

**M-SECTION® SWEEP-IN RECOVERY
O.M. 23647**

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 **WARNING**

Do not proceed with these instructions* until you have READ the orange cover of this MANUAL and YOU UNDERSTAND its contents.

These WARNINGS are included for the health and safety of the operator and those in the immediate vicinity.

***If you are using a Clemco Distributor Maintenance and Part Guide, refer to the orange warnings insert preceding the Index before continuing with the enclosed instructions.**

Electronic files include a Preface containing the same important information as the orange cover.

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INDUSTRIAL
Blast Facilities
by Clemco Industries Corp.

1.0 INTRODUCTION

1.1 Scope of Manual

1.1.1 This installation guide assists the user in the assembly of a Clemco Sweep-in M-Section® recovery system. Reviewing the process before beginning the installation will simplify the assembly. Supplemental manuals are included for the blast machines, accessories, and optional reverse-pulse dust collector.

1.1.2 All references made in these instructions are for 900 cfm reclaimers. If a larger reclaimer is requested, the system will be furnished on a job order and will include a separate reclaimer manual.

1.1.3 Job Order Equipment: If the recovery system is custom designed equipment and furnished on a job order, assembly drawings for the specific M-Section® and accessories are supplied in the job order manual. This guide is not a shortcut to assemble job order equipment; use the guide as well as the drawings and accessory manuals, for placement and assembly of the M-Sections® and accessories. Refer to the table of contents shown at the beginning of the job order manual for the tab sections of each component accessory manual and electrical drawings.

1.2 Safety Alerts

1.2.1 Clemco uses safety alert signal words, based on ANSI Z535.4-1998, to alert the user of a potentially hazardous situation that may be encountered while operating this equipment. ANSI's definitions of the signal words are as follows:



This is the safety alert symbol. It is used to alert the user of this equipment of potential personal injury hazards.

Obey all safety messages that follow this symbol to avoid possible injury or death.

CAUTION

Caution used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

CAUTION

Caution indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

WARNING

Warning indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

DANGER

Danger indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

1.3 General Description

1.3.1 The Sweep-in M-Section® system consists of the pneumatic recovery section with grating and transition elbow, 900 cfm reclaimer, 6 cu. ft. storage hopper, flex hoses, blast machine, and choice of a reverse-pulse dust collector or dry filter. Standard M-Sections® come in 8-foot, 10-foot, and 12-foot lengths. Figure 1 shows the components supplied with standard sweep-in systems with RPH dust collector. Figure 2 shows the reclaimer connected to a dry filter. If the Sweep-in was supplied on a job order (job order equipment), refer to the job order general arrangement drawings for the layout of equipment. Optional operator safety equipment is also available.

1.4 Dust Collector Options

WARNING

Prolonged exposure to any dust could result in serious lung disease and death. Short term ingestion of toxic materials, such as lead dust or dust from other heavy metals and corrosives, could cause serious respiratory injury or death. Identify all materials that are to be removed by blasting. Use reverse-pulse dust collectors with HEPA after-filters if lead coating or any other toxic materials are being removed by the blasting process. Do not use dust collectors with simple cloth filters for those applications.

1.4.1 Dust collector: The system uses one of two dust collectors, RPH-2 reverse-pulse dust collector, or dry filter.

1.4.2 Dry Filter: Push-through dry filter uses tubular filters which trap dust on their inner surfaces. A dry filter is efficient for moderate dust contamination. The filters must be manually shaken every two hours and the dust drawer emptied regularly. This type of dust collection must never be used in applications which generate toxic dust.

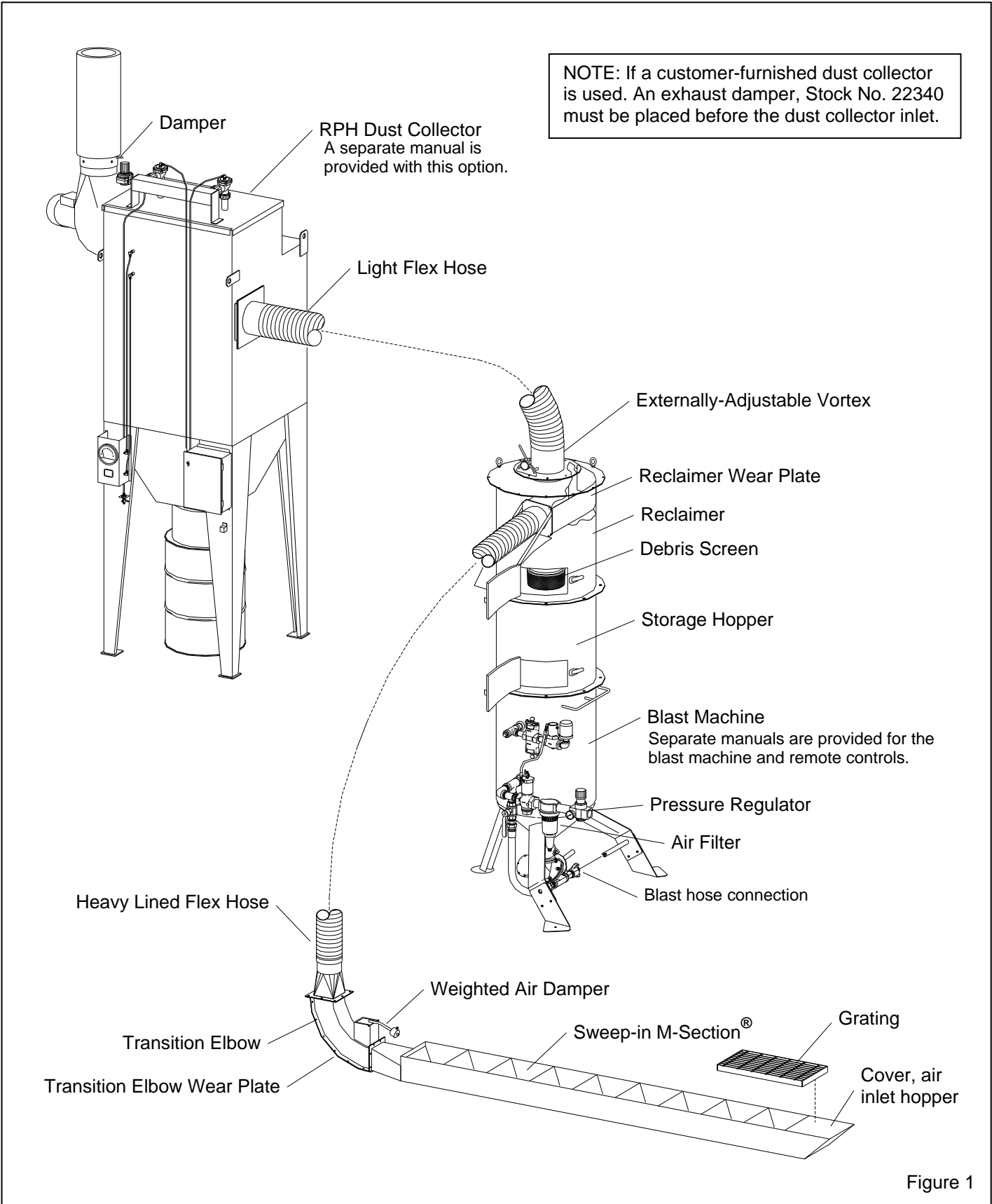


Figure 1

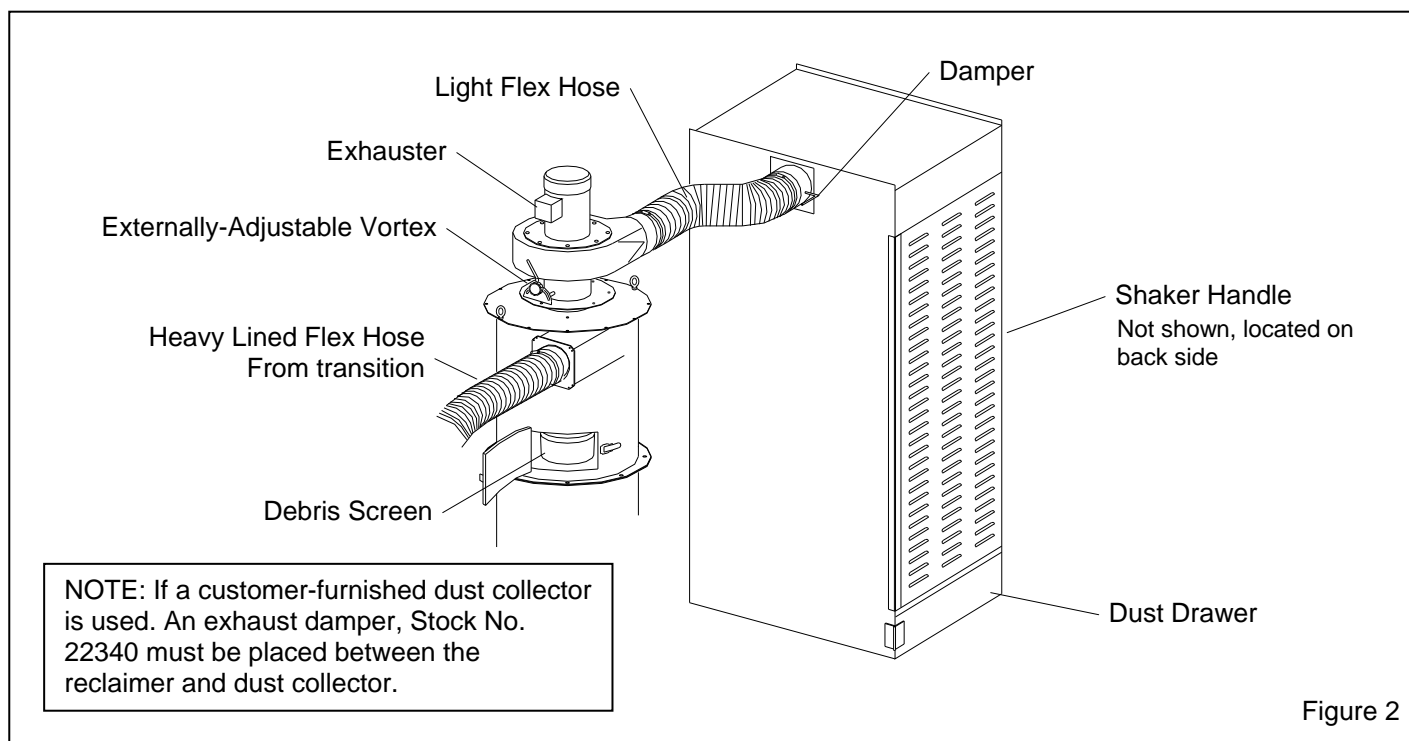


Figure 2

1.4.3 Reverse-pulse Dust Collector: The pull-thru reverse-pulse dust collector is the most efficient dust collector option. This type of dust collector used with the optional HEPA filter must be used in applications in which toxic dust is generated. Cartridge filters are cleaned by a periodic pulse of air. See separate manual for operation of reverse-pulse dust collectors.

1.4.4 HEPA Filter: HEPA filters must be used when removing lead coatings or any other toxic materials. Optional HEPA after-filters provide additional filtration, and are available for use with reverse-pulse collector only.

1.5 Reclaimer

NOTE: Rubber-lined reclaimers should be used with systems using aggressive media. Replaceable rubber liners may be field installed. See Optional Accessories in Section 14.1.

1.5.1 Reclaimers are divided into two categories, Push-thru and Pull-thru.

- Push-thru reclaimers have an exhauster mounted on top of the reclaimer. Air is pushed through the filter tubes on a dry filter dust collector. The dry filter is under a slight positive pressure.
- Pull-thru reclaimers do not have an exhauster, and are used with reverse-pulse dust collectors. Rather, the exhauster is mounted on the dust collector outlet, and pulls the air through the dust collector; the dust collector is under negative pressure.

1.5.2 Standard reclaimers are 900 cfm. All references made in these instructions are for 900 cfm reclaimers. If a larger reclaimer is requested, the system will be furnished on a job order and will include a separate reclaimer manual.

1.6 Media

1.6.1 Unless noted otherwise, standard M-Sections® accommodate most common reusable media between 60 and 180 mesh that is specifically manufactured for dry blasting.

1.6.2 Steel: Steel shot and steel grit are not recommended for use with standard M-Section® pneumatic recovery systems. Smaller sized steel may be used on job order equipment, but this requirement must be stated ahead of time so that the equipment may be modified accordingly.

1.6.3 Sand and Slag: Sand should never be used because of the respiratory hazards associated with the use of media containing free silica. Slags are not recommended because they rapidly breakdown.

1.6.4 Silicon Carbide, Aluminum Oxide, and Garnet: These are the most aggressive, high volume abrasives in the blasting industry. Aggressive media such as these may be used with the M-Section®, but accelerated wear will occur on any equipment components which come in contact with the abrasive. To avoid unscheduled down time, periodically inspect the

M-Section®, reclaimer, reclaimer booster exhauster, hoses, and nozzle for abrasive wear.

When occasionally using aggressive abrasive, install an optional aluminum oxide kit. When these abrasives are used extensively, use a full rubber-lined reclaimer and a reverse-pulse dust collector. Interior rubber lining on blasting enclosures is recommended. Nozzles lined with boron carbide are optional, but recommended to extend nozzle wear life.

1.6.5 Glass Bead, #6 thru #12: Most beads have been treated to ensure free-flow operation even under moderately high humidity conditions. Glass beads subjected to excessive moisture may be reused after thorough drying and breaking up of any lumps.

1.6.6 Fine Mesh Media: When using very fine media (180 mesh and finer), the inlet baffle of the reclaimer may need to be removed. Consult the factory before proceeding with its removal.

1.6.7 Lightweight Media, 12 thru 40 mesh: When using plastic media, and some agricultural media, the inlet baffle of the reclaimer may need to be removed. Consult the factory before proceeding with its removal. NOTE: Standard Aerolyte reclaimers are shipped without an inlet baffle.

2.0 PREPARE ASSEMBLY SITE

2.1 Reclaimer and Blast Machine: Provide space to access the reclaimer fill (access) door, blast machine inspection door, and vortex adjustment.

2.2 Dust Collector: Provide space to remove waste drums from under the dust collector hopper, access the sequence control panel, and exhaust damper. Space is needed above the collector to fully open the lid.

2.3 Electrical Service: Make sure electrical service is available for all electrical controls. Standard reclaimer motors (motor is on dust collector when optional reverse-pulse dust collector is used) are 3-ph., 230/460 volt. 115 volt power is required for reverse-pulse dust collector sequence panels.

2.4 Compressed Air: Compressed air must be plumbed to the blast machine inlet, dust collector pulse manifold, and any pneumatic accessories such as respirators and air blow-off nozzles.

2.5 If the sweep-in is recessed, make sure the pit is large enough for the M-Sections® and transition. Refer to the foundation drawings.

3.0 PLACEMENT

WARNING

Failure to observe these warnings could result in serious injury or death.

- **Weight and bulk of the components require that erection and placement of the equipment be performed by personnel experienced with handling structural steel, and able to safely operate material handling equipment needed to assemble the equipment. Assembly personnel must take care to recognize and avoid hazards associated with handling this type of equipment.**
- **To move this equipment use the lifting eyes that are provided on each segment. Never hoist the equipment by the legs, handle or piping, or with a sling through anything other than the lifting eyes.**
- **Keep the equipment level and upright when moving and lifting. Use guy-lines to steady the equipment during moving and placement, and to prevent equipment from tipping.**
- **Always use appropriately rated lifting apparatus (the lifting device, chains or slings, and attachment hardware) rated higher than the weight of the equipment.**
- **Stay clear of equipment while it is being raised or moved; do not work under any elevated equipment.**

Refer to the individual manuals for detailed installation instructions for each component.

3.1 Move all the large components to their approximate location (refer to the assembly drawing on job order equipment), and position all units before final assembly.

3.2 The blast machine and dust collector must be placed on sound footing that will allow permanent anchoring.

3.3 All components must be protected from weather and water infiltration.

4.0 ASSEMBLY

4.1 M-Section®

4.1.1 If the M-Section® is recessed, make sure the M-Section® trough is clear of debris.

4.1.2 Set the M-Section® in the trough or position it on the floor surface.

4.1.3 Remove all debris, bolts, nuts, etc. from the M-Section® hoppers.

4.1.4 Install grating over the M-Section®, and temporarily cover the grate to prevent debris from falling into M-Section® during remaining assembly.

4.2 Blast Machine

4.2.1 Rotate the blast machine to align the blast hose connection toward the blast room, and to provide the best access for the compressed air plumbing.

4.2.2 Apply adhesive-backed strip gasket to the top of the flange on the blast machine. Punch out an opening at each bolt hole.

4.2.3 Place the storage hopper on the blast machine. The access door should be on the bottom, and rotated to allow access to load media. Be careful not to damage the flange gasket. An air leak at the flange will carry good media to the dust collector. Bolt into place. Apply adhesive-backed gasket to the top flange of the storage hopper as described in Section 4.2.2.

4.3 Reclaimer (If the system is job order equipment, refer to the Table of Contents for the reclaimer manual, which contains additional essential information.)

4.3.1 Rotate the reclaimer to enable full access to the door and to connect the flex hose from the transition elbow to the reclaimer inlet adaptor, with as few bends as possible.

4.3.2 Using a lift, raise the reclaimer over the blast machine and storage hopper, and carefully lower it in place, being careful not to damage the flange gasket. An air leak at the flange will carry good media to the dust collector. Bolt in place with fasteners provided.

WARNING

Do not work under the reclaimer while it is hanging from the lifting device. Severe injury or death could occur if the reclaimer is released before it is secured to the media chamber.

4.3.3 Use ropes or other means to temporarily support the blast machine and reclaimer during final assembly. Do not remove the temporary supports until the equipment is securely anchored.

4.3.4 Rotate the externally-adjustable vortex cylinder and exhauster, to align the exhauster outlet toward the dust collector inlet so flex hose can be connected to the dust collector inlet with minimum bends.

4.4 RPH Dust Collector: Refer to the RPH Dust Collector Manual. See Section 4.5 for dry filter dust collector.

4.4.1 Position the dust collector to align the flex hose from the reclaimer outlet to the dust collector inlet.

4.4.2 Connect a dust drum to the bottom of dust hopper.

4.4.3 Install dust collector filter cartridges if shipped separately.

4.5 Dry Filter Dust Collector

4.5.1 Dry filters can be converted to left or right hand inlet. If it is more convenient to have the inlet on the opposite side, switch the inlet adaptor and blank cover.

4.6 Interconnecting Flex Hose Connections

Make sure each end is securely fastened with clamps to prevent media and dust from escaping.

4.6.1 Refer to the general assembly drawing in Figures 1 and 2, and connect flex hoses as follows:

4.6.2 Connect the 6" ID heavy-lined flex hose from the M-Section® transition to the reclaimer inlet.

4.6.3 Connect the 7" ID flexible interconnecting hose between the reclaimer outlet and dust collector/dry filter inlet. It may be easier to slip the hose over the adaptors, and create a tighter seal, if the first two or three inches of wire are removed from the inside of the hose. Use care not to damage the hose. Secure with worm clamps.

5.0 COMPRESSED AIR CONNECTIONS

5.1 The following equipment requires compressed air. Refer to the manuals shown in the Table of Contents for the air requirements on job order equipment.

- Blast machine requires air to the inlet plumbing.
- Optional CPF Air filter requires at least Grade "D" air for the supplied-air respirator.
- Optional carbon monoxide monitor requires air from the line supplying air to the CPF filter.
- RPH Dust collector requires air to the pulse manifold.

5.2 Refer to the table in Figure 3 to determine the maximum cfm through schedule-40 pipe. Size the air line accordingly. Do not use any restrictive fittings or adaptors that reduce the ID smaller than the size shown.

MAXIMUM CFM FLOW THROUGH SCHEDULE-40 PIPE							
Applied Pressure Psi	Nominal Standard Pipe Size in Inches						
	3/4	1	1-1/4	1-1/2	2	2-1/2	3
5	7	13	27	40	80	135	240
10	11	21	44	64	125	200	370
20	19	35	75	110	215	350	600
40	34	62	135	200	385	640	1100
60	50	93	195	290	560	900	1600
80	65	120	255	380	720	1200	2100
100	80	150	315	470	900	1450	2600
150	115	220	460	680	1350	2200	3900

Figure 3

5.3 Determine where the blast hose, control hose, and respirator supply enter the blast room, and install the optional CPF filter and optional carbon monoxide monitor close by. Follow the installation instructions in those manuals.

5.4 Install an appropriately-sized isolation valve at each air line branch to enable depressurization for service.

6.0 ELECTRICAL SERVICE



WARNING

Electrical power must be locked out and tagged out before continuing. Shorting electrical components could result in serious electrical shocks, or damage the equipment. All electrical work, or any work done inside an electrical panel, must be performed by a qualified electrician, and comply with applicable codes.

6.1 Job Order Equipment: A wiring schematic is furnished for all electrical accessories furnished by Clemco. The schematics are packed in the control panel. An extra schematic is included with the manual. Use the schematics for making electrical connections.

6.2 Standard Equipment: Wire 115 volt to the dust collector sequence (a schematic is packed in the panel) and 3 ph. wiring from the motor to the customer-supplied disconnect and controls.

6.3 After the wiring is completed, observe the warning below, and check the motor rotation. To check rotation, jog the starter (momentarily turn switch on and off). This will cause the motor to rotate slowly. Look through the slots in the fan housing on top of the motor where rotation of the fan can easily be observed. Proper rotation is indicated by the arrow on the exhauster housing. The fan should rotate toward the exhauster outlet.



WARNING

Do not look into the reclaim exhauster outlet while the paddle wheel is turning. Injury to the eye or face could occur from objects being ejected from the exhauster.

6.4 Check the amperage on initial start up. If the motor draws excessive amperage, gradually close the damper until the amperage is within the specifications shown on the motor plate. The damper is located on the inlet of dry filters, and on the exhauster outlet of reverse-pulse collectors.

7.0 FINAL ASSEMBLY

7.1 Anchors

7.1.1 Holes are provided on the RPH dust collector and blast machine legs. Use the holes to anchor the equipment to sound footings.

7.1.2 Bolt a steel angle from a reclaimer bolt to a nearby, sound structural part.

7.2 Hose Connections

7.2.1 Make sure that all compressed-air supply hose connections are secured with safety lock pins and safety cables to prevent accidental separation or disconnection. Safety cables and lock pins are listed in Section 14.1 of this manual.

WARNING

Hose disconnection while under pressure could cause serious injury or death. Use safety lock pins and safety cables on all coupling connections to help prevent hose couplings from accidental disconnection.

7.2.2 Install the blast hose and control hose per instructions in the blast machine and remote control manuals.

7.2.3 Connect the respirator supply hose from the CPF filter to the respirator per instructions in the CPF filter and respirator manuals.

8.0 PRE START-UP CHECKS

8.1 Start the air compressor per the manufacturer's starting and operating procedures.

8.2 Shut off the sequence switch on the RPH dust collector sequence panel.

8.3 Slowly open the compressed air lines and listen for leaks or open valves. Check all compressed air lines for leaks, and fix any that are found.

8.4 Temporarily set pressure regulators as follows:

- Blast Machine 125 PSI Max.
- CPF Filter 95 PSI
- RPH Dust Collector Manifold 20 PSI

8.5 At the control panel, start the recovery system.

8.6 Switch RPH dust collector pulse sequencer "on" and check pulse operation. Turn sequencer "off" when operation is confirmed.

8.7 Test the operation of the blast machine and operator safety equipment.

8.8 Shut off the system at the control panel and shut down the compressed air system.

9.0 LOADING AND UNLOADING MEDIA

9.1 Media Capacity: Media capacity of a standard sweep-in system is approximately 6 cu. ft. The system is full when media reaches the level of the blast machine pop-up valve. Overfilling will result in media carryover to the dust collector and possible blockage in the conveying hose. Under certain circumstances the media capacity can be up to 12 cu. ft., but only if the blast machine and storage hopper are emptied before recovering any media.

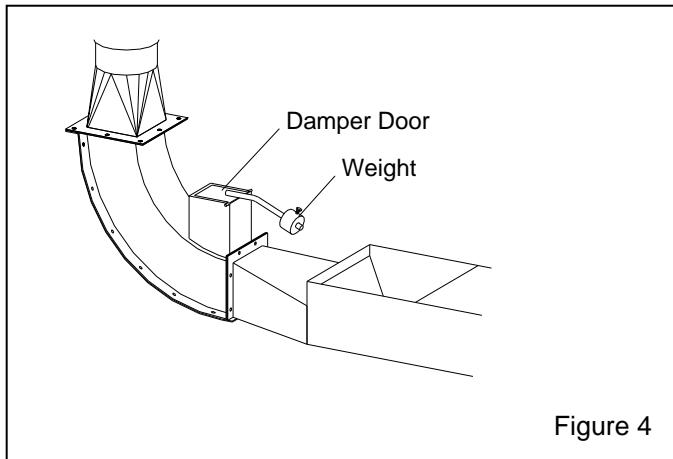
9.2 Media Loading: If the system is completely emptied, media can be loaded by pouring it into the M-Sections® hoppers while the exhauster is running. When adding media, have the exhauster off, and pour clean, dry media into the storage hopper through the access door. **Do not pour media directly into the hoppers if the current media level is unknown, as overfilling or blockage may occur.** Refill only after all media has been recovered from the blast area.

9.3 Media Unloading: To empty the blast machine and hopper of media, reduce pressure to 40 psi. Place an empty container, such as a drum, in the blast room. Close the choke valve and begin blasting. Direct media flow into the container. Empty the container when full or before it is too heavy to handle, and repeat the process until the machine is empty. If complete purging of media is required, use a vacuum to remove media residue in the hopper and blast machine head.

10.0 ADJUSTMENTS

10.1 Weighted Inlet Baffle (transition elbow) Ref. Figure 4

Refer to the appropriate manual for adjustment to respirator, blast machine, and RPH dust collector.



10.1.1 To adjust, loosen the weight on the damper assembly, and plug two hopper sections. Start the recovery system motor, and slide the weight on the rod until the damper door just begins to open. Tighten the weight to maintain the setting and remove the hopper plugs.

10.1.2 Once adjusted, the damper will open to clear the M-Section® transition should it become plugged.

10.2 Static Pressure

10.2.1 A constant static balance is necessary for efficient separation, as the reclaimer operates by a centrifugal balance of velocity, particle weight, and size. The best way to ensure a constant air balance is to set and monitor static pressure with the manometer. Refer to the instructions supplied with the manometer for its use. Use the table in Figure 5 to establish the static pressure starting point for given media.

Media	Size	Static Pressure
Glass Bead	8 to 13	2-1/2 to 3 inches
Al. Oxide	60 to 80	4 to 5 inches
Al. Oxide	80 and finer	2-1/2 to 3 inches
Plastic	All *	2-1/2 to 3 inches

* Reclaimers not specifically ordered for plastic media must be modified. Consult the factory.

Figure 5

10.2.2 Adjust static pressure by opening or closing the damper. The damper is located on the inlet of dry filters, and on the exhaust outlet of reverse-pulse collectors. Operate the system until the media has gone through several cycles before making additional adjustments. The objective is to obtain a balance of maximum dust removal without media carryover.

10.2.3 To Remove More Fines: (Too much dust in media) If the damper is not opened far enough, the reclaimer will not remove fines, resulting in dusty media, poor visibility, and possible media blockage in the conveying hose. Open the damper enough to increase static pressure by 1/4 inch. After the media has gone through several cycles, check media and adjust the damper as required.

10.2.4 To Remove less Fines: (Too much usable media is being carried to the dust collector) If the damper is opened too far, it may cause carryover (usable media carried into the dust collector) and result in excessive media consumption. Close the damper far enough to decrease static pressure by 1/4 inch.

10.2.5 If the damper has been adjusted and carryover or excessive dust in the media continues to be a problem, adjusting the vortex cylinder may help retain media.

10.3 Externally-adjustable Vortex Cylinder

Before adjusting the vortex cylinder, adjust the damper on the dust collector per Section 10.2. After the static pressure has been adjusted, adjust the cylinder as follows.

10.3.1 The adjusting lever for the vortex cylinder is mounted on the outlet pipe on top of the reclaimer or the spacer between the reclaimer body and exhaustor housing depending upon which system is provided.

10.3.2 Adjustments are made by loosening the handle's locking knob and moving the handle to achieve the correct setting. When the correct setting is established, tighten the locking knob to prevent movement.

10.3.3 Start with the lever slightly to the right (about one o'clock) of the vertical position.

10.3.4 To Remove More Fines: (Too much dust in media), raise the cylinder by moving the lever left toward "COARSE", in 1/4" increments at the indicator plate. Do not adjust again until the media has gone through several cycles, to be certain that further adjustment is required.

10.3.5 To Remove less Fines: If too much usable media is being carried to the dust collector, lower the vortex cylinder by moving the lever right toward "FINE", in 1/4" increments at the indicator plate. Note: If the

cylinder is lowered too far, the reclaimers will again begin to allow usable media to be carried over, and cause abnormally high static pressure.

10.3.6 When using very fine media (180 mesh and finer or any plastic media), the inlet baffle of the reclaimer may also need to be removed. Consult the factory before proceeding with its removal.

10.3.7 Manometer, Optional Accessory

NOTE: The following instructions explain the process for taking static pressure readings on reclaimers. Permanent fittings should be installed when rigid ducting is used, or when the manometer installation is permanent. Use silicone sealer or other sealant to seal around the fitting to prevent leaks. To prevent negative pressure air leaks, the fitting should be capable of being capped when the manometer tube is removed.

10.3.7.1 Refer to directions packed with the manometer for filling and operation instructions for the manometer.

10.3.7.2 Connect one end of the 3/16" ID tubing to the tubing adaptor on the manometer, by pushing it over the barbed fitting.

10.3.7.3 Leaving the needle protector on the needle, insert the needle into the other end of the tubing. The ends of the tubing must fit tight on the manometer and needle; leaks will give inaccurate readings.

10.3.7.4 Open both manometer valves (elbows) one full turn.

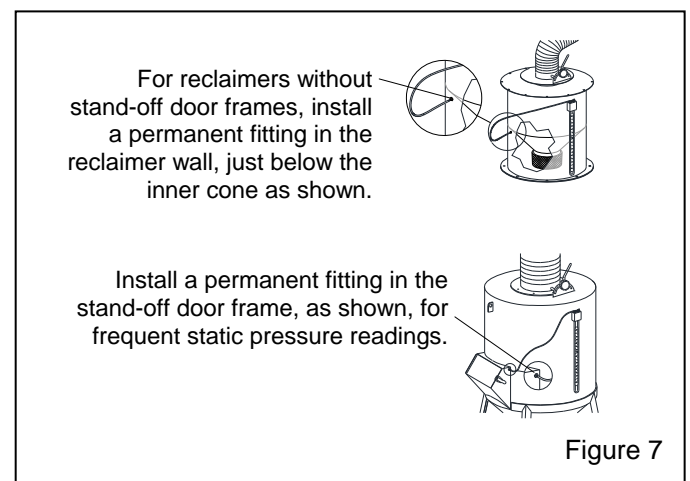
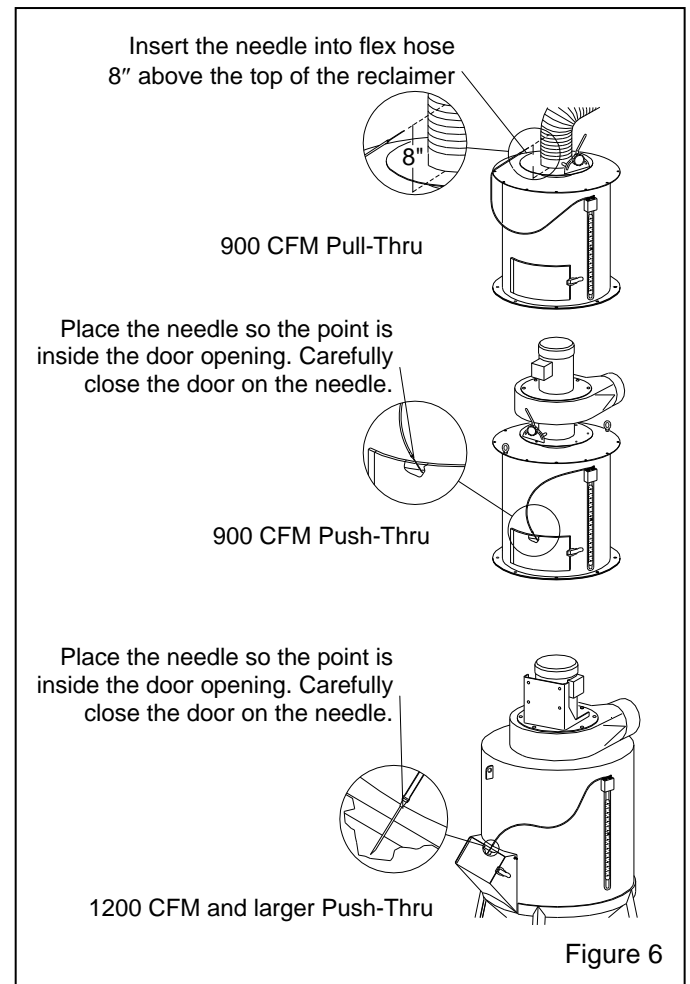
10.3.7.5 Magnets on the manometer hold it in position on the reclaimer body. The manometer must be vertically plumb so the fluid is level on both sides.

10.3.7.6 Pull-through system (reclaimer without exhauster): Remove the needle protector, and insert the needle into the flex hose approximately 8" from the top of the reclaimer. The push-thru method may also be used.

10.3.7.7 Push-through system (reclaimer with exhauster): Open the reclaimer fill door, remove the needle protector and place the needle so the point is inside the door opening. Carefully close the door on the needle. The side of the needle will embed into the rubber, creating an airtight seal. Static pressure readings at the door are generally .5" to 1" lower than those taken above the reclaimer.

10.3.7.8 The illustration in Figure 6 shows the manometer set-up for taking periodic static pressure readings. A permanent fitting may be installed in the reclaimer door frame or wall as shown in Figure 7 for

frequent static pressure readings. Permanent fittings must have a means of sealing the fitting when the manometer is not in use. Air drawn into the reclaimer will cause carryover of good media to the dust collector.

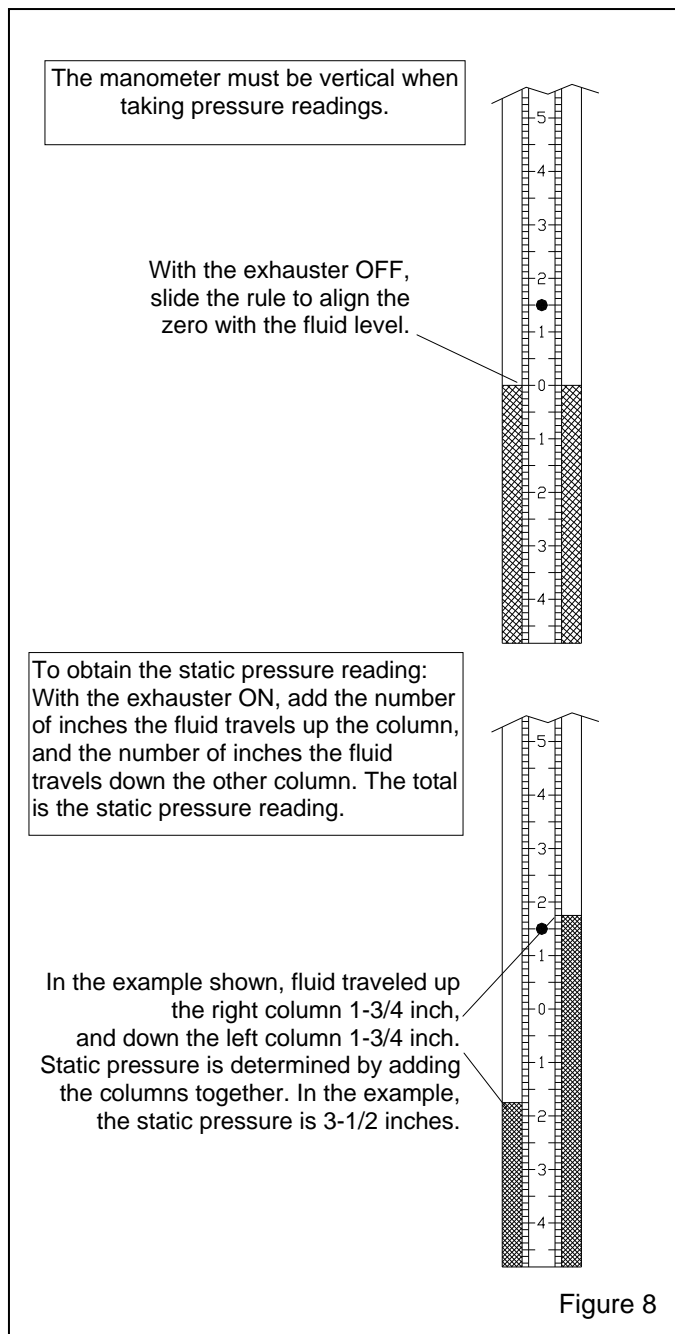


10.3.7.9 Turn the exhauster ON. The negative (static) pressure will move fluid in the tube.

10.3.7.10 Adjust the slide rule to align the zero with the fluid level. Refer to Figure 8.

NOTE: Readings must be taken with the cabinet door open, and with the exhauster running.

10.3.7.11 To find the static pressure, observe the fluid level in each column, above and below zero, (level line) and add the readings together. See the example in Figure 8.



10.3.7.12 After taking the readings, replace the needle protector. Close the manometer valves and store the manometer in the original container in a clean area.

Note: If the manometer installation is permanent, the manometer may remain on the reclaimer body after the valves are closed.

11.0 PREVENTIVE MAINTENANCE

11.1 Dry Filter Dust Collector

11.1.1 The dry filter uses tubular filters which collect dust on their inner surfaces. A shaker arm accessible from the outside of the collector is used to shake dust from the filters. Every two hours, turn off the exhauster and shake the filters vigorously.

CAUTION

Do not shake the filters when the exhauster is on. Doing so will accelerate wear on the filters around the shaker assembly, but will not loosen the dust.

11.1.2 Empty the dust collector drawer regularly. Begin by checking the drawer daily and adjust frequency based on usage and breakdown rate of media.

CAUTION

Do not open the dust drawer door while the exhauster is on. The drawer chamber is under positive pressure when the exhauster is on. Opening the dust door while the exhauster is operating or the paddle wheel rotating, will allow dust to escape.

NOTE: Blast media is usually non-toxic; however, some materials removed by the blasting process may be toxic. Check with proper authorities for disposal restrictions.

11.2 Reclaimer

11.2.1 Clean the reclaimer debris screen daily: To clean, turn the exhauster off, open the access door and remove screen. Empty the screen and replace it, making sure it is securely re-attached to the inner cone.

11.2.2 Periodically check for wear on the reclaimer inlet and outlet pipes, and flex hoses, and replace as required.

11.2.3 Check optional rubber liners. Replace liners when the rubber is worn-through.

12.0 SERVICE MAINTENANCE

12.1 Replacing Reclaimer Wear Plate

12.1.1 Remove the inlet adaptor and old wear plate. The wear plate is held in place by screws attached from the outside of the reclaimer.

12.1.2 Angle the new wear plate into reclaimer inlet until it is in position with the straight end at the reclaimer inlet. Using a board or similar object as leverage, pry the wear plate against the inner wall and top of the reclaimer, and install sheet metal screws to hold in place. Caulk any gaps or voids around the top of the wear plate to prevent rapid wear.

12.2 Replacing Rubber Reclaimer Liners, Figure 9

Installation Note: The sequence numbers in parenthesis (-) shown in Figure 9 and the applicable paragraph, show the recommended order of installation. When installing the liners, make sure that seams are aligned. The final assembly must be smooth and free of protrusions, edges, and gaps. Any of these imperfections could disrupt the air flow, causing wear, and affect the reclaimer media cleaning efficiency.

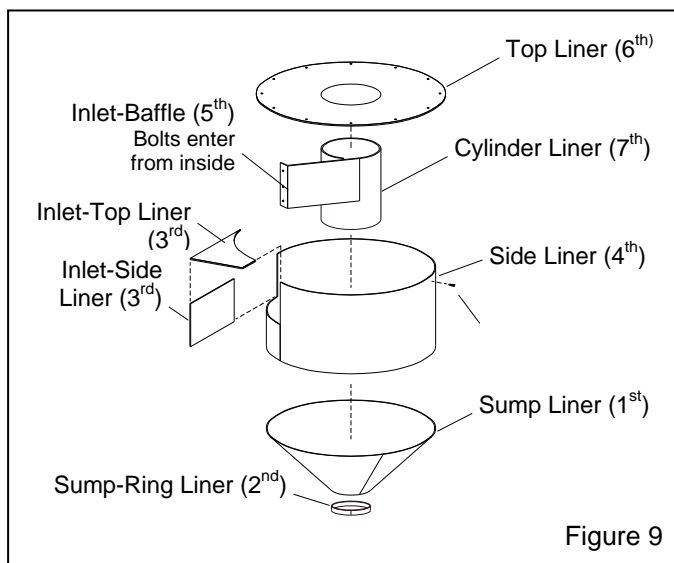


Figure 9

12.2.1 Remove the inlet and outlet flex hoses.

12.2.2 Remove the screw that secures the inlet-top liner to the reclaimer top.

12.2.3 Remove the bolts securing the reclaimer top, and remove the top, along with the top liner and cylinder liner.

12.2.4 Remove the bolts located next to the inlet, and remove the Inlet-baffle.

12.2.5 To remove the inlet-top liner, remove the self-drilling screws securing it to the top of the inlet.

12.2.6 Side and inlet-side liners are held in place with self-drilling screws. From the outside of the reclaimer, remove the screws, and remove the liners.

12.2.7 Sump liners and sump ring liners are glued onto the inner cone. Pull the liners to remove them.

12.2.8 Remove remnants of old caulking and adhesive from the weldment.

12.2.9 (1st) Place the sump liner in the cone with the fabric side down, and check the fit. Apply medium-set contact cement, and install the sump liner.

12.2.10 (2nd) Use contact cement to install the sump liner ring.

12.2.11 (3rd) Position the inlet-side liner and inlet-top liner to make sure they fit. Trimming is occasionally required. Align the inlet-side liner and inlet-top liner and clamp them in place. Use self-drilling screw at each hole location in the weldment to secure the liners.

12.2.12 (4th) Clamp the side liner in place, making sure it is flush with the top of the reclaimer body and aligned with the inlet. Mark the side liner at the three bolt-hole locations for the inlet baffle. Remove the liner and drill the bolt holes. Reinstall the side liner. Align the three bolt holes and temporarily place bolts through the holes to hold it in place. Clamp the liner, and while pushing the liner against the weldment, secure it with self-drilling screws, through each screw hole in the weldment. Remove the temporary inlet-baffle bolts after the liner is secured.

12.2.13 Use silicone caulking to seal seams around the inlet-side liner and reclaimer weldment, and between the inlet-top liner and side liner seam. Apply caulking at the seams of the sump ring liner and sump liner and between the sump ring liner and side liner. Wipe the caulking smooth.

CAUTION

All seams between each liner must be sealed, and all seams between the liners and reclaimer weldment must be sealed. Voids will cause premature wear.

12.2.14 (5th) Install the inlet baffle; bolts should be installed from the inside of the reclaimer to attach nuts from the outside.

12.2.15 (6th) Slide the top liner over the inner cylinder and align the holes in the liner with those in the top. Note that the holes around the inlet are spaced differently from the others. Temporarily install a couple of bolts to keep the alignment.

12.2.16 (7th) Place the cylinder liner over the inner cylinder, and use worm clamps to temporarily clamp the liner to the cylinder. Align it so the seam is on the backside (away from the inlet). Make sure the liner is tight against the top liner, then tack the liner to the bottom of the inner tube in three or four places. Remove the clamps when the cylinder liner is secured.

12.2.17 Apply caulking to the seam on the cylinder liner and between the cylinder liner and top liner.

12.2.18 Apply caulking around the top edge of the side liner and inlet-top liner.

12.2.19 Align the reclaimer top assembly and lower it into place being careful not to smear the caulking. Secure the top bolts and inlet baffle bolts.

12.2.20 Working through the reclaimer inlet, wipe the caulking seal smooth. Apply additional caulking to seams between the baffle and side liner. Re-caulk any voids.

12.2.21 Install flex hoses.

12.2.22 Allow time for the caulking to cure before putting the reclaimer in service.

12.3 Transition Elbow Wear Plate, Figures 10 and 11

NOTE: If the M-Section® is short and surface-mounted, the wear plate may be replaced by raising the transition end, otherwise remove the elbow as follows:

12.3.1 Remove the bolts securing the top adaptor and remove the top adaptor, as shown in Figure 10. Remove the flex hose if necessary.

12.3.2 Remove the bolts securing transition to the elbow, and remove the elbow.

12.3.3 Remove the screws and wear plate from the outside radius on the elbow.

12.3.4 Attach the new wear plate elbow.

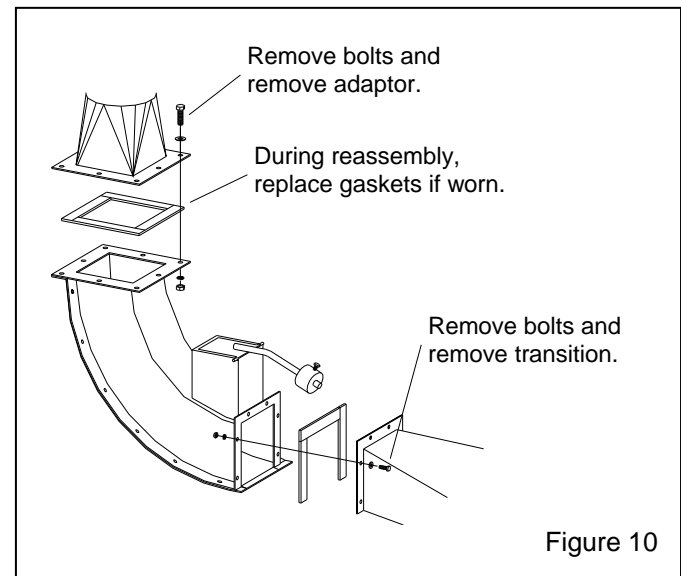


Figure 10

12.3.5 Apply a bead of caulking to the top side of the new wear plate as shown in Figure 11, and install the elbow onto the transition. Apply new gasket material if necessary.

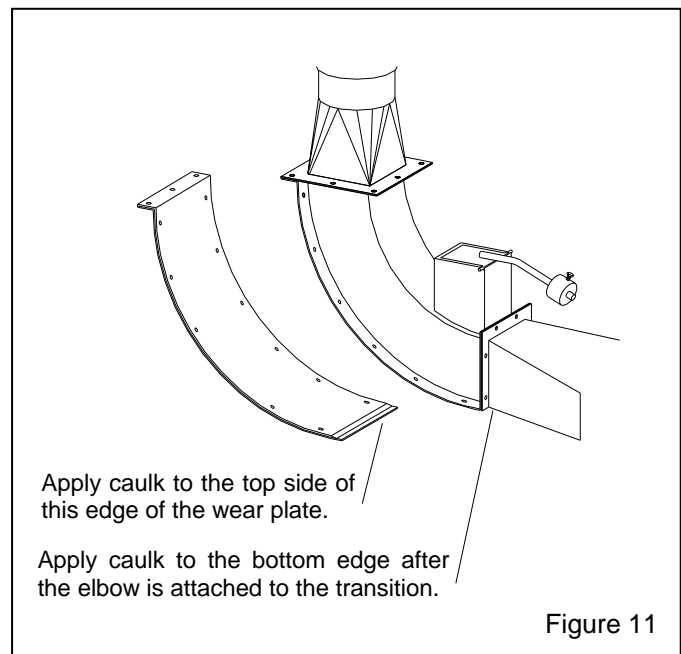


Figure 11

12.3.6 After the elbow is securely attached to the transition, apply caulking to the lower seam to ensure an air tight seal.

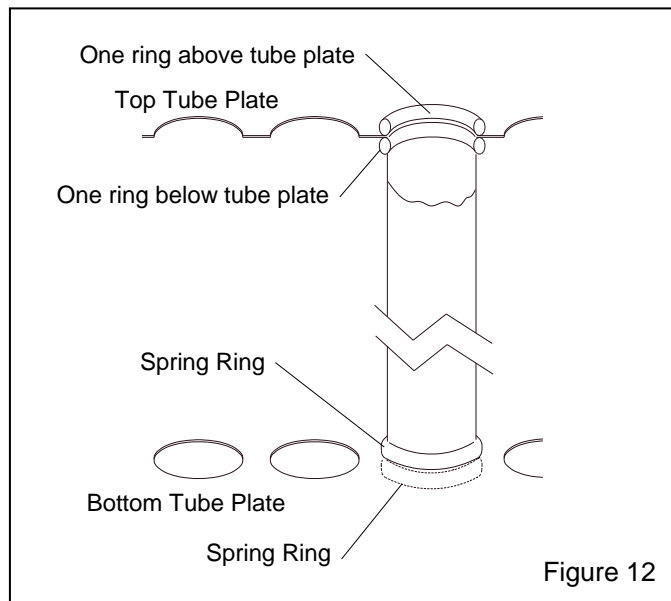
12.3.7 Reattach the top adaptor, using new gasket material if required.

12.4 Dry Filter Tube Replacement, Figure 12

CAUTION

- Do not bend spring ends tight enough to cause ends to kink.
- Do not use a sharp instrument to force spring rings into the opening. This could damage the filter and seriously impair the function of the dust collector.
- Install one filter at a time. Check the seating of the top and bottom spring rings, and that tube is not twisted, before proceeding to the next.

12.4.1 Replace damaged filters immediately. Remove the old filters by pulling the spring rings off the bottom and top tube plates. Working from the back to the front, install one filter at a time. To install new filters, form the end of the spring ringed tubular filter into a shallow "C" shape, push the filter far enough into the hole of the top plate to allow one spring ring to snap into place above the tube plate and the other to snap into place below it. See the illustration in Figure 12.



12.4.2 The tubular filter is held firmly by spring rings above and below the perimeter of the hole in the top and bottom tube plate. The filters fit tight to prevent dust leakage. Force may be required by the installer. Check for proper seating at both ends, and remove any twist in the tube before proceeding to the next filter.

13.0 TROUBLESHOOTING

13.1 Excessive Media Carryover

13.1.1 Dust collector damper open too far. Adjust static pressure per Section 10.2.

13.1.2 Vortex cylinder out of adjustment. Adjust vortex cylinder per Section 10.3.

13.1.3 Reclaimer or storage hopper door open or leaking. Check doors and gasket for leaks. Air entering the reclaimer at this point will cause media to be carried into the dust collector. DO NOT operate unless all doors are closed.

13.1.4 Flange gasket between the blast machine, storage hopper, or reclaimer leaking. Check gasket for negative pressure leak.

13.1.5 Leak in reclaimer weldment. Check entire reclaimer for leaks.

13.1.6 Media level too high. Do not fill past the blast machine's pop-up opening. Load media only through fill door.

13.1.7 If using very fine media (180 mesh and finer), the inlet baffle of the reclaimer may need to be removed. Consult the factory before proceeding with its removal.

13.1.8 Reclaimer debris screen clogged with debris. Check screen basket daily.

13.2 Reclaimer Not Recovering Media

13.2.1 Exhauster motor rotating backwards. The motor should rotate as indicated by the arrow on the exhauster housing. If it does not rotate in the proper direction, **lockout** and **tagout** electrical power and switch the motor leads as shown on the motor plate. Refer to the system's wiring schematic.

13.2.2 Dust collector damper closed too far restricting air movement through M-Section®. Adjust static pressure per Section 10.2.

13.2.3 Blocked air inlet hopper. Air enters through the hopper farthest from the transition elbow, Ref. Figure 1. Blockage in the air intake restricts incoming air and reduces air movement through the M-Section®. Check for blockages.

13.2.4 Hole worn in flex hose between transition and reclaimer inlet (if reverse-pulse collector is used, also check hose between the reclaimer outlet and dust

collector inlet). Replace hoses and route them with as few bends as possible to prevent wear.

13.2.5 Reclaimer door open. DO NOT operate unless door is closed.

13.2.6 Obstruction in transition, flex hose, or any segment before the reclaimer inlet. Remove hose and check for blockage.

13.2.7 Exhauster paddle wheel worn. Check wheel for wear.

13.3 Excessively High Media Consumption

13.3.1 See Section 13.1

13.3.2 Media may be too fine or worn-out. Replace media as necessary.

13.3.3 Using media that rapidly breaks down. If the application allows for it, change to durable media.

13.3.4 Blast pressure too high for the media, causing media to breakdown. Lower blast pressure if application allows it.

13.4 Reduction in Blast Cleaning Rate

Also refer to the blast machine owners manual.

13.4.1 Low media level reducing media flow. Check media level and refill as necessary.

13.4.2 Reduced air pressure. This may be caused by a malfunctioning regulator, a dirty filter element in moisture separator, partially closed air supply valve, leaking air line, or other air tools in use. Refer to the blast machine owner's manual.

13.5 Plugged Blast Nozzle

13.5.1 Damaged or missing debris screen. When the filter screen is damaged or not in place, all media and blast cleaning by-products, such as paint chips, scale etc. pass directly into the metering valve area, blocking the metering valve or nozzle. Check placement of the debris screen.

13.6 Media Bridging

13.6.1 Frequent bridging or blockages in the media metering valve can be caused by damp media. Media becomes damp by blasting parts that are slightly oily, from moisture in the compressed air line, or from absorption.

13.6.2 To avoid contaminating media from the workpiece, all parts should be clean and dry. If parts are oily or greasy, degrease and dry them prior to blasting.

13.6.3 Moist compressed air may be due to a faulty compressor that overheats or pumps oil or moisture into the air line, too long an air line permitting moisture to condense on the inside, or from humidity. Drain the moisture separator and receiver tank regularly. If the problem persists, it may be necessary to change media more often or install an aftercooler or air dryer.

13.6.4 Absorption: Some media tends to absorb moisture from the air, especially fine-mesh media in high humidity areas.

14.0 ACCESSORIES AND REPLACEMENT PARTS

14.1 Options and Accessories

Item	Description	Stock No.
(-)	Manometer kit	12528
(-)	Lock pins, coupling (package of 25)	11203
(-)	Safety cable, 1/2" to 1-1/4" OD hose	15012
(-)	Safety cable, 1-1/2" to 3" OD hose	15013

Rubber Liners, Figure 13

The reclaimer must be designed for liners and have a removable top.

Item	Description	Stock No.
(-)	Rubber liner set, 900 cfm reclaimer	23151
1.	Top liner, 900 cfm	23059
2.	Inlet baffle and cylinder liner (2-piece)	23416
3.	Body liner, 900 cfm	17008
4.	Inlet side liner, 900 cfm	12830
5.	Sump liner, inner cone, (2-piece)	16070
6.	Inlet top, 900 cfm	22827
7.	Screw, self drilling, 10-16 x 3/4"	12722

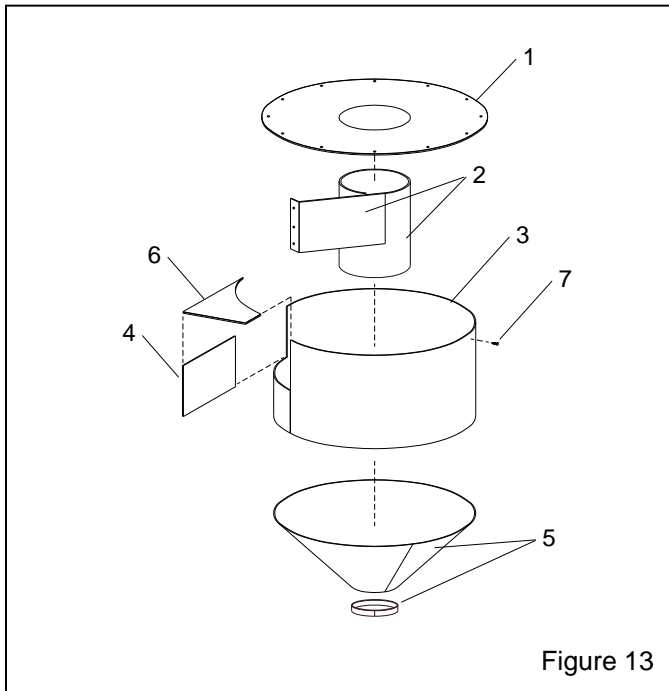


Figure 13

14.2 Reclaimer Assemblies, Figure 14

Reclaimers larger than 900 cfm are normally only furnished on job orders. Refer to the job order owner's manual for job order replacement parts.

Note: M-Section® systems come with options shown below with an asterisk (*). **These items are not supplied with standard replacement reclaimers.** If asterisk (*) items are needed on a replacement reclaimer, order separately and request installation.

Item	Description	Stock No.
(-)	Reclaimer assembly, less exhauster 900 cfm, for 24" blast machine	21823
(-)	Reclaimer assembly, with exhauster 900 cfm, for 24" blast machine	14269
1.	Motor, exhauster 900 cfm reclaimer, 2 HP, 3-Ph	12309
2.	Plate, motor mount, 900 cfm	12005
3.	Housing, 900 cfm exhauster	12271
4.	Paddle wheel 900 cfm	12335

5.	Gasket, 5/16" x 1" adhesive-backed, specify feet required	00187
6.	Inlet pipe without hose support (std) 900 cfm 6"	12363
*	with hose support, (option) 900 cfm, 6" ..	16887
7.	Gasket, inlet 900 cfm	11759
8.	Wear plate, 900 cfm	14055
9.	Screen assembly 900 cfm standard	21265
	900 cfm, 4.5 mesh Aerolyte	21275
10.	Gasket, door, 900 cfm	11745
11.	Spring latch assembly	12263
12.	*Vortex cylinder assembly, for 900 cfm Exhauster mounted reclaimer	23047
13.	Vortex cylinder assembly, adjustable, pull-through reclaimer, 900 cfm	23046
14.	Gasket, 2" adhesive-backed, specify feet required	13089
15.	Top, 900 reclaimer	23040
16.	Eyebolt, 1", 3/8-NC x 1-1/4"	00430

* Refer to the **Note** under paragraph 14.2

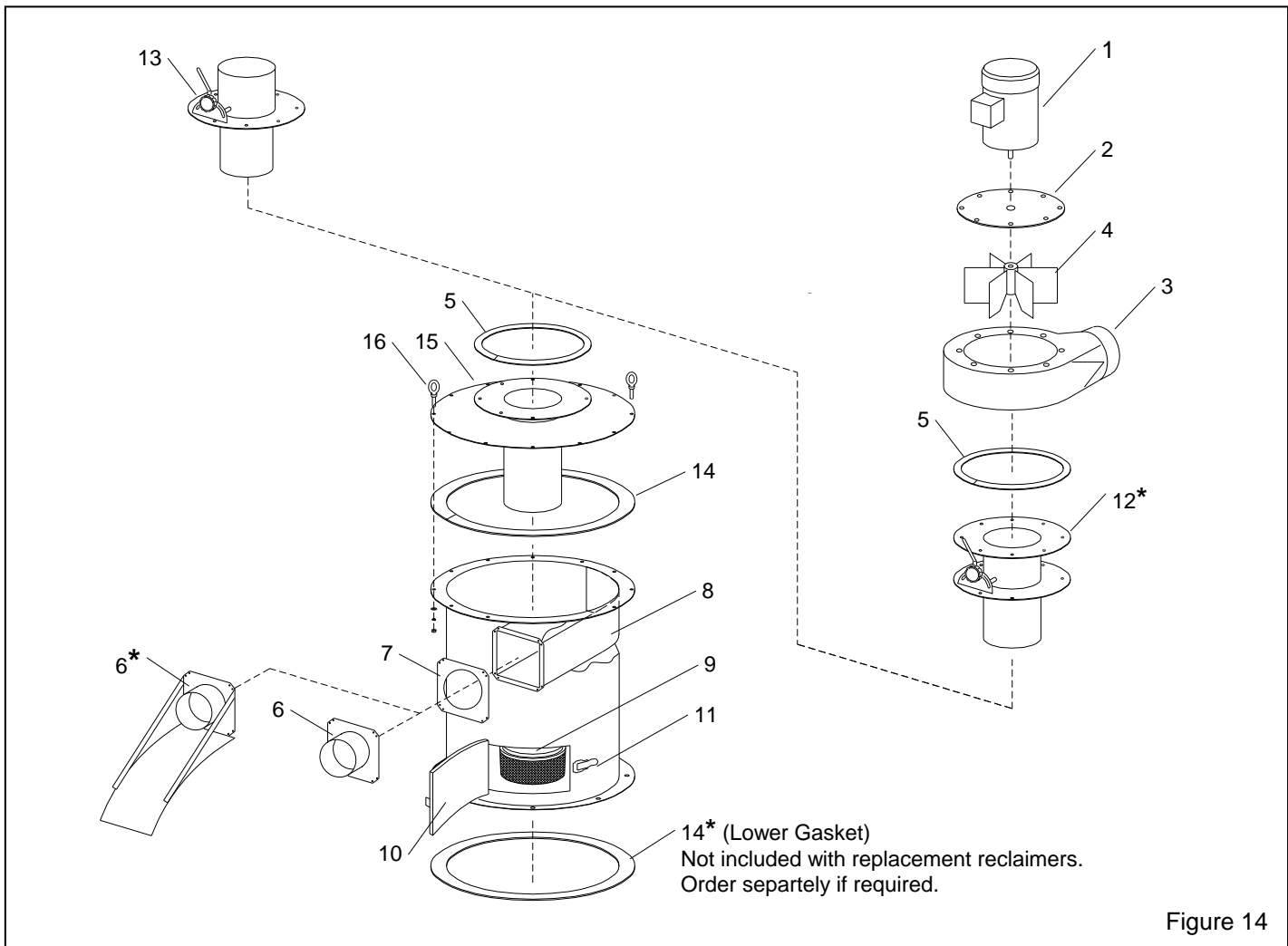


Figure 14

14.3 Transition Elbow Assembly, Figure 15

Item	Description	Stock No.
1.	Hose, 6" heavy lined flex (15 ft. only)	12457
2.	Clamp, hose	11576
3.	Gasket, 5/16" x 1" adhesive-backed specify feet required	00187
4.	Wear plate w/ fasteners.....	22377
5.	Adaptor, 6" outlet pipe	22375

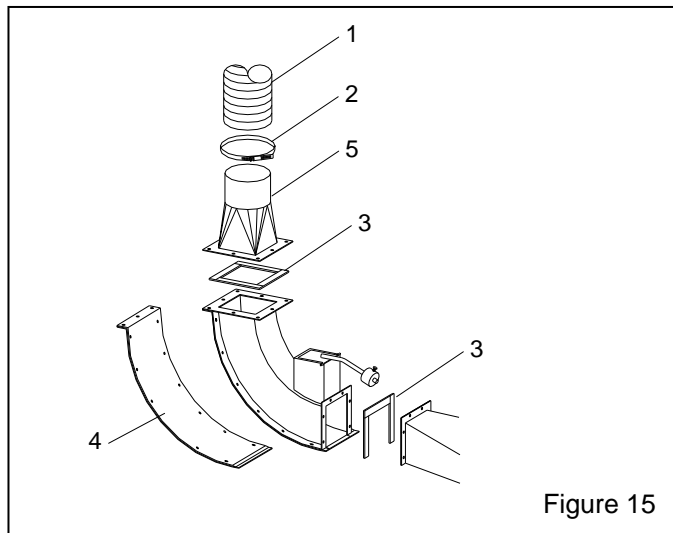


Figure 15

14.4 Storage Hopper, Figure 16

Item	Description	Stock No.
(-)	Storage hopper, 6-cu.ft., 24-inch dia.	21027
1.	Gasket, door, 900 cfm	11745
2.	Spring latch assembly	12263
3.*	Gasket, 2" adhesive-backed, specify feet required	13089

* **Note:** Item 3 is not included with replacement storage hoppers. Order separately if required.

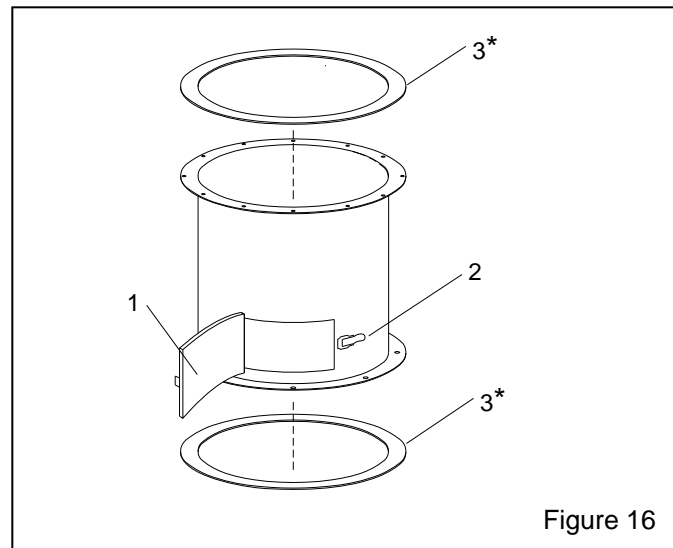


Figure 16

14.5 Dry Filter Dust Collector, 900 cfm, Figure 17

Item	Description	Stock No.
(-)	Dry filter, complete, 900 cfm	12701
1.	Hose, 7" ID flex, specify ft. required	12448
2.	Inlet adaptor w/ damper 7" for 900 cfm	14273
3.	Gasket, inlet adaptor 900 cfm	11763
4.	Gasket, dust drawer	11771
5.	Clamp, hose	11576
6.	Spring latch assembly	12263
7.	Drawer, dust 900 cfm	14276
8.	Plate, inlet cover 900 cfm	14278
9.	Tubular filter, each	11503
	900 cfm requires 40	
10.	Shaker, tube filter 900 cfm	12415
11.	Handle, shaker	12899

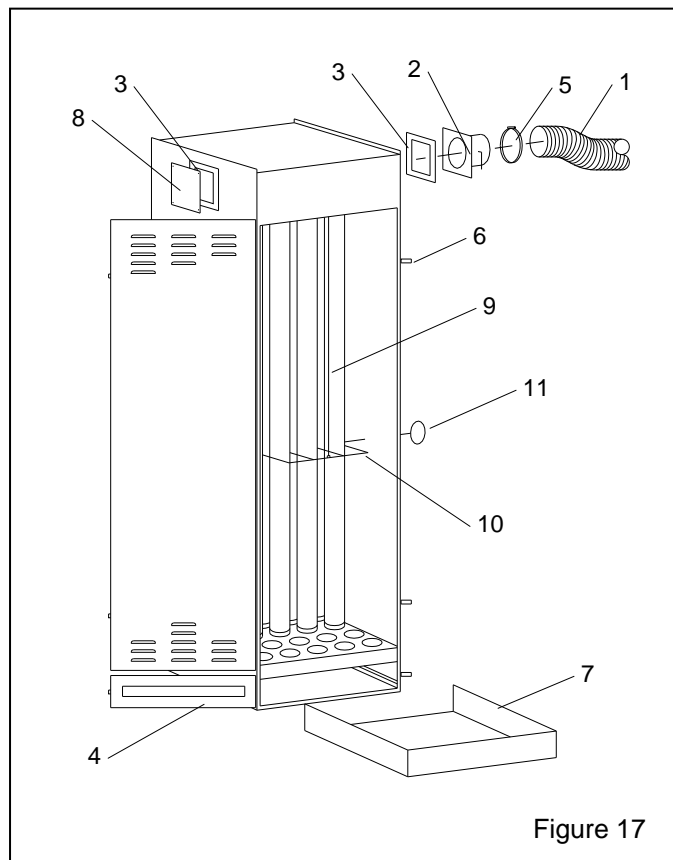


Figure 17