Activate Your Warranty By Registering TODAY!!!

FINN® CORPORATION

9281 LeSaint Drive • Fairfield, Ohio 45014
Phone (513) 874-2818 • Fax (513) 874-2914
Sales: 1-800-543-7166

Bark Blower™
AIM-AND-SHOOT MULCH SPREADING

Model BB-1216 & 1222
Parts and Operator's Manual

Model **SR** Serial No. _____

LBBB1216-SR Rev A

NOTES

ACTIVATE YOUR FINN EQUIPMENT WARRANTY

IMPORTANT INFORMATION ON ACTIVATING
YOUR FINN EQUIPMENT WARRANTY!!!

IT IS IMPERATIVE THAT YOU, THE PURCHASER, COMPLETE THE FOLLOWING STEP IN ORDER TO ACTIVATE THE FINN CORPORATION LIMITED WARRANTY.

COMPLETE THE "EQUIPMENT REGISTRATION" FORM ON THE NEXT PAGE AND MAIL TO THE FINN CORPORATION.

IF FINN CORPORATION DOES NOT HAVE YOUR COMPLETED REGISTRATION FORM ON FILE, YOUR WARRANTY CLAIM WILL BE DENIED.

Once your Finn equipment has been registered, your Finn Limited Warranty will be activated per the warranty statement on the other side of this notice.

<<What should you do if you need repairs or parts under Warranty?>>

1. NOTIFY FINN CORPORATION OF THE FAILURE OF MATERIAL OR WORKMANSHIP

1-800-543-7166 Extension (246)
WARRANTY@FINNCORP.COM

2. AFTER YOU OR YOUR SERVICE DEALER NOTIFY FINN, FINN WILL:

- VERIFY THAT WE HAVE YOUR "REGISTRATION" ON FILE
- VERIFY THAT THE WARRANTY PERIOD IS IN EFFECT
- VERIFY THAT THE RELATED PART(s) ARE INCLUDED IN THE SCOPE OF WARRANTY (PENDING FINN'S INSPECTION OF DEFECTIVE PARTS)
- SEND YOU REPLACEMENT PART(S) AND A "WARRANTY INFORMATION PACKET"
- REQUEST YOU FOLLOW ALL INSTRUCTIONS AS NOTED IN THE "PACKET"

  - **Fill out the Parts Tag. (Completely)**
  - **Attach the Parts Tag to the defective part(s).**
  - **Return the part(s) and the completed Warranty Claim Form to Finn Corporation using the return shipping label. (Within 2 weeks)**
  - **Tape the Orange identifier sheet, marked with the W / RMA# on the outside of the box you are shipping the defective part(s) to Finn in.**

Finn Corporation Commercial Limited Warranty

Effective August 23, 2010

OUR WARRANTY TO YOU:

Finn Corporation warrants to you, the original purchaser, for use (or rental to others for use) all new construction machinery, parts and attachments (except those referred to herein) that are 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 to which parts are installed, as if parts were original components of the product.

WHAT FINN WILL DO:

Upon notification of Finn concerning a failure of material or workmanship in accordance with the above stated Warranty, Finn Corporation will:

- Verify claim falls within the valid warranty time frame.
- Verify the product and equipment has been **registered** with Finn in order to be eligible for warranty coverage.
- Upon affirmation of warranty period and registration, Finn will send to you a new or repaired replacement part(s), whichever Finn elects and a "Warranty Claim Information packet" containing instructions for processing the warranty claim.
- Evaluate the part when defective part is returned. Note: Failure to return defective part within **two weeks** will result in an invoice being sent to the customer. In addition, if damage to a part is determined not to be covered under the warranty, the customer will be billed for the replacement part.
- Reconcile costs with customer for parts and shipping, as determined by our inspection of failed parts, and confirmation of warranty coverage, per the terms of this warranty.
- Correction of nonconformities, in the manner provided above, shall constitute fulfillment of all liabilities of Finn Corporation under this warranty.

WHAT YOU MUST DO TO OBTAIN WARRANTY SERVICE:

- As the purchaser covered under the above limited warranty you must **REGISTER** the equipment with Finn as such owner. Should registration not be on file with Finn Corporation, your **warranty will be void**. (See Operators manual for Registration Form)
- All warranty labor must be pre-approved by providing Finn with an estimate of labor costs. Once approved, Finn will issue you a Work Authorization Number, prior to work being performed.
- The labor costs reimbursement will be based on the Labor Allowance Schedule established by Finn and where not applicable, on a reasonable number of hours as determined by Finn.
- Notify Finn Corporation of any failure of material or workmanship as described under this warranty.
  - Web notification: Warranty@Finncorp.com
  - Phone 1-800-543-7166 extension 246
- Complete the required steps in the "Warranty Claim Information packet" (which Finn will send you) and return the defective part(s) as directed in the packet to Finn Corporation.
- Should the failed part be a hydraulic component, Finn may send you an "**Oil Analysis Kit**", requesting that a sample of oil from the hydraulic system be taken, and mail it to a lab. Follow the instruction sheet, on how to use your Finn Oil Analysis Kit that comes with the Kit. Failure to comply when requested will void the warranty.

WHAT THE WARRANTY DOES NOT COVER:

1. Normal wear parts and Allied Equipment or trade accessories not manufactured by it, such as but not limited to items such as various filters, fluids, brakes, clutch linings, belts, hoses, light bulbs, mechanical seal, over center clutches, tires, ignitions, starters, batteries, magnetos, carburetors, engines and labor, or like or unlike equipment or accessories. (Such being subject to the warranty, if any, provided by their respective manufacture).
2. Secondhand, used, altered, or rebuilt machines or parts.
3. Defects, malfunctions or failures resulting from accidents, abuse, misuse, improper servicing, or neglect of required operational guidelines and maintenance service, as outlined in the Finn Corporation's Operators Manual(s).
4. The warranty shall be null and void to the extent any defect or failure of the products warranted arises out of or is caused by accessories or component parts not manufactured or supplied by Finn Corporation, whether same are supplied by purchaser, dealers, or any other party.
5. This Warranty does **NOT** cover any costs associated with transporting the equipment for warranty service, such as mileage, fuel, or man hours; such is the responsibility of the equipment owner.
6. Dealers & Customers are responsible to follow all guidelines related to Seasonal & Long Term Storage of Equipment, as advised in operation & equipment manuals. i.e. Finn, Engine, Clutch, Pump, Motor, etc. Equipment failures caused by neglect of these guidelines are not warrantable.

THIS IS THE ONLY EXPRESS WARRANTY ON OUR PRODUCTS:

We neither assume nor authorize anyone to assume for us any other express warranty. The Distributor/Dealer has no authority to make any representation or promise on behalf of Finn Corporation or to modify the terms or limitations of this warranty in any way.

THIS WARRANTY THEREFORE SHALL BE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

LIMITATIONS ON OUR RESPONSIBILITY WITH RESPECT TO PRODUCTS PURCHASED:

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.

ALL WARRANTY REPAIR MUST BE DONE BY A FINN AUTHORIZED SERVICE PROVIDER OR AUTHORIZED REPAIR SHOP OF FINN'S CHOICE.

TRANSPORTATION, HAULING, STORAGE, OR OTHER SIMILAR COSTS ARE NOT PART OF FINN'S OBLIGATION UNDER THE LIMITED WARRANTIES AND IS THE RESPONSIBILITY OF THE EQUIPMENT OWNER.

THE ESSENTIAL PURPOSE of this exclusive remedy shall be to provide the original 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.

NOTICE:

FINN CORPORATION URGES the use of only Finn corporation supplied parts and attachments to assure proper performance and safe operation of Finn corporation equipment. Insist on parts and attachments manufactured or supplied by Finn corporation when you purchase, repair or replace your Finn equipment and attachments. Because Finn corporation cannot assure that parts and attachments not manufactured or supplied by Finn meet Finn corporation's quality standards, specifications, or operating requirements, our warranty is not effective to the extent any failure of or defect in a Finn corporation product arises from or is caused by parts, attachments or components not originating with Finn corporation. Use of Finn corporation equipment with parts and attachments not manufactured or supplied by Finn could result in personal injury.

Effective August 23, 2010

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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.

The first six pages of this manual are a summary of all the main safety aspects associated with this unit. Be sure to read completely before operation of machine.

This symbol is used throughout the operation and maintenance sections of this manual to call attention to safety procedures.

- Pay Attention -

DANGER: **Immediate hazards which WILL result in severe personal injury or death.**

WARNING: **Hazards or unsafe practices which COULD result in severe personal injury or death.**

CAUTION: **Hazards or unsafe practices which COULD result in minor personal injury or product or property damage.**

IMPORTANT: Indicates that equipment or property damage could result if instructions are not followed.

NOTE: Gives helpful information.

Finn Corporation

CALIFORNIA

Proposition 65 Warning

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

CALIFORNIA

Proposition 65 Warning

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

BARK BLOWER SAFETY SUMMARY SECTION

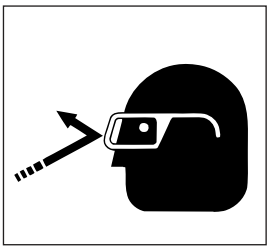
It is important that all operators of this machine are familiar with all the safety aspects mentioned below before operating the machine. Always keep a copy of this manual with the machine. It is the responsibility of the operator of the machine to fully understand this safety section. Remember that YOU are the key to safety. Good safety practices protect not only you but also the people working with and around you. Keep in mind that this safety sheet is written for this type of machine only. Practice all other usual and customary safe working precautions; and above all, remember that safety is up to you.

I. PRE-START EQUIPMENT CHECK (equipment check is to be made with the engine off):

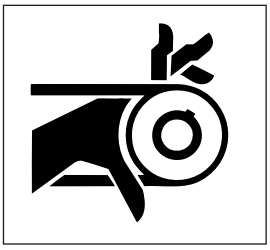
1. Verify that all guards are in place.
2. By carefully looking into the blower hopper and transition, inspect for and remove any foreign objects. Follow OSHA lockout/tag out procedure (29 CFR 1910.147)
3. Inspect all hydraulic hoses and tubes for cracks, bulges or damage. If hose is bad, replace immediately.
4. Inspect the material discharge hose and connections for cracks or damage. If damage is found, replace affected part immediately.

II. MACHINE OPERATION:

1. Always wear safety goggles when operating or feeding the machine. Other safety attire such as safety shoes, ear protection, gloves, hard hats, dust masks, etc., should be worn as required by warning decals on machine, operator's manuals, or job requirements. Remove rings, watches, etc. Avoid loose fitting clothing which may get caught in rotating machinery.

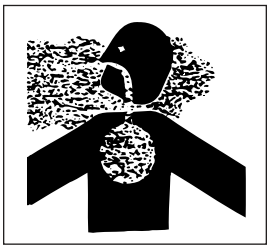


2. Do not override or tamper with the safety shutdown switches on the folding door or discharge. If switches fail, use OSHA lockout/tagout procedure (29 CFR 1910.147) until switches are repaired or replaced.
3. Do not operate the machine without all guards in place.



4. Never attempt to connect or disconnect the discharge hose while the engine is running.
5. Make sure that no one is working in or on the machine. Make sure the discharge area is clear of all persons, animals, etc. Signal "All Clear" before starting the engine. Keep unauthorized personnel away from the machine and discharge hose at all times.

6. The driver of the towing vehicle is responsible for the safety of the operators) and feeder(s) of the machine. Make sure the driver is aware of and avoids all possible hazards, such as tree limbs, low power lines, etc.
7. Do not allow anyone to ride on the trailer or any other part of the blower for any reason.
8. Never operate machine in an enclosed area without venting the exhaust of both the equipment and the tow vehicle. Deadly carbon monoxide fumes can accumulate.



9. Never operate this or any other machinery when fatigued, tired, under the influence of alcohol, illegal drugs or medication. You must be in good physical condition and mentally alert to operate this machine.
10. Never modify the machine. Never remove any part of the machine (except for service and then reinstall before operating).
11. During application, high pressure can be exerted at the end of the hose. Always establish and maintain good footing and hold the hose firmly. Extra personnel may be required to help direct and hold the hose, especially when working on slopes. The proper technique for hose holding personnel is to firmly grasp the hose under both arms. Never hold the hose so it goes between the legs.
12. The blower discharges material at pressures and velocities that can cause severe bodily injury. Do not aim discharge at people, animals, etc. Only aim the discharge at the intended discharge area. Unless properly protected, do not place hand into the discharge stream.

13. Do not open any doors or access panels while machine is in operation. Severe injury may result from rotating parts.

14. Do not attempt to pull anything out of the blower hopper when machine is in operation. Shut down the engine, using OSHA lockout/tagout procedure (29 CFR 1910.147) before removing any foreign objects. Signal “All Clear” before restarting the machine.

15. When leaving the blower unattended for any reason, be sure to:

    A. Shut off conveyor drive.

    B.. Shut off vehicle engine and blower engine.

    C. Place transmission of the vehicle in “neutral” or “park”.

    D. Set parking brake firmly.

    E. Lock ignition and take keys with you.

    F. Lock vehicle cab.

    G. If on a steep grade, block the wheels.

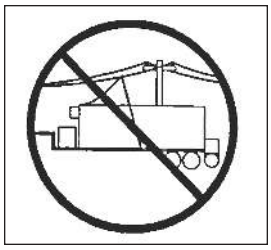
    These actions are recommended to avoid unauthorized use, runaway, vandalism, theft and unexpected operation when the equipment is restarted.

16. Do not read, eat or otherwise lose or lessen your attention in any manner while operating the blower. Operating is a full time job.

17. Be careful in getting on and off the blower, especially in wet, icy, snowy or muddy conditions. Clean mud, snow or ice from steps, fenders and footwear.

18. All personnel operating and/or around the machine must be aware that the blower can be controlled via remote control. For safety reasons and to prevent accidental starting, always keep the power switch on the remote receiver in the “OFF” position when the remote control is not being used.

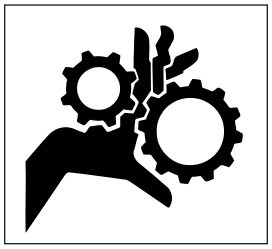
19. Be careful when operating the tarp near power lines. Raising the tarp into power lines may cause severe electrical shock. Always have the tarp either fully open or retracted when transporting the machine.



20. Turn slowly and travel on rough surfaces and side slopes carefully, especially with a loaded blower body.

III. MAINTENANCE:

1. Before servicing the machine, turn off engine and allow all moving parts to stop. Disconnect the battery cables to prevent accidental starting of the machine. Tag the engine operating area to show that the machine is being serviced. Use lockout/tagout procedure (29 CFR 1910.147).



2. Take extreme care when adjusting or replacing knives. Knife edge is very sharp and can cause severe bodily injury.

3. Radiator maintenance. Liquid cooling systems build up pressure as the engine gets hot. Before removing the radiator cap, stop the engine and let the system cool. Remove the radiator cap only after the coolant is cool.

4. Battery maintenance. Lead-acid batteries contain sulfuric acid which may damage eyes or skin on contact. Always wear a face shield to avoid acid in the eyes. If acid contacts eyes, flush immediately with clean water and get medical attention. Wear rubber gloves and protective clothing to keep acid off skin. Lead-acid batteries produce flammable and explosive gasses. Keep arcs, sparks, flames, and lighted tobacco away.

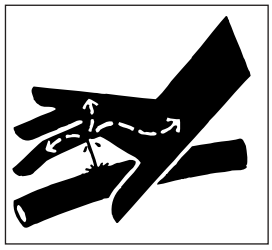
5. Filling of fuel. Never fill the fuel tank with the engine running, or while smoking or when near an open flame. Never smoke while handling fuel or working on the fuel system. The fumes in an empty container are explosive. Never cut or weld on fuel lines, tanks, or containers. Move at least 10 feet (3 meters) away from fueling point before starting engine. Wipe off any spilled fuel and let dry before starting engine.

NOTE: Be careful not to allow fuel, lubricant, hydraulic fluid, or cooling fluids to penetrate into the ground or be discharged into the water system. Collect all used fluids and dispose of them properly.

6. It is recommended that only authorized genuine FINN replacement parts be used on this machine.

7. Do not use ether cold start fluid if engine is equipped with glow plug type preheater or other intake manifold type preheater. It could cause an explosion or fire and severe injury or death.

8. Diesel fuel or hydraulic fluid under pressure can penetrate the skin or eyes and cause injury, blindness or death. To check for such leaks, use a piece of cardboard or wood instead of your hand. Pressure may build up in the hydraulic system so use caution when removing the cap.



9. Some parts and assemblies are quite heavy. Before attempting to unfasten any heavy part or assembly, arrange to support it by means of a hoist, by blocking or by use of an adequate arrangement to prevent it from falling, tipping, swinging or moving in any manner which may damage it or injure someone.

10. If repairs require use of a torch or electric welder, be sure that all flammable and combustible materials are removed. Fuel or oil reservoirs must be emptied, steam cleaned and filled with clean water before any cutting or welding on them is attempted. Do NOT weld or cut on any tank containing oil, gasoline or their fumes or other flammable material, or any container whose contents or previous contents are unknown.

CURRENT SET OF SAFETY DECALS

WARNING

FLYING OBJECTS!
Wear proper eye protection when feeding machine.
Failure to comply could result in death or serious injury.

P/N 29990

WARNING

FLYING OBJECTS!
Wear proper eye protection when feeding machine.
Failure to comply could result in death or serious injury.

P/N 29990

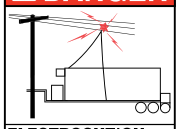
WARNING

BURN HAZARD!
Cooling system is under pressure.
Allow system to cool before handling.
Remove radiator cap slowly.
Wear appropriate safety gear.
Failure to comply could result in death or serious injury.

RADIATOR HANDLING INSTRUCTIONS
1. Use a 50/50 solution of water and antifreeze. Using 100% antifreeze will result in engine damage.
2. Check and replenish water prior to use. More water will be consumed when operating in hot conditions.
3. If overflow pipe begins emitting vapor, check and replenish water.
4. Remove and clean screen when dirty.
5. Check and clean fins periodically. Clogged fins will increase water consumption.
6. Protect radiator from fertilizer corrosion by washing radiator core with water.

P/N 31462

DANGER



ELECTROCUTION HAZARD!

DO NOT raise tarp under high voltage lines.

Failure to comply will result in death or serious injury.

P/N 45126

WARNING

SEVER HAZARD!
Keep hands clear!
Sharp knives. Rotating fan and gears.
DO NOT operate without guards or doors in place.
Shut off engine, disconnect battery and allow all moving parts to stop before servicing.
FLYING DEBRIS!
Wear eye protection around equipment.
Failure to comply could result in death or serious injury.

P/N 314638

WARNING

Wear proper eye protection when operating machine.

Failure to comply could result in death or serious injury.

P/N 23512

WARNING

FLYING OBJECTS!
STAY BACK!
Stay away from discharge area during operation. Keep bystanders away.
DO NOT point discharge toward people, animals or property.
ALWAYS wear appropriate protective gear.
Failure to comply could result in death or serious injury.

P/N 55280

WARNING

CONTENTS UNDER HIGH PRESSURE!
To prevent injury or death:
- Turn off engine to relieve air pressure on system before uncoupling any hoses or loosening any clamps.
- Wear proper eye and hand protection when operating equipment.
- Keep all hoses, couplings and clamps in good condition.

Failure to comply could result in death or serious injury.

P/N 55735

WARNING

BURN HAZARD!
Hot exhaust!
Stay back!
Failure to comply could result in death or serious injury.

P/N 12278

DANGER

ENTANGLEMENT HAZARD!
Keep arms and feet out!
Never climb on or in unit before:
Turning engine off.
Allow all moving parts to stop.
Disconnect battery cables and follow proper lock-out & tag-out procedures.
Failure to comply will result in death or serious injury.

P/N 52177

DANGER

SEVER HAZARD!

Keep hands and feet out!

Sharp knives will sever.

Failure to comply will result in death or serious injury.

P/N 55219

NOTES

OPERATION AND MAINTENANCE MANUAL FOR FINN BARK BLOWER

INTRODUCTION:

The FINN Corporation would like to thank you for your latest FINN purchase. In our efforts to maintain a quality and growing relationship with each and every customer, we would like to encourage you to contact us for help with service, genuine replacement parts, or any other information you may require.

THE FINN BARK BLOWER AND ITS FUNCTION:

The FINN Bark Blower is an apparatus for conveying and discharging bulk materials, such as bark mulch, at a fast and uniform rate utilizing a minimum amount of manpower. The product to be used is generally composted and processed and used as a soil amendment, a ground cover for erosion and weed control, or for decorative purposes on landscaping (bark mulch).

This manual is intended to provide step-by-step instructions on the operation, care, and maintenance of the Bark Blower. In addition, it contains illustrations and a complete list of parts and components for easy identification.

HOW THE BARK BLOWER WORKS:

The bulk material is loaded into the hopper by a loader or by a feed elevator. Located at the bottom of the hopper is a drag conveyor, which conveys the bulk material to an opening containing a feed roll. The feed roll and drag conveyor feed the bulk material into a rotary air valve (the “airlock”). The rotary air valve is specifically designed and built to handle tough, fibrous material. The function of the rotary air valve is to take the bulk material into open pockets exposed to the outside air and to convey it to an area where the pocket is closed off. At that point a high pressure air stream, created by the blower, is channeled through the pocket carrying the material off and through the hose for discharge.

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

MOUNTING THE BARK BLOWER:

The selection of the vehicle on which a blower is to be mounted has important safety aspects. To avoid overloading:

A. Do not mount a blower on a chassis which, when fully loaded with material to be spread, will exceed either the Gross Axle Weight Rating (GAWR) or the Gross Vehicle Weight Rating (GVWR) for the chassis, see below.

B. Do install the blower only on a vehicle with cab-to-axle dimension recommended for the blower body length selected, see below.

Once the proper carrier has been selected, the blower must be securely mounted to it.

CAUTION: **Your FINN® Bark Blower should be mounted by a qualified truck body installer.**

IMPORTANT: Mounting the blower to the truck must allow for tire clearance as well as frame twist. Place hard wood spacers along the length of truck rails or use FINN® Spring Mounting Kit (#011562) or equivalent.

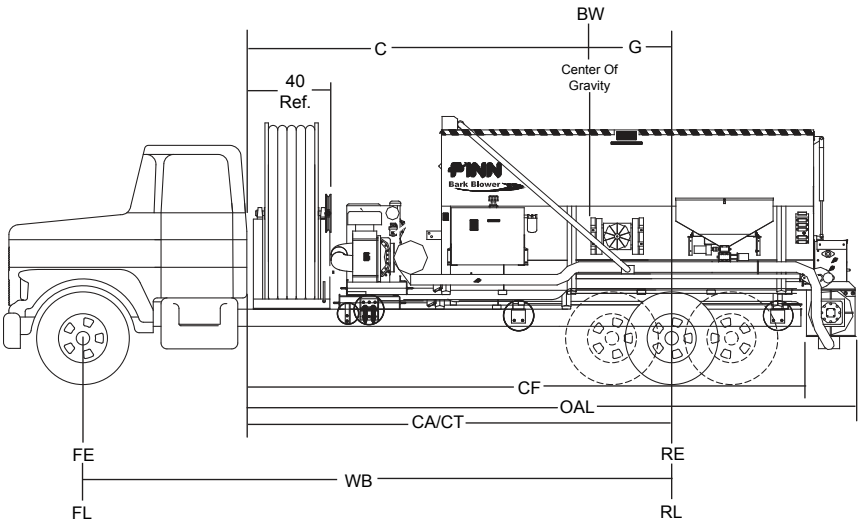
2. Follow mounting instructions given in Figures 1 and 2 on Page 8. If mounting conditions require deviation from these instructions, consult the factory.

DIMENSIONS, CAPACITIES, AND TRUCK REQUIREMENTS:

*CF - Back of cab to end of frame
C - Distance from front of Bark Blower to center of gravity
*CA/CT - Back of cab to center of rear axle or trunnion
*FE - Front axle weight - Empty
FL - Front axle weight - Loaded
G - Distance from center of rear axle or trunnion to Bark Blower™ Center of gravity
BW - Bark Blower weight
*RE - Rear axle weight - Empty
*RL - Rear axle weight - Loaded
*WB - Truck wheel base
* These dimensions needed from the truck supplier as well as Front axle capacity and Rear axle capacity.
** Truck GVW depends on the truck weight. CA/CT dimensions are approximate only, and depend on the front and rear axle capacities, as well as the front and rear empty axle weights.
*** Weight of Bark Blower, hose reel and mulch (800 lbs per yard.) Weight may vary greatly due to the large variety of mulch materials.
OAL - Overall Length

		1216
Truck GVW **	Pounds (kg)	33,000 (14,970)
CA/CT **	Inches (cm)	192+ (487+)
C	Inches (cm)	161 (409)
OAL	Inches (cm)	274 (695)
BW ***	Pounds (kg)	23,500± (10,700±)

TRUCK MOUNTING CALCULATIONS:



$$\frac{(WB \times FL) - (WB \times FE)}{BW} = G$$

$$\frac{WB \times (RE + HW - RL)}{BW} = G$$

G + C must be equal to or less than CA

$$\frac{(WB \times FE) + (G \times BW)}{WB} = FL$$

$$\frac{(WB \times RE) + BW \times (WB - G)}{WB} = RL$$

Figure 1

GENERAL MOUNTING GUIDELINES:

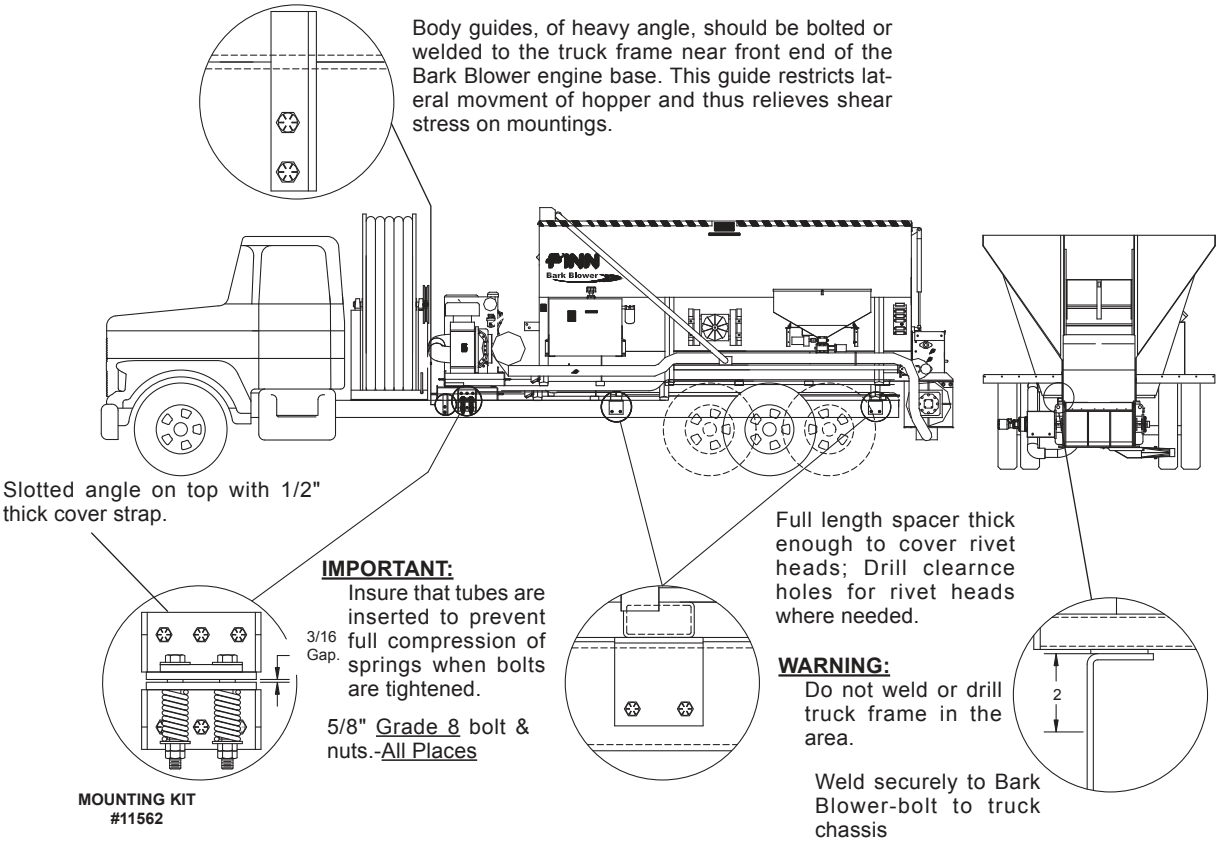


Figure 2

SELECTING A MULCHING MATERIAL:

Several factors must be considered when selecting material to convey through the Bark Blower. The variety of the wood used, how it is processed, its moisture content, and the presence of foreign objects all effect the ability of the Bark Blower to convey the mulch at a uniform and acceptable rate.

The mulch material must be processed and/or screened so that a minimum of material is over 2 inches (5.1 cm) in any direction with no material exceeding 4 inches (10.2 cm) in length. The Bark Blower is not a wood processor. It only reduces mulch fibers when they protrude above the rotary air valve (airlock) vanes. As the vanes rotate past the knife, the protruding fibers are sheared off. If the mulch contains long or large fibers, and if the wood fibers are harder to cut, then the machine's throughput is reduced. For example, if two mulches have the same mix of material sizes that the Bark Blower rotor must cut, but one is softwood like pine, and one is hardwood such as oak, the pine would go through at a higher rate because it is easier to cut.

Two characteristics must be considered when selecting a material: the "greenness" of the wood and the moisture of the mulch as a whole. Wood that is well seasoned is easier to cut than "green" wood. It also processes better, making a less stringy mulch. High moisture in the mulch may cause it to bridge in the hopper.

CAUTION: Avoid using mulches that contain any hard foriegn objects such as dirt, mud, rocks, nails, glass metalic objects, etc. These objects could cause bodily injury as well as damage to machine components, especially the cutting knifes in the airlock. If you have any questions regarding the materials that can be used, contact your sales rep.

PRE-START EQUIPMENT CHECK:

CAUTION: Equipment check is made with the engine off and all rotating parts stopped.

Safety check to insure operator safety:

1. Check that all the truck mountings are secure.
2. Make sure that all guards are in place.
3. Tool Kit - see that it contains all prescribed items (see tool kit list, parts manual).
4. Lubricate equipment - use handgun only (see lube chart, pages 28-29).
5. Check engine oil - refer to engine operator's manual.
6. Check liquid coolant level in radiator (protected to -34ºF (-37ºC) when shipped).
7. Check fuel level. Use #2-D diesel fuel oil unless operating at ambient temperature below 40ºF (4ºC) or at an altitude exceeding 5000 feet (1524 meters). In these instances use #1-D fuel oil.
8. Inspect the engine air cleaner (refer to the engine operator's manual), the radiator chaff screen, and the blower air cleaner for dust and dirt.
9. Check hopper and transition for foreign objects that could injure workers, or damage equipment.
10. Check the fluid level in the hydraulic tank. Check that service valve is open on reservoir. Proper level is midway between the upper and lower indicator mark on the sight gauge. (See page 29 for oil specification).
11. Install the discharge hose, using the short hot air hose section as the first connection after the airlock. This will help extend the life of the other hoses. Use clamps provided with the machine.

CAUTION: Do not use radiator type clamps. These clamps may not hold under machine operating pressure.

STARTING PROCEDURE:

CAUTION: See safety section of the manual (pages 2-4) before operating the machine.

1. Turn the remote control to the off position on the remote control panel.
2. Turn the key until starter engages and the engine fires.

NOTE: This engine has a safety system that will shut the engine off if the engine oil pressure drops below 7 PSI (.48 bar) or if the water temperature reaches 230º Fahrenheit (110º Centigrade).

3. Allow engine to warm up for three to five minutes.
4. Prior to mulch application, move the throttle position to fully open, and allow the governor to control the engine speed. Governed engine speed should be 2575 to 2625 RPM under load.

CREW MEMBERS AND THEIR DUTIES:

1. The Operator controls the placement of the mulch by moving and aiming the discharge hose.
2. The Loader(s) feed material to the machine by using a bucket loader or belt conveyor dumping material directly into the hopper.

THE MATERIAL FEED SYSTEM:

The material feed system on the Bark Blower has been designed to give fast and uniform mechanical feeding. The adjustable feeding rate and the automatic reverse control system allow the use of varied materials while obtaining maximum production. The system is an integration of the following four subsystems, all of which contribute to efficient material flow:

SUBSYSTEM 1: MATERIAL HANDLING GROUP

The four major components of the material handling group are the blower, the drag conveyor, the feed roll, and the rotary air valve (airlock).

The blower is a rotary lobe, positive displacement type unit having two double lobe impellers. It is direct driven off the engine flywheel by a flexible coupling. Therefore, whenever the engine is running, air is being pumped. The blower is equipped with a relief valve limiting maximum air pressure to 16 PSI (1.1 bar), an inlet and outlet silencer for noise attenuation, and an inlet air filter.

The drag conveyor receives material from the agitated hopper and conveys it to an opening located at the rear of the hopper, where the feed roll is located. The feed roll insures a uniform feed of bulk material to the rotary air valve. The drag conveyor is powered by a variable speed hydraulic motor mounted to a gearbox.

The airlock receives the material from the drag conveyor and pressurized air from the blower. Its primary function is to convey the material from the atmospheric air to a sealed chamber where the blower air picks it up and blows it out of the hose. To enable the Bark Blower to convey fibrous material, the airlock housing is equipped with two sharp cutting knives, and the vanes on the rotor are angled and hardened. If any long material should protrude above a vane, it will be sheared off before the vane enters the close tolerance of the housing. The airlock rotor is direct-coupled to a bi-rotational hydraulic motor and gearbox.

SUBSYSTEM 2: HYDRAULIC SYSTEM

Hydraulic power for the Bark Blower is generated by a flow and pressure compensated, load-sensing pump driven off of the engine auxiliary drive. This means the pump can measure how much load is on the hydraulic circuit and will only pump the oil needed to satisfy the demands of the circuit. The pump receives DTE-13m hydraulic fluid from the 36 gallon (136 liter) reservoir through a service valve and suction hose, and delivers it to the valve manifold. The manifold is one block of machined aluminum, equipped with valve cartridges and solenoids that control all the functions of the Bark Blower.

Two pressure gauges at the valve manifold read the valve inlet pressure (left/rear gauge) and the load-sense pressure (right/front gauge). The L/R gauge should always read about 300 PSI more than the F/R gauge. This 300 PSI is called the "margin pressure" and is a measure of the pump's ability to respond to changes in the hydraulic circuit. If the margin pressure is set too high (over 500 PSI), the pump will be too sensitive and can become unstable. If the marging pressure is too low (below 200 PSI), the pump can become "lazy" and not provide enough oil flow for the demand. The margin pressure can be adjusted using the lower compensator adjustment screw in-line with the load sense hose on the back of the hydraulic pump. The only time the gauges will not show the margin pressure is when one of the hydraulic circuits is stalled, such as if the floor conveyor somehow became jammed. In this case, both gauges will show the high pressure standby of 2800 PSI until the blockage is removed. High pressure standby is the maximum pressure the pump will produce. A system relief valve is set for 3500 PSI to protect the system if there is a failure in the pump compensator.

DESCRIPTION OF VALVE SECTIONS

Figure 3 shows the valve block and the different hydraulic circuits. Each circuit, except for the Hose Reel (HR) circuit, is controlled by two valves. On the Floor (F) and Air Lock (AL) circuits, the flow rate is controlled by the proportional valves which can be manually stroked by inserting a small rod or screw driver into the hole in the bottom of the solenoid. The Floor and Air Lock circuits also have a directional valve which can be manually stroked by pressing the red knob on the bottom of the solenoid. The Agitator (A) and Seed Injection (S) circuits are controlled by a three position valve that is actuated by one of two solenoids. These valves can be stroked manually be pressing or pulling on the red knob on the bottom of the solenoid. The Hose Reel (HR) circuit is controlled by a two position on/off valve and its solenoid can only be actuated in one direction by pressing on the red knob on the bottom. The flow rates for the Hose Reel, Seed Injection and Agitator circuits are adjusted using the flow control valves located directly behind the solenoids for their respective circuits.

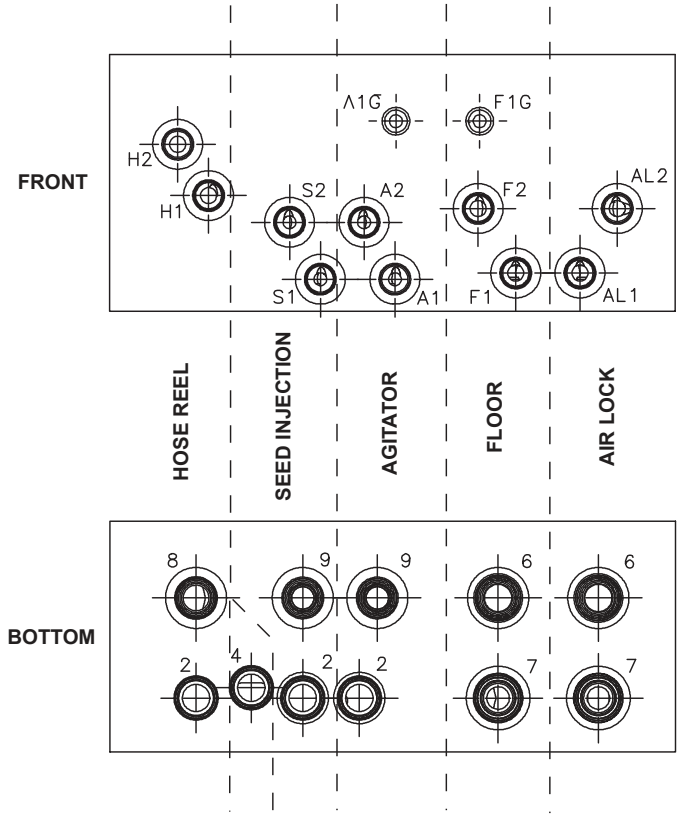


Figure 3

A. GATE

The left side of the manifold controls the hose reel. The flow rate is factory set so that the hose reel winds at a rate of about 13 RPM.

B. AGITATOR

The third valve section controls the speed and rotation of the agitator. The spool in this section is factory set so that the agitator rotates at approximately 4 RPM. This section also has a pressure switch installed on the forward port that is set for 2400 PSI (165 bar) that triggers the agitator auto-reverse function. Normal rotation of the agitator is clockwise if looking from the rear of the machine.

C. DRAG CONVEYOR FLOOR & FEED ROLL

The fourth valve from the left, controls the floor and feed roll speed. It is an electrically-driven proportional valve that is controlled by the floor speed settings on the control box. Adjusting the dial from 0 to 100 varies the input voltage to the solenoid and moves the spool in the valve accordingly, allowing more or less oil flow to the floor and feed roll. The feed roll is plumbed in series with the floor, meaning oil flows to the feed roll motor first and then down to the floor motors. This setup automatically causes the floor to slow down if the feed roll begins to jam up, preventing overfeeding of the feed roll.

D. ROTARY AIR VALVE (AIRLOCK)

The last valve section of the manifold runs the airlock. The spool in the valve is factory set so that the airlock turns at about 12 RPM. The proportional valve, in combination with the control box, provides adjustment of the airlock speed. There is a pressure switch on the forward circuit that is set for 2400 PSI (165 bar) that triggers the auto-reverse function on the airlock. Normal rotation of the airlock is clockwise if looking from the driver side of the machine.

SUBSYSTEM 3: HYDRAULIC CONTROL SYSTEM

The hydraulic control system is a digital system that controls all of the hydraulic functions of the Bark Blower. This 12-volt DC system runs off the engine electrical system. It is a programmable logic controller (PLC) system contained in the control box on the rear passenger-side of the machine which controls the solenoid valves in the hydraulic system. The solenoids are energized by way of the white DIN connectors mounted on each solenoid. The DIN connectors each have a small red light in them that light up if the circuit is active. This is an easy way to check if a particular circuit has electrical power.

When the “Start” button is pushed, the proportional solenoid on the airlock valve section is energized, starting the airlock. If the floor toggle switch is “On”, the floor and feed roll solenoid is also energized after a factory set 1.5 sec delay. This delay ensures that airlock gets a chance to clear itself. After the delay, the floor and feed roll will begin to move at the speed relative to the Floor Set Speed. This speed can be set in the speed menu using the Dial on the lower right of the control box. This set point will be overridden if the "Saved Program" selection reads anything other than "No Program".

As material drops into the top of the airlock, the pressure required to cut the material is monitored by the pressure switch located on the forward port of the airlock valve section in the manifold (see figure 3). The switch is normally open. When the airlock motor stalls due to the rotor encountering an object it cannot cut, high pressure is created in the airlock circuit and the pressure switch closes. The amount of time the pressure switch is closed is monitored by a setting in the PLC box. If the switch remains closed for more than 0.5 seconds, the system automatically reverses the rotor by energizing the reverse solenoid. It also de-energizes the floor solenoid, shutting off the floor and the feed roll. The airlock will remain in reverse for approximately 1.5 seconds. The system will then restart the floor and feed roll after allowing the airlock to clear itself.

The agitator is also controlled through the PLC box. The agitator will start on a 3 second delay, in a similar manner to the floor, and will stop during an auto-reverse. The agitator circuit on the Bark Blower also has an auto-reverse feature for when the agitator may become "bogged down" and become unable to turn. This most often occurs at the beginning of a load when the hopper is completely full of wet or packed down mulch. The PLC system receives a signal from the pressure switch on the forward port of the agitator circuit when the agitator motor stalls. When it receives this signal, the system automatically de-energizes the followed solenoid and energizes the reverse solenoid on the valve circuit, causing the agitator to rotate in reverse. The reverse time is set for 10 seconds, after which time the forward solenoid will re-energize and the agitator will return to its normal rotation. This process may be repeated several times until the agitator sufficiently breaks up the packed mulch material. The agitator auto-reverse process does not interrupt or affect any other functions on the Bark Blower.

When the "Stop" button is pushed, power is shut off to solenoids controlling the hydraulic motors on the floor, airlock, feed roll, and agitator. The hydraulics can also be stopped by shutting off the ignition key. Please note that the hydraulics will also stop if the folding door on the feed roll housing is opened and cannot be restarted until they are closed and the "Start" button is pushed.

SUBSYSTEM 4: RADIO REMOTE CONTROL

This Bark Blower is equipped with a Radio Remote to control the Material Feed Start and Stop, the Floor Speed, and the Engine Throttle. It also contains an Emergency Stop button that shuts off power to the hydraulic valve solenoids and interrupts the engine power enough to stop the engine.

If using the Radio Remote, a certain start-up sequence must be followed to activate the remote. When using the remote, start as follows:

1. Place the Radio Remote ON/OFF switch, located on the control box, to the “OFF” position

2. Press and hold the small red button, located on top of the Radio Transmitter, until there are no lights alit on the top of the Radio Transmitter.
3. Start the engine and allow it to warm up as specified in the Starting Procedure on Page 11.
4. Place the Radio Transmitter Switch located on the control box to the “ON” position
5. Press and hold the small red button, located on top of the Radio Transmitter, until both lights turn on then off.

To utilize the Material Feed Start/Stop feature on the Radio Remote, the initial start must occur at the Start/Stop station on the Bark Blower. The hard-wired Start/Stop on the unit is the primary and overriding set of controls. When either the “Stop” button is pushed or a loss of power to safety measures in the PLC system (i.e. the folding door on the feed roll housing is opened or a circuit breaker trips), the Feed Start/Stop feature on the Radio Remote is deactivated. This feature will remain inactive until the initial start is once again made at the machine by pressing the “Start” button.

The Material Increase/Decrease function on the remote can be used to change the floor conveyor speed and effectively adjust the output of mulch from the machine. Adjustments to the floor speed made from the remote control will be shown on the control box “Main Menu” screen and the “Speed” screen.

The Engine Increase/Decrease function on the remote adjusts the throttle on the engine. For use of the engine RPM function refer to “Mulching with the Bark Blower” below.

Pushing the large red “E-Stop” button on the Radio Transmitter activates the shutdown system. This will shut off the engine, automatically return the engine throttle back to idle and cut power to all the hydraulic valve solenoids. To reset the safety system:

1. Turn and release the “E-Stop” button on the Radio Transmitter
2. Re-start the engine
3. Start the engine and allow to warm up as specified in the "Starting Procedure" on (page 11).

MULCHING WITH THE BARK BLOWER:

1. Check all areas listed under “Pre-Start Equipment Check” (page 10).
2. Start the engine following all the steps listed under “Starting Procedure” (page 11).
3. Set the floor speed and airlock speed control to the desired operating speed or select one of the saved programs.
4. Open the gate to the maximum opening.
5. Put the drag conveyor floor switch to the ON position.
6. To activate the dust control system, select the dust control setting on the Options screen. The dust control system will only operate when the floor switch is in the ON position. The needle valve above the airlock discharge pan can be adjusted for varying flow.
7. Press the "Start" button on the main control panel to activate the material start/stop feature on the remote and at the same time press the material stop on the remote. Remote functions are now active and the clear remote feed standby light should be on.
8. Increase the throttle to full.
9. With a firm grip on the end of the hose, press the material start button on the remote.
10. Floor speed can be adjusted for the desired flow. Watch for auto-reversing of the air lock as well as shock waves through the hose. Listen for the relief on the blower. Partial plugging in the airlock discharge or hose may cause it to open, causing a high pitched whine, indicating over-feeding of the airlock.
11. Use the engine RPM button on the remote to decrease and increase air and material flow. A lower engine RPM may require a lower floor speed to avoid auto-reversing or plugging.
12. At the end of the load, hit material stop and shut down the engine.

BARK BLOWER ADJUSTMENTS:

Your Bark Blower has been designed to be as simple as possible to operate. The feed roll and airlock are designed to create a smooth, consistent flow of material from the hopper to the discharge. The agitator has been designed to eliminate possible material bridging in the hopper and to help improve mulch consistency as it enters the feed roll chamber. However, material conditions can change from one load to the next or from one day to the next. The only adjustment the operator should have to make is to the drag conveyor speed. Adjusting the floor speed will allow the Bark Blower to efficiently convey many different types of mulch.

Knowing when and how much to adjust the floor is the key to maximizing the machine's performance. The floor conveyor speed is controlled by the Floor Speed Toggle Switch on the electrical control box and by the Material Feed Toggle Switch on the remote. The floor speed can be adjusted from 0% to 100% on the Floor Speed display with 0% being the slowest (0 RPM) and 100% being the fastest (approx. 8 RPM). For most materials, a setting of 30% is a good starting point. The floor speed can be increased (5% increments are recommended) until certain warning signs appear. They include the following:

A. CONSISTENT HOSE SHOCK

The Bark Blower uses a large amount of air to blow the mulch material through the discharge hose, which can become difficult for an operator to handle. If rough shock waves become consistently tough on the operator at the end of the hose, the floor can be turned down to smooth out the flow of material into the airlock. Cutting back on the engine RPM can also smooth out the hose since there will be less air being pumped through the hose. Hose shock is usually due to partial plugging around the discharge. When the material gets dislodged, the larger clumps are shot through the hose and can make it jump significantly.

Another adjustment that could help with hose shock is the airlock speed itself. Refer to the Airlock section of the "Material Feed System" on pg. 13 for instructions on how to adjust the airlock speed. Certain materials may run more smoothly with a faster or slower airlock. Generally, the airlock should not be run any slower than 8 RPM and can be adjusted up to 15 RPM.

B. EXCESSIVE AUTO-REVERSING

If the airlock starts to auto-reverse regularly, (i.e. more than three times a minute), then the airlock is being overfed and the floor should be turned down. Excessive auto-reversing leads to less production than if the floor was just turned down to a lower RPM. This condition will occur more often with stringy mulch or less processed material that contains larger chunks of wood that the airlock may have to cut.

C. REGULARLY TRIPPING THE BLOWER RELIEF

The blower on your machine has a relief valve in the air line to protect the blower against a large back pressure that could build if the line becomes plugged. The relief valve, set for 14 PSI, is located directly behind the blower in the engine area on the front of the machine. A blockage, temporary or otherwise, can trip the relief, which causes a loud whining noise to be heard from the engine area. Occasional blowing through the relief is expected, as long as the machine can clear itself. However, if the relief goes off repeatedly in a 10 second span, then the discharge area or hose is in danger of becoming completely blocked. The floor speed should be immediately reduced until the relief valve is not heard consistently going off. Partial plugging most often occurs with less processed material or if the mulch is wet and dense.

The gate may also be used to help smooth out the flow of material and improve production. Lowering the gate effectively shrinks the opening in the back of the machine that the material must pass through as it enters the feed roll housing and then the airlock. Sometimes reducing the size of that opening may produce a more consistent flow of material, especially with finer material such as compost.

CLEARING A BLOCKAGE

If the unit does become plugged and the machine can not clear itself, immediately shut down the machine, either by pressing the emergency stop on the remote or with the ignition key on the control box. Perform the following steps:

1. Disconnect the discharge hose and determine if the blockage is in the airlock discharge. Any blockage should be seen through the outlet. If there is no blockage, then the hose is plugged somewhere.
2. If there is blockage, loosen the handle that holds the door onto the back of the discharge cone.
3. The outlet side of the discharge is hinged and should swing down away from the airlock housing. The seam has gaskets, so it may be tight.
4. Remove any blockage and clean the discharge of any mulch debris, especially on the gasket surface so that it can seal tightly.
5. Close the discharge outlet and tighten the handle.
6. Reconnect the discharge hose if it is not plugged.
7. Restart the machine with the floor off, and run the engine full to clear out the airlock and any mulch lying in the hose.
8. Resume normal operation.

QUICK DUMP FEATURE

The Bark Blower has a Quick Dump Feature that can be used to unload bulk material quickly.

1. Shut off the feeding system by pressing the Stop button on the control panel.
2. Open the access door above the airlock and secure it in the notches located in the feed roll housing side panels.
3. Select the Quick Dump option from the "Options" screen.

CAUTION: In Quick Dump mode, the feed roll is exposed and can cause material to be thrown from the rear of the machine, especially at higher floor speeds.

4. With the Floor Switch ON, press the Start button to begin unloading material. The material will pass through the feed roll housing and out the rear of the machine over the airlock, which will not be turning.
5. The floor conveyor speed can be adjusted higher for faster unloading.
6. When finished, press the Stop button, return the Quick Dump switch to the OFF position, and close the control box lid using the four latches.

WARNING: Do not place hands down inside the airlock vanes to remove material, the knives are sharp and can cause serious injury.

7. Close the rear access door securely using the hand knobs.
8. The Bark Blower should be run with the Floor Switch OFF for a few seconds so that the airlock has a chance to clear itself before resuming normal operation. The startup sequence on page 10 will need to be followed again before remote operation can be used.

DUST CONTROL SYSTEM

The Dust Control System on the Bark Blower is helpful in reducing the amount of dust that can be generated by blowing very dry materials. Water is pumped from the 75 Gal. poly tank down to a nozzle in the discharge pan. A metering valve on the discharge pan allows for varying amounts of water to be sprayed into the mulch as it is blown from the machine. A pressure regulator set for 30 PSI is mounted near the pump and sends any excess flow produced by the pump through the recirculation hose back into the tank. The Dust Control System is activated by turning the Dust Control Switch to On when the floor conveyor is operating.

The water pump has an internal thermal switch that will shut off the pump if it gets too hot. A clogged nozzle, clogged pump inlet, or too high of a regulator pressure setting can all cause excessive heat in the pump. If the pump shuts off frequently, make sure the water flow is not restricted and the regulator is not set above 30 PSI.

MAINTENANCE

CAUTION: Turn off engine and disconnect battery before servicing equipment.

DAILY - AFTER EVERY 4 - 8 HOURS OF OPERATION:

1. Check engine and blower air cleaner filters for dirt and debris. Remove and clean with dry, compressed air if necessary.
2. Check engine coolant and oil levels. See engine manual.
3. Check hydraulic oil level in reservoir. The oil should be about half way up the sight glass.
4. Check blower oil level. See blower manual.
5 Clean out front floor chain compartment. Pull the pin and remove the front cleanout door from the front of the hopper. Remove any built-up material from under the floor pan and around the sprockets. This will minimize material overflow through the front takeup bearings during daily operation.
6. Check fuel level.

WEEKLY - AFTER EVERY 50 HOURS OF OPERATION:

1. Lubricate the bearings on the drag conveyor, the blower, the agitator, and on the feed roll shaft. See Lube Chart on pages 28-29. Wipe each bearing before lubrication to remove dirt and prevent overheating.
2. Blow out radiator fins with dry compressed air. Do not use a pressure washer. This will damage the radiator fins.
3. Remove and clean air cleaner elements on the engine and rotary blower using dry, clean compressed air.
4. Check the oil in the airlock gearbox, the drag conveyor gearbox, and the agitator gearbox.
5. Check the gear case on the blower (see blower manual).
6. Check airlock knife for wear, chips, and clearance. To adjust knife:

DANGER: Knives have very sharp edges that can cause serious injury. Adjust one at a time. Handle with care.

a) Using a 3/16" allen wrench, remove the six set screw plugs in the access holes on the out side front/rear face of the airlock housing.

NOTE: To adjust the reversing knife, the rear catch pan will need to be removed to gain access to the reversing knife clamps.

b) Loosen the two outer bolts on each of the three knife clamps in the top of the airlock.

c) Barely loosen the center bolt on each of the three knife clamps.

d) The knife adjusting screws are reachable through the access holes in the outside front/rear face of the airlock housing. Using a 5/32" allen wrench, adjust each of the screws in until there is a uniform .003" to .006" (.08 to .15 mm) gap between the knife and rotor. One full turn of the screws will move the knife approximately .055" (1.4 mm). Make sure that the two adjusting screws on each knife clamp are adjusted equally.

e) Tighten the nine bolts on the three knife clamps and replace the set screw plugs in the access holes.

7. If a knife is worn past adjustment and needs replacing:

a) Remove the nine bolts that hold the three knife clamps in place and remove the clamps and knife.

b) Clean the knife shelf so that it is free of debris and smooth.

c) Compare the replacement knife to the one removed. If the new knife is wider, back out the adjusting screws by at least that amount. Count the turns and back the screws out evenly.

d) Lay the knife down on the knife shelf. Insure the knife is installed with the **cutting angle edge facing down** as shown in Figure 5. Loosely install the three knife clamps with the nine knife mounting bolts. Tighten the mounting bolts just enough to hold the knife in position while still allowing it to be moved.

c) Check the clearance between the knife and the rotor end walls and along the rotor vane using a feeler gauge. There should be .003” to .006” (.08 to .15 mm.) gap.

d) Use the jacking screws to close the gap, if necessary. One full turn of the screw moves the knife 0.055 inches (1.4 mm).

e) Tighten mounting bolts.

f) Immediately have removed knife sharpened. Do not attempt to grind the knife by hand. It must be ground straight and true on a surface grinder by an experienced knife sharpener. Grind the knife to the profile shown below:

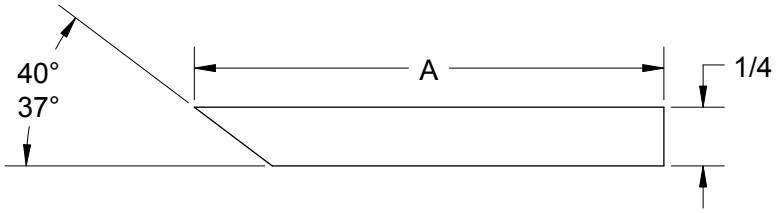


Figure 5

When dimension “A” has been reduced to 1-3/8 inches (3.5 cm) the knife must be discarded.

FLOOR CHAIN ADJUSTMENT: EVERY 50 HRS

1. The floor chain tension should be checked every 50 hrs. If the chain is too loose, the chain flights can buckle under the floor pan and damage the chain linkages and flights. If the chain is too tight,

it can put added wear on the floor bearings and cause excessive chain stretch. The chain originally contains 164 links. As the chain stretches over time, some links may need to be removed in order to tighten the chain. When the chain has been shortened to 156 links, the entire chain must be replaced.

2. Shut the machine off and open the rear access door above the airlock. Remove any built-up material under the floor pan between the chain links and the rear catch pan so that an accurate measurement can be made. Check the tension on the floor chain in the Bark Blower as shown in Fig. 6 below:

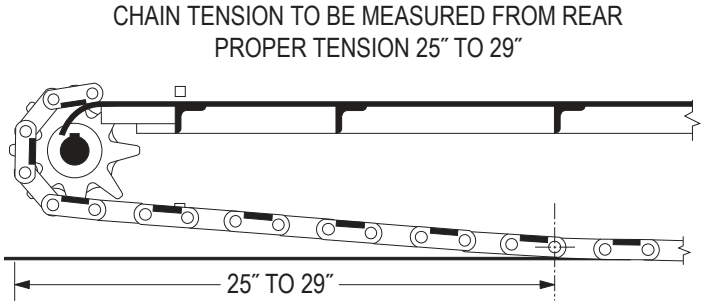


Figure 6

3. To adjust the chain tension, find the takeup bearings on either side of the floor sill near the front of the hopper. Using a 1½" wrench, turn the tensioning rod clockwise to tighten the chain and counterclockwise to loosen it. Always turn both tension rods the same amount so that the chain is always square with the drive shaft. A misaligned chain can jump off the sprocket and buckle.

AFTER FIRST 100 HOURS OF OPERATION:

1. Change engine oil and filter after 100 hours, then every 250 hours after that following engine manufacturer's recommendations.
2. Change the gear box oil on the blower (see blower manual). Change oil every 500 hours thereafter.
3. Change the gearbox oil on the airlock, the drag conveyor and the agitator using SAE 80W90 oil, filling to the side plug. Change every 1000 hours thereafter.

WINTER SHUTDOWN AND STORAGE:

1. Blow all material out of machine and turn off engine.
2. Remove the inlet elbow to the blower air chamber and coat internals of impeller cylinder with a rust preventative. Keep hands free of the impellar area. Reconnect piping to prevent foreign debris from entering blower chamber. Rotate drive shaft three or four revolutions after piping is reconnected. Repeat this process every month or as conditions may require.
3. Remove any material buildup in the airlock vanes and endplates. Coat the rotor vane tips and airlock housing with a rust preventative. Rotate the airlock as necessary to coat all internal surfaces. Repeat this process as needed to prevent excessive rust buildup.
4. Disconnect battery cables and store machine inside or protect as best as possible.

IMPORTANT: If the machine is stored outside, do not allow water to sit or ice to form in the airlock or the discharge pan. A severe buildup of rust on the rotor vanes can lock up an airlock and ice expansion can damage the airlock discharge. Also, drain the water tank and water pump hoses to prevent freezing water from damaging the tank and pump.

TROUBLE SHOOTING CHART:

Symptom	Probable Cause	Remedy
Engine won't start	No fuel	Check fuel gauge on engine sheet metal
Airlock not turning	Safety Switch Open	Make sure rear cleanout door and airlock discharge are closed tightly and interlock switches are working properly
	Blue light out on control panel	Check 10A circuit breaker in control box
	Airlock speed control turned down too far	Adjust airlock needle valve out. See page 12.
	Quick Dump feature activated / left on.	Deselect Quick Dump from the "Option" screen.
Airlock constantly auto-reversing	Overfeeding airlock	Decrease floor speed, see pg. 15 for tips
	Dull airlock knives	Check knife clearance, sharpen if dull
	Pressure switch time delay set too low	Check timer TR1, should be set for 0.5 sec.
Airlock stalling, not auto-reversing	Pressure switch isn't closing at 2400 PSI	Check pressure switch connections or replace switch if necessary
Discharge material pulsing, not smooth	Too much air	Decrease engine throttle and floor speed accordingly
	Airlock turning too fast/slow	Adjust airlock speed, see pg. 15 for tips

CONTROL BOX FAMILIARIZATION

This Bark Blower is equipped with a Programmable Logic Computer (PLC) control system. The PLC is used to control the hydraulic and electrical functions of the Bark Blower as well as provide an interface for engine communication. Because the engine is a Tier II engine, the only control offered to the engine through the PLC system is throttle command. However, the PLC also acts as an interface for engine diagnostic information such as RPM, engine oil pressure, and engine coolant temperature, using the SAE J1939 standard.

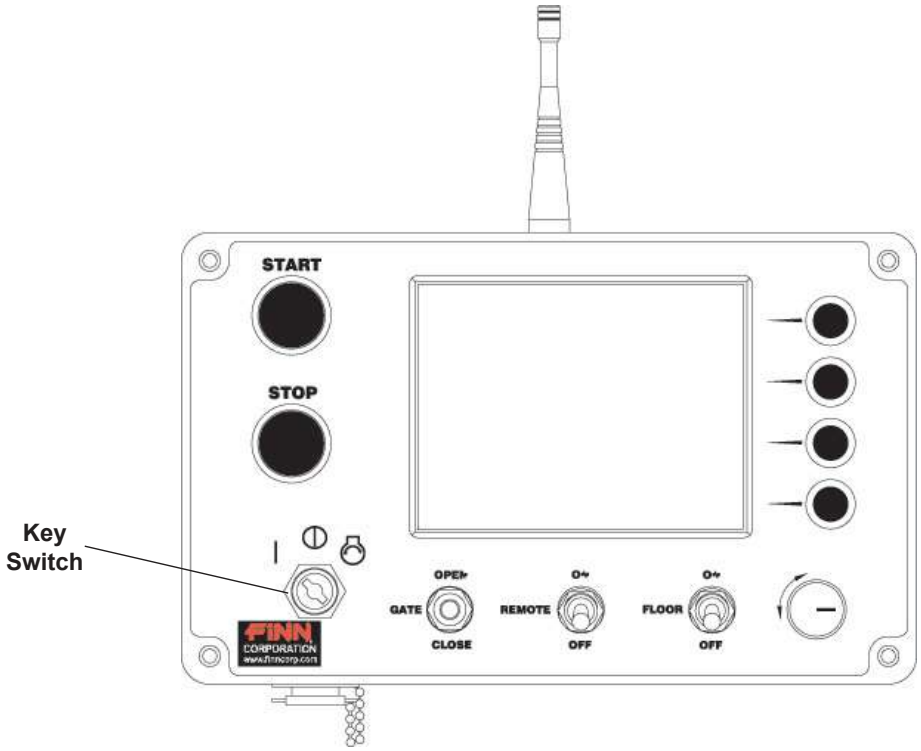


Figure 7

The key switch on the control box has three positions. From left to right, they are “Off”, “Key On” and “Start”. When the key switch on the control box is turned to the “Key On” position the Finn loading screen will appear for a few seconds before advancing to the “Main Menu” screen (see Figure 8). From this screen, one can observe the actual engine RPM, the Floor Speed setting, the engine RPM set point and any of the following status messages:

- Airlock Auto-Reverse
- Agitator Auto-Reverse
- Quick-Dump Mode
- Transmitter out of Range
- No Error

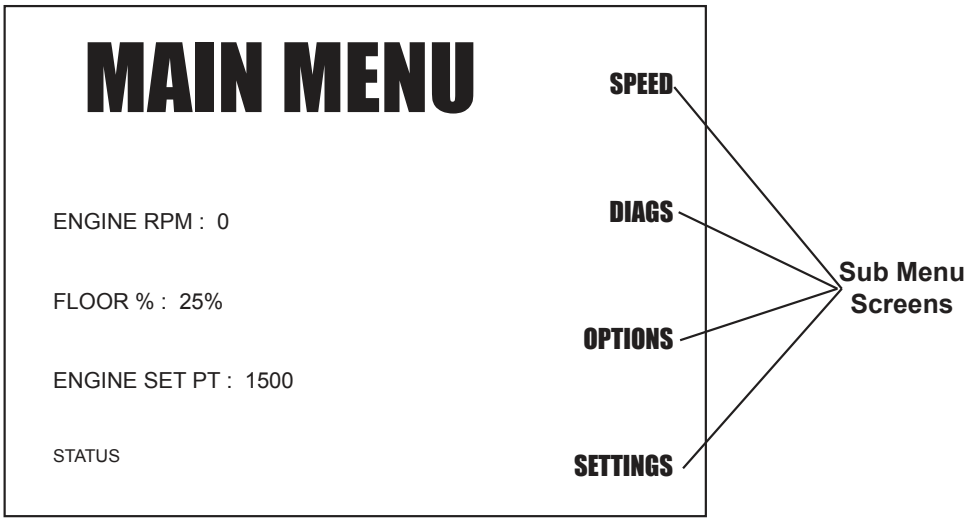


Figure 8

On the right hand side of the "Main Menu" screen are the names of four sub menus. Pressing the yellow button on the control box next to the sub menu name will take you to the corresponding menu. From the "Main Menu" you can reach the "Speed", "Diags" (diagnostics), "Options" and "Settings" sub menus, or screens.

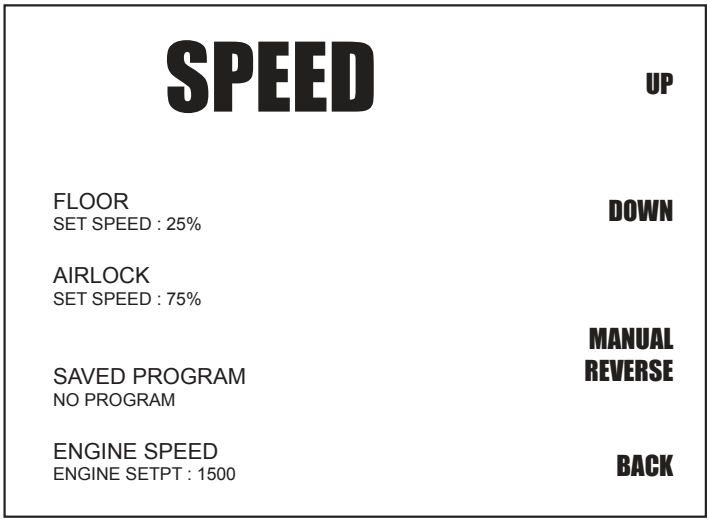


Figure 9

While in the "Speed" menu, the operator can set the Airlock speed, the Floor speed, load a preset program, and set the Engine Set Point, or engine speed (see Figure 9). By pressing the yellow buttons, now labeled "Up" and "Down", the different options will be highlighted. Rotating the dial in the lower-right of the control screen will adjust the highlighted option. The "Floor" and "Airlock" selections will range from 0% of capacity to 100% of capacity in 1% increments. The "Engine Speed" selection ranges from 1250 rpm (idle) to 2650 rpm (full throttle) in 1 rpm increments.

There are four options for "Saved Program"; "No Program", "Setting 1", "Setting 2" and "Setting 3". The "No Program" selection will use the Floor and Airlock set speeds selected in the "Speed" menu during operation. If one of the three programs is selected, their set points will override the manually selected ones at start-up. See chart (pg 24) for the Airlock and Floor set speeds for the three saved programs.

	Floor Speed	Airlock Speed
Setting 1	40	70
Setting 2	60	70
Setting 3	80	80

Airlock & Floor Set Speeds

The “Manual Reverse” button will activate the Auto-Reverse function for the Airlock circuit. See “Subsystem 3: Hydraulic Control System” on page 14 for more information.

Pressing the “Back” button will return the control box to the “Main Menu” screen.

The “Diagnostics” screen displays engine information read from the engine’s ECU (see Figure 10). The “Back” button returns to the “Main Menu” screen, while the “Next” button goes to the “Engine Status” screen.

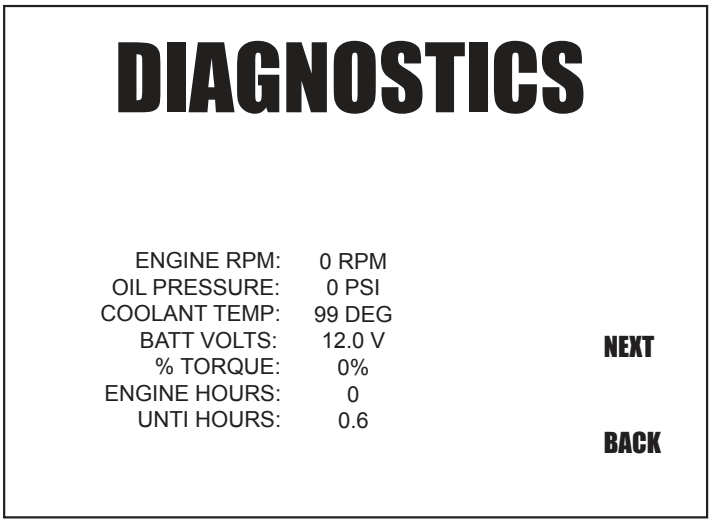


Figure 10

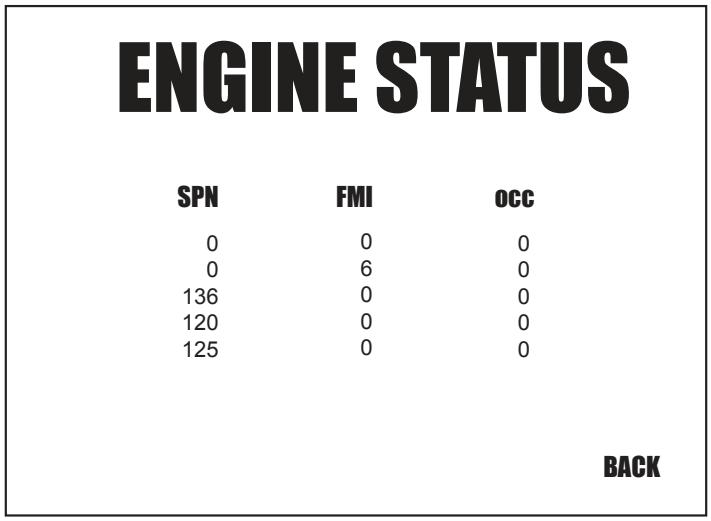


Figure 11

The “Engine Status” screen displays engine code information (see Figure 11). The “Back” button on this screen will return to the “Diagnostics” screen.

The “Options” screen has the settings for the Seed Injection option (if equipped) and the toggles for the Dust Control pump and the Quick Dump function(see Figure 12). As in the “Speed” menu, pressing the “Up” and “Down” buttons will cycle through the Seed Injection toggle, the Seed Injection program, the Dust Control toggle, and the Quick Dump toggle and the dial will change the selection. The only selection on this screen that is not an on / off toggle is the setting for “Material Program”. There are four programs that drive the speed of the electric metering wheel on the Seed Injection system as seen in the chart on page 26.

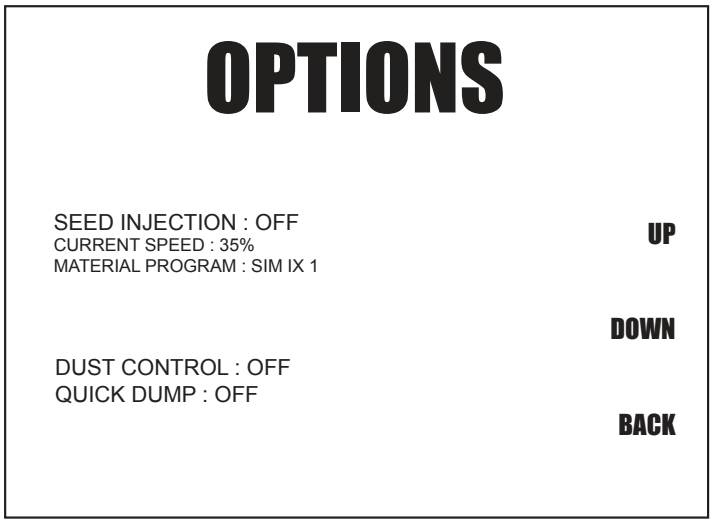


Figure 12

	Motor Speed
Seed Mix 1	35%
Seed Mix 2	50%
Seed Mix 3	75%
Seed Mix 4	100%

Electric Metering Wheel Speed

The “Back” button will bring back the “Main Menu”.

The options under the “Settings” screen are for set up purposes and, as such, are only used at the Finn facility. In order to return to the “Main Menu” simply press the “Back” button.

NOTES

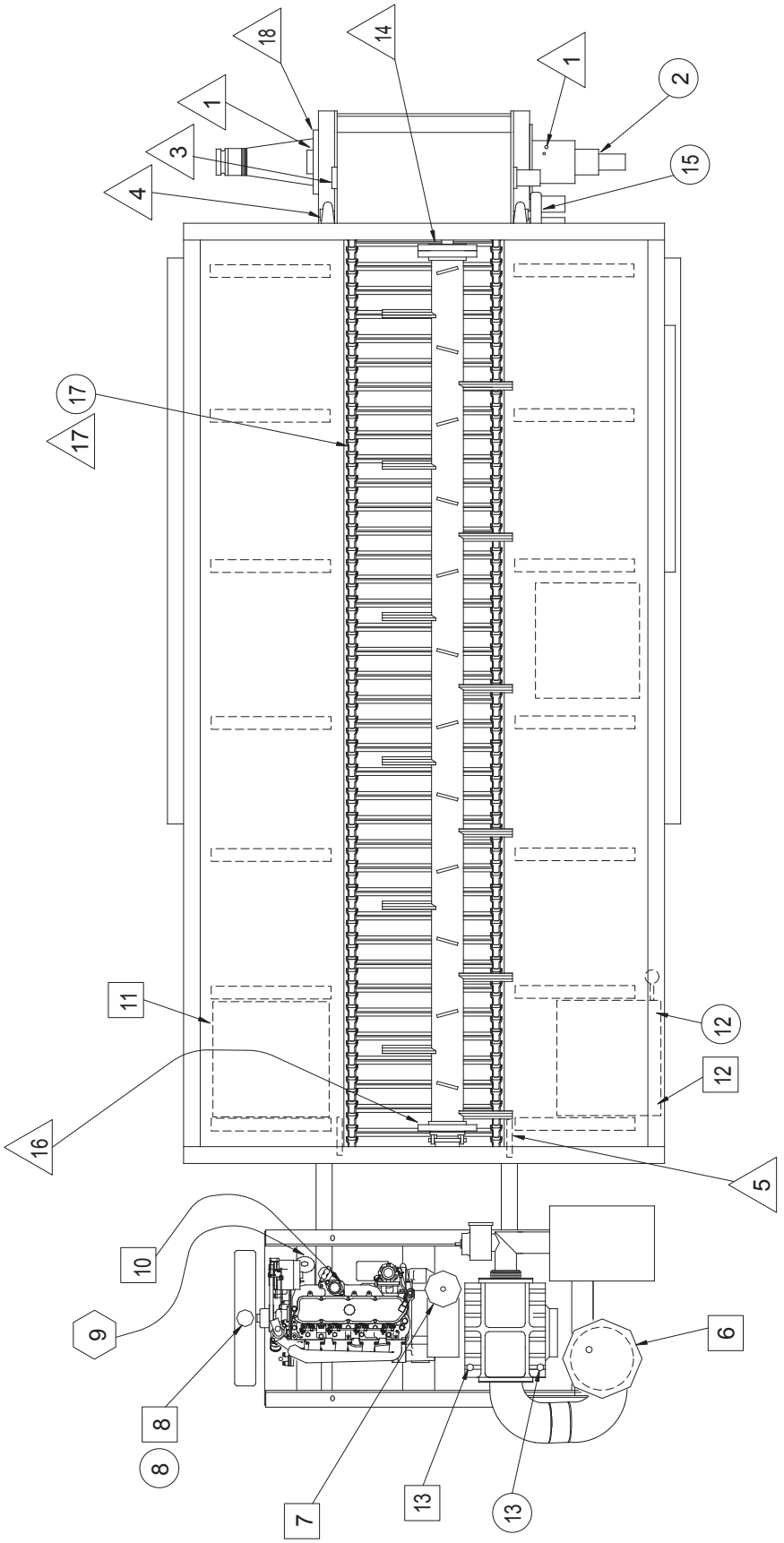


Figure 7

LUBRICATION CHART

Ref. No.	Location	Lubricant	Frequency	Number
1	Air Lock Bearing	CL	Weekly	2
2	Change Air Lock Gearbox Oil	GO	50,100, then Seasonally	1
3	Feeder Roll Bearing	CL	Weekly	1
4	Floor Pillow Block Bearing	CL	Weekly	1
5	Floor Take-Up Bearing	CL	Weekly	2
6	Check Blower Inlet Filter		Daily	1
7	Check Engine Air Cleaner		Daily	1
8	Check Engine Coolant Level	AF	Daily	1
	Change Engine Coolant	AF	Seasonally	1
9	Change Engine Oil and Filter	HO	See Engine Manual	1
10	Check Engine Oil Level	HO	Daily	1
11	Check Fuel Level	DF	Daily	1
12	Check Hydraulic Oil Level	HO	Daily	1
	Change Hydraulic Oil and Filter	HO	Seasonally	1
13	Check Blower Oil Level	BO	Daily	2
	Change Blower Oil	BO	50,100, then Seasonally	2
14	Agitator Bearing	CL	Weekly	1
15	Change Floor Drive Gearbox Oil	GO	50,100, then Seasonally	1
16	Change Agitator Gearbox Oil	GO	50,100, then Seasonally	1
17	Check Chain Tension		Weekly	1
	Lubricate Floor Chain	CH	Seasonally	1
18	Airlock Shaft Seals	CL	Weekly	2

TIME KEY

DAILY (8 hours)

WEEKLY (50 hours)

SEASONALLY (500 hours)

SEE ENGINE MANUAL

LUBRICANT OR FLUID USED

CL	Chassis Lubricant
BO	Blower Oil Mobil SHC-630 Synthetic
AF	50/50 Anti-Freeze and Water Mixture
DF	#1 D / #2 D Diesel Fuel
HO	Hydraulic Oil DTE-13M Hyd. Fluid
GO	SAE 80W90 Gear Oil
CH	Mineral oil or chain lubricant

FLUID CAPACITIES

Fuel - 38 Gallons (143 L)
Hydraulic Oil - 36 Gallons (136 L)
Engine Coolant - 4 Gallons (15.1 L) 50/50 Mix Only
Engine Oil - See Engine Manual
Agitator Gearbox Oil - 2 Quarts (1.9 L)
Airlock Gearbox Oil - 20 Oz. (0.6 L)
Floor Gearbox Oil - Fill to Level Plug
Blower Oil - See Blower Manual

BARK BLOWER

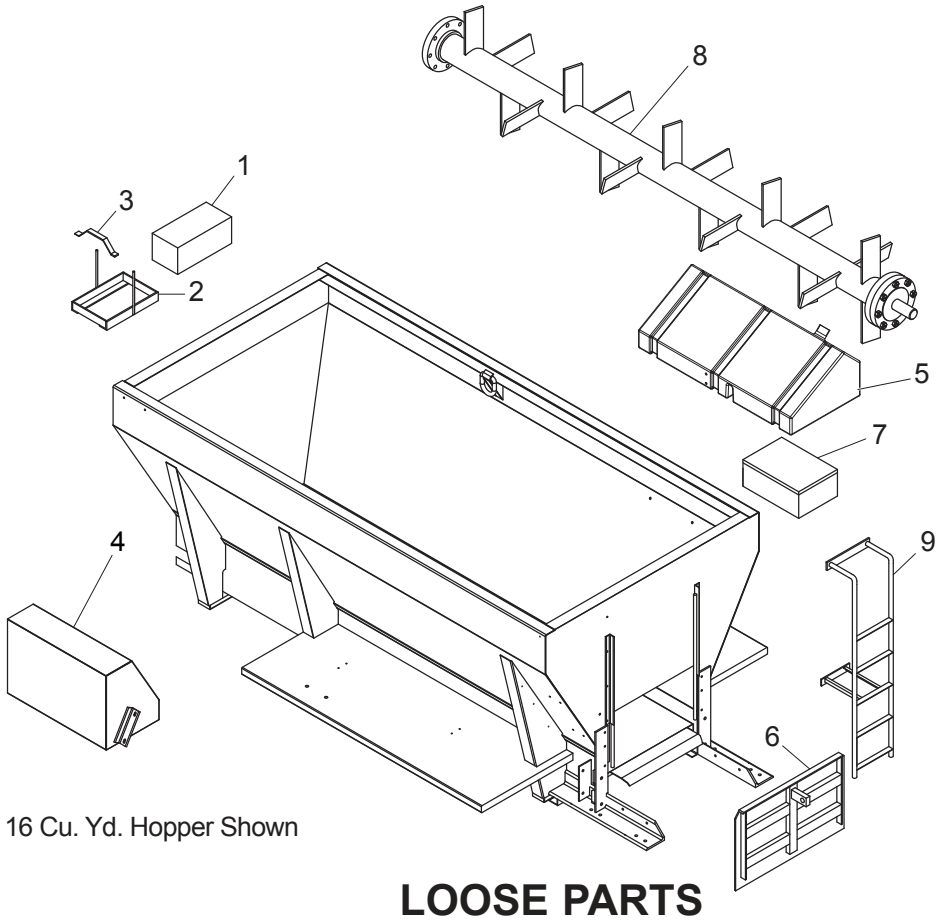
Model 1216 & 1222
Parts Manual

Model SR

NOTES

PICTORIAL REFERENCE

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

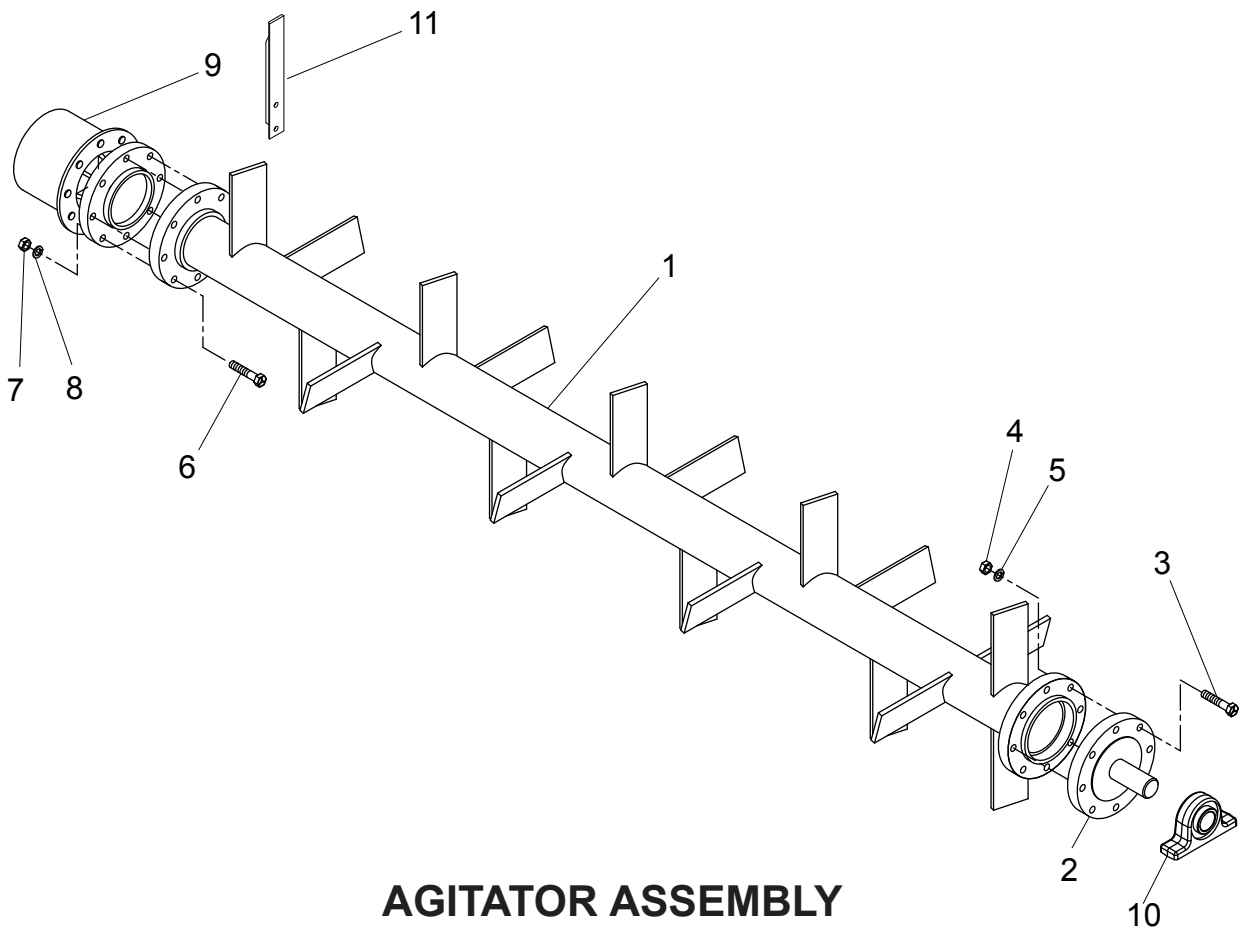


16 Cu. Yd. Hopper Shown

LOOSE PARTS

Ref. No.	Part Number	Description	No. Req'd
1	011770	Battery Box	1
	011851	Battery	1
2	F330-0054	Battery Tray	1
3	F330-0092	Battery Holddown Strap	1
4	053004	Hydraulic Reservior	1
	011927	Hydraulic Reservoir Suction Strainer	1
	008706	Hydraulic Reservoir Fill Cap	1
5	012693	Fuel Tank	1
	012694	Fuel Level Sender	1
6	052999	Rear Gate Weldment	1
7	052160	Tool Box	1
8	052872-02	Agitator Assembly (see pg. 35)	1
9	052360	Ladder	1
		NOT SHOWN	
	052730-01	Hot Air Hose Cradle	1
	052742	Hose Cradle Draw Latch	2
	052731	1-1/2" Rubber Grommet	2

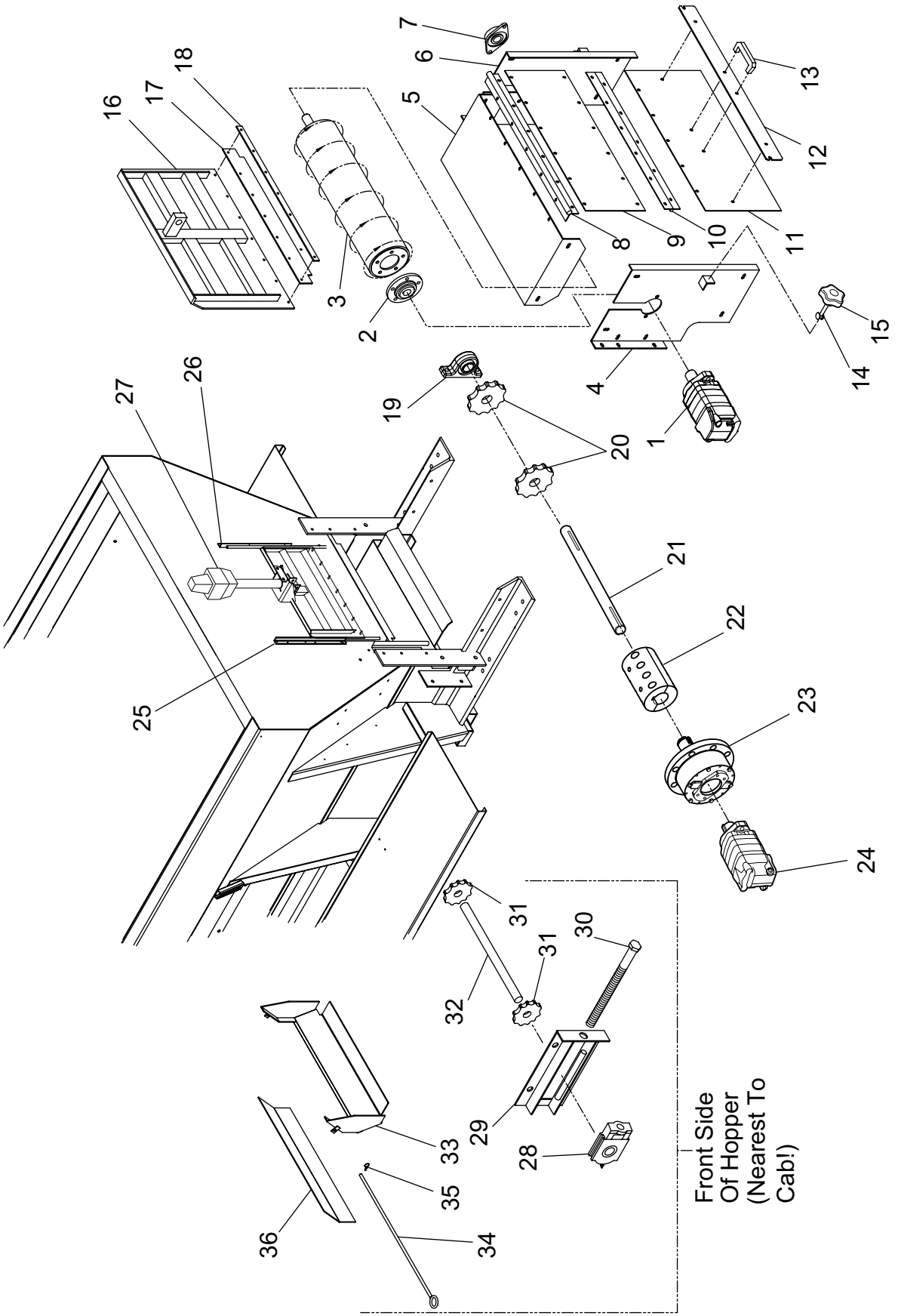
WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE



AGITATOR ASSEMBLY

Ref. No.	Part Number	Description	No. Req'd
1	052872-02	Agitator Shaft	1
2	052420	Special Agitator Stub Shaft	1
3	0X1260	3/4-10 UNC HHCS x 3-3/4" Lg.	8
4	00X12L	3/4-10 UNC Lock Nut	8
5	00W12L	3/4" Lock Washer	8
6	0X1040	5/8-11 UNC HHCS x 2-1/2" Lg.	8
7	00Y10L	5/8-11 UNC Lock Nut	8
8	00W10L	5/8" Lock Washer	8
9	052446	Gear Box	1
	WL7-122	1/2-20 Press-In Stud	8
10	052129	Agitator Bearing	1
11	053072	Agitator Scrapper	1
		NOT SHOWN	
	052991	Hydraulic Motor	1

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

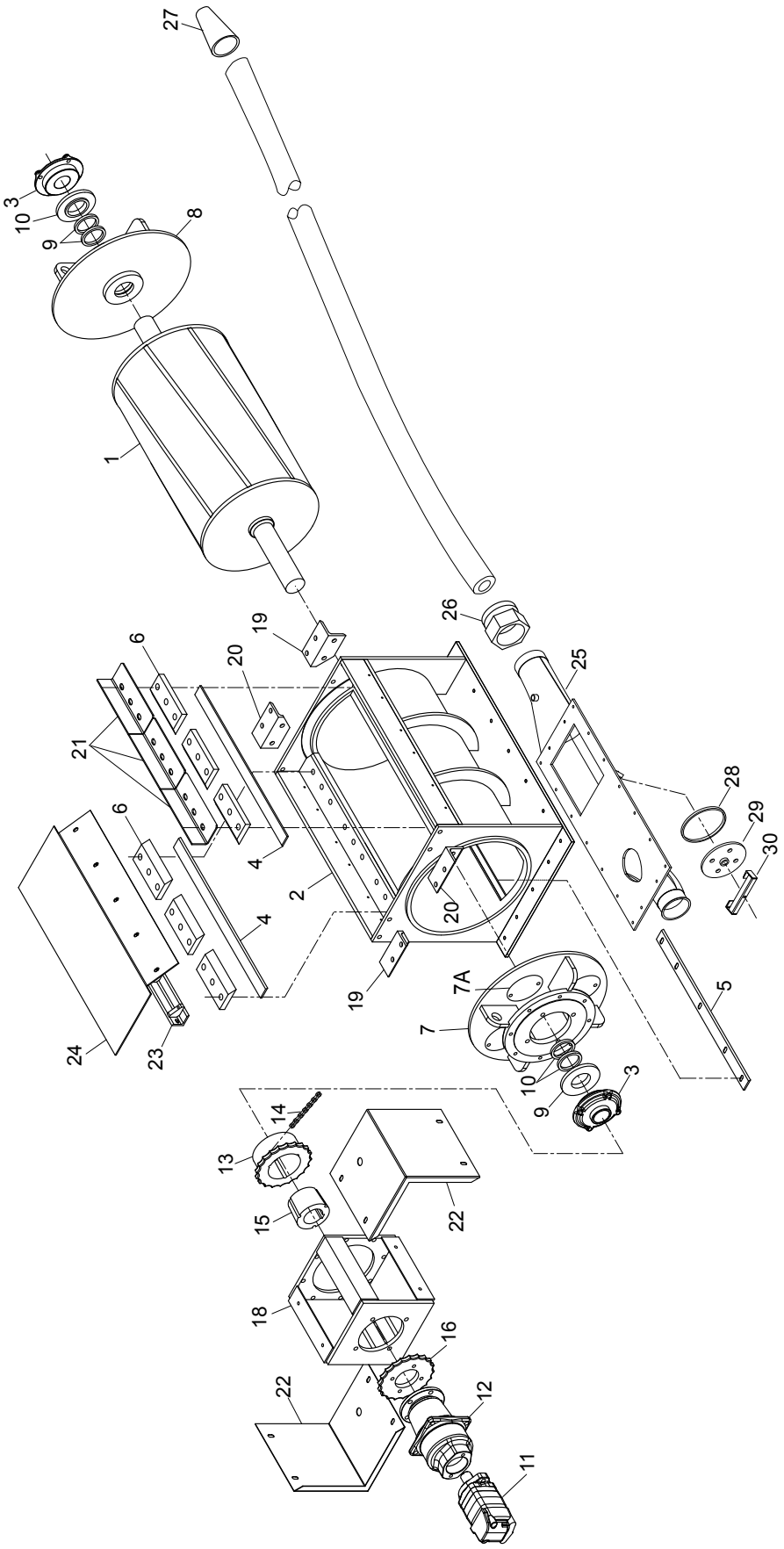


WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

FLOOR AND FEED ROLL PARTS

Ref. No.	Part Number	Description	No Req'd
1	052500	Feed Roll Hydraulic Motor	1
2	045031	Feed Roll Mount Hub	1
3	052676	Feed Roll	1
4	052517-01	Left-Hand Feeder Panel	1
5	F916-0004	Feeder Top Cover	1
6	052517-02	Right-Hand Feeder Panel	1
7	020586	2-Bolt Feed Roll Bearing	1
8	052506-01	Top Feeder Door Hinge	1
9	F916-0006-01	Top Feeder Door	1
10	052506-02	Lower Feeder Door Hinge	1
11	F916-0006-02	Bottom Feeder Door	1
12	052502-02	Door Stiffener Strap	1
13	055586	Feeder Door Pull Handle	1
14	052703	Swing Bolt	2
15	052699	Black Knob	2
16	052999	Rear Gate	1
17	052372-01	Rear Gate Seal	1
18	052372-02	Rear Gate Seal Strap	1
19	045019	Rear Floor Bearing	1
20	052224	Rear Floor Sprocket	2
21	052986	Rear Floor Drive Shaft	1
22	053023	Steel 2 Piece Coupling	1
23	052989	Floor Gear Box	1
24	052990	Hyd Motor - Floor	1
	055517	Floor Motor Gasket	1 per
25	F916-0001-07	Left-Hand Gate Rail	1
26	F916-0001-08	Right-Hand Gate Rail	1
27	052985	Gate Hydraulic Cylinder	1
28	052220	Idler Bearing	2
29	052780	Bearing Frame	2
30	052780-06	Adjustment Rod	2
31	075218	Front Idler Sprocket	4
32	052507-02	Front Idler Shaft	2
33	F916-0045	Front Clean-out Frame	1
34	052352-08	Front Clean-Out Door Rod	1
36	052821	Front Clean-Out Door	1
		NOT SHOWN	
	052996	Floor Assy	1
	053032	Belt Scraper	1
	053054-01	Front Floor Seal	1
	053054-02	Front Seal Mount	1
	053054-03	Front Seal Retainer	1
	053057-08	Engine Wiring Harness	1
	053067	Rubber Floor Chain Cover - 1216/1222	2
	053068-01	Chain Cover Strap	6
	053068-02	Chain Cover Strap - Short	2
	053068-03	Chain Cover Dog House Retainer	2
	F1216-0024	Chain Guard Mount	6
	F1216-0025	Chain Guard Extension Mount	2

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

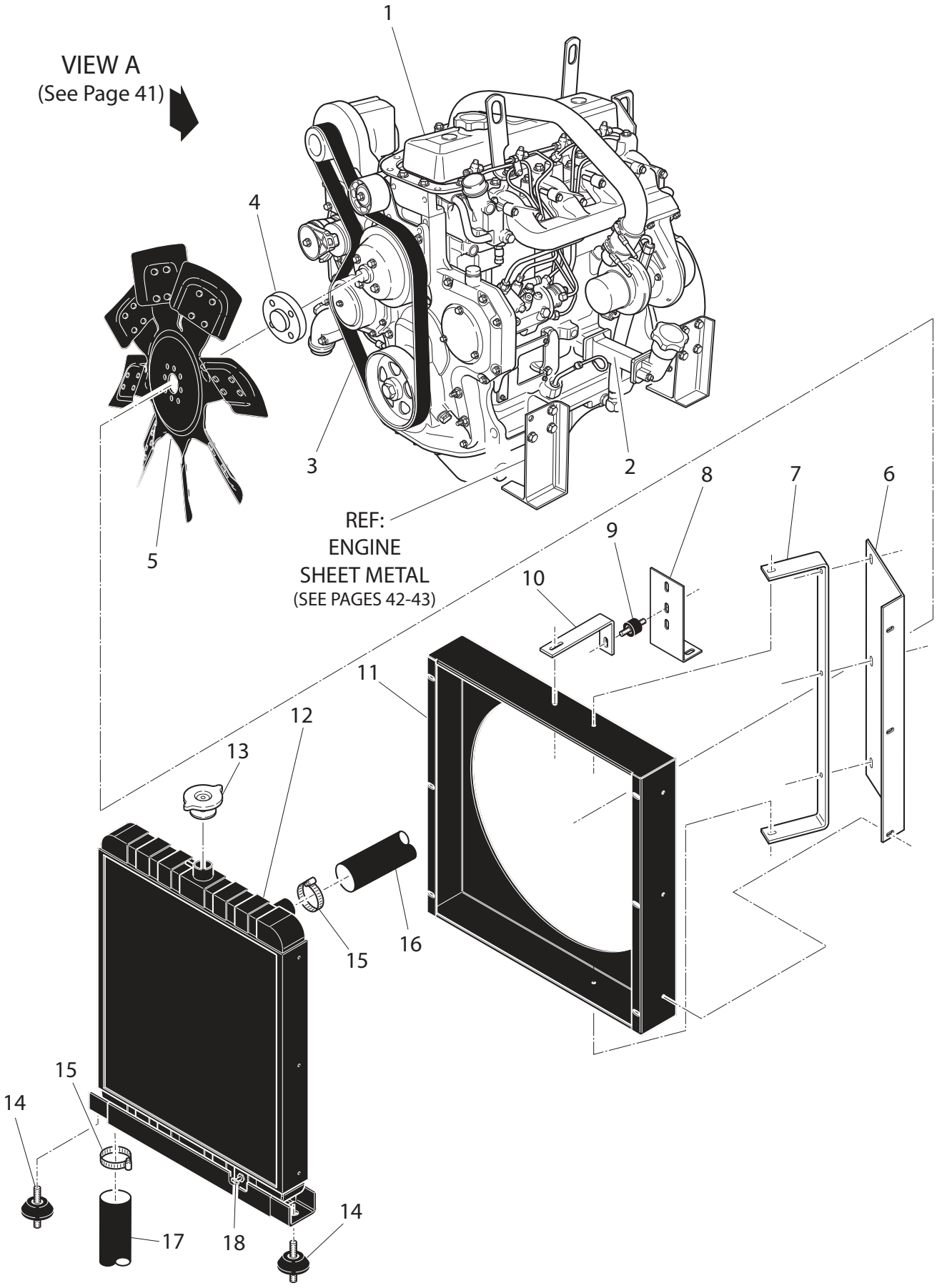


WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

AIRLOCK PARTS

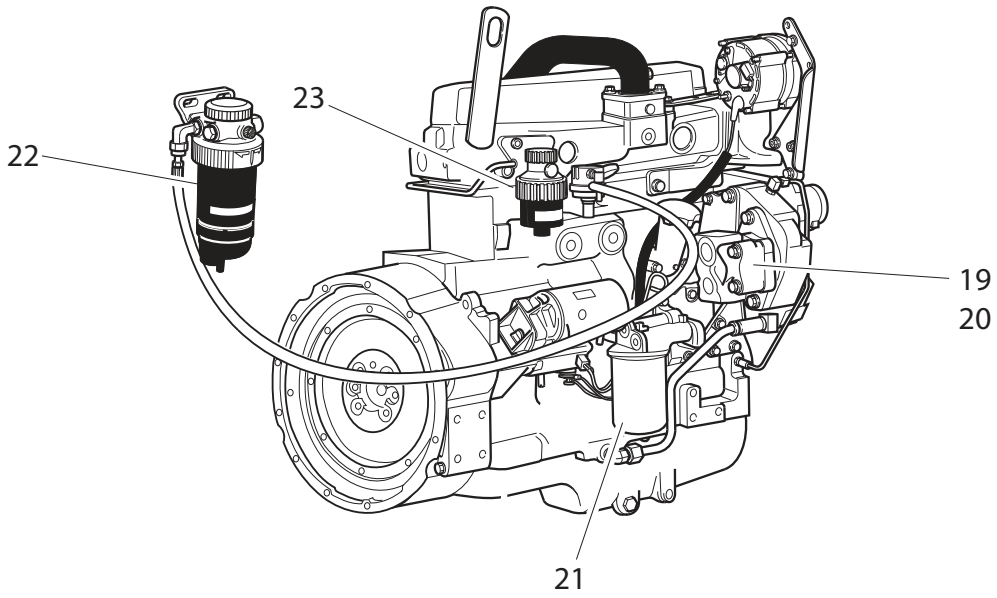
Ref. No.	Part Number	Description	No. Req'd
	052665	18 x 33 Standard Duty Airlock	1
1	052752	Rotor Weldment	1
2	052753	Housing Weldment	1
3	052754	Flange Bearing	2
4	045296-01	Top Knife	2
5	045296-02	Bottom Wiper Knife	1
6	052757	Top Knife Clamp	6
7	052758	Drive Endplate	1
7A	052762	Cleanout Door	8
8	052759	Discharge Endplate	1
9	052760	Packing Media	2
10	052761	Packing Gland	2
11	052535	Airlock Hydraulic Motor	1
12	045378	Gearbox	1
13	045199	Coupling Half	1
14	045201	Coupling Chain	1
15	045202	Taper Bore Bushing	1
16	045230	Machined Coupling Sprocket	1
17	190131-48	3/4 Keystock x 3" Lg. (Not Shown)	1
18	045254	Gearbox Mount	1
19	045273-01	Left Mounting Angle	2
20	045273-02	Right Mounting Angle	2
21	F1240-0039-02	Knife Cover Plate	3
22	F1240-0041	Coupling Gaurd	2
23	F916-0064	Rear Catch Pan Mount	1
24	F916-0017	Rear Catch Pan	1
25	052987	Inlet Pan Weldment	1
26	012306	5" Male Aluminum Adapter	1
27	052878	Red Diffuser Cone 4"	1
28	053059	Clean Out Door Gasket	1
29	F1216-0015	Burnout Door	1
30	053001	Burnout Door Clamp Assy	1

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



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

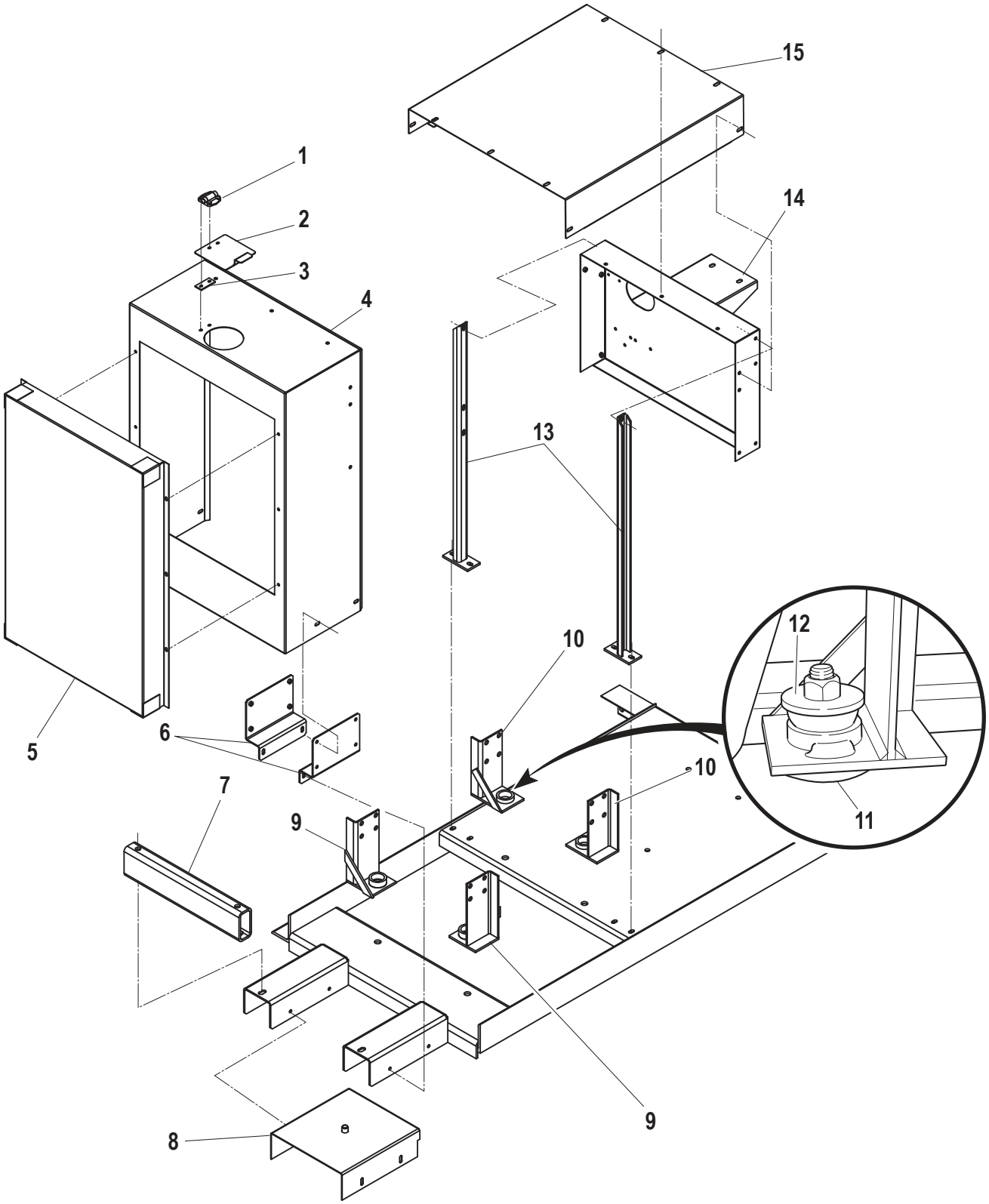
VIEW A



ENGINE & RADIATOR

Ref. No.	Part Number	Description	No. Req'd
1	023864	4045T Tier 2 Engine Assembly	1
2	012611	Oil Fill Extension	1
3	JDR123442	Fan Belt	1
4	JDSD043	1" Fan Spacer	1
5	JDAR98090	Suction Fan	1
6	F816-0008-01	Fan Guard	1
7	F330-0096	Fan Guard Mounting Strap	1
8	023812-02	Radiator Arm Support Bracket	1
9	023438	Rubber Mount	1
10	023792-08	Fan Shroud Strap	1
11	F330-0093	Fan Shroud	1
12	075562	Radiator	1
13	023807	Radiator Cap	1
14	008641	Isolator Mount	2
15	022450	2-1/2" Hose Clamp	4
16	JDR128455	Upper Radiator Hose	1
17	023845	Lower Radiator Hose	1
18	022452	Drain Cock	1
19	052817	Hydraulic Pump	1
20	JDR96934	Pump Gasket	1
21	JDRE504836	Oil Filter	1
22	JDRE517181	Secondary Fuel Filter	1
23	JDRE509031	Primary Fuel Filter	1

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

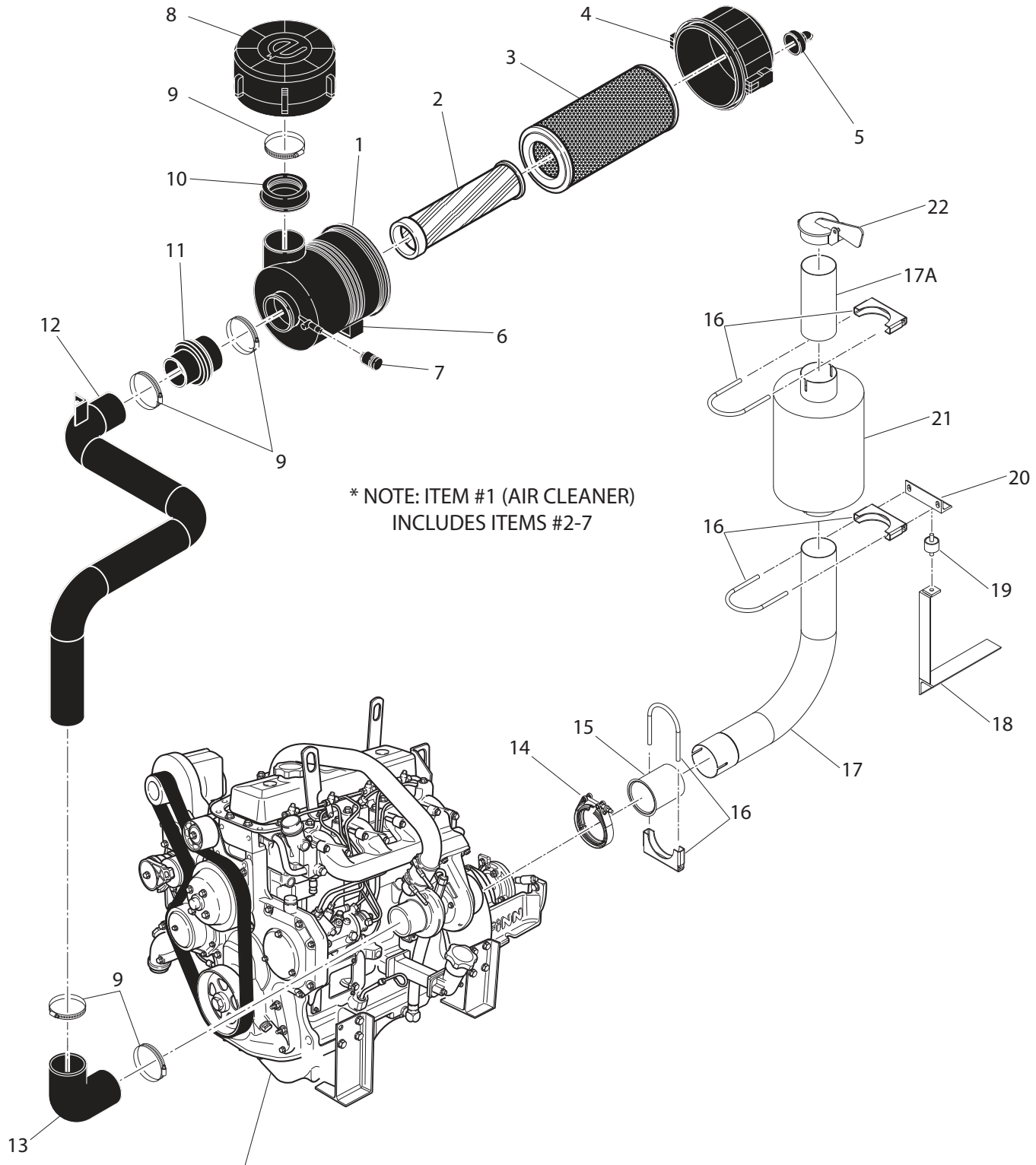


WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

ENGINE SHEET METAL

Ref. No.	Part Number	Description	No. Req'd
1	055669	Lock Positioning Hinge	1
2	F260-0006-02	Radiator Cap Cover	1
3	F260-0006-03	Hinge Spacer	1
4	F170-0023	Radiator Shroud	1
5	F1216-0012	Radiator Screen	1
6	F170-0026	Front Sheet Metal Mount	2
7	012835	Radiator Spacer	1
8	F170-0020	Radiator Pan	1
9	012753	Front Engine Foot	2
10	052397	Rear Engine Foot	2
11	007433	Rubber Shock Mount	6
12	007887	Snubbing Washer	4+
13	008664	Rear Panel Mount	2
14	008663	Rear Engine Panel	1
15	F916-0033	Engine Top Cover	1

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



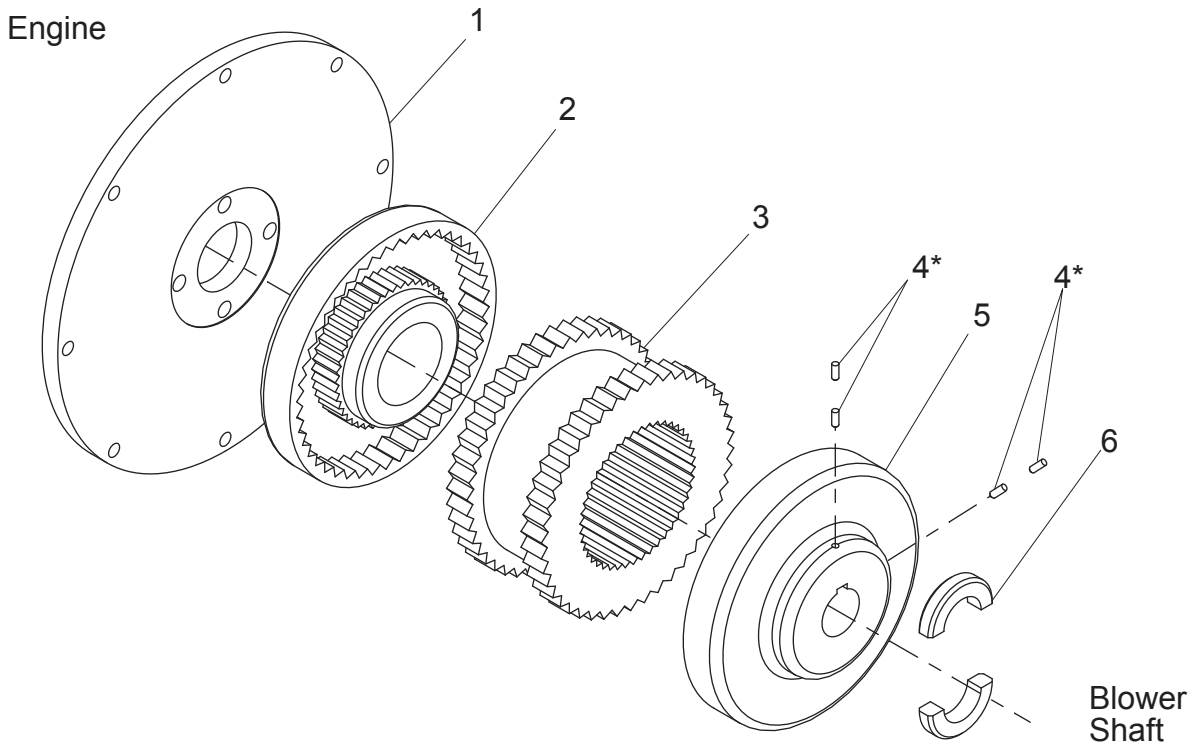
REF:
ENGINE & RADIATOR
(See Pages 40-41)

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

ENGINE AIR INTAKE

Ref. No.	Part Number	Description	No. Req'd
1	012621	Air Cleaner	1
2	012623	Safety Filter Element (3.75-E2)	1 per
3	012622	Main Filter Element (3.75-E1)	1 per
4	012621D	Filter Cap	1 per
5	012621A	Flapper Valve	1 per
6	012621C	Mounting Bracket	1 per
7	012621B	Dust Load Indicator Gauge	1 per
8	012608	Pre-Cleaner	1
9	022657	4" Clamp	5
10	012609	Pre-Cleaner Adapter	1
11	008618	Hump Adapter	1
12	012840	Turbo Inlet Tube Weldment	1
13	011852	Rubber Elbow	1
14	023800	V-Band Clamp	1
15	023799	Flared Adapter	1
16	023801	3-1/2" Muffler Clamp	3
17	023797	Long Exhaust Elbow	1
17A		Made from drop of Item 17 (P/N 23797)	
18	052516	Exhaust Mount Weldment	1
19	023438	Rubber Shock Mount	1
20	052515-03	Exhaust Mount Angle	1
21	045012	Exhaust Muffler	1
22	045014	Rain Cap	1

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

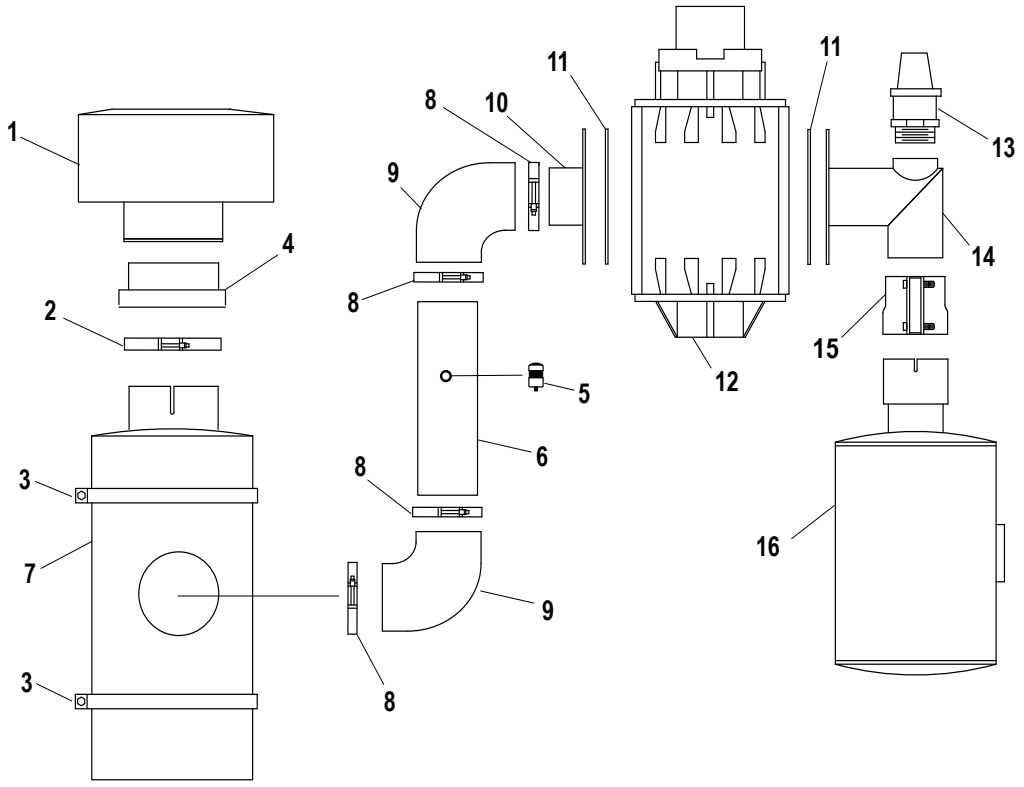


***Note:** Part number 045003 blower coupling half must be locked with double setscrews (two on top of each other.)

BLOWER DRIVE ASSEMBLY

Ref. No.	Part Number	Description	No. Req'd
1	045039	Flywheel	1
2	045002	Flywheel Mount Coupling Half	1
3	045004	Coupling Insert	1
4	Z0606CPK	Coupling Set Screw	4
5	045003	Blower Coupling Half	1
6	045118	Lock Collar	1
		NOT SHOWN	
	F1240-0003-01	Left Coupling Gaurd	1
	F1240-0003-02	Right Coupling Gaurd w/Weldnut	1

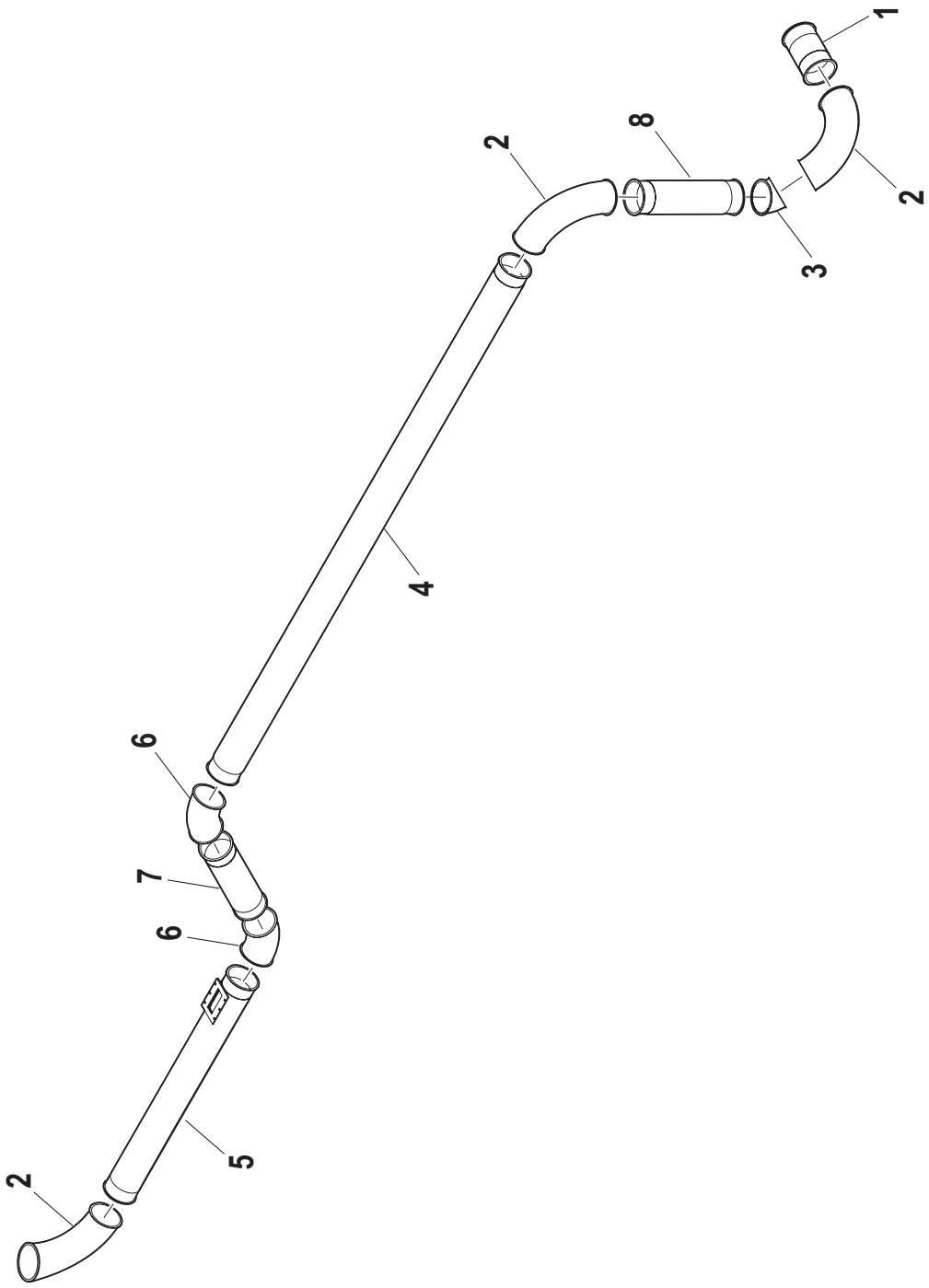
WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE



BLOWER SYSTEM

Ref. No.	Part Number	Description	No. Req'd
1	052905	Pre-Cleaner	1
2	052905-C	Pre-Cleaner Clamp	1
3	052907	Filter Bracket	2
4	052905-B	Pre-Cleaner Bushing	1
5	053055	Filter Gauge	1
6	052919-02	Inlet Tube	1
7	052906	Canister Filter	1
	052904-01	Filter Stand (Not Shown)	1
8	052908	7" Band Clamp	4
9	052915	7" Rubber Elbow	2
10	052919-01	Blower Inlet Flange	1
11	045192-01	Blower Gasket	2
12	045001	Blower	2
	052532-01	Blower Foot (not shown)	2
13	052937	Relief Valve	1
14	052994	Blower Discharge Weldment	1
	052778	Pressure Gauge (not shown)	1
15	045186	5" Lap Joint Clamp	1
16	053000	Outlet Silencer	1
	052997	Silencer Support (not shown)	1

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

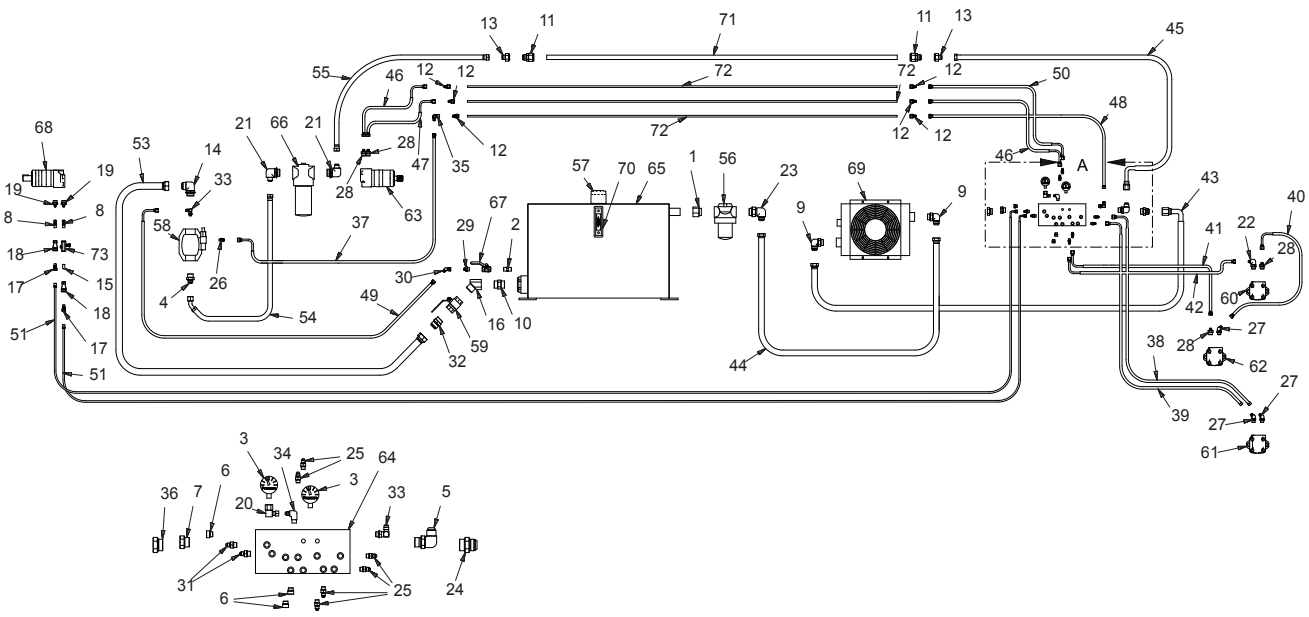


WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

BLOWER PIPING

Ref. No.	Part Number	Description	No. Req'd
1	052981-01	1208/1216 Short Air Tube Weldment	1
2	045338	5” 90° Elbow	3
3	045362	5” 45° Elbow Segment	1
4	052981-03	Long Air Tube Weldment	1
5	053029-02	Seed Hopper Air Tube Weldment	1
6	045339	5” 45° Elbow	2
7	052981-04	Connector Air Tube Weldment	1
8	052981-02	Vertical Air Tube Weldment	1
		NOT SHOWN	
	045336	5" Jacobs Pull Ring	12
	045337	5" Jacobs Gasket	12

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



DETAIL A
SCALE 1 / 10

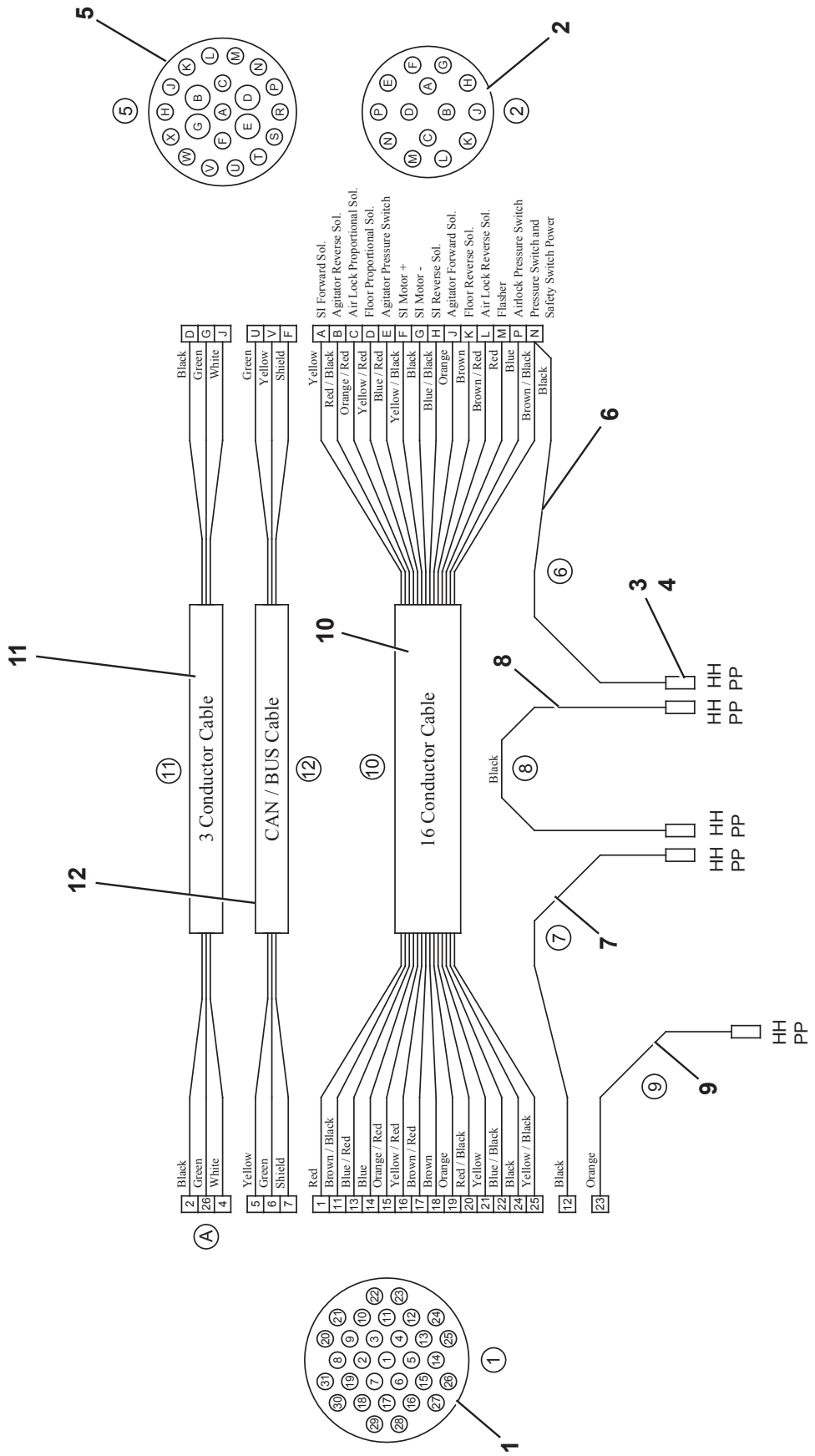
HYDRAULIC SYSTEM

Ref. No.	Part Number	Description	No. Req'd
1	008708	FNPT - MSAE Adapter	1
2	011504	Pipe Nipple	1
3	012044	Pressure Gauge #CF-5000-25	2
4	012088	MSAE - MJIC Adapter	1
5	012091	MSAE - MJIC 90° Elbow	1
6	012130	MSAE Plug	3
7	012362	MSAE Plug	1
8	012419	FNPT - FJIC Swivel Adapter	2
9	023620	MSAE - MJIC 90° Elbow	2
10	041150	Pipe Nipple	1
11	045203	Tube - MJICAdapter	2
12	045204	Tube - MJIC Adapter	6
13	052028	JIC Reducer	2
14	052401	MSAE - MJIC 90° Elbow	1
15	052748	Pipe Nipple	1
16	053018	NPT 45° Street Elbow	1
17	053046	Male Quick Disconnect	2
18	053047	Female Quick Disconnect	2
19	053051	MSAE - MJIC Adapter	2
20	053076	FNPT - FJIC 90° Swivel Adapter	1
21	053078	MSAE - MJIC 90° Elbow	2
22	055309	MSAE - MJIC 90° Elbow	1
23	055358	MSAE - MJIC 90° Elbow	1
24	055383	MSAE - MJIC Adapter	1
25	055601	MSAE - MJIC Adapter	6

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

HYDRAULIC SYSTEM

Ref. No.	Part Number	Description	No. Req'd
26	055602	MSAE - MJIC Adapter	1
27	055741	MSAE - MJIC 45° Elbow	3
28	085014	MSAE - MJIC Adapter	4
29	085015	MNPT - MJIC Adapter	1
30	085189	JIC 45° Swivel Elbow	1
31	FW65217	MSAE - MJIC Adapter	2
32	FW65348	MNPT - MJIC Adapter	1
33	FW71448	MSAE - MJIC 90° Elbow	2
34	FW71450	MNPT - MJIC 90° Elbow	1
35	FW71636	JIC 90° Swivel Elbow	1
36	FW75199	MSAE Plug	1
37	052554	3/8" Hyd. Hose x 65"	1
38	053015-05	3/8" Hyd. Hose x 42"	1
39	053015-06	3/8" Hyd. Hose x 41"	1
40	053015-07	3/8" Hyd. Hose x 20"	1
41	053015-08	3/8" Hyd. Hose x 24"	1
42	053015-09	3/8" Hyd. Hose x 33"	1
43	053045-01	1" Hyd. Hose x 83"	1
44	053045-02	1" Hyd. Hose x 55"	1
45	053045-03	3/4" Hyd. Hose x 27-1/2"	1
46	053045-04	3/8" Hyd. Hose x 36"	2
47	053045-05	3/8" Hyd. Hose x 35"	1
48	053045-06	3/8" Hyd. Hose x 37"	1
49	053045-07	3/8" Hyd. Hose x 127"	1
50	053045-08	3/8" Hyd. Hose x 28"	1
51	053045-10	1/4" Hyd. Hose x 278"	2
53	053045-11	1-1/4" Hyd. Hose x 120"	1
54	053079-01	3/4" Hyd. Hose x 64"	1
55	053079-02	3/4" Hyd. Hose x 39"	1
56	008702	Hydac Low Pressure Filter	1
57	011783	Filler / Breather Cap	1
58	011922	Hydraulic Pump	1
59	012083	1-1/4" Ball Valve	1
60	052500	Hydraulic Motor	1
61	052535	Hydraulic Motor	1
62	052990	Hydraulic Motor	1
63	052991	Hydraulic Motor	1
64	052992	Hydraulic Manifold	1
65	053004	Hydraulic Reservoir	1
66	053077	Hydac High Pressure Filter	1
67	070122	1/2" Ball Valve	1
68	070660	Hydraulic Motor	1
69	075523	Heat Exchanger	1
70	080329	Hydraulic Level Gauge	1
71	202575SS	SS Tubing	1
72	202097SS	SS Tubing	3
73	FW71203	Flow Control Valve	1



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

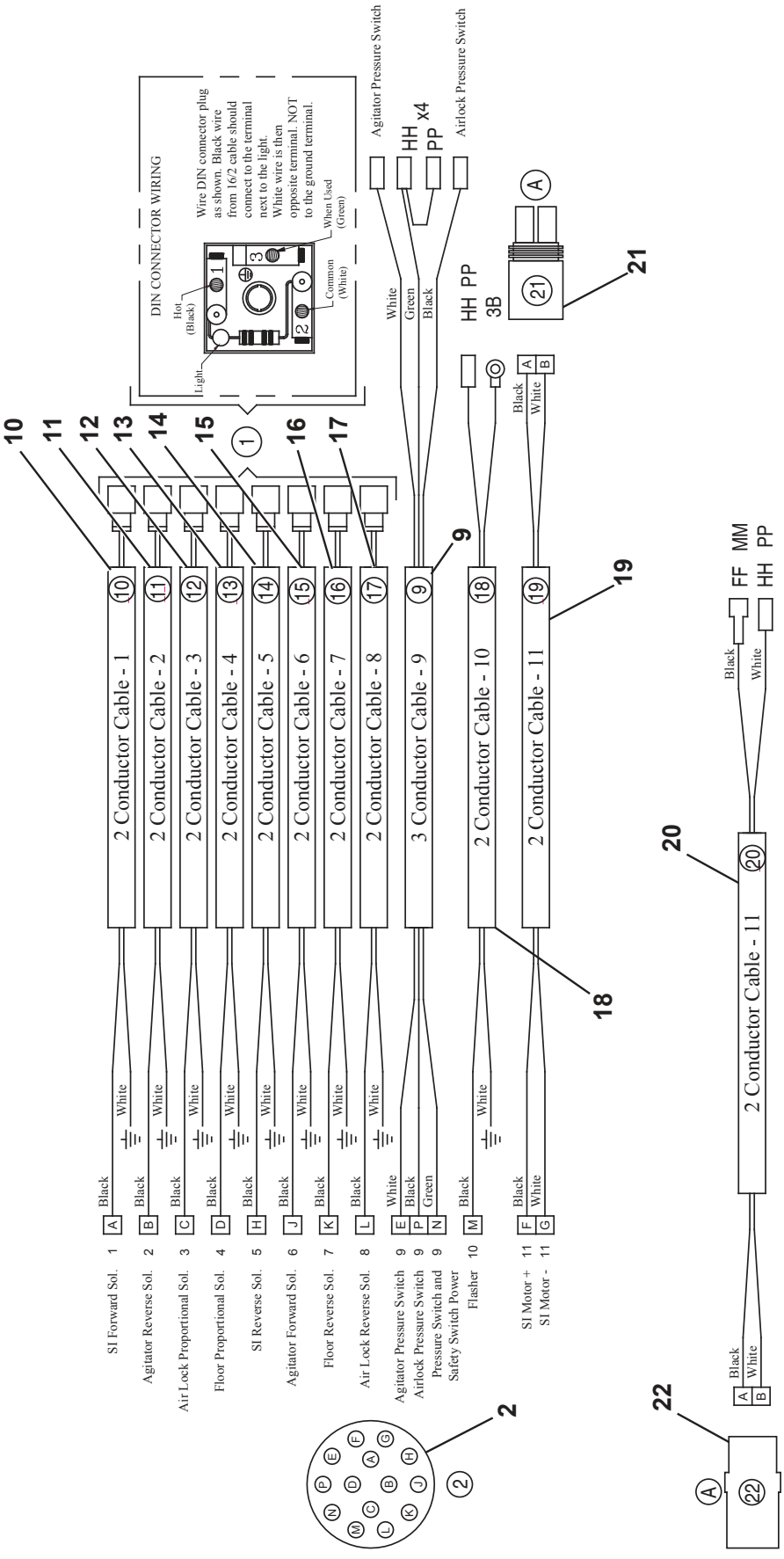
CONTROL BOX HARNESS

	Part Number	Description	No. Req'd
	053048	Control Box Wiring Harness	1
1	053017	Deutsch #HD36-24-31ST	1
2	053041	Deutsch Receptacle	1
3	170019	SINGLE CIR RECEPT HSG 480054-3	5
4	170023	FASTON RECEPT #42282-2	5
5	170101	Deutsch #HDP26-24-21SE Plug	1
6	190051	WIRE 16GA BLACK SAE SXL	48"
7	190051	WIRE 16GA BLACK SAE SXL	59"
8	190051	WIRE 16GA BLACK SAE SXL	100"
9	190058	WIRE 16GA ORANGE SAE SXL	37"
10	190108	16 CONDUCTOR SDN CABLE	96"
11	190146	16 GA./3 Conductor SOW-A Cable	242"
12	190228	Datacell 1939 TF Can-Bus Cable	242"
13	170111	Deutsch Socket (16 Ga.)	41
14	170112	Deutsch Socket (12 Ga.)	2
15	170110	Deutsch Socket (16 Ga.)	24

ELECTRICAL COMPONENTS NOT INCLUDED IN HARNESSES

012694	Fuel Gauge	1
JDRE68470	Engine Starter	1
JDTY24485	95A Alternator	1
022891	Solenoid Relay	1
011851	12-Volt Battery	1
031031	Battery Cable	1
010516	Ground Strap	1
011770	Battery Box	1
075523	Hydraulic Oil Cooler w/Fan	1
007336	Warning Light	1
052336	Pressure Switch	1
052436	Rear Door Switch	2

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

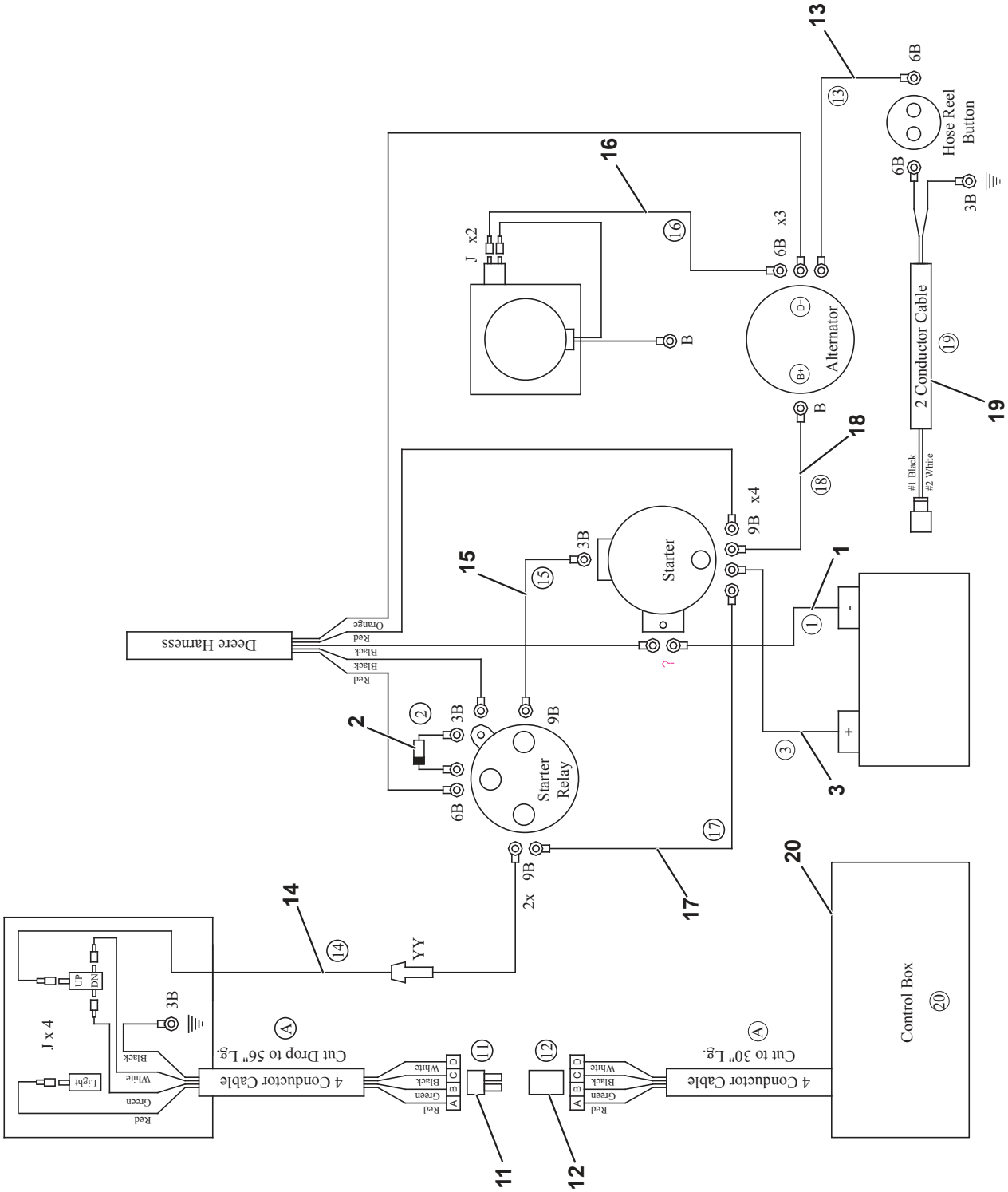


WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

VALVE WIRING HARNESS

	Part Number	Description	No. Req'd
	053056	Valve Wiring Harness	1
1	045136	Lighted DIN (2+GND)	8
2	053042	18-14PT Receptacle	1
3	170004	Ring Tongue 16-14 1/4	1
4	170018	Single CIR HSG	1
5	170019	Single CIR Recept HSG	6
6	170022	Tab	1
7	170023	Recept	6
8	190055	Wire 16GA Green SAE SXL	2"
9	190146	16 GA./3 Conductor SOW-A Cable	25"
10	190156	16 GA./2 Cond. SOW-A Cable (Black)	25"
11	190156	16 GA./2 Cond. SOW-A Cable (Black)	25"
12	190156	16 GA./2 Cond. SOW-A Cable (Black)	25"
13	190156	16 GA./2 Cond. SOW-A Cable (Black)	25"
14	190156	16 GA./2 Cond. SOW-A Cable (Black)	25"
15	190156	16 GA./2 Cond. SOW-A Cable (Black)	25"
16	190156	16 GA./2 Cond. SOW-A Cable (Black)	25"
17	190156	16 GA./2 Cond. SOW-A Cable (Black)	25"
18	190156	16 GA./2 Cond. SOW-A Cable (Black)	72"
19	190156	16 GA./2 Cond. SOW-A Cable (Black)	3"
20	190156	16 GA./2 Cond. SOW-A Cable (Black)	
21	035078	Male Connector	1
22	071208	Female Connector Assy.	1

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

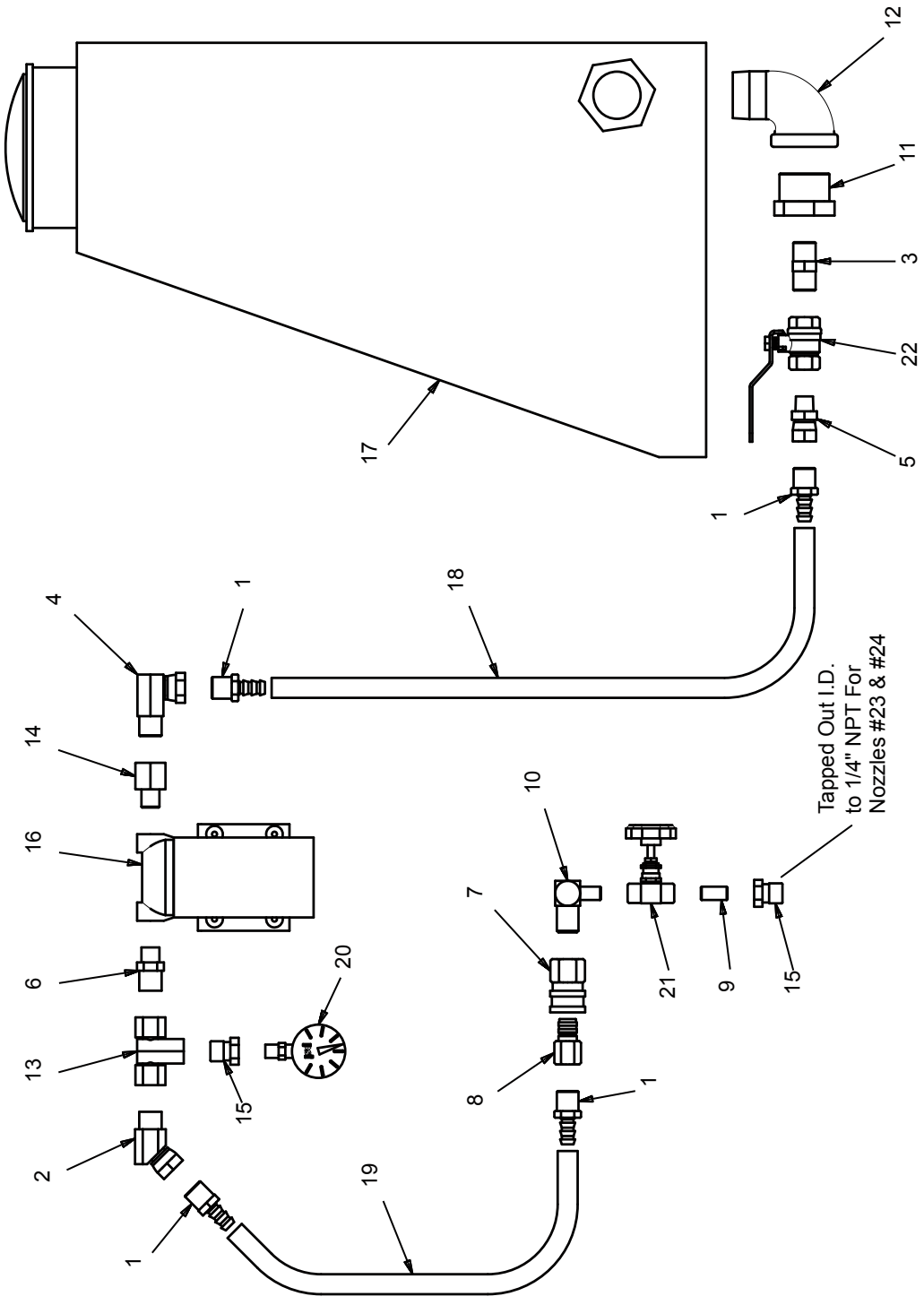


WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

ENGINE WIRING

	Part Number	Description	No. Req'd
	053057	Engine Wiring	1
1	010516	Ground Strap	1
2	022425	Diode	1
3	031031	Battery Cable 2 GA Red X 3/8	1
4	170000	Ring Tongue 12-10 3/8	2
5	170004	Ring Tongue 16-14 1/4	5
6	170005	Ring Tongue 16-14 GA.	7
7	170007	Ring Tongue 6 3/8	6
8	170012	Butt Conector 16-14	2
9	170024	Faston PIDG Recept	6
10	170028	Fuse & Holder	1
11	170059	4-Way Connector: Tower Half	1
12	170060	4-Way Connector: Shroud Half	1
13	190054	Wire 16GA Blue SAE SXL	60"
14	190060	Wire 12 GA Red SAE SXL	207"
15	190156	16 GA./2 Cond. SOW-A Cable (Black)	22"
16	190066	Wire 12 GA Orange SAE SXL	226"
17	190088	Wire 6 GA Red	22"
18	190088	Wire 6 GA Red	26"
19	190156	16 GA./2 Cond. SOW-A Cable (Black)	270"
20	052993	12 Series Control System)	1

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

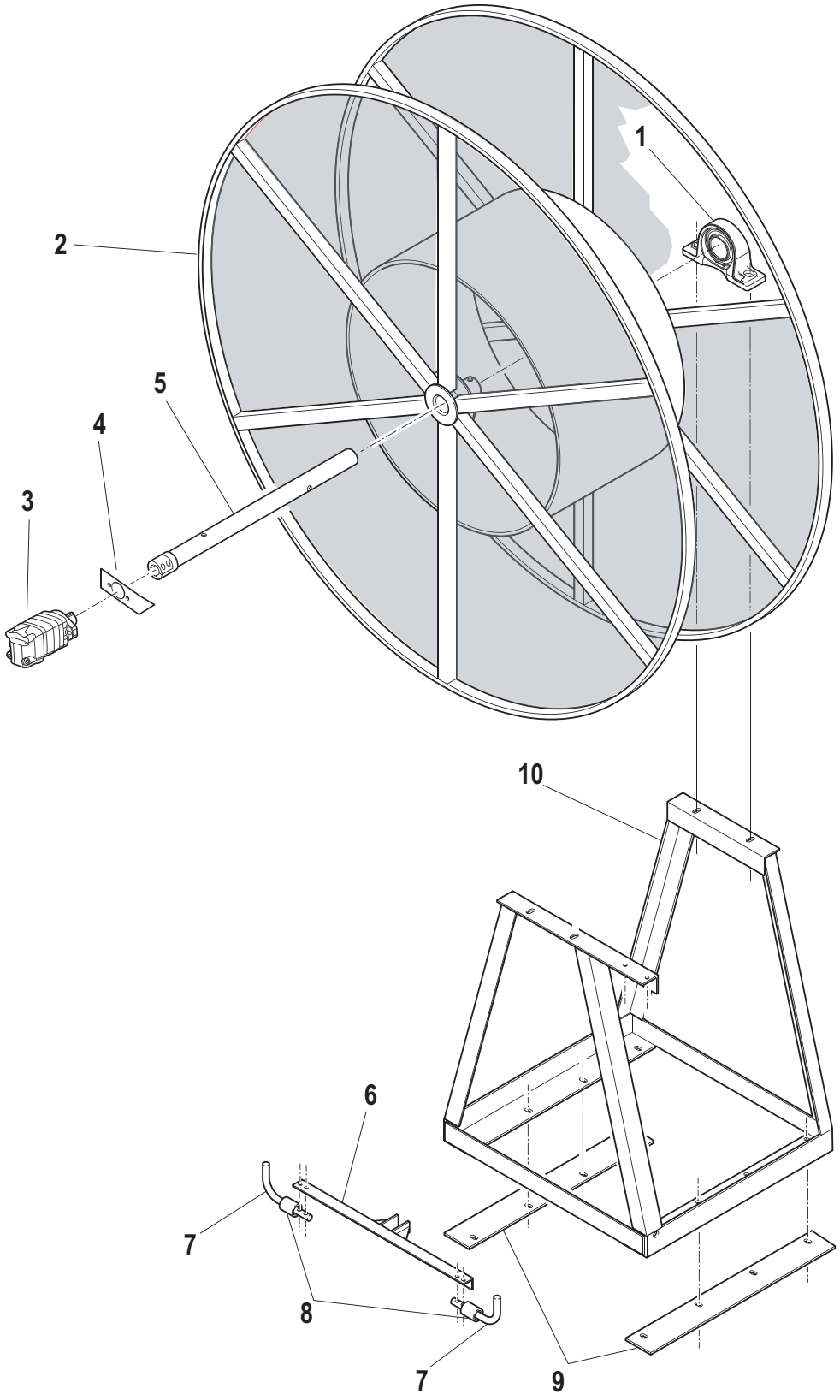


WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

DUST CONTROL SYSTEM

Ref. No.	Part Number	Description	No. Req'd
1	006772	Hose Barb	4
2	011503	NPT 45° Swivel Elbow	1
3	011504	Pipe Nipple	1
4	021669	NPT 90° Swivel Elbow	1
5	022305	NPT Straight Swivel Adapter	1
6	052032	Reducer Nipple	1
7	052734	Female Quick Disconnect	1
8	052735	Male Quick Disconnect	1
9	052748	Pipe Nipple	1
10	052749	MNPT - MNPT 90° Reducer Elbow	1
11	052841	Reducer Bushing	1
12	052842	Swivel Pipe Elbow	1
13	052901	Female Swivel Tee	1
14	053066	NPT Reducer Coupling	1
15	055229	Reducer Bushing	2
16	052667	Pump	1
17	052718	75 Gal. Poly Tank	1
	052750	3/4" Bulkhead Fitting - Drain	1
	052751	3/4" Drain Plug	1
	052718-03	Tank Cap	2
18	052722-06	Suction Hose	1
19	052722-07	Discharge Hose	1
20	052771	Pressure Gauge	1
21	052941	Needle Valve	1
22	070122	Ball Valve	1
23	052480	1/4" S10 Brass Nozzle	1
24	052481	1/4" S14 Brass Nozzle	1
		NOT SHOWN	
	052942	Water Tank Bracket	2
	052743	Tank Hold Down Strap	2

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

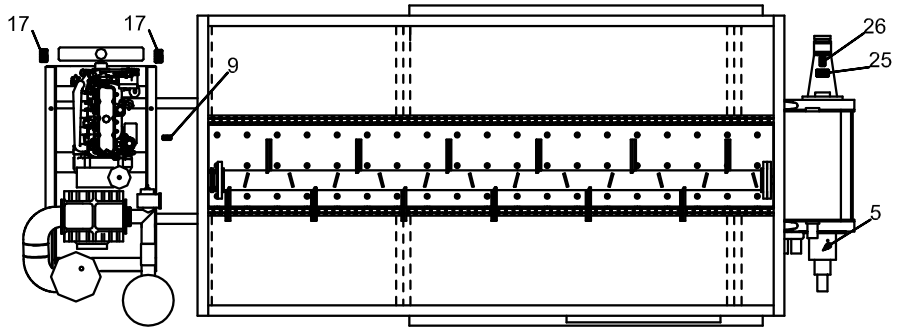


WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

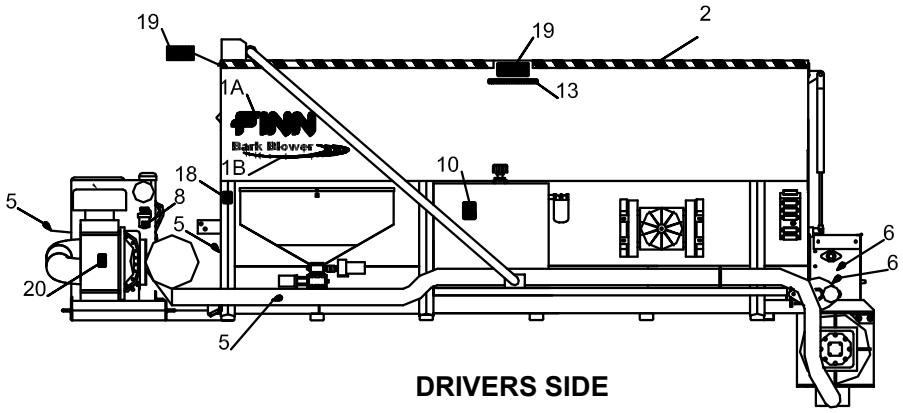
HYDRAULIC HOSE REEL

Ref. No.	Part Number	Description	No. Req'd
	053011	Hydraulic Hose Reel Assy	1
1	052337	2" Special Pillow Block Brg.	1
2	052416	Reel Weldment	1
3	070660	Hydraulic Motor	1
4	F1216-0019	Hose Reel Motor Mount	1
5	053014-05	Hose Reel Shaft	1
6	053013	Hose Reel Latch	1
7	052350-02	Latch Handle Rod	2
8	052384-05	Lock Spacer Tube	2
9	052384-06	Mounting Strap	2
10	052383	Hose Reel Mounting Frame	1

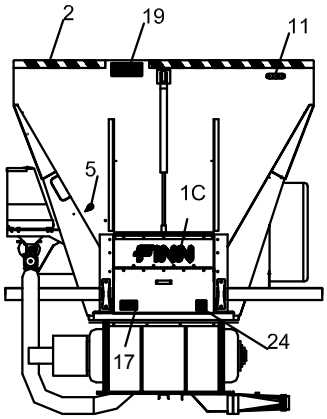
WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE



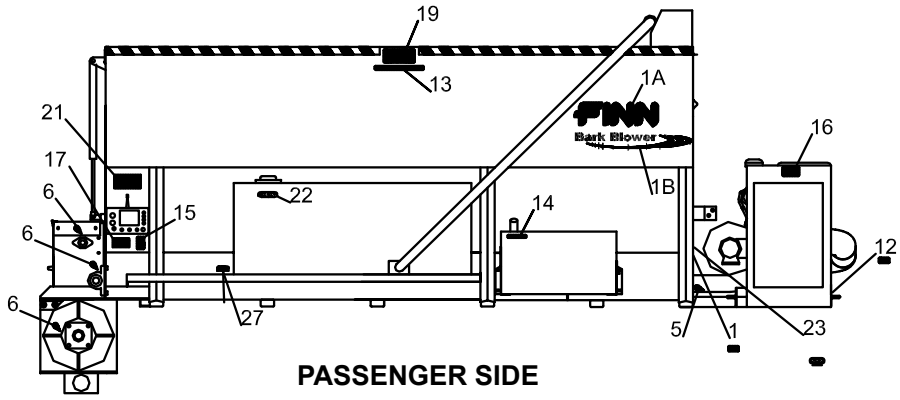
TOP VIEW



DRIVERS SIDE



REAR VIEW



PASSENGER SIDE

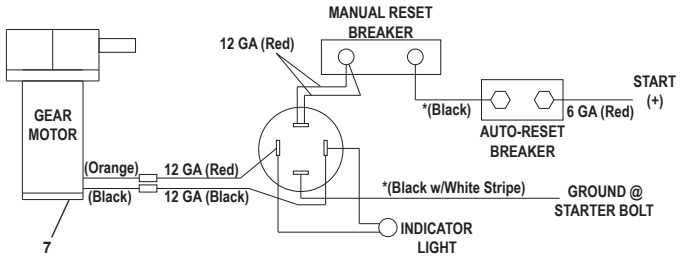
WHEN ORDERING PARTS, BE SURE TO STATE SERIAL NUMBER OF MACHINE

DECALS

Ref. No.	Part Number	Description	No. Req'd
*1	011690	FINN Name Plate	1
*1A	023174	Decal "FINN" Large	2
*1B	055639	Decal "Bark Blower"	2
*1C	031235	Decal "FINN" Small	1
*2	190173	2" Yellow-Black Warning Tape	40'
3	007230	Decal "Service Daily"	2
4	007230-02	Decal "Service Daily"	1
5	007231	Decal "Service Weekly"	6
6	007231-01	Decal "Service Weekly"	5
7	007231-02	Decal "Service Weekly"	1
8	007607	Decal "Drain Water Daily"	1
9	012278	Decal "Warning! Burn Hazard"	1
10	012687	Decal "Caution-Hydraulic System..."	1
11	012688	Decal "Caution-Fall Hazard"	1
12	012868	Decal "Hose Reel Rewind"	1
13	022690	Decal "Wear Eye Protection"	2
14	023391	Decal "Diesel Fuel Only"	1
15	023519	Decal "Wear Eye Protection"	1
16	031462	Decal "Warning! Radiator"	1
17	031463	Decal "Warning! Sever Hazard"	4
18	045128	Decal "Danger Do Not Raise"	1
19	052177	Decal "Danger - Rotating Hazard"	4
20	052178	Decal "Important - If The Machine..."	1
21	053038	Decal "Operating Instructions"	1
22	053062	Decal "Water Only"	1
23	055216	Decal "PATENT NUMBERS"	1
24	055219	Decal "Danger, Sharp Knives"	1
25	055280	Decal "Warning! Flying Objects"	1
26	055375	Decal "Warning! Contents Under..."	1
*27	012260	Metal Plate: Important...."	1

***Note:** These items are not part of the 12 Series Decal Sheet (P/N053037). All other decals are not available individually, they are only available by ordering 053037. Decals are shown on page 62 for location purposes only.

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



TARP ASSEMBLY

Ref. No.	Part Number	Description	No. Req`d
	052865	Tarp Assembly Includes:	1
1	RR1031	Electric Gear Tarp Motor w/Protective Cover	1
	RR3103-16	Pre-Threaded Aluminum Tarp Axle	1
	RR3105	Flange Bearing	2
2	RR1050	Electric Kit (Switch, Bracket, Breaker, Etc.)	1
3	RR3636-16	Wind Deflector Housing	1
4	RR4643	3-Spring Pivot Set	2
5	RR7670-16	Tarp Bow Set	1
	RR7677-16	Crossbar	1
	RR7676-16	Upper Arm	2
6	RR8116	Knit Mesh Tarp	1
7	RR1031	Electric Gear Tarp Motor	1

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

TOOL KIT

Part Number	Description	No. Req'd
012681A	FINN Beige Touch-Up Paint (Aerosal - 4.5 Oz.)	1
012681T	FINN Beige Touch-Up Paint (Wet - 0.5 Oz.)	1
	Engine Parts Manual	1
	Engine Operators Manual	1
	Blower Operators Manual	1
	Radio Remote Control Manual	1
	Bark Blower Parts/Operators Manual	1

DISCHARGE HOSE

Part Number	Description	No. Req'd
052952	Severe Duty Discharge Hose Assy (4" Dia x 50' Lg)	4
055377	Hose Adapter	8
055374A	Aluminum Male Coupler	4
055375A	Aluminum Female Coupler	4
052881	Discharge Deflector Cone	1
055337	Shoulder Strap	1
045347	5" x 4" Reducer w/ Couplings	1
045304	Hot Air Hose	1

RECOMMENDED SPARE PARTS

Part Number	Description
011869	Hydraulic Oil Return Filter
011784	Hydraulic Reservoir Breather Filter
JDRE60021	Fuel Filter
JDRE59754	Engine Oil Filter
JDR123442	Fan Belt
012622	Main Filter Element
012623	Safety Filter Element
045296-01	Airlock Knife (2 per)
045296-02	Bottom Wiper Knife (1 per)
052436	Airlock Door/Discharge Interlock Switch
055122	12V Timer Relay

NOTE: *Recommended spare parts are available to help avoid unnecessary down time.*

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