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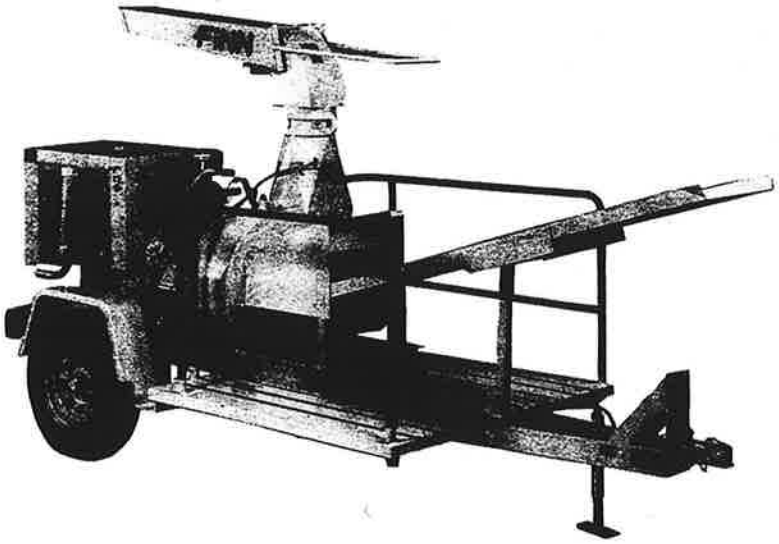


FINN B70

Mulch Spreader

PARTS AND OPERATOR'S MANUAL

MODEL B70 SERIAL NO. RE

W A R R A N T Y

Finn warrants to the original Purchaser for use (or rental to others for use) all new construction machinery and attachments therefore manufactured by Finn to be free from defects in material and workmanship for a period of 12 months from date of purchase or 1200 hours of use, whichever comes first. Replacement parts provided under the terms of this warranty are warranted for the remainder of the warranty period applicable to the product in which installed, as if such parts were original components of that product. Finn makes no warranty with respect to (a) allied equipment or trade accessories not manufactured by it (such as, but not limited to tires, ignitions, starters, batteries, magnetos, carburetors, engines or like or unlike equipment or accessories), such being subject to the warranty, if any, provided by their respective manufacturers; or (b) second-hand, used, altered, or rebuilt machines. THE WARRANTY DESCRIBED IN THIS PARAGRAPH SHALL BE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Upon notification of Finn within the above-stated warranty period of any failure to conform to this warranty, and upon inspection by Finn to verify said nonconformity and to verify the continuing existence of the warranty period, Finn will provide a new part or a repaired part, whichever Finn elects, to replace the part found to be defective. Such parts will be provided without charge to the Purchaser during normal working hours at a place of business of a Finn dealer or other establishment authorized by Finn to effect said repairs or replacements, but Purchaser shall bear all costs of transporting the product to and from such place of business or establishment. Correction of nonconformities, in the manner and for the period time provided above, shall constitute fulfillment of all liabilities of Finn under this contract.

THE REMEDIES OF THE USER SET FORTH HEREIN ARE EXCLUSIVE, WITHOUT REGARD TO WHETHER ANY DEFECT WAS DISCOVERABLE OR LATENT AT THE TIME OF DELIVERY OF THE PRODUCT TO THE PURCHASER. The essential purpose of this exclusive remedy shall be to provide the Purchaser with repair or replacement of parts that prove to be defective within the period and under the conditions previously set forth. This exclusive remedy shall not have failed of its essential purpose (as that term is used in the Uniform Commercial Code) provided Finn remains willing to repair or replace defective parts within a commercially reasonable time after it obtains actual knowledge of the existence of a particular defect.

IN NO EVENT SHALL FINN BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL OR INDIRECT DAMAGES, INCLUDING LOST PROFITS OR LOST COMMERCIAL OPPORTUNITIES, WITH RESPECT TO THE SALE OF THE ABOVE-WARRANTED PRODUCT OR ANYTHING DONE IN CONNECTION THEREWITH, OR FOR PROPERTY DAMAGE SUSTAINED BY A PERSON CLAIMING TO BE A THIRD-PARTY BENEFICIARY OF A SURVIVING WARRANTY UNDER THE LAW OF ANY JURISDICTION.

Effective October 1, 1989

SAFETY FIRST

With any piece of equipment, new or used, the most important part of its operation is **SAFETY!**

Finn Corporation encourages you and your employees to familiarize yourselves with your new equipment and to stress safe operation.

This symbol is used throughout this manual to call attention to safe procedures.
- Pay Attention -

Finn Corporation

INDEX

WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

OPERATION AND MAINTENANCE OF THE FINN B-70 MULCH SPREADER

DEFINITION OF MULCHING: Mulching is the process whereby a vegetative mulch such as hay or straw, sometimes excelsior or other wood product or other vegetative material is spread on previously seeded areas to promote germination, while providing for temporary erosion control.

THE FINN B-70 MULCH SPREADER AND ITS FUNCTION: The Finn B-70 Mulch Spreader will apply vegetative mulch at a fast and uniform rate (with the specified amount of adhesive material, if so desired) utilizing a minimum amount of manpower.

This manual is designed for step by step instructions of the operation, care and maintenance of the B-70 Mulch Spreader and, in addition, it contains illustrations and descriptions of a complete list of parts and components for easy identification.

HOW THE MULCH SPREADER WORKS: The baled vegetative mulch material , is placed on the feed chute and separted by the bale feeder as he feeds these bats into the shredder housing. In the shredder housing a combination of beater chains and air currents separates the mulch into individual fibers, which are drawn into the blower housing and blown through the discharge assembly onto the seedbed.

IMPORTANT: For best results and to insure long life of the equipment please follow the operation instructions carefully.

TOWING TRUCK

The truck used to tow the Finn B-70 Mulch Spreader should have a bed large enough to carry the quantity of mulch needed for economical operation. The truck must be equipped with a ball or pintle type hitch to tow the Mulch Spreader. This hitch should be mounted as near the end of the truck bed as possible.

STACKING THE BALES ON THE TRUCK

Load the bales of mulch on the truck bed with binder twine or wire on top rather than on the side. This makes it easier to grab the bales while the Mulch Spreader is in operation.

Place the first layer of bales "lengthwise" on the truck. The second layer of bales should be placed "crosswise". Alternate successive layers lengthwise and crosswise in order to secure the load.

Leave enough room at the rear of the truck bed for the bale handler to stand.

BEFORE STARTING THE ENGINE

Pre-start check to insure operator safety:

1. Check the bolts on the tongue, the ball or pintle hitch and safety chains.
2. Check the signal horn.

Pre-start check -equipment.

1. Tool kit - see that it contains all prescribed items (see tool kit list).
2. Lubricate equipment- use hand gun only (see lube chart).
3. Check engine oil - refer to engine operator's manual. On diesel option also check liquid level in radiator (protected to -34˚F (-37˚C) when shipped).
4. Check fuel tank. For gasoline engine use only a reputable well known brand of REGULAR GRADE gasoline with an anti-knock index of 87 minimum. DO NOT USE gasoline containing either alcohol or methanol. For diesel engine use 2-D diesel fuel oil. If operating at ambient temperature below 40˚F (4˚C) or at an altitude exceeding 5000 feet (1524m) use No. 1-D fuel oil.
5. Inspect air cleaner for dust and dirt - refer to engine operator's manual.
6. Engage and disengage clutch to determine if it "snaps" in and out of engagement.
7. When not using an adhesive, remove the belt which drives the asphalt pump (running the pump dry will permanently damage it).
8. Check shredder box for foreign objects which could damage the equipment or injure workers.
9. Check beater chains and their mounting pins for damage or wear. Replace if necessary.

STARTING PROCEDURE

GASOLINE OPTION

1. Disengage the clutch.
2. Put ignition switch to "on" position. Set throttle about 1/4 open. Pull choke out.
3. Depress starter button to turn engine over. When engine fires, push choke back in for even running and allow engine to warm up for 3 to 5 minutes.
   NOTE: This engine has an over heat safety switch which will kill the engine is it should ever get too hot.
4. With the engine still idling, engage the clutch slowly. Move the throttle to wide open position and let the governor control the engine speed.

CAUTION: Before engaging the clutch, be certain that the discharge tube is under control and is pointed in the proper direction.

DIESEL OPTION

1. Disengage the clutch.
2. Push the engine kill knob in.
3. Set throttle about 1/4 open.
4. While holding in the safety switch button, turn key counterclockwise and hold until the glow plug indicator glows red (approximately 30 seconds).
5. Continuing to hold the safety switch in, turn the key clockwise until the starter engages, and the engine starts.
6. Continue to hold safety switch in for approximately 10 seconds, (until horn does not blow). Allow the engine to warm up for 3 to 5 minutes.

   NOTE: This engine has a safety system which will sound a horn if the engine oil pressure drops below 7 psi. or if the water temperature reaches 225 degrees Fahrenheit.
7. With the engine still idling, engage the clutch slowly. Move the throttle to wide open position and let the governor control the engine speed.

CREW MEMBERS AND THEIR DUTIES

1. The Operator controls the placement of the mulch on the seedbed by moving the discharge assembly. He also controls the movement of the towing truck along the seedbed by using a predetermined set of signals with the signal horn.
2. The Bale Handler operates from the truck bed and supplies the feeder with bales of mulch material, cut side up.
3. The Feeder cuts and disposes of the twine or wire; separates the bale in 1-1/2 to 2" bats and feeds those into the shredder box allowing about a 10" space between bats. Uniform feeding assures fast separation and more uniform application.
4. The Truck Driver follows the directions of the operator for the movement of the towing truck. The truck driver should be cautious in starting or stopping the truck so that the crew members are not thrown off balance.

DISTRIBUTING THE MULCH

The B-70 Mulch Spreader should be towed to a point approximately 30' from the area where the mulch is to be applied. The operator elevates the discharge spout about 10 degrees above the plain of the seedbed so that the mulch floats onto the seedbed.

Do not drive the mulch into the seedbed with air pressure. The higher the tube is held, the more uniform the application will be.

A full circle horizontal travel of the discharge spout allows the operator to vary the direction of the discharge spout according to the prevailing winds. The tube should never be directed into the wind, towards any persons, or at the towing vehicle.

SMOOTH MULCH PATTERN

Your B-70 Mulch Spreader has a beater roll on the extended blower shaft. Mounted on this beater roll are four beater chains installed opposite each other. This arrangement will work well for most materials. If a longer discharged fiber length is desired, remove two opposing chains.

CAUTION: Be sure beater chains are mounted opposite each other at all times to avoid throwing the blower shaft out of balance.

CLOGGING OF THE MULCH BLOWER SYSTEM

If any obstruction stops the flow of mulch, immediately disengage clutch and shut off engine. Do not reach into the beater box or attempt any adjustment until the engine and all rotating parts have stopped. When the obstruction has been removed, the motor can be restarted and mulch application can continue.

DANGER: Do not reach into the beater box or attempt any adjustment until the engine and all rotating parts have stopped.

ASPHALT EMULSION SYSTEM

The Finn B-70 Mulch Spreader is equipped to spray asphalt emulsion adhesive on the mulch material as it leaves the end of the discharge spout. This adhesive effectively keeps the mulch in place on the seedbed. The asphalt emulsion system for the Finn B-70 Mulch Spreader consists of:

1. A suction pipe with screen.
2. A pump which draws the adhesive from the drum carried on the Mulch Spreader.
3. A valve to control the flow of adhesive.
4. A tube which carries the adhesive to the end of the discharge spout.
5. Injection nozzles for spraying adhesive on the mulch at the end of the discharge spout.
6. A relief valve, which has been pre-set at the factory.

Prepare the asphalt system for operation as follows:

1. Mount the asphalt drum in the rack and secure with tension binder.
2. Remove the plug from the top of asphalt drum and insert the suction assembly into the drum.
3. Install the drive belt on the asphalt pump and snug the belt with the tension adjustment bolt.
4. Install the nozzle in the fitting at the end of the discharge spout. See "Selection of Nozzles". Close the asphalt valve.
5. Start the engine and let it warm up at an idle speed. Then with the engine still idling, engage the clutch slowly.

Read the asphalt pressure gauge on the discharge spout. At this time you should have a pressure reading on the liquid pressure gauge of approximately 35 lbs. If the gauge shows no pressure, turn off the engine and prime pump by pouring some liquid into the barrel suction tube. After priming, again start the engine and check the pressure reading on the gauge. Open the asphalt

valve momentarily to check the spray pattern produced by the nozzle, be careful where the tube is aimed.

DANGER: DO NOT USE GASOLINE

With the asphalt system ready for operation, move the throttle to wide open position, and you are now ready to start operation.

When using adhesive, the operator keeps the valve handle in the "on" position when mulch material is being applied. As soon as mulching operations have stopped or the mulch flow is temporarily interrupted, turn the adhesive handle to the "off" position.

ADHESIVE NOZZLES

From the three nozzles provided, select the one which will deliver the gallonage required. Install the nozzle in the holder at the end of the discharge spout.

The faster you apply the mulch, the larger the nozzle you will need. Naturally, the larger the nozzle opening the more adhesive it will spray.

The nozzles spray at the following rates:

Nozzle No.	Gallons per minute
2530	3
2560	6
25100	10

SELECTION OF NOZZLES

Use the following formula to find out which nozzle to use to apply the proper amount of adhesive material:

$$\frac{\text{Tons per hour X gallons per ton required}}{60} = \text{Gallons per minute}$$

Tons per hour is determined by the quality of the mulch material.

The gallons per hour required is determined by the specifications for the particular job; normally this is around 100 gallons per ton.

ILLUSTRATION

Assuming the mulch is of average quality; we assume you can blow 2 tons per hour. Assuming also your specifications read 100 gallons of adhesive per ton; then the formula looks as follows:

$$\frac{2 \text{ (tons per hours) X } 100 \text{ (gallons per ton)}}{60} = 200$$

$$\frac{200}{60} = 3 \text{ GPM approx. (use nozzle No. 1530)}$$

CLOGGING OF THE LIQUID APPLICATION SYSTEM

If the liquid asphalt emulsion stops flowing and the supply drum still holds material, the stoppage is in the strainer on the barrel sucker. Remove and clean strainer so that the flow of asphalt may resume.

CLEAN ASPHALT SYSTEM IF WORK IS INTERRUPTED

Since asphalt emulsion sets when exposed to air, the lines and nozzles must be cleaned soon after mulching is stopped. For shut downs longer than 10 minutes and at the end of each day's operation, the following clean-up procedure should be used:

1. With the clutch disengaged and all moving parts stopped, insert the suction tube into a barrel of fuel oil or kerosene.

DANGER: DO NOT USE GASOLINE

2. Engage the clutch, open the throttle half-way and move the asphalt valve handle to discharge until a clear white fog appears at the end of the spout.
3. Close the valve and let the machine run for at least 30 seconds. This allows time for all supply lines, and by-pass system to cleaned.
4. Disengage clutch and shut-off the engine. Remove barrel suction assembly from the fuel oil barrel and insert it in the holder in the frame.
5. Remove the pump drive belt. Pump will be permanently damaged if it is run without liquid being pumped.

DAILY CLEAN-UP AND MAINTENANCE

Follow this procedure daily to keep the equipment in good operating condition:

1. Remove asphalt emulsion strainer screen. Clean and reinstall.
2. Clean the air cleaner following the instructions in the engine operator's manual.
3. Check air cleaner connections. If they come loose or disconnected, warranty on your engine is subject to cancellation.
4. Wash crankcase breather cap in cleaning solvent. On the gas engine the rotating screen in front of the engine. For diesel engine clean the radiator and radiator guard with tap water.
5. Clean the beater chains, making sure to remove all twine, wire and other foreign objects. Check pins and nuts.
6. Lock the discharge tube into place.
7. Fill the fuel tank with the proper fuel (see: starting the engine).
8. If the asphalt emulsion system has been used, the cleaning procedure previously described should be followed.
9. Check engine oil level.
10. Check hitch bolts and safety chains.

WEEKLY MAINTENANCE

After each 50 hours of operation, follow this procedure:

1. Change engine oil, following engine manufacturer's recommendations.
2. Change the engine oil filter cartridge with every other oil change (once every 100 hours).
3. Lubricate bearings with general purpose chassis lubricant, using a grease gun. Wipe each bearing before lubrication to remove dirt and prevent overheating.
4. Inflate tires to 32 pounds.
5. Check for chaff and dirt around the cylinder barrels and clean if necessary (Gasoline engine only).
6. Check clutch adjustment to insure that it "snaps" in and out of engagement.

CAUTION: Adjust clutch only while engine is shut down.

ATTACHMENTS

HAND HELD ASPHALT SPRAYBAR

The asphalt spray bar is used to spray emulsion independently of the built-in system. The 50' hose connects to the asphalt system by a quick coupling which is plugged in opposite the relief valve. The rate of asphalt discharge is controlled by the size nozzles inserted in the hand held spray bar. Clean the accessory spray bar and hose by connecting to the asphalt system while the system is being flushed with clean out liquid.

USING YOUR B-70 MULCH SPREADER AS A TREE MISTER

Slide a drum 1/2 to 3/4 full of water onto the barrel holder of the B-70 Mulch Spreader. Into this drum, put the necessary chemical mixture which you will use in your tree misting operation. After ascertaining that the pump has been hooked up and the pump is in the driving position, insert the barrel sucker into the drum of chemical mixture and start the Mulch Spreader.

With the clutch engaged and the valve closed, run the Mulch Spreader about 6 minutes prior to starting the misting operation. This will agitate the chemical in the drum into a homogenous mixture. Use a 1506 nozle (available from Finn) which will apply 1 gallon of chemical mixture per minute of operation.

Position your B-70 Mulch Spreader under the tree to be treated and direct the discharge tube into the center of the tree. With the machine running at the governed RPM, open the liquid valve.

The same system can be used for the application of insecticides for insect control.

After using your B-70 Mulch Spreader for the application of chemicals or insecticides, it is advisable to flush the liquid system with clear water. If there is danger of freezing, replace water with a solvent such as kerosene or fuel oil to prevent damage to the liquid system.

WOOD CHIP HOPPER

Mount the hopper in the feed chute so that the flat end is adjacent to the shredder box. Elevate the feed chute for proper alignment. Bulk material may be put in with loader or shovel.

SEED FERTILIZER HOPPER, is mounted on top of the shredder box after the top of the box is removed.

"FOR DIESEL ENGINE ONLY"
(See Engine Manual for Clutch on Gasoline Engine)

CARE AND OPERATION OF ROCKFORD POWER TAKE-OFF

The following brief instructions are a simple outline of duties that the owner and operator must perform for long and satisfactory service from any Rockford Power Take-Off.

ADJUSTMENT

CLUTCH If the clutch does not pull, overheats, or the clutch operating lever jumps out, the clutch must be adjusted. To adjust the clutch remove the hand hole plate in the housing and rotate the clutch until the adjusting lock and lock screw can be reached. Remove or disengage the adjustment ring lock.

HE CLUTCH Turn the adjusting ring counter clockwise to obtain recommended operating lever pressure.

HANDLE PRESSURE

Variation in handle length directly affects the pressure required at the handle for proper clutch adjustment. See table below to determine correct handle pressure:

CLUTCH SIZE	REFERENCE HANDLE LENGTH	PRESSURE AT lever
7½"	35"	25-28#

A new clutch generally requires several adjustments until the friction surfaces are worn in. Do not let a clutch slip as this will glaze the friction plates and may ruin them.

BEARINGS Power Take-Offs with ball type shaft bearings do not require bearing adjustment.

INSTALLATION OF POWER TAKE-OFF

Avoid jamming, excessive wear or scrubbing of parts. Also misalignment between engine and power take-off.

LUBRICATION

LUBRICANT Any high grade, Lithium Base #2, short fiber grease having an operating temperature of 200° F recommended for roller bearings may be used.

CAUTION

Do not mix Sodium or Calcium base grease with Lithium grease.

ANTI-FRICTION BEARINGS Shaft bearings should be lubricated after each 50 hours of operation through fittings, page (C-3) with a short fiber, high grade, high temperature, Lithium Base #2 lubricant having an operating temperature of 200° F.

CLUTCH LEVERS AND LINKAGE Levers and linkage should be lubricated with engine oil after every 500 hours of operation.

LUBRICATE SPARINGLY TO AVOID OIL ON CLUTCH FACINGS.

REMOVAL OF PTA FROM THE ENGINE

1. Remove all attached parts such as guards, belts, and drive components.
   Engage clutch operating handle to hold clutch facings in place, when removing PTA from engine.
2. Attach a suitable lifting device to the power take-off. Remove the hex-head cap screws that secure the power take-off housing to the flywheel housing.

CAUTION should be exercised when removing the power take off from the engine so that the facings and pilot bearing are not damaged.

3. Support the power take-off on blocks with output end of the shaft down.
4. Remove the (2) screws (T4) and name plate (T2) from the power take-off housing (T1).

DRIVE PLATE REPLACEMENT ONLY A common indication that friction surface is worn out is that the adjusting ring cannot be turned any tighter.

1. Remove all accessory components that would prevent Power Take-Off removal from engine.
2. Remove bell housing to fly wheel housing bolts.
3. With suitable lifting device remove Power Take-Off from engine.
4. In replacing segmented facings the clutch assembly need not be removed from the shaft.

DISASSEMBLY OF HE CLUTCH

REMOVAL OF CLUTCH FROM SHAFT

1. Bend lock tab on lock (T27) away from nut (T26).
2. Remove nut (T26) and lock (T27).
3. Remove clutch from shaft as follows:

   Place prybars at opposite side of the clutch housing and behind pressure plate. Exert pressure outward (away from the roller bearings), rap pilot end of the shaft sharply with soft hammer to jar clutch assembly off the taper of the drive shaft.

DISASSEMBLY OF HE CLUTCH

1. Remove clutch release lever (holdback) spring (H12) from clutch release sleeve.
2. Match mark each half of release sleeve collar (H23) to assure that they will be assembled in their same relative position, if so equipped.
3. Remove the two nuts and bolts holding the collar (H23) together, then remove collar from release sleeve (H22), if so equipped.
4. Remove retaining rings (H34) from pins (H33). Remove pins (H33) from links (H30) and levers (H13).
5. Remove retaining rings (H15) from pins (H14) that connect release levers (H13) to the bosses on the clutch body (H1). Remove pins and levers from clutch body. Note the direction the heads of the link to release sleeve and release lever to pressure plate pins are facing before removing so they may be installed in the same direction as they were removed.
6. Remove the adjusting ring lock retaining bolt (H17) lock washer (H18) and lock (H19) from pressure plate (H3).
7. Remove clutch adjusting ring (H9) by turning COUNTER-CLOCKWISE out of the clutch pressure plate.
8. Lift clutch pressure plate (H3) straight up, off bosses of clutch body (H1).
9. Remove the three clutch pressure plate separator springs (H36) from holes in clutch body.

INSPECTION

Wash all parts of the Power Take-Off EXCEPT the CLUTCH FACINGS in clean fuel oil or a good solvent, then, blow dry before inspection.

1. **BALL AND ROLLER BEARINGS** Examine CUPS, RACES, BALLS, and ROLLERS for indications of corrosion or pitting. Apply light engine oil to the bearings, then, while holding the inner race, revolve the bearing and outer race slowly to check for free rolling of the balls or rollers on the races and cup. Rough or sticking spots of the bearings are cause to reject the bearings from further use.
2. **CLUTCH FACINGS** Examine the clutch FACINGS for being scored, burned or cracked; inspect driving TEETH for wear or damage and measure thickness of the facings. Replace any clutch facing that is badly scarred, burned, or has driving teeth which are worn and/or damaged, or if the facing thickness is worn to under 5/16 of an inch.
3. **PRESSURE PLATES** Inspect the FRICTION SURFACES on the clutch body and pressure plate for being flat, smooth, and free from cracks and heat checks. The drive BOSSES and KEYWAY of the clutch body, and the adjusting ring THREADS and boss NOTCHES of the pressure plate should be examined for wear, and if worn excessively, should be replaced.
4. Inspect the INNER FACE and THREADS of the adjusting ring for wear or damage. If worn excessively, replace adjusting ring.
5. **PINS AND PIN HOLES** Examine all lever and link pins and pin holes in links, release levers, release sleeve and pressure plate for wear. If pins and pin holes in parts are worn excessively, parts must be replaced.
6. **LOCK** Inspect the FINGERS of the adjusting ring lock for wear. Replace lock if fingers are worn excessively or have been damaged. Lock must have sufficient tension to hold adjusting ring from turning when clutch is operating.
7. **CLUTCH RELEASE SLEEVE & COLLAR** Examine the WEARING SURFACE of release sleeve collar and mating surface on release sleeve. If parts show excessive wear, they must be replaced.
8. **CLUTCH RELEASE YOKE** Inspect the surface of the clutch release yoke fingers and mating TRUNNIONS on the release sleeve collar for wear. If parts are worn excessively, they must be replaced.
9. **CLUTCH DRIVE SHAFT** Examine threads, keyways, and pilot bearing surface of drive shaft.
10. **SEPARATOR SPRINGS** Check the pressure plate separator springs for being broken or weak. Approximate spring pressure is 15 to 20 lbs. with spring compressed to 13/16 of an inch.

ASSEMBLY OF CLUTCH

With all the clutch parts cleaned and inspected and necessary parts on hand, the Power Take-Off may be reassembled as outlined in the following.

CLUTCH ASSEMBLY Having cleaned, inspected, and replaced all worn parts, assemble clutch as follows:

1. Place the clutch body (H1) on workbench with hub end (release lever bosses) of pressure plate up.

2. Place clutch pressure plate separator springs (H36) in holes provided in plate next to release lever bosses. Note: If whole ring facing is to be used it must be installed at this time.
3. Place the pressure plate (H3) on top of the clutch body (smooth face down) with notches in pressure plate in line with the release lever bosses of the clutch body, then lower pressure plate down on the three pressure plate separator springs (H36).
4. Lubricate threads on clutch adjusting ring (H9) and turn it CLOCKWISE into pressure plate (H3) until it bottoms.
5. Install clutch release levers (H13) in opening of bosses or clutch body (H1) with notch end of lever up and out.

NOTE

Determine the direction the clutch will rotate when attached to the engine, then install lever pins (H14) with the heads of the pins leading the rotation of the clutch.

CAUTION

Be sure retaining rings (H15) are securely locked on pins (H14).

6. Align holes in levers (H13) with holes in bosses of outer plate then insert pins (H14) through pin holes and secure with retaining rings (H15).
7. Heeding the match marks previously placed on the two halves, lubricate inside diameter of clutch release sleeve collar (H23). Place the two halves together over the shoulder on release sleeve (H22) with machined side of collar down and secure them together with two bolts and nuts. Rotate collar on sleeve to check for free turning. If collar binds on sleeve, it may be necessary to shim between the collar halves to allow running clearance, if so equipped.

CAUTION

Be sure that the tapped hole in release sleeve is facing grease tube when assembled in Power Take-Off.

8. Place clutch release lever (holdback) spring (H12) over end of release sleeve (H25) and up against release collar before installing links (H30) to release sleeve (H25).
9. Place one release lever link (H30) on each side of each hole on clutch release sleeve (H25) with triangular end of release lever link at release sleeve and point of triangle facing toward center of release sleeve.
10. Attach links to release sleeve with link pins (H31) and retaining rings (H32).
11. Place the clutch release sleeve (H25), with other parts assembled, down on clutch with each pair of release links (H30) astride release lever (H13).

CAUTION

When installing pins, all pins must be installed with head leading rotation.

Connect links to levers with pins (H33) and retaining rings (H32).

NOTE

Be sure retaining rings (H32) are securely locked on pins (H33).

12. With the clutch release links (H30) and release levers (H13) connected, slide clutch release lever (holdback) spring (H12) over ends of release lever links and into place on release levers (H13).
13. Insert the clutch facings (H4) (three segments) in between the clutch body (H1) and pressure plate (H3), and center.
14. Lock clutch facings between the pressure plates as follows:
    A. With the clutch assembly resting on workbench, turn the clutch adjusting ring (H9) COUNTER-CLOCKWISE until pressure plate (H3) almost contacts clutch facing (H4).
    B. Place clutch driving ring over clutch facings with teeth in driving ring in mesh with teeth of clutch facings, and locate the driving ring centrally relative to the pressure plate and clutch body.

NOTE

If driving ring is not properly located relative to pressure plate and clutch body, the clutch cannot be assembled to the flywheel as the teeth of clutch facings will not enter the teeth of driving ring even though the clutch drive shaft enters the pilot bearing.

    C. Engage the clutch by applying pressure on top of release sleeve and collar assembly and lock clutch facings between the pressure plate and clutch body. If clutch facings are still free to move, disengage the clutch and turn adjusting ring COUNTER-CLOCKWISE just enough to lock the clutch facings in place when clutch is engaged.

NOTE

The clutch must now be kept engaged until the Power Take-Off assembly is attached to engine.

15. Remove clutch driving ring (H35) from the clutch facings and attach it to the flywheel with the specified bolts and lock washers.

SECTION F
DISASSEMBLY AND ASSEMBLY
OF
BALL BEARING TYPE
POWER-TAKE OFF

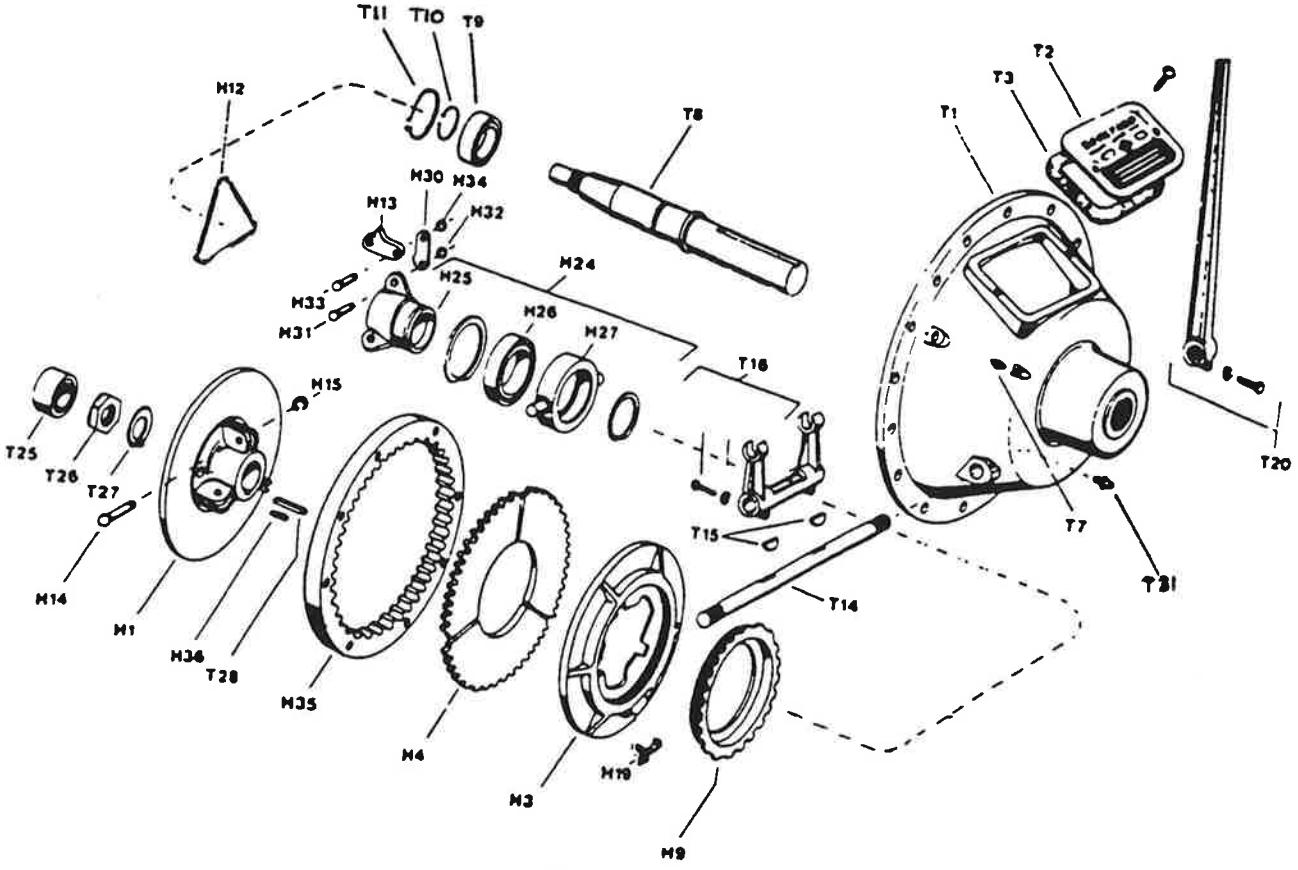
DISASSEMBLY OF BALL BEARING

1. With the Power Take-Off housing supported on blocks, use a standard bearing puller and remove the pilot bearing from the clutch shaft.
2. Straighten the tang on lock washer (T27). Hold clutch and shaft, remove clutch shaft nut (T26).
3. Remove the clutch from the clutch shaft (T8) as follows:
   Place prybars at opposite sides over the housing and back of the clutch pressure plate. Hold pressure on both bars and rap the pilot bearing end of the shaft sharply with a babbit hammer to free clutch from shaft.
4. Remove clutch and drive key (T28) from drive shaft (T8).
5. Loosen clamp bolt (T22) and remove operating handle (T20) from cross shaft (T14).
6. Loosen the (2) bolts (T18) in yoke (T17).
7. Slide yoke left or right on the cross shaft to expose woodruff keys (T15).
8. Remove woodruff keys (T15) from cross shaft (T14).
9. Withdraw shaft (T14) from yoke (T17) and housing (T1).
10. Remove bearing retainer lock bolt (T12) and lock (T11).
11. Remove bearing retainer (T10) and bearing spacer (T48).
12. Remove the clutch shaft from the front of the Power Take-Off housing by tapping lightly on the output end of the shaft with a soft hammer.
13. Wash the bearing thoroughly with clean fuel oil or solvent. Blow dry with compressed air and examine for wear, corrosion or rough spots. If it is determined that the bearing is unsatisfactory for use it must be removed from the shaft as follows:
    A. Remove snap ring (T29).
    B. Place the clutch shaft on a press and press the bearing off the shaft.

ASSEMBLY PROCEDURE

Follow disassembly procedure in reverse order to assemble the Power Take-Off, except for bearing installation.

1. Place one snap spring on the shaft, then stand shaft on end.
2. Heat bearing in oil until bearing expands enough to slide on shaft.
3. Tap bearing lightly to seat bearing against snap ring.
4. Install other snap ring against bearing.

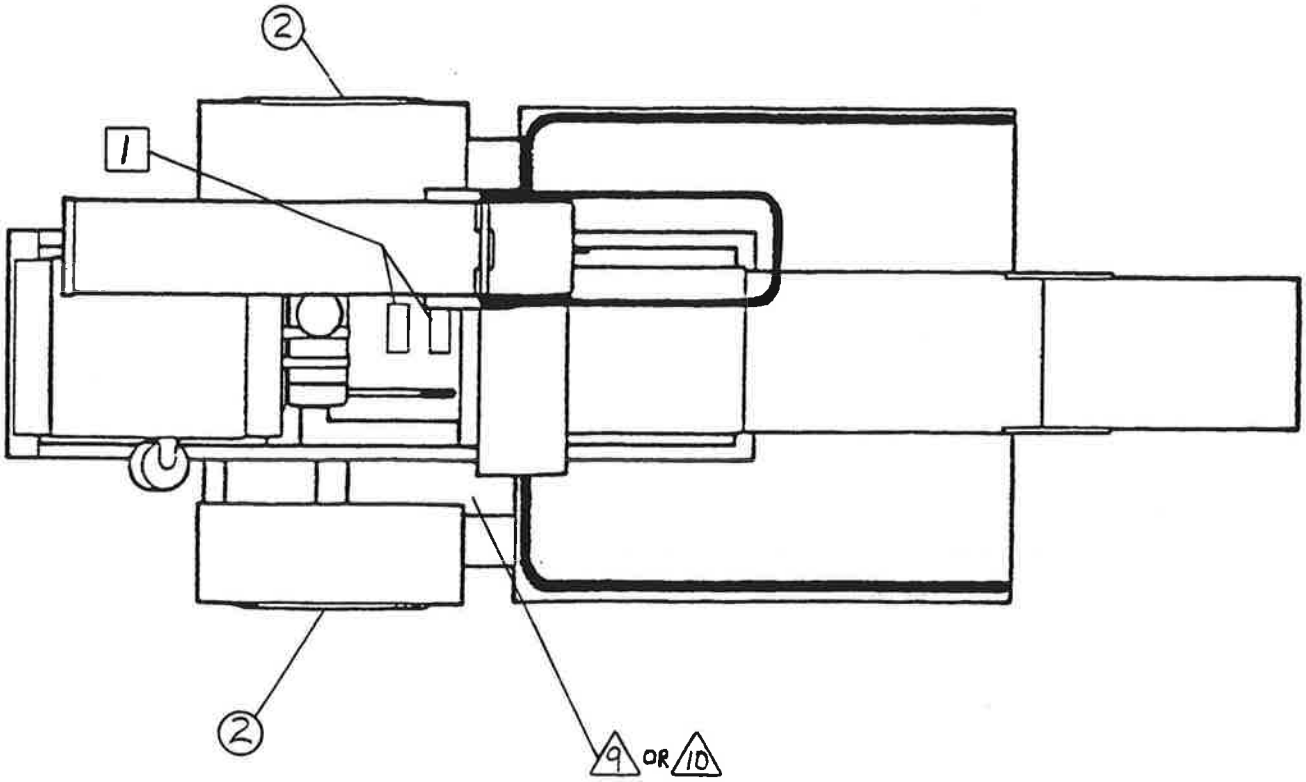


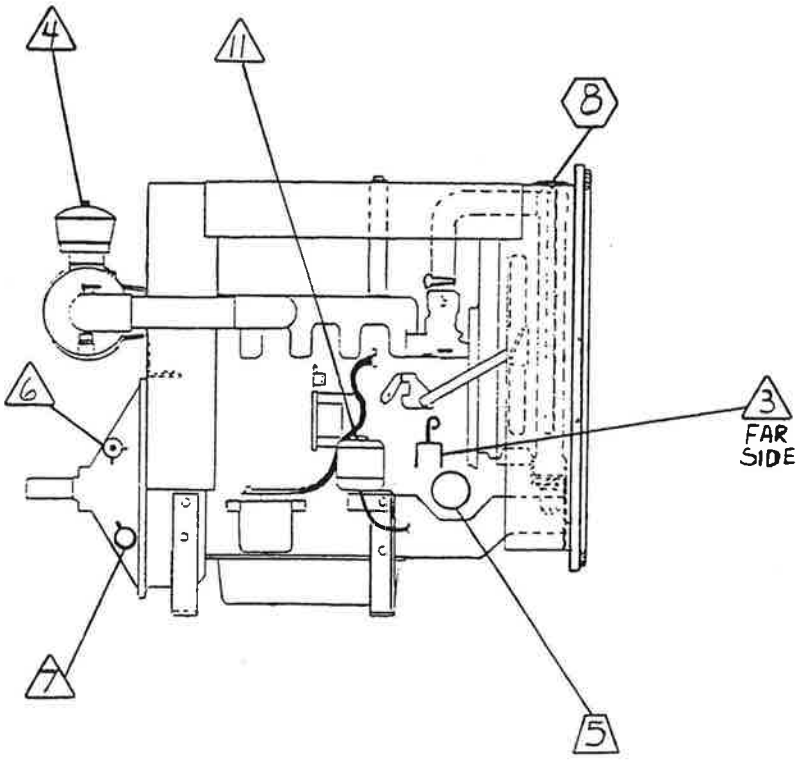
(DIESEL ONLY)

POWER TAKE OFF ASSEMBL

REF NO.	PART NO.	DESCRIPTION	NO. REQ'D
H1	100207	Body, Clutch	1
H3	100208	Plate, Pres	1
H4	100209	Facing, C' segments)	1
H9	100210	Ring, Ad	1
H12	100211	Spring	1
H13	100212	Leve'	3
H14	100213	Pir Lever	3
H15	100008	P taining	3
H19	100214	Adjusting	1
H24	100327	ase, Sleeve & Bearing Assy.	1
H25	100328	eve,Release	1
H26	100330	earing, Release	1
H27	10032'	Carrier, Bearing	1
H30	100'	Link, Connecting	6
H31 & 3	10	Pins, Link	6
H32 & 4	100	Ring, Retaining	6
H35	100218	Ring, Driving	1
H36	100219	Spring, Separator	3
H's	100333	Clutch Assembly	1
T1	100221	Housing Clutch	1
T2	100222	Plate, Instruction	1
T3	100054	Gasket, Cover	1
T7	100043	Fitting, Lubrication	1
T8	100223	Shaft, Drive	1
T9	100060	Bearing	1
T10	100055	Snap Ring, External	1
T11	100059	Snap Ring, Internal	1
T14	100041	Shaft Yoke	1
T15	100042	Key, Woodruff	2
T16	100073	Yoke, Clutch	1
T20	031219	Lever, Shifting	1
T25	005151	Bearing, Pilot	1
T26	100045	Nut, Drive, Shaft	1
T27	100047	Washer, Lock	1
T28	100056	Key, Clutch	1
T31	100224	Lube Fitting, Yoke Shaft	2
	031304	Power Take Off Assembly (4-34193)	

WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE


2
1
2
9 OR 10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FAR SIDE
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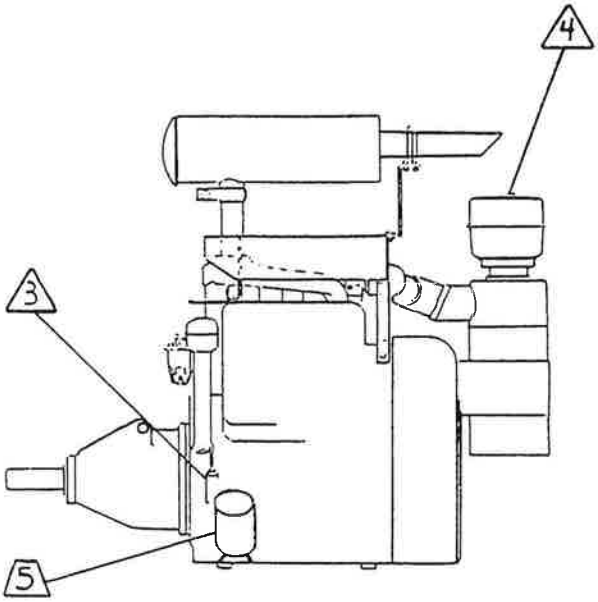

4
3
5

LUBRICATION CHART

	Location	Lubricant or Fluid Used	Frequency	Number Gas	Number Diesel
1.	Grease Drive Shaft Bearings	CL	Weekly	2	2
2.	Repack Wheel Bearings	CL	Annually	2	2
3.	Check Engine Oil Level	MO	Daily	1	1
4.	Check Air Cleaner	MO	Daily	1	1
5.	Change Engine Oil & Filter	MO	See Eng. Man.	1	1
6.	Grease Clutch Shaft Bearings	CL	Daily	0	1
7.	Grease Clutch Lever Bearing	CL	Daily	0	1
8.	Change Engine Coolant	AF	Seasonally	0	1
9.	Check Fuel Tank Level-Gas	FU	Daily	1	0
10.	Check Fuel Tank Level-Diesel	DF	Daily	0	1
11.	Check Engine Coolant	AF	Daily	0	1

Lubricant or Fluid Used

CL Chassis Lubricant
MO Motor Oil SAE 30 CD/SF
AF 50/50 Anti-Freeze and water mixture
FU Gasoline
DF Diesel Fuel

TIME KEY

DAILY 

WEEKLY 

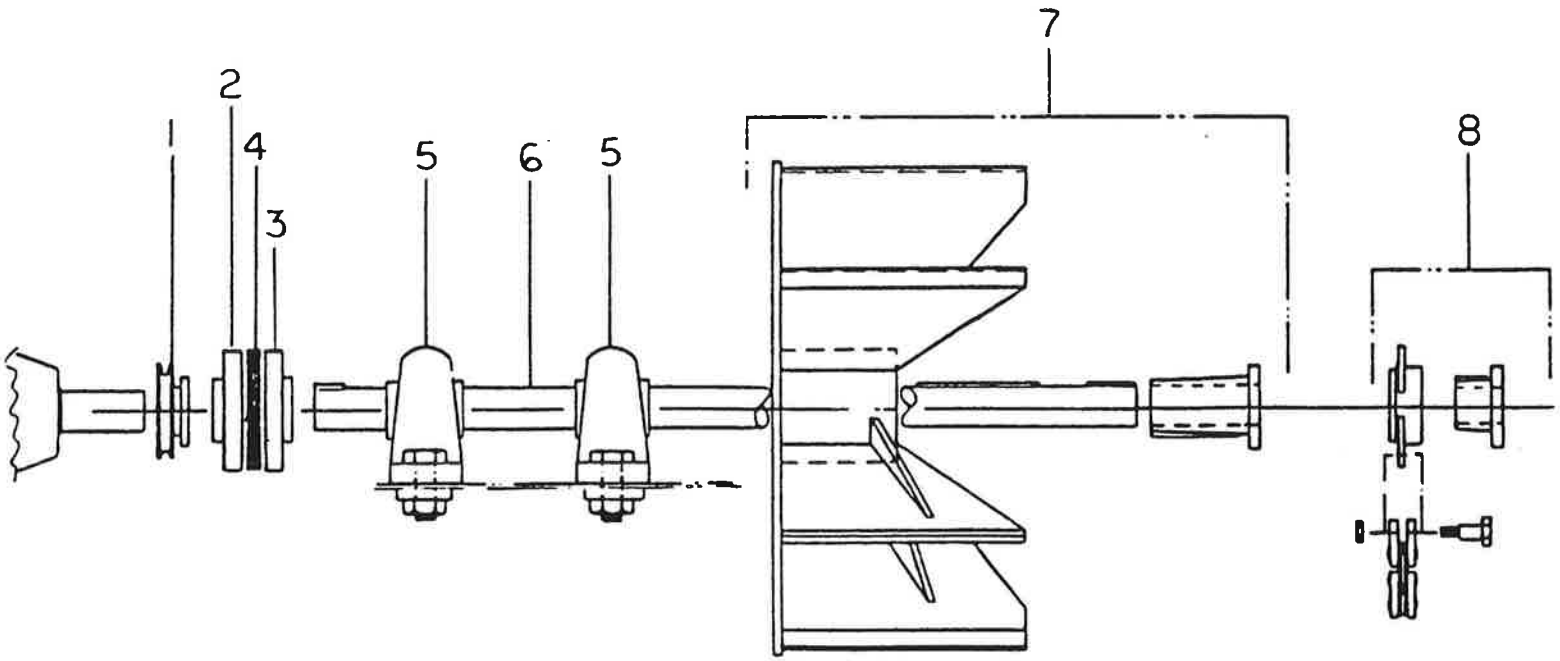
SEASONALLY (or 500 hours) 

ANNUALLY 

SEE ENGINE MANUAL 

FLUID CAPACITIES

Fuel - 13.5 Gallons
Engine Oil - See Engine Manual
Engine Coolant - (50/50 Anti-Freeze and water mixture) 4 Gallons



BLOWER AND DRIVE

Ref. No.	Gas	Diesel	Description	No. Req'd
1	000527	000527	Sheave, Motor	1
2	031273	031273	Coupling Half, Motor	1
3	031272	031272	Coupling Half, Blower	1
4	031274	031274	Coupling Insert	1
5	030712	030712	Bearing	2
6	030904	030904	Blower Shaft	1
7	031029	031029	Blower Blade w/ Hub	1
	030877	030877	Blower Hub	1
	030874	030874	Key, Bushing to Shaft	1
	030873	030873	Key, Hub to Bushing	1
8	030950	030950	Beater Roll Assembly	1
	030872	030872	Beater Roll Hub	1
	020111	020111	Chain	4
	020119	020119	Pin	4
	030876	030876	Beater Roll Bushing	1
	031278	031278	Guard	1
	031276	031276	Tool Box	1

WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

S-Flex

Installation Instructions

S-Flex flanges (hubs) and elastomeric sleeves come in many sizes and types. First, determine the size and type of components being used. Remove all components from their boxes and loosely assemble the coupling on any convenient surface. (Do not attempt to install the wire ring on the two-piece E or N sleeve at this time.) Also check maximum RPM values in Table 2 against operating speed. All rubber sleeves (EPDM, and Neoprene) have the same ratings for a given size and may be used interchangeably.

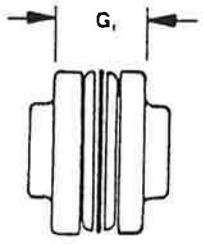
1 Inspect all coupling components and remove any protective coatings or lubricants from bores, mating surfaces, and fasteners. Remove any existing burrs, etc. from the shafts.

2 Slide one coupling flange onto each shaft, using keys where required. Keys should fit snugly. With the Model B flange (with QD bushing) it may be necessary to expand the bore of the bushing by wedging a screwdriver into the saw cut of the bushing bore.

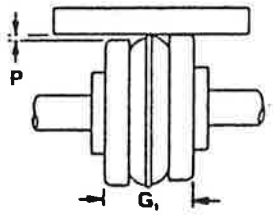
3 Position the flanges on the shafts to approximately achieve the G, dimension shown in Table 2. It is usually best to have an equal length of shaft extending into each flange. Tighten one flange in its final position. If possible, slide the other flange far enough away to install sleeve. If flange cannot be slid back, or if "blind" assembly, tighten second flange on shaft and bring equipment together.

Tighten setscrews or bushing cap screws to the appropriate value shown in Table 1.

With a two-piece sleeve, do not move the wire ring to its final position—allow it to hang loosely in the groove adjacent to the teeth until completing alignment (5) and (6).

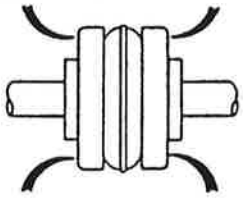


4 Check parallel alignment by placing a straightedge across the two coupling flanges and measuring the maximum offset at various points around the periphery of the coupling without rotating the coupling. If the maximum offset exceeds the figure shown under "Parallel" in Table 2, realign the shafts.



Parallel

5 Check angular alignment with a micrometer, vernier, or caliper. Refer to G, and G,(Max) dimensions in Table 2. Measure from the outside of one flange to the outside of the other at intervals around the periphery of the coupling. Determine the maximum and minimum dimensions without rotating the coupling. These measurements must be within the range of G, and G,(Max.). If a correction is necessary, be sure to recheck the parallel alignment.



Angular

6 If the coupling employs the two-piece sleeve with the wire ring, force the ring into its groove in the center of the sleeve. It may be necessary to pry the ring into position with a blunt screwdriver.

7 Install coupling guards per OSHA or ASME B15.1 requirements.

Caution: Coupling sleeves may be thrown from the coupling assembly with substantial force when the coupling is subjected to a severe shock load or abuse.

Note: Any coupling and connected equipment will normally operate longer and more economically when the coupling is carefully aligned.

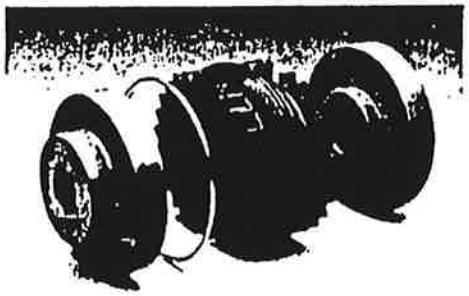


Table 1—Fastener Torque Values (ft.-lbs.)

Coupling Size	Type J 2 SS at 90°	Type J SS Sizes	Type S & SC 2 SS at 90°	Type S & SC SS* Sizes	Type B 3 Hex Head Cap Scr	Type B Cap Scr** Size	QD	Type SC 4 Hex Head Cap Scr Flange to Hub	Type SC Cap Scr Size	Type SC 2 SS at 90° to Hub
3	7	¼ — 20	—	—	—	—	—	—	—	—
4	7	¼ — 20	—	—	—	—	—	—	—	—
5	7	¼ — 20	7	¼ x 20	—	—	—	4	10 x 1½	7
6	13	⅝ — 18	13	⅝ x 18	5	10-24x1	JA	9	¼ x 1¾	13
7	—	—	23	⅜ x 16	5	10-24x1	JA	9	¼ x 1⅞	23
8	—	—	23	⅜ x 16	9	¼-20x1⅜	SH	18	⅝ x 2¼	25
9	—	—	50	½ x 13	9	¼-20x1⅜	SD	31	⅜ x 2¾	50
10	—	—	50	½ x 13	15	⅝-18x2	SK	50	⅞ x 3¼	50
11	—	—	50	½ x 13	30	⅜-16x2	SF	75	½ x 3½	50
12	—	—	50	½ x 13	60	½-13x2¾	E	150	⅝ x 4	50

*Supplied as standard with vibration resistant nylon patch setscrews.
**Capscrews supplied with split-lock washers.
Note: use hub torque values when hub size differs from flange size.

Short Hub Capscrew Lengths	
9 HS	⅜ x 2¼
10 HS	⅞ x 2½
11 HS	½ x 2¾

Table 2—Maximum RPM and Allowable Misalignment (inches)

		Types JE, JES, JN, JNS, E & N			
Sleeve Size	Maximum RPM†	P Parallel	Angular*	G,	G, (Max.)
3	9200	.010	.035	1.188	1.223
4	7600	.010	.043	1.500	1.543
5	7600	.015	.056	1.938	1.994
6	6000	.015	.070	2.438	2.508
7	5250	.020	.081	2.563	2.644
8	4500	.020	.094	2.938	3.032
9	3750	.025	.109	3.500	3.609
10	3600	.025	.128	4.063	4.191
11	3600	.032	.151	4.875	5.026
12	2800	.032	.175	5.688	5.863

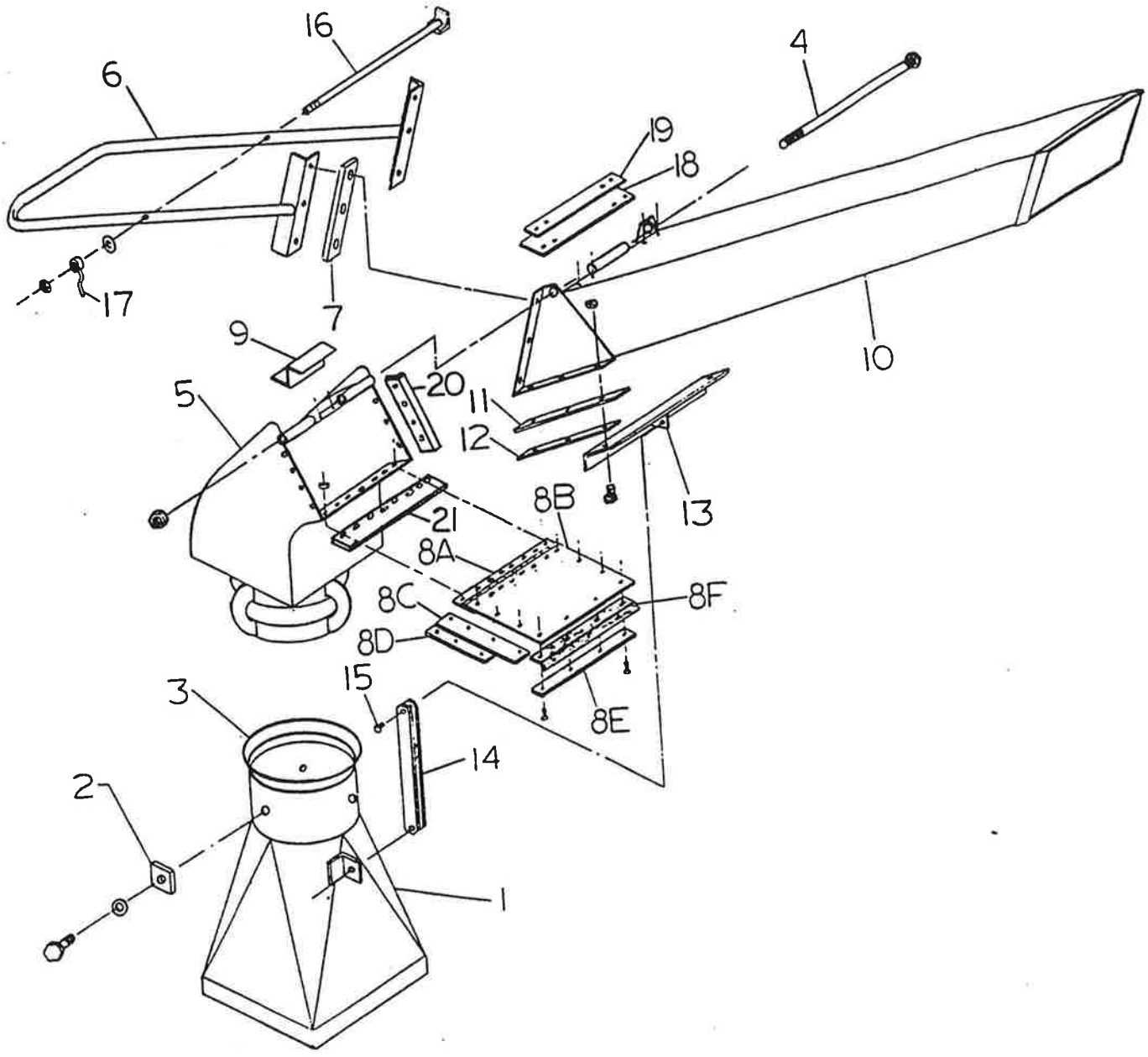
Note: Values shown above apply if the actual torque transmitted is more than ¼ the coupling rating. For lesser torque, reduce the above values by ½.

†Typically factors such as environment, loading, misalignment, balance & types of connected equipment influence very high speed (RPM) limits. Please contact Lovejoy engineering for assistance.

*G, (Max.) minus G, equals angular misalignment allowance.

*Neoprene is a registered trademark of E. I. Dupont Nemours & Co.

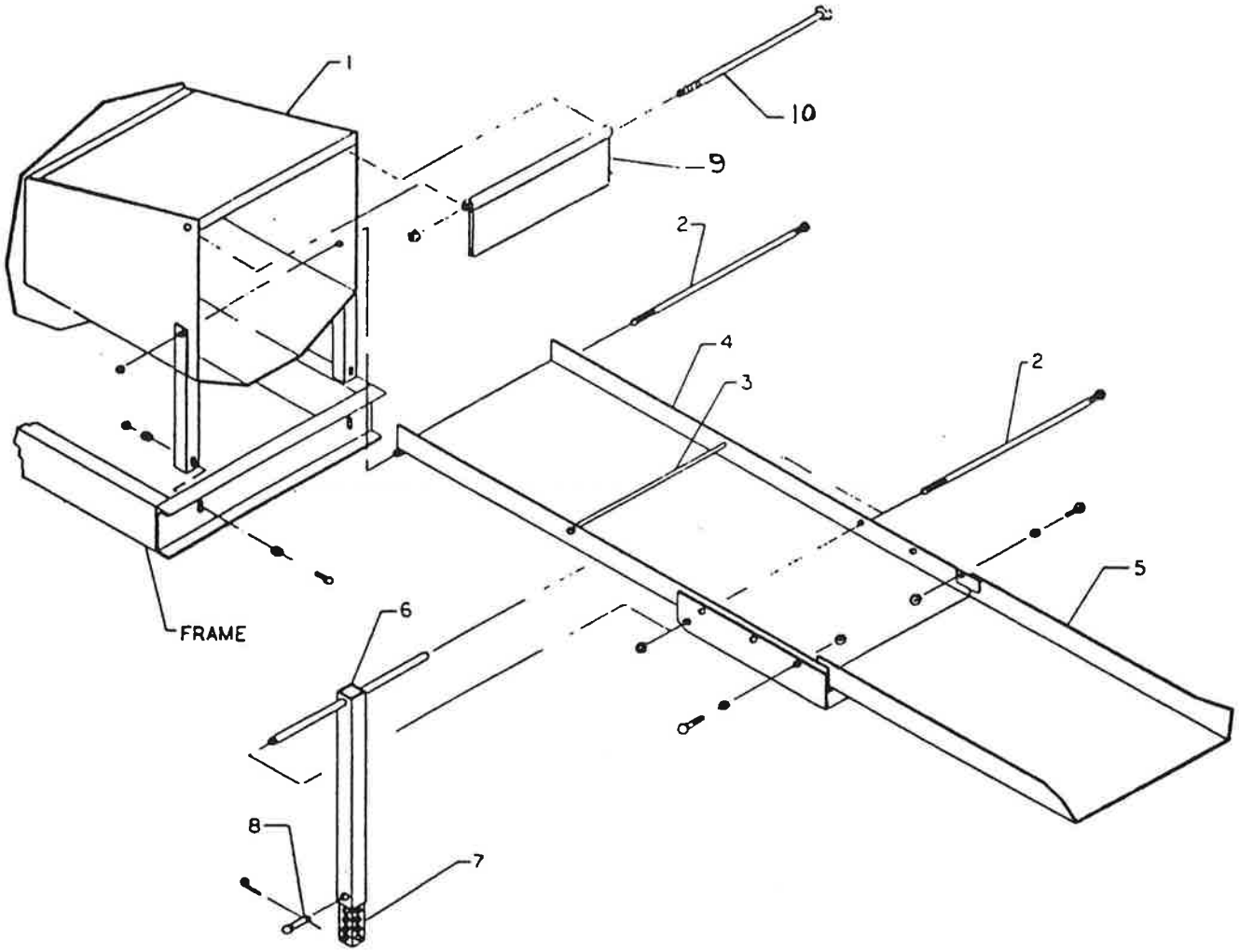
*QD is a registered trademark of Emerson Electric Corp. S-Flex couplings, flanges & sleeves are mfg. in U.S.A.



WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

DISCHARGE ASSEMBLY

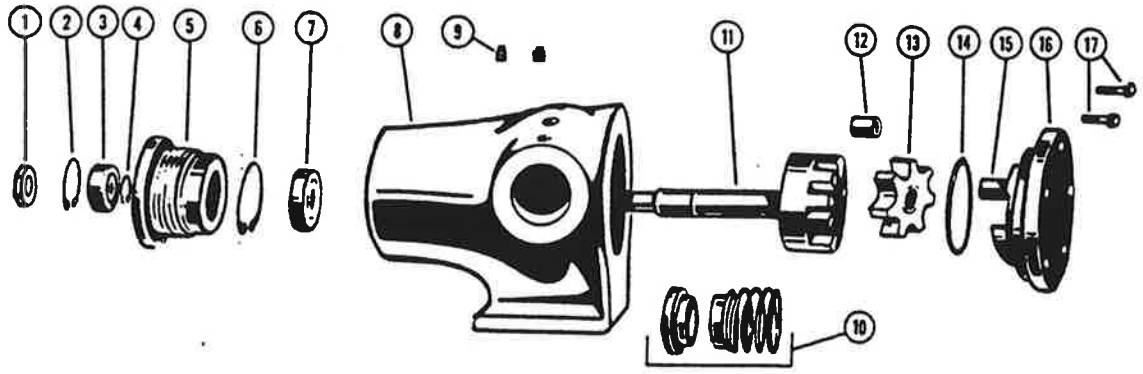
Ref. No.	Part No.	Description	No. Req'd
1	031247	Transition Assembly	1
2	031018-01	Elbow Bearing	3
3	031086	Transition Seal	1
	031109	Seal Banding	32"
4	031243-08	Elbow Hinge Rod	1
5	031239	Elbow Assembly	1
6	031241	Elbow Handle	1
7	031242-03	Elbow Seal-Upper	2
8	031341	Seal Plate Assembly	1
8A	031338-01	Seal Plate Hinge	1
8B	031388-04	Seal Plate	1
8C	031338-08	Side Seal	2
8D	031338-07	Side Seal Retaining Strap	2
8E	031338-03	End Flap Seal Retaining Strap	1
8F	031338-04	End Flap Seal	1
9	031238-05	Hinge Seal	1
10	031240	Discharge Tube	1
11	031242-04	Elbow Seal-Lower	2
12	031242-07	Elbow Seal Retainer Strap	2
13	031243-01	Discharge Tube Hold-Down Brkt	1
14	031243-04	Discharge Tube Hold-Down Are	1
15	031245	Snapper Pin	1
16	031243-07	Elbow Tensioning Rod	1
17	031258	Lever Nut	1
18	031338-09	Top Seal	1
19	031338-10	Top Seal Retaining Strap	1
20	031338-12	Side Elbow Seal	2
21	031338-11	Hinge Seal	1



SHREDDER BOX AND FEED CHUTE

Ref No.	Part No.	Description	No. Req'd
1	31287	Shredder Box	1
		X512 Mtg Hardware to Housing	12
		X616 Mtg Hardware to Frame	2
	31284	Shredder Box Cover	1
		X612 Mounting Hardware	3
2	31158-4	Feed Chute Hinge Pin w/Nuts	2
3	31158-5	Feed Chute Stop w/Nuts	1
4	31157	Feed Chute	1
5	30898	Feed Chute Extension	1
		X816 Mounting Hardware	2
6	31184-1	Upper Feed Chute Stand	1
7	31184-3	Lower Feed Chute Stand	1
		X640 Mounting Hardware	1
8	30893	Clevis Pin	1
	30894	Hairpin Cotter	1
9	31096-1	Shredder Door	1
10	31096-4	Shredder Door Hinge Pin w/Nut	1

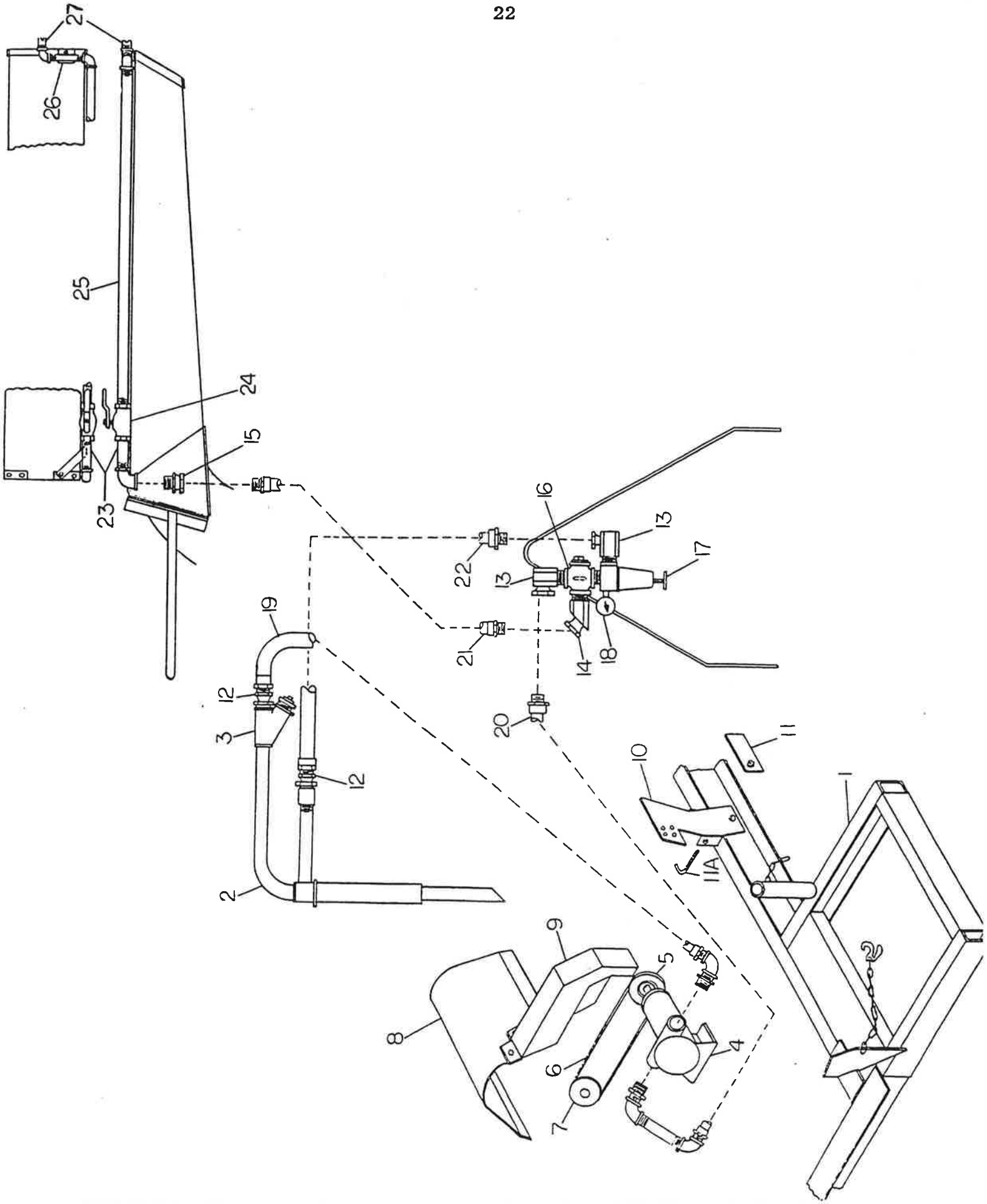
WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE



#031316 ADHESIVE PUMP ASSEMBLY

REF NO.	PART NO.	DESCRIPTION	NO. REQ'D
1	031316-01	Locknut	1
2	031316-02	Snap Ring, Outer	1
3	031316-03	Ball Bearing, Outer	1
4	031316-04	Snap Ring for Shaft	1
5	031316-05	Bearing Housing	1
6	031316-06	Snap Ring, Inner	1
7	031316-07	Ball Bearing, Inner	1
8	031316-08	Casing	1
9	031316-09	Pipe Plug	2
10	031316-10	Mechanical Seal	1
11	031316-11	Rotor and Shaft	1
12	031316-12	Idler Bushing	1
13	031316-13	Idler and Bushing	1
14	031316-14	Head Gasket	1
15	031316-15	Idler Pin	1
16	031316-16	Head and Idler Pin	1
17	031316-17	Capscrew for Head	2

WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE



WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

ADHESIVE SYSTEM

Ref. No.	Part No.	Description	No. Req'd
1	031198	Barrel Mount	1
	030660	Spring Binder	1
2	030169	Barrel Sucker	1
3	030170	Suction Strainer	1
	030171	Screen	1
4	031316	Pump	1
5	031317	Sheave,Pump	1
6	000998	Drive Belt	1
7	000527	Sheave,Drive	1
7A	020362B	Bushing (Not Shown)	1
8	031279	Coupling Guard	1
9	031203-02	Belt Guard	1
10	031318	Pump Base	1
10A	031200-03	Pump Pivot Bracket (Not Shown)	1
11	031200-04	Belt Adjusting Nut	1
11A	031200-06	Belt Adjusting Bolt	1
12	000668	Adapter Union	2
13	022862	Adapter Union-90 degrees	2
14	080234	Adapter Union-45 degrees	1
15	022305	Adapter Union	1
16	030930	Cross Manifold	1
17	000876	Relief Valve	1
18	000262	Gauge	1
19	030407	Suction Hose	1
20	031322	Pump Discharge Hose	1
21	031320	Manifold Discharge Hose	1
22	031321	Return Hose	1
23	031248-02	Pipe Mount	1
24	070122	Valve	1
25	031248-07	Discharge Pipe	1
26	031248-04	Nozzle Mount	1
27	031250-01	Nozzle 2530	1
	031250-02	Nozzle 2560	1
	031250-03	Nozzle 25100	1

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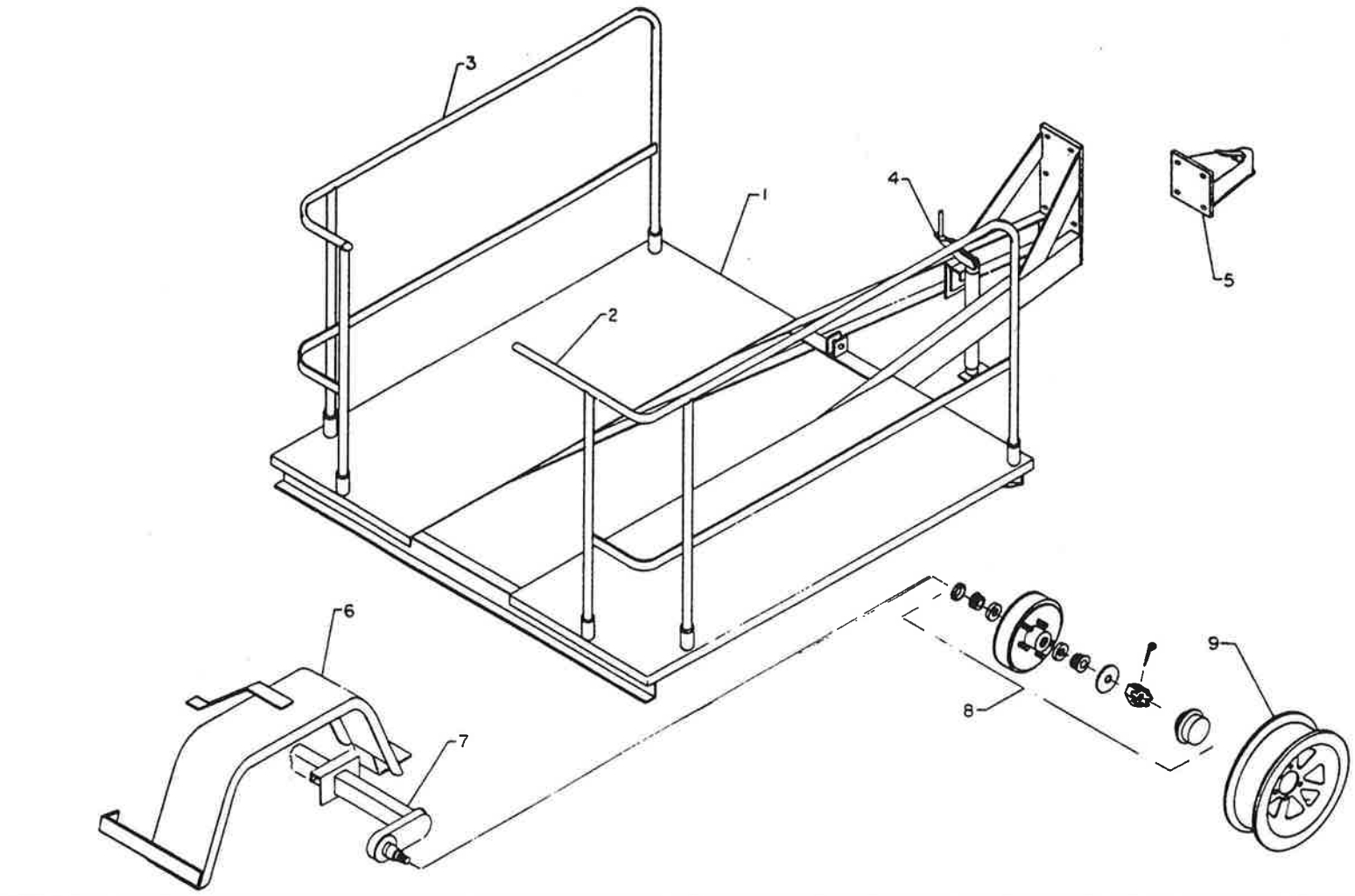

WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

TRAILER ASSEMBLY

Ref No.	Part No.	Description	No. Req'd
1	31205	Platform Assembly	1
		X0824 Mtg Hardware	6
2	31183-01	Guard Rail- Right	1
3	31183-02	Guard Rail- Left	1
4	31189	Jack	1
5	31202	2" Ball Hitch Assembly	1
		X1028 Mtg Hardware	4
	30482	2" Ball (Optional)	
6	31196-01	Fender Assembly -Right	1
	31196-02	Fender Assembly -Left	1
7	31167	Axle Assembly: Includes	1
		31220 Axle Shim Plate	2
8	31221	Complete Hub Assembly	2
		9103305 Grease Seal	2
		LM68149 Bearing,Inner Cone	2
		L68111 Inner Cup	2
		9080607 Hub/Drum	2
		L44610 Outer Cup	2
		L44649 Bearing,Outer Cup	2
		90509 Spindle Washer	2
		90601 Spindle Nut	2
		91901 Cotter Pin	2
		92102 Grease Cap	2
		9251510 Wheel Stud	2
		90608 Wheel Nut	2
	31222	Right Brake Assembly	1
	31223	Left Brake Assembly	1
9	31187	Wheel	2
	31188	Tire	2
	31179	Safety Chain	2
	31180	Clevis Grab Hook	2
	31181	Chain Connecting Link	2
	21664	Decal "Do Not Tow"	
	20970	Decal "Caution Do Not Ride"	
	22192	Decal "Caution Tighten Hitch"	
10	31269	Bumper (Not Shown)	1

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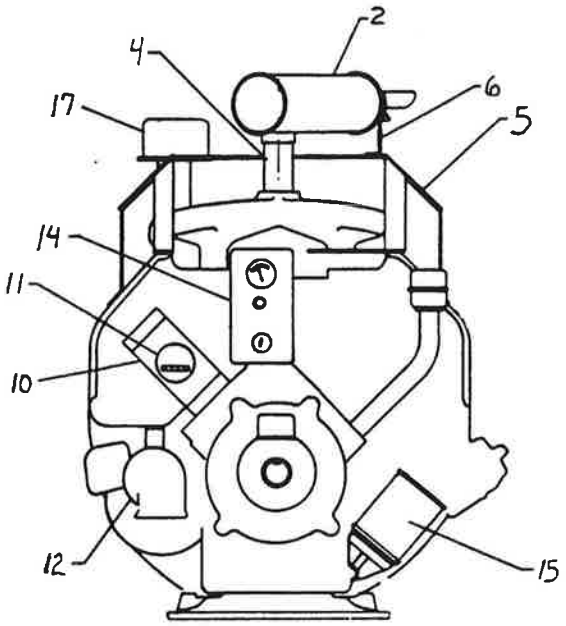

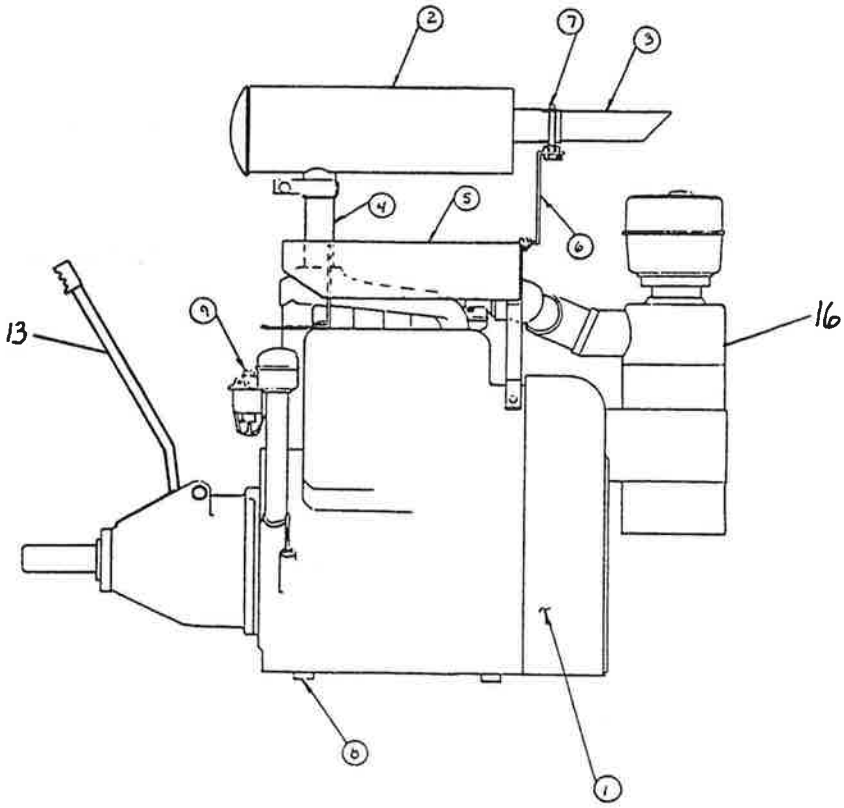

WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

POWER SECTION - GASOLINE

Ref. No.	Part No.	Description	No. Req'd
1	005007	Engine, Gasoline	1
2	031185	Muffler with Heat Screen	1
3	004595-01	Tail Spout	1
4	004666-03	Exhaust Pipe	1
5	031142	Engine Manifold Cover	1
6	004666-02	Muffler Support	1
7	004516	Muffler Clamp	1
8	031201	Engine Shim	2
9	022312	Hose Barb	1
10	031146	Hourmeter Mount	1
11	007274	Hourmeter	1
12	006499	Horn and Bracket	1
13	031150	Clutch Lever Assembly	1
	031144-01	Clutch Lever	1
	030469	Clutch Lever Socket	1
	000427	Handle Grip	1
14	YE2	No Longer available- Contact Wisconsin	1
	YC10C	No Longer available- Contact Wisconsin	1
	YC78	No Longer available- Contact Wisconsin	1
15	RV52	No Longer available- Contact Wisconsin	1
16	LO1594S1	No Longer available- Contact Wisconsin	1
17	LO115A	No Longer available- Contact Wisconsin	1

Not Shown

	031197	Fuel Tank	1
	007914	Cap	1
	031334-08	Fuel Line Hose	1
	031186	Tool Box	1
	030760	Belt Retaining Clip	1
	020886	Horn Button	1
	030434	Throttle Cable	1
	031031	Positive Battery Cable	1
	000241	Negative Battery Cable	1
	002256-12	Battery	1
	031275	Fuel Guage	

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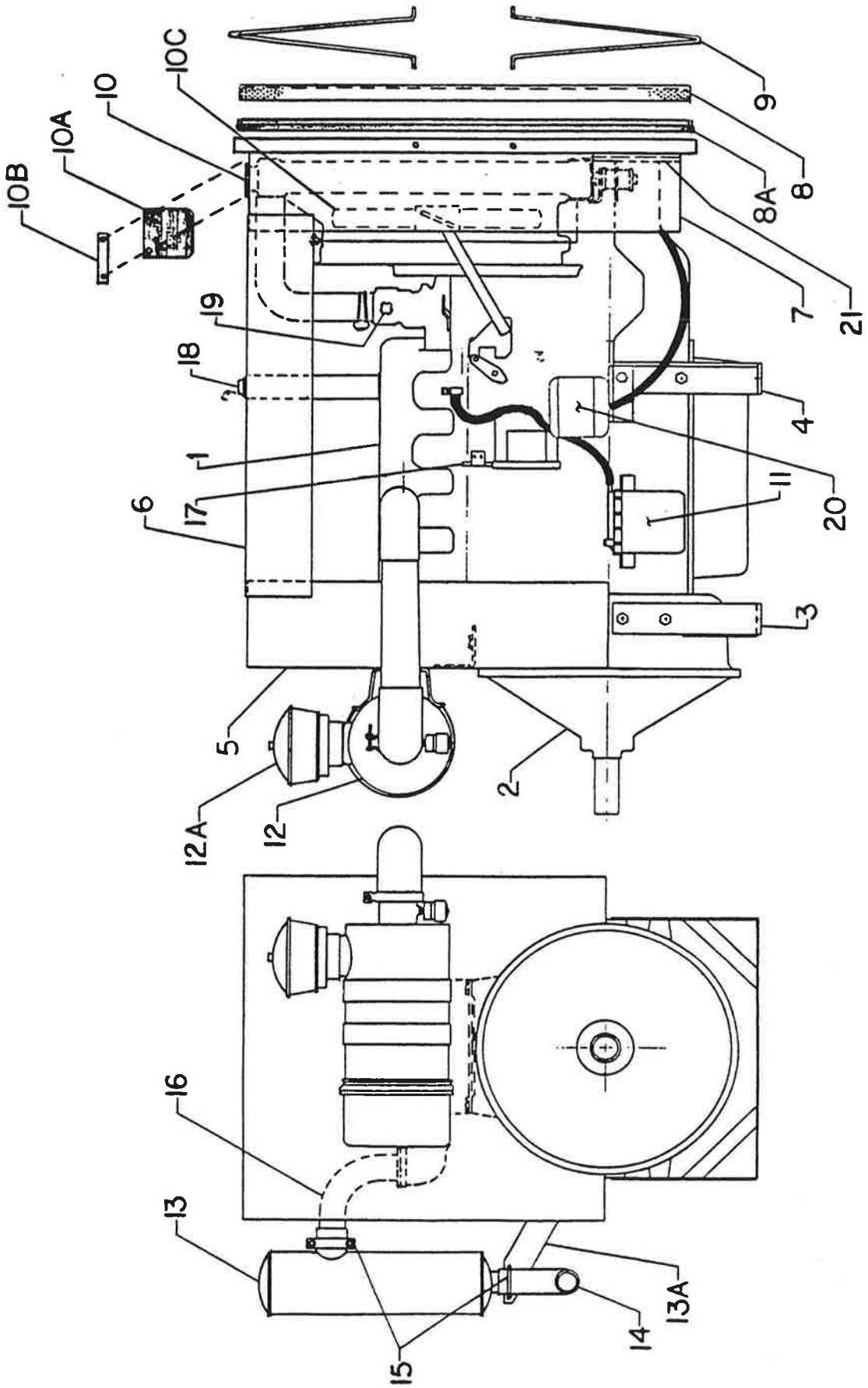
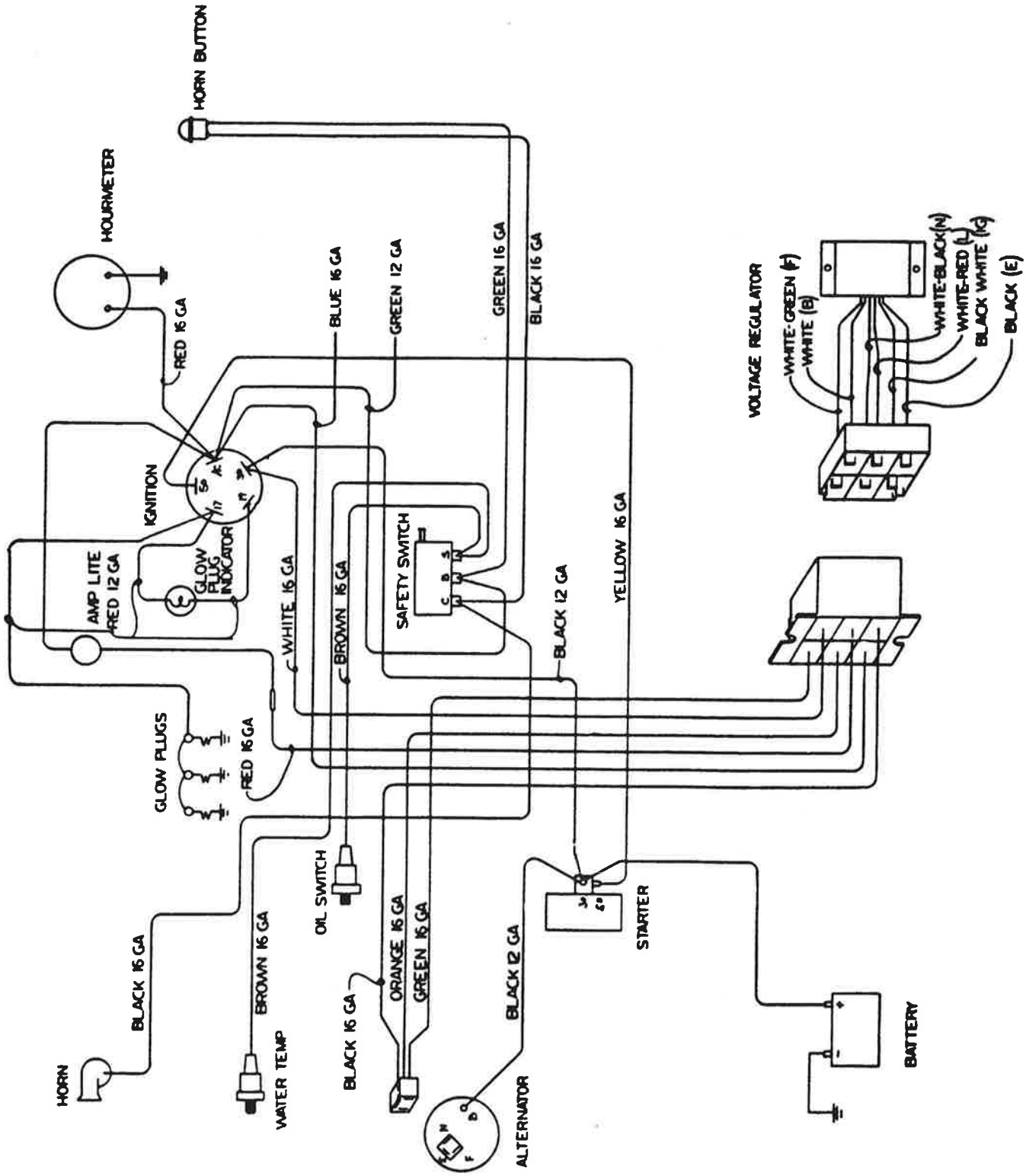


WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

POWER SECTION - DIESEL

REF NO.	PART NO.	DESCRIPTION	NO.REQ'D
1	005003	Diesel Engine Assembly	1
2	031304	Clutch Assembly (see pgs 9-12)	1
		031219 Clutch Arm	1
3	005099	Rear Engine Mount	1
		X832 Mounting Hardware	2
4	004979	Front Engine Mount	1
		X832 Mounting Hardware	2
5	005098	Rear Engine Shroud	1
6	005097	Top Shroud	1
7	031311	Radiator Shroud	1
8	031310	Radiator Screen	1
8A	190087	Seal, Radiator Screen	104"
9	031308	Retaining Spring, Screen	2
10	005093	Radiator Assembly	1
10A	008177	Cover, Radiator Cap Hole	1
10B	031311-08	Strap, Cover	1
10C	031312	Suction Fan	1
11	005095	Fuel Filter Assembly	1
		KU70000-43081 ' Filter Element	1
12	005096	Air Cleaner Assembly	1
		007739 Element	1
12A	007988	Pre Cleaner	1
13	031185	Muffler	1
13A	031313	Support Bracket, Muffler	1
14	031194	Tailpipe	1
15	004516	Clamp	2
16	031215	Exhaust Pipe	1
17	004984-07	Engine Control Mount	1
18	004984-06	Oil Fill Extension	1
19	080077	Temperature Switch	1
20	KU15501-72400	Coolant Recovery Tank w/Brkt	1
	031311-11	Mounting Angle	1
	190013	Hose	48"
	010321	Hose Clamp	2
21	031311-09	Heat Shield	1
	031275	Fuel Guage	
		NOT ILLUSTRATED:	
	031332	Voltage Regulator Mount	1
		(31332-04 for Side Feed Option)	
	008279	Rubber Shock Mount	2
	160733	Bushing	1
	031197	Fuel Tank	1
		007914 Cap	1
	031134-09	Suction Line	1
	031134-10	Return Line	1
	080103	Fuel Pump	1
	080105	Pre Fuel Filter	1
	031206	Throttle Cable	1
		80090 Pivot	1
	021148	Engine Kill Cable	1
		004983 Clamp	1
		007675 Ball Joint	1
	031186	Tool Box	1
		031204-01 Holddown	1
	030760	Belt Retaining Clip	1
	020886	Horn Button w/W9F Washer	1

WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

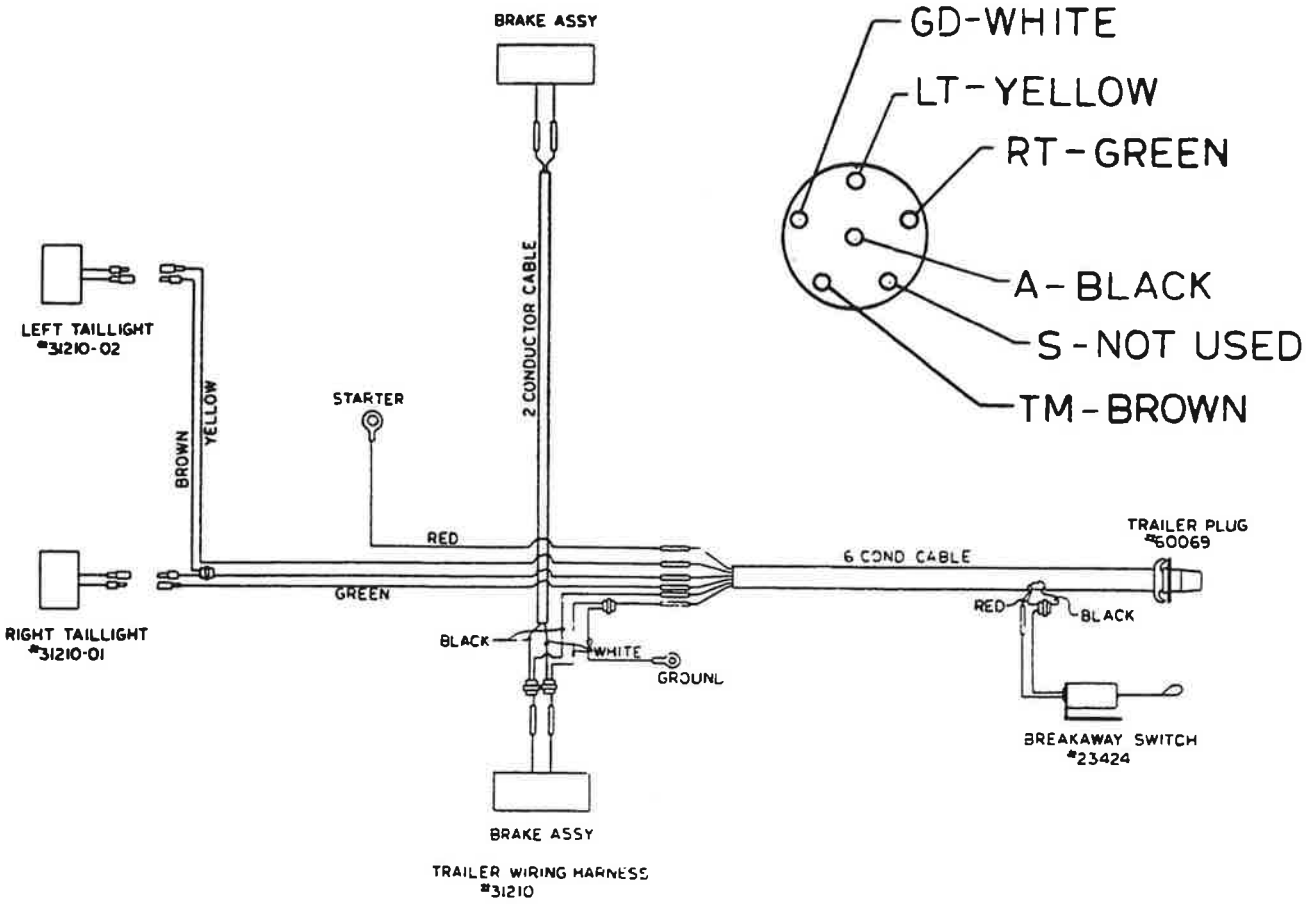


WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

DIESEL WIRING HARNESS

Ref. No.	Part No.	Description	No. Req'd
1	031264	Wiring Harness	1
2	002256-12	Battery	1
3	031031	Battery Cable	1
4	000241	Ground Strap	1
5	006499	Horn Assembly	1
6	007274	Hourmeter	1
7	020886	Horn Button	1
8	005301	Temperature Switch	1
9	080132	Magnetic Safety Switch	1
10	KU7000-65398	Voltage Regulator	1
11	KU66711-55131	Ignition	1
12	004934	Oil Switch	1
13	004935	Glow Plug Indicator	1
14	006245	Amp Light	1
	KU66711-55140	Key for Ignition Switch	

WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE



TRAILER WIRING

Ref No.	Part No.	Description	No. Req'd
1	31210	Trailer Wiring Harness	1
2	60069	Trailer Plug	1
3	31210-01	Right Tail Light	1
4	31210-02	Left Tail Light	1
5	23424	Breakaway Switch	1

WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

TOOL KIT
(Not Illustrated)

Part No.	Description	No. Req'd
20057	#9 Twine Knife	1
20059	#10 Twine Knife	1
	Manual, Engine	1
	Manual, Parts & Operation	1
	THE FOLLOWING IF LIQUID SYSTEM IS INCLUDED	
31250-01	Nozzle 2530	1
31250-02	Nozzle 2560	1
31250-03	Nozzle 25100	1
	ON SPECIAL ORDER	
153	Nozzle 15015 for Misting Applic.	1
31263	Wood Chip Hopper	1
	MISCELLANEOUS PARTS	
11666	Paint, Neutral	1 gal
11667	Paint, Prime	1 gal
11690	Name Plate	1
31235	"Finn" Decal	2

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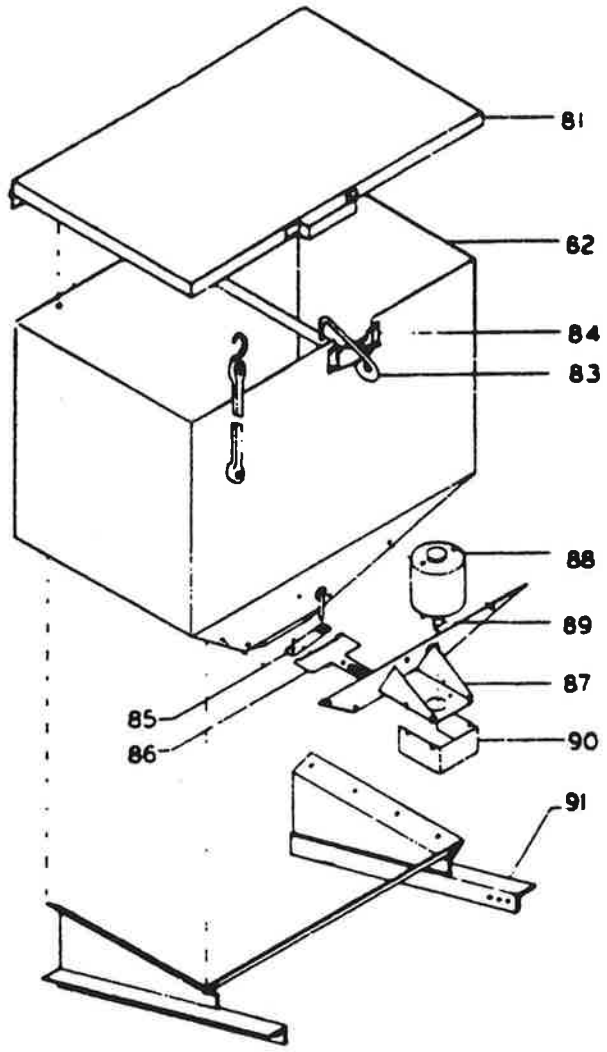

SEED - FERTILIZER HOPPER

Ref No.	Part No.	Description	No. Req'd
81	30456	Lid, Seed Hopper	1
82	30457	Hopper, Seed	1
83	30458	Rod, Gauge, Adj.	1
	30459	Spring, Gauge Rod	1
84	30460	Gauge, Gate Adjusting	1
85	30461	Linkage, Gauge Arm	1
86	30944	Plate, Feed	1
87	30945	Bracket, Motor Support	1
88	30948	Motor	1
89	30447	Eccentric, Feeder	1
90	30942	Guard, Eccentric	1
91	31232	Bracket, Hopper Mount	1
	30463	Wiring & Switch Assembly	1
		30485 Wiring Harness	1
		20887 Switch, Off/On	1
		30484 Resistor	1
	7913	Strap w/ S Hook	1
	31051	Filler Guard	1

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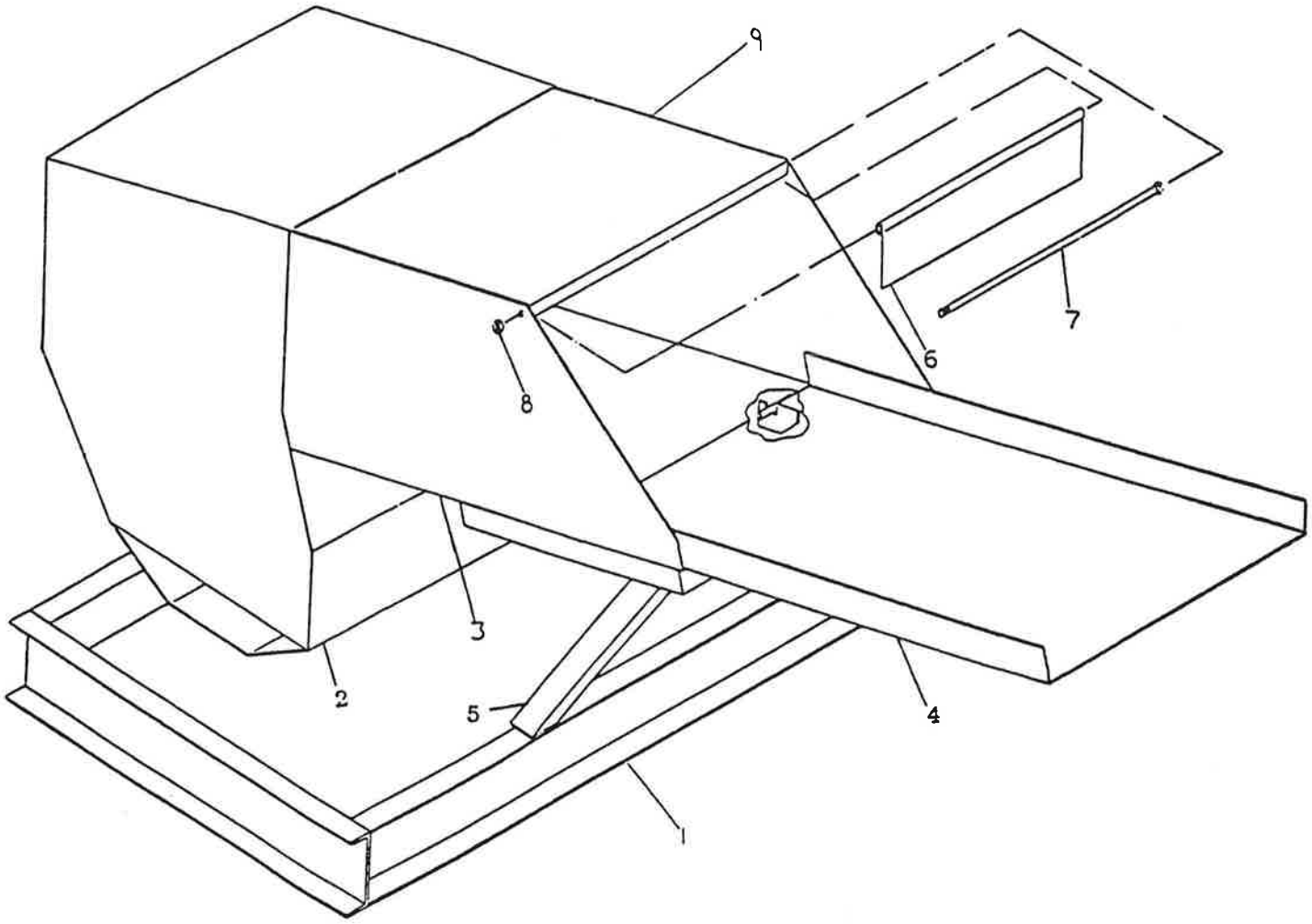

SIDE FEED ASSEMBLY

Ref. No.	Part No.	Description	Qty.
1	031281	Frame Weldment	1
2	031292	Shredder Box Weldment	1
3	031293	Feed Chute Weldment	1
4	031294	Feed Chute Extension	1
5	031295-04	Left Leg Weldment	1
	031295-05	Right Leg Weldment	1
6	031295-01	Door Weldment	1
7	031096-04	Hinge Pin	1
8	Y05	5/16-18 locknut	1
9	031289-01	Feed Chute Cover	1

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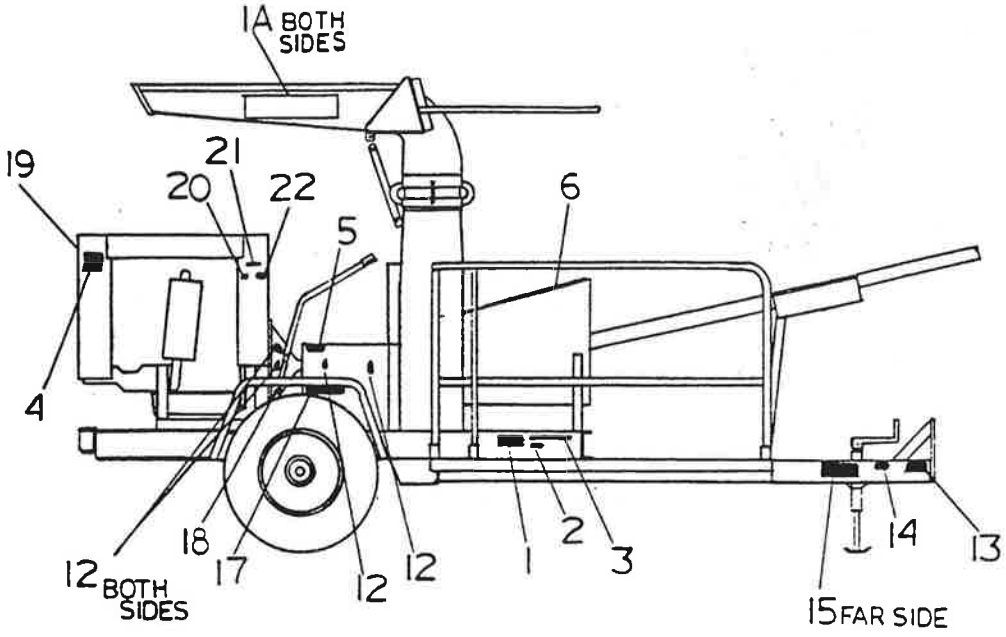

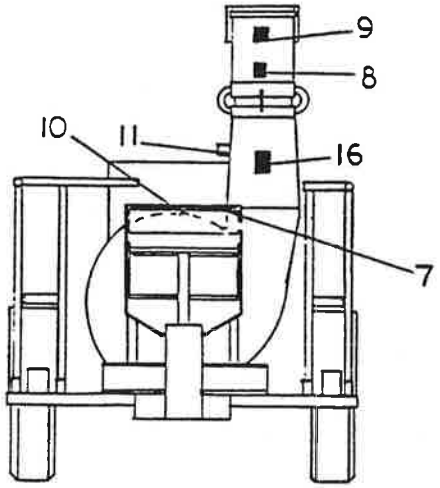

B70 DECALS

REF NO.	PART NO.	DESCRIPTION	Quantity Required BASIC	TRAILER	DIESEL
1	011690	Finn Name Plate	1		
1A	031235	"Finn" Decal	2		
2	020976	Pat. Infringement	1		
3	031168	Pat. No.	1		
4	022357	Caution: Turn off Engine	1		
5	031297	Important: Clutch Adjustment	1		
6	020068	Danger: Do Not Open	1		
7	022690	Caution: Eye Protection	1		
8	020970	Caution: Do Not Ride Over 5MPH	1		
9	023519	Caution: Wear Eye Protection	1		
10	006870-HORN	"HORN"	1		
11	080108-02	"Throttle"	1		
12	007231	"Service Weekly"	2		2
13	031227	Caution: Tighten Hitch		1	
14	023425	Warning: Breakaway Switch		1	
15	031228	Caution: Safety Chain Inst.		1	
16	021664	Caution: Do NotTow Over 35MPH		1	
17	023391	"Diesel Fuel Only"			1
18	007351	"Hand Gun Only"			1
19	007429	"Radiator Protection"			1
20	006870-GEN	"GEN"			1
21	005275	"Engine Kill"			1
22	080108-03	"Glow Plug"			1

Note: Safety Decals must be purchased as a kit
Part # 031460

NOTE: ls reference numbers 2 through 22.

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