# Table of Contents

Warranty Policy ................................................................................................................................. 4  
Serial Number Location ...................................................................................................................... 6  
Introduction ........................................................................................................................................ 7  
General Safety Precautions .............................................................................................................. 8  
Hitching Implement to Tractor ........................................................................................................... 13  
General Maintenance .......................................................................................................................... 14  
Safety Decal Locations ...................................................................................................................... 16  
Operation ............................................................................................................................................ 18  
Calibration .......................................................................................................................................... 26  
Adjustments and Service ..................................................................................................................... 38  
Troubleshooting ................................................................................................................................. 46  
Options ............................................................................................................................................... 50  
Specifications ..................................................................................................................................... 52
Thank you for purchasing Salford Group Inc. products. Our goal is to provide you with the highest quality, efficient and high performance product to help you succeed in your operation.

Salford products are designed and built with longevity and serviceability in mind and are intended to withstand the normal rigors of agricultural use. In case of defect in material or workmanship, Salford Group Inc. (Salford) will replace and/or repair at its option any part covered by the warranty policy outlined below.

Salford will provide this warranty upon the following conditions and will begin from date of first use.

- Registration card is filled out and returned to validate the warranty.
- Dealer has notified Salford of the work to be done BEFORE any work is begun and obtained a Warranty Authorization Number.

What is covered by warranty

A new whole goods serial numbered machine is warranted free from defects in material or workmanship when assembled and set up correctly, The machine must be properly lubricated, properly stored and properly maintained in accordance with the instructions contained in the operators manual for the period of 3 years or 36 months as outlined below. Warranty may be voided by extreme usage beyond normal operating conditions. ie. Extreme soil conditions, or in the instance of extremely high acreage operation or if the machine is being used for a non agricultural use.

What is not covered by warranty:

Damage which occurs as a result of:

- Extracting a machine which is mired in mud.
- Operating a machine which is plugged with soil and residue.
- Operating a machine at depths outside of that recommended in the operators manual.
- High transport speeds on rough or damaged road or lane way surfaces.
- Coming disconnected or unhitched from the towing vehicle or tractor.
- Building foundations, tree root systems, stumps, fence posts or shale rock that does not allow rock protection systems to react to the obstacle.
- Transportation costs to and from the dealership if required.
- Damage caused by towing at speeds above 25 mph (40 km/h)
- Normally wearing parts such as sweeps, shovels, points, shears, blades etc. are not covered by this warranty policy.
- Tires are not covered by this warranty, but are normally covered by the Original Equipment Manufacturer.
- If the product has not been maintained or serviced properly or not operated within the limits of design for which the product is intended the entire warranty will be voided. If unauthorized alterations or attachments have been added the warranty may also be voided.

Users obligations:

- It is the users obligation to read and understand the operators manual provided with the serial numbered machine.
- Lubricate and maintain the equipment in accordance with instructions in the operators manual.
- Replace wear parts in a timely manner and in accordance with reasonable operating practices.
- Operate the machinery in a safe and approved manner while in the field and in transport.

This warranty is transferable within the time periods and conditions outlined below:

- 1st year - parts and labor to remove, repair or replace defective parts only.
Rental Machinery:

Warranty on machines operated as rental machines is limited in its entirety to 120 days from the date of first field use.

Warranty Approval:

This warranty may only be approved by the warranty services department of Salford Group Inc. No other employee or agent of the company may approve a claim for warranty.

How to obtain warranty service

- Report problem to your original authorized dealer.
- Have proof of product warranty coverage still being valid. I.e. customer warranty card, model & serial no. of machine.
- Dealer will obtain Warranty Authorization Number.
- Provide transportation of the product or failed part to and from dealer’s place of business.

Who provides warranty work:

Salford offers this warranty work to be done by either the original authorized dealer or a Salford authorized technician or by the owner of the equipment at the discretion of Salford determined at the time of request for warranty.

Cost to purchaser:

Salford will supply the dealer with approved replacement parts and/or instructions on how to perform the work necessary. Premium charges for overtime are not covered by warranty and will be charged to the purchaser if warranty work requires overtime or after hours time.

Parts will be shipped using regular ground freight. Any other requests will be at the customer’s option and expense.

Limitation of Remedy:

In the event of a failure of the repair the purchasers sole and exclusive remedy against Salford Group Inc. shall be for the repair and replacement of the failed part and this exclusive remedy shall not be deemed to have failed in its essential purpose as long as Salford Group Inc. is willing and able to repair or replace the defective part in the manner prescribed herein the terms of the product warranty.

Limitations of liability:

Salford Group Inc. provides this warranty in lieu of all other warranties or conditions whether express or implied. Salford shall not be held responsible or liable to the purchaser or to the dealer for any indirect or consequential damages resulting from any defects covered by this warranty or any implied warranty applicable to the product including, but not limited to, property damage, loss of use, labour costs, loss of earnings, or loss of profit resulting from the failure of a part, component or a machine covered under the conditions and terms of this warranty.

This policy is subject to local regional laws and statutes governing warranty inclusions and exclusions.

This Warranty is not valid unless registered with Salford, within 10 days from the date of original purchase.
Your Valmar applicator has a model and serial number to clearly identify it. Always give your dealer the Model Number and Serial Number of your machine when ordering parts or requesting service information. Mark the model and serial numbers in the spaces provided for easy reference.

Applicator Serial Number

The Serial Number Plate is located on the front right-hand inside panel of the hopper as shown in the photo below.

Model No. ___________________________

Serial No. __________________________

Hydraulic Motor Serial Number

______________________________

Gas Engine Serial Number

_____________________________
Introduction

Congratulations on your choice of a Salford applicator for your farming operation. This equipment has been designed to meet the needs of a discerning agricultural industry for the pneumatic application of fertilizer and granular herbicide products.

Safe, efficient and trouble-free operation of your applicator requires that you and all who operate or maintain this machine read and understand all information contained in this Operator's Manual.

Safety Alert Symbol

This SAFETY ALERT SYMBOL indicates important safety messages in this manual. When you see this symbol be alert to the possibility of personal injury. CAREFULLY READ THE MESSAGE THAT FOLLOWS.

Dealer Information

Your Salford dealer is your source for parts and service for your applicator. If you need any assistance with the operation or maintenance of your machine, call your Salford dealer. Write the dealer's name and phone number below for handy reference.

Dealer's Name:  

Dealer Phone No.:  

Operator Orientation

The directions left, right, front and rear as mentioned throughout the manual are as seen from the driver's seat and facing in the direction of travel.
General Safety Precautions

Signal Words

The words **DANGER, WARNING, or CAUTION** are used with the safety alert symbol. Learn to recognize the safety alerts, and follow the recommended precautions and safe practices.

Three words are used in conjunction with the safety-alert symbol:

- **DANGER**
  Indicates an imminently hazardous situation that, if not avoided, will cause DEATH OR VERY SERIOUS INJURY

- **WARNING**
  Indicates a potentially hazardous situation that, if not avoided, could cause DEATH OR SERIOUS INJURY

- **CAUTION**
  Indicates a potentially hazardous situation that, if not avoided, may cause MINOR OR MODERATE INJURY

Replace any **DANGER, WARNING, CAUTION, or instructional decal** that is not readable or is missing. The location and part number of these decals are identified later in this manual.

The words **Important** and **Note** are not related to personal safety but are used to give additional information and tips for operating or servicing this equipment.

**IMPORTANT**: Identifies special instructions or procedures which, if not strictly observed could result in damage to, or destruction of the machine, process or its surroundings.

**NOTE**: Indicates points of particular interest for more efficient and convenient repair or operation.

**A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT!**
General Safety Precautions

Wing Fold

- Wings may fall rapidly causing injury.
- Do not stand under wings.
- Always stay clear of wings when being lowered, raised, or in an elevated state.
- Always use wing locks when raised.
- Ensure cylinders are completely filled with hydraulic fluid to avoid any unexpected movement.

Hydraulics

- DO NOT search for high pressure hydraulic leaks without any hand and face protection. A tiny, almost invisible leak can penetrate skin, requiring immediate medical attention.
- Use cardboard or wood to detect leaks – never your hand.
- Double check that all is clear before operating hydraulics.
- NEVER remove hydraulic hoses or ends with machine elevated. Relieve hydraulic pressure before disconnecting hydraulic hoses or ends.
- Use transport/maintenance locks when machine is raised.
- Maintain proper hydraulic fluid levels.
- Keep all connectors clean for positive connections.
- Ensure all fittings and hoses are in good condition and are properly tightened.
- NEVER work on or under an elevated machine unless it has been locked up using the transport/maintenance locks.
General Safety Precautions

GENERAL SAFETY & PRECAUTIONS

⚠️ Read Operators manual before using.
Ensure operator is fully familiar with all operational features and safety concerns of the implement.

⚠️ Observe all safety and warning decals and practice safe operation of equipment, this will help prevent accidents and save lives. Safety first!

⚠️ Keep area free from bystanders while hooking to tractor, failure to do so may result in fatal injury. Hitch machine securely with draw pin and safety locking pin with safety chain attached. Failure to do so may cause machine to disconnect from tractor and cause fatal injury.

⚠️ Ensure safety lighting is operational and slow moving vehicle sign is installed. Slow moving objects are a hazard on the roads and are sometimes difficult to see, especially at night.

⚠️ Use all safety locks and safety equipment while transporting. When transporting equipment on public roadways, watch for overhead wires or objects, link tractor brake pedals, and do not exceed 20 mph. If road is rough keep speed to minimum, excessive speed may cause machinery to start swerving or tip over.
General Safety Precautions

⚠️ Adapt operating speed to ground conditions. Never assume that you can make a turn at full speed and always use turn signals and slow down. When going down hills shift down to a lower gear.

⚠️ Always lift machinery out of ground before turning.

⚠️ Lower all equipment on to ground before exiting tractor.

⚠️ Always lock parking stand in place before unhitching from tractor.

⚠️ Exercise extreme caution when changing wearing parts!

⚠️ When working on the implement, be sure it is supported with safety stands to prevent any part of the machine from falling on to the operator.

⚠️ Absolutely no riders allowed at any time, rider can fall off the implement and get seriously injured or killed.

⚠️ Do not dismount tractor when tractor is still running. Always engage parking brake before dismounting tractor.
Granular Chemical Safety

Some granular products are more harmful than others. Read and strictly follow the instructions found on the product container or package.

To avoid the possibility of burns, lung damage or eye irritation:
1. Wear Gloves and safety goggles
2. Avoid contact with skin and eyes.
3. Avoid breathing dust or fumes. Wear a dust mask or respirator as directed by the chemical manufacturer
4. READ and follow the CHEMICAL MANUFACTURER’S INSTRUCTIONS
Hitching Implement to Tractor

DANGER  You may be severely injured or killed by being caught between tractor and implement. Do not stand or put any part of your body between machines during hookup. Stop tractor and set parking brake before inserting hitch pins.

1. Adjust the hitch on the implement using the jack to match height of tractor drawbar.

2. Back tractor up and align holes on the hitch of the implement to the hitch of the tractor. Take care no person is in between tractor and implement!

3. Insert proper sized hitch pin into hole and secure with safety pin. (Lynch or hair pin).

4. Attach safety chain and secure on tractor drawbar. Provide enough slack to turn. NOTE: When 2 safety chains are used, they must be crossed.

5. Plug in electrical harnesses, lights and monitor (if equipped). Ensure connectors are clean and free of debris.

6. Connect all hydraulic hoses. On all implements equipped with a fan, the case drain MUST be plugged into a low pressure return dump line. Ensure couplers are clean and free of debris. **High Pressure Fluid Hazard!** Relieve pressure before disconnecting or connecting hoses!

7. Lower all the weight of the hitch of the implement onto the tractor drawbar, remove jack from the side of the hitch (away from tractor tire contact area) and store it on the holder on top of the stone grate.

8. Raise rear parking stand and make sure safety pin is inserted. (if equipped)

NOTE– Check that appropriate hitch pin size is being used to match both the tractor drawbar and the hitch on the machine. See chart for sizes which correspond to tractor horsepower.

<table>
<thead>
<tr>
<th>Hitch Pin Chart</th>
<th>Draft Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 3</td>
<td>1 1/4&quot; – 1 1/2&quot; dia.</td>
</tr>
<tr>
<td>Category 4</td>
<td>1 5/8&quot; – 2&quot; dia.</td>
</tr>
<tr>
<td>Category 5</td>
<td>2&quot;-2 3/4&quot; dia.</td>
</tr>
</tbody>
</table>
General Maintenance

SALFORD implements are exposed to many types of forces during normal operations, Vibration and friction are two key items that contribute to down-time. Therefore it is very IMPORTANT to keep all nuts and bolts tight and all other fasteners (hair pins, linch pins, roll pins etc.) in good condition.

⚠️ **Danger** When servicing your implement you may be severely injured or killed by being crushed by the implement, always install transport lock pins and install blocks underneath the frame to prevent from falling on the operator.

⚠️ **Danger** When replacing wear parts always wear protective gear to prevent serious injury. Disk edges and harrow tine teeth and sweeps are very sharp. Use caution when working with these components.

Wear components such as replaceable shovels, sweeps, tines, bearings etc. must be maintained in good condition to extend the total life of the machine and to optimize the performance. Good maintenance reduces operating costs and increases machine uptime & maintains resale value!

Because of the constant heavy loads, DAILY INSPECTION AND LUBRICATION at specified intervals is necessary to maximize the life of the implement. (see “Lubrication Schedule” page)

⚠️ When changing a tire be extremely careful, use a safety cage when inflating tires and never stand in front of tire! Use a clip-on chuck and extension hose, never exceed recommended tire pressure and always use the correct tools and equipment.
Safety Decals

Keep safety decals clean and legible at all times. Replace decals that are missing or have become illegible. Safety decals are available from the Valmar Parts Department.

Safety Decal Installation

- Be sure the installation area is clean and dry.
- Decide on the exact position before removing the backing paper.
- Remove the smallest portion of the backing paper.
- Align the decal over the desired area and press the small portion of the decal into place.
- Remove the remainder of the backing paper and press the entire decal in place.
- Pierce any air pockets and smooth them out.

Familiarize yourself with the location and message of all safety decals on these pages.
Safety Decal Locations

Decal 1

Decal 2

Decal 3

Decal 4

Decal 5

Decal 6
Operation

Your Valmar applicator is designed to efficiently broadcast seeds and granular chemicals.

As noted in the diagram below, the system operates by using a hydraulically (optional gas engine) powered fan to blow product through an air delivery system. A grooved metering roller accurately meters product from the hopper into the venturis. Air passing through the manifold and venturis draws the product into an airstream and sends it down a distribution hose where it can be spread by a deflector. Product application rate is controlled by a sixty speed gearbox driven by a metering wheel in contact with the ground.

Figure 4-1: How the System Works
Operation

Safe Operation

Efficient and safe operation of the Valmar Pneumatic Applicator requires that each operator reads and understands the operating procedures and all related safety precautions outlined in this section. A pre-operation checklist is provided. It is important for both personal safety and maintaining the good mechanical condition of the Applicator, that this checklist is followed.

Pre-Operation Checklist

Before operating the applicator and each time thereafter, check off the following areas:

1. Check the implement and applicator hydraulic system. Ensure that the hydraulic reservoir in the tractor is filled to the required specifications.
2. Inspect all hydraulic lines, hoses, fittings and couplers. Use a clean cloth to wipe any accumulating dirt from the couplers before connection to the tractor’s hydraulic system.
3. Inspect all delivery hoses for any wear and restrictions. Repair or replace if necessary.
4. Inspect the hopper for accumulation of any foreign material that could plug the venture system.
5. Check all the chains, sprockets, belts and pulleys for proper adjustment and tension. Adjust as shown in the Adjustment and Service section of the manual.
6. Check the fan and manifold for any accumulation of straw or dirt. Clean as required. Run the fan at field speed to clear hoses and outlets of foreign material.
7. Check the metering rollers. They must turn easily. Worn rollers will alter rates.
8. Ensure that all bearings turn freely.
9. Inspect the gearbox for alignment and proper lubrication. Refer to Adjustment and Service section of the manual.
10. Operate the electrical clutches for proper engagement. Refer to Adjustment and Service if clutches do not work properly.
11. Make sure that all guards and shield are in place.

12. Check the ground drive tire pressure. Inflate to 30 psi.
13. Check mounting hardware for hopper to implement. Tighten where necessary.

Control Unit

Parker-Hannifin Control Unit (Figure 4-2)

The applicator is equipped with an electrically operated control unit. The unit allows selection of left, right or both metering rollers as well as normal or alternate rates of product application. The control unit also indicates incorrect manifold pressures. Refer to Assembly and Installation Manual for control unit installation.

Power Switch

Push the power switch to “ON” position for operation of control unit. A light above the switch indicates power is on.

Selector Switch

Select BOTH for the operation of both metering rollers for full width application of product. Select LEFT or RIGHT when only half the application width is desired. This is useful when finishing a field or where overlapping may occur. Green lights above the dial indicate which option is selected.

Normal/Alternate Rate (Optional)

If an alternate rate kit is installed, either a NORMAL rate or an ALT (alternate) rate can be selected and switched from one to the other at any time. The desired alternate rate must be determined when purchasing the kit according to the following chart:

<table>
<thead>
<tr>
<th>Alternate Rate Sprockets</th>
<th>% Change in Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Teeth</td>
<td>% Change in Rate</td>
</tr>
<tr>
<td>12</td>
<td>40% Lower</td>
</tr>
<tr>
<td>14</td>
<td>30% Lower</td>
</tr>
<tr>
<td>16</td>
<td>20% Lower</td>
</tr>
<tr>
<td>18</td>
<td>10% Lower</td>
</tr>
<tr>
<td>22</td>
<td>10% Higher</td>
</tr>
<tr>
<td>24</td>
<td>20% Higher</td>
</tr>
<tr>
<td>26</td>
<td>30% Higher</td>
</tr>
<tr>
<td>28</td>
<td>40% Higher</td>
</tr>
</tbody>
</table>
The green light indicates NORMAL rate and the yellow light indicates ALT (alternate) rate. Assembly procedures are contained in the alternate rate kit itself.

**Pressure Alarm**

The red ALARM light and buzzer alerts the operator to inadequate or excessive air manifold pressure. The light and buzzer are activated by the manifold pressure gauge. Refer to Manifold Pressure Gauge in the Operation Section.

**Figure 4-2: P-H Control Unit**

**Manifold Pressure Gauge (Figure 4-3)**

The manifold pressure gauge is installed when using the Parker-Hannifin Controller. The gauge indicates proper fan speed by measuring air pressure in the manifold in inches (cm) of water column. The pressure gauge includes a low pressure contact set at 10 inches and a high pressure contact set at 25 inches. The gauge is wired to the pressure alarm light on the control unit. The pressure alarm light will light up for two reasons:

1. The air pressure is below 10 inches.
2. The air pressure is above 25 inches.

Proper fan speed is achieved at a manifold pressure of 17 inches of water column. Fan speed is set by adjusting the speed of a gas engine or a hydraulic motor which drives the fan.

**Figure 4-3: Pressure Gauge**

**DTI Control Unit (Figure 4-4)**

The applicator is equipped with an electrically operated control unit. The unit allows selection of left, right or both metering rollers as well as normal or alternate rates of product application. The control unit also indicates the manifold pressure. Refer to Assembly and Installation Pages for control unit installation.

**Figure 4-4: DTI Control Unit**

**Power Switch**

Push the power switch to “ON” position for operation of control unit. A green light beside the switch indicates power is on.
Selector Switch

Select BOTH for the operation of both metering rollers for full width application of product. Select LEFT or RIGHT when only half the application width is desired. This is useful when finishing a field or where overlapping may occur. Green lights above the dial indicate which option is selected.

Normal/Alternate Rate (Optional)

If no alternate rate kit is installed, operate the machine with the alternate rate switch in the OFF position. The machine will operate correctly with either Alt. or Norm. selected but there will be a flashing green light indicating a disconnected clutch.

If an alternate rate kit is installed, either a NORMAL rate or an ALT (alternate) rate can be selected and switched from one to the other at any time. Green lights above the dial indicate which option is selected. Assembly procedures are contained in the alternate rate kit itself.

Pressure Alarm

The red ALARM light and buzzer alerts the operator of inadequate or excessive air manifold pressure. The light and buzzer are activated by the manifold pressure sensor. The pressure will be displayed on the LCD screen on the control unit.

Proper fan speed is achieved at a manifold pressure of 17 inches of water column. Fan speed is set by adjusting the speed of a gas engine or a hydraulic motor which drives the fan.

The control unit monitors the pressure and has a low pressure alarm set at 10 inches and a high pressure alarm set to 25 inches. The gauge is wired to the pressure alarm light and buzzer on the control unit and will activate if either of these limits are exceeded.

The high and low pressure settings can be adjusted using a small Phillips screw driver and inserting it into the small hole highlighted in Figure 4-4. To increase the high and low values turn the screws clockwise and to decrease the values turn the screws counter-clockwise. When adjusting the high and low limits the values will be displayed on the screen.

LCD Screen

Along with the manifold pressure, the LCD screen displays whether the clutches are working properly. If both is selected and the clutches are working properly, two solid bars (right and left) will appear in the top left corner of the screen. If the clutches are not working or a connection is broken, a 0 will appear instead of a solid bar. If only right or left are selected only the corresponding bar will appear, if the clutches are working properly.

When using the alternate rate switch there will also be a solid bar in the top right corner of the screen (above the pressure reading), showing whether the clutch is working properly. The bars will appear with the Norm. bar on the right and Alt. on the left. A 0 will appear if the clutch is disconnected.

The LCD screen contrast can be adjusted using a small Phillips screw driver and inserting it into the small hole highlighted in Figure 4-4. To increase the contrast turn the screw clockwise and to decrease the contrast turn the screw counter-clockwise.
Gas Engine Fan Drive (Optional)

The 2055 can be equipped with a 9 hp Honda engine. The 2455 and 3255 can be equipped with an 11 hp Honda engine.

Refer to the Honda Owner's Manual for correct start-up and operation of the engine.

The engine is equipped with centrifugal clutch that engages at 1600 rpm. Below that speed the fan will not operate.

Hydraulic Fan Drive (Figure 4-6)

The hydraulic fan drive requires an oil flow of 10.5 U.S. gpm for the 2055 and 2455 and 11.5 U.S. gpm for the 3255.

For 2016 and newer Valmar applicators, the major components of the hydraulic fan drive are as follows. These components will work with tractors that have a closed center hydraulic system.

1. The hydraulic motor for operating the fan.
2. The check valve for allowing the impellor to slowly come to a stop when hydraulic flow is shut off.

Set fan speed as follows:

1. Engage the tractor hydraulic system.
2. Adjust fan speed using the tractor’s adjustable flow control valve.

If your tractor has an open center hydraulic system, you will need to install an optional Valmar flow control valve in place of the check valve. Set the fan speed as follows:

1. Set the Valmar flow control valve to a setting of “0”.
2. Engage the tractor hydraulic system.
3. Adjust the fan speed by slowly turning the lever on the Valmar flow control to a higher number.

Shut-Off Gate & Metering Rollers (Figure 4-8)

The shut-off gates are located above each metering roller. They must be fully open when metering product. Do not use the shut-off gates to regulate product flow. The shut-off gates can be pushed down when removing the metering rollers if product is still in the hopper.

The metering rollers are held in place by a bearing clip on either end of the roller. Pull down on the manifold latches to lower the manifold. Pull up on the bearing clips to release the metering roller.
Product application rate can be affected by the gap between the metering lip. Maintain a gap of ¼ inch for the RED roller as well as the GREY roller. See the Adjustments and Service Section of this manual for instructions on setting the roller gap. If lower application rates are desired for seeds like canola, the gap can be lowered to 1/8”. Seed must meter out from the bottom of the metering roller.

Setting the Application Rate

Up to sixty (60) product application rates are available with the mechanical metering gearbox. Three mechanisms need to be set to select the desired application rate: input ratio, range and speed.

Input Ratio

Four gearbox input ratios can be selected by pairing the 12 and 34-tooth gears or the 19 and 27-tooth gears on the side of the gearbox. The available ratios are Ultra Low, Low, Medium and High. Select the desired input ratio as follows:

1. Raise the gearbox shield.
2. Select the pair of gears corresponding to the desired input ratio and install them in the correct orientation shown in the following diagrams, using linch pins on the correct shafts.
3. If the appropriate gears are not on the shafts, they can be found on the storage shaft as indicated by the diagrams.
4. Store the unused gears on the storage shaft.
Operation

Figure 4-11: Medium

Figure 4-12: High

Range Selection (Figure 4-13)

1. Release the clip on the speed shifter and lift it up.

2. Move the range lever to the “A” or “B” position.

3. Rotate the gears manually to ensure complete engagement. Lock the speed shifter into place by pushing down on the clip.

Figure 4-13: Range & Speed Selection

Speed Selection

1. Release the clip on gearbox speed shifter and lift up.

2. Move the speed shifter sideways to the correct numbered detent position. Drop the speed shifter into the detent slot.

3. Rotate the gearbox manually to ensure proper gear engagement. Lock the speed shifter in place by pushing down on the clip.

Funnels

Two funnels are provided for each machine for calibration and for emptying the hopper. Remove or install the funnels by rotating the storage latch until they are released or secured.

Storage

2055: The funnels are stored on the front left and right inner sides of the hopper as noted in Figure 4-14.

Figure 4-14: 2055 Funnel Storage
Operation

2455 / 3255: The funnels are stored under the front of the platform as shown in Figure 4-14.

Figure 4-14: 2455/3255 Funnel Storage

Installing the Funnels

1. Remove the funnels from their storage positions.

2. Pull on the manifold latches shown in Figure 4-5 to lower the manifold.

3. Place the wide end of the funnels under the front edge of the metering lip. Make sure the tabs on the back of the funnels engage two venturi cups.

Figure 4-15: Funnel Installation
Calibration

Calibration determines the actual product flow rate of your applicator. Generally the metering rate of fertilizer, granular product and seed is predictable as long as its properties are consistent. However, metering rate variations are possible and may be caused by:

- Manufacturer's quality control problems.
- A change in product density due to settling in transport.
- Damaged or worn metering components.
- Variations in seed size and density due to changes in growing conditions.

For these reasons, product flow rate charts are intended as a guide only. Calibration is essential for accurate application. The applicator should be calibrated the first time a new fertilizer or granular product is used and periodically thereafter. For seed, the applicator should be calibrated each time a particular batch of seed is used. When applying seed mixtures, consult the New Product Calibration section of this chapter.

Use the following procedure to ensure that your applicator is metering product as accurately as possible. Refer to the Operation Chapter of this manual for specific instructions on setting the metering components.

**Calibration Set Up**

1. Pour sufficient product into both metering bottoms for calibration.
2. Lower both manifolds by pulling the latches on each side of manifold assembly.
3. Install the funnels as shown in Figure 5-1. Make sure the two tabs on the back funnels each engage a venture cup.
4. Place a large container under each of the funnels to collect and weigh the product in.
5. Ensure hopper gates are fully open.
6. Engage both metering drive clutches.
7. Remove the calibration crank from its storage position on the inside left hand corner of the hopper as shown in Figure 5-2.
8. Install the crank on the shaft indicated in Figure 5-3. Turn the crank in the direction indicated until product is falling evenly across the entire width of metering rollers. The product must meter out from the bottom of the roller not the top.
9. Empty both collection containers into the hopper. Measure and record the weight of each empty container.
Calibration

Use the following formula to determine crank turns if your implement width is not found in the chart.

\[
\frac{3679.5}{\text{Implement width (ft.)}} = \text{Number of crank revolutions}
\]

3. Weigh both containers. Subtract the weight of the empty containers. The product weight is the application rate in lbs/acre at the selected gearbox setting.

Calibration Results

Compare the calibration results with the Product Flow Rate Charts in this manual. A difference in flow rates could indicate the following:

- Incorrect sprocket installation on the ground drive system. See Figure 5-4 for correct sprocket layout.
- Gearbox is not properly set.
- The flow rate characteristic or density of the product has changed.
- Metering rollers are worn or damaged.
- Metering roller gap is not correct.
- A mathematical error was made.
- Alternate rate was engaged instead of normal rate.

If a difference occurs after eliminating the above possible causes, contact your Valmar dealer.

Figure 5-3: Calibration Crank

Calibration Procedure

1. Set the gearbox to the desired speed as shown in the Operation section of this manual.

2. Turn the crank the number of turns indicated in the following table.

<table>
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Calibration

Up to date charts for a wide variety of pesticides, seeds and fertilizers are available at Valmar’s website:

www.valmar.com

Seeding canola with your Valmar

Due to the large numbers of canola varieties and variations in seed size, calibration is absolutely essential when seeding canola with a Valmar. Consult the New Product Calibration section on Page 26 for instructions.

For more accurate application of canola at low rates, it is advisable to lower the roller gap for the Red metering roller from ¼" to 1/8". See Page 33 of this manual for further instructions.
### Flow Rates in lbs/acre for RED ROLLER

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**GEARBOX SETTING**

**GEARBOX INPUT RATIO**

- **ULTRA LOW RATIO**
  - 34 T
  - 12 T
- **LOW RATIO**
  - 27 T
  - 19 T

**USE THIS CHART AS A GUIDE ONLY, CALIBRATE YOUR APPLICATOR.**
## Flow Rates in lbs/acre for RED ROLLER

### Valmar 1655, 2055, 2455, 3255 IM, 245 PT, 245TM, 242TM, 1255 PT, 6600/7600 PT, 1255 TR, 1255 IM, 5500PT

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### Gearbox Setting

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**Note:** Use this chart as a guide only, calibrate your applicator.
Flow Rates in lbs/acre for RED ROLLER

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**Gearbox Input Ratio**

- **Ultra Low Ratio**
  - 34 T
  - 12 T
- **Low Ratio**
  - 27 T
  - 19 T

**Use this chart as a guide only, calibrate your applicator.**
## Flow Rates in lbs/acre for RED ROLLER

### Valmar 1655, 2055, 3255 IM, 245 PT, 245TM, 242TM, 1255 PT, 6600/7600 PT, 1255 TR, 1255 IM, 5500PT

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**Gearbox Input Ratio**

**Medium Ratio**

- 19 T
- 27 T

**High Ratio**

- 12 T
- 34 T

**Calibration**

Use this chart as a guide only, calibrate your applicator.
Calibration

Metering Rates in lbs/acre for GREY ROLLER

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**Valmar 1655, 2055, 3255 IM, 245 PT, 245 TM, 242 TM, 1255 PT, 242 TM, 1255 PT**

**Gearbox Setting**

**Seed Density**

**Gearbox Input**

**Ratio**

**Barley - Bonanza**

**Buckwheat, Large**

**Fall Rye**

**Lentils, Chilean**

**Lentils, Eston**

**Oats**

**Wheat, Glenlea**

**Wheat, Hard Red**

**Deer Cover**

**Use This Chart as a Guide Only, Calibrate Your Applicator.**
### Metering Rates in lbs/acre for GREY ROLLER

<table>
<thead>
<tr>
<th>Gearbox Setting</th>
<th>Gearbox Ratio</th>
<th>Valmar 1655, 2055, 3255 IM, 245 PT, 245M, 242TM, 1255 PT</th>
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<tr>
<td>NO. 7</td>
<td>NO. 8</td>
<td>---------------------------------------------------------</td>
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#### Gearbox Setting
- **Gearbox Setting**: GEARBOX SETTING
- **Seed Density**: SEED DENSITY
- **No. 1**: 12 groove gray roller 1/4 in. gap

#### Gearbox Ratio
- **Gearbox Ratio**: GEARBOX INPUT
- **Ratio**: RATIO

#### Seeds
- **Barley - Bonanza**: 38
- **Barley, Medium**: 38
- **Barley, High**: 38
- **Buckwheat, Large**: 37
- **Fall Rye**: 37
- **Lentils, Chilean**: 47
- **Lentils, Eston**: 50
- **Oats**: 46
- **Wheat, Glenlea**: 47
- **Wheat, Hard Red**: 48
- **Deer Cover**: 6.2

#### Use this chart as a guide only, calibrate your applicator.
Calibration

New Product Calibration

When applying product that is either not listed on the Product Flow Rate Charts (such as grass mixtures) or that is inconsistent with the charted values, it is necessary to create a flow rate chart. Use the following procedure to prepare flow rates for all possible gearbox settings.

Calibration Set-up

Follow the same procedure as given at the beginning of this chapter.

Calibration

1. Set the gearbox to **Low Ratio, Range B, Speed No. 8**. At this setting the gearbox input to output ratio is 1 to 1.
2. Turn the crank the number of turns indicated in the chart at the beginning of this chapter.
3. Weigh the calibration containers. Subtract the weight of the empty containers to find the actual application rate in pounds per acre at the gearbox setting indicated in Step 1.
4. Record this weight on the blank Product Flow Rate Charts on the next two pages in the Calibration Weight column.
5. Multiply this calibration weight by the Gearbox Adjustment Factors listed on the chart in order to calculate the actual application rate in pounds per acre for all the other gearbox settings.

Example Calculation (Table 5-1)

A grass mixture is to be applied at 1.8 pounds per acre. A calibration was performed in which 6 pounds of product was collected.

Therefore, the application rate was 6 lbs/acre in Low Ratio, Range B, Speed No. 8. This weight was recorded in the Calibration Weight column of the blank charts. This weight was then multiplied by each Gearbox Adjustment Factor in the chart to calculate what the flow rate would be at all the other gearbox settings. It was found that Ultra Low Ratio, Range B, Speed No. 3 was the correct setting for 1.8 pounds per acre of the grass mix.

The gearbox was set to Ultra Low Ratio, Range B, Speed No. 3 and an applicator calibration performed as a final check.

<table>
<thead>
<tr>
<th>Product Flow Rate Chart in lbs / Acre</th>
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<tr>
<td><strong>Metering Gearbox Setting</strong></td>
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| 2.3  | 2.5   | 2.6   | 2.7   | 2.8   | 3.0   |       |       |       |             |

Table 5:1: Flow Rate Example Calculation

*Calculated from .30 X 6 = 1.8 lbs/acre
## Calibration

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**February 2001**

**Calibration**
### Product Flow Rate Chart in lbs/acre

#### Gearbox Setting

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#### Gearbox Input Ratio

- **MEDIUM RATIO**
  - 19 T
  - 27 T

- **HIGH RATIO**
  - 12 T
  - 34 T

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*February 2001*

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*Salford Group Inc.*

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*1005173 2655, 2455 and 3255 Operators Manual 2017*
This section provides information on daily and periodical maintenance of your applicator. A recommended service interval is listed with each item. Be sure to service all these components after any lengthy period of non-use. You are responsible for the Safe operation and maintenance of your applicator. Ensure that you and anyone else who is going to operate, maintain or work on or around the applicator be familiar with the operating and maintenance procedures and related safety information contained in this manual.

Safety

1. Refer to the Operator’s Manual for your tillage equipment. Follow all operating, maintenance and safety information in the manual.
2. Place the implement on a firm level surface. Lower all sections of the implement.
3. Exercise extreme caution when working around or with high-pressure hydraulic systems. Depressurize the system when connecting or disconnecting the hose couplings.
4. Wear heavy gloves and a face shield for eye protection when searching for suspected hydraulic leaks. A high-pressure concentrated stream of hydraulic fluid can pierce the skin. If such happens, seek immediate medical attention, as infection and toxic reaction could develop.
5. Do not attempt any adjustments or maintenance to any system of the Valmar Applicator when the implement is in motion.
6. Make sure all guards and shields are in place when the applicator is being operated.
7. Never wear ill-fitting, baggy or frayed clothing when working on any drive system components.
8. Store and transfer gasoline, solvents, cleaners or any flammable liquids only in Safety Standard approved containers.

Electric Clutches

Figure 6 - 1: Clutches

Clutches Do Not Release

The clutches should release when electrical power is shut off. If metering rollers continue to turn, inspect clutches for improper assembly. Check the following:

1. Check bearings for corrosion, damage or failure. They can cause the clutch to engage improperly or drag.
2. Insufficient gap at clutch armature. If the clutch armature contacts the rotor ring when power is disconnected, add a spacer ring to provide the 1/32 inch clearance between the armature and rotor as indicated in the diagram.

Clutches Do Not Engage

Raise ground drive wheel. Energize the clutches by turning the control unit ON. Use another 12 volt source if tractor is not attached. Rotate wheel by hand and observe clutches to see if they engage. If they do not engage
Adjustments and Service

1. Check for electromagnetic attraction. Touch the armature using a wrench or screwdriver to see if it attracts metal. If there is no magnetic pull, check the following:
   a) Check the control unit. The Power Switch must be ON. Check the Normal/Alternate Switch to make sure it is in the proper position.
   b) Check the fuses to the control unit. Refer to Fuses in this section.
   c) Check connections to the power source (battery).
   d) Check all connections along harness.
   e) Check ohm resistant readout at clutch. It should be between 2.4 and 2.8 ohms at room temperature.

2. There is magnetic pull, but no clutch engagement. Check the following:
   a) Check gap in the clutch. A gap greater than 1/32 inch indicated in Figure 6-1 means the spacer ring should be removed.
   b) If there is no spacer ring and gap is greater than required, see your Valmar dealer.

Clutch Lockup (Fig. 6-2)

Gas Engine

Refer to the Honda engine Operator’s Manual for correct engine maintenance procedures.

Centrifugal Clutch (Fig. 6-3)

The centrifugal clutch is secured to the engine using Loctite 609. Should only the bearing require replacement, do not remove the clutch assembly from the engine output shaft. This will prevent the breaking of the Loctite seal.

Bearing Replacement

The bearing can be replaced without removing the clutch from the engine as follows:

1. Remove the snap ring (5) and the pulley (4) from the clutch rotor and hub (1).
2. Remove one snap ring (2) which holds the bearing in place within the pulley and press out the bearing.
3. Reinstall the components in reverse order of removal. Install the new bearing by pressing on the inner race, not the balls of the bearing.

Figure 6 - 2: Clutch Lockup

The electromagnetic clutches can be manually engaged should an electrical failure by inserting a 1/8" dia. pin through both clutch halves as shown.

Figure 6 - 3: Bearing Replacement
**Adjustments and Service**

**Clutch Removal**

If the clutch or pulley is damaged and needs to be completely removed from the engine, do so as follows:

1. Remove the retaining bolt and washer from the end of the crankshaft.
2. Heat the Loctite securing the clutch to 350 to 400 degrees F. Direct the heat to the connection point only. Do not overheat the crankshaft as this may weaken it.
3. Using a puller, remove the clutch from the engine while hot.

**Clutch Reinstallation**

1. Check the bearing seals for heat damage. Replace if necessary.
2. Remove old Loctite from the clutch and engine output shaft. Clean thoroughly using a chlorinated solvent. Wipe dry.
3. Apply Loctite 609 evenly to both mounting surfaces. Do not fill the keyway.
4. Install clutch to engine with the belt groove away from the engine. Wipe off excess Loctite.
5. Reinstall washer and retainer bolt. Do not Loctite the washer.
6. Cure Loctite for 6 hours at a temperature of 68 to 70 degrees F before operating. If temperature falls to 50 degrees F, allow 24 hours for curing.

**Fan Drive**

1. Start up the fan and run at the recommended RPM until the manifold, venturis and hoses are blown dry by the airflow.
2. Check airflow at the house outlets with the fan running at operating pressure. If an outlet lacks sufficient air velocity, check the manifold venturis and hose for any blockage. Unplug as required.
3. Check that all bearings turn freely. Replace any that are rough or seized.
4. Check all hardware. Tighten all loose bolts and replace any that are missing. Use Grade 5 or better when replacing bolts.

**Fuse Replacement**

Three fuses are located in the control unit. Access them by removing the screws which hold the housing together. The fuses are a 7.5 amp fast blow type (AGC 7 ½).

**Gearbox (Figure 6-5)**

**Top and Bottom Gear Cluster Alignment**

If the top and bottom clusters do not align vertically, adjust by bending the range shift lever left or right until gears align.

**Gearbox Speed Shifter Alignment**

If the idler gear in the gearbox speed shifter does not line up (by detent) to the top and bottom gear clusters, adjust it as follows:

1. Disengage gearbox speed shifter from gear clusters.
2. Loosen setscrew on top shifter shaft.
3. Move to shifter shaft left or right, then tighten the setscrew.
4. Check idler gear alignment to both gear clusters. Repeat adjustment, if necessary.
Adjustments and Service

Idler Gear Tension (Fig. 6-6)

Check the idler gear tension as noted below and adjust if necessary:

1. Set the gearbox at No. 1B and clip the idler gear in place. Ensure that the gear teeth engage the gear clusters.
2. The idler gear should not be free to slide back and forth in the direction shown. If it is, unclip the idler gear and loosen off the latch plate. Move the latch plate down until proper tension is achieved.
3. Repeat the above procedure for gearbox setting No. 8B.
4. Set the gearbox to No. 2A. Ensure that the idler gear can be engaged by hand without excessive force. Adjust as required and repeat steps 1 and 2.
5. Repeat step 3 for gearbox setting No. 8A.

Manifold Pressure Gauge (Fig. 6-7)

The two electrical alarm contacts on the manifold pressure gauge can be adjusted by inserting an allen wrench into the allen head screws on the face of the gauge. The Low Pressure Contact should be set at 10. The High Pressure Contact should be set at 25.

Metering Rollers

The metering rollers should be removed, cleaned and inspected for damage on a daily basis. Grooving or flattening of the metering roller surface can drastically alter the metering rate. Damaged rollers must be replaced.
Keeping the applicator free from moisture will help to prevent product from building up on the rollers.

**Metering Roller Gap (Fig. 6-8)**

The gap between the metering roller and the metering lip is preset at the factory. Should the gap need adjustment, do so as follows:

1. Loosen the bolts securing each bearing housing to the bottom assembly.
2. Insert a ¼” spacer for the RED and GRAY rollers. If seeding canola with the RED roller, use a 1/8” spacer for more accurate application.
3. Tighten the bearing housing bolts. Remove the spacers.

![Figure 6 - 8: Metering Roller Gap](image)

Clean the metering rollers on a daily basis as follows:

1. Push down the shut-off plates if hopper is not empty.
2. Lower the manifold and install the funnels along with some collection containers. Release the bearing clips and remove the metering rollers.
3. Clean the metering rollers, metering roller area, bearing seats and venturis.

**Figure 6 - 9: Metering Roller Cleaning**

Keep the hopper clean and free of debris to ensure trouble-free operation. Do not leave product in the hopper overnight or longer as condensation may cause the product to cake up. Clean the hopper as follows:

1. Follow the instructions in the preceding section to remove the metering rollers
2. Open the shut-off plate to allow material to flow into the collection container(s).
3. Clean the hopper and bottom thoroughly.
4. Place the product in a sealed container and store indoors.

**Lubrication**

**Bearings**

There are two types of bearings used on the applicator. They are:

a) Sealed bearings which require no relubrication.

b) Greasable flange bearings (2) on the clutch shaft (1997 models and older). Apply two
Adjustments and Service

shots of multi-purpose grease to each bearing daily.

Chain drives

Lubricate with a recommended chain lubricant. Grease or heavy oil will attract dirt and dust.

Metering Gearbox

Lubricant all moving parts of the metering gear box with a “cleaner lubricant” such as penetration oil. Grease or heavy oil will attract dirt and dust causing premature wear and difficult shifting.

Belt and Chain Adjustments

Proper V-belt and chain tension is critical to the efficient function and long wear of all drive systems. Belts and chains that are too tight, too slack or misaligned will wear prematurely.

Alignment

Periodically check the alignment of all pulleys and sprockets. Place a straight edge against them to see if belts and chains are in line and shafts are parallel. Turn the pulley or sprocket and check at different points for warping. Replace any damaged parts.

Fan Drive Belt (Fig. 6-10 thru 6-12)

The correct fan belt tension is ½ inch of deflection when a 5 pound force is applied at the mid-point of the belt span.

Figure 6 - 10: Fan Belt Tension
Adjust hydraulic and gas engine fan drives by loosening the lock nuts and bolts on the sliding motor mount. Use a pry bar to adjust the tension as shown in Figures 6-11 and 6-12. Tighten the bolts and locknuts securely when tensioning is complete.

Figure 6 - 11: Gas Engine Fan Belt Tension

Figure 6 - 12: Hydraulic Fan Belt Tension

Chain Tension

Allow 2% slack (1/4” per foot) between shaft centers for proper chain tension, as measured at the mid-point of the chain span.

Hydraulic Fan Drive Motor (Figure 6-13)

Should the hydraulic fan drive motor be disassembled for any reason, it is critical to reassemble it so that it rotates in the correct direction as shown below.
Adjustments and Service

6. Touch up any paint scratches.
7. Store in a shed or cover with a waterproof tarpaulin.

Pre-Season maintenance

Before starting the season’s work, check the following areas:

Gas Engine

1. Change the crankcases oil and replace the spark plug.
2. Clean the engine and all components thoroughly. Ensure that the throttle and choke operate freely.

Bearings

1. Inspect the fan bearing. Remove the cover, loosen the belt and push and pull on the one edge of the impellor.
2. Turn the metering system by hand. If there is any binding or dragging, replace the worn bearing(s).

Delivery System

1. Inspect the applicator for accumulation of debris. Clean if necessary.
2. Install the manifold pressure gauge. Run the fan to ensure it is working properly.
3. Run the fan at operating speed and check the air flow in each outlet.

Metering System

1. Disassemble the electric clutches and buff the internal surfaces with emery cloth. Reassemble to proper gap.
2. Inspect gearbox for proper gear alignment. Lubricate all moving parts.
3. Check roller chain and fan belt tension and alignment.
4. Be sure all sprockets are secured to a shaft. If the sprocket has been spinning, grind a flat spot on the shaft where the screw is located.
5. Check the metering roller gap.

Figure 6-13: Hydraulic Fan Drive Motor

Tire Pressure

The ground drive tire should be inflated to 30 psi.

Post-Season Maintenance

Before storing the applicator after the work season, check the following areas:

1. Remove the metering rollers and clean them.
2. Clean the inside of the hopper, especially the bottom corners.
3. Purge the delivery system by running the fan at operating speed.
4. Lubricate all roller chains and the gearbox.
5. Remove the manifold pressure gauge. Store it in a clean, dry place. Plug the port.
# Troubleshooting

The Valmar Airflow system is a simple, accurate and reliable system which requires minimal maintenance.

Should you nonetheless encounter problems with your applicator, the following section lists their possible causes and solutions.

If the problem persists even after taking the steps to recommend in the section, call your Valmar dealer. Before you call, have this operator’s manual and applicator serial number ready.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>The rate of product being applied is lower than expected.</td>
<td>Product density has changed resulting in a discrepancy with the applicator charts.</td>
<td>Calibrate your applicator. Create a new chart.</td>
</tr>
<tr>
<td></td>
<td>Mathematical error during calibration.</td>
<td>Recheck calculations.</td>
</tr>
<tr>
<td></td>
<td>Mistake made while weighing calibration sample.</td>
<td>Weigh sample again.</td>
</tr>
<tr>
<td></td>
<td>Actual acreage covered less than expected.</td>
<td>Recheck field size.</td>
</tr>
<tr>
<td></td>
<td>Tractor wheel slippage may be causing incorrect odometer reading.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wrong gearbox setting.</td>
<td>Set gearbox correctly.</td>
</tr>
<tr>
<td></td>
<td>Sprocket(s) slipping on shafts. Ground drive wheel is slipping.</td>
<td>Tighten sprocket set screws. Align sprockets and shafts properly.</td>
</tr>
<tr>
<td></td>
<td>Misaligned shafts and sprockets or damaged bearings are causing the metering system to drag</td>
<td>Replace damaged bearings.</td>
</tr>
</tbody>
</table>
## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Collapsed delivery hose.</td>
<td>Replace hose.</td>
</tr>
<tr>
<td></td>
<td>Fan speed too low.</td>
<td>Increase fan speed to 17 inches water column pressure.</td>
</tr>
<tr>
<td></td>
<td>Field speed too fast. Product is being metered into venturis faster than air flow can carry it.</td>
<td>Slow down.</td>
</tr>
<tr>
<td>Venturi filling up with product and spilling over</td>
<td>Plugged fan inlet.</td>
<td>Unplug inlet.</td>
</tr>
<tr>
<td></td>
<td>Fan speed too low.</td>
<td>Increase fan speed to 17 inches water column pressure.</td>
</tr>
<tr>
<td></td>
<td>Fan to manifold hose torn or not operating.</td>
<td>Replace hose.</td>
</tr>
<tr>
<td></td>
<td>Fan not operating.</td>
<td>Engage the fan drive.</td>
</tr>
<tr>
<td></td>
<td>Manifold pressure gauge giving inaccurate reading.</td>
<td>Replace manifold pressure gauge.</td>
</tr>
<tr>
<td></td>
<td>Plugged manifold.</td>
<td>Clean out manifold.</td>
</tr>
<tr>
<td></td>
<td>Product caking up venturi.</td>
<td>Clean venturi.</td>
</tr>
<tr>
<td></td>
<td>Hot or humid weather.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Water hopper.</td>
<td>Clean out hopper</td>
</tr>
<tr>
<td></td>
<td>Water in manifold.</td>
<td>Run fan to blow-dry the delivery system.</td>
</tr>
</tbody>
</table>
## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product clings to the venturi due to static electricity.</td>
<td>An electrical charge builds up in the venturi causing the product to cling to the venturi. The product resists the suction created by the air stream.</td>
<td>Clear the venturi by pushing the product through the fan running. Wipe the venturi with an antistatic towel as used in clothes dryers. If the problem persists, the venturi has to be grounded to the manifold. Run a small wire, preferably copper, through the venturi cup and into the manifold as shown below. The wire must contact the manifold to ground out the electrical charge.</td>
</tr>
</tbody>
</table>

![Diagram of venturi and manifold](image)

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clutches will not engage.</td>
<td>No electrical power to clutches.</td>
<td>Check power cable to battery. Check fuses. Check wiring harness and all connections.</td>
</tr>
<tr>
<td></td>
<td>Dirt lodged between clutch halves.</td>
<td>Pull the clutch halves apart. Clean the contact surfaces and reset to proper gap.</td>
</tr>
<tr>
<td></td>
<td>Gap between clutch halves is too wide.</td>
<td>The gap should be 1/32&quot;. Disassemble clutch and remove the space ring. See Adjustment and Service section for more information.</td>
</tr>
</tbody>
</table>
## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed Fan too slow.</td>
<td>Loose fan drive belt.</td>
<td>Adjust tension.</td>
</tr>
<tr>
<td></td>
<td>Flow control valve improperly set.</td>
<td>Refer to Hydraulic Fan Drive in Operations section.</td>
</tr>
<tr>
<td></td>
<td>Insufficient oil supply from tractor.</td>
<td>Check hydraulic oil flow specifications for the tractor. Ensure that the tractor hydraulic system is working properly.</td>
</tr>
<tr>
<td>Flow control valve improperly set.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insufficient oil supply from tractor.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic Motor leaks.</td>
<td>Seal worn or damaged by heat.</td>
<td>Replace seal.</td>
</tr>
<tr>
<td></td>
<td>Overpressure ruptured seal.</td>
<td>Replace seal.</td>
</tr>
<tr>
<td></td>
<td>Contaminants damaged seal.</td>
<td>Replace seal. Ensure that oil supply is clean.</td>
</tr>
<tr>
<td>Hydraulic fan drive surges and/or</td>
<td>Valmar flow controller incompatible with your tractor’s hydraulics.</td>
<td>Install a Valmar flow control bypass kit. See the options chapter of this manual for details.</td>
</tr>
<tr>
<td>overheats.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: Ensure that the tractor hydraulic system is working properly.*
Valmar Airflo makes available optional equipment designed to fit your applicator to particular applications or enhance its performance. This section provides basic information about the function of each option as well as reasons for using them. Detailed instructions for the assembly and installation of the options are contained in the kits themselves.

**Options**

**Pedestal Mount Kit (18.6251)**

A pedestal mount kit is available for situations where the applicator may need to be installed over an obstruction on your implement such as depth control linkage. A welder is required for assembly.

**Alternate Rate Kit (18.6384)**

An alternate rate kit is available for operators who need to switch between two different application rates on the go. Operators can decrease application rates on hilltops or increase them in heavily infested areas.

**Gas Engine Kit (18.6346)**

A gas engine kit is available for operators who need a fan that is driven by a gas engine, such as in situations where tractor hydraulic flow may be insufficient for a hydraulically driven fan.

Note: A gas engine is not provided in this kit. A 9 horsepower engine (11.3898) is recommended for the 2055, and an 11 horsepower engine (11.3899) is recommended for the 2455 and 3255.

**Flow Control Bypass Kits**

These kits are recommended for operators who experience surging and/or heating problems with their hydraulic fan drive. Two kits are available:

- **18.7102** - For tractors with closed center or open center hydraulic systems with an adjustable flow controller.
- **18.7276** - For tractors with non-adjustable flow controllers.

**Hose Coupler Kit (18.7156)**

This kit is for operators who may wish to temporarily remove their applicator from the implement. The coupler eliminates the need to pull the delivery hoses off the venturis.

**Outlet Blocker Kit**

This kit allows the operator to block off from one to 10 outlets on the metering bottoms.

**Harrowbar Mounting Kits**

A variety of harrowbar mounting kits are available from Valmar. See your dealer to determine which one is right for you.
Specifications

Model No. 2055

Hopper
Steel welded, painted with acrylic enamel.

Dimensions
Height 50 inches, Length 46 inches, Width 48 inches

Capacity
33 cubic feet; 1485 lbs at 45 lbs per cubic foot density.

Weight (Empty)
700 pounds; hopper with hydraulic fan.
1190 pounds total shipping weight

Gear Box Ratios
60 speed gearbox with 5% difference between settings.
Refer to the chart for more information on ratios.

Tires
6-12 Ground Drive Tire (Approx. 892 revolutions per mile)
Inflate to 30 psi.

Engine Fan Drive
Belt driven system. Belt size B70
9 hp Honda Engine with centrifugal clutch

Hydraulic Fan Drive
Belt driven system. Belt size BX75
2.8 cubic in./rev. motor. Minimum flow requirement is 10 gpm (U.S.) for a fan speed of 3800 rpm.

Metering
Two metering rollers with shut of gate for each roller.
20 venturis. Manifold and venturis drop for easy calibration and emptying.

Hydraulic Metering
11.8 cubic in./rev. Minimum flow requirement for a roller speed of 18 rpm is 8 gpm (U.S.).

Electric Clutch
12 volt DC; 3.4 amps; 90 lbs torque capacity. Resistance is 2.4 to 2.8 ohms (cold). Two clutches for complete or ½ shutoff of metering rollers and in-cab control unit.

Electrical Requirements
12 volt D.C.; 10 amps standard version; 20 amps alternate version

Operating Width
50 feet maximum @ 30 inch deflector spacing.

Metering Gearbox Ratios: (input to output shaft)

<table>
<thead>
<tr>
<th>No. 1</th>
<th>No. 2</th>
<th>No. 3</th>
<th>No. 4</th>
<th>No. 5</th>
<th>No. 6</th>
<th>No. 7</th>
<th>No. 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>A</td>
<td>B</td>
<td>A</td>
<td>B</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>.250</td>
<td>.265</td>
<td>.276</td>
<td>.292</td>
<td>.305</td>
<td>.321</td>
<td>.336</td>
<td>.353</td>
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<td>.498</td>
<td>.528</td>
<td>.551</td>
<td>.581</td>
<td>.608</td>
<td>.640</td>
<td>.670</td>
<td>.704</td>
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<tr>
<td>1.007</td>
<td>1.066</td>
<td>1.112</td>
<td>1.174</td>
<td>1.227</td>
<td>1.292</td>
<td>1.353</td>
<td>1.421</td>
</tr>
<tr>
<td>2.007</td>
<td>2.125</td>
<td>2.217</td>
<td>2.341</td>
<td>2.447</td>
<td>2.576</td>
<td>2.698</td>
<td>2.833</td>
</tr>
</tbody>
</table>

Input Gear
U. Low
Low
Med.
High
**Specifications**

**Model No. 2455**

**Hopper**  
Steel welded, painted with acrylic enamel.

**Dimensions**  
Height 55 inches, Length 46 inches,  
Width 48 inches

**Capacity**  
40 cubic feet; 1800 lbs at 45 lbs per cubic foot density.

**Weight (Empty)**  
800 pounds; hopper with hydraulic fan drive.  
1300 pounds total shipping weight

**Gear Box Ratios**  
60 speed gearbox with 5% difference between settings.  
Refer to the chart for more information on ratios.

**Tires**  
6-12 Ground Drive Tire (Approx. 892 revolutions per mile)  
Inflate to 30 psi.

**Engine Fan Drive**  
Belt driven system. Belt size B70  
11 hp Honda Engine with centrifugal clutch

**Hydraulic Fan Drive**  
Belt driven system. Belt size BX75  
2.8 cubic in./rev. motor. Minimum flow requirement is 10.5 gpm (U.S.) for a fan speed of 4000 rpm.

**Metering**  
Two metering rollers with shut of gate for each roller.  
24 venturis. Manifold and venturis drop for easy calibration and emptying.

**Hydraulic Metering**  
11.8 cubic in./rev. Minimum flow requirement for a roller speed of 18 rpm is 8 gpm (U.S.).

**Electric Clutch**  
12 volt DC; 3.4 amps; 90 lbs torque capacity. Resistance is 2.4 to 2.8 ohms (cold). Two clutches for complete or ½ shutoff of metering rollers and in-cab control unit.

**Electrical Requirements**  
12 volt D.C.; 10 amps standard version; 20 amps alternate version

**Operating Width**  
60 feet maximum @ 30 inch deflector spacing.
**Specifications**

**Model No. 3255**

**Hopper**  
Steel welded, painted with acrylic enamel.

**Dimensions**  
Height 55 inches (61 inches 2012 & newer), Length 46 inches, Width 60 inches

**Capacity**  
50 cubic feet; 2250 lbs at 45 lbs per cubic foot (2011 & older models)  
60 cubic feet; 2700 lbs at 45 lbs per cubic foot (2012 & newer models)

**Weight (Empty)**  
900 lbs; hopper w/hydraulic fan: 1405 lbs total shipping weight (2011 & older)  
940 lbs; hopper w/hydraulic fan: 1445 lbs total shipping weight (2012 & newer)

**Gear Box Ratios**  
60 speed gearbox with 5% difference between settings.  
Refer to the chart for more information on ratios.

**Tires**  
6-12 Ground Drive Tire. Approx. 892 revolutions per mile. Inflate to 30 psi.

**Engine Fan Drive**  
Belt driven system. Belt size B70  
11 hp Honda Engine with centrifugal clutch.

**Hydraulic Fan Drive**  
Belt driven system. Belt size BX75  
2.8 cubic in./rev. motor. Minimum flow requirement: 11.5 gpm (U.S.) for a fan speed of 4200 rpm.

**Metering**  
Two metering rollers with shut of gate for each roller.  
32 venturis. Manifold and venturis drop for easy calibration and emptying.

**Hydraulic Metering**  
11.8 cubic in./rev. motor. Minimum flow requirement for a roller speed of 18 rpm is 8 gpm (U.S.).

**Electric Clutch**  
12 volt DC; 3.4 amps; 90 lbs torque capacity. Resistance is 2.4 to 2.8 ohms (cold). Two clutches for complete or ½ shutoff of metering rollers and in-cab control unit.

**Electrical Requirements**  
12 volt D.C.; 10 amps standard version; 20 amps alternate version

**Operating Width**  
80 feet maximum @ 30 inch deflector spacing.
Specifications

Hopper Dimensions

Figure 8-1: Dimensions
Specifications
Parker-Hannifin Wiring Schematic

Figure 8-2: Parker-Hannifin Control Unit Wiring

Figure 8-3: Parker-Hannifin Implement Harness Wiring
Specifications

DTI Harness Wiring Schematic

Main Harness
Wire Data

<table>
<thead>
<tr>
<th>Name</th>
<th>Colour</th>
<th>Gauge</th>
<th>Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1</td>
<td>Green</td>
<td>16</td>
<td>Left 1 High</td>
</tr>
<tr>
<td>W2</td>
<td>Black</td>
<td>16</td>
<td>Left 2 High</td>
</tr>
<tr>
<td>W3</td>
<td>Blue</td>
<td>16</td>
<td>Common</td>
</tr>
<tr>
<td>W4</td>
<td>Yellow</td>
<td>16</td>
<td>Right 1 High</td>
</tr>
<tr>
<td>W5</td>
<td>Black</td>
<td>16</td>
<td>Right 2 High</td>
</tr>
<tr>
<td>W6</td>
<td>White</td>
<td>16</td>
<td>SNS 1</td>
</tr>
<tr>
<td>W7</td>
<td>Blue</td>
<td>18</td>
<td>SNS 2</td>
</tr>
<tr>
<td>W8</td>
<td>Black</td>
<td>18</td>
<td>SNS 3</td>
</tr>
<tr>
<td>W9</td>
<td>Red</td>
<td>18</td>
<td>Common</td>
</tr>
<tr>
<td>W10</td>
<td>Black</td>
<td>16</td>
<td>Common</td>
</tr>
<tr>
<td>W11</td>
<td>Black</td>
<td>16</td>
<td>Common</td>
</tr>
</tbody>
</table>

Power Connector

<table>
<thead>
<tr>
<th>Name</th>
<th>Colour</th>
<th>Gauge</th>
<th>Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1</td>
<td>Black</td>
<td>14</td>
<td>Common</td>
</tr>
<tr>
<td>W2</td>
<td>Red</td>
<td>14</td>
<td>Power</td>
</tr>
</tbody>
</table>