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Bark Blower TM

Model BB-605 **Operator's Manual**

Model **SMA** Serial No. _____

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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

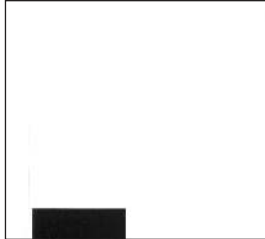
Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

BARK BLOWER SAFETY SUMMARY SECTION

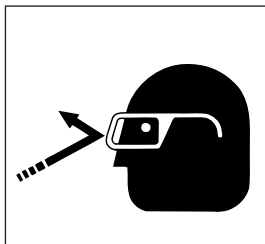
It is important that all operators of this machine are familiar with all the safety aspects mentioned below before operating the machine. Always keep a copy of this manual with the machine. It is the responsibility of the operator of the machine to fully understand this safety section. Remember that 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. Check hitch and hitch bolts, safety chains, lights, brakes and breakaway switch. Verify that the hitch ball or pintle hook is the correct size for the coupler.

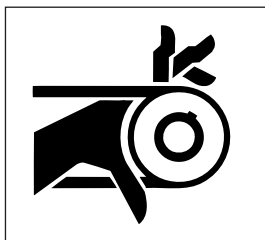


2. Verify that all guards are in place.
3. By carefully looking into the blower hopper and transition, inspect for and remove any foreign objects. Follow OSHA lockout/tagout procedure (29 CFR 1910.147)
4. Inspect all hydraulic hoses and tubes for cracks, bulges or damage. If hose is bad, replace immediately.
5. 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 operator(s) 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.



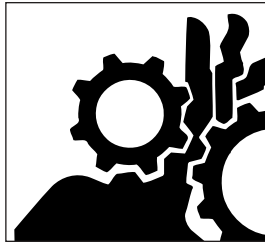
9. Never operate this or any other machinery when fatigued, tired, under the influence of alcohol, illegal drugs or medication. You must be in good physical condition and mentally alert to operate this machine.

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.

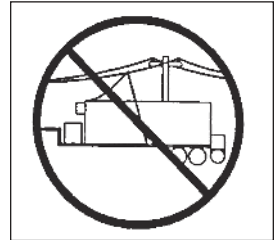
17. Be careful in getting on and off the blower, especially in wet, icy, snowy or muddy conditions. Clean mud, snow or ice from steps, fenders and footwear.



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.

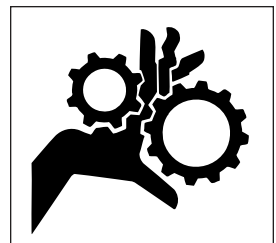
19. Be careful when operating the tarp near power lines. Raising the tarp into power lines may cause severe electrical shock. Always have the tarp either fully open or retracted when transporting the machine.



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.

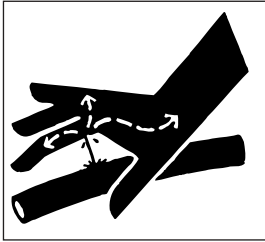
4. Battery maintenance. Lead-acid batteries contain sulfuric acid which may damage eyes or skin on contact. Always wear a face shield to avoid acid in the eyes. If acid contacts eyes, flush immediately with clean water and get medical attention. Wear rubber gloves and protective clothing to keep acid 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

CAUTION

**Wear proper eye protection
when feeding this machine.**

22690

WARNING

To prevent serious burning or scalding:

- Pressurized cooling system.
- Allow system to cool.
- Remove cap slowly with gloves on.

012279

WARNING

Do not operate
without guards
in place.

12179

DANGER

**Sharp
knives.**

P/N 52218

DANGER

HOT EXHAUST

012278

DANGER

Rotating Parts.

Turn off engine and
allow all parts to stop
completely before opening
door, removing guards or
attempting service.

20068

WARNING

Turn engine off,
disconnect battery,
and allow all moving
parts to stop before
servicing equipment.

22357

CAUTION

**Always inspect tow
vehicle and equipment
hitch before towing.**

**Tighten all hitch
bolts and properly
connect wiring and
saftey chains.**

P/N-31227

WARNING

**THROWN OBJECT HAZARD
KEEP AWAY**

- To prevent serious injury or death from
thrown object:
- Stay away from discharge area during
operation. Keep others away.
- Do not point discharge toward people,
animals or property.

P/N-55288

WARNING

BREAKAWAY SWITCH

Do not use for parking.
Attach cable to towing
vehicle with slack for
turning. Engine battery on
trailer must be charged
and hooked up for proper
breakaway function.

P/N-23423

CAUTION

SAFETY CHAIN INSTALLATION

Both the single and double chains must be crossed
under the tongue. They must be oriented in such a
manner as to prevent the tongue from dropping to
the ground in the event of failure to the hitch,
coupler or ball. The Chains must be connected to
the towing vehicle so that the slack for each length
of chain, between the trailer and the towing vehicle,
is the same and must have no more slack when in
use than is necessary to permit proper turning of
the vehicles. The forward end of the chain must be
attached to the towing vehicle, not to the ball, but
to the hitch or other frame member. The chain must
be looped around the member and hooked back
into itself.

P/N-31228

CAUTION

Wear eye protection
around operating
equipment.

23519

DANGER

**Do not raise
tarp under high
voltage lines.**

P/N 945128

WARNING

Rotating fan hazard.
Keep hands clear.
Shut off engine
before servicing.

12255

DANGER

**ROTATING HAZARD
INSIDE THIS UNIT**

NEVER PUT ARMS OR FEET NOR CLIMB
ON OR IN THIS UNIT BEFORE FIRST:

- SHUTTING OFF ENGINE AND ALLOWING
ALL MOVING PARTS TO STOP
- DISCONNECTING BATTERY CABLES AND
FOLLOWING PROPER LOCK-OUT/
TAG-OUT PROCEDURE

FAILURE TO FOLLOW THESE INSTRUCTIONS
WILL RESULT IN SERIOUS INJURY OR DEATH

P/N 52177

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.

TOWING VEHICLE:

The truck used to tow the FINN 605 Bark Blower must be equipped with a 2-5/16” ball or pintle type hitch. This hitch should be mounted as near to the end of the truck bed as possible. The tow vehicle should be fully wired for trailer marker, turn, and stop lights as well as electric brakes, and be sized to pull and stop a 14,000 pound trailer. (Loaded 605 assuming 1000 #/yd³ mulch)

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.

Avoid using mulches that contain any hard foreign objects such as rocks, nails, steel, cans, glass, etc. These objects could cause bodily injury as well as damage to machine components, especially the cutting knives in the airlock.

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 all trailer connections to the towing vehicle, as well as the condition of the safety chains, and bolts connecting the ball coupler or pintle eye to the tongue.
2. Insure that all guards are in place.
3. Tool Kit - see that it contains all prescribed items (see tool kit list, page 23).
4. Lubricate equipment - use hand gun only (see lube chart, page 18-19).
5. Check engine oil - refer to engine operator's manual.
6. Check liquid coolant level in radiator and overflow tank (protected to -34°F (-37°C) when shipped).
7. Check fuel level. Use #2-D diesel fuel oil unless operating at ambient temperature below 40°F (4°C) 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. Proper level is midway between the upper and lower indicator marks on the sight gauge. (See "Hydraulics" page 19 for oil specification).
11. Install the discharge hose. 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 1-5) before operating the machine.

1. Place the remote control switch to the “Off” position.
2. If temperature is below 25 degrees F. turn key counter-clockwise to the “Glow Plug” position until the Glow Plug Light goes out.
3. Turn the key clockwise until the starter engages and the engine fires.

NOTE: This engine is equipped with a shutdown system that will shut the engine off if the engine oil pressure drops below 15 psi or if the water temperature reaches 230 degrees F. This shut down system is controlled by a relay that has a 15-second override period at start up. If the key switch is left in the “Run” position too long without the engine running, the Key Reset Light will come on to prompt you to turn the key switch “Off “ prior to any further attempts at starting.

4. Check that the “On/Fuse” and the “Door Switches” lights are illuminated. If the green “Door Switches” light is not, check that the door above the airlock is tightly closed. If both lights are off, but the voltmeter is reading correctly, check the ten-amp circuit breaker in the control box. If the voltmeter also shows no reading, then check the 30-amp circuit breaker in the control box.
5. Allow the engine to warm up for three to five minutes.
6. 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 2650-2750 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 skid steer, 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 or floor, 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 12 psi (.8 bar), an inlet and outlet silencer for noise attenuation, and an inlet air filter.

The drag conveyor receives material from the 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 feed roll is powered by a variable speed hydraulic motor, which also powers the drag conveyor through a chain drive.

The rotary air valve 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 rotary air valve housing is equipped with 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 by a scissor like action between the vane and cutting knife. The rotor of the rotary air valve is direct-coupled to a gearbox and driven by a bi-rotational hydraulic motor.

SUBSYSTEM 2: HYDRAULIC SYSTEM

Hydraulic power for the Bark Blower is generated by a fixed displacement tandem hydraulic pump driven off of the engine auxiliary drive. The pump receives hydraulic fluid from the 30 gallon (113 liter) reservoir through a service valve and suction hose, and delivers it to the solenoid control valves. Pressure driving the two individual hydraulic circuits can be monitored on the outlets of the pump by the gauges provided.

A. ROTARY AIR VALVE (AIRLOCK)

The front section of the tandem pump feeds oil to the rotary air valve motor through a solenoid valve. The solenoid valve is an open center spool valve with built in relief set at 2750 psi (190 bar). The spool in the valve is spring centered, and is moved by actuating a 12V DC solenoid on either end of the spool. Spool movement can be checked manually by pushing the button located at either end. Activating the "B" solenoid (the solenoid towards the hitch) pushes the spool in the valve rearward and causes the airlock to run clockwise viewed from the motor end. This is the "Forward" position. The amount of oil flow in this direction and thus airlock motor speed can be adjusted by changing the setting on the detented needle valve located inside the storage compartment near the control box on the passenger side. Maximum airlock speed will be approximately 20 rpm, and will be used on most materials. Slowing the airlock speed slightly may reduce hose shock waves that make the end of the hose tough to handle, especially if the material is very fine and has a high moisture content. Energizing the other solenoid produces reverse rotation of the airlock motor. Airlock speed is unregulated in reverse.

B. FEED ROLL/FLOOR

The rear section of the tandem pump supplies oil to the feed roll motor through a solenoid valve. The solenoid valve is the same as used on the airlock circuit except the relief is set at 2100 psi (145 bar). Energizing the solenoid closest to the outside of the machine produces oil flow to the motorized flow control which regulates feed roll motor speed in forward. Flow/speed in reverse is unregulated like the airlock circuit. The floor is chain driven from the roll motor.

SUBSYSTEM 3: HYDRAULIC CONTROL SYSTEM

The hydraulic control system is an electrical system that controls all of the hydraulic functions on the Bark Blower. This 12-volt DC system runs off the engine electrical system. It is a series of relays, located in the electrical control box on the rear passenger-side of the machine, which control 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 CR1 and CR2 relays in Figure 1 (pg. 12) are energized. This in turn energizes the forward solenoid on the airlock valve section, starting the airlock. If the floor toggle switch is “On”, the floor and feed roll solenoid is also energized after a short delay. Timer relay TR3 delays the start of the floor so the airlock always has a chance to clear itself. TR3 should time out after 1.5 seconds, at which point the floor and feed roll will begin to move at a speed relative to the Floor Speed display. 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. The switch is normally open. When the airlock motor stalls due to the rotor encountering an object it can not 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 the timer relay TR1 in Figure 1. If the switch remains closed for more than 0.5 seconds, TR1 energizes timer relay TR2. TR2 automatically reverses the rotor by energizing the reverse solenoid and de-energizing the forward solenoid. It also de-energizes the floor solenoid, shutting off the floor and feed roll. The airlock will remain in reverse until TR2 times out, which is approximately 1 second. Timer relay TR3 will then restart the drag conveyor after allowing the airlock to clear itself.

The feed roll/floor circuit is capable of being reversed manually from the electrical control box to clear jams. To use the feature, the "Stop" button must be pushed, and the blue and green indicator lights must be on. The "Floor Switch" is a three position switch with a momentary reverse feature. Pushing the switch down to reverse the feed roll and floor sends power to the TR4 relay. The floor and feed roll will reverse until TR4 times out, which is approximately 2 seconds. This setting will clear most jams.

With the “Start” button pushed and the “Floor Switch” in the “On” position, a normally open pressure switch located in the tee with the pressure gauge monitors the pressure in the feed roll/floor circuit. If the pressure in the feed roll/floor circuit reaches the set pressure of the this switch (approximately 2050 psi), an electrical signal is sent to TR4 to trigger the feed roll/floor to auto-reverse for 2 seconds, and then re-start in forward to clear any obstruction.

When the "Stop" button is pushed, power is cut to the relays. This stops the hydraulic motors on the airlock and feed roll by shutting off power to the solenoids. The hydraulics can also be stopped by shutting off the ignition key. Please note that the hydraulics will also stop if the rear 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 activates the Murphy shut-down system on 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. Place the switch, located on top of the Radio Transmitter, to the “Off” position.
3. Start the engine and allow to warm up as specified in the Bark Blower instruction manual.
4. Place the radio remote switch located on the control box to the “On” position.
5. Place the radio transmitter switch to the “On” position.

To utilize the Material Feed Start/Stop feature of 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 the relays occurs (i.e. the rear 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 "Floor Speed" display on the control box.

The Engine Increase/Decrease function on the remote adjusts the throttle actuator on the engine. For use of the engine RPM function refer to "Mulching with the Bark Blower" on page 12.

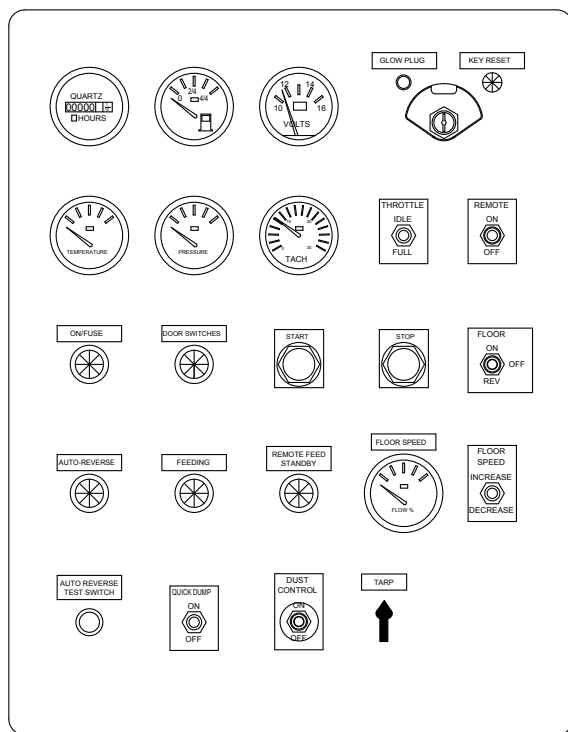
Pushing the red button located next to the antenna on the Radio Transmitter activates the Murphy shutdown system. This will shut off the engine, automatically return the engine throttle back to idle, and cut power to all the relays which will shut down all of the hydraulics. To reset the safety system:

1. Flip the Radio Transmitter On/Off switch to "Off".
2. Re-start the engine.
3. Flip the radio transmitter On/Off switch to "On".

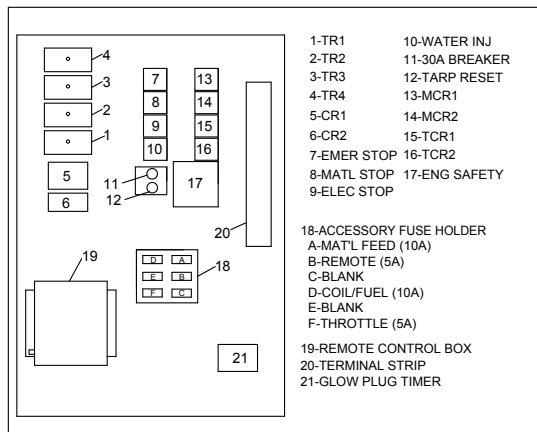
BARK BLOWER POWER STATUS LIGHTS:

<u>Light Color</u>	<u>Function</u>	<u>Indicator</u>
Blue	ON/FUSE	Should be glowing when engine key is on. Shows power from the ignition switch through the 10 amp circuit breaker in the electrical control box. (Will shut off when feeding)
Green	DOOR SWITCHES	Should be glowing when engine key is on if the rear door is closed and the interlock switches are making proper contact. (Will shut off when feeding)
Amber	FEEDING	Should be glowing whenever the "Start" button is pushed activating the Bark Blower hydraulic system.*
Clear	REMOTE FEED STANDBY	Should be glowing anytime feeding is stopped by pressing the Material Stop button on the Radio Transmitter. Warns other crew members that the Radio Transmitter is active and feeding can begin remotely.*
Red	AUTO-REVERSE	Should be glowing whenever the unit auto-reverses while feeding.*

The Bark Blower is equipped with five Power Status Lights on the electrical control box. Each glowing light indicates that a function is ready for operation. A list of the lights as they appear from top to bottom and the meaning of each follows:

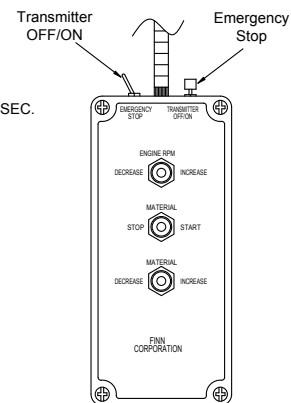


Main Control Panel



NORMAL TIMER SETTINGS:
 #1-TR1 (AIR LOCK PRESS SWITCH) 0.5 SEC.
 #2-TR2 (AIR LOCK REVERSE) 1.0 SEC.
 #3-TR3 (FLOOR DELAY) 1.5 SEC.
 #4-TR4 (FLOOR REVERSE) 1.5 SEC.

(See Page 14pg. for timer instructions.)



***NOTE:** The amber light will deactivate whenever the "Radio Remote Reverse" light comes on, or the unit is put into "Remote Feed Standby".

Figure 1

MULCHING WITH THE BARK BLOWER:

1. Check all areas listed under "Pre-Start Equipment Check"(pages 7).
2. Start the engine following all the steps listed under "Starting Procedure"(pages 8).
3. Set the "Floor Speed" indicator to 10% of Flow.
4. Place the "Floor" switch to the "On" position.
5. Activate the radio remote control by first placing the "Remote" switch on the main control panel to the "On" position, and then placing the switch on top of the transmitter to the "On" position.
6. Press the "Start" button on the main control panel to activate the material start/stop feature on the remote control and then quickly push the "Material Start/Stop" switch on the remote transmitter to Stop. The clear "Remote Feed Standby" light should be on.
7. With a firm grip on the hose, and the engine throttle at full, press the "Material Start/Stop" switch to Start. The yellow "Feeding" light should activate and mulching should begin.
8. Floor speed can be adjusted from 10% for smooth flow. Watch for auto reversing of the air lock, as well as shock waves through the hose. Listen for the relief valve on the blower. Partial plugging in the discharge or hose may cause it to open, causing a high pitched whine, indicating over-feeding of the airlock.
9. Use the "Engine RPM" switch on the remote to decrease and increase air and material flow. A lower engine RPM may require a lower floor speed setting to avoid auto reversing or plugging.

10. At the end of the load, push "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. 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. 3 RPM). For most materials, a setting of 10% is a good starting point. The floor speed can be increased (2-1/2% 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. 9 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 10 RPM and can be adjusted up to approximately 20 RPM.

B. EXCESSIVE AUTO-REVERSING

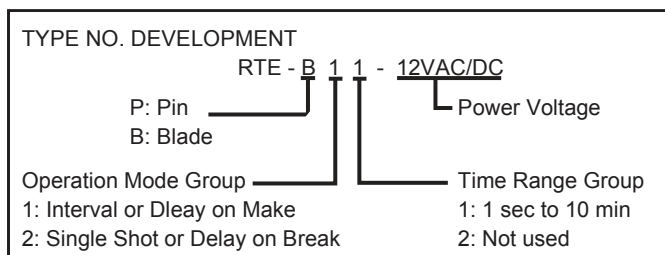
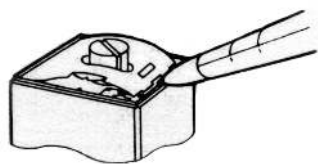
If the airlock starts to auto-reverse regularly, i.e. more than three times a minute, then the airlock is being overfed and the floor should be turned down. Excessive auto-reversing leads to less production than if the floor was just turned down to a lower RPM. This condition will occur more often with 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 12 PSI(0.8 bar), is located directly behind the blower in the engine area on the driver's side 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.

TIMER RANGE PROGRAMING INSTRUCTIONS:

Adjusting the timer relays should be unnecessary, but the operator should know how to set the timers if they become changed somehow.

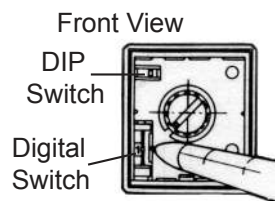


1. REMOVING THE FACE PLATE

Dip Switch	Left = Interval
Position	Right = Delay on Make

2. SELECTING THE MODE OF OPERATION

Select the operation mode by moving the DIP switch to the right or the left position. (After installing the face plate, the knob set to the left position is visible through the face plate window.)



Digital Switch Position	0	1	2	3	4	5	6	7
Time Range	1 sec	3 sec	6 sec	10 sec	60 sec	30 sec	5 min	10 min
Face Color	Pink	Yellow	Yellow	Pink	Yellow	Yellow	Pink	Pink

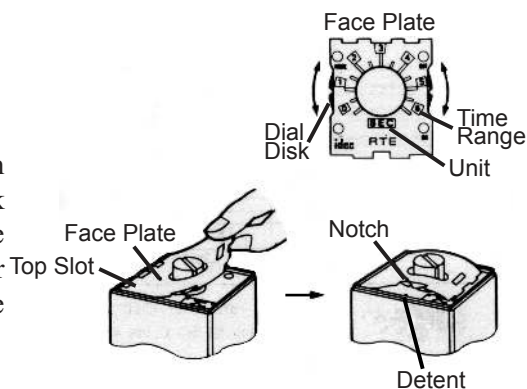
3. SELECTING THE TIME RANGE

Select the time range by rotating the digital switch.

NOTE: When the digital switch is at position 8 or 9, the time range setting is the same as at position 0 or 1, respectively.

4. SETTING THE FACE PLATE

Each timer is provided with a face indicating the time range on both sides in different colors per time range group. The dial disk has four notches on its perimeter at every 90 degrees. Choose the side with the correct face color from above chart containing your required time range and turn the dial disk to the position where the required time range figure and unit appear in the windows.



5. INSTALLING THE FACE PLATE

When the operation mode and timer range settings are complete, place the face plate onto the timer by inserting the edge into the top slots. Bend the face plate slightly and insert the bottom edge into the bottom

TROUBLE SHOOTING CHART:

Symptom	Probable Cause	Remedy
---------	----------------	--------

CLEARING A BLOCKAGE

If the unit does become plugged and the machine can not clear itself, immediately shut down the engine, 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 two clamps on the front and the rear of the discharge.
3. Remove the discharge.
4. Remove any blockage and clean the discharge of any mulch debris, especially on the gasket surface so that it can seal tightly.
5. Install the discharge outlet and clamp into place.
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. Turn off the feeding system by pressing the "Stop" button on the control panel.
2. Open the access door above the airlock.
3. Set the "Quick Dump" switch to "On".

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 rotate.



5. The floor conveyor speed can be adjusted higher for faster unloading.
6. When finished, press the "Stop" button and return the "Quick Dump" switch to the Off position.

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 clamps.

slot on the timer. Make sure the dial disk notch is retained in place.

See the parts manual for full illustrations of timer faces with proper settings.

Engine won't start ☐

- ☐
- ☐
- ☐
- ☐
- ☐
- ☐

Engine safety system ☐ override delay expired ☐

- ☐

No fuel ☐

- ☐

Engine too cold ☐

- ☐

Airlock not turning ☐

- ☐
- ☐

Green light out on ☐ control panel. Blue ☐ light on ☐

Blue light out on ☐ control panel ☐

- ☐
- ☐

Airlock speed control ☐ turned down too far ☐

- ☐
- ☐

Quick Dump feature ☐ activated / left on. ☐

- ☐
- ☐

Floor not turning ☐

- ☐

Motorized flow control ☐ valve closed ☐

Make sure terminal "A+" ☐ on timer TR3 has 12V ☐ ☐

- ☐
- ☐
- ☐

"Out" light on TR3 should ☐ come on 1.5 sec after ☐ turning floor switch on ☐

- ☐
- ☐
- ☐

Feed roll /Floor ☐ jammed ☐ ☐

- ☐
- ☐
- ☐

Return ignition key to "OFF" before starting

- ☐ ☐ ☐

Check fuel gauge

- ☐ ☐ ☐

Preheat glow plugs

- ☐ ☐ ☐ ☐

Make sure rear cleanout door is closed tightly and interlock switches are working properly

Check 10A circuit breaker in control box

Adjust airlock speed control toward "Max" See page 9.

Flip "Quick Dump" switch on control box to "OFF"

Increase material feed control ☐ ☐

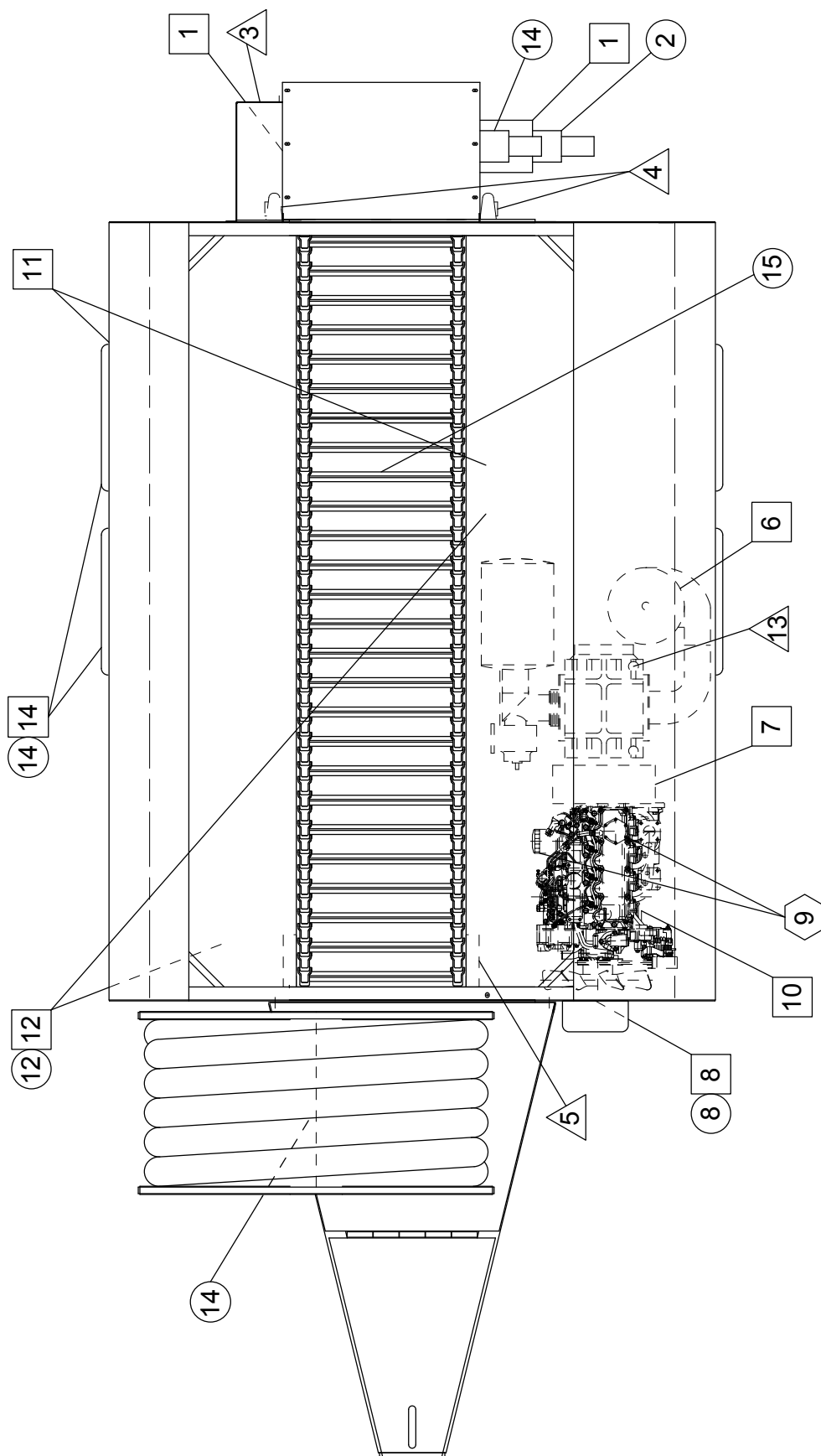
No: Low voltage, check interlock switches for bad connections or bad switch

No: Bad timer, check settings or replace if bad ☐ ☐

Check gauge reading: If 2000 psi, push "Stop" button and reverse floor with floor switch

TROUBLE SHOOTING CHART:





Symptom	Probable Cause	Remedy
Airlock constantly auto-reversing	Overfeeding airlock	Decrease floor speed, see pg. 13 for tips
	Dull airlock knives	Check knife clearance, Sharpen or replace if dull or chipped
	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. Check relief setting airlock.
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. 13 for tips
	Partial plugging in airlock discharge	Check airlock discharge pan for blockages and air leaks



MAINTENANCE 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	2
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	Weekly	2
	Change Blower Oil	BO	50,100, then Seasonally	2
14	Tire Air Pressure		Weekly	4
	Wheel Bearings	CL	Annually	5
15	Lubricate Floor Chain	CH	Seasonally	1

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	Diesel Fuel
HO	Hydraulic Oil Mobil DTE-13M
GO	80 W Gear Oil
CH	Mineral oil or chain lubricant

FLUID CAPACITIES

Fuel - 30 Gallons (113 L)	Hydraulic Oil - 30 Gallons (113 L)
Airlock Gearbox Oil - 20 Oz. (0.6 L)	Engine Oil - See Engine Manual
Engine Coolant - 4 Gallons (15.1 L) 50/50 Mix Only	Blower Oil - See Blower Manual

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 8 will need followed again before remote operation can be used.



DANGER:

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. Unclamp and remove the front cleanout door from the front of the hopper by first sliding the door towards the passenger side of the unit, then pulling towards the hitch, and finally back towards the drivers side of the unit. 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, airlock, the blower and on the feed roll shaft. See Lube Chart on pages 18-19. 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. Change if element shows signs of damage



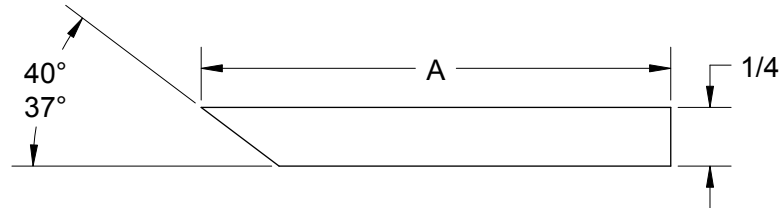
- the oil in the airlock gearbox.
- the gear case on the blower (see blower manual).
- airlock knife for wear, chips, and clearance. To adjust knife:

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 four set screw plugs in the access holes on the outside front/rear face of the airlock housing.
- b) Loosen the two bolts on each of the four knife clamps in the top of the airlock.
- c) 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.

- d) Tighten the eight bolts on the four 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 eight bolts that hold the four 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 2. Loosely install the four knife clamps with the eight knife mounting bolts. Tighten the mounting bolts just enough to hold the knife in position while still allowing it to be moved.
 - e) 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.
 - f) 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).
 - g) 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 2

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

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 1000 hours thereafter.
3. Change the gearbox oil on the airlock, using SAE 80W90 oil. Change every 1000 hours thereafter.

EVERY 3 MONTHS OR 3000 MILES (4800 KM):

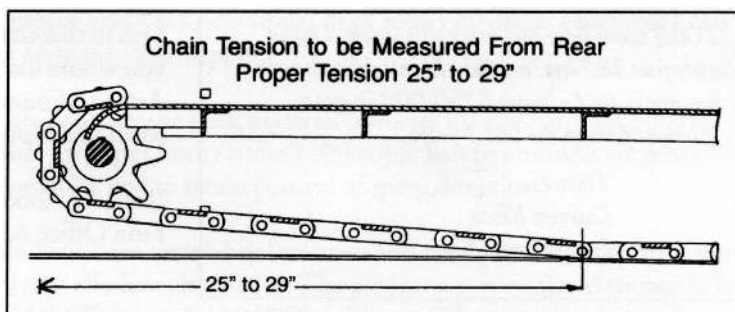
1. Check and adjust trailer brakes.
2. Re-torque wheel lug nuts (90-120 ft.lbs. (13-17 kg-m)).
3. Check tire condition.

EVERY 12 MONTHS OR 12000 MILES (19300 KM):

1. Inspect and repack wheel bearings.
2. Inspect trailer brake magnets, pads, drums, ect.

FLOOR CHAIN ADJUSTMENT: EVERY 500 HOURS

1. The floor chain tension should be checked every 500 hours. 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.



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. 3 below:

Figure 3

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 counter-clockwise 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.

WINTER SHUTDOWN AND STORAGE:

1. Blow all material out of machine, turn off engine and disconnect battery cables.
2. Remove the inlet elbow to the blower air chamber and coat internals of impeller cylinder with a rust preventative such as "WD-40". Reconnect piping to prevent foreign debris from entering blower chamber. Rotate drive shaft three or four revolutions. Repeat this process every month or as conditions may require.
3. 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.

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BARK BLOWER

Model 605 Parts Manual

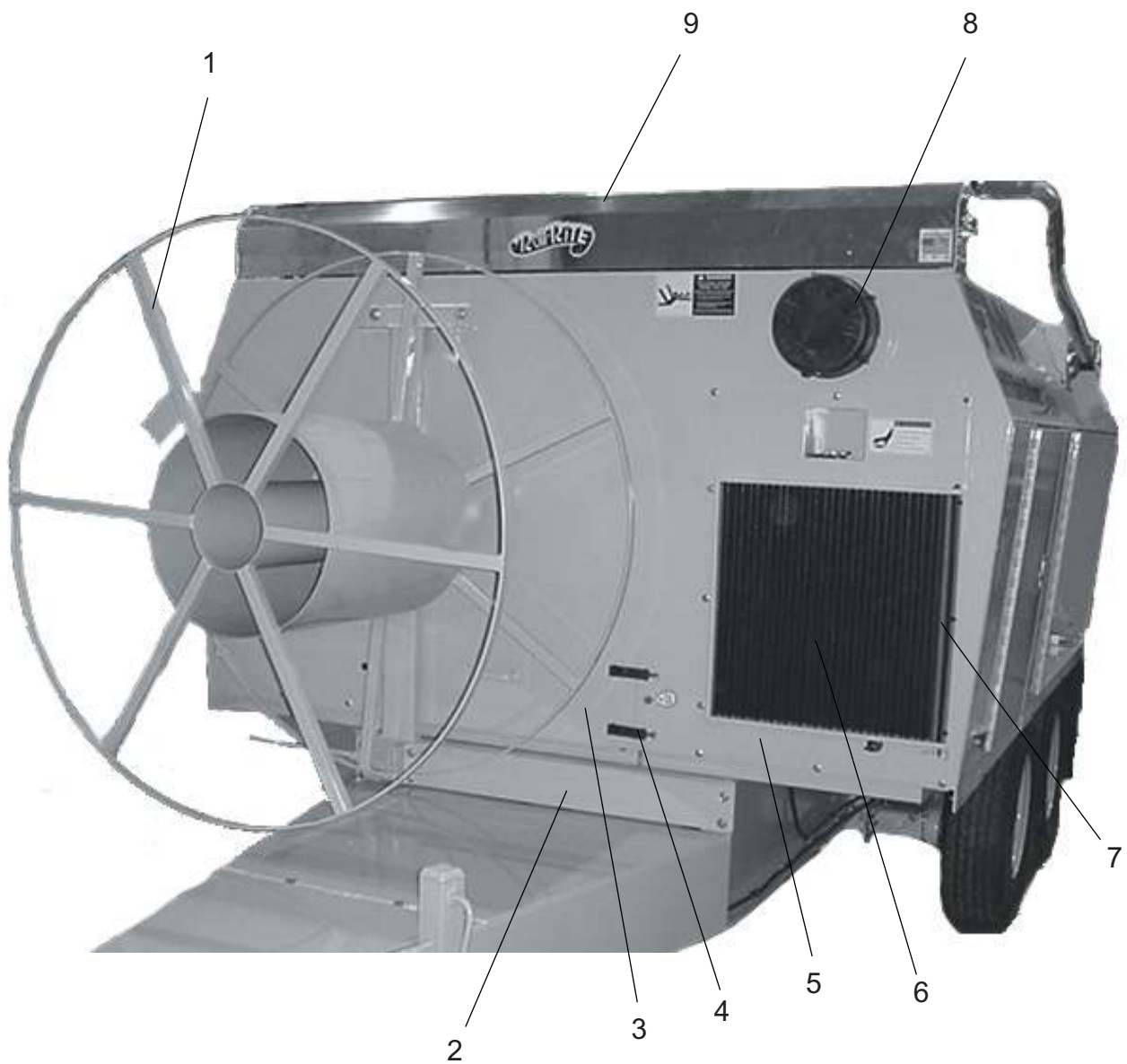
Model SMA



SIDE PANELS

Ref. No.	Part Numbers	Description	No. Req'd
1	F605-0044	Right Rear Panel	1
	F605-0045	Left Rear Panel	1
2	F605-0041	Side Compartment Door	4
3	F605-0043-02	Right Door Jamb	1
	F605-0043-01	Left Door Jamb	1
4	F605-0042-01	Right Front Panel	1
	F605-0042-02	Left Front Panel	1
5	075370	Side Door Latch-R.H.S.	2
	075340	Side Door Latch-L.H.S.	2
6	075339	Side Compartment Door Hinge	4

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

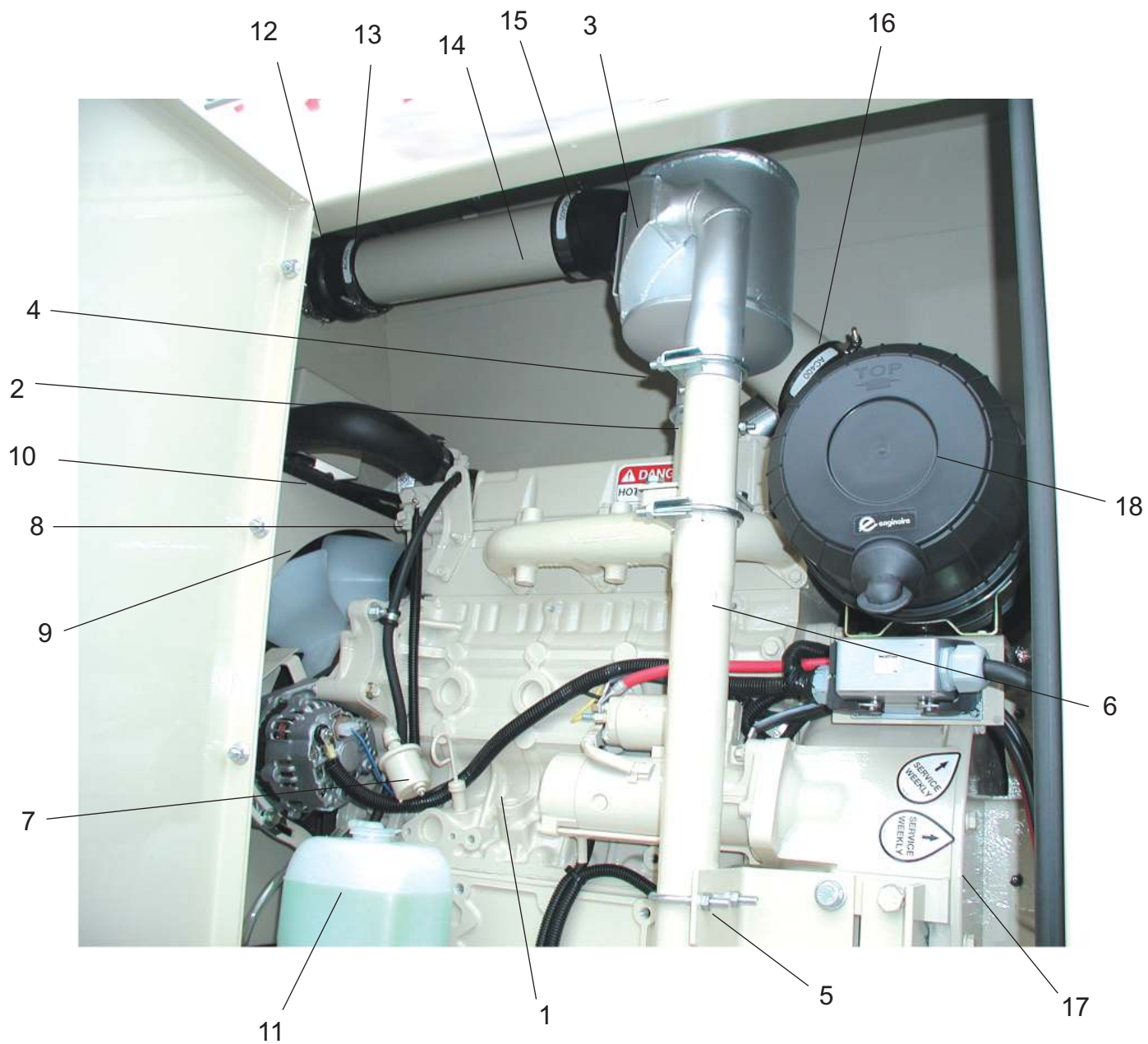


**WHEN ORDERING PARTS, BE SURE TO STATE
SERIAL NUMBER OF MACHINE**

HOSE REEL AND FRONT END

Ref. No.	Part Number	Description	No. Req'd
1	075289	Hose Reel Drum	1
	075291	Hose Reel Lock Mount	1
	055715-01	Hose Reel Lock	1
2	075287	Hose Reel Mount	1
	WLH-15-450E	Hub Assembly	1
	WLLM11949	Outer Bearing Cone	1
	WLLM67048	Inner Bearing Cup	1
	WLSCP-100	Spindle Cotter Pin	1
	WLSL-150	Seal	1
	WLSN-750	Spindle Nut	1
	WLSN-751	Spindle Washer	1
	WL1504	Dust Cap	1
	WL6-80	Wheel Nut	4
	055725	Strap Brake	1
	F605-0039	Front Clean-Out Door	1
	F605-0039-02	Door Stiffener Strap	1
4	005592	Rubber Dram Latch	2
5	075298	Radiator Insert Piece	1
	012620	Radiator	1
	F605-0030	Fan Shroud	1
6	F605-0031	Radiator Screen	1
7		Radiator Screen Pin	1
8	012608	Pre-Cleaner Assembly	1
	075292-01	Pre-Cleaner Adapter Flange	1
9	075305	Tarp Assembly	1

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

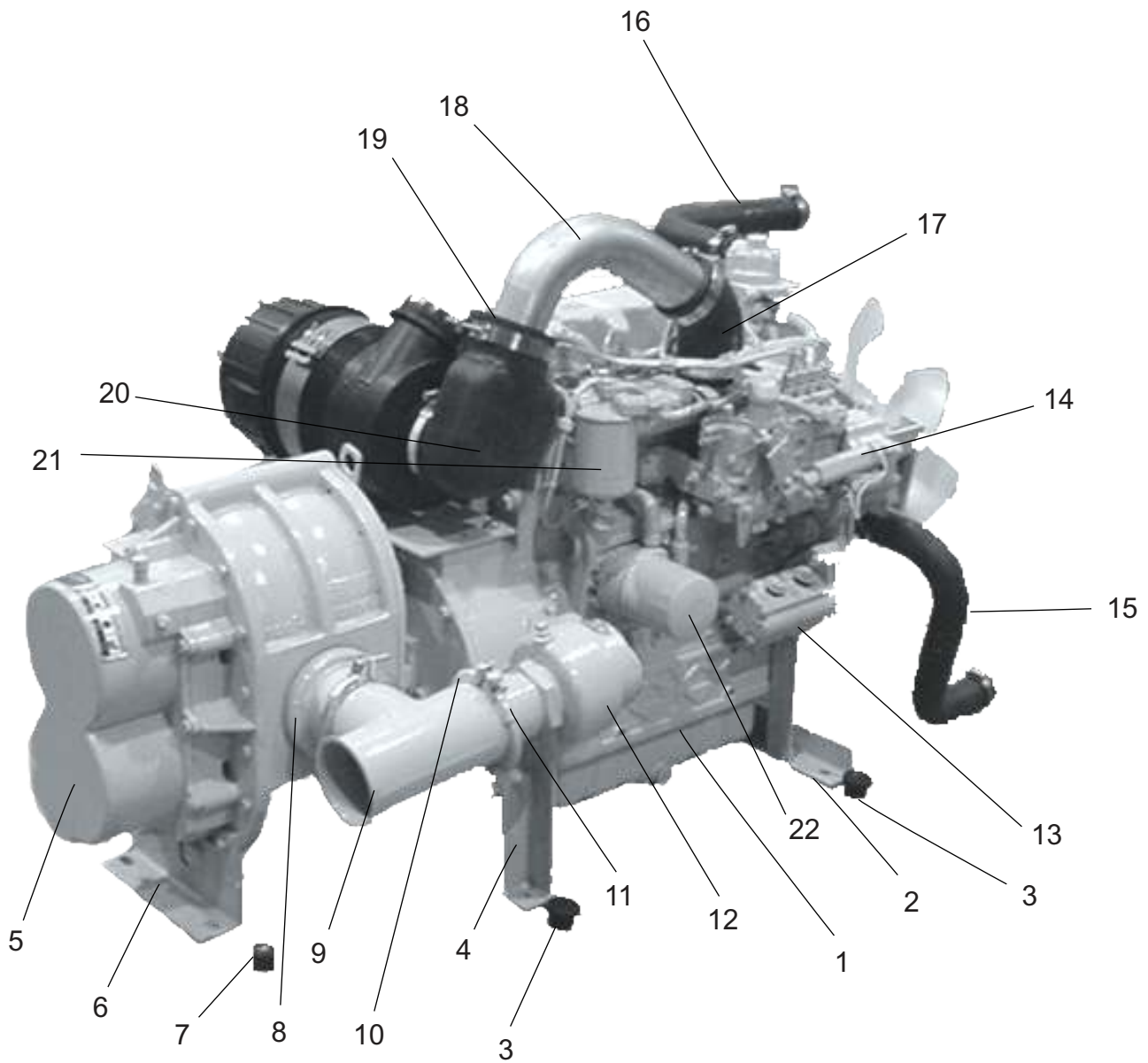


**WHEN ORDERING PARTS, BE SURE TO STATE
SERIAL NUMBER OF MACHINE**

ENGINE COMPONENTS

Ref. No.	Part Number	Description	No. Req'd
1	075201	V3300 Engine	1
	KU1C011-64010	Alternator	1
	KU1G521-97010	Fan Belt	1
	KU1C010-63010	Starter	1
	KU19258-12230	Exhaust Gasket	1
2	075292-03	Exhaust Flange	1
3	075243	Muffler	1
4	000461	Muffler Clamp	3
5	F605-0046-02	Tailpipe Support	1
6	075374-03	Tailpipe	1
7	075308	Oil Sending Unit	1
8	075310	Water Temperature Sending Unit	1
9	F605-0030	Radiator Fan Shroud	1
10	012620	Radiator	1
11	KU15501-72400	Coolant Recovery Tank	1
12	055367	Hump Reducer	2
13	055335	Clamp	6
14	075283-01	Air Inlet Pipe	2
15	052012	45° Elbow	1
16	075246	Rubber Reducer Insert	1
17	075226	Flywheel Plate	1
	075225	Blower Coupler	1
18	012646	Air Cleaner Assembly	1
	F605-0046-01	Air Cleaner Mount	1
	012622	Air Cleaner Element	1
	012623	Air Cleaner Safety Element	1

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

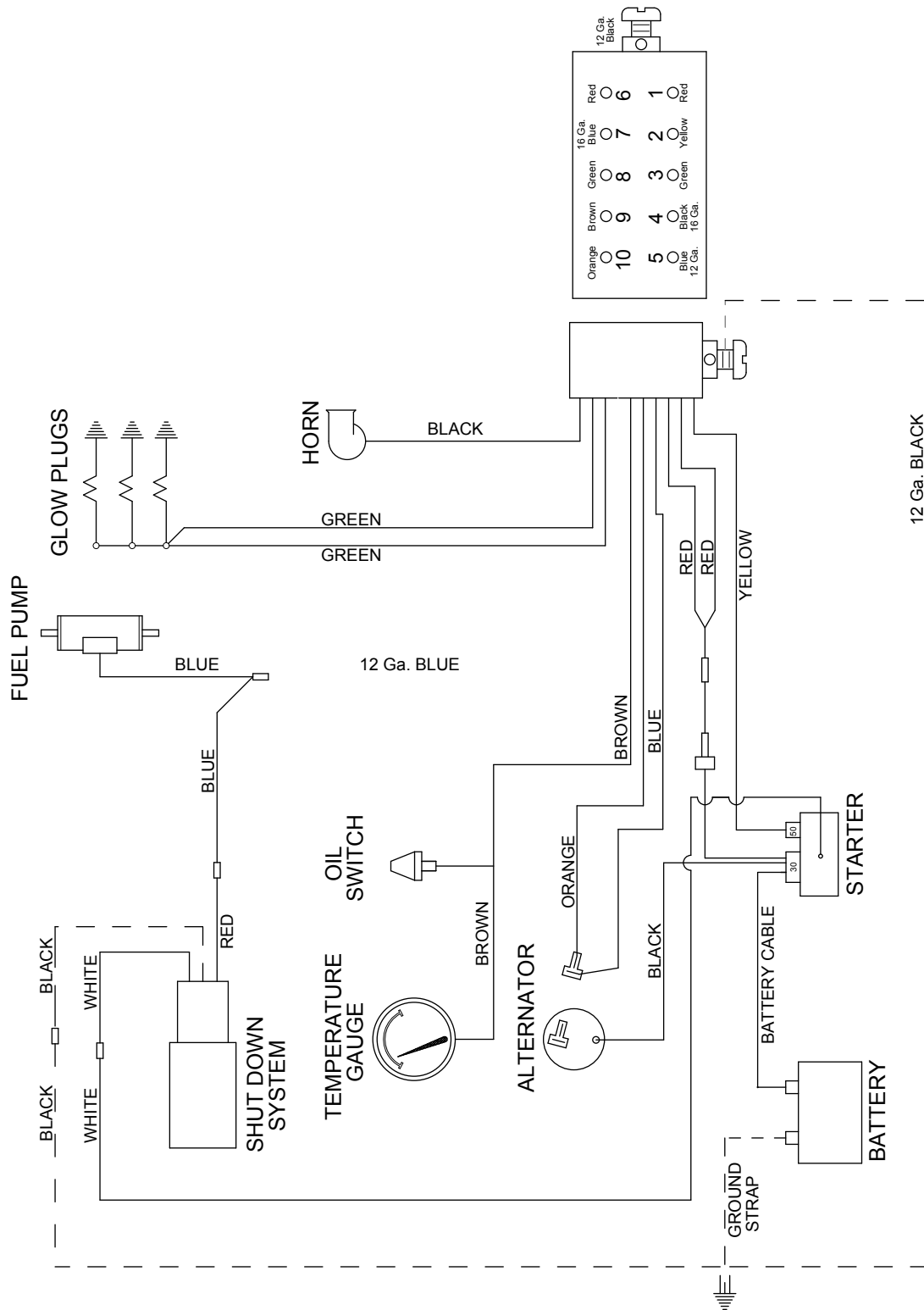


**WHEN ORDERING PARTS, BE SURE TO STATE
SERIAL NUMBER OF MACHINE**

ENGINE ASSEMBLY

Ref. No.	Part Number	Description	No. Req'd
1	075200	Kubota V3300 Engine	1
2	075281-01	Front Engine Foot	1
3	075205	Rubber Bushing Mount	4
4	075281-02	Rear Inside Engine Foot	1
	075281-03	Rear Outside Engine Foot	1
5	075290	Blower	1
	075295-02	Blower Inlet Nipple	1
	052010	Rubber Elbow	1
	052011	5" Clamp	1
	055335	4" Clamp	1
6	052662	Blower Foot	1
7	075206	Center Bushing Mount	2
8	075295-04	Blower Outlet	1
9	075306	Outlet Tee	1
10	052737	Tubing Clamp	2
	052738	Tubing Clamp Gasket	2
11	075295-03	Relief Valve Flange	1
12	052008	Relief Valve	1
13	075327	Hydraulic Pump	1
	075201	Hydraulic Pump Base Kit	1
14	023814	Throttle Actuator	1
	075292-02	Throttle Pivot	1
	075284-01	Throttle Actuation Strap	1
15	075228	Lower Radiator Hose	1
	022450	Hose Clamp	2
16	075227	Upper Radiator Hose	1
	022450	Hose Clamp	2
17	055499	45° Rubber Elbow	1
	075244	Rubber Reducing Insert	1
	055496	Clamp	2
18	075365-02	Air Elbow	1
19	075245	Rubber Reducing Insert	1
20	075247	Cobra Elbow	1
21	KU16631-43560	Fuel Filter	1
22	KU1C010-32430	Oil Filter	1

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ENGINE WIRING

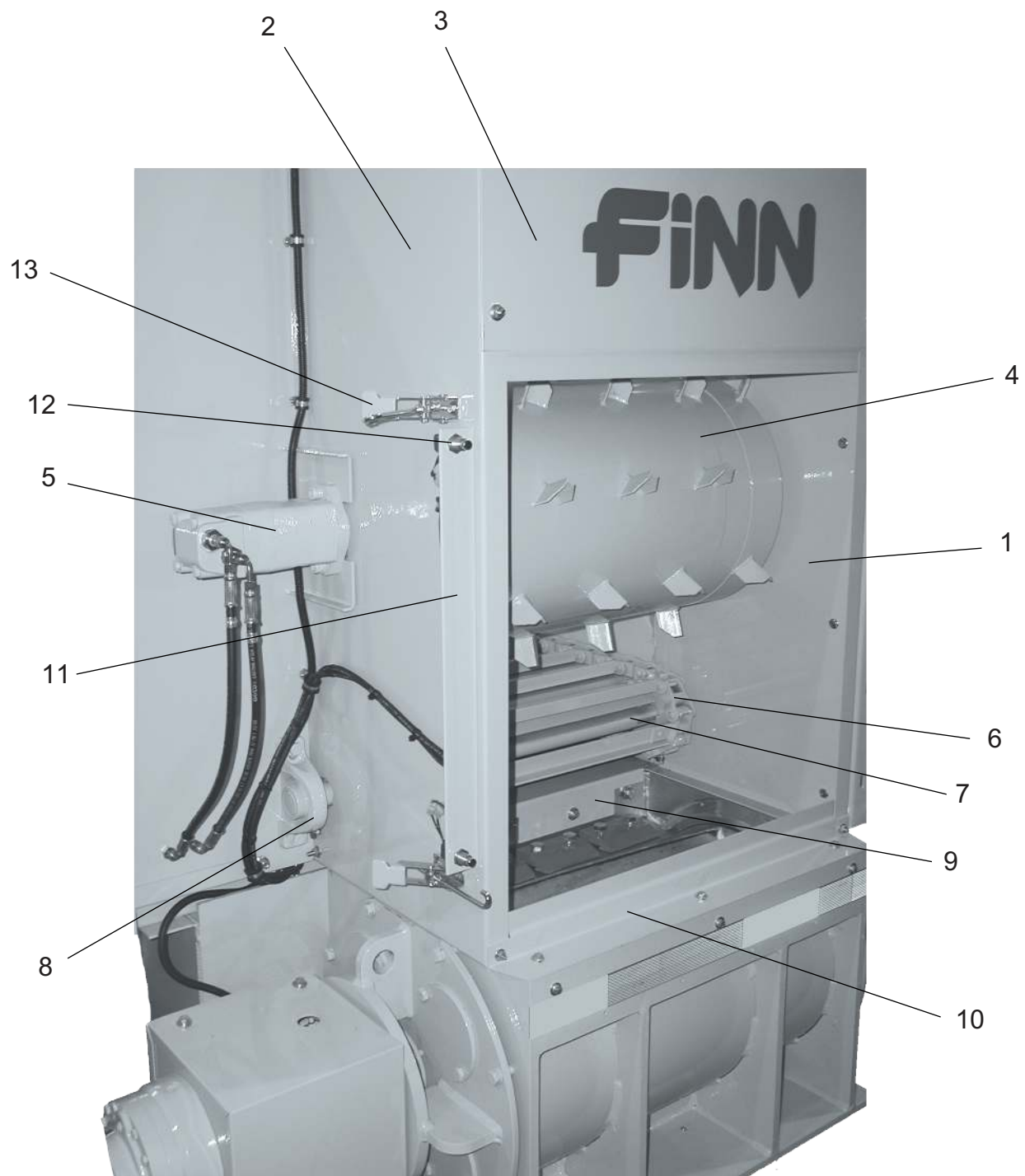
Part Number	Description	No. Req'd
075348	Engine Wiring Harness	1
FW71680	Surface Mount Housing	1
FW71357	Female Plug Insert	1
FW71359	Hood Housing	1
FW71356	Male Plug Insert	1
023814	Throttle Actuator	1
011851	12 Volt Battery	1
011770	Battery Box	1
080096	Positive Battery Cable	1
031350	Negative Battery Cable	1
KU1C011-64010	Alternator	1
KU1C010-63010	Starter	1
075308	Oil Pressure Sender	1
075310	Water Temperature Sender	1
075329	Magnetic Tach Sender	1
075202	Electric Fuel Pump	1

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BLOWER DISCHARGE ASSEMBLY

Ref. No.	Part Number	Description	No. Req'd
1	052093	Inlet Silencer	1
2	075293-01	Inlet Silencer Spacer	1
3	052023-01	Inlet Flange	1
4	055336	Pipe Clamp	1
5	052469	Inlet Silencer Filter	1
	055145	Filter Element	1
	052141	Silencer Gasket	1
6	075294	Outlet Silencer	1
7	075295-05	Flex Tube Weldment	1
8	055336	Pipe Clamp	2
9	052142	Battery Box Weldment	1
10	011770	Battery Box	1
	011851	Battery	1
	031350	Negative Battery Cable	1
	080096	Positive Battery Cable	1
11	F605-0007	Left Fender	1
12	055682	Solenoid Valve	2
13	075300	Logic Valve	1
14	075299	Flow Control Valve	1

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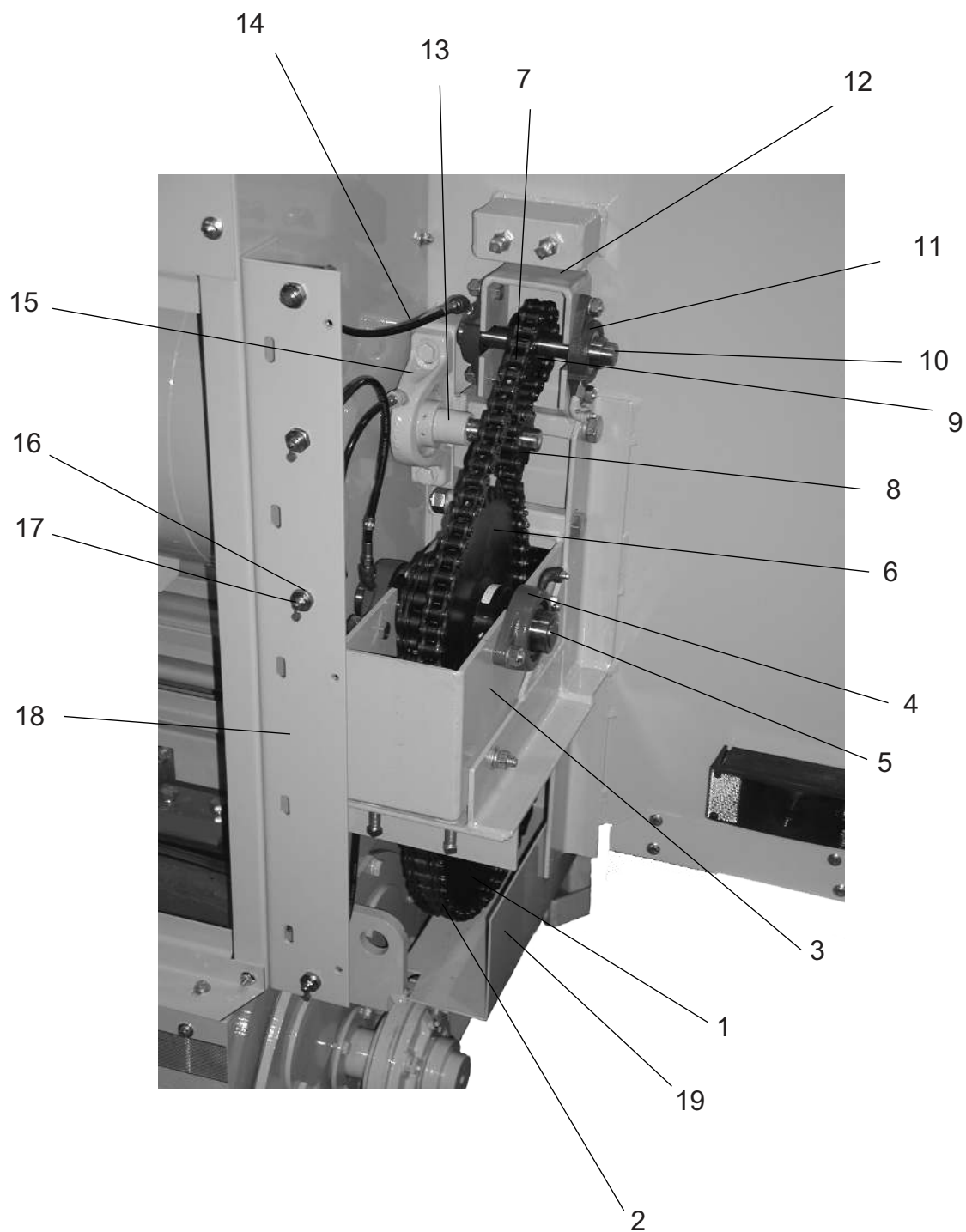


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FEED ROLL & FLOOR ASSEMBLY

Ref. No.	Part Number	Description	No. Req'd
1	F605-0034	Doghouse-Right Hand Side	1
2	F605-0033	Doghouse-Left Hand Side	1
3	F605-0035	Doghouse Cover	1
4	075297	Feed Roll	1
	045031	Feed Roll Hub	1
	075214	Feed Roll Stub Shaft	1
5	075231	Feed Roll Hydraulic Motor	1
6	075217	Live Floor Chain	1
	075218	Live Floor Sprocket	4
	075219	Take-Up Bearing Frame	2
	075220	Take-Up Bearing	2
7	075215-01	Rear Floor Dive Shaft	1
	075215-02	Front Floor Idler Shaft	1
8	075233	Floor Bearing	2
9	F605-0047-02	Bottom Pan Cover Angle	1
	F605-0038	Bottom Floor Pan	1
10	F605-0047-01	Bottom Door Flange	1
	075317	Rear Door	1
	075277-01	Upper Door Support Angle	1
	075277-02	Lower Door Support Angle	1
11	075277-03	Door Switch Mounting Angle	1
12	055407	Door Safety Switch	2
13	075224	Overcenter Draw Latch	2

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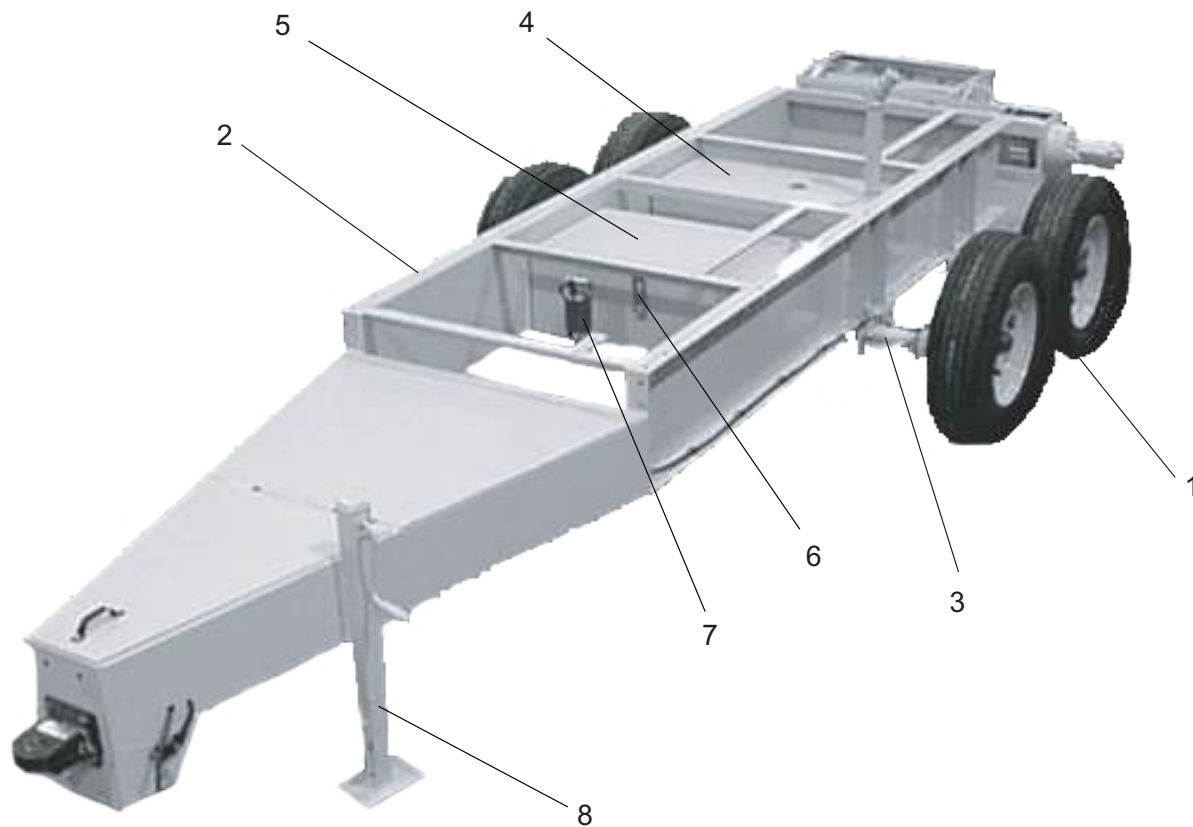
FLOOR DRIVE ASSEMBLY

Ref. No.	Part Number	Description	No. Req'd
1	075356	Large Floor Drive Sprocket	1
2	075361	Floor Drive Chain	1
	075357	Small Floor Drive Sprocket	1
3	075368-01	Lower Chain Tensioner	1
4	075360	Flange Bearing	2
5	075215-04	Dual Sprocket Idler Shaft	1
6	075358	Large Idler Sprocket	1
7	075363	Feed Roll Drive Chain	1
8	075359	Feed Roll Sprocket	1
9	075359	Idler Sprocket	1
10	075215-03	Idler Shaft	1
11	075232	Flange Bearing	2
12	075368-02	Upper Chain Tensioner	1
13	075214	Feed Roll Stub Shaft	1
14	012521	Grease Hose	4
	008154	Grease Fitting Adapter	2
	160052	90° Elbow	2
	160078	45° Elbow	4
15	075234	Bearing	1
16	012520	Bulkhead Fitting	4
17	007705	Grease Fitting	6
18	F605-0049-02	Chain Guard Mount Angle	1
19	F605-0049-01	Chain Guard Bottom Pan	1
	F605-0048	Chain Guard	1

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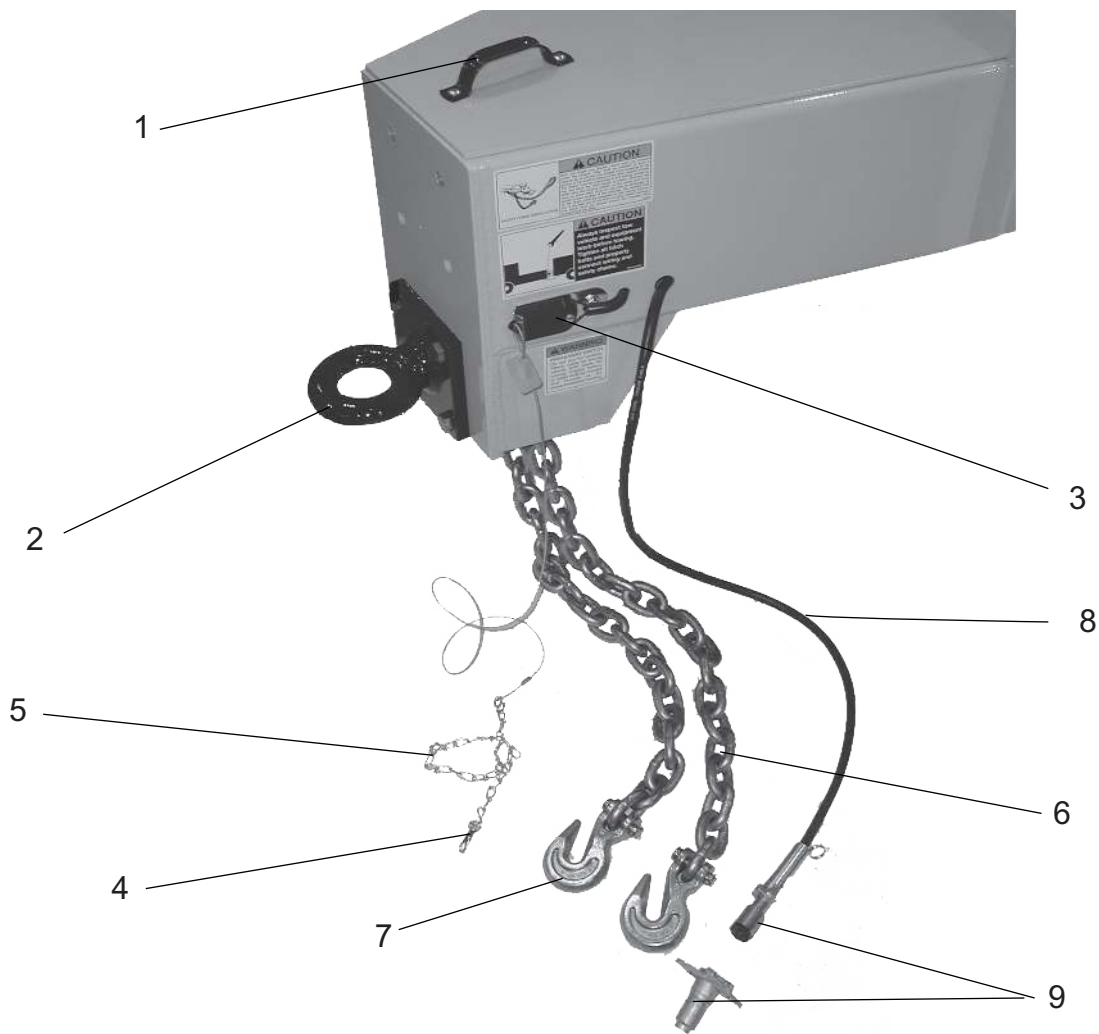
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TRAILER ASSEMBLY

Ref No.	Part Number	Description	No. Req'd
1	023841	Tire and Rim Assembly	4
	005060R	Tire	4
	005057	Rim	4
2	075275	Trailer Frame Weldment	1
3	005567	Axle	2
4	075278	Fuel Tank Weldment	1
	075312	Fuel Level Sender	1
	075283-06	Fuel Filler Neck Extension	1
	160042	45° Elbow	1
	007907	Fill Neck Weldment	1
	007914	Fuel Cap	1
5	075279	Hydraulic Reservoir Weldment	1
	011648	Suction Strainer	1
6	080329	Hydraulic Sight Gauge	1
7	021617	Hydraulic Oil Filter Assembly	1
	021618	Filter Element	1
	011868-G	Restrictor Gauge	1
8	005438	Jack	1
	005134	2-5/16" Coupler (optional)	
	005135	2-5/16" Ball	

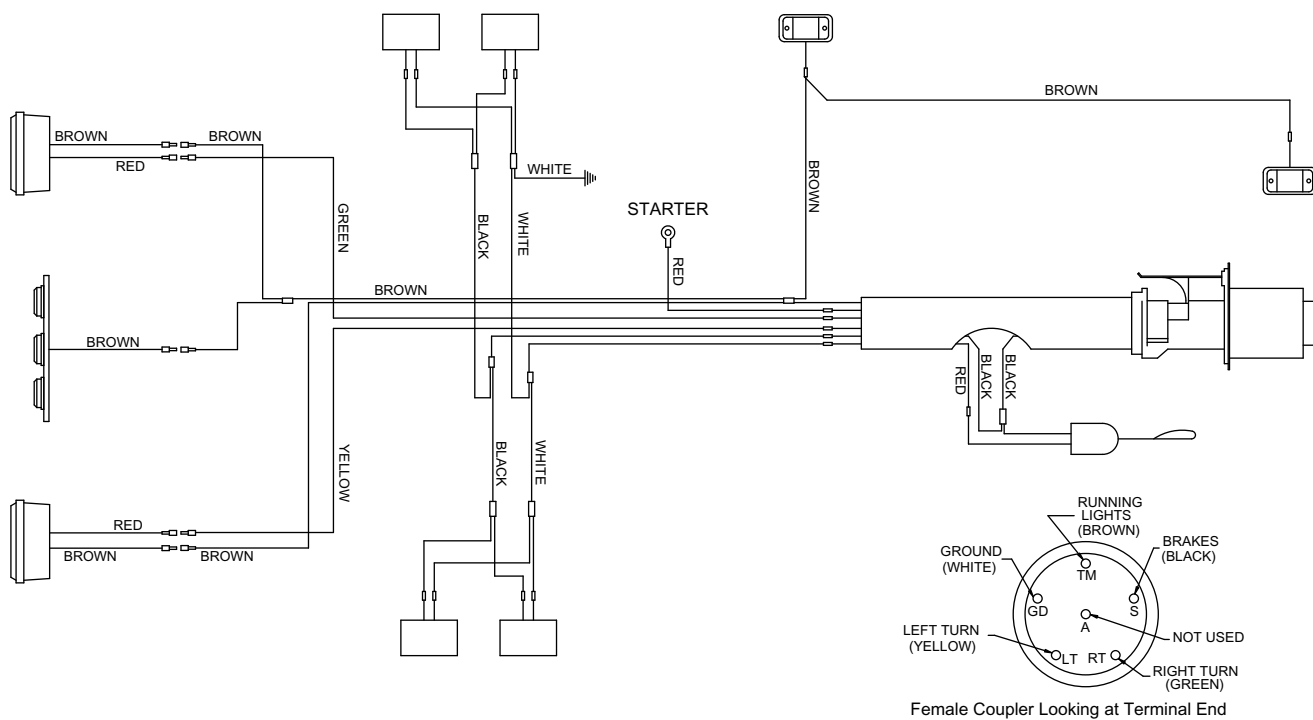
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TOW HITCH ASSEMBLY

Ref. No.	Part Number	Description	No. Req'd
1	002909	Handle	1
2	080043	Tow Ring	1
3	023424	Break-Away Switch	1
4	005017	Snap	1
5	030394-01	Chain	1
	005016	"S" Hook	2
6	005168	Safety Chain	2
	005170	Chain Connector	2
7	005169	Clevis Grab Hook	2
8	075349	Trailer Wiring Harness	1
9	060069	Trailer Plug	1

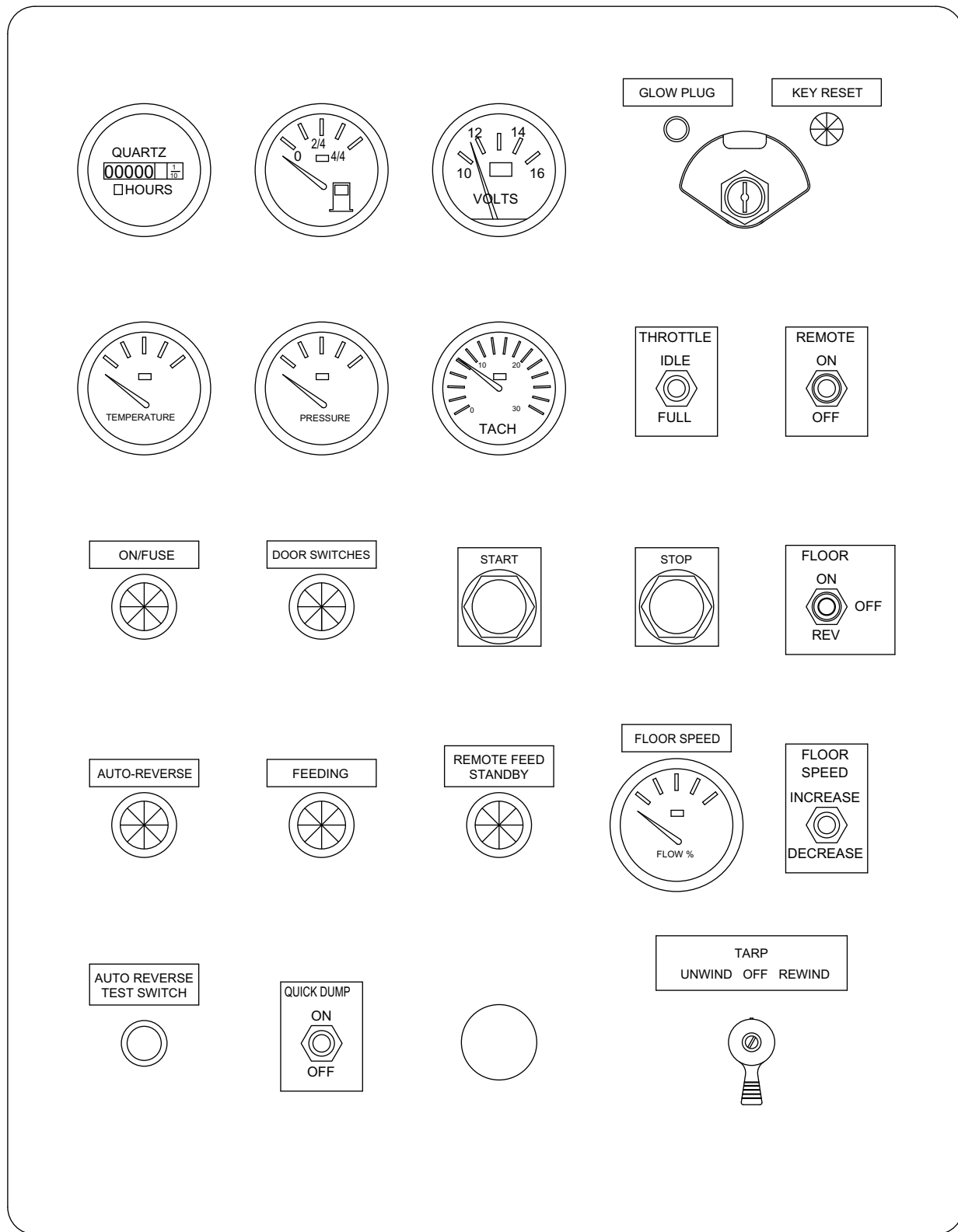
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TRAILER WIRING

Part Number	Description	No. Req'd
075349	Trailer Wiring Harness	1
060069	Trailer Plug	1
023424	Breakaway Switch	1
005016	"S" Hook	2
005017	Snapper Hook	1
005137	Left Taillight Assembly	1
005138	Right Taillight Assembly	1
005437	3 Bar Light	1
FW71090	Amber Marker Light	2

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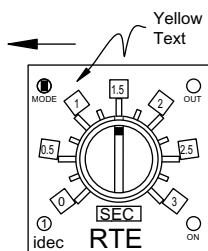
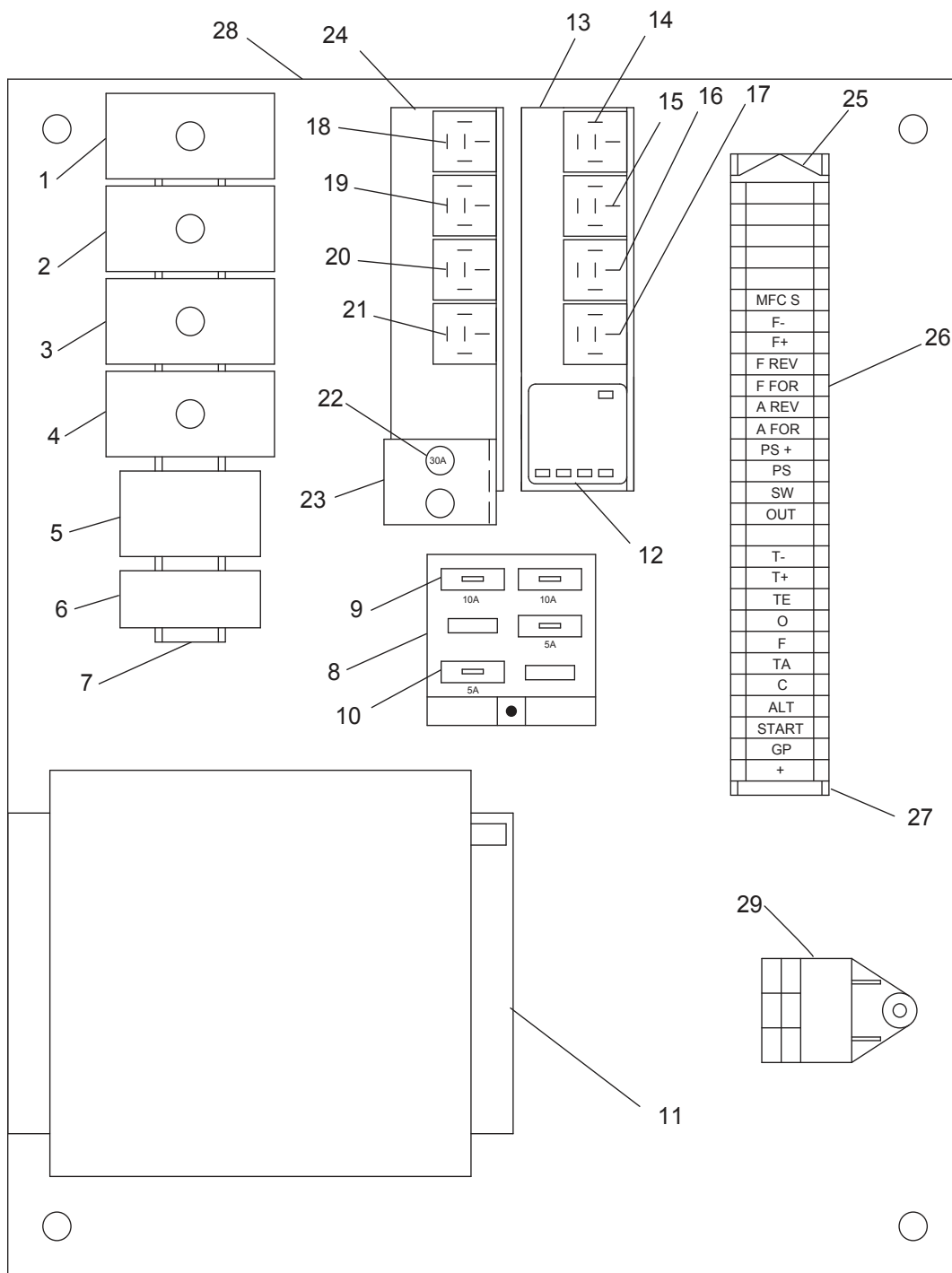


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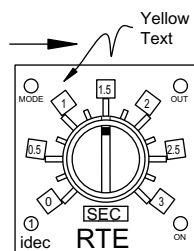
CONTROL BOX FACE PANEL

Part Number	Description	No. Req'd
075330	Hourmeter	1
075311	Fuel Gauge	1
075312	Fuel Sender	1
075313	Voltmeter	1
004933	Ignition Switch	1
006245	Pilot Light	2
075309	Temperature Gauge	1
075310	Temperature Sender	1
075307	Pressure Gauge	1
075308	Pressure Sender	1
075328	Tachometer	1
075329	Speed Sensor	1
FW71555	Throttle Switch	1
010531	Remote On/Off Switch	1
075314	Floor On/Off Switch	1
FW71555	Floor Speed Switch	1
045311	Quick Dump Switch	1
080526	Switch Boot	5
075303	Floor Speed Gauge	1
020886	Auto Reverse Test Switch	1
075318	Black "STOP" Button	1
075319	"STOP" Button Contact	1
075320	"STOP" Button Placard	1
075321	Red "START" Button	1
075322	"START" Button Contact	1
075323	"START" Button Placard	1
045060	Blue "On/Fuse" Lens Cover	1
045057	Green "Door Switches" Lens Cover	1
045058	Red "Auto-Reverse" Lens Cover	1
045059	Amber "Feeding" Lens Cover	1
045061	Clear "Remote Feed Standby"	1
045062	Light Socket	5
045067	Light Bulb	5

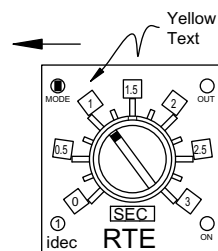
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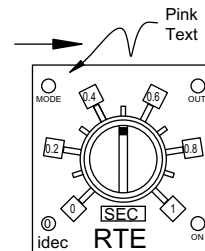
TR4-Floor Reverse
Timer Settings
Item 4



TR3-Floor Delay
Settings
Item 3



TR2-Air Lock Reverse Settings
Item 2



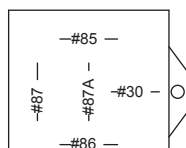
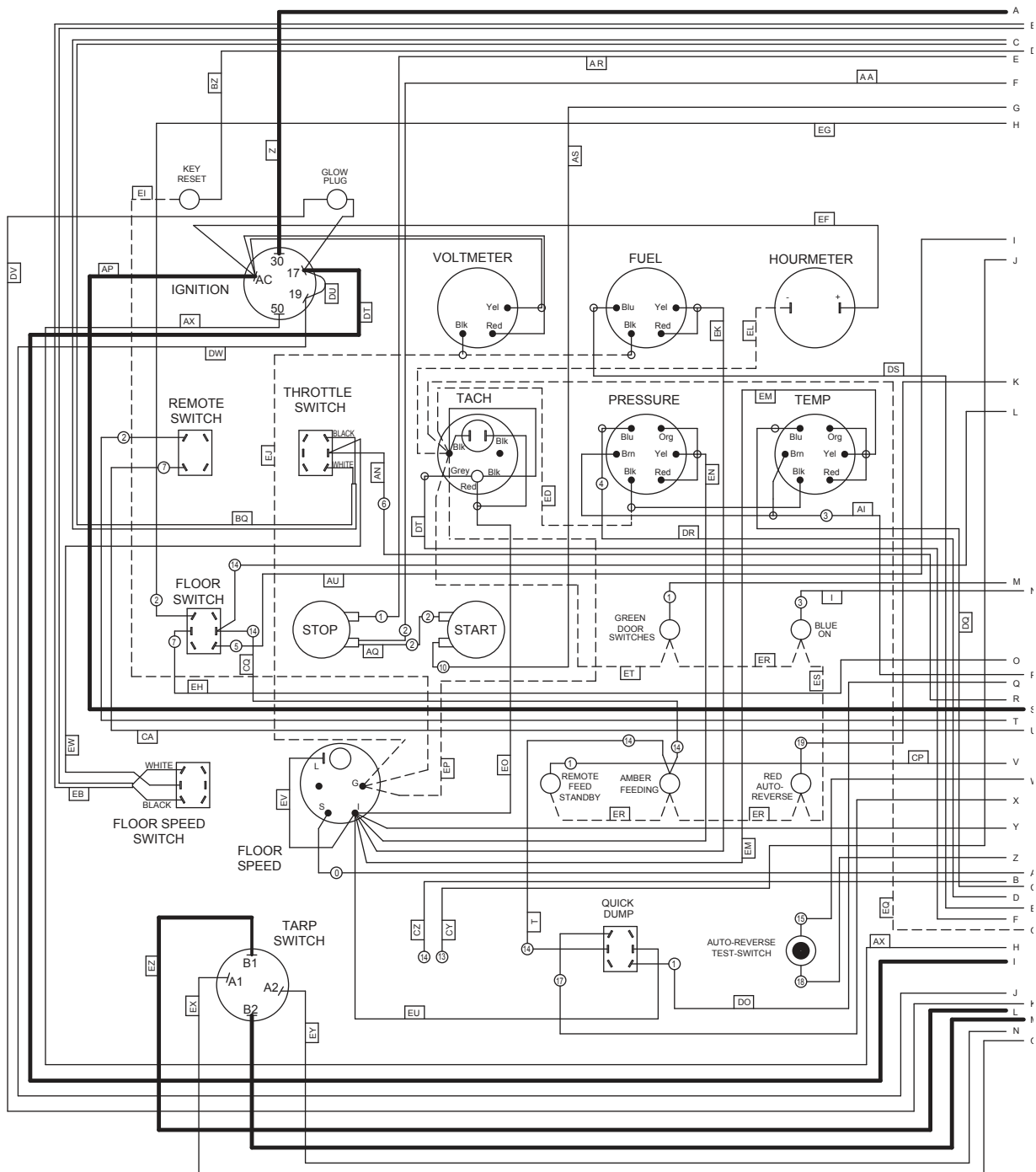
TR1-Air Lock Pressure
Switch Settings
Item 1

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CONTROL BOX ELECTRICAL COMPONENTS

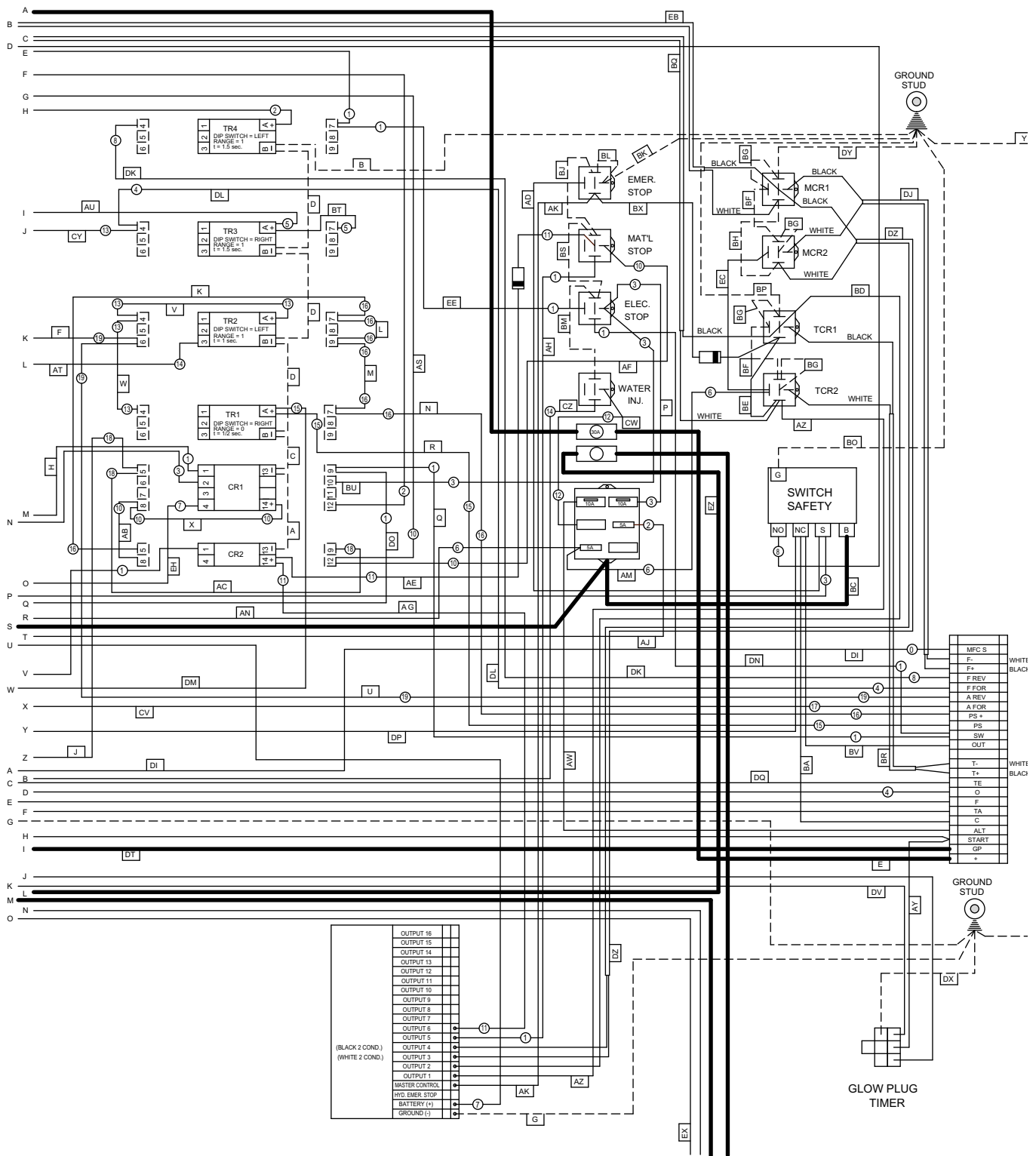
Ref. No.	Part Number	Description	No. Req'd
1-4	055122	12 Volt Timer (TR1, TR2, TR3, TR4)	4
	055125	Timer Socket	4
5	055121	12 Volt Relay	1
	055124	Relay Socket	1
6	055120	12 Volt Relay	1
	055123	Relay Socket	1
7	075346-04	Timer Mounting Rail	1
8	052118	6 Circuit Fuse Panel	1
9	045056	10A Circuit Breaker	2
10	055450	5A Fuse	2
11	052133	Radio Remote Control	1
12	023802	Murphy Safety Switch	1
13	075346-02	Right Relay Mounting Angle	1
14-21	FW71749-02	30A Relay	8
22	075346-03	Circuit Breaker Mounting Angle	1
23	045055	30A Circuit Breaker	1
24	075346-01	Left Relay Mounting Angle	1
25	055132	Terminal Block	28
26	055451	Terminal Block End Cap	1
27	075346-05	Terminal Block Mounting Rail	1
28	075336	Sub Panel	1
29	KU15694-65592	Glow Plug Timer	1
	075335	Control Box (Not Shown)	1
Ref. No.	Function		
1	Floor Reverse Timer		
2	Floor Delay Timer		
3	Air Lock Auto Reverse Timer		
4	Air Lock Pressure Switch Delay Timer		
14	Material Speed Control Relay		
15	Material Speed Control Relay		
16	Throttle Control Relay		
17	Throttle Control Relay		
18	Emergency Shutdown Relay		
19	Material Stop Relay		
20	Electric Stop Relay		
21	Water Injection Relay		

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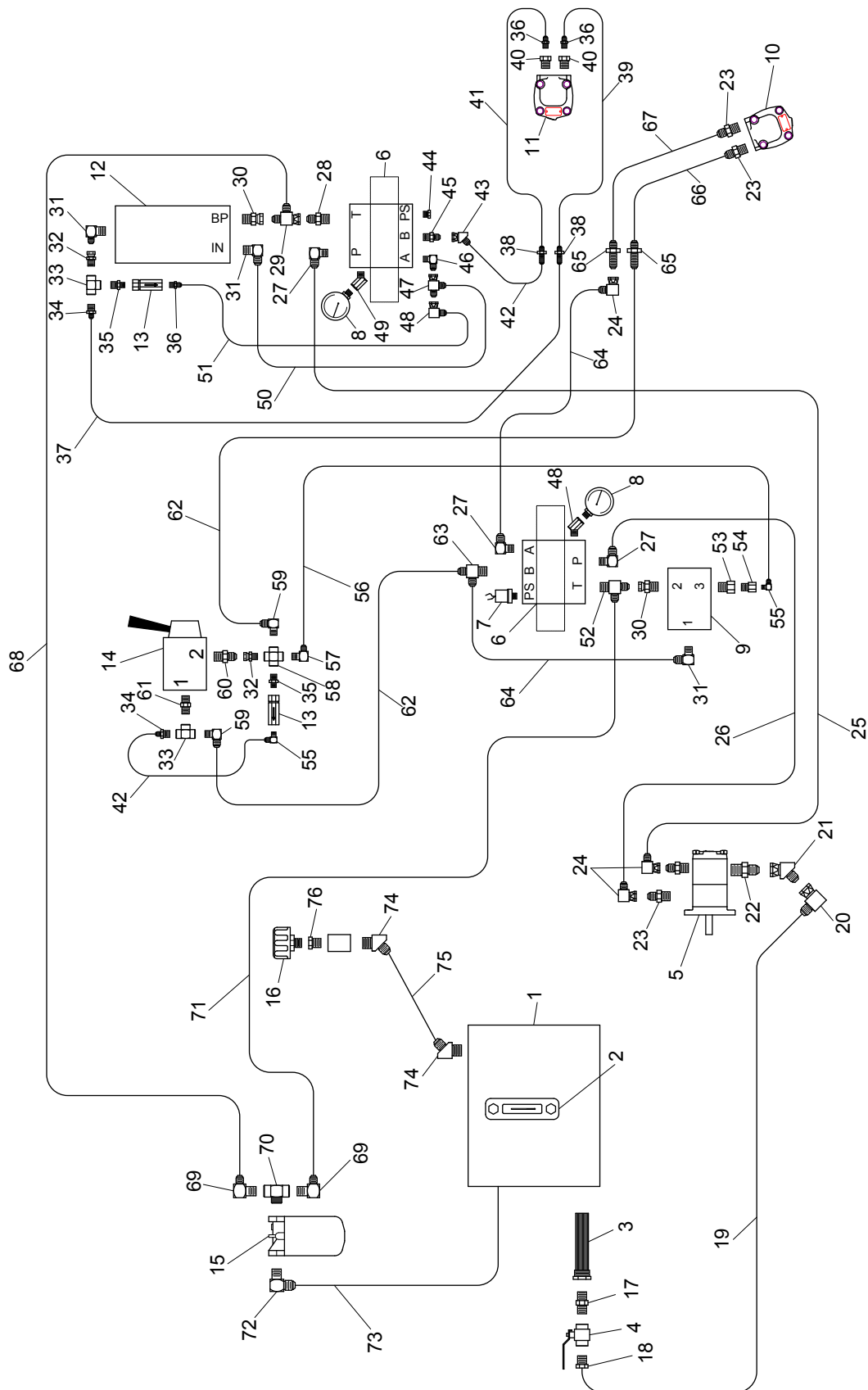


Note origin with respect to mounting stud.

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HYDRAULIC SCHEMATIC

Ref. No	Part Number	Description	No. Req'd
1	075279	Hydraulic Reservoir	1
2	080534	Hydraulic Sight Gauge	1
3	011648	Suction Strainer	1
4	012083	Ball Valve	1
5	075327	Tandem Hydraulic Pump	1
6	075343	Hydraulic Valve Block	1
7	052336	Pressure Switch	1
8	012044	Pressure Gauge	2
9	055659	Pressure Switch	1
10	075230	Air Lock Hydraulic Motor	1
11	075231	Feed Roll Hydraulic Motor	1
12	075301	Manual Flow Control Valve	1
13	021617	Return Filter	1
	021618	Filter Element	1
14	004900	Filler/Breather Cap	1
15	041150	Pipe Nipple	1
16	041153	Reducer Bushing	1
17	075256	Suction Hose	1
18	FW71571	90° Swivel Adapter Elbow	1
19	055513	45° Swivel Adapter Elbow	1
20	055383	Straight Adapter	1
21	075373	Plug	1
22	085014	Straight Adapter	4
23	FW71636	90° Swivel Adapter Elbow	3
24	075375	Pump Discharge Hose	2
25	FW71786	90° Adapter Elbow	2
26	FW65216	90° Adapter Elbow	2
27	FW71448	90° Adapter Elbow	3
28	075378	Feed Roll Work Hose	2
29	FW71910	Straight Adapter	2
30	005686	Reducing Adapter	2
31	075377	Air Lock Motor Short Work Hose	1
32	075376	Air Lock Motor Long Work Hose	1
33	045084	Reducing Adapter	1
34	008544	Straight Swivel Adapter	1
35	075385	Female Run Tee	1
36	012097	Reducing Adapter	1
37	FW71892	90° Elbow	1
38	055601	Straight Adapter	2
39	075380	Manual Flow Control Valve Work Hose	2
40	085089	45° Swivel Adapter Elbow	1
41	FW75148	Straight Adapter	1
42	075379	Return Hose	1
43	023616	Straight Adapter	1
44	FW71591	90° Adapter Elbow	1
45	075257	Reservoir Return Hose	1
46	005546	45° Adapter Elbow	2
47	075258	Fill Hose	1
48	011958	Reducer Bushing	1

TOOL KIT

Part Number	Description	No. Req'd
FW71883	Touch Up Paint	1
	Engine Operator's Manual	1
	Blower Operator's Manual	1
	Radio Remote Control Manual	1
	Bark Blower Operator's/Parts Manual	1

DISCHARGE HOSE

Part Number	Description	No. Req'd
055339A	100' Discharge Hose Ass'y w/ Aluminum Couplers	1
055398A	50' Discharge Hose Ass'y w/Aluminum Couplers	1
055374A	Aluminum Male Adapter	1
055375A	Aluminum Female Coupler	1
045303	Hot Air Hose	1
052380	Discharge Deflector Assembly	1
055337	Shoulder Strap	1

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WARRANTY

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

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

THE REMEDIES OF THE USER SET FORTH HEREIN ARE EXCLUSIVE, WITHOUT REGARD TO WHETHER ANY DEFECT WAS DISCOVERABLE OR LATENT AT THE TIME OF DELIVERY OF THE PRODUCT TO THE PURCHASER.

The essential purpose of this exclusive remedy shall be to provide the Purchaser with repair or replacement of parts that prove to be defective within the period and under the conditions previously set forth. This exclusive remedy shall not have failed of its essential purpose (as that term is used in the Uniform Commercial Code) provided Finn remains willing to repair or replace defective parts within a commercially reasonable time after it obtains actual knowledge of the existence of a particular defect.

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

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 December 8, 1995

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.