
# SET-UP, OPERATING and MAINTENANCE INSTRUCTIONS

**For**

***SAFE Systems, Inc.***

**TRAILER MOUNTED DUST COLLECTOR**

**MODELS**

**DC 14,000-E**

# SET-UP PROCEEDURE

1. Ask the driver for the **Packing Slip** from the shipper. Keep this paperwork with the equipment so that when the unit is returned there is a list of the components that came with the unit. The person loading the equipment for its return can check this list to insure that all the components are present. This will help to avoid additional charges for missing components.
2. Disconnect the trailer from the towing vehicle.
3. Locate the equipment on a level surface where it is to be operated
4. Do not locate the equipment in a building or structure with LOW overhead clearance. The discharge from the fan can be very powerful and it may damage items above it.
5. Block the wheels and use the front trailer jack to level the trailer.
6. Have a licensed electrician connect the proper power source to the equipment if being operated in the electric mode.
7. Remove the inlet cover from one (or more) of the duct inlets.
8. Have the electrician start and stop the fan to check the fan rotation. If the rotation is incorrect, have it corrected. (Warning: Do not change the power cord connections inside the control box, this may cause damage to the circuit breaker).
9. Connect the ducting to the unit using the duct adapter(s) provided. Install the duct covers on any duct inlet that does not have a duct connected to it.
10. Connect a ¾" air line to the air regulator/filter for the pulse air cleaning system and set the line pressure @ 95 PSI.
11. Position a 55-gallon drum or other collection device (provided by the customer) under the slide gate of the duct collector's hopper. Put the drum cover on the drum and connect the hose from the drum cover to the slide gate. Close the slide gate.
12. Make sure to position the duct inside the containment area where it is not too close the working personnel or to the dust generating operation. (Warning: Recovering abrasive media from the containment area through the ventilation ducting can damage the filters).
13. Do not allow rope, rages or other debris to get sucked up into the ducting and dust collector. This debris can clog the ducting, inlet screens inside the collector or the dust discharge at the bottom of the dust hopper. This type of blockage may cause the equipment to shut down and it may cause damage to the filters or the unit itself.
14. The fan in equipped with a "Damper" to adjust the air flow through the system. The damper adjustment handle is located on the inlet side of the fan. The recommended damper setting for new filters is 40% open.

## OPERATING PROCEEDURE (Electric Drive)

1. Open the air supply of dry air to the filter/regulator on the pulse cleaning system. Set pressure @ 95 psi.
2. Turn the selector switch on the front on the electrical panel to the AC position.
3. Turn breaker on the control box to the “ON” position (should have a green POWER ON indicator light illuminated.
4. Check the fan damper setting, with new filters it should be approximately 40% open.
5. Close the dust discharge slide gate.
6. Insure that the filter access door in closed and latched.
7. Insure that all motor access doors are closed and latched. Note: The motor will not start if any of the access doors are open or not latched and the motor will shut down if the doors are open while in the motor is running.
8. Check the duct connections and ducting to make sure they are tight and ready for operation.
9. Push the start button to start the fan. Verify that fan rotation is correct.
10. Listen to insure that the filter pulse cleaning system is pulsing properly. There should be an air pulse every 10 to 20 seconds.
11. Check and record the reading of the magnehelic gauge on a Daily Log Sheet. This should be checked on a regular basis (every couple of hours). If it starts climbing rapidly the system should be shut down and the cause determined.
12. The filters (PN 1000 0300) in this equipment are rated @ 99.9% at .5 microns. Refer to the attached **Filter Performance Specifications** for more information
13. The normal operating range of this equipment is between .05” to 10” of differential pressure as indicated on the magnehelic gauge. If the reading is above or below this range the equipment should be shut down and the cause for the high or low reading determined.
14. Shut the system down every 2 hours of operation and dump the dust from the hopper. This time frame can be adjusted to more often or less often depending on the dust amount being collected. Do not use the dust hopper as a collection device. This will cause the dust collected inside the hopper to be re-entrained back onto the filters, thus shorting the life of the filters.
15. Do not open the dust discharge slide gate while the fan is running. This will re-entrain the dust that has been collected in the hopper back onto the filters.
16. Drain the moisture from the air filter/regulator and the air manifold daily or as needed to insure that the filters are not being pulse with wet or damp air.

## SHUT DOWN PROCEEDURE (Electric Drive)

1. Stop the dust generating operation and let the dust collector run for about 5 minutes until the containment area is cleared of all air-born dust and the filters have a chance to pulse down during a non-dust generating period.
2. Record the magnehelic gauge reading on a Daily Log Sheet.
3. Push the stop button and the fan will shut down. Warning: Do not use the main circuit breaker on the control panel to turn the fan off.
4. Turn the main circuit breaker to the “OFF” position.
5. Turn the air pressure off to the pulse cleaning system and drain any moisture from the filter regulator and the air manifold.
6. Open the dust discharge slide gate and drain the dust residue from the hopper into the waste drum.
7. Close the slide gate.
8. Insure that all openings on the dust collector are closed so no moisture enters the equipment while it is shut down.

## OPERATIONAL TIPS

1. We recommend the application of “Precoat Dust” to new filters prior to putting the dust collector into use. This precoat dust will help to extend the life of the filters especially if the dust being collected is very fine.
2. Never open the fan damper past **40% Open** on new filters. This will cause premature failure (blinding) of the filters. Opening the damper will greatly increase the air-flow (CFM) thru the new filters and drives the dust particles so deep into the filter media that it cannot be dislodged by the compressed air back-pulse cleaning system.
3. As the filters form a “Dust Cake” they actually become more efficient and remove more and finer dust particles. Never open the fan damper on the fan until the “Dust Cake” has formed on the filters and the magnehelic gauge has a reading of at least 4” of differential pressure between the clean side of the filters and the dirty side of the filters. At this point the damper can be opened slightly to lower the differential pressure reading. As the reading continues to climb the damper can be gradually opened more.
4. The compressed air used to clean the filters must be **DRY**. Wet or damp air will greatly reduce the life and efficiency of the filters. The filter media is basically made from a paper and polyester blend material, which can be damaged by water or high moisture.
5. The pulse air pressure can be increased gradually from the initial setting of 95 PSI to a maximum of 105 PSI after the filters have formed the dust cake and the differential pressure reading on the magnehelic gauge has started to climb. Back pulsing the filters with air pressure higher than 105 PSI will damage the filter media and may allow dust particles to get through the filter media. High pulse pressure can also cause the filter to “Blow-out” which actually forms a hole in the filter and allows dust to by-pass the filter altogether. This can cause damage to the fan impeller and housing and will allow fugitive dust to escape into the environment.
6. The “JOG” button on the control box allows the filters to be pulsed manually without the fan operating. This allows the operator to back pulse the filters with no airflow through the filters. If the differential pressure reading on the magnehelic gauge is high this is a good way of cleaning the filters and lowering the reading. Be aware that with no airflow being provided by the fan the dust can migrate back through the ventilation hose into the containment area. The Jog button must be pushed and held in manually to allow the pulse cleaning cycle to operate. When the button is released the cleaning cycle will stop.
7. When planning your ventilation try to position the air inlet and air exhaust at opposite ends of the of the containment area so there is good cross through ventilation. Try to keep the cross-sectional area as small as possible which will limit the CFM required to ventilate the area. (i.e. Ventilating an area 10’ high x 20’ wide x 60’ long. Try to put the exhaust at one end of the 60’ and the inlet air opening at the other end of the 60‘. This provides the smallest cross-sectional area 10’ x 20’ and it provides good cross through ventilation).
8. Do not position the exhaust duct too close to the floor or too close to the proximity of the work being performed. The dust collector is designed to remove air-born dust, not large abrasive particles. These abrasive particles can cause damage the filter media and the equipment.
9. A daily log recording the reading of the magnehelic gauge and the air pressure gauge is recommended to help track how the equipment is operating and it gives the operator a chance to address issues before they become problems.
10. WARNING: This equipment is not designed or intended for the use of ventilation during the PAINTING process. Contact the equipment supplier for more information.

## PREPARATION OF EQUIPMENT FOR RETURN FROM RENTAL

1. Remove as much dust residue as possible with the hand auger system. Dust may build up around the auger especially is the humidity is high. With the fan tuned off, open the

filter door and push as much of the residual dust down to the auger to be transported out of the hopper via the auger.

2. Secure/disconnect the AC power from the equipment and coil the power cord up for transport.
3. Secure and disconnect the compressed air from the equipment.
4. Discount all vent hoses and remove Inlet Hose Adapters from the vent hoses.
5. Remove the filters from the equipment. **Note: These filters are the property of the renter and they should NOT BE RETURNED with the equipment. It is the renter's responsibility to properly store or dispose of these filters.**
6. Open all the dust inlets and remove any dust residue or trash from the inlet area.
7. Remove the remaining dust residue in the filter/hopper area by vacuuming, or washing the interior of the unit.
8. Wash the exterior of the unit if it is dirty or muddy beyond normal conditions.
9. Re-stall the Inlet Cover(s) and secure the Inlet Clamp Ring(s) for shipment.
10. Close the dust discharge valve at the bottom of the hopper.
11. Close and secure the filter access door for shipment.
12. Gather and secure for transport all the accessories sent with the equipment (Inlet Hose Adapter(s), Drum Cover, Duct Splice Ring(s), Ducting section(s), etc).
13. Properly secure the equipment on the truck or trailer using proper tie-down procedures. Use the lifting eyes and forklift tubes for attachment of the chains or straps. This will minimize the risk of causing damage to the unit during transport.
14. Make a note of any problems experienced during the operation of this equipment and a contact name and phone number so our technician can contact this person. Give this note to the delivery person returning the equipment.
15. We hope this equipment rental went well for you and we look forward to assisting your company in future projects. Thank you for your business.