	WASHER, 1/4 SAE ZINC
14	2	05049	WHIZ LOCK, 1/4-20 NC X 3/4 ZINC
15	4	05073	NUT, NYLOCK, 3/8-16 NC ZINC



1 35 HP MODEL USES 3 WEIGHTS

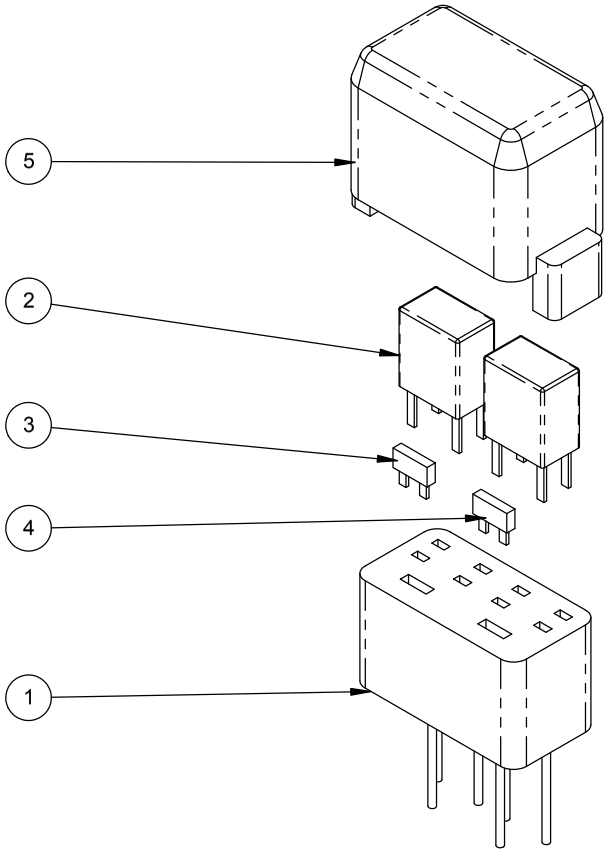
BARRETO

TITLE: BATTERY & WEIGHT ASSEMBLY

PRODUCT LINE: 30SG / 35SG DATE: 1/14

SCALE: 1:8 SHEET 1 OF 1 DWG# 00326-SG

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	12492	FUSE / RELAY HOLDER & WIRES
2	2	12493	RELAY
3	1	12494	FUSE, 5A
4	1	12495	FUSE, 15A
5	1	12492-1	COVER



BARRETO

TITLE: FUSE / RELAY ASSEMBLY

PRODUCT LINE: 30SG

DATE: 7 / 13

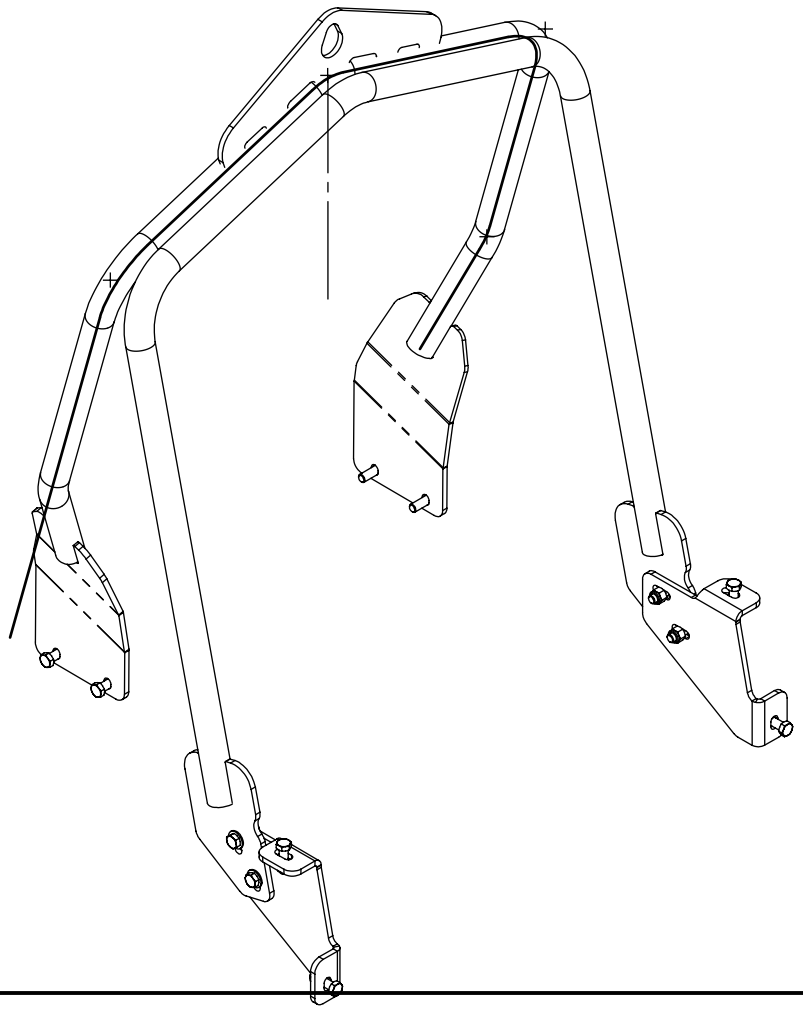
SCALE: 1:2

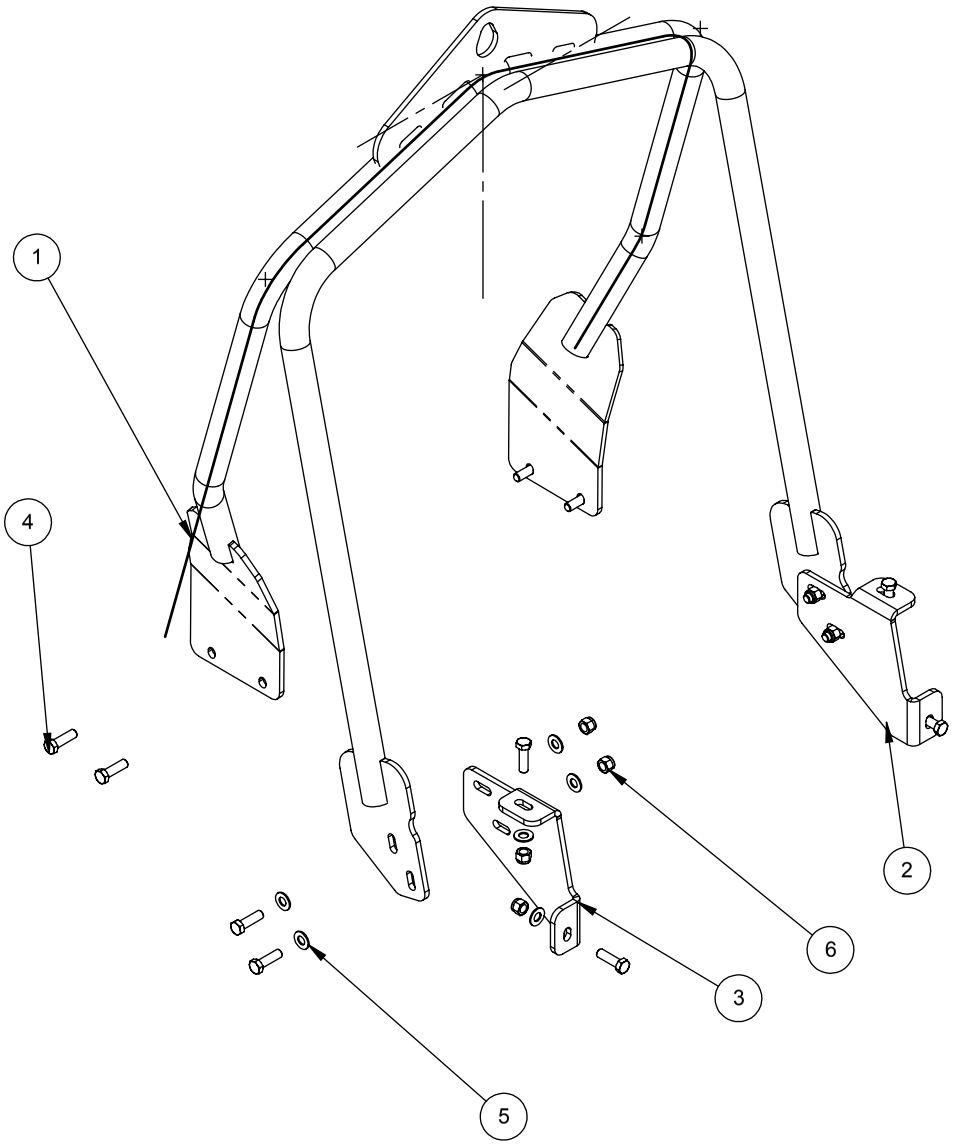
SHEET 1 OF 1

DWG# 12492-AS

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	13220 R1	LIFT EYE, SG
2	1	13221-L	FRONT MOUNT, LH
3	1	13221-R	FRONT MOUNT, RH
4	12	05091	HH CAP SCREW, 3/8-16 NC X 1-1/4 G5 ZINC
5	10	05101	WASHER, 3/8 SAE ZINC
6	8	05073	NUT, NYLOCK, 3/8-16 NC ZINC

1 7-5-2016
13220 R1 SHOWN - REVISED TO FIT BEARING MOUNTED PUMPS
13220 R1 WILL FIT EARLIER UNITS





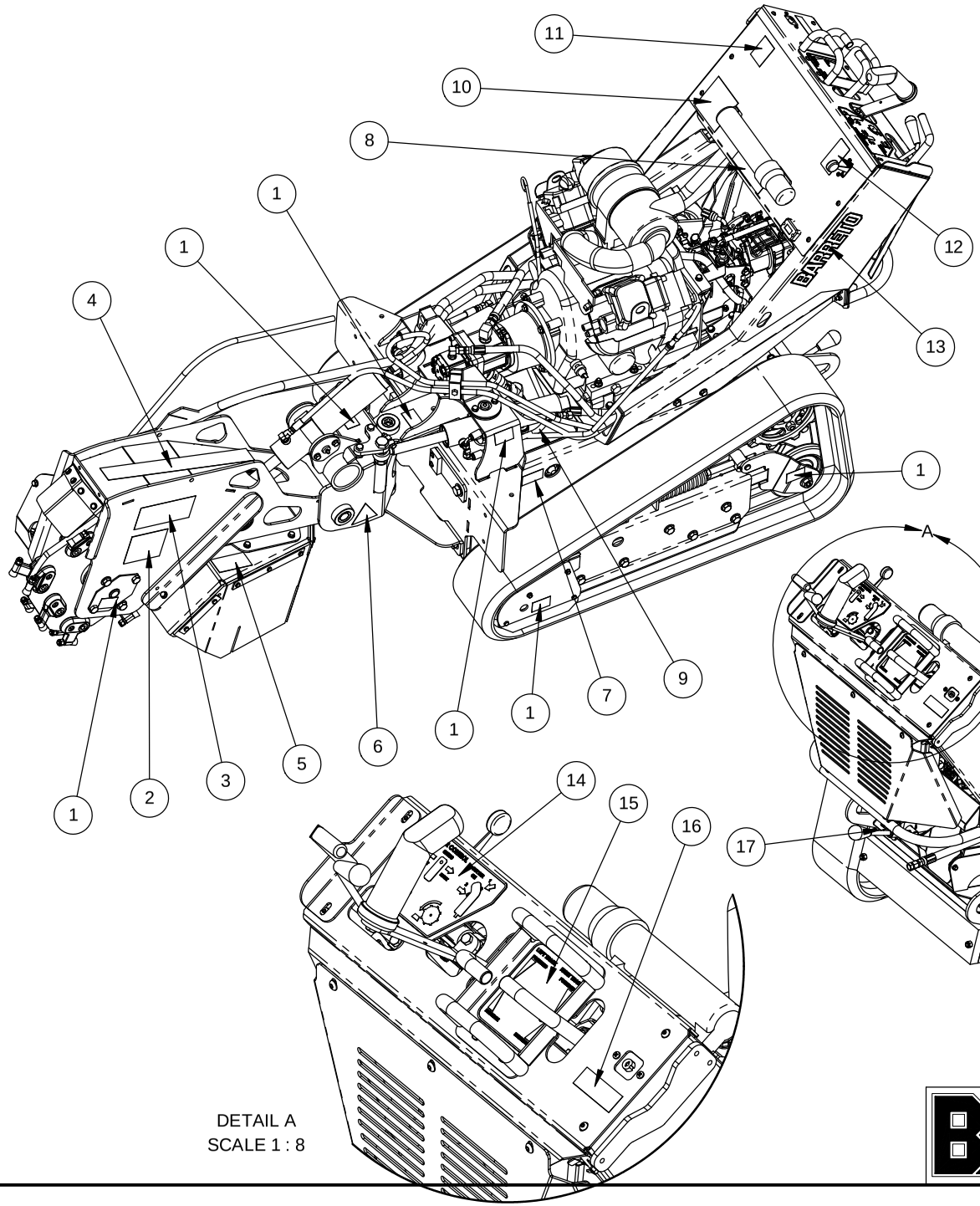
BARRETO

TITLE: LIFT EYE, SG RETRO-BOLT-ON

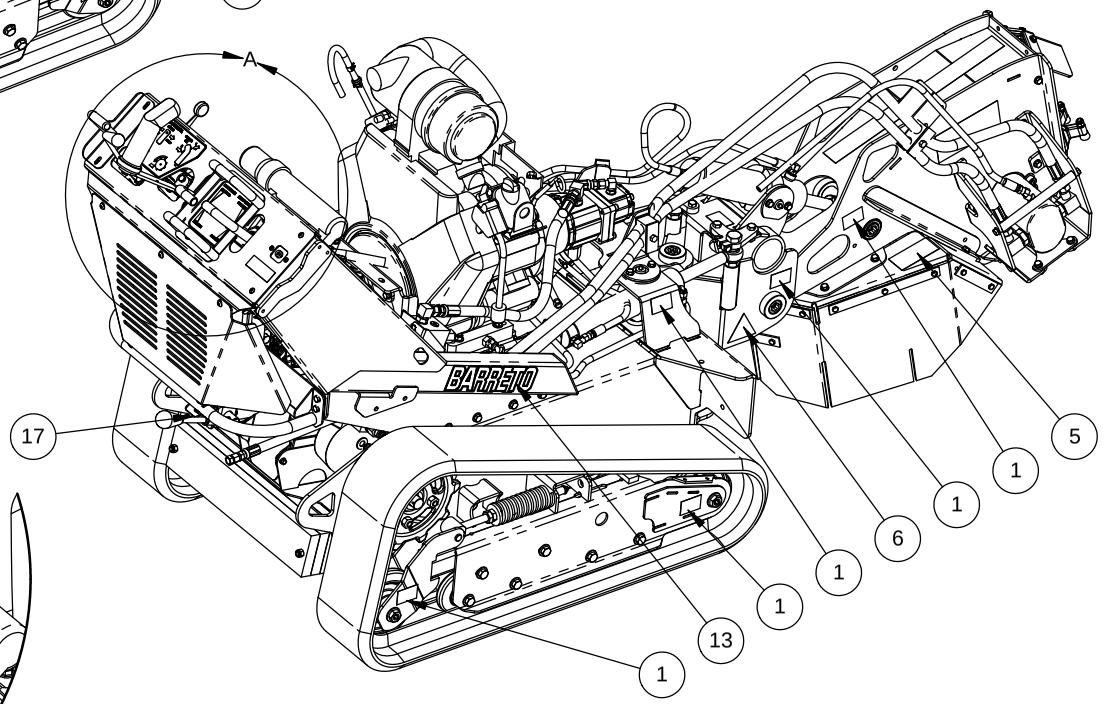
PRODUCT LINE: 30SG - OPTION DATE: 15-15

SCALE: 1:8 SHEET 1 OF 1

DWG# 13220-ASSEM



REF.	PART NO.	DESCRIPTION
1	03040-04	GREASE DAILY
2	04451-CP-05	GREASE CHART, SG
3	04451-04	30 SG
4	03341-02	DANGER STRIPES
5	04451-10	DANGER, ROTATING BLADE
6	04451-11	DANGER, PINCH POINT
7	03040-57	OIL LEVEL
8	04451-09	WARNING, READ MANUAL
9	03040-06	HYDRAULIC OIL ONLY
10	04451-06	SAFETY SYMBOLS, PROTECTIVE GEAR
11	03040-01	MADE IN USA
12	04440-05	THROTTLE
13	03040-02	BARRETO, (LARGE)
14	04451-CP-03	CUTTER CONTROL
15	04451-TK	TRACK CONTROL
16	03341-07	IGNITION, ON-OFF
17	04450-16	PARK BRAKE



BARRETO

TITLE: 30 SG DECAL LOCATION CHART

PRODUCT LINE: 30 SG DATE: 1-22-16

SCALE: 1:16 SHEET 1 OF 1

DWG# E30SG-DECALS

CUTTER WHEEL REPLACEMENT PARTS	
Part#	**Description**
12280	Cutter tooth, includes collar and nut, 700 series Wearsharp
12280-K	Set of 16 cutter teeth, Wearsharp
12280-COMP	Complete set of teeth, 8 angled & 8 straight holders, & bolts for the cutter wheel
12281	Tooth holder, straight. 700 Wearsharp
12281-K	Tooth holder set of 16, includes 4 straight and 12 angled
12282	Tooth holder, angled, 700 Wearsharp
12282-K	Tooth holder set of 16, includes 8 straight and 8 angled
12283	Cutter bolt
12283-K	Set of 16 cutter bolts
12284	Tooth collar, 700 series Wearsharp
05273	Tooth nut, 700 series Wearsharp