# CONVEYAIR


## Operator's Manual

# WARRANTY REGISTRATION

*IMPORTANT: To validate your warranty, mail within 10 days from date of purchase to*

**VANA INDUSTRIES LTD.**
92 De Baets Street
Winnipeg, Manitoba
Canada R2J 3S9

PURCHASER: _____

ADDRESS: _____

CITY/TOWN: _____

PROV/STATE: _____

POSTAL CODE/ZIP: _____

TELEPHONE NO: _____

MODEL NO: _____

SERIAL NO: _____

DATE OF PURCHASE: _____

DEALER: _____

# CONVEYAIR

## PNEUMATIC GRAIN HANDLING SYSTEMS

## OPERATOR'S MANUAL

**IMPORTANT**

References:

Economy — models **1950, 2450, 2950, 3950**

Deluxe — models **3000, 3500, 4000**

Unless otherwise specified in the following text.

Third Revision April 1986
PRINTED IN CANADA

## TABLE OF CONTENTS

This Operator's Manual provides you with the information to properly operate and maintain your CONVEYAIR pneumatic grain conveyor.

Familiarize yourself with the information, observe all the operating aspects and safety procedures and your machine will give you many years of reliable service.

For your convenience and speedy service please record below the model and serial number of your machine (see figure 1) and the serial and part number of your blower (see figure 2).

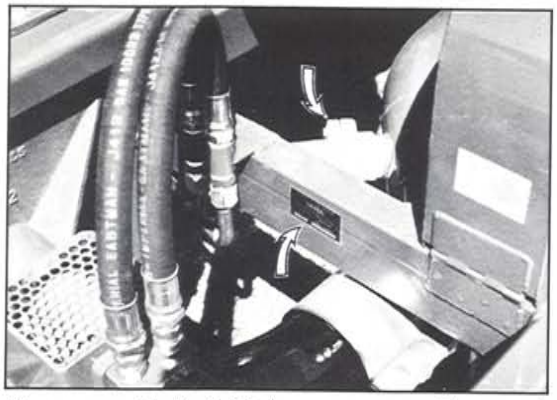
**Machine**

Model _____ Serial No. _____

Date Purchased _____ Dealer _____

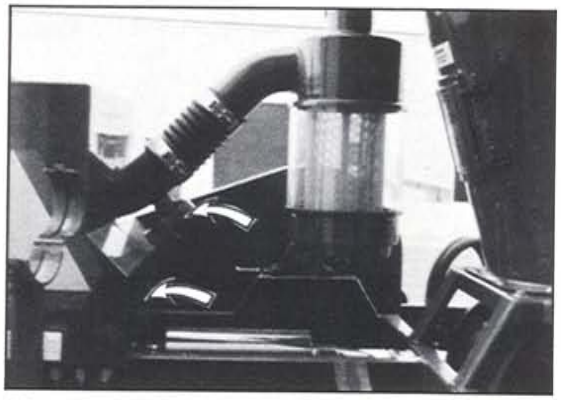
**Blower**

Serial No. _____ Part No. _____



*Pressure Relief Valve* *Figure 1*

*Serial # machine*



*Vacuum Relief Valve* *Figure 2*

*Serial # blower*
*Part # blower*

## SAFETY

Safety involves common sense. Be conscientious and observe the rules outlined in this section.

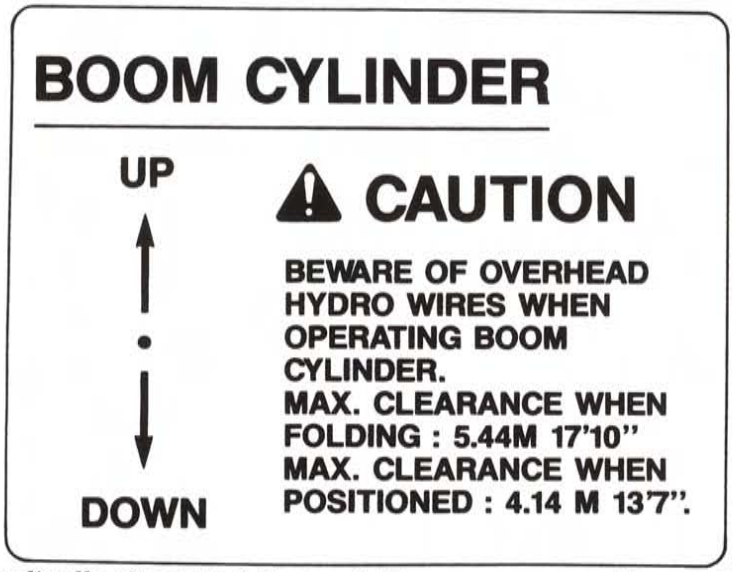
### Starting Up

- Be sure drawbar pin is secured.
- Be sure jack is locked in horizontal position.
- Attach power take-off (PTO) shaft properly to machine and to the 1000 RPM or 540 RPM PTO shaft of tractor, depending on CONVEYAIR model.
- Attach shield chains to prevent shield from rotating with PTO shaft. Be sure PTO shaft can rotate freely (see figure 3).
- PTO shaft should be in line with drawbar to assure proper transfer of torque.


*Figure 3*

**General Operation**

- Attach hydraulic lines properly so airlock rotates as arrow indicates when airlock control is in forward position.
- Stay clear of PTO shaft, intake nozzle and discharge when engaging tractor PTO.
- Always engage tractor PTO slowly and at low engine speed.
- Never operate the machine without the shields in place.
- Stand clear of truck loading kit.
- When raising or lowering boom beware of overhead hydro wires (see figures 4 and 5).
- Never open the receiver section inspection door while the tractor is running or while the hydraulic hoses are attached to the tractor hydraulics (see figure 6).
- When attaching cyclone to boom always be sure to lock levers in place with cotter pins.
- Never remove elbow from airlock outlet when hydraulic hoses are attached to tractor hydraulics (see figure 7).




*Decal — Hydraulically Operated Boom Lift* *Figure 4*


*Decal — Manually Operated Boom Lift*
*Figure 5*


*Decal — All Models* *Figure 6*


*Decal — All Models* *Figure 7*

**Shut Down**

- Stay clear of truck loading boom when folding the truck loading kit.
- During cold weather or high humidity conditions, run machine at low idle 5-10 minutes to ensure proper cool down and removal of condensation.
- After conveying oilseeds run machine at low idle 5-10 minutes to ensure removal of oil.

**Maintenance**

- Never service or lubricate when the machine is running.
- Relieve hydraulic pressure and disconnect the hoses before working on the hydraulic system.

**Hydraulic System**

- Be sure to maintain positive connections and keep all connectors and fittings clean.
- When searching for suspected leaks in the hydraulic system be sure to use proper hand and face protection.
- Fluid escaping from a small hole may be nearly invisible under high pressure . . . use a piece of cardboard to locate suspected leaks (see figure 8).
- Fluid escaping under pressure from a small hole can penetrate the skin and cause infection and toxic reaction. If skin penetration occurs see a doctor immediately.

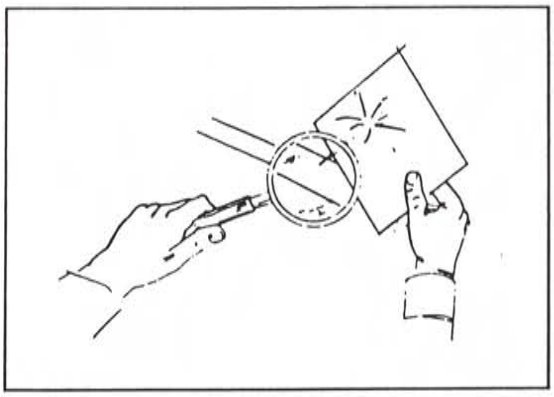


*Figure 8*

**Blower** (Air Pump)

- Do not attempt to change the setting on vacuum relief valves.
- Do not disassemble the blower without authorization since this will void the warranty.
- Do not operate blower with open inlet or outlet. Blower has rotating impellers . . . at all times avoid contact with rotating parts. Always keep shields in place.
- Do not remove belt cover during operation.

**Hearing Protection**

- Prolonged exposure to excessive noise can cause impairment of hearing. Wear suitable protection such as earplugs or earmuffs.

**Towing**

- Your machine comes equipped with farm implement tires and a slow moving vehicle sign. Do not tow at speeds exceeding 30 kilometres (20 miles) per hour.

## General

When operating the machine the PTO shaft should be in line with the drawbar of the CONVEYAIR to avoid unnecessary wear and possible damage to the driveline components.

The blower is belt driven. If slippage is observed check the driveline and check whether the blower can rotate freely.

To check free movement of the blower, disconnect the PTO shaft, lift up the V-belt cover, and turn the large pully by hand (see figure 9).

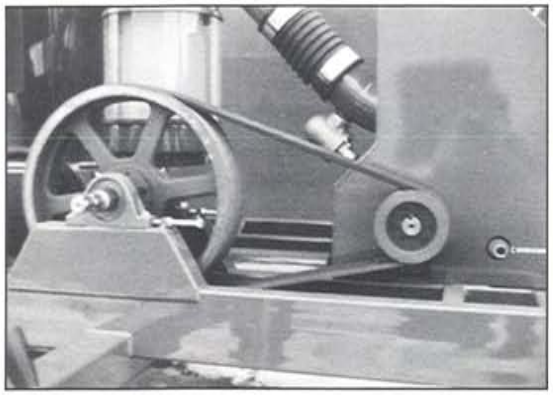


*Figure 9*

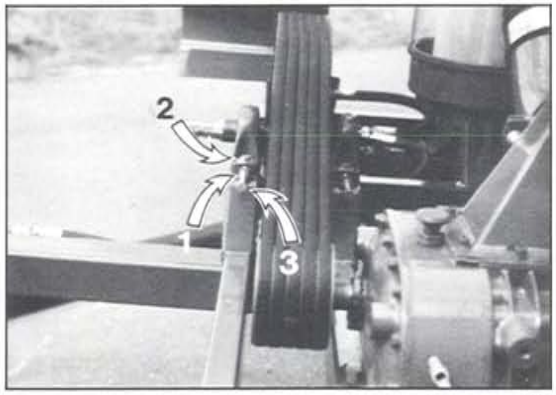



*Figure 10*

**CAUTION — Always engage the PTO of the tractor slowly and at a low RPM.**

A slow engagement and a gradual acceleration of the PTO shaft saves the driveline of your machine and increases the belt life.

New belts should be checked after the first ½ hour of running, and adjusted if necessary (see figure 10). For procedure to tighten belts see page 16.

## Hydraulics

Economy — When tractor hydraulics are engaged, the airlock should run in a counterclockwise direction as indicated by the arrow above the airlock (see figure 12). If the airlock turns the opposite direction, reverse the hydraulic lines going to the tractor, or change the position of the tractor hydraulics lever.

Deluxe — When engaging the hydraulics always check whether the airlock turns the proper direction. When the airlock control is in the FORWARD position, (see figure 11) the airlock must turn counterclockwise as the arrow above the airlock indicates (see figure 12).

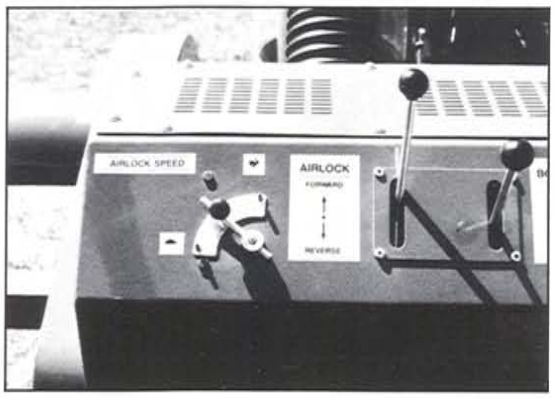


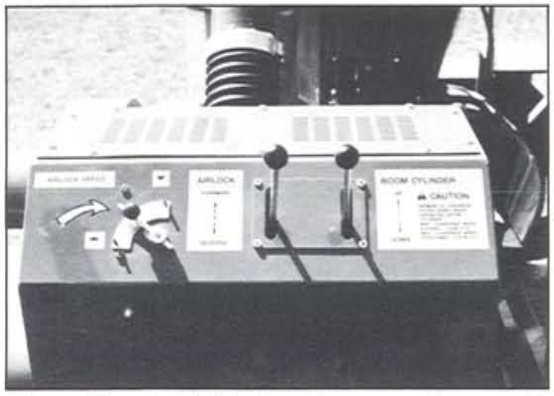

*Figure 11*

*Figure 12*

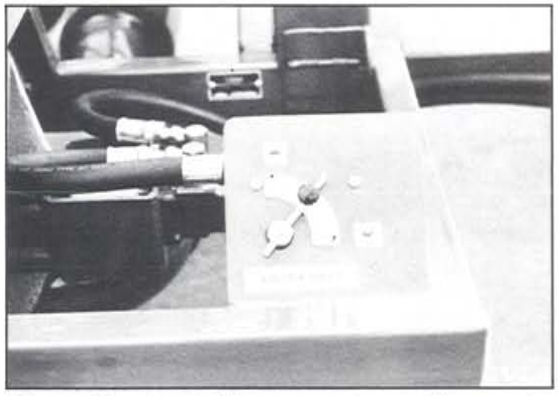
When the hydraulics function as described on page 5, the hydraulic motor is protected against overload by the pressure relief of the flow control valve (see figures 13 and 14).

The pressure relief at the flow control valve is set at 800 psi.

Consult your tractor Operator's Manual regarding proper operation of remote hydraulic motors.




*Flow Control (Deluxe)* *Figure 13*



*Flow Control (Economy)* *Figure 14*

**Deluxe** — The boom cylinder is activated and the truck unloading kit unfolded when the cylinder control is pushed in the UP position (see figure 15).

When folding the truck loading kit, push the cylinder control in the DOWN position.

Caution must be exercised when unfolding the truck loading kit. Beware of overhead hydro wires or other obstructions.

**Airlock** (Rotary Valve)

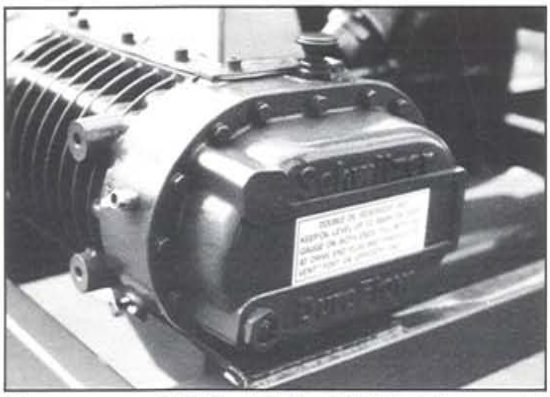
The RPM of the airlock ranges from 0 to 70 RPM. Airlock speed is determined by the density of the grain that is being conveyed by the machine. The general rule that applies is: the larger and heavier the grain kernel, the faster the airlock should turn.

| | |
|---|---|
| BARLEY | = Airlock speed 55-65 RPM |
| CANOLA | = Airlock speed 35-45 RPM |
| CORN | = Airlock speed 45-55 RPM |
| FLAX | = Airlock speed 35-45 RPM |
| WHEAT | = Airlock speed 45-55 RPM |

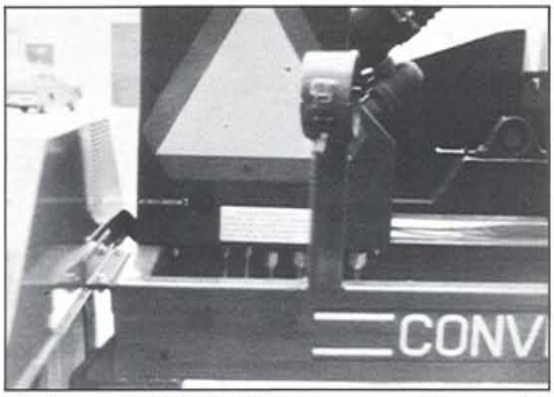
The above are guidelines only (based on Truck Loading Application). Proper adjustment is explained under Start Up and Operation. Note: Airlock speed may vary depending on suction and discharge lengths.

**Blower** (Air Pump)

Check the oil level of the blower daily. Be sure that the machine is parked level when checking the oil (see figure 15 and figure 16). On models 3950, 4000 the front gear case is lubricated with grease and the rear gear case with oil (see figure 17).



*Economy (1950, 2450, 2950) Figure 15*

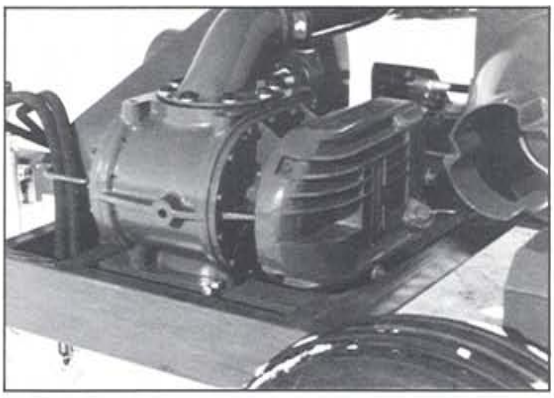



*Deluxe (3000, 3500) Figure 16*

**Filter** (External)

At the suction side of the blower (between the receiver section and the blower) an external filter protects the blower and prevents particles from being drawn into the blower by the airstream.

In case the filter becomes dirty or clogged, easy clean-out can be achieved by loosening the wingnut at the bottom of the filter and removing the bottom cover (see figure 18 and figure 19).



*Wade Blower Figure 17*

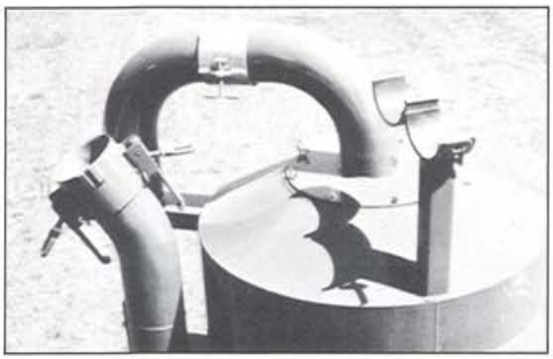
*Wingnut Figure 18*

*Filter Cover Figure 19*

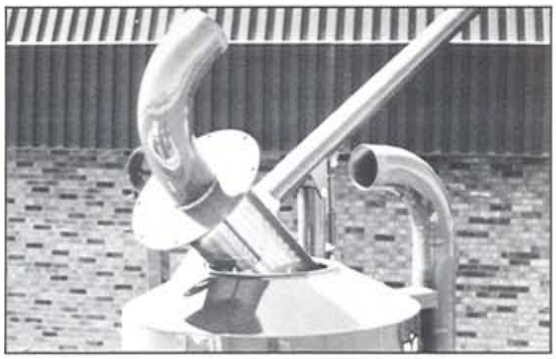
When replacing the bottom cover of the filter be sure that the rubber washer and flat washer above the wingnut are placed properly. This will avoid drawing false air.

**Filter** (Internal)

Machines that do not have an external filter have an internal filter located in the receiver tank. This filter can be removed by taking off the wing nuts and by loosening the quick clamp (see figure 20). This way the filter can be pulled out and cleaned if necessary (see figure 21). The filter is accessible through the inlet opening or inspection door on the receiver tank and can be cleaned if needed by rubbing the filter element with a brush or your hand.



*Top Filter* *Figure 20*



*Internal Filter* *Figure 21*

**General Guidelines**

When transferring granular material with your CONVEYAIR always try to keep the suction line as short as possible and minimize the number of bends. This will reduce the wear on elbows and flexible hose and will maximize the capacity of the machine.

When the machine does not need to be used at full capacity, e.g., when cleaning bins, throttle down the tractor approximately 30-40%.

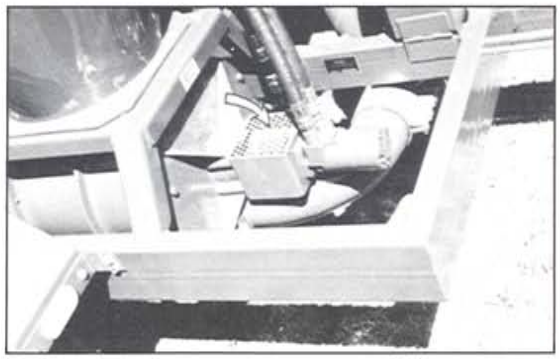
For best capacity the tractor PTO should run at full RPM, 540 or 1000 RPM depending on model, and the airlock between 45 and 55 RPM. The grain level in the receiver section should be kept to approximately the level of the inspection door (see figure 22).

When using the seed drill clean out kit, operate the tractor at idle only to reduce suction air flow. The receiver tank can be used as a holding tank by stopping the airlock until the seed can be discharged into truck or storage.

**Start Up and Operation**

When starting up the CONVEYAIR run tractor PTO at full RPM. When conveying wheat set airlock speed at 50 RPM, when conveying barley and corn at 60 RPM.

*Grain Level* *Figure 22*



*Airlock Speed* *Figure 23*

Determine the RPM of the airlock by counting the number of revolutions of the chain coupler (see figure 23). Increase or decrease the number of revolutions by adjusting the flow control (see figure 10 and figure 13, page 7). Open the airslide on the intake nozzle approximately 2 inches. Insert the intake into the grain. To achieve maximum capacity, adjust airlock speed to allow the grain level inside the receiver tank to stay at the level of the inspection door.

Slowly close the airslide on the bin nozzle until the machine begins to surge. Then open airslide until machine runs smoothly. If necessary adjust airlock speed to maintain grain level inside the receiver tank at the level of the inspection door.

The airlock speed is meant to control the level of grain in the tank above the airlock. Proper maintenance of this level ensures maximum capacity of the machine. Grain levels can increase due to excessive, as well as insufficient airlock speed. If there is a build up in the tank and the airlock is turning in excess of 65 RPM reduce speed until the correct level is achieved. As well, if the airlock speed is below 30 RPM, and there is a build up in the tank increase speed until the correct level is achieved. Remember, if airlock speed is too slow build up will occur due to reduced transfer of grain from the vacuum to pressure side. If the airlock turns too fast the segments of the airlock will not fill completely causing a build up in the tank due to reduced efficiency in transfer of grain from vacuum to pressure side.

### Shut Down

When shutting down the CONVEYAIR, take the nozzle out of the grain, throttle down the tractor and disengage the tractor PTO. To ensure complete clean out of the machine, engage the PTO again at low tractor RPM and accelerate to top speed approximately 1-2 minutes. Throttle down the tractor, disengage the PTO, and disengage the hydraulic valve in the tractor.

If the CONVEYAIR is shut down just to change trucks, it is not necessary to readjust the airlock speed and airlock setting.

When the machine has been used to convey oilseeds, e.g., sunflower seeds, leave the CONVEYAIR idling for approximately 5 minutes, then disengage the tractor PTO.

### Long Distance Blowing

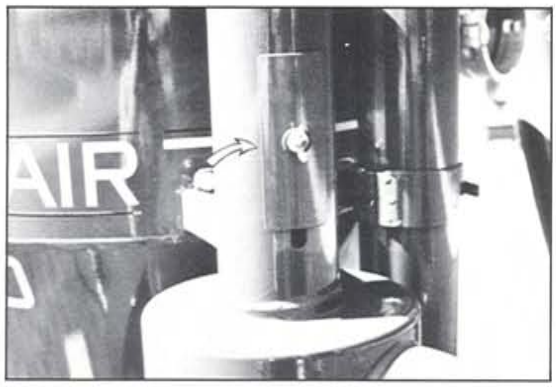



*Figure 24*

An airslide located on the air line between the receiver tank and the air pump is used to assist in long distance blowing and also in cooling the air pump. This air slide should only be used if the air pump or the pressure line between the air pump and the airlock is getting too hot to touch, or if discharge length is in excess of 40 feet. The rule of thumb in long distance blowing is to open the slide ¼" - ½" for every 100 feet of distance. This may change according to type of grain and if this grain is being moved vertically of horizontally. Remember, opening the airslide too far can affect capacity as adversely as not opening it at all.

### Long Distance Suction

When sucking grain more than thirty feet try to avoid using flex line. Use instead straight piping. Remember, the straighter the suction line the greater the efficiency of the CONVEYAIR being used. If an overheating situation is encountered during

long distance suction, the airslide between the receiver tank and the air pump (see figure 24) may be opened to supply cool air to the system. The resulting loss of suction capacity will be compensated by the increased efficiency of cooler air and a cooler air pump.

**Applications**

Your CONVEYAIR can be used in many ways as a means to convey granular material from point A to point B. Power demand and capacity will depend on the application and the type of material being moved. Extended intake or discharge lines reduce the capacity of the machine, as do the number and angle of bends.

**Truck Loading Kit**

Economy models — Unlatch clamp, (see figure 25) and jack the boom up enough to clear the clamp. Rotate the boom towards the rear of the machine with the swivel handle until the boom is clear of the rear of the machine. Loosen the screw on the jack (see figure 26) and lower the boom completely. Remove the

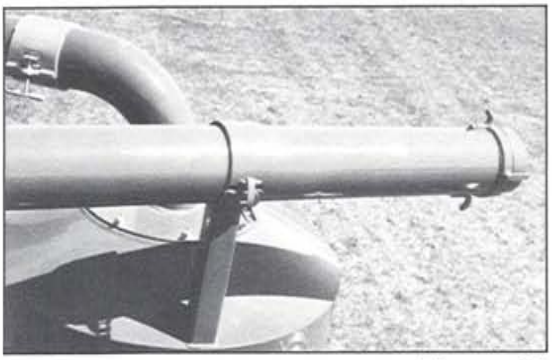


*Figure 25*

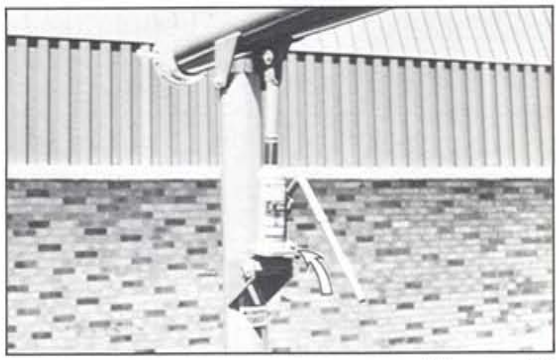


*Figure 26*

cyclone assembly (see figure 27) from the transport position and attach the boom with the self-locking levers and secure with hair pins (see figure 28). Raise the boom

*Figure 27*

*Figure 28*

assembly with the jack and a special handle (see figure 29). Swing into position over the truck, and secure with the lock bolt (see figure 29). Attach the rear flex elbow to the airlock outlet (see figure 30) and then to the boom end (see figure 29). Slowly and carefully lower the cyclone until it is horizontal and tighten the jack screw. Then proceed to load the truck.

To place unit into transport, reverse the above procedure.

**Caution: Be sure to release jack screw valve for transport.**

*Figure 29*

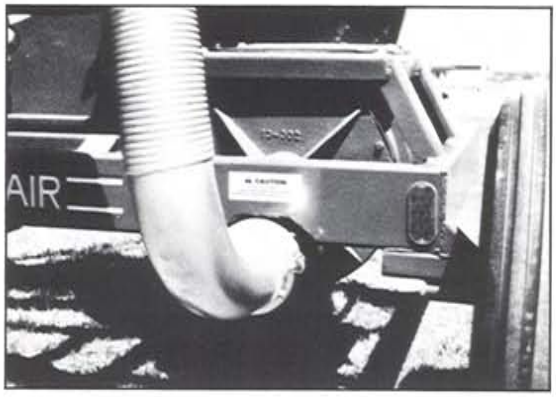



*Figure 30*

Deluxe Models — Detach clamp (see figure 31) and lift the boom out of its seat. Rotate the boom towards the rear of the machine. Remove the cyclone assembly from the transport position (see figure 32) and attach to the boom with self-locking levers (see figure 33).

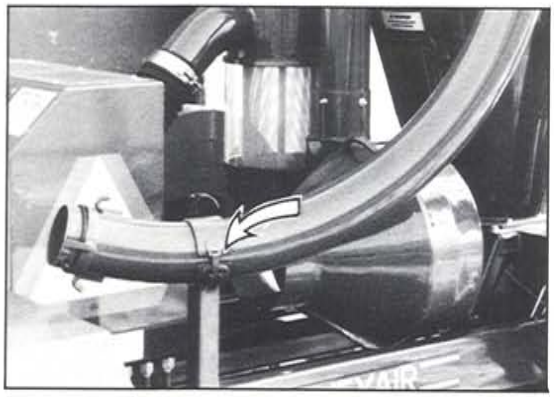


*Figure 31*

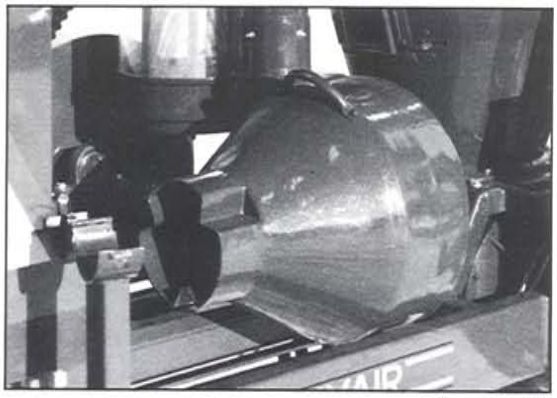


*Figure 32*

The self-locking levers assure a positive hook-up. Be sure to insert the cotter pins behind the self-locking levers. Levers may unlock because of vibration if this is not done (see figure 33).

By activating the hydraulic valve, (see figure 34) slowly and carefully lift the boom into the operating position and proceed to load the truck. To place the unit into transport, simply reverse the above procedure.

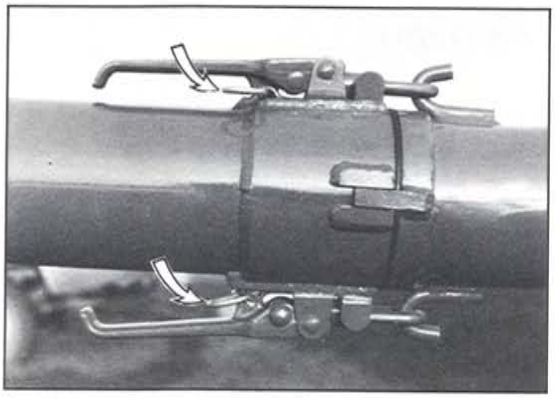


*Figure 33*

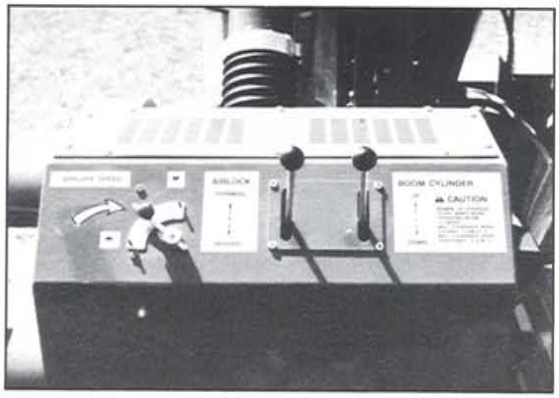


*Figure 34*

*Figure 35*

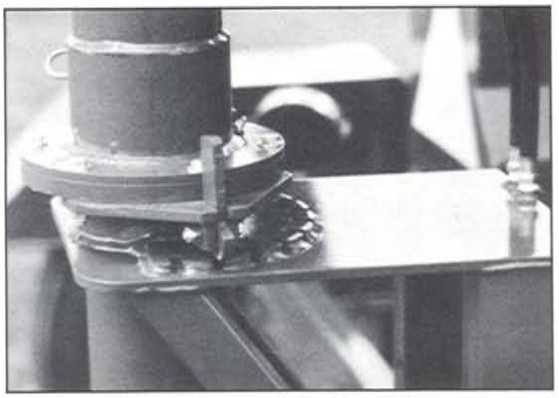


*Figure 36*

The boom can be rotated 180 degrees to position the boom properly over the truck, and locked every 15 degrees (see figure 35 and figure 36) to prevent boom movement.

### Filling Bins

Economy — When discharging into bins simply detach the couplers from the truck loading kit and hook up the piping going to the bins (see figure 30).

Deluxe — When discharging into bins, take off the bottom elbow behind the airlock (see figure 37), and hook up the machine to stationary or other piping.

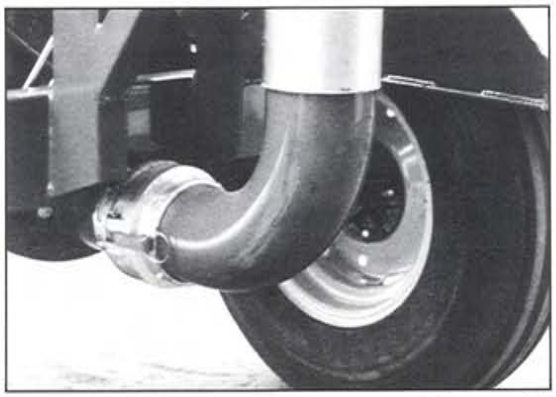


*Figure 37*

### Splined Shaft

The splined shaft bearings should be lubricated every 10 hours of machine operation (see figure 38).

### PTO Shaft

Lubrication of the PTO shaft bearings should be done as illustrated in figure 39.

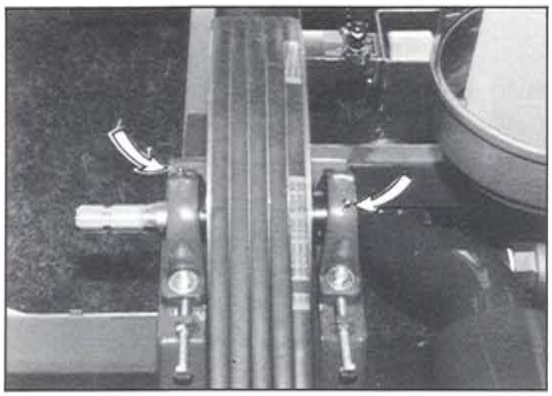
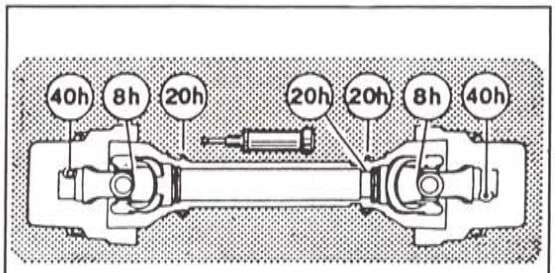


*Figure 38*

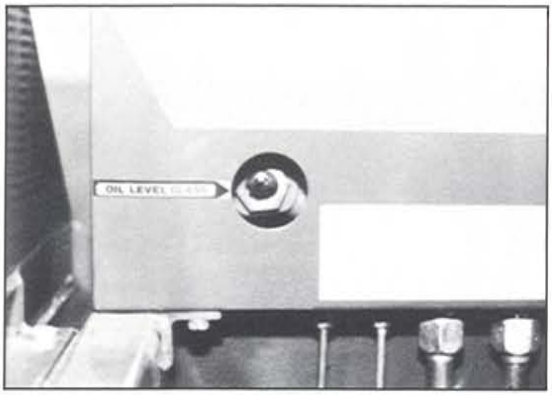



Lubricate after number of hours of operation indicated above

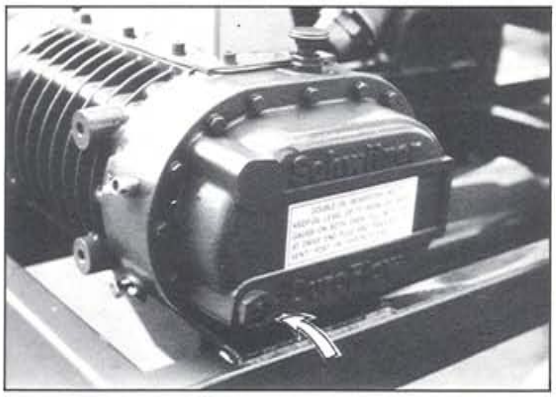
*pto shaft* *Figure 39*

**Blower** (Models 1950, 2450, 2950, 3000, 3500)

The blower has two oil compartments, one at either end. Check the oil level of both compartments after every 10 hours of operation. Oil should be in the centre of the oil level glass. When checking the oil level be sure that the machine is parked level (see figure 40 and figure 41).

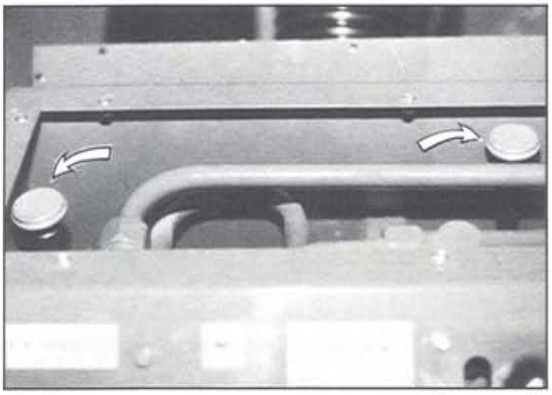


*Deluxe* *Figure 40*

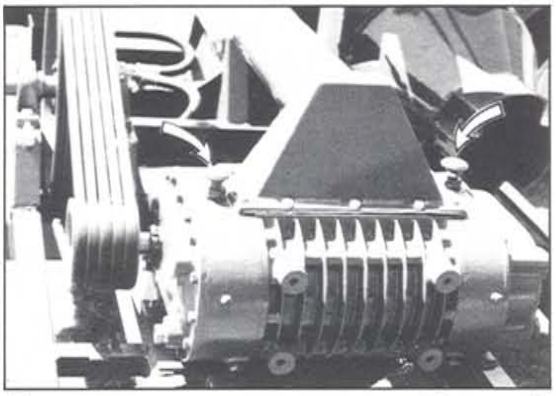


*Economy* *Figure 41*

To add oil, remove the cover of the cabinet, (on Deluxe) and unscrew the breather cap. DO NOT OVERFILL. Too much oil will result in overheating and inadequate lubrication. Add oil and screw the breather cover back on (see figure 42 and figure 43).



*Deluxe* *Figure 42*



*Economy* *Figure 43*

Change oil every 100 hours of operation or every 6 months, whichever comes first.

Drain the oil by removing the oil drain plugs at the bottom of the oil compartments at each end of the blower. After draining, replace the drain plugs. Remove the breather caps and refill the oil compartments until the oil level stabilizes at the centre of the level glasses. DO NOT OVERFILL.

Oil used in the blower must meet or exceed the requirements of SAE specifications "SE." Recommended is 15W-40 or 10W-40 multigrade oil.

Oil capacity is approximately 180cc (27½ oz.) per compartment.

Check and clean the breather caps every 50 hours or 3 months whichever comes first. They can easily be cleaned by washing with a commercial solvent and drying with compressed air.

**Blower** (Model 3950, 4000)

The blower has an oil reservoir at the rear (see figure 44) and two grease fittings at the front (see figure 45). Change oil every 100 hours of operation or every 6 months, whichever comes first. Grease front points every 10 hours of operation. Recommended is Texaco Regel AFB 2 grease. The oil level can be checked and added by removing the plug (see figure 44). When changing oil do not overfill as this can cause overheating and seal damage. The oil used must meet or exceed SAE specifications "SE" 10W-40 multigrade oil. Oil capacity of reservoir is 210 cc (32 oz).

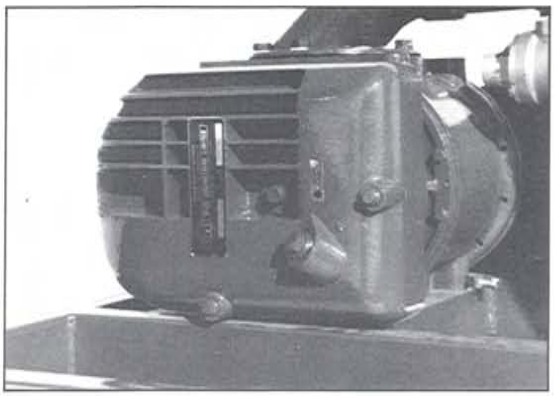


*Figure 44*

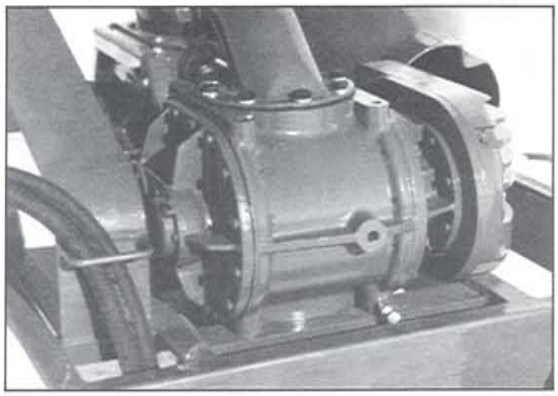


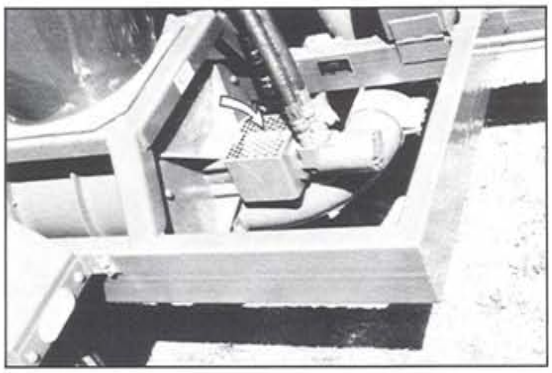
*Figure 45*

**Wheel Bearings**

The wheel bearings should be removed, cleaned and replaced with wheel bearing grease yearly.

**Airlock** (Rotary Valve)

Very little maintenance is required to keep your airlock in good operating condition. The chain coupling should be repacked with grease annually (see figure 46).



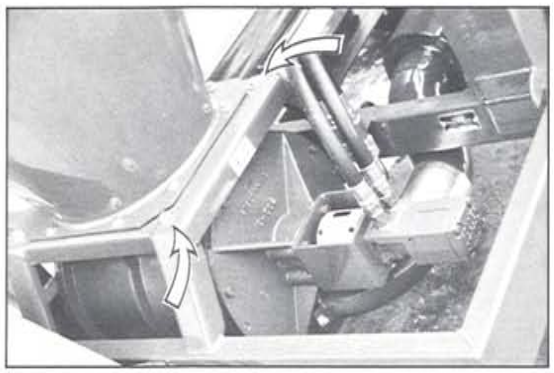
*Chain Coupling* *Figure 46*

**Airlock Clearance**

To check the clearance between the airlock tips and the inside of the airlock shell, remove the hydraulic motor. The airlock can now be rotated freely and the clearance can be checked through the inspection door with a feeler gauge.

The clearance should not exceed .015 inches (15 thou). If adjustment of the tips is necessary, the airlock needs to be taken off the machine.

When removing the airlock, disconnect the airlock intake and outlet tubes and the hydraulic hoses leading to the motor. Use a floor jack to support the airlock. Loosen the four bolts which support it and lower the airlock carefully (see figure 47). The airlock can then be pulled from under the machine.



*Airlock Support Bolts* *Figure 47*

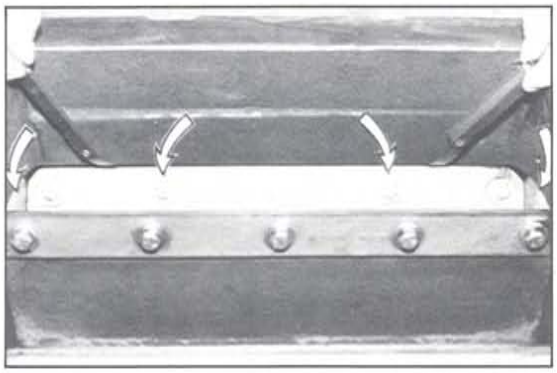


*Figure 48*

Step 1: Place a strip of .008″ shimstock between each side of rotor and endplate.

Step 2: Loosen bolts of rotor tip, and place two .005″ feeler guages between rotor tip and inside of shell housing; push rotor tip tight against inside wall and tighten the second and the fourth bolt (see figure 48).

Step 3: Remove feeler guages and shimstock and rotate rotor. If it runs freely, tighten the other three bolts. Then continue to do the other tips using the same procedure. If rotor does not run freely and excessive scraping occurs, tap tip back slightly with small hammer. Clearance between tip and shell wall should not exceed .010″ (10 thou).

Step 4: When finished adjusting all 10 tips, tighten bolts up to 25 foot pounds using torque wrench.

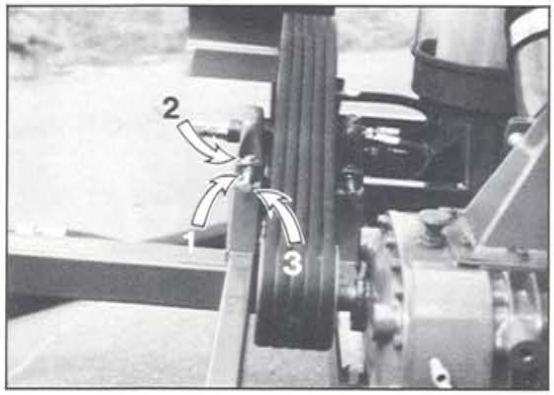



*Figure 49*

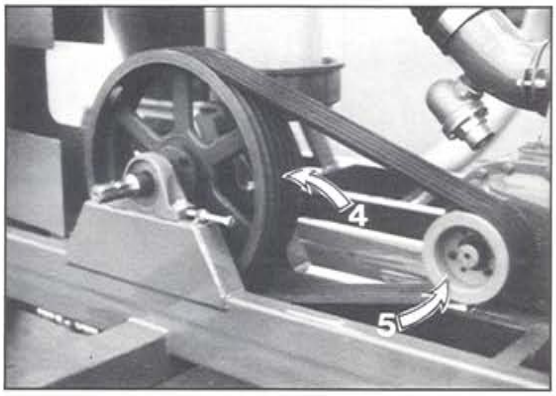



*Figure 50*

**V-Belt Drive**

Check the belt drive at regular intervals. When tightening belts, loosen jam nuts (1) and bearing bolts (2). Tighten tension bolts (3) until the belts are properly adjusted — approximately 1″ deflection. The V-belt drive must be carefully aligned (see figure 49).

The PTO driven pulley (4) and the blower pulley (5) must be parallel to each other and in the same plane within 2 mm (1/16″) (see figure 50).

Belt tension should be adjusted and tightened only enough to prevent slippage. Tighten bearing bolts and jam nuts. Over-tightening of the belts leads to heavy bearing loads and unwarranted premature failure.

When belts need replacement, always use a matched set.

**Caution: Do not over-tighten belts.**

*Figure 51*

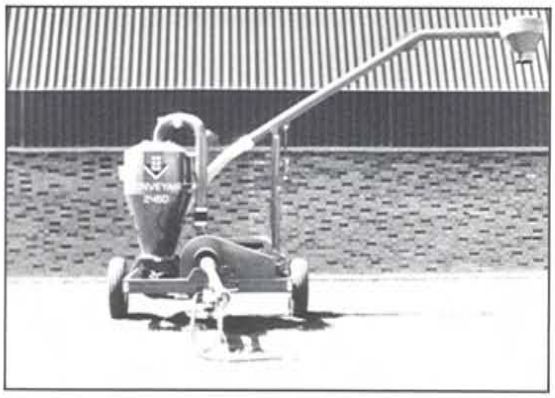


*Figure 52*

**Recommended Accessory Packages**

#1 — CONVEYAIR 1950, 2450, 2950, 3000

1 - 4″ Cleanup Nozzle
1 - 4″ × 14′ Poly Hose c/w couplers
2 - 5″ × 10′ Steel Flex Hose c/w couplers
1 - 5″ Full Bin Nozzle (see figure 53)

#2 — CONVEYAIR 1950, 2450, 2950, 3000, 3500

1 - 5″ Cleanup Nozzle (see figure 54)
1 - 5″ × 14′ Poly Hose c/w couplers
2 - 5″ × 10′ Steel Flex Hose c/w couplers
1 - 5″ Full Bin Nozzle (see figure 53)

#3 — CONVEYAIR 3950, 4000 only

1 - 5″ Cleanup Nozzle (see figure 54)
1 - 5″ × 14′ Poly Hose c/w couplers
2 - 6″ × 10′ Steel Flex Hose c/w couplers
1 - 6″ Full Bin Nozzle

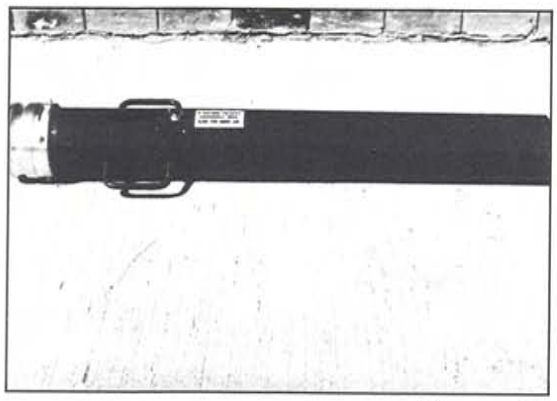


*Figure 53*

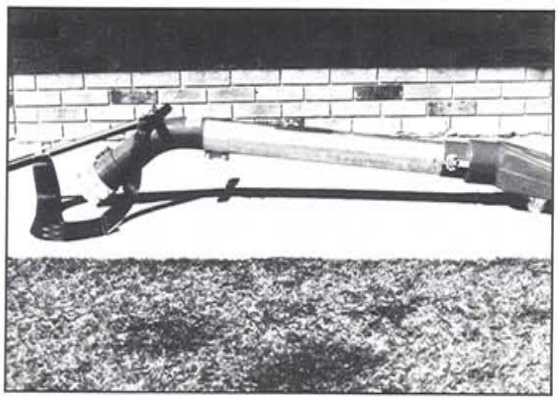


*Figure 54*

## TROUBLE SHOOTING

| Problem | Cause | Solution |
|---|---|---|
| Low capacity. | Tractor PTO runs slow. | Speed up tractor PTO to 1000 RPM. |
| | 540 rather than 1000 RPM. | Change tractor or PTO shaft. |
| | Belts are slipping. | Tighten belts. (see page 16). |
| | Airlock runs too fast. | Slow down airlock speed until grain builds up to a level of inspection door. |
| | Improper air intake. | Adjust air intake (see start up, page 8). |
| | Improper use of nozzle. | Use full bin nozzle for larger piles and full bins. Use cleanup nozzle with flare for cleanup only. Do not submerge airslide in grain. |
| | Air-leaks intake. | Check for worn coupler levers or missing coupler gaskets. Check flex hose and tubing. |
| | Air-leaks machine. | Check filter, receiver section, and airlock gaskets. Check pressure and vacuum relief valve. Check clamps on airline between receiver tank and air pump. |
| | Improper piping. | Keep suction lines as short as possible. Minimize bends. Use straight lengths of pipe wherever possible. |
| | Filter plugged. | Remove bottom cover and clean out filter (see page 8). (Deluxe only). |
| | Filter excessively dirty. | Remove and clean filter (economy only). |
| | Airlock tip clearance excessive. | Adjust airlock tips (see page 15). |
| Excessive grain damage. | Too much air intake. | Adjust air at intake nozzle. |
| | PTO running too fast. | Throttle down tractor. |
| | Damaged tubing or flex line. | Repair and replace when necessary. |
| Pulsation. | Insufficient air at intake. | Open slide until grain flow becomes even. |
| | Improper airlock speed. | Adjust airlock speed until grain is at level of the inspection door (see Start Up, page 8). |
| | PTO running too slow. | Increase PTO RPM. |
| | Belts are slipping. | Tighten belts (see page 14). |

| Problem | Cause | Solution |
|---|---|---|
| Pulsation. cont. | Excessive airlock tip clearance.<br>Airlock turning too slowly.<br>Obstruction in suction line. | Adjust airlock tips.<br>Adjust airlock speed until grain is at proper level on inspection door.<br>Shut down machine and clear obstruction. |
| Filter plugs up. | Airlock turning too slow.<br>Airlock not turning at all. | Increase airlock speed, until grain is at the level of the inspection door (see General Guidelines, page 8).<br>Shift airlock control from FORWARD to REVERSE and back to FORWARD. If the obstruction does not clear up, shut off tractor and machine, open up inspection door and remove the cause of obstruction. |
| Airlock not turning fast enough. | Flow control valve for airlock speed set too low.<br>Faulty tractor hydraulics. | Reset flow control to increase airlock speed.<br>Use different tractor. |
| Airlock not turning. | Flow control valve for airlock speed set too low.<br>Tractor hydraulics not properly engaged.<br>Obstruction in airlock. | Reset flow control.<br>Reset tractor hydraulics.<br>Shift airlock control from FORWARD to REVERSE and back to FORWARD. Repeat if obstruction does not clear up. If obstruction does not clear up, shut off tractor and machine, open up clean out door and remove the cause of obstruction. |
| Hydraulic oil heating up excessively. | Faulty tractor hydraulics.<br>Low oil level. | Use different tractor.<br>Add oil. |
| Excessive wear flex hose and tubing. | Improper piping.<br>Too much air intake.<br>PTO running too fast. | Minimize bends.<br>Adjust air intake nozzle.<br>Throttle down tractor. |

IF YOU HAVE OTHER PROBLEMS, CONSULT YOUR LOCAL CONVEYAIR DEALER

## SPECIFICATIONS

| | DELUXE MODELS | ECONOMY MODELS |
|---|---|---|
| Length | 2.77 M (8 ft. - 10 in.) | 2.77 M (8 ft. - 10 in.) |
| Width | 2.41 M (7 ft. - 11 in.) | 2.34 M (7 ft. - 8 in.) |
| Height (transport) | 2.36 M (7 ft. - 9 in.) | 2.36 M (7 ft. - 9 in.) |
| Height (extended boom) | 4.14 M (13 ft. - 7 in.) | 4 M (13 ft.) |
| Maximum Clearance (under cyclone when loading) | 3.70 M (12 ft.) | 3.60 M (11 ft. - 10 in.) |
| Weight | 962 kg (2120 lbs.) | 907 kg (2000 lbs.) |
| Tire Size | 7.60 × 15 | 7.60 × 15 |
| Tire Pressure | 25 PSI | 25 PSI |
| PTO speed (1950) | | 540 RPM |
| PTO speed (2450, 2950, 3000) | 1000 RPM | 1000 RPM |
| PTO speed (3950, 4000) | 1000 RPM | 1000 RPM |
| Minimum HP (1950) | | 60 HP |
| Minimum HP (2450, 2950, 3000) | 80 HP | 80 HP |
| Minimum HP (3950, 4000) | 100 HP | 100 HP |

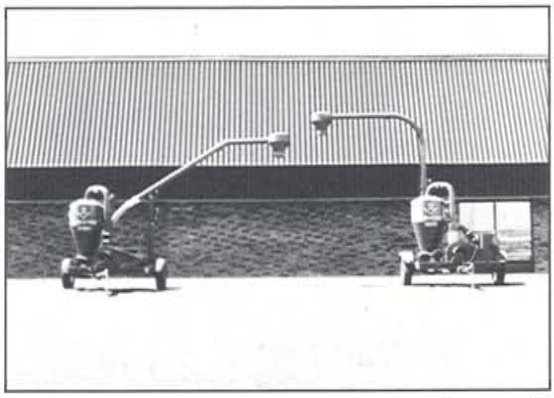


*Figure 55*

## LIMITED WARRANTY

VANA INDUSTRIES LTD. ("Vana") warrants to the buyer that the new CONVEYAIR ("the new machinery") is free from defects in material and workmanship.

This warranty is only effective as to any new machinery, which has not been altered, changed, repaired or treated since its delivery to the buyer, other than by Vana or its authorized dealers or employees, and does not apply to accessories, attachments, tools or parts, sold or operated with the new machinery, if they have not been manufactured by Vana.

Vana shall only be liable for defects in the materials or workmanship attributable to faulty material or bad workmanship that can be proved by the buyer, and specifically excludes liability for repairs arising as a result of normal wear and tear of the new machinery or in any other manner whatsoever, and without limiting the generality of the foregoing, excludes application or installation of parts not completed in accordance with Vana's Operator's Manual, specifications, or printed instructions.

Written notice shall be given, by registered mail, to Vana within seven (7) days after the defect shall have become apparent or the repairs shall have become necessary, addressed as follows:

Vana Industries Ltd.
92 De Baets Street
Winnipeg, Manitoba, Canada R2J 3S9

This warranty shall expire one (1) year after the date of delivery of the new machinery.

If these conditions are fulfilled, Vana shall at its own cost and at its own option either repair or replace, any defective parts provided that the buyer shall be responsible for all expenses incurred as a result of repairs, labour, parts, transportation, or any other work, unless Vana has authorized such expenses in advance.

This warranty shall not extend to any repairs, changes, alterations, or replacements made to the new equipment other than by Vana or its authorized dealers or employees.

This warranty extends only to the original owner of the new equipment.

This warranty is limited to the terms stated herein and is in lieu of any other warranties whether express or implied, and without limiting the generality of the foregoing, excludes all warranties, express or implied or conditions whether statutory or otherwise as to quality and fitness for any purpose of the new equipment. Vana disclaims all liability for incidental or consequential damages.

VANA INDUSTRIES LTD.

# VANA INDUSTRIES LTD.

WINNIPEG, MANITOBA, CANADA