# BLAST CLEANING EQUIPMENT

## OPERATING AND MAINTENANCE MANUAL

### TITAN VRS RECOVERY SYSTEM

**MODELS COVERED**

**VRS-3.5 VRS-7.0 VRS-10.0**

**CAUTION**

**IMPROPER USE OF PRESSURE BLAST CLEANING EQUIPMENT CAN BE EXTREMELY HAZARDOUS. THIS MANUAL IS PROVIDED TO ASSURE THE SAFE OPERATION OF THE TITAN ULTRABLAST SERIES OF ABRASIVE BLAST CLEANING MACHINES. PLEASE READ CAREFULLY BEFORE PROCEEDING.**

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## DIAGRAMS

## 1.0 INTRODUCTION

This manual will provide the user a basic background in the operation and maintenance of TITAN MODEL VRS SYSTEM. These machines primary use is for high production dry stripping with reclaimable plastic media.

## 1.1 DESCRIPTION OF BASIC SYSTEM

Machines consist of a 3, 7, or 10 cubic feet capacity pressure blaster specially modified for use with plastic media. Each blaster is equipped with 50 feet (standard) of blasting hose and a production nozzle. Media is regulated by means of a high production grit valve and remote control system.

## 2.0 INSTALLATION

Packed in a separate container are the media hose and hopper, dust hose, blasting hose (s) and any optional items you may have ordered. Unpack these items.

## 2.1 RECLAIMER

If the reclaimer has been disassembled for shipment, reassemble it as shown on Figure 1 using the gasket and bolts provided. Note that there must not be any gaps where air could leak at the junction of the reclaimer and storage hopper.

After installing the reclaimer, connect the dust hose between the reclaimer outlet and dust collector inlet as shown in Figure 1. Use the worm gear clamps provided.

Connect the 4" diameter by 25' 0" long conveying hose between the reclaimer inlet and the load hopper using the worm gear clamps provided.

## 2.2 BLAST HOSE AND CONTROLS

Attach the blast hose coupling (s) (Item 2, Fig. 1) to the quick couplings (Item 1, Fig. 1) located on the media regulator outlet (s).

Important: To assure that quick couplings cannot be accidentally disconnected, all couplings have two “Safety Wire” openings which are furnished with coupling pins. Make sure that the coupling pins are in place before proceeding.

Install the remote control line (s) (Item 3 and 3A, Fig. 1) and handle (s) (Item 4, Fig. 1). The black and yellow pneumatic control lines should be connected to the labelled fittings. Secure the control handle to the blast hose with the two adjustable hose clamps provided. Use friction tape or similar material and tape the control lines to the blasting hose (s) approximately every four feet.

## 2.3 ELECTRICAL CONNECTIONS

The pneumatic recovery system is powered by a 10 HP high pressure fan. A motor starter is provided for the fan motor. The supply wiring to the motor starter should be sized and wired by a qualified electrician in accordance with the standards outlined in the National Electric Code Article 430.

The motor starter furnished provides running overload and undercurrent protection for the fan motor. Supply wiring provided should also have:

a. Branch circuit protection - fuses (NEC 430-52)

b. A disconnect switch within sight of (but not more than 50 ft. from) the fan motor (NEC 430-86).

Make sure that fan rotates in the direction shown on the decal on the side of the fan housing.

## 2.4 COMPRESSED AIR SUPPLY

The volume of air required for efficient operation of your system depends on the size of the nozzle (s) being used and the desired blast pressure. The top numbers on the chart below show minimum air requirements in SCFM for various nozzles and pressure. The bottom numbers (in parenthesis) show the pounds of plastic media consumed each hour at the indicated nozzle size and pressure. Flow rates are approximate since actual flow can vary depending on grit valve adjustment.

| | PSI | | | | | | |
|---|---|---|---|---|---|---|---|
| Nozzle Size | 25 | 30 | 35 | 40 | 45 | 50 | 60 |
| 1/4 | 28 (78) | 32 (89) | 37 (103) | 41 (114) | 45 (125) | 49 (136) | 56 (156) |
| 5/16 | 44 (122) | 50 (139) | 57 (158) | 64 (178) | 70 (194) | 76 (211) | 88 (244) |
| 3/8 | 63 (176) | 73 (203) | 82 (228) | 91 (252) | 100 (277) | 109 (303) | 126 (350) |
| 7/16 | 85 (236) | 99 (275) | 112 (311) | 124 (344) | 137 (381) | 149 (414) | 172 (473) |
| ½ | 112 (311) | 129 (353) | 146 (406) | 163 (453) | 179 (497) | 194 (539) | 225 (625) |

Keep in mind that for efficient operation your compressor must have capacity in excess of the actual requirement. Check with your compressor supplier for the recommended compressor size for a given air flow.

Connect your compressed air piping or hose to the threaded air inlet (Item 17 on Figure 1). If an undersize hose is used, the performance of your system will suffer. The minimum size of hose depends on the volume of compressed air being used as well as the distance to the compressor. The chart below indicates the minimum pipe or hose size which should be used:

| SCFM | 100 | 150 | 200 | 250 | 300 | 350 | 400 |
|---|---|---|---|---|---|---|---|
| Pipe or hose size | ----- 1" ---------- | | 1 1/4"---------- | | 1 ½"---------- | | 2"---------- |
| Distance | 50 | 100 | 150 | 200 | 250 | 300 | |

Example: Air flow 200 SCFM, distance 100 ft. use 1 1/4 hose

IMPORTANT: For proper operation your system requires dry, clean air. Moisture or oil in your compressed air supply can contaminate abrasive and prevent it from flowing freely resulting in inefficient blasting. Your unit is equipped with a moisture trap which will help to remove water which may condense in the connecting air piping during shutdown, however, this trap is not designed to clean grossly contaminated air.

## 2.5 MEDIA LOADING

With the fan running load the initial charge of media into the recovery hopper. The amount of media required to fully charge your system is shown below:

| System | Lb. Media |
|---|---|
| 3 cubic foot | 150 |
| 6 cubic foot | 300 |
| 10 cubic foot | 500 |

Media level in the storage hopper can be observed through the door above the blaster.

Your system is designed for use with plastic media in the 12 to 80 mesh sizes. Other media may cause operational problems - consult the factory prior to using any other kind of media.

## 3.0 OPERATION

Your system is designed to allow one or two operators to blast within a confined area. As the operators are blasting (or afterward) spent media can be swept or shoveled from the floor into the recovery hopper provided. (Snow shovels are very efficient low cost tools for collecting media from the floor).

Media and dust are pneumatically conveyed to a cyclone separator where good media is reclaimed and dust is carried to the dust collector. Debris gathered up with the media is trapped on the recovery hopper screen. A second screen in the cyclone separator catches any debris which works its way through the first screen. Good media drops into the storage hopper above the blaster where it is held until recharging.

Keep in mind that the non-aggressive properties of plastic media can be defeated if the media becomes contaminated with harder materials such as sand. As media is blasted and recovered, it can become contaminated unless care is taken. The standard screens and cyclone separator of the system are not designed to prevent this type of contamination.

## 3.1 STARTUP

IT IS STRONGLY RECOMMENDED THAT PRIOR TO STARTUP ALL BLASTING PERSONNEL BE TRAINED IN THE PROPER OPERATION AND MAINTENANCE OF THE SYSTEM. TRAINING BY QUALIFIED FACTORY PERSONNEL IS AVAILABLE PLEASE CONTACT US FOR FURTHER INFORMATION.

After the hoses, controls, power supply and compressed air supply are connected the system is ready for use. Double check all hose connections to be sure that they are tight and that safety wires have been installed in all quick couplings.

Once all equipment has been checked and the operator is positioned ready for blasting, the compressed air line from the compressor can be opened to pressurize the blaster. At this point, the operator can depress the remote control handle to begin blasting.

The system provides the following:

1. Blasting pressure regulator and gauge

Blasting pressure will depend on the type of work being done. A normal operating range when using plastic media will be 20 - 60 PSI. Be aware that blasting at too high a pressure has the potential to cause surface damage and rapid media breakdown.

The adjustment knobs on both the blast pressure and media flow controls can be removed to prevent unauthorized tampering.

## 3.2 MEDIA RECOVERY

Media recovery can take place at the same time as blasting if desired, or it can be done after blasting is completed. All that is required is to start the fan motor and then sweep or shovel media into the recovery hopper. This hopper is designed to meter the media at a controlled rate so as not to overload the conveying system. In addition to the standard above floor hopper, optional hoppers designed for mounting in a shallow pit are also available.

The media recovery hopper is designed to be used with 25 feet of 4" diameter hose.

## 3.3 RECHARGE OF BLASTER

The length of time an operator can blast continuously without recharging will depend on the following factors:

a. Nozzle size
b. Blast pressure
c. Size of blaster
d. Number of operators

The continuous blasting time for a given system can be calculated by using the media flow rates in Section 2.4. For example a single operator using a 6 cubic foot capacity tank and a 5/16" diameter nozzle at 50 PSI can operate continuously for about (211/600) x 60 = 42 minutes before shutting down to recharge. Since actual media flow rates can vary depending on how the media valve is adjusted, actual continuous blasting time can vary.

The recharging procedure is as follows:

a. Turn off the blower
b. Shut off the inlet valve (Item 20, Fig. 1)
c. Open the exhaust valve (Item 9, Fig. 1)

Recharge time will be approximately 2 -3 minutes. Once media from the storage hopper has drained into the blaster:

a. Close the exhaust valve
b. Open the inlet valve
c. Turn on the blower

- If the cleanup operator will be working at the same time as the blast operator(s), then he should be furnished with an approved air fed breathing system.

## 4.0 EQUIPMENT ADJUSTMENTS

### 4.1 FINE TUNING OF CYCLONE SEPARATOR

A key feature of the system is its ability to separate unusable dust from good media. This improves visibility in the blasting area and increases the blast effectiveness since only good media is circulated. Dust can be removed by opening the vent ports however, this adjustment must be made cautiously since too much opening will cause good media to be carried to the dust collector. Decreasing the opening will allow smaller sized particles to be retained.

The proper opening for the vent ports (Item 23, Fig. 1) will vary depending on the type and size of media and the condition of the dust collector filter. The proper port setting must be determined by trial and error. When a system is new, the vent ports may have to be adjusted periodically to make sure the proper sized media is retained. After the system is "broken in", it will be possible to "set and forget" the vent ports.

### 4.2 ADJUSTMENT OF VIBRATING SCREEN

The screen below the cyclone reclaimer includes a pneumatic vibrator to assure that the lightweight plastic media will not pile up on the screen. If media does not flow freely through the screen, this pressure can be increased as required.

## 5.0 MAINTENANCE

5.1 Every 4 hours of operation pulse dust collector filter by pushing and releasing button (Item 12, Fig. 1) 10 - 15 times.

### 5.2 DAILY MAINTENANCE

a. All rubber washers on nozzle, blasting hose, tank and air line couplings must be properly installed and in good condition.

b. Check operator's protective equipment, such as blasting hood, window, gloves and protective clothing.

c. All couplings must be equipped with "safety wires".

d. The nozzle must be tightly secured to the nozzle coupling. Do not use the nozzle without a washer. This will cause premature wear to nozzle and coupling. For smooth flow the nozzle entrance I.D. and washer I.D. should be the same size.

e. Open the drain valve on the moisture separator to remove any accumulation of moisture. The valve should be left slightly cracked to assure that accumulated moisture will be removed.

f. Dual line hose must be in good operating condition and tightly secured at the operator's control handle and at the blaster.

g. All manual valves must be in good operating condition and easy to open and close.

h. Conveying hose in good condition and tightly secured.

i. Clean screen in load hopper and below cyclone separator.

j. Check oil level in lubricator and add oil if necessary.

k. Empty dust from dust collector.

### 5.3 WEEKLY MAINTENANCE

a. The specially constructed blasting hose should be checked for signs of wear. Replace if any soft spots are found.

b. Inspect the sealing "O" ring and sealing plunger for signs of wear. Replace if worn. To replace "O" ring, pry old ring out with a screwdriver from the outside top of the filling head. Install a new ring by pressing it into groove. Ring must be "seated" properly.

Note: If "O" ring is difficult to install, use a lubricant such as petroleum jelly applied to the rubber "O" ring itself. To replace sealing plunger, remove the cover from the handhole to gain access to the blaster interior. Turn the plunger guide counter-clock-wise with vise-grip pliers. Remove plunger and guide. Slide new plunger in guide and install guide back onto tee. The guide need not be tightly seated, finger tight is adequate. The use of pipe tape on threads will permit easy removal of the guide in the future. Replace handhole cover - the gasket must be centered to prevent leakage.

c. Check main air, choke and exhaust valves for good operating condition.

## 5.4 MONTHLY MAINTENANCE OR 200 HOURS OF OPERATION

a. Check ball and stem and diaphragm in 5700-17 abrasive regulator for wear or ruptures. In the grit valve, the ball is worn if air from the nozzle does not shut off completely when the remote control handle is released. Replace if defective. (See 6.2).

b. Check rubber diaphragm in the grit valve to see that it is in good operating condition. Air leaking through or around a diaphragm will escape through the vent hose in the diaphragm cover. Replace diaphragm if defective (see Section 6.1 and figure #5B).

c. Check the nozzle for wear. A nozzle is considered worn* when it wears to half again its original diameter. Example:

3/16" nozzle increases to 1/4"

1/4" nozzle increase to 3/8"

5/16" nozzle increase to 7/16"

A drill bit can be used to measure the nozzle opening. Blasting with a worn nozzle can cause wear on the air compressor and may reduce operating pressure which will reduce blasting speed.

- Note that compressed air consumption increases as the square of nozzle diameter, i.e. a 3/8" diameter nozzle requires more than twice as much SCFM as a 1/4" nozzle. Compressor capacity may limit the amount which a nozzle is allowed to wear.

## 6.0 REPAIR AND MAINTENANCE

6.1 REMOTE CONTROL SYSTEM - PART NO. 5700 ABRASIVE REGULATOR AND PART NO. 5720 INLET VALVE - A complete internal inspection should be performed. If possible, the unit should be empty when this is done.

6.2 DISASSEMBLY

1.) (ABRASIVE REGULATOR ONLY) - If the machine contains abrasive the tank should be placed on its side to prevent the abrasive from flowing out during service. If the machine must remain in a vertical position, remove the Cleanout Plug (18) and insert a short length of 3/4" O.D. pipe or tubing through the Valve Body into the Ball Seat (15) to block abrasive flow.

2.) Remove the air pilot line from the Valve Cover (6).

3.) Release tension from spring by removing Tensioner (4 or 25).

4.) Remove the 6 nuts from 3/8" Hex Head Bolts (9) that hold the valve cover in place.

5.) Using a small hammer LIGHTLY tap around the Outer Spacer ring (14). This will free up the entire outer assembly for removal. DO NOT use a screwdriver or similar tool to pry off spacer ring and cover. The Valve Cover (6), Ball and Stem (20). Ball Stem Nut (19), Diaphragms (11) and the Spacer ring (14) should be removed as one unit. Remove the Hex head Bolts and separate the Valve Cover from the remaining parts.

6.) Inspect Diaphragms (11) for tearing and replace if necessary. *To replace Spring Diaphragm the following instructions must be followed to insure proper operation and safety precautions.

7.) A drill press or manual press must be used to compress the valve spring. To compress the spring install assembly with diaphragm toward drill chuck. Open drill chuck to allow spring bolt to enter inside during assembly. Insert socket head wrench through hole in base of press, spring retainer, and into spring bolt. Compress spring using handle of press. Remove threaded washer (13) and relieve pressure slowly from handle.

8.) The Ball and Stem (20) should be replaced if any sign of wear is present.

9.) The Ball Seat (15) should be replaced when any wear is visible or the Ball and Stem will wear prematurely. A 1-3/4" socket is required to remove the Seat. When installing a new seat coat the threads with pipe point compound and tighten to 30 ft. lbs. of torque, DO NOT OVER TIGHTEN.

10.) Holding the Valve Cover (8), check the operation of the Control Handle (1). It should turn freely without binding. Inspect the Control stem for worn or damaged threads, replace if necessary.

## 6.3 RE-ASSEMBLY

1.) Spring Assembly - Check condition of threads on spring bolt (9), replace if necessary. Spring Washer (10) should be flat and the center hole should be round. Replace if wear is evident. To reassemble spring install assembly in press as described in removal instructions. Compress spring with handle of press and attach spring bolt to threaded washer. The entire assembly should be tightened until the diaphragm does not move on the assembly.

2.) Valve Assembly - Prior to installation of components remove the Spacer Piston (15) and inspect for wear. Replace o-ring and/or piston if wear is evident. Apply small amount of grease on o-ring prior to installation. Locate bleed holes on Valve Cover (6) and Center Spacer (14). Both bleed holes should face the ground when installed on machine.

3.) Insert the 6 - 3/8" Hex Head Bolts (9) through the Valve Cover and install the spacer/diaphragm assembly on the main body. Install the nuts on the Hex Head Bolts and torque to 35 ft. lbs. In two stages using a cross pattern, remove the tool from the cleanout port, install cleanout plug and torque to 60 ft. lbs.

4.) Apply tension to spring by turning tensioner in until it is tight against valve cover. DO NOT OPERATE WITH TENSIONERS PARTIALLY APPLIED. This will affect machine operation.

5.) Install air pilot line on the Valve Cover.

## 7.0 TROUBLE SHOOTING

### 7.1 PROBLEM-POOR PRODUCTION

a. Air pressure is an extremely important factor. In most cases, poor production problems can be traced to lack of air. This is generally caused by the following:

1. The compressor is too small for the nozzle being used.

2. The I.D. size of the air line is too small. (see chart in Section 2.4.) Or restrictions caused by improper fittings.

   Insufficient air supply or restrictions caused by undersized supply lines or improper fittings will cause a system to operate in the following way: When the blaster is pressurized but not blasting, the blaster pressure gauge will read full pressure. However, as soon as blasting starts, the pressure will rapidly drop to a much lower pressure.

3. Operating with a small diameter "whip" hose. Actual blasting pressure at the nozzle can be considerably less than the pressure indicated at the blaster if undersized blasting hose is used. In general, the blasting hose diameter should be at least three times the diameter of the nozzle. Actual pressure at the nozzle can be checked with an optional pressure tester an accessory we strongly recommend.

   REMEMBER: AIR IS THE MAIN INGREDIENT IN PRODUCTION BLASTING

b. Operating with a straight barrel nozzle instead of a production venturi barrel.

c. Operating with the nozzle too close to the surface being cleaned. The closer the nozzle is to the surface, the smaller the blasting pattern.

d. Operating with a small nozzle orifice. The smaller the orifice, the smaller the blasting pattern.

e. Grit size too small. A general rule to remember: "The thicker the coating being removed, the coarser or larger the grit particle size should be".

f. Blast finishing a part which is oily or wet - the surface must be absolutely dry and free of any oil, grease, water, etc.

g. Operating with an improper setting at the grit valve - if the mixture is either too rich or too lean it will affect the operator's performance.

h. Too much dust in media. Adjust reclaimer as described in Section 4.1. Be sure operating pressure falls within the recommended range (Section 3.1). Replace broken down media with new media if necessary.

## 7.2 PROBLEM PULSATING OR SURGING OF GRIT FROM THE NOZZLE

a. Operating with the choke valve partially closed. This valve must remain open during blasting operations. The choke valve is designed to help in removing most obstructions found in the pressure vessel and grit valve. By closing the choke valve, all the compressed air is forced into the pressure vessel helping to "push" the obstruction down into the tee at the bottom of the grit valve, opening the choke valve permits air to flow through the line, pick up the debris or obstruction and carry it out the blast hose to the nozzle.

b. Operating with an improper media flow setting. If the media mixture is too rich it will pulsate. Gradually reduce the flow of media.

c. Operating with damp media. Media must be absolutely dry to flow evenly through the grit valve and blast hose. On humid days, or when using an older compressor, it may be required to operate with the moisture separator drain chock slightly opened. If conditions persist, an air dryer may be required.

d. Operating with the blasting hose I.D. too large for the nozzle orifice size, (for example: If you use a 3/16" nozzle with 1 1/4" blasting hose, you will have a pulsating effect. Reduce the blasting hose I.D. size to 1" or 3/4".)

e. Nozzle attached to nozzle coupling with restrictive washer - washer opening should be same diameter as nozzle entrance.

## 7.3 PROBLEM FLOW OF AIR THROUGH THE NOZZLE BUT LITTLE OR NO FLOW OR GRIT

a. Grit valve closed - during operation the handle on the grit valve should be backed out 3 - 4 turns. To do this turn handle counter-clock-wise.

b. Clogged nozzle. Sometimes a clogged nozzle will allow air to pass, but little or no grit. Remove the nozzle from the coupling and inspect.

IMPORTANT: DO NOT REMOVE NOZZLE WHEN BLASTER IS UNDER PRESSURE.

c. Blaster is empty. Refill with grit

d. Contaminated grit - Grit contaminated with moisture, excess fines, or foreign material can interrupt grit flow. This free flow is necessary for effective blasting.

e. Clogged grit valve

1. Adjust the grit valve to full open position. While the machine is blasting, close the choke valve for a few seconds; then open it fully. Doing this three or four times should clear any temporary blockage. Reset the grit valve and continue blasting.

2. If Step #1 is not successful depressurize the blaster and back out the set screw and spring tensioner (Item 4) handle at least 2/3". This will relieve all pressure on the Ball and allow it to open a full 3/4" in. Choke the machine as in Step 1.

3. If Step 2 is not successful depressurize the blaster. Remove the lower flange housing from the regulator body (see 6.2). Inspect bottom opening of tank with a flashlight. Also, check cleanout in regulator. Remove foreign material causing blockage. Continue blasting.

g. Air leaks around grit valve diaphragm assembly when remote handle is depressed (Item 11).

1. Tighten the 6 bolts around outside of spring enclosure. If this fails to stop air leaks proceed to next step.

2. Disassemble spring enclosure check diaphragm (Item 11), tightness of plunger and “O” rings (Item 15 -16). Replace any worn part and retighten plunger.

3. Plunger (Item 15), frozen in the closed position. Disassemble diaphragm body. Inspect plunger and plunger guide, replace if scored or frozen. Note: A new “O” ring (16) should be used and a light film of white grease applied during reassembly.

## 7.4 PROBLEM NO FLOW OF COMPRESSED AIR OR GRIT

a. Clogged nozzle - Depressurize blaster and remove the nozzle from the coupling and inspect for any foreign material that may be lodged in the orifice opening. Important: Do not remove nozzle when blaster is under pressure.

b. Clogged blasting hose. Remove the nozzle and washer from the coupling and while someone is firmly holding the blasting hose, do the following:

1. Close the main air valve and grit valve.

2. Turn on the air compressor.

3. Close the exhaust valve.

4. Open the main valve.

This will force the compressed air through your blasting hose and dislodge packed grit. You may have to disconnect the blasting hose and inspect the tank coupling for any foreign material.

## 7.5 PROBLEM - WHEN OPERATOR HANDLE IS FIRST DEPRESSED, GRIT AND AIR FLOW NORMALLY, BUT THEN GRIT FLOW GRADUALLY STOPS LEAVING ONLY AIR FLOW.

a. Leak through or around grit valve diaphragm. If air escapes through vent hole in cover (Item 6) the diaphragm is defective or its connecting hardware is not tightened properly.

b. Undersized supply air line - size according to Section 2.4.

7.6 PROBLEM - UNABLE TO STOP THE FLOW OF COMPRESSED AIR

When hand pressure is removed from the operator's control, the compressed air should stop immediately. If the compressed air does not stop, the problem is in the automatic air valve or operator's control.

a. Check for a sticking plunger in the operator's control handle. This can be done as follows. Remove the grey return line just behind the operator's control handle, when the handle is depressed, air should flow from the disconnected fitting; when the handle is released, the flow of air should immediately stop. If flow does not stop, disassemble control handle and clean. Inspect plunger and "O" rings, replace if worn or frozen.

7.7 PROBLEM - GRIT SURGING FROM NOZZLE WHEN POT IS PRESSURIZED AND CONTROL HANDLE NOT DEPRESSED. REF. FIGURE #5B.

a. Operating with spring tensioner (4) leave in bolt (25) not fully seated against body. Turn in until fully seated.

b. Ruptured or worn diaphragm/Ball & Stem (11 - 20). Disassemble valve. Inspect and replace if defective.

c. Plunger (15) frozen in the fully open or partially opened position. Disassemble diaphragm body.

Note: A new "O" ring (16) should be used and a light film of white grease applied during reassembly.

7.8 PROBLEM - RAPID WEAR OF COMPONENTS

Using media other than plastic media - systems are specially designed for use with plastic media. Using other medias may cause rapid wear of components. Consult with a factory representative prior to using media other that plastic.

7.9 PROBLEM - MEDIA NOT CONVEYING PROPERLY

a. Fan rotation backwards - jog fan to check rotation.

b. Fan silencer opening inadequate - the gap between the silencer lid and body should be at least 1/2 inch.

c. Media hose plugged - lift hose to detect clog. If a clog occurs, entire conveying hose must be emptied prior to further operation.

7.10 PROBLEM - FAN MAKES UNUSUAL NOISE

Bad electrical connection - fan is single phasing. Stop fan immediately - electrician to check all incoming electrical connections.

7.11 PROBLEM - GOOD MEDIA CARRIED TO DUST COLLECTOR

a. Vent ports open too far - adjust as described in 4.1.

b. Bad gasket on reclaimer door - if air can enter the reclaimer through a faulty gasket or improperly fitting door good media can be carried through the reclaimer.

8.0 REPLACEMENT PARTS (RECOMMENDED SPARE PARTS MARKED with asterisk*)

| | | | |
|---|---|---|---|
| 1. | | TC114 | Aluminum tank coupling * |
| 2. | | HC-1 | Quick Snap Coupling |
| 3. | | 6053 | Dual Line Hose with Fittings * |
| | A) | 6051 | Heavy Duty Dual Line Extension |
| | | 6100 | Deadman Switch |
| 4. | A) | 6011 | Male Adapter 1/8 x 1/8 plug |
| | B) | 6012 | Male Adapter 1/4 x 1/4 plug |
| | C) | 09648 | Adj. Clamp (each) * |
| 5. | A) | 502712 | UV-3 3/16" nozzle * |
| | B) | 502722 | UV-4 1/4" nozzle * |
| | C) | 502732 | UV-5 5/16" nozzle * |
| | D) | 502742 | UV-6 3/8" nozzle * |
| | E) | 502752 | UV-7 7/16" nozzle * |
| | F) | 502762 | UV-8 1/2" nozzle * |
| 6. | | NC-3 | Nozzle Coupling |
| 7. | | BHP-H | Blast hose with fittings * |
| 8. | | 5700-17 | Abrasive Regulator |
| 9. | | 5720-17 | Air Valve 1" NPT |
| 10. | | 08005 | Ball Vibrator |
| 11. | | 09702 | 4" diameter hose x 8' long |
| 12. | | 08002 | Silencer |
| 13. | | 1609 | Wheel |
| 14. | | 16760 | Wheel Swivel with lock |
| 15. | | MSS-14 | Air Filter 1 1/4 NPT |
| 16. | | AR-32 | Regulator 1 1/4 NPT |
| 17. | | 4027 | 1 1/4" Ball valve manual |
| 18. | | 09882 | Recovery hopper |
| 19. | A) | 08050 | Gasket, reclaimer door |
| | B) | 09990 | Vent Port covers |
| 20. | | 09980 | Muffler |
| 21. | | 09702 | 4" diameter recovery hose x 25 foot long * |
| 22. | | 09702 | 4" diameter x 12' long dust hose |