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# **GAS AERATION FAN OWNER'S MANUAL**

## SIGN-OFF FORM

Venlaw Mfg follows the general Safety Standards specified by the American Society of Agricultural and Biological Engineers (ASABE), American National Standards Institute (ANSI), Canadian Standards Association (CSA), International Organization for Standardization (ISO), and Occupational Safety and Health (OHS). Anyone operating and/or maintaining the Portable Fan must read and clearly confirm that they understand ALL Safety, Operating, and Maintenance Information presented in this manual.

law Mfg recommends all personnel that intend to use the Portable Aeration Fan read the operators manual and follow the safety precautions and instructions and will operate and maintain this equipment safely. Venlaw Mfg recommends that all users "sign off" below which confirms their agreement concerning safety.

Periodic reviews of this manual with all employees should be standard practice. For your convenience, we include this sign-off sheet so you can record your initial operation safety training and periodic reviews.

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## 1 INTRODUCTION

Congratulations on your choice of a Venlaw Mfg Portable aeration Fan! This equipment has been engineered to provide optimum performance for your aeration needs.

This manual covers the Portable Aeration Fan manufactured by Hidden Valley Manufacturing (HVM) and is your first source of information about the machine. If you follow the instructions given in this manual, your Portable Aeration Fan will work well for many years. Safe, efficient, and trouble free operation of your Portable Aeration Fans requires that anyone operating or maintaining the machine to read and understand this manual.

Keep this manual handy for frequent reference and to pass on to new operators or owners. Call your Venlaw Mfg Dealer if you need assistance or information.

### 1.1 SERIAL NUMBER LOCATION

Always give your dealer the serial number of your Portable Aeration Fan when ordering parts or requesting service or other information. The serial number plate is located on the frame. Please mark the number in the space provided for easy reference. As well, we recommend that you file these identification numbers in a secure place.

Model Number: \_\_\_\_\_

Venlaw/YLD Serial Number: \_\_\_\_\_

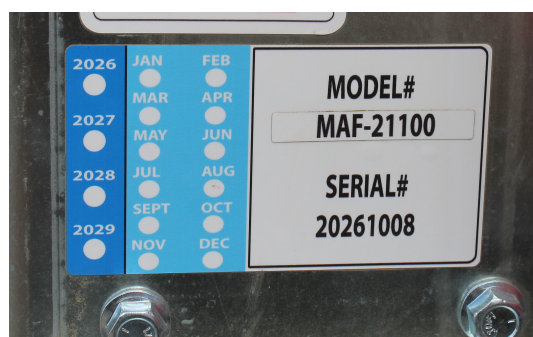


Figure 1: Serial Plate



Figure 2: Location of Serial Plate

Pics to change

## 2 SAFETY FIRST

In order to operate this equipment safely, a complete understanding of the potential hazards present and the meaning of the warning decals is needed. Safety should be your first priority.

### 2.1 SAFETY ALERT SYMBOLS



The Safety Alert Symbol above identifies important safety messages on the product and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is *SAFETY* important to you? Three Big Reasons:

- Accidents Disable and Kill
- Accidents Cost
- Accidents Can be Avoided

The Safety Signal Words below are used in the manual and on the safety decals, along with the Safety Alert Symbol. The appropriate signal word for each message has been selected using the definition below as a guideline.



**DANGER** indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.



**WARNING** indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.



**CAUTION** indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury



**NOTICE** is used to address practices not related to personal injury.

### 2.2 GENERAL SAFETY

*YOU* are responsible for the *SAFE* operation and maintenance of your Venlaw Mfg Portable Aeration Fan. *YOU* must ensure that you and anyone else who is going to operate, maintain, adjust, disconnect, or work around the Portable Aeration Fan understands all procedures and related *SAFETY* information contained in this manual.

Remember, *YOU* are the key to safety. Good safety practices not only protect you, but also the people around you. Make these practices a working part of your safety program.

- It is the equipment owner and the operator's responsibility to read and understand ALL safety instructions, safety decals, and manuals and follow them before operating, maintaining, adjusting or disconnecting the Portable Aeration Fan.
- Equipment owners must give instruction and review the information initially and annually with all personnel before allowing them to operate this product. Untrained users/operators expose themselves and bystanders to possible serious injury or death.
- Prior to operating this equipment, be sure to read and understand the operator's manual. If there is any portion you do not understand, or any phase of the machine's

operation you do not understand, be sure to contact your dealer or Venlaw Mfg.

- Do not modify your Venlaw Mfg Portable Aeration Fan in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment. **Any unauthorized modification to the equipment voids the warranty.**
- Use the Portable Aeration Fan for its intended purposes only.
- At any point in time, do not add any weight to the Portable Aeration Fan.
- Do not allow children, animals, or bystanders within the work area, refer to Figure 3.
- Never operate the Portable Aeration Fan with safety shields/guards removed. Be aware that even with all safety shields in place the equipment can be dangerous if operated incorrectly.
- Ensure all the guards and shields are properly installed and properly secured before operating.
- All farm machinery is inherently dangerous to children and to persons unfamiliar with its general operation. Since the Portable Aeration Fan contains numerous moving parts that can be extremely hazardous, steps should be taken to ensure the safety of the operator.
- Never conduct maintenance on the equipment when parts are moving. Be aware of moving parts.
- Make sure all persons are clear of the equipment when in operation. Failure to follow any of the above warnings may cause serious bodily injury or death, refer to Figure 3.
- Do not touch any of the exposed metal surfaces of the engine and the muffler

during and after operation. These surfaces could be extremely hot and could cause minor to severe burns.

- Have a first-aid kit available for use should the need arise and know how to use it.
- Provide a fire extinguisher for use in case of a fire. Store in a highly visible place.
- Ensure that the equipment is stored at room temperature away from any source of ignition.
- Ensure that the fuel tank is emptied if the equipment is to be left outside for storage or if it is not to be operated for a long period of time.
- Wear protective gear. This includes but is not limited to:



- Protective shoes with slip resistant soles
- Protective goggles
- Work gloves
- Wet weather wear
- Hearing protection
- Respirator or filter mask

### 2.3 OPERATIONAL SAFETY



Do not allow children, animals or bystanders within the work area. Refer to the Hazardous Work Area diagram (Figure 3 on the following page).

## **⚠ WARNING**

Before operating, maintaining, adjusting or disconnecting the Portable Aeration Fan, all controls are placed in neutral, ensure the engine is turned off, remove the ignition key and wait for all the moving parts to stop. Further, ensure that the Portable Aeration Fan is on even ground, both jacks are in extended position such that the foot is sitting firmly on the ground and wheel chocks are placed at each wheel of trailer.

**Important:** This Safety First Section includes instructions that are overall safety practices. Any instructions specific to a certain safety practice (example: Operation Safety) can be found in the appropriate section. Always read the complete instructional sections in addition to the Safety First Section before doing anything with the equipment.

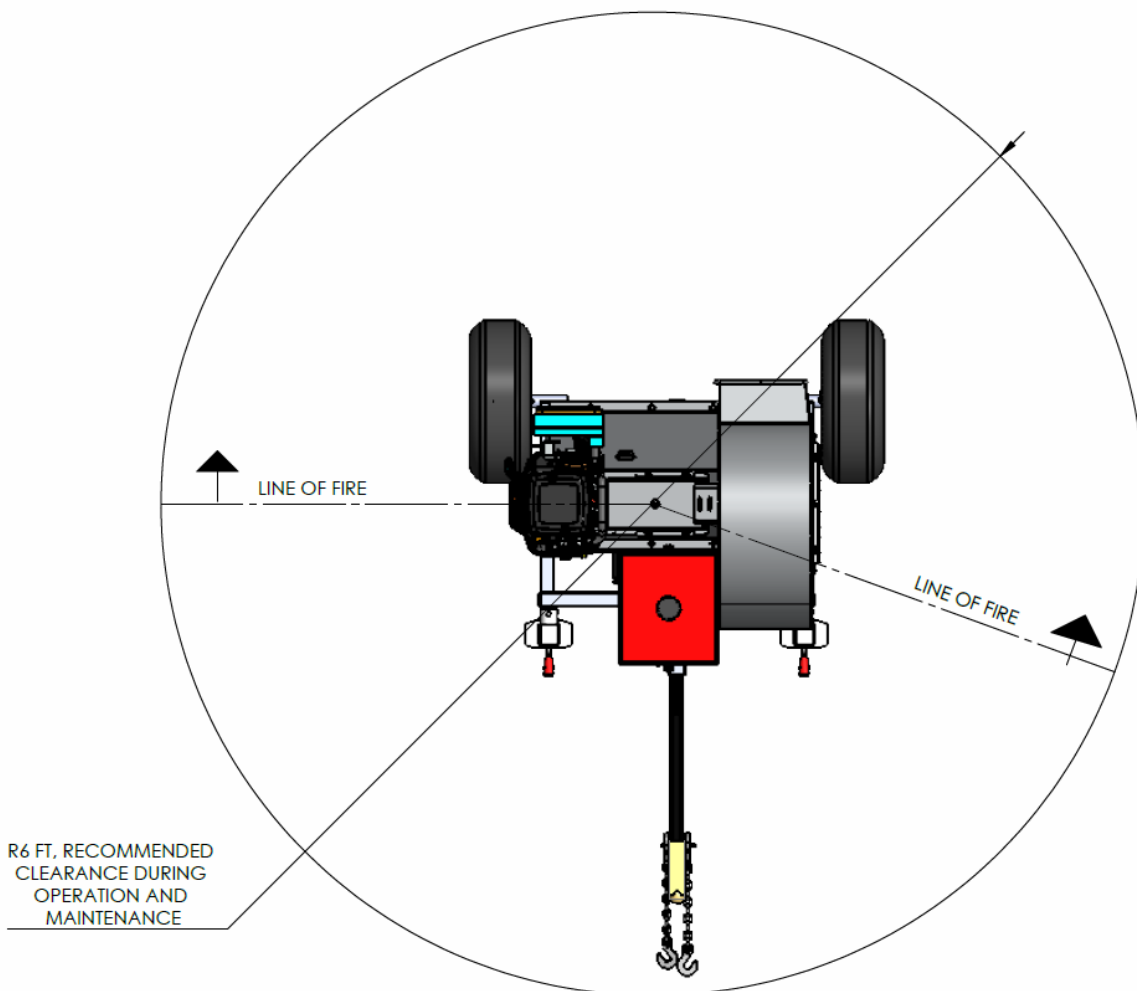


Figure 3: Recommended Clearance

## 2.4 EMERGENCY SHUTDOWN PROCEDURE:

In case of emergency, immediately shut off the Portable Aeration Fan power source. This will eliminate all suction and rotation hazards that may contribute to an emergency situation.

- Push the gas throttle pin all the way to CLOSE position, see Figure 5.
- Turn the ignition key to OFF position.
- Turn the fuel shut-off valve to OFF position under the tank.
- Stay clear of the Portable Aeration Fan until all moving parts come into full stop.

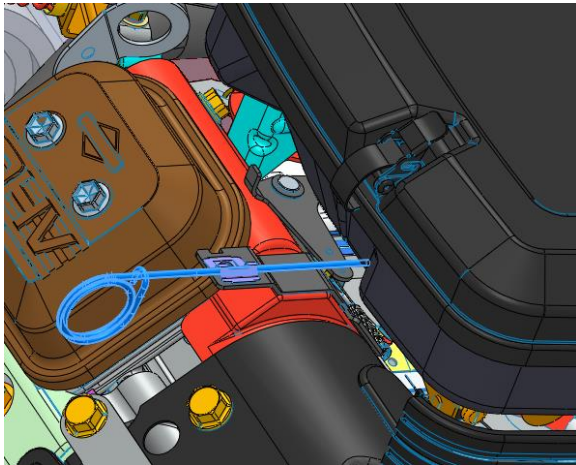


Figure 5: Fuel Throttle Control

**NOTE:** To minimize the potential of injury, it is recommended that you:

- Read and understand the Operator's Manual and all Safety Signs before operating.
- Do not operate if any of the guards or shields are removed or damaged.
- Do not wear loose fitting clothing that may catch in moving parts
- Be sure there are no tools or other foreign objects laying on or in the machine.
- Do not allow children, spectators, or bystanders within the work area.
- Do not start the machine until you are sure everyone is clear.
- Do not allow riders on the Portable Aeration Fan trailer.
- Accumulation of dirt or foreign material in the blower wheel may cause imbalance or excessive vibration. Inspect daily, thoroughly clean when necessary.
- Keep hands, feet and clothing away from moving parts, especially the air intake area of the fan.
- Do not clean, adjust or lubricate your equipment while it is running.
- Never sit or stand on this machine while it is in operation.
- Stay clear of fan discharge area.

## 2.5 SAFETY PRECAUTIONS – GASOLINE, ALL GRADE

Handling and storage of gasoline should conform to Material Safety Data Sheet **MSDS No. 9950**. Note of the following key points:

- High fire hazard. Keep away from heat, spark, open flame, and other ignition sources.
- Keep unused gasoline out of reach of children, pets and irrelevant persons. Store unused gasoline outside of the home, away from food and feed, and under lock and key.
- Store unused gasoline in original container and keep tightly closed.
- Avoid inhalation or direct contact.
- Avoid spills. If spills occur, follow decontamination procedure on chemical container label.

## 2.6 INTERNAL COMBUSTION ENGINE SAFETY

### **DANGER**

DO NOT OPERATE THE PORTABLE AERATION FAN IN FLAMMABLE AREA.

Any personnel working with an internal combustion engine should be familiar and fully understand Occupational Safety & Health Code (OSH) **Section 166** for Internal Combustion Engines. Key pointers based on industry standard practices and Section 166 of OHS Code are found in Section 3.2 of this manual.

## 2.7 PTO SAFETY

### **WARNING**

Before operating, maintaining, adjusting or disconnecting the Portable Aeration Fan, all controls are placed in neutral, ensure the engine is turned off, remove the ignition key and wait for all the moving parts to stop. Further, ensure that the Portable Aeration Fan is on an even ground, both jacks are in extended position such that the foot is sitting firmly on the ground and wheel chocks are placed at each wheel of trailer.

- Ensure the bearing cover is securely installed prior to starting the engine.
- Keep body, hair, clothing and/or any foreign object away from the rotating PTO and transmission shaft.
- Do not exceed an operating speed of 3500 rpm.

## 2.8 ELECTRICAL SAFETY

### **WARNING**

Before operating, maintaining, adjusting or disconnecting the Portable Aeration Fan, all controls are placed in neutral, ensure the engine is turned

off, remove the ignition key and wait for all the moving parts to stop. Further, ensure that the Portable Aeration Fan is on an even ground, both jacks are in extended position such that the foot is sitting firmly on the ground and wheel chocks are placed at each wheel of trailer.

### **WARNING**

Wear proper hand and face protection and disconnect power source when searching for electrical faults. Electrical shock from uninsulated wire can cause injury. In case of accident, see a doctor immediately.

- Always disconnect the power source before working on electrical components.
- Avoid working in wet environment where electricity can pass through water.
- Never touch a bare wire with hand, always use an electrical tester.
- Use standard electrical connector and insulating tape if required to do so.

## 2.9 MAINTENANCE SAFETY

### **WARNING**

Before operating, maintaining, adjusting or disconnecting the Portable Aeration Fan, all controls are placed in neutral, ensure the engine is turned off, remove the ignition key and wait for all the moving parts to stop. Further, ensure that the Portable Aeration Fan is on even ground, both jacks are in extended position such that the foot is sitting firmly on the ground and wheel chocks are placed at each wheel of trailer.

### **WARNING**

Failure to follow all the safety instructions below in Maintenance Safety Section can result in serious injury, death and/or property damage.



- Support the Portable Aeration Fan with blocks or safety stands when working beneath the Portable Aeration Fan
- Use only tools, jacks and hoists of sufficient capacity for the job.
- Make sure all the guards and shields are in place and properly secured when the maintenance work is completed.
- Keep body, hair and clothing away from all moving and/or rotating parts.
- Do not allow children, spectators, or bystanders within the work area.
- Use only genuine Venlaw Mfg replacement parts or equivalent. Replacement parts must meet ASABE standards. Use of unauthorized parts will void warranty. If in doubt, contact your Venlaw Mfg dealer.
- Do not modify any Portable Aeration Fan components without authorization from Venlaw Mfg

## 2.10 TRANSPORT & PLACEMENT SAFETY

THE PORTABLE AERATION FAN IS INTENDED FOR OFF ROAD USE ONLY, MAXIMUM TOW SPEED OF 40KM/H.

### **WARNING**

Before operating, maintaining, adjusting or disconnecting the Portable Aeration Fan, all controls are placed in neutral, ensure the engine is turned off, remove the ignition key and wait for all the moving parts to stop. Further, ensure that the Portable Aeration Fan is on even ground, both jacks are in extended position such that the foot is sitting firmly on the ground and wheel chocks are placed at each wheel of trailer.

- Make sure you are in compliance with all of the local regulations regarding transporting Agricultural Equipment on public roads and

highways. Consult your local law enforcement agency for details.

- Properly place the hitch pins, using a mechanical retainer.
- Always use the hazard flashers on the towing vehicle unless prohibited by law.
- Ensure that the towing vehicle have sufficient *Gross Vehicle Weight Rating (GVWR)* and *Gross Combination Weight Rating (GCWR)* to carry the equipment.
- The equipment is designed to comply with Transport Canada's requirement that the towing vehicle be at least weighs 50% more than the equipment.
- Ensure that the tire pressure of both wheels is 20psi.
- Ensure that both of the safety chains are securely installed before towing the Portable Aeration Fan.
- Ensure that safety chains and hitch coupler are in good working condition, replace these components if there are any damage that could hinder their intended purposes.

Care must be taken to provide ample clearance for obstacles and oncoming and overtaking traffic. To move or transport, use the following procedure:

1. Ensure that all components are securely stowed in position on the Portable Aeration Fan
2. Use only an attaching pin that has provisions to install a mechanical retainer. Always install the retainer.
3. Use the hazard flashers on the towing vehicle unless prohibited by law in your area.
4. Take special care and precautions when transporting during times of limited visibility such as rain, fog, snow, dusk or at night.
5. Never transport faster than the road or terrain conditions will allow you to do safely. Maximum tow speed is 40km/h.

6. Check with the local authorities on the rules and regulations governing the transporting of Agricultural Equipment on highways before starting. Always comply with these ordinances and regulations.
7. Do not allow riders on the Portable Aeration Fan trailer.

## 2.11 STORAGE SAFETY

- Store the Portable Aeration Fan on a firm, level surface.
- Store away from areas of human activity. Do not permit children to play on or around the Portable Aeration Fan.
- Please refer to Section 2.5 for gasoline handling and storage.
- To ensure that there is no fuel in the fuel line, refer to Section 5.7 for proper shutdown of the Portable Aeration Fan.

## 2.12 DECALS

Venlaw Mfg reserves the right to update safety decals on new machines without notice to owners of older machines. Safety decals may not be exactly as shown.

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### 2.12.1 DECAL INSTALLATION

- Be sure that the installation area is clean and dry.
- Determine the exact position before you remove the backing paper.
- Place the decal over the specified area and carefully press a small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.

- Small air pockets can be pierced with a pin and smoothed out using the decal backing paper.

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### 2.12.2 DECAL MAINTENANCE

- Keep the safety decals clean and legible at all times.
- Replace any safety decals and signs that are missing or have become illegible.

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### 2.12.3 DECAL REPLACEMENT

- Ensure the new equipment components installed during repair include the current safety signs specified by the component manufacturer to be affixed to the replaced components.
- Safety decals are available from your authorized dealer or Venlaw Mfg. The complete decal sheet can be found on the following page. The numbers beside each decal coincide with the descriptions in the Decal Locations section.



## 2.12.4 SAFETY DECALS

NOTE:

- [##] – Represents the item number of the decal on the BOM attached on page 33-35.
- Decals are not to scale.

1. [69]



2. [70]



3. [71]



4. [62]



5. [65]



6. [64]



7. [63]



8. [73]



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## 2.12.5 OTHER DECALS

9. [67]



10. [66]



12. [72] 13.[18]



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## 2.12.6 DECAL LOCATIONS

The types of decals and location on the equipment are shown on the following page. Good safety requires that you familiarize yourself with the various safety decals, the type of warning and the area, or particular function related to that area, that requires your *SAFETY AWARENESS*.

**NOTE:** If Safety Decals have been damaged, removed, become illegible or parts are replaced without decals, new decals must be applied. New decals are available from your authorized dealer or Venlaw Mfg.

**IMPORTANT:** Please review the decals shown. If your Portable Aeration Fan does not have these decals, they are available upon request. Please specify which decals you need.

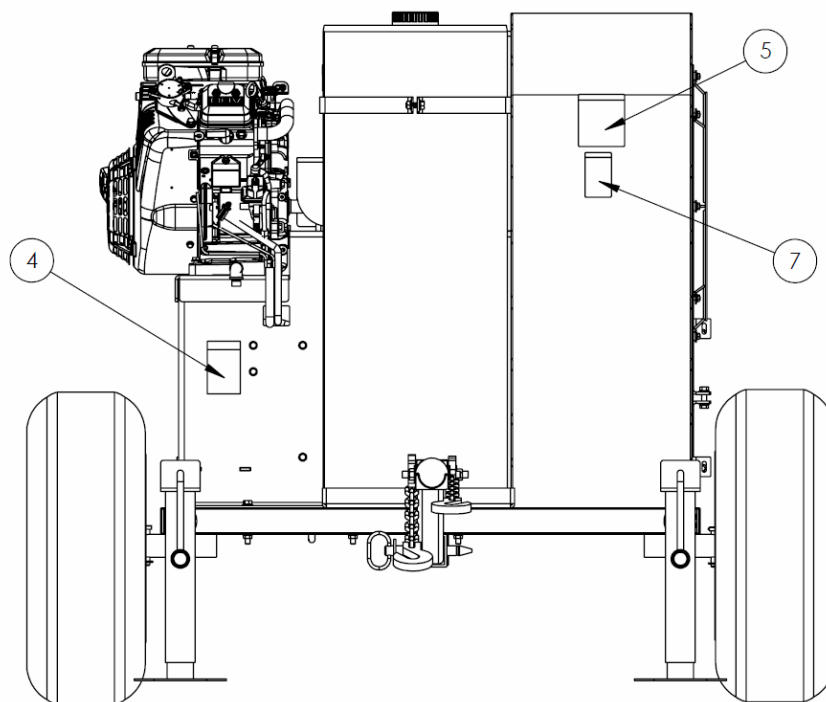


Figure 6: FRONT VIEW

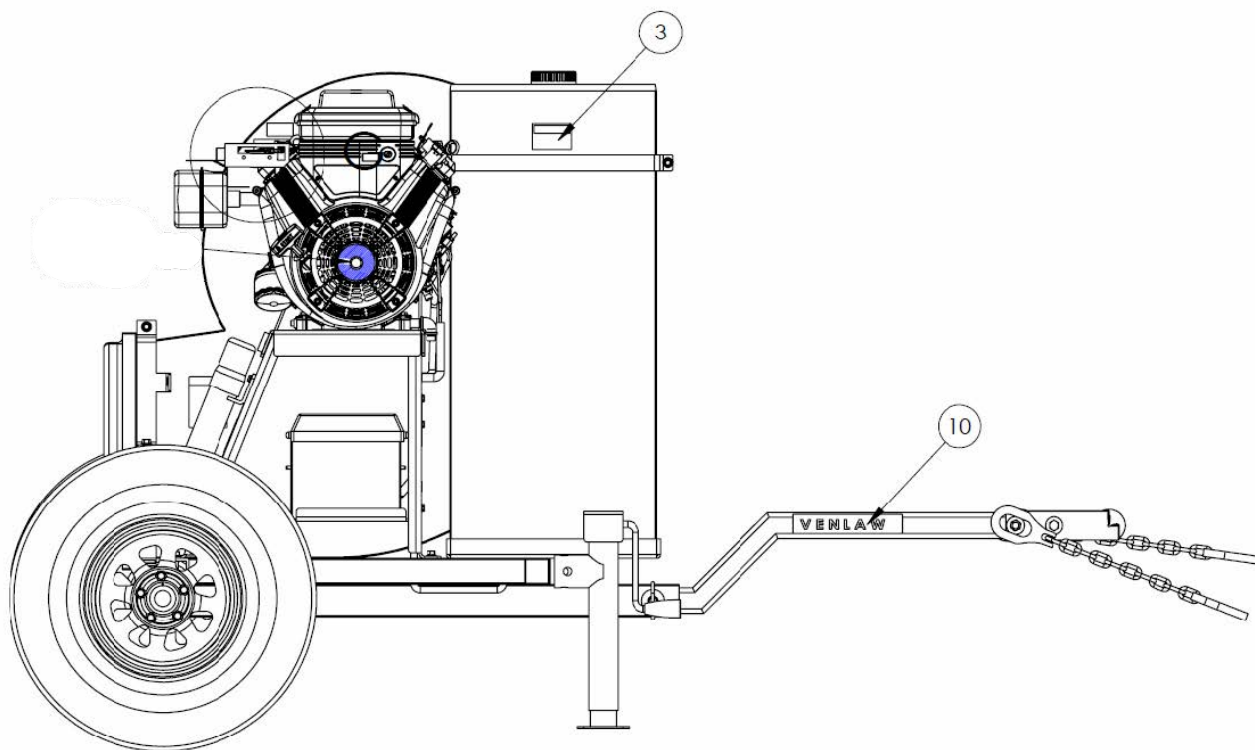
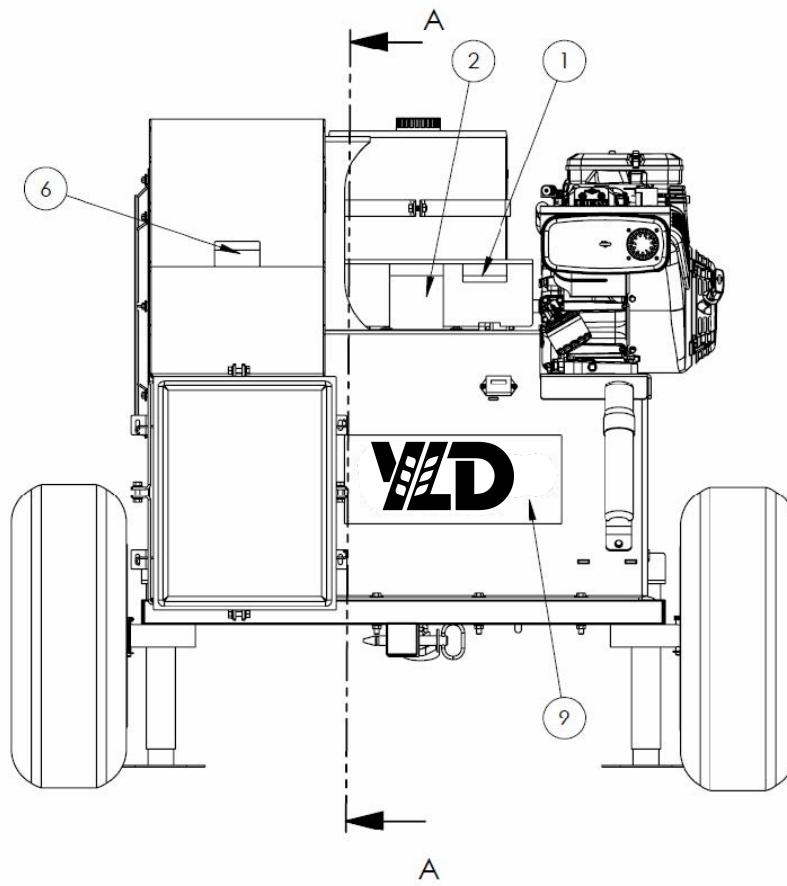
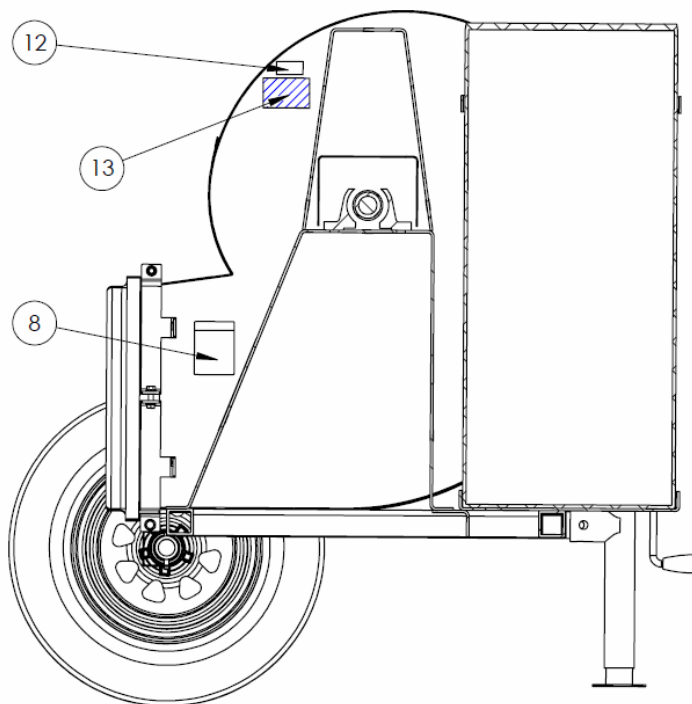


Figure 7: RIGHT SIDE VIEW



**Figure 8: REAR VIEW**



**Figure 9: SECTION VIEW**

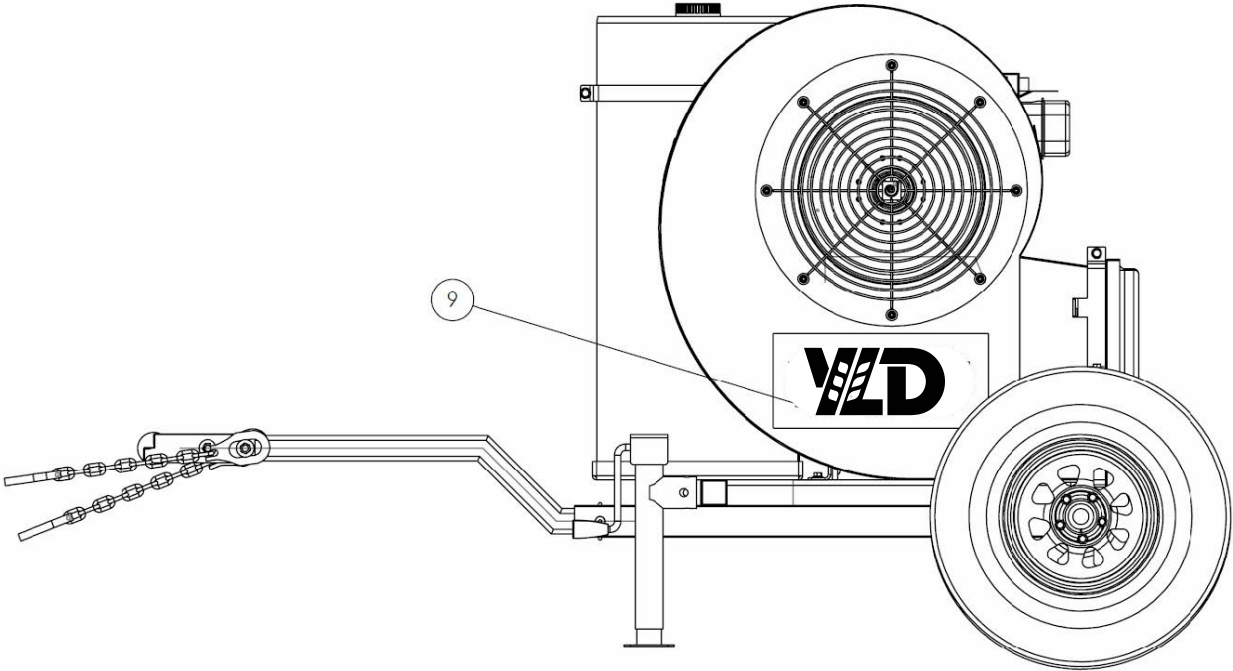


Figure 10: LEFT SIDE VIEW

### 3 GENERAL INFORMATION

#### 3.1 FAN BLADE

The unit has a fan blade rotating at high speed while it is in operation. When guarded with the screen guard it poses no direct hazard.



MAKE SURE THE SCREEN GUARD IS SECURELY ATTACHED AND FASTENED IN PLACE.



WHEN SERVICING THE FAN BLADE, MAKE SURE THE SOURCE OF POWER IS SHUT OFF AT THE FAN DISCONNECT, AND LOCK THE FAN DISCONNECT IN THE OFF POSITION.



DO NOT MANUALLY ROTATE THE FAN BLADE OF THE SHAFT UNLESS THE IGNITION KEY IS OFF AND/OR REMOVED. TURNING COULD MAKE A POWER STROKE TO OCCUR WHICH COULD START THE ENGINE UNINTENTIONALLY.

#### 3.2 ENGINE

The unit utilizes an internal combustion engine as the source of energy. Internal combustion engines can be hazardous if used in facilities that process flammable gases and liquids. An internal combustion engine could ignite flammable gases or vapors, and the consequences could be devastating.

The Occupational Safety & Health Code Section 166 states that internal combustion engines fueled by diesel, gasoline, natural gas, propane, or other fuels, can act as ignition sources

Internal combustion engines must have a specific fuel-to-air ratio to work properly. Air enters the engine through the intake and travels to the cylinder combustion chambers. Flammable gases and vapors can enter the cylinders with the air. The flammable

material in the cylinders provides an external fuel source and increases the engine's fuel-to-air ratio creating an ignition hazard. OSH recommends a workplace evaluation and other preventative measures, including:

- Identifying areas where flammable liquids or gases are located and where internal combustion engines are used.
- Determine flammable material areas and internal combustion engine use by contractors.
- Store materials and equipment according to OSH Code Section 166.
- Evaluate, establish, and mark acceptable routes through hazardous locations.
- Install preventative measures such as intake flame and exhaust spark arrestors, shutdown systems, and use a safe work permit lockout tagout system, and post hazard and precaution signs.
- Train workers and contractors on hazardous areas and safety precautions.

NOTE: The above pointers are key pointers from OSH Code Section 166, it is your responsibility to be fully familiar and fully understand this document prior to operating this unit.

## 4 LIST OF FEATURES

The Portable Full-Speed Centrifugal Aeration Fan has been designed for applications that require high static pressures. The Portable Full-Speed Centrifugal Aeration Fan utilizes a centrifugal rotor which spins at a nominal 3500 rpm. The fan incorporates the following features:

### 4.1 AERATION FAN

- Heavy gauge steel housing and mounting platform.
- Aluminum fan rotor for lightweight efficient design and corrosion resistance.
- Powder coated body and screen for long life.
- Rain tight control enclosure on the fan.
- Fully engineered shaft.

### 4.2 TRAILER BODY

- Heavy gauge HSS and flat bar steel.
- Highway rated trailer wheels - Rainer ST175-80-R13BC.
- Dexstar black mod 13" x 4.5", 5 on 4.5" rim.
- Dexter 1 1/4" BT8 assembly.
- Ram 5000lbs jack-screw sided wind.

### 4.3 COUPLER FEATURE

- Patented WingLock™ Element Design for higher bond strength, improved fatigue resistance, and longer life.
- 5-year Limited Warranty.

### 4.4 ENGINE FEATURES

- Float carburetor for consistent easy starting
- Dual-Clean™ air cleaner pleated paper filter with a foam pre-cleaner ensures maximum protection for extended engine life.

- Full pressure lubrication with spin-on oil filter assures controlled lubrication for extended component life.
- Overhead valve design (OHV) for cooler operation and longer valve life.
- Buyer protection package provides three-year commercial limited warranty.

### 4.5 OTHER FEATURES

- 130L/34.3 Gal vented MDPE plastic fuel tank.
- 90deg elbow shut off valve.
- Digital Tachometer for RPM control.



## 5 OPERATION



**WARNING:** Before continuing, please reread the safety information relevant to this section at the beginning of this manual. Failure to follow these safety instructions and the ones below can result in serious injury, death and/or property damage.

### 5.1 PRE-OPERATIONAL CHECKLIST

Before initially operating the Portable Aeration Fan and each time thereafter, the operator must confirm the following:

- Proper maintenance has been performed.
- Check all bolts, nuts, and hose connections to be sure they are tight.
- Electrical connections are in place and secure.
- All safety guards and service doors are in place and secure.
- Portable Aeration Fan body is free of wear, restrictions or foreign material.
- The rotor has been inspected for accumulation of dirt or foreign material which cause imbalance or excessive vibration.
- Know how to safely shut down the Portable aeration Fan in an emergency. Refer to the Emergency Shutdown procedure (Section 2.4) in the Operation Safety Section of this manual.
- Check fuel hoses for kinks, cracks, or soft spots (replace hoses if they show any of these conditions).

### 5.2 MACHINE BREAK-IN

**Note:** Before machine break-in, complete the Pre-Operation Checklist.

When using the Portable Aeration Fan for the first time, it is recommended that the following mechanical items be checked:

1. Before starting or pre-delivery inspection:
  - a. Read the Operator's Manual.
2. After operating 10 hours:
  - a. Stop the Portable Aeration Fan and lockout the power unit before checking the rotor and fuel line.

### WARNING

Before operating, maintaining, adjusting or disconnecting the Portable Aeration Fan, all controls are placed in neutral, ensure the engine is turned off, remove the ignition key and wait for all the moving parts to stop. Further, ensure that the Portable Aeration Fan is on even ground, both jacks are in extended position such that the foot is sitting firmly on the ground and wheel chocks are placed at each wheel of trailer.

### 5.3 FUELING THE EQUIPMENT

- Carry gasoline in a closed container, which is adequately vented. For proper handling of gasoline, please refer to Section 2.5.
- Ensure that the engine is shut off before fueling or refilling the fuel tank.
- Ensure to use the correct type of fuel as per the engine operators manual. Do not mix any contaminants not approved by the engine manufacturer as per the engine operator's manual.
- Do not overfill the equipment fuel tank.
- Ensure the tank lid is securely closed.
- Inspect the tank daily for leaks.

### 5.4 TARP ATTACHMENT



Bent rods were welded on the edge of the exhaust for tarp attachment, see Figure 11. Your Venlaw Portable Fan comes with a 12ft tarp attached to it secured by custom designed lock as shown on Figure 11.

- Ensure that the tightening belt is behind the welded rods.
- Tighten the belt enough so that the tarp is stopped from moving by the welded rods.
- The inlet side of the tarp has the following measurement: 14 11/32" X 18 11/32".
- The dimension of the fan outlet could be seen on Section 8.4.2.

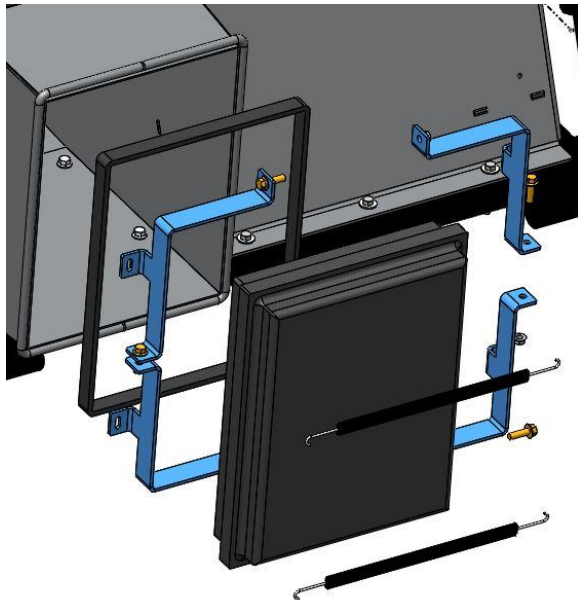


Figure 11: Exhaust of Fan with Welded Rods

## 5.5 OPERATION

### **⚠ DANGER**

Do not allow children, animals or bystanders within the work area. Refer to the Hazardous Work Area diagram in Figure 3.

- Check all the items on the Pre-Operation checklist

- Make sure you and others in the area are wearing appropriate personal protective equipment.

## 5.6 STARTING PORTABLE AERATION FAN

1. Ensure tank has adequate fuel for the intended job.
2. Turn the fuel shut-off valve into ON position.
3. Turn ignition key into ON position
4. Pull the gas throttle to OPEN position.
5. Put the RPM lever on the LOW position
6. Turn the key.

### **NOTICE**

Start the machine slowly at low speed to prevent component overloading.

### **NOTICE**

Do not operate Portable Aeration Fan in excess of 3500 RPM. Failure to follow these instructions may result in machine component damage or failure

## 5.7 SHUT DOWN

When the job is complete, use the following steps for proper shutdown of the Portable Aeration Fan. The procedure below will ensure that there is no fuel left in the engine and in the fuel line.

1. Turn the fuel shut-off valve into OFF position.
2. Let the engine stop running.
3. Push the fuel throttle position into CLOSE position.
4. Turn the ignition key into OFF position; remove and keep the key in safe place.

## 6. MAINTENANCE & STORAGE

### **WARNING**

Before operating, maintaining, adjusting or disconnecting the Portable Aeration Fan, all controls are placed in neutral, ensure the engine is turned off, remove the ignition key and wait for all the moving parts to stop. Further, ensure that the Portable Aeration Fan is on even ground, both jacks are in extended position such that the foot is sitting firmly on the ground and wheel chocks are placed at each wheel of trailer.

### 6.1 GENERAL POINTERS

- Use only tools, jacks and hoists of sufficient capacity for the job.
- Make sure all the guards and shields are in place and properly secured when the maintenance work is completed.
- Keep body, hair and clothing away from all moving and/or rotating parts.
- Do not allow children, animals, or bystanders within the work area.
- Use only genuine Venlaw Mfg replacement parts or equivalent. Use of unauthorized parts will void warranty. If in doubt, contact Venlaw Mfg or your Venlaw Mfg dealer.
- Do not modify any Portable Aeration Fan components without authorization from Venlaw Mfg. Modification can be dangerous and result in serious injuries.

### 6.2 LUBRICANTS

- Grease: Use a SAE multi-purpose high temperature grease with extreme pressure (EP) performance. Also acceptable is an SAE multipurpose lithium based grease.
- Grease bearings – 1 shot every 50 hours.
- DO NOT OVER GREASE. Over greasing can cause damage to the bearing seals. Too

much grease builds unnecessary pressure and raises the temperature inside the bearing.

- Ensure that the grease nipple is installed on the grease hole at all times to prevent dirt from entering the rotating area.
- Storing Lubricants: Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.
- Use the Service Checklist provided to keep a record of all scheduled maintenance.
- Use a hand-held grease gun for all greasing.
- Wipe the grease fittings with a clean cloth before greasing, to avoid injecting dirt and grit.
- Replace or repair broken fittings immediately. If fittings will not take grease, remove and clean thoroughly. Also, clean the lubricant passageway.

### 6.3 ENGINE

Refer to the engine operator's manual for complete information on engine maintenance.

### 6.4 SPLIT TAPER BUSHING INSTALL/REMOVAL

### **WARNING**

Before operating, maintaining, adjusting or disconnecting the Portable Aeration Fan, all controls are placed in neutral, ensure the engine is turned off, remove the ignition key and wait for all the moving parts to stop.

### **NOTICE**

Further, ensure that the Portable Aeration Fan is on even ground, both jacks are in extended position

such that the foot is sitting firmly on the ground and wheel chocks are placed on each wheel of trailer.

Never allow the sheave to be drawn in contact with the flange of the bushing. This gap should measure from 1/8 to 1/4 inch (3.2 mm to 6.4 mm). If extreme screw tightening forces are applied, excess pressures will be created in the hub of the mounted sheave which may cause it to crack.

## NOTICE

The removal of all traces of oil or grease from the mating surfaces of the bushing or sheave is critical to prevent sheave failure during the assembly process.

---

### 6.3.1 REMOVING PROCEDURE

1. Remove the cap screws and thread into the tapped holes in the sheave hub. Tighten progressively until the bushing is free from the sheave taper.
2. Remove the assembly from the shaft.

**NOTE:** As a check to ensure parts are clean, use a cloth to wipe the surface and check for any oil or grease residue.

---

### 6.3.1 INSTALL PROCEDURE

1. Align the tapped holes in the bushing flange with the drilled holes in sheave hub.
2. Insert the cap screws through the drilled holes in the sheave hub and thread loosely into the tapped holes in the bushing flange.
3. Position the assembly on the shaft and tighten the cap screws progressively and uniformly.

## 6.5 STORAGE

After the season's use, inspect all the major systems and components of the machine. Repair or replace any damaged or worn components to prevent any unnecessary down time at the start of the next season.

When the Portable Aeration Fan will be stored for any period of time without being operated, use the following procedure to ensure proper operation when it needs to be used again:

1. Wash all foreign material, dirt debris, chemicals, etc. from the outside of the fan
2. Drain and flush the entire gasoline from fuel tank, refer to Section 2.5
3. Grease bearings, refer to Section 6.2
4. Touch up all paint chips and nicks to prevent rusting.
5. Store the Portable Aeration Fan in a dry place. If it is to be stored outside, cover it to prevent any water accumulation in the tank.
6. Store the Portable Aeration Fan away from areas of human activity. Do not allow children to play on or around the machine.
7. Before initial operation after being stored for an extended period check all items listed on the "Operator Check List".

## 7. TROUBLESHOOTING

The Portable Aeration Fan is a simple and reliable system that requires minimal maintenance.

In the following section, we have listed many of the possible causes and solutions to the problems that you may encounter.

If you encounter a problem that is difficult to solve, even after having read through this troubleshooting section, please call *Venlaw Mfg.* Before you call, please have this Operator's Manual and the *serial number* of your Portable Aeration Fan ready.

| Problem                                                     | Possible Cause                                          | Recommended Solution                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Engine fails to start.                                      | The battery does not have enough cranking current amps. | Replace battery. Refer to Section 2.8 for Electrical Safety work procedures.                                                                                                                                                                                                     |
|                                                             | Problem with electrical connections.                    | inspect electrical wiring and connection points, ensure all connections are securely tighten. Replace damage cables and connectors. Refer to Section 2.8 for Electrical Safety work procedures.                                                                                  |
|                                                             | Blocked fuel filter.                                    | Replace fuel filter with the same type of fuel filter, contact Venlaw Mfg. or your Venlaw Mfg. dealer.                                                                                                                                                                           |
|                                                             | Blocked fuel line.                                      | Shut the fuel valve OFF. Remove the fuel hose from the filter and the fuel tank. Flash the fuel hose and reinstall once hose is dried.                                                                                                                                           |
|                                                             | Mechanical problem in the engine.                       | Take the engine to an Authorized Service Center.                                                                                                                                                                                                                                 |
| Excessive Vibration                                         | Excessive dirt accumulated on fan rotor.                | Excessive dirt could cause imbalanced on the fan rotor. Clean dirt using compressed air. There could be cases where dead bugs would stick on the surfaces of the rotor, these could be cleaned by using a wet cloth. Inspect the fan rotor for other damages before reoperation. |
|                                                             | Misaligned shaft.                                       | To prevent further damage to your Portable Aeration Fan, it is recommended that the machine should not be operated until the alignment is fixed.<br>For assistance, contact Venlaw Mfg. or your Venlaw Mfg. dealer.                                                              |
| Squeaking and/or hissing sound on the bearing steel blocks. | Not enough lubrication.                                 | Put sufficient grease on each pillow block bearings. If the sound does not dissipate, contact Venlaw Mfg. or your Venlaw Mfg. dealer                                                                                                                                             |
| Fan rotation speed do not much engine RPM                   | Tight screws on fan bushing are broken                  | Refer to Section 6.2, contact Venlaw Mfg. or your Venlaw Mfg. dealer for assistance.                                                                                                                                                                                             |
|                                                             | Tight screws on coupler bushing are broken              | Contact Venlaw Mfg. or your Venlaw Mfg. dealer for assistance.                                                                                                                                                                                                                   |

## 8. SPECIFICATIONS

**NOTE:** Specifications are subject to change without notice.

### 8.1 GENERAL SPECIFICATIONS

| Item             | Measurement         |
|------------------|---------------------|
| Weight           |                     |
| Transport Height | 52 9/16             |
| Transport Width  | 60 27/32            |
| Transport Length | 84 29/32            |
| Ground Clearance | 10 29/64            |
| Engine HP        | 18 HP               |
| Max RPM          | 3500 RPM            |
| Max Airflow      | 6850 CFM            |
| Fan Body Paint   | PLATINUM SPARKLE IV |
| Trailer Paint    | MAC BLACK           |

### 8.2 PERFORMANCE CHART

#### CFM AT 3500 RPM

| Pressure (in wg) | Pressure (Pa) | Flow Rate (CFM) | Flow Rate (m3/s) |
|------------------|---------------|-----------------|------------------|
| 12               | 2986          | 3800            | 1786             |
| 10               | 2488          | 4600            | 2162             |
| 8                | 1991          | 5150            | 2421             |
| 6                | 1493          | 5900            | 2773             |
| 4                | 995           | 6500            | 3055             |

#### CFM AT 4 IN WG (995 PA)

| RPM  | Flow Rate (CFM) | Flow Rate (m3/s) |
|------|-----------------|------------------|
| 3500 | 6500            | 3055             |
| 3000 | 5225            | 2456             |
| 2500 | 3700            | 1739             |
| 2000 | 2250            | 1058             |

(1) STANDARD AIR-the condition of air with a density of 0.0750 lb/ft<sup>3</sup> at 68 OF (200C), 50% humidity, and barometric pressure of 29.92 inches Hg.

(2) STATIC PRESSURE-the increase in pressure created inside an aerated enclosure over outside air pressure.

(3) STATIC EFFICIENCY-the ratio of output power to input power expended in creating static pressure.

(4) AIR FLOW RATES-the rate of air movement measured in cubic feet per minute (CFM).

### 8.3 BOLT TORQUE SPECIFICATIONS

#### Checking Bolt Torque

The tables shown below give correct torque values for various bolts and cap screws. Tighten all the bolts to the torque's specific value in chart unless otherwise noted. Check the tightness of the bolts periodically, using the bolt torque chart as a guide. Replace the hardware with the same strength bolt.

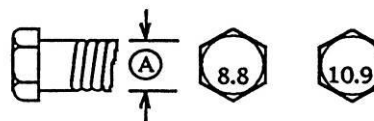
| Bolt Dia "A" | Bolt Torque (N.m) (ft•lbs) |     |       |     |       |     |
|--------------|----------------------------|-----|-------|-----|-------|-----|
|              | SAE 2                      |     | SAE 5 |     | SAE 8 |     |
| 1/4"         | 8                          | 6   | 12    | 9   | 17    | 12  |
| 5/16"        | 13                         | 10  | 25    | 19  | 36    | 27  |
| 3/8"         | 27                         | 20  | 45    | 33  | 63    | 45  |
| 4/16"        | 41                         | 30  | 72    | 53  | 100   | 75  |
| 1/2"         | 61                         | 45  | 110   | 80  | 155   | 115 |
| 9/16"        | 95                         | 60  | 155   | 115 | 220   | 165 |
| 5/8"         | 128                        | 95  | 215   | 160 | 305   | 220 |
| 3/4"         | 225                        | 165 | 390   | 290 | 450   | 400 |
| 7/8"         | 230                        | 170 | 570   | 420 | 880   | 650 |
| 1"           | 345                        | 225 | 850   | 630 | 1320  | 970 |

#### 8.3.1 ENGLISH TORQUE SPECIFICATIONS

#### 8.3.2 METRIC TORQUE SPECIFICATIONS

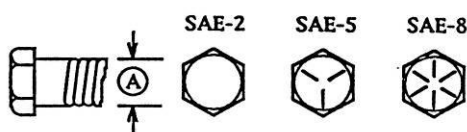
| Bolt | Bolt Torque (N.m) (ft•lbs) |
|------|----------------------------|
|------|----------------------------|

| Dia "A" | 8.8  |      | 10.9 (N.m)<br>(ft•lbs) |      |
|---------|------|------|------------------------|------|
|         |      |      |                        |      |
| M3      | 0.5  | 0.4  | 1.8                    | 1.3  |
| M4      | 3    | 2.2  | 4.5                    | 3.3  |
| M5      | 6    | 4    | 9                      | 7    |
| M6      | 10   | 7    | 15                     | 11   |
| M8      | 25   | 18   | 35                     | 26   |
| M10     | 50   | 37   | 70                     | 52   |
| M12     | 90   | 66   | 125                    | 92   |
| M14     | 140  | 103  | 200                    | 148  |
| M16     | 225  | 166  | 310                    | 229  |
| M20     | 435  | 321  | 610                    | 450  |
| M24     | 750  | 553  | 1050                   | 774  |
| M30     | 1495 | 1103 | 2100                   | 1550 |
| M36     | 2600 | 1917 | 3675                   | 2710 |



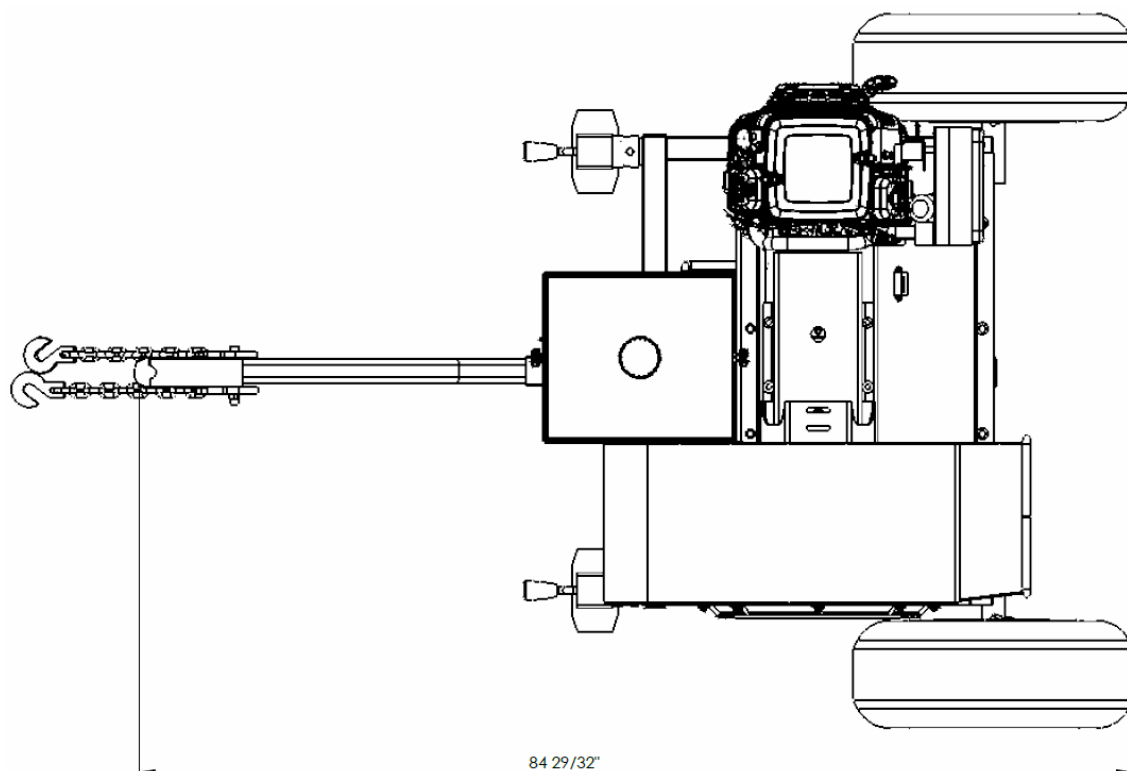
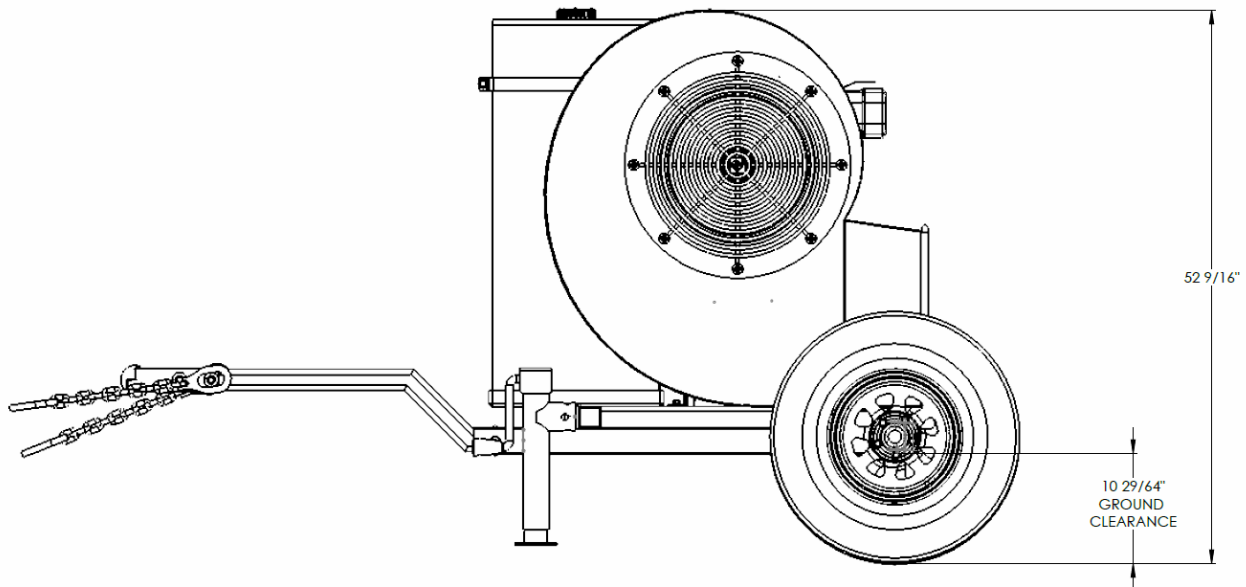
Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or cap screws unless otherwise specified in this manual. When using locking elements, increase the torque values by 5%.

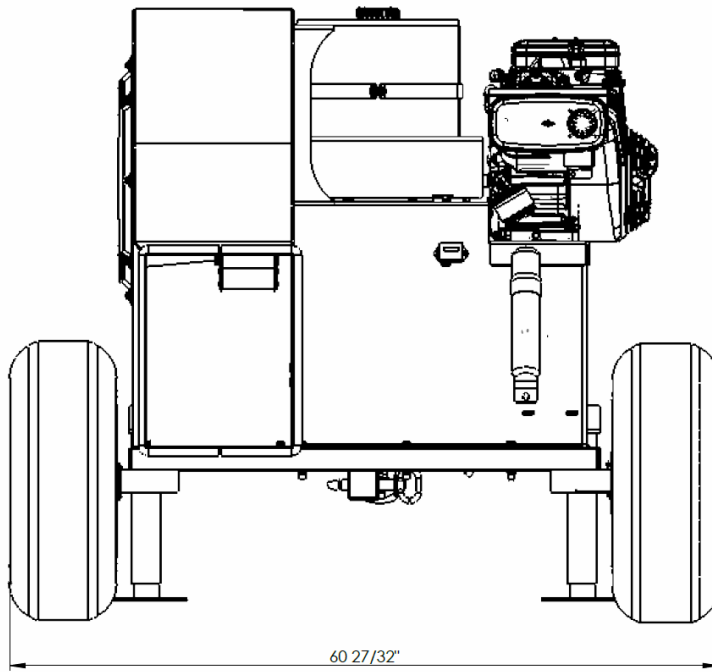
Torque value for bolts and cap screws are identified by their head markings.



## 8.4 DIMENSIONS

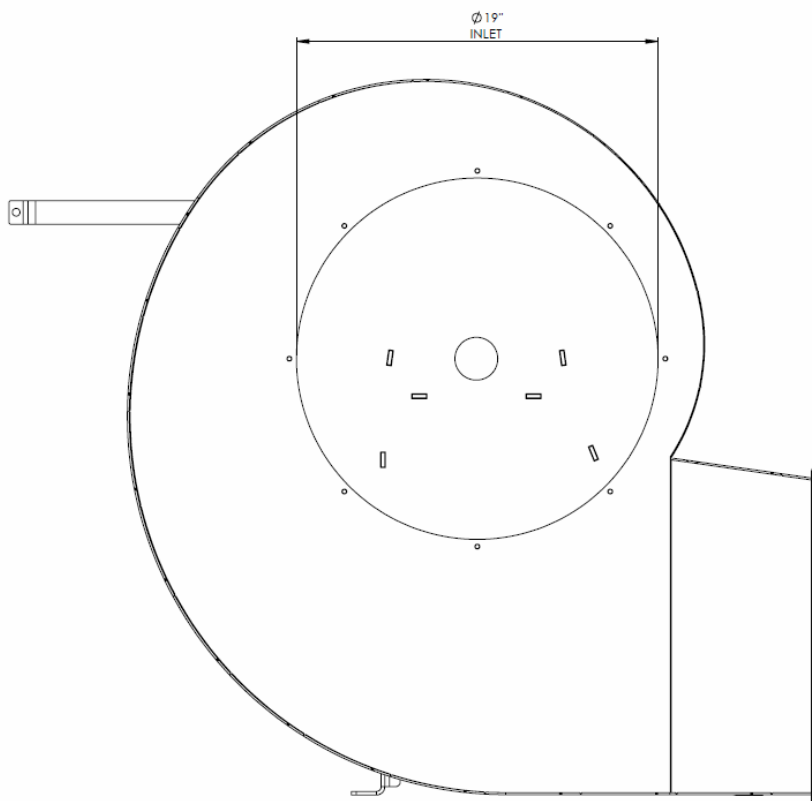
### 8.4.1 OVERALL DIMENSIONS



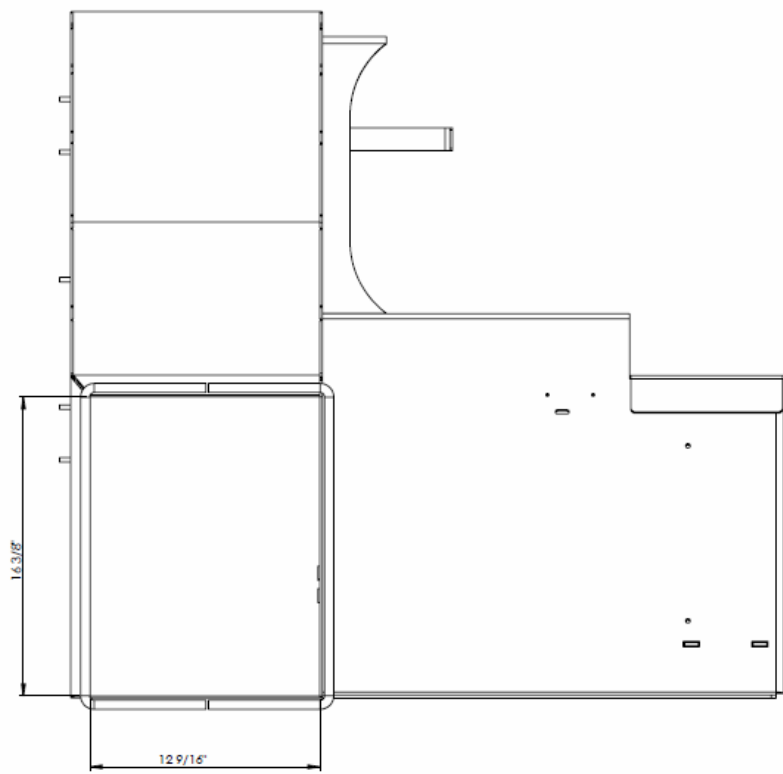


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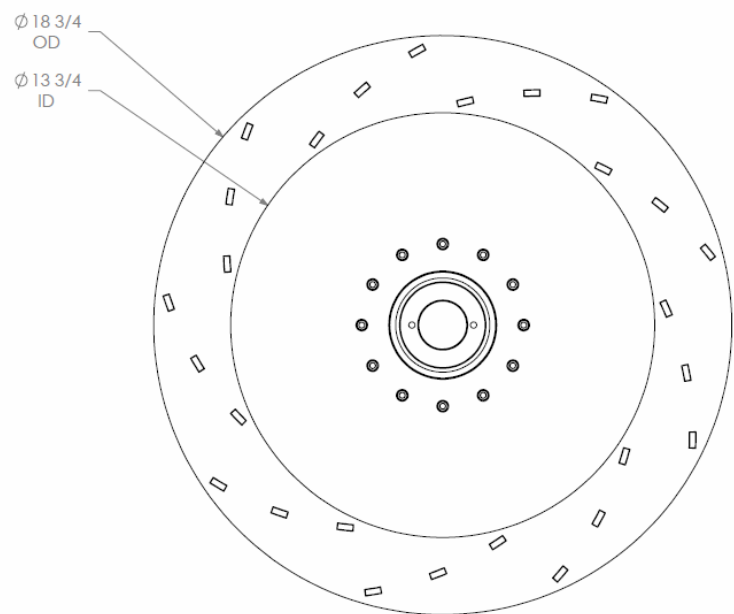
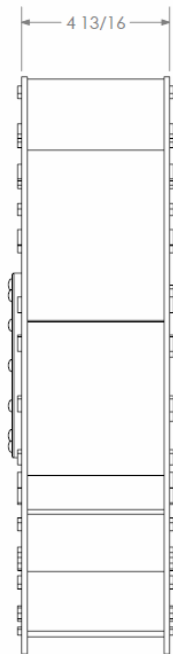
#### 8.4.2 FAN DIMENSIONS







#### 8.4.3 ROTOR DIMENSIONS

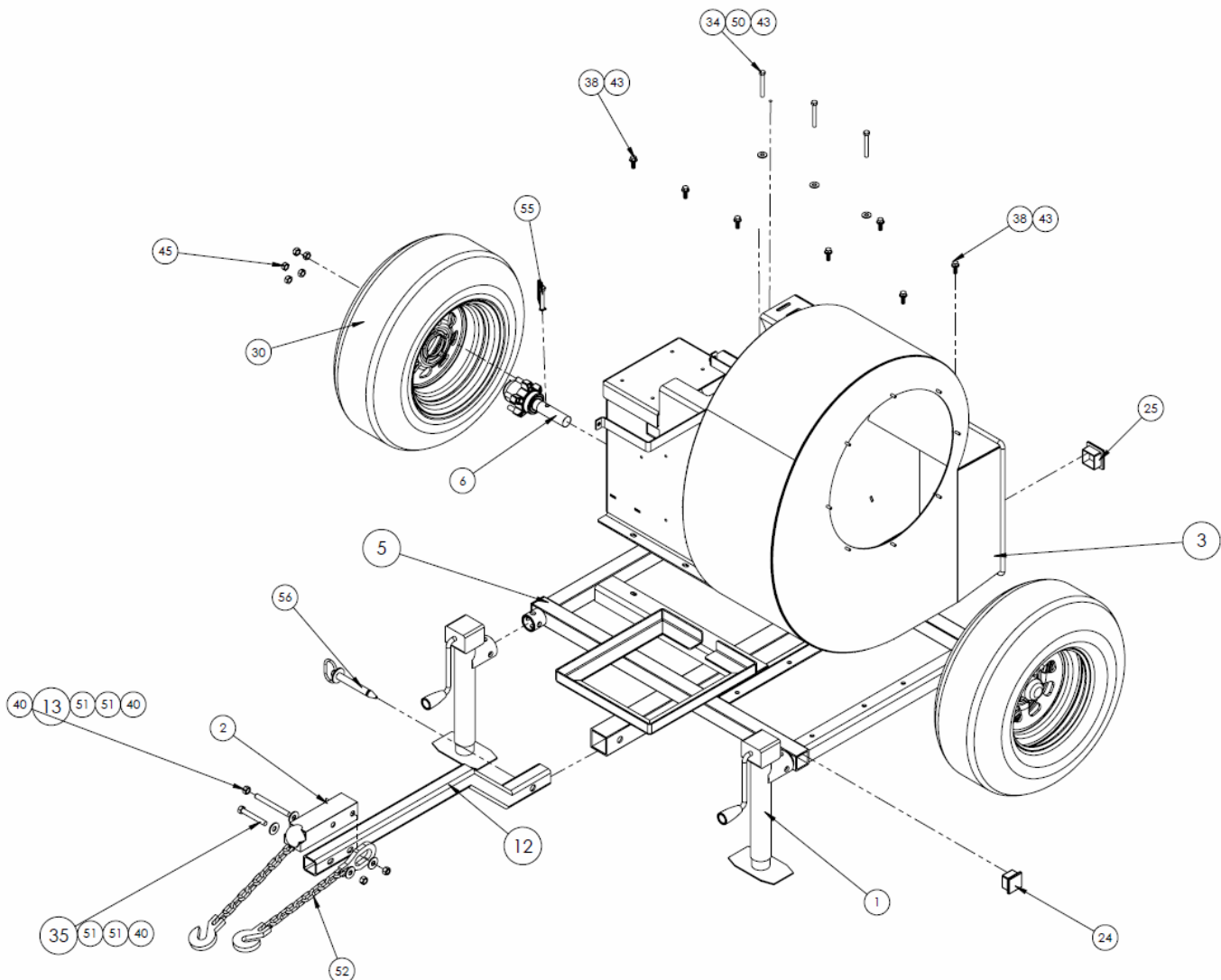


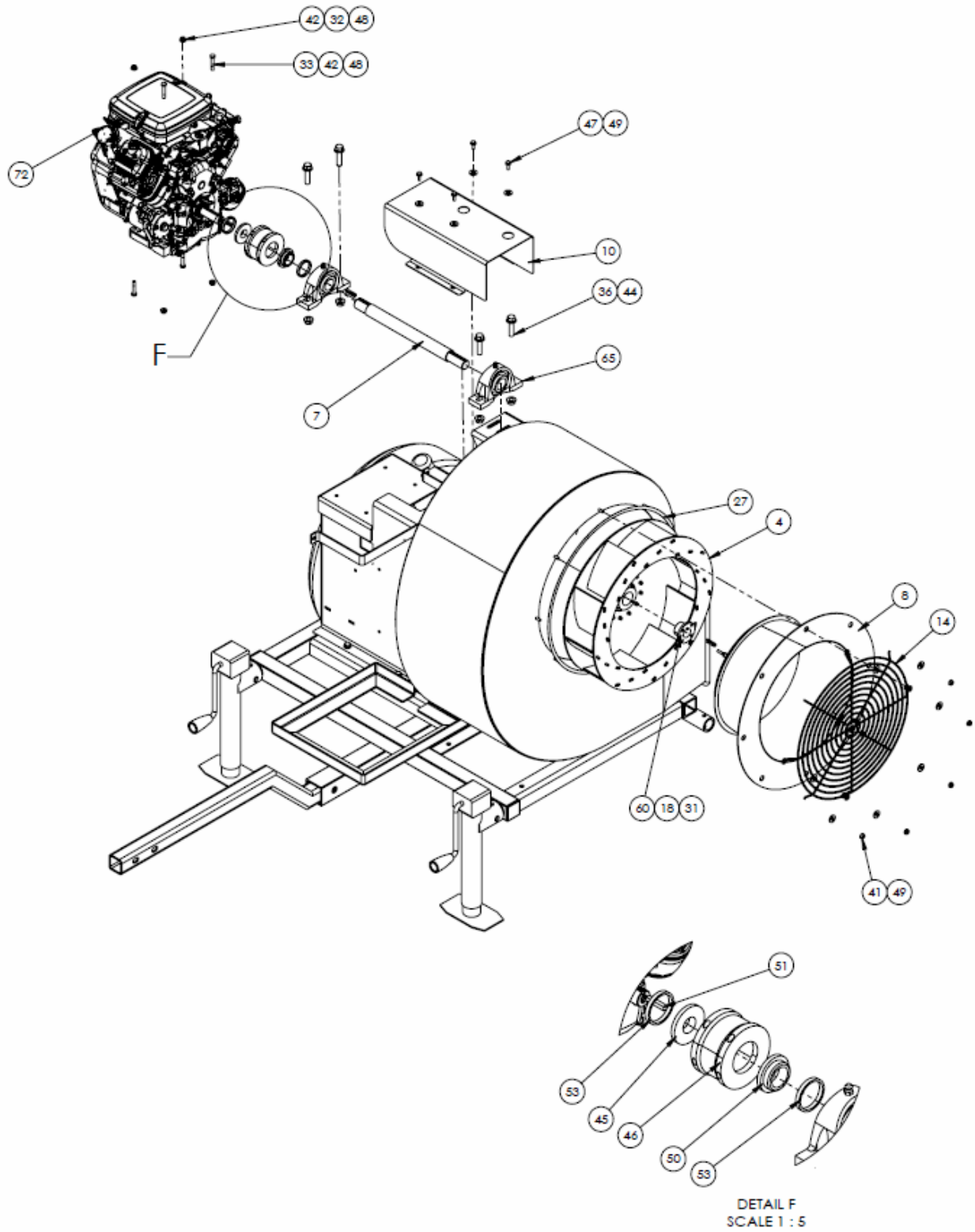
## 9 PARTS LIST

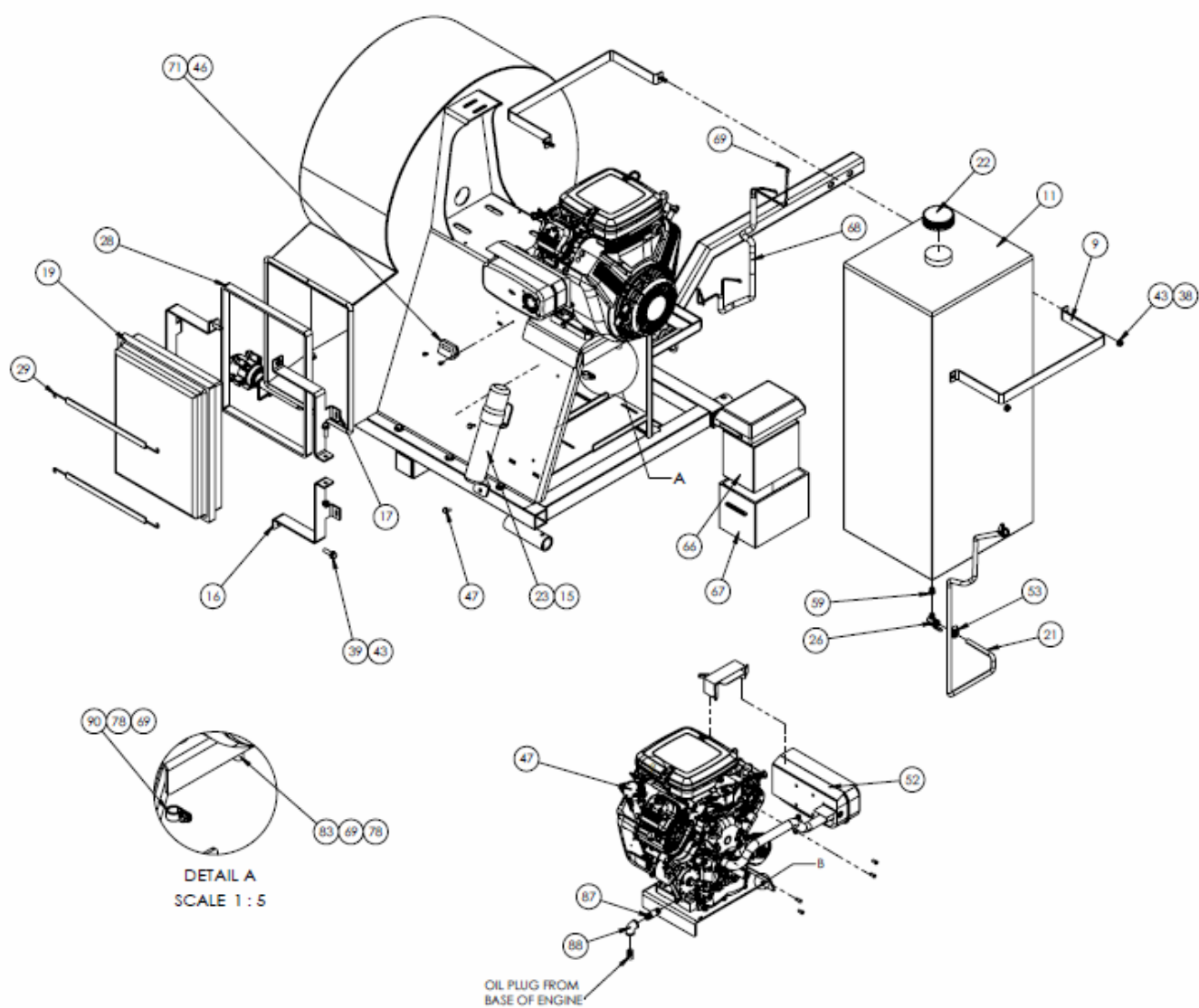
This manual contains a part list for your machine.

Always give your dealer the Model and Serial Number of your machine to assist him/her in ordering and obtaining the correct parts. Use the exploded view and bill of materials to correctly identify the required part.

### 9.1 ISOMETRIC VIEWS







## 9.2 BILL OF MATERIALS

| NO | QTY. | PART NUMBER  | DESCRIPTION                        |
|----|------|--------------|------------------------------------|
| 1  | 2    | 0485-00-0008 | JACK-SIDEWIND 3000                 |
| 2  | 1    | 0486-02-0002 | 2"BALL -STRAIGHT COUPLER, ZN       |
| 3  | 1    | 18-113750    | BODY 10HP FC CCW                   |
| 4  | 1    | 18-113756    | ROTOR BAL 18HP FC CCW              |
| 5  | 1    | 18-113761    | CHASIS WELDED                      |
| 6  | 2    | 18-113785    | HUB/SPINDLE BT8 W/ PINHOLE         |
| 7  | 1    | 18-113790    | SHAFT VENNLAW                      |
| 8  | 1    | 18-113795    | INLET CONE ASSEMBLY                |
| 9  | 1    | 18-113874    | VENLAW TANK BRACE PAINT            |
| 10 | 1    | 18-113904    | VENLAW BEARING COVER PAINT         |
| 11 | 1    | 18-113905    | VENLAW FUEL TANK VENTED            |
| 12 | 1    | 18-113906    | VENLAW HITCH BENT & PAINT          |
| 13 | 1    | 18-113907    | HITCH CHAIN MOUNT                  |
| 14 | 1    | 18-113908    | SCREEN LARGE MAC BLACK             |
| 15 | 1    | 18-113931    | MANUAL AERATION VENLAW FAN         |
| 16 | 2    | 18-113935    | VENLAW TARP LOCK PAINT 1           |
| 17 | 2    | 18-113937    | VENLAW TARP LOCK PAINT 1           |
| 18 | 3    | 2500-00-0021 | KEY 1/4 X 1/4 X 1-3/8"             |
| 19 | 1    | 3005-60-0001 | TARP 12'L IN 14 11/32" X 18 11/32" |
| 20 | 1    | 3400-00-0042 | SERIAL PLATE VENLAW 18HP FC        |
| 21 | 1    | 3423-00-0251 | BARRICADE FUEL HOSE 1/4'           |
| 22 | 1    | 3703-00-0066 | FUEL TANK LID                      |
| 23 | 1    | 3703-00-0073 | 9 1/2 MANUAL CANISTER              |
| 24 | 2    | 3707-20-0188 | SQUARE TUBE PLUGS 2X2X.188         |
| 25 | 1    | 3707-25-0188 | SQUARE TUBE PLUGS 2.5X2.5X.188     |

**BILL OF MATERIALS *continued***

| NO | QTY. | PART NUMBER  | DESCRIPTION                           |
|----|------|--------------|---------------------------------------|
| 26 | 1    | 3711-01-0001 | VALVE SHUTOFF 90ELBOW PLASTIC         |
| 27 | 1    | 3890-00-0002 | NEOPRENE 1/8" X 3/8"                  |
| 28 | 1    | 3890-00-0026 | NEOPRENE 3/8 X 1" X 20'               |
| 29 | 2    | 3900-82-5164 | RUBBER/TARP STRAP 15" OAL             |
| 30 | 2    | 3910-13-0175 | TIRE/WHEEL ASSY ST175/80R13           |
| 31 | 2    | 4001-22C2156 | BOLT 1/4 X 1"GR5                      |
| 32 | 2    | 4001-22C2368 | BOLT HEX 5/16 X 1-1/2" GR5            |
| 33 | 2    | 4001-22C2376 | BOLT HEX 5/16 X 1-3/4" GR5            |
| 34 | 3    | 4001-22C2550 | BOLT - HEX 3/8 X 3 UNC GR.5           |
| 35 | 1    | 4001-22C2944 | BOLT - HEX 1/2-13 UNC X 3 1/2 GR 5    |
| 36 | 4    | 4024-22C0525 | BOLT - FLANGE 1/2-13 UNC X 2 GR 5     |
| 37 | 4    | 4024-22C2148 | BOLT WHIZ 1/4 X 3/4" GR5              |
| 38 | 9    | 4024-22C2502 | BOLT - FLANGE 3/8-16 UNC X 1 GR 5     |
| 39 | 4    | 4024-22C2510 | BOLT - FLANGE 3/8-16 UNC X 1 1/4 GR 5 |
| 40 | 3    | 4030-21C0260 | NUT - HEX 1/2-13 UNC GR 5             |
| 41 | 12   | 4046-13C0200 | NUT - FLANGE 1/4-20 UNC GR 5          |
| 42 | 4    | 4046-13C0220 | NUT - FLANGE 5/16-18 UNC GR 5         |
| 43 | 16   | 4046-13C0235 | NUT FLG 3/8" GR5                      |
| 44 | 4    | 4057-02C0500 | NUT FLG OVAL LOCK 1/2" GRG            |
| 45 | 10   | 4060-F2-0500 | WHEEL NUT 1/2 UNF PLTD                |
| 46 | 2    | 4891-ST-0195 | HEX HD SELF THREAD 10-24X1/2          |
| 47 | 6    | 4891-ST-0313 | HEX HD SELF THREAD 5/16-12 X 3/4      |
| 48 | 4    | 5009-02-0250 | WASHER - FLAT USS 1/4                 |
| 49 | 12   | 5009-02-0313 | WASHER - FLAT 5/16" USS PLTD          |
| 50 | 3    | 5009-02-0375 | WASHER - FLAT USS 3/8                 |

**BILL OF MATERIALS *continued***

| NO | QTY. | PART NUMBER  | DESCRIPTION                    |
|----|------|--------------|--------------------------------|
| 51 | 4    | 5009-02-0500 | WASHER - FLAT 1/2" USS PLTD    |
| 52 | 2    | 6187-00-0006 | SAFETY CHAIN 7600LBS           |
| 53 | 2    | 6190-00-0004 | HOSE CLAMP 1/2 HS8             |
| 54 | 2    | 6190-00-0005 | ROUTING CLAMPS                 |
| 55 | 2    | 6730-23-3244 | PIN SNAP LOCK 3/8 X 2-1/2"     |
| 56 | 1    | 6733-00-0004 | PIN-HITCH PULL 3/4 x 4 1/2"    |
| 57 | 1    | 6811-00-0001 | 3/8 X 2 STEEL PIPE NIPPLE      |
| 58 | 1    | 6811-00-0002 | 3/8 90 ELBOW STEEL NPT         |
| 59 | 1    | 6811-00-0003 | 1/4" X 1/8" NPT REDUCER        |
| 60 | 1    | 7000-02-1125 | BSHG-SPLIT TPR H 1-1/8         |
| 61 | 1    | 7023-00-0006 | RAPTOR COUP 120353 SH 1 BSG    |
| 62 | 1    | 7023-00-0007 | RAPTOR COUP 120357 SH 1.25 BSG |
| 63 | 2    | 7023-00-0008 | RAPTOR COUP 015815 5HQD HUB    |
| 64 | 1    | 7023-00-0009 | RAPTOR COUPLER COVER E5        |
| 65 | 2    | 7226-02-0722 | CAST IRON BASE-MOUNT           |
| 66 | 1    | 8105-00-0003 | 12V BATTERY - U1R-280          |
| 67 | 1    | 8105-00-0004 | BATTERY 12V U1R-280 BOX        |
| 68 | 1    | 8120-00-0010 | CABLE #12 AWG SOOW             |
| 69 | 4    | 8120-00-0011 | CABLE CONNECTOR                |
| 70 | 2    | 8120-00-0012 | ROUTE CLAMPS CABLE             |
| 71 | 1    | 8500-01-0005 | DIGITAL TACHOMETER & HOURMETER |
| 72 | 1    | 8564-18-0001 | 18HP VANGUARD MOTOR            |
| 73 | 1    | 8564-18-0002 | 18 HP VANGUARD MUFFLER KIT     |
| 74 | 1    | 9005-18-0135 | DECAL-DANGER DISCONNECT        |
| 75 | 1    | 9005-18-0136 | DECAL-WARNING PREVENT PRSR     |



**BILL OF MATERIALS *continued***

| NO | QTY. | PART NUMBER  | DESCRIPTION                  |
|----|------|--------------|------------------------------|
| 76 | 1    | 9005-18-0137 | DECAL-WARNING KEEP HANDS CLR |
| 77 | 1    | 9005-18-0138 | DECAL-WARNING SCREEN GUARD   |
| 78 | 1    | 9005-18-0142 | DECAL-LOGO VENLAW 1.5X8.5    |
| 79 | 2    | 9005-18-0143 | DECAL-LOGO VENLAW 7.5X17     |
| 80 | 1    | 9005-18-0144 | DECAL-LOGO VENLAW 3" ROUND   |
| 81 | 1    | 9005-18-0145 | DECAL-WARNING ROTATING SHAFT |
| 82 | 1    | 9005-18-0146 | DECAL-WARNING SERIOUS INJURY |
| 83 | 1    | 9005-18-0147 | DECAL-VENLAW GASOLINE        |
| 84 | 1    | 9005-18-0148 | DECAL-VENLAW SERIAL NUMBER   |
| 85 | 1    | 9005-43-0131 | DECAL-ROTATING BLADE WARNING |



### 9.3 PACKING LIST

| Description                             | QTY |
|-----------------------------------------|-----|
| Portable Fan Unit                       | 1   |
| Trailer Hitch w/ Coupler & Safety Chain | 1   |
| Set of manual                           | 1   |
| Extension Tarp                          | 1   |

### 10 WARRANTY

**For specific warranty details  
please contact Venlaw.**