



**MODELS: 6614D, 7614D,
7816D & 8614D**

**ULTRA-VAC[®]
OPERATOR'S MANUAL**



WALINGA Start-up/Commissioning Form

<i>This form must be filled out by the sales representative and/or dealer; and signed by both the sales representative and/or dealer and the customer at the time of delivery.</i>			
<i>Delivery date: MM/DD/YYYY</i>			
<i>Owner Operator Name</i>		<i>Sales Representative / Dealer Name</i>	
<i>Phone</i>		<i>Phone</i>	
<i>Email</i>		<i>Email</i>	
<i>Address</i>		<i>Address</i>	
<i>City</i>	<i>Prov/State</i>	<i>City</i>	<i>Prov/State</i>
<i>Postal Code/ZIP</i>	<i>Country</i>	<i>Postal Code/ZIP</i>	<i>Country</i>
<i>Unit Serial Number</i>			
<i>Blower Serial Number</i>		<i>Airlock Serial Number</i>	

CONFIRMATION OF ACTIONS COMPLETED	
	All items and features accounted for
	Pre-delivery inspection
	Review of warranty terms
	Review of standard notes and terms
	Review operating and safety instructions
	Operator manual supplied
	Supplemental documents supplied
	Guards installed and secured
	All safety signs identified and reviewed
	Discussion regarding applicable standards (see statement on reverse)

WALINGA

Start-up/Commissioning Form

It is the responsibility of the Owner Operator to review and determine compliance to local and federal regulations. These regulations include, but are not limited to, local and federal laws as well as standards published by the NFPA (National Fire Protection Agency), ISO (International Organization for Standardization), OSHA (Occupational Safety and Health Administration) or OH&S (Occupational Health and Safety Standards), and ANSI (American National Standards Institute). *Please note: It is a requirement in NFPA 652 that the final operator completes a dust hazard analysis (DHA) of their facility and the products and processes it contains.* Based on this, Walinga understands that a DHA is required to be completed by the owner/operator prior to start-up/commissioning. In the event that a DHA is not available at start-up/commissioning, the owner/operator must provide written acknowledgement of their responsibility and intention to complete a DHA. The owner/operator also agrees that they shall be solely responsible for ensuring that any applicable NFPA standards and regulations shall be satisfied in conjunction with the incorporation of Walinga's equipment into the buyer's specific system of operations.

Date: _____ Owner Operator's Signature: _____

The above equipment has been received by me and I confirm that the sales representative / dealer has completed the start-up/commissioning process.

Date: _____ Owner Operator's Signature: _____

I have completed the actions listed above and confirm that the owner operator has completed the start-up/commissioning process.

Date: _____ Dealer Representative's Signature: _____

I have completed the actions listed above and confirm that the owner operator has completed the start-up/commissioning process.

Date: _____ Manufacturer Representative's Signature: _____

Additional notes:

Walinga Inc.

Pneumatic Conveying System

Warranty Terms

Walinga Inc. is committed to providing a quality product that will meet or exceed your expectations for many years to come. Our warranty terms and our warranty claim process has been designed to ensure that each warranty claim will be resolved in an orderly, fair and timely manner.

The Warranty

Walinga Inc. ("Walinga") warrants that all new pneumatic products sold by Walinga Inc. will be free from defects in material and workmanship (the "Walinga Warranty").

Warranty Period

The warranty period for the Walinga Warranty shall expire on the date that is the earlier of: two (2) years after the date of delivery to the original customer; or upon the expiration of five hundred (500) hours of operation; whichever date comes first.

Limitations of and exclusions from the Walinga Warranty

- The Walinga Warranty applies to material and workmanship only.
- With respect to any component parts that are supplied or manufactured by others, the warranty coverage on such component parts will be strictly limited to the warranties of the manufacturers of such component parts.
- The Walinga Warranty shall only be for the benefit of the original purchaser of the pneumatic products.
- A Walinga Warranty may be transferable by the original purchaser to a third party for the balance of the warranty period then remaining, provided that Walinga consents in writing to such transfer of warranty.
- The Walinga Warranty is conditional upon proper storage, installation, use, maintenance, operation and compliance with any applicable recommendations of Walinga.

Warranty Claim Procedure

Should you encounter any difficulties with your unit within its warranty period, please contact your local Walinga dealer or sales representative, your local Walinga Service department or Walinga's Warranty Department to submit a warranty claim application.

To speak with a Walinga Warranty Coordinator, contact:

- Canada 1-888-WALINGA (ext 258)
International +1-519-824-8520 (ext 258)
Email – warranty.canada@walinga.com
- USA 1-800-466-1197 (ext 8)
Email – warranty.usa@walinga.com
- Australia 07-4634-7344
Email – mail@customvac.com.au

Required Warranty Claim information

The following information must be provided to Walinga in order for us to properly process and consider your warranty application:

- Customer name and contact information (email if available).
- The equipment serial number and/or Vehicle Identification Number (if applicable).
- Date of claimed failure.
- Equipment hours of operation.
- Details, description and photos (upon request) of the claimed failure and the corrective repairs attempted.

Warranty Conditions

- **Equipment must be registered within 30 days of being received by the buyer. It will be within the sole and unfettered discretion of Walinga as to whether it will honour its warranty on non-registered equipment.**

Warranty Conditions (continued)

- The buyer is responsible for promptly notifying Walinga of any defects to the equipment. The buyer is also responsible for making the equipment available to Walinga or its authorized repair facility for evaluation and repair.
- Prior to making any repairs or parts replacements, a warranty application and any estimated associated costs must be approved with the issuance of a claim number by an authorized Walinga representative. Undertaking any work prior to receiving warranty authorization may result in a partial or complete loss of warranty coverage.
- At Walinga's discretion, warranty repairs may be authorized to be completed at a repair facility convenient to the buyer. In such situations the estimated labour time must be approved by Walinga prior to undertaking any work. Labour hours will be reimbursed at the facilities posted hourly labour rate.
- At Walinga's request, parts in question must be returned to the nearest Walinga service facility for evaluation. In such situations a Returned Goods Authorization (RGA) number will be provided to the buyer. The returning shipment must be clearly labeled with the assigned RGA number and include a copy of the RGA form. Unless otherwise arranged, these parts are to be returned to Walinga within 30 days to ensure timely processing of your warranty claim. Failure to return such parts may result in partial or complete loss of warranty coverage.
- Replacement parts provided under warranty are covered for the remainder of the original equipment warranty period.
- Walinga reserves the right to use new, remanufactured or refurbished components when performing warranty repairs and replacements.
- Walinga is entitled to a reasonable amount of time and a reasonable number of attempts to assess the claim, diagnose the problem, and perform any necessary repairs.
- The warranty offered on used or refurbished equipment is limited to that specified on the purchase contract. Where a warranty period has not been stipulated on the purchase contract., and where such equipment is "used", then such equipment is considered by Walinga to be sold "as is, where is" without the Walinga Warranty. Where such equipment is refurbished, then the Walinga Warranty shall apply.

Without limitation, Walinga reserves the right to reject a warranty claim or for any one or more of the following reasons:

- The warranty claim information provided is insufficient.
- The product evaluation does not substantiate the claim.
- The unit has been operated above and beyond its capacity or not maintained or serviced properly, resulting in damages incurred to major components.
- If the unit was equipped with a factory installed hour meter which has been disconnected, altered or inoperative for an extended period of time; with the result being that the equipment's operating hours cannot be verified.
- It is apparent that the operator's manuals have not been followed.
- The equipment is not registered.

Without limitation, Walinga's Warranty does not cover:

- Damage or deterioration due to lack of reasonable care or maintenance.
- Damage caused or affected by unapproved modifications to the equipment.
- Damage caused by negligence or misuse of the equipment.
- Damage caused by using the equipment for purposes for which it was not designed or intended.

Walinga's liability under this warranty, whether in contract or tort, is limited to the repair, replacement or adjustment of defective materials and workmanship. In no event will Walinga be responsible for any direct, indirect, loss of time, incidental or consequential expenses including, but not limited to, equipment rental expenses, towing, downtime, inconvenience, or any losses resulting from the inability to use the equipment. Further, Walinga shall not be liable for any damages or inconvenience caused by any delay in the supply or delivery of any equipment or component parts thereof.

The selling Dealer/Sales Person makes no warranty of its own and has no authority to make any representation or promise on behalf of Walinga, or to modify the terms or limitations of the Walinga Warranty in any way.

Punitive, exemplary or multiple damages may not be recovered unless applicable law prohibits their disclaimer.

Warranty related claims may not be brought forward as a class representative, a private attorney general, a member of a class of claimants or in any other representative capacity.

The Walinga Warranty and all questions regarding its enforceability and interpretation are governed by the law of the country, state or province in which you purchased your Walinga equipment. The laws of some jurisdictions limit or do not allow the disclaimer of consequential damages. If the laws of such a jurisdiction apply to any claim against Walinga, the limitations and disclaimers contained here shall be to the greatest extent permitted by law.

Dear Customer,

Thank you for choosing WALINGA PNEUMATIC CONVEYING SYSTEMS. For your convenience, should you require any information related to Parts, Service or Technical Engineering, please contact one of the following Walinga Personnel in Guelph at 1-888 925-4642 unless noted*

TECHNICAL - ENGINEERING:

Duane Swaving *226-979-8227 pcs.techsupport@walinga.com

Ken Swaving *519 787-8227 (ext:100) ks@walinga.com

To speak with a Walinga Warranty Coordinator, contact:

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International +1-519-824-8520 (ext 258) Email – warranty.canada@walinga.com
- USA 1-800-466-1197 (ext 8) Email – warranty.usa@walinga.com
- Australia 07-4634-7344 Email – mail@customvac.com.au

GUELPH SERVICE:

Kevin VanderZwaag *(519) 763-7000 (ext:273) kevin.vanderzwaag@walinga.com

ORIGINAL PARTS SALES:

Ontario and Eastern Canada:

(ext: 224) parts.canada@walinga.com

Parts Department Fax: (519) 824-0367

Manitoba and Western Canada:

Chad Yeo * 204-745-2951 (ext: 424) chad.yeo@walinga.com

USA:

John VanMiddlekoop * (800) 466-1197 (ext 3) parts.usa@walinga.com

SALES MANAGER:

Tom Linde *519-787-8227 (ext 5) thl@walinga.com

Peter Kingma (800) 466-1197 jpk@walinga.com

CORPORATE HEAD OFFICE:

5656 Highway 6N

RR#5, Guelph, Ontario, N1H 6J2

PHONE: (888) 925-4642 FAX: (519) 824-5651

www.walinga.com

FACTORY DISTRIBUTION AND SERVICE CENTRES:

938 Glengarry Cres. Fergus, Ontario Canada N1M 2W7

Tel: (519) 787-8227 Fax: (519) 787-8210

1190 Electric Ave. Wayland , MI.USA 49348

Tel: (800) 466-1197 Fax: (616) 877-3474

70 3rd Ave. N.E. Box 1790 Carman, Manitoba Canada R0G 0J0

Tel: (204) 745-2951 Fax: (204) 745-6309

24 Molloy St, Toowoomba, Queensland Australia 4350

Tel: 07-4634-7344 Email: mail@customvac.com.au

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SERIAL NUMBER LOCATION

Always give your dealer the Serial Number of your Walinga Ultra-Vac® when ordering parts or requesting service or other information.

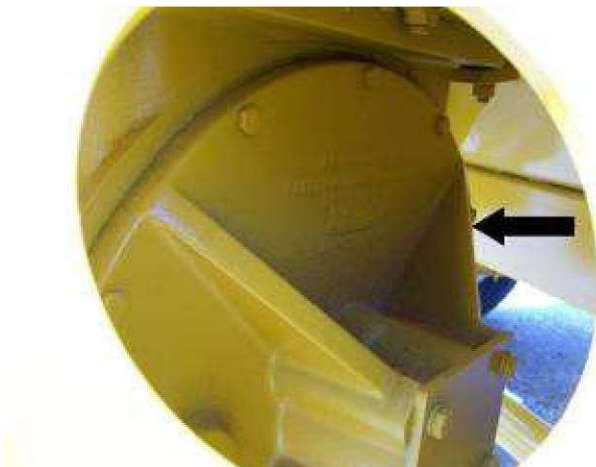
The Serial Number plates are located where indicated. Please mark the number in the space provided for easy reference.



Machine Serial Number



Blower Serial Number



Airlock Serial Number

1 INTRODUCTION

Congratulations on your choice of a Walinga Ultra-Vac[®] to complement your farming operation. This equipment has been designed and manufactured to meet the needs of the discriminating buyer for the efficient moving of grain.

Safe, efficient and trouble free operation of your Ultra-Vac[®] requires that you and anyone else who will be operating or maintaining the machine, read and understand the Safety, Operation, Maintenance and Trouble Shooting information contained within the Operator's Manual.



This manual covers Models 6614D,7614D,7816D, 8614D made by Walinga Inc. Differences are explained where appropriate.

Keep this manual handy for frequent reference and to pass on to new operators or owners. Call your Walinga dealer if you need assistance, information or additional copies of the manual. Contact your dealer for a complete listing of parts.

OPERATOR ORIENTATION - The directions left, right, front (hitch) and rear (receiver tank) , as mentioned throughout this manual, are as seen from the driver's seat of the towing vehicle.

2 SAFETY

SAFETY ALERT SYMBOL

This Safety Alert symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**



The Safety Alert symbol identifies important safety messages on the Walinga Ultra-Vac® and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

3 Big Reasons

**Accidents Disable and Kill
Accidents Cost
Accidents Can Be Avoided**

SIGNAL WORDS:

Note the use of the signal words **DANGER, WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guidelines:

DANGER -

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

WARNING -

Indicates a potentially hazardous situation, that if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION -

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

SAFETY

YOU are responsible for the **SAFE** operation and maintenance of your Walinga Ultra-Vac®. **YOU** must ensure that you and anyone else who is going to operate, maintain or work around the Ultra-Vac® be familiar with the operating and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be adhered to while operating the Ultra-Vac®.

Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** operating this equipment is familiar with the recommended procedures and follows all the safety precautions. Remember, most accidents can be prevented. Do not risk injury or death.

- Remember to be an efficient operator. An efficient operator is a very safe, cost efficient and professional person.
- Ultra-Vac® owners must give operating instructions to operators or employees before allowing them to operate the equipment, and at least annually thereafter.
- The most important safety feature on this equipment is a **SAFE** operator. It is the operator's responsibility to read and understand **ALL** Safety and Operating instructions in the manual and to follow these. All accidents can be avoided.
- Walinga feels that a person who has not read, understood and been trained to follow all operating and safety instructions is not qualified to operate the equipment. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety of the equipment and affect the life of the machine.
- Think SAFETY! Work SAFELY!

2.1 GENERAL SAFETY

1. Read and understand the Operators Manual and all safety signs before operating, maintaining, adjusting or unplugging the Ultra-Vac®.
2. Only trained competent persons shall operate the Ultra-Vac®. An untrained operator is not qualified to operate the machine.
3. Have a first-aid kit available for use should the need arise and know how to use it.
4. Have a fire extinguisher available and know how to use it.
5. Do not allow riders.
6. Wear appropriate protective gear.



This list includes but is not limited to:

- A hard hat
- Protective shoes with slip resistant soles
- Protective goggles
- Heavy Gloves
- Wet weather gear
- Hearing protection



7. Before servicing, adjusting, repairing or maintaining unit, ensure that unit power source is completely shut down and can not start up.
8. Wear appropriate hearing protection when operating for long periods of time.
9. Know where overhead electrical lines are located and stay away from them. Electrocutation can occur without direct contact.
10. Review safety related items annually with all personnel who will be operating or maintaining the Ultra-Vac®.



2.2 OPERATING SAFETY

1. Read and understand the Operator's Manual and all safety signs before using.
2. Place all controls in neutral, stop the engine, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
3. Do not operate when any guards are damaged or removed. Install and secure guards before starting.
4. Keep hands, feet, clothing and hair away from all moving and/or rotating parts.
5. Do not allow riders on the Ultra-Vac® or towing vehicle during operation or transporting.
6. Clear the area of all bystanders, especially small children, before starting.
7. Stay away from overhead obstructions and power lines when extending boom and during operation and transporting. Electrocution can occur without direct contact.
8. Keep away from unloading boom when moving, adjusting or setting. Keep others away.
9. Clean reflectors, signs, and lights before transporting.
10. Do not operate with leaks in the hydraulic system.
11. Do not place intake nozzle near feet when standing on the top of grain.
12. Before applying pressure to the hydraulic system, make sure all components are tight and that steel lines, hoses and couplings are in good condition.
13. Review safety items with all personnel annually.

13. Wear appropriate ear protection when operating or long periods of time.



2.3 SAFETY AROUND BINS,SILOS, TANKS AND BOOT PITS

Working in and around bins, silos, and tanks and boot pits.

Ultra-Vac operators and all other personnel assisting should strictly adhere to the procedures outlined below before entering a storage structure. For additional details regarding these procedures, reference OSHA Standards, or your local regulations. (see also Sect 4.10.1)



Entering a bin, silo, tank or other type of storage structure is hazardous. You can suffocate and die from the materials stored inside these structures. There also may be explosive, harmful or poisonous gas or dust in the air.

Before entering a storage structure, Ultra-Vac operators and all other personnel assisting should strictly adhere to safety procedures as follows: *(adapted from the Kansas Grain and Feed Association's Safety, Health and Environment Committee.)*

1. The machine operator(s) and all assisting personnel should be aware of the actions they will take in the event of an emergency.
2. The machine operator(s) and all assisting personnel should be trained in the general and specific safety hazards associated with their work tasks.
3. The machine operator(s) and all assisting personnel should be trained in the general procedures and safety practices for entering and working in bins, silos, tanks or other storage structures, as well as the safety procedures for handling special tasks concerning entering and working in such structures.
4. The atmosphere within a bin, silo, tank or storage structure should be tested for the presence of combustible gases, dusts, vapors and toxic agents.
5. Ventilation should be provided until the unsafe conditions are eliminated or as long as there is a possibility of recurrence of the unsafe conditions while the bin, silo, tank or storage structure is occupied by personnel.
- 6. Anyone entering the bin, silo, tank, storage structure or boot pit, should wear an appropriate respirator and protective clothing, as long as there is a possibility of any unsafe atmospheric condition.**
7. When entering bins, silos, tanks or storage structures from the top, personnel should wear a body harness with lifeline, or use a boatswain's chair.
8. An observer equipped to provide assistance and trained in rescue procedures, including notification methods, should be stationed outside the bin, silo, tank or storage structure being entered. Visual, voice or signal line communications should be constantly maintained between the observer and the party in the bin, silo, tank or storage structure.
9. Equipment for rescue operations which is specifically suited for the bin, silo, tank or storage structure being entered should be provided.
10. Do not enter bins, silos, tanks or storage structures under a bridging condition, or where a buildup of materials could fall and bury you. It is also recommended that you do not walk or stand on grain or other materials where the depth is greater than waist high.
11. Be aware of the extremely high suction at the intake nozzle. Stay away from nozzle intake area.

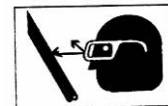
2.4 MAINTENANCE SAFETY

1. Follow ALL the operating, maintenance and safety information in the manual.
2. Support the machine with blocks or safety stands when changing tires or working beneath.
3. Follow good shop practices:
 - a. - Keep service area clean and dry.
 - b. - Be sure electrical outlets and tools are properly grounded.
 - c. - Use adequate light for the job at hand.
4. Use only tools, jacks and hoists of sufficient capacity for the job.
5. Place all controls in neutral, stop the engine, disconnect all electrical power sources, set the park brake on tractor or towing vehicle, remove the ignition key and wait for all moving parts to stop before servicing., adjusting, repairing or unplugging.
6. Make sure all guards are in place and properly secured when maintenance work is completed.
7. Before applying pressure to a hydraulic system, make sure all lines, fittings and couplers are in good condition.
8. Relieve pressure from hydraulic circuit before servicing or disconnecting from tractor.
9. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
10. Place hydraulic controls in neutral and stop the engine before working on Ultra-Vacs.
11. Clear the area of bystanders, especially small children, when carrying out any maintenance and repairs or making any adjustments.



2.5 HYDRAULIC SAFETY

1. Make sure that all components in the hydraulic system are kept in good condition and are clean.
2. Replace any worn, cut, abraded, flattened or kinked hoses or metal lines immediately.
3. Relieve pressure before working on hydraulic system.
4. Do not attempt any makeshift repairs to the hydraulic fittings or hoses by using tape, clamps or cements. The hydraulic system operates under extremely high-pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.
5. Wear proper hand and eye protection when searching for a high pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.
6. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.
7. Before applying pressure to the system, make sure all components are tight and that lines, hoses and couplings are not damaged.



2.6 STORAGE SAFETY

1. Store unit in an area away from human activity.
2. Do not permit children to play on or around the stored machine.
3. Store the unit in a dry, level area. Support the base with planks if required.

2.7 TRANSPORT SAFETY

Refer to Section 4.9 TRANSPORTING - Towing (page 32) for detailed information and regulations.

1. Make sure you are in compliance with all local regulations regarding transporting equipment on public roads and highways.
2. Make sure that all the lights and reflectors that are required by local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.
3. Make sure the discharge boom is placed in the transport position and resting in the boom saddle.
4. Attach securely to the towing vehicle using a retainer on the drawbar pin and a safety chain.
5. Do not allow anyone to ride on the Ultra-Vac® or towing vehicle during transport.
6. Reduce speed on rough roads and surfaces.
7. Stay away from overhead obstructions and power lines. Electrocutation can occur without direct contact.
8. Always use hazard warning flashers on towing vehicle when transporting unless prohibited by law.
9. Add extra lights or use pilot vehicles when transporting during times of limited visibility or as required by local regulations.

Use ANSI/SAE S279.17 July,2013 as a minimum standard for Lighting and Marking of Agricultural Equipment on Highways whether towing the Ultra-Vac during daytime or nighttime.

2.8 TIRE SAFETY

1. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
2. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
3. Have a qualified tire dealer or repair service perform required tire maintenance.
4. Ensure that the tires are kept inflated to the proper pressure.

2.9 SAFETY SIGNS

1. Keep safety signs clean and legible at all times.
2. Replace safety signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current sign.
4. Safety signs are available from your Distributor or the factory.

How to Install Safety Signs

- Be sure that the installation area is clean and dry.
- Be sure temperature is above 50°F (10°C).
- Decide on the exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

3 SAFETY DECAL LOCATIONS

The types of safety signs and locations on the equipment are shown on the following pages. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, of particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!



Fig. 3-1 Right Hand Side



Fig. 3-2 Rear

REMEMBER - If safety signs have been damaged, removed, become illegible or parts are replaced without signs, new signs must be applied. New signs are available from your authorized dealer or factory direct.

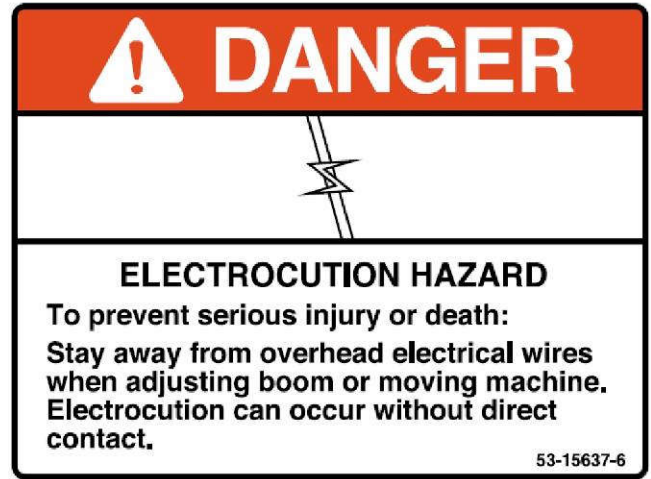
3 SAFETY DECAL LOCATIONS (Cont'd)

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- Think SAFETY! Work SAFELY!



Decal A 53-15633-6 revA



Decal B 53-15637-6



Decal C 53-04730-6



Decal D 53-15638-6

REMEMBER - If safety signs have been damaged, removed, become illegible or parts are replaced without signs, new signs must be applied. New signs are available from your authorized dealer or factory direct.

3 SAFETY DECAL LOCATIONS (Cont'd)

The types of safety signs and locations on the equipment are shown on the following pages. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, of particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!



Decal G 53-18290-6



Decal H 53-15639-6



Decal J 53-100397-6



Fig 3-5 Typical Decals on Sweep and Suction Nozzle

REMEMBER - If safety signs have been damaged, removed, become illegible or parts are replaced without signs, new signs must be applied. New signs are available from your authorized dealer or factory direct.

3 SAFETY DECAL LOCATIONS (Cont'd)

The types of safety signs and locations on the equipment are shown on the following pages. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, of particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!



Decal E 53-18288-6



Decal F 53-17704-6



Fig. 3-3 Belt Cover

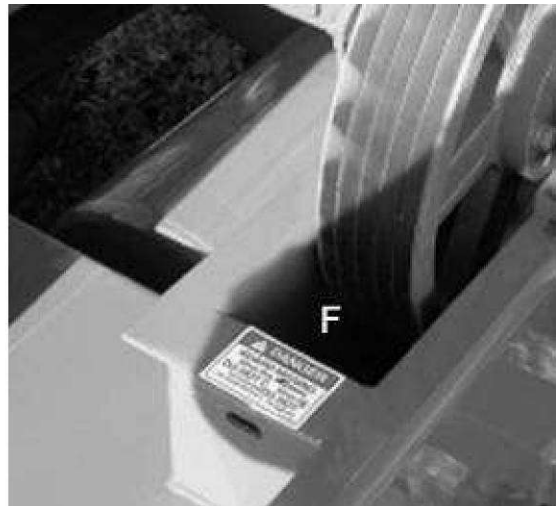


Fig. 3-4 Belt Cover Removed for Servicing

REMEMBER - If safety signs have been damaged, removed, become illegible or parts are replaced without signs, new signs must be applied. New signs are available from your authorized dealer or factory direct.

4 OPERATION

OPERATING SAFETY

1. Read Operator's Manual before using machine.
2. Refer to Operators Manual for correct warm up procedure.
3. Stop tractor engine, lower machine to the ground place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing, unplugging or fitting.
4. Install and secure all guards before starting.
5. Keep hands, feet, hair & clothing away from moving parts.
6. Do not allow riders.
7. Keep all hydraulic lines, fittings and couplers tight and free of leaks before using.
8. Clean reflectors, SMV and lights before transporting.
9. Install safety locks before transporting or working beneath components.
10. Add extra lights and use pilot vehicle when transporting during times of limited visibility.
11. Use hazard flashers in tractor when transporting.
12. Install safety chain when attaching to tractor.
13. Keep away from overhead and electrical lines. Electrocution can occur without direct contact.
14. Review safety instructions with all operators annually.

4.1 TO THE NEW OPERATOR OR OWNER

The Walinga Ultra-Vac® is specifically designed to vacuum up grain and move it in a stream of pressurized air. A high capacity air pump moves the air through the machine creating a vacuum on the intake side and pressure on the outlet side. Be familiar with all operating and safety procedures before starting.

It is the responsibility of the owner and operator to read this manual and to train all other operators before they start working with the machine. Follow all safety instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders, and the area around the worksite. Untrained operators are not qualified to operate the machine.

Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the machine safely and how to set it to provide maximum efficiency. By following the operating instructions in conjunction with a good maintenance program, your Ultra-Vac® will provide many years of trouble-free service.

4.2 MACHINE COMPONENTS

The air pump or blower is the key component in the Ultra-Vac® and is driven by the diesel engine through a belt drive system. The blower moves air through the machine. On the intake side, the blower creates a vacuum in the receiver tank and intake lines for picking up grain. Grain is separated from the stream of air in the receiver tank.

On the discharge side of the blower, the pressurized air flows through the airlock where it picks up a metered quantity of grain and moves it out the lines to the discharge cyclone. The airlock is rotated by the same power source as the blower.

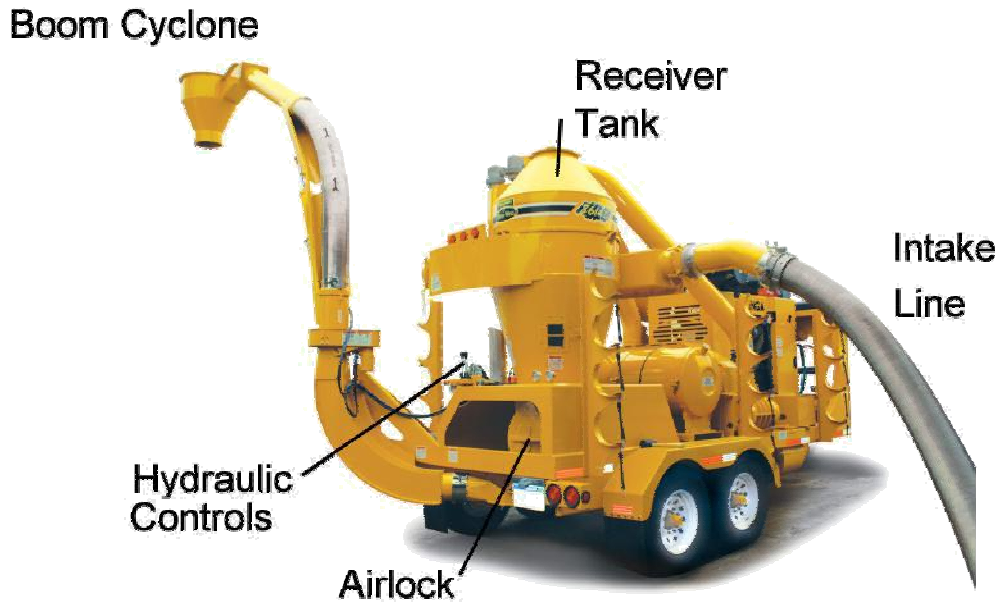
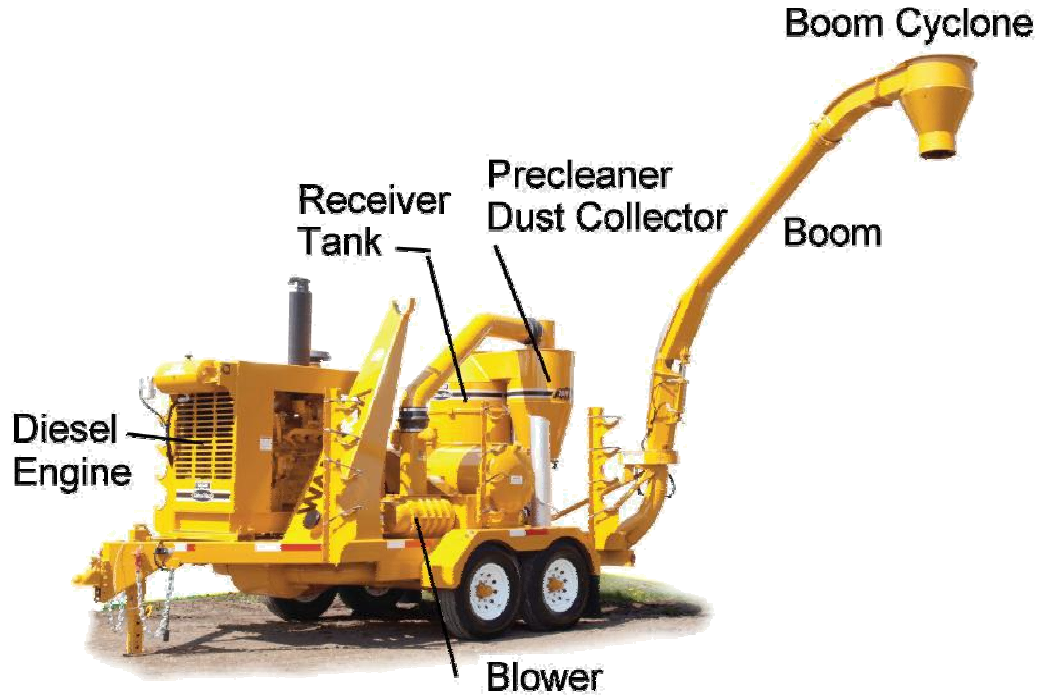


Fig. 4-1 Machine Components

Some items shown may be optional

4.3 BREAK-IN

Although there are no operational restrictions on the Ultra-Vac® when used for the first time, it is recommended that the following mechanical items be checked:

A. After operating for 1/2 hour:

1. Retorque all the wheel bolts.
2. Retorque all other fasteners and hardware.
3. Check that the blower turns freely.
4. Open and clean the pre-cleaner door and tank.
5. Check that no hoses are pinched, rubbing or being crimped. Re-align as required.
6. Check for oil leaks. Stop leaks before continuing.
7. Check oil level in reservoirs. Add as required.
8. Lubricate all grease fittings.

B. After operating for 5 hours and 10 hours:

1. Retorque all wheel bolts, fasteners and hardware.
2. Check hose routing.
3. Check that blower turns freely.
4. Open and clean the pre-cleaner door and tank.
5. Check oil level in reservoirs.
6. Then go to the normal servicing and maintenance schedule as defined in the Maintenance Section 5

4.4 PRE-OPERATION

CHECKLIST

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

Before operating the Ultra-Vac® and each time thereafter, the following areas should be checked off:

1. Lubricate the machine per the schedule outlined in Section 5 Service and Maintenance.
2. Ensure that the machine is properly attached to the towing vehicle. Be sure that the retainer is installed in the drawbar pin and the safety chain is attached.
3. Check the hydraulic system.
4. Check the oil level in the blower reservoirs.
5. Inspect all hydraulic lines, hoses, fittings and couplers for tightness.
6. Check the tires and ensure that they are inflated to the specified pressure.
7. Check that the blower turns freely.
8. Open and clean the pre-cleaner door and tank.
9. Check for and remove entangled material.
10. Close and secure all guards.

4.5 CONTROLS

All controls on the Ultra-Vac® are located on the rear of the machine. Review this section carefully to familiarize yourself with the function and movement of each control before starting.

1. Airlock Control:

The right valve controls the operation of the airlock. Pull on the control to operate the airlock in the forward direction and push to operate in the reverse direction. Stop the airlock by placing the lever in the center neutral position.

Do not operate for long periods of time in the reverse direction. The rotor is not designed to operate in the reverse direction. Reverse rotation may be used to free jammed object in rotor only.

Watch and count the arrow revolutions on the airlock indicator wheel to determine airlock speed and direction.

2. Boom Rotation Control:

This spring-loaded-to-neutral-centre lever controls the direction of the boom rotation. Push on the lever and hold to swing the boom to the right. (clockwise) Release to return to centered position to stop rotation. Pull and hold to swing to the left. (counter-clockwise)

3. Boom Lift Control:

The valve controls the boom position. Push on the lever to raise the boom and pull to lower. Place in the center position for no boom movement.

IMPORTANT

Do not attempt to raise boom while airlock is in operation.

4. Boom Lock Valve:

This valve is located in the boom lift circuit to control the oil flowing through the lines. Move the lever parallel to the line to open the valve when positioning the boom. Move at right angles to the line to stop oil flow and maintain boom position.



Fig. 4-2 Controls

5. Flow Divider:

A flow divider in the airlock circuit is used to control the airlock speed. Normal operation should start at a setting of 5. Move in small increments toward 0 to decrease the speed. Move toward 10 to increase the speed. Watch and count the arrow revolutions on the airlock wheel to determine the speed.

Use Table 1 as a guide to setting the airlock speed.

Experiment a little to determine the best setting.

Airlock Speed vrs Grain (rpm)				
	6614D	7614D	7816D	8614D
Corn & Barley				
Wheat	55-70	65-70		
Soybeans				

Table 1

4.6 ATTACHING/UNHOOKING

The Ultra-Vac® should always be parked on a level, dry area that is free of debris and foreign objects.

Follow this procedure when attaching.

1. Clear the area of bystanders and remove foreign objects from the machine and working area.
2. Make sure there is enough room to back the towing vehicle up to the hitch point.
3. Start the towing vehicle and slowly back it up to the hitch point.
4. Stop the towing vehicle, place all controls in neutral, set park brake and remove ignition key before dismounting.
5. Use the tongue jack to raise or lower the Ultra-Vac to align to towing vehicle.
6. Install a safety chain between the towing vehicle drawbar and the machine tongue.
7. Raise the tongue jack and rotate it 90° to place in its stowed position.
8. When unhooking from the towing vehicle, reverse the above procedure.



Fig. 4-3 Unhooked

4.7 MACHINE PREPARATION

Before the Ultra-Vac® can be used it must be set up and prepared for operation.

When setting-up, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Be sure you select a spot that has sufficient space to locate the machine and enough clearance to allow trucks to drive under the discharge cyclone.
3. Position the machine approximately 12 feet (4 meters) from the storage facility.
4. Place all other controls in neutral and set park brake before dismounting.
5. Remove the plug from the receiver tank inlet.
6. Remove the intake nozzle from its storage position on the frame and install on the end of the steel flex tube. Secure in position using the bolts on the coupler.
7. Connect the 12 foot steel flex tube to the inlet. Tighten the bolts on the coupler to lock the tube securely in place.
8. Starting Engine:
 - a. Place all controls (including Clutch) in their neutral or off position and lock-off the hydraulic oil supply valve to the boom-lift cylinder.
 - b. Start the engine using the procedure outlined in the engine manufacturers handbook. Run the engine at low idle.
 - c. Slowly engage the PTO/Clutch control to the drive system
9. Use the boom lift control to raise the boom out of the boom saddle. Use the boom rotation control to swing boom around until it is in a working position that will allow a truck to drive under the discharge cyclone.
10. Reverse the above procedure when finished working and placing into the storage or transport configuration.

Stay away from overhead electrical wires to prevent electrocution.



Fig. 4-4 12ft Bin Clearance



Fig. 4-5 Intake Installation



Fig. 4-6 Flex Tube Installation



Fig. 4-7 Positioned

4.8 OPERATING

When operating the Ultra-Vac®, follow this procedure:

1. Clear the area of bystanders, especially small children, before starting.
2. Review and follow the Pre-Operation Checklist (See Section 4.4).
3. Be sure the machine is correctly positioned and set-up per Section 4.7. The trucks should have ample space and clearance to drive under the discharge cyclone.
4. Place chocks in front and behind unit tires to prevent moving.
5. **Starting Machine:**
 - a. Place all controls (including Clutch) in their neutral or off position and lock-off the hydraulic oil supply valve to the boom-lift cylinder.
 - b. Start the engine using the procedure outlined in the engine manufacturers handbook. Run the engine at low idle.
 - c. Slowly engage the PTO/Clutch control to the drive system. (Fig. 4-9)
 - d. Preliminary airlock setting:
 - i Engage airlock hydraulics.
 - ii. Check arrow on indicator to be sure airlock is turning in the correct direction.
 - iii. Increase engine speed to 1500 RPM and use the flow divider to set the airlock speed to approximately 60 RPM.
 - iv. Return engine speed to low idle and stop airlock.



Fig. 4-8 Working Position



Fig. 4-9 PTO/Clutch Control

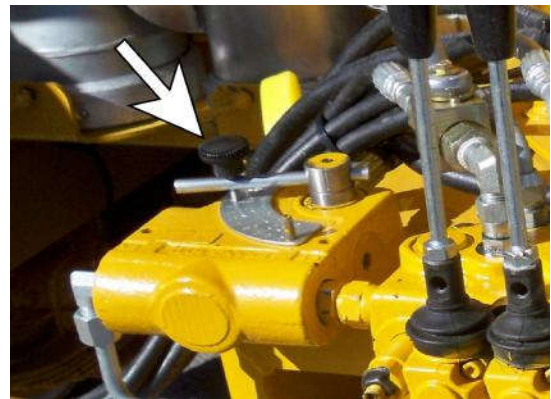


Fig. 4-10 Airlock Flow Divider



Fig. 4-11 Airlock Flow Divider

4.8 OPERATING (cont'd)

5. Starting Machine (cont'd)

- e. Slowly engage the PTO/Clutch control to the drive system. (Fig. 4-8)
- f. Increase engine speed until it is at 3/4 throttle.
- g. Engage airlock hydraulics. Be sure airlock is turning in the forward direction.
- h. Operate machine at 3/4 speed for 10 minutes to warm system before putting under full load.

IMPORTANT

It is important to warm the hydraulic system and blower reservoirs before going to rated speed. The blower will not "warm up" unless product is being conveyed.

- i. Open airslide approximately 2 inches and insert into the grain. Operate at this setting until the machine is warm (10 minutes).
- j. After warm up period, bring machine to capacity.
 - i. Increase engine speed to rated RPM.
 - ii. Close airslide until the intake line starts to pulsate. Open slightly to stop pulsing.
 - iii. Watch glass door in receiver tank to determine how the product is moving through the machine. The glass can be covered but it should not be stationary. If more product is being drawn in than discharged, the product will lay stationary against the window.

6. Airlock Speed:

Refer to the Table 2 as a guide for setting the airlock speed. Use the flow control to adjust the speed and count the revolutions using the arrow on the wheel. It may be necessary to experiment to determine the best speed.

Airlock Speed vrs Grain (rpm)				
	6614D	7614D	7816D	8614D
Corn & Barley				
Wheat	55-70	65-70		
Soybeans				

Table 2



Fig. 4-12 Open Airslide



Fig. 4-13 Sight Glass in Receiver Tank

7. Maximum Capacity:

- a. The nozzle should be placed into the grain with the inlet below the surface of the grain but not below the airslide. It is recommended that some air be allowed to enter with the grain to obtain the best capacity.
- b. Open the airslide about 2 inches to start. Close the airslide until the machine starts to pulsate. Then open it until the pulsing stops. This will give a balanced grain and airflow condition.
- c. Watch the amount of grain on the window in the receiver tank. Keep the window full yet keep the product moving.

There are several ways to control the amount of grain on the window:

- i. Decrease the amount of grain entering nozzle.
- ii. Increase airflow by opening airslide.
- iii. Increase airlock speed.
- iv. Decrease airlock speed.

The airlock acts as a seal between the vacuum and pressure sides of the circuit. Increasing the airlock speed normally will remove product from the receiver faster. Refer to Airlock Speed Chart as a guide.

8. Use the regular nozzle until there is approximately 12 inches of grain left in the bin. Then switch to the clean-up nozzle to pick up the last of the grain.
9. When using the clean-up nozzle, it is recommended that the rubber intake hose be installed to allow you to move around to pick up the grain from the corners more easily.

10. Stopping Machine:

- a. Remove the intake nozzle from the grain.
- b. Allow the unit to run until the grain has stopped coming out the cyclone.
- c. Stop the airlock.
- d. Slow the engine speed down to low idle.



Fig. 4-14 Nozzle Positioned



Fig. 4-15 Sight Glass

4.8 OPERATING (cont'd)

10. Stopping Machine Cont'd:

- e. Disengage hydraulic circuit and slowly disengage PTO clutch.
- f. Stop engine by turning ignition key to OFF and REMOVE.

11. Pre-Cleaner:

The machine is designed with a cleaner between the blower and the receiver tank to remove dust and dirt from the air stream. Clean every 1000 bushels during normal operating conditions. Clean or empty pre-cleaner canister more frequently in dirty or dusty conditions.

12. Specialty Crops:

Operating:

When handling specialty products such as sunflower seeds, lentils etc, it is recommended that the PTO speed be reduced by 1/4 to 1/2 rated RPM. This gives a gentler action through the machine.

Run the airlock at a slower speed to allow more time for the product to fill the pockets.

13. Operating Hints:

- a. Try to keep the hoses full as possible to have maximum capacity.
- b. Pull the intake nozzle out of the grain and empty the machine before changing trucks.
- c. Maximum efficiency is obtained with large airflow lines. Use the smaller rubber lines only for final clean-up.
- e. Route the lines to minimize bends and corners. If a corner is necessary, use a large radius elbow.
- f. Keep lines as short as possible to minimize friction losses.
- g. If long distance moving is required, push the grain rather than pull.
- h. If long distance moving is required, use solid metal tubing whenever and wherever possible.

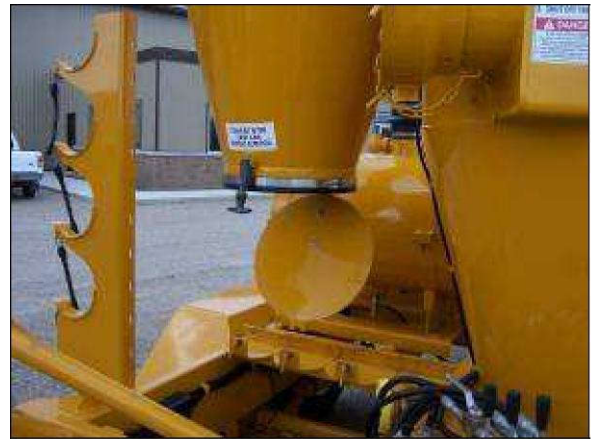


Fig. 4-16 Pre-Cleaner Canister

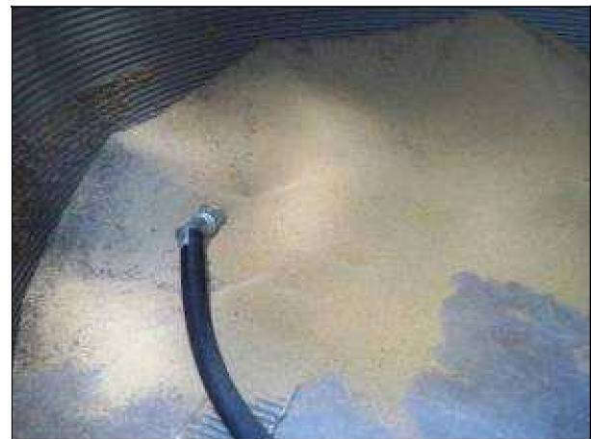


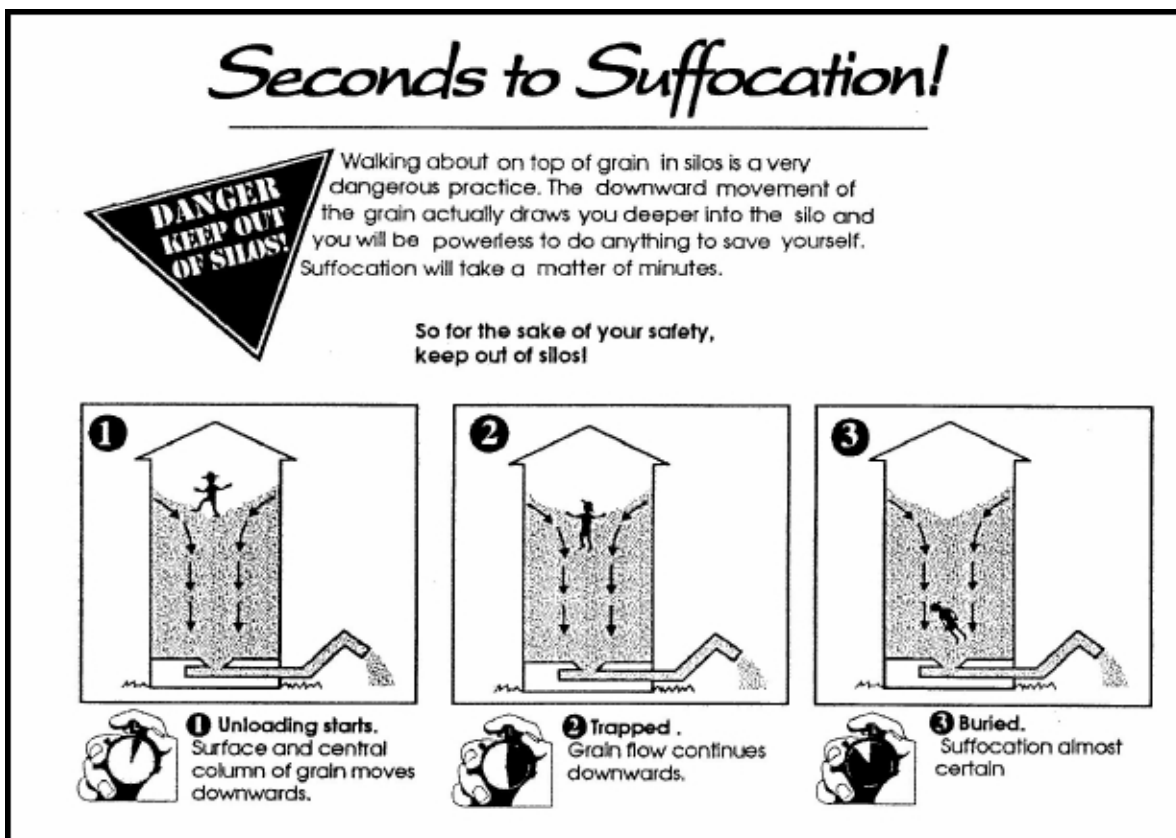
Fig. 4-17 Inside Bin



Fig. 4-18 Loading Truck

4.8 OPERATING (cont'd)

- i. If the airlock becomes jammed, use the hydraulics to reverse the direction of airlock rotation and clear the obstruction.
- j. When on top of grain, do not push the nozzle into the pile next to the feet. The suction will pull the nozzle and the operator into the pile. If the pile is deep enough, the operator can be submerged under the grain and suffocated.



4.9 CONVEYING OILSEEDS

For conveying oil seed commodities (such as sunflower seeds or canola) we recommend a raised tip blower and washout ports.

The raised tip blowers have a tip on the impellor that cleans the casing as the blower rotates.

After conveying oilseeds, we recommend washing the internal surfaces to remove any residue.

This will reduce the risk of seizing caused by a build up of oil residue.

4.10 TRANSPORTING (Towing)

TRANSPORT SAFETY

1. Make sure you are in compliance with all local regulations regarding transporting equipment on public roads and highways.
2. Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.
3. Attach securely to the tractor/towing vehicle using a retainer on the drawbar pin and a safety chain.
4. Do not allow anyone to ride on the Ultra-Vac or towing vehicle during transport.
5. Do not exceed 20 mph (32 kph). Reduce speed on rough roads and surfaces.
6. Stay away from overhead obstructions and direct contact.
7. Always use hazard warning flashers on towing vehicle when transporting unless prohibited by law.
8. Add extra lights or use pilot vehicles when transporting during times of limited visibility.

Walinga Ultra-Vacs® are designed to be easily and conveniently moved from location to location.

When towing, follow this procedure:

1. Be sure all bystanders are clear of the machine.
2. Be sure that the Ultra-Vac® is hitched positively to the towing vehicle. Always use a retainer in the drawbar pin and a safety chain between the machine and the towing vehicle.
3. Keep to the right (using North American convention) and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.
4. Do not allow riders on the towing machine or the tractor.
5. During periods of limited visibility, use pilot vehicles or add extra lights to the Ultra-Vac®.

Use ANSI/SAE S279.17 July 2013 as a minimum standard for Lighting and Marking of Agricultural Equipment on Highways whether towing the Ultra-Vac during daytime or nighttime.

If the Ultra-Vac obstructs any lights/reflectors or SMV emblems on the towing vehicle, the lights/reflectors or SMV emblems being obstructed must also be installed on the Ultra-Vac using the ANSI S279.17 July 2013 standard.

Make sure you are in compliance with all local regulations regarding transporting equipment on public roads and highways.

***NOTE: Local regulations may require or disallow certain lamps, (e.g. beacons) , and/or operating modes, (e.g. flashing red lamps) Any such regulations take precedence in their area of jurisdiction over the requirements of the ANSI S279.17 July 2013 standard.**

4.10 TRANSPORTING -Towing (cont'd)

8. ****Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.**

****The SMV (Slow Moving Vehicle) emblem can only be displayed when the Ultra-Vac is being towed at speeds less than 40 kph (25 mph). see ANSI S276.7.7.2.3**

***The SMV emblem shall be removed or covered when the Ultra-Vac is being towed at a speed that is greater than 40 kph (25 mph)**

9. Stay away from overhead power lines. Electrocutation can occur without direct contact.
10. Make sure the discharge boom is placed in the transport position and resting in the boom saddle.
11. Always use hazard flashers on the towing vehicle when transporting unless prohibited by law.
12. Secure all the components and accessories before transporting.
13. Make sure that all the lights and reflectors that are required by local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.

Table 3 Road Speed vs Weight Ratio

<u>Road Speed</u> relative to the weight of the <u>towing machine.</u>	Weight of fully equipped or loaded Ultra-Vac(s)
Up to 32 kph (20 mph)	1 to 1 or less
Up to 16 kph (10 mph)	2 to 1 or less
Do not tow	More than 2 to 1

It is not recommended that the machine be transported faster than 20 mph (32 kph). Table 3 gives the acceptable transport speed as the ratio of the weight of the towing vehicle to the machine weight.

4.11 STORAGE

STORAGE SAFETY

1. Store the unit in an area away from human activity.
2. Do not permit children to play on or around the stored machine.
3. Store the unit in a dry, level area. Support the base with planks if required.

At the end of the season, the machine should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary down time at the start of next season.

Follow this procedure when storing:

1. Wash the entire machine thoroughly using a water hose or pressure washer to remove all dirt, mud, debris or residue.
2. Retract and secure all the accessories and components.
3. Lubricate all the grease points. Make sure all the grease cavities have been filled with grease to remove any water residue from the washing.
4. Inspect all the hydraulic hoses, fittings, lines, couplers and valves. Tighten any loose fittings. Replace any hose that is badly cut, nicked or abraded or is separating from the crimped end of the fitting.
5. Check the oil level in the blower reservoirs. Bring the oil level to the recommended level.
6. Install the plugs into the receiver tank inlet
7. Empty the pre-cleaner tank. Check inside the receiver tank to make sure it is empty.
8. Apply "never seize" or grease to the boom cylinder ram.
9. Touch up all paint nicks and scratches to prevent rusting.
10. All hoses should be stored inside or under a shelter.
11. Move the machine to its storage position.
12. Select an area that is dry, level and free of debris.
13. Place planks under the jack for added support.
14. Unhook the machine from the tractor/power unit. (Refer to Section 4.6)

5 SERVICE AND MAINTENANCE

MAINTENANCE SAFETY

1. Follow ALL the operating, maintenance and safety information in the manual.
2. Support the machine with blocks or safety stand when changing tires or working beneath.
3. Follow good shop practices.
 - Keep service area clean and dry
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.
4. Use only tools, jacks and hoists of sufficient capacity for the job.
5. Place all controls in neutral, stop the engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
6. Make sure all guards are in place and properly secured when maintenance work is completed.
7. Before applying pressure to a hydraulic system, make sure all lines, fittings and couplers are tight and in good condition.
8. Relieve pressure from hydraulic circuit before servicing or disconnecting from the tractor.
9. Keep hands, feet, hair and clothing away from all moving an/or rotating parts.
10. Place hydraulic controls in neutral and stop engine before working on the Ultra-Vac.
11. Clear the area of bystanders, especially small children when carrying out any maintenance and repairs or making any adjustments.

5.1 SERVICE

5.1.1 FLUIDS AND LUBRICANTS

1. Grease:

Use an SAE multi-purpose high temperature grease with extreme pressure (EP) characteristics.

Also acceptable is an SAE multi-purpose lithium based grease.

2. Blower Oil:

Use Walinga Blower oil part# 98-13813-5 (4 liters) or Walinga Blower oil part# 98-93866-5 (20 liters)

Table 4

MODEL LOCATION	6614D 7614D	7816D	8614D
Front (drive)	1 litre	5 litres	
Rear (idle)	2 litres	6 litres	
Total	3 litres	11 litres	

Storing Lubricants:

Your unit can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.

5.1.2 GREASING

Refer to Section 5.1.1 for recommended grease. Use the Service Record checklist provided to keep a record of all scheduled servicing.

1. Use a hand-held grease gun for all greasing.
2. Wipe the grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
3. Replace and repair broken fittings immediately.
4. If the fittings will not take grease, remove and clean thoroughly. Also clean the lubricant passageway. Replace the fitting if necessary.

5.1.3 SERVICING INTERVALS

8 Hours or Daily

1. Check the tension and alignment of the input drive belts. (fig. 5-3)
See Maintenance Section.
2. Check the oil level in the blower reservoirs (2 locations).

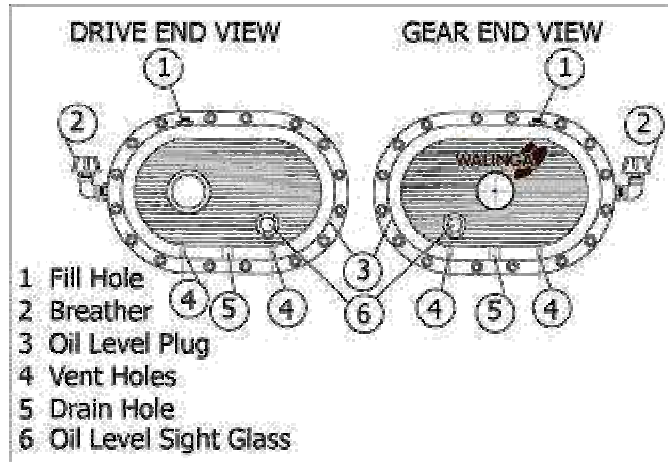


Fig. 5-1 Blower End Views



Fig. 5-2 Gear End



Fig 5-3 Drive End

5.1.3 SERVICING INTERVALS (cont'd)

20 Hours

1. Check the condition of the wear liner in the discharge cyclone.(fig. 5-4)
Replace as required.



Fig. 5-4 Discharge Cyclone
& Boom Cylinder

40 Hours

1. Lubricate the exposed rod end of the boom lift cylinder (fig. 5-4) with "never seize" (1 location)
2. Lubricate the boom swivel.



Fig. 5-5 Boom Swivel

5.1.3 SERVICING INTERVALS (cont'd)

100 Hours or Annually

1. Change the oil in the blower reservoirs (2 reservoirs).

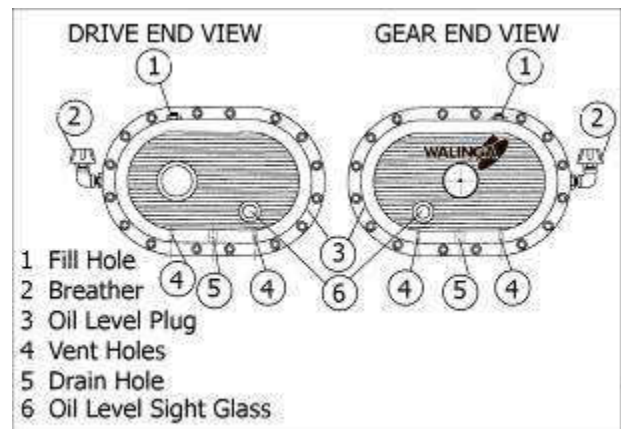


Fig. 5-6 Blower Reservoirs

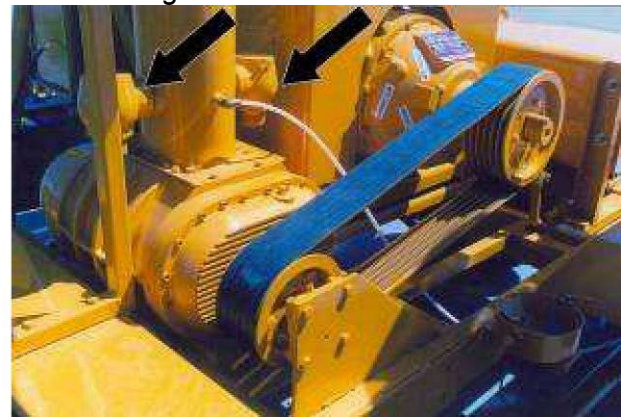


Fig 5-7 Vacuum Relief Valve

2. Check the function of the vacuum and pressure relief valves.



Fig 5-8 Pressure Relief Valve

3. Check condition of air line seals.



Fig. 5-9

Air Line Seal at Flex Hose

5.2 MAINTENANCE

By following a careful service and maintenance program for your machine, you will enjoy many years of trouble-free service.

5.2.1 BELT TENSION AND ALIGNMENT

Rotational power from the engine is transmitted to the blower through the belt drive. To obtain efficient transmission of power and good belt life, the belts must be properly tensioned and the pulleys aligned.

Belts that are too tight will stretch and wear quickly or overload the bearings on the input shaft or blower; Belts that are too loose will not transmit the required power and will slip, overheat and wear quickly. Pulleys that are not aligned will result in rapid belt wear.

Follow this procedure when checking and adjusting belt tension and pulley alignment.

1. Clear the area of bystanders, especially small children.
2. Place all controls in neutral, stop the engine, remove ignition key and wait for all moving parts to stop before dismounting.
3. Unlatch and remove the belt cover. Lay to the side.

MODEL	BELT TENSION		DEFLECTION
	New Belt	Old Belt	
6614D	16 lbs (7.3kg)	12 lbs (5.4kg)	3/8 in (9.5mm)
7614D	16 lbs (7.3kg)	12 lbs (5.4kg)	3/8 in (9.5mm)
7816D	13.3 lbs (6.0kg)	11 lbs (5.0kg)	5/16 in (8.3mm)
8614D			

Table 4 Belt Deflection

5.2.1 BELT TENSION AND ALIGNMENT (cont'd)

4. Use a 10 pound weight to determine the belt deflection in a static condition.

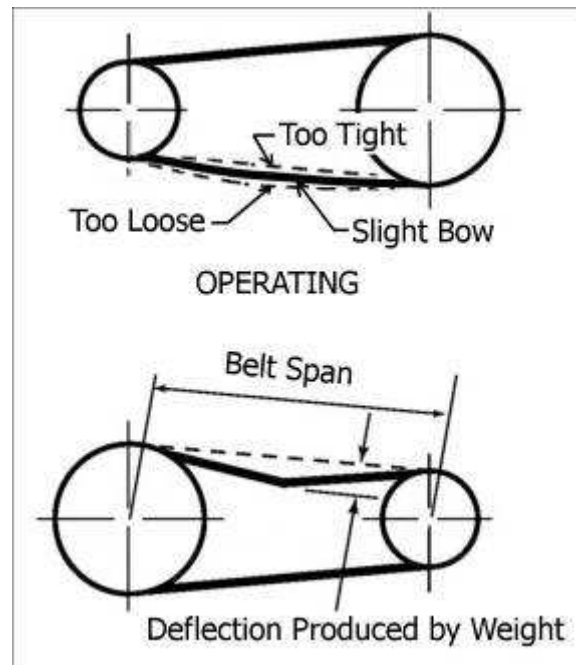


Fig. 5-10 Deflection

5. Adjusting Tension:

- a. Loosen the jam nuts on the adjusting bolts. Loosen bearing bolts slightly.
- b. Turn the adjusting bolt to set the tension. Turn both bolts the same amount to maintain pulley alignment.
- c. Check the tension again. Over tightening will cause belt stretching and overload the bearing. Belts that are too loose will slip, tear and wear rapidly. Check alignment, see next section.
- d. Tighten jam nuts. Tighten bearing bolts.
- e. Install and secure belt covers.

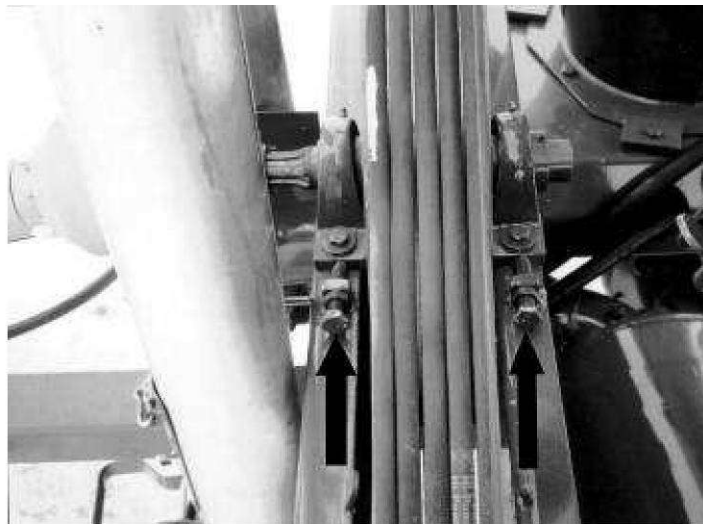


Fig. 5-11 Tension Adjustment

6. Pulley Alignment:

- a. Lay a straight-edge across the faces of the two pulleys.
 - b. If the gap between the pulley and the straight-edge exceeds 1/16 inch (1.5 mm), the pulleys must be realigned.
 - c. Review the types of alignment before starting.
 - d. Use the adjusting bolts on the input shaft to align the input pulley. Tighten jam nuts when alignment has been completed.
 - e. Use the bearing housing assembly anchor bolts to align the blower pulley. Tighten anchor bolts to their specified torque.
 - f. Set the belt tension.
 - g. Install and latch belt cover.
7. Be sure all guards are installed and secure before resuming work.

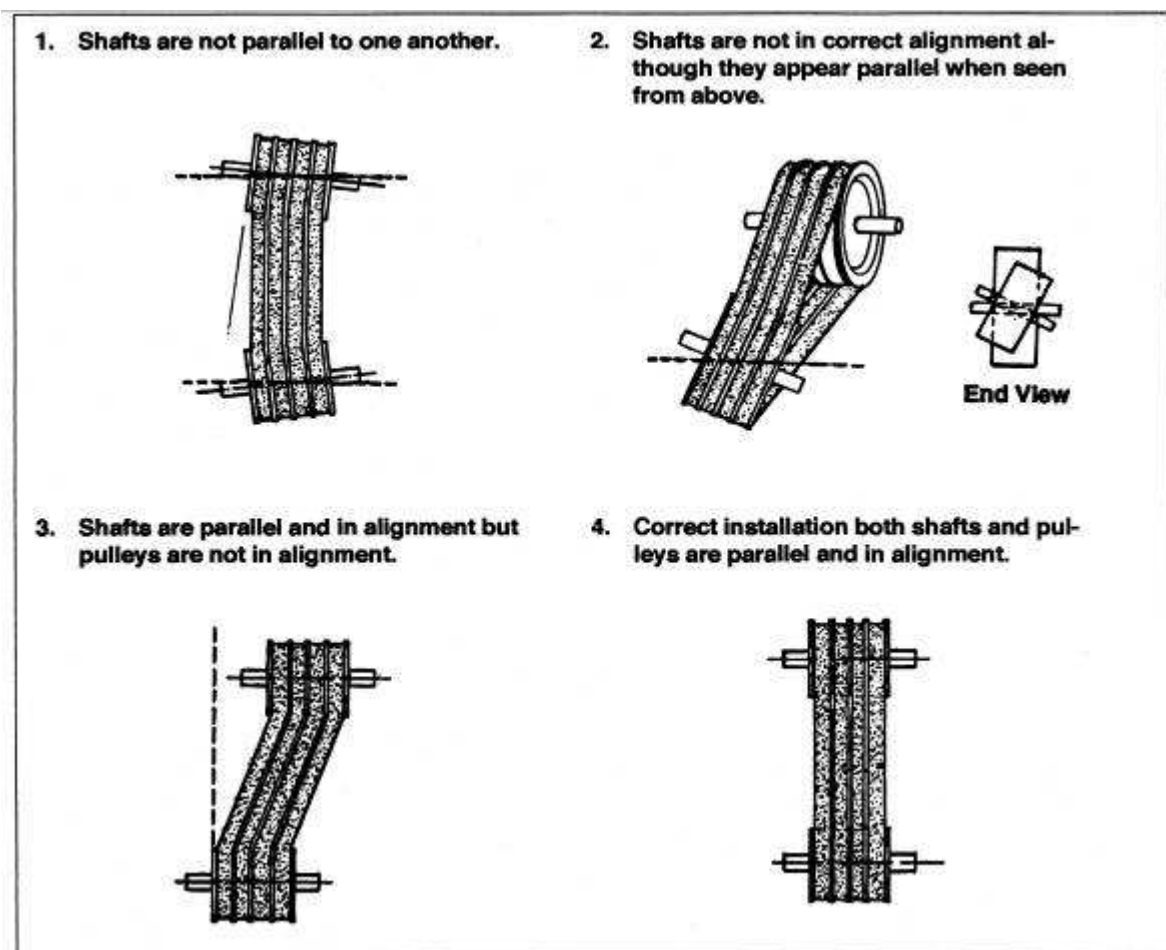


Fig. 5-12 Misalignment

5.2.2 BLOWER OIL CHANGING AND BREATHER CLEANING

The gears that drive and time the blower lobes run in an oil bath for lubrication. Maintaining the correct level in the reservoirs and changing every 100 hours will insure proper lubrication.

When maintaining the blower, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Place all controls in neutral, stop engine and remove ignition key or disconnect PTO driveline before starting.
3. Unlatch and remove the belt drive covers.
4. **Checking Oil Level:**
 - a. Remove the level plug in each reservoir or check the sight glass.

IMPORTANT

Check the level only when the oil is cold and the machine is level.

- b. Oil in the reservoir should just fill the threads of the level plug hole.
- c. Add oil if low or allow the reservoir to drain if overfilled.

IMPORTANT

It is necessary to maintain the recommended oil level in the reservoir. A low level causes heating from lack of lubrication and rapid gear and bearing wear. Too much oil causes heating from oil churning and can cause seal and breather leaks.

- d. Install and tighten the level plug.
- e. Install and secure the belt covers.

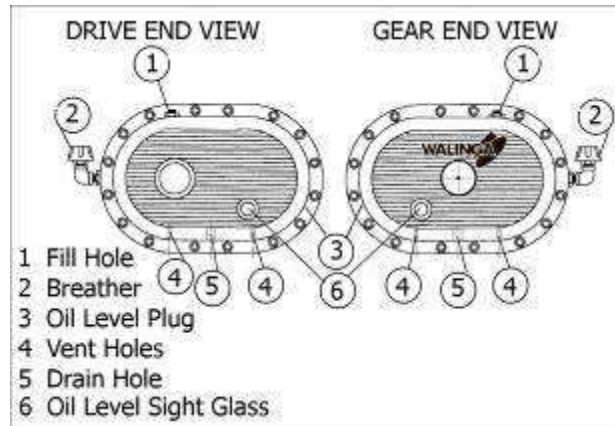


Fig. 5-13 Blower



Fig. 5-14 Blower

5.2.2 BLOWER OIL CHANGING AND BREATHER CLEANING (cont'd)

5. Changing Oil:

- a. Place a collection pan or pail under each drain plug.
- b. Remove each drain plug.
- c. Flush each case and allow several minutes to drain.
- d. Dispose of the oil in an approved manner. Do not contaminate the worksite with used oil.
- e. Install and tighten the drain plugs.
- f. Remove fill and level plugs.

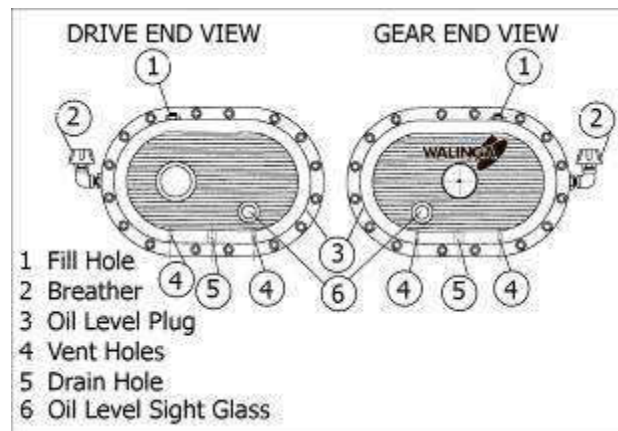


Fig. 5-15 Blower

IMPORTANT

Condensation forms and collects inside the reservoirs during machine operation. Changing oil removes this water and prevents it from damaging the gears and bearings.

- g. Install and tighten the level and fill plugs.
 - h. Install and secure the belt drive covers.
- ### 6. Cleaning Breathers:
- a. Remove breathers and blow out with an air hose.
 - b. If dirt has caked up in the breather, soak in good solvent and then blow out. It may be necessary to use a probe to loosen the dirt.
 - c. Install and tighten the breather.
 - d. Install and secure the belt drive covers.
 - e. Clean vents in end plates located under the blower on either side of the drain plug.

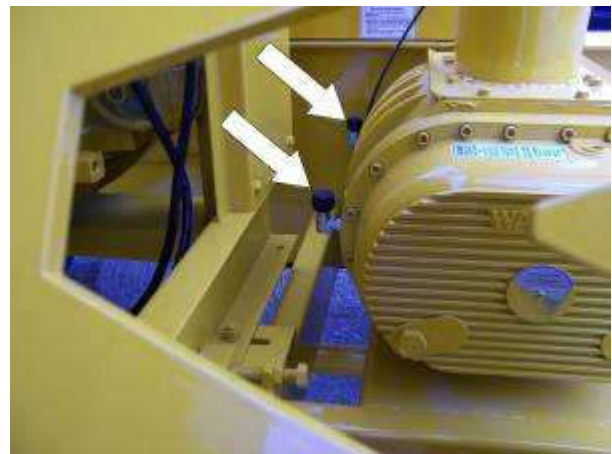


Fig. 5-16 Breathers

5.2.3 AIRLOCK

The airlock acts as a seal between the vacuum and pressure sides of the machine and is located at the bottom of the receiver tank. As the rotor turns, a pocket is filled with material when it points upward. As the pocket rotates, it is moved to the bottom and is moved into the pressure side of the system. The grain is picked up by the stream of pressurized air and moved out the discharge piping.

Efficient operation of the airlock requires a close fit between the tips of the rotor and the case to maintain a seal between vacuum and pressure sides.

When checking or maintaining the airlock, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Disconnect the hydraulic lines from the tractor to prevent airlock operation.



Fig. 5-17 Airlock Typical Location Below Receiver Tank

5.2.3 AIRLOCK (cont'd)

3. Checking Tip Clearance:

- a. Checking the airlock can be done through the inspection door.
- b. Use a feeler gauge to check the clearance between the tip and the case. Inspect each tip over its entire width.
- c. The clearance of the tips must be maintained at :

6614D	.004in - .010in
7614D	.008in - .011in
7816D	.008in - .011in
8614D	.008in - .012in

- d. Replace any tips that are bent, chipped or broken.

NOTE

Blades are reversible if not excessively damaged.



Fig. 5-18 Tip Clearance

4. Wiper Blade:

A wiper blade is located at the top of the airlock to clean the tips as the airlock turns.

To check the wiper blade, follow this procedure:

- a. Open the access door on receiver tank.
- b. Reach into the top of the airlock and feel the condition of the wiper blade.
- c. Replace it if it is damaged in any way.

5. Blade Replacement:

- a. Disconnect hydraulic hoses from the tractor.
- b. Remove the quick connect plugs from hydraulic lines.
- c. Lift the receiver tank off the airlock.
- d. Remove the tips from the rotor and the wiper blade from the housing.

- e. File the ends of each replacement blade so there is approximately 0.006 inches of clearance between the ends and the housing.
- f. Mount the blades to their respective vane and tighten bolts finger tight.
- g. Rotate airlock rotor slightly to set the clearance between the blade and the case. Be sure to set it at 0.004 inches of clearance. Use a feeler gauge.
- h. Tighten the center bolt first. Then the others.
- i. Rotate the airlock and listen if it touches the housing anywhere. A slight touch is alright.
- j. Repeat mounting procedure with the other blades.
- k. Turn the rotor after each blade is installed to be sure it does not contact the case.
- l. Mount the new wiper blade. Be sure the wiper contacts each tip slightly as the airlock turns.
- m. Install and secure the airlock.
- n. Connect hydraulic lines and close access door.
- o. Run the airlock at operating speed.
- p. Clean thoroughly.

5.2.4 AIR SYSTEM RELIEF VALVES

The air in this system is moved by the blower. It draws air into the intake side and creates a vacuum that can pick up and draw material into the system. As the air moves through the blower, it becomes pressurized and flows through the airlock to move material out of the system and to its destination. As the flow into the intake is restricted, the vacuum will build until it exceeds the setting of the intake relief valve. The valve opens to supply a flow of air to the blower to prevent overheating. A relief valve on the pressure side will also open to allow air flow if the airlock (outlet pressure side of the circuit) is restricted or plugged.

The vacuum side relief valve is set to open at 16 in. Hg vacuum and the pressure side at 15 psi. Both must function at very close to these specified levels to insure optimum capacity and performance. After prolonged use, the springs in these valves can weaken causing the valve to open prematurely and affect machine performance. Dirt and debris can get caught in the valve seat allowing air leakage that affects system performance.

To maintain air system relief valves, follow this procedure:

1. Listen for the valves opening during operation. They will sound like a popping or a whistle if they are opening.
2. Install gauges on the vacuum and pressure sides of the air system.
3. Watch the gauges to monitor the pressure in the vacuum and pressure sides of the air circuit.
4. Restrict the flow into the intake side of the air system until you hear the valve open. The vacuum gauge should read 16 in. Hg. If it does not, replace valve.
5. Restrict the output side until you hear the valve open. The pressure gauge should read 15 psi. If it does not, replace the valve.
6. Place all controls in neutral or OFF, stop engine, remove ignition key and wait for all moving parts to stop.
7. Remove old valve and replace it with a new one.
8. Tighten valve into fitting to secure.

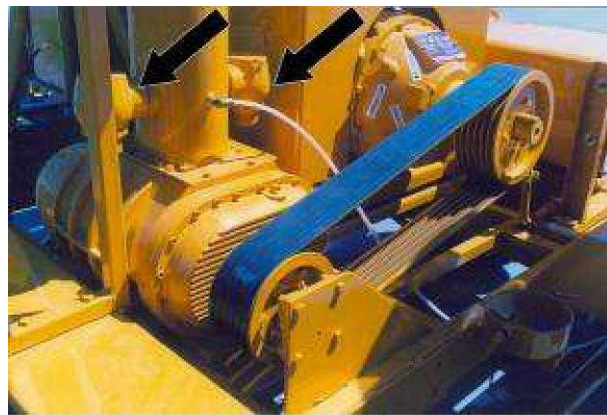


Fig. 5-19 Vacuum Relief Valves

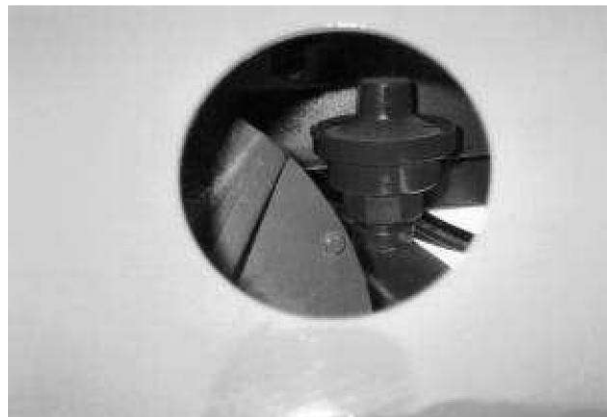
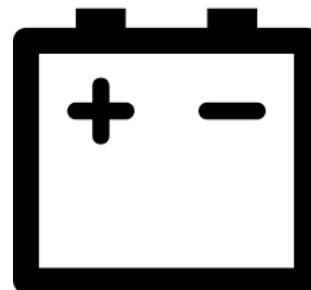


Fig. 5-20 Pressure Relief Valve

5.2.5 DISCONNECT BATTERY

When performing any repairs to your Ultra-Vac where welding is needed, it is highly recommended that the battery is disconnected, or an automotive surge protector is installed in order to prevent any surging from occurring. Failure to do so could result in 'frying' the ECU.



6 TROUBLE SHOOTING

The Walinga Ultra-Vac® is a high capacity air pump that creates a vacuum for picking up grain and supplies pressurized air for moving the grain. It is a simple and reliable system that requires minimum maintenance.

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

If you encounter a problem that is difficult to solve, even after having read through this trouble shooting section, please call your Walinga dealer. Before you call, please have this Operator's Manual and the serial number from your Ultra-Vac® ready.

6.1 MOBILE TRANSFER UNIT

PROBLEM	CAUSE	SOLUTION
Slow pick up of grain.	Air leaks.	Tighten all vacuum connections. Be sure seals are in good condition.
		Tighten receiver cyclone to base.
		Check seal on pre-cleaner bottom door. Close and secure.
		Inspection door must be closed and sealed.
		Check vacuum relief valve. Replace if defective. Clear obstruction.
Slow discharge of grain.	Air leaks.	Check pressure relief valve. Clean or replace as required.
		Check clearance between lobes and case. Excessive clearance will decrease air flow. Consult your dealer.
		Check that tip clearance is 0.004 inches. Adjust or replace tips as required.
	Improper setting of air slide.	Reset airslide.
		Tighten all pressure connections. Be sure seals are in good condition.
		Check pressure relief valve. Clean or replace as required.

PROBLEM	CAUSE	SOLUTION
Slow discharge of grain (cont'd).	Defective blower.	Check clearance between lobes and case. Excessive clearance will decrease air flow. Consult your dealer.
	Defective airlock.	Check that tip clearance is 0.004 inches. Adjust or replace tips as required.
	Improper setting of flow control valve.	Reset flow control.
Pulsation.	Not enough air flow.	Open air slide on nozzle to provide more air. Increase blower speed or decrease size of intake piping.
	Too many bends.	Straighten out intake line.
Blower overheating.	Not enough air flow.	Open air slide on nozzle to provide more air.
	Low oil level.	Add oil as required.
Product damage.	Liners worn out.	Replace wear liners in discharge cyclone.
	Poor connections.	Tighten and seal all connections.
	Lines wearing.	Eliminate elbows. Keep lines straight as possible and provide a large radius for bends.
	Excessive RPM speed.	Decrease air flow by slowing blower or increasing size of the lines. Increase grain quantity by closing air slide.
Blower bogging down.	Dirt from pre-cleaner going through blower.	Clean pre-cleaner tank. Clean more frequently in dirty conditions.
Hydraulics overheating.	Low oil level.	Check engine oil level. Add as required.

PROBLEM**CAUSE****SOLUTION**

Hydraulics overheating (cont'd)

Poor oil quality.

Replace with oil of required specifications.

Defective hose or tube.

Check hoses, lines and couplers. Repair or replace as required.

Improper circuit.

Check for proper system setting. i.e. open or close.

Wrong airlock speed.

Check for speed control valve. If oil flow continues at 0 setting, repair or replace valve.

Too much flow.

If flow from engine is set at 30 gpm, reduce to 15 gpm.

Airlock too tight.

Adjust airlock tips.

6.2 AIRLOCK**PROBLEM****CAUSE****SOLUTION**

Noisy airlock.

Tips hitting case.

Readjust tips where applicable

Airlock stalls.

Airlock jammed.

Reverse airlock direction to clear.



Remove obstruction from airlock by opening inspection door or discharge elbow. Disconnect hydraulic hoses.

Insufficient oil flow.

Check couplings or lines.

Defective engine hydraulics. Repair engine.

Airlock operated in reverse too long.

Rotor damaged. Repair or replace rotor.

Blades too tight.

Loosen bolts. Refer to airlock maintenance.

Faulty airlock motor.

Replace motor.

Faulty flow divider.

Replace flow divider.

Faulty pressure relief valve.

Replace pressure relief valve.

Air loss through airlock.

Tip clearance too large.

Adjust tips to decrease clearance to 0.006 inches.

Breaking rotor blades.

Airlock running in reverse.

Set for forward rotation. Repair or replace blades.

6.3 BLOWER

PROBLEM	CAUSE	SOLUTION
Low air volume.	Slow speed.	Check blower speed with tach. Increase speed. Check for slipping belts. Adjust belt tension as required.
	Piping blocked.	Check inlet and outlet piping. Remove obstruction. Check relief valves. Clean, repair or replace as required.
	Excessive pressure rise.	Check inlet vacuum and discharge pressure and compare with recommended conditions. Determine cause before continuing.
	Worn components.	Check clearance and replace defective components. Refer to Blower Manual.
Overheating.	Inadequate lubrication.	Check oil level in reservoirs. Add as required.
	Excessive lubrication.	Check oil level. Correct as required.
	Excessive pressure rise.	Adjust operating conditions to reduce pressure rise to below 10 psi.
	Coupling misalignment.	Check and realign.
Engine overloading.	Speed too high.	Check and decrease speed to recommended RPM.
	Pressure too high.	Adjust operating conditions to set rise to below 10 psi. Add more air.
	Impellers rubbing.	Consult your nearest dealer.

6.4 V-BELT DRIVE

PROBLEM	CAUSE	SOLUTION
Loss in drive speed.	Belts slipping.	Tighten belts as required.
	Localized belt wear.	Check cross-section dimension. a. If narrow, pulley spinning. b. If swollen, belt failing internally.
	Unequal stretch on belts.	Defective belts. Replace with matched set.
	Belts overloaded.	Belts failed or worn out. Replace belts with matched set.
	Belt separation.	Belts too tight. Replace belts and set correctly.
	Envelope seams opening.	Check for oil or rubber solvent. Eliminate contamination and replace belts.
	Abnormal envelope wear.	Check for worn sheave, misalignment or slip. Replace defective parts, adjust properly and replace belt.
	Belt softening or swelling.	Eliminate oil or rubber solvent. Replace belt.
	Belt hardening or cracking.	Eliminate heat or chemical contamination. Replace belt.

7. SPECIFICATIONS

7.1 MECHANICAL

PRODUCT	CAPACITY* Bu/hr				CAPACITY* Tonnes/hr			
	6614D	7614D	7816D	8614D	6614D	7614D	7816D	8614D
Corn & Barley	3600	5000	5500	7000	92	127	140	178
Wheat	3200	4500	5000	6500	84	122	136	176
Soybeans	2800	4100	4800	6000	75	112	131	163

LINE SIZE			DISCHARGE HEIGHT	
6614D	7614D/7816D	6614D	6614D/7614D & 7816D	8614D
6in (150mm)	7in (175mm)	7in & 8in (175mm & 203mm)	14' minimum (4.26m)	15' maximum (4.57m)

Due to continuous product development, specifications are subject to change without notice. *Capacities based on using 12ft (3.65m) suction line and truck loading kit. Capacity will vary with the condition of the product.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

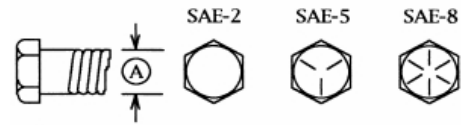
7.2 BOLT TORQUE

CHECKING BOLT TORQUE

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

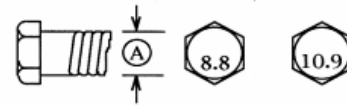
ENGLISH TORQUE SPECIFICATIONS

Bolt Diameter "A"	Bolt Torque					
	SAE 2		SAE 5		SAE 8	
	(N.m)	(lb-ft)	(N.m)	(lb-ft)	(N.m)	(lb-ft)
1/4"	8	6	12	9	17	12
5/16"	13	10	25	19	36	27
3/8"	27	20	45	33	63	45
7/16"	41	30	72	53	100	75
1/2"	61	45	110	80	155	115
9/16"	95	60	155	115	220	165
5/8"	128	95	215	160	305	220
3/4"	225	165	390	290	540	400
7/8"	230	170	570	420	880	650
1"	345	225	850	630	1320	970



METRIC TORQUE SPECIFICATIONS

Bolt Diameter "A"	Bolt Torque			
	8.8		10.9	
	(N.m)	(lb-ft)	(N.m)	(lb-ft)
M3	.5	.4	1.8	1.3
M4	3	2.2	4.5	3.3
M5	6	4	9	7
M6	10	7	15	11
M8	25	18	35	26
M10	50	37	70	52
M12	90	66	125	92
M14	140	103	200	148
M16	225	166	310	229
M20	435	321	610	450
M24	750	553	1050	774
M30	1495	1103	2100	1550
M36	2600	1917	3675	2710



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

* Torque value for bolts and capscrews are identified by their head markings.



Operator's Manual

6614D, 7614D, 7816D & 8614D



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