TABLE OF CONTENTS

NOTE- ANY PART, PORTION, DESIGN, NUMBER, SPECIFICATION, AND/OR DIMENSION IN THIS MANUAL IS SUBJECT TO CHANGE WITHOUT NOTICE BY THE MANUFACTURER.

INTRODUCTION

The purpose of this manual is to provide the user with specifications and procedures for the operation, maintenance and repair of this BANDIT product. As with any piece of equipment, safety should always be a constant thought while the machine is being operated, serviced or stored. In order to highlight this consideration, the material which addresses safety is proceeded by the following signal words:

Signal Word	Likelihood of Occurrence	Degree of Potential Injury or Damage
⚠ **DANGER**	Will occur if warning is ignored	Severe
⚠ **WARNING**	Can occur if warning is ignored	Severe
⚠ **CAUTION**	Will or can occur if warning is ignored	Minor to Severe
NOTICE	Important, but not hazard related	Minor

The equipment is designed and manufactured in accordance with the latest product industry standards. This alone does not prevent injury. It is the operator's responsibility to use good judgement and follow the warnings and instructions as indicated in this manual.

⚠ WARNING

Improper use of the product can result in severe personal injury. Personnel using the equipment must be qualified, trained and familiar with the operating procedures as defined in this manual, prior to operating the product.

⚠ WARNING

It is the responsibility of the owner or employer to insure that the operator is trained and practices safe operation while using and servicing the machine. It is also the owner's responsibility to provide and follow a regularly scheduled preventative maintenance and repair program on the product, using only factory approved replacement parts. Any unapproved repairs or modifications may not only damage the machine and its performance, but could result in severe personal injury. Unapproved repairs or modifications will void warranty and eliminate manufacturer of any liability claims. Consult the equipment manufacturer!!!

Each machine is shipped with a manual, a customer's check sheet on the product, and any available parts & service manuals on component parts not produced by this manufacturer. Additional copies of these manuals and check sheets can be purchased from the manufacturer, or through the dealer. Engine parts, service and maintenance manuals **MUST** be purchased through the engine manufacturer or their dealer.

NOTE - The producer of this Bandit product reserves the right to make any modifications or revisions to the design or specifications of its machine without advance notice. The producer also reserves the right to change machine and part prices as needed without advance notice.

EXPLANATION OF LIMITED WARRANTY

The manufacturer will not reimburse the customer or dealer labor costs incurred for installing “bolt-on” or “slip-on” items, such as hydraulic pumps and motors, control valves, flow dividers, belts, sheaves, etc. The manufacturer will provide replacement parts to the customer for defective parts during the warranty period. **Defective parts must be returned to Bandit Industries, Inc.** It will be the customer’s responsibility to install the replacement parts unless arrangements are made with the selling dealer.

The manufacturer will not reimburse travel costs to servicing dealer unless prior approval has been obtained from the manufacturer. It is the customer’s responsibility to deliver the machine to dealer’s service facility, unless other arrangements have been agreed to between selling dealer and customer.

The manufacturer may elect, at its discretion, to reimburse reasonable labor costs to customer or dealer for major defect repairs. Prior approval must be obtained from Bandit Industries, Inc.

There are several forms that must be completely filled out and returned to us in reference to our portion of warranty. Read and understand the Bandit Limited Warranty responsibilities. Some components on your machine are covered by their respective manufacturers and cannot be handled through Bandit Industries as stated in Warranty Section of this manual.

Use this manual to help you resolve what and where your problem is, in most cases you can fix it easily. If you still have problems, work through the dealer you purchased the machine through, or contact Bandit Industries direct if needed.

Make sure the following forms are used, for us as well as you, to keep track of service and pending warranty request. It is our company policy that all parts shipped out will be invoiced until the possible warranty parts are returned with a Warranty Claim Form completed for consideration.

Make sure the Warranty Validation Form is completed and sent in to us as soon as you receive the Bandit. This will activate our warranty responsibilities.

If Warranty Validation Form is not on file, all Warranty consideration is null and void.

BANDIT INDUSTRIES INC. LIMITED WARRANTY
(989) 561-2270

Bandit Industries Inc., also referred to as “Manufacturer” warrants this new product to be free of defects in workmanship and material for a period of 1 year.

This warranty takes effect upon delivery to the original retail purchaser. The manufacturer at it’s option will replace or repair at a point designated by the manufacturer, any parts which appear to have been defective in material or workmanship. The manufacturer is not responsible for labor, consequential damages, traveling or down time expenses.

This warranty and any possible liability of Bandit Industries Inc., is expressly in lieu of any other warranties, expressed or implied, including but not limited to, any implied warranty or merchantability of fitness for a particular purpose and of any noncontractual liabilities including product liabilities based upon negligence or strict liability. Bandit Industries Inc., will not be liable for consequential damages resulting from breach of warranty.

All parties involved agree that the Owner’s Sole and Exclusive Remedy against the Manufacturer, whether in contract or arising out of this warranty, instructions, representations, or defects shall only be for the replacement or repair of defective parts as provided herein. In no event or circumstances shall the Manufacturer’s liability exceed the purchase price of the machine. The buyer also agrees that no other remedy (including but not limited to consequential or incidental loss) shall be available to him or her.

It is absolutely necessary to return the Warranty Validation Form, completely and accurately filled out, and notify Bandit Industries Inc., in writing within ten (10) days from the date of purchase to validate this warranty. If Warranty Validation Form is not on file, all Warranty Consideration is NULL AND VOID.

This warranty will <u>not</u> apply if the Bandit product is not operated with replacement parts or equipment <u>not</u> manufactured or recommended by Bandit Industries, Inc.

This warranty will not apply if the Bandit product is not operated in a manner recommended by the manufacturer. The following examples would void the warranty:

1. The completed Warranty Validation Form is not on file.
2. The Bandit product has been abused, or not serviced properly.
3. Repairs or attempted repairs made without prior written authorization.
4. Repairs made due to normal wear are not warrantable.
5. The Bandit product was involved in, or damaged by an accident.
6. The Bandit product was damaged from any type of foreign material.

The owner is responsible for all scheduled maintenance as explained in the Operators Manuals. Negligence of proper maintenance or any other negligence, accident or fire; nor with failure to adjust, tighten, or replace wear items included but not limited to items such as teeth, teeth holders, belts, lubrication fluids, bearings, filters, hydraulic components, loose nuts or bolts, etc. may void warranty.

BANDIT INDUSTRIES, INC. LIMITED WARRANTY
(989) 561-2270

NOTE: This warranty applies only to new and unused equipment or parts thereof manufactured by Bandit Industries Inc. and is void if the machine is operated with replacement parts or equipment not manufactured or recommended by Bandit Industries Inc.

All other components are warranted by their respective manufacturers (i.e. engines, axles, hydraulic pumps and motors, clutches, tires, batteries, etc.) Any machines used for lease or rental purposes warranty is limited to 90 days from the first day of initial service.

CONTINENTAL U.S. INFORMATION PHONE NUMBERS FOR ACCESSORIES (NOT COVERED UNDER PRODUCT WARRANTY PROGRAM)

Briggs & Stratton Engines	1-414-259-5333	Interstate Batteries	1-800-331-2000
Caterpillar Engines (Thru 275Hp)	1-800-551-2938	PGL Auto Clutch	1-800-551-2938
Caterpillar Engines (300Hp & Up)	1-866-228-2111	PT Tech Clutch	1-330-414-3172
Continental Engines	1-800-726-8870	Rockford Clutch	1-800-383-9204
Cummins Engines	1-248-573-1592	Twin Disc Clutch	1-440-951-5111
Deutz, Lombardini Engines	1-800-445-5273	Electronic Solutions	1-866-736-6839
Ford, Hatz Engines	1-800-726-8870	E.S.I.	1-815-985-0383
GM, Perkins Engines	1-800-551-2938	L.O.R. MFG.	1-866-644-8622
Honda Engines	1-734-453-6258	Miratron Inc.	1-866-285-0132
John Deere Engines	1-888-803-9175	Dexter Axles	1-574-295-7888
Kohler Engines	1-800-854-9273	Tires	1-989-463-4088
Kubota Engines	1-800-832-7670	Caterpillar Tracks	1-309-636-1100
Robin Engines	1-248-399-0002	Chermack Tracks	1-715-458-2655
Wisconsin Engines	1-800-726-8870	Petro-Canada Hydrex XV	1-888-284-4572

(Phone numbers for outside the continental U.S. can be supplied from your phone directory or local Bandit dealer.)

In order to process any warranty claims, it is the owner's responsibility to report the claims promptly to the Manufacturer, or our authorized dealer from whom the equipment was purchased.

It is necessary to include the following information on any and all requests for warranty:

1) Warranty Claim Form, obtained from Bandit Industries or it's dealers, completely and accurately filled out.
2) Dealer from whom purchased.
3) Date of delivery.
4) Serial number of unit.
5) Model number of unit.
6) Engine make and serial number.
7) Length of time in use (hours on machine).
8) Date of Failure.
9) Nature of Failure.

Bandit Industries Inc., reserves the right to alter, improve, revise or modify any parts or products with the altered, improved, revised or modified parts or products. They also may change design, specifications, or part prices without advance notice.

Bandit Industries Inc., is NOT responsible for updating or upgrading completed machines with design changes that are made after it's production.

Bandit Industries Inc., expects the Customer/Owner to bring their machine to the Dealer/Manufacturer for Warranty Repairs. The Manufacturer DOES NOT pay Dealers or Customers for bringing their machine in for repair. Nor does the Manufacturer furnish loaner machines while the unit is being repaired.

TYPICAL GRINDER SERIAL NUMBER AND/OR WORK ORDER NUMBER LOCATIONS

1. Work Order Number
2. Serial Number

NOTE: The engine information is located on the engine block. The clutch information is located on the clutch plate.

SAFETY PROCEDURES

⚠ DANGER

The words ⚠ Danger, ⚠ Warning, ⚠ Caution, and Notice are used on the safety decals and throughout this manual, to make you aware of the safety procedures. These procedures are very important, read and obey them.

YOUR SAFETY IS VERY IMPORTANT TO US!

This machine is equipped with safety decals, guards and designs for your protection.

Don't ever take the machine for granted, always be cautious and careful when operating your equipment.

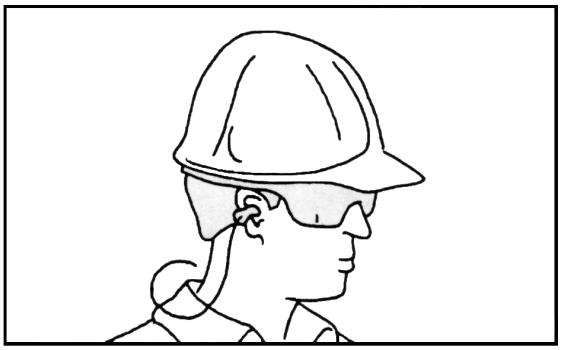
Read and follow all the instructions in your manual thoroughly. Your safety is dependent on your knowledge of how to operate and maintain this machine. You may obtain additional copies of this manual from your Bandit Dealer.

Before operating machine, you must have all potential operators; read and understand manuals and decals, watch video and follow the recommendations.

Regardless of how hard a manufacturer tries to produce a safe machine, accidents still happen. Normally accidents are caused by people making mistakes. They do not read the manual, they ignore warning decals or do not use lockouts provided for their safety. This normally happens after the person has become accustomed to the machinery. In the initial start up and operation of the machinery, they are cautious, they are very careful because they do not understand the machine.

This equipment is intended for use by personnel who are experienced with similar equipment. Always operate safely. It is also recommended that someone else is present while operating or servicing in case an accident should occur. Never operate any machine while under the influence of drugs or alcohol.

Keep children, bystanders and animals clear of working area. Never operate equipment that is in need of repair or adjustment.



⚠ DANGER

Before starting the machine, take a minute to check a few things. The grinder should be in an area restricted from people passing by. This area around the grinder must be free of all objects that can obstruct movement when working with the grinder. The machine should be checked for loose tools or foreign objects, especially in the grinding area. All tools not in use should be secured in a tool box.

⚠ WARNING

Operators **must** at all times be located within easy reach of all feed control and shut-off devices when the unit is running. They must be attentive and prepared to activate the devices.

⚠ DANGER

Torn or loose clothing is more likely to get caught in moving machinery parts. Keep such items as long hair, shirt sleeves, and shirt tails properly contained. Avoid wearing necklaces, rings, watches, and especially neckties while operating this machinery. Make sure the machine is in excellent condition, and all the guards are in place, tight and secure.

Wear all personal protection equipment and follow all safety standards per ANSI and OSHA instructions. Examples of equipment: hard hat, face shield, safety glasses, gloves, ear protection, etc. Always keep a fully charged fire extinguisher with the machine while operating and servicing the machine.

SAFETY PROCEDURES

⚠ DANGER

NEVER sit, stand, lay, climb or ride anywhere on this machine while it is running, operating, or in transit. You will be injured.

⚠ WARNING

It is very important after you have operated a new machine for approximately an hour to shut down the machine and recheck all hydraulic fittings. Retighten as needed.

DO NOT GO NEAR HYDRAULIC LEAKS! High pressure oil easily punctures skin causing serious injury, gangrene, or death. DO NOT use fingers or skin to check for leaks. Lower load or relieve hydraulic pressure before loosening fittings. Use a piece of cardboard to find leaks. Never use your bare hands.

In cold weather situations let your hydraulic system idle for approximately 15 minutes to allow the system to warm up to operating temperature.

⚠ WARNING

It is very important after you have operated a new machine for approximately an hour to shut down the machine and recheck all nuts and bolts. It is normal for nuts and bolts to loosen once on a new piece of machinery. If you tighten them now, there is a good possibility they won't loosen again. Certain nuts and bolts must be checked periodically such as cutter teeth bolts, etc. for torque and fit.

Most of the nuts used on the Bandit Grinder are self locking. After a nut or bolt has been removed five times, it should be replaced to insure proper tightness. This is especially critical on the cutter tooth bolts!

After the engine is started, let the grinder disc turn at the lowest RPM's possible. Listen for any type of noise that is foreign. Any steel on steel noise is foreign. If you hear a noise, stop the engine, find the problem and fix it.

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

⚠ DANGER

Do not go near or in-line with the debris field of the stump grinder while in operation. While grinding stumps, the chips and portions of the stump fly from the cutterhead and can cause severe injury.

⚠ DANGER

DO NOT operate this machine indoors! Exhaust fumes can be fatal. Never refuel while the machine is running. Never refuel in the shop or building. Always refuel in a well ventilated area, away from sparks or open flames, DO NOT SMOKE. Extinguish all smoking materials. Wipe up all spilled fuel before restarting the engine. Do not fill above 1/2" (12.7 mm) from top of tank.

To obtain the most from your machine, for the least amount of cost, it is a good practice to set up and follow a scheduled preventative maintenance program. It will eliminate many possible problems and down time.

⚠ WARNING

Never use jumper cables during freezing temperatures. Haul the machine inside and allow the battery time to warm up. If the machine must be started outside, inspect the battery acid for ice formation. Explosion will occur with a frozen battery. Never use jumper cables in a confined or unventilated area. Battery acid fumes are explosive. Never expose an open flame or spark near the battery.

⚠ DANGER

Before attempting any type of maintenance disengage clutch, turn off engine, wait for the cutter wheel to come to a complete stop, install the cutter wheel lock pin, disconnect battery, and make sure the ignition key is in your possession.

ALWAYS install the lock pin into the cutter lock tube before working on the grinder.

Simply slide the lock pin into the cutter wheel lock tube. This is to insure that the cutter wheel cannot be started while you are working on the grinder. If for some reason the cutter wheel would start to turn, it would simply hit the lock pin.

⚠ WARNING

DO NOT operate this machine unless all hydraulic control devices operate properly. They must function, shift and position smoothly and accurately at all times. Faulty controls can cause personal injury!

SAFETY PROCEDURES

⚠ DANGER

Never grind any materials that might contain wires, stones, nails, or other metal objects which may damage the teeth and become dangerous projectiles. Remove all rocks and stones from stump grinding area.

⚠ DANGER

Your machine may or may not be equipped with a clutch. Depending on the options ordered, some machines are direct drive.

Do not work on the machine if the engine is running with the clutch disengaged. A clutch can self engage if either the pilot or throw-out bearing happens to seize to the main output shaft.

There are various types of clutches (PTO's) available for this type of equipment. Make sure to study the original clutch manufacturer's manual that is provided with the machine and follow its instructions for operation, service, and adjustments. Some styles require clutch engagement to be maintained so that it takes a lot of force, others will require very little force, and some are push button, electric, manual lever, or hydraulic activation. Each different style clutch (PTO) is a very expensive item that will fail if not correctly maintained and adjusted. It will be quite costly if a few minutes are not taken daily, weekly, and monthly to keep the clutch serviced as required.

The operator must take care in the engagement and disengagement of the clutch, engine RPM should always be below 1000 RPM. When the engine has sufficiently warmed up, bump the clutch handle against engagement to start the cutter wheel turning. This will have to be repeated until the cutter wheel is turning at proper ratio with engine RPM. Then push the handle all the way in gear until it locks into position securely. After engagement raise engine RPM to full throttle. Engaging and disengaging the clutch at high engine RPM will quickly and excessively wear out clutch plates as well as bearings. Refer to clutch manufacturer's manual for proper service and operation.

NOTICE

Do not attempt to start the engine or engage the engine PTO (power-take-off) system on this machine if the cutter wheel is jammed or frozen in place. If you do, you will damage or ruin the drive belts and/or the PTO which will not be covered under warranty and will cost you down time and money.

⚠ DANGER

Do Not start to grind a stump unless you are completely sure there are not any power lines, water lines, sewer lines, phone lines, etc. in the area above or below ground level where you are grinding.

⚠ DANGER

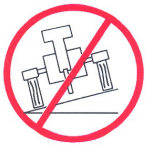
Never go near cutter wheel or teeth while engine is running or cutter wheel is coasting to a stop.

⚠ WARNING

Before you begin to transport your trailerized machine follow all of the transportation procedures on page 22. Make sure that the tongue has been raised to the proper height and attach the machine securely to the towing vehicle. Once secured to vehicle, locate tongue jack and secure it in the transport position. Always hook safety chains to vehicle by crossing them under the tongue allowing enough slack to avoid binding when making turns. Check brakes and highway lights make sure that they are all operating properly. Check that the plug terminal functions match the towing vehicle for proper operation. Be sure to check tire pressure before you begin to transport the machine.

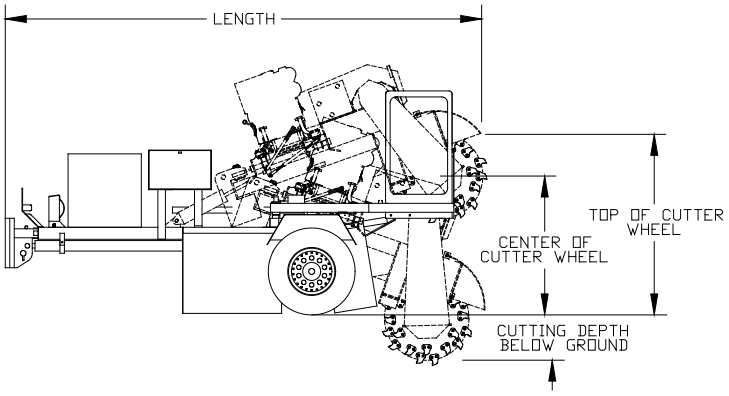
⚠ DANGER

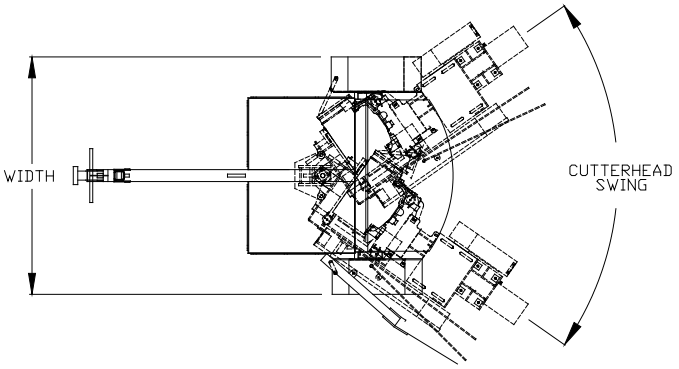
- Use **EXTREME CAUTION** when traveling over non-level surface! Not designed to be used on non-level surface.



- This machine can tip over or tip backwards on non-level surface. You will cause engine damage, machine damage and possible personal injury!
- Use caution when transporting to avoid a roll over because of narrow wheel base!

EQUIPMENT SPECIFICATIONS





Approximate Dimensions & Weights

(Dimensions & weights will vary depending on optional equipment)

Approx. Weight:	Model 2800:	3900 to 4200 lbs. (1769 to 1905 kg)
	Model 3200:	5000 to 5300 lbs. (2268 to 2404 kg)

(Approximate weights depending on engine and equipment options.)

Overall Dimension:	Model 2800:	Height: 78” (2.0 m),	Length: 140” (3.6 m),	Width: 66” (1.7 m)
	Model 3200:	Height: 79” (2.0 m),	Length: 160” (4.1 m),	Width: 79” (2.0 m)

Cutting Wheel:	Mod. 2800:	Top of: 43” (1.1 m)	Center of: 29” (.7 m)	Cutting Depth Below Ground: 14.5” (.4 m)
	Mod. 3200:	Top of: 49” (1.2 m)	Center of: 33” (.8 m)	Cutting Depth Below Ground: 24” (.6 m)

Cutterhead Swing:	Model 2800:	Arc: 83” (2.1 m)
	Model 3200:	Arc: 97” (2.5 m)

	Model 2800	Model 3200
Number of Teeth on Cutter Wheel:	32	48
Cutter Wheel Diameter with Teeth:	28” (711 mm)	32” (813 mm)
Fuel Tank Capacity:	24 Gallons (91 Liters)	24 Gallons (91 Liters)
Hydraulic Tank Capacity:	6 Gallons (23 Liters)	6 Gallons (23 Liters)

(Approximate dimension depending on equipment options.)

DECALS

Decals located on your Bandit equipment contain useful information to assist you in operating your equipment safely. Some of the decals on your machine and their location are shown in this section.

It is very important that all decals remain in place and in good condition on your machine. Please follow the care and instructions given below:

1) You should use soap and water to keep your decals clean. Never use mineral spirits or any other abrasive cleaners.
2) Replace immediately any missing or damaged decals. The location the decal is going to be applied to must be clean and dry, and at least 40° F (5°C) before applying decal.
3) When the need arises to replace a machine component with a decal attached, be sure and replace the decal.
4) Replacement decals are available, and can be purchased from the manufacturer or your Bandit Dealer.
5) Other language decals may be purchased. Spanish and other foreign language decals are available. Mail translated decals required to Bandit Industries, Inc.

EXAMPLES:

NOTICE

DECAL MAINTENANCE IS THE RESPONSIBILITY OF THE OWNER OF THIS MACHINE. KEEP DECALS LEGIBLE. DECALS (ETC.) ARE AVAILABLE IN OTHER LANGUAGES.

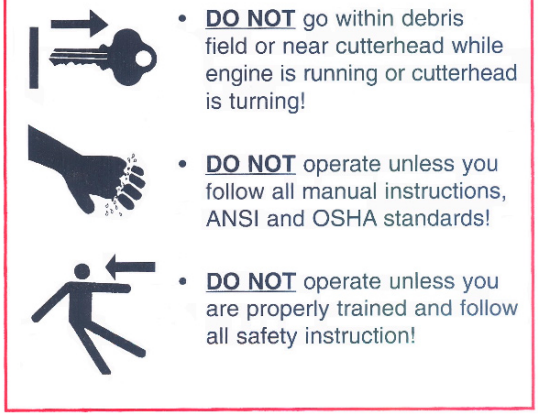
CONTACT: PARTS DEPARTMENT
6750 MILLBROOK RD.
REMUS, MI 49340
PHONE (888) 748-6348

DANGER

DO NOT insert fingers or amputation could occur.

DO NOT perform any maintenance until belts inside this hole have completely stopped moving.

DANGER



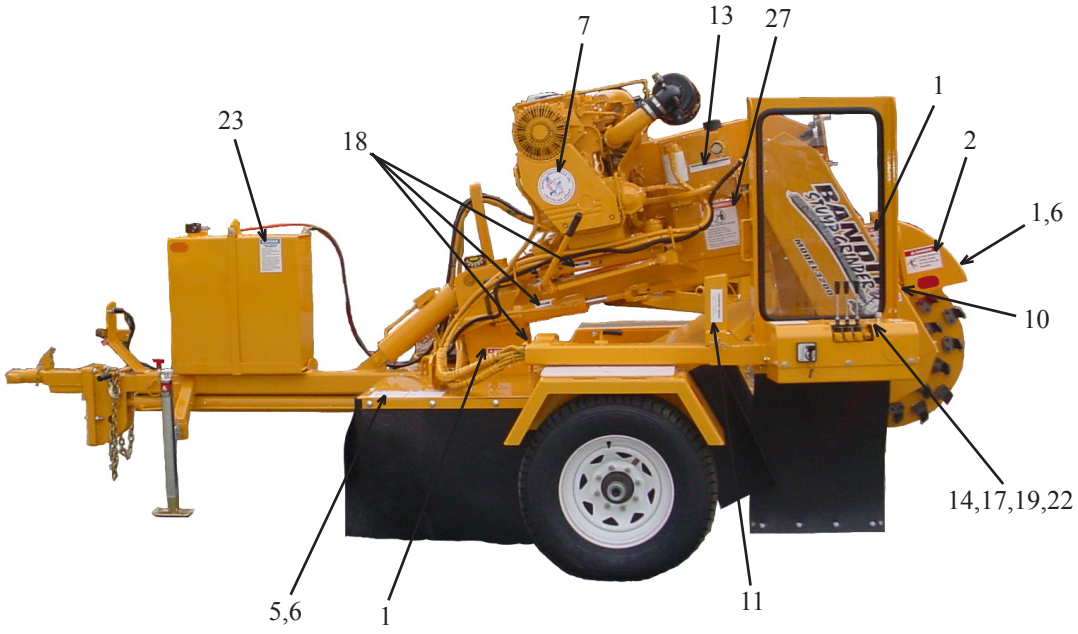
DANGER

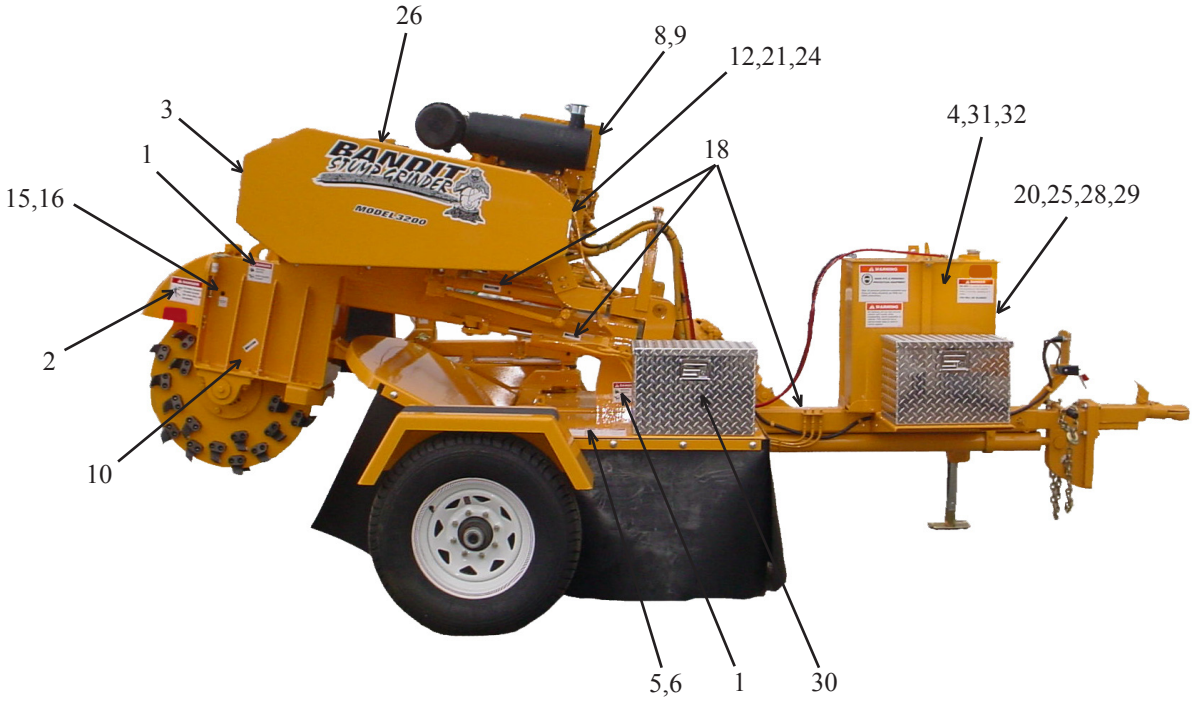
DO NOT sit, stand, lay, climb or ride anywhere on this machine while it is running, operating or in transit.

YOU WILL BE INJURED!

DECAL LOCATIONS

Decal locations may vary, these are general locations.





DECAL LOCATIONS

Modifications and/or additions of decals to this list will happen.
Consult grinder dealer or manufacturer for most current decal package.

LOCATION	NUMBER	DESCRIPTION
1.	SPD-02	Moving Parts Keep Hands...
2.	SPD-20	Flying Objects Stand Clear...
3.	SPD-28	...Belts Inside This Hole Stopped...
4.	SPD-30	Do Not Sit, Stand, Lay, Climb or...
5.	SPD-35	Extreme Caution...Non-Level Surface...
6.	SPD-36	...Debris Field...
7.	ID-42	Bandit Industries Inc...USA
8.	ID-53	Model 2800
9.	ID-56	Model 3200
10.	INST-12	Grease Daily
11.	INST-18	Transport Brace
12.	INST-44	Proposition 65
13.	INST-53	Hydraulic Oil...Hydrex XV...
14.	INST-62	Remote On - Controls Off - Machine On
15.	INST-73	Cutter Head Lock Hole
16.	INST-74	Cutter Head Lock Pin
17.	INST-79	Swing Speed - Counter Clockwise To Slow
18.	INST-86	Grease Daily (Double Arrows)
19.	INST-87	Cutter Down / Up ...
20.	INST-95	Electric Plug-In Schematic
21.	INST-101	Canada Engine Decal
22.	INST-110	Window Washing Instructions
23.	N-02	Maintain Lubrication...
24.	SPN-06	Decal Maintenance..
25.	N-22	Before Operating Remove Lock Pin...
26.	N-24	Service Under Beltshield...
27.	SPW-01	Do Not Go Near Oil Leaks...
28.	SPW-02	Diesel Fuel Only...
29.	SPW-03	Gasoline Fuel Only...
30.	SPW-04	Frozen Battery Will Explode...
31.	SPW-08	Wear Eye & Personal Protection...
32.	SPW-09	...Go Slow Around Corners...
33.		Bandit Model 2800 Vinyl Decals
34.		Bandit Model 3200 Vinyl Decals

Note: Some decals are for optional equipment. Decal Locations may vary, these are general locations. If any decals become damaged , replace immediately.

SUPER SWEEP OPTION

SUPER SWEEP SYSTEM

Consult the original manufacturer's manual for your grinders
Super Sweep operating and maintenance procedures

When processing material through the grinder, the swing system will automatically stop when the engine drops below a preset RPM point. The engine is constantly being monitored by an adjustable electronic speed switch. The switch can be adjusted so that at a given RPM, an electronic relay system will operate the hydraulic solenoid valves to stop until the engine has recovered speed. The Super Sweep system will reverse for a set period of time and then stop until the engine has recovered speed. The Super Sweep system will then automatically turn the swing on to resume travel.

Due to required components and equipment options a machine may have various types or brands of Super Sweep systems. Each grinder is shipped with the original manufacturer's manual for the Super Sweep system it is equipped with.

For the approximate Super Sweep settings on all optional Super Sweep systems refer to page 15 of the grinder manual. For part numbers on the hydraulic portion of the Super Sweep systems refer to pages 66 & 67 of the grinder manual.

Do not power wash the digital tach hour meters. Pressure causes unwarranted damage. **Do not spray tach, this will void warranty.**

PART NUMBERS FOR SUPER SWEEP DIGITAL TACH HOUR METERS

ESI Intelli-Feed
Part Number: 900-2908-11
For Service Call
1-815-985-0383

Electronic Solutions
Part Number: 900-2904-85
For Service Call
1-866-736-6839

No longer used.

L.O.R. MFG.
Part Number: 900-2906-82
For Service Call
1-866-644-8622

Miratron Inc.
Part Number: 900-2910-68
For Service Call
1-866-285-0132

No longer used.

TROUBLE SHOOTING GUIDE

POSSIBLE CAUSES WHY SUPER SWEEP DOES NOT WORK OR IS INTERMITTENT:

1. Super Sweep is not turned on.
2. Engine not coming back to full rated RPM.
3. Tach not programmed correctly.
4. Bad or corroded fuse holder.
5. Bad fuse.
6. Loose or corroded wire ends.
7. Not wired properly.
8. Alternator belt loose.
9. Alternator not working.
10. Hydraulic valve not working.
11. Hydraulic valve stuck in OPEN or CLOSED position.
12. Hydraulic coil bad.
13. Hydraulic coil not grounded properly.
14. Grinder belts loose.
15. Clutch slipping, not adjusted correctly.

APPROXIMATE DIGITAL SUPER SWEEP SETTINGS (FOR ALL SUPER SWEEP SYSTEMS - REFERENCE ONLY)

Current Engine Types	Maximum RPM	Alternator PPR	Magnetic Pick-Up PPR	Off RPM	On RPM	ALR (LOR only)	Swing Reverse Time
Caterpillar 3021CT 61 Hp	3025	N/A	126	2875	2600	N/A	.3
Deutz BF3L2011SC 61 Hp	2800	13	N/A	2650	2400	.4	.3
Deutz BF4L2011 79 Hp	2800	13	N/A	2650	2400	.4	.3

BRUSH BANDIT®

BUILT WITH QUALITY AND DESIGN FIRST

CONTROLS

Models 2800/3200 Basic Location of Controls and Adjustments

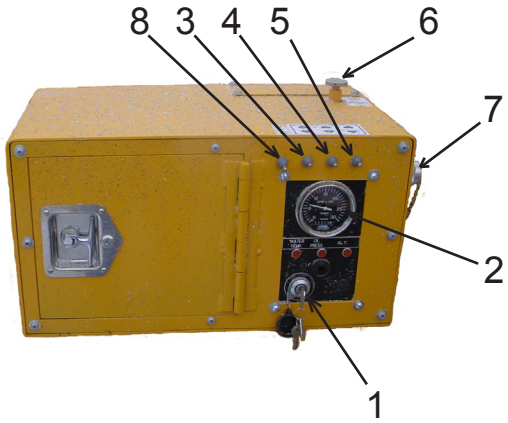
LOCATION SHOWN

1. Key Switch
2. Super Swing / Tachometer (Optional)
3. Cutter Wheel Lift
4. Tongue Extension
5. Cutter Wheel Swing
6. Swing Speed Control
7. Tether Plug
8. Local / Remote Switch
9. Engine Kill Switch

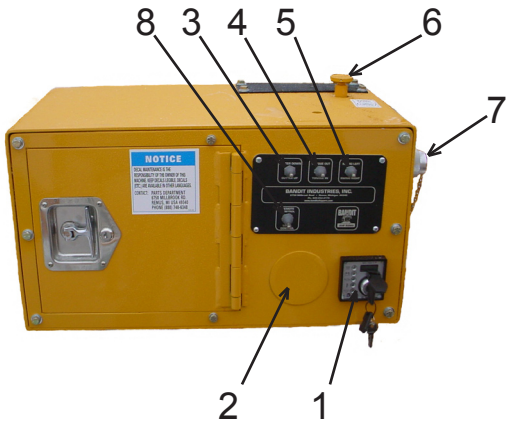
MANUAL CONTROL

REMOTE CONTROL

REMOTE CONTROL BOX
CAT ENGINE



REMOTE CONTROL BOX
DEUTZ ENGINE



CONTROL OPERATING PROCEDURES

Cutter Wheel Lift:

The cutter wheel lift operates the lift cylinder. To lower the cutter wheel, if using the manual controls or the remote controls, push the lever/switch, away from the operator or if using the the remote control box on the machine, pull the switch up, away from the ground. To lift the cutter wheel, if using the manual controls or the remote controls, pull the lever/switch, towards the operator or if using the the remote control box on the machine, push the switch down, towards the ground. The cutter wheel lift is in the off position when it is in the center location.

Tongue Extension:

The tongue extension operates the tongue cylinder. To extend the tongue, if using the manual controls or the remote controls, push the lever/switch, away from the operator or if using the the remote control box on the machine, pull the switch up, away from the ground. To retract the tongue, if using the manual controls or the remote controls, pull the lever/switch, towards the operator or if using the the remote control box on the machine, push the switch down, towards the ground. The tongue extension is in the off position when it is in the center location.

Cutter Wheel Swing:

The cutter wheel swing operates the swing cylinder. To make the cutter wheel swing to the left, if using the manual controls or the remote controls, push the lever/switch, away from the operator or if using the the remote control box on the machine, pull the switch up, away from the ground. To make the cutter wheel swing to the right, if using the manual controls or the remote controls, pull the lever/switch, towards the operator or if using the the remote control box on the machine, push the switch down, towards the ground. The cutter wheel swing is in the off position when it is in the center location.

Swing Speed Control:

The swing speed controls the rate the cutter wheel passes through the stump. To increase the swing speed control turn the knob clockwise. To decrease the swing speed control turn the knob counter clockwise.

Local / Remote:

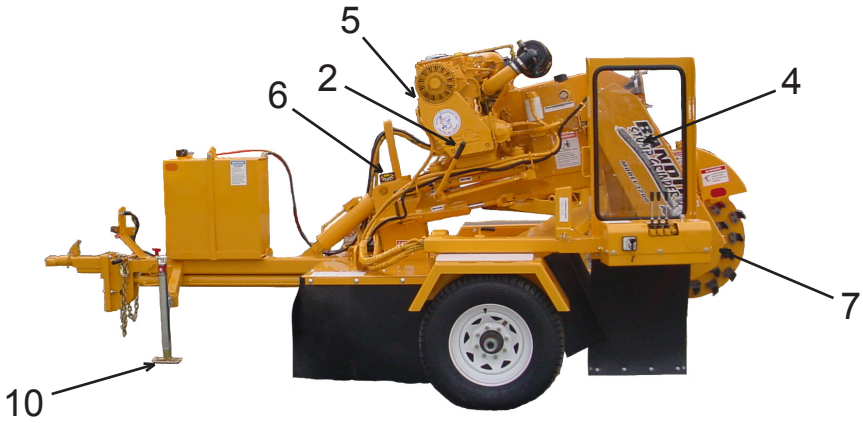
The local/remote switch determines which controls will be active, only used on the remote control box on the machine. If the switch is pulled up, away from the ground, the machine will respond to the remote control. If the switch is pushed down, towards the ground, the machine will respond to the controls on the remote control box.

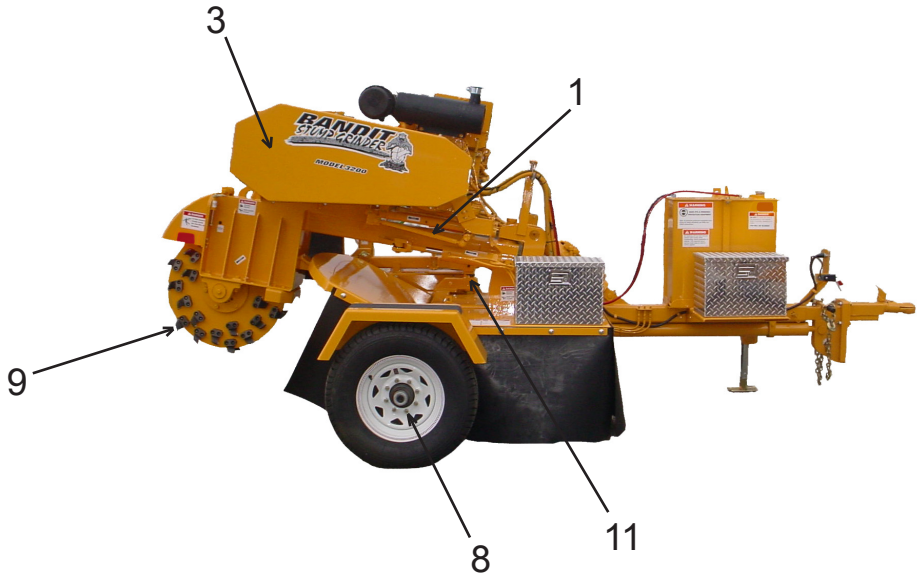
CONTROLS

Models 2800/3200 Basic Location of Controls and Adjustments

LOCATION SHOWN

1. Belt Tensioners
2. Belt Engage Handle
3. Grinder (Drive) Belts
4. Poly Chain (Cutter Wheel) Belt
5. Engine Throttle Adjuster
6. Engine Level Gauge
7. Debris Clean Out Door
8. Lug Nuts
9. Grinder Teeth
10. Foot Pad Jack
11. Chock Block





CONSULT THE ENGINE MANUFACTURER'S MANUAL FOR SPECIFIC CONTROLS, OPERATION, & MAINTENANCE FOR TYPICAL ENGINES

1) **Ignition Switch:**
Turn the ignition switch key clockwise one stop (on position) to turn the electrical system on. The key should remain in the on position while the engine is running. Turn the key fully clockwise (start position) this will start the engine. To shut off the engine, return the key to the off position.

2) **On/Off Switch - Push Button Start:**
Some gasoline engines may have a Toggle Switch or an On/Off Switch combined with a push button to start the engine. First turn the On/Off Switch or Toggle Switch to the on position, then depress and hold the Push Button Start until the engine starts, then release the button. To shut off the engine, return the On/Off Switch or Toggle Switch to the off position.

3) **Ignition Switch With Preheat:**
The typical diesel engine may have a preheat system to assist in starting the engine during cold weather. To activate the preheat system, continue to hold the ignition key in the preheat position for 15 to 20 seconds, then attempt to start the engine. If the engine fails to start within 15 seconds, return the key to the preheat position, hold 10 seconds, and try starting again.

4) **Choke Adjustment (if equipped):**
Some gasoline engines may have a choke adjustment, pull the choke lever out to choke the engine. Push the choke lever in for normal engine operations.

5) **Throttle Adjustment (if equipped):**
Some engines may have a knob or a handle for the throttle adjustment. Typically you would pull the knob out, or turn the handle to increase the engine R.P.M.'s. To decrease you would push in the knob or turn the handle the opposite way.

6) **"Bandit" Lever Lock Cable Throttle System (if equipped):**
The Bandit throttle system has (2) positions, HIGH and LOW. Engine R.P.M. is controlled by moving the lever from one position to the other.

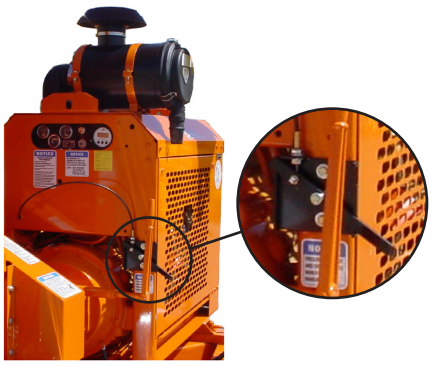
8) **Push Button Or Electric Throttle System (if equipped):**
Some engines may have a push button or electric throttle adjustment. Engine R.P.M. is controlled by pushing a button or switch to raise or lower the R.P.M.

9) **Alternator Warning Light:**
This light will glow when the alternator is not charging, or when the ignition switch is turned on and the engine is not running.

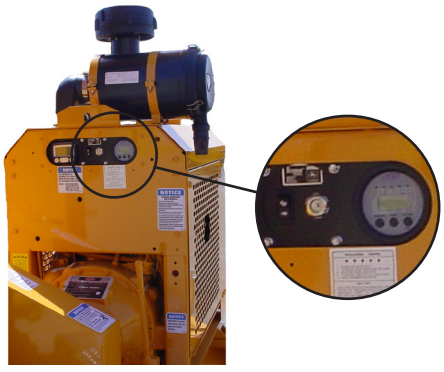
10) **Oil Pressure Warning Light:**
This light will glow when the oil pressure is to low, or when the ignition switch is turned on and the engine is not running.

11) **Engine Temperature Warning Light:**
This light will glow when the engine, or engine coolant, is above normal operating temperature. If this occurs allow the engine temperature to cool down. If the engine is overheating because of a loss of coolant, or a broken fan belt, shut the engine off immediately.

TYPICAL DIESEL ENGINES



BANDIT THROTTLE SYSTEM



PUSH BUTTON OR ELECTRIC THROTTLE SYSTEM

TYPICAL GASOLINE ENGINE

MACHINE OPERATION

- Check all fluids before starting the machine.
- Make sure to go through the daily start-up and maintenance procedures before operating the machine. See pages 23-25.
- Drive belts (if equipped) must be disengaged before starting.
- Start engine at idle speed and allow for sufficient time for oil to circulate before proceeding.
- Test all controls for proper operation.
- Avoid transversing slopes.

⚠ DANGER

DO NOT OPERATE AROUND WATER, GAS, POWER OR PHONE LINES. IF IN DOUBT, CHECK BEFORE GRINDING.

⚠ DANGER

WEAR ALL PERSONAL PROTECTIVE EQUIPMENT PER ANSI, OSHA AND MANUALS.

⚠ DANGER

KEEP CLEAR OF CUTTING WHEEL, MOVING MACHINE PARTS AND GRINDER DEBRIS FIELD

Position machine at stump with cutter wheel a slight distance away from stump.

Lift boom and remove boom chock block.

Reduce engine RPM to idle.

Raise cutterhead clear of stump.

Engage cutterhead drive belts by pushing down on engagement handle to relieve pressure on engine slide stop. Lift slide stop and slowly pull handle back to engage belts.

Increase engine RPM to full.

Test controls for proper operation, speed, and unobstructed movement.

Cutterhead swing speed should be adjusted to a rate that will allow cutter wheel to pass through stump smoothly. If jerking, bouncing or significant drops in engine speed occur, swing rate is too rapid and must be decreased.

Swing speed should be determined and adjusted with the controls in the full open position.

A swing speed control is located on the remote control (if equipped) or manual control to adjust this speed. Turning the dial counterclockwise will slow the swing action. Turning the dial clockwise will increase swing action.

Lower spinning cutter wheel to stump and make a few light passes at stump to get a feel for the cutting action.

Gradually increase cutting action and work away at stump by swinging cutter wheel left-to-right-to-left through stump in a sideways motion. Smooth, effortless cutting lengthens machine life, minimizes down time and is more profitable in the long run.

Continue cutting stump by adjusting cutting wheel progressively lower until stump is cut well below ground level.

Swing cutter wheel clear of stump and extend tongue to position machine closer to stump for next series of passes and continue cutting.

Continue in this manner until stump has been removed.

Larger stumps may require repositioning machine to remove complete stump.

Raise cutter wheel clear of stump and return to center position.

Withdraw tongue extension.

Reduce engine speed to idle and disengage drive belts. **DO NOT TURN OFF MOTOR**. Engine should be allowed to cool slowly at idle for 3-5 minutes to avoid damage.

MACHINE OPERATION (cont.)

DO NOT ENGAGE OR DISENGAGE DRIVE BELTS AT A HIGH ENGINE SPEED. Damage to belts and machine will occur.

At low engine RPM cutter wheel swing speed control needs to be closed for cutter head to swing. Turn clockwise to close. If machine is equipped with super sweep system, and autofeed is “ON”, you will not be able to swing cutter head at low RPM.

Turn off engine.

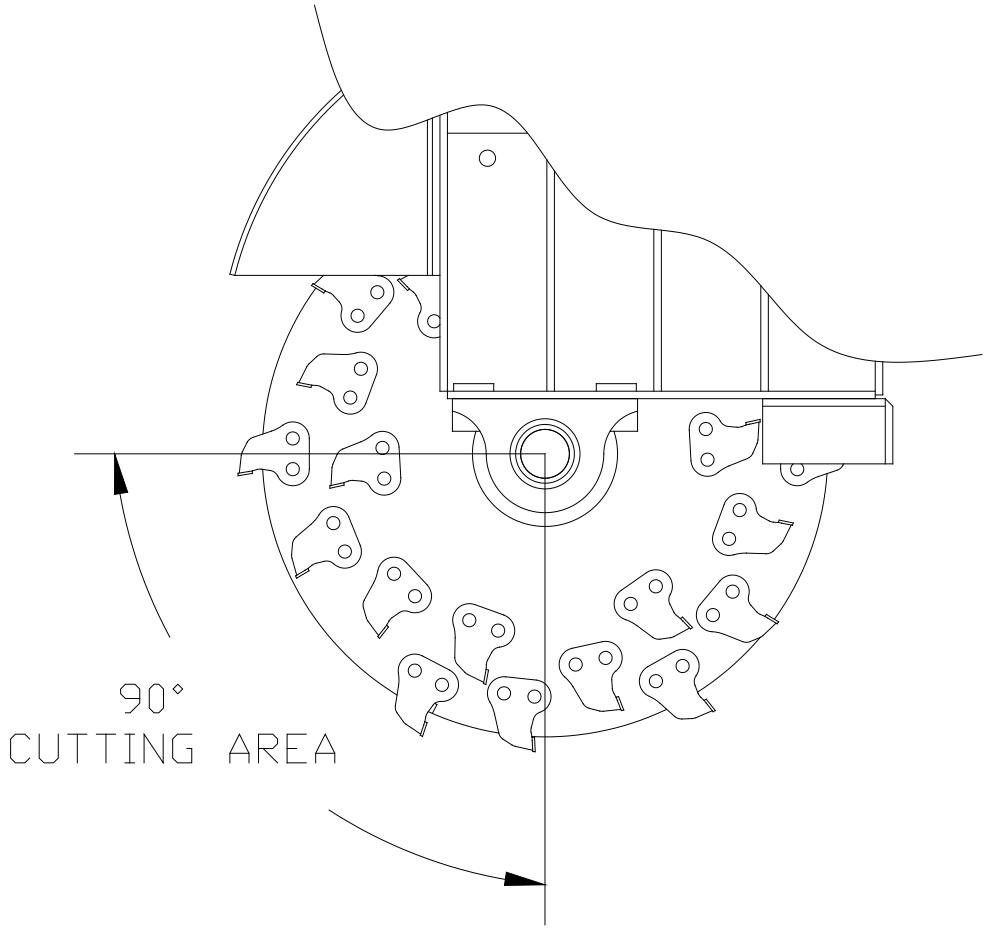
Allow cutter wheel to come to a complete stop before inspecting.

Do not run engine if not in white area of level gauge on boom.

CUTTING AREA

⚠ DANGER

For optimum performance, the stump should be cut with the portion of the cutter wheel shown below. **NEVER UNDERCUT THE STUMP**. Undercutting the stump may cause severe kickback, vibration and component damage. **NEVER CUT THE STUMP FROM THE TOP**. The cutter wheel will throw debris up and toward the operator, instead of down and under the machine.



Transportation Procedures

⚠ WARNING

BEFORE TRANSPORTING THE MACHINE THE FOLLOWING MUST BE COMPLETED

1) Idle engine and disengage clutch.
2) Place all hydraulic controls in the “off” position.
3) Turn off engine, wait for the cutterwheel to come to a complete stop and you must have the ignition key in your possession.
4) Store all tools in the tool box and makes sure all boxes and cabinets are closed and secured.
5) Place the cutterwheel in the transport position and install chock block.
6) Remove all excess debris. Remove any wood or debris which may have collected.
7) Raise the front of machine with the tongue jack.
8) Couple machine to transport vehicle by lowering the machine onto the hitch. Make sure the hitch matches the coupling size. Then secure hitch and lock it.
9) Place the tongue in the transport position.
10) Attach the safety chains by crossing them under hitch, make sure to allow the proper amount of slack in chains to avoid binding or dragging the ground when making turns.
11) Connect the brake breakaway cable (if equipped) and plug in the electrical connection for the lights on the machine.
12) Check running lights, turn signals, and brake lights. All must be operating properly before transporting the machine. Also check brakes (if equipped) to make sure they are operating correctly.
13) Check tires for correct pressure, cuts or damaged rims.
14) Check lug nuts and retorque if necessary. Check new units before operation, check again after 20-25 miles (32-40 km) and regularly check at least weekly.
15) Inspect and replace any axle dust caps that are damaged or leaking.
16) Check wheel bearings and grease or oil axles per axle manufacturer’s manual.
17) Walk around the machine to confirm that everything is secure and that there isn’t anything loose that could fall off during transport. Look under machine to ensure nothing is dragging. Look down both sides of the machine for anything sticking out that may become damaged during transport.
18) Close and secure any of the following, if equipped: engine cowl doors and side panels, radiator debris screens, inspection doors, housing covers, tanks caps and covers, etc.
19) The machine is now ready for transport. Make sure to obey all local regulation and laws regarding the transporting of this type of machine.
20) Do not drive too fast for road conditions or exceed speed regulations for equipment towing. Machine must be hauled level and the towing vehicle must be sized to handle hitch weight, towing weight, and braking requirements.

MAINTENANCE SECTION

The Bandit is a very simple machine to maintain. If you will follow a regular scheduled preventative maintenance program you should have years of trouble free operation.

⚠ DANGER

Before attempting any type of maintenance disengage clutch, turn off engine, wait for the cutterwheel to come to a complete stop, install the cutter wheel lock pin, place cutter wheel on the ground, disconnect battery, and make sure the ignition key is in your possession.

⚠ DANGER

Do not let anyone operate or maintain this machine until they have thoroughly read this manual, reviewed the equipment decals, watched the equipment video, and has been properly trained. You can purchase additional Bandit manuals, decals and videos for a nominal fee.

NOTICE

Consult your engine manual for proper break-in procedures. Various engines require somewhat different procedures, but basically the engines need to operate at lower R.P.M.'s and loads for a specific time.

NOTICE

Failure to properly break-in your engine may result in poor bearing and piston ring surfaces.

NOTICE

The Bandit has only been run for a short time to test proper hydraulic pressures, possible leaks, etc. The fuel tank will be empty. Fuel is provided through a small auxiliary tank for testing. This immensely helps maintain safety in our manufacturing facility and while shipping.

NOTICE

Expensive damage to the Bandit will occur if proper preparation is not taken before welding on the machine. Be sure to disconnect both battery cables and the engine ECM (engine control module) before welding. Follow the specific Engine MFG. instructions for proper welding and grounding procedures, before attempting to weld on the machine. If welding on the machine, do not ground the welder through the machine bearings, ground near work to be performed.

DAILY START UP & MAINTENANCE

1) Check the safety decals and engine gauges:
Replace any missing or damaged decals and/or engine gauges.

2) Check all safety equipment:
Check for proper operation. Repair or replace as needed.

3) Check entire machine for loose bolts, nuts, parts, or components:
Check entire machine for any loose parts or components. Check for loose nuts or bolts. Torque, tighten, or replace any of the loose components. See page 28 for specific bolt torques.

4) Check all guards:
Check to make sure all guards are in place and installed correctly. Make sure they are secure.

5) Check the cutter wheel and pockets for wear:
Check for elongated bolt holes, secure welds, torqued bolts, excessive wear and impact cracks. If a problem is found contact the grinder manufacturer or an authorized Bandit dealer.

6) Check condition of cutter teeth and hardware:
Grind or replace your cutter teeth to keep them sharp. Check the condition of your teeth hardware. Replace if necessary.

DAILY START UP & MAINTENANCE cont.

7) Check cutter teeth bolts:
All cutter teeth bolts must be factory approved. Bolts must be replaced after a maximum of 4-5 rotations/changes to insure safe clamping ability.

Torque to 150 ft.-lbs. (203 Nm) AT ALL TIMES.

8) Grease grinder bearings daily:
Use an EP-2 Lithium type grease only for all bearings. Purge grinder bearings with grease. You can not over grease these bearings. These bearings are designed with a relief system that will not allow over greasing. In other words, you can not hurt the bearing seals by pumping in too much grease. Most of the failures related to bearings are diagnosed as "contaminations". Contamination is caused by improper lubrication. Wipe off excess grease. **Excessive grease will attract dirt.**

9) Grease bottom pivot bushings:
Grease bottom pivot bushings with 1 to 2 shots of EP-2 Lithium type grease. Wipe off excess grease. **Excess grease will attract dirt**.

10) Grease engine slides:
Grease engine slide blocks daily. Use EP-2 Lithium grease. Wipe off excess grease. **Excess grease will attract dirt**. Oil slide bars with a lightweight oil such as WD-40.

11) Clean debris from beltshield and chain guard:
Inspect beltshield for debris and clean out any chips. Clean out poly chain guard by removing bottom portion of guard. Chip build up will wear or break poly chain belt.

12) Check / adjust the grinder belt tension and alignment:
The belts will need to be tightened several times in the first few days of operation. A loose belt will slip and glaze over. Once they slip you must replace them. See pages 42 - 44 for procedures. Check the grinder belt sheaves with a straight edge to ensure they are in line.

13) Check and torque set screws:
Check and torque set screws and/or clamp bolt on hydraulic pump and make sure it is fully inserted into shaft.

14) Check hydraulic oil level:
The hydraulic oil reservoir tank level should always remain at 7/8 full. Remember to check DAILY to avoid excessive heat build up.

15) Check for any fluid leaks:
Inspect for any oil, fuel, or hydraulic oil. Check all hoses, fittings, lines, and tanks. DO NOT use fingers or skin to check for hydraulic leaks. Repair or replace any damaged or leaking components.

16) Check the fuel level:
Check the fuel level, running out and repriming is time consuming.

17) Check engine oil and coolant levels:
Follow the engine manufacturer manual recommendations for fluid levels. You MUST follow specific ENGINE MFG. manual recommendations for radiator coolant, additives, lubrication, correct engine speed, ETC.

18) Check radiator, debris screen:
Thoroughly clean radiator fins at least once a day and twice in excessive condition. Make sure debris is not packed between fins. Use pressurized water spray to clean. Do not rely on air pressure. The radiator will only appear to be clean. A partially plugged radiator will not allow the engine to cool properly. Clean cooling fan, shroud on air cooled engines, and the debris screen (if so equipped). Improper service, maintenance, or neglect will cause overheating problems and engine failure.

19) Check air cleaner or precleaner:
Clean or replace element following engine manual recommendations.

20) Check clutch (if equipped):
Check for proper lubrication, and engagement tension adjustment, frequently adjust and lubricate per PTO clutch manufacturers manual. Bandit Industries Inc. does not warranty clutch failures.

21) Check tires:
Check tires for wear, weather checking, and damage. Replace if damaged.

22) Check around machine:
Check around the entire machine for tools, cans, saws, etc. All tools not in use should be stored in a tool box.

23) Review all safety procedures on decals, from manual, and from video.

24) Make sure all safety equipment is being worn:
Make sure you are wearing all of your safety equipment: hard hat, face shield, gloves, eye protection, ear protection, etc. per ANSI and OSHA standards.

25) Remember to check EVERYTHING on the checklist.

WEEKLY MAINTENANCE

1) Check set screws in bearings:
Check set screws in jack shaft bearings and cutter wheel bearings for tightness.

2) Grease engagement arm pivot:
Grease engagement arm pivot. Use EP-2 Lithium grease. Wipe off excessive grease. **Excessive grease will attract dirt.**

3) Grease cylinder lug pins:
Grease cylinder lug pins. Use EP-2 Lithium grease. Wipe off excessive grease. **Excessive grease will attract dirt.**

4) Check and retighten tank mount bolts:
Check the fuel tank and hydraulic tank mount bolts and retighten.

5) Check alternator and fan belts on engine (as applicable):
Adjust and maintain per the engine manufacturer's manual.

6) Check wheel lug nuts:
Keep lug nuts tight, retorque, replace if needed.

MONTHLY MAINTENANCE

1) Check towing hitch:
Check for excessive damage or wear. Replace if needed. Keep pintle ring greased to reduce wear.

2) Grease telescopic tongue:
With tongue extended, grease inside tongue with 1 to 2 shots of grease per side and spread evenly.

3) Grease swing pivot bearings:
Grease top and bottom swing pivot bearing zerk with 1 to 2 shots of EP-2 Lithium type grease. Wipe off excess grease. **Excessive grease will attract dirt.**

4) Check grinder bearings and grinder sheave:
Check, retighten all bearing bolts and belt sheave bushings to correct torques.

5) Check hydraulic pressures:
Check, reset and maintain all hydraulic pressure settings to the specified maximum, see page 35. This will give you the best performance from the hydraulic system.

6) Tire air pressure:
Fill each tire to rated capacity on tire.

7) Check bearing and bearing lock collars:
Check, retighten bearing lock collars to correct torques.

8) Check wheel bearings:
Check and grease wheel bearings per axle manufacturer's instructions.

9) Inspect dust caps and adjust brakes:
Inspect or replace axle dust caps. Inspect and adjust brakes as needed per axle MFG. manual.

10) Lubricate "Bandit" lever throttle cable:
If the machine is equipped with a "Bandit" lever throttle system, lubricate inner throttle cable and cable ends with a cable lube or SAE 10W/30 oil. Replace throttle cable if it doesn't operate smoothly.

3 MONTH MAINTENANCE

1) Hydraulic oil filter:
Must be replaced after FIRST 10 HOURS OF OPERATION, USE A 10 MICRON FILTER. After first change replace oil filter every 3 months or 400 hours.

6 MONTH MAINTENANCE

1) Grease outboard bearing:
Grease outboard bearing behind engine sheave every 6 months or 1000 hours. Use 1 to 2 shots of grease **DO NOT OVER GREASE.**

YEARLY MAINTENANCE

1) Hydraulic oil:
Change hydraulic oil and flush the hydraulic reservoir tank.

2) Hydraulic suction screen:
Change hydraulic suction screen yearly or every 2000 hours.

DAILY START UP & MAINTENANCE CHECK LIST

Each day before starting your machine these checks must be made:

		O.K.	Repaired
1)	Check the safety decals and engine gauges, replace if damaged.	☐	☐
2)	Check, maintain, and service all safety equipment for proper operation:	☐	☐
3)	Check entire machine for loose nuts, bolts, and components.	☐	☐
4)	Check all guards to make sure they are tight and securely in place.	☐	☐
5)	Check the condition of the cutter wheel and teeth pockets.	☐	☐
6)	Check the condition of the cutter teeth and hardware.	☐	☐
7)	Properly torque cutter teeth bolts.	☐	☐
8)	Grease (purge) grinder bearings and jack shaft bearings daily.	☐	☐
9)	Grease bottom pivot bushings with 1 to 2 shots.	☐	☐
10)	Grease engine slide blocks.	☐	☐
11)	Clean debris from beltshield and chain guard.	☐	☐
12)	Check and/or adjust grinder belt tension and alignment.	☐	☐
13)	Check and torque set screws, make sure hydraulic pump is properly installed.	☐	☐
14)	Check and always maintain hydraulic oil level at 7/8 full.	☐	☐
15)	Check all hoses, fittings, lines, and tanks for damage and fluid leaks.	☐	☐
16)	Check fuel level. (Running out and repriming is time consuming).	☐	☐
17)	Check engine oil, coolant levels, and correct engine speed. Follow ENGINE MANUFACTURERS manual specs. Engine Must Be Level To Check Fluids.	☐	☐
18)	Check radiator and debris screen. Clean as necessary. Clean cooling fan and shroud on air cooled engines.	☐	☐
19)	Check air cleaner and precleaner. Clean as necessary.	☐	☐
20)	Check clutch for proper engagement tension and lubrication, frequently adjust and grease per PTO manufacturers manual recommendations. (If equipped.)	☐	☐
21)	Check condition of the tires.	☐	☐
22)	Check around the entire machine for any foreign objects, tools, cans, saws, etc.	☐	☐
23)	Review all safety procedures on decals, from manual, and from video.	☐	☐
24)	Wear all applicable safety equipment: hard hat, gloves, eye protection, ear protection, etc.	☐	☐
25)	Remember to check EVERYTHING on the checklist.	☐	☐

WEEKLY CHECK LIST

		O.K.	Repaired
1)	Check set screws in cutter wheel bearings for tightness.	☐	☐
2)	Grease engagement arm pivot.	☐	☐
3)	Grease cylinder lug pins.	☐	☐
4)	Check and retighten fuel tank and hydraulic tank mount bolts.	☐	☐
5)	Check alternator and fan belts on engine.	☐	☐
6)	Check and retighten wheel lug nuts.	☐	☐

MONTHLY CHECK LIST

		O.K.	Repaired
1)	Check towing hitch for wear, keep pintle ring greased.	☐	☐
2)	Grease inside tongue with 1 to 2 shots and spread evenly.	☐	☐
3)	Grease swing pivot bearings with 1 to 2 shots.	☐	☐
4)	Check grinder bearings and grinder sheaves.	☐	☐
5)	Check hydraulic pressure. Set to specified PSI (bar).	☐	☐
6)	Check and fill tires to rated pressures.	☐	☐
7)	Check and retighten bearing lock collars.	☐	☐
8)	Check and grease wheel bearings, follow axle MFG. instructions.	☐	☐
9)	Check/replace axle dust caps. Adjust brakes, follow axle MFG. instructions.	☐	☐
10)	Lubricate “Bandit” lever throttle cable.	☐	☐

3 MONTH CHECK LIST

		O.K.	Repaired
1)	Replace hydraulic oil filter after first 10 hours, then quarterly or every 400 hours.	☐	☐

6 MONTH CHECK LIST

		O.K.	Repaired
1)	Grease outboard bearing behind engine sheave every 6 months or 1000 hours.	☐	☐

YEARLY CHECK LIST

		O.K.	Repaired
1)	Change hydraulic oil and flush the hydraulic tank.	☐	☐
2)	Replace the hydraulic suction screen annually or every 2000 hours.	☐	☐

MAINTENANCE SECTION

BOLT TORQUE CHART

(THESE TORQUES ARE BASED ON DRY, CLEAN THREADS)

DESCRIPTION	BOLT SIZE	TORQUE (FT-LBS)	TORQUE (Nm)
Grinder Bearing Bolts	5/8”-11 NC	190	258
Grinder Bearing Set Screw		57	77
Engine Hold Downs	1/2”-13 NC	95	129
Engine Sheave Bushing	1/2”-13 NC	60	81
Jackshaft Sheave Bushing	9/16”-12 NC	75	102
Jackshaft Cog Bushing		36	49
Cutter Wheel Cog Bushing		84	114
Cutter Wheel Bushing	9/16”-12 NC	84	114
1 1/2” Flange Bearing Bolt	3/8”-16 NC	40	54
Cutter Wheel Teeth Bolts	5/8”-18 NF	150	203
Hitch Mount Bolts	5/8”-11NC	220	298

Before tightening bolts be sure you have the correct size bolt for the correct amount of torque. Use only factory approved bolts and hardware.

BASIC WHEEL TORQUE REQUIREMENTS (per mfg.)

KEEP LUG NUTS PROPERLY TIGHTENED, CHECK NEW UNIT BEFORE OPERATION, CHECK AGAIN AFTER 20-25 MILES (32-40 km) AND REGULARLY CHECK AT LEAST WEEKLY.

5 & 6 Lug Hubs (1/2” - 20 Studs) .....90 - 120 ft.-lbs. Torque (122 - 163 Nm)
8 Lug Hubs (1/2” - 20 Studs) .....90 - 120 ft.-lbs. Torque (122 - 163 Nm)
8 Lug Hubs (9/16” - 18 Studs) .....110 - 120 ft.-lbs. Torque (149 - 163 Nm)
8 Lug Hubs (5/8” - 18 Studs) .....190 - 210 ft.-lbs. Torque (258 - 285 Nm) (Cone Nut)
8 Lug Hubs (5/8” - 18 Studs) .....275 - 325 ft.-lbs. Torque (373 - 441 Nm) (Flange Nut)
10 Lug Hubs (3/4” - 16 Studs) .....450 - 500 ft.-lbs. Torque (610 - 678 Nm)

(Consult axle manufacturers manual shipped with each machine for specific axle-stud-wheel combination lug nut torques.)

PAINT CARE

To help keep up the appearance of your Bandit Equipment and reduce the possibility of surface rust follow these steps:

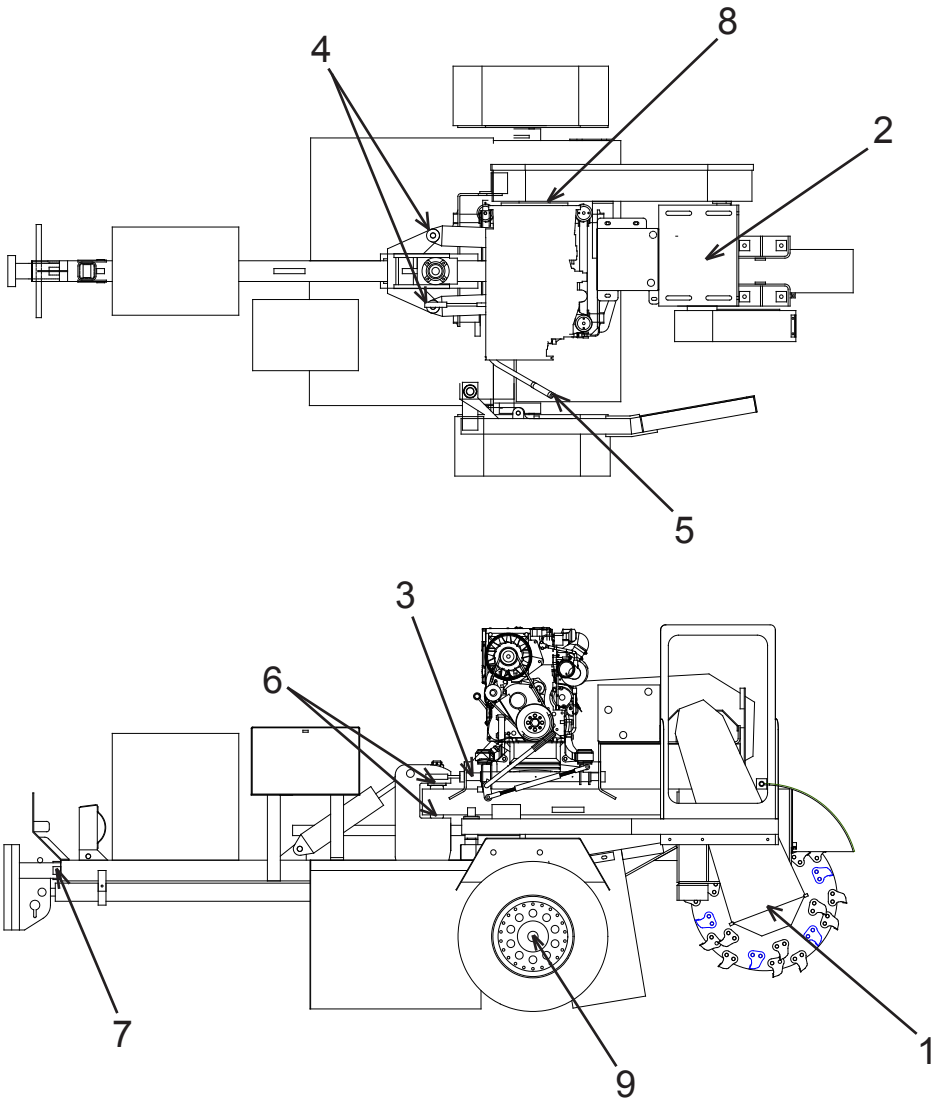
1) The machine should be washed on a regular basis with a non-abrasive mild detergent and then rinsed thoroughly. Do not pressure wash sensitive areas like: decals, gauges, electronic devices, etc.
2) If a stone chip, paint scratch, or paint crack occurs - it should be repaired immediately. Simply sand the edges of the damaged paint area, mask off the surrounding area and apply primer and paint to the dry, clean, and warm surface. This will help keep the damaged area from spreading or getting worse.
3) If you are unable to sand and mask the area, there are containers of primer and paint available. A small brush can be used to touch up the area.
4) Also, primer and most colors of paint are available in aerosol spray cans to simply spray over the effected area after it is cleaned, dry, and warmed. This method is not as reliable as the process in step #2.

It is also reported that some equipment owners polish their machine at least yearly and keep good mud flaps on their towing trucks.

TROUBLE SHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Engine will not start. (See Engine MFG. manual for further information.)	1. Loose ground cable. 2. Loose hot cable. 3. Dead battery.	1. Clean and tighten. 2. Clean and tighten. 3. Recharge or replace.
Belt squeal.	1. Belt tension too loose. 2. Belt out of alignment.	1. Tighten or replace. 2. Align pulleys.
Belt jumping off.	1. Engaging or disengaging belt at high engine RPM. 2. Belt keeper too far from belt. 3. Belt out of alignment.	1. Only engage or disengage belts at low engine speed or need replacement. 2. Adjust belt keeper closer to belt. 3. Make sure sheaves aligned properly.
Cutter wheel vibration.	1. Tooth missing. 2. Pocket out of balance. 3. Improper tooth arrangement. 4. Bad cutter shaft bearing.	1. Replace missing teeth. 2. Always replace pockets in pairs across from each other. 3. Install correctly with like pairs of teeth directly across from each other. 4. Replace bearing.
Cutter wheel throwing teeth.	1. Bad pocket. 2. Dirt in pocket.	1. Replace pocket. 2. Clean pocket and replace missing teeth.
Cutter wheel breaking teeth.	1. Operator hitting rocks.	1. Avoid rocks, stone, etc.
Cutter wheel stops turning.	1. Belt not engaged. 2. Belt loose. 3. Engine belt broke. 4. Poly chain broke. 5. Sheared key in shaft. 6. Broke cutter wheel shaft.	1. Adjust belt assembly. 2. Tighten. 3. Replace. 4. Replace. 5. Replace. 6. Replace.
Roar in machine when cutter wheel is engaged.	1. Belt guards rubbing on jack shaft or cutter wheel shaft. 2. Jack shaft or cutter wheel bearings going bad.	1. Reposition guards off of shafts. 2. Replace bearings.
Bearing will not take grease.	1. Grease fitting clogged.	1. Replace.
Machine will not run with remote hooked up.	1. 3-position switch on machine control panel is in off position. 2. 6-pin connector pins are touching and grounding machine out. 3. Y-connection in remote cable pulled apart. 4. Dead battery in remote.	1. Position switch on machine to remote and remote on switch to on. 2. Spread pins apart on inside of connector. 3. Reconnect wires in splice in remote cable. 4. Replace.

MAINTENANCE SECTION



		CHECK			
#	DESCRIPTION	DAY	WEEK	MONTH	PROCEDURE
1	Cutter Wheel Bearings	X			Purge bearings daily - wipe off excess
2	Jack Shaft Bearings	X			Purge bearings daily - wipe off excess
3	Engine Rails	X			Grease daily - wipe off excess
4	Cylinder Lugs		X		1 to 2 shots of grease - wipe off excess
5	Engage Pivot Arm		X		Grease weekly - wipe off excess
6	Pivot Bearing - Top & Bottom			X	1 to 2 shots of grease - wipe off excess
7	Telescopic Tongue			X	1 to 2 shots of grease to each side
8	Outboard Bearing			6 Month	1 to 2 shots of grease - wipe off excess
9	Wheel Bearings			X	See manufacturer's specs

TIRE WEAR DIAGNOSTIC CHART

Wear Pattern		Cause	Action
	Center Wear	Over Inflation	Adjust pressure to particular load per tire catalog
	Edge Wear	Under Inflation	Adjust pressure to particular load per tire catalog
	Side Wear	Not Hauling Trailer Level Bent Axles Wide Tires Wheel Bearings	Must be hauled parallel to ground Replace as needed Characteristic of wide flotation tires Adjust or replace
	Cupping	Out-Of-Balance Wheel Bearings	Check bearing adjustment and balance tires Adjust or replace
	Flat Spots	Wheel Lock Up & Tire Skidding	Avoid sudden stops when possible and adjust brakes.

The wear pattern and tread life of tires involves many variables that the user has control of, but **DOES NOT** fall under faulty manufacture or design.

The following is a list of some causes supplied by tire suppliers and axle manufacturers:

- Misalignment - from rough roads, pot holes, excessive speeds and hitting curbs.
- Tire Width - the wider the tire for flotation, the more uneven the tire wear.
- Tire Air Pressure - to much or too little, for the load.
- Vehicle Hitch Height - if trailer is not level with ground, axle camber is misaligned.
- Maintenance - wheel bearing lubrication and adjustment. Follow axle MFG. instructions.
- Brakes - uneven or misadjusted brakes cause irregular brake activation.

RECOMMENDED BRAKE ADJUSTMENT PROCEDURE PER AXLE MANUFACTURER.

The proper clearance between the shoe and drum surfaces will be set up initially from our factory to assure proper operation during the normal break in period. No further adjustment will be necessary until the vehicle completes the recommended break in period of 200 miles (322 km).

Since all brakes of this type must be burnished or “run in” before their full effectiveness can be achieved, the MFG. maintenance manuals call for readjustment after the first 200 miles (322 km) of operation. This usually allows ample time for the burnishing to take place. Readjustments is not necessary for brakes fitted with self-adjustment features although periodic inspection is suggested.

The following shows the correct adjustment for the MFG. brakes of 12” diameter and 12 1/4” diameter.

NOTICE: Clearances that are too small will result in excessive drag and overheating while too much clearance can render the brake nonfunctional.

AXLE SIZE	SIZE	TYPE	DIAMETRAL CLEARANCE	CLICKS TO BACK OFF
5200 LBS.	12” X 2”	Electric	.040” (1 mm)	10 TO 16
7000 LBS.	12 1/4” X 2.5”	Electric	.040” (1 mm)	7 TO 13

For additional brake adjustment procedures consult the axle manufacturer manual.

HYDRAULIC SECTION

⚠ WARNING

DO NOT GO NEAR HYDRAULIC LEAKS!

High pressure oil easily punctures skin causing serious injury, gangrene, or death. If injured, seek emergency medical help. Immediate surgery is required to remove oil. DO NOT use fingers or skin to check for leaks. Lower load or relieve hydraulic pressure before loosening fittings.

DO NOT operate this machine unless all hydraulic control devises operate properly. They must function, shift and position smoothly and accurately at all times. Faulty controls can cause personal injury!

Hydraulic Fluid Requirements

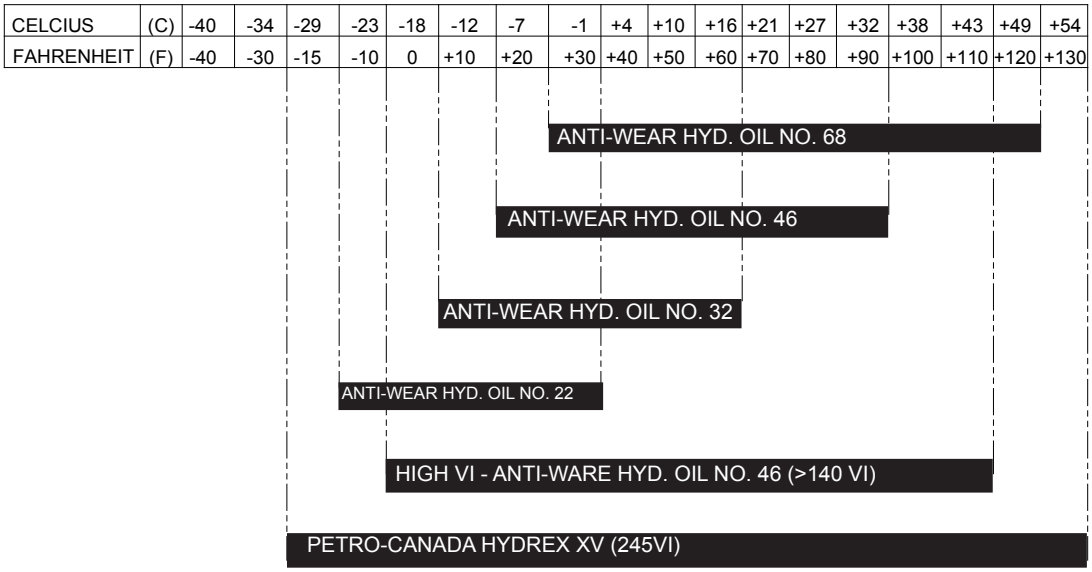
This machine is equipped with “Petro-Canada Hydrex XV” hydraulic fluid. It is recommended to replace with the same. “Petro-Canada Hydrex XV” is an all season hydraulic fluid. This is a premium performance, long life anti-wear, hydraulic fluid, designed for all season use in heavy duty hydraulic systems. “Petro-Canada Hydrex XV” allows year round use under wide extremes of temperature. It allows the hydraulic system to start at temperatures as low as -40°C/-40°F, under no load conditions and it improves lubrication of hydraulic components at high operating temperatures. It will also help protect against hydraulic failures during the wide temperature swings of spring and fall. To find the closest “Petro-Canada Hydrex XV” dealer call 1-888-284-4572.

Multi Viscosity motor oils not recommended to mix with “Petro-Canada Hydrex XV” hydraulic oil. AW oils may mix with “Petro-Canada Hydrex XV” hydraulic oil. The following are specifications and authorizations of compatible oils. Only a high quality anti-wear (AW) hydraulic oil containing foam, corrosion, rust and oxidations inhibitors should be used. This viscosity grade depends on the oil temperature in service, based on the climate and operating conditions.

	Hydrex XV	ISO 22, AW	ISO 32, AW	ISO 46, AW	ISO 68, AW	ISO 100, AW
Viscosity Index	>235	>95	>95	>95	>95	>95
Flash Point	>240°C /464°F	>200°C /395°F	>210°C /410°F	>220°C /430°F	>220°C /430°F	>240°C /464°F
Oxidations Stability (ASTM D0943)	>9,000 Hours	>3,000 Hours	>3,000 Hours	>3,000 Hours	>3,000 Hours	>3,000 Hours
Cold Start-up, No Load, Max	-40°C/-40°F	-34°C/-29°F	-26°C/-14°F	-19°C/-3°F	-9°C/16°F	-4°C/24°F

HYDRAULIC SECTION

Alternate hydraulic oils are available, but they do not equal the performance or longevity of the “Hydrex XV” oil. Consult the following information supplied by the oil distributor.



Note: The above chart is a suggested guide for viscosity of hydraulic fluids at start up ambient temperature. The load, demand, and cleanliness of the equipment will affect actual oil temperatures which can increase dramatically above ambient air temperatures during operation. The actual viscosity needed is based on oil temperature during operation and not air temperature. Compare your fluid specifications with the specifications below to verify compliance.

When choosing a hydraulic fluid - these maximum and minimum specifications must be met:

Minimum Viscosity during operation = 12 cSt
Maximum No-Load Viscosity at start-up = 2000 cSt

Hydraulic fluids vary in their resistance to oxidation at elevated temperatures, their ability to protect against metal-to-metal contact under increasing temperature, and their ability to separate water from the fluid. Viscosity is temperature dependant. Fluids with high viscosity-index (VI) will thin out slower at higher temperature and thicken slower at colder temperatures allowing a wider operating range. Choose a fluid that has test results in these areas for best results.

Based on the varying temperatures of the area where Bandit equipment is used, and the high demand and loads placed on this equipment, Bandit has filled each hydraulic system with Petro-Canada’s Hydrex XV All Season Hydraulic Fluid for maximum protection and performance.

Contact Petro Canada at (888) 284-4572 to find a dealer near you.

Note: Some equipment and components such as fluid engagement clutch’s (PTO’s) have their own lubrication requirements. Consult their manufactures manual for that information.

HYDRAULIC SECTION

THE BANDIT HYDRAULIC SYSTEM

The Bandit is equipped with a very efficient, simple hydraulic system. Each component is capable of withstanding a specified PSI (bar) and still operate for a very long time.

If the simple rules mentioned below are followed, the hydraulic components will last for years:

•After you have operated a new machine for approximately an hour shut down the machine and recheck all hydraulic fittings for tightness and leaks.

• Avoid hydraulic pump cavitation. Low oil levels or cold start-ups will cause the hydraulic pump to cavitate. Cavitation will ruin the pump and possibly the entire hydraulic system. Cavitation only has to happen once. This will start the pump on its way to ruin. Allow hydraulic system to turn slowly for several minutes in cold weather in order for hydraulic system to warm up. Cavitation is not covered under warranty.

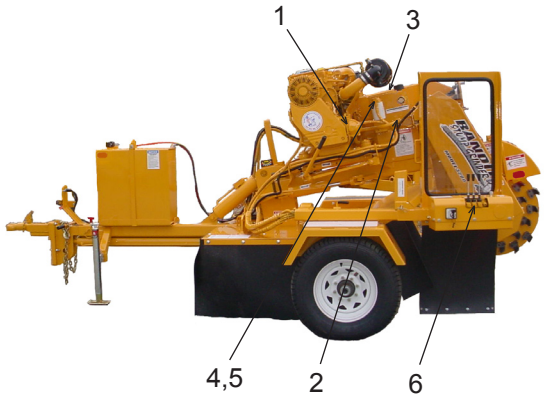
• Keep hydraulic oil clean. Dirty oil will cause excessive wear and loss of hydraulic power.

• Replace the hydraulic oil filter(s) after first 10 hours and with each 400 hours of operation or 3 months.

• Replace hydraulic oil & suction screen once yearly. This is also a very good time to flush and clean the tank. Replace hydraulic oil immediately if it is contaminated or looks “milky”.

• If the Bandit’s hydraulic system is kept clean and the hydraulic pressures are not increased beyond the specified PSI (bar), the maximum use and life should be received from the Bandit grinder hydraulic system.

HYDRAULIC COMPONENTS



1) PUMP:
The hydraulic pump could be bolted directly to the engine, or may be driven by a sheave/belt combination off of the grinder shaft.

2) SUCTION STRAINER:
This strainer stops contaminants from reaching the hydraulic pump. The suction strainer should be replaced every 2000 hours or yearly.

3) HYDRAULIC TANK:
This tank must be kept clean and filled minimum 7/8 full. Clean tank yearly.

4) FILTER:
This tank mounted filter cartridge must be replaced per maintenance schedule.

5) FILTER MOUNT:
The filter is tightened on the Filter Mount.

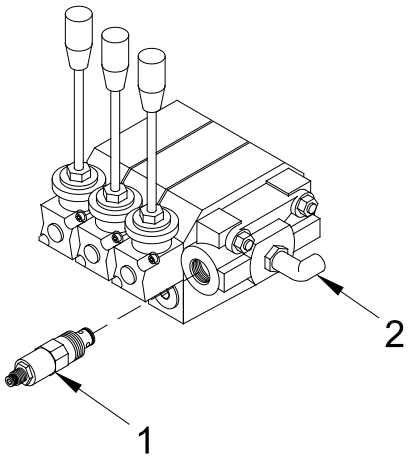
6) HYDRAULIC VALVE:
These valves are actuated by the control levers or the optional remote control. The valves actuate the hydraulic components to be used.

7) HYDRAULIC CYLINDER
Attaches to the tongue allowing adjustment in and out or to the upper swing arm allowing adjustment up and down and left to right.

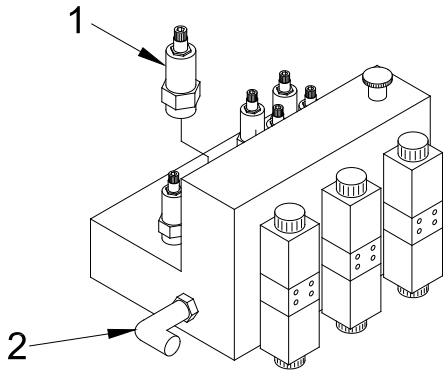
The relief valve is typically located internally in the control bank. Do not adjust this relief valve above 1500 psi (103 bar). The relief valve system is a simple spring tension design but small pieces of debris can stick the valve partially open which weakens the hydraulic power. The relief as well as hydraulic oil, and screen must be kept clean.

CHECKING SYSTEM PRESSURE

MANUAL CONTROL



REMOTE CONTROL



1. RELIEF VALVE
2. TEST PORT

⚠ WARNING

Before attempting to check any pressures, make sure engine is shut off, ignition key is removed and in your possession, hydraulic oil is clean, hydraulic tank is 7/8 full, and the machine has been pre-run to warm the hydraulic oil. To correctly check relief valve pressure, the pressure gauge MUST be installed correctly.

1. First lower cutter wheel boom and put all controls in neutral position.
2. Put pressure gauge into test port.
3. Leave all other hydraulic hoses connected.
4. Start engine and adjust engine to full throttle.
5. Operate controls of what component pressure is to be checked.

NOTICE

DO NOT UNDER ANY CIRCUMSTANCES OVER-SET THESE RELIEF PRESSURES, BECAUSE IT WILL CAUSE DAMAGE TO COMPONENT PARTS AS WELL AS HYDRAULIC PARTS.

NOTE: These Typical Hydraulic Flows And Relief Pressure Settings Are With The Engine At Full RPM. All Settings Are Subject To Change!

Equipment Model	2800 / 3200
Pump	4.7 GPM (17.8 LPM)
Main Relief Pressure	1500 PSI (103 bar)
Tongue Cylinder	1500 PSI (103 bar)
Cutterwheel Up	1500 PSI (103 bar)
Cutterwheel Down	850 PSI (59 bar)
Swing Left / Right	1500 PSI (103 bar)

TROUBLE SHOOTING

BEFORE ATTEMPTING ANY TYPE OF MAINTENANCE DISENGAGE CLUTCH, TURN OFF ENGINE, WAIT FOR THE CUTTER WHEEL TO COME TO A COMPLETE STOP, INSTALL THE CUTTER WHEEL LOCK PIN, DISCONNECT BATTERY, AND MAKE SURE THE IGNITION KEY IS IN YOUR POSSESSION.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Hydraulic oil very hot, causing system to operate slowly	1. Dull teeth 2. Low oil level 3. Worn pump, poor oil quality 4. Damaged hose 5. Oil suction screen or filter plugged 6. Binding	1. Replace teeth 2. Fill 7/8 full minimum 3. Replace 4. Replace 5. Clean or replace 6. Repair
Hydraulic system loss of power.	1. Low oil level 2. Poor oil quality 3. Bad cylinder 4. Bad pump 5. Pump belts slipping	1. Fill 7/8 full minimum 2. Replace 3. Replace or repair 4. Replace 5. Replace or repair
Swing cylinder loss of power.	1. Cutterhead speed adjustment screw turned wide open. 2. Bad cylinder	1. Screw in speed adjustment screw to close bypass. Readjust for “no bounce” cutting. 2. Replace or repair
Cutter head swings faster one way then the other.	1. Counter balance valve is out of adjustment. 2. Bad cylinder	1. Adjust counter balance valve to equalize swing speed. 2. Replace or repair
Cutter head does not stay in up position, creeps down	1. Counter balance out of adjustment 2. Bad cylinder	1. Adjust counter balance valve or replace counter balance cartridge. 2. Replace or repair
Cutter wheel turns while disengaged	1. Belt tension to tight	1. Adjust belt tension 2. Adjust belt per linkage 3. Slide engine towards cutterwheel

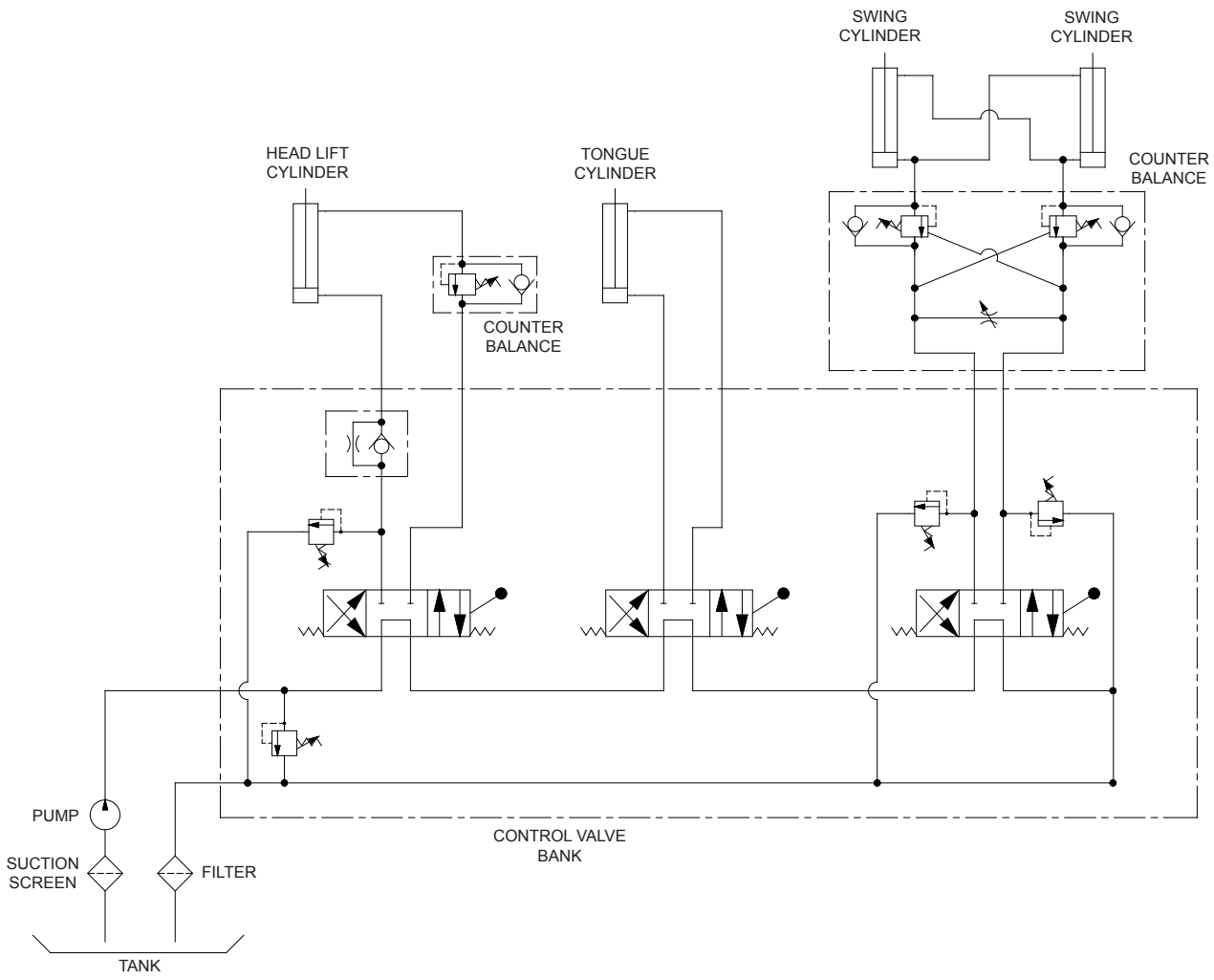
CORRECTING HYDRAULIC PROBLEMS

COMPONENT	PROCEDURE
Checking for defective pump	1. See pages 38 to 39 for instructions to check on a defective pump.

NOTE: When returning hydraulic components for warranty make sure to box up all warranted parts to avoid additional damage while shipping. **Do not disassemble any hydraulic components which are to be warranted.** Anything which has been disassembled or tampered with will not be warranted. Items being returned must be clean. All hydraulic components must have all hosing ports plugged. Failure to plug ports will allow debris to enter components which will void warranty.

HYDRAULIC SCHEMATIC

SPECIFIC SCHEMATIC FUNCTION MAY VARY
DEPENDING ON OPTIONS OR COMPONENT MANUFACTURER.



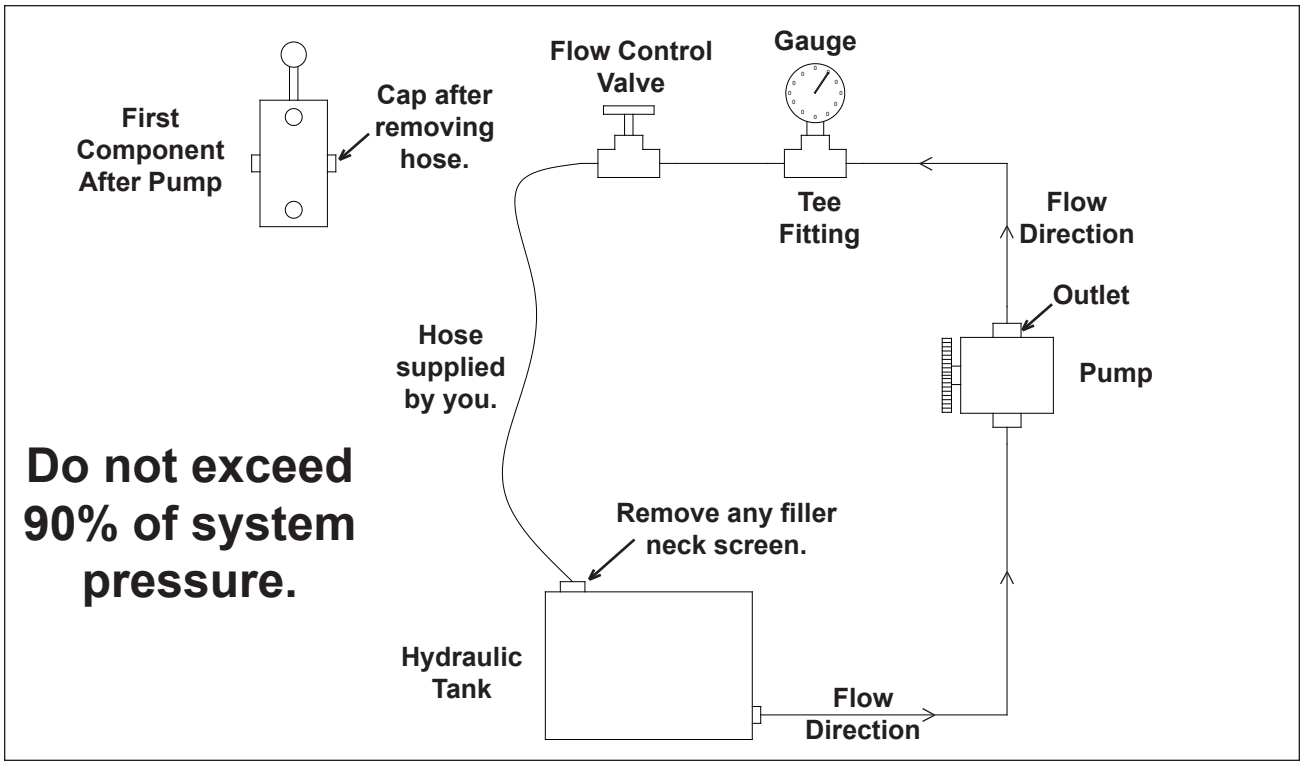
NOTE: Control valves are shown as manual control but, may be electric control depending on options ordered.

HYDRAULIC PUMP CHECK OUT

HYDRAULIC PUMP CHECK OUT WITHOUT USING A FLOW METER

To check out the hydraulic pump the mechanic will need a needle type flow control valve, a pressure gauge capable of reading 3000 psi (207 bar) and a long enough hose that will span between the pump and the hydraulic tank.

1) Disconnect the pressure line going from the pump at the first component and cap the fitting at the component.
2) Attach a Tee fitting to the end of the pressure hose (which was removed from the component) and install the Tee fitting and gauge.
3) Attach the hydraulic flow control valve to the Tee fitting and the hose (you supply) to the outlet port of the flow control valve.
4) **Make sure the pressure gauge is installed up stream from the flow control valve. Failure to do this will cause serious damage to the hydraulic pump when testing.**
5) If the hydraulic oil tank is equipped with a mesh strainer in the fill neck, remove it and place the open end of the hose (you supply) into the tank fill neck.
6) **MAKE SURE THAT THE FLOW CONTROL VALVE IS FULLY OPEN SO AS TO ALLOW UNRESTRICTED FLOW TO PASS THROUGH IT.**
7) Start the engine to engage the pump, the clutch may have to be engaged if the pump is belt driven.
8) Have a second person lift the hydraulic hose far enough out of the tank inlet to observe the flow of oil going into the tank. Observe the pressure gauge reading to make sure a high pressure does not exist.
9) Increase the engine speed slowly to full rpm and at the same time observe the pressure. This should still remain low.
10) **SLOWLY** turn the needle valve on the flow control in and observe the pressure increase on the pressure gauge.
11) Continue closing the flow control valve until the pressure gauge reading reaches 90% of the normal relief valve setting (example: if system operates at 2500 psi (172 bar), do not exceed 2250 psi (155 bar). **Never allow the pressure to go more than 90% of the main relief pressure.**
12) If the pump is good there should be no noticeable decrease in the flow rate coming out of the hose and into the hydraulic tank.
13) If 90% of the main relief pressure can not be obtained and/or the flow rate of the hose is considerably less, then the pump is worn or damaged.

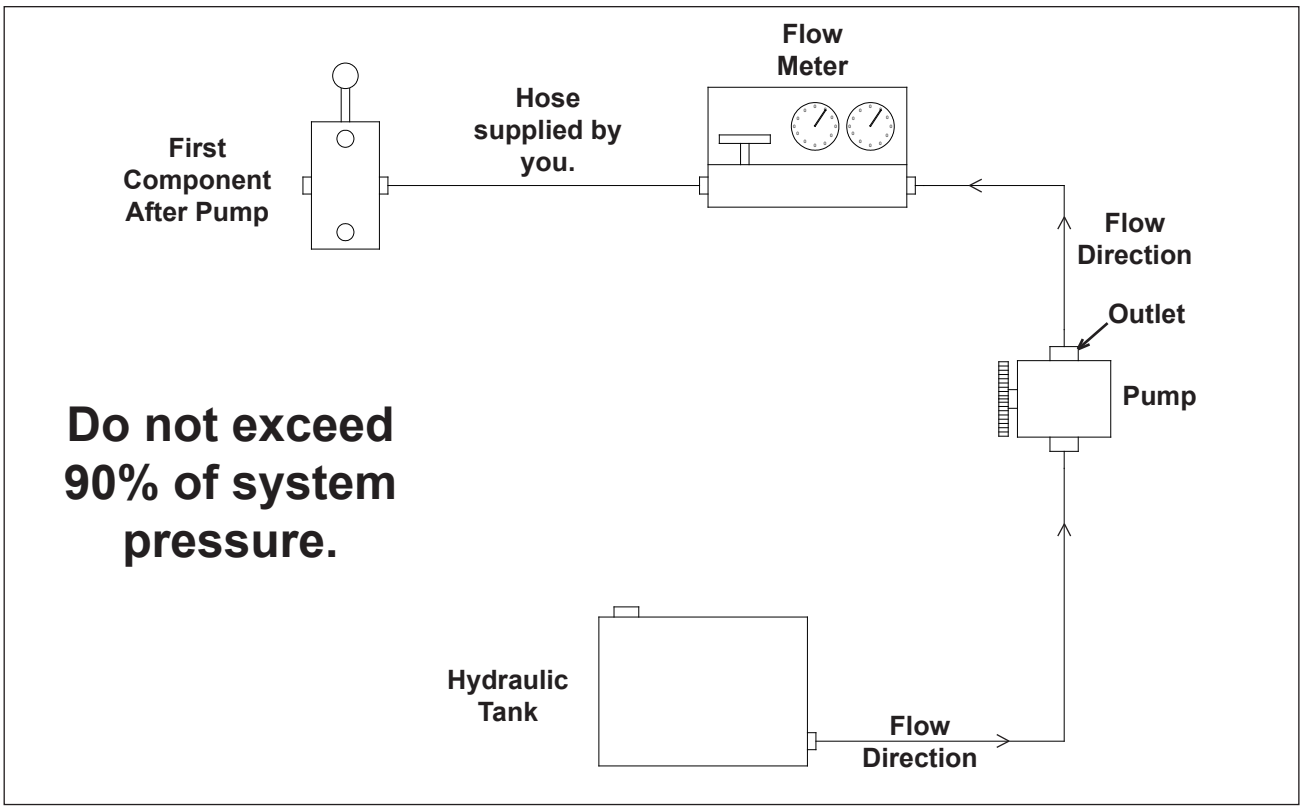


HYDRAULIC PUMP CHECK OUT

HYDRAULIC PUMP CHECK OUT USING A FLOW METER

To check out the hydraulic pump the mechanic will need a needle type flow meter capable of reading 3000 psi (207 bar) and a long enough hose that will go from the flow meter back to the first component.

1) Disconnect the pressure line going from the pump at the first component.
2) Attach the flow meter to the end of the pressure hose (which was removed from the component).
3) Attach the hose you supplied to the outlet of the flow meter and run the hose back to the first component. **MAKE SURE THE HOSES ARE ON THE CORRECT SIDES OF THE FLOW METER.**
4) **Make sure the pressure gauge is installed up stream from the flow control valve. Failure to do this will cause serious damage to the hydraulic pump when testing.**
5) **MAKE SURE THAT THE FLOW CONTROL VALVE IS FULLY OPEN SO AS TO ALLOW UNRESTRICTED FLOW TO PASS THROUGH IT.**
6) Start the engine to engage the pump, the clutch may have to be engaged if the pump is belt driven.
7) Observe the flow rate through the meter and pressure gauge reading to make sure a high pressure does not exist.
8) Increase the engine speed slowly to full rpm and at the same time observe the pressure and flow rate. The pressure should still remain low. Make a note of the flow rate (gpm or Lpm) at full engine rpm.
9) **SLOWLY** turn the needle valve on the flow control in and observe the pressure increase on the pressure gauge.
10) Continue closing the flow control valve until the pressure gauge reading reaches 90% of the normal relief valve setting (example: if system runs at 2500 psi (172 bar), do not exceed 2250 psi (155 bar). **Never allow the pressure to go more than 90% of the main relief pressure.**
11) If the pump is good, you should have at least 80% of the flow rate (gpm or Lpm) passing through the flow meter as noted at low pressure and full rpm (example: 10 gpm (38 Lpm) and low pressure = 8 gpm (30 Lpm) at 90% pressure).
12) If 90% of the main relief pressure can not be obtained and/or the flow rate passing through the meter is considerably less, then the pump is worn or damaged.



MODEL 2800 CUTTER WHEEL SECTION

DO NOT OPERATE MACHINE WITHOUT A FULL SET OF TEETH. OPERATING MACHINE WITHOUT A FULL SET OF TEETH CAN CAUSE EXCESSIVE VIBRATION AND PREMATURE BEARING FAILURE.

Use only original equipment manufacturer's teeth. The use of any other aftermarket teeth may cause damage or premature failure to the drive train.

There are thirty-two (32) teeth to a complete set on the model 2800. Two (2) straight teeth, fifteen (15) left 45° teeth, and fifteen (15) right 45° teeth.

Do Not operate machine with extremely worn or broken teeth.

A locking pin is provided to hold the cutter wheel in position during tooth removal and reinstallation. Locking pin will only lock on outer teeth. **NEVER USE HAND ON CUTTER WHEEL TO HOLD IN PLACE WHILE CHANGING TEETH. BE SURE TO REMOVE LOCKING PIN BEFORE OPERATING THE MACHINE.**

MODEL 2800 TOOTH ARRANGEMENT

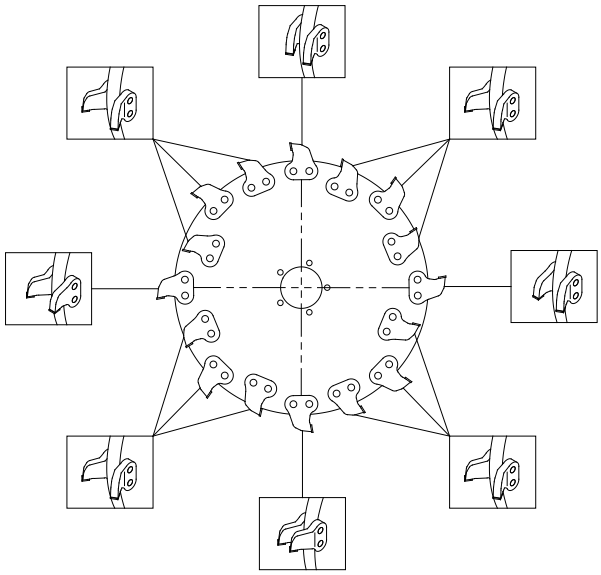
Inspect pockets, teeth and bolts for damage and replace as required.

When replacing pockets, always replace new pockets across from each other (180°) in order to prevent vibration.

Replacement teeth must be carbide tipped and of like design as provided with the machine.

Use anti-seize on threads to help prevent bolts from "freezing up" in cutter wheel pockets.

When replacing complete set of teeth, be sure to duplicate original factory tooth arrangement.
Torque bolts to 150 ft.-lbs. (203 Nm).



Straight teeth are mounted in **TWO OPPOSING POCKETS** (180°).

A straight tooth must have a 45° tooth accompanying it in the same pocket set. The opposite pocket sets should have this same combination of straight and 45° teeth, except with positions reversed. Mounting these teeth opposite each other on the cutter wheel reduces damaging vibration.

Two Remaining Outside Pockets require 45° teeth overlapping the center line of the cutter wheel to make plunge cuts possible. Mount two left 45° teeth opposite two right 45° teeth.

Inside Pockets require 45° teeth mounted away from the cutter wheel.

MODEL 2800

Straight Tooth:	900-9903-82
Left Tooth 45°:	900-9903-83
Right Tooth 45°:	900-9903-84
C'Bored Mounting Block:	900-9903-85
Threaded Mounting Block:	900-9903-86
Bolt:	900-9903-80
Tooth Kit:	900-9903-88

MODEL 3200 CUTTER WHEEL SECTION

DO NOT OPERATE MACHINE WITHOUT A FULL SET OF TEETH. OPERATING MACHINE WITHOUT A FULL SET OF TEETH CAN CAUSE EXCESSIVE VIBRATION AND PREMATURE BEARING FAILURE.

Use only original equipment manufacturer's teeth. The use of any other aftermarket teeth may cause damage or premature failure to the drive train.

There are forty-eight (48) teeth to a complete set on the model 3200. Two (2) straight teeth, twenty-three (23) left 45° teeth, and twenty-three (23) right 45° teeth.

Do Not operate machine with extremely worn or broken teeth.

A locking pin is provided to hold the cutter wheel in position during tooth removal and reinstallation. Locking pin will only lock on outer teeth. **NEVER USE HAND ON CUTTER WHEEL TO HOLD IN PLACE WHILE CHANGING TEETH. BE SURE TO REMOVE LOCKING PIN BEFORE OPERATING THE MACHINE.**

MODEL 3200 TOOTH ARRANGEMENT

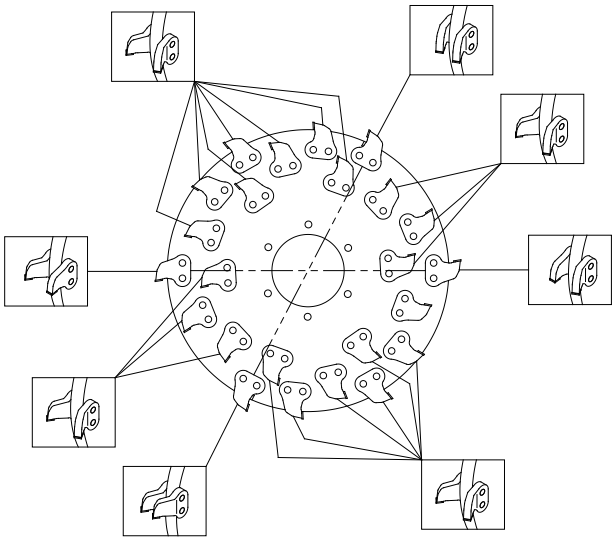
Inspect pockets, teeth and bolts for damage and replace as required.

When replacing pockets, always replace new pockets across from each other (180°) in order to prevent vibration.

Replacement teeth must be carbide tipped and of like design as provided with the machine.

Use anti-seize on threads to help prevent bolts from "freezing up" in cutter wheel pockets.

When replacing complete set of teeth, be sure to duplicate original factory tooth arrangement.
Torque bolts to 150 ft.-lbs. (203 Nm).



Straight teeth are mounted in **TWO OPPOSING POCKETS** (180°).

A straight tooth must have a 45° tooth accompanying it in the same pocket set. The opposite pocket sets should have this same combination of straight and 45° teeth, except with positions reversed. Mounting these teeth opposite each other on the cutter wheel reduces damaging vibration.

Two Remaining Outside Pockets require 45° teeth overlapping the center line of the cutter wheel to make plunge cuts possible. Mount two left 45° teeth opposite two right 45° teeth.

Inside Pockets require 45° teeth mounted away from the cutter wheel.

MODEL 3200	
Straight Tooth:	900-9903-82
Left Tooth 45°:	900-9903-83
Right Tooth 45°:	900-9903-84
C'Bored Mounting Block:	900-9903-85
Threaded Mounting Block:	900-9903-86
Bolt:	900-9903-81
Tooth Kit:	900-9903-89

BELT TENSION

GENERAL RULES FOR TENSIONING

1. Check tensioning during the first 2-48 hours of run-in operation.
2. Over tensioning or under tensioning shortens belt and bearing life.
3. Keep belts free from foreign materials that may cause the belt to slip.
4. Make V-drive inspection on a periodical basis. Never use belt dressing as this will damage the belt and cause early failure.
5. Belts should never be forced over the sheave. Allow enough room for belts to slip on during removal and replacement.
6. Always make sure sheaves are aligned properly.

TENSIONING PROCEDURE

Main Drive Belts

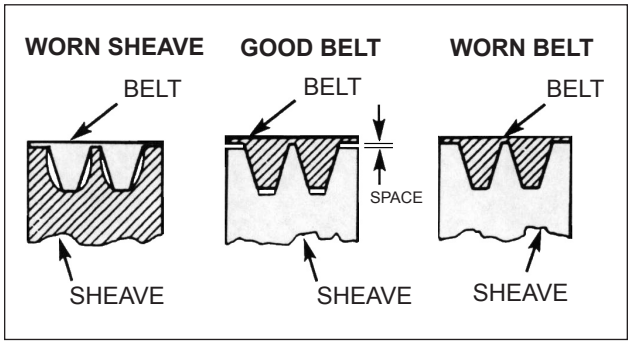
Follow all pre-maintenance shut down procedures. Locate the center of the belt span between the sheaves. Push or pull on the belt until the belt has deflected 1/2" (12.7 mm). Record the push or pull force. The force should be 66 lbs/belt (29.9 kg/belt) with a new belt or 44 lbs/belt (20.0 kg/belt) with a used belt for a Model 2800. The force should be 98 lbs/belt (44.5 kg/belt) with new a belt or 65 lbs/belt (29.5 kg/belt) with used a belt for a Model 3200. Adjust the belt tension if the force falls outside of this range. If belts are not properly adjusted belts will slip, glaze over and be ruined. This is NOT covered by warranty.

NOTE: It is a good practice to rotate the belts during tensioning. Then recheck deflections. The belts may need to be tightened again.

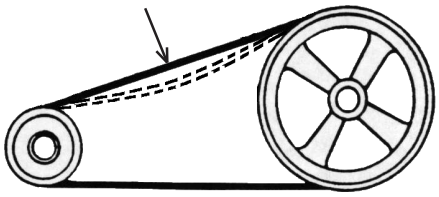
DO NOT IGNORE THIS MAINTENANCE RULE!

New belts stretch very soon and must be adjusted several times in the first few hours of operation. Adjust after one hour of operation, then every four hours until the belts quit stretching.

Failure to do this will cause the belts to burn and fly off. **THIS FAILURE IS NOT COVERED BY WARRANTY!**



Main Drive belt maximum of 1/2" deflection with 66 lbs. (new) or 44 lbs. (used) of force for a Model 2800.
Main Drive belt maximum of 1/2" deflection with 98 lbs. (new) or 65 lbs. (used) of force for a Model 3200.

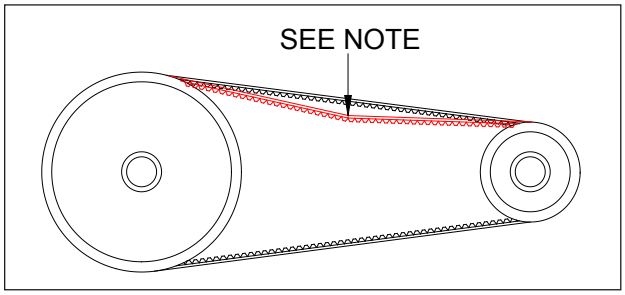


Poly Chain Belt

Special care needs to be taken with your poly chain belt. Alignment, tension, and cleanliness of this belt is very important. The poly chain belt needs to be checked for tension approximately every 70 to 100 hours of use. The poly chain belt must be running true. If you adjust one bearing more than the other, the belt will run on an angle which will cause belt failure. When replacing the poly chain belt, do not try to pry belt on over pulley, this can break the fibers in the poly chain belt. After you have installed or re-tensioned the poly chain belt, you will have to readjust the engine belt for proper tension.

Remove the poly chain guard cover and bottom cover. Loosen poly chain belt by moving jack shaft bearings back toward rear of machine. Mark them so that you know how they are positioned on the jack shaft plate. Loosen, do not remove, the four bolts that hold the jack shaft bearings down. Loosen the jam bolts in the back and move the bearings back toward cutter wheel. Remove old belt and replace with new one.

To adjust tension of the belt, slide the bearings back into the place that you had marked. Tighten the jam bolts. To tighten the belt more if needed, loosen the front jam bolts and tighten each of the back jam bolts the same number of revolutions, to keep the alignment true. Then once the belt is adjusted, tighten the front jam bolts back against the bearing. Check poly chain pulleys with a straight edge to ensure that they are in line. You will also have to check v-belt for tightness and straightness after adjusting the poly chain belt.



Model 2800

NOTE: For a new belt, the deflection is a 7/16” (11.1 mm) with 37 lbs. (16.8 kg) of force. For a used belt, the deflection is a 7/16” (11.1 mm) with 30 lbs. (13.6 kg) of force.

Model 3200

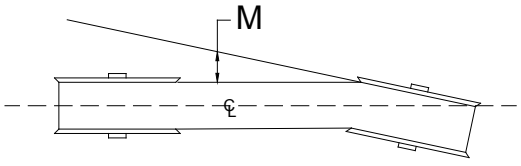
NOTE: For a new belt, the deflection is a 9/16” (14.3 mm) with 60 lbs. (27.2 kg) of force. For a used belt, the deflection is a 9/16” (14.3 mm) with 46 lbs. (20.9 kg) of force.

Sprocket Alignment and Installation

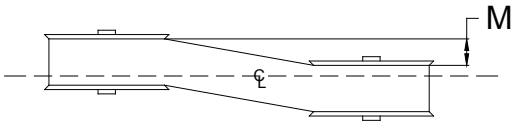
Sprocket and pulley alignment is very important. Proper alignment allows the load to be transferred equally across belt width, which reduces wear and improves belt life.

1. Place a straight edge on the outside of the drive pulley, making sure that the straight edge touches the outside and inside of the pulley.
2. Move the sprocket until the straight edge touches both outside edges and inside edges.
3. Make sure sprocket and pulley are properly aligned. Alignment should be within 1/4 degree. This is the maximum “M” dimension of .05” per foot (1.3 mm per 305 mm) center distance.

ANGULAR MISALIGNMENT

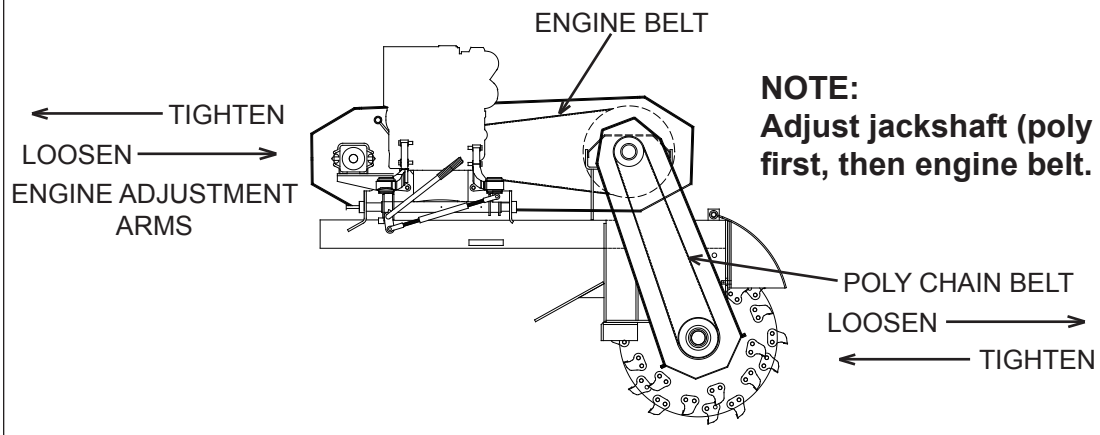


PARALLEL MISALIGNMENT



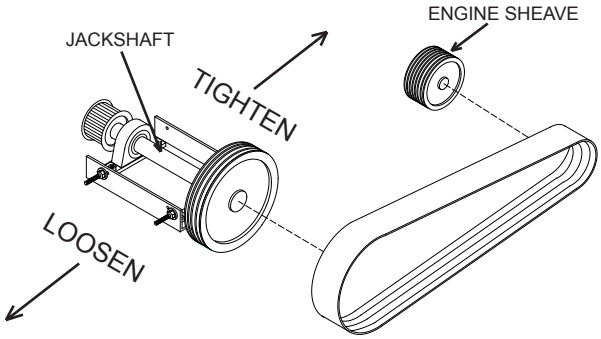
Sprocket Installation

1. Inspect the bore of the sprocket and the bushings tapered surface. Remove any oil, dirt or grease.
2. Place bushing in sprocket inserting screw loosely
3. Place key in key set and slide sprocket to its desired location with the screw head facing outside. If bushing goes on hard check shaft for burrs, remove if necessary.
4. Check for proper alignment of belts and evenly tighten bolts to recommended torque (SEE PAGE 28).



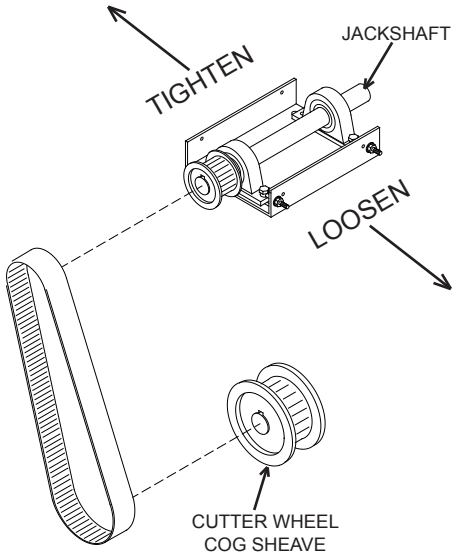
NOTE:
Adjust jackshaft (poly chain belt) first, then engine belt.

DRIVE BELT



NOTE:
Adjust each jam nut the <u>EXACT</u> same revolutions to maintain proper sheave alignment.

JACKSHAFT BELT



LUBRICATION & COOLANT

1) **Engine:** Follow original equipment manufacturers requirements for both changing oils and filters, refer to engine manual specifications.
2) **Engine Coolant:** Refer to engine manufacturers manual specifications.
3) **Clutch (if equipped):** Follow original equipment manufacturers requirements for both greasing and adjusting. Frequently adjust, and grease per PTO manufacturers manual.
4) **Wheel Bearings:** Follow axle manufacturer's instructions for greasing wheel bearings.
5) **Hydraulic Reservoir Tank:** Completely change hydraulic oil, suction screen(s), and flush the tank annually. Change hydraulic oil filter AFTER FIRST 10 HOURS OF OPERATION. Then change hydraulic oil filter(s) every 400 hours or 3 months thereafter. Maintain hydraulic oil level 7/8 full. See hydraulic oil requirements below. Check hydraulic oil level in tank daily.
6) **Hydraulic Fluid Requirements:** See pages 32 - 33 for hydraulic fluid requirements.
7) **Engine Slide Blocks:** Grease engine slide blocks daily with an EP-2 Lithium type grease. Wipe off excess grease. **Excessive grease will attract dirt.** Oil slide bars with a lightweight oil such as WD-40.
8) **Bottom Pivot Bushings:** Grease bottom pivot bushings daily with one (1) or two (2) shots of EP-2 Lithium type grease. Wipe off excess grease. **Excessive grease will attract dirt.**
9) **Engagement Arm Pivot:** Grease engagement arm pivot weekly with an EP-2 Lithium type grease. Wipe off excess grease. **Excessive grease will attract dirt.**
10) **Swing Pivot Bearings:** Grease top and bottom swing pivot bearing monthly. Use one (1) or two (2) shots of EP-2 Lithium type grease. Wipe off excess grease. **Excessive grease will attract dirt.**
11) **Outboard Bearing:** Grease outboard bearing behind engine sheave with 1 to 2 shots of an EP-2 Lithium type grease once every 6 months or 2000 hours. May need to remove the beltshield. **DO NOT OVER GREASE.**
12) **Cylinder Lug Pins:** Grease cylinder lug pins weekly. Use one (1) or two (2) shots of EP-2 Lithium type grease. Wipe off excess grease. **Excessive grease will attract dirt.**
13) **Grinder & Jack Shaft Bearings:** Use an EP-2 Lithium type grease only for all bearings. Purge grinder bearings and jack shaft bearings with grease you can not over grease these bearings. These bearings are designed with a relief system that will not allow over greasing. In other words, you can not hurt the bearing seals by pumping in to much grease. Wipe off excess grease. **Excessive grease will attract dirt.**

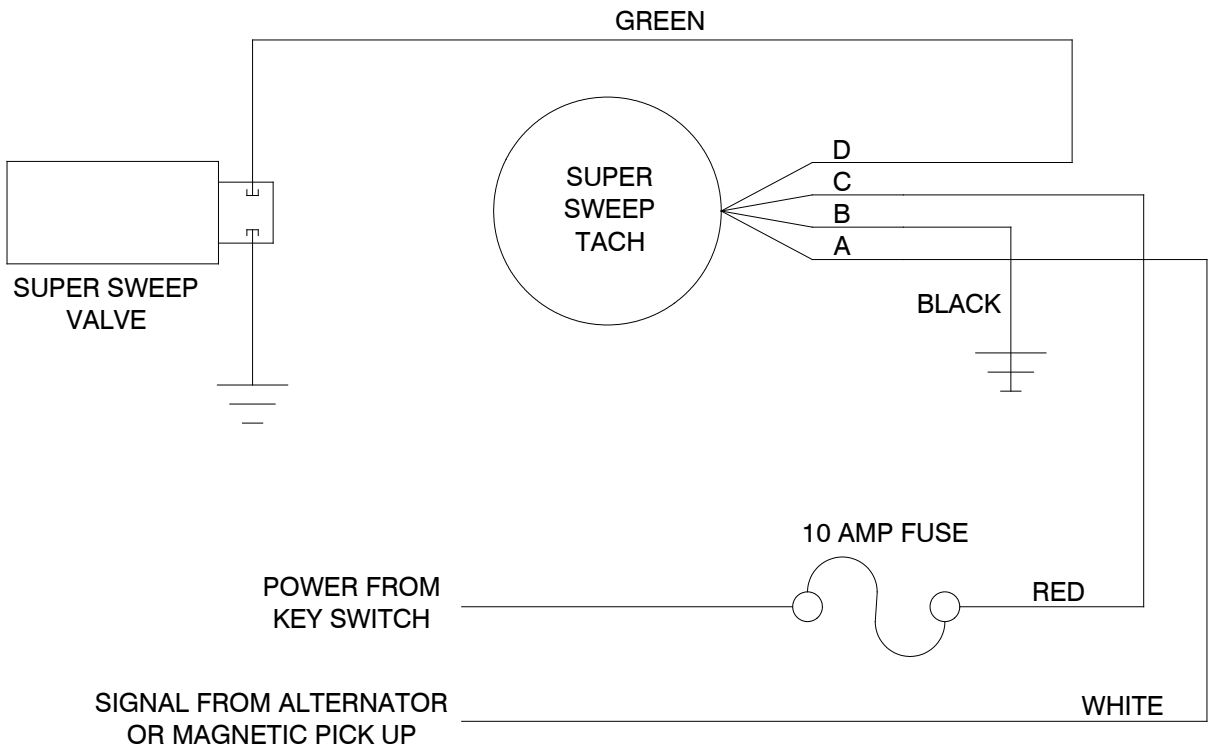
    Most of the failures related to bearings are diagnosed as "Contamination". Contamination is caused by improper lubrication.

    Especially important is proper lubrication when the grinder is setting idle. The bearings must be fully purged when shut down. Then the bearings must be again fully purged each thirty (30) days and the machine allowed to run for approximately 10 minutes. Then fully purged again before the machine is put back into operation. Failure to do this will ruin the bearings. Bearings corrode when the machine is setting idle.

    The second largest cause of bearing failure is operating them at high speeds when the grease is cold. This causes the bearing race to turn on the shaft. Naturally this ruins the bearing as well as the shaft. Allow the bearings to turn at slower speeds for at least five minutes. Also check the bearing lock collar set screws for tightness each 30 days. Loose set screws allow the race to turn on the shaft. Failed bearings diagnosed as contamination or cold starts at high speed are not covered by warranty of the bearing manufacturer.
14) **Telescopic Tongue:** With tongue extended, grease inside tongue with 1 to 2 shots of an EP-2 Lithium type grease per side and spread evenly every month.
15) **Pintle Eye Ring:** Keep greased to reduce wear and extend the normal life of your pintle eye ring.
16) **"Bandit" Lever Throttle Cable (if equipped):** If the machine is equipped with a "Bandit" lever throttle system, lubricate inner throttle cable and cable ends with a cable lube or SAE 10W/30 type oil every month. Replace throttle cable if it doesn't operate smoothly

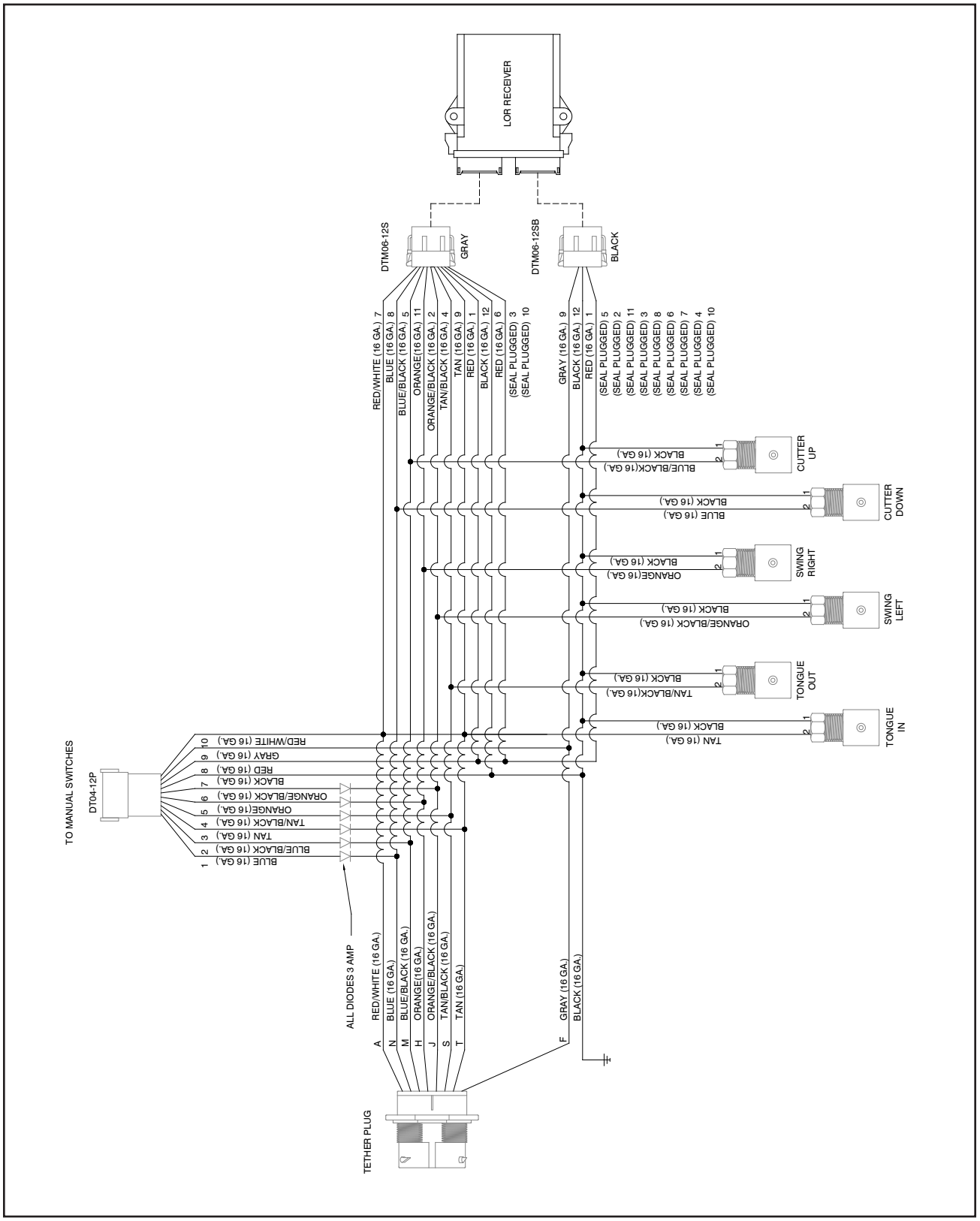
MANUAL CONTROLS WITH SUPER SWEEP

SPECIFIC SCHEMATIC FUNCTION MAY VARY DEPENDING
ON OPTIONS OR COMPONENT MANUFACTURER.



LOR REMOTE CONTROL HARNESS

SPECIFIC SCHEMATIC FUNCTION MAY VARY DEPENDING
ON OPTIONS OR COMPONENT MANUFACTURER.

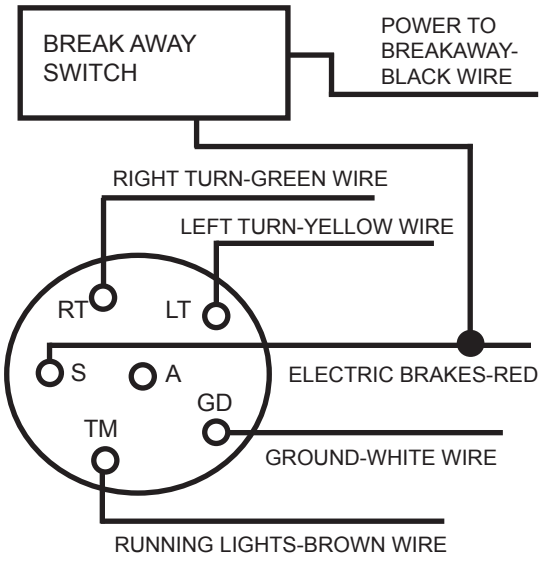


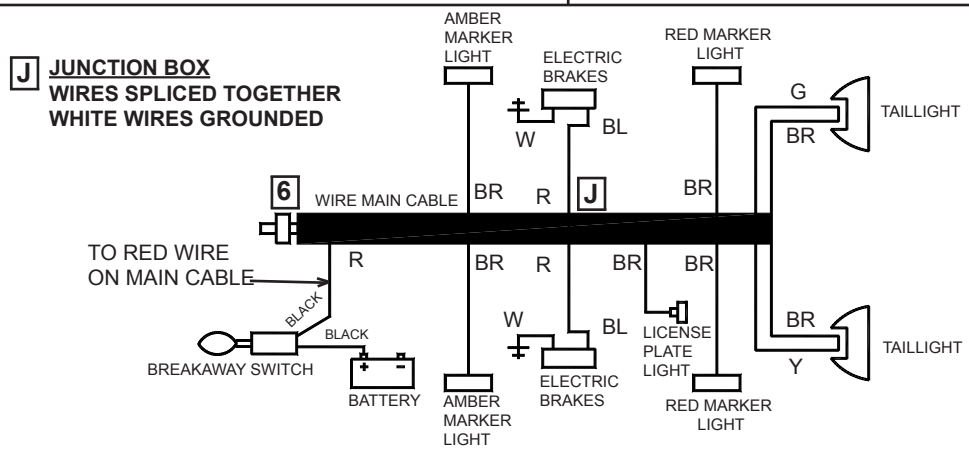
TYPICAL ELECTRICAL WIRING DIAGRAMS

WIRING FOR STANDARD 6 PRONG PLUG AND 6 WIRE MAIN CABLE EFFECTIVE ON MACHINES BUILT AFTER 11/01/04

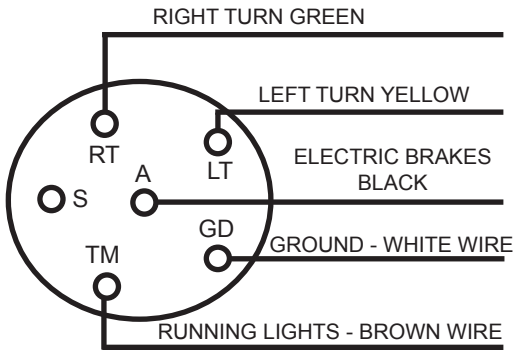
6 Wire Main Cable Color Code

Red R (Brakes & Breakaway Switch)
White W (Ground)
Green G (Right Turn)
Yellow Y (Left Turn)
Brown BR (Running Lights)
Black BL (Power to Breakaway Switch)





6 WIRE MAIN CABLE COLOR CODE (OLD STYLE)



OLD STYLE

6 Wire Main Cable Color Code

Black BL (Brakes)
White W (Ground)
Green G (Right Turn)
Yellow Y (Left Turn)
Brown BR (Running Lights)
Red R (Breakaway Switch)

REPLACEMENT PARTS SECTION

Depending on what replacement parts you are ordering
the following information will be needed:

GRINDER COMPONENTS	ENGINE COMPONENTS	CLUTCH COMPONENTS
Serial Number	Brand	Brand
Model Number of Grinder	Engine Serial Number	Serial Number
	Engine Spec. Number	Assembly Number of Clutch

NOTE

When ordering any replacement parts you should have the serial number (S/N) of the machine to ensure that you receive the correct replacement part. See page 6 for typical serial number & work order number locations.

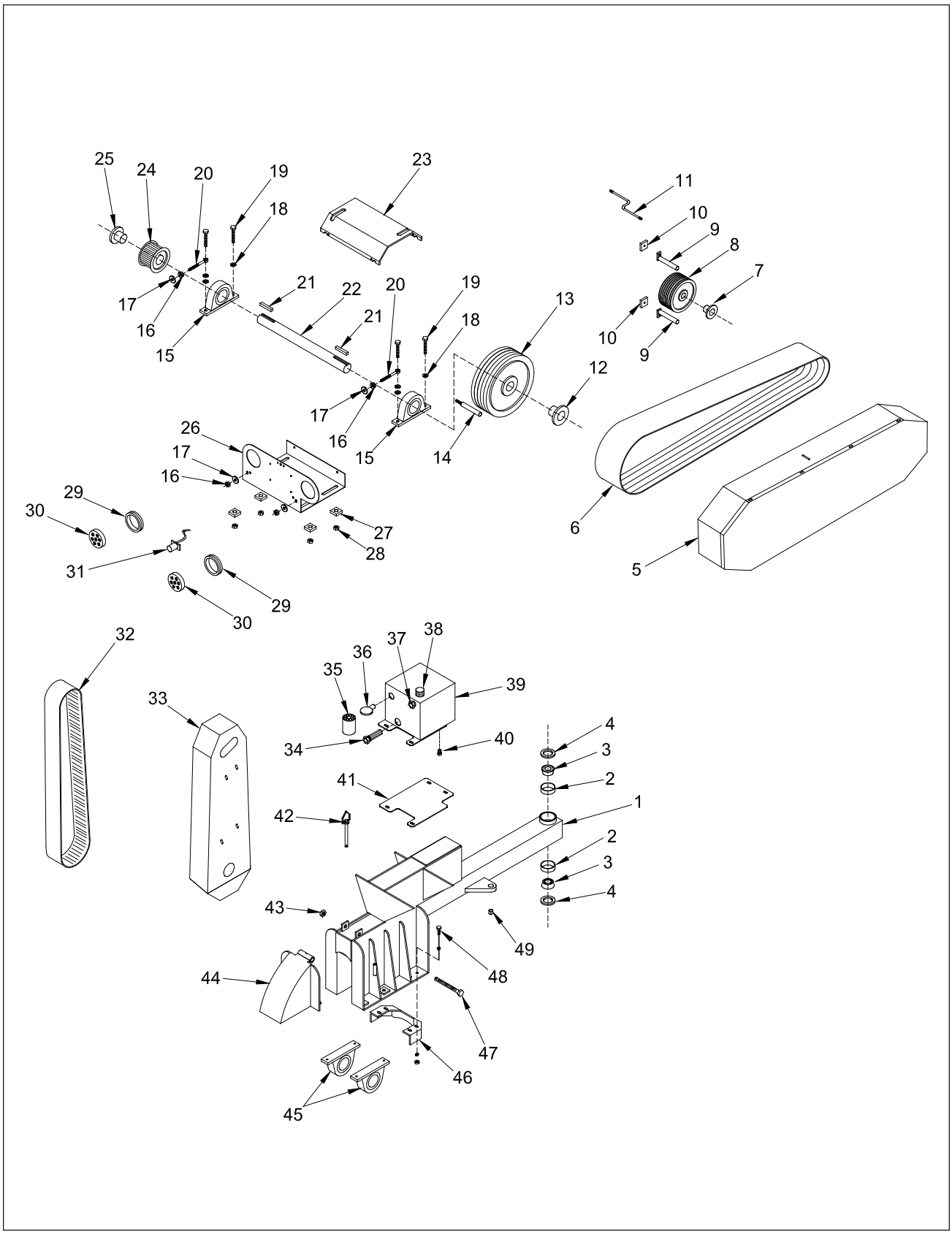
NOTE

All nuts, bolts, washers, and many other components can be ordered by physical description.

NOTE

Some of the components shown in this section are for optional equipment and may not apply to every machine.

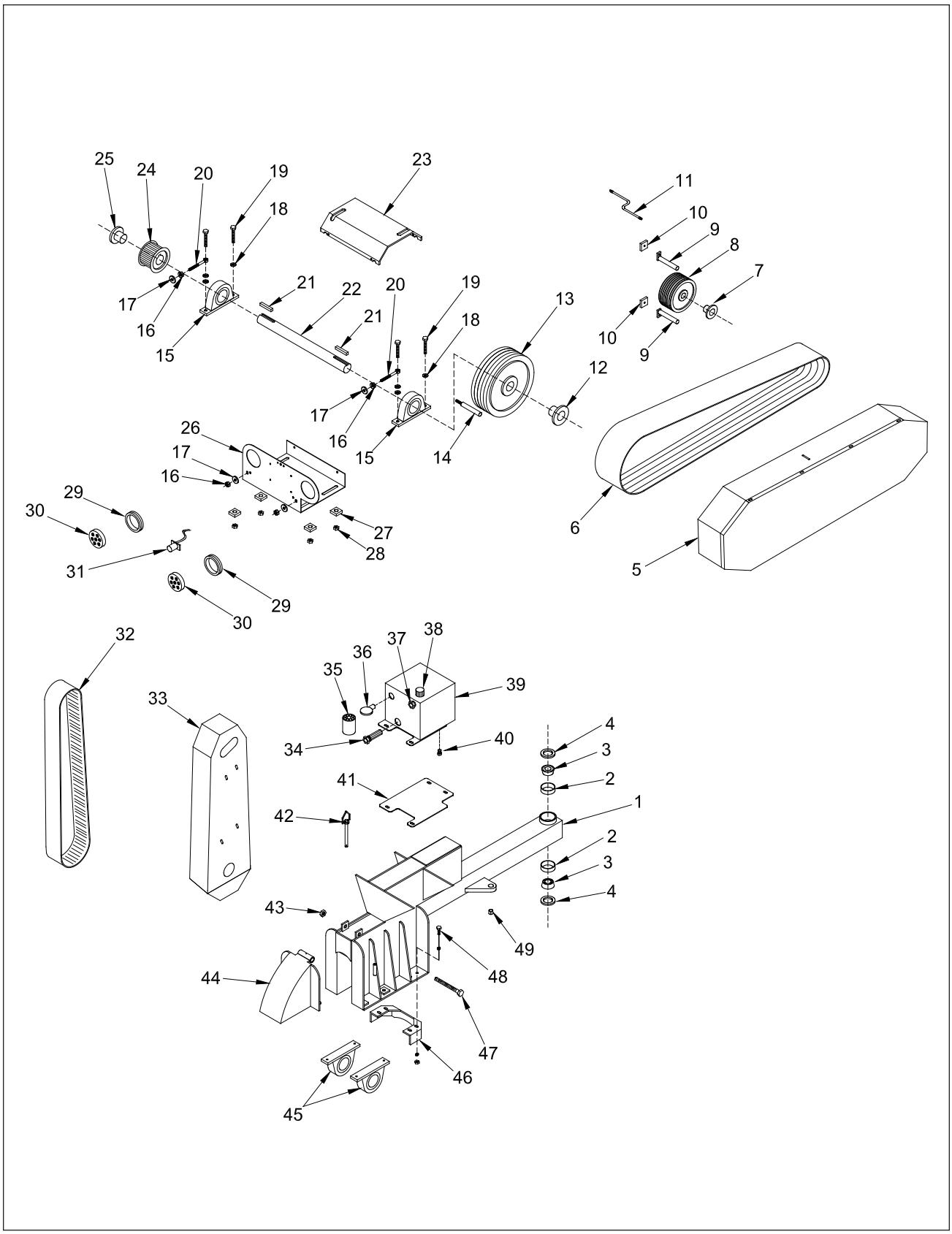
Bandit Industries Inc. reserves the right to make changes in models, size, design, installations and applications on any part without notification.



NOTE: Parts may not be exactly as shown.

LOCATION	MODEL 2800 PART NUMBER	MODEL 3200 PART NUMBER	DESCRIPTION
1.	989-100010	996-100062	Upper Frame Assembly
2.	900-1910-05	900-1910-05	Bearing Cup
3.	900-1910-06	900-1910-06	Bearing
4.	900-1910-04	900-1910-04	Bearing Seal
5.	989-300017	996-100019	Beltshield
6.	900-1912-51	900-1909-70	Drive Belt
7 a.	900-1912-56	N/A	QD Bushing (Started W/O 35734)
b.	900-1900-27	N/A	QD Bushing (Through W/O 35616)
c.	N/A	900-1911-50	QD Bushing (Started W/O 34340)
d.	N/A	900-1904-64	QD Bushing (Through W/O 34339)
8.	900-1908-83	900-1909-54	Engine Sheave
9.	996-300118	996-300118	Belt Guide - Engine Sheave
10.	996-300393	996-300393	Belt Guide Mount
11 a.	900-3911-85	900-3911-85	Grease Line For Engine Pilot Bearing - 22”
b.	900-3911-87	900-3925-12	Grease Line Fitting (Not Shown)
12.	900-1908-86	900-1902-07	Bushing
13.	900-1902-16	900-1908-72	Sheave
14.	996-300119	996-300119	Belt Guide - Jackshaft Sheave
15.	900-1909-68	900-1909-69	Bearing
16.	900-4902-45	900-4902-45	1/2” Nut
17.	900-4909-18	900-4909-18	1/2” Washer
18.	900-4901-32	900-4901-32	5/8” Washer
19.	900-4900-65	900-4900-65	Bolt
20.	900-4902-29	900-4902-29	Bearing Adjuster
21.	989-300135	996-300108	Key Stock
22.	989-300130	996-300099	Jackshaft
23.	989-300129	996-300105	Jackshaft Mount Cover
24.	900-1911-38	900-1910-99	Sheave
25.	900-1906-01	900-1911-05	Taper Lock Bushing
26.	989-300128	996-300102	Bearing Mount Plate
27.	996-300278	996-300278	1 1/2” x 1 1/2” x 1/4” Washer
28.	900-4908-37	900-4908-37	5/8” Nylon Nut
29.	900-2908-75	900-2908-75	Rubber Grommet for LED Taillight
30 a.	900-2908-76	900-2908-76	LED Taillight
b.	900-2908-74	900-2908-74	Adapter Wire for LED Taillight (Not Shown)

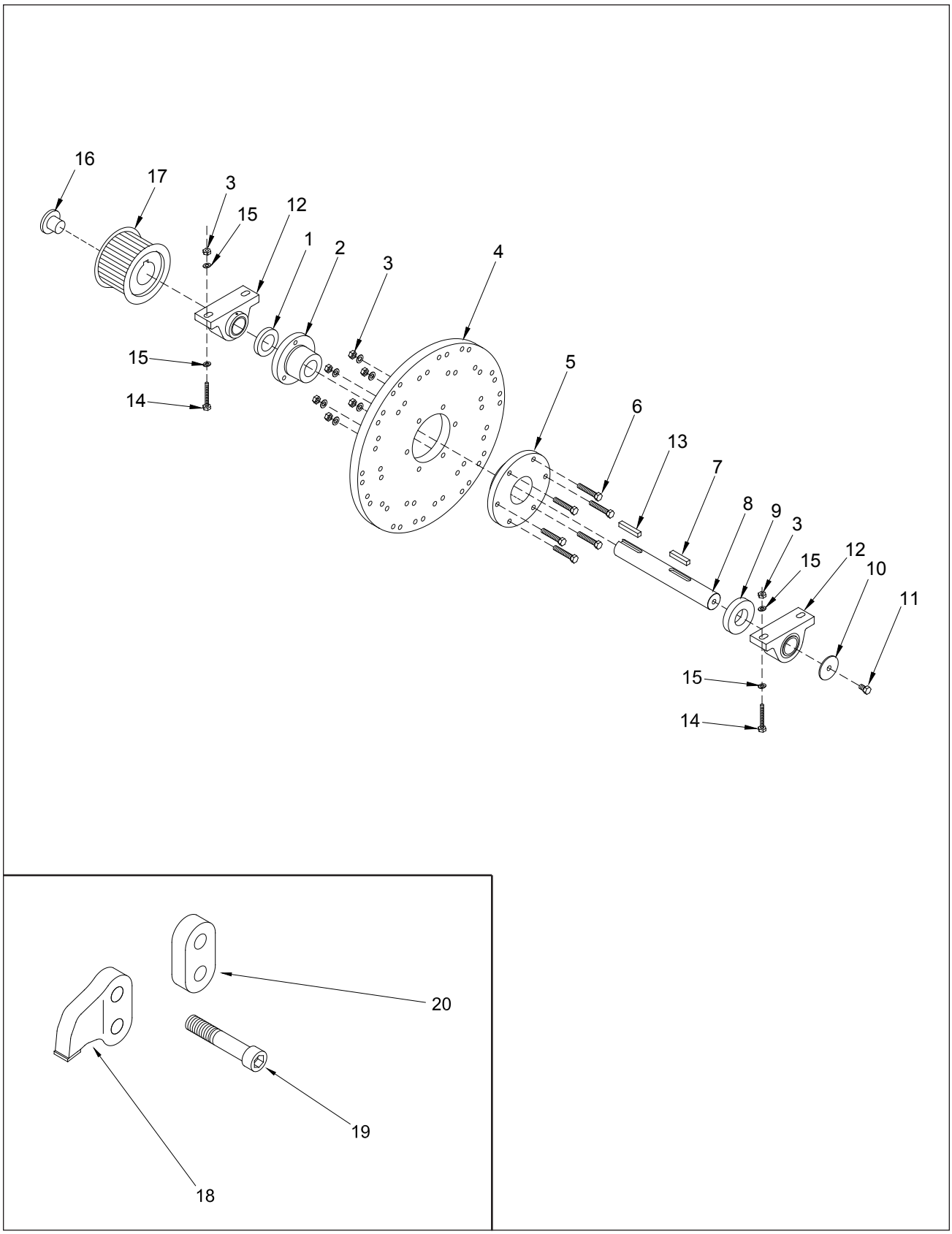
NOTE: Nuts, bolts, washers, and all other components can be ordered by physical description.



NOTE: Parts may not be exactly as shown.

LOCATION	MODEL 2800 PART NUMBER	MODEL 3200 PART NUMBER	DESCRIPTION
31.	900-2900-07	900-2900-07	License Plate Light
32.	900-1910-95	900-1910-98	Poly Chain Belt
33 a.	989-100016	996-100020	Jackshaft Beltshield
b.	996-100051	996-100051	Hatch
c.	989-300142	996-300133	Hatch Hinge (Not Shown)
d.	900-9900-92	900-9900-92	Latch Assembly (Pre 12/04) (Not Shown)
34.	900-3900-07	900-3900-07	Suction Strainer
35.	900-3900-10	900-3900-10	Filter Element
36.	900-3900-09	900-3900-09	Filter Head
37.	900-3901-78	900-3901-78	Fluid Level Gauge
38.	900-3925-91	900-3925-91	Hydraulic Tank Cap
39.	989-100021	996-100024	Hydraulic Tank
40.	900-3922-60	900-3922-60	Magnetic Drain Plug
41.	989-300180	996-300143	Hydraulic Tank Mount
42.	900-4907-44	900-4907-44	Cutter Head Lock Pin
43.	900-4908-35	900-4908-35	Nylock Nut
44.	989-300012	996-100012	Cutter Guard
45.	See Pages 54-55	See Pages 54-55	Cutter Wheel Bearing
46.	989-300094	996-300069	Cutter Wheel Frame
47.	900-4903-34	900-4903-34	3/4 x 6 Hex Bolt
48.	900-4900-17	900-4900-17	1/2 x 1 1/2 Hex Bolt
49.	900-1911-59	900-1911-59	Bushing

NOTE: Nuts, bolts, washers, and all other components can be ordered by physical description.

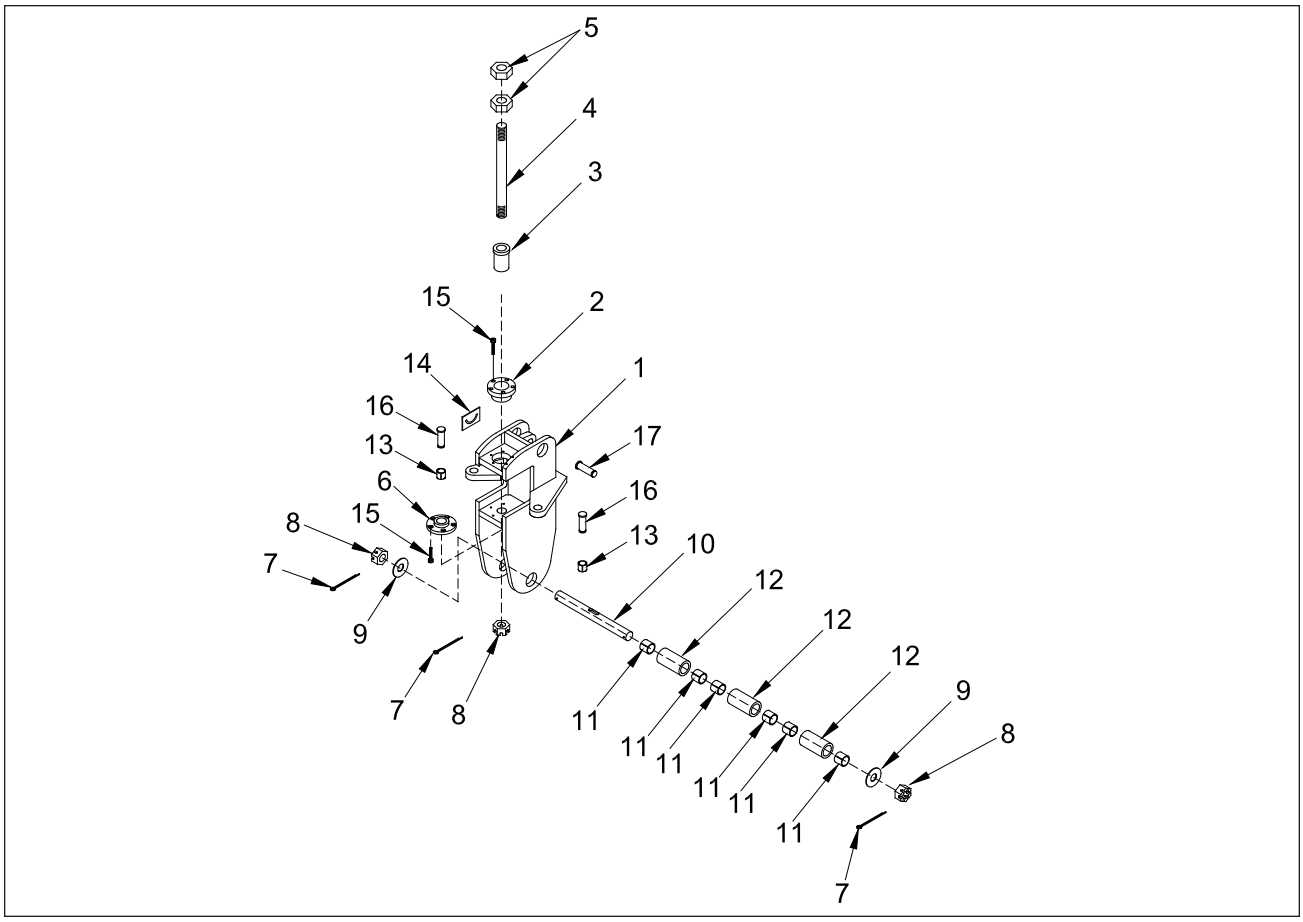


NOTE: Parts may not be exactly as shown.

LOCATION	MODEL 2800 PART NUMBER	MODEL 3200 PART NUMBER	DESCRIPTION
1.	989-300004	996-360004	Spacer
2.	900-1908-50	900-1902-07	Bushing
3 a.	900-4906-84	900-4903-39	Center Lock Nut With Flat Washer
b.	900-4909-18	900-4901-32	Mill Carb Washer
4.	989-300001	996-300471	Cutter Wheel
5.	989-300002	996-300002	Hub
6.	900-4906-77	900-4900-65	Hub Bolt
7.	989-300008	996-300007	Key Stock
8.	989-300003	996-300005	Wheel Shaft
9.	989-300005	996-300003	Spacer
10.	989-300006	996-300006	Washer
11 a.	900-4906-70	900-4903-32	Washer Bolt
b.	900-4902-81	900-4901-38	Lock Washer
12.	900-1908-68	900-1909-69	Cutter Wheel Bearing
13.	989-300007	996-300008	Key Stock
14.	900-4900-58	900-4900-58	5/8 x 3 Grade 8 Hex Bolt
15.	900-4903-64	900-4903-64	5/8 Flat Washer
16.	900-1911-04	900-1908-71	Taper Lock Bushing
17.	900-1911-39	900-1911-00	Cog Sheave
18 a.	900-9903-82	900-9903-82	Straight Tooth
b.	900-9903-83	900-9903-83	Left Tooth 45°
c.	900-9903-84	900-9903-84	Right Tooth 45°
19.	900-9903-80	900-9903-81	Tooth Bolt
20 a.	900-9903-85	900-9903-85	Counter Bored Mounting Block
b.	900-9903-86	900-9903-86	Threaded Mounting Block
21.	900-9903-88	900-9903-89	Tooth Kit - Full Set of Teeth, Bolts, and Pockets (Not Shown)

NOTE: Nuts, bolts, washers, and all other components can be ordered by physical description.

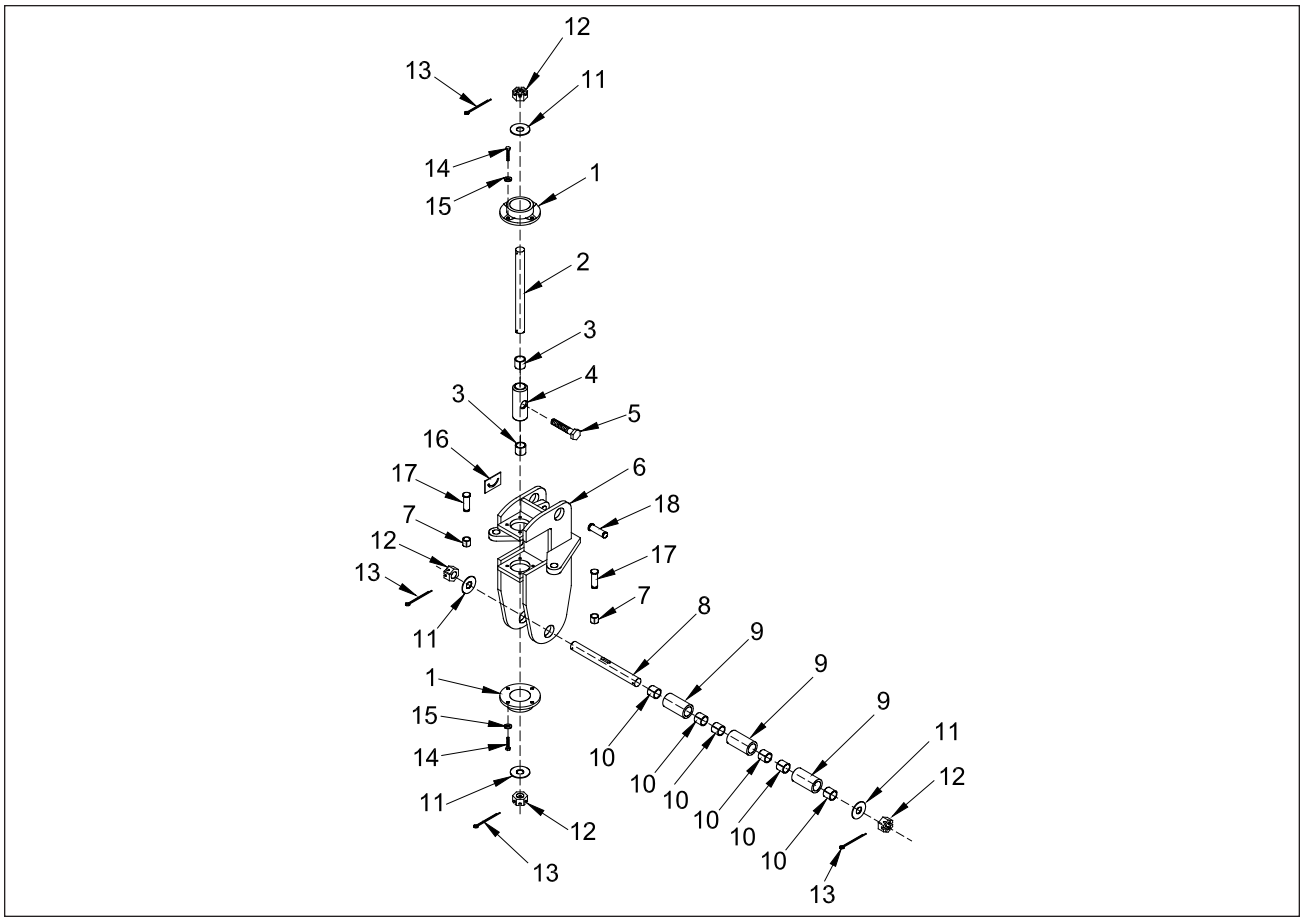
INTERNAL TAPER ROLLER BEARING STYLE PIVOT
(Start 8/04)



LOCATION	PART NUMBER	DESCRIPTION
1.	996-100061	Pivot
2.	996-300405	Top Alignment Sleeve
3.	996-300407	Pin Sleeve
4.	996-300408	Pivot Pin
5.	900-4908-36	Jam Nut
6.	996-300406	Bottom Alignment Sleeve
7.	900-4907-60	Cotter Pin
8.	900-4907-23	Castle Nut
9.	900-4907-37	Washer
10.	996-300192	Pivot Pin
11.	900-1908-37	Split Bushing
12.	996-300343	Pivot Sleeve
13.	900-1911-59	Split Bushing
14.	900-4907-45	Tilt Indicator
15.	900-4909-44	5/16-18 x 1” Flat Had Socket Cap Screw
16.	900-3935-08	Swing Cylinder Pin
17.	900-3935-08	Pivot Cylinder Pin
18.	900-4908-02	Hydraulic Hose Spring Hanger (Not Shown)

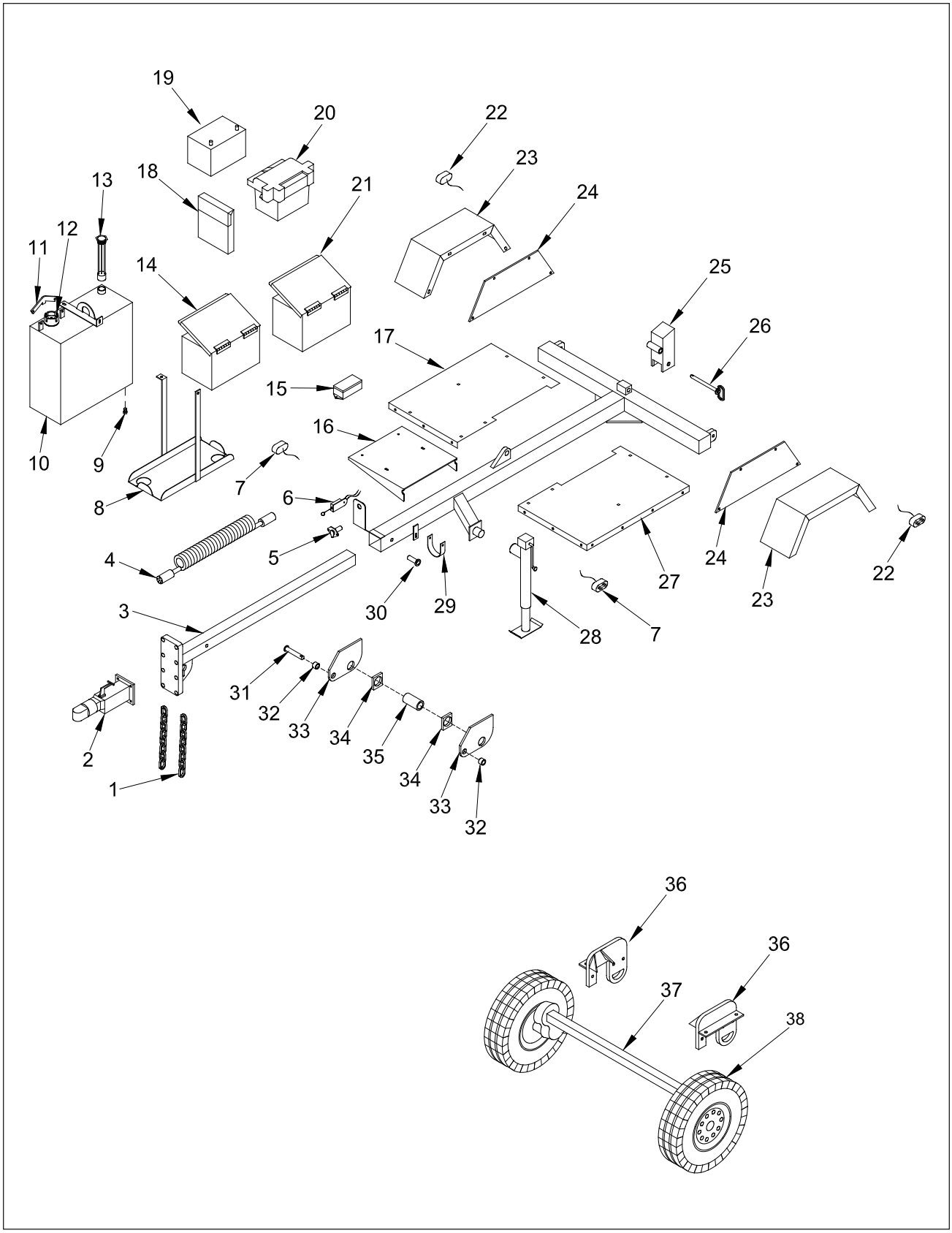
NOTE: Parts may not be exactly as shown.

FLANGE BEARING STYLE PIVOT
(Pre 8/04)



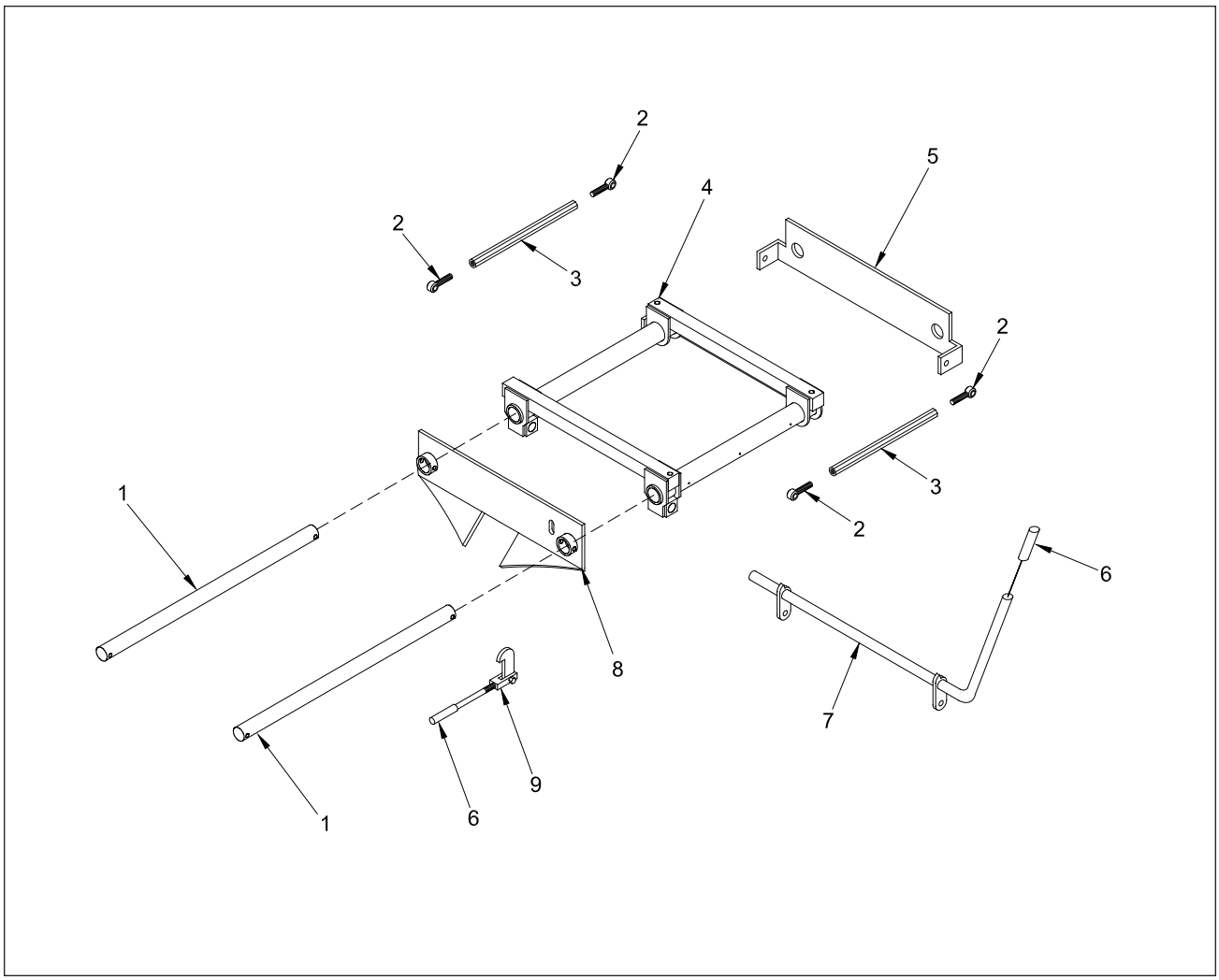
LOCATION	PART NUMBER	DESCRIPTION
1.	900-1908-94	Bearing
2.	996-300190	Pivot Pin
3.	900-4907-36	Split Bushing
4.	996-300073	Pivot Sleeve
5.	900-4901-21	5/8 x 1 1/2 Grade 8 Set Bolt
6.	996-100034	Pivot Bracket
7.	900-1911-59	Split Bushing
8.	996-300192	Pivot Pin
9.	900-1908-37	Split Bushing
10.	996-300343	Pivot Sleeve
11.	900-4907-37	Washer
12.	900-4907-23	Castle Nut
13.	900-4907-60	Cotter Pin
14.	900-4906-52	3/8-16 x 1 1/4 Grade 8 Bolt
15.	900-4906-62	Lock Washer
16.	900-4907-45	Tilt Indicator
17.	900-3935-08	Swing Cylinder Pin
18.	900-3935-08	Pivot Cylinder Pin
19.	900-4908-02	Hydraulic Hose Spring Hanger (Not Shown)

NOTE: Parts may not be exactly as shown.



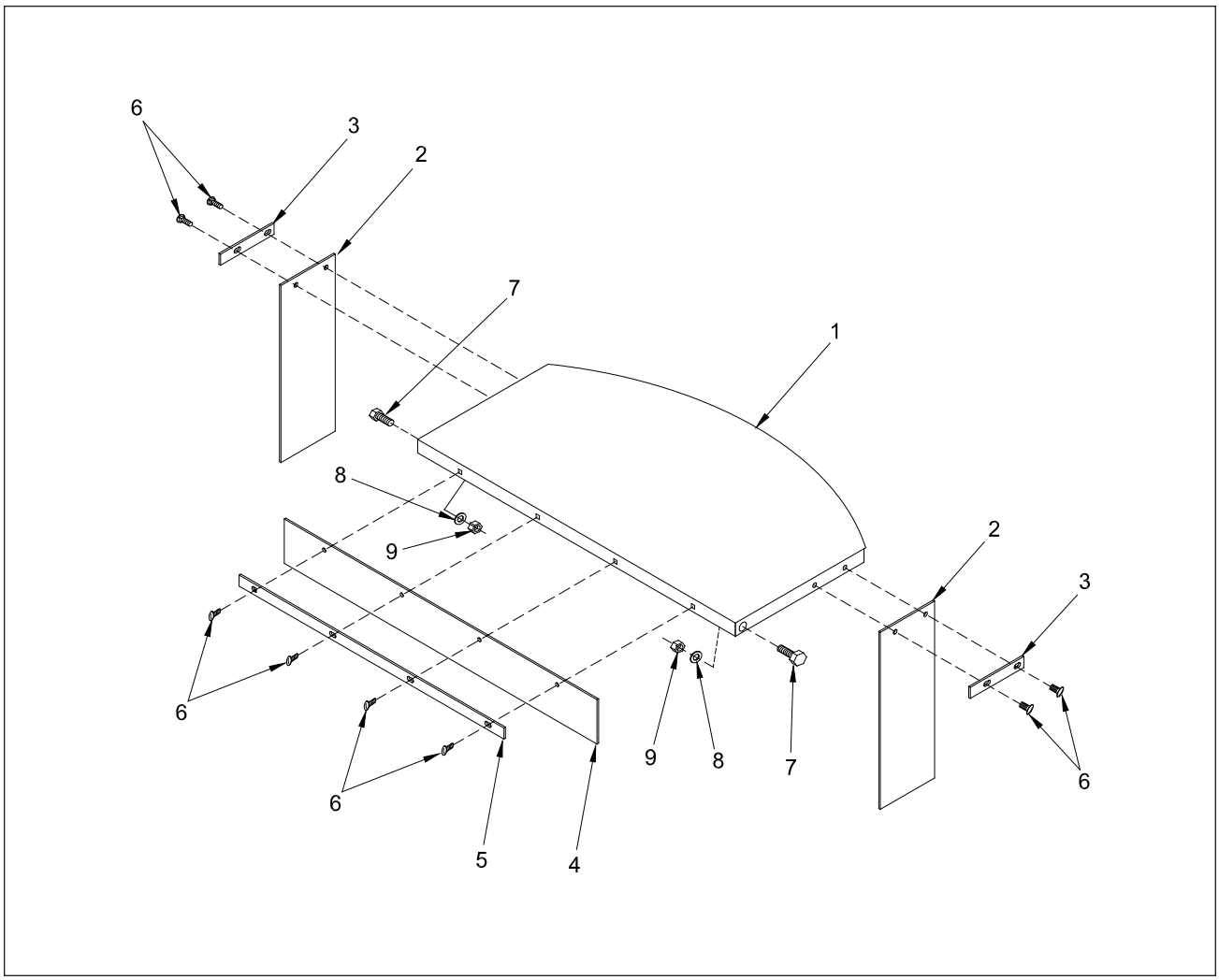
NOTE: Parts may not be exactly as shown.

LOCATION	MODEL 2800 PART NUMBER	MODEL 3200 PART NUMBER	DESCRIPTION
1.	900-4912-70	900-4912-70	Safety Chain With Hooks and Spring Latches
2 a.	980-0501-47	N/A	2” Ball Coupler Assembly
b.	980-0505-33	980-0505-33	2 5/16” Ball Coupler Assembly
c.	900-5900-13	900-5900-13	2 1/2” Heavy Duty Pintle Ring Hitch
3.	989-100046	996-100004	Tongue
4 a.	900-2908-37	900-2908-37	Coil Cable Assembly With 6 Prong Plugs
b.	900-2900-17	900-2900-17	6-Prong Male Trailer Plug Only
5.	900-2900-18	900-2900-18	6-Prong Female Trailer Plug Only
6.	900-5900-09	900-5900-09	Electrical Breakaway Switch
7.	900-2915-97	900-2915-97	LED Amber Marker Light
8.	996-100026	996-100026	Fuel Tank Tray
9.	900-3922-60	900-3922-60	Magnetic Drain Pug
10.	996-100025	996-100025	Steel Fuel Tank Assembly
11 a.	980-0506-86	980-0506-86	Fill Cap Locking Assembly for Steel Tank
b.	900-4912-40	900-4912-40	Padlock With Short Shackle For Tank With Locking Cap
c.	P812	P812	Key For Padlock (Not Shown)
12.	900-3917-71	900-3917-71	Fill Cap Only No Dipstick for Steel Tank
13.	900-2903-85	900-2903-85	Rochester Sight Gauge
14.	900-7900-78	900-7900-78	Aluminum Tool Box (Optional)
15.	900-2902-41	900-2902-41	Electrical Junction Box
16.	989-300313	996-300263	Tool Box Tray
17.	989-300205	996-300162	Chip Guard
18.	900-9902-07	900-9902-07	Manual Holder
19.	900-6900-02	900-6900-02	660 CCA Battery for Diesel Engines
20.	900-7900-08	900-7900-08	Plastic Battery Liner
21.	900-7900-78B	900-7900-78B	Aluminum Battery Box
22.	900-2915-98	900-2915-98	LED Red Marker Light
23 a.	989-300218	996-300456	Steel Fender
b.	989-300219	996-300457	Aluminum Fender
24.	989-300012	996-300012	Fender Mount
25.	989-100006	996-100006	Chock Block
26.	900-4907-44	900-4907-44	Pin for Chock Block
27 a.	N/A	996-300160	Chip Guard Without Tether
b.	989-300204	996-300161	Chip Guard With Tether
28.	900-5906-10	900-5906-10	2000 lb. Side Crank Tongue Jack - Zinc
29.	989-300021	996-300021	Cylinder Guard
30.	900-4907-44	900-4907-44	Pin for Telescopic Tongue
31.	989-300030	996-100029	Cylinder Pin
32.	989-300026	996-300026	Spacer
33.	989-300015	996-300413	Pivot Cylinder Mount Plate
34.	989-300032	996-300013	Frame Pivot
35.	989-300014	996-300343	Pivot Sheave
36.	989-300004	996-100005	Axle Mount - Specify Curb Side Or Road Side
37 a.	900-5905-46	N/A	5200 lb. Torflex Axle Without Brakes
b.	900-5905-68	N/A	5200 lb. Torflex Axle With Electric Brakes
c.	N/A	900-5905-32	7000 lb. Torflex Axle With Electric Brakes
38 a.	900-5907-21	N/A	225/75R - 15” Tire and White Mod, 6-Bolt Rim
b.	900-5905-98	N/A	225/75R - 15” Tire Only
c.	900-5903-12	N/A	15” x 6” White Mod, 6-Bolt Rim Only
d.	N/A	900-5904-20	245/75R - 16” Tire and White Spoke, 8-Bolt Rim
e.	N/A	900-5904-18	245/75R - 16” Tire Only
f.	N/A	900-5904-22	16” x 6” White Spoke, 8-Bolt Rim Only



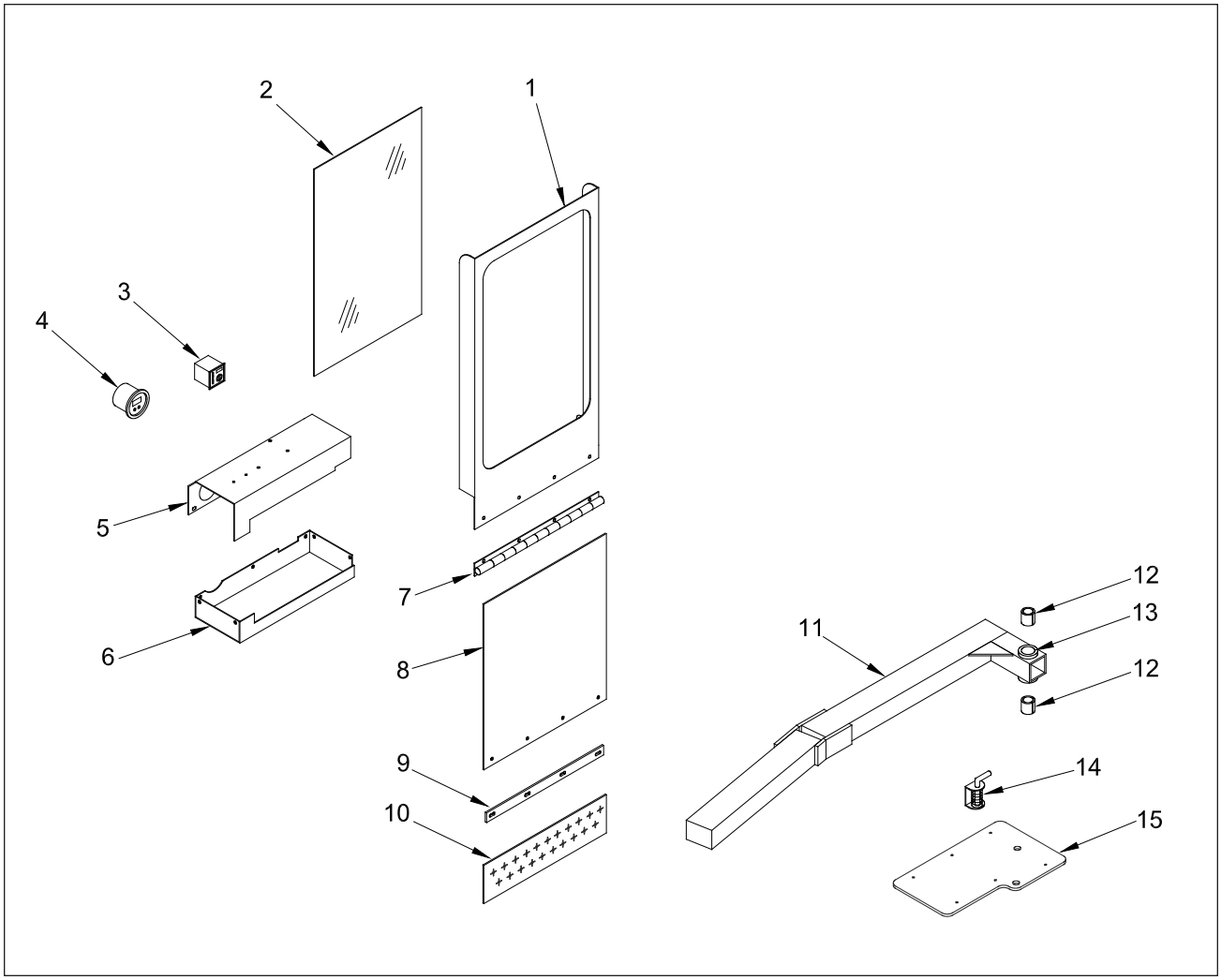
LOCATION	PART NUMBER	DESCRIPTION
1.	996-300081	Slide Rails
2.	900-4908-24	Tie Rod End
3.	996-300513	Belt Engage Linkage Bar
4.	996-100052	Engine Mount Assembly
5.	996-300089	Engine Slide Frame
6.	900-4907-35	Black Plastic Grip
7 a.	996-100053	Engage Handle - Deutz Engine
b.	989-300068	Engage Handle - Caterpillar Engine
8.	996-300275	Engine Slide Frame
9.	996-100010	Engine Lock

NOTE: Parts may not be exactly as shown.



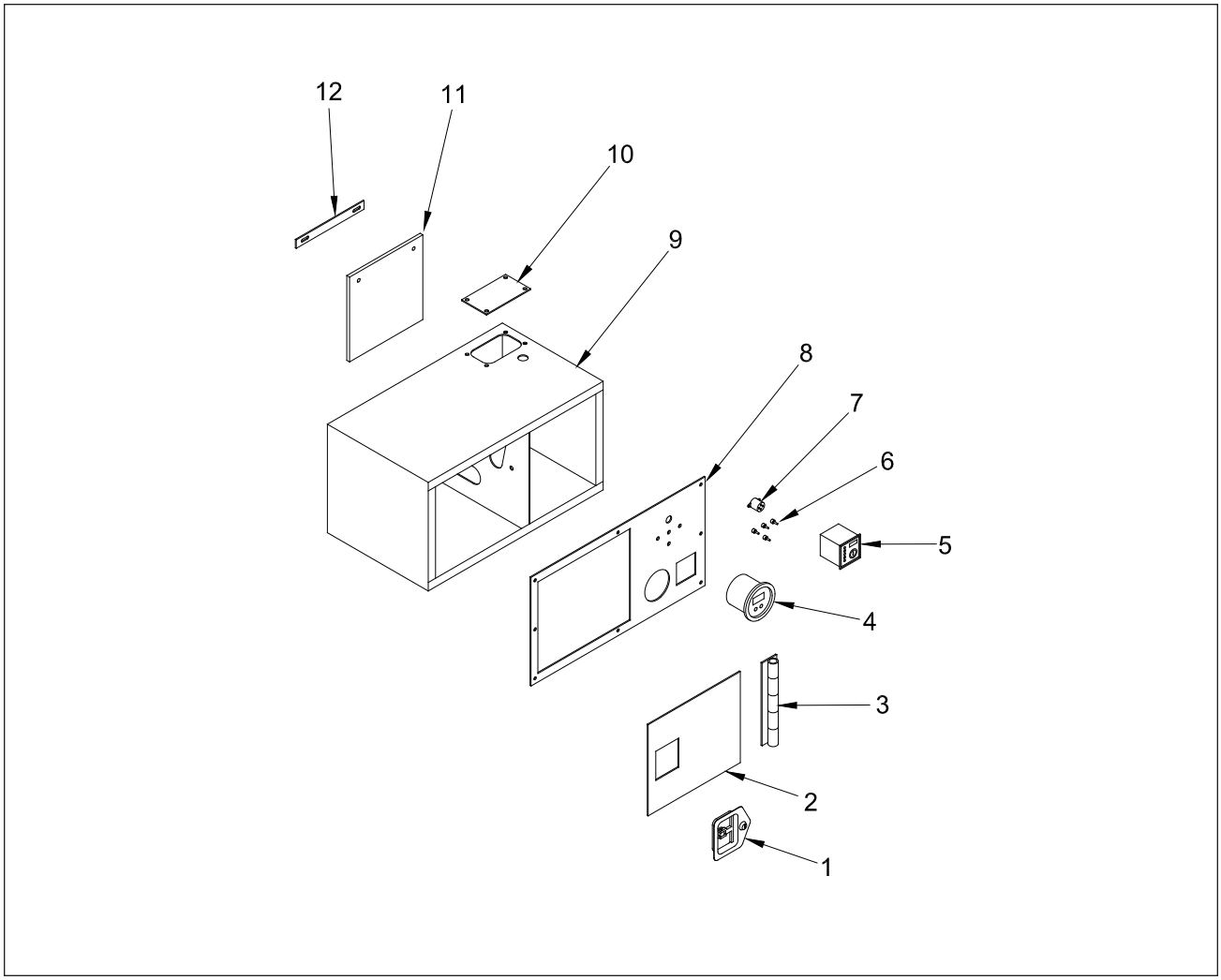
LOCATION	MODEL 2800 PART NUMBER	MODEL 3200 PART NUMBER	DESCRIPTION
1.	989-300197	996-300529	Rear Chip Pan
2.	989-300976	996-300158	Chip Curtain
3.	989-300201	996-300156	Curtain Mount
4.	989-300975	996-300159	Rear Chip Curtain
5.	989-300202	996-300157	Rear Curtain Mount
6.	900-4908-39	900-4908-39	Carriage Bolt
7.	900-4908-40	900-4908-40	Bolt and Washer
8.	900-4900-94	900-4900-94	Flat Washer
9.	900-4908-35	900-4908-35	Lock Nut

NOTE: Parts may not be exactly as shown.



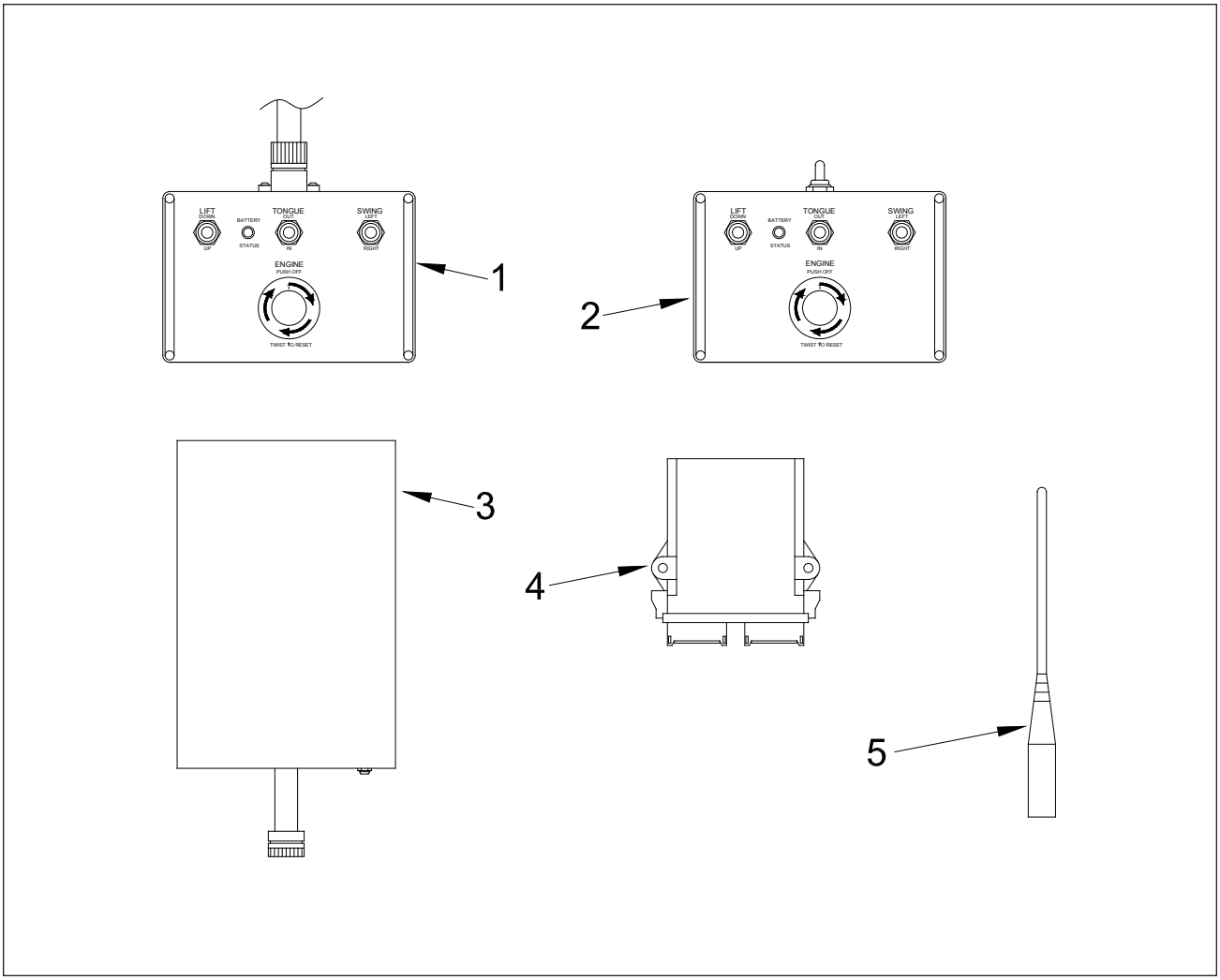
LOCATION	PART NUMBER	DESCRIPTION
1.	996-300211	Window Frame
2.	996-300225	Lexan Window
3.	900-2911-29	LOFA Panel Key Switch (Deutz Engine)
4.	See Page 14	Super Sweep Digital Tach Hour Meter (Option)
5 a.	996-300214	Instrument Panel - Deutz Engine
b.	N/A	Instrument Panel - Caterpillar Engine
6.	996-300217	Instrument Panel Bottom
7.	996-300227	Hinge
8.	996-300224	Control Arm Flap
9.	996-300212	Curtain Mount
10.	996-300475	Aluminum Guard
11.	996-300206	Control Arm
12.	900-1908-37	Harden Split Bushing
13.	996-300199	Pivot Sleeve
14.	900-4904-90	Spring Latch
15.	996-300222	Fender Plate

NOTE: Parts may not be exactly as shown.



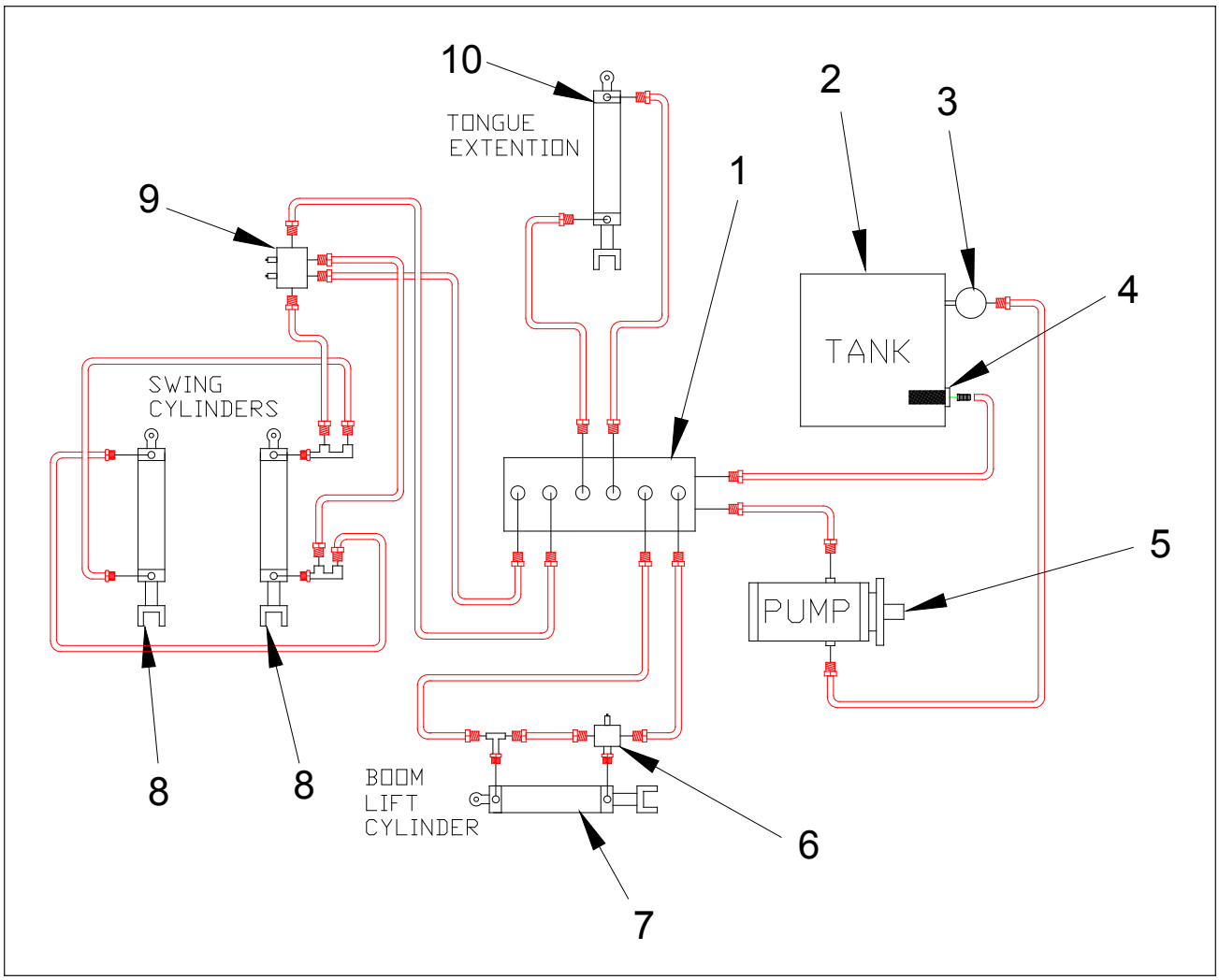
LOCATION	PART NUMBER	DESCRIPTION
1 a.	900-4904-58	“T” Handle Latch
b.	CH545	Key (Not Shown)
2.	996-300250	Door
3.	996-300254	Door Hinge
4.	See Page 14	Autofeed Digital Tach Hour Meter (Option)
5.	900-2911-29	LOFA Panel Key Switch (Deutz Engine)
6 a.	900-2906-97	Switch For Swing Left/Right, Cutter Up/Down, Tongue In/Out
b.	900-2910-47	Switch For Remote / Local
7.	900-2911-54	Tether Plug
8 a.	989-300264	Remote Control Box Cover - Deutz Engine
b.	989-300274	Remote Control Box Cover - Caterpillar Engine
9.	996-100057	Remote Control Box
10.	996-300258	Cover
11.	996-300499	Rubber Flap
12.	996-300257	Rubber Flap Strap

NOTE: Parts may not be exactly as shown.



LOCATION	PART NUMBER	DESCRIPTION
1 a.	900-2911-91	Tether Remote Control - LOR
b.	900-2911-45	Tether Remote Control - Miratron
2 a.	900-2912-31TX	Radio Remote Control - LOR
b.	900-2911-44	Radio Remote Control - Miratron
3 a.	N/A	Receiver With Metal Box Housing - Miratron
b.	N/A	Pigtail for Metal Box Receiver - Miratron
4 a.	900-2912-31REC	Receiver for Housing With Deutsch Connectors - LOR
b.	900-2911-46	Receiver for Housing With Deutsch Connectors - Miratron
c.	900-2911-48	Pigtail for Receiver With Deutsch Connectors - Miratron
5 a.	900-2912-66	Antenna - LOR
b.	900-2911-47	Antenna and Cable - Miratron
6.	900-2912-31	Radio Remote Kit - LOR (Includes 1a, 2a, 4a, 5a)

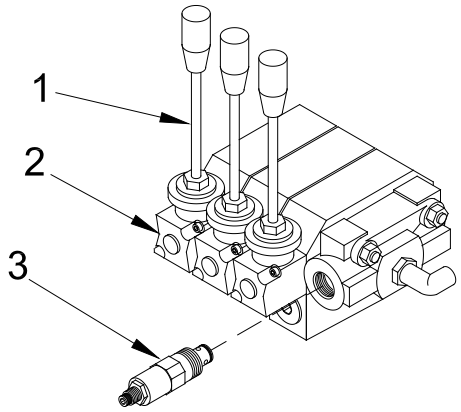
NOTE: Parts may not be exactly as shown.



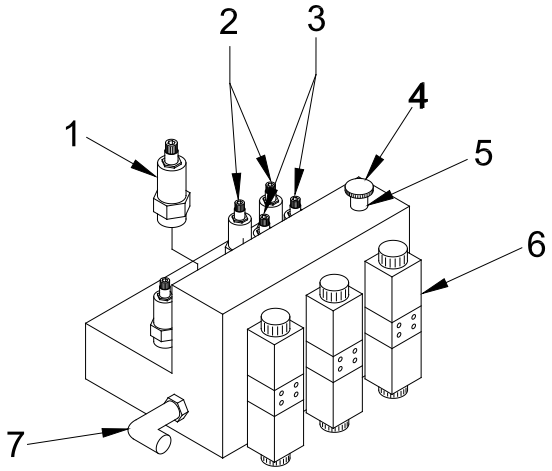
LOCATION	MODEL 2800 PART NUMBER	MODEL 3200 PART NUMBER	DESCRIPTION
1 a.	900-3928-22	900-3928-22	Manual Control Valve Bank
b.	900-3924-45	900-3924-45	Electric Control Valve Bank
2.	989-100021	996-100024	Hydraulic Tank
3 a.	900-3900-10	900-3900-10	Hydraulic Filter
b.	900-3900-09	900-3900-09	Hydraulic Filter Mount
4.	900-3900-07	900-3900-07	Hydraulic Tank Strainer
5 a.	900-3915-08	900-3915-08	Hydraulic Pump - Deutz Engine
b.	900-3925-35	N/A	Hydraulic Pump - Caterpillar Engine
6 a.	900-3923-03	900-3923-03	Counter Balance for Boom
b.	900-3929-09	900-3929-09	Counter Balance Relief Only
7.	900-3927-83	900-3923-01	Boom Cylinder
8.	900-3927-81	900-3927-81	Swing Cylinders
9 a.	900-3918-65	900-3918-65	Counter Balance for Sweep Without Super Sweep
b.	See Pages 66-67	See Pages 66-67	Super Sweep Valve and Counter Balance for Sweep
c.	900-3929-09	900-3929-09	Counter Balance Relief Only
10.	900-3927-79	900-3927-80	Tongue Extension Cylinder

NOTE: Parts may not be exactly as shown.

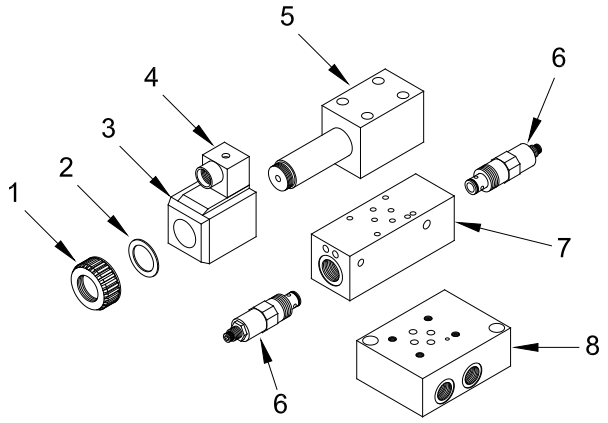
MANUAL CONTROL VALVE BANK



REMOTE CONTROL VALVE BANK



SUPER SWEEP VALVE



Torque Retainer Nut to a maximum of 4 to 6 ft.-lbs. (5 to 8 Nm) and install Vibra Tite.
Over torque will cause damage and will also void warranty.

NOTE: Parts may not be exactly as shown.

MANUAL CONTROL VALVE BANK

LOCATION	PART NUMBER	DESCRIPTION
1.	900-3929-28	Handle
2.	900-3930-78	Lever Box
3.	900-3929-29	Main Relief
4.	900-3929-30	Port Relief - Down (Not Shown)
5.	900-3928-22	Manual Control Valve Bank Assembly

REMOTE CONTROL VALVE BANK

LOCATION	PART NUMBER	DESCRIPTION
1.	900-3929-12	Relief - High
2.	900-3929-09	Counter Balance
3.	900-3929-11	Relief - Low
4.	900-3929-21	Delta Knob
5.	900-3929-19	Needle
6.	900-3929-14	DO-3 Control Valve
7.	900-3929-13	Test Point
8.	900-3927-44	Electric Control Valve Bank Assembly

SUPER SWEEP VALVE

LOCATION	PART NUMBER	DESCRIPTION
1.	900-3931-02	Super Sweep Valve Coil Nut
2.	900-3931-03	Super Sweep Valve Coil Nut “O”-Ring
3.	900-3931-01	Super Sweep Valve Coil Only
4.	900-3931-04	Molded Wire Plug Assembly
5.	900-3930-99	Super Sweep Valve Only
6.	900-3929-09	Counter Balance Relief Only
7.	900-3931-05	Super Sweep Counter Balance With Reliefs
8.	900-3926-12	Super Sweep Relief Block Subplate
9.	900-3926-09	Super Sweep Valve Assembly (Includes #’s 1,2,3,5)

SERVICE RECORD

DATE	DESCRIPTION	AMOUNT

