MANUAL

FOR

CERTAINTED MACHINE WORKS

Volu-Matic™ SE INSULATION

BLOWING MACHINE

PLEASE READ THIS MANUAL THOROUGHLY BEFORE PUTTING THE VOLU-MATIC™ SE INSULATION BLOWING MACHINE INTO SERVICE!

MANUFACTURED BY:
CertainTeed Machine Works
101 Hatfield Rd.
Winter Haven, Florida 33880
1-800-237-7841
www.certainteedmachineworks.com

PUBLICATION: VM-SE 004 - 06/14
Check the accessory kit included with new delivered machines that the following items were received for operation.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Item Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>150 foot long remote control cord</td>
</tr>
<tr>
<td>1</td>
<td>Stator bar</td>
</tr>
<tr>
<td>1</td>
<td>4 inch sleeve (this item will be on the machine when installed by CMW)</td>
</tr>
<tr>
<td>1</td>
<td>4 inch I.D. x 2 foot length rubber hose (this item will be on the machine when installed by CMW)</td>
</tr>
<tr>
<td>1</td>
<td>4 inch O.D. to 3.5 inch O.D. reducer coupler</td>
</tr>
<tr>
<td>1</td>
<td>3.5 inch O.D. to 3.0 inch O.D. reducer coupler</td>
</tr>
<tr>
<td>1</td>
<td>3.5 inch I.D. x 4 inch length rubber hose</td>
</tr>
<tr>
<td>4</td>
<td>4 inch hose clamp (two are used for through wall connection at installation)</td>
</tr>
<tr>
<td>2</td>
<td>3.5 inch hose clamp</td>
</tr>
<tr>
<td>2</td>
<td>#40 and #50 chain connector links</td>
</tr>
<tr>
<td>2</td>
<td>#40 and #50 chain connector links</td>
</tr>
<tr>
<td>6</td>
<td>Shear keys</td>
</tr>
<tr>
<td>1</td>
<td>1/8&quot; and 5/32&quot; Allen wrench</td>
</tr>
</tbody>
</table>

The following items are available through CMW and required for machine installation.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Item Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Exhaust system for engine models</td>
</tr>
<tr>
<td>1</td>
<td>Engine cooling air intake flange</td>
</tr>
<tr>
<td>1</td>
<td>3 feet Spiratube hose for engine cooling air intake flange</td>
</tr>
<tr>
<td>2</td>
<td>Hose clamp for Spiratube hose</td>
</tr>
<tr>
<td>1</td>
<td>1.25 inch non-expansion pillow block bearing for PTO model</td>
</tr>
<tr>
<td>1</td>
<td>1.25 inch expansion pillow block bearing for PTO model</td>
</tr>
<tr>
<td>1</td>
<td>PTO warning label kit</td>
</tr>
</tbody>
</table>
Volu-Matic™ SE INSULATION BLOWING MACHINE

SPECIFICATIONS

MODELS:

VM-SEKA2C: Kohler gasoline engine - 18 horsepower two cylinder air cooled.

VM-SEPTO: Power take-off on truck.

ALL MACHINES: 18 inch airlock feeder, air volume control system, positive displacement blower, electro-magnetic clutches, four speed transmission.

HEIGHT: 69.00 INCHES

LOAD HEIGHT: 59.00 INCHES

LENGTH: 72.00 INCHES

WIDTH: 48.25 INCHES

WEIGHT: 1300 POUNDS

ELECTRICAL: 12 volt remote control

BLOWER VOLUME: 270 CFM @ 2 PSI

HOSE REQUIREMENT: 3 ½" I.D. minimum x 150' length minimum – open blow

3" I.D. or 2 ½" I.D. minimum x 150' length minimum – sidewall

HOSE MANUFACTURER: Flexaust Mark II

MAXIMUM FEED RATE:

CELLULOSE: 70 - 80 pounds per minute @ 2.0 PSI.

FIBERGLASS: 25 - 35 pounds per minute @ 3.5 PSI.

ROCKWOOL: 35 - 55 pounds per minute @ 4.5 PSI.

WARNING: RECOMMENDED HOSE SIZE, TYPE, AND LENGTH MUST BE USED TO ACHIEVE MAXIMUM RESULTS. CERTAINEED MACHINE WORKS CANNOT GUARANTEE PERFORMANCE OF THE VOLU-MATIC™ SE MACHINE IF HOSES ARE UNDERSIZED, WORN, DAMAGED, OR HOSES OTHER THAN THOSE WE RECOMMEND ARE USED.

When ordering parts or corresponding with us about this machine, please provide the following information as follows:

Machine Model No. ___________________________

Machine Serial No. ___________________________
INTRODUCTION

Several safety features are on the Volu-Matic™ SE machine to ensure operator safety. Study the safety section thoroughly so that all the features concerning safety are understood. Keep all these features functional during machine operation.

This introduction is presented to provide a basic description of the function and purpose of the Volu-Matic™ SE.

The Volu-Matic™ SE machine is principally designed to blow insulating materials into attics of residential and commercial buildings, and can also be configured to blow side walls. The insulation material manufacturer’s instructions prevail when it comes to installing their product, since they guarantee the final results.
The **Volu-Matic™ SE** machine is normally mounted in the back of a contractor's truck and can be powered either by a small industrial engine or by the truck engine via a power take off (PTO) box. The belt driven power train that drives all machine mechanisms, includes electromagnetic clutches that provide separate control of various functions on the machine. To allow the person installing the insulation full control of the machine, a 12-volt electrical remote control system is provided, which operates either through the provided hard wire remote cord and toggle switch, or with an optional radio frequency remote control unit. The **Volu-Matic™ SE** controls provide independent control of both the air that blows the material down the hose to its destination, and the machine mechanisms that condition and feed the insulating material into that air stream. The machine can be set at different speed settings with the transmission to match the applicators ability and/or material characteristics.

The 12-volt electrical circuit is powered by the machine's small industrial engine, or by the truck battery when it is PTO driven. The electrical control circuit is protected with a 20 amp circuit breaker. A light illuminates when the master switch is turned on, indicating that power is on for both the blower relay and remote control receptacle. When the remote cord switch is moved toward the cord, power is sent through the emergency stop buttons to the blower relay, causing the blower clutch to engage. When the remote cord switch is moved toward the end of the housing, power flows to the blower and mechanism relays, causing both clutches to engage. The toggle switch in the remote cord housing is labeled to identify these machine functions. The switches on the optional radio frequency remote control unit are labeled on the transmitter to identify these machine functions.

The hopper area where material is deposited into the machine has a circulator to open and stir the material, and an auger at the bottom for material feed. Material exits the auger and is conditioned by the shredder before entering the airlock feeder. The airlock feeder deposits the material into the air stream where it enters the hose and flows to the hose exit.

Another feature on the **Volu-Matic™ SE** machine is a slide gate that when adjusted, can lengthen the time the material is in the hopper area, which conditions the material. The slide gate is used to control both feed rate and material conditioning during side wall applications. Air volume is controlled independently with a manually operated valve, to help optimize material coverage.

**BEFORE YOU RUN THIS MACHINE...**
**PLEASE STUDY THE REST OF THIS MANUAL.**
SAFETY

The Volu-Matic™ SE Insulation Blowing Machine has full guarding and electrical disconnects for your safety. Every Volu-Matic™ SE machine has this warning displayed in a prominent place. Do not remove, modify, or deface the warning label!

WARNING: IF ANY FOREIGN OBJECT SHOULD ENTER THE MACHINE; PUSH AN EMERGENCY STOP BUTTON IN (OFF), TURN OFF THE MASTER SWITCH, UNPLUG THE REMOTE CORD, AND SHUT THE MACHINE ENGINE OR POWER SOURCE DOWN BEFORE RETRIEVING THE OBJECT. NEVER REACH INTO THE MACHINE WHILE IT IS IN OPERATION.
Other warning signs, caution signs, and danger signs are displayed so that the operator is aware of other hazards associated with the use of the machine. You will see the following warnings on the machine. **Do not remove, modify, or deface the warning labels!**

The purpose of this sign is to make the operator aware that they may lose their balance and fall.

This warning sign is displayed on the truck after installation of a PTO driven machine. A label kit is required with the PTO model when the machine is shipped for customer installation. Use the installation instructions if you install the machine.
All Volu-Matic™ SE machines are factory equipped with side, front, and rear guards. The top of the machine does not require guarding when correctly mounted in the contractor's truck, as shown in the installation instructions. If the machine is installed so that the top is exposed, such as in a manufacturing plant, or in an open top trailer installation, a top guard will have to be equipped.

The front guard 1 is designed to hinge up for access to your machine for maintenance and troubleshooting. This guard must never be opened while your Volu-Matic™ SE machine is in operation - there are shafts under the guard, which are still rotating. If this guard is opened, a safety switch 2 is mounted to the guard which will stop chain driven mechanisms, plus the blower, and the engine for those models. If the mechanisms do not shut off or stop when the guard is lifted up, you should request that maintenance be performed on the safety interlocks. For PTO models, you will have to push the reset button 3 in order to restart the machine after the guard is closed. If the safety switch or guard should become damaged, replace them to ensure safety while operating your Volu-Matic™ SE machine.
There are two emergency stop buttons 4 & 5 that will completely shut the machine down. Either red button will stop all machine mechanisms when pushed in (off) overriding all other controls. **If the mechanisms do not shut off or stop when either button is pushed, request that maintenance be performed on the safety interlocks.** The emergency stop buttons must be pulled out (on) for normal operation. "**Knowledge of the location and function of these emergency stops is emphasized.**"

These buttons should be used for any of the following type of emergencies:

- unauthorized individual getting too close to the machine.
- objects falling into machine.
- a machine component breaks.
- a material hose becomes disconnected.
- anything requiring immediate stopping of the machine.

For PTO models, you will have to push the reset button 3 in order to restart the machine after the emergency stop buttons are pulled back out (on) for machine operation. If any safety switch interlock should become damaged, replace it; keep your machine safe.

During machine operation, always turn off the “rocker type” master switch 6 (light indicates switch is on), and unplug the remote cord from the receptacle 7 before removing any guards for any reason!

During machine operation, always stand on the floor to deposit material into the hopper. Under no circumstances should your hand, arm, stick, or broom be used to move or force feed material down into the hopper. The Volu-Matic™ SE machine is a self-feeding design requiring no outside assistance for smooth flow.

Operators should wear hearing protection if the machine noise makes them uncomfortable or noise level exceeds acceptable standards. CertainTeed Machine Works recommends that the operator wear an “approved” dust mask or respirator for their protection. Safety features are incorporated into the Volu-Matic™ SE machine to protect from serious injury. Operate your machine according to the outlined instructions in this manual with all safety features in place and working properly. Operating the machine in an unsafe manner can result in serious injury.
INSTALLATION

The Volu-Matic™SE is designed for operation when mounted in the body of the contractor's commercial truck. The machine is powered by an industrial engine or a power take off (PTO) gearbox mounted to the side of the transmission. Use the following instructions to install the machine for operation.

ENGINE DRIVEN MODEL INSTALLATION

The engine driven model Volu-Matic™SE is designed to operate using an industrial engine to power the machine. The engine drives a shaft through a belt drive which in turn drives machine mechanisms for operation. Installation requirements are minimal but will require some effort to locate exactly all cut outs required in the truck body for a clean installation and machine operation. The following items are required to complete the engine driven installation: engine air intake flange, 4' hose & clamps for engine air intake flange, engine exhaust kit, 4" sleeve, 4" i.d. x 2' rubber hose.

1. Use the following drawing as a guide for locating the Volu-Matic™SE machine. Remove all of the shipping crate and skids when placing the machine in the truck body.

2. You will have to locate cut outs in the truck body side wall if doors are not directly in front on the drivers side for through wall air intake to the engine. Intake flange, hose, and clamps are required to provide clean cooling air to the engine.
You will also have to locate a cut out for the applicators hose connection to the airlock feeder if doors are not directly in front on the curb side of the truck. A four inch I.D. rubber hose, sleeve, and clamps are required for through wall connection.

3. Engine driven models will require exhaust installation or additional flexible pipe to route the exhaust fumes outside. The exhaust system or flexible pipe and clamps are required for operator safety. Make sure that the exhaust is routed outside the truck body and away from the engine air intake flanges. CertainTeed Machine Works installs the exhaust through the floor and then routes toward the back of the truck.

**WARNING: CARBON MONOXIDE POISONING FROM ENGINE EXHAUST CAN BE FATAL. MAKE SURE EXHAUST IS ROUTED AWAY FROM AIR INTAKE FLANGES AND THAT THE TRUCK BODY IS WELL VENTILATED.**

4. Once you are satisfied with the machine location, make all necessary cut outs and bolt the machine to the floor. Make sure air intake connection hose allows for belt tensioning requirements to the engine. Note where the engine oil drain is located in case a hole in the floor is needed for maintenance.

**WARNING: DO NOT SMOKE WHEN OPERATING THE MACHINE.**

5. The fuel tank is located on the machine frame and is plumbed to the engine. The tank is EPA C.A.R.B. compliant for the recovery of fuel fumes. Fill tank with a good clean grade of fuel.

**WARNING: DO NOT SMOKE WHEN REFUELING THE TANK. FUMES FROM FUEL ARE EXPLOSIVE AND CAN BE FATAL. FOLLOW ALL SAFETY PRECAUTIONS WHEN HANDLING ANY TYPE OF FUEL.**

6. Refer to the operation section for initial start and machine operation.
POWER TAKE OFF (PTO) DRIVEN INSTALLATION

The power take off (PTO) driven model Volu-Matic™ SE is designed to operate using a PTO gearbox mounted to the side of the transmission on the truck. This PTO box should be approximately 100% take off of truck engine speed in order to achieve proper machine speed while the truck idles at the manufacturer’s recommended rpm range. Most installations have an idle speed range of 1200 to 1500 rpm. The PTO box should have an output shaft with a diameter of 1.25 inches. Additionally, most trucks will require programming of the ECM (engine control module) to control the PTO speed, this will have to be accomplished by the truck dealer.

A drive system will be installed under the truck that connects to the PTO box output shaft on one end and has an output shaft at the other end for belt drive to the machine. The belt drive will connect to a right angle gearbox on the machine. The following items are required to complete the PTO driven installation: universal drive shaft, output shaft, 1 1/4" expansion and 1 1/4" non-expansion pillow block bearings, bearing mounts, drive pulley, belts, 4" sleeve, 4" I.D. x 2' rubber hose and clamps, PTO warning label kit.

At the time a new machine order was placed, you were asked to supply information about the truck mounted PTO box output shaft rotation. To determine the rotation, you look at the PTO box shaft from the rear of the truck, see drawing. This information is necessary for determining machine setup at the factory. The right angle gearbox pinion shaft will always rotate in the same direction as the PTO box shaft. It is a simple matter of flipping the right angle gearbox onto one mounting side or the other so that the cross shaft always rotates toward the front of the machine. The drain plug and breather cap also have to be inserted accordingly. Installation will require some effort to locate exactly all cut outs required in the truck body for a clean installation and machine operation, see drawing next page.
1. With the rotation of the truck mounted PTO box and machine determined, use the following drawing as a guide for locating the Volu-Matic™SE machine. Remove all of the shipping crate and skids when placing the machine in the truck body.

2. Locate the Volu-Matic™SE machine so that the cut out in the floor of the truck body for the belt drive lies between truck chassis cross members. You will have to be keenly aware of other obstacles under the truck that may interfere with the belt drive. You also want to keep the machine as close as possible to the truck body front wall to maximize material storage space.

Next, locate cut outs for the applicators hose connection to the airlock feeder if doors are not directly in front on the curb side of the truck. Four inch I.D. rubber hose and sleeve are supplied with new delivered machines for through wall connections.

3. Once satisfied with the machine location, the next step is to get the drive system located under the truck. Make all necessary cut outs and bolt the machine to the floor. The next drawing shows the basic layout of a drive system.
A = min. 5 degrees - max. 11 degrees.

B = PTO universal drive shaft
   Up to 36" overall length - use 2" diameter drive shaft tubing.
   Up to 54" overall length - use 2 ½" diameter drive shaft tubing.
   54" to 72" maximum length - use 3" diameter drive shaft tubing.

Overall length established during installation with slip yoke at center of travel.

C = PTO output drive shaft
   Up to 36" center distance - use 1 ¾" C1045 cold drawn solid.
   *Up to 44" center distance - use 2" o.d. x 1/8" wall cold drawn seamless tubing.
   *Over 44" center distance - use 2 3/8" o.d. x 3/16" wall cold drawn seamless tubing.

*Output shafts made of cold drawn seamless tubing will have stub shafts at each end turned down to match bearings.

D = 3" ship channel - bolt to truck frame and brace (see next page for bearing mounts that CertainTeed Machine Works manufactures for installation at the factory).

E = PTO box installed by truck manufacturer or truck dealer service center.

F = expansion pillow block bearing - set according to manufacturer's literature.

G = non-expansion pillow block bearing - set according to manufacturer's literature.

H = output drive pulley

I = slip yoke

J = stub yoke

K = stub shaft

L = end yoke

M = cross

N = belts
4. In order to support the drive system, you will have to manufacture bearing mounts for the output drive shaft. The next two drawings show different mounting configurations for bearing mounts.

5. First, locate the outboard bearing stand so that it will be as close as possible to the output pulley location. Locate the inboard bearing stand so that it will be as close as possible to the end yoke of the universal drive shaft. Make sure that you maintain the minimum or maximum angle of the universal drive shaft. The length of the universal drive shaft will be determined by the location of the inboard bearing stand in relation to the PTO box output shaft. Once the bearing stands are in place, manufacture necessary shafts for installation. If a tubular drive shaft is manufactured for an output shaft, have the shaft balanced at a drive shaft shop along with the universal drive shaft.
6. Next, install the pillow block bearings that support the output drive shaft. One pillow block bearing assembly is a non-expansion type and one assembly is an expansion type. Make sure that the expansion type is mounted next to the output pulley and that these bearings are set according to the manufacturer’s specifications, see manufacturer’s literature.

7. Next, install output drive shaft and universal drive shaft. Make sure that the slip yoke and stub yoke in the universal drive shaft are positioned as shown in the basic outlay of a drive system to avoid excessive vibration.

8. Now that the drive shafts are installed, the next step is to install the output pulley and drive belts. First, the proper output drive pulley has to be established, then the proper belt length can be established. The right angle gearbox is designed to run at 1500 rpm. The pinion shaft will have a 3B50 pulley mounted on it. The output shaft will have to be tached while the truck engine idles at the manufacturer’s recommended rpm. In the chart, find the closest rpm in the column under the 3B50 pulley, to the left will show the output pulley required for installation.

<table>
<thead>
<tr>
<th>OUTPUT PULLEY UNDER TRUCK *</th>
<th>3B44</th>
<th>3B46</th>
<th>3B48</th>
<th>3B50</th>
<th>3B52</th>
<th>3B54</th>
<th>3B56</th>
<th>3B58</th>
<th>3B60</th>
</tr>
</thead>
<tbody>
<tr>
<td>3B58</td>
<td>1140</td>
<td>1190</td>
<td>1240</td>
<td>1290</td>
<td>1345</td>
<td>1395</td>
<td>1450</td>
<td>1500</td>
<td>1550</td>
</tr>
<tr>
<td>3B60</td>
<td>1100</td>
<td>1150</td>
<td>1200</td>
<td>1250</td>
<td>1300</td>
<td>1350</td>
<td>1400</td>
<td>1450</td>
<td>1500</td>
</tr>
<tr>
<td>3B62</td>
<td>1065</td>
<td>1110</td>
<td>1160</td>
<td>1210</td>
<td>1260</td>
<td>1305</td>
<td>1355</td>
<td>1405</td>
<td>1450</td>
</tr>
<tr>
<td>3B64</td>
<td>1030</td>
<td>1080</td>
<td>1125</td>
<td>1170</td>
<td>1220</td>
<td>1265</td>
<td>1315</td>
<td>1360</td>
<td>1405</td>
</tr>
<tr>
<td>3B66</td>
<td>1000</td>
<td>1045</td>
<td>1090</td>
<td>1135</td>
<td>1180</td>
<td>1225</td>
<td>1275</td>
<td>1320</td>
<td>1365</td>
</tr>
<tr>
<td>3B68</td>
<td>970</td>
<td>1015</td>
<td>1060</td>
<td>1100</td>
<td>1145</td>
<td>1190</td>
<td>1235</td>
<td>1280</td>
<td>1325</td>
</tr>
<tr>
<td>3B70</td>
<td>940</td>
<td>985</td>
<td>1030</td>
<td>1070</td>
<td>1115</td>
<td>1160</td>
<td>1200</td>
<td>1245</td>
<td>1285</td>
</tr>
<tr>
<td>3B74</td>
<td>890</td>
<td>930</td>
<td>975</td>
<td>1015</td>
<td>1055</td>
<td>1095</td>
<td>1135</td>
<td>1175</td>
<td>1215</td>
</tr>
<tr>
<td>3B80</td>
<td>825</td>
<td>860</td>
<td>900</td>
<td>935</td>
<td>975</td>
<td>1015</td>
<td>1050</td>
<td>1090</td>
<td>1125</td>
</tr>
</tbody>
</table>

* SOME APPLICATIONS MAY BE LIMITED TO PULLEY DIAMETER OR RPM OUTPUT FROM THE TRUCK. FIND THE APPROPRIATE OUTPUT PULLEY OR RPM AND THEN FIND THE APPROPRIATE DRIVE AND/OR DRIVEN PULLEY.
9. Once the pulley drive for the **Volumatic™ SE** PTO model machine is determined, the next step is to determine the pitch length for the B section drive belts. Making sure that all mounting is complete, measure the center distance between the output shaft and the right angle gearbox. Record this distance for use in a calculation to determine the belt pitch length. The next chart gives the pitch diameters of the pulleys shown in the pulley chart that was used to determine the pulley drive.

\[
\text{CENTER DISTANCE} = \text{GEARBOX SHAFT PULLEY} - \text{OUTPUT PULLEY UNDER TRUCK}
\]

<table>
<thead>
<tr>
<th>GEARBOX SHAFT</th>
<th>PITCH DIAMETER</th>
<th>OUTPUT SHAFT UNDER TRUCK</th>
<th>PITCH DIAMETER</th>
</tr>
</thead>
<tbody>
<tr>
<td>3B44</td>
<td>4.4</td>
<td>3B58</td>
<td>5.8</td>
</tr>
<tr>
<td>3B46</td>
<td>4.6</td>
<td>3B60</td>
<td>6.0</td>
</tr>
<tr>
<td>3B48</td>
<td>4.8</td>
<td>3B62</td>
<td>6.2</td>
</tr>
<tr>
<td><strong>3B50</strong></td>
<td><strong>5.0</strong></td>
<td><strong>3B64</strong></td>
<td><strong>6.4</strong></td>
</tr>
<tr>
<td>3B52</td>
<td>5.2</td>
<td><strong>3B66</strong></td>
<td>6.6</td>
</tr>
<tr>
<td>3B54</td>
<td>5.4</td>
<td><strong>3B68</strong></td>
<td>6.8</td>
</tr>
<tr>
<td>3B56</td>
<td>5.6</td>
<td><strong>3B70</strong></td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3B74</td>
<td>7.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3B80</td>
<td>8.0</td>
</tr>
</tbody>
</table>

*SUPPLIED ON MACHINE

**RANGE FOR MOST APPLICATIONS**
1. Next, calculate the belt pitch length. The three key numbers; center distance, output pulley pitch diameter, and input pulley pitch diameter are used in a calculation to determine the pitch length of the “B” section drive belts. The calculation to be done is shown next.

1. "B" pitch diameter of output drive pulley under truck.
2. "B" pitch diameter of input pulley on right angle gearbox.
3. Add line 1 and 2.
4. Multiply line 3 by 1.57
5. Multiply measured center distance by 2.
6. Add line 4 and 5 to get pitch length of required belts.

1. Find the output shaft drive pulley in the chart and record the pitch diameter on line 1 above.
2. Find the PTO input shaft pulley in the chart, usually 3TB50, and record the pitch diameter on line 2.
3. Add line 1 and 2 and record on line 3.
4. Multiply line 3 by 1.57 and record on line 4.
5. Multiply the measured center distance by two (2) and record on line 5.
6. Add lines 4 and 5 and record on line 6. This is the “B” section pitch length of required drive belts.

11. Refer to the following chart to match a belt pitch length to the calculated pitch length on line 6 in the previous calculation. In most cases, the pitch length is not exact. Select the longer pitch length for use on the drive system.

<table>
<thead>
<tr>
<th>BELT</th>
<th>PITCH LENGTH</th>
<th>BELT</th>
<th>PITCH LENGTH</th>
<th>BELT</th>
<th>PITCH LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>B70</td>
<td>71.8</td>
<td>B80</td>
<td>81.8</td>
<td>B90</td>
<td>91.8</td>
</tr>
<tr>
<td>B71</td>
<td>72.8</td>
<td>B81</td>
<td>82.8</td>
<td>B91</td>
<td>92.8</td>
</tr>
<tr>
<td>B72</td>
<td>73.8</td>
<td>B82</td>
<td>83.8</td>
<td>B92</td>
<td>93.8</td>
</tr>
<tr>
<td>B73</td>
<td>74.8</td>
<td>B83</td>
<td>84.8</td>
<td>B93</td>
<td>94.8</td>
</tr>
<tr>
<td>B74</td>
<td>75.8</td>
<td>B84</td>
<td>85.8</td>
<td>B94</td>
<td>95.8</td>
</tr>
<tr>
<td>B75</td>
<td>76.8</td>
<td>B85</td>
<td>86.8</td>
<td>B95</td>
<td>96.8</td>
</tr>
<tr>
<td>B76</td>
<td>77.8</td>
<td>B86</td>
<td>87.8</td>
<td>B96</td>
<td>97.8</td>
</tr>
<tr>
<td>B77</td>
<td>78.8</td>
<td>B87</td>
<td>88.8</td>
<td>B97</td>
<td>98.8</td>
</tr>
<tr>
<td>B78</td>
<td>79.8</td>
<td>B88</td>
<td>89.8</td>
<td>B98</td>
<td>99.8</td>
</tr>
<tr>
<td>B79</td>
<td>80.8</td>
<td>B89</td>
<td>90.8</td>
<td>B99</td>
<td>100.8</td>
</tr>
</tbody>
</table>
12. Once the pulley size and belt length for the drive are determined, mount the components making sure the pulleys and belts clear all obstacles. Refer to next drawing, tighten the belts with the idler pulley supplied with the machine. Make sure that the idler pulley is used on the slack side of the belts and to the inside. In the drawing, the take up arm is routed to pull the idler pulley against the inside of the belt by means of the adjustment nut. Do the opposite for counterclockwise rotation. Make sure the belt deflects a half inch on the pull side when fully tensioned. After an initial run in break time, it will most likely be necessary to retention the drive belts.

13. Power to the machine is supplied by the truck battery for all 12 volt electrical functions. New delivered machines have a 15 foot wire lead out of the handy box located behind the right side end guard. The white wire is connected to the circuit breaker and goes to the battery positive post. The green wire is ground to the machine and goes to the battery negative post. When this is complete, install any guards removed for installation and fasten securely.
NOTE: KEEP IN MIND THAT A WEAK TRUCK BATTERY MAY NOT BE POWERFUL ENOUGH TO RUN THE MACHINE. KEEP THE TRUCK BATTERY AND CHARGING SYSTEM IN VERY GOOD SHAPE.

WARNING: CARBON MONOXIDE POISONING FROM ENGINE EXHAUST CAN BE FATAL. MAKE SURE EXHAUST IS ROUTED AWAY FROM AIR INTAKE AND THE CUT OUT IN THE FLOOR. MAKE SURE THE TRUCK BODY IS WELL VENTILATED.

NOTE: A KIT OF DECALS IS INCLUDED WITH THE PTO BOX FROM THE MANUFACTURER OF THE PTO AND ARE ALSO AVAILABLE FROM CERTAINTED MACHINE WORKS. THESE DECALS SHOULD BE DISPLAYED ON THE TRUCK AS INDICATED BY THE INSTRUCTIONS PROVIDED WITH THEM. ADDITIONALLY, CERTAINTED MACHINE WORKS MANUFACTURES AND INSTALLS AN ADDITIONAL GUARD FOR UNDER THE TRUCK TO FURTHER INSURE SAFETY WHEN INSTALLATION IS PERFORMED AT THE FACTORY. YOU SHOULD DO THE SAME.

---

14. Refer to the Operation section for initial start and machine operation.
OPERATION

Preliminary checks

1. Check the following table for the proper hose size, type, and length for a particular operation. All hose couplings must be thin wall, 1/16 inch maximum, to minimize restrictions. Thin wall couplings can be purchased from CertainTeed Machine Works.

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>OPERATION</th>
<th>HOSE DIAMETER</th>
<th>HOSE LENGTH</th>
<th>HOSE TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CELLULOSE</td>
<td>OPEN BLOW</td>
<td>3 1/2&quot; MINIMUM</td>
<td>150' MINIMUM</td>
<td>MARK II</td>
</tr>
<tr>
<td>FIBERGLASS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROCKWOOL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CELLULOSE</td>
<td>SIDE WALL</td>
<td>2 1/2&quot; MINIMUM</td>
<td>150' MINIMUM</td>
<td>MARK II</td>
</tr>
<tr>
<td>FIBERGLASS</td>
<td></td>
<td>3&quot; MINIMUM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROCKWOOL</td>
<td></td>
<td>3&quot; MINIMUM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Make sure that hopper area is empty.

3. Check for presence of oil from the blower, transmission, and gearbox indicating a leak. On engine models, check for presence of oil from engine indicating a leak. Check the Preventive Maintenance section for proper levels and type of oil used in each component.

4. Check material conditioning slide and air bleed valve position. Check the recommended start settings chart for proper position.

5. Make sure all guards are in place and securely latched.

WARNING: ALWAYS OPERATE YOUR MACHINE WITH THE TRUCK SITTING ON A LEVEL SURFACE. OPERATING THE MACHINE WHEN THE TRUCK IS NOT LEVEL WILL LEAD TO FAILURE OF SOME MACHINE COMPONENTS. THE OIL LEVEL IN THE BLOWER, TRANSMISSION, AND GEARBOX, MAY NOT LUBRICATE INTERNAL PARTS PROPERLY WHEN THE TRUCK IS SITTING ON AN INCLINE.

Preliminary Start-up Checks

1. On engine driven models, start the engine in accordance with manufacturer's literature and increase engine speed until the throttle is at full stroke. The engine will run 3600 rpm.
On PTO model machines, start the truck and engage the PTO at a low idle in accordance with truck manufacturer’s literature. Bring the truck up to the recommended speed established during installation. Always engage and disengage the PTO at a low idle.

**PTO OVER SPEED WARNING:**

The gearbox that powers the drive train on the machine is designed to run at a nominal 1500 rpm. This speed should be held within 25 rpm (1475 minimum - 1525 maximum) so that machine components are operating at the correct design speed. Over speeding the machine can and will damage shafts, bearings, and clutches driven by the gearbox, as well as the gearbox itself. **This is especially true if the truck is moved before the PTO attachment is disengaged after operating the machine.** Remember, the gearbox rotates at all times the PTO is engaged.
2. Make sure the hopper area is empty.

3. Turn on the master switch 6; light indicates the switch is on.

4. Pull emergency stop buttons 4 & 5 out (on) for operation.

5. Push reset button 3 on PTO models for next step.

6. Move the toggle switch 9 to the center (off) position and plug the remote cord 10 shipped with new delivered machines into the receptacle 7. This is a twist lock connection.

7. Clear the area in front of the airlock feeder outlet 11 for testing.

8. Cycle the toggle switch in the remote cord housing toward the cord and the blower will come on, check that air does exit the airlock outlet. With the blower operating satisfactorily, cycle the switch toward the end of the housing and the blower and machine mechanisms will operate simultaneously.

9. Become knowledgeable about the components of the Volu-Matic™ SE machine. Engage and disengage the remote cord noticing the drives start and stop. With machine running, push one emergency stop button and check that the drives stop. Pull emergency stop button out, push the reset button and start the machine again. Push in the other emergency stop button and check that the drives stop. If the remote toggle switch was cycled off, then cycle the toggle switch for the drives to come on.

10. For any problems encountered during preliminary start-up procedures, check the Troubleshooting section or call CertainTeed Machine Works at 800-237-7841.

**WARNING:** IF AT ANY TIME THE DRIVES DO NOT STOP WHEN AN EMERGENCY STOP BUTTON IS PUSH IN (OFF), REQUEST THAT MAINTENANCE BE PERFORMED ON THE SAFETY INTERLOCKS.
<table>
<thead>
<tr>
<th>OPERATION</th>
<th>MATERIAL</th>
<th>SLIDE GATE</th>
<th>TRANSMISSION GEAR</th>
<th>AIR BLEED PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPEN BLOW</td>
<td>CELLULOSE</td>
<td>16&quot;</td>
<td>3rd</td>
<td>2.0 – 3.5 PSI</td>
</tr>
<tr>
<td></td>
<td>FIBERGLASS</td>
<td>16&quot;</td>
<td>3rd</td>
<td>2.0 – 3.5 PSI</td>
</tr>
<tr>
<td></td>
<td>ROCKWOOL</td>
<td>12&quot;</td>
<td>2nd</td>
<td>4.5 – 5.5 PSI</td>
</tr>
<tr>
<td>SIDE WALL</td>
<td>CELLULOSE</td>
<td>8&quot;</td>
<td>1st</td>
<td>1.0 – 2.5 PSI</td>
</tr>
<tr>
<td></td>
<td>FIBERGLASS</td>
<td>8&quot;</td>
<td>2nd</td>
<td>1.0 – 2.5 PSI</td>
</tr>
<tr>
<td></td>
<td>ROCKWOOL</td>
<td>6&quot;</td>
<td>1st</td>
<td>1.5 – 1.75 PSI</td>
</tr>
</tbody>
</table>

**NOTE 1:** USE THESE SETTINGS AS A STARTING GUIDE ONLY. VARIATIONS BETWEEN MATERIALS OF THE SAME TYPE AND VARIATIONS BETWEEN BATCHES FROM THE SAME MANUFACTURER MAY REQUIRE DIFFERENT SETTINGS THAN THOSE SUGGESTED. REMEMBER, THE MATERIAL MANUFACTURER'S INSTRUCTIONS PREVAIL SINCE THEY GUARANTEE THE FINAL RESULTS.

**NOTE 2:** AIR PRESSURE SETTINGS FOR SIDE WALL OPERATION ARE FOR DENSE PACK, NET FILL, AND DRILL & FILL OF OUTSIDE WALLS OF OLDER STRUCTURES. SPRAYING SIDE WALLS WILL RESULT IN HIGHER PRESSURE BASED ON WATER IN THE AIR STREAM.

**GENERAL INSTRUCTIONS:**

1. SET THE INDUSTRIAL ENGINE SPEED OR TRUCK SPEED FOR MACHINE OPERATION. REDUCE MACHINE SPEED APPROXIMATELY 20 PERCENT FOR SIDE WALL OPERATION.

2. VARY THE AIR BLEED PRESSURE FIRST. IF YOU CANNOT GET THE DESIRED RESULTS BY OPENING OR CLOSING THE AIR CONTROL LEVER HANDLE, THEN...

3. VARY THE SLIDE GATE NEXT. IF YOU CANNOT GET THE DESIRED RESULTS BY CLOSING OR OPENING THE SLIDE GATE, THEN...

4. GO TO THE NEXT HIGHEST OR LOWEST SPEED ON THE TRANSMISSION. IF YOU CANNOT GET THE DESIRED RESULTS CHANGING THE SPEED, THEN...

5. ADD OR REMOVE STATOR BAR. IF YOU CANNOT GET THE DESIRED RESULTS BY ADDING OR REMOVING THE STATOR BAR, THEN START WITH VARYING THE AIR PRESSURE AGAIN.
Getting Started

1. Use the preliminary and start-up checks as a check list on your Volu-Matic™ SE machine each day before proceeding to the job site. At the job site, connect hose at the through wall connection firmly with band clamps and make sure the hose does not have a short radius bend. A short radius bend will result in poor coverage, excessive hose and feeder wear, and/or plugged hoses. Use thin wall couplings and reducers, 1/16 inch maximum, to minimize restrictions.

The Volu-Matic™ SE machine will not perform to specifications when held back by undersized and restrictive hoses, couplings, reducers, and/or nozzles that are used for sidewall spray operations. For open blow operations, use a 25 foot to 50 foot length of 4 inch diameter hose at the through wall connection if excessive high air pressure is experienced using all 3-1/2 inch diameter hose. For sidewall spray operations, make sure the nozzle that you use has an opening that is at least the same square inch area or greater than the hose selected. The nozzle should also have a body wall that is not greater than 1/16 to 1/8 inch in thickness and with a smooth tapered entrance.

Repeated warnings about choice of hose may seem to be an attempt to sell our brand, but we must stress the importance of proper hose selection for the type of material and operation. A rough bore corrugated hose is necessary for blown fibers since smooth bore rubber or plastic will roll shredded material into small tight balls. Your Volu-Matic™ SE machine has been engineered, when properly adjusted, to condition fibers for optimum coverage. Improper hose selection will degrade fibers conditioned by the machine and reduce insulation value in blown material. Do not deviate from hose diameters, types, or length, as specified in the table.
2. Make sure the emergency stop buttons are pushed in (off) and the remote cord toggle switch is in the center (off) position.

3. Use the recommended start settings chart to adjust machine for the type of insulation you are using and particular operation.
4. Air flow rate may be controlled with the air bleed control valve 13 while monitoring system pressure on the air gauge 14. The system back pressure must be read while the Volu-Matic™ SE machine is operating with full length and proper hose while material is being blown.

Always start the adjustment with the air bleed control valve in the fully closed position. If the air flow and pressure deliver the desired results with the valve closed, then do nothing to the valve. As you begin to open the valve, air is bled off from the exit of the blower preventing flow of all air to the airlock feeder. As you open the valve, be careful to not open completely during open blow or the blowing hose could clog because of insufficient air volume.

**CAUTION: AS YOU OPEN THE VALVE, BE CAREFUL NOT TO OPEN COMPLETELY DURING OPEN BLOW OR THE BLOWING HOSE COULD CLOG BECAUSE OF INSUFFICIENT AIR VOLUME.**

5. To adjust the slide gate 15, refer to the chart and select the proper setting for the material to be blown and particular operation. Lift the handle 8 out of the notch and move to the left to open the slide gate. Place handle in notch that matches with the desired setting on the scale 16. The scale is calibrated in inches of opening.
6. To adjust the transmission 17, refer to the chart and select an appropriate gear for material and type of operation. Shift the lever 18 into gear in accordance with decal instructions on the machine front panel. Since the transmission is not synchronous, it may be necessary to pull the gears through by hand using the pulley 19 so that gears mesh allowing you to change them. This should never be attempted or gears shifted while the machine is operating.

**WARNING:** NEVER ATTEMPT TO CHANGE GEARS WHILE THE *Volu-Matic™ SE* MACHINE IS IN OPERATION. ALWAYS CHANGE GEARS WHEN THE MACHINE IS COMPLETELY SHUT DOWN. FAILURE TO DO SO CAN RESULT IN SERIOUS PERSONAL INJURIES OR A SEVERELY DAMAGED TRANSMISSION.

7. Load the machine from a standing position on the floor depositing bags of material on the shelf 20. Do not build scaffolding or use a foot stool to load material into the *Volu-Matic™ SE* machine. This moves the operator closer to the rotating components in the hopper and provides a way to lose balance and fall.

Load three to four bags of material into the hopper being particularly careful not to leave pieces of bag in the material since this will clog and stall the machine.
**WARNING:** DO NOT ATTEMPT TO REMOVE ANY FOREIGN OBJECT FROM THE MACHINE UNTIL IT IS COMPLETELY SHUT DOWN; MASTER SWITCH TURNED OFF, EMERGENCY STOP BUTTONS PUSHED IN, REMOTE CORD UNPLUGGED, AND THE PTO DIENGAGED OR ENGINE SHUT DOWN. FAILURE TO DO SO WILL RESULT IN SERIOUS INJURIES BY THE ROTATING COMPONENTS IN THE HOPPER OR ON THE MACHINE.

8. Pull emergency stop buttons out (on) for operation and then push the reset button.

9. Take the end of the blowing hose and remote cord to the job’s starting point. Engage remote cord for air and material to begin the insulation blowing process.

10. Upon completion of open blow operation, use air only function for the following:
   - clear all material out of hose.
   - level off insulation mounds.
   - blow off duct work and clear out air handler drip pan.
   - blow material from recessed lights.
   - blow material out of soffits

**Coverage**

Coverage may be defined as the maximum allowable square feet covered per bag at a minimum specified depth and weight per square foot at a given "R" value. A manufacturer might recommend that the material be blown at a rate of 79 sq./ft. per bag at a depth of 8 3/4 inches and a weight 0.444 lbs. sq. ft. to achieve an insulation value of R-19. If you opened a bag of material and hand distributed it to a depth of 8 ¾ inches, it would only cover 15 - 16 sq./ft. Fiber
must be worked or conditioned by your Volu-Matic™ SE machine to achieve coverage of 79 sq./ft. per bag.

Coverage decreases when feed rates are too low and material is overworked by the machine mechanisms (or the wrong hose is used) rolling the fibers into tight little balls. Coverage will also decrease if feed rates are too high, allowing material to pass through the machine before it has been opened to the proper density.

An option to coverage problems can also be controlled to some extent with the use of a stator bar in the shredder housing. Remove cover plate 21 and insert stator bar 22 making sure shredder hammers clear pins before bolting down. This adjustment should be done only after various settings of the air bleed control valve, slide gate, and transmission speed do not gain desired results. The stator bar can help increase coverage, but it can also decrease coverage and slow the feed rate of the machine.

12 Volt Electrical System

The following is a description of the 12 volt electrical system on the Volu-Matic™ SE machine, an electrical schematic is included in the Troubleshooting section.

Engine Models:

Power comes from the battery through the 20 amp circuit breaker to the master switch 6. When the master switch is turned on, electricity flows through the switch causing the light to illuminate while providing power to the blower relay and remote control receptacle 7. The emergency stop buttons 4 & 5 must be pulled out (on) and the front guard closed against the safety switch 2 or the engine will not start. When the remote cord switch 9 is moved toward the cord, power flows to the blower relay’s internal coil. This causes the normally open contacts in the
relay to close sending power to the blower clutch while also providing power to the mechanism relay. When the remote switch is moved toward the end of the switch housing, power flows to the internal coils of the blower and mechanism relays. This causes the normally open contacts in both relays to close sending power to the respective clutches simultaneously.

PTO Models:

Power comes from the battery through the 20 amp circuit breaker to the master switch 6. When the master switch is turned on, electricity flows through the switch causing the light to illuminate while providing power to the latching relay and blower relay. The emergency stop buttons 4 & 5 must be pulled out (on) and the front guard closed against the safety switch 2, pressing the reset button 3 energizes the latching relay contacts to the closed position allowing power to flow to the remote control receptacle 7. When the remote cord switch 9 is moved toward the cord, power flows to the blower relay’s internal coil. This causes the normally open contacts in the relay to close sending power to the blower clutch while also providing power to the mechanism relay. When the remote switch is moved toward the end of the switch housing, power flows to the internal coils of the blower and mechanism relays. This causes the normally open contacts in both relays to close sending power to the respective clutches simultaneously.

At any time that an emergency stop button is pushed in (off) or the front guard is opened while the machine is operating, power is de-energized on PTO models at the latching relay which opens the contacts. The engine will stop on engine driven models. This will stop power flow to the remote control receptacle and relays which will disengage the blower and mechanism clutches. You will have to pull the emergency stop button out (on) and/or close the front guard and then push the reset button to re-energize the remote function.

If an emergency stop button is pushed in (off) or a swing gate guard is opened while only the master switch is on but the machine is not operating, the reset button will have to be pressed once the emergency button is pulled out (on) or the front guard is closed to energize the latching relay for machine operation. This is also true for any troubleshooting requirements you may encounter.

NOTE: ALWAYS TURN THE MASTER SWITCH OFF AT THE END OF THE JOB. LEAVING THE MASTER SWITCH ON WILL DRAIN BATTERY POWER. A BATTERY LOW ON POWER WILL CAUSE THE CLUTCHES TO SLIP DURING OPERATION OR NOT ENGAGE AT ALL.
PREVENTIVE MAINTENANCE

General

Make sure all power sources are off and the truck mounted PTO controls are disengaged before attempting any maintenance procedures. Check for loose nuts and bolts, check for slack and condition of chains and belts, and check for oil leaks, especially after the first few days of operation. Keep the machine clean.

Daily

1. Check and clean the blower air inlet screen and industrial engine cooling air inlet screen truck body flange as required during operation. Keep these screens clean.

2. Visually inspect and remove any foreign objects that may have entered the machine such as pieces of bag, rags; razor knife, etc.

3. Make sure emergency stop buttons are functional.

4. Check that the shredder area inspection window is not cracked.

5. Check oil level in industrial engine.

Weekly

1. Check for slack and condition of the PTO drive belts from under the truck.

2. Check chain and belt tension on the machine.

3. Very important – grease the PTO drive pillow block bearings two to three pumps from a hand operated gun. See bearing section for proper grease.

4. Check the oil level in the blower, transmission, and gearbox.

Airlock Feeder

The airlock feeder will require periodic maintenance to prolong the life of the assembly since steel will wear when abrasive type materials and air velocity are mixed. The rubber feeder seals must be changed every 250 hours of operation or approximately every 1 ½ months if the machine is operated 8 hours a day 5 days a week. Additionally, the seals need to be replaced if problems are experienced with loss of air pressure and blow-by occurs during machine operation. Blow-by is a term used when material seems to blow back into the hopper area while the auger tries to meter the material into the shredder area. Failure to change seals on schedule will result in excessive wear and replacement of the feeder assembly.
Change the Volu-Matic™ SE Airlock Feeder Seals as Follows:

A. Make sure you have a complete set of seals (6) before the job is started.

B. Make sure all power is disconnected; distributor wire on engine, PTO disengaged and truck engine off, master switch off, remote cord unplugged, etc.

C. Remove necessary guards to do the job after power is disconnected, make sure that all guards are installed and secure when job is complete.

D. Once the outlet end plate is removed, check for excessive wear on the feeder barrel and end plate surfaces. New seals will not be effective in an excessively worn feeder. Inspect rotor for any wear and repair as required.

E. Replace excessively worn or damaged feeder barrel, end plate and bearing seals for optimum performance from your Volu-Matic™ SE machine. Excessively worn parts are considered to be when 25% of metal thickness has worn away.

F. Supplies and tools for seal change:
   Set of six seals – seal part number A-39U-18, spare 1/4"-20 x 5/8" length grade 5 bolts and lock washers, spray silicon, never-seize shaft lube, penetrating oil, emery cloth, feeder crank hub and rod, dead blow hammer, pry bars, flat file, miscellaneous sockets, open end wrenches, and hex head Allen wrenches.

1. Loosen the set screws A in bearing collar on the inlet end plate only.

2. Move idler pulley B to left and tighten nut C. Remove drive chain and sprocket D at front of feeder. Remove mounting bolts E.
3. Use pry bars $F$ between end plate and feeder barrel to bring entire rotor assembly out. File and polish the rotor shaft. Loosen set screws in bearing collar and slide the end plate off rotor shaft.

4. Remove the bolts that hold the backing plate $G$ and rubber seal $H$ to the rotor assembly $I$. Clean the rotor vane surface $J$ (opposite side) before placing in a new seal. Bolt on backing plate making sure not to over tighten, distorting the seal.

5. Apply spray silicon lubricant to edges of new rubber seals and surface of feeder barrel. Apply never-seize lube on inlet bearing race.

6. Insert rotor assembly into feeder barrel rotating counterclockwise using crank hub $K$ and rod $L$ while pushing with free hand. Make sure bearing seal at inlet end plate does not pinch between rotor shaft and bearing race.

7. Once rotor shaft enters the inlet end plate bearing, it might be necessary to use a dead blow soft hammer to fit rotor all the way in the feeder while rotating it. Push rotor as far in as possible with seals beginning to bend over on the side against the inlet end plate.


Peer through outlet end plate to see if rubber seals break over against end plates evenly. Adjust as required by rotating rotor and tap with dead blow hammer. Tighten set screws in bearing collars when rotor is centered in the feeder barrel. Install drive components and any guards removed for service. Discard old seals.
**Industrial Engine**

Check the engine oil level daily before start up. Follow manufacturer's recommended maintenance schedule as specified in the engine manual included with the Volu-Matic™ SE manual. Keep the engine clean, especially element type air filters and the air inlet cooling system.

Check that battery connections are tight and that cable leads are tight. If the battery is not maintenance free, check the water level weekly. Make sure you use distilled water when replenishing a non-maintenance free battery. Check that all exhaust connections are tight and that no leaks are present in the pipes or muffler, replace as required.

**PTO Drive System**

The PTO drive pillow block bearings 23 should be greased once a week or every 30 hours of operation. Do not over lubricate. Two to three pumps from a hand operated grease gun is sufficient. CertainTeed Machine Works uses lithium based high temperature grease. See manufacturer's literature on spherical roller bearings.

The universal crosses 24 should be greased once a month. Do not over lubricate. One pump from a hand operated grease gun is sufficient. CertainTeed Machine Works uses an aluminum complex based all purpose grease. The slip yoke 25 should be greased once a year.

Internal bearings in the belt idler pulley assembly are sealed for life and can only be replaced. A machine shop with a bearing press may be necessary. Do not over tighten the PTO drive belts as this may cause premature bearing failure.
**Electro-Magnetic Clutch**

The electro-magnetic clutch has no scheduled wear replacement parts and can only be replaced whenever field failures may occur. Refer to the following drawing and detailed instructions for removing the clutch from the shaft.

1. Disconnect wiring at clutch connector.
2. Remove torque arm attach bolt from clutch arm.
3. Remove drive belts from pulley. The pulley is part of the clutch assembly.
4. Remove the attach bolt, washer, & lock washer.
5. Slide clutch off clutch shaft. The use of a pry bar or similar device may be necessary to start clutch off shaft, wedge between bearing housing and clutch hub. Make sure that bearing shaft seal or clutch bearing seal does not get damaged.
6. Inspect clutch drive key, replace as required.

**Note:** Upon reassembly, make sure to add two drops of blue Locktite to threads of attach bolt. Be careful not to get Locktite on clutch shaft.
**Pillow Block Bearings – Machine Clutch Shafts**

Machine main shaft bearings should be lubricated every month of operation. **Do not** over lubricate. One to two pumps from a hand operated gun is sufficient.

**Flanged Bearings**

Bearings should be lubricated every 6 months of operation if equipped with a grease fitting. Bearings without fittings are considered lubricated for life. **Do not** over lubricate. One to two pumps from a hand operated gun is sufficient.

**Belts**

Do not use belt dressing. Belt dressing will collect material and cause the belts to slip and/or wear faster. There is no substitute for keeping belts dry, free of oil and grease, and tight. Replace worn and deteriorated belts as required. All belt driven components are equipped with take up adjustment.

**Blower**

Check the oil level weekly in the blower by turning the brass valve 90 degrees to check. A small amount should appear indicating sufficient oil. Follow manufacturer’s recommended maintenance schedule as specified in the enclosed blower manual. After **100** hours of operation, drain while warm and refill with fresh lubricant. Thereafter, change every six months or 1000 hours machine time. The bearings on the drive end of the blower should be grease lubricated once a month.

**Right Angle Gearbox - PTO Models**

Check the oil level weekly in the gearbox. The gearbox is filled with **synthetic gear oil 80w140**. The proper oil level is at the plug halfway up the rear of the housing. After **500** hours of operation, drain while warm. Thoroughly flush housing with light flushing oil and refill with fresh lubricant. Thereafter, change and flush every two years or 4000 hours machine time.

**Transmission**

Check the oil level weekly in the transmission. The transmission is filled with **Mobil gear oil 626**. The proper oil level is marked at the front of the housing. After **100** hours of operation, drain while warm. Thoroughly flush housing with light flushing oil and refill with fresh lubricant. Thereafter, change and flush every six months or 1000 hours machine time.
WARNING: MAKE ALL CHECKS WITH THE INDUSTRIAL ENGINE OFF OR PTO DRIVE DISENGAGED. ALL MACHINE ELECTRICAL IS POWERED BY THE ENGINE OR TRUCK BATTERY. IN ORDER TO CHECK ELECTRICAL FUNCTIONS THE FOLLOWING HAS TO HAPPEN; TURN MASTER SWITCH ON, PULL EMERGENCY STOP BUTTONS OUT (ON), AND PUSH THE RESET. IF AN EMERGENCY STOP BUTTON IS PUSHED IN DURING TROUBLESHOOTING, REMEMBER TO PUSH THE RESET BUTTON. ADDITIONALLY, IF THE BATTERY IS WEAK (LOW VOLTAGE), THE ELECTRICAL MAY NOT WORK. THIS CONDITION MAY ALSO BE CAUSED BY LOOSE OR CORRODED BATTERY CONNECTIONS.

TROUBLESHOOTING

1a. Engine will not start.
   A. Check if red indicator light is on for safety circuit fault.
   B. Check if battery charge is low.
   C. See engine manufacturer's manual.

1b. PTO will not engage.
   A. See truck manufacturer's PTO accessory manual.

2. Engine starts or PTO engages but there are no other machine functions - no electrical power to panel.
   A. Check for tripped circuit breaker 26 on machine electrical panel door. A tripped circuit breaker will be indicated by the middle button protruding out. If the circuit breaker trips again - check for loose or damaged wires, shorts to ground.
   B. Make sure master switch 6 is on.
   C. Check that an emergency stop button 4 or 5 is not pushed in (off).
   D. Make sure belt guard is closed against safety switch 2.
   E. Push reset button 3 on PTO models.
3. **Engine starts or PTO engages - but blower will not operate.**

A. Peer through guard and check that blower clutch is operating.

B. Only PTO models, no power at latching relay.

C. Check clutch electrical connections.

D. Clutch not operational - check remote cord. With master switch on and guard switch actuated, use jumper wire 27 in remote receptacle 7. If blower starts, remote cord is defective.

E. Remote cord okay - check blower relay 28. You will have to remove thumb screw 29 to lower door 30 in order to
check the relay. Pull test tab 31 up to lock relay contact 32, you should see a colored flag in window 33 to indicate contact. If blower starts, the relay is defective.

F. Check battery, clutch will not cycle or will slip if battery is not fully charged.

G. Check for 12 volts at clutch.

H. Check that blower can be turned by hand. If not - blower is defective.

I. Faulty clutch - replace.

3. Engine starts or PTO engages and blower operates - but machine mechanisms will not operate.

A. Peer through guard and check that mechanism clutch is operating.

B. On PTO models, no power at latching relay.

C. Check clutch electrical connections.

D. Clutch not operational - check remote cord. With master switch on and guard switch actuated and jumper wire 27 in place, use jumper wire 34 in remote receptacle 7. If mechanism starts, remote cord is defective.

WARNING: LEAVING THE TAB IN THE UP POSITION ON THE RELAY WILL OVERRIDE THE REMOTE CONTROL FUNCTION. THE CLUTCH WILL STAY ENGAGED AS LONG AS THE MASTER SWITCH IS ON. ALWAYS RETURN THE TEST TAB TO THE NORMAL OPERATING POSITION, USE ONLY FOR TROUBLESHOOTING.

continued...
E. Remote cord okay - check mechanism relay. Pull blue tab up to lock relay contact. If mechanism starts, the relay is defective.

F. Check battery, clutch will not cycle or will slip if battery is not fully charged.

G. Check for 12 volts at clutch.

H. Check shear key.

I. Faulty clutch - replace.

4. **Insufficient Air - Clutch is Operating.**

A. Check that air bleed control valve 13 is not fully open.

B. Check if blower air intake screen 35 is clogged.

C. Check air stream hose connections.

D. Material hose plugged.

E. Check for blow-by indicating airlock feeder components (seals, end plate, etc.) worn out or damaged. To check for blow-by, the machine will have to be on for operation. Making sure the air bleed control valve 13 is closed, cycle remote cord for air only. Then block exit of air at feeder outlet 11 (hold hose solid to ground or block with piece of wood) and check if air is blowing back up into the machine.

F. Blower defective, worn, or damaged.
5. No material flow - clutch is operating.
   
   A. No material in hopper.
   
   B. Transmission not in gear.
   
   C. Check shear key 36. Shut machine down completely and look for jams in machine if key continually shears.
   
   D. Check if slide gate is closed or adjusted in too far for material feed rate.
   
   E. Object restricting flow in the machine.
   
   F. Material hose plugged.
7/16-14 NYLOC Nut, 6 per bearing
3/8-16 x 1.1 BOLT & NUT, 8 RED.
Outlet End Plate, U55A02013
Rotor, U55A02009
Shaft Seal, U55A02019
Feeder Seal, VA-39U-18
Backplate, U55A0204
Seal, ATACH BOLT, L/4-50 x 5/8" LENGTH,
Feeder Barrel Weld Assembly, U55A02007
Bearing, 1-3/16" Bore
to shredder housing
TO SHREDDER HOUSING

SLIDE, U36403003

3/8"-16 NYLOCK NUT

3/8"-16 NUT

SLIDE ROD, U55403003

SLIDE ROD SUPPORT, WELDED TO MACHINE FRAME
CLUTCH TORQUE TAB

1/4"-20 NYLOCK NUT

1/4"-20 x 1' BOLT

WASHER

TORQUE ARM

WASHER

1/4"-20 NYLOCK NUT

1/4"-20 x 1' BOLT

TAB WELDED TO MACHINE FRAME
AIR INTAKE SCREEN, ULTRA4011
BLOWER
WELDED TO INLET PLATE.
FEEDER END PLATE TUBE.
3" CWC CONNECTION HOSE
AIR OUTLET ELBOW & CHECK VALVE, ULTRA404
1/2" NPT NIPPLE
1/2" NPT ST ELBOW
3 CONNECTION HOSE
U BOLT
BALL VALVE
HANDLE
POINTER
AIR GAUGE
MACHINE FRAME
CERTAINTED MACHINE WORKS BLOWING EQUIPMENT
LIMITED TWO-YEAR WARRANTY

CertainTeed Machine Works (the Company) warrants to each original purchaser (the Buyer) of its blowing equipment that such products will be free of manufacturing defects for a period of two years from the date of shipment to the Buyer, except that no warranty is made with respect to:

1. Components or accessories manufactured and warranted by others. Warranties for component parts, including but not limited to the engine, blower, gearbox, and transmission, if furnished by the manufacturer of the component, are on file at the Company’s main office and copies will be furnished with the blowing equipment when sold. In no event shall the Company provide service on any such component.
2. Any defect caused by alteration performed without the express written authorization of the Company.
3. Repairs made or attempted or adjustments undertaken by unauthorized persons.
4. Any machine that has not been operated and/or maintained in accordance with normal industry practice and the written recommendations of the Company, such as a machine operated with an improperly sized, worn or damaged hose.
5. Damage or breakage due to carelessness, accidents, or improper use.
6. The results of any application or use of the blowing equipment.

This limited warranty does not extend to component parts that need to be replaced on a regular basis due to normal wear and usage, including but not limited to seals, feeder, shredder, auger, fuses, switches, clutches, hoses, shaft seals, chains, belts, sprockets, pulleys, bearings, cables, and batteries.

The Company’s obligation under this warranty is limited to repairing or replacing (at its option) any part that is determined by the Company to have a manufacturing defect. The Company or an authorized repair facility will provide any required parts and labor to the Buyer. If the equipment must be returned to the Company for repair, all transportation costs shall be the Buyer’s responsibility. The Buyer must obtain a Return Material Authorization (RMA) number from the Company before returning the equipment for repair.

THIS LIMITED WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER GUARANTEES AND/OR WARRANTIES, ORAL OR WRITTEN, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTY OF MERCHANTABILITY AND THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. THE COMPANY SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, OR ECONOMIC LOSS, INCLUDING DAMAGES TO ANY BUILDING OR ITS CONTENTS, OR INJURY TO ANY PERSONS THEREIN, LOSS OF PROFITS, REVENUE, OR LOSS OF EQUIPMENT USE, EVEN IF THE COMPANY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR LOSS, OR FOR ANY CLAIM AGAINST THE BUYER BY ANY OTHER PARTY.

This warranty is not transferable.

Any claimed defect for which the Company does not receive notice within the two-year warranty period is not covered by this warranty.

CertainTeed
SAINT-GOBAIN
Machine Works

101 Hatfield Rd, Winter Haven, FL 33880
800-237-7841
www.certainteedmachineworks.com
© 2012 CertainTeed Corporation