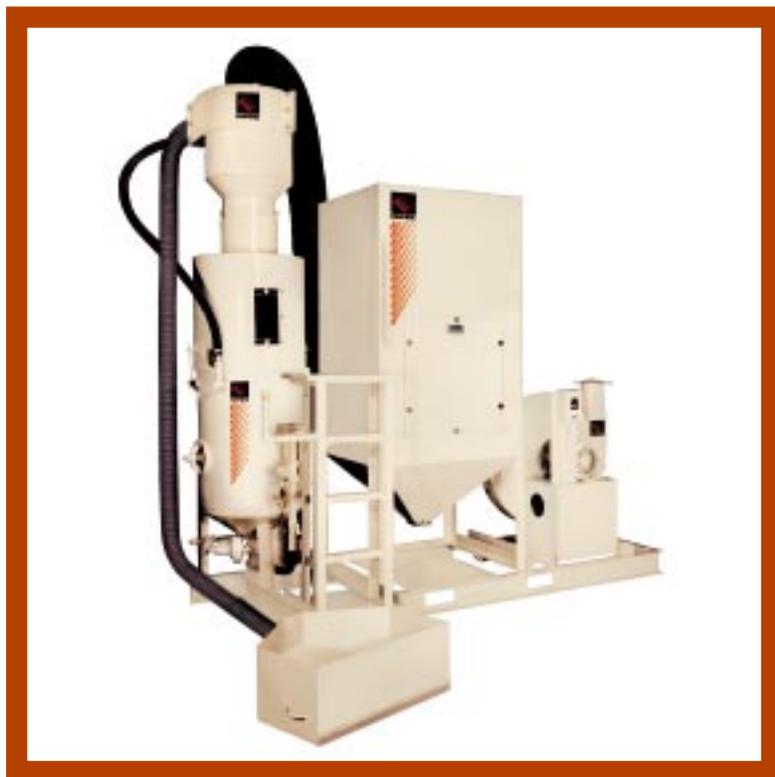


Operating Instructions
for the
Pneumatic Recovery System



EMPIRE ABRASIVE EQUIPMENT COMPANY

Model Number: _____ **Serial Number:** _____

Date of Purchase: _____ **Date of Installation:** _____

Distributor Purchased From:

Name: _____

Address: _____

Phone: _____

* * * * *

Manufactured by: EMPIRE ABRASIVE EQUIPMENT COMPANY
2101 West Cabot Boulevard
Langhorne, PA 19047-1893
Ph: 215-752-8800 Fax: 215-752-9373

Empire equipment should be properly maintained per the operating instructions. For peak performance of your equipment, use only genuine Empire replacement parts; accept no substitutes! **The use of non-Empire parts may void the warranty.**

PARTS AND SERVICE
1-800-497-4543

To order Empire replacement parts, contact your local authorized Empire distributor. For the name of you local distributor, call Empire Customer Service, 1-800-497-4543, or fax us at 215-752-9373, and we will call you back.

Operating Instructions for the
Pneumatic Recovery System
Empire Abrasive Equipment Company

IMPORTANT

SILICA SAND IS NOT TO BE USED IN ANY EMPIRE BLAST EQUIPMENT.

Safety Precautions

■ ■ ■ WARNING ■ ■ ■

Failure to follow all the manufacturer's instructions for operator safety equipment and blast equipment could result in serious injury or death.

Read this manual completely before installing and operating the SuperBlast equipment.

For maximum operator safety, use protective equipment. NIOSH/OSHA require the use of a respirator (air-fed hood) with proper air supply, remote controls, canvas jacket, pants, and leather gloves.

OSHA requires that the air-fed hood be equipped with a personal air filter, grade "D" compressed air, and CO monitor or an ambient air pump.

Always use safety wires when joining blast hose and air hose couplings.

Always check filters *before* blasting.

Ensure that there is an adequate air supply to both the operator's helmet and the pressure vessel.

■ ■ ■ SAFETY NOTE ■ ■ ■

Operating instructions for operator safety equipment, such as respirators (air-fed hoods), personal air filters, and ambient air pumps, are provided separately.

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1.0 Introduction

1.1 Contents of this Manual

This manual will provide the user a basic background in the operation and maintenance of Empire's Pneumatic Recovery System (PRS). The PRS provides an economical method of blasting and reclaiming abrasives.

Read this manual carefully and keep it handy for future reference.

1.2 Additional Information

If you have any questions regarding the operation or maintenance of any Empire equipment, please contact your local Empire distributor or Empire, at **(800) 497-4543**. Ask for the Technical Service Department. Every Empire distributor is qualified to assist you with service and offers a complete stock of replacement parts.

2.0 Description

The Pneumatic Recovery System consists of a high performance, high-vacuum dust collector, blower, and motor with an 800 CFM reclaimer and a storage hopper designed to fit on top of a portable pressure vessel. The pressure vessel may be existing or supplied with the system.

The *Pneumatic Recovery System* is illustrated in *Figure 2-1* and the parts list is provided in *Table 2-1*. Reference numbers in *Figure 2-1* correspond to the numbered items in *Table 2-1*.

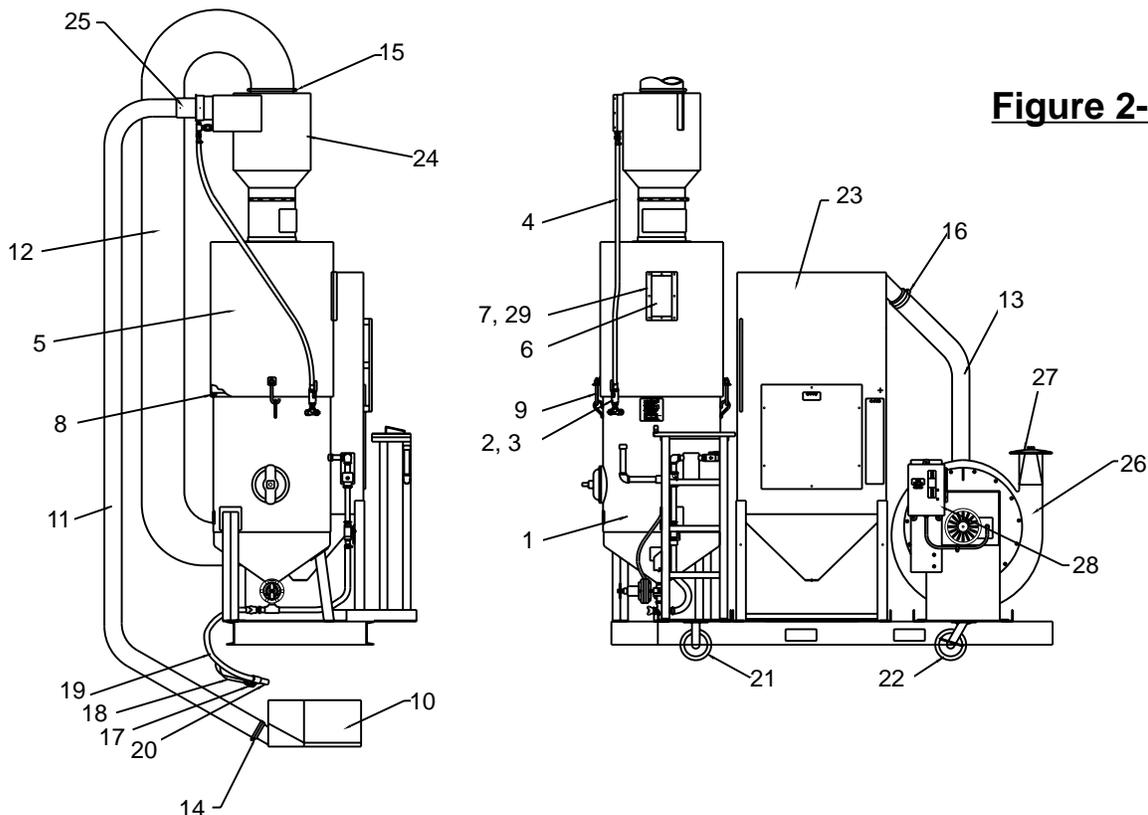


Table 2-1

Ref.	Part Number	Description	Ship Weight
1	221004	Pressure Vessel, S-650 with 780 Controls	490
	241004	Pressure Vessel, S-1050 with 780 Controls	790
2	518492	Ball Valve (for exhaust)	4
3	520181	Hose Barb, 1" NPT	2
4	520822	1" Blast Hose (Qty. = 9', standard)	9
5	290476	Storage Hopper Assembly, 6 1/2 cu. ft.	200
	290477	Storage Hopper Assembly, 10 1/2 cu. ft.	225
6	526231	Viewing Window, Storage Hopper	1
7	768262	Hold down, Viewing Window	2
8	523641	Sponge Rubber, 1" x 1 1/2" (Qty. = 9' standard)	1
9	764484	J-Hook, Threaded	1
10	768211	Media Recovery Hopper	68
11	515911	4" Hose, Heavy Duty (25' standard, lengths to 50')	40
12A	516153	10" Hose x 15' long, Heavy Duty	40
12B	516889	10" Hose x 25' long (Opt.)	55
13	515641	6" Hose x 8' long	15
14	522953	4" Heavy Duty Hose Clamp	1
15	522314	10" Hose Clamp	1
16	520551	6" Hose Clamp	1
17	290164	Saf-Stop II Dead-Man Control	2
18	521892	Dual Line Hose with Fittings (55')	9
19	521802	Blast Hose, 1" x 50' QC x NC	64
20	502732	5/16" Silicon Carbide Production Venturi Nozzle, Polymer Jacket	1
21	511521	Wheel, 8" dia.	5
22	511511	Wheel, 8" dia, Swivel with Lock	5
23A	113300	Dust Collector, DCM-200hv	850
23B	113300	Dust Collector, CDC-HV, Manual Clean	800
24	330007	800 CFM Ultra Lined Reclaimer	150
25	764032	Adapter, Reclaimer Inlet, 4" x 6"	2
26	549942	10 hp Blower, 230-460V/60Hz/3 Ph (Standard)	250
	549932	10 hp Blower, 200-208V/60Hz/3 Ph	250
	549952	10 hp Blower, 575V/60Hz/3 Ph	250
	549943	Replacement Impeller Kit	30
27	762992	Guard, Fan Outlet	1
28	290446	Electrical Assembly, 230-460V/60Hz/3 Ph (Standard)	15
29	525170	Window Gasket, 3/4" x 1" (3' required)	1

2.1 Principles of Operation

After blasting, media which falls on the floor of the blast enclosure can be shoveled into the portable media recovery hopper or swept into one of the optional 8, 10 or 12-foot long recessed floor troughs. The 10 hp blower pneumatically conveys the media to the tunable cyclonic reclaimer. The reclaimer separates the reusable media from dust and fines, which are carried to the high-vacuum dust collector. The reusable media drops into the storage hopper and is held until needed to refill the pressure vessel.

3.0 Set-Up

The PRS consists of a skid with the blower, dust collector, and pressure vessel (if supplied) mounted to it. Shipped separately are the recovery hose, media storage hopper, recovery hopper (or optional recovery trough), dust hose, heavy duty recovery hose, blast hose(s), reclaimer, and any optional items you may have ordered.

If you have purchased a system without wheels, locate the PRS in a position that allows access for maintenance, and is reasonably close to your blasting area. There is an access panel on the front of the dust collector for changing filter bags. The reclaimer will need to be adjusted, the screen inside the reclaimer will need to be cleaned, and the pressure vessel pipe string must also be accessible.

The PRS is not to be located within a blast enclosure. The skid should be placed just outside the enclosure. You will need to make several holes in your blast enclosure, one for the blast hose and remote control hose, one for the reclamation hose, and one for the hose that supplies an air-fed hood.

3.1 Component Assembly

Step	Procedure
-------------	------------------

- | | |
|-----|---|
| 1. | Remove the bolts and washers from the top of the media storage hopper (5). They will be used to mount the reclaimer, later. If you have purchased a system that includes a pressure vessel, go directly to Step 5. Before mounting the storage hopper, please note the location of the viewing window. The hopper should be oriented so that the window is easily accessible. There is a ladder mounted to the front of the skid to allow the operator to easily check the media level in the storage hopper. |
| 2a. | If the media storage hopper is to be mounted to an existing Empire SuperBlast Portable Pressure Vessel, it should be firmly secured to the two lifting eyes with the J-hooks provided. |
| 2b. | If the storage hopper is to be mounted to a pressure vessel without lifting eyes, use the optional clamping ring. |

Make sure the gasket on the inner lip of the storage hopper is sealed against the top of the pressure vessel.

NOTE

ASME Code pressure vessels can not be welded, cut, ground or altered in any way, except by properly qualified personnel. Any alteration or repair to these vessels requires recertification by a licensed inspector.

- | | |
|----|--|
| 3. | Bolt or weld the pressure vessel legs to the PRS skid. You may need to make modifications to the legs of the pressure vessel or to the skid. |
|----|--|

■ ■ WARNING ■ ■

Do not attempt to fill hopper or operate PRS without securely mounting pressure vessel legs to PRS skid and storage hopper to pressure vessel. Failure to do so may result in serious injury or death.

4. Connect the 1/4" air hose to the fitting on the front of the dust collector above the right leg. If possible, connect the other end to a fitting on the pressure vessel pipe string, using line pressure air. This air line is required to operate the cylinder in the dust collector that shakes the bags.
5. Set the flat screen in place over the hole in the top of the media storage hopper. Use the bolts from Step 1 to mount the reclaimer (24) to the top of the media storage hopper (5). Confirm that the gasket between the hopper and the reclaimer is in place and in good condition, as an air-tight seal is vital. Pay particular attention to the orientation of the 4" inlet on the side of the reclaimer. The recovery hose will be connected to that inlet. Also note that the door of the reclaimer should face the front of the machine. There is a ladder welded to the skid that allows maintenance personnel to clean the screens in the reclaimer. Open the reclaimer door and insert the basket screen atop the flat perforated screen in the reclaimer.
6. Connect one end of the 4" heavy duty recovery hose (11) to the inside of the reclaimer inlet. Use the predrilled holes and the screws provided to secure the hose to the reclaimer adapter (25). Apply silicone caulk around the hose to provide a completely airtight connection.
7. Connect the other end of the 4" heavy duty recovery hose to the recovery hopper (10) using the special clamp provided.
8. Install the 10" diameter dust hose (12) between the reclaimer outlet (on top) and dust collector (23) inlet located at the bottom, in the rear. Use the worm gear clamps provided. Insure that the connections are air-tight.
9. Attach one end of the 1" exhaust hose (4) to the hose barb on the reclaimer. Connect the other end to exhaust valve on the pressure vessel and clamp both ends.

3.2 Electrical Connections

The PRS is powered by a 10 HP high pressure fan (26). A fused disconnect is provided for the fan motor. The supply wiring to the fused disconnect must be sized and wired by a qualified electrician in accordance with the standards outlined in the National Electric Code Article 430 and all applicable local codes.

The fused disconnect (28) furnished provides branch-circuit short-circuit, ground-fault and overload protection for the fan motor in accordance with the National Electric Code.

NOTE: Make sure the fan rotates in the correct direction, shown by the arrow on the side of the fan housing.

3.3 Compressed Air Requirements

The only compressed air requirement for this machine is for the blast nozzle. The volume of air required depends on the size of the nozzle used and the desired blast pressure. See the air requirement chart below to determine your minimum compressed air requirements. Keep in mind that nozzles do wear out. As the orifice in the nozzle enlarges, your air requirement increases.

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. If a pressure vessel was purchased with the system, then the unit is equipped with a manual drain separator which will help remove condensation. However, this separator is not designed to clean grossly contaminated air.

Blast Pressure (psi)						
Nozzle Orifice	60	70	80	90	100	120
3/16"	30	33	38	41	45	–
1/4"	54	61	68	74	81	97
5/16"	89	101	113	126	137	152
3/8"	126	143	161	173	196	220
7/16"	170	194	217	240	254	300
1/2"	224	252	280	309	338	392
5/8"	356	404	452	504	548	611

* Amounts shown are CFM required to operate a nozzle at the given pressure. *

3.4 Pressure Vessel

If you purchased or are using an Empire pressure vessel (1) with your system, see the attached SuperBlast Operating Manual for set-up and operation.

The standard pressure vessel for this system is equipped with 780 pneumatic controls.

4.0 Operation

Your system is designed to allow one operator to blast within an enclosed area. After the operator has blasted, spent media can be swept or shoveled from the floor into the low profile recovery hopper provided. (Snow shovels are very efficient, low-cost tools for collecting media from the floor). Empire does not recommend having one operator blasting while another is sweeping. If you choose to blast and recover simultaneously, precautions must be taken so that the blast is not directed at personnel. While blasting is taking place, all personnel inside the blast enclosure must wear the appropriate OSHA safety equipment.

4.1 Start-up

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 air-tight and that safety pins have been installed in all blast hose quick couplings. Inspect the interior of the pressure vessel for cleanliness. Remove any debris that may be present.

4.2 Media Loading

1. Make sure pressure vessel is depressurized. Start the blower.
2. With the blower running, load the initial charge of media into the recovery hopper. The amount of media required to fully charge your system is shown below:

<u>System</u>	<u>Lb. Media</u>			
	<u>Steel Grit</u>	<u>Steel Shot</u>	<u>Aluminum Oxide</u>	<u>Garnet</u>
6 1/2 cubic foot	1,680	1,380	900	780
10 1/2 cubic foot	2,800	2,300	1,500	1,300

3. When the pressure vessel is 3/4 full, pressurize the pressure vessel to allow the storage hopper to fill. Observe the media level in the storage hopper through its viewing window. Do not let the storage hopper overflow as this can interfere with both the reclaimer and the pressure vessel's operation.

DO NOT OVERLOAD THE SYSTEM!

It is designed to operate with a full pressure vessel and a full storage hopper. Additional media in the system will cause reclamation and blasting problems.

NOTE:

Total weight of media loaded into any Pneumatic Recovery System must never exceed 3,000 pounds. Loading more than 3,000 pounds could cause structural damage to the system.

4.3 Blasting

Follow manufacturer's instructions for operation of your pressure vessel. If you are using an Empire pressure vessel, see the Operating Instructions for the SuperBlast Portable System for safe operation.

4.4 Media Recovery

To begin media recovery, start the fan motor and then shovel media into the low profile 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 in-floor troughs up to 12' long are also available.

The PRS is capable of reclaiming up to A-12 aluminum oxide or G-25 steel grit.

The media recovery hopper is designed to be used with (25) feet of 4" heavy duty recovery hose.

If the clean-up operator will be working at the same time as the blast operator(s), then he **must** be furnished with an OSHA compliant air-fed breathing system and protective clothing. Again, precautions must be taken so that the blast is not directed at any personnel.

4.5 Reclaimer Fine Tuning (See Figure 7-3)

A key feature of the recovery system is the reclaimer's ability to separate unusable dust from good media. This improves visibility in the blasting area and increases the blast effectiveness. The reclaimer is adjustable so that it may work with different types and sizes of media. The tuning band (7) is joined at both ends by a bolt that must be loosened before adjusting the band to allow more or less secondary air. The slot pattern in the reclaimer body has one slot omitted. The joined ends of the band must be located over the area of the omitted slot. The larger the opening, the more secondary air introduced. With more secondary air comes more carry-over to the dust-collector.

Step 1. Move the band by sliding in one direction until 1/16" of opening is created between the band and reclaimer slots.

HELPFUL HINT:

Place a pencil mark on the band and a corresponding mark on the reclaimer body.

Step 2. Turn the blower on and shovel media into the recovery hopper.

NOTE:

Dust collectors require a light coating of dust on their bags to achieve maximum efficiency (referred to as "seasoning"). Until your dust bags are seasoned, the system may require periodic adjustment.

Step 3. Shut down the blower. Dump the waste from the dust collector and check it for usable media.

Step 4. If no media is found in the waste, open the reclaimer metering band 1/16" to expose more of the reclaimer body slot area (let more air pass).

Step 5. Make a new reference mark on the reclaimer body.

Repeat steps 1 through 5 until media is present in the dust collector waste.

Step 6. When you find more than a trace amount of media in the dust collector waste, move the reclaimer metering band *back* to the last mark on the reclaimer body.

Once your filter bags are seasoned, you should receive consistent reclamation of good media.

The proper opening for the tuning band will vary depending on the type and size of media and the condition of the dust collector bags. The proper tuning band setting must be determined by trial and error. When a system is new, the tuning band 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 tuning band.

■ ■ WARNINGS ■ ■

1. Explosive Dust

Dust is generated from blast media, removed coatings and substrates. An extreme concentration of dust may combust if ignited by spark or flame. As a precaution, clean the system and empty the dust collector often. Change media that has excessive dust concentration.

2. Emptying the Dust Collector

Empty dust collector after each bag-cleaning. Always wear an appropriate dust mask when emptying dust collector or changing filter bags.

4.6 Dust Collector (See Figure 7-1)

Shake the dust collector bags by pushing the bag shake button 10 - 15 times. The fan must be off when cleaning the bags. Always empty the waste container after shaking bags.

5.0 Maintenance

Most of the maintenance required for your system will pertain to the pressure vessel. Follow the recommendations in the manufacturer's operating and maintenance manual. Other maintenance required is listed below.

5.1 Every (4) Hours

Shake the dust collector bags by pushing the bag shake (11) button 10 – 15 times. The fan must be off when cleaning the bags. Empty dust from dust collector.

5.2 Daily

- a. Check operator's protective equipment, such as air-fed hood, lenses, gloves and protective clothing.
- b. Clean screen in recovery hopper and in cyclone reclaimers.
- c. Empty dust from dust collector.
- d. Check that all hoses are in good condition and tightly secured.
(i.e. recovery, dust, blast and remote control hoses)

5.3 Hoses

All hoses are specially constructed to withstand the high static pressure generated by the blower. Replace worn hoses with genuine Empire replacement parts.

5.4 Blower

■ ■ WARNING ■ ■

This fan has moving parts that can cause serious bodily injury.

The fan and accessories should be inspected upon receipt for any shipping damage. Turn the wheel by hand to see that it rotates freely and does not bind. Also verify that the taper-lock bushings are tight and lubricated.

Lubrication: Bearings should be lubricated with a premium quality lithium-based grease conforming to NLGI Grade 2 or 3. Examples are:

Mobil – Mobilith AW2
Texaco – Premium RB
Gulf Oil – Gulf Crown #2 or #3
Shell – Alvania #2 or #3

Do not use "high temperature" greases, as many are not formulated to be compatible with fan bearings. Add grease to the bearing while running the blower or rotating the shaft by hand. Be sure all guards are in place if lubrication is performed while the blower is operating. Add just enough grease to cause a slight purging at the seals. Do not overlubricate.

Lubricate the ball bearings every 2-4 months and roller bearings monthly.

5.5 Photohelic Controlled Pulse Jet Cleaning

Turn ON the compressed air supply to the dust collector compressed air manifold. Adjust regulator to 60 psig of pressure. Pressure of 60 psig is the most typical setting for satisfactory cleaning performance. Adjust the photohelic low setpoint to 2 inches and the high setpoint to 4 inches.

■ ■ WARNING ■ ■

DO NOT adjust ON TIME it has been factory adjusted. Too much or too little ON time can cause shortened filter element life.

Pulse On Time: Factory set at 100 milliseconds (1/10 second).

Off Time: Adjustable 1.5 to 30 seconds, factory set at 30 seconds.

Operating Temperature Range: -40 degrees to +150 degrees Fahrenheit.

Solenoid Valves: 115 VAC at 19.7 watts each.

6.0 Troubleshooting

For problems with the pressure vessel, refer to the manufacturer's operation and maintenance manual. Troubleshooting for the pneumatic reclaim portion of your system is described in the chart below.

<i>Problem</i>	<i>Cause</i>	<i>Remedy</i>
Media carry-over to dust collector	Too much secondary air	Close tuning band (<i>See Section 4.5</i>) check for air leaks between storage hopper and pressure vessel/hopper and reclaimer close optional fan damper
Dust in good media	Not enough secondary air	Open tuning band (<i>see Section 4.5</i>)
No reclamation	Air inlet blocked	Clear recovery hopper air inlet (front, bottom of recovery hopper)
	Recovery hose plugged	Clear hose
	Dust collector/bags clogged	Shake filter bags and/or empty dust collector
	Exhaust blockage	Clear blower exhaust
	Air leaks	Check for holes/air leaks in hoses/connections
	Incorrect wiring	Check fan rotation

7.0 Replacement Parts

Figure 7-1 illustrates the dust collector and its components. Table 7-1 provides a parts list. The reference numbers in Figure 7-1 correspond to the numbered items in Table 7-1.

Figure 7-1
DCM-200HV

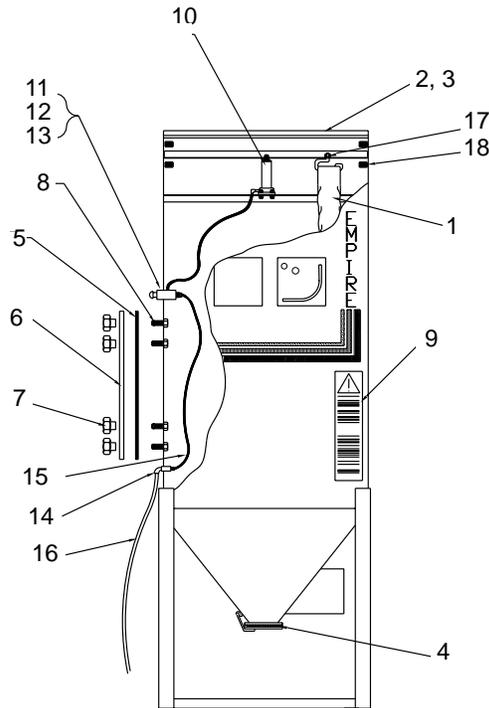


Table 7-1

Ref.	Part Number	Description	Ship Weight
1	515521	Dust Bag, Cotton Sateen (Qty. = 30)	5
2	768332	Top Plate, DCM-200hv	25
3	523551	Gasket, Top Plate (Qty. = 9')	1
4	524351	Gasket, Clean-Out Door	1
5	525061	Gasket, Access Door, 5/8" x 5/8" (Qty. = 9')	1
6	768342	Access Door	15
7	510461	Knob, Plastic, 3/8"-16, (Qty. = 6)	1
8	551852	Bolt, 3/8"-16 x 1 1/4", (Qty. = 6)	1
9	567401	Label, Warning, Dust Collector	1
10	515981	Air Cylinder, Standard Bag Shaker	5
11	517221	Valve, Pushbutton, 3-way	1
12	521101	Connector, Brass, 1/4" tube x #10-32 mpt	1
13	520432	Elbow, Brass, 1/8" mpt x 1/4" tube	1
14	521081	Connector, Brass, 1/4" tube x 1/4" mpt	1
15	510541	Tubing, Polyurethane, 1/4" OD (Qty. = 6')	1
16	521481	Air Hose Assembly, 1/4" x 8' with fittings	2
17	509721	Bag Hook, 1/4"-20 (Qty. = 30)	1
18	523541	Rubber bumper (Qty. = 8)	1

Figure 7-2 illustrates the cartridge type dust collector. Table 7-2 provides a parts list. The reference numbers in Figure 7-2 correspond.

Figure 7-2
CDC-HV

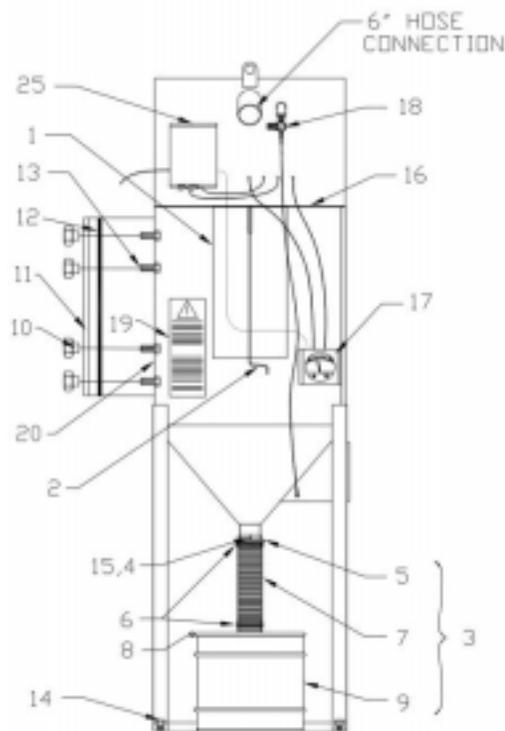


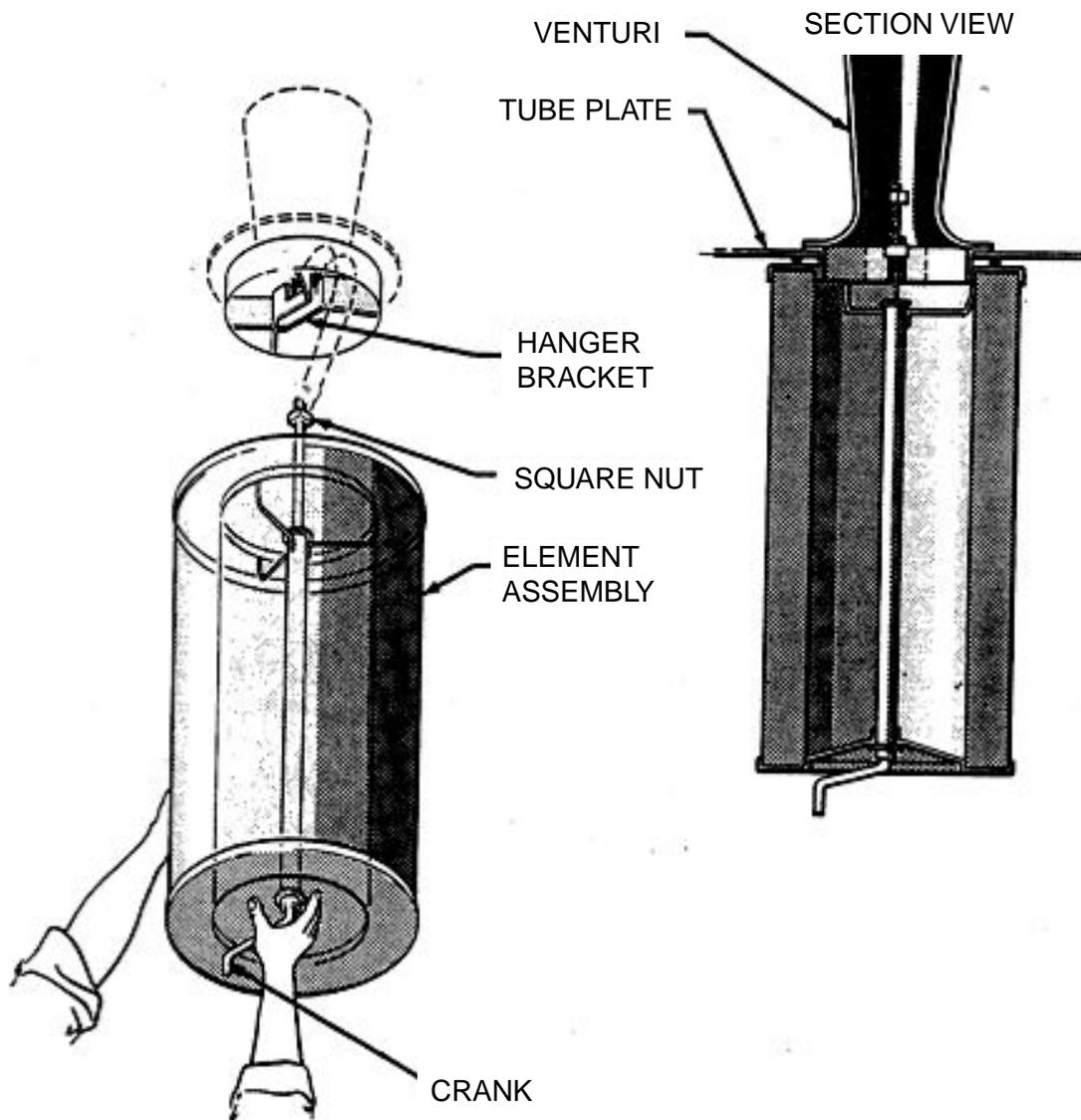
Table 7-2

Ref.	Part Number	Description	Ship Weight
1	515525	Cartridge Filter, Qty. (2)	
2	515526	Crank for Filter Cartridge, Qty. (2)	
3	113015	16 Gallon Drum Assembly	
4	554232	Screw, #8 x 5/8", Qty. (4)	
5	515473	Slide Gate, 4"	
6	520531	Hose Clamp, 4", Qty. (2)	
7	515591	Dust Hose, 4"	
8	770686	Lid for 16 Gallon Drum	
	504020	Locking Ring for Lid	
9	504016	16 Gallon Drum	
10	510461	Knob, 3/8" - 16, Qty. (6)	
11	760851	Access Door	
12	525711	Gasket, Access Door 5/8" x 5/8"	
13	551852	Bolt, 3/8" - 16 x 1-1/4", Qty. (6)	
14	551742	Bolt, Leveling 3/8" - 16 x 2", Qty. (4)	
15	567415	Label, Slide Gate Open	
16	524471	Gasket, 1/16" x 1"	
17	550450	Mini-Helic Package, Std. on CDC	
18	140851	Air Supply Assembly	
19	567401	Decal, Instruction/Warning	
20	564305	Decal, Empire Logo	
22	566712	Caulk, Tube	

Additional Parts used with Dust Collectors

25	140900	Photohelic/Timer Package (Opt.)	
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CDC FILTER INSTALLATION



Unscrew the square nut so the top is flush with the end of the mounting rod. Insert the rod through the filter element as shown. Hang the support rod and filter on the hanger bracket. Turn the crank clockwise while holding the filter straight until the gasket on top makes contact with the tube plate. (See figure above) Tighten the filter until the gasket is compressed 50%.

Do NOT remove the filters from the collector unless you intend to replace them.

Figure 7-3 illustrates that reclaimer and its components. Table 7-3 provides a parts list. The reference numbers in Figure 7-3 correspond to the numbered items in Table 7-3.

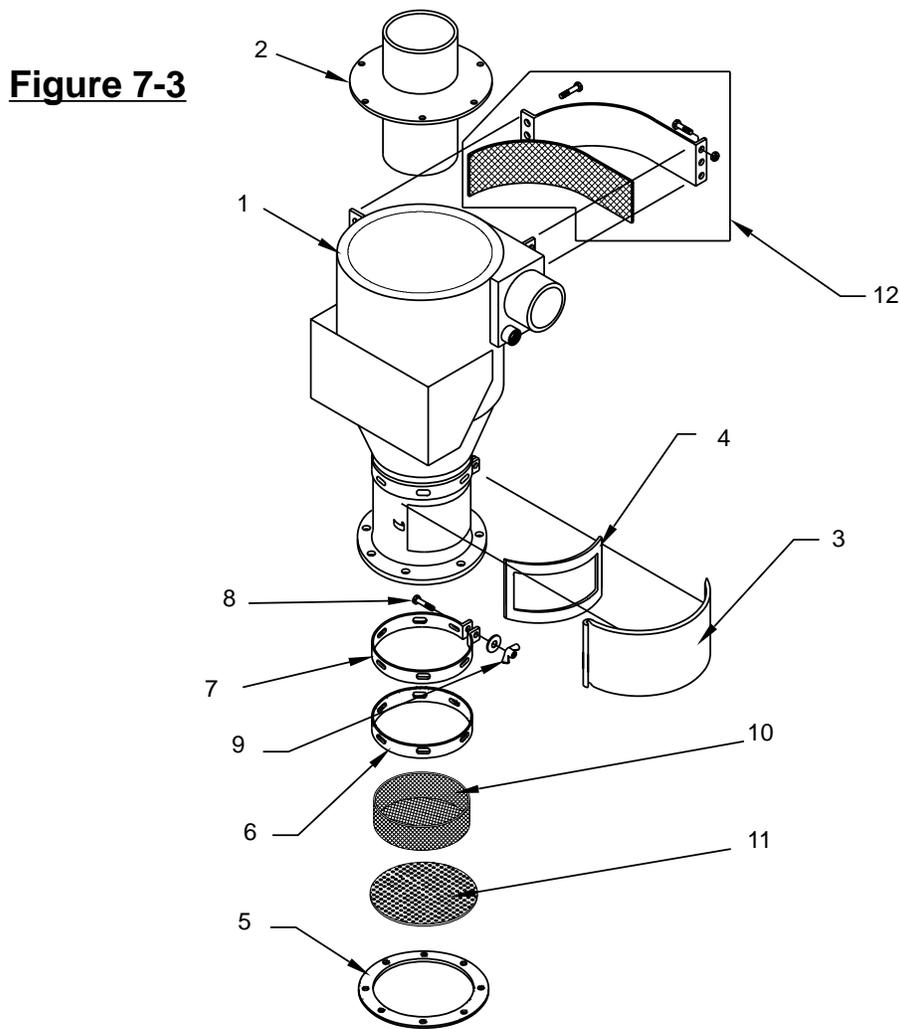


Table 7-3

Ref.	Part Number	Description	Ship Weight
1	330007	800 cfm Ultrawear Lined Reclaimer	125
2	766751	Removable Top	15
3	760721	Reclaimer Door	2
4	524331	Gasket, Reclaimer Door	1
5	524371	Gasket, Reclaimer to Storage Hopper	1
6	524341	Gasket, Tuning Band	1
7	760701	Tuning Band	1
8	551782	Bolt, 1/4" -20 x 2"	1
9	552392	Wingnut, 1/4"-20	1
10A	739041	Removable Screen, #8 Mesh (1/8" Std.)	1
10B	739051	Removable Screen, #4 Mesh (1/4")	1
11	760711	Flat Screen, 11 ga., 5/16" dia. Holes	2
12	514521	Wear Plate, 900 cfm Reclaimer(customer installed)	4

8.0 Options and Accessories

8.1 Heavy-Duty Sweep-In Troughs

The drawing on the following page of these instructions show the concrete pit requirements for the heavy-duty sweep-in troughs. Once the concrete has cured, simply attach the end of the reclamation hose to the end of the trough tube with the clamp provided. Place the trough in the concrete pit and set the grating on the ledge.

8.2 Magnetic Separator

The magnetic separator reduces possible damage to delicate substrates by removing steel and other ferrous contaminants from the blast media as it passes through the reclaimer. The separator consists of an industrial magnet that is installed in the reclaimer. Maintain this magnet by removing it from the reclaimer and cleaning it manually.

8.3 Vibrating Reclaimer Screen

With this option, a vibrator is installed on the reclaimer to aid the flow of material passing through the reclaimer screens.

8.4 90 dBA Fan Silencer

This fan silencer reduces sound emissions to 90 dBA.

8.5 85 dBA Fan Silencer

This fan silencer reduces sound emissions to 85 dBA in accordance with OSHA standards.

8.6 CDC - Cartridge Dust Collector

This cartridge collector replaces the standard bag type collector. It is equipped with (2) torit ultra-web filters, manual cleaning and a magnahelic filter gauge.

8.7 Automatic Bag Shaker - Electric and Pneumatic

The automatic bag shaker will shake the dust collector bags every time the system is turned off. The air-operated cylinder shakes for several minutes, cleaning the bags thoroughly. This option can be productive by freeing an operator from this maintenance task.

8.8 Photohelic Gauge

Automatically pulse cleans cartridges as required.

8.9 Manometer

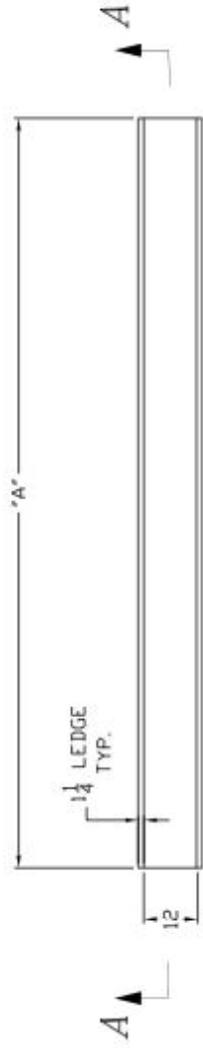
The manometer is a gauge that displays the pressure differential between the clean and dirty side of the dust collector filter bags when the fan is running. This allows the operator to see how clean or dirty the bags are.

8.10 Needled-Felt Dust Bag Upgrade

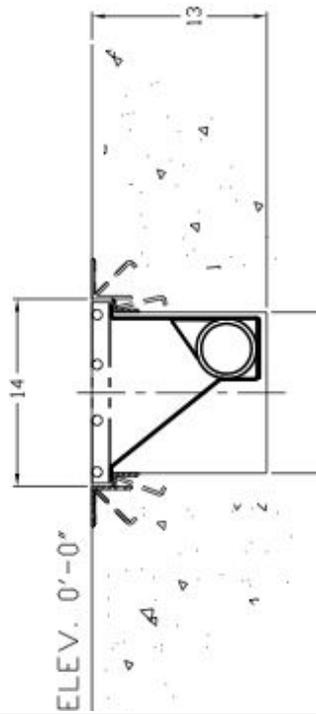
Needled-felt dust bags improve air flow and cleanliness. They release dust with less effort and offer better initial filtration than standard bags. Because of these qualities, the needled-felt dust bags also reduce wear and tear on the blower.

HEAVY DUTY RECOVERY TROUGH

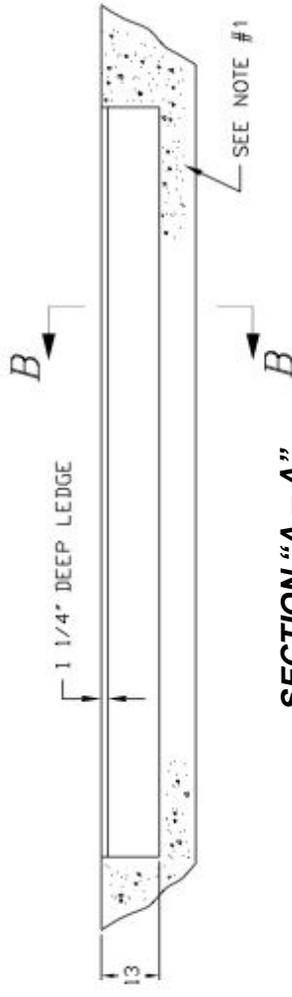
DASH NO.	DESCRIPTION	"A" LENGTH OF PIT
-1	8 FT. TROUGH	10'-1"
-2	10 FT. TROUGH	12'-1"
-3	12 FT. TROUGH	14'-1"



PLAN VIEW



SECT. "B - B"



SECTION "A - A"

NOTES

- 1) RECOMMENDED CUSTOMER FLOOR - 5' MIN. THICKNESS (FROM BOTTOM OF PIT)
2500 LB. P.S.I. CONCRETE WITHOUT WIRE REINFORCEMENT
- 2) ENTIRE AREA OF FLOOR SHOULD BE LEVEL WITHIN 1/4".
IF CUSTOMER FLOOR IS NOT LEVEL, PNEUMATIC RECOVERY TROUGH MUST BE SHIMMED AND GROUTED FOR SUPPORT.

9.0 Warranty

Empire guarantees all parts and equipment against defects in material and workmanship, under normal use and service, for THREE YEARS from the date of installation.

Material found to be defective within this THREE YEAR period will be replaced at NO CHARGE.

This warranty does not apply to the normal wear of nozzles, blast hose, or other components exposed to in direct contact with the blast media.

EMPIRE

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