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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 the Beast Recycler. 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 recycler is designed and manufactured in accordance with the latest machine 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 recycler can result in severe personal injury. Personnel using the recycler must be qualified, trained and familiar with the operating procedures as defined in this manual.

⚠ 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 recycler, 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. Consult the equipment manufacturer!!!

Each machine is shipped with a manual, a customer's check sheet on the recycler, any available parts & service manuals on component parts not produced by this manufacturer, and service & safety video tape. 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 the Beast Recycler 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 Smoracy, LLC. 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 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 Smoracy, LLC.

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 Smoracy, LLC Limited Warranty responsibilities. Some components on your machine are covered by their respective manufacturers and cannot be handled through Smoracy, LLC 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 Smoracy, LLC 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 machine. This will activate our warranty responsibilities.

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

SMORACY, LLC LIMITED WARRANTY
(989) 561-2270

Smoracy, LLC also referred to as “Manufacturer” warrants each new Model 2680 Beast Recycler to be free of defects in workmanship and material for a period of six months or 1000 operating hours, which ever comes first.

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 Smoracy, LLC 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. Smoracy, LLC 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.

It is absolutely necessary to return the Warranty Validation Form, completely and accurately filled out, and notify Smoracy, LLC 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 not apply if the Smoracy, LLC Recycler is not operated with replacement parts or equipment not manufactured or recommended by Smoracy, LLC.

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

1. The completed Recycler Warranty Validation Form is not on file.
2. The Smoracy, LLC Recycler 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 Recycler was involved in, or damaged by an accident.
6. The Recycler was damaged from any type of foreign material.
7. The Recycler did not have parts replaced with Smoracy, LLC parts.

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 belts, lubrication fluids, bearings, filters, hydraulic components, loose nuts or bolts, etc. may void warranty.

SMORACY, LLC LIMITED WARRANTY
(989) 561-2270

NOTE: This warranty applies only to new and unused equipment or parts thereof manufactured by Smoracy, LLC. This warranty will not apply if the Smoracy, LLC Recycler is not operated with replacement parts or equipment not manufactured or recommended by Smoracy, LLC.

All other components are warranted by their respective manufacturers (i.e. engines, axles, 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.

USA & CANADA INFORMATION PHONE NUMBERS FOR ACCESSORIES (NOT COVERED UNDER RECYCLER WARRANTY PROGRAM)			
Caterpillar Engines	1-248-349-7050	PT Tech Fluid Clutch	1-330-239-4933
Cummins Engines	1-248-478-9700	Interstate Batteries	1-800-331-2000
John Deere Engines	1-888-803-9175	Twin Disc Clutch	1-262-638-4000
Dexter Axles	1-574-295-7888	LOR Manufacturing	1-866-644-8622
Tires	1-989-463-4088	Honda Engines	1-770-497-6400

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 Smoracy, LLC 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.
8) Date of Failure.
9) Nature of Failure.

Smoracy, LLC 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.

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

Smoracy, LLC expects the Customer/Owner to bring their Recycler 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.

You will need the machine identification number, serial number, when ordering parts for your machine. The serial number will also be required by law enforcement in order to track down your machine if it is ever stolen. The machine serial number is stamped on the machines cutter head bearing pad. Please make a note of this number.

TYPICAL RECYCLER SERIAL NUMBER LOCATIONS

1. Inside the Control Cabinet
2. Curb Side Bearing Pad

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

MACHINE DIRECTIONAL INSTRUCTIONS ARE DESCRIBED AS "CURBSIDE" (RADIATOR SIDE OF MACHINE) AND "ROADSIDE" (CLUTCH SIDE OF MACHINE).

SAFETY PROCEDURES

⚠ WARNING

CHECK FOR FIRES, CLEAN OFF DEBRIS, SWITCH OFF BATTERY

DO NOT leave this machine unattended until all potential fire debris is removed, no fire or smoldering exists and battery is switched off. The diesel engine creates many hot spots, including exhaust manifold and turbo. Remove all flammable debris (wood, mulch, oils, fuels, etc.) from:

- Engine turbo and exhaust
- Beside and around engine
- Under engine and tanks
- Inside belt shields
- Inside control cabinets
- Anywhere materials collect

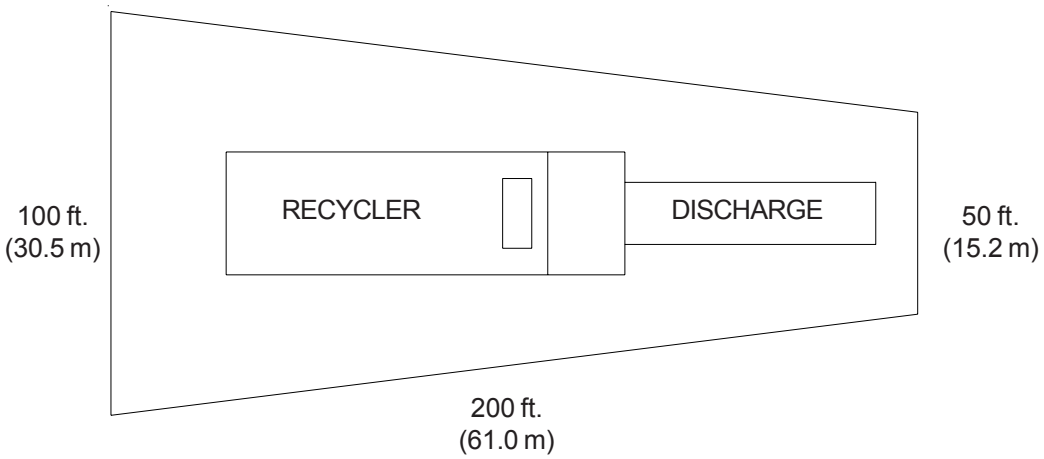
DO NOT leave this machine unattended until all fire hazards are removed, hot spots are cold and battery is disconnected.
ALWAYS keep several type A:B:C fire extinguishers operational and on the job at all times.

SMORACY, LLC IS NOT RESPONSIBLE FOR FIRES CAUSED BY FIRE HAZARDS LEFT TO SMOLDER AND BURN, OR IMPROPER SHUTDOWN PROCEDURES.

⚠ DANGER

RESTRICTED AREA

DO NOT approach within envelope or you will be injured while machine is operating.



SAFETY PROCEDURES

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 Smoracy, LLC Dealer.

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

⚠ WARNING

Operators **must** at all times be located within easy reach of all feed control and shut-off devices when the unit is running. Also always be observant and prepared to activate controls to prevent an accident.

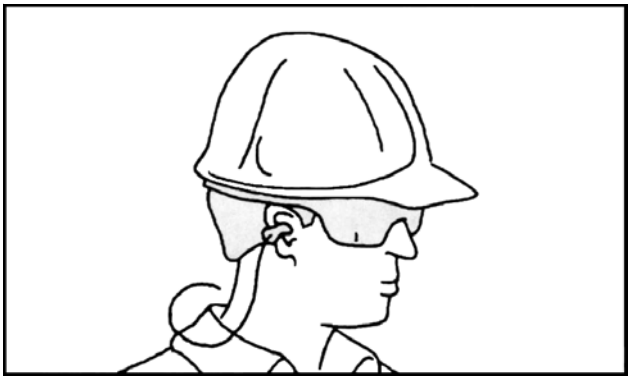
⚠ DANGER

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

⚠ DANGER

Do Not wear torn or loose clothing it 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, safety glasses, gloves, ear protection, etc. Do not wear gauntlet or secured fit gloves. Always keep a fully charged type A:B:C fire extinguisher with the machine while operating or servicing the recycler.



SAFETY PROCEDURES

⚠DANGER

Never stand at the entrance to the Infeed Conveyor or look over the Infeed Conveyor side panels. Never attempt to manually dislodge material located on the Infeed Conveyor while the machine is running. Never raise Feedwheel Yoke and look inside, or look down Infeed Conveyor while machine is working. Entanglement in Infeed Conveyor can cause serious injury. Stay away from the Infeed Conveyor during operation. If the conveyor drive is not shut off a stalled conveyor may restart unexpectedly as the obstruction is removed. Do not hand feed raw material onto Infeed Conveyor.

⚠DANGER

Stay away from the Feedwheel and Cutterhead areas. Never stand close to the Feedwheel assembly while the machine is running. Never attempt to do work on a raised Feedwheel without making sure all safety devices are secured. Always engage the hydraulic Yoke Lock Bars, and use the Safety Chain to secure the Feedwheel assembly to the Discharge Belt Conveyor rest before replacing Cutterhead inserts or bodies. Follow proper shutdown procedures before beginning any type of maintenance to the Recycler.

⚠ DANGER

Entanglement in the Discharge Belt Conveyor can cause serious injury. Stay away from the conveyor during operation. If the conveyor drive is not shut off a stalled conveyor may restart unexpectedly as the obstruction is removed. Avoid the Discharge Belt Conveyor area. Ejected material can cause serious injury. Stay away! Stay clear of thrown and falling objects. Take the following precautions to avoid injuries from thrown and falling objects: Wear all applicable safety equipment. Only properly protected workers are allowed in “thrown object area”. All machines in “thrown object area” must have overhead protection. Machines used to load the recycler must have an enclosed cab. Do not leave controls unattended while machine is operating. Locate the recycler a safe distance from buildings, public roads and populated areas.

NOTICE

To avoid damage to the Discharge Conveyor do not move the machine with the Conveyor extended. Do not fold or unfold the Conveyor on uneven ground. Do not cause abrupt stops when raising or lowering the Conveyor. Do follow all operation, service and safety guidelines. Do follow these steps to purge air from the hydraulic system every time the Conveyor is moved. 1) Place pressure gauge in diagnostic port of valve bank. 2) With Conveyor resting in fold or unfold position, operate valve to position it further in that direction. Hold valve position for 4 to 5 seconds until gauge reaches system pressure. 3) Repeat these steps for second control valve. Now you may proceed to raise or lower the Conveyor. Do operate the Conveyor folding actions with the engine at idle. Do fold the Conveyor upper section first, then the mid section. NEVER slam the Discharge Belt Conveyor to a rest.

⚠ DANGER

Avoid moving parts. Keep hands, feet, and clothing away from power driven parts. Keep all guards and shields in place and properly secured.

⚠ 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, shut down the machine and recheck all nuts and bolts. It is normal for 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 bolts should be checked periodically such as Cutterbody and Teeth bolts, etc. for torque and fit.

Most of the nuts used on the Smoracy, LLC Recycler are self locking. After a nut has been removed five times, it should be replaced to insure proper tightness.

SAFETY PROCEDURES

⚠ WARNING

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. Avoid burns from fluid. Hot fluid under pressure can cause severe burns. Relieve all pressure in the system before disconnecting the lines, hoses or performing other work. Allow system to cool down to ambient temperature before opening any coolant or hydraulic oil system.

⚠ DANGER

Inspect raw materials pile for prohibited materials. The following are examples of prohibited materials to be avoided. Material and products containing toxic substances, explosive or flammable materials including chemicals, liquids, gases, pressurized containers etc., tires, glass, heavy rigid plastic, sheet metal, masonry, stone materials, and solid metals.

⚠ DANGER

Avoid power lines. Electrocution is possible if the recycler touches a power line. Take the following precautions. Position the recycler and any loading equipment at least 10 feet (3 meters) from electric lines. If the machine contacts an electric line stay away from the machine.

⚠ DANGER

DO NOT operate this machine indoors! Exhaust fumes can be fatal. Never refuel while the machine is running or engine is hot. 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 the recycler, for the least amount of cost, it is a good practice to set and follow a scheduled preventative maintenance program. It will eliminate many possible problems and down time.

⚠ WARNING

Check laws and regulations. Know and obey all federal, state, and local laws and regulations that apply to your work situation and the transportation of a machine this size.

⚠ DANGER

Keep the machine in good condition. Be sure the machine is in good operating condition and that all safety devices, including guards and shields are installed and functioning properly. Visually inspect the machine daily before starting the machine. Refer to the "Start-up Procedures ". Make no modifications to your equipment unless specifically recommended or requested by Smoracy, LLC.

⚠ WARNING

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

⚠ WARNING

The machine was built with a maintenance door engine disable plug which disables the engine if it is not installed properly with the maintenance in the closed position. Correctly installed and maintained, the engine will not start or it will shut off if the maintenance door engine disable plug is disconnected. The maintenance door must NEVER be open or opened during operation.

⚠ WARNNG

Never use jumper cables during freezing temperatures. Tow the machine inside and allow the battery time to warm up. Explosion will occur with a frozen battery. Never use jumper cables in a confined or unventilated area. Battery acid fumes are explosive. Battery acid can cause severe burns. Avoid contact with eyes, skin and clothing. Battery fumes are flammable and can explode. Never expose an open flame or spark near the battery. Keep all burning materials away from the battery. When servicing the battery, do not smoke, shield eyes and face. Service in a well ventilated area.

SAFETY PROCEDURES

⚠ DANGER

Never work under or around the Feedwheel without first disengaging clutch, turning off engine, waiting for the Cutterhead to come to a complete stop, turning Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession. Some maintenance requires that you work under the Feedwheel while it is in the raised position. The Feedwheel Yoke assembly is equipped with two safety devices that must be put in place before work commences.

1. Yoke Lock Bars:

With the engine running, clutch disengaged, and the Cutterhead completely stopped, raise the Feedwheel Yoke to its maximum height using the Feedwheel Yoke manual control valve. Then locate the Hydraulic Yoke Lock valve and pull the lever. The Yoke Lock Bars located on top of the Cutterhead housing will extend or engage.

2. Safety Chain:

Now use the Safety Chain attached to the Discharge Belt Conveyor rest and secure it to the lug located on the right side of the Feedwheel Yoke. With the safety devices in place lower the Feedwheel Yoke until it contacts the Yoke Lock Bars and the Safety Chain pulls tight. Disengage clutch, turn off engine, wait for the Cutterhead to come to a complete stop, turn Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession. For added safety it is a good practice to use an additional log chain to help support the Feedwheel Yoke to the conveyor rest. When all safety devices are in place you may start performing maintenance to the machine.

Do Not feed this machine with the top feedwheel pinned, blocked or secured in the open position.

⚠ DANGER

Do not hand feed this machine! This machine is designed to only be fed by a mechanical log loader. Feeding material into this machine by hand is not permitted or authorized. Severe injury or death can result!

⚠ DANGER

Do not run or operate this machine with any door/ compartment open. Door enclosures are guards, you can be injured if open during operation.

⚠ WARNING

Before you change the Screen in your Recycler you must remember to never do any maintenance work inside or around your Recycler without first disengaging clutch, turning off engine, waiting for the Cutterhead to come to a complete stop, turning Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession.

The Recycler is equipped with a remote controlled electric lift to assist service person while changing the screen. It is only to be used to assist in changing the screen!!! Always follow the instructions in the lift owners manual! Never attempt any maintenance or service unless the equipment is completely shut down! Never overload lift or its cable, it is only to be used to handle the recycler screens (max. 300 lbs. or 136 kg)! Always keep components 100% operational and maintained: cable, hooks, wiring, connections, bolts and nuts, controls, etc.! Always replace wire rope if it shows kinks, frayed wires, broken or worn strands! Always wear quality leather gloves when handling wire rope! Always stay clear of wire rope, hooks, lift and screen while operating! Always insure that the brake device in lift is operational and maintained, before using it!

First lower winch cable to Screen area, remove winch hook stop block from winch hook. Hook winch up to the back of Screen and snug up the cable. Remove the eight mounting bolts that hold the screen in place. Remove Screen using winch. Clean ALL debris from Screen mounting area, then install new Screen. Reinsert clamp locks and bolts into Screen mounting area. Lightly snug up bolts then adjust Screen. Screen must ALWAYS be at least 1/8" (3.2 mm) minimum from teeth. When final adjustment is completed torque bolts to 376 ft.-lbs (510 Nm). Reinstall winch stop block before reeling in winch cable. Stop block must pull tightly to engine base when winch operation is complete.

⚠ WARNING

Do not open the belt shield door unless engine and all machine parts have completely stopped moving. Open this door only to check for proper drive belt tension. Do not start or operate this machine unless door is securely in place.

SAFETY PROCEDURES

⚠ WARNING

Check for fires, clean off debris, switch off battery. Do not leave this machine unattended until all potential fire debris is removed, no fire or smoldering exists and battery is switched off. The diesel engine creates many hot spots, including exhaust manifold and turbo. Remove all flammable debris (wood, mulch, oils, fuels, etc.) from: engine turbo and exhaust, beside and around engine, under engine and tanks, inside belt shield, inside control cabinets, anywhere materials collect. Do not leave this machine unattended until all fire hazards are removed, hot spots are cold and battery is disconnected. Always keep several type A:B:C fire extinguishers on the job at all times. Smoracy, LLC is not responsible for fires caused by fire hazards left to smolder and burn, or improper shutdown procedures.

⚠ DANGER

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.

Remember, it should take most of your strength to engage the clutch. If the clutch engages easily, DO NOT OPERATE this recycler until the clutch has been adjusted.

The clutch is an expensive component part of the Beast Recycler. It needs proper maintenance (see maintenance section and manufacturers manual for detailed information). The operator must take care in the engagement and disengagement of the engine, RPM should always be 800 to 900 RPM.

FIRE WARNING!

The self activating fire extinguishers located in various places will not stop your machine from burning. They are there to help put out a fire that may start. If a fire gets going after you have left the machine, they will be ineffective. You must clean the debris away from the engine and other hot areas before leaving the machine! It is your responsibility to properly maintain and test the extinguishers as instructed by the directions that come with the fire extinguisher. If you do not have that information contact Smoracy, LLC.

⚠ DANGER

Before transporting the machine: 1) Clean out any existing material on the machine by allowing the machine to operate for several minutes without further loading. 2) Idle engine and disengage clutch. 3) Make sure that the feedwheel is in the lowered position. 4) Make sure all manual hydraulic control valves are in the off position. 5) Switch engine off and remove ignition key. 6) Lock radiator debris screen in transport position. 7) Stow remote cable controls inside hydraulic compartment. 8) Lock compartment doors. 9) Clean off all Debris and potential fire hazards from the machine. Along with these procedures make sure to follow all of the “transportation procedures “ in that section.

⚠ WARNING

If the machine is equipped with a screen hoist, do not operate the hoist while the machine is running. Make sure the screen hoist and all the components are in good working order before operating. Use extreme care and safety when operating the screen hoist. Screen hoist operation is a one person job. This means the person who hooks the hoist to the screen is the same person who operates the hoist. Make sure the screen is securely attached to the screen hoist before lifting. Do not exceed the lifting capabilities of the screen hoist. This device is designed and authorized to lift screens only! Before resuming machine operation or transporting the machine, make sure the screen hoist and all components are properly stored on the machine and the screen hoist disconnect switch is in the off position. Do not leave the machine unattended, unless the screen hoist disconnect switch is in the off position. Use only the manufacturer’s recommended fluid for the hoist pump.

SAFETY PROCEDURES

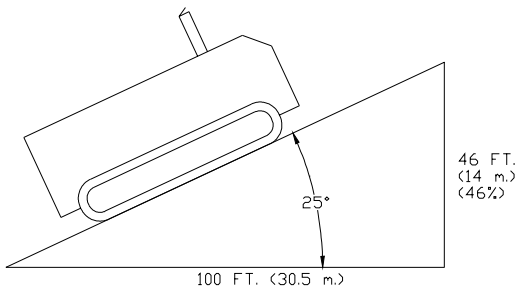
Machines equipped with undercarraige tracks are shipped with a manual from the track manufacturer. Refer to it for service, operation and safety information.

⚠ WARNING

DO NOT ATTEMPT TO OPERATE THE TRACK MACHINE ON AN ASCENDING OR DESCENDING SLOPE OF MORE THAN 25° OR 46% OR A SIDE SLOPE OF MORE THAN 17° OR 30%, IT IS DANGEROUS AND COULD BE FATAL. THIS IS THE MAXIMUM SLOPE GRADE THE MACHINE CAN BE OPERATED ON IF THE HYDRAULICS, TRACKS, AND ENGINE ARE RUNNING AT MAXIMUM PERFORMANCE AND THE TRACKS SUSTAIN GOOD TRACTION.

MAXIMUM SLOPE GRADE

ASCENDING OR DESCENDING SLOPE



SIDE SLOPE

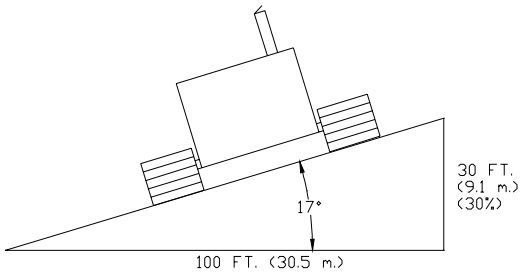


DIAGRAM SHOWS PERCENTAGE TO DEGREE OF SLOPE.
PERCENTAGE IS IN VERTICAL FEET FOR EVERY 100 HORIZONTAL FEET.

⚠ WARNING

ANY INCREASE FROM THE SPECIFIED MAXIMUM OPERATING ANGLES MAY CAUSE LOSS OF LUBRICATION FUNCTION AND DAMAGE THE ENGINE.

⚠ DANGER

THE TRACK MACHINE SHOULD NEVER BE PARKED ON A SLOPE AT ANY TIME. THE MACHINE CAN COAST OR CREEP CAUSING EQUIPMENT AND/OR PERSONAL INJURY.

⚠ DANGER

MAKE SURE EVERYONE IS CLEAR OF MACHINE BEFORE MOVING THE TRACK MACHINE. STAY CLEAR OF TRACK WHEN THE MACHINE IS MOVING.

⚠ DANGER

DO NOT ENTANGLE FEET OR HANDS IN UNDERCARRIAGE TRAVEL SYSTEM.

⚠ DANGER

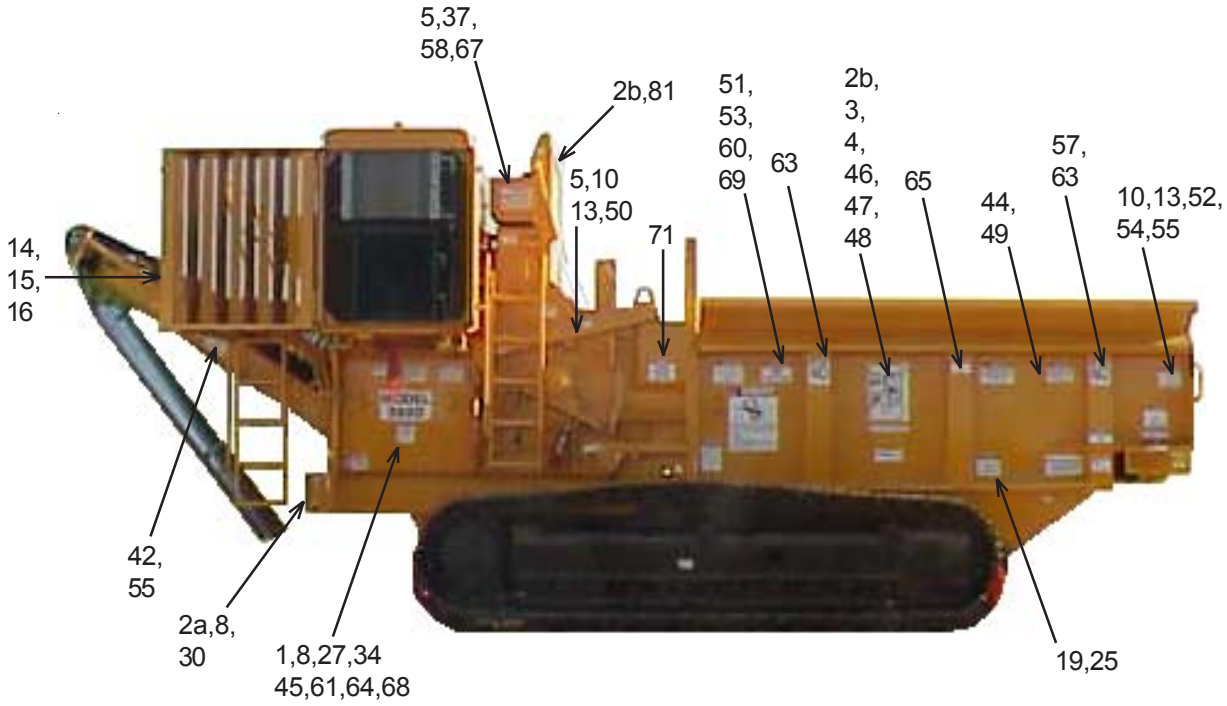
USE **EXTREME CAUTION** WHEN TRAVELING OVER NON-LEVEL SURFACE! THIS MACHINE CAN TIP OVER OR TIP BACKWARDS ON NON-LEVEL SURFACE. YOU WILL CAUSE ENGINE DAMAGE, MACHINE DAMAGE AND POSSIBLE INJURY!

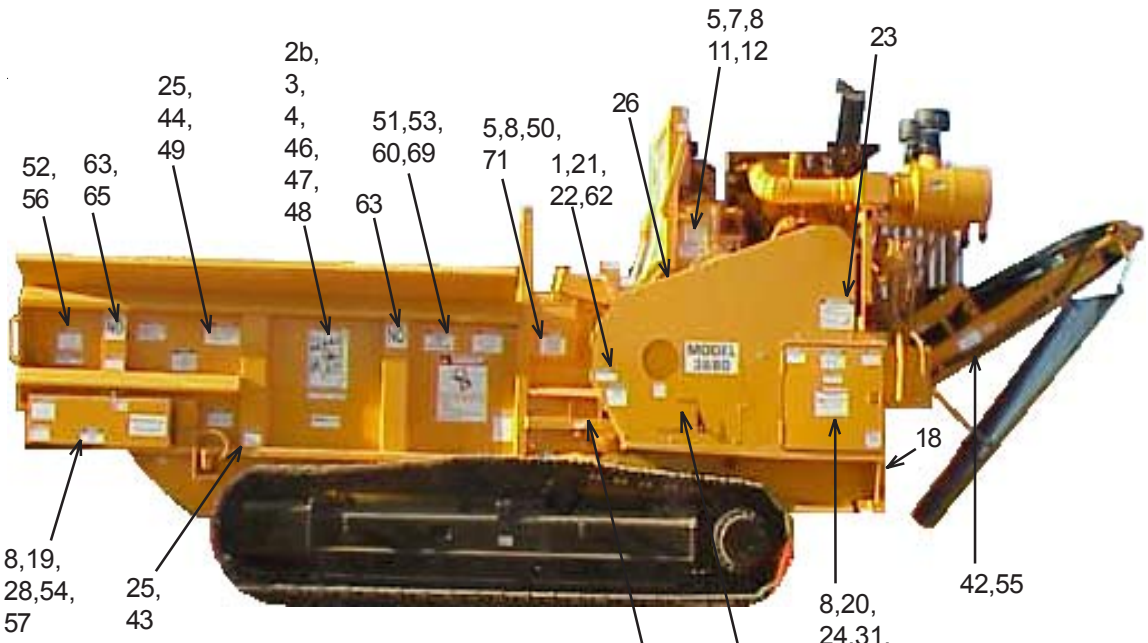
⚠ DANGER

NEVER SIT, STAND, LAY, CLIMB OR RIDE ANYWHERE ON THIS MACHINE WHILE IT IS RUNNING, OPERATING, OR IN TRANSIT. YOU WILL BE INJURED.

DECAL LOCATIONS - MODEL 2680 TRACK

ALTHOUGH LOCATIONS MAY VARY, ALL DECALS MUST BE ON MACHINE DURING OPERATION
IF ANY DECALS BECOME DAMAGED, REPLACE IMMEDIATELY.





INSIDE CONTROL CABINET

DECALS
6,9,17,29,35,36,38,39,40,41,59,66,70

PLAQUES
72,73,74,75,76,77,78

DECAL LOCATIONS - MODEL 2680 TRACK

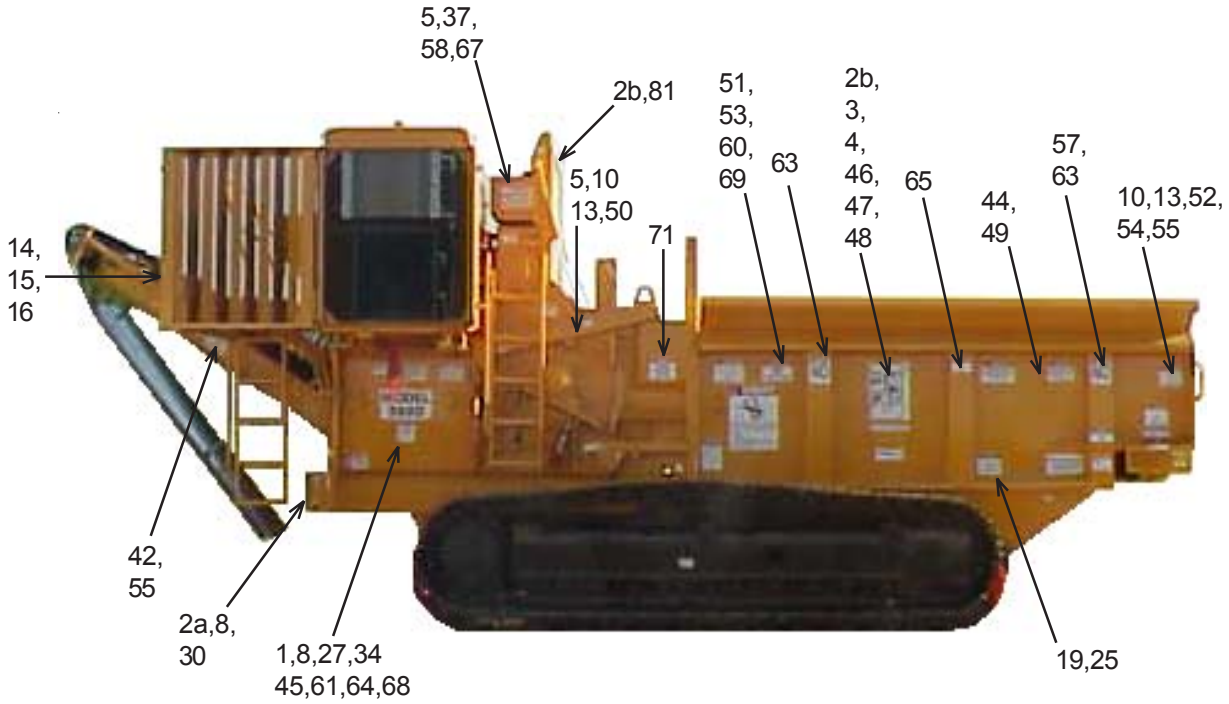
Modifications and/or additions of decals to this list will happen.
Consult recycler dealer or manufacturer for most current decal package.

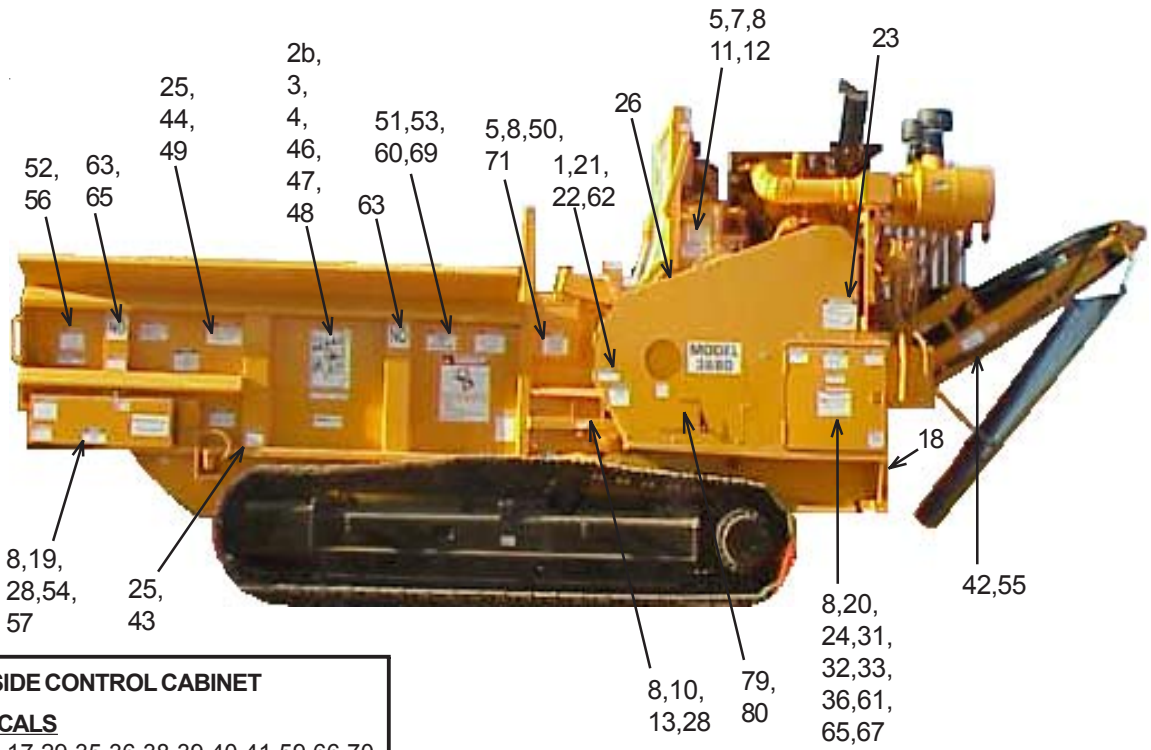
LOCATION NUMBERS		DECAL NUMBERS	DESCRIPTION
1.		ID-38	2680 Recycler...
3.		ID-43	Distributed By: Bandit Industries Inc...
Variety of locations		INST-04	Arrow
Variety of locations		INST-12	Grease Daily Arrow
Variety of locations		INST-16	Grease Weekly
7.		INST-38	Avoid Problems And Equipment Damage...
8.		INST-39	Oil Daily
9.	*Optional	INST-44	California Proposition 65...
10.		INST-45	For Parts And Service...
11.		INST-47	Trouble Shooting Machine Problems...
12.		INST-50	Avoid Damage To Discharge Conveyor...
13.		INST-51	Fire Warning! The Self Activating...
14.		INST-53	Hydraulic Oil.....
15.		INST-56	Avoid Costly Downtime.....
16.		INST-59	Adjust Chain Tension.....
66.		INST-100	Lubricate Cutter Head.....
17.		N-02	Notice Maintain Lubrication and Hydraulics...
18.		N-03	Notice Service Required Under...
19.		N-05	Notice Frequent Adjustment...
20.		N-06	Notice Decal Maintenance Is...
21.		N-07	Notice The Clutch Handle Should Not...
22.		N-08	Notice This Machine Is Covered...
23.		N-14	Notice Do Not Start To Weld...
24.		N-16	Notice 24 Volt Circuit
25.		N-17	Notice Battery Disconnect.....
27.		N-26	Notice Battery Disconnect Switch...
28.		N-27	Set Feed To Match Material
29.		N-28	In Line Fuel Filter
64.		N-30	Notice Must Wait 45 Seconds.....

***SOME DECALS ARE FOR OPTIONAL COMPONENTS**

DECAL LOCATIONS - MODEL 2680 TRACK

ALTHOUGH LOCATIONS MAY VARY, ALL DECALS MUST BE ON MACHINE DURING OPERATION
IF ANY DECALS BECOME DAMAGED, REPLACE IMMEDIATELY.





INSIDE CONTROL CABINET

DECALS
6,9,17,29,35,36,38,39,40,41,59,66,70

PLAQUES
72,73,74,75,76,77,78

DECAL LOCATIONS - MODEL 2680 TRACK

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

LOCATION NUMBERS		DECAL NUMBERS	DESCRIPTION
30.		W-01	⚠ Warning Do Not Go Near Leaks...
31.		W-02	⚠ Warning Combustible Liquid...
32.		W-04	⚠ Warning Frozen Battery Will Cause...
33.		W-08	⚠ Warning Wear Eye & Personal Protection...
34.		W11	⚠ Warning Do Not Leave.....
35.		W-13	⚠ Warning Check For Fires, Clean Off Debris...
36.		W-14	⚠ Warning This Recycler Is Equipped With...
37.		W-15	⚠ Warning Do Not Open This Door Unless...
38.		D-02	⚠ Danger Moving Parts...
39.		D-16	⚠ Danger Do Not Hand Feed This Machine...
40.		D-17	⚠ Danger Do Not Run Or Operate This Machine...
41.		D19	⚠ Danger Do Not Entangle Feet or Hands....
42.		D-20	⚠ Danger Flying Objects Stand Clear...
43.		D-23	⚠ Danger Restricted Area Do Not Approach...
44.		D-24	⚠ Danger Falling Objects Stand Clear...
45.		D-25	⚠ Danger Stay Clear - Moving Conveyor
46.		D-26	⚠ Danger Do Not Work Under Feed Wheel...
47.		D-27	⚠ Danger Hydraulic Shut Down Switch
48.		D-28	⚠ Danger Do Not Insert Fingers...
49.		D-29	⚠ Danger NO Do Not Climb Or Reach...
50.		D-30	⚠ Danger Do Not Sit, Stand, Lay, Climb...
51.		D-31	⚠ Danger Never Work Under Top Feed Wheel...
52.		D-32	⚠ Danger Avoid Injury Or Death...
53.		D-34	⚠ Danger Do Not Work Under Top Wheel...
		INL-501	Inlaid Plaque - Feedwheel
		INL-502	Inlaid Plaque - Infeed
		INL-503	Inlaid Plaque - Yoke
		INL-504	Inlaid Plaque - Discharge
		INL-506	Inlaid Plaque - Conveyor Fold
		INL-507	Inlaid Plaque - Yoke Lock
		INL-508	Inlaid Plaque - Screen
		INL-509	Inlaid Plaque - Auger
60.		OPEN	Open Vinyl
61.		CLOSED	Closed Vinyl
62.			Model 2680 Beast Vinyl
63.	*Optional	Magnet	Caution Strong Magnet

***SOME DECALS ARE FOR OPTIONAL COMPONENTS**

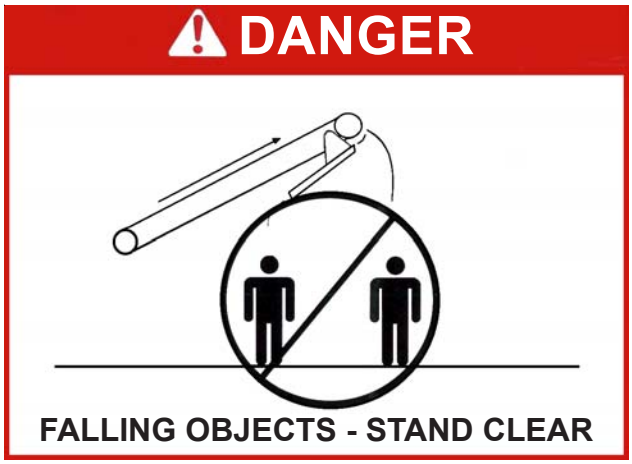
SAFETY DECALS

Safety Decals located on your Beast Recycler 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. If decals are damaged or removed it is the owner's responsibility to replace them. 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 Smoracy, LLC Dealer.

EXAMPLES:



AUTO FEED SECTION

AUTOFEED SYSTEM

Consult the original manufacturer's manual for your recyclers
Autofeed operating and maintenance procedures

When processing material through the recycler, the feed 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. The "Autofeed Plus" system will reverse for a set period of time and then stop until the engine has recovered speed. The "Autofeed Plus" system will then automatically turn the feed on to resume forward travel.

Due to required components and equipment options a recycler may have various types or brands of "Autofeed Plus" systems. Each recycler is shipped with the original manufacturer's manual for the "Autofeed Plus" system it is equipped with.

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

AUTOFEED DIGITAL TACH HOUR METER

Digital E-290 "Autofeed Plus"
(White Face)
Part Number 900-2906-83 (24 volt)

For Warranty/Service Call
1-866-644-8622

AUTO FEED OPTIONS

ENGINE PANEL/RADIO CONTROL SYSTEM

AUTOFEED TACH

DIAGNOSTIC GAUGE

SWITCH MODULES

TRANSMITTER

See “Control Box Components” For Parts Reference Numbers

(Picture shown is typical, your control box may have other options)

AUTO FEED OPTIONS

NOTICE

Before you begin programming, you will need to determine the appropriate numbers (values) to use for the following settings:

HI RPM:
This is the RPM at which the controller will turn OFF.

LO RPM:
This is the RPM at which the controller turns ON.

BACKUP TIME:
This is the time, in milliseconds, to allow the feed system to reverse.

PROGRAMMING SEQUENCE

1) Turning On Program Mode:

While The Engine Is Off:
Press and hold the set button while turning ignition key ON. Release button. Go To Step #2

While The Engine Is Running:
Press and hold the set button for 2 to 3 seconds. Release button. Go To Step #2

> **NOTE:**
> To advance from one setting to the next (while engine is running) you must **PRESS & HOLD** the **SET** button until the screen changes.

2) Set the HI RPM Value:

To decrease the setting value press the down ▽ button.
To increase the setting value press the up △ button.
To save the setting press the set ○ button. The set button initiates the program mode, saves settings, and finalizes the program mode.

3) Set the LOW RPM Value:

To decrease the setting value press the down ▽ button.
To increase the setting value press the up △ button.
To save the setting press the set ○ button. The set button initiates the program mode, saves settings, and finalizes the program mode.

AUTO FEED OPTIONS

4) Set the BACKUP TIME Value:

To decrease the setting value press the down ▽ button.

To increase the setting value press the up △ button.

To save the setting press the set ○ button. The set button initiates the program mode, saves settings, and finalizes the program mode.

INFORMATION DISPLAY

(This information will only be displayed when in run mode, not in program mode.)

1) To display the running hours press the down ▽ button.

2) To display the engine speed (RPM's) press the up △ button.

3) To display the Total cumulative hours press the Total hrs ○ button.

DISABLING OUTPUTS

Holding the down ▽ button for 4 seconds disables BOTH outputs.

The unit then alternates between displaying the RPM's for 9 to 10 seconds and "OFF" for 1 second.

To enable outputs, press either the up △ or the set ○ buttons.

NOTE: This feature only works when engine is running.

AUTO FEED SECTION

RED LED

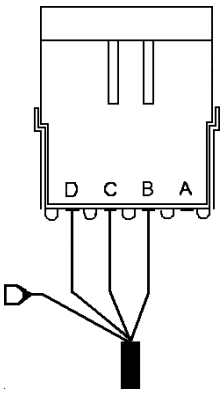
The Red LED will light when Output 1 is active and putting out positive voltage to the feed system solenoid valves. This happens when the Autofeed stops the feed system from feeding in, reverses and stays lit until the feed system starts to feed again.

OUTPUT WIRING

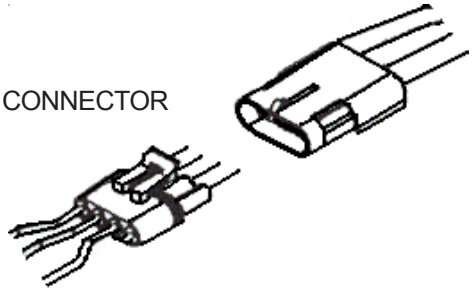
IMPORTANT:

It is of the utmost importance that the digital control be connected to a clean power source. The clean power source can or could include (first choice) the accessory side of the key switch or (second choice) the run side of the key switch.

A clean power source is the result of filtering unwanted voltage spikes and EMF. Spikes can be prevented by the installation of clamping diodes at their source (coils).



WEATHER-PACK CONNECTOR



POSITION	COLOR	FUNCTION
	ORANGE	Positive output to solenoid coil (Output 2)
D	GREEN	Positive output to solenoid coil (Output 1)
C	RED	Positive Voltage from clean power source
B	BLACK	Ground
A	WHITE	Signal from alternator or magnetic pickup

TROUBLE SHOOTING

IF THE POWER TO CHECK THE FEED SOLENOID IS INCONSISTENT OR DOES NOT WORK, CHECK THE FOLLOWING WITH A MULTIMETER:

MULTIMETER SET AT RX100 RANGE

TP1 to TP5	0 ohms
TP2 to TP6	0 ohms
TP3 to TP7	0 ohms
TP4 to TP9	0 ohms
TP10 to TP8	0 ohms
TP4 to TP8	0 ohms with ON-OFF switch ON

AC VOLTAGE TEST

With the engine running and the multimeter set to the 0-50 Volts AC range, TP1 or TP5 should show a reading of 6-40 Volts AC to ground.

DC VOLTAGE TEST

With the autofeed turned on, the engine at idle, and the multimeter set to DC Volts, TP4 or TP8 should show a reading of 12-16 Volts DC to ground. The feedwheels should not be turning.

1. Select DC volts on the multimeter.
2. Put the red (+) lead on the multimeter to the red lead supplying power to the speed sensor. If there is no voltage:
   a. Check the 7.5 amp in line fuse and replace if bad.
   b. Check the wires to the quick connectors on both sides of the speed sensor control. (Making sure they are not broken)
   c. Check the wires at the solenoid valve.

NOTE: The solenoid will be ON when the engine is off (with key turned to the on position) or when the RPM is at a low idle. If the above adjustments and voltage checks do not work, then replace the autofeed control. Call your dealer and they can send another control already programmed for the engine used on the recycler.

TROUBLE SHOOTING

POSSIBLE CAUSES WHY AUTOFEED DOES NOT WORK OR IS INTERMITTENT:

Possible Cause:	Solution:
1. Dirty Tach Probe	1. Remove tach probe and clean any debris from its end. To install, turn the probe in till it touches the flywheel teeth and then back it out 3/4 of a turn. (Tach probe located on top of the flywheel housing)
2. Faulty Tach Probe	2. With the engine shut down and the ignition switch off, check the draw at the probe by using a meter capable of reading ohms. There should be a reading of 140 ohms, if not then the probe needs to be replaced. To install, turn the probe in until it touches the flywheel teeth and then back it out 3/4 of a turn.
3. Incorrect settings	3. Follow the procedures for changing the settings of the "Autofeed Plus" system to make sure that they are correct.
4. Engine not returning to full rated RPM's	4. Check engine throttle setting to make sure it is where it should be. "Autofeed Plus" system high RPM setting is too close to actual engine high RPM's. There should be about a 200 RPM difference.
5. Clutch or drive belts slipping	5. The "Autofeed Plus" system works with the engine speed so if the clutch or belts are slipping allowing the Cutterhead to slow down and the engine speed doesn't, than the "Autofeed Plus" will not stop. If this happens you will need to adjust or replace the belts or clutch.

APPROXIMATE DIGITAL AUTOFEED SETTINGS

(FOR REFERENCE ONLY)

Engine	Maximum RPM	Magnetic Pickup PPR (CAL)	Off RPM	On RPM	Reverse Time
Caterpillar C-10**	2100	118	1700	2000	.5 Seconds
Caterpillar C-15**	2100	136	1700	2000	.5 Seconds
Caterpillar 3412E**	2100	136	1700	2000	.5 Seconds
Cummins M-11	2100	118	1700	2000	.5 Seconds
Cummins N-14	2100	118	1700	2000	.5 Seconds
Cummins QSK-19	2100	142	1700	2000	.5 Seconds
John Deere 6125A	2100	147	1700	2000	.5 Seconds
John Deere 6125H	2100	147	1700	2000	.5 Seconds

**With PT Tech Clutches 395 HP and above use a PPR value of 113

CONTROLS

MODEL 2680 BASIC LOCATION OF TETHER REMOTE CONTROLS

1. Engine Shut Down Switch
2. Infeed Conveyor Forward & Reverse Switch
3. Feedwheel Yoke Up Switch
4. Throttle Up & Down Switch
5. Concave Door Open & Close Switch
6. Feedwheel Forward & Reverse Switch

(Picture shown is typical, your controls may have other options)

OPERATING THE TETHER REMOTE

The Tether Remote control comes standard with every machine. The system works by means of electric solenoids on the manual control valves operated through a push button station, which is at the end of an umbilical cord which is approximately 50 ft. (15.2 m) long. The Tether Remote control connection is via a Deutsch Socket. Insert plug into socket located on the side of the engine gauge panel and tighten. Make sure it is secure. On the engine gauge panel move the first switch from manual to Radio/Tether and second switch to Tether Remote which will allow you to control the machine from the Tether Remote. For the Tether Remote control to function properly the manual control valves for the Infeed Conveyor Chain, Feedwheel, and Feedwheel Yoke must be in the off position.

Concave Door Control Switch: (5)

The Concave Door open and close switch is located on the top left side of the remote. To open the Concave Door, push the switch up. To close the Concave Door, pull the switch down. An indicator on either side of the Recycler shows Concave Door position.

The Feedwheel Yoke Switch: (3)

The Feedwheel Yoke is located on the top right side of the remote. To raise the Feedwheel Yoke depress the button. Release the button to lower and float on incoming material.

Feedwheel Motion Switch: (6)

The Feedwheel motion switch is located on the left center of the remote. By pushing the switch up the Feedwheel will pull material in. To run in the reverse direction the switch needs to be pulled down and held. To stop the Feedwheel pull switch down to reverse then to center or off position.

The Infeed Conveyor Motion (Chain): (2)

The Infeed Conveyor motion switch is located on the right center of the remote. By pushing the switch up the Infeed Conveyor chain will pull material in. To run in the reverse direction the switch needs to be pulled down and held. To stop the Infeed Conveyor chain pull switch down to the reverse position and then to center or off position.

Engine Shut Down Switch: (1)

The Engine Shut Down switch is located in the bottom center of the remote. To shut down the engine in an emergency, depress the button. This will not stop everything immediately. This shuts off fuel and or electrical power to the engine but engine and moving components will coast to a stop. To reset so engine will start turn key off and back on at the control panel on Recycler.

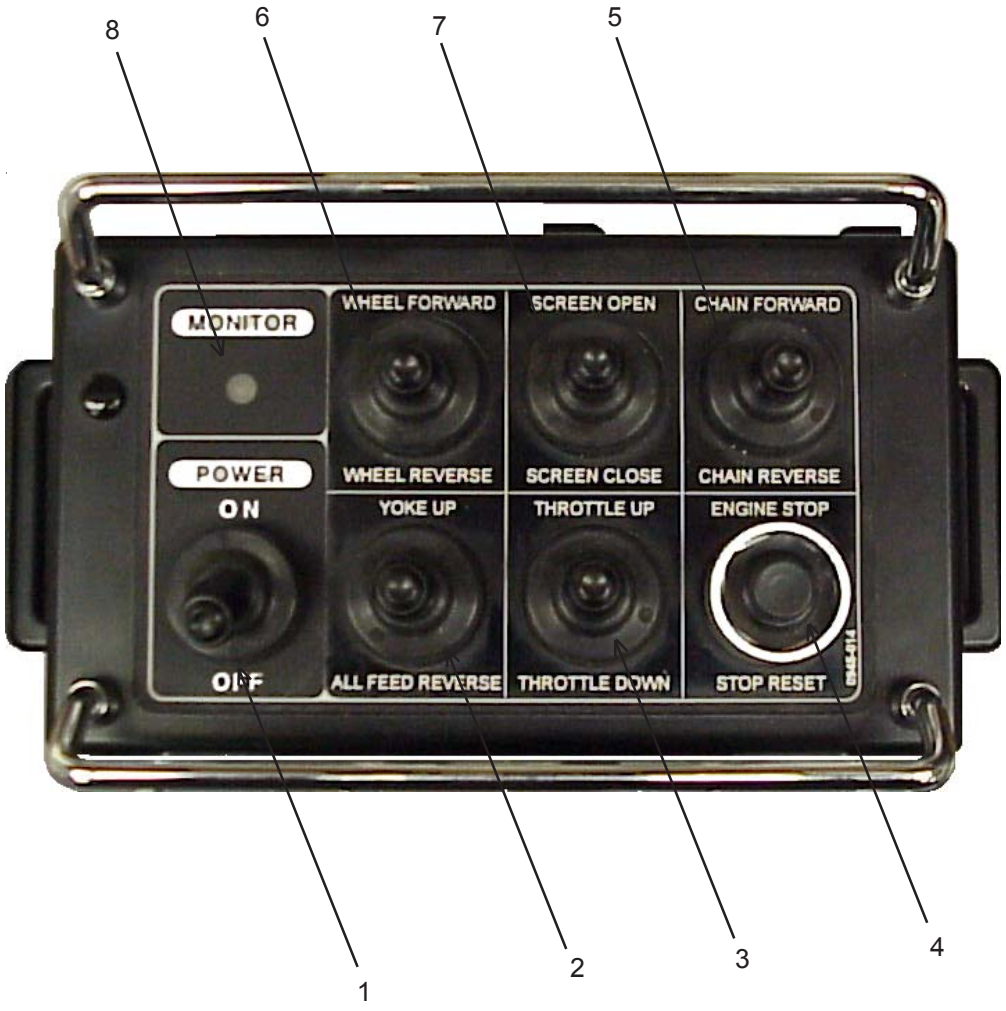
Throttle Control Switch: (4)

The throttle control switch is located on top of the remote. To increase engine speed, push the switch to the right. To decrease engine speed, push the switch to the left. This remote switch can only speed up the engine to the RPM level set with the manual switch in the control cabinet at the Recycler.

RADIO REMOTE CONTROL

MODEL 2680 BASIC LOCATION OF RADIO REMOTE CONTROLS

1. Power On & Off Switch
2. Yoke Up & Feed Reverse Switch
3. Throttle Up & Down Switch
4. Engine Stop & Reset Switch
5. Feedwheel Forward & Reverse Switch
6. Concave Door Open & Close Switch
7. Infeed Conveyor Forward & Reverse Switch
8. Monitor Light



(Picture shown is typical, your controls may have other options)

OPERATING THE RADIO REMOTE

In order to operate the Recycler using the Radio Remote controls, the manual control valves ***must*** all be placed in the off position.

On/Off Switch (1)

To turn on the remote control push the switch up. To turn off the remote control push the switch down.

Feedwheel Yoke Raise and All Feed Reverse Switch (2)

To raise the Feedwheel Yoke push the switch up. Letting the switch return to center allows the Feedwheel to lower and float on incoming material. Pulling the switch down allows the Infeed Conveyor Chain and Feedwheel to reverse at the same time. To start the Infeed Conveyor Chain and Feedwheel again you will need to push up on the individual switches.

Throttle Switch (3)

To throttle up the engine push the switch up. To throttle down the engine push the switch down.

Engine Shut Down Button (4)

To shut the engine down press the engine kill switch. This will not stop everything immediately. Allow any moving parts to come to a complete stop. The Key switch will need to be cycled to allow the engine to restart.

Feedwheel Control Switch (5)

To have the Feedwheel run in the forward motion the switch needs to be pushed up. To have the Feedwheel turn in the reverse motion the switch needs to be pushed down.

Concave Door Control Switch (6)

To have the Concave Door open push the switch up. To have the Concave Door close push the switch down.

Infeed Conveyor Control Switch (7)

To have the chain run in the forward motion the switch needs to be pushed up. To have the chain run in the reverse motion the switch needs to be pushed down.

The Monitor Light (8)

The light will be green when the remote control is turned on. The light will not be lit when the remote is turned off.

EQUIPMENT SPECIFICATIONS

The Smoracy, LLC Recycler machine is designed to reduce wood and all organic products into mulch. The unit is powered by one of several optional engines. Power is transmitted through a V-Belt system to the cutter head. Applicable service manuals should be consulted concerning power units and clutches for proper maintenance. Any available manuals pertaining to these component parts are also shipped with the unit. Additional copies can be purchased through their respective manufacturers.

SPECIFICATIONS - FOR MODEL 2680 BEAST

FRAME: Made from 20" (508 mm) deep formed section steel plate, with 18" (457 mm) deep formed section cross-bracing.

HYDRAULIC TANK: 140 gallon (530 liter) capacity with in tank element filter on return line, strainer on tank inlet, baffle, sight gauge, shut-off valves, and oil temperature gauge, rubber mounted.

FUEL TANK: 250 gallon (946 liter) with sight gauge, lockable cap and shock mounted.

FEED SYSTEM: Horizontal feed, hydraulically powered 13' 6" (4.1 m) long by 5 feet (1.5 m) wide angle type slat conveyor, assisted with a 24 inch (610 mm) diameter by 5 feet (1.5 m) wide floating feedwheel mounted over the conveyor. Infeed rate 20 feet per minute (6.1 m/min)

DISCHARGE CONVEYOR: 4 feet (1.2 m) wide x 18 feet (5.5 m) long, conveyor with vee-style cleats, troughing rolls, 1 speed constant hydraulic direct drive and optional magnetic head.

CUTTER MILL: Consists of 60 cutters mounted between supports welded to 24" (610 mm) diameter drum. Tip to tip diameter is 42 inches (1067 mm). Head width is 5 feet (1.5 m). Cutters consists of body, plus bolt and lock nut, and cutter insert and nut.

MAIN CUTTER HEAD BEARING: (2) - 4" (101.6 mm) diameter spherical roller pillow block bearings.

SCREENS: Various screen options available.

INFEED CONVEYOR SPEED RATE: Single Speed Infeed Conveyor is standard. Approximately 20 ft/min (6.1 m/min). Three Speed Infeed Conveyor, optional. Approximately 10, 20, and 30 ft/min (3.0, 6.1, and 9.1 m/min).

EQUIPMENT SPECIFICATIONS

CUTTER HEAD SHAFT: 6” (152 mm) diameter, bushing mounted inside 24” (610 mm) diameter by 3/4” (19.1mm) wall pipe connected by end plates.

CUTTER MILL OPENING: 30” (762 mm) high x 60” (1524 mm) wide

GUARDS: All rotating parts covered by heavy-duty guards.

OVERALL DIMENSIONS: Approximately 30’ (9.1 m) long x 8’6” (2.6 m) wide x 13’3” (4.0 m) high.

WEIGHT: Approximately 45,000 pounds (20,412 kg). (Depending on engine options.)

MACHINE SYSTEM CONTROLS: Primary control with electric Tether Remote. Secondary Control with radio remote control option. Manual hydraulic controls for maintenance purposes.

HYDRAULIC HOSES: Protected by hose guards in all wear areas.

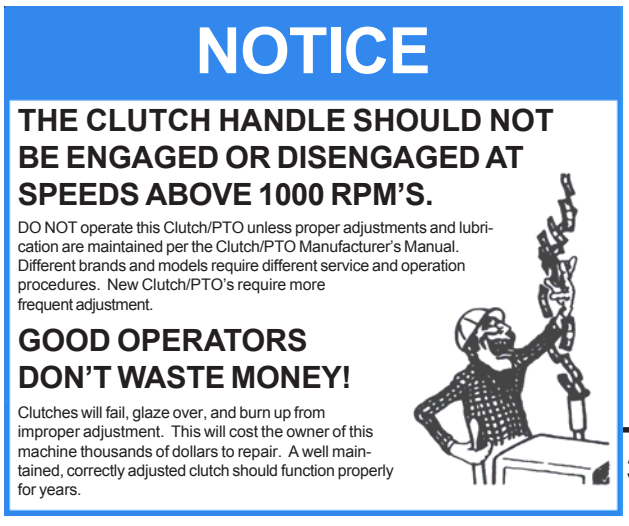
RADIATOR SCREEN: High capacity radiator debris screen.

ENGINES: Optional engines available.

BATTERY BOX: Lockable, steel fabricated construction.

HYDRAULIC PUMPS: Hydraulic pumps will vary depending on engine options.

All welding is done by an experienced labor force, using gas MIG welders. They are inspected and reinspected to assure secure, solid welds. Many fabricated components such as drive guards, cutter head base, etc. are not only externally welded but internally welded as well. This type of quality work insures good looks as well as security.



The CLUTCH is a relatively expensive wear item on the recycler. This decal is installed on each machine shipped as a reminder to the operator to save money and down time by proper maintenance and usage. Refer to your clutch manuals for proper maintenance procedures.

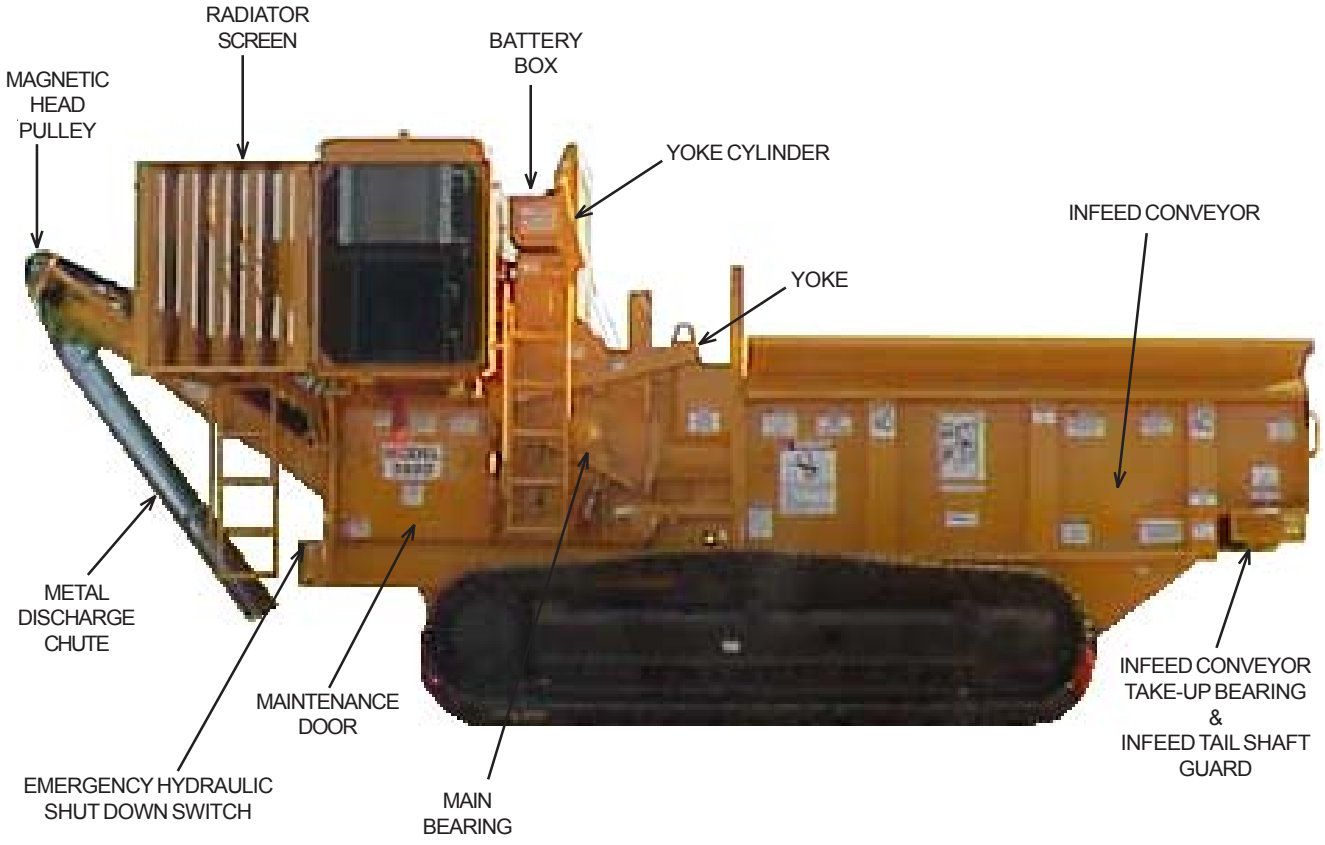
Please remember, if it ISN’T taking most of your strength to engage the clutch, IT ISN’T ADJUSTED PROPERLY.

SMORACY, LLC DOES NOT warranty clutch failures. Warranty must be handled through the respective manufacturers.

New clutches require several adjustments in the first few hours of operation. This is the time period they are wearing in. Failure to adjust will cause the entire clutch to burn up.

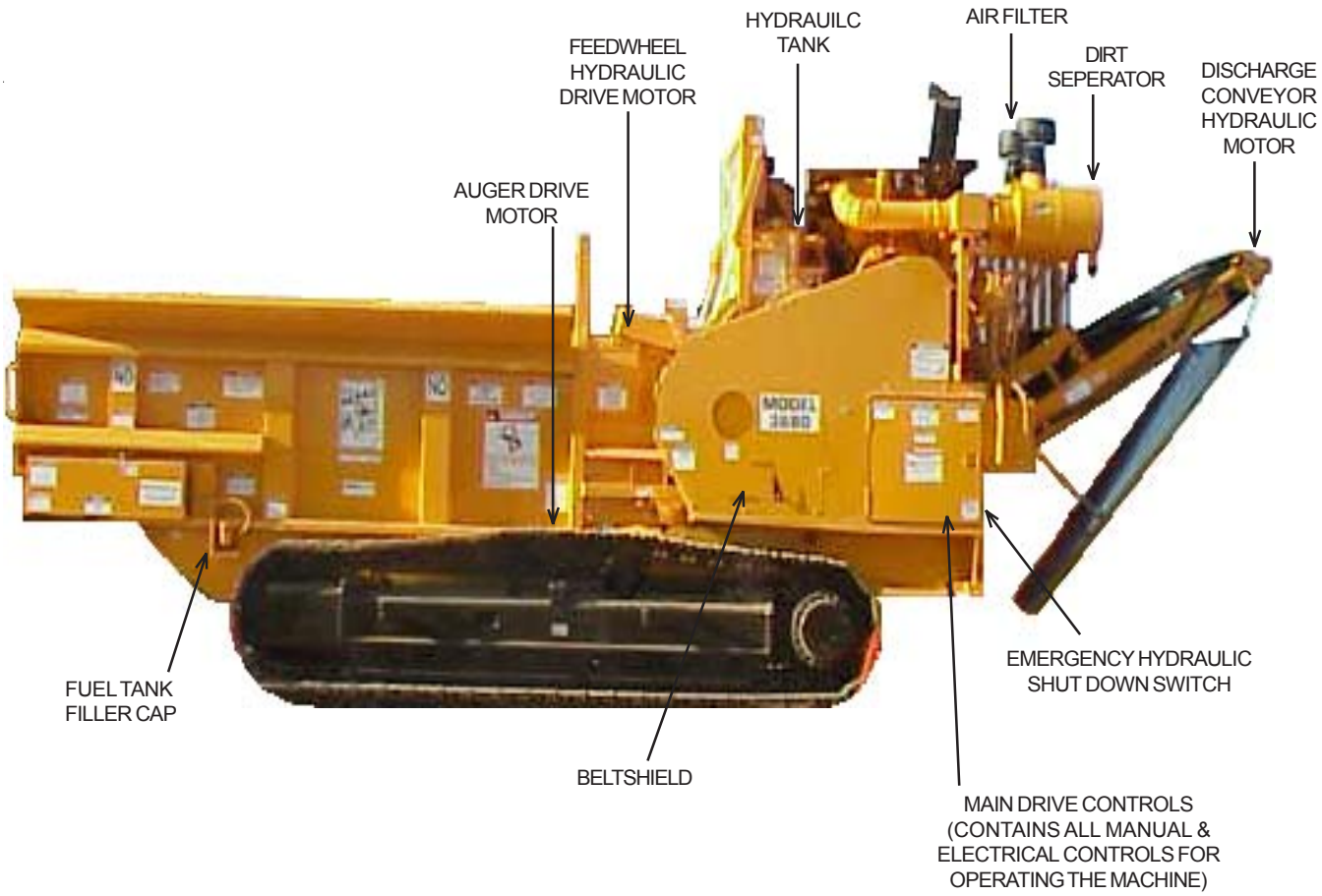
COMPONENT PARTS
MODEL 2680 "CURBSIDE" VIEW

Picture shown is typical, your machine may have other options



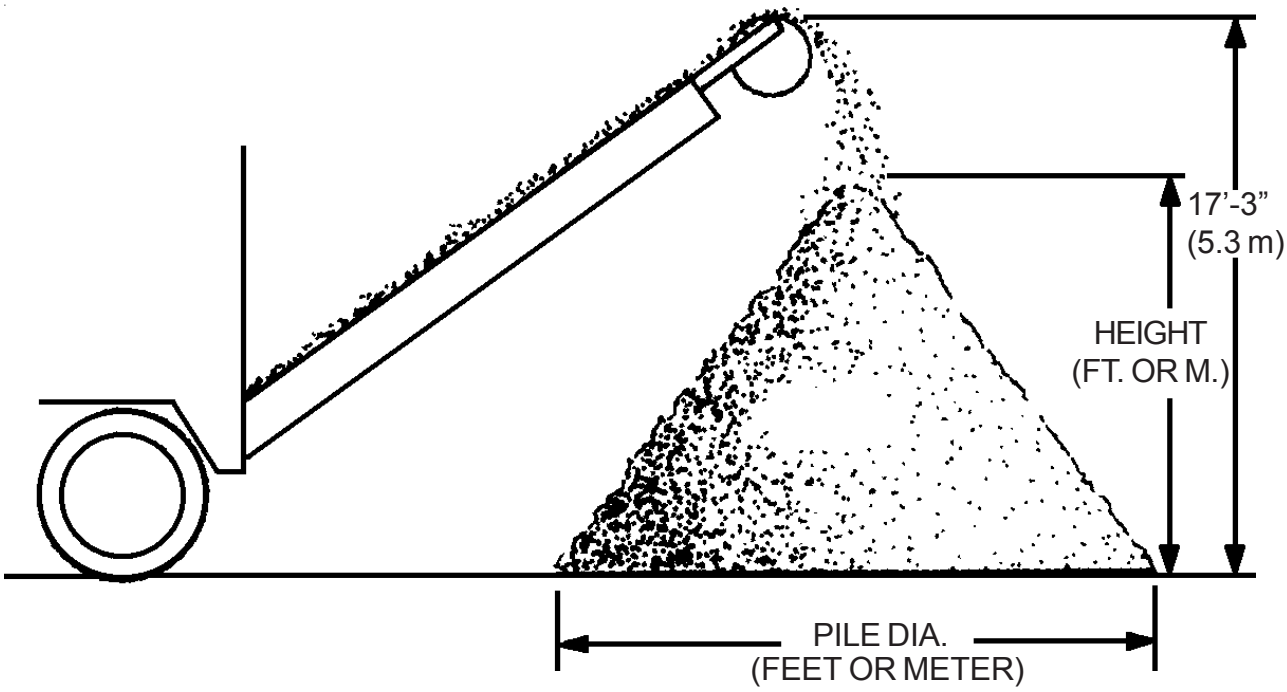
COMPONENT PARTS
MODEL 2680 "ROADSIDE" VIEW

Picture shown is typical, your machine may have other options



EQUIPMENT SPECIFICATIONS

VOLUME OF A CONE



APPROX. VOLUME OF PILE = $\frac{\text{DIA. (FEET)} \times \text{DIA. (FEET)} \times \text{HEIGHT (FEET)}}{100}$
IN CUBIC YARDS

APPROX. VOLUME OF PILE = DIA. (METER) x DIA. (METER) x HEIGHT (METER) x .26
IN CUBIC METERS

CONTROLS

Model 2680 Beast Basic Location of Controls

PRIMARY CONTROLS

Controls for the Recycler are located in the control cabinet on the road side of the machine. The Recycler is operated by means of a dual control system. All valves function manually and some of these same valves are controlled electrically by the Tether Remote Control or the optional Radio Remote Control.

Control Cabinet

DEUTSCH SOCKET

Attachment of the tether remote umbilical cord is via a Deutsch Socket. The cord and push button station can be removed by unscrewing the Deutsch plug from its socket.

When using the tether remote as the main control, the manual control valves must be placed in the off position.

Deutsch Socket

REMOTE RADIO CONTROL

In addition to the primary and tether remote, the machine can also be controlled by an optional radio control up to a distance of two hundred feet. The radio receiver is mounted inside the control panel for machines ordered with this option.

ENGINE START

Before starting the engine make sure that the clutch is not engaged. Turn the ignition switch one stop to the ON position. This will turn on the electrical fuel pump and the rest of the electrical system. Then turn the ignition switch all the way to the right and hold until the engine starts. There will be a five second delay, during this time a beeping sound will be heard alerting anyone near the machine that it is starting. Also the temperature overheat light will cycle letting you know that it is working.

NOTE: Some engines have a pressure override switch wired into their systems. In this case, depress the pressure override button and turn the ignition switch all the way to the right, now hold both until the engine starts. Once their is oil pressure the override button may be released.

Engine Start

Model 2680 Beast Basic Location of Controls and Adjustments

CLUTCH ENGAGEMENT

The engine must be running at low idle when engaging the clutch. The clutch is engaged by bumping-in. Bumping-in involves several partial engagements using the clutch handle. Each bump establishes rotation to the Cutterhead assembly progressively increasing speed. After two or three "bumps", the clutch handle is moved to the fully engaged over-center position. It will take most of your strength to engage the clutch fully. If it engages easily, do not operate the Recycler until the clutch has been properly adjusted. **Remember; it must take most of your strength to lock the clutch in place.** The engine is now ready to be brought up to full RPM with the throttle control. Reduce to 1,000 RPM to disengage PTO.

PTO Engagement

NOTICE: DO NOT ATTEMPT TO ENGAGE THE ENGINE PTO (POWER TAKE OFF) STYSTEM ON THIS MACHINE IF THE CUTTER HEAD IS JAMMED OR FROZEN IN PLACE. THIS WILL CAUSE DAMAGE TO THE DRIVE BELTS AND/OR PTO WHICH WILL NOT BE COVERED UNDER WARRANTY.

HYDRAULIC CLUTCH ENGAGEMENT (PT TECH)

With the engine turned on and running at 900 RPM, push and hold the start button on the hydraulic clutch control box for 3 seconds. When the LED light turns green, clutch is engaging. The engine is now ready to be brought up to full RPM with the throttle control. Reduce to 1,000 RPM to disengage PTO.

Start Button

Hydraulic PTO Engagement

CONSULT THE ENGINE MANUFACTURER'S MANUAL FOR SPECIFIC CONTROLS FOR TYPICAL DIESEL ENGINES

1) **Throttle Adjustment:**

The engine throttle adjustment is located on the engine gauge panel inside the control cabinet. To increase engine speed, toggle the switch up. To decrease engine speed, toggle the switch down.

2) **Oil Pressure Gauge:**

The oil pressure is monitored on the diagnostic gauge located on the engine panel inside the control cabinet. The engine shut down system is wired through this gauge. If the oil pressure is lost, the engine will shut down and all moving components will coast to a stop.

3) **Engine Temperature Gauge:**

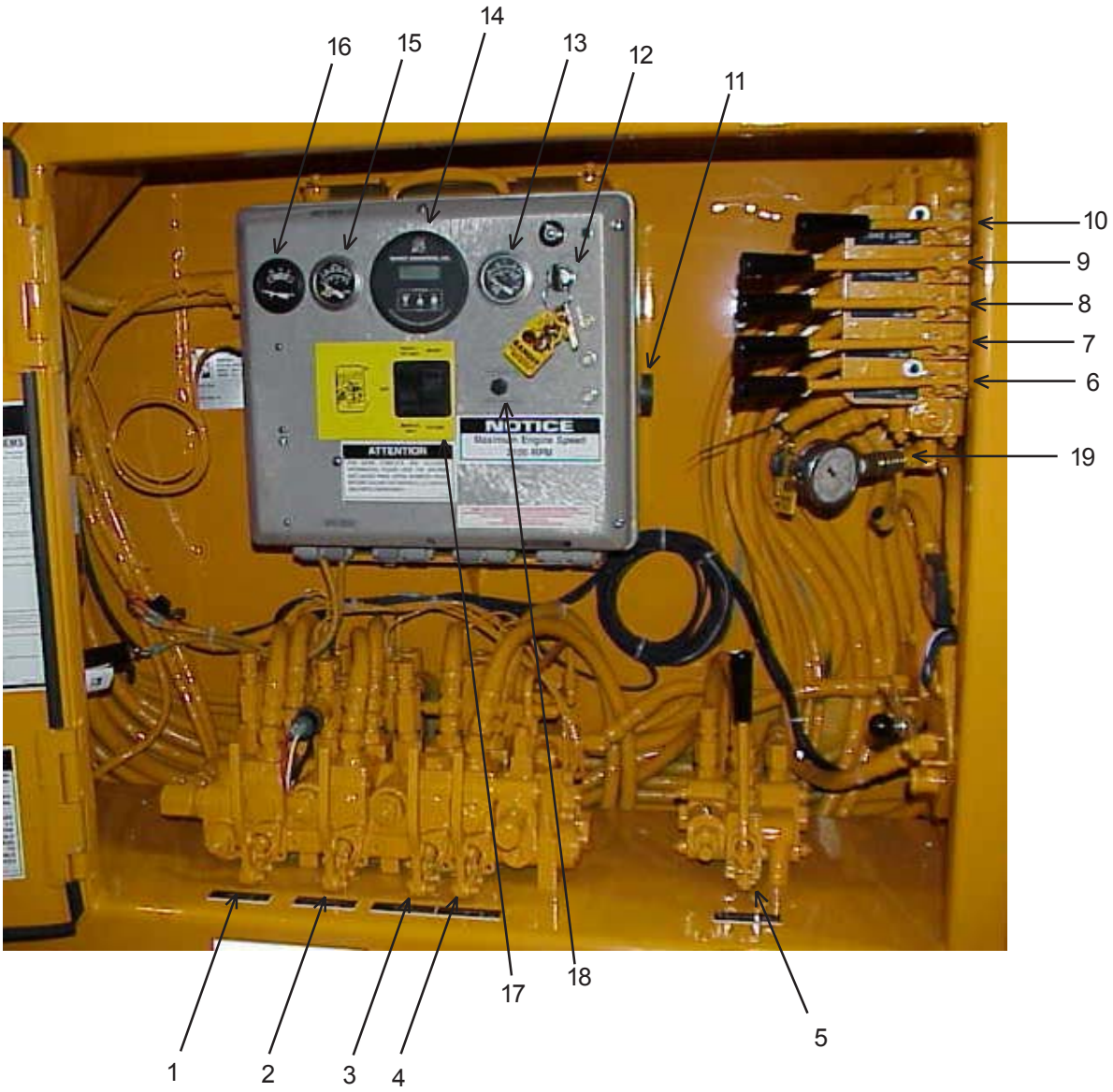
The engine temperature is monitored on the diagnostic gauge panel inside the control cabinet. The engine is equipped with a temperature overheat strobe light. This will alert the operator that an overheat condition is about to occur and before an automatic shutdown happens.

The engine shut down system is also through this gauge. If the coolant temperature gets too high, the engine will shut down and all moving components will coast to a stop.

CONTROLS

MODEL 2680 BASIC LOCATION OF CONTROLS

1. Infeed Conveyor Control Handle
2. Feedwheel Control Handle
3. Feedwheel Yoke Control Handle
4. Concave Door Control Handle
5. Discharge Belt Conveyor Control Handle
6. Auger Control Handle
7. Discharge Fold Control Handle (If Equipped)
8. Discharge Fold Control Handle (If Equipped)
9. Stabilizer Control Handle
10. Feedwheel Yoke Lock Control Handle
11. Deutsch Socket
12. Ignition Switch
13. Water Temperature Gauge
14. Digital Autofeed Tachometer
15. Oil Pressure Gauge
16. Battery Voltage Gauge
17. Radio/Tether or Manual Control Switch and Radio or Tether Switch
18. Throttle Control
19. Pressure Gauge



CONTROLS

STABILIZER ADJUSTMENT (9)

The Stabilizer directional control valve is located in the block of valves on the right hand side of the control cabinet. To raise the front of the machine pull the control handle toward you. To lower the front of the machine push the control handle away from you.

CONCAVE DOOR CONTROL (4)

The Concave Door, also referred to as lower screen, control valve is located in the valve bank column on the right side of the control cabinet. To open the Concave Door, pull the control handle toward you. To close the Concave Door push the control handle away from you.

⚠ CAUTION

AUGER CONTROL (6)

Never operate the Auger in reverse for more than one or two seconds at a time. Leaving the Augers in reverse will cause material buildup against the rear Auger pan.

The Auger manual control valve is located in the valve bank column on the right hand side of the control cabinet. To operate the Augers in the normal forward direction, push the control handle forward. Always engage augers before engaging feed system.

FEEDWHEEL YOKE (3)

Operation of the Feedwheel Yoke lift is accomplished by operating the Feedwheel Yoke control valve. In the off position the Feedwheel Yoke is hydraulically locked.

⚠ WARNING

NEVER use the off position of the Feedwheel Yoke lift control valve to lock the Feedwheel Yoke up if work is to be done under or around the Feedwheel. Use the hydraulic Yoke Lock Bars provided by the manufacturer. For added safety chain the Feedwheel Yoke to the Discharge Belt Conveyor rest using the Safety Chain attached to the Discharge Belt Conveyor rest.

To lift the Feedwheel Yoke pull the control handle toward you. To lower the yoke push the control handle away from you. The Feedwheel yoke and Feedwheel assembly will float on the incoming material in this position.

HYDRAULIC YOKE LOCK (10)

Some maintenance requires that you work under the Feedwheel while it is in the raised position. The Feedwheel Yoke assembly is equipped with two safety devices that must be put in place before work commences.

With the engine running, clutch disengaged, and the Cutterhead completely stopped, raise the Feedwheel Yoke to its maximum height using the Feedwheel Yoke manual control valve. Then pull the hydraulic Yoke Lock Bars control handle which is located on the valve bank column on the right side of the control cabinet. The Yoke Lock Bars located on top of the Cutterhead housing will then extend or engage. Now use the Safety Chain attached to the Discharge Belt Conveyor rest and secure it to the lug located on the right side of the Feedwheel Yoke. With the safety devices in place lower the Feedwheel Yoke until it contacts the Yoke Lock Bars and the Safety Chain pulls tight. Finally do not attempt any type of maintenance without turning off engine, making sure the Cutterhead has come to a complete stop, turning Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession.

For added safety it is a good practice to use an additional log chain to help support the Feedwheel Yoke to the conveyor rest. When all safety devices are in place you may start performing maintenance to the machine.

⚠ WARNING

Never use the cable or radio remote button to hold the Feedwheel Yoke in the raised position if work is to be done under or around the Feedwheel. Use all safety devices as explained above.

FEEDWHEEL MOTION (2)

Forward motion of the Feedwheel is accomplished by pushing the Feedwheel control valve handle forward away from you. To stop the Feedwheel place the handle in the middle or off position. To reverse the Feedwheel pull the handle toward you.

INFEED CONVEYOR MOTION (1)

Forward motion of the Infeed Conveyor is accomplished by pushing the Infeed Conveyor control valve handle forward away from you. To stop the Infeed Conveyor place the control handle in the middle or off position. To reverse the Infeed Conveyor pull the control handle toward you.

Continued on next page

CONTROLS

⚠ CAUTION

DISCHARGE BELT CONVEYOR MOTION (5)

Forward motion of the Discharge Belt Conveyor is accomplished by pushing the Discharge Belt Conveyor control handle away from you. To stop the Discharge Belt Conveyor place the control handle in the middle or off position. To reverse the Discharge Belt Conveyor pull the control handle toward you.

DISCHARGE BELT CONVEYOR FOLD (If Equipped) (7 & 8)

The Discharge Belt Conveyor must be stowed in the folded position when moving the machine. Before folding or unfolding the Discharge Belt Conveyor, make sure the engine is at idle and everyone is clear from the Recycler area. Remember, never slam the Discharge Belt Conveyor to a rest, always feather the controls to allow a smooth stop.

Before unfolding, with the Discharge Belt Conveyor in the transport position, push the Discharge Belt Conveyor fold control handles in one at a time for 4-5 seconds until the pressure gauge reaches 1800 PSI (124 bar). This will purge the hydraulic system of any air.

To unfold the Discharge Belt Conveyor to its normal operating position pull the mid section Discharge Belt Conveyor fold control handle until the mid section is fully extended. To unfold the upper section pull the upper section Discharge Belt Conveyor fold control handle until the upper section is fully extended. Again remember, just feather the controls, do not slam the Discharge Belt Conveyor to a stop.

Before folding, with the Discharge Belt Conveyor in the operating position, pull the Discharge Belt Conveyor fold control handles out one at a time for 4-5 seconds until the pressure gauge reaches 1800 PSI (124 bar). This will purge the hydraulic system of any air.

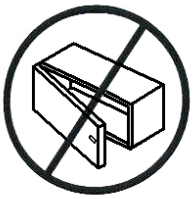
When folding the Discharge Belt Conveyor the upper section must be folded first, followed by the mid section. Failure to follow these procedures may result in the belt becoming too tight and this could cause damage to the machine. To fold the Discharge Belt Conveyor to its folded or transport position push the Discharge Belt Conveyor upper section fold control handle away from you until the upper section Discharge Belt Conveyor is fully raised. Then push the Discharge Belt Conveyor mid section fold control handle away from you until the Discharge Belt Conveyor comes to rest on the Discharge Belt Conveyor support. Again, just feather the controls, do not slam the Discharge Belt Conveyor to a stop. Slamming the Discharge Belt Conveyor could cause extensive damage to your Recycler or cause serious injury or even death.

HYDRAULIC SHUT DOWN SWITCHES

There are four hydraulic shutdown switches located at the corners of the Recycler. When any of these switches are pushed in, all hydraulic systems will stop. Be aware that the engine and Cutterhead will continue to run; these switches only stop the hydraulic systems. All switches must be pulled back out for the hydraulic systems to work again.

CONTROLS

DANGER



DO NOT RUN OR OPERATE MACHINE WITH THE DOOR/ COMPARTMENT OPEN

Door/enclosure is a guard, you can be injured if open during operation.

AVOID DAMAGE TO DISCHARGE CONVEYOR

DO NOT move machine with Conveyor extended.

DO NOT fold or unfold Conveyor on uneven ground.

DO NOT cause abrupt stops when raising or lowering Conveyor.

DO follow all operation, service and safety guidelines.

DO follow these steps to purge air from the hydraulic system **EVERY TIME** the Conveyor is moved.

1. Place pressure gauge in diagnostic port of valve bank.
2. With Conveyor resting in fold or unfold position, operate valve to position it further in that direction. Hold valve position for 4 to 5 seconds until gauge reads 2050 PSI.
3. Repeat these steps for second control valve.
4. Now you may proceed to raise or lower conveyor.

DO operate the Conveyor folding actions with engine at an idle.

DO fold Conveyor upper section first, then mid section.

RECYCLER MAINTENANCE DOOR ENGINE DISABLE PLUG OPERATION

The recycler maintenance door engine disable plug is installed for safety purposes. It is designed to shut down the engine if the plug is not properly in place holding the maintenance door in the closed position. Correctly installed and maintained, the engine will not start or it will shut off if the plug connector is removed.

The recycler maintenance door engine disable plug is located on the maintenance door of the recycler (see figure 1). The maintenance door engine disable plug is made up of two parts: an electric socket and a plug connector (see figure 2). The electric socket is bolted to the recycler engine disable plug mount bracket (see figure 3) and the plug connector is attached by a cable to the maintenance door handle (see figure 4).

If the recycler maintenance door engine disable plug is not properly installed then the engine will not start or run. If the recycler maintenance door engine disable plug becomes disconnected while the recycler engine is running the engine will be shut down or be disabled from running. This is for safety purposes, to ensure that the maintenance door is not opened while the engine is running.

The recycler maintenance door engine disable plug is wired to shut down the recycler engine. There are two wires connected into the electric socket which are tied into the engine electronics. There is a wire loop installed inside the plug connector so when the two are connected the electric circuit is complete. When the plug connector is pulled out of the electric socket the electric circuit is broken, disabling the engine (see figure 5).

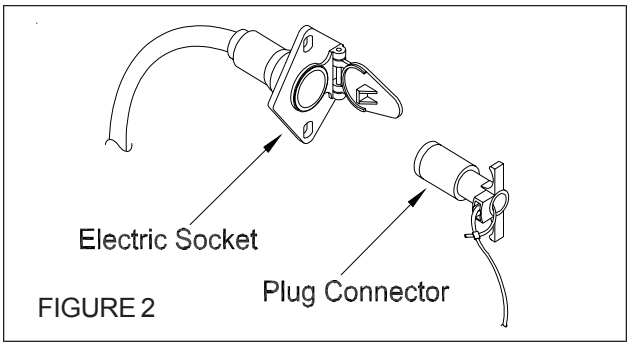


FIGURE 2

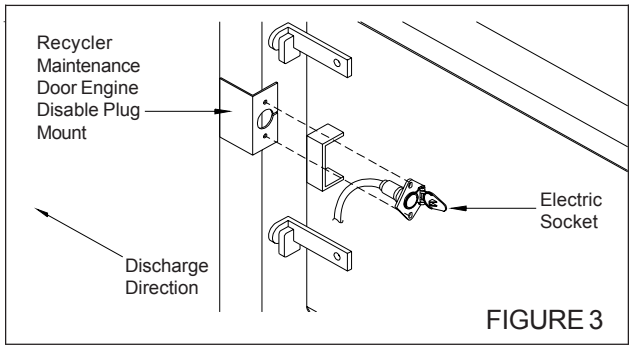


FIGURE 3

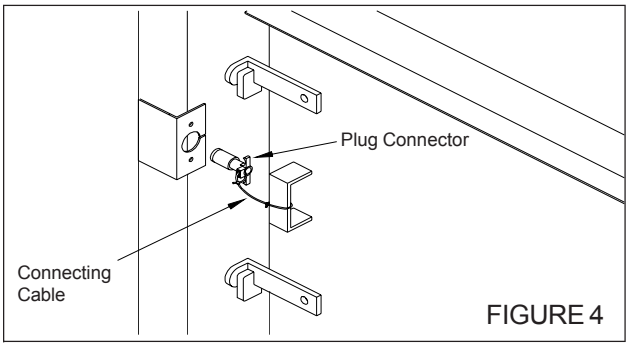


FIGURE 4

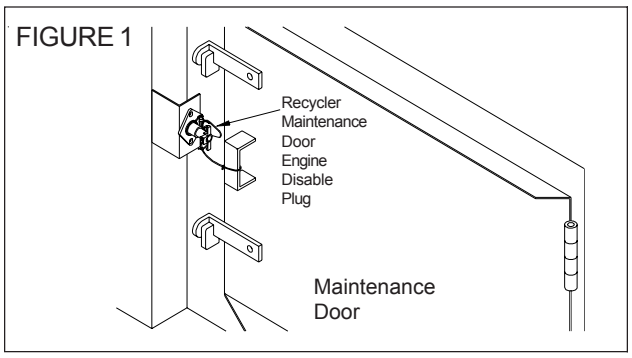


FIGURE 1

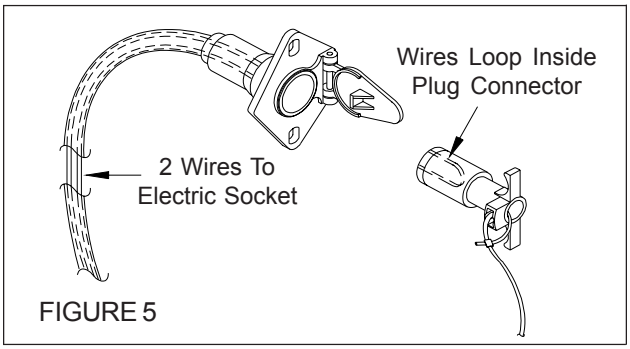


FIGURE 5

START-UP PROCEDURES

⚠ DANGER

Do not let anyone operate or maintain this machine until they have thoroughly read this manual, viewed the decals and video tape, and follow all instructions. You can purchase additional Smoracy, LLC manuals & video tapes for a nominal fee.

⚠ WARNING

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.

⚠ WARNING

Failure to properly break-in your engine will result in poor bearing and piston ring surfaces. See Engine Manual for proper break-in procedures.

⚠ WARNING

The machine has only been run for a short time to test proper hydraulic pressures, possible leaks, etc.

STARTING THE RECYCLER

(See following page for pre start-up procedures)

Before starting the engine make sure that the clutch is not engaged. Turn the ignition switch one stop to the ON position. This will turn on the electrical fuel pump and the rest of the electrical system. Then turn the ignition switch all the way to the right and hold until the engine starts. There will be a five second delay, during this time a beeping sound will be heard alerting anyone near the machine that it is starting. Also the temperature overheat light will cycle letting you know that it is working.

NOTE: Some engines have a pressure override switch wired into their systems. In this case, depress the pressure override button and turn the ignition switch all the way to the right, now hold both until the engine starts. Once their is oil pressure the override button may be released.

Ignition Switch

START-UP PROCEDURES

BEFORE STARTING ENGINE

1) Wear all applicable personal protective equipment; hard hat, gloves, eye protection, ear protection, etc.
2) Observe all safety procedures on decals, in video tape and from manual.
3) Check inserts and Cutterbody bolts. Change if necessary.
4) Inspect/replace axle dust caps, or grease axles per axle MFG. manual. Inspect and adjust brakes as needed per axle MFG. manual.
5) Check the entire machine for any loose parts or components. Check for loose nuts or bolts, torque, tighten or replace.
6) Check hydraulic pump and motor shaft for fit and tightness.
7) Check the Infeed Conveyor for any foreign objects.
8) Daily grease all related bearings and oil all roller chains.
9) Check radiator, debris screen. Clean as necessary.
10) Check the fuel level, check the fuel lines, fuel tank, and fittings for fuel leaks.
11) Check and/or adjust belt tension on recycler belt drives.
12) Check engine oil and coolant levels, make sure they are at the proper level for operation.
13) Check hydraulic oil level, this should always be 7/8 full. Remember to check DAILY to avoid excessive heat build up.
14) Check the air cleaner and pre-cleaner. Clean as necessary.
15) Make sure all guards and shields are tight and securely in place.
16) Check around the machine for tools, cans, saws, etc.
17) Make sure Discharge Belt Conveyor is located in a safe direction.
18) Check clutch for proper engagement tension and lubrication, frequently adjust and grease, per PTO manufacturers manual recommendations.
19) Block tires and tongue for stability before operation.
20) Check Infeed Conveyor chain tension, keep chain tight and lubricated.
21) Fasten debris screen in front of radiator.
22) Confirm that all manual hydraulic control valves are in the off position.
23) Fold clutch handle out from its transport position and pin into place.
24) Make sure clutch is disengaged.
25) Check to ensure Hydraulic Shut Off Valve is open.
26) Check to ensure cutting teeth and cutter bodies are in good running condition.
27) Check tooth clearance between chain (min 3/4" or 19.1 mm), anvil (min 1/4" or 6.4 mm), concave gate (min 1/4" or 6.4 mm), and screen (min 1/4" or 6.4 mm)
28) Turn the Battery Disconnect Switch on.
29) Check to ensure remote control switch on engine gauge panel is on manual.
30) Make sure throttle switch is in the idle position.
31) Remove all potential fire hazards.
32) Remember to check EVERYTHING on the checklist.

TRANSPORTING THE RECYCLER

⚠ WARNING

BEFORE TRANSPORTING THE MACHINE THE FOLLOWING MUST BE COMPLETED

1) Clean out any existing material in the Recycler by allowing the machine to operate for several minutes without further loading.
2) From the remote control stop the Infeed Conveyor Chain and the Feedwheel rotation.
3) Idle engine and disengage clutch.
4) Place the Auger manual control valve handle in the off or middle position to stop the Augers from operating.
5) Place the Discharge Belt Conveyor manual control handle in the off or middle position to stop the Discharge Belt Conveyor from operating.
6) Make sure the Feedwheel is in the lowered position.
7) On the engine gauge panel turn the throttle control switch to the idle position and move switch from remote control to manual.
8) Disengage clutch, turn off engine, wait for the Cutterhead to come to a complete stop, turn Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession.
9) Disconnect and stow tether remote control in the tool box.
10) Radio remote control can be stored inside control cabinet on the left side or road side of the Recycler.
11) Remove all potential fire hazards. Remove hazards such as wood debris, fuel, oil, etc. The top of the engine, around the exhaust system and turbo are areas to be kept especially clean. Clean beside and around the engine, around and under fuel and hydraulic tank, inside belt shield, inside control cabinets and anywhere else materials have collected. This must be done prior to starting the machine each day, must be done every time the machine is left unattended during the day, and definitely must be done at the end of each day. Spend some time walking around the machine checking for any hot spots. Check Cutterhead, Infeed, and Discharge Belt Conveyor bearings to make sure they are not hot so they do not start a fire. It is your responsibility to prevent fires so keep the machine and area around clean from debris.
12) Restart engine and fold the Discharge Belt Conveyor to transport position (if so equipped).

    Make sure to follow the proper folding procedures.
13) Make sure all manual hydraulic control valve are in the off or middle positions.
14) Once again disengage clutch, turn off engine, wait for the Cutterhead to come to a complete stop, turn Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession.
15) Lock control cabinet doors.
16) Pull pin on the clutch handle and fold up out of the way.
17) Lock radiator debris screen in the transport position.
18) Fold and secure swing ladder on the right side or curb side of the machine.
19) Walk around Recycler to confirm that everything is secure and that there isn't anything loose that could fall off the machine while transporting. Look under Recycler to ensure nothing is dragging. Look down both sides of the Recycler checking for anything sticking out that may become damaged during transporting.
20) The Recycler is now ready for transport. Make sure to obey all local regulations and laws regarding transporting a machine of this size.

MAINTENANCE SECTION

Your recycler will give you many hours of production time with inexpensive repairs if you follow the proper maintenance instructions in this manual. A Daily Maintenance Check must be done each day prior to putting your Recycler to work. Maintenance shall be performed only by those authorized by the owner and trained to perform such operations. The authorized person shall notify the crew that maintenance is to be done and that the Recycler must be shut down and secured.

⚠ DANGER

It is the responsibility of the owner or employer to provide education and training in job-site specific hazards associated with the job, work procedures and practices involved, special precautions and personal protective clothing and equipment requirements as applicable to employee job assignments.
Before staring any maintenance on the recycler, any person involved MUST read and understand all safety precautions described in this manual. Failure to do this may cause serious injury and even death!

⚠ DANGER

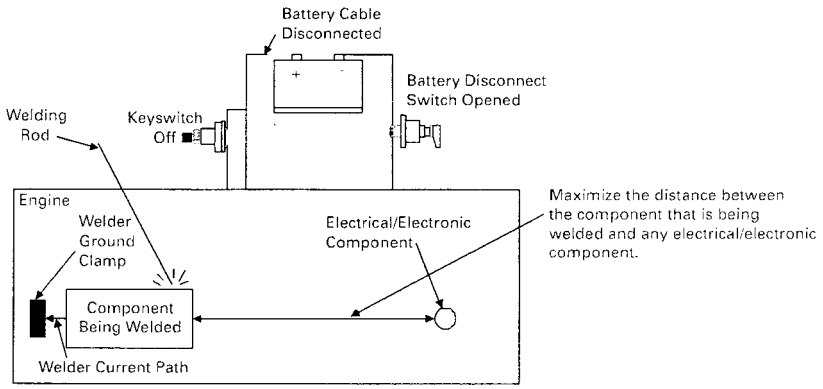
DO NOT work on the Recycler if the engine is running. A clutch can self-engage if either the pilot or throw-out bearing happens to seize to the main output shaft. Make sure that you are wearing all of your personal protective equipment and you have the key to the Recycler in YOUR pocket. It is your responsibility to ensure that the Recycler is isolated and will not operate before proceeding with any maintenance or repairs. When all safety procedures are in place you may start working on the machine.

⚠ WARNING

Any repairs that require welding or the use of a cutting torch should be done in the morning so that a smoldering fire will be caught during the day. You should always keep several fully charged fire extinguishers with the machine at all times. Before welding any place on the machine it is imperative that you follow the specific engine manufactures instructions for proper welding and grounding procedures. An electrical spike from the welder will fry the ECU (Electronic Control Unit), which is the computer that controls your engine and is very costly to replace. The ECU must be disconnected and the Battery Disconnect Switch turned off.

Example from Caterpillar engine manual: Welding on Engine Guideline Diagram

The current flow from the welder to the welder ground will not cause damage to any of the associated components.



⚠ WARNING

Some maintenance requires that you work under the Feedwheel while it is in the raised position. The Feedwheel Yoke assembly is equipped with two safety devices that must be put in place before work commences.

With the engine running, clutch disengaged, and the Cutterhead completely stopped, raise the Feedwheel Yoke to its maximum height. Then extend or engage the Yoke Lock Bars located on top of the Cutterhead housing. Now use the Safety Chain attached to the Discharge Belt Conveyor rest and secure it to the lug located on the right side of the Feedwheel Yoke. With the safety devices in place lower the Feedwheel Yoke until it contacts the Yoke Lock Bars and the Safety Chain pulls tight. Finally do not attempt any type of maintenance without first disengaging clutch, turning off engine, waiting for the Cutterhead to come to a complete stop, turning Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession.

For added safety it is a good practice to use an additional log chain to help support the Feedwheel Yoke to the conveyor rest. When all safety devices are in place you may start maintenance to the machine.

MAINTENANCE CHECK SHEET

DAILY

1) Check the safety decals, replace if damaged.
2) Check all guards and shields.
3) Check entire machine for loose nuts and bolts.
4) Check Cutterhead assembly.
5) Check condition and clearances of Cutterbody, Cutterteeth, and Raker Inserts.
6) Check and/or adjust Cutterhead drive belt tension.
7) Check hydraulic pump and motor drives.
8) Check air cleaner, pre-cleaner.
9) Check radiator, debris screen.
10) Check engine oil and coolant levels.
Follow ENGINE MFG. manual specifications.
11) Check hydraulic oil level.

It is highly recommended that after initial start-up of the recycler and after any replacement of hydraulic components, that fittings and hoses be re-checked for leaks and clearances.

12) Check for oil, fuel, hydraulic oil, or engine coolant leaks.
13) Grease all bearings (except Cutterhead bearings).
14) Check clutch engagement, tension and lubrication.
Frequently adjust and grease, per PTO manufacturers manual.
15) Check Infeed Conveyor chain tension and tracking.
16) Check the drive chains for the Infeed Conveyor and Augers.
17) Check the Screen and Concave Door assemblies.
18) Check Screen and Concave Door bolts.
19) Check Discharge Belt Conveyor.
20) Remove all potential fire hazards (wood debris, fuel, oil, etc.)
21) Engine Air Intake and Exhaust Components for missing or loose nuts, bolts or clamps.

WEEKLY

1) Check alternator and fan belts on engine.
2) Check, retighten hydraulic, fuel tank mount bolts.
3) Check Auger assemblies, and Auger chain.

MONTHLY

1) Check hydraulic pressures.
2) Replace hydraulic oil filters.
3) Check and retighten all bearing lock collars.
4) Grease cutterhead bearings with 16 pumps of synthetic grease.

MAINTENANCE SECTION

The Beast Recycler 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

Do not attempt any type of maintenance without first disengaging clutch, turning off engine, waiting for the Cutterhead to come to a complete stop, turning Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession.

DAILY MAINTENANCE

1) Check the safety decals and engine gauges:
Replace if missing or damaged. Check the engine manufacturer's manual to make sure your engine is running properly.

2) Check all shields and guards:
Check to ensure all shields and guards are securely in place.

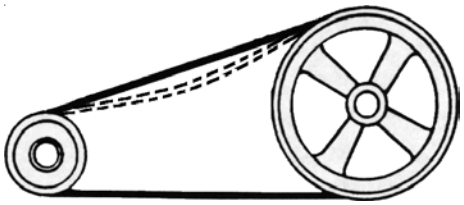
3) Check entire machine for loose bolts, nuts, parts, or components:
Look for, find and tighten anything that has loosened up.

4) Check Cutterhead Assembly:
Check for any damage and excessive wear. Check entire Assembly for loose nuts and bolts

5) Check Cutterbody, Cutterteeth, and Raker Inserts:
Look for, find and tighten anything that has loosened up.
Check tooth clearances (3/4" or 19.1mm min. on infeed chain) (1/4" or 6.4mm min. on screen, gate, and anvil)

6) Check and/or adjust the Cutterhead drive belt tension:
The belts will need to be tightened several times in the first few days of operation. A loose belt will slip and then glaze over. Once they slip you must replace them. See "Belt/Chain Section" for the specified deflection and load per belt. Check hydraulic pump drive belts also. (If equipped).

See"Belt/Chain Section" for the correct specfied amount of deflection and load per belt.



RECYCLER BELTS

7) Check the hydraulic pump and motor drives:
They should be fully inserted, and fit tight on the pump motor shaft. If the set screws are loose. Remove them and apply RC-609 Loc-tite then retighten to the Proper Torque.

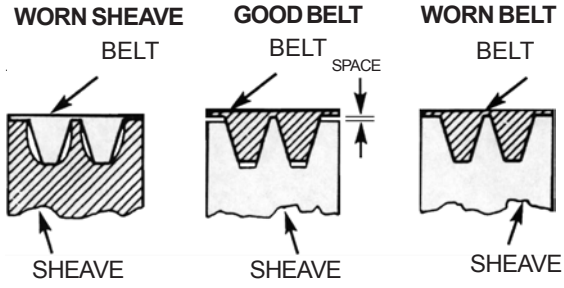
8) Check air cleaner and pre-cleaner, clean or replace as necessary:
Clean or replace element following engine manual recommendations. Check and clean Vacutator Valve.

9) Check radiator, debris screen:
Check radiator and debris screen for contamination. Thoroughly clean radiator and debris screen (if equipped).

10) 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, correct engine speed, ETC.

11) Check hydraulic oil level:
In the hydraulic oil reservoir tank the level should always remain at 7/8 full.

Worn or misaligned belts and sheaves in the power train causes belt slippage, thus power loss. Keep the power train working for you, not against you, by checking for needed adjustment or replacement.



MAINTENANCE SECTION

DAILY MAINTENANCE (cont.)

12) Check for any oil, fuel, hydraulic oil, or Engine coolant leaks:
Inspect for any oil, fuel, hydraulic oil, or engine coolant leaks. Check all hoses, fittings, lines, tanks, repair or replace.

13) Grease all bearings daily (except Cutterhead bearings - see monthly maintenance):
Use an EP-2 Lithium type grease only for all bearings (except cutterhead bearings). Oil all drive chains.

14) Check clutch for proper engagement tension adjustment, and lubrication:
Frequently adjust and grease per PTO Manufacturers manual.

15) Check Infeed Conveyor chain tension and tracking:
Keep Infeed Conveyor chain tight and lubricated.
Keep Infeed Chain 3/4" (19.1 mm) min from a new tooth.

16) Check the drive chains for the Infeed Conveyor and Augers.
Check the tension on the drive chains.

17) Check the Screen and Concave Door assemblies:
Check for wear or damage. Repair or replace as necessary.

18) Check Screen and Concave Door bolts:
Check the bolts holding the Screen and Concave Door in place to ensure tightness and fit.

19) Check Discharge Belt Conveyor:
Check Discharge Belt Conveyor for proper tension and tracking.

20) Remove all potential fire hazards:
Remove hazards such as wood debris, fuel, oil, etc.

21) Check all engine air intake and exhaust components: Including pre-cleaner, turbo clamps, muffler clamps, etc. for missing or loose nuts and bolts. Tighten or replace as necessary.

WEEKLY MAINTENANCE

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

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

3) Check Auger assemblies, and Auger chain.
Check and tighten or replace if necessary.Check timing of the augers.

MONTHLY MAINTENANCE

1) Check hydraulic pressures:
See hydraulic system pressure chart.

2) Hydraulic oil filters:
Must be replaced after FIRST 10 HOURS OF OPERATION, then every 400 hours afterwards. Change hydraulic suction strainer quarterly or every 400 hours.

3) Check and retighten all bearing lock collars:
Check the tightness of all the set screws on the Feedwheel bearings, Feedwheel yoke pivot bearings, Cutterhead bearings, hydraulic pump and motor couplers.

4) Grease Cutterhead bearings:
Grease cutterhead bearings monthly with 16 pumps of synthetic grease. Use Mobil 1 Universal Synthetic Grease, Mobil SHC 220 Synthetic Grease, Mobil AW2 Synthetic Grease, or Amsoil Multi-Purpose Grease NLGI#2.

MAINTENANCE SECTION

BOLT TORQUES

(THESE TORQUES ARE BASED ON DRY, CLEAN THREADS)

DESCRIPTION	BOLT SIZE	FT.-LBS. TORQUE	Nm TORQUE
Cutter Body Holders Bolts	1”-14 TPI	700	949
Tooth Inserts	7/8”-14 TPI	500	678
Raker Wear Pad Bolts	3/4”-10 TPI	376	510
Cutter Head Shaft Brg. Bolts	7/8”-9 TPI	460	624
Infeed Conveyor, Head Shaft Bolts	5/8”-11 TPI	125	169
Screen Mount Bolts	3/4”-10 TPI	376	510
Discharge Conveyor Brg. Bolts	5/8”-11 TPI	160	217
Engine Hold Down Bolts	3/4”-10 TPI	376	510
Infeed Tail Shaft and Feedwheel Brg. Bolts	5/8”-11 TPI	160	217
Engine Sheave Bushing Bolts	3/4”-10 TPI	376	510
Cutterhead Sheave Bushing Bolts	7/8”-10 TPI	376	510
Cutterhead Sheave Bushing Bolts	3/4”-10 TPI	376	510

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

CUTTERHEAD SECTION

The Cutter head is one of the most important components to keep a preventive maintenance schedule on. The Cutterhead is the heart of your Recycler, it does most of the work. The Cutterhead MUST be maintained daily. Watch your Cutterteeth patterns. Experiment with different styles of Cutterteeth, and patterns. Learn what works best for you and your machine. We cannot stress enough how important it is to maintain your Cutterhead.

NEVER RUN THE MACHINE WITH THE FOLLOWING FAILURES. THIS WILL CAUSE SERIOUS DAMAGE TO YOUR MACHINE AND POSSIBLE SERIOUS INJURY TO OPERATORS.

The single most important thing to understand is that bolts will come loose due to the pounding and the vibration of the machine. ALWAYS keep the Cutterbody bolts tight (700 ft.-lbs. or 949 Nm). Failure to do so will cause premature wear to the Cutterbody. Loose bolts could also cause the holder arm to crack. (See Figure 1)

Replace holder arms if the mounting holes measure more than 1.042" (26.5 mm). (See Figure 2)

ALWAYS use Smoracy, LLC replacement parts. Using parts not made for the machine could cause premature damage to the machine.

ALWAYS keep Cutterteeth tight. Torque to 500 ft.-lbs. (678 Nm).

NEVER allow the Cuttertooth to fall below 1/8" (3.2 mm) of carbide or wear material. Replace immediately. (See Figure 3)

ALWAYS keep the optional Raker Inserts tight. Torque to 376 ft.-lbs. (510 Nm).

The Cutterbody holder bolts should be 1/8" (3.2 mm) from the edge of the arm. When clamping the Cutterbody be sure the nut does not bottom out.

NOTE: It is a good practice to stop after 20 or 30 minutes of running new teeth and/or Cutterbodies in order to retighten any loose nuts and bolts to their specified torque.

Adjust the Infeed Conveyor Chain tension daily. Incorrect adjustments will cause expensive Cutterhead and Infeed Conveyor Chain damage. Always keep chain tension so the chain link runs in the center of the inspection window. The Infeed Conveyor Chain location must be 3/4 inch from the tip of a new tooth. Measure from the end sprockets of the chain head shaft as shown (Figure 4).

Figure 1

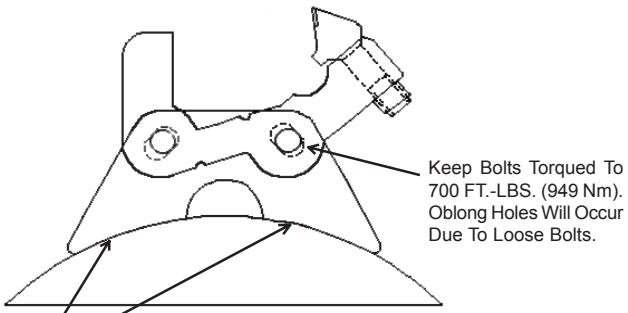


Figure 2

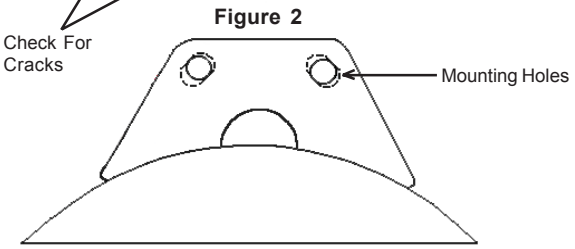


Figure 3

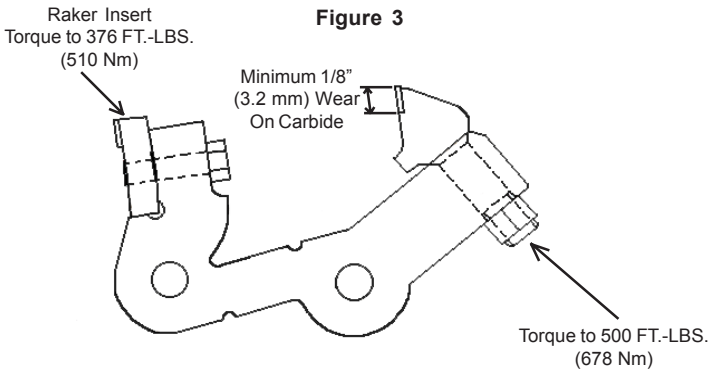
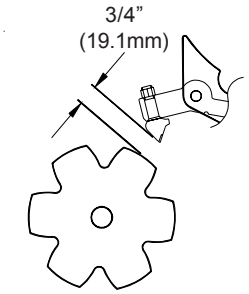


Figure 4



CUTTERBODY

The Cutterbody used in the Beast has a leading edge referred to as the “raker”. The raker is designed to control the depth of cut that the Cuttertooth will take. As the Raker wear it allows the Cuttertooth to take larger and larger cuts. If using a small hole screen taking large cuts means that the material has to beat around inside the Cutterhead housing until small enough to exit through the screen. This robs horsepower that could be used at the Cuttertooth. Also, taking bigger cuts puts undue stress on the Cutterhead shaft leading to possible shaft failure.

When new, the Cutterbody has a hard surface weld applied to the raker area. It is imperative that this area be maintained. The diagrams below show the height of the raker area when new and the maximum allowable wear. While in the machine these measurements are taken from the face of the Cutterhead drum. When worn, remove the Cutterbody from the Cutterhead and build up the raker area with a hard surface weld using the dimensions below as a guide. You could also lay a worn Cutterbody on a new one to see the amount of buildup necessary. If using a wire feed welder it is suggested using a Lincoln Lincore 60-0 or a Stoody 101HC wire. In a stick rod try the Lincoln Wearshield 60 or the Stoody Stoodite 2134. If you have excessive wear it is recommended that the Cutterbody be replaced with a new one. Be careful not to buildup above the height as when it was new as this will affect how the machine feeds.

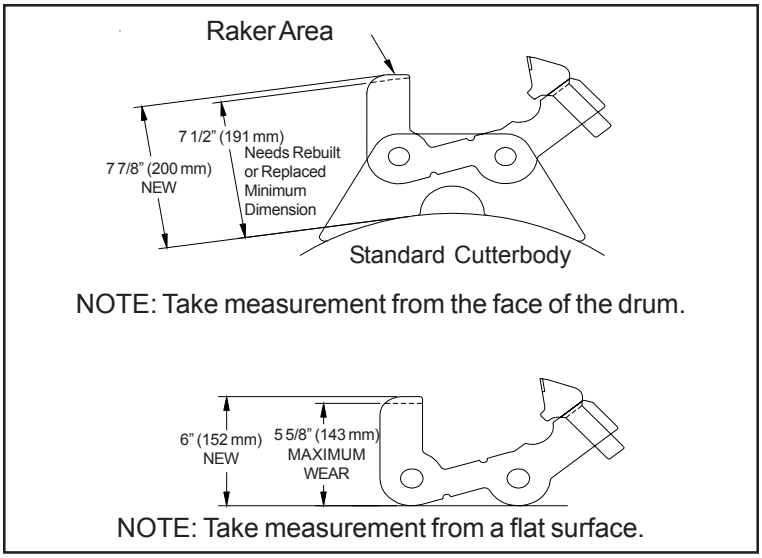
Never weld on the Cutterbodies while in the machine, as there is the potential for fire. It pays to have several extra Cutterbodies as replacements and weld up worn ones at your leisure.

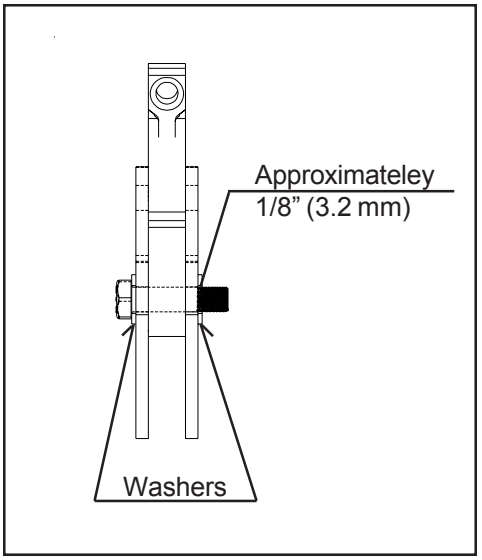
CUTTERBODY BOLTS

The Cutterhead of the Beast uses a replaceable Cutterbody that is designed to fail should something foreign get into the machine. They take an enormous amount of abuse with the bolts that hold the Cutterbody in place being one of the critical components. During the initial design and testing of this machine a bolt was developed that is made special for Smoracy, LLC just for this application. The tolerances and the length of the shank make it unique to any other bolt on the market. Maintaining the proper torque of 700 ft.-lbs. (949 Nm) on this bolt is also extremely critical. Using the wrong bolts or not keeping them tight allows for movement between the Cutterbody and the Support Arms which in turn leads to fatigue and failure. Once the Cutterbody is allowed to run loose the integrity of the hole in the Support Arm is lost and must be replaced. Other wise the bolt will never be able to keep tight again. If using an air wrench, check it to make sure that it is capable of reaching the proper torque.

A few customers have had Cutterbodies break loose from the Cutterhead. In every case it was because they were not using the proper bolt. A lot of lost time and money will occur if there is a failure due to using inferior parts. Any warranty claims will be denied if the Cutterhead was run with anything other than parts supplied by Smoracy, LLC.

When ordering new Cutterbodies new bolts must be ordered as well. Order extra to have on hand for future use.





REPLACING CUTTERBODIES

⚠ DANGER

Access to the Cutterbodies and inserts is below the raised Feedwheel. Refer to Safety Procedures for proper procedure to raise and safely secure the Feedwheel in position. Do not attempt any type of maintenance without first disengaging clutch, turning off engine, waiting for the Cutterhead to come to a complete stop, turning Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession.

CUTTERBODY REPLACEMENT

1. Disengage clutch, turn off engine, wait for the Cutterhead to come to a complete stop, turn Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession.
2. Block the Cutterhead so it will not turn on you when working on the Cutterbody.
3. Remove the 1" bolts and nuts that attach the Cutterbody, this will allow the Cutterbody to be taken out of the Cutterhead.
4. Clean both holder arms to make sure Cutterbody clamps flat.
5. Insert new Cutterbody into the arms. Use only 1" bolts supplied by Smoracy, LLC to put back together. Failure to do so, may cause premature failure to the Cutterbodies and will cause damage to your machine. (Tighten 1" fine threaded bolts and nuts to 700 ft.-lbs. or 949 Nm).

6. Check all Screen and Infeed Chain clearances. (3/4" or 19.1mm min. on infeed chain) (1/4" or 6.4mm min. on anvil, concave gate, and screen.)

⚠ WARNING

Whenever servicing the head area, ALWAYS look for cracked welds and/or excessive wear on the support arms. Cracks and worn Cutterbody Holder Arms could cause a Cutterbody to come off the Cutterhead. This will cause major damage to your machine.

NOTICE

ALWAYS use Smoracy, LLC replacement parts. Failure to do so may cause major damage to your machine.

CUTTER TEETH SECTION

⚠ DANGER

Access to the Cutterbodies and inserts is below the raised Feedwheel. Refer to page 11 for proper procedure to raise and safely secure the Feedwheel in position. Do not attempt any type of maintenance without first disengaging clutch, turning off engine, waiting for the Cutterhead to come to a complete stop, turning Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession.

TEETH REPLACEMENT

1. Disengage clutch, turn off engine, wait for the Cutterhead to come to a complete stop, turn Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession.
2. Block the Cutterhead so it will not turn on you when working on the Cutterbody.
3. Remove the 7/8" nut from the Cuttertooth then remove tooth.
4. Clean countersink surface free of burrs or debris.
5. Replace with a new Cuttertooth. Tighten to 500 ft-lbs (678 Nm).
6. Check all Screen and Infeed clearances. (3/4" or 19.1mm min. on infeed chain) (1/4" or 6.4mm min. on anvil, concave gate, and screen).

TOOTH LIFE

Tooth life depends on the amount of abrasive materials and contaminates in the raw material, the amount of production being processed and the fineness of the end product.

Figuring 150 to 200 cubic yards (115 to 153 cubic meters) of finished product per hour, most operations are getting 80 to 100 hours per set. A number of land clearers are using 30 splitter and 30 splitter fans. They are getting in excess of 250 hours per set. More detailed information on teeth maintenance is available at any time upon request.

APPLICATION FOR CUTTERTEETH

As a general rule we suggest that you change your worst 6 teeth daily if they need it or not. You can use these teeth for future running if some may break or go bad. Changing the six worst teeth will keep your Cutterhead operating well.

For maximum productivity never stack logs or railroad ties. Allow this type of material to go through in a single layer. Contact our service department for further questions.

NOTICE

It is highly recommended to use at least 1 spiral of a fan combination tooth. The fan combination tooth is designed to help get the ground material through the screen. Tests show that the fan combination teeth have increased production and tooth life.

CUTTERTEETH APPLICATIONS

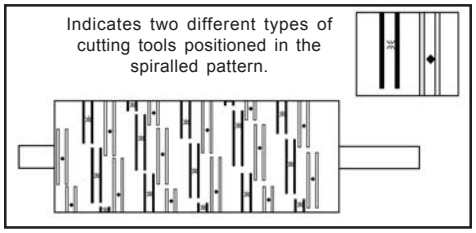
⚠ CAUTION

Your Cutterhead is fabricated with 2 spirals of tool holders. The spirals wrap the Cutterhead like the red and white ribbons on a barber pole. Each spiral must contain a complete set (30) of the same tools. Mixing tool types on the same spiral is not recommended. Improperly installed teeth will not grind properly and may damage the Cuttermill. Because all applications differ it is important to determine what tooth combinations perform best under different situations. We encourage you to experiment with different combinations of tools and screens to obtain production, product and economic goals. We have found the following teeth combinations to work best in these situations:

NOTE: These suggestions are based on our previous experience. Applications vary due to the material being processed.

TOOTH STYLES	APPLICATIONS
1. Logs and Stumps	All 1" forged (clean wood) 1/2 splitters and 1/2 splitter fans 1/2 splitter fans and 1/2 1" forged carbide 1/2 splitter fans and 1/2 shingles
2. Green Waste	1/2 splitters and 1/2 splitter fans 1/2 splitters and 1/2 1" fans 1/2 shingles and 1/2 splitter fans 1/2 splitter fans and 1/2 1" forged carbide
3. Pallets	1/2 splitter fans and 1/2 G-55 1/2 splitter and 1/2 pointed shingle fans
4. Shingles/Asphalt	1/2 shingle teeth and 1/2 pointed shingle fans 1/2 square shingle fans and 1/2 pointed fans 1/2 square shingle fans and 1/2 splitter fans
5. Stringy Material/Palm Fronds	All 1" carbide teeth 1/2 1" carbide teeth and 1/2 pointed shingle fans 1/2 shingles and 1/2 pointed shingle fans
6. Wet leaves/Wet bark	All 1" fan teeth 1/2 splitter fans and 1/2 1" fans 1/2 shingle fans and 1/2 splitter fans
7. Construction/Demolition Material	All splitter fans 1/2 splitter fans and 1/2 G-55 1/2 splitter fans and 1/2 Study
8. Fluffy Mulch/Animal Bedding	All splitters 1/2 splitter fans and 1/2 shingles 1/2 shingle fans and 1/2 splitters

The G-55 impregnated carbide teeth will work for most all of the above applications and is recommended if the material contains contaminates. Smoracy, LLC recommends replacing the 6 worst worn teeth per day. DO NOT discard any teeth still capable of grinding. They can be used to replace broken teeth or can be used in demolition. This process will keep your Cuttermill running at optimum performance. When using a combination of two different teeth make sure they are properly installed. Each spiral must contain the same type of tooth. Improperly installed teeth will not grind properly and may damage the Cuttermill.



Tooth Combinations

When using a combination of two different teeth make sure they are properly installed. Each spiral must contain the same type of tooth. Improperly installed teeth will not grind properly and may damage the Cuttermill.

TEETH STYLES

SPLITTER TOOTH - Part Number #900-9904-61

- Good aggressive “IN”
- Good aggressive “OUT”
- Will not tolerate ungrindable materials larger than nails, bolts, small pieces of thin steel and stones, etc.
- Acts as a splitter that cuts the material entering the grinding chamber.
- Works well on most materials.
- A good all-around tooth.

SHINGLE TOOTH - Part Number #900-9902-89

- Usually works with other teeth.
- Used 100% when running shingles.
- Diverse high production.
- Will tolerate light metal and stone.
- Is being used in nearly all applications including demolition, so long as the larger contaminates have been removed.

G-55 - Part Number #976-000660

- Good aggressive “IN”
- Good aggressive “OUT”
- Ideal for demolition.
- Will tolerate some ungrindable material: nails, small stones. Not for solid steel or large rock.
- End product is more shredded.

TEETH STYLES

CARBIDE INSERT TOOTH
Part Number #900-9902-15 YELLOW

- Good aggressive “IN”
- Good aggressive “OUT”
- Most ideal tool for green material.
- Will not tolerate ungrindable materials larger than nails: carbide tends to shatter when coming in contact with solid steel or larger rocks.
- End product tends to look more cut, like saw dust.
- Recommended for larger pieces of wood such as stumps, logs, etc.
- Provides more of a cutting action.
- Carbide teeth of varying hardness offered.

FORGED SPLITTER FAN TOOTH - Part Number #900-9904-62

- Good aggressive “IN”
- Excellent aggressive “OUT”
- Will not tolerate ungrindable materials larger than nails, bolts, small pieces of thin steel and stones, etc.
- Acts as a splitter that cuts the material entering the grinding chamber. Often used with shingle or carbide insert tooth.
- Works well on most materials.
- A good all-around tooth.
- Forged fan area increases production of tooth by pushing material through screen

POINTED SHINGLE FAN TOOTH - Part Number #976-000665

- Usually works with other teeth.
- Used 100% when running shingles.
- Diverse high production.
- Will tolerate light metal and stone.
- Is being used in nearly all applications including demolition, so long as the larger contaminates have been removed.
- Trimay fan block increases production of tooth by pushing material through screen.

TEETH STYLES

HELMET HEAD - Part Number #900-9903-62

- Great performance and durability
- Applications include pallets,construction waste, green waste sawmill waste and logging slash
- Holds up well in dirty materials
- Works well with splitter teeth for initial breakdown
- Works well for regrind

OVERSIZED SPLITTER - Part Number #900-9903-68

- Great performance and durability
- Stumps
- Can be used in the same application as splitter teeth
- Works well at breaking down similar material as splitters' and Helmut Heads
- Holds up well in dirty material

SCREEN MAINTENANCE

OPERATION

Various Screens are available for sizing the product. If it is known that the material being processed is free of metal or other destructive materials the machine can be operated with the Concave Door in the closed position. **IF THERE IS ANY DOUBT, THE CONCAVE DOOR SHOULD BE SET IN THE OPEN POSITION.** The metal can be removed upon discharge from the Discharge Belt Conveyor. The material can then be reprocessed with the Concave Door closed. Screens are a very high wear item on your machine and should be checked frequently. When maintaining the Screens, ALWAYS adjust the Screen at least 1/8" (3.2 mm) from the longest tooth on the Cutterhead. (This will tend to be a brand new tooth or a fan tooth). Also check to see if the Screen holder bolts are at 376 ft.-lbs. (510 Nm). **IF SCREENS ARE BENT OR BROKEN, REPLACE IMMEDIATELY. FAILURE TO DO SO WILL CAUSE COSTLY DAMAGE TO YOUR MACHINE.**

SCREEN REPLACEMENT

Replacing the Screen is a two man operation, an operator working on the inside and an assistant on the outside. The Discharge Belt Conveyor must be folded down to its normal operating position and the Concave Door in the closed position. Do not attempt any type of maintenance without first disengaging clutch, turning off engine, waiting for the Cutterhead to come to a complete stop, turning Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession.

At the maintenance door on the right side of machine, pull the Engine Disable electrical plug, release the door latches and swing door open. Retrieve the electric winch control cable from the tool box and plug into receptacle under engine. Battery Disconnect switch must be turned ON for winch to work. Lower winch and connect it to the lug on the back of Screen and bring up snug. Remove the eight mounting bolts that hold the screen in place. Remove Screen out through the maintenance door opening with the assistants help. Install new Screen using winch to move it into place. Lightly snug up the bolts to hold Screen in place. Move Screen up from Concave Door about 1/8" (3.2 mm) so Concave Door will open and close. With a new Cuttertooth on each end of the Cutterhead, set Screen to be no closer than 1/8" (3.2 mm) from Cutterteeth. When final adjustment is completed torque bolt to 376 ft.-lbs. (510 Nm). Roll Cutterhead several times by hand to make sure there is no contact between Cutterteeth and Screen. Reinstall winch stop block before reeling in winch cable. Stop block must pull tightly to engine base when complete. Turn Battery Disconnect switch off, disconnect winch control cable and stow in tool box. Close and secure maintenance door and finally re-insert safety plug or the engine will not start.

CONCAVE DOOR REPLACEMENT

Replacing the Concave Door, also known as the Lower Gate or Lower Screen is a two man operation. The Discharge Belt Conveyor must be folded down to its normal operating position and the Concave Door in the closed position. Do not attempt any type of maintenance without first disengaging clutch, turning off engine, waiting for the Cutterhead to come to a complete stop, turning Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession.

Remove the indicators on each side of the machine that show the Concave Door position. At the maintenance door on the curb side of machine, pull the Engine Disable electrical plug, release the door latches and swing door open. Remove the pin(s) connecting the hydraulic cylinder(s) to the Concave Door. Starting on the curbside, remove the four bolts holding the hinge pin access door, then pull the hinge pin out. Go to roadside and repeat . Once the hinge pins are out, the Concave Door can be pulled free and slid out through the maintenance door opening. Slide the new Concave Door into place. Start the hinge pin from the curbside and drive it through until it stops. Be sure to align keystock with gate bushing slot. Go to roadside and repeat. Install access doors and tighten bolts. Reconnect hydraulic cylinder(s) to the Concave Door. Check the clearance between the Concave Door and new Cuttertooth. It should be no closer than 1/8" (3.2 mm). If adjustment is necessary, pull the cylinder pin and turn the hydraulic cylinder clevis in or out to achieve proper clearance. Reinstall the indicators on each side of machine. Close the maintenance door and insert safety plug. Start engine and operate manual valve to open and close the Concave Door checking for proper operation.

AUGER SECTION

ACCESSING AUGERS

1. Start with the Feedwheel secured in the raised position. Follow all safety procedures in securing the Feedwheel.
2. Remove dust suppression system water lines and tie them back out of the way so as not to be damaged.
3. Remove the bolts holding the Infeed Conveyor to the Cutterhead housing. There are two bolts on each side of the machine.
4. Remove the bolt from the Infeed Conveyor drive chain guard at the fender mount.
5. Remove the two bolts and nuts holding the Infeed Conveyor to the Recycler's frame, one on either side near the hitch end of the Infeed Conveyor.
6. Find the two lock blocks located on the sides of the frame behind the tongue. Slide each block up until they snap in place between the slats of the Infeed Conveyor chain.
7. Start the engine and feather the Infeed Conveyor chain manual control valve in the reverse direction. The Infeed Conveyor assembly will slide back about three feet. Be careful not to stretch hydraulic hoses connected to Infeed Conveyor drive motor.
8. Once again disengage clutch, turn off engine, wait for the Cutterhead to come to a complete stop, turn Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession.
9. Now that the Infeed Conveyor assembly is slide back you can access the Augers below the Cutterhead.
10. Remove the cover over the Auger drives and bearing. The auger chain and sprockets will be revealed.

NOTICE

The auger chain needs to be oiled Daily. New auger chain is installed fairly tight and will loosen up slightly as the joints set themselves. After the first few weeks of operation the chain drive should be adjusted to have a small amount of slack. Adjustment is made by loosening the hydraulic motor mount bolts and turning the adjuster bolt to achieve desired tension. Retighten motor mount bolts.

Check alignment of the sprockets and chain Daily for the first 100 hours of running. New bolts may loosen up and cause sprockets to move. Once the bolts are retightened they will generally not come loose again. After 100 hours check alignment monthly.

Check auger bearings for any free play. Replace if needed.

Check the timing on the augers weekly. The timing of the augers is especially crucial when running pallets or stringy types of materials. Timing of the augers refers to each auger and the one next to it should never have flights next to each other. The flighting of the augers should stagger the auger next to it. See below.

See the following pages for removal instructions and timing of augers

AUGER REMOVAL PROCEDURE

The Augers located next to the Frame Sides can be removed without cutting off the Auger, Auger Shaft, or Bearings.

Remove 2 bolts which hold the Auger onto the Auger Shaft.

Slide the Auger up the Auger Shaft until the Auger contacts the Anvil Front Plate

Remove bottom Bearing bolts and slide bearing up to Drive Sprocket. If Bearing will not move, remove Bearing bolts from the top and bottom Bearings.

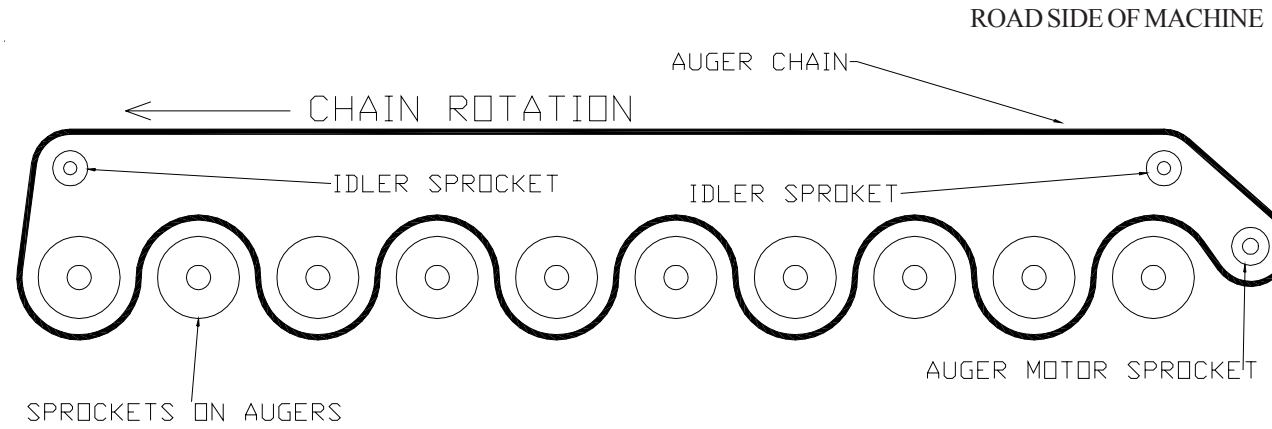
Tip Auger and Auger Shaft up to gain clearance to slide Auger from Auger Shaft.

AUGER TIMING PROCEDURE

The following will instruct on the proper procedure for timing the Augers. Augers which are not timed correctly will not move material properly and will interfere with each other during operation. This interference will cause Auger damage and premature wear.

1. Rotate the Augers to "time" each one so that the flighting is centered between the flighting of the Auger on each side. See Example.

2. Install the Auger Chain by threading it over the Auger Sprockets. See Example.



3. Install chain master link, remove excess slack in chain and align Auger Sprockets, Idler Sprockets, and Auger Motor Sprocket.

4. Tighten the Auger Chain.

5. Remove tools and equipment from the Auger area and verify that all persons are clear of the machine.

6. Start engine and operate Augers to verify timing, sprocket alignment, and chain rotation.

7. Check chain tension after several hours of operation and adjust as necessary.

INFEED SECTION

NOTICE

The Infeed Conveyor Drive Chain needs to be oiled daily. New chain is installed fairly tight and will loosen up slightly as the joints set themselves. After the first few weeks of operation the chain drive should be adjusted to have a small amount of slack. Adjustment is made by loosening the hydraulic motor mount bolts and turning the adjuster bolt to achieve desired tension. Retighten motor mount bolts.

Check alignment of the sprockets and chain daily for the first 100 hours of running. New bolts may loosen up and cause sprockets to move. Once the bolts are retightened they will generally not come loose again. After 100 hours check alignment monthly.

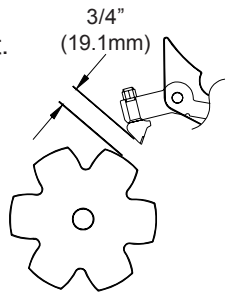
The Recycler comes with a three speed Infeed Conveyor Chain. The machine is designed to run with the Infeed Conveyor in low. The two higher settings are for occasions where you are processing brush and limbs or material that is not taxing the power unit. The best production can be realized by allowing the power unit to consistently run in its power band range. If the Autofeed system is constantly engaging then you must use a lower speed or a different combination of teeth and screens. You will loose time and money when the Autofeed system is continually working. Placing it in a lower setting will allow the machine to run smoother. This saves Teeth, takes less time to produce more, and saves fuel.

ADJUSTING INFEED CONVEYOR CHAIN TENSION

1. Locate the chain tensioning screws. They will be at the front end of the machine on each side of the Infeed Conveyor.
2. Loosen the bolts holding down the pillow block bearings.
3. Turn the tensioning screws to the right to tighten and to the left to loosen.
4. Turning one screw more than the other will cause the chain to run to one direction. Turn the other tension screw to straighten up the path of the Infeed Conveyor Chain.
5. When the Conveyor Chain has the correct tension, the inside of the chain will be running level with the frame below idler bearing. See decal located on the machine.
6. Be sure that both sides are tensioned the same and that the chain is running straight.
7. When adjustment is finished be sure to tighten the bearing bolts.

ADJUSTING INFEED CONVEYOR TOOTH CLEARANCE

1. Locate the chain tensioning screws. They will be under the Infeed Conveyor Drive shaft bearings at the opposite end from the tensioning screws.
2. Loosen the bolts holding down the pillow block bearings.
3. Turn the tensioning screws to the right to get the Infeed Chain closer to the teeth and to the left to bring it away from the teeth.
4. Turning one screw more than the other will cause the chain to run to one direction. Turn the other tension screw to straighten up the path of the Infeed Conveyor Chain.
5. The minimum clearance between a new tooth and the chain should be 3/4" (19.1 mm)
6. Be sure that both sides are at the same clearance and that the chain is running straight.
7. When adjustment is finished be sure to tighten the bearing bolts.



BELT TENSION

GENERAL RULES FOR TENSIONING

1. Check tensioning during the first 2-48 hours of run-in operation.
2. Over 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.
6. Always make sure sheaves are aligned properly.

TENSIONING PROCEDURE

Main Drive Belts (8V or 5V Kevlar Banded Belts)

Locate the center of the belt span between the sheaves. Push or pull on the belt until the belt has deflected 7/8" (22.2 mm) to 1" (25.4 mm). Record the push or pull force. For a new belt the force should be 19-22 lbs./belt (8.6-10.0 kg/belt) for the 5V belts, and 35-39 lbs./belt (15.9-17.7 kg/belt) for the 8V belts. After the break in period the normal force should be 14-20 lbs./belt (6.4-9.1 kg/belt) for the 5VK belts, and 25-32 lbs./belt (11.3-14.5 kg/belt) for the 8V belts.

NOTE: lbs./belt (kg/belt) is per 1 belt. For a 5 groove banded belt lbs./belt must be multiplied by 5.
NOTE: It is a good practice to rotate the belts during tensioning. Then recheck deflections. The belts may need to be tightened again.

Pump Drive Belts (If Equipped)

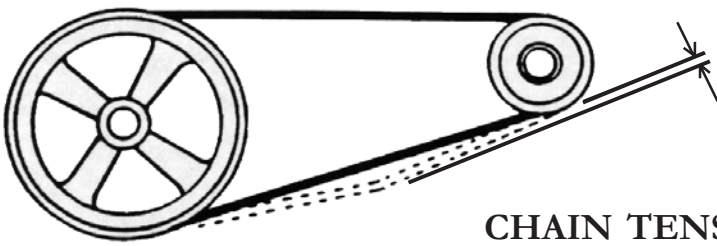
Locate the center of the span between sheaves. Push or pull down on the belt until the belt has deflected 1/4" (6.4mm). Record the push or pull down force. For a new belt the force should be 14-17 lbs (6.4-7.7 kg). After the break-in period the normal force should be 10-15 lbs (4.5-6.8 kg). Adjust the belt tension if the force falls outside of this range.

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!**

Location	Deflection	Load
Main Drive (Kevlar Banded)	7/8"-1" (22.2-25.4mm)	5V 19-22 lbs. (8.6-10.0 kg) 8V 35-39 lbs. (15.9-17.7 kg)
Pump	1/4" (6.4mm)	14-17 lbs. (6.4-7.7 kg)



CHAIN TENSION

Chains should be installed fairly tight with only a small amount of slack. New chains will loosen up slightly as the joints seat themselves. After the first several weeks of operation, adjust the centers to give a small amount of slack. With adequate lubrication the chains should not need any further adjustment.

TWIN DISC "DRY" CLUTCH

A clutch that engages easily is out of adjustment. It will take most of your strength to lock the clutch in place. Clutches are a high maintenance item and expensive to repair. New or rebuilt clutches require several adjustments in the first few hours of operation. During this time the clutch plates are wearing in. Burned clutch plates are never covered under warranty. Failure to properly adjust will cause the entire clutch to burn up.

To check clutch engagement, attach a torque wrench to the cast-in hex on the hand lever. Measure the effort needed to force the clutch engaging linkage over center to lock up the clutch.
Engaging torque must be:
Between a minimum of 510 ft.-lbs. (691 Nm) and a maximum of 676 ft.-lbs. (917 Nm) for the Model SP318SBO and, a minimum of 194 ft-lbs (263 Nm) and a maximum of 257 ft-lbs (348 Nm) for the Model 314SB1.
Frequently adjust and grease per the clutch manufactures manual.

ADJUSTING THE TWIN DISC CLUTCH

1. Shut down engine, disengage clutch and observe all safety procedures.
2. Open up the inspection plate on top of the clutch housing.
3. Turn the clutch so that the adjusting lock pin can be reached through the cover plate opening.
4. Press the adjusting lock pin and turn the adjusting ring clockwise one or two notches to tighten.
5. Release the lock pin and continue turning clockwise to the nearest notch.
6. Make sure the lock pin snaps out in the notch.
7. Reinstall the clutch plate and recheck engagement torque.
8. If engagement torque is not within the limits, re-adjust starting at step one.

PAINT AND APPEARANCE

To help keep up the appearance of your Smoracy 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.

2) If 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 add a primer and paint to the dry clean warm surface. This will help keep the damaged area from spreading or getting worse.

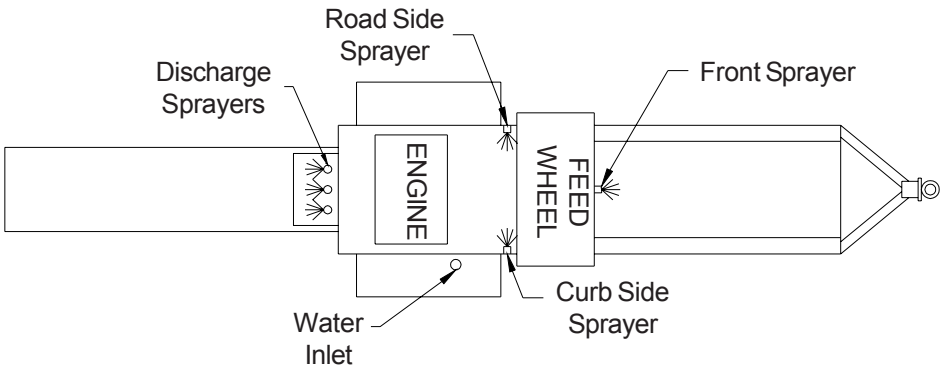
3) If you are unable to sand and mask the area, there are containers of primer and paint available. A small brush can be used to touch up the area.

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 #2 process.

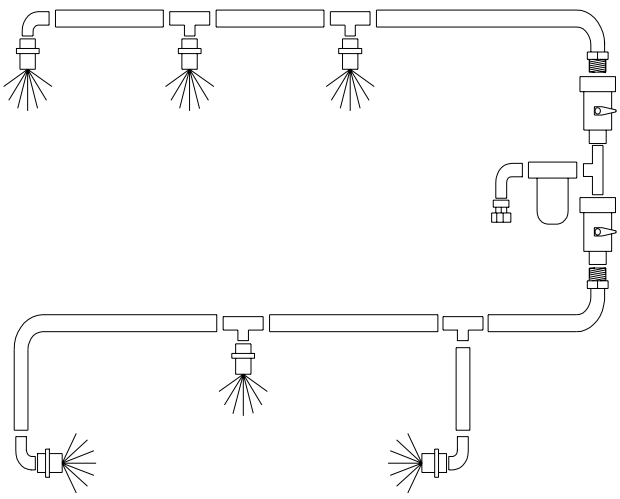
It is also reported that some equipment owners polish their machines at least yearly, and keep good mud flaps on their towing trucks.

DUST SUPPRESSION SYSTEM

Location of Dust Suppression Components



Dust Suppression Water Schematic



TROUBLE SHOOTING GUIDE

PROBLEM - ENGINE WILL NOT START:

Possible Cause	Possible Solutions
Battery Disconnect Switch off.	Turn switch on.
Battery cables cut or corroded terminals.	Inspect battery cables for damage, repair or replace as necessary. Clean battery terminals.
Dead or low battery.	Charge or replace battery.
No power to ignition switch. Circuit breaker tripped.	Reset circuit breaker in engine gauge panel.
No power to engine gauge panel. Main fuse blown.	Check in-line fuse near engine starter and replace if necessary. This fuse protects the entire engine gauge panel and its functions.

PROBLEM - ENGINE TURNING BUT WILL NOT START:

Possible Cause	Possible Solutions
Engine disable plug removed.	Check the maintenance door engine disable plug to ensure that it is installed and operating correctly.
No fuel.	Fill fuel tank and prime engine fuel system.
Problem with the engine or the engine control panel.	Consult engine Manufacturer's manual.

PROBLEM - NONE OF THE HYDRAULIC SYSTEMS ARE WORKING:

Possible Cause	Possible Solutions
Hydraulic Shut Down Switch	Make sure all Hydraulic Shut Down Switches are pulled out.
Shut-Off Valve on hydraulic oil tank not on.	Turn Shut-Off Valve on.
Blown fuse for solenoids of Hydraulic Shut Down system. These solenoids valves need to be energized or the oil is pumped back to tank.	Replace in-line fuse near engine gauge panel if powered by Cat or Cummins. John Deere units have the fuse near the starter.
Loss of power to Hydraulic Shut Down circuit.	John Deere equipped machines only have an auxiliary solenoid near the engine starter to supply power for this circuit. Check to make sure you are getting power through this solenoid.
Low oil in hydraulic tank	Keep oil level at 7/8 full.
Pump belts missing if so equipped.	Replace pump belts.
Broken pump shaft.	Repair or replace pump.
Oil strainer in Hydraulic Oil Tank is plugged.	Remove and clean or replace strainer.

TROUBLE SHOOTING GUIDE

PROBLEM - INFEED CONVEYOR CHAIN NOT OPERATING USING THE MANUAL CONTROLS:

(All other hydraulic systems are working)

Possible Cause	Possible Solutions
Infeed Conveyor chain lock blocks engaged.	Lower lock blocks.
Material wedged or stuck preventing the Infeed Conveyor chain from turning.	With the machine shut down, check around Infeed Conveyor looking for anything that may have the Infeed Conveyor chain bound up. In cold climates the Infeed Conveyor chain could be frozen to the bed.
Broken drive or idler sprocket assemblies.	Check both drive and idler sprockets to make sure they are all right as well as the bearings that support them.
Check roller chain on drive motor to make sure it's still in places.	Repair or replace roller chain.
Check to see if the drive key in the infeed drive sprocket or infeed hydraulic motor shaft has sheared.	Check shafts for damage and replace key.
Check the flow controls to see if they are open.	If the flow controls are opened up too far the Infeed Conveyor chain can stop under heavy load.
Low hydraulic system pressure. indicate	A quick check of the hydraulic pressure can be done by placing the pressure gauge into the diagnostic port provided on the control valve. Put the Infeed Conveyor manual control valve into forward or reverse position to check the Infeed Conveyor working hydraulic pressure. A 1200 PSI (83 bar) reading would that the Infeed Conveyor is mechanically stalled by some obstructing material. A very low pressure reading would indicate a hydraulic problem with the pressure relief valve or the hydraulic pump. See "Procedure for checking hydraulic pump and relief valve setting" in the Hydraulic Section.
No hydraulic system pressure.	Trace the pressure line from the valve bank back to the manifold used for the Hydraulic Shut Down system. Identify the electric solenoid for this circuit and verify that you have a 12 volt reading (24 volt on some models) with the ignition switch on. These solenoid valves need to be energized or the oil is pumped back to tank. If you have the proper voltage, try swapping this solenoid with another to determine if it is bad. If the problem moves to the circuit you swapped with then the solenoid is at fault. If the problem stays with the circuit you are working on then the pump is your problem.

TROUBLE SHOOTING GUIDE

PROBLEM - INFEED CONVEYOR NOT OPERATING USING THE RADIO OR TETHER CONTROLS:

(All other functions are working)

Possible Cause	Possible Solutions
No electrical signal to the solenoid control valve.	Check for electrical power at the solenoid while Engaging the switch on the remote used to operate the Infeed Conveyor. If you have electrical power at the solenoid on the control valve then you will need to refer the electrical schematic supplied with the machine to trace the problem. A wire may be broken or have a faulty relay inside the engine control panel.
Faulty switch in Remote Control.	If using the Radio Remote, switch to the Tether Remote and vice versa to determine if the problem may be in the remote.

PROBLEM - FEEDWHEEL WILL NOT TURN USING THE MANUAL CONTROLS:

(All other hydraulic systems are working)

Possible Cause	Possible Solutions
Material wedged or stuck preventing the Feedwheel from turning.	Raise and secure the Feedwheel using all safety devices. With the machine shut down, check around Feedwheel looking for anything that may have it bound up.
Check to see if the drive key in the Feedwheel hydraulic motor shaft has sheared.	Check shaft for damage and replace key.
Feedwheel bearing failure.	Raise and secure Feedwheel following all safety procedures and check bearing. Replace if necessary.
Check the flow controls to see if they are on.	If the flow controls are opened up too far the Feedwheel can stop under heavy load.
Low hydraulic system pressure.	A quick check of the hydraulic pressure can be done by placing the pressure gauge into the diagnostic port provided on the control valve. Put the Feedwheel manual control valve into forward or reverse position to check the Feedwheel working hydraulic pressure. A 1200 PSI (83 bar) reading would indicate that the Feedwheel is mechanically stalled by some obstructing material. A very low pressure reading would indicate a hydraulic problem with the pressure relief valve or the hydraulic pump. See " Procedure for checking hydraulic pump and relief valve setting" in the Hydraulic Section.

TROUBLE SHOOTING GUIDE

PROBLEM - FEEDWHEEL WILL NOT TURN USING THE MANUAL CONTROLS: (cont.)

(All other hydraulic systems are working)

Possible Cause	Possible Solutions
No hydraulic system pressure.	Trace the pressure line from the valve bank back to the manifold used for the Hydraulic Shut Down system. Identify the electric solenoid for this circuit and verify that you have a 12 volt reading (24 volt on some models) with the ignition switch on. These solenoid valves need to be energized or the oil is pumped back to tank. If you have the proper voltage, try swapping this solenoid with another to determine if it is bad. If the problem moves to the circuit you swapped with then the solenoid is at fault. If the problem stays with the circuit you are working on then the pump is your problem.

PROBLEM - FEEDWHEEL WILL NOT TURN USING THE RADIO OR TETHER CONTROLS:

(All other functions are working)

Possible Cause	Possible Solutions
No electrical signal to the solenoid on the control valve.	Check for electrical power at the solenoid while engaging the switch on the remote used to operate the Feedwheel. If you have electrical power at the solenoid on the control valve then that means that the solenoid is faulty. If there isn't any electrical power than you will need to refer to the electrical schematic supplied with the machine to trace the problem. Could be a broken wire or a faulty relay inside the engine control panel.
Faulty switch in Remote Control.	If using the radio remote, switch to the tether remote and vice versa to determine if the problem may be in the remote.

PROBLEM - FEEDWHEEL YOKE WILL NOT RAISE USING THE MANUAL CONTROLS:

(All other hydraulic systems are working)

Possible Cause	Possible Solutions
Material wedged or bound up around Feedwheel Yoke.	Do not attempt any type of maintenance without first disengaging clutch, turning off engine, waiting for the Cutterhead to come to a complete stop, turning Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession, then check around Feedwheel Yoke to determine what might be restricting it.

TROUBLE SHOOTING GUIDE

PROBLEM - FEEDWHEEL YOKE WILL NOT RAISE USING THE MANUAL CONTROLS: (cont.)

(All other hydraulic systems are working)

Possible Cause	Possible Solutions
Low hydraulic system pressure.	A quick check of the hydraulic pressure can be done by placing the pressure gauge into the diagnostic port provided on the control valve. Pull the Feedwheel Yoke manual control handle towards you to check the working hydraulic pressure. A 2050 PSI (141 bar) reading would indicate that the Feedwheel Yoke is mechanically stalled by some obstructing material. A very low pressure reading would indicate a hydraulic problem with the pressure relief valve or the hydraulic pump. See “Procedure for checking hydraulic pump and relief valve setting” in the Hydraulic Section.
No hydraulic system pressure.	Trace the pressure line from the valve bank back to the manifold used for the Hydraulic Shut Down system. Identify the electric solenoid for this circuit and verify that you have a 12 volt reading (24 volt on some models) with the ignition switch on. These solenoid valves need to be energized or the oil is pumped back to tank. If you have the proper voltage, try swapping this solenoid with another to determine if it is bad. If the problem moves to the circuit you swapped with then the solenoid is at fault. If the problem stays with the circuit you are working on then the pump is your problem.
Broken piston or bad seals in lift cylinders.	Oil coming out of the vent plug at the top of the cylinder would indicate a problem. Repair or replace cylinder.

PROBLEM - FEEDWHEEL YOKE WILL NOT LOWER USING THE MANUAL CONTROLS:

(All other hydraulic systems are working)

Possible Cause	Possible Solutions
Yoke Lock Bars engaged or Safety Chain attached.	Raise Feedwheel and release Safety Chain and disengage Yoke Lock Bars.
Material wedged or bound up around Feedwheel Yoke.	Do not attempt any type of maintenance without first disengaging clutch, turning off engine, waiting for the Cutterhead to come to a complete stop, turning Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession. Raise Feedwheel Yoke and install all safety devices, then check around Feedwheel Yoke to determine what might be restricting it from coming down.
Bent lift cylinder rod.	Repair or replace lift cylinder.

TROUBLE SHOOTING GUIDE

PROBLEM - FEEDWHEEL YOKE WILL NOT RAISE USING THE RADIO OR TETHER REMOTE CONTROLS:

(All other functions are working)

Possible Cause	Possible Solutions
No electrical signal to the solenoid on the control valve.	Check for electrical power at the solenoid while engaging the switch on the remote used to operate the Feedwheel. If you have electrical power at the solenoid on the control valve then that means that the solenoid is faulty. If there isn't any electrical power than you will need to refer to the electrical schematic supplied with the machine to trace the problem. Could be a broken wire or a faulty relay inside the engine control panel.
Faulty switch in Remote Control.	If using the Radio Remote, Switch to the Tether Remote and vice versa to determine if the problem may be in the remote.

PROBLEM - FEEDWHEEL YOKE WILL NOT LOWER USING THE RADIO OR TETHER REMOTE CONTROLS:

(All other functions are working)

Possible Cause	Possible Solutions
Manual control valve in the off position. The yoke can not lower in this position.	When switching from Manual to Radio/Tether mode the Feedwheel Yoke valve should immediately move forward to the float position. If you have electrical power at the solenoid on the control valve then that means the solenoid is faulty. If there isn't any electrical power than you will need to refer to the electrical schematic supplied with the machine to trace the problem. This could be a broken wire or a faulty relay inside engine control panel.

PROBLEM - AUGER WILL NOT TURN USING THE MANUAL CONTROLS:

(All other hydraulic systems are working)

Possible Cause	Possible Solutions
Material wedged or stuck preventing the augers from turning.	Do not attempt any type of maintenance without first disengaging clutch, turning off engine, waiting for the Cutterhead to come to a complete stop, turning Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession. Raise Feedwheel Yoke and install all safety devices, then check around Augers looking for anything that may have them bound up. Clean out all debris to free Augers so they may turn.
Check roller chain on drive motor to make sure it's still in place.	Repair or replace roller chain.
Check to see if the drive key in the hydraulic motor shaft has sheared.	Check motor shaft for damage and replace key.
Bad bearing or chain sprocket.	Move the Infeed Conveyor forward and remove the access cover. Inspect all bearings and chain sprockets. Repair or replace as necessary.

TROUBLE SHOOTING GUIDE

PROBLEM - AUGER WILL NOT TURN USING THE MANUAL CONTROLS: (cont.)

(All other hydraulic systems are working)

Possible Cause	Possible Solutions
Low hydraulic system pressure.	A quick check of the hydraulic pressure can be done by placing the pressure gauge into the diagnostic port provided on the control valve. Put the Auger manual control valve into forward position to check the Auger working hydraulic pressure. An 1800 PSI (124 bar) reading would indicate that the Auger is mechanically stalled by some obstructing material. A very low pressure reading would indicate a hydraulic problem with the pressure relief valve or the hydraulic pump. See "Procedure for checking hydraulic pump and relief valve setting" in the Hydraulic Section.
No hydraulic system pressure.	Trace the pressure line from the valve bank back to the manifold used for the Hydraulic Shut Down system. Identify the electric solenoid for this circuit and verify that you have a 12 volt reading (24 volt on some models) with the ignition switch on. These solenoid valves need to be energized or the oil is pumped back to tank. If you have the proper voltage, try swapping this solenoid with another to determine if it is bad. If the problem moves to the circuit you swapped with then the solenoid is at fault. If the problem stays with the circuit you are working on then the pump is your problem.

PROBLEM - MATERIAL BUILDING UP UNDER THE INFEED CONVEYOR:

Possible Cause	Possible Solutions
Augers not turning.	Refer to Augers will not turn using the manual controls.
Augers turning but covered by debris.	Sometimes doing house demolition a piece of plywood or similar material can be pulled in and cover the augers so they are unable to do their job. Raise and secure the Feedwheel following all safety procedures and clean debris from augers.

PROBLEM - DISCHARGE CONVEYOR BELT NOT RUNNING:

(All other hydraulic systems are working)

Possible Cause	Possible Solutions
Material wedged or stuck preventing the Discharge Belt Conveyor from turning.	With the Recycler shut down, check around Discharge Belt Conveyor looking for anything that may have the Discharge Belt Conveyor bound up.
Discharge Belt Conveyor running off track.	Make adjustments to conveyor so that belt is running centered.
Discharge Belt Conveyor drive roller spinning inside of belt.	Check Discharge Belt Conveyor for proper tension.

TROUBLE SHOOTING GUIDE

PROBLEM - DISCHARGE CONVEYOR BELT NOT RUNNING: (cont.)

(All other hydraulic systems are working)

Possible Cause	Possible Solutions
Check to see if the key in the hydraulic drive has sheared.	Check shaft for damage and replace key.
Broken drive or idler drum assemblies.	Check both drive and idler drums to make sure they are all right as well as the bearings that support them.
Low hydraulic system pressure. (Single Speed System Only)	A quick check of the hydraulic pressure can be done

PROBLEM - DISCHARGE CONVEYOR BELT BOUNCING OR JERKING:

(All other hydraulic systems are working)

Possible Cause	Possible Solutions
Material wedged in idler drum causing a high spot.	With machine shut down, remove any debris trapped in the idler drum roll.
Bent shaft on drive or idler drum rollers.	Check both drum rollers and replace if damaged.

TROUBLE SHOOTING GUIDE

PROBLEM - CONCAVE DOOR WILL NOT MOVE USING THE MANUAL CONTROLS:

(All other hydraulic systems are working)

Possible Cause	Possible Solutions
Material wedged in and around Concave Door.	Shut down the machine and with the ignition key in your possession, check around the Concave Door to determine what might be restricting it from moving. Access is through the maintenance door on right side of machine. Clear any debris that may be causing the problem.
Concave Door assembly.	It's possible to bend the Concave Door and the hinge area when a large piece of steel or some other foreign material is allowed to get into the machine. Repair or replace the Concave Door as necessary.
Hydraulic cylinder damage, (bent rod, broken piston, end cap etc.)	It's possible for the cylinders to become damaged if foreign material forces it's way through the Concave Door.
Feedwheel Yoke lift valve engaged.	The Concave Door shares a hydraulic circuit with the Feedwheel Yoke lift. If the Feedwheel Yoke lift valve is engaged to raise the Feedwheel there will not be any oil passing through the control valve for the Concave Door. Check to make sure the Feedwheel Yoke lift valve is not stuck in the raise position.
Low hydraulic system pressure.	A quick check of the hydraulic pressure can be done by placing the pressure gauge into the diagnostic port provided on the control valve. Put the Concave Door manual control valve into the open or close position to check the Concave Door working hydraulic pressure. An 2050 PSI (141 bar) reading would indicate that the Concave Door is mechanically stalled by some obstructing material. A very low pressure reading would indicate a hydraulic problem with the pressure relief valve or the hydraulic pump. See " Procedure for checking hydraulic pump and relief valve setting" in the Hydraulic Section.
No hydraulic system pressure.	Trace the pressure line from the valve bank back to the manifold used for the Hydraulic Shut Down system. Identify the electric solenoid for this circuit and verify that you have a 12 volt reading (24 volt on some models) with the ignition switch on. These solenoid valves need to be energized or the oil is pumped back to tank. If you have the proper voltage, try swapping this solenoid with another to determine if it is bad. If the problem moves to the circuit you swapped with then the solenoid is at fault. If the problem stays with the circuit you are working on then the pump is your problem.

TROUBLE SHOOTING GUIDE

PROBLEM - CONCAVE DOOR WILL NOT MOVE USING THE RADIO OR TETHER CONTROLS:

(All other functions are working)

Possible Cause	Possible Solutions
No electrical signal to the solenoid on the control valve.	Check for electrical power at the solenoid while engaging the switch on the remote used to operate the Feedwheel. If you have electrical power at the solenoid on the control valve then that means that the solenoid is faulty. If there isn't any electrical power than you will need to refer to the electrical schematic supplied with the machine to trace the problem. Could be a broken wire or a faulty relay inside the engine control panel.
Faulty switch in Remote Control.	If using the Radio Remote, Switch to the Tether Remote and vice versa to determine if the problem may be in the remote.

PROBLEM - NONE OF THE TETHER REMOTE CONTROLS ARE WORKING:

Possible Cause	Possible Solutions
Also refer to: None of the hydraulic systems are working.	
Switches in gauge panel in wrong position.	Check switches to make sure they are positioned correctly.
Poor connection at Deutsch plug.	Check connection to make sure it is secure.
Tripped circuit breaker or blown fuse.	This electrical circuit is protected by either a circuit breaker in the face of the gauge panel or a bar fuse located in a fuse holder on the side. Reset the circuit breaker or replace the bar fuse as necessary.
Tether Remote Control cable damaged.	Inspect cable for any cut or damaged wire. Try using the Radio Remote Control and if everything works than the problem lies with the Cable Remote Control.
No pilot pressure to electric solenoid valves.	The recycler is equipped with electric solenoid controlled valves to be able to control certain functions from the remote control. These valves are controlled by the solenoids but shifted by pilot pressure from the hydraulic system. The pilot pressure is picked up from the hydraulic circuit that supplies oil to the Feedwheel Yoke up and down. If there is no pressure in that system than there is not any pilot pressure to shift any of the electric valves. Refer to the Feedwheel Yoke will not raise using the manual control.

TROUBLE SHOOTING GUIDE

PROBLEM - NONE OF THE RADIO REMOTE CONTROLS ARE WORKING:

(Functions are working)

Possible Cause	Possible Solutions
Also refer to: None of the hydraulic systems are working.	
Switches in gauge panel in wrong position.	Check switches to make sure they are positioned correctly.
Switch on remote not ON.	Check to make sure switch in remote is ON.
Battery inside Radio Remote is dead.	Replace battery.
Tripped circuit breaker or blown fuse.	This electrical circuit is protected by either a circuit breaker in the face of the gauge panel or a bar fuse located in a fuse holder on the side. Reset the circuit breaker or replace the bar fuse as necessary.
No radio signal.	Too far away from machine. Also check antenna and coaxial cable connections.
Radio Remote damaged from being dropped or left in the weather.	Connect the Tether Remote to the machine and if everything works fine than the Radio Remote is to blame.
No pilot pressure to electric solenoid valves.	The recycler is equipped with electric solenoid controlled valves to be able to control certain functions from the remote control. These valves are controlled by the solenoids but shifted by pilot pressure from the hydraulic system. The pilot pressure is picked up from the hydraulic circuit that supplies oil to the Feedwheel Yoke up and down. If there is not pressure in that system than there is not any pilot pressure to shift any of the electric valves. Refer to the Feedwheel Yoke will not raise using the manual control.

HYDRAULIC SECTION

HYDRAULIC RELIEF PRESSURE SETTINGS

DESCRIPTION	SINGLE SPEED	THREE SPEED
Infeed Conveyor	1200 PSI (83 bar)	1800 PSI (124 bar)
Internal Drive Feedwheel	1500 PSI (103 bar)	1500 PSI (103 bar)
Augers	2100 PSI (145 bar)	1800 PSI (124 bar)
Yoke Cylinders	2500 PSI (172 bar)	1500 PSI (103 bar)
Discharge Conveyor	1800 PSI (124 bar)	1800 PSI (124 bar)
Discharge Conveyor Fold	1800 PSI (124 bar)	1800 PSI (124 bar)
Concave Door: "A" Port	600 PSI (41 bar)	600 PSI (41 bar)
"B" Port	1200 PSI (83 bar)	1200 PSI (83 bar)
Stabilizer	1800 PSI (124 bar)	1800 PSI (124 bar)

It is highly recommended that after initial start-up of the recycler and after any replacement of hydraulic components, that fittings and hoses be re-checked for leaks and clearances.

CONSTANT SPEED DISCHARGE CONVEYOR (if equipped)

Compensator	2600 PSI (179 bar)
High Speed	2000 PSI @ 18 GPM (138 bar @ 68.1 LPM)
Low Speed	2000 PSI @ 6.5 GPM (138 bar @ 24.6 LPM)

⚠ CAUTION

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

APPROXIMATE PUMP FLOW INFORMATION FOR REFERENCE ONLY
(Will vary depending on engine options and pump efficiency)

THE BEAST RECYCLER HYDRAULIC SYSTEM

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

If you follow the simple rules mentioned below, the hydraulic components will last for years:

- 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.
- Do not operate the machine if the hydraulic oil level is low. This will cause the pump to cavitate and over heat. Keep tank minimum 7/8 full.
- Do not increase the relief valve settings beyond its specified PSI (bar). This will cause damage to hydraulic or mechanical components.
- Keep your oil clean, dirty oil will cause excessive wear and loss of feedwheel power. Replace spin on filters per maintenance chart.
- Replace the hydraulic oil suction screen & oil filters with each 400 hours of operation or 3 months.
- Replace your hydraulic oil once yearly. This is also a very good time to flush and clean the tank.
- If you keep the recycler's hydraulic system clean and do not increase the hydraulic pressure beyond specified PSI (bar), you will get the maximum use and life out of your recycler.
- If you encounter a problem, it will more than likely be located in the relief valves or something as simple as pump belts slipping. Make sure all Hydraulic Shut-Down Switches are pulled out.
- Always check these areas first.

PROCEDURE FOR CHECKING HYDRAULIC PUMP AND RELIEF VALVE SETTING

All hydraulic circuits have a diagnostic port located in the valve banks, there are a total of five. Each machine is delivered with a 3000 PSI (207 bar) gauge installed in the diagnostic port of the valve bank on the upper right hand side of the control cabinet. Before checking any pressures the hydraulic oil must be at normal operating 1 temperature. Also remember to relieve any pressure in the hydraulic system before disassembly. Checking these pressures will be done with engine operating at full RPM's so the Recycler must be secured. Allow no one on or near the machine while performing these tests except the operator. The test are all completed at the control panel on the left hand side or road side of the machine.

Starting with the valve bank on the bottom of the control cabinet. This valve bank has manual controls for the Infeed Conveyor, Feedwheel rotation, Feedwheel Yoke, and the Concave Door. There are three diagnostic ports in this bank, one for the Infeed Conveyor, one for the Feedwheel rotation, and one for both the Feedwheel Yoke and Concave Door.

Before checking the Infeed Conveyor Chain or the Feedwheel rotation circuits you will need to disconnect the hydraulic hoses at the drive motor and cap them. This is necessary to cause a restriction so you can check the system pressure. Remember, never work on or near the Feedwheel without Yoke Lock Bars and Safety Chains in place. The Feedwheel must be down before testing hydraulic system pressure. Also make sure the flow controls for the Infeed Conveyor and the Feedwheel systems are closed so no oil is being drained back to tank.

Continued on Next Page

PROCEDURE FOR CHECKING HYDRAULIC PUMP AND RELIEF VALVE SETTING

The Feedwheel Yoke and the Concave Door circuits share a common relief valve so you will only need to use one of these valves to check system pressure. It is suggested to use the Feedwheel Yoke valve. As with any circuit using hydraulic cylinders all you need to do is stall it out at the end of its stroke to cause a pressure build up. The oil from this circuit exits through a power beyond port and is the same oil that powers the valve bank on the upper right hand side of the cabinet. Because of this, the relief valve setting must be checked here first, and the pressure must be at least 200 PSI (14 bar) higher then the setting you want at the second valve bank.

The control valve for the Discharge Conveyor Belt also has a diagnostic port. To check the pressure here the hoses to the hydraulic drive motor must be disconnected and capped to get a pressure reading.

The valve bank on the upper right side of the control cabinet has only one relief valve and therefore only one diagnostic port to plug a pressure gauge into. When checking the system pressure use only the Feedwheel Yoke Lock valve at the top of the bank. Remember that you must check the system pressure at the lower bank first before checking the system pressure here.

Refer to “Hydraulic Relief Settings” in this section for the correct relief valve pressure setting for the hydraulic circuit being checked. To begin checking system pressures place the pressure gauge in the first diagnostic port. With the machine and area secure, start the engine and open throttle to full RPM’s. With the manual control valve handle centered, the pressure reading should be less than 180 PSI (12 bar). Push the control valve handle away from you and observe reading. If the pressure reading is not correct, adjust the relief valve by loosening the lock nut and screwing the adjustment in or out slowly. If this fails to adjust the pressure the problem may be either with the relief valve or the pump.

Disengage clutch, turn off engine, wait for the Cutterhead to come to a complete stop, turn Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession. Remove the gauge at the filter head assembly and set aside. This will break the siphon effect so as not to drain all the oil out of the tank. Attach a hose to the ball valve located on the manifold inside the control cabinet. Drain the oil from this manifold into a clean bucket by turning the ball valve on.

With the oil drained remove the relief valve cartridge by unscrewing from the valve body. Make sure that the o-rings are still on the cartridge, and if they are not remove them from the valve body. Check the cartridge for any foreign material trapped inside that may prevent the relief valve form operating properly. Check for broken valve springs or damaged parts. Thoroughly flush the cartridge in a solvent bath and reinstall in the valve body. Unscrew the valve adjustment a few turns to make sure that its not bottomed out and would not be able to open under pressure. Close the ball valve on the manifold and replace the gauge in the filter head assembly.

Start engine and attempt to adjust the pressure using the same procedure as before. If the relief fails to adjust the next step is to swap it with another. The relief valves are common throughout the hydraulic system.

Disengage clutch, turn off engine, wait for the Cutterhead to come to a complete stop, turn Battery Disconnect Switch off, and you must have the ignition key in **YOUR** possession. Remove gauge from filter head assembly again and drain manifold. Remove relief valve in question and swap it with another. After both are tightened in place, close ball valve at the manifold and replace the gauge in the filter head assembly. Start the engine and again attempt to make adjustment with the swapped relief valve. If adjustment is possible than the relief valve you started with is bad and needs to be replace. A new relief valve will need to be checked for proper pressure setting after it is installed. Any time you are putting a relief valve in it’s a good idea to back off the adjustment a few turns to make sure its not bottomed out and unable to open. Make final adjustments with the relief valve in the machine. If adjustment is still not possible the problem lies with the hydraulic pump. A qualified technician with a Hydraulic Flow Meter unit could confirm your suspicion while the pump is still on the Recycler, or you can remove the pump and have it repaired or replaced.

Follow this procedure to check the other circuits of the hydraulic system. Reconnect the hydraulic hoses to the drive motors when you have completed all testing. Check the fluid level in the hydraulic tank to make sure that it is still 7/8 full.

LUBRICATION

1) Engine:

Follow original equipment manufacturers requirements for changing oils and filters.

2) Clutch:

Follow original equipment manufacturers requirements for both greasing and adjusting. Frequently adjust, and grease per PTO manufacturers manual.

PT Tech Hydraulic Clutch (if equipped)

Must use "Mobil" Brand Fluid #424 in Hydraulic Clutch. See clutch manual for additional lubricating instructions.

Twin Disc Hydraulic Clutch (if equipped)

Clutch comes filled with Petro-Canada Duron SAE-30 oil. See clutch manual for instructions.

3) Hydraulic Reservoir Tank:

Completely change hydraulic oil, suction screen, and flush the tank annually.

Change hydraulic oil filter AFTER FIRST 10 HOURS OF OPERATION. Then change hydraulic oil filter 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.

4) Hydraulic Oil Requirements:

This machine is equipped with "Petro-Canada Hydrex XV" hydraulic fluid. Replace with the same or equivalent. "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 componetns at high operating temperatures. It will also help protect against hydrauilc failures during the wide temperature swings of spring and fall.

5) Lubrication of Cutterhead Bearings

Use Mobil 1 Universal Synthetic Grease, Mobil SHC 220 Synthetic Grease, Mobil AW2 Synthetic Grease or

Amsoil Synthetic Multi-Purpose Grease NLGI#2

It is recommended that synthetic grease is used, however, EP-2 Lithium grease is approved for monthly greasing. Give each bearing sixteen (16) pumps once each month. Annually, remove the cap from the bearing housing and spoon out most of the grease from the bearing housing. It is not necessary to purge out all the grease. Refill the bottom housing to about 2/3 full with new synthetic grease. IMPORTANT: Each bearing cap is matched to the bottom housing; replace each to its original bearing assembly. See the "Bolt Torque Charts" section for tightening the bearing cap bolts. It is recommended that the cutterhead be turned manually if it is sitting idle for more than one month at a time. This will recirculate grease to the bearings. In cold temperatures (below 32^0 F or 0^0 C) allow the cutterhead to turn at a slow speed for about five minutes to allow the grease to warm up and circulate.

6) All Other Shaft Bearings

Use an EP-2 Lithium type grease only for all bearings. Purge recycler bearings with grease you can not over grease these bearings. These bearing 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.

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

Especially important is proper lubrication when the recycler is stored. 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.

Continued on the next page

LUBRICATION

Then fully purge again before the machine is put back into operation. Failure to do this will ruin the bearings. Bearings may 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. A loose lock collar allows the sleeve to turn on the shaft. Failed bearings diagnosed as contamination or cold starts at high speed are not covered by warranty or by the bearing manufacturer.

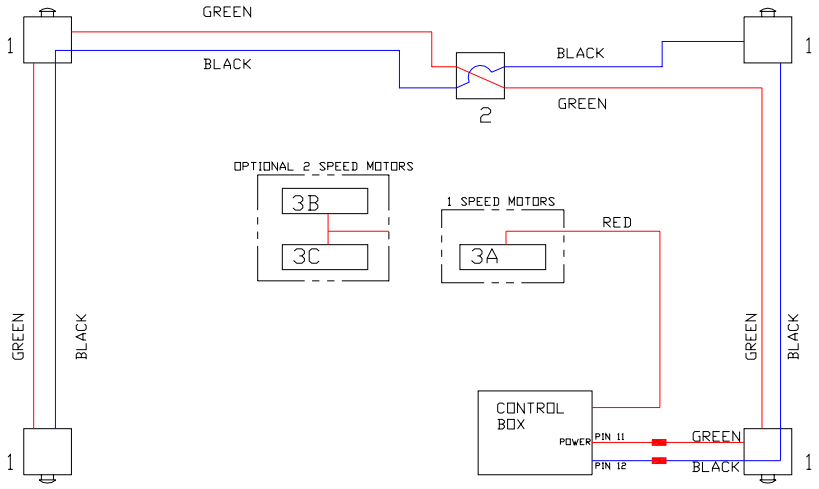
7) Infeed Gear Box

Fill half full (20 oz. or .59 L) with EP 90 petroleum based gear oil. This oil should be changed after the first 50 hours of operation and every 1000 hours thereafter. Change immediately if oil exceeds 200^0 F (93^0 C).

8) Feedwheel Gear Box

Fill half full (23 oz. or .68 L) with EP 90 petroleum based gear oil. This oil should be changed after the first 50 hours of operation and every 1000 hours thereafter. Change immediately if oil exceeds 200^0 F (93^0 C).

RECYCLER EMERGENCY HYDRAULIC SHUT DOWN
With Caterpillar Engine



ITEM	PART NUMBER	DESCRIPTION
1.	901-100002	Hydraulic Shut Down Box Assy.
2.	900-2902-92	Electrical Junction Box
3.	900-3921-77	24 Volt Coil
	900-3918-63	Wiring Harness for 24 Volt Coil
A.	900-3910-31	Dump Valve Block (1 Speed)
B.	900-3921-72	Dump Valve Block (3 Port, optional)
C.	900-3920-39	Dump Valve Block (4 Port, optional)

REPLACEMENT PARTS SECTION

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

RECYCLER COMPONENTS	ENGINE COMPONENTS	CLUTCH COMPONENTS
Serial Number	Engine Size	Name of Manufacturer
Model Number of Recycler	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 locations.

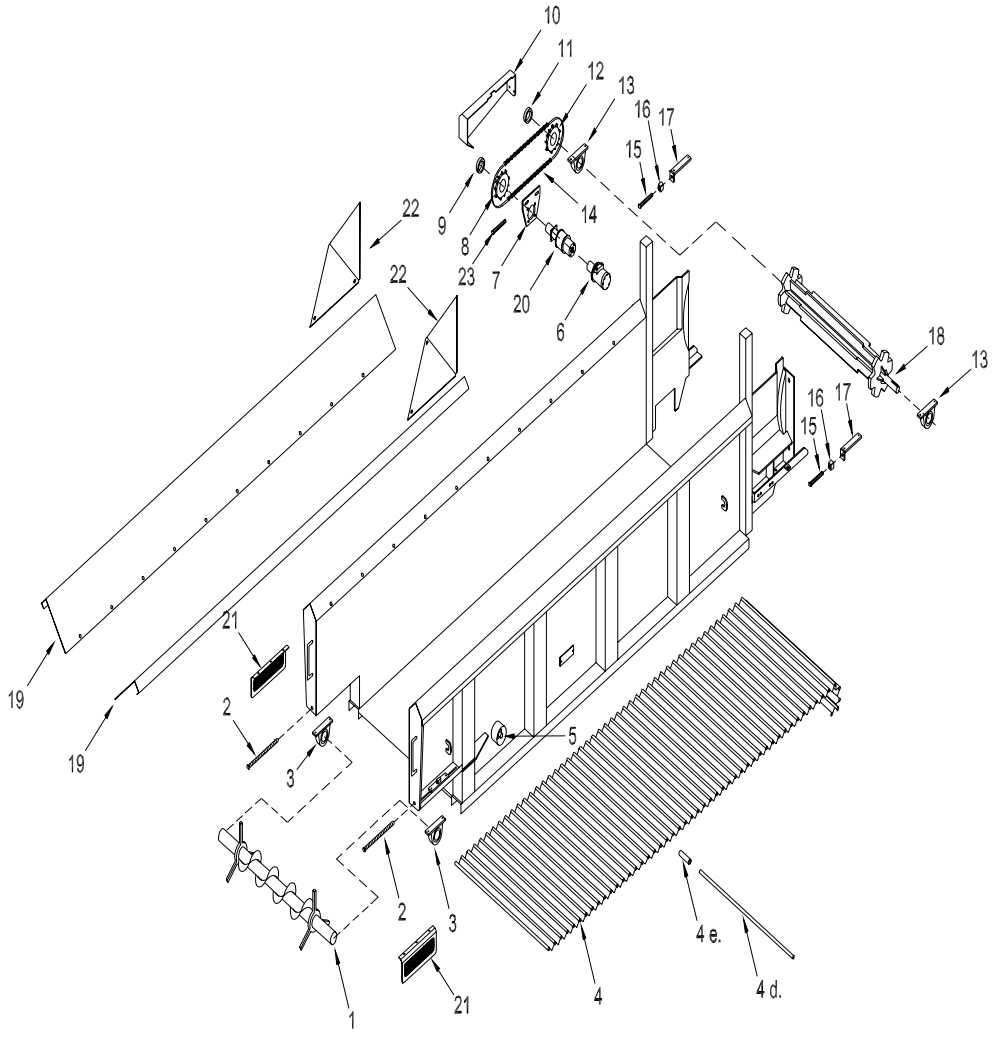
NOTE

All nuts, bolts, washers, and all 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.

Smoracy, LLC reserves the right to make changes in models, size, design, installations and applications on any part without notification.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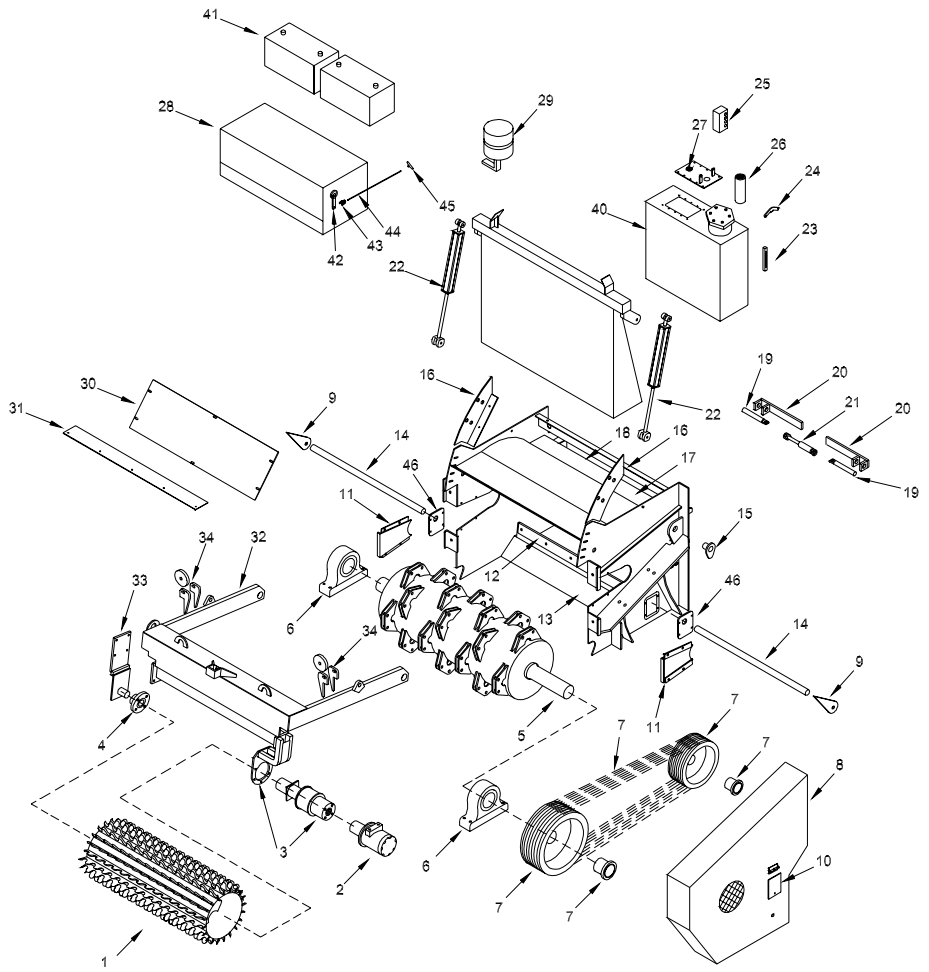
LOCATION	PART NUMBER	DESCRIPTION
1.	977-100036	Tail Shaft Drive Assembly
2.	977-100038	Infeed Tailshaft Take Up Screw Weldment
3.	900-1906-33	Tail Shaft Bearing
4 a. XX	978-100033	Complete Chain Assembly
b.	977-100146	Single Chain Link Assembly
c.	900-4904-51	Set Screw (Not Shown)
d.	976-051031	Pin
e.	976-001074	Slat Drive Bushing
5	977-100018	Hydraulic Shutdown Assembly (See Emergency Hydraulic Shutdown diagram for list of parts in Electrica Section)
6. X	900-3901-39	1 Speed Infeed Conveyor Hydraulic Motor (Standardl)
X	900-3913-70	3 Speed Infeed Conveyor Hydraulic Motor (Optional)
7.	977-300459	Hydraulic Motor Mount
8. X	900-1905-24	Bushed Sprocket For Infeed Conveyor (1 Speed)
X	900-1907-65	Bushed Sprocket For Infeed Conveyor (3 Speed)
9.	900-1903-43	Bushing
10.	977-200196	Infeed Conveyor Chain Guard
11.	900-1900-08	Bushing
12.	900-1914-19	Bushed Sprocket
13.	900-1906-33	Infeed Head Shaft Bearing
14.	901-100010	Infeed Conveyor Drive Chain Kit - 5’
a.	900-1910-15	Roller Chain Half Link (not shown)
b.	900-1910-16	Roller Chain Master Link (not shown)
15.	977-100052	Infeed Head Shaft Bearing Adjustment Bolt
16.	976-021017	Adjustment Block
17.	977-000172	Infeed Head Shaft Bearing Pad
18.	977-100035	Infeed Head Shaft Assembly
19 a.	978-300103	Infeed Wing (Road Side)
b.	978-300185	Infeed Wing (Curb Side)
20.	900-3901-54	Gear Box
21.	977-000224	Infeed Tail Shaft Guard
22 a.	978-300170	Wing End Cap - Curb Side (if equipped)
b.	978-300169	Wing End Cap - Road Side (if equipped)
23.	900-4908-55	Hydraulic Motor Adjuster Eyebolt



LOCATION		PART NUMBER	DESCRIPTION
1.		977-200169	Feedwheel Assembly
2.	X	900-3916-84	1 Speed Hydraulic Motor
	X	900-3928-11	3 Speed Hydraulic Motor (Optional)
3	X	900-3916-83	Gear Box 1 Speed
	X	900-3928-10	Gear Box 3 Speed
	b.	977-200150	Gear Box Mount Assembly
4.		900-1900-15	Feedwheel Bearing
5	a. XX	977-100091	Cutterhead Assembly
	b.	901-100000	Cutterhead Wiper Insert (not shown)
6	a.	977-100100	Cutterhead Bearing - Clutch Side
	b.	977-100101	Cutterhead Bearing - Radiator Side
7.			Cutterhead Drive Components
	X	900-1911-69	Engine Sheave
	X	900-1907-45	Engine Sheave Bushing
	X	900-1914-67	Cutterhead Sheave
	X	900-1906-08	Cutterhead Sheave Bushing
	X	900-1912-87	Drive Belts
8.		978-200022	Belt Shield Assembly 2 Axle

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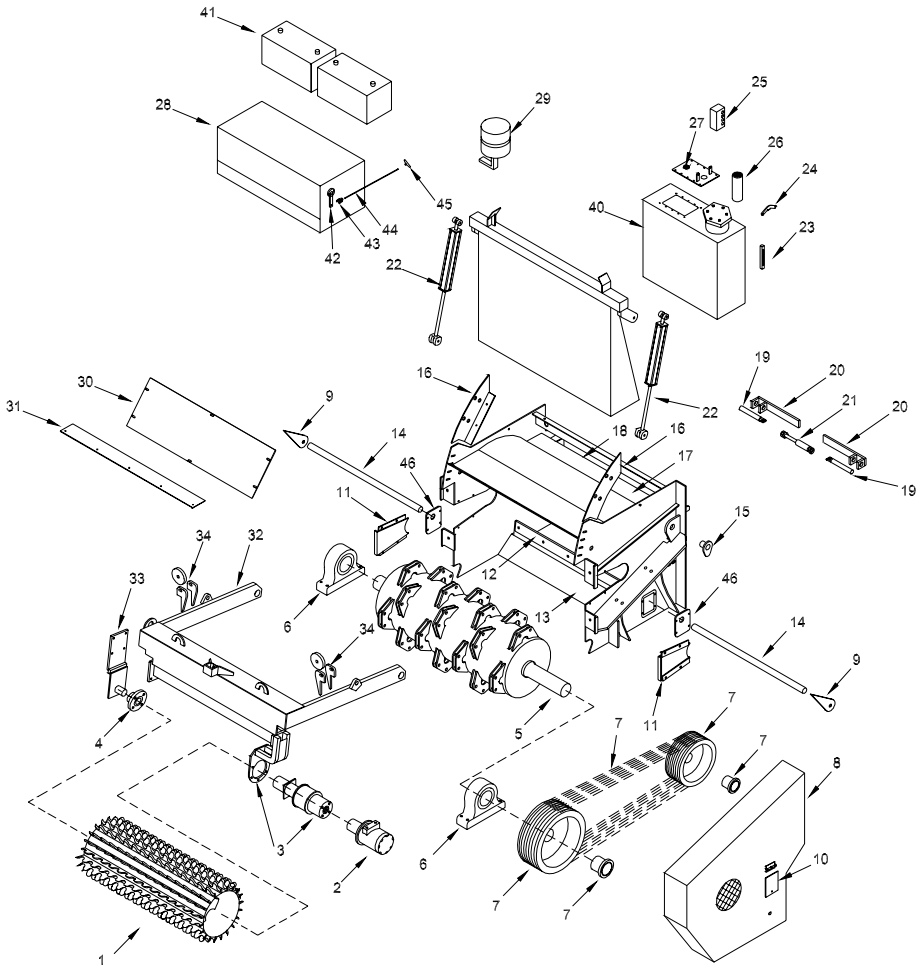
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LOCATION	PART NUMBER	DESCRIPTION
9.	977-200153	Screen Location Indicator
10.	977-100007	Beltshield Tension Check Door Assembly
11.	978-200006	Base Side Cover Plate
12.	976-003422	Anvil
13.	977-200128	Anvil Mount Assembly
14 a.	977-200143	Concave Door Pin Curb Side
X	977-200144	Concave Door Pin Road Side (under 650 HP)
X	977-200145	Concave Door Pin Road Side (over 650 HP)
15.	977-200155	Yoke Pivot Pin Assembly
16.	976A-004468	Yoke Slide Guide
17.	977-200156	Roll Cover
18.	976-000181	Crash Bar
19.	977-200200	Yoke Lock Pin Assembly
20.	977-200199	Yoke Lock Base Assembly
21.	900-3927-26	Yoke Lock Cylinder
22 a.	900-3927-27	Yoke Lift Cylinder
b.	900-3911-49	Breather Fitting For Lift Cylinder (not shown)
23.	900-3901-78	Sight Gauge
24 a.	976-012584	Hydraulic Tank Filler Cap Lock
b.	900-3907-66	Hydraulic Tank Fill Cap
c.	900-3901-73	Service Filter Gauge (not shown)
25 a.	900-3921-72	3 Speed Hydraulic Stop Block
X	900-3910-31	1Speed Hydraulic Stop Block
b.	900-3917-24	24 Volt Solenoid On Stop Block
X	900-3910-33	12 Volt Solenoid On Stop Block
26.	900-3926-57	In Tank Hydraulic Filter
27.	900-3913-68	Moisture Control Insert
28.	977-200243	8D Battery Box Weldment
29.	900-9902-45	Automatic Fire Extinguisher
30.	976A-004075	Yoke Lock Cover
31 a.	976-000176	Base Top Rubber Flap
b.	976-000194	Base Top Rubber Flap Mount
32.	977-200157	Feedwheel Yoke Weldment
33.	977-200158	Feedwheel Idle Shaft Weldment
34.	983-100000	Yoke Roller Guide Assembly
35.	977-000278	Yoke Lift Safety Chain And Hook (Not Shown)
36 a.	977-000281	Beltshield Catwalk Assembly Only (Not Shown)
b.	977-000280	Beltshield Catwalk Assembly And Ladder (Not Shown)
37.	977-200159	Beltshield Fold Up Ladder Assembly Only (Not Shown)
38.	976-001579	Beltshield Catwalk Hand Rail Assembly (Not Shown)
39	900-2906-56	24v Screen Assist Winch Kit (Not Shown)
40.	977-100009	140 Gallon Hydraulic Tank Assembly
41.	900-6907-88	8D 1400 CCA Battery
42.	900-2908-56	Disconnect Lever
43.	900-6901-70	1/4” Clevis Kit
44.	900-4907-93	Push/Pull Cable (1/4”)
45.	900-4907-92	Cable Knob
46.	976A-004252	Anvil Access Door
Not Shown	977-200168	Air Compressor Battery Box Weldment (if equipped)

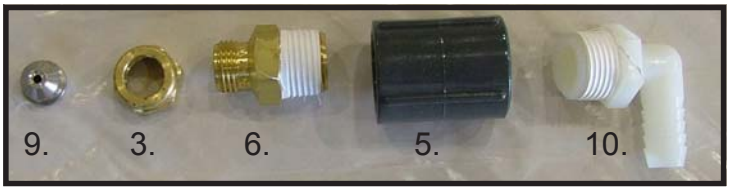
DUST SUPPRESSION SYSTEM

Discharge Sprayer

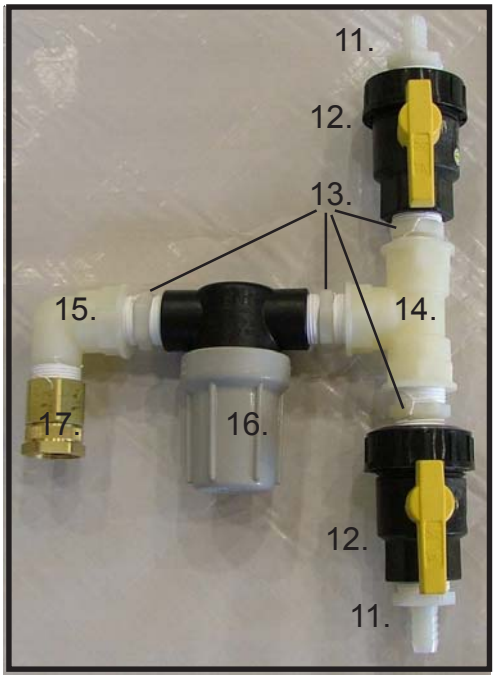
Center Yoke Sprayer

Discharge Sprayer

Curb Side and Road Side Sprayer

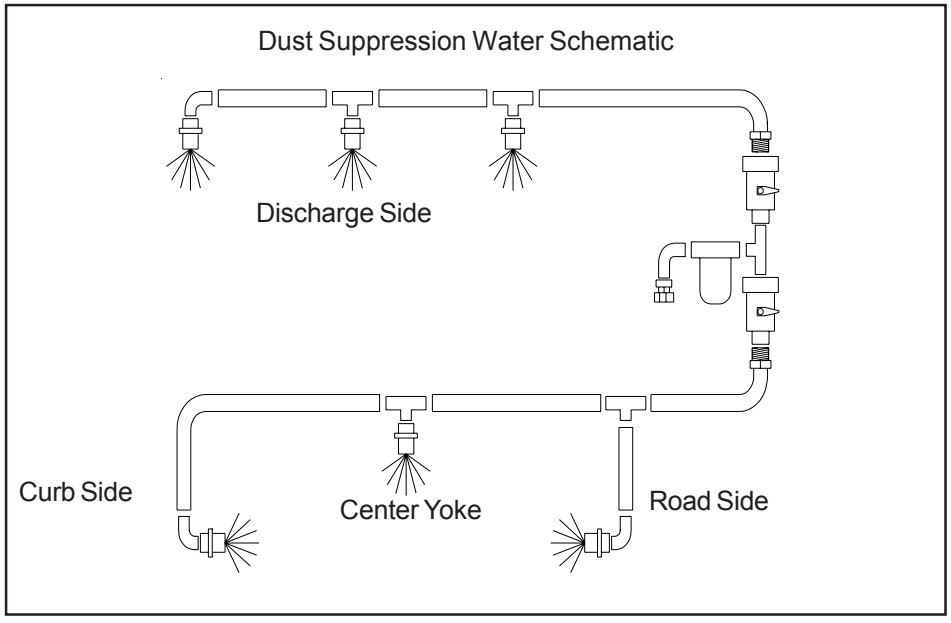


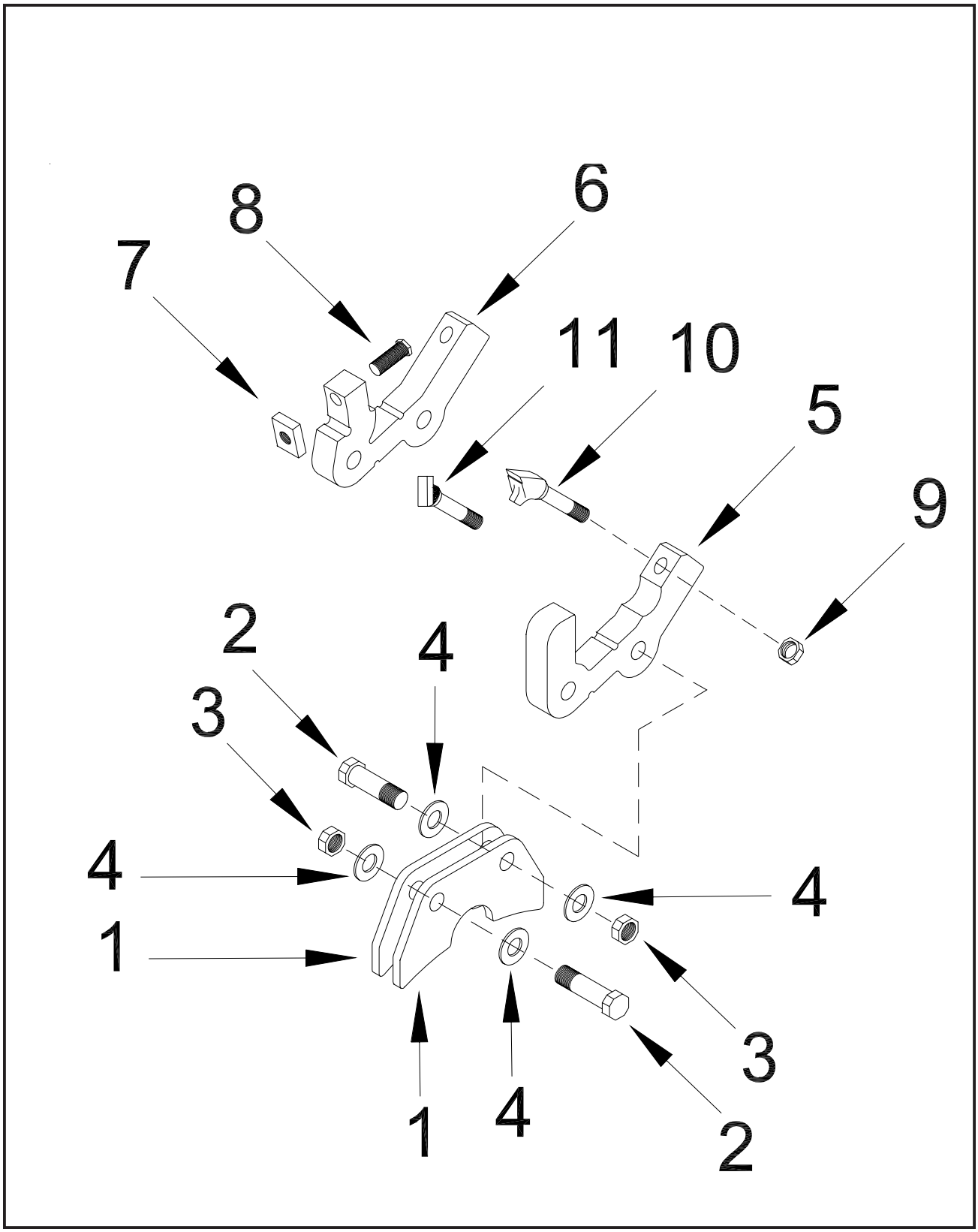
Filter and Shut Off Assembly



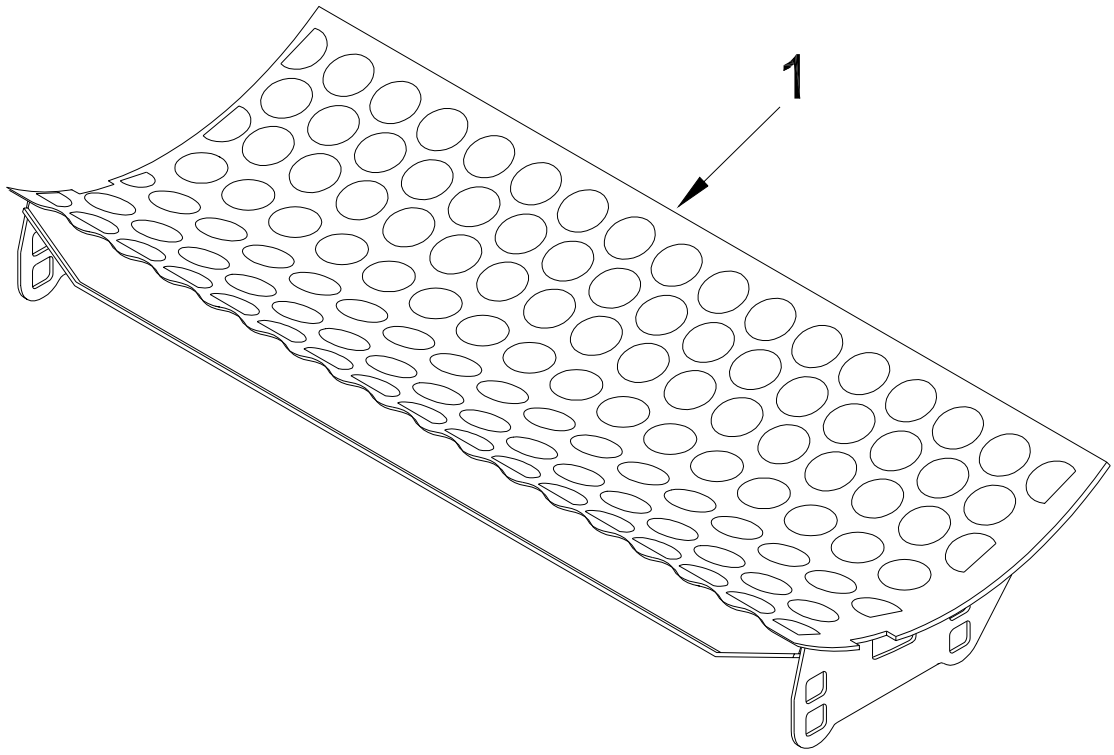
DUST SUPPRESSION SYSTEM

LOCATION	PART NUMBER	DESCRIPTION
1.	900-9902-52	Plastic 90 Elbow with Nut
2.	900-9902-55	Nozzel Tip (Discharge Side Sprayer)
3.	900-9902-57	Nozzel Cap
4.	900-9902-62	Male to Hose Barb
5.	900-3917-76	Coupling
6.	900-9902-58	Nozzel Body
7.	900-9902-59	Nozzel Tip (Center over Yoke)
8.	900-9902-53	Plastic “T” with Nut
9.	900-9902-56	Nozzel Tip (Road Side & Curb Side)
10.	900-9902-50	Plastic Elbow
11.	900-9902-93	Male to Hose Barb
12.	900-9902-60	Shut Off Valve
13.	900-9902-48	Nipple
14.	900-9902-51	Plastic “T”
15.	900-9902-49	Plastic 90 Elbow
16.	900-9902-54	Filter
17.	900-3913-00	Hose Connector
*	900-9902-78	Clear Hose (priced per foot) Not Shown





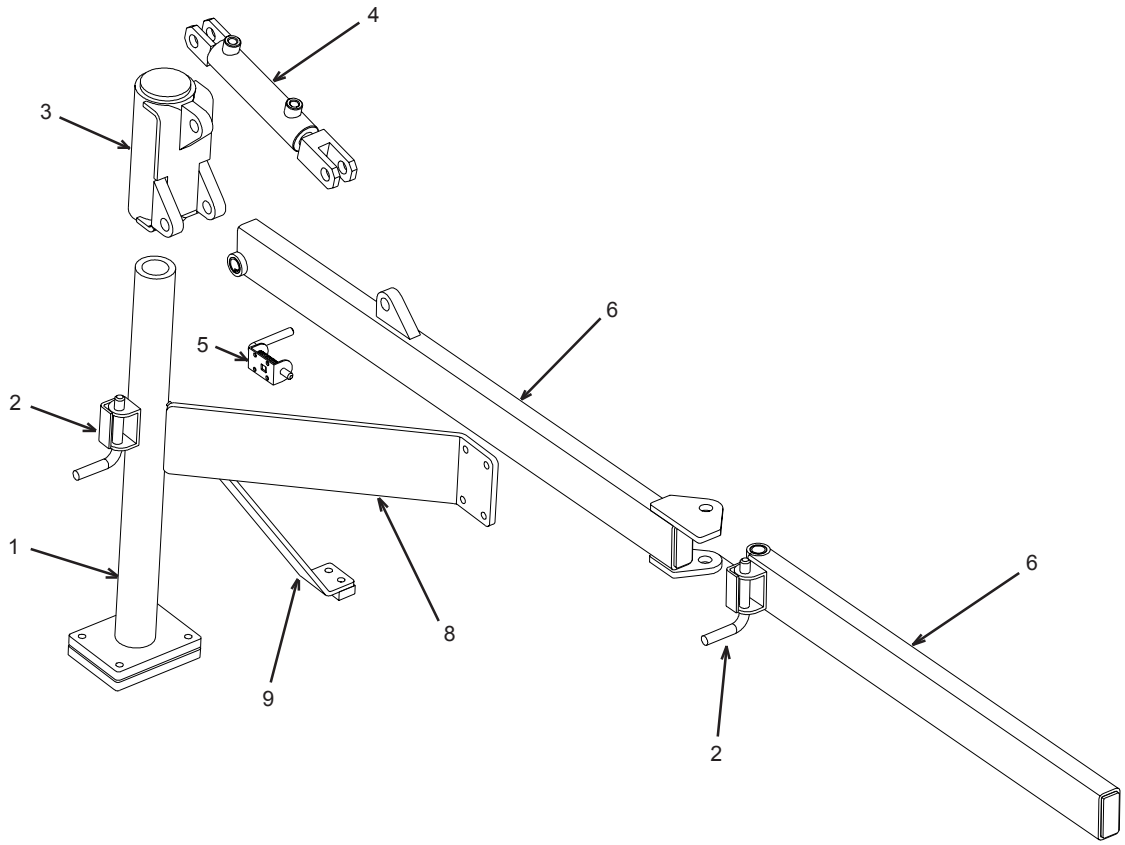
LOCATION	PART NUMBER	DESCRIPTION
1.	977-301087	Cutterbody Support Arm
2.	900-4908-78	Cutterbody Bolt
3.	900-4904-92	1” Stover Lock Nut For Cutterbody Bolt
4.	900-6907-68	Steel Washers
5.	977-200195	Non-Replaceable Raker Cutterbody
6.	977-301434	Replaceable Raker Cutterbody Only (option)
7.	977-100056	Replaceable Raker 45° (option)
	977-100057	Replaceable Raker Square Cut (option)
	977-200122	Replaceable Raker Square Cut with four welds (option)
8.	900-4902-78	Replaceable Raker Bolt
9.	900-4901-66	7/8” Grade 8 Nut
10.	*	See Cutterteeth Section for descriptions
11.	*	See Cutterteeth Section for description



LOCATION	PART NUMBER	DESCRIPTION
1.		ROUND SCREENS (SHOWN)
a.	977-200009	1” Round
b.	977-200010	2” Round**
c.	977-200011	3” Round**
d.	977-200012	4” Round
e.	977-200013	5” Round
f.	977-200014	6” Round
		MODIFIED DIAMOND SCREENS (NOT SHOWN)
a.	977-200001	1” Modified Diamond**
b.	977-200002	1 1/2” Modified Diamond
c.	977-200003	2” Modified Diamond**
d.	977-200004	3” Modified Diamond**
d.	977-200005	4” Modified Diamond**
e.	977-200006	5” Modified Diamond**
f.	977-200008	6” Modified Diamond**
g.	977-200007	7” Modified Diamond
		SQUARE SCREENS (NOT SHOWN)
a.	977-200015	1” Square
b.	977-200016	2” Square
c.	977-200017	3” Square
d.	977-200018	4” Square
e.	977-200019	5” Square
f.	977-200020	6” Square

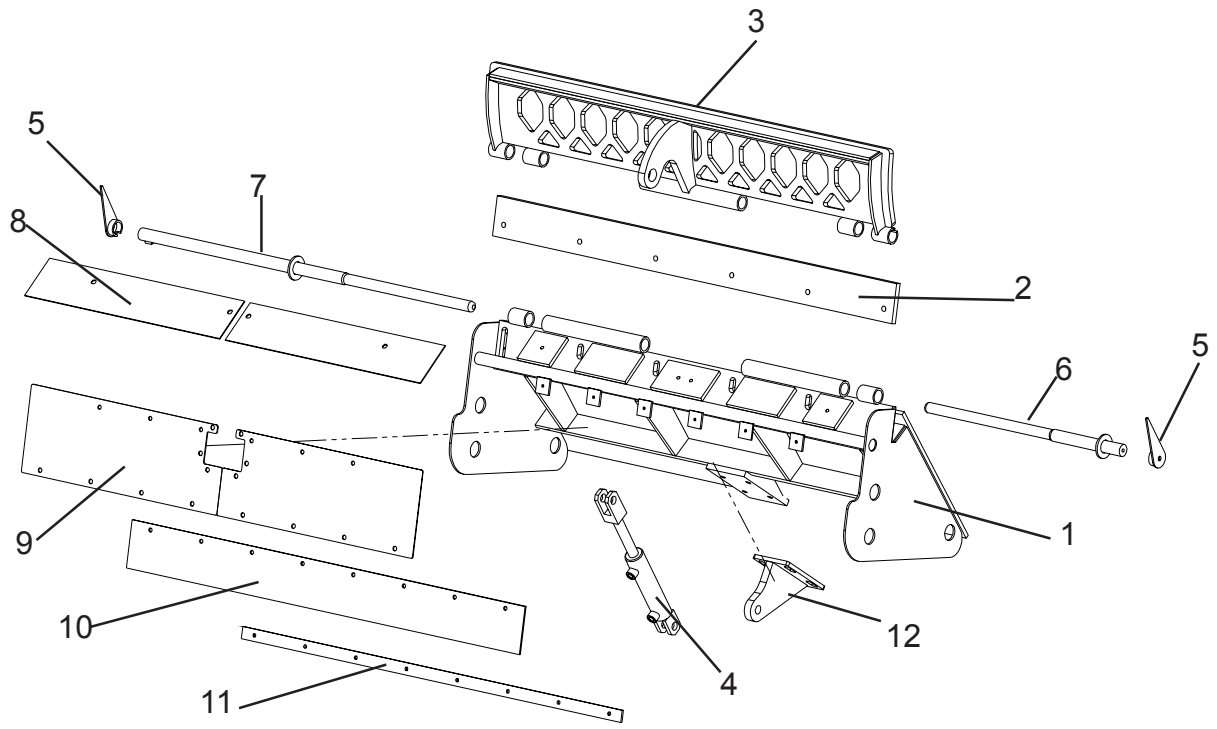
**These are all stock screens, all others will take a minimum of two weeks to produce.

SCREEN HOIST COMPONENTS



SCREEN HOIST COMPONENTS

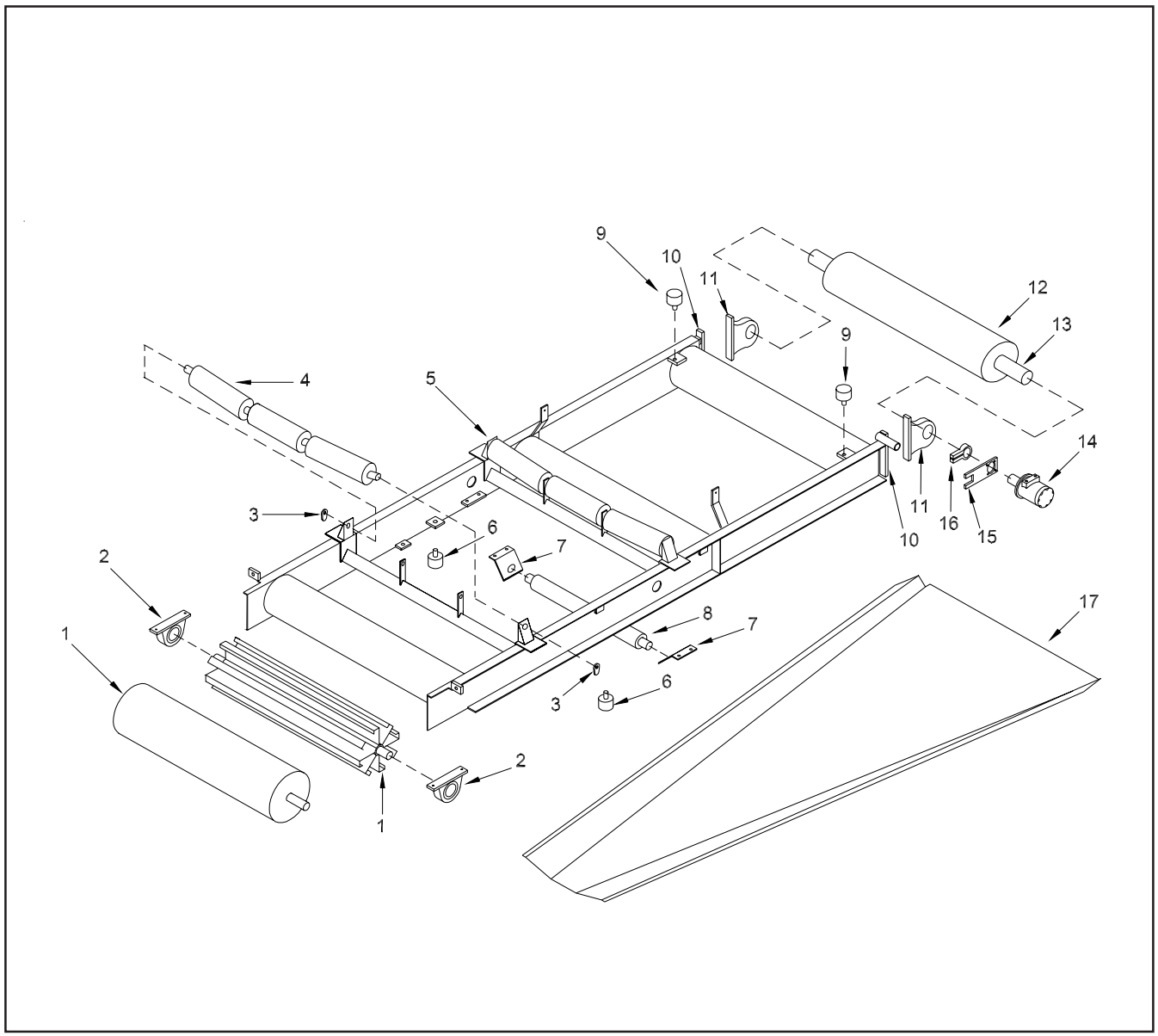
LOCATION	PART NUMBER	DESCRIPTION
1.	977-200426	Screen Hoist Pole Assembly
2.	900-4904-90	3/4” Spring Latch
3.	977-200425	Screen Hoist Pivot Head Assembly
4 a.	900-3920-77	Screen Hoist Cylinder
b.	901-100031	Flow Restictor Only (Not Shown)
5.	900-4901-83	1/2” Spring Latch
6 a.	977-200423	Screen Hoist Long Arm Assembly
b.	900-1911-59	Split Steel Bushing
7 a.	977-200424	Screen Hoist Long Arm Assembly
b.	900-1911-59	Split Steel Bushing
8.	977-302391	Screen Hoist Pole Support
9.	977-302388	Screen Hoist Pole Support
10.	901-100032	Chain Assembly With Slip Hook (Not Shown)
11.	900-9905-86	Forged Grab Hook (Not Shown)
12.	977-302398	Electric Pump & Reservoir Cover (Not Shown)
13.	900-6907-66	Disconnect Switch
14 a.	900-9905-85	Electric Pump With Controller & Reservoir (Not Shown)
b.	900-2915-56	Electric Motor Only (Not Shown)
c.	900-2915-57	Controller Only (Not Shown)
d.	900-2915-58	Controller Cord Only (Not Shown)
16.	977-100158	Screen Hoist Assembly (Includes 1-14a)



ANVIL ASSEMBLY W/10" GATE

LOCATION	PART NUMBER	DESCRIPTION
1.	977-200240	Bolt In Anvil Assembly
2.	977-300774	Replaceable Anvil
	CONCAVE GATES AVAILABLE FOR YOUR BEAST	
3 a.	977-200092	1" Modified Diamond
b.	977-200093	1-1/2" Modified Diamond
c.	977-200094	2" Modified Diamond
d.	977-200095	3" Modified Diamond
e.	977-200096	4" Modified Diamond
f.	977-200097	5" Modified Diamond
g.	977-200098	1" Round
h.	977-200099	2" Round
i.	977-200100	3" Round
j.	977-200102	1" Square
k.	977-200103	2" Square
l.	977-200104	3" Square
4.	900-3927-32	Hydraulic Cylinder for Concave Gate
5.	977-200153	Gate Indicator
6.	977-200143	Curb Side Hinge Pin
7.	977-200144	Road Side Hinge Pin
8.	977-300413	Top Half Chip Slide Plate
9.	977-301768	Chip Slide Plate Bottom
10.	977-301844	Anvil Rubber Skirt
11.	977-300782	Anvil Flat Mounting Strip
12.	977-200241	Gate Cylinder Lug Assembly

18' DISCHARGE CONVEYOR

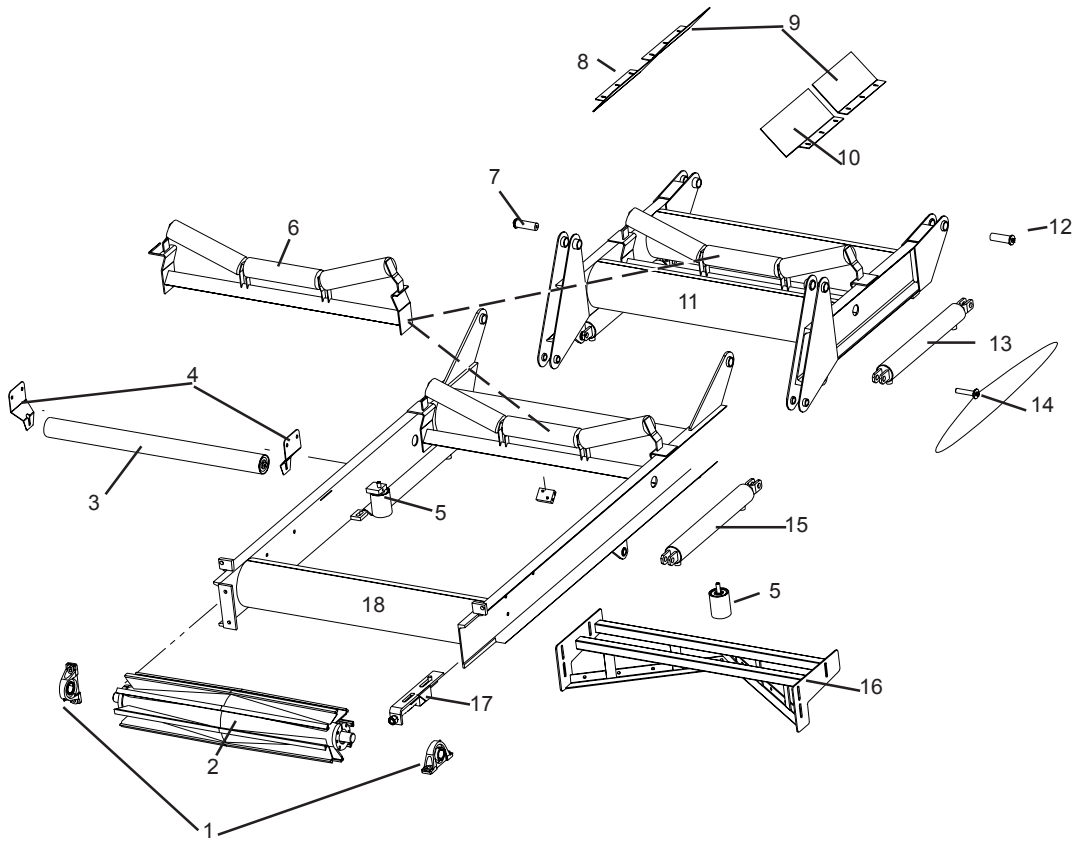


18' DISCHARGE CONVEYOR

LOCATION	PART NUMBER	DESCRIPTION
1	977-100001	Winged Bottom Idler Wheel Assembly
a.	900-1909-35	Bushings for Idler Wheel Assembly (not shown)
b.	900-1909-33	Winged Drum Only (not shown)
c.	977-301188	Shaft Only for Winged Idler Wheel Assembly (not shown)
2.	900-1905-10	Bottom Idler Wheel Bearing
3 a.	977-900234	Outside Troughing Roll Clip
b.	977-900233	Inside Troughing Roll Clip
4.	900-1912-13	Single Troughing Roll
5.	900-1905-31	Troughing Roll Assembly
6.	900-1910-17	Side Guide Roller
7.	977-301465	Return Roller Mount
8.	900-1911-62	Frame Mounted Return Roller
9.	900-1910-17	Side Guide Roller
10 a.	977-200188	Magnetic Roller Head Mount (Drive Side)
b.	977-200189	Magnetic Roller Head Mount (Non Drive Side)
11.	900-1905-10	Roller Head Bearing
12.	900-1906-71	Magentic Roller Head
13.	977-310840	Shaft For Magnetic Roller Head
	900-1908-24	Bushing for Magnetic Roller Head
14. X	900-3901-39	Magnetic Roller Head Hydraulic Motor (1 Speed)
X	900-3923-12	Magnetic Roller Head Hydraulic Motor (Constant Speed, optional)
15.	977-301337	Torque Arm
16 a.	977-301338	Lee-Tight Coupler
b.	977-301339	Key For Lee-Tight Coupler (Not Shown)
17.	977-301153	Steel Chute
18.	900-1910-53	Conveyor Belt (18') Not Shown
	977-301157	Replaceable Belt Conveyor Plastic Slides (not shown)

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

LOWER & MID DISCHARGE CONVEYOR

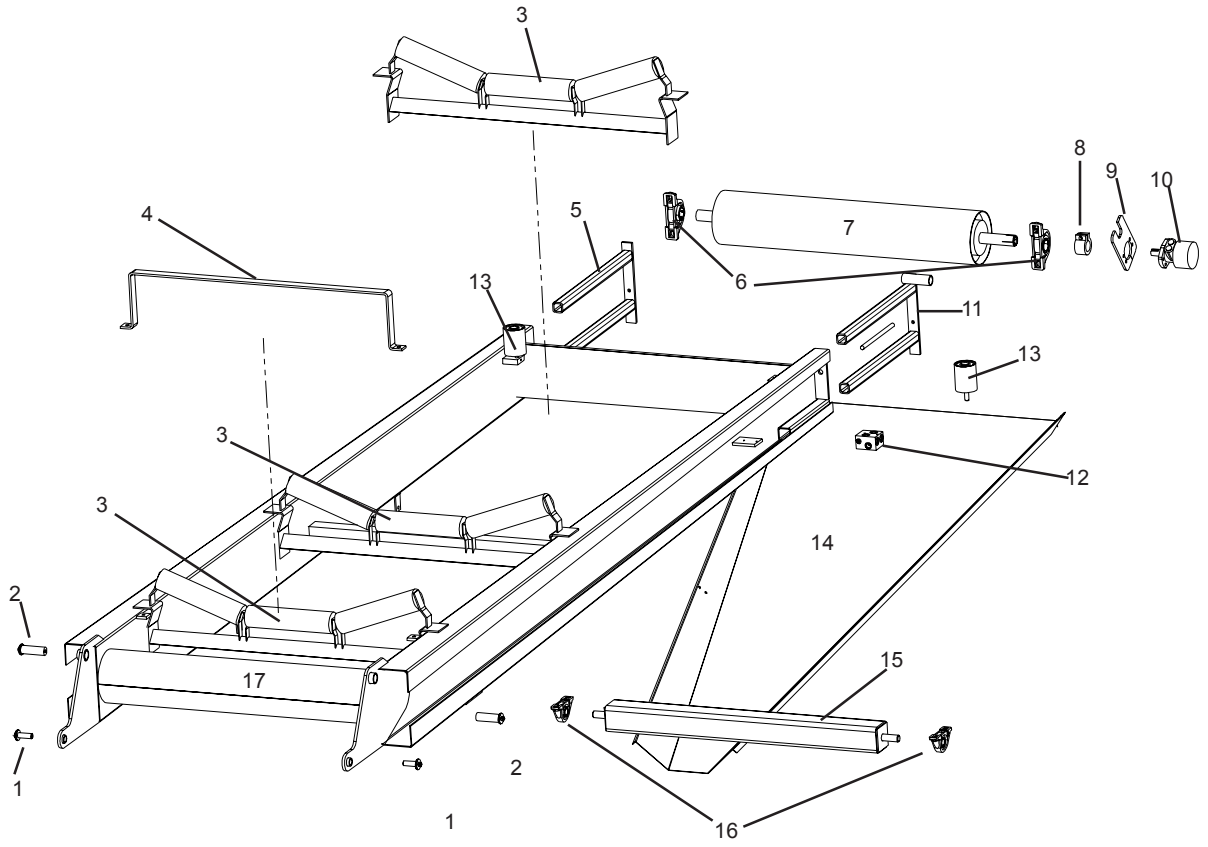


REF:977-100015

LOWER & MID DISCHARGE CONVEYOR

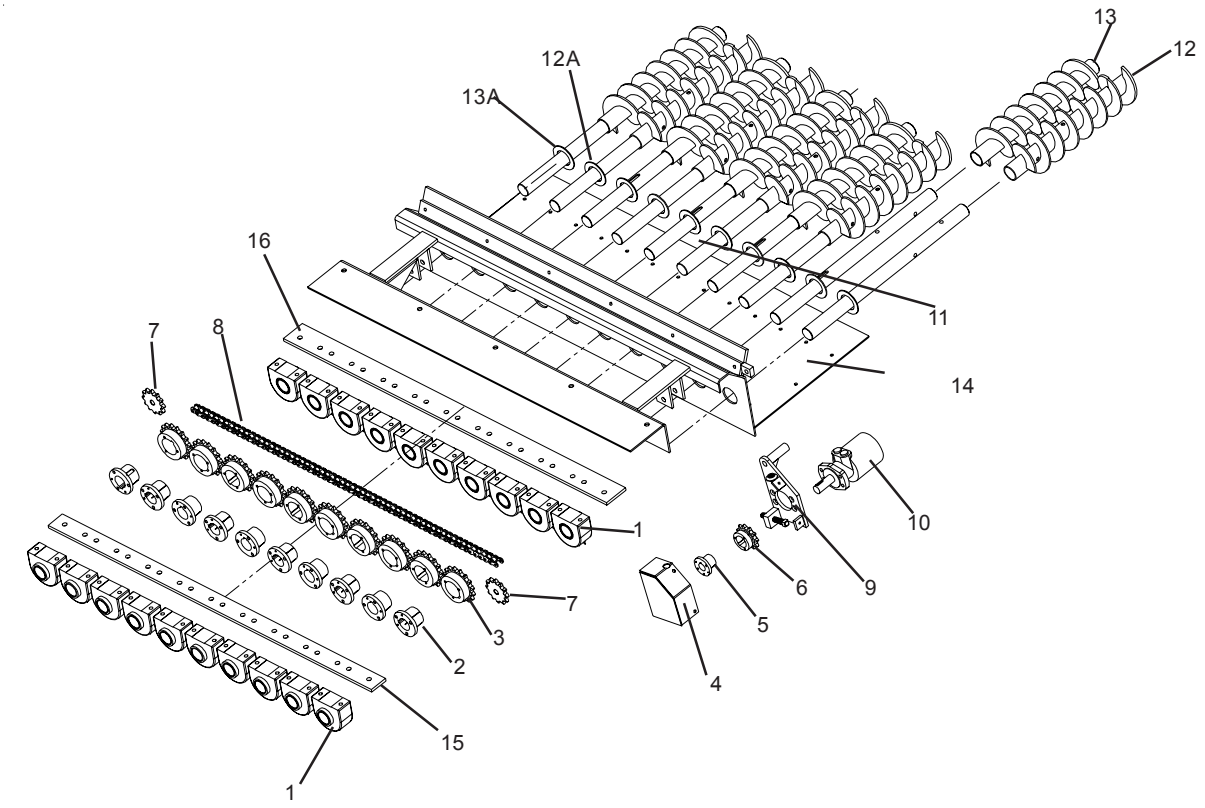
LOCATION	PART NUMBER	DESCRIPTION
1.	900-1905-10	Idler Wheel Bearing
2.	977-100001	Fanned Idler Wheel Assembly
a.	900-1909-33	Fanned (Winged) Bottom Idler Wheel Only
b.	977-301188	Idler Wheel Shaft
c.	900-1909-35	Idler Wheel Bushing
3.	900-1911-62	Return Roller (without mount)
4.	977-301465	Return Roller Mount (2 required)
5.	900-1910-17	Side Guide Roller
6.	900-1911-61	Complete Troughing Roller Assembly
7.	977-200221	Pivot Pin
8.	977-301305	Discharge Debris Shield
9.	977-301303	Discharge Debris Shield
10.	977-301304	Discharge Debris Shield
11.	977-100013	Mid-Discharge Weldment
12.	977-200221	Pivot Pin
13.	900-3927-29	Upper Fold Cylinder
14.	977-200220	1” Pivot Pin
15.	900-3927-28	Lower Fold Cylinder
16.	977-200173	“V” Deflector Weldment
17.	977-200258	Idler Wheel Adjustment Assembly
a.	977-000284	Bottom Idler Wheel Bearing Adjusting Bolt
b.	977-301173	Bottom Idler Wheel Bearing Adjusting Rail
c.	977-301175	Bottom Idler Wheel Bearing Adjusting Clamp Plate
d.	977-300430	Bottom Idler Wheel Bearing Adjusting Block
18.	977-100013	Mid Section Assembly
	977-301157	Replaceable Belt Conveyor Plastic Slides (not shown)

UPPER DISCHARGE CONVEYOR



UPPER DISCHARGE CONVEYOR

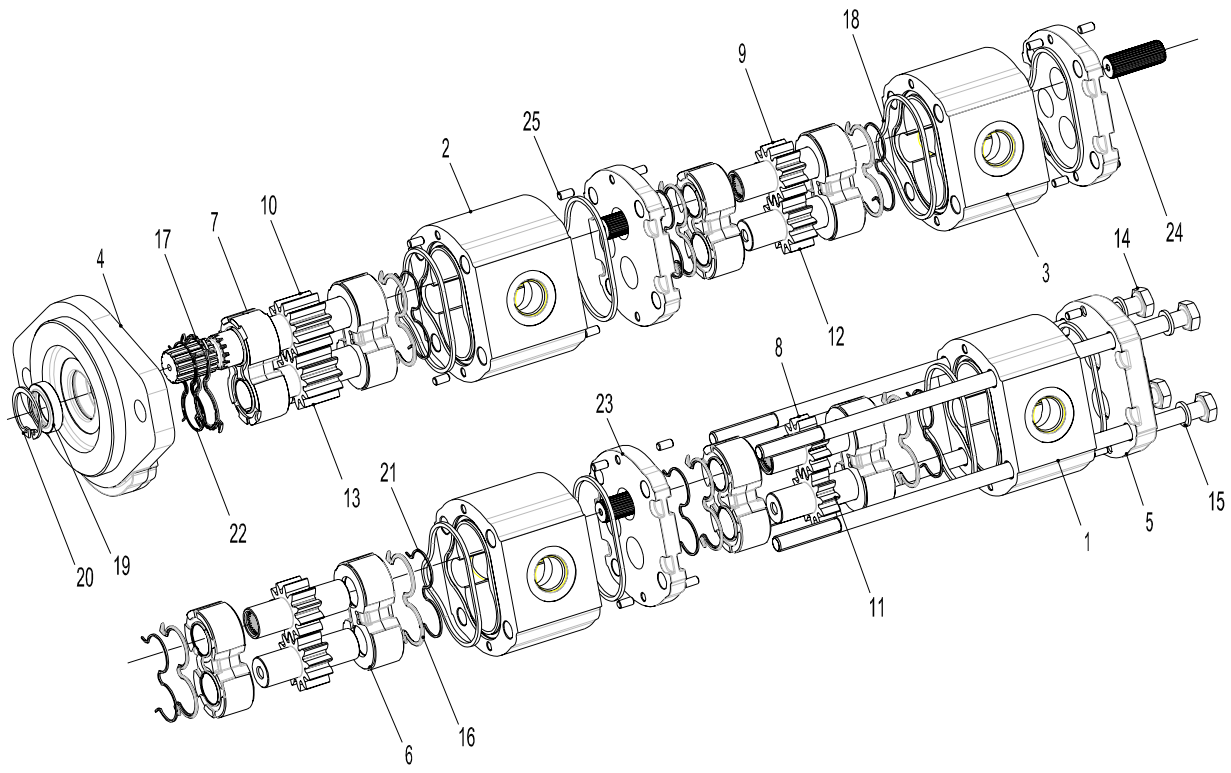
LOCATION	PART NUMBER	DESCRIPTION
1.	977-200220	1” Pivot Pin
2.	977-200221	1 1/2” Pivot Pin
3.	900-1911-61	Complete Troughing Roller Assembly
	977-900234	Outside Troughing Roll Clip (not shown)
	977-900233	Inside Troughing Roll Clip (not shown)
	900-1912-13	Replacement Roller Only
4.	977-301315	Discharge Belt Loop
5.	977-200189	Non-Drive Side Magnetic Roller Head Mount
6.	900-1905-10	Magnetic Drive Pulley Bearing
7.	900-1906-71	Magnetic Head Drive Pulley
a.	977-301340	Shaft Only for Magnetic Head Pulley
b.	900-1908-24	Bushing for Magnetic Head Pulley
8 a.	977-301338	Lee Tite Coupler
b.	977-301339	Key For Lee Tite Coupler (Not Shown)
9.	977-301337	Torque Arm
10.	900-3923-12	Constant Speed Roller Head Hydraulic Motor
11.	977-200188	Drive Side Magnetic Roller Head Mount
12.	900-3923-14	Crossover Relief Manifold
13.	900-1910-17	Side Guide Roller
14.	977-301152	Steel Discharge Chute
15.	977-100016	5” Shaker Roll Assembly
16.	900-1908-79	Shaker Roll Bearing
17.	977-100014	Upper Folding Section Weldment
	900-1910-52	Discharge Belt (Not Shown)



LOCATION	PART NUMBER	DESCRIPTION
1.	900-1909-01	Auger Bearing
2.	900-1904-85	Bushing
3.	900-1905-25	Auger Sprocket
4.	977-200270	Auger Chain Guard
5.	900-1912-49	Bushing
6.	900-1905-26	Sprocket
7.	900-1905-22	Idler Sprocket With Bearing
8.	901-100006	Auger Chain Kit - 15’
a.	900-1908-29	Roller Chain Half Link (not shown)
b.	900-1908-28	Roller Chain Master Link (not shown)
9.	977-200271	Auger Hydraulic Motor Mount
10.	900-3924-31	Auger Hydraulic Motor
11.	977-300875	Auger Shaft
12.	900-9902-47	Left Hand Auger Assembly
X	977-000106	Left Hand Auger Assembly for Shingle Application
a.	977-300790	Auger Dust Ring
13.	900-9902-46	Right Hand Auger Assembly
X	977-000107	Right Hand Auger Assembly for Shingle Application
a.	977-300790	Auger Dust Ring
14.	900-7900-88	Auger Plastic Bed Sheet (1/2 x 24 x 63) for 10” Concave Door
15.	977-300745	Auger Bearing Pad, Bottom
16.	977-300755	Auger Bearing Pad, Top

QUAD PUMP

P/N 900-3916-88

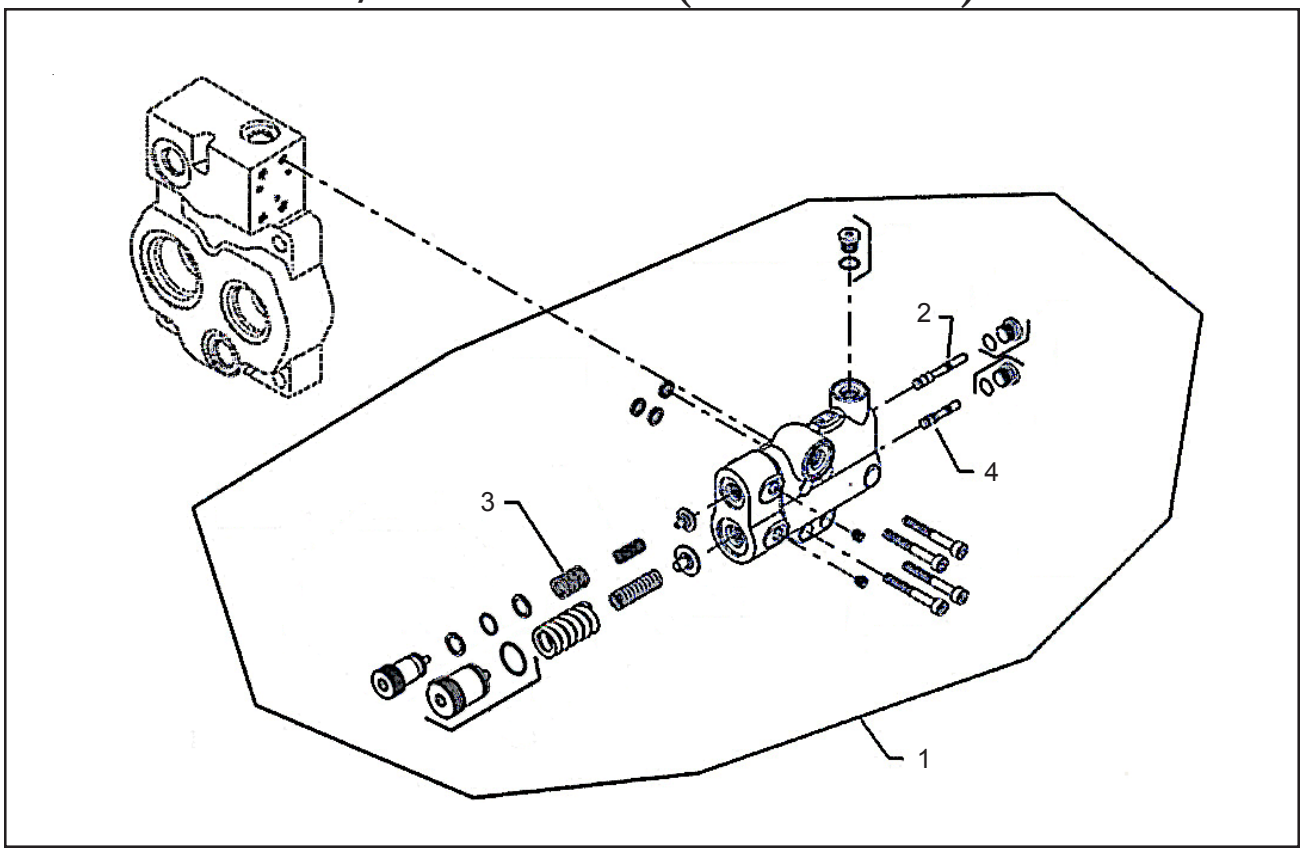


QUAD PUMP

P/N 900-3916-88

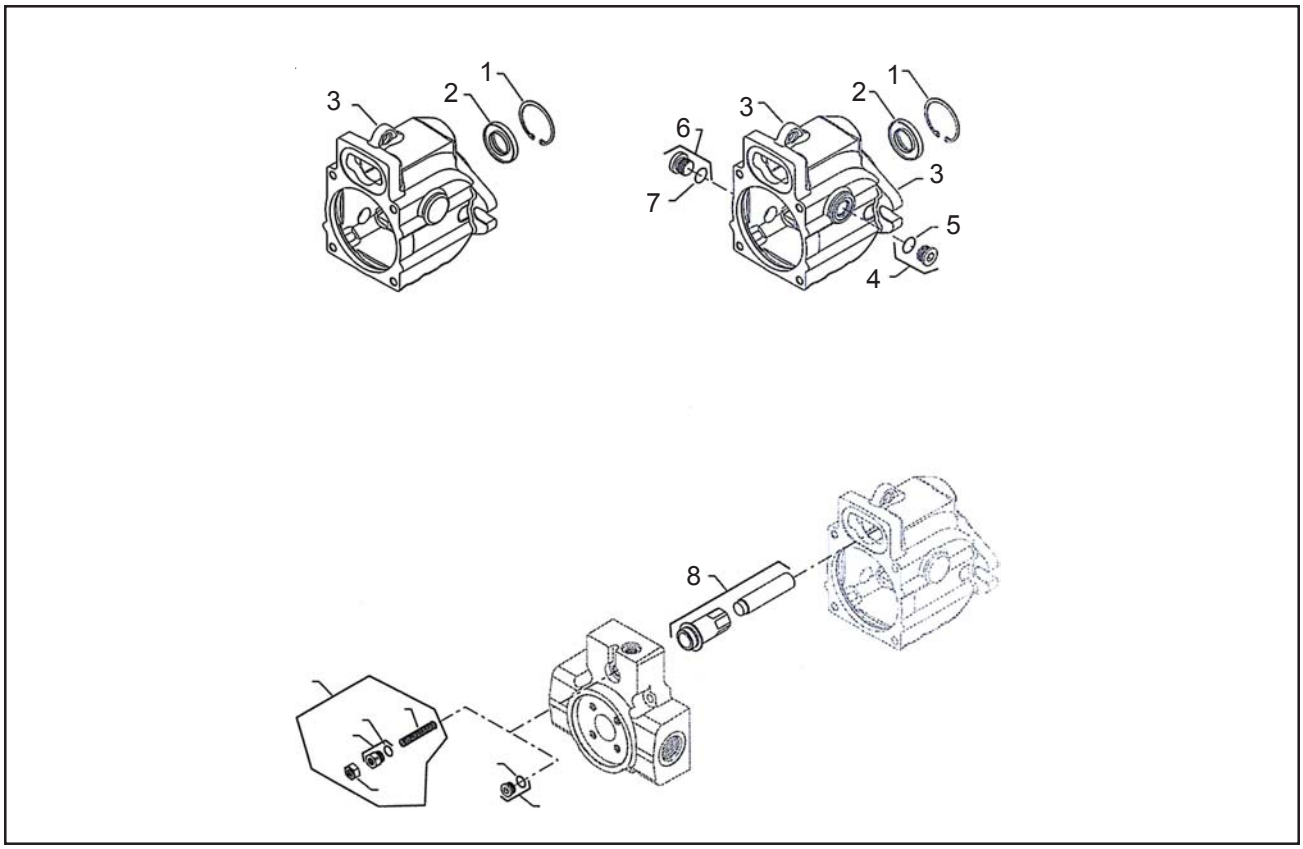
LOCATION	PART NUMBER	DESCRIPTION
1.	17676294	Body
2.	17676297	Body
3.	17677072	Body
4.	21911750	Front Cover
5.	21915751	Thrust Plate
6.	25930292	Upper Thrust Plate
7.	25930400	Upper Thrust Plate
8.	27720824	Drive Gear
9.	27720826	Drive Gear
10.	27721496	Drive Shaft
11.	27750020	Driven Gear
12.	27750030	Driven Gear
13	27750050	Driven Gear
14.	36596900	Screw
15.	37583700	Washer
16.	39656100	Seal
17.	39656115	Seal
18.	39666200	Seal
19.	39701000	Shaft Seal
20.	40665100	Ring
21.	41387100	Backup Ring
22.	41387115	Anti-extrusion
23.	43388056	Flange
24.	44297900	Splined Connecting Shaft
25.	49270000	Dowel Pin

Constant Speed Pressure Compensated Pump
P/N 900-3923-11 (CONTROLS)



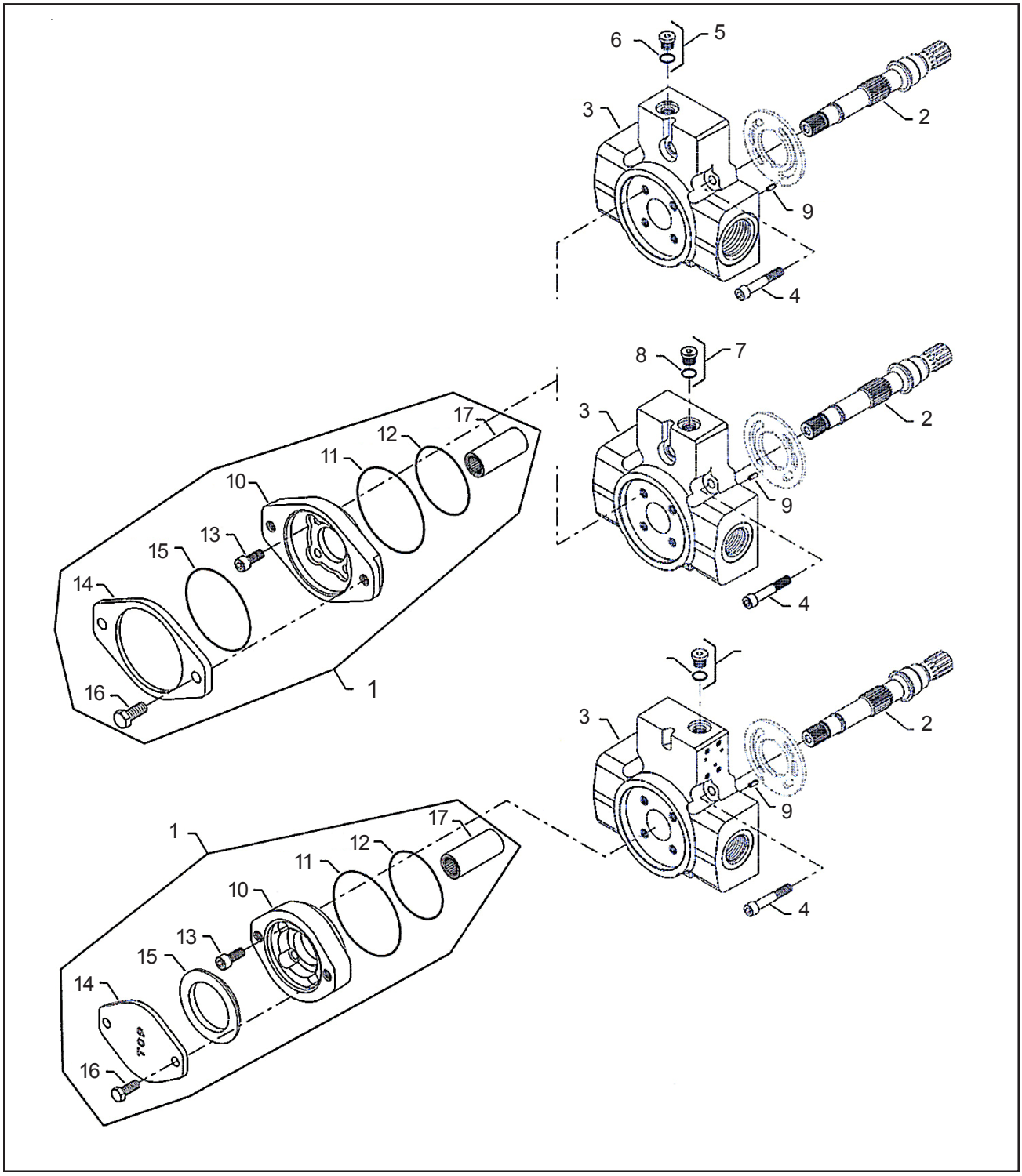
LOCATION	PART NUMBER	DESCRIPTION
1.	4510358	Control Kit (SB-2001-004)
2.	1700216	Spool
3.	1700190	Spring, Outer
4.	1700217	Spool

Constant Speed Pressure Compensated Pump
P/N 900-3923-11
(HOUSING, SHAFT SEAL, AND DISPLACEMENT LIMITER)



LOCATION	PART NUMBER	DESCRIPTION
1.	016014	Retaining Ring
2.	5000555	Lip Seal
3.	1700164	Housing
4.	315325	Plug
5.	001149	O-Ring
6.	315325	Plug
7.	001149	O-Ring
8.	4510352	Servo Piston Kit .45CC, Small

Constant Speed Pressure CompensatedPump
P/N 900-3923-11
(SHAFT, AUXILIARY FLANGE, AND END CAP)



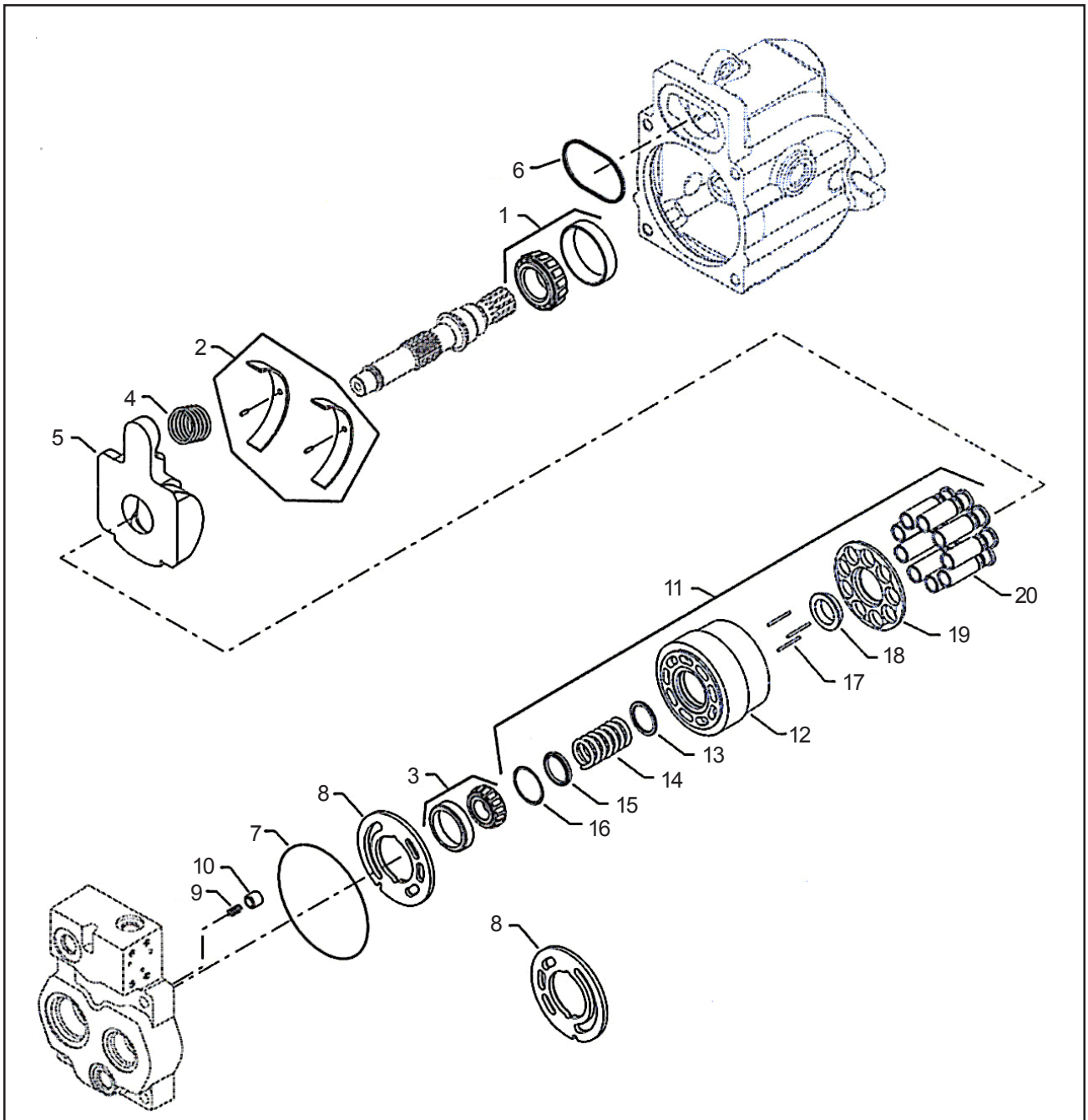
Constant Speed Pressure Compensated Pump
P/N 900-3923-11
(SHAFT, AUXILIARY FLANGE, AND END CAP)

LOCATION	PART NUMBER	DESCRIPTION
1.	4510378	Auxiliary Mounting Kit
2.	1700178	Shaft, 13-Tooth Spline W/Auxiliary Drive
3 a.	1700763	End Cap, Radial, Control On Right, KRR (SB-2002-042)
b.	1700774	End Cap, Radial, Control On Right, KRL (SB-2002-042)
4.	672295	Screw
5 a.	515965	Plug, KRL
b.	5000438	Plug, KRL
6 a.	085043	O-Ring, KRL
b.	5000463	O-Ring, KRL
7 a.	515965	Plug, KRR
b.	5000438	Plug, KRR
8 a.	085043	O-Ring, KRR
b.	5000463	O-Ring, KRR
9.	688622	Pin
10.	4570210	Adapter Flange, SAE B
11.	5000099	O-Ring
12.	545434	O-ring
13.	294611	Screw
14.	689091	Cover Plate
15.	680892	O-Ring
16.	647248	Screw
17.	1700181	Coupling, 13-Tooth

Constant Speed Pressure Compensated Pump

P/N 900-3923-11

(HOUSING, SHAFT SEAL, AND DISPLACEMENT LIMITER)



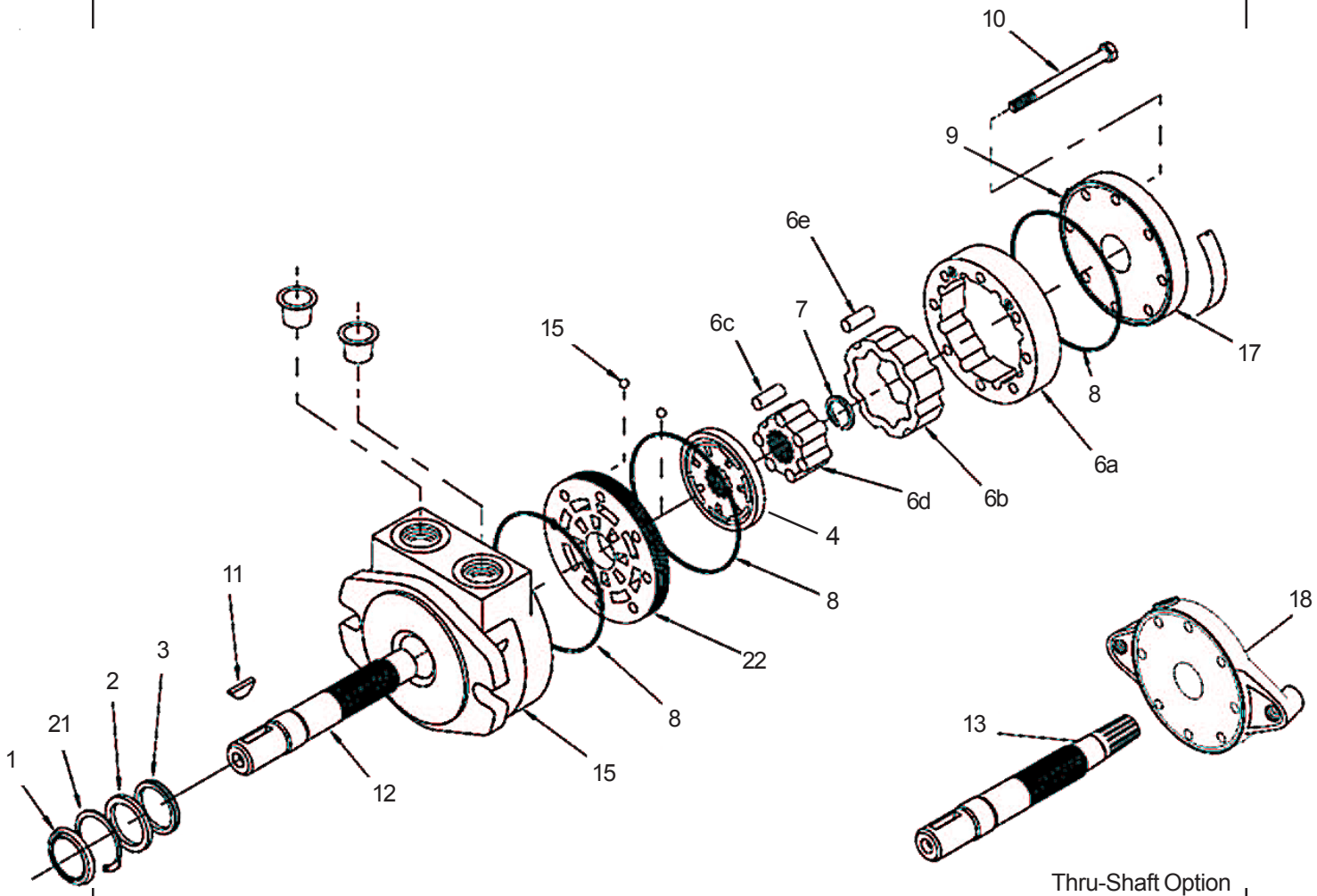
Smoracy, LLC

Constant Speed Pressure Compensated Pump
P/N 900-3923-11
(HOUSING, SHAFT SEAL, AND DISPLACEMENT LIMITER)

LOCATION	PART NUMBER	DESCRIPTION
1.	4510326	Bearing Kit, Front
2.	4510327	Swashplate Bearing Kit
3.	4510330	Bearing Kit, Rear
4.	1700050	Dias Spring
5.	1700890	Swashplate
6.	5000569	Servo Piston Seal
7.	5000581	O-Ring
8 a.	1700542	Valve Plate, CW, KRR (SB-2001-023)
b.	1700202	Valve Plate, CW, KRR
c.	1700210	Valve Plate, CCW, KRL
9.	1700257	Check Valve Spring (SB-2001-020)
10.	1700256	Check Valve Spring (SB-2001-020)
11.	1700259	Cylinder Block Kit, 41/45cc
12.	1700551	Cylinder Block
13.	3104095	Washer
14.	3103486	Spring
15.	3103485	Spring Retainer
16.	019026	Retaining Ring
17.	4700091	Slipper Hold Down Pin
18.	3103487	Slipper Retainer Guide
19.	3103488	Slipper Retainer
20.	3104068	Piston Assembly

FEEDWHEEL HYDRAULIC MOTOR*

*3 Speed Feedwheel Hydraulic Motor Complete Assy. 900-3919-99 (optional)
* 1 Speed Feedwheel Hydrualic Motor Complete Assy. 900-3916-84 (standard)



Thru-Shaft Option

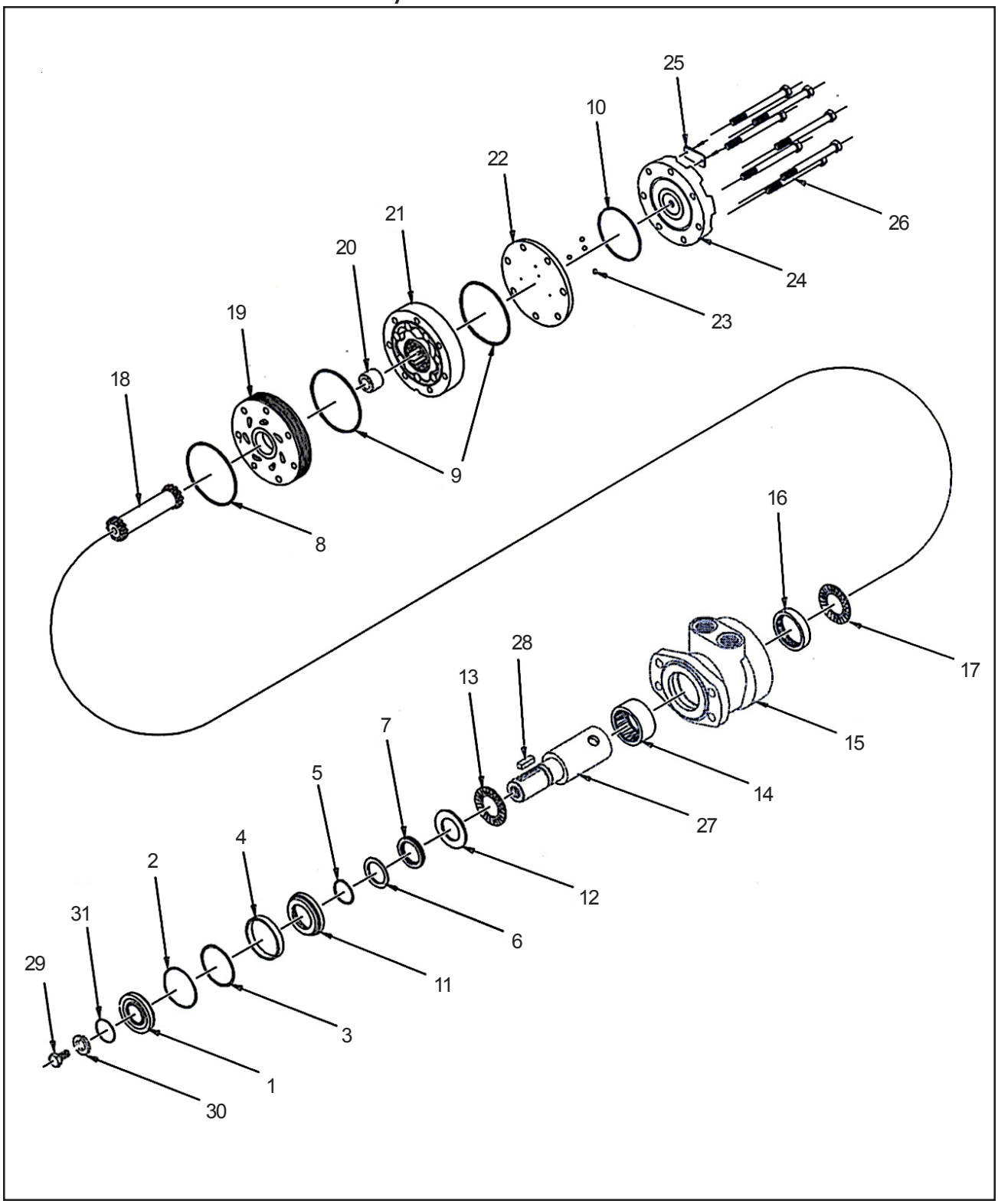
FEEDWHEEL HYDRAULIC MOTOR*

LOCATION	PART NUMBER	DESCRIPTION
1.	2183	Seal, Dust
2.	2177	Back Up Ring
3.	2175	Seal, Lip
4.	SM014010	Valve Plate
5.	1021	Check Valve Ball (.25 Dia.)
6 a.*	SM016407004-A1	3 Speed IGR Assembly
b.*	SM018907004-A1	1 Speed IGR Assembly
7 a.	1135	Snap Ring, Shaft, .042 Thick (Thru Shaft)
b.	1296	Snap Ring, .109 Thick (Extra Heavy Duty)
8.	1046	Square Ring Seal (7/16”)
9.	036297	Case Drain Plug w/O-ring
10 a.*	021438	3 Speed Hex Bolt
b.*	021435	1 Speed Hex bolt
11.	1655	Key, Woodruff 1.0 X .25”
12.	2109-X	Shaft, 1” keyed
13.	Not applicable	
14.	1157	Snap Ring Valve (Thru Shaft)
15.	PA-2328-5	SAE “B” 2 bolt O-ring
17.	M110C-1	Cover/Bearing Assembly
18.	Not applicable	
19.	2263	Seal Kit/ Body
21.	2180	Snap Ring (.05 Thick)
22.	1865	Commutator Plate

Note: * 3 Speed Feedwheel Hydraulic Motor Complete Assy. 900-3919-99
*1 Speed Feedwheel Hydrualic Motor Complete Assy. 900-3916-84

AUGER MOTOR

P/N 900-3924-31



AUGER MOTOR

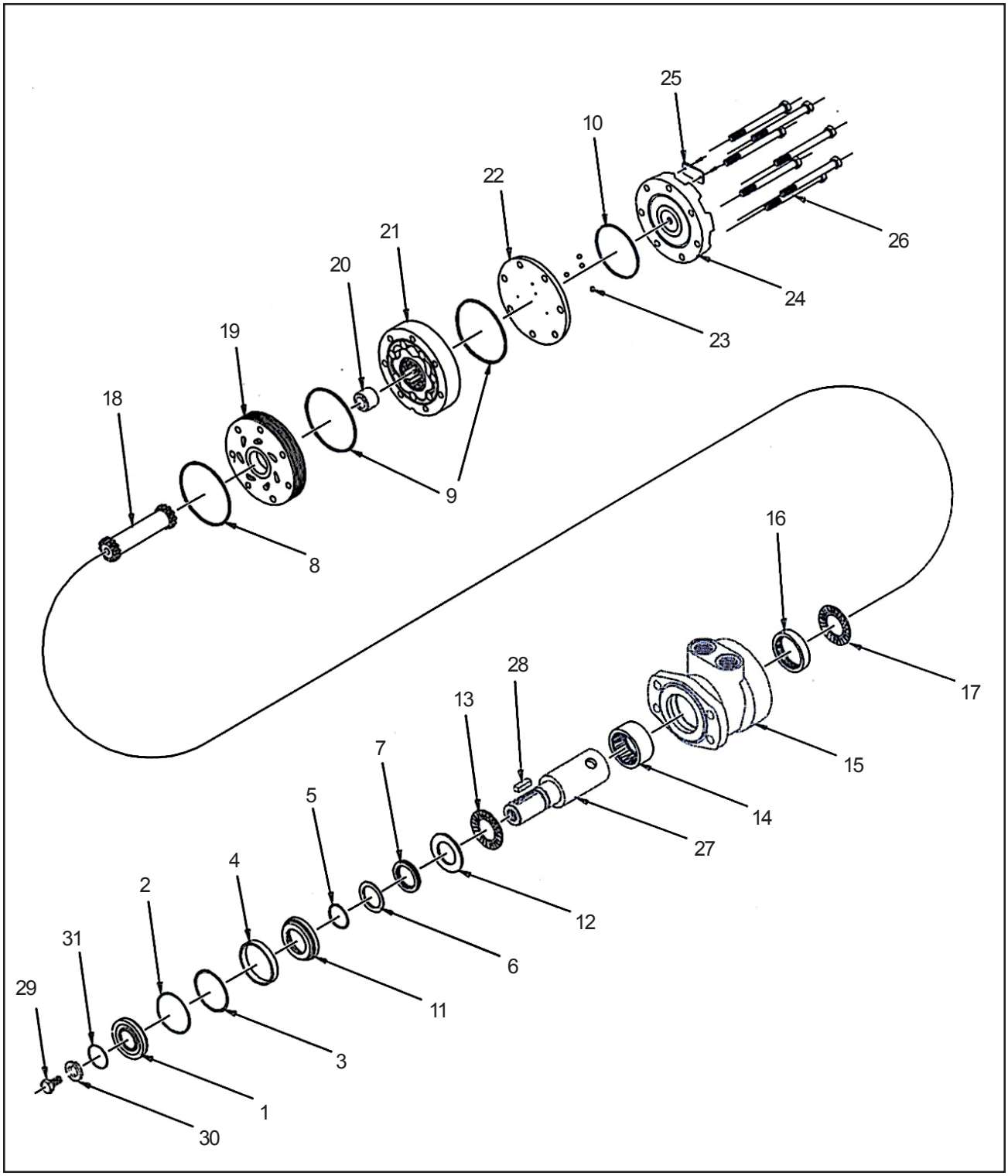
P/N 900-3924-31

LOCATION	PART NUMBER	DESCRIPTION
1.	**	Dust Seal
2.	**	Housing Seal
3.	**	Metal Backup Shim
4.	**	High Pressure Seal
5.	**	Metal Backup Shim
6.	**	Polyamide Seal
7.	**	Shaft Seal
8.	**	Rear Housing Seal
9.	**	Body Seals (2)
10.	**	End Cover Seal
11.	**	Seal Carrier
12.	**	Thrust Washer
13.	500018252	Front Thrust Bearing
14.	500018003	Front Housing Bearing (1" Wide)
15.	500130823	Housing
16.	500018002	Rear Housing Bearing (1/2" Wide)
17.	500018059	Rear Thrust Bearing
18	500014008	Drive Link Kit
19.	500015006	Forward Manifold
20.	500018178	Drive Link Spacer (Auger Motor Only)
21 a.	----	Rotor
b.	500607005	Standard Rotor Kit
c.	500607011	Freeturn Rotor Kit
22.	500012001	Balance Plate (3 Balls Included)
23.	500018048	Steel Ball
24.	500016001	End Cover
25.	----	Tag
26	500445045	Bolt Set
27	Long 1 1/4"	Shaft
28.	500449102	Key
29.	500449301	Bolt
30.	500449302	Washer
31.	500449201	Wire Ring
32.	500444001	Seal Kit

NOTE: Items 1-12 are included in the seal kits.

INFEED CONVEYOR MOTOR

X SINGLE SPEED 900-3901-39
X THREE SPEED 900-3913-70



INFEED CONVEYOR MOTOR

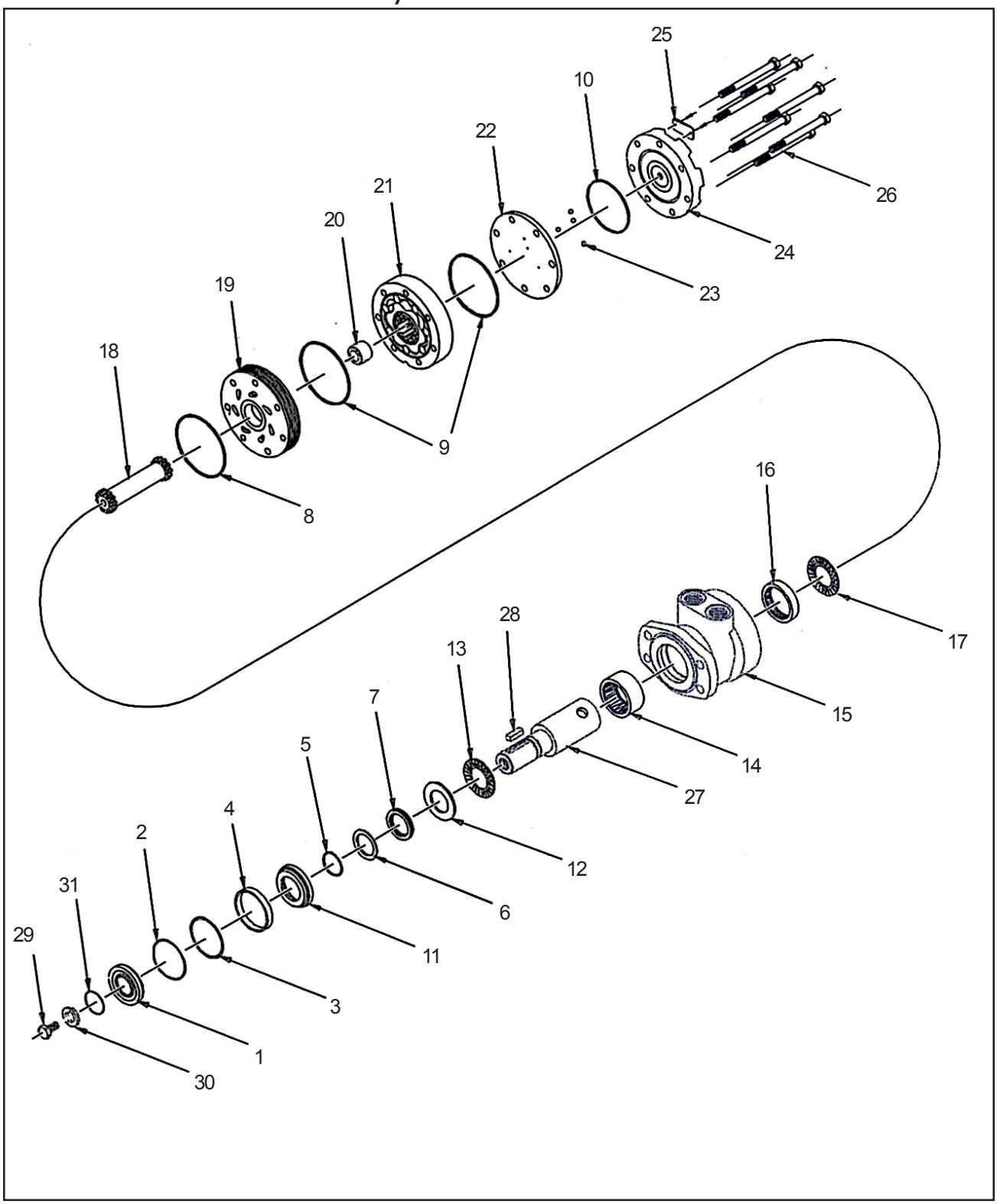
X SINGLE SPEED 900-3901-39
X THREE SPEED 900-3913-70

LOCATION	PART NUMBER	DESCRIPTION
1.	**	Dust Seal
2.	**	Housing Seal
3.	**	Metal Backup Shim
4.	**	High Pressure Seal
5.	**	Metal Backup Shim
6.	**	Polyamide Seal
7.	**	Shaft Seal
8.	**	Rear Housing Seal
9.	**	Body Seals (2)
10.	**	End Cover Seal
11.	**	Seal Carrier
12.	**	Thrust Washer
13.	500018252	Front Thrust Bearing
14.	500018003	Front Housing Bearing (1" Wide)
15.	500130823	Housing
16.	500018002	Rear Housing Bearing (1/2" Wide)
17.	500018059	Rear Thrust Bearing
18 a.	500014008	Drive Link Kit (1-Speed)
b.	500014007	Drive Link Kit (3-Speed)
19.	500015006	Forward Manifold
20.	Not Applicable	
21 a.	500307005	Standard Rotor Kit (1-Speed Motor)
b.	500247005	Standard Rotor Kit (3-Speed Motor)
22.	500012001	Balance Plate (3 Balls Included)
23.	500018048	Steel Ball
24.	500016001	End Cover
25.	----	Tag
26 a.	500445024	Bolt Set (1-Speed Motor)
b.	500445018	Bolt Set (3-Speed Motor)
27.	500011200	Shaft
28.	500449102	Key
29.	500449301	Bolt
30.	500449302	Washer
31.	500449201	Wire Ring
32.	500444002	Seal Kit (1-Speed Motor)
33.	500444003	Seal Kit (3-Speed Motor)

NOTE: Items 1-12 are included in the seal kits.

SINGLE SPEED DISCHARGE MOTOR

P/N 900-3901-39



SINGLE SPEED DISCHARGE MOTOR

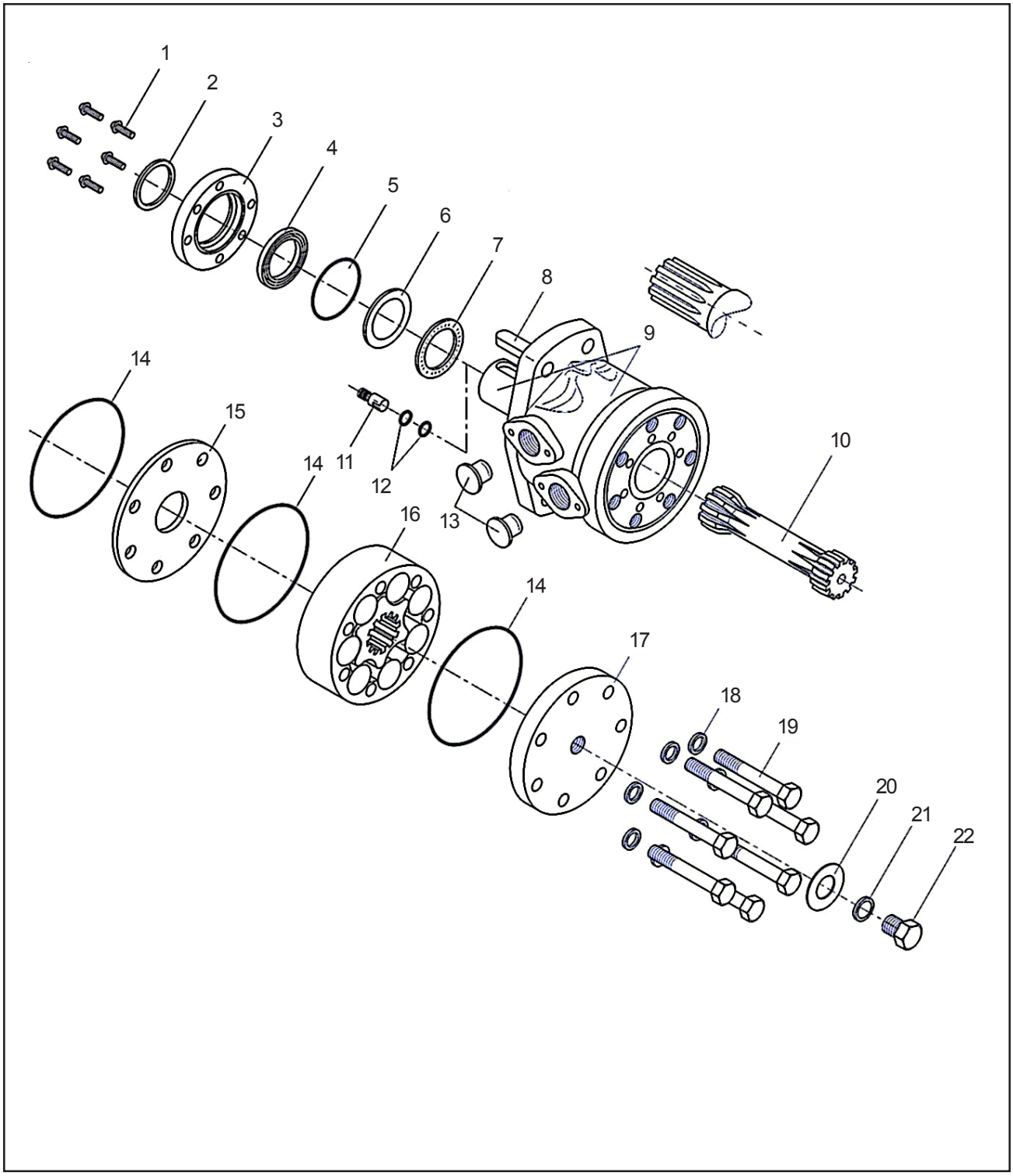
P/N 900-3901-39

LOCATION	PART NUMBER	DESCRIPTION
1.	**	Dust Seal
2.	**	Housing Seal
3.	**	Metal Backup Shim
4.	**	High Pressure Seal
5.	**	Metal Backup Shim
6.	**	Polyamide Seal
7.	**	Shaft Seal
8.	**	Rear Housing Seal
9.	**	Body Seals (2)
10.	**	End Cover Seal
11.	**	Seal Carrier
12.	**	Thrust Washer
13.	500018252	Front Thrust Bearing
14.	500018003	Front Housing Bearing (1" Wide)
15.	500130823	Housing
16.	500018002	Rear Housing Bearing (1/2" Wide)
17.	500018059	Rear Thrust Bearing
18	500014008	Drive Link Kit
19.	500015006	Forward Manifold
20.	Not Applicable	
21	500307005	Standard Rotor Kit
22.	500012001	Balance Plate (3 Balls Included)
23.	500018048	Steel Ball
24.	500016001	End Cover
25.	----	Tag
26.	500445024	Bolt Set
27.	500011200	Shaft
28.	500449102	Key
29.	500449301	Bolt
30.	500449302	Washer
31.	500449201	Wire Ring
32.	500444002	Seal Kit

NOTE: Items 1-12 are included in the seal kits.

CONSTANT SPEED DISCHARGE MOTOR

P/N 900-3923-12



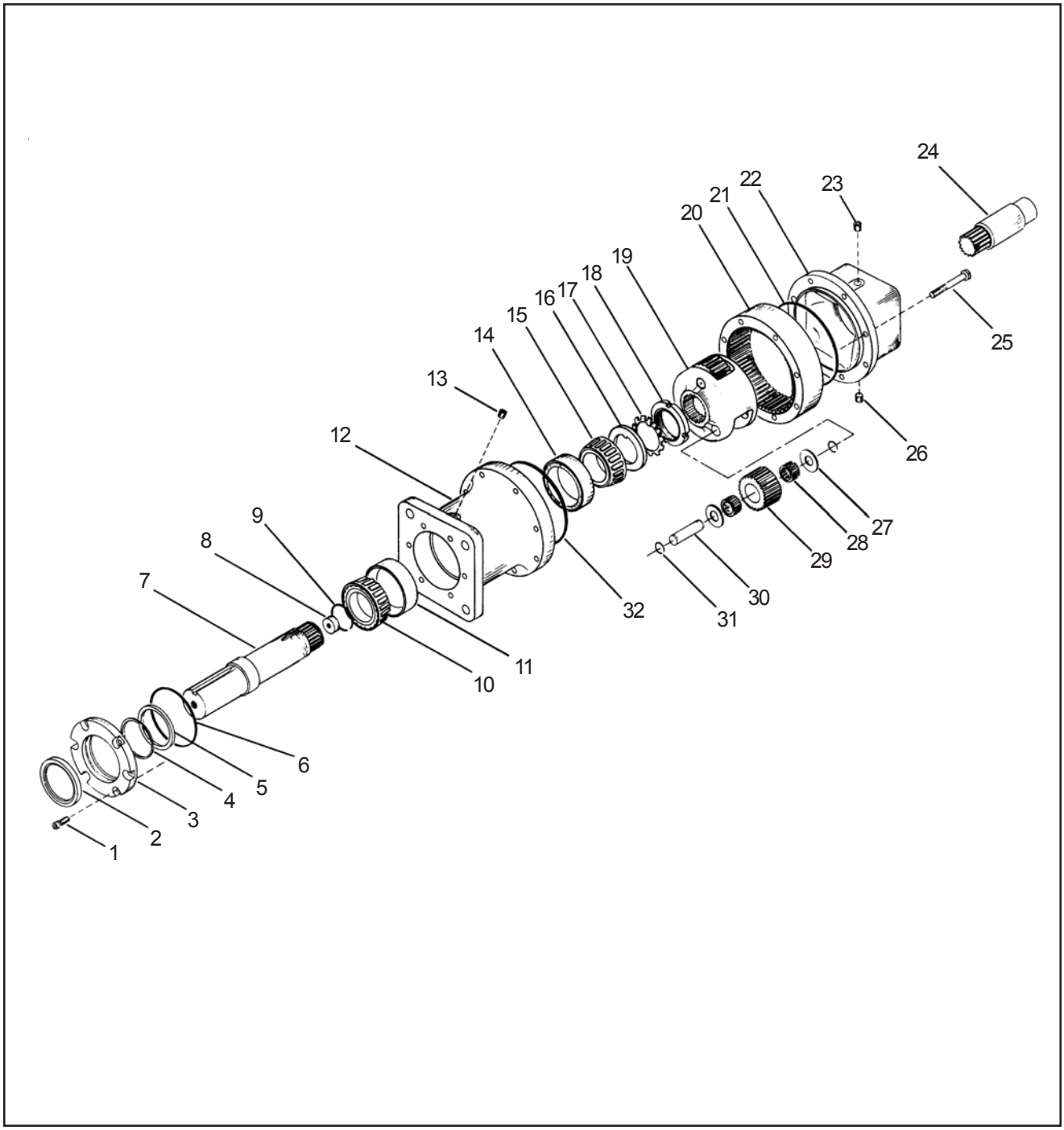
CONSTANT SPEED DISCHARGE MOTOR

P/N 900-3923-12

LOCATION	PART NUMBER	DESCRIPTION
1.	681X1989	Screw (M6; 1 = 16mm, Torx T30)
2.	633B3396	Dust Seal Ring (1 1/4" Dia., 1 1/4" Spl. Shaft 36 x 42 x 3.5)
3.	151H0301	Spigot Flange (1 1/4" Dia., 1 1/4" Spl. Shaft 36 x 42 x 3.5)
4.	633B3395	Shaft Seal (1 1/4" Dia., 1 1/4" Spl. Shaft 36 x 48 x 5.5)
5.	633B1528	O-Ring (53 x 2mm)
6.	981X9224	Bearing Race (37 x 52 x 3.5mm)
7.	981X9223	Axial Needle Bearing (36 x 52 x 3mm)
8.	151-4109	Parallel Key (32 Dia. x 35 Dia. mm shaft)
9.	Not Sold Separately	Housing And Output Shaft
10.	151H0338	Cardan Shaft (OMH 200)
11.	151-1076	Check Valve (Includes Item 12)
12.	633B1324	O-Ring (5 x 1.5mm)
13.	633X0017	Seal Plug
14.	633B1807	O-Ring (105 x 2mm)
15.	151H0305	Distributor Plate
16.	151H1253	Gearwheel Set (OMH 200)
17.	151H0311	End Cover
18.	684X2152	Washer (10 x 15 x 1mm)
19.	681X1501	Screw M10 X 1.5 (OMH 200)
20.	151A0411	Name Plate, Aluminum
21.	684X2120	Washer (13.5 x 1mm)
22.	151-5439	Drain Plug

INFEED CONVEYOR GEAR BOX

P/N 900-3901-54



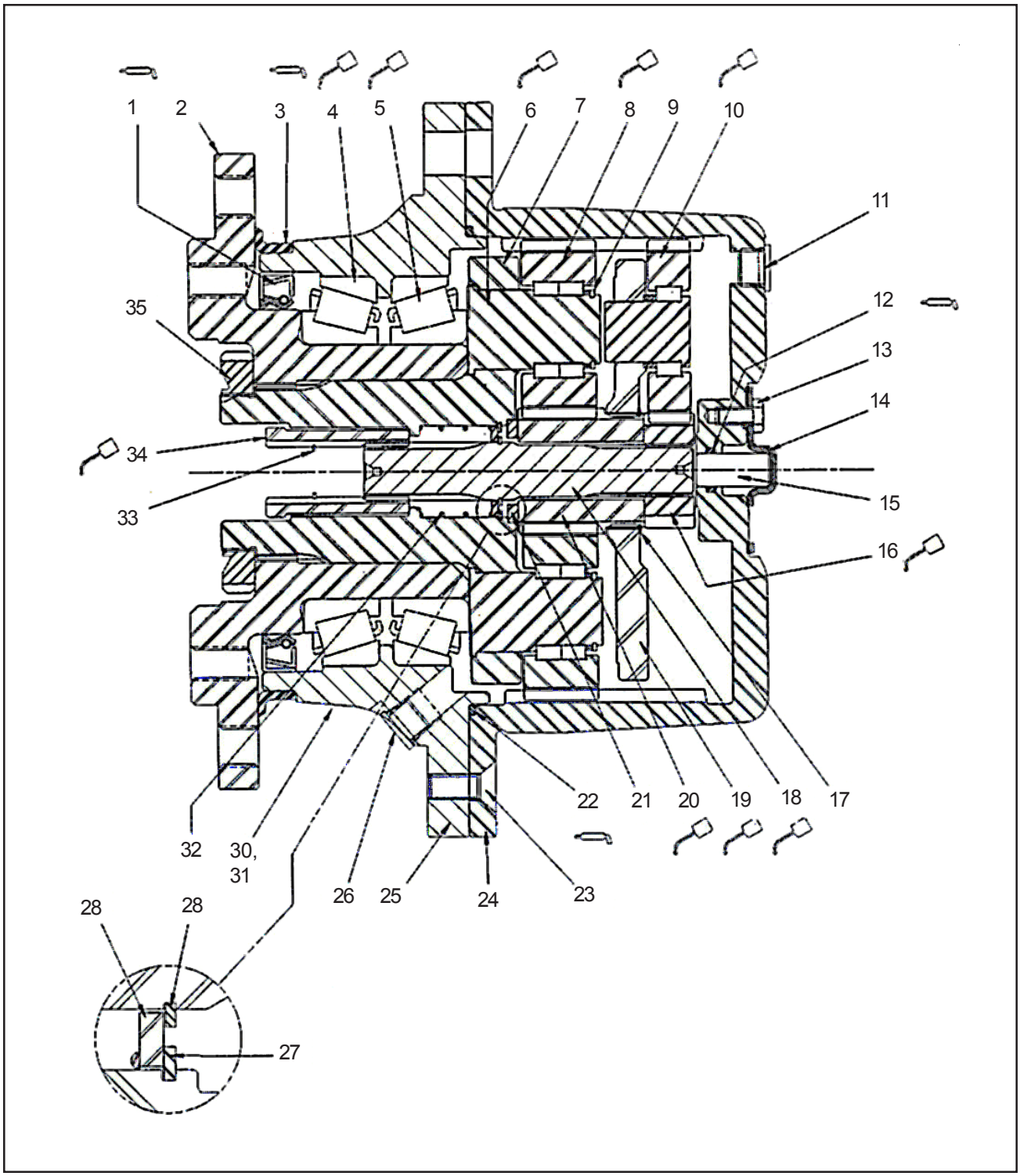
INFEED CONVEYOR GEAR BOX

P/N 900-3901-54

LOCATION	PART NUMBER	DESCRIPTION
1.	15111	Cap Screw
2.	15106	Shaft Seal
3.	15056	Seal Carrier
4.	15105	Backup Ring
5.	15301	Quad Ring
6.	15133	O-Ring
7.		Output Shaft
8.	150152	Thrust Washer
9.	15011	Retaining Washer
10.	15118	Cone
11.	15128	Cup
12 a.	15052	Front Flange
b.	15055	Center Flange
13.	15129	Pipe Plug
14.	15128	Cup
15.	15118	Cone
16.	15163	Keyed Washer
17.	15162	Lock Washer
18.	15138	Lock Nut
19.	15004	Planet Carrier
20.	15003	Internal Gear
21.	15102	O-ring
22.		Motor Adapter
23.	15129	Pipe Plug
24.		Sun Gear Kit
25.	15110	Bolt
26.	15129	Pipe Plug
27.	15112	Thrust Washer
28.	15115	Planet Bearing
29.	15006	Planet Gear
30.	15008	Planet Pin
31.	15107	Retaining Ring
32.	15102	O-Ring

FEEDWHEEL GEARBOX

P/N 900-3916-83

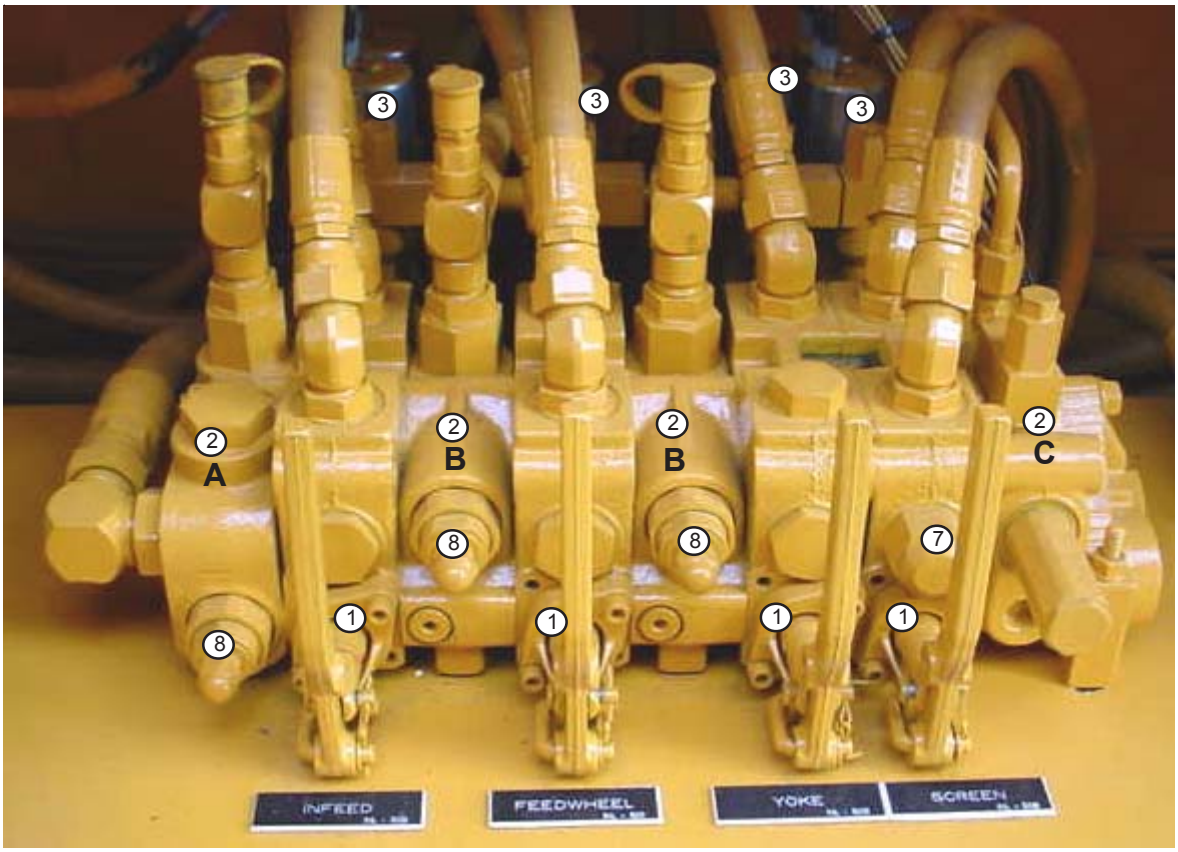


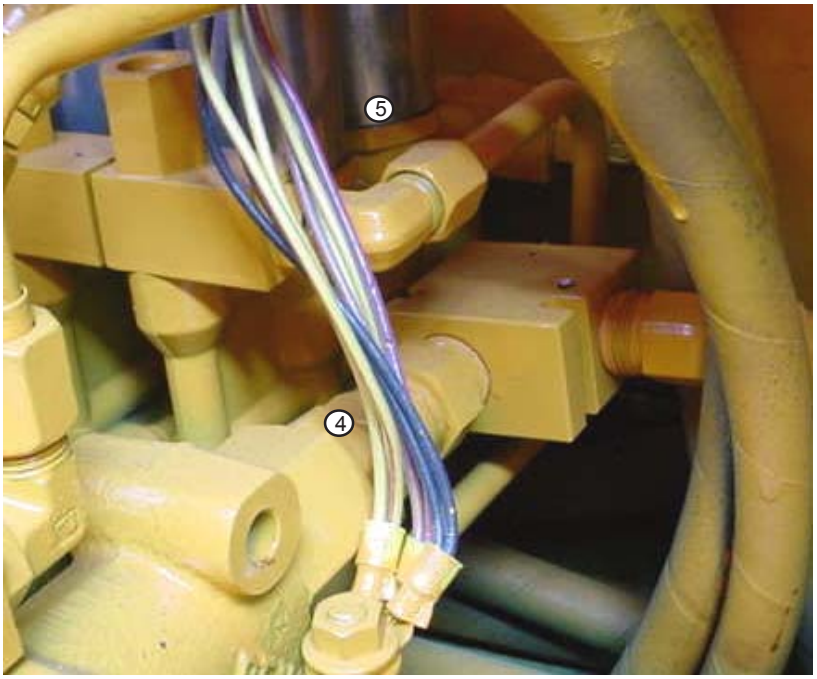
FEEDWHEEL GEARBOX

P/N 900-3916-83

LOCATION	PART NUMBER	DESCRIPTION
1.	9013176	Seal, Lip
2.	R2400703	Spindle
3.	9013140	Seal, Boot
4.	7500807	BRG, Tapered - Cup
5.	7500808	BRG, Tapered - Cone
6.	R2220102A	BRG, Cylinder Roller
7.	R2230503	Carrier (Output)
8.	R2320001	Gear, Planet
9.	9100235	RET, Ring - EXT
10.	R2310002A	Gear, Planet Assembly
11.	951009	Pipe Plug, O-Ring
12.	940001	O-Ring
13.	930003	Bolt, HEX 1/4-20UNC X 1/2 Grade 5
14.	1900401	Disengage, Cap
15.	R2920101	Disengage, Rod
16.	R2110002	Gear, Sun
17.	9100221	RET, Ring - EXT
18.	R2100108	Shaft, Input
19.	R2220512	Carrier
20.	R2130001	Gear, Sun
21.	901043	Washer, Thrust
22.	9165000262	O-Ring
23.	930904	Bolt, Flat HD - Hex SKT (3/8-16)
24.	R2500006	Gear, Ring
25.	R2500605	Housing
26.	951009	Pipe Plug, O-Ring
27.	910059	RET, Ring-INT
28.	1901009	Washer, Thrust
29.	910014	RET, Ring-EXT
30.	901202	Plate, ID
31.	930301	Screw, Drive
32.	901522	Spring
33.	910043	RET, Ring-INT
34.	R2100205	Coupling
35.	980150	Nut, BRG

SEAL KITS FOR GRESEN VALVES



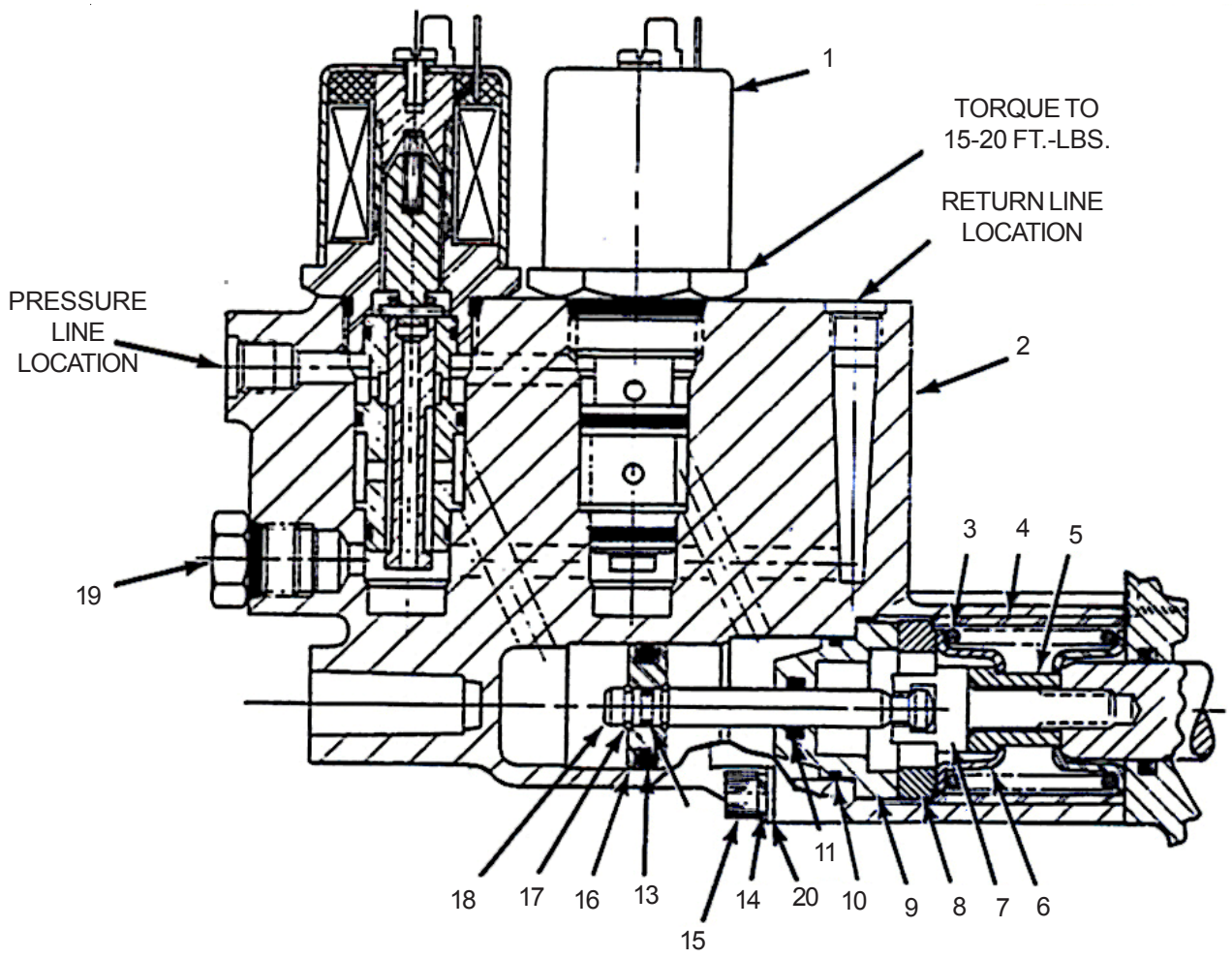


Complete Valve Assembly (24 Volt) 900-3916-72

SEAL KITS FOR GRESEN VALVES

LOCATION	PART NUMBER	DESCRIPTION
1.	4K-6027	Work Section Kit
2 a.		Inlet Cover Kit
b.		Mid inlet Cover Kit
c.		Utility Section Kit
3 a.	5K-6072	Fitting Kit
b.	5K-6073	Fitting Kit
4 a.	0-2709001	Power Beyond (O-Ring)
b.	0-1910001	Power Beyond (O-Ring)
5. a.	K-6077	Solenoid Cartridge O-Ring Seal Kit
b.	900-3915-71	Solenoid Valve Cartridge Replacement Assembly (24 Volt)
6.	1K-28078	PRV Seal Kit
7.	2K-6005	RC Relief Kit
8.	3K-19005	RP51A KIT

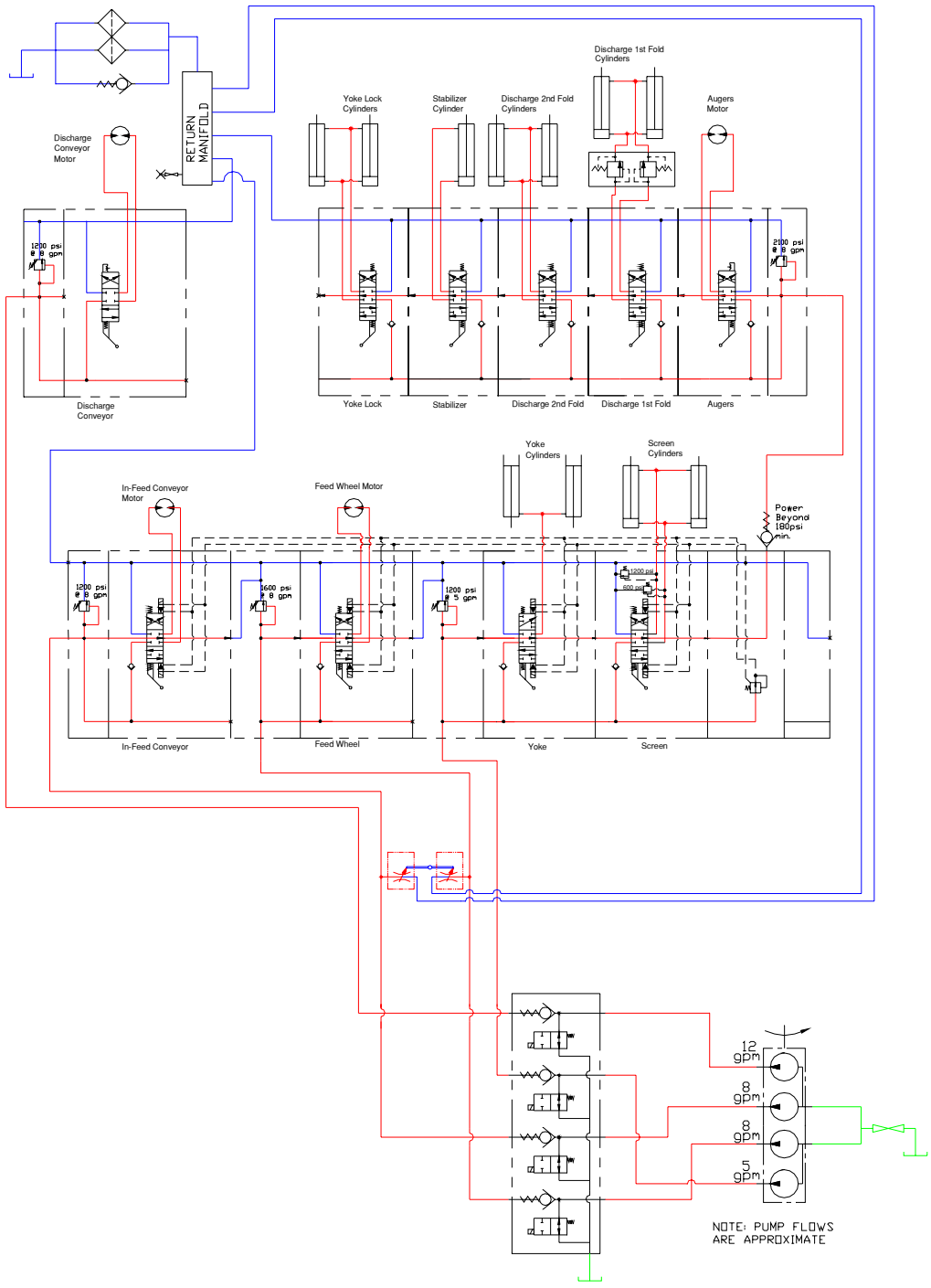
PILOT CONTROL FOR GRESEN VALVES



PILOT CONTROL FOR GRESEN VALVES

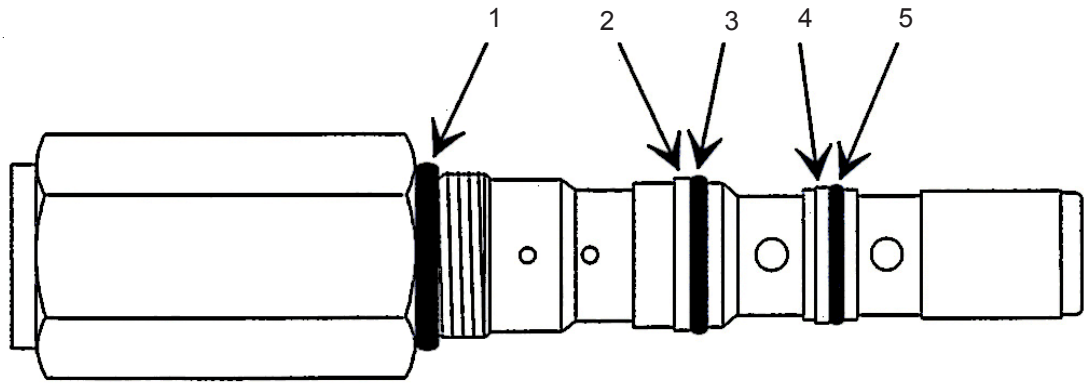
LOCATION	PART NUMBER	DESCRIPTION
1	900-3915-71	Cartridge, Solenoid Valve, 24 VDC
2	7850-001	Housing Actuator
3.	8300-001	Spring
4.	8298-001	Spacer
5	10818-001	Spacer
6.	10819-001	Collar, Spring
7.	8297-001	Screw, Spool
8	8293-001	Spacer
9.	7858-001	Guide, Piston Rod
10.	7028-002	Seal, O-Ring
11.	7854-001	Seal, O-Ring
12.	3191-001	Seal, O-Ring
13.	7700-001	Seal, O-Ring
14.	0563-001	Washer, Lock
15	3731-111	Screw, Socket Head Cap, 1/4--20 x 3.50
16.	7856-001	Piston
17.	7855-001	Ring, Retaining
18.	7857-001	Rod, Piston
19.	3637-001	Plug, SAE 6 (With O-Ring)
20.	7904-001	Plate, Bearing

THIS IS A TYPICAL SINGLE SPEED INFEED/ DISCHARGE HYDRAULIC SCHEMATIC. YOUR MACHINE MAY HAVE OTHER OPTIONS.



GRESEN VALVE PILOT FEED SECTION

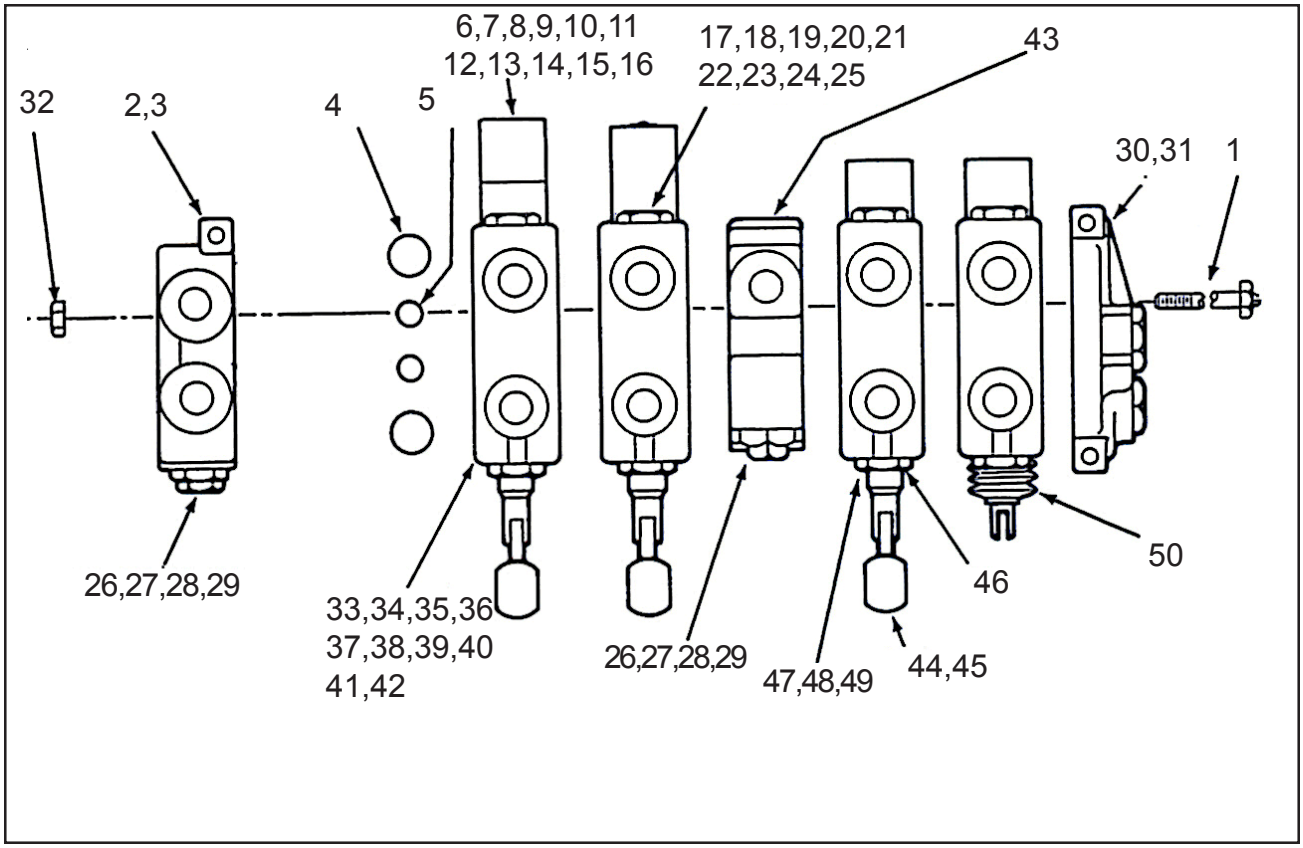
PRESSURE REDUCING VALVE CARTRIDGE



PRESSURE REDUCING VALVE CARTRIDGE

LOCATION	PART NUMBER	DESCRIPTION
	12956001	Pressure Reducing Valve Cartridge
1.	02707001	O-Ring Seal
2.	03092001	Backup Ring
3.	07829001	O-Ring Seal
4.	00682001	Backup Ring
5.	01091001	O-Ring Seal
6.	08569001	Cartridge Seal Kit (contains 1-5)
	12956001	Pressure Reducing Valve Cartridge

GRESEN DIRECTIONAL CONTROL VALVE



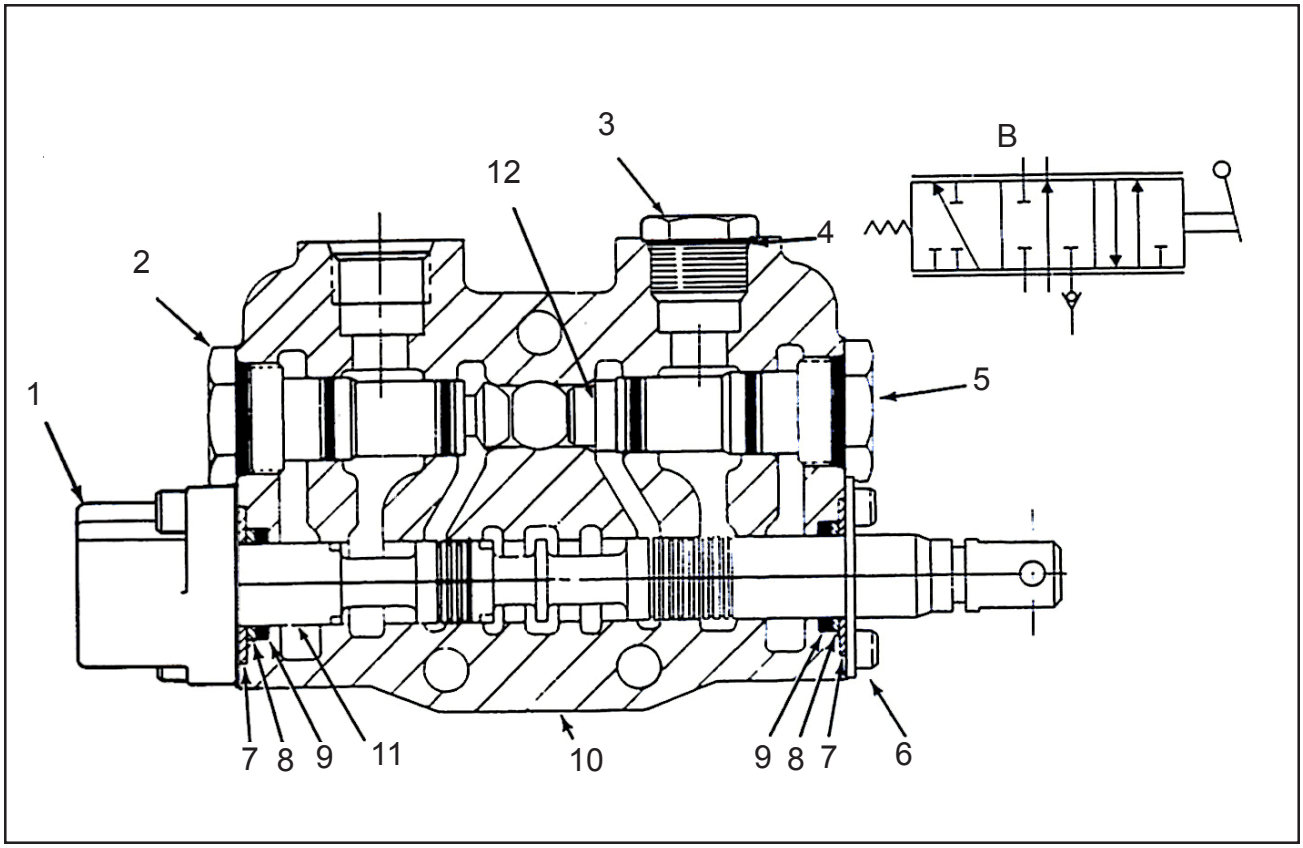
LOCATION	PART NUMBER	DESCRIPTION
1.	K-6111-C	Stud Kit, 8- section
2.	8398-	Cover
3.	7736-	Cover, with flow control
4.	21733-001	O-ring, Exhaust, Large
5.	21857-00	O-ring, Pressure, Small
	21866-001	O-ring, Load Sensing
6.		Positioner, Standard Spool
7.		Positioner, Manual Spool
8.		Positioner, Float Detent, 4 way, 4 position
9.		Detent, Option R, w/spring return to neutral
10.		Detent, Option D, 3 position
11.		Spring Extended Spool
12.		Electro-Magnetic Spool Release
13.		Positioner, Pressure Detent Release
14.		Positioner, Rotary
15.		Positioner, Standard Spool
16.		Positioner, Float Detent, 4 way, 4 position
17.		Check, Lockout
18.		Check, Anti-Cavitation
19.		Check, Anti-Cavitation, V20S
20.		Plug, Load Check
21.		Plug, Load Check, V20S

GRESEN DIRECTIONAL CONTROL VALVE

LOCATION	PART NUMBER	DESCRIPTION
22.		Relief, Work Port, Model RC
23.		Relief, Work Port, Model RCA
24.		Relief, Anti-Cavitation Check, Work Port, Model CRA
25.		Relief, Work Port, Model RCS
26.		Relief, Main, Model WH
27.		Relief, Main, Model WHA
28.		Relief, Main, Model RP51
29.		Plug, No Main Relief (NR)
30.	6770-	Cover, Right
31.	8644-	Cover, Right
32.	9310-006	Nut, Stud
33.	8072-	Valve Section, 4 way, 3 position
34.	8072-	Valve Section, 3 way, 3 position
43.	6825-007	Mid-Inlet Section, Split Flow, Top Inlet SAE 12
44.		Handle Assembly, Vertical
46.		Bracket, Standard Handle
47.	K-6033-B	Retainer, Seal, Standard
50.	K-6056-B	Boot Assembly, Spool Protective

3 WAY - 3 POSITION VALVE

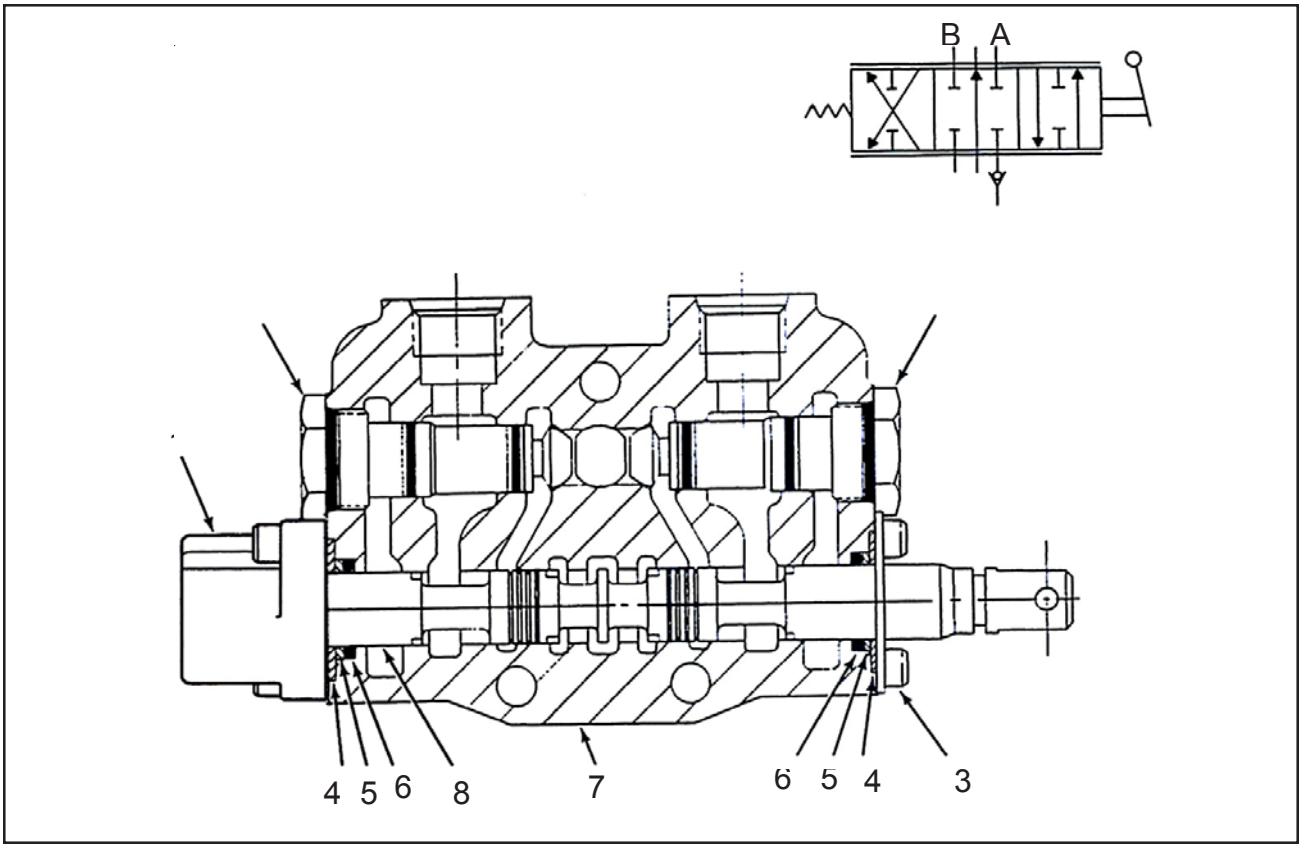
OPERATES YOKE LIFT



LOCATION	PART NUMBER	DESCRIPTION
1.	K-6125-B	Positioner, Spool, Standard
2.	K-6030-C	Check, Load
3.	1458-001	Plug, 3 way Conversion, SAE 10
4.	2707-001	Seal, O-ring, SAE10 Plug
5.	K-6030-C	Plug, Check (Load Check and Spring are not used)
6.	K-6033-B	Retainer Assembly
7.	6752-001	Retainer, Plate Washer
8.	3265-001	Washer, Back up
9.	7700-001	Seal, O-ring
10.	8072-	Housing
11.	8083-001	Spool, 3 way
12.	6754-001	Plug, 3 way

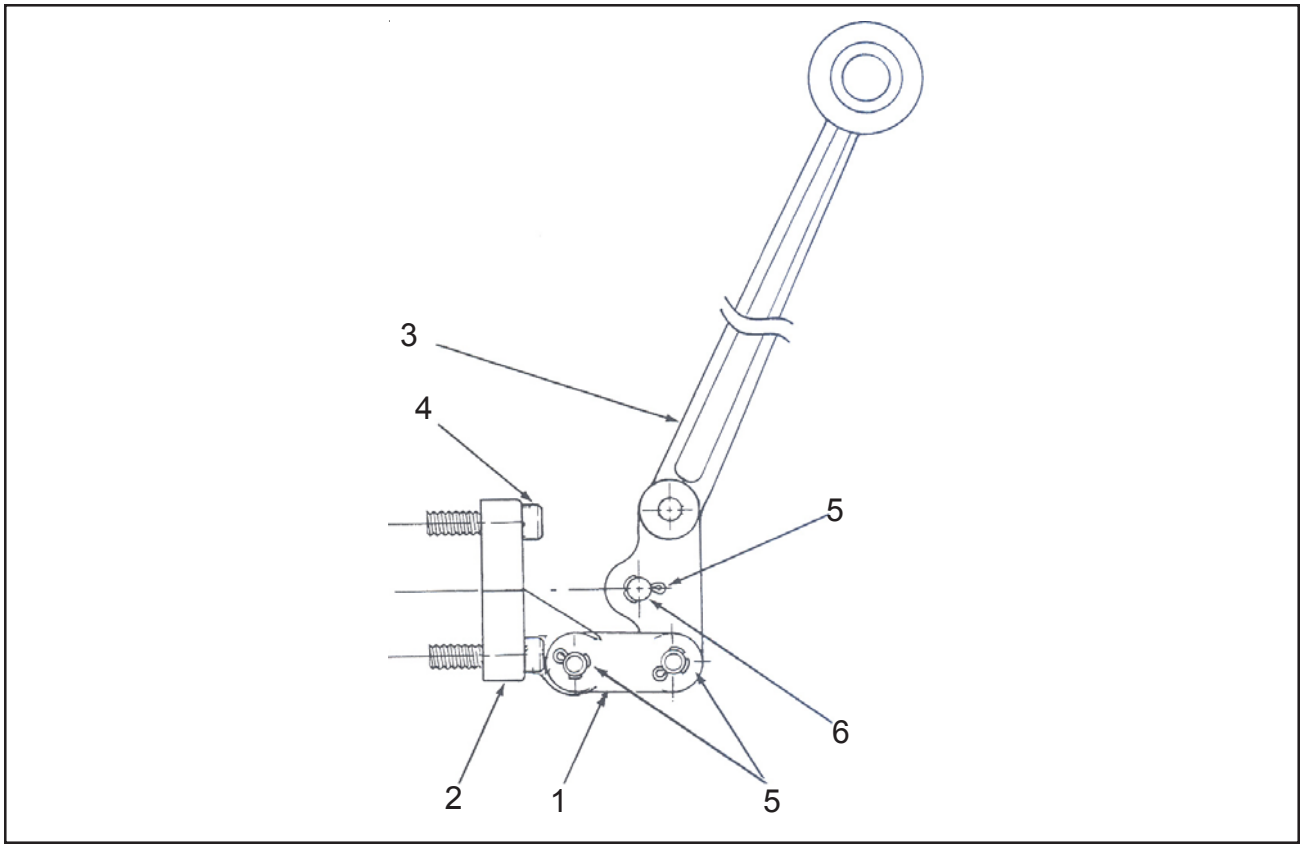
4 WAY - 3 POSITION VALVE

OPERATES INFEED, FEEDWHEEL, AND GATE CYLINDER



LOCATION	PART NUMBER	DESCRIPTION
1.	K-6125-B	Positioner, Spool, Standard
2.	K-6030-C	Check, Load
3.	K-6033-B	Retainer Assembly, Standard
4.	6752-001	Retainer, Plate Washer
5.	3265-001	Washer, Back up
6.	7700-001	Seal, O-ring
7.	8072-	Housing, Standard
8.	8084-001	Spool, 4 way

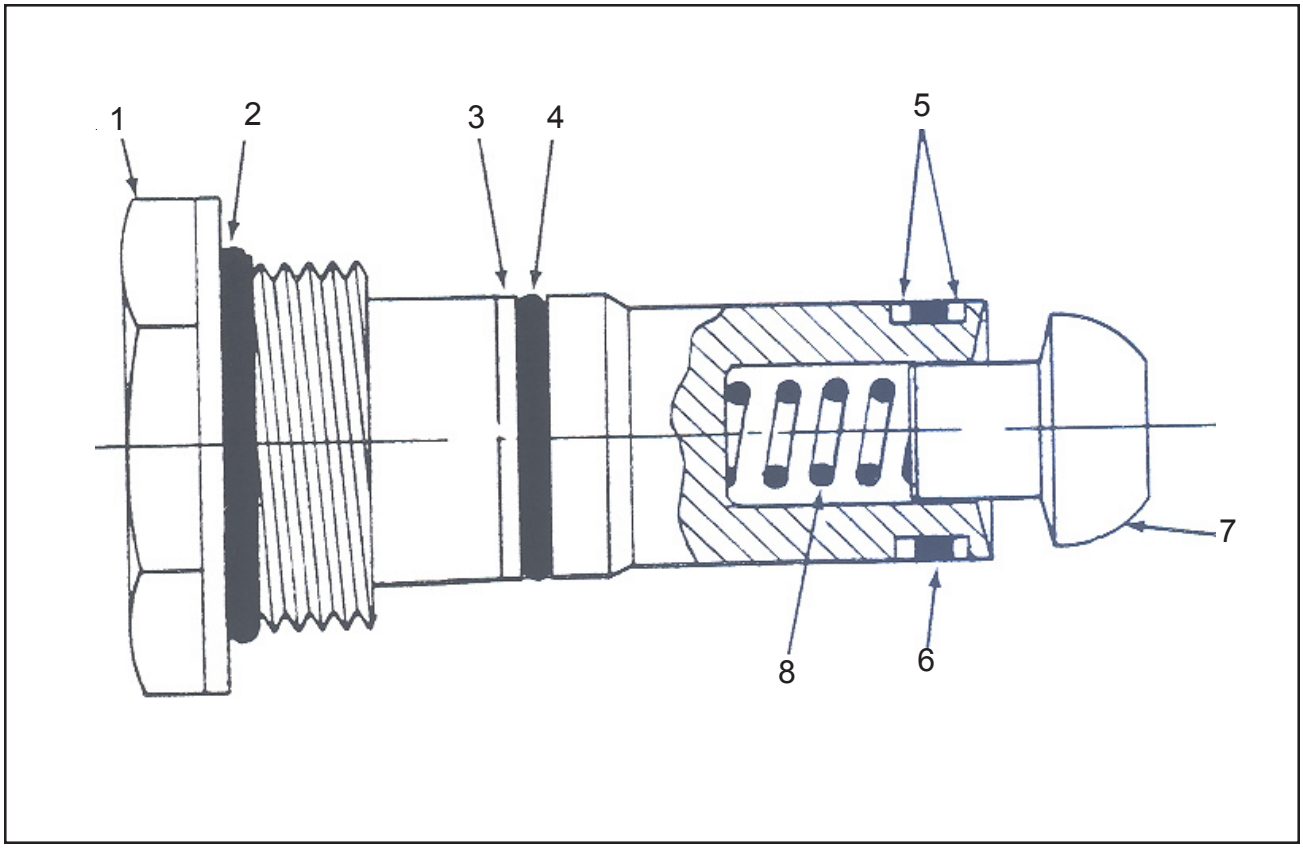
GRESEN HANDLE & BRACKET ASSEMBLY



LOCATION	PART NUMBER	DESCRIPTION
1 a.	11393-001	Link
b.	11392-001	Plate, Link
2.	1801-001	Bracket, Die Cast
3.	1802-003	Handle, Plain (actual Beast handle cut off to accomodate cabinet door on four bank valve assembly).
4.	9161-407	Screw, HSHC
5.	0086-001	Pin, Cotter
6.	1857-001	Pin
7.	1800-001	Seal, Wiper (Not Shown)
8.	K-6137-A	Replacement Kit*

*Contains Items 2 and 4

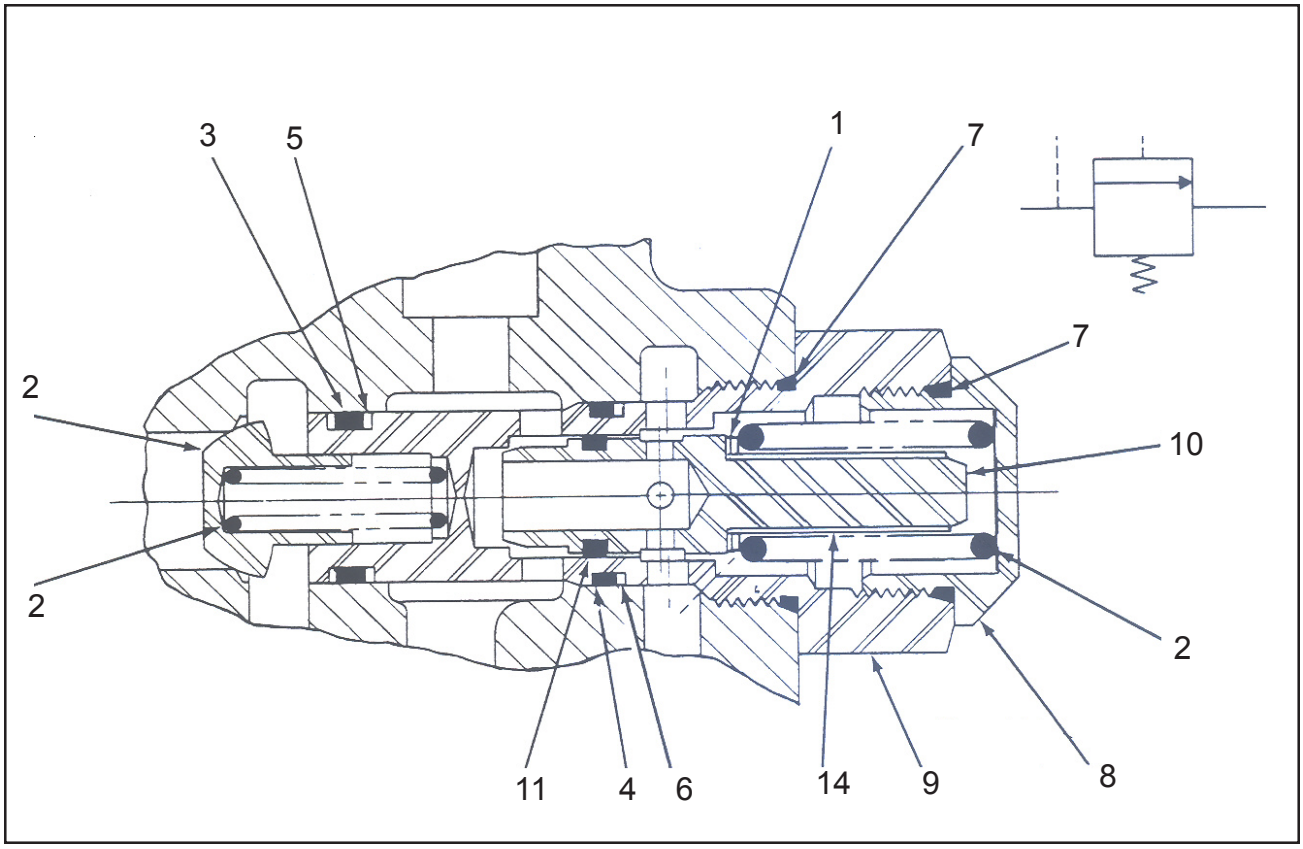
GRESEN LOAD CHECK PLUG ASSEMBLY



LOCATION	PART NUMBER	DESCRIPTION
1.	3411-001	Plug, Lift Check, Steel
2.	2707-001	Seal, O ring
3.	1821-001	Washer, Back Up, Outer
4.	1819-001	Seal, O ring, Outer
5.	1820-001	Washer, Back up, Inner
6.	1818-001	Seal, O ring
7.	2781-001	Poppet, Lift Check
8.	1868-001	Spring, Lift Check
9.	K-6030-A	Replacement Load Check Plug Assembly

GRESEN GATE CYLINDER PORT RELIEF

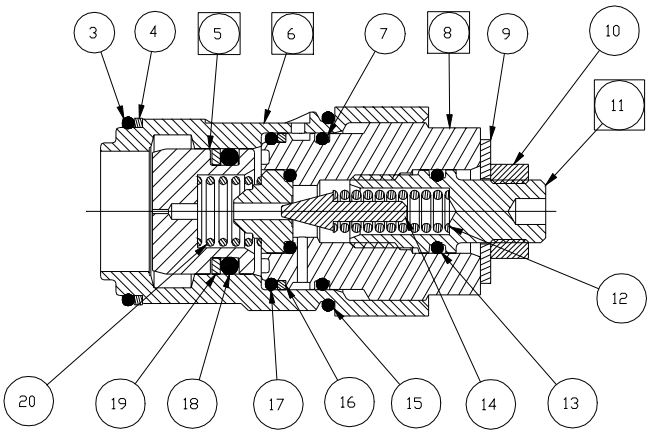
RC-1200 RELIEF CARTRIDGE (GRESEN)



LOCATION	PART NUMBER	DESCRIPTION
1 a.	0458-001	Shim (.040 inch thick)
b.	0459-001	Shim (.020 inch thick)
c.	0462-001	Shim (.010 inch thick)
2	1869-001	Spring (500-1249 psi Crack)
3.	1818-001	Seal, O ring
4.	1819-001	Seal, O ring
5.	1820-001	Washer, Back up, Inner, Check Plug
6.	1821-001	Washer, Back up, Outer, Check Plug
7.	2707-001	Seal, O ring
8.	1880-001	Cap, Relief
9.	1884-001	Body, Relief
10.	1881-001	Poppet, Relief
11.	1883-001	Ring, Piston
12.	2781-001	Check, Steel
13.	1868-001	Spring, Check
14.	7874-001	Sleeve, Dampening
15.	K-19002	Service Kit

INFEED, FEEDWHEEL, YOKE LIFT RELIEF

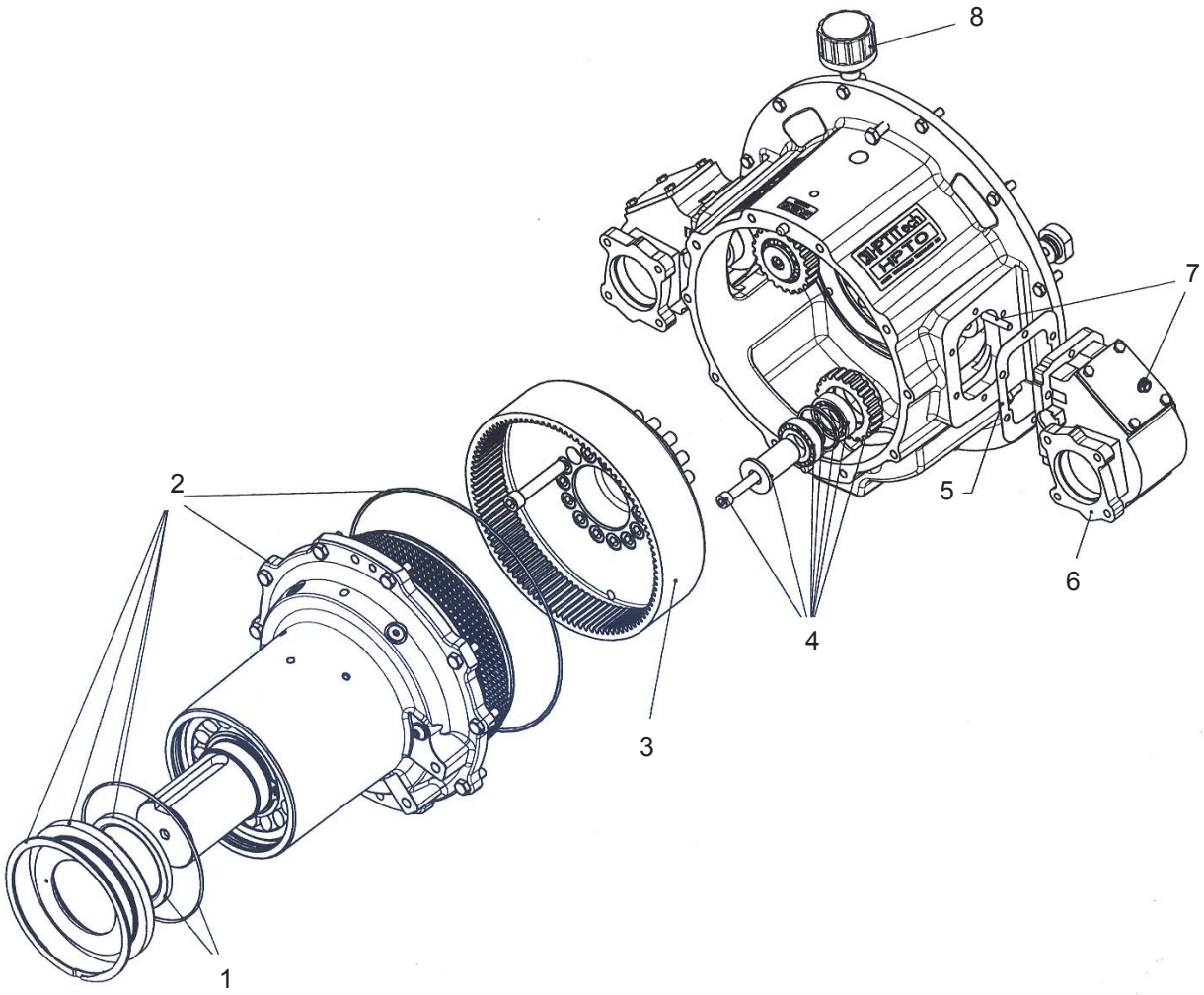
RP51A ADJUSTABLE RELIEF CARTRIDGE (GRESEN)



LOCATION	PART NUMBER	DESCRIPTION
3.	01718001	O Ring
4.	09020022	Ring, Back Up
5.	20209001	Poppet, Main RP51
6.	08954001	Body, RP51, Relief
7.	06814002	Seal, O Ring AS-019
8.	11059001	Body, Pilot ASM (Torque to 15-18 ft.-lbs)
9.	10852001	Washer, ID-RP51
10.	09302006	Nut, Hex Jam* (Torque to 15-18 ft.- lbs)
11.	08956001	Screw, Adjustment (hex socket)
12.	10059001	Spring, Relief Pilot
13.	06884001	Seal, O Ring AS-012
14.	08475001	Poppet, Relief
15.	01615001	Seal O Ring AS-023
16.	24248001	Ring, Back Up
17.	01660001	Seal O Ring AS-019
18.	09000113	Seal O Ring AS-113
19.	20903001	Ring, Back Up
20.	20254001	Spring
*	3497-001	Acorn Cover Nut (not shown) sold seperately from complete cartridge

Adjustable Relief Valve See pressure settings in “Hydraulic Section” for proper settings

PT TECH CLUTCH



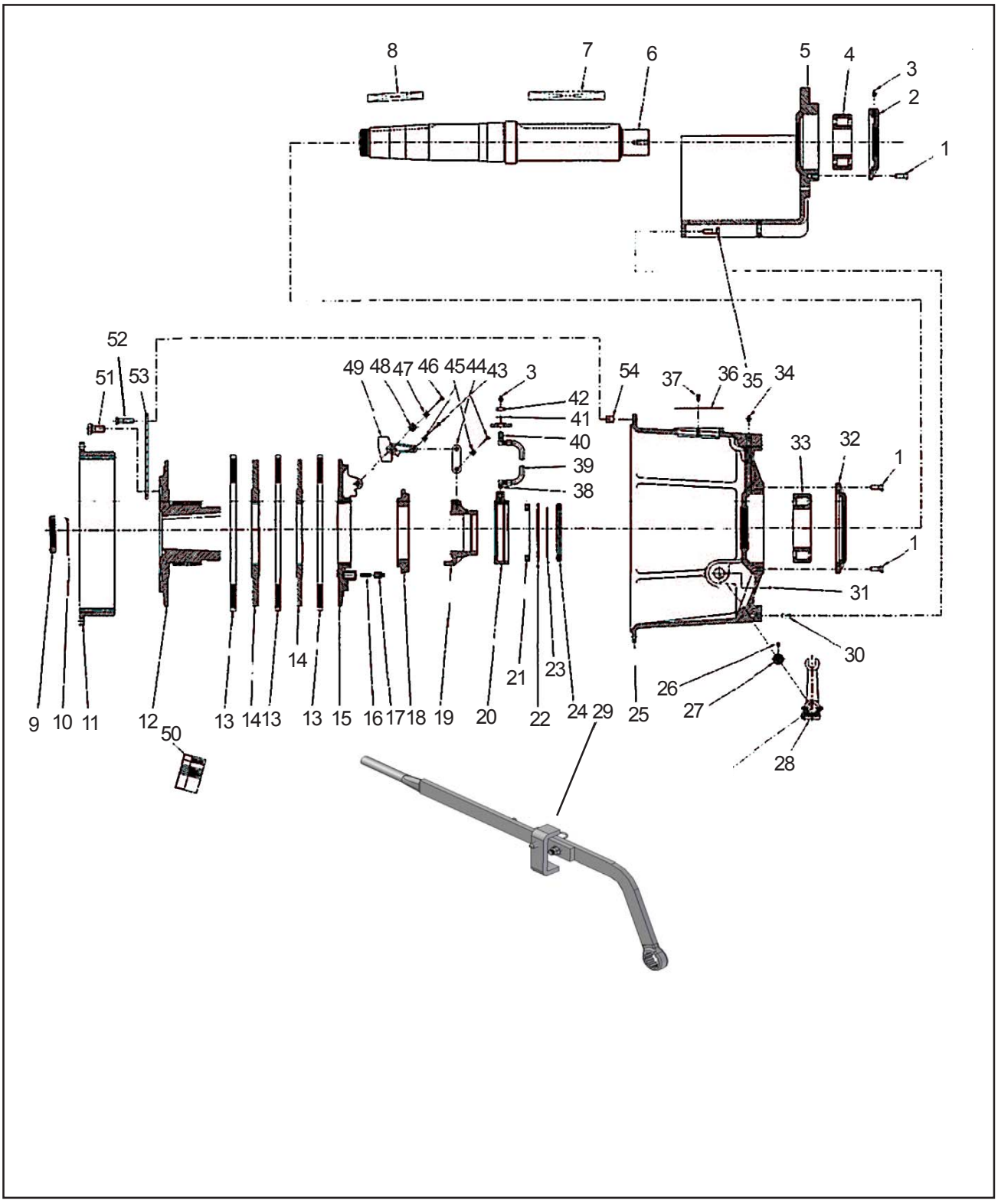
PT TECH CLUTCH

LOCATION	PART NUMBER	DESCRIPTION
1.	HPT014TD-60-100	Shaft Seal Kit
2.	HPT014TD	End Cover Sub Assembly
3.	HPT014DD	Clutch Body
4.	HPT014DD	Idler Gear Sub Assembly
5.	CHYGA-001	Gasket Pack
6.	CHYPD-RH-001	Pump Drive
7.	CHYSK-001	Stud Kit
8.	SHFOB-012-002	Breather
9.	CHYOC-002	Oil Change Kit (Includes Breather)
10.	CECCL-001	Coil - 12 Volt
	CECCL-002	Coil - 24 Volt
11.	CHYPS-205-001	Pressure Switch
12.	CHYTS-200-001	Temperature Switch
13.	CHYRV-220-001	Pressure Reducing Valve
	900-6908-12	Oil Filter (not shown)
	900-2910-27	Blue Flashing Strobe Light Assembly (not shown)
	900-2910-28	Strobe Light Flash Tube (not shown)

NOTE: XX indicates a generic part number. A specific part number will be required for ordering. Have serial number of machine and clutch when ordering.

TWIN DISC CLUTCH

MODEL SP318SBO POWER TAKE OFF



TWIN DISC CLUTCH

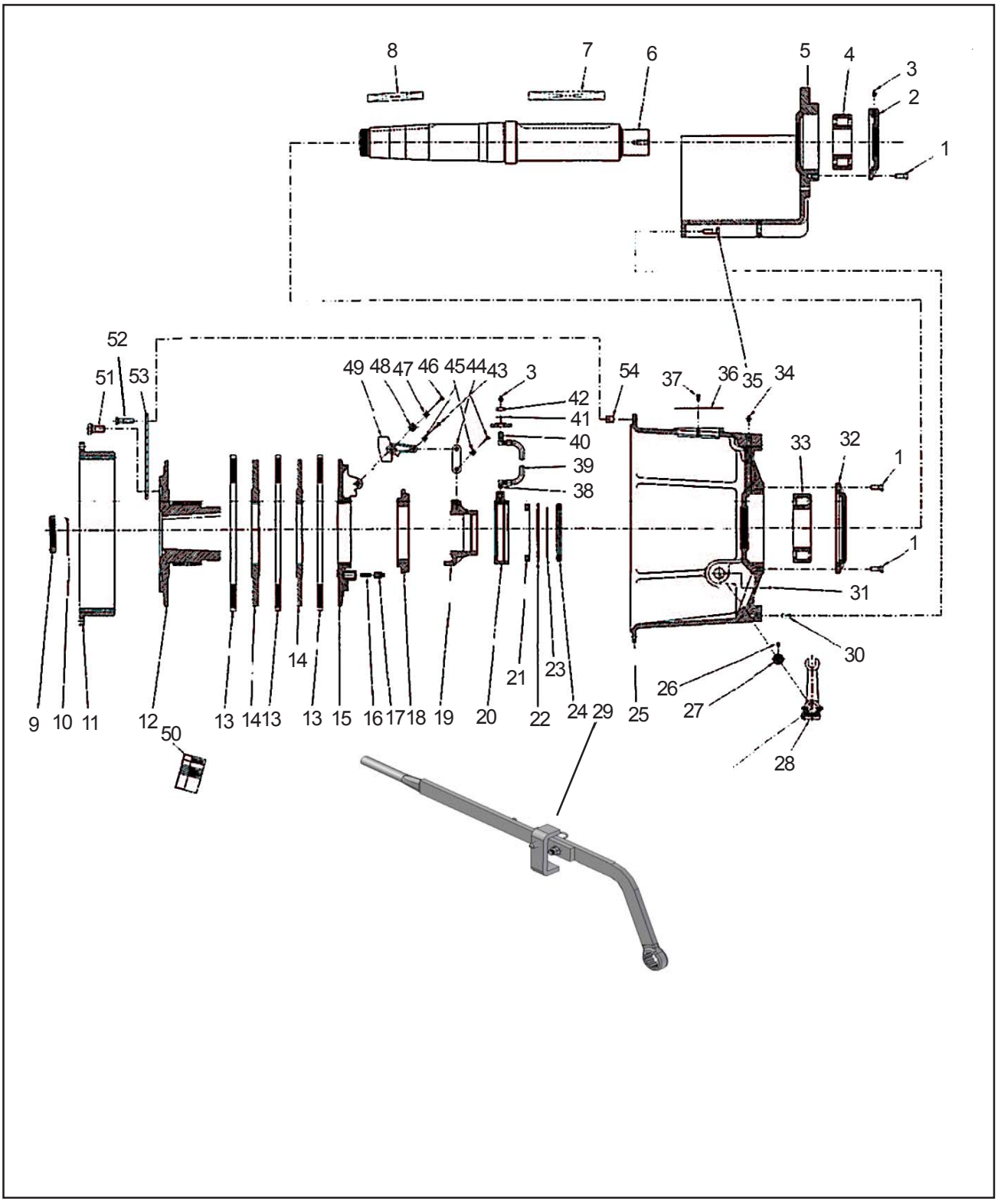
MODEL SP318SBO POWER TAKE OFF

LOCATION	PART NUMBER	DESCRIPTION
1.	M2004F	Screw, Hex HD
2.	B6366	Retainer, Bearing
3.	M268	Fitting
4.	MA1017	Bearing
5.	A7576	Housing, Sleeve
6.	A7577A	Shaft, Clutch
7.	M2034CO	Key
8.	M2034AJ	Key
9.	B1509L	Nut
10.	B1511J	Washer
11.	6926E	Ring, Driving
12.	Z9678A	Hub And Back Plate
13.	5658G	Plate, Friction
14.	9676	Plate, Center
15.	9677B	Plate, Pressure
16.	A2702BE	Spring, Compression
17.	B2341	Pin
18.	A6681	Ring, Adjusting
19.	B5913A	Sleeve, Sliding
20.	B5916	Collar
21.	MA542	Bearing, Ball
22.	A2669DV	Ring, Snap
23.	A2903CH	Ring, Snap
24.	B2339	Shield, Grease
25.	A7574	Housing
26.	M2022AC	Key, Woodruff
27.	A3633E	Shaft, Operating
28.	XA5486	Shaft, Operating
29.	977-100042	Hand Lever Assembly

Continued on following page.

TWIN DISC CLUTCH

MODEL SP318SBO POWER TAKE OFF



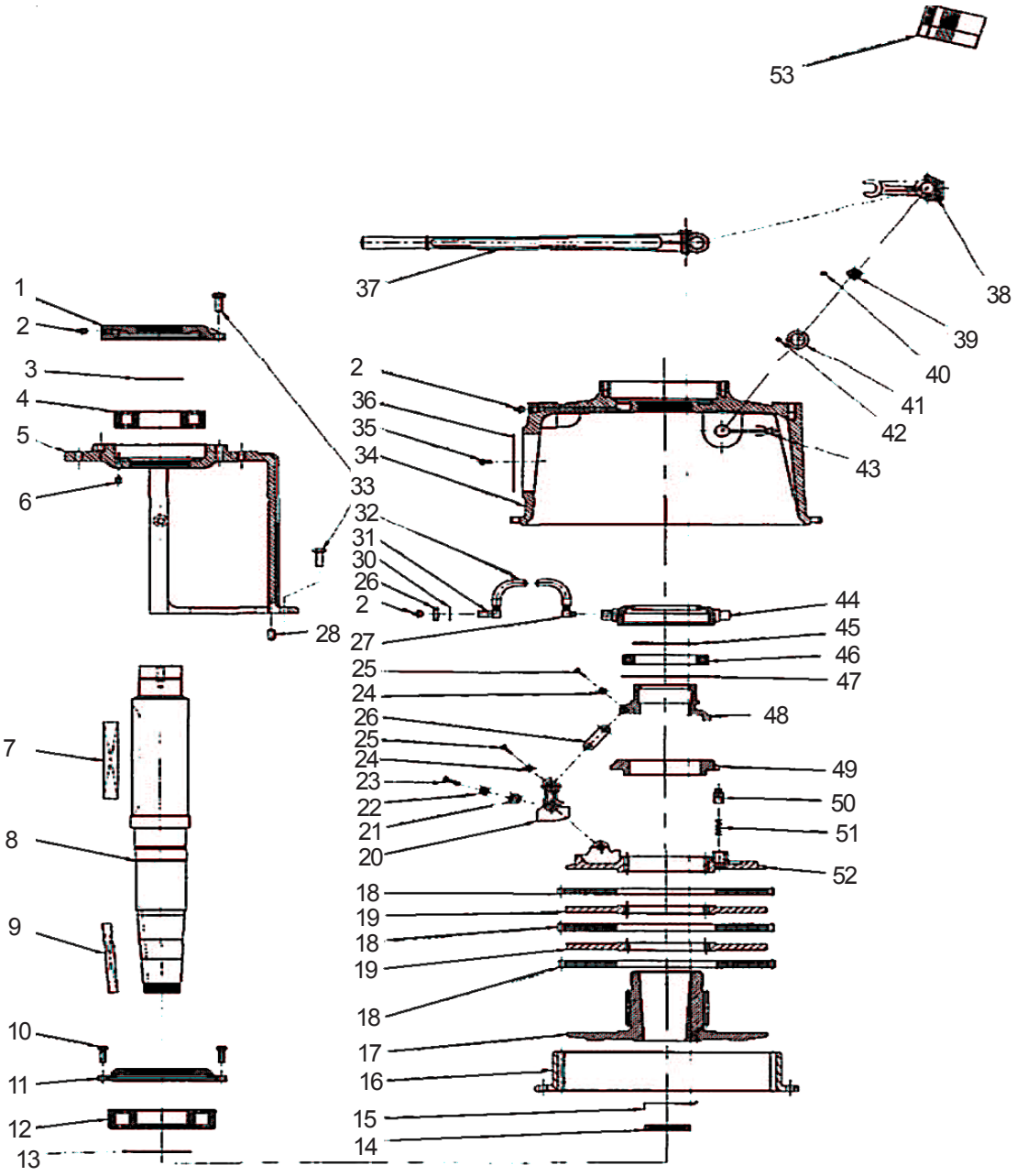
TWIN DISC CLUTCH

MODEL SP318SBO POWER TAKE OFF

LOCATION	PART NUMBER	DESCRIPTION
30.	A2711L	Pin, Dowel
31.	M503	Fitting
32.	B6366	Retainer, Bearing
33.	MA1016	Bearing
34.	M287	Fitting
35.	M2004K	Screw, Hex HD
36.	A4836X	Fitting
37.	02006092	Plate, Instruction
38.	M1284	Screw, Hex HD
39.	M1292A	Hose
40.	M1283	Fitting
41.	M2046AF	Washer
42.	M2027AN	Nut
43.	B1535E	Pin, Cotter
44.	1345	Link
45.	B1539A	Pin, Head
46.	B1535F	Pin, Cotter
47.	B1541A	Pin, Head
48.	M2115E	Washer
49.	A4419	Lever
50.	1016992	Manual
51.	M2007B	Screw, Hex HD
52.	M2004W	Screw, Hex HD
53.	1018220	Strap
54.	1018219	Spacer

TWIN DISC CLUTCH

MODEL SP314SB1 POWER TAKE OFF



TWIN DISC CLUTCH

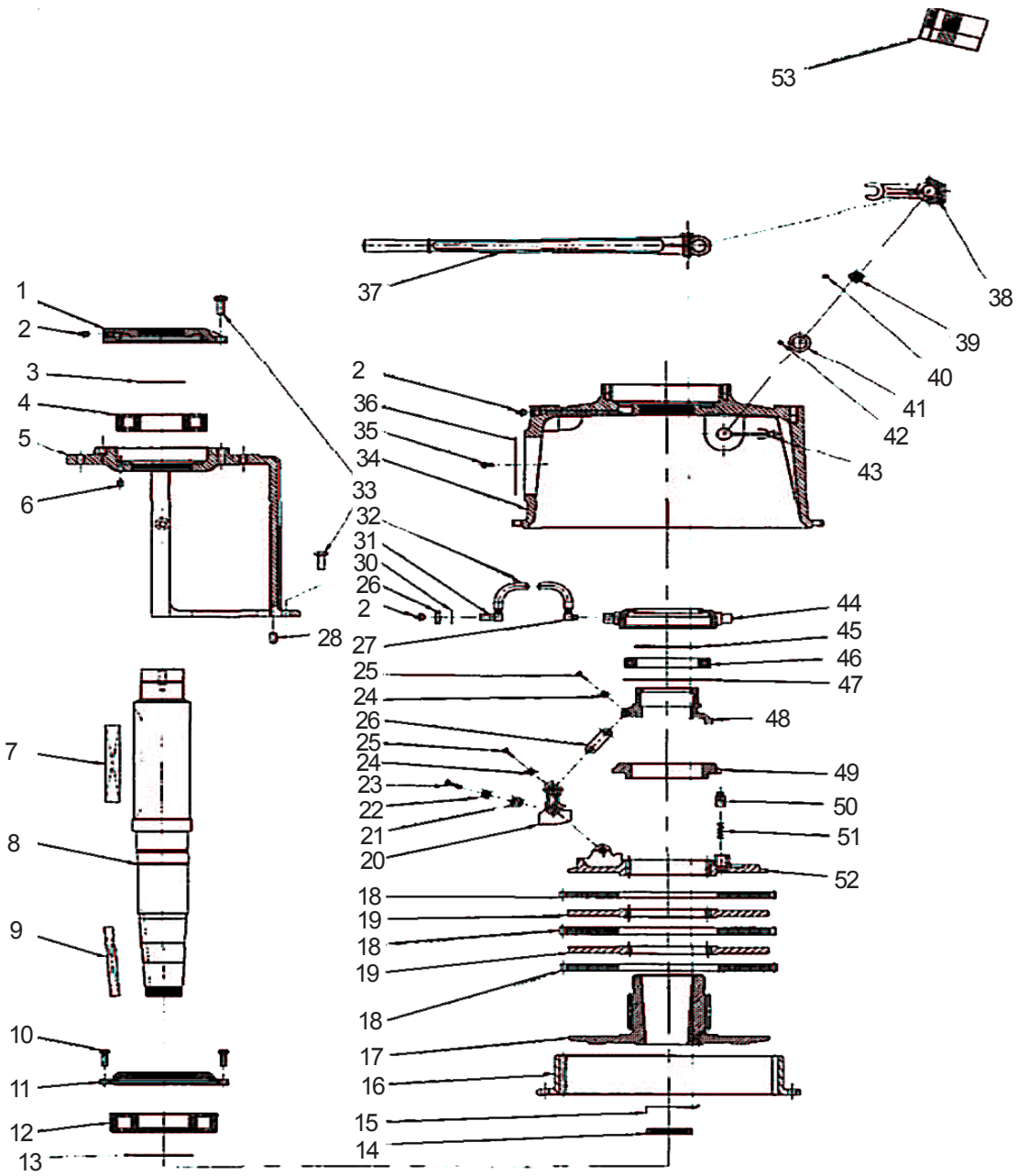
MODEL SP314SB1 POWER TAKE OFF

LOCATION	PART NUMBER	DESCRIPTION
1.	1015807	Retainer Bearing
2.	M268	Fitting
3.	A2903BY	Ring, Snap
4.	1015769	Bearing
5.	1019124	HSG, Sheave
6.	M2051B	Plug Pipe
7.	M2034AT	Key
8.	1016185	Shaft, Clutch
9.	M2033BK	Key
10.	MA96K	Screw, Hex HD
11.	1015792	Retainer Bearing
12.	1015770	Bearing
13.	A2903CW	Ring, Snap
14.	1442	Nut
15.	A1590	Washer
16.	A6518A	Ring, Driving
17.	ZA6511A	Hub & Back Plate
18.	5659K	Plate, Friction
19.	A6513	Plate, Center
20.	B1284	Lever
21.	M2115D	Washer
22.	B1540A	Pin, Clevis
23.	B1535D	Pin, Cotter
24.	B1538B	Pin, Clevis
25.	B1535C	Pin, Cotter
26.	119B14	Link
27.	M1283	Fitting
28.	MA1035B	Pin, Dowel
29.	M2027AN	Nut

Continued on following page.

TWIN DISC CLUTCH

MODEL SP314SB1 POWER TAKE OFF

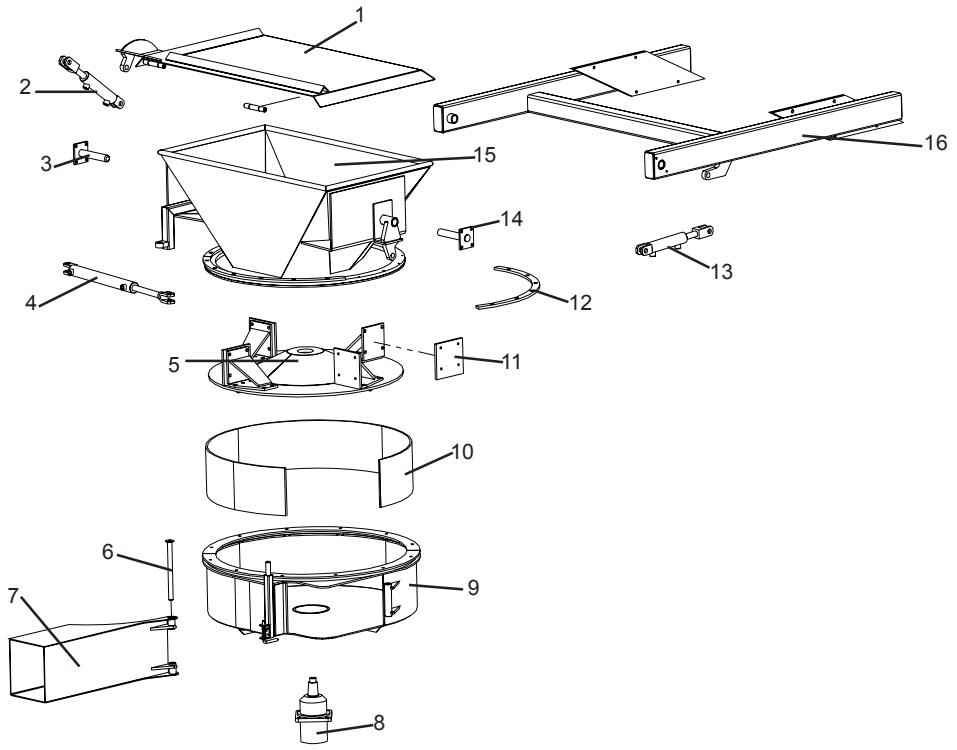


TWIN DISC CLUTCH

MODEL SP314SB1 POWER TAKE OFF

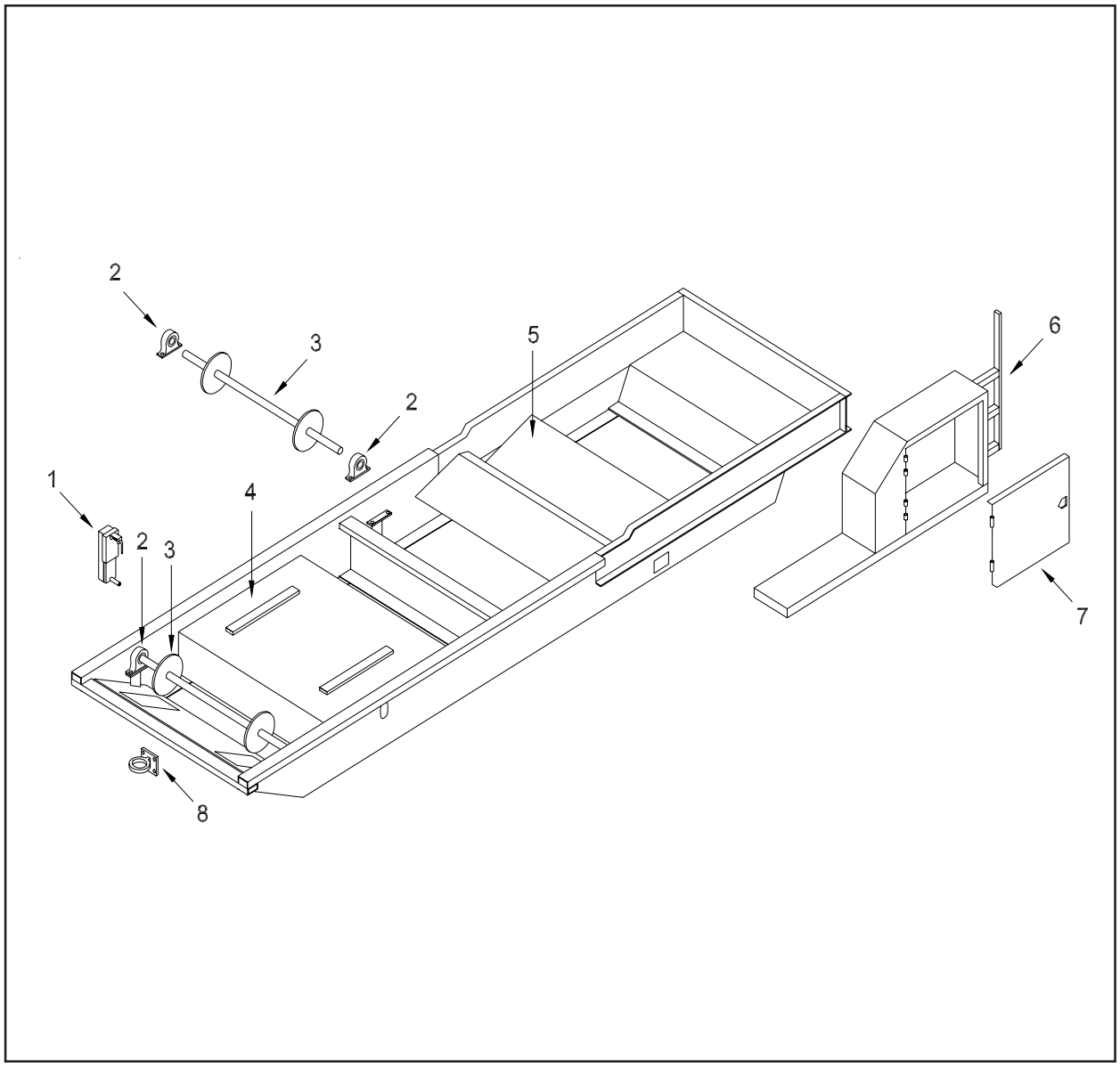
LOCATION	PART NUMBER	DESCRIPTION
30.	M2046AF	Washer
31.	M1284	Fitting
32.	M1292B	Hose
33.	MA996D	Screw, Hex HD
34.	1015764	Housing
35.	02006092	Screw
36.	A4836Y	Plate, Instruction
37.	X74417	Lever, Hand Assembly
38.	1015795	Yoke
39.	1016045	Shaft, Operating
40.	M2022Z	Key, Woodruff
41.	1242	Collar, Stop
42.	M2041G	Screw
43.	M503	Fitting
44.	A6603	Collar
45.	A2622A	Ring, Snap
46.	M303	Bearing, Ball
47.	A2669W	Ring, Snap
48.	A6635	Sleeve, Sliding
49.	A4241	Ring, Adjusting
50.	B2341	Pin
51.	A2702BE	Spring, Comp.
52.	A6512C	Plate, Pressure
53.	1016619	Manual

THROWER ASSEMBLY



THROWER ASSEMBLY

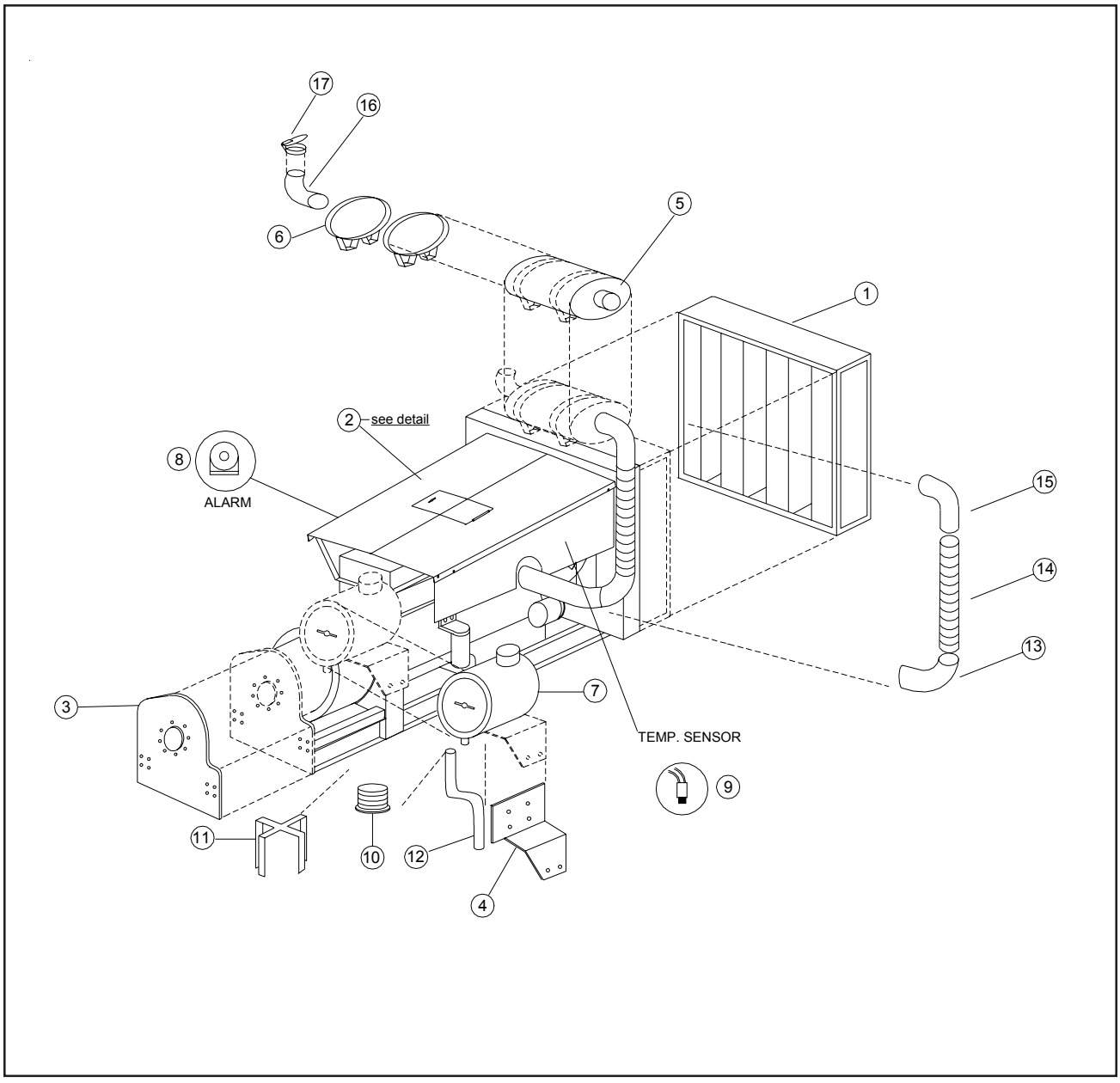
LOCATION	PART NUMBER	DESCRIPTION
1 a.	967-200014	Thrower Lid Assembly
b.	977-200274	Hinge Assembly
2.	900-3920-77	Lid Cylinder
3.	967-200005	Support Arm Pivot Pin Assembly
4.	900-3926-64	Side to Side Cylinder
5.	967-200013	Impeller Plate Assembly
6.	967-300045	Spout Hinge Pin
7.	967-200011	Spout Assembly
8.	900-3927-17	Impeller Drive Motor
9.	967-200010	Impeller Housing Assembly
10.	967-300108	Inner Ring
11.	967-300115	Impeller Paddle
12.	967-300022	Hopper Rotation Wear Strip (3 required)
13.	900-3920-77	Tilt Up/Down Cylinder
14.	967-200005	Support Arm Pivot Pin Assembly
15.	967-200012	Hopper Assembly
16.	967-200000	Thrower Support Arm Assembly
17.	977-300553	18' Discharge Sides For Thrower Option (Not Shown)



LOCATION	PART NUMBER	DESCRIPTION
1.	977-100061	Infeed Chain Stop Assembly
2.	900-1907-09	Idler Roller Bearing
3.	977-100062	Idler Roller Assembly
4.	978-200005	250 Gallon Fuel Tank
a.	900-3926-56	Fuel Filter Head (not shown)
b.	900-3925-68	Fuel Filter for 900-3926-56
5.	See Auger Components	Auger Assembly
6.	977-100043	Curb Side Ladder Assembly
7.	977-000085	Cabinet Door Assembly
a.	900-4908-19	Cabinet Door “T” Handle Latch (not shown)
b.	977-100028	Cabinet Door Closer Assembly (not shown)
8.	900-5900-71	Pintle Ring

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

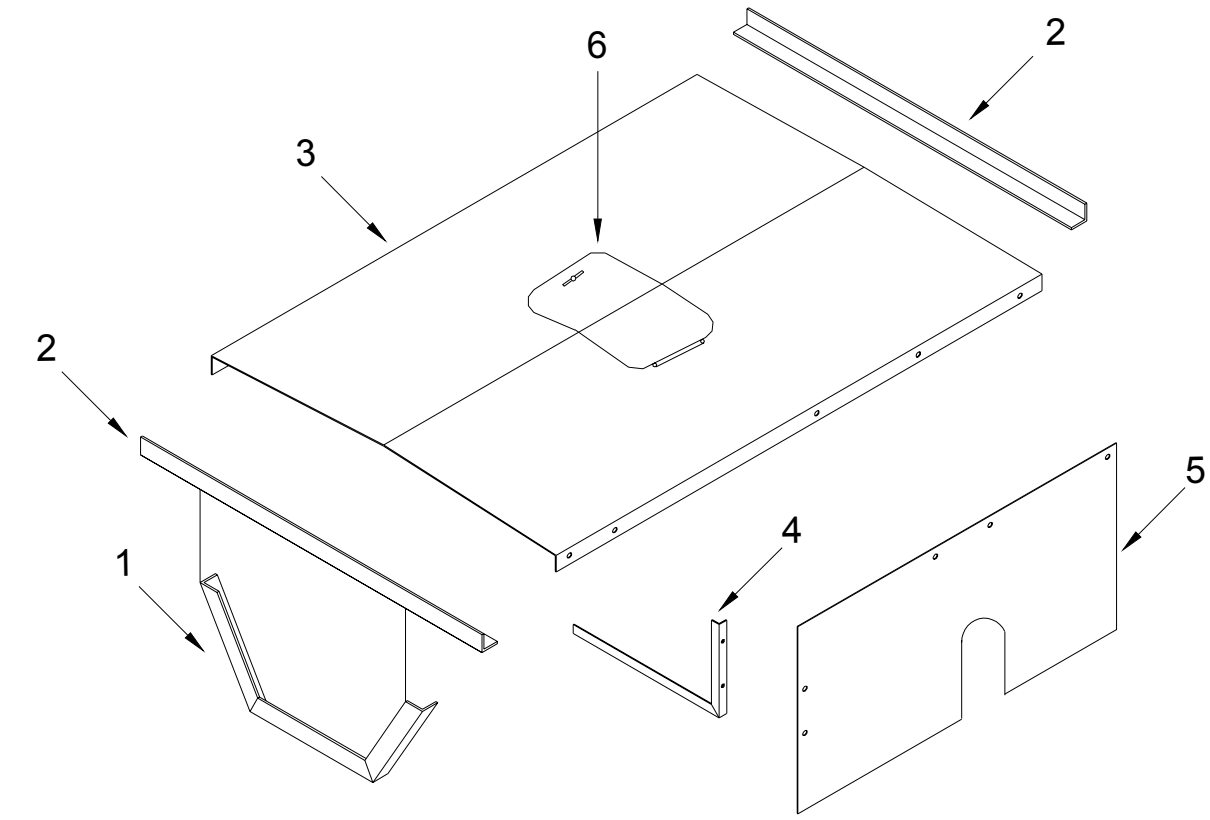
CATERPILLAR 3126E,C-10,C-15



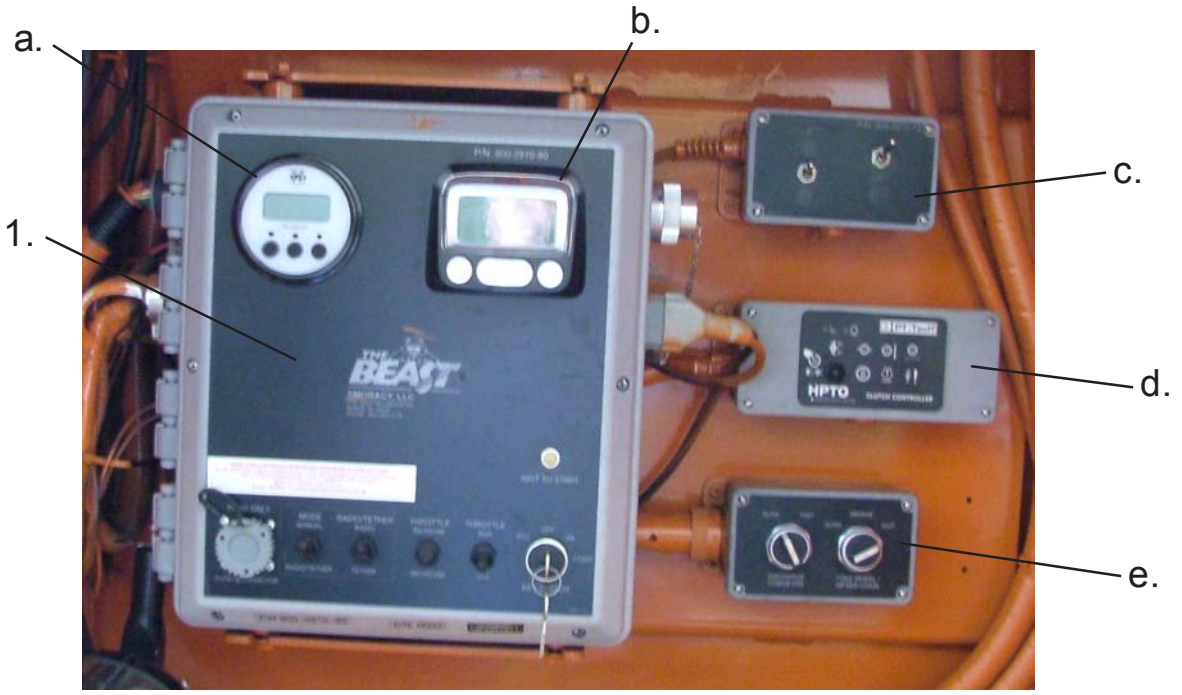
CATERPILLAR 3126E,C-10,C-15

LOCATION	PART NUMBER	DESCRIPTION
1. x	977-200198	Debris Screen Assembly (C-15)
X	977-200225	Debris Screen Assembly (C-10)
2. x	977-200197	Engine Canopy Assembly
3.	976-012103	Clutch Plate
4.	976-011924	Air Cleaner Mount
X	**901-100004**	**C-15 Complete Exhaust System Kit**
X	**901-100005**	**C-10/3126E Complete Exhaust System Kit**
5.	900-6907-90	Muffler
6.	977-050077	Muffler Mount
7. a.	900-6907-91	Air Cleaner
b.	900-6902-35	Pre Cleaner (not shown)
8.	900-2908-04	Start Alarm Beeper
9.	900-2909-12	Temperature Sensor
10.	900-2909-10	Strobe Light (overheat condition)
a.	900-2912-32	Strobe Light replacement flash tube (not shown)
11.	900-2909-11	Strobe Light Branch Guard
12.	977-300004	Branch Guard Mount Tube
13.	900-6908-14	6” Male to Female Elbow
14.	900-6907-65	6” Flex (20” Length)
15.	900-6907-57	6” Short Elbow
16.	900-6908-15	6” Male to Male
17.	900-6908-16	6” Rain Cap
	978-100000	Optional Cold Weather Kit (not shown)
	Includes:	1500 Watt Immersion Heater for hydraulic tank
		12’ Cord for heater
X		Caterpillar C-10/C-12 Engine Block Heater

CATERPILLER C-10 C-15 SHOWN BELOW



LOCATION	PART NUMBER	DESCRIPTION
1.	976-011990	Rear Canopy Support
2.	976-002630	Front Canopy Support
3.	976-041989	Engine Canopy
4.	976-002110	Canopy Side Support
5.	976-012628	Canopy Side
6.	976-003204	Canopy Access Door



RADIO & TETHER CONTROL COMPONENTS

1.

2.

CONTROL BOX COMPONENTS

(Picture shown is typical, your control box may have other options)

LOCATION		PART NUMBER	DESCRIPTION
1.	X	900-2910-90	Control Box and Receiver
a.		900-2906-83	Autofeed Tach - 24V
b.		900-2911-88	Diagnostic Guage
			Control Modules
c.	X	900-2910-13	Reversing Fan Switch Module
d.	X	900-2910-16	Clutch Switch Module
e.	X	900-2910-12	Discharge Conveyor and Yoke Switch Module
		900-2905-07	Autofeed Relay (not shown)
		900-2904-26	Antenna (not shown)

RADIO & TETHER CONTROL COMPONENTS

(Picture shown is typical, your controls may have other options)

LOCATION	PART NUMBER	DESCRIPTION
1.	900-2906-30	Radio Transmitter
2.	900-2904-32	Tether Remote Control

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