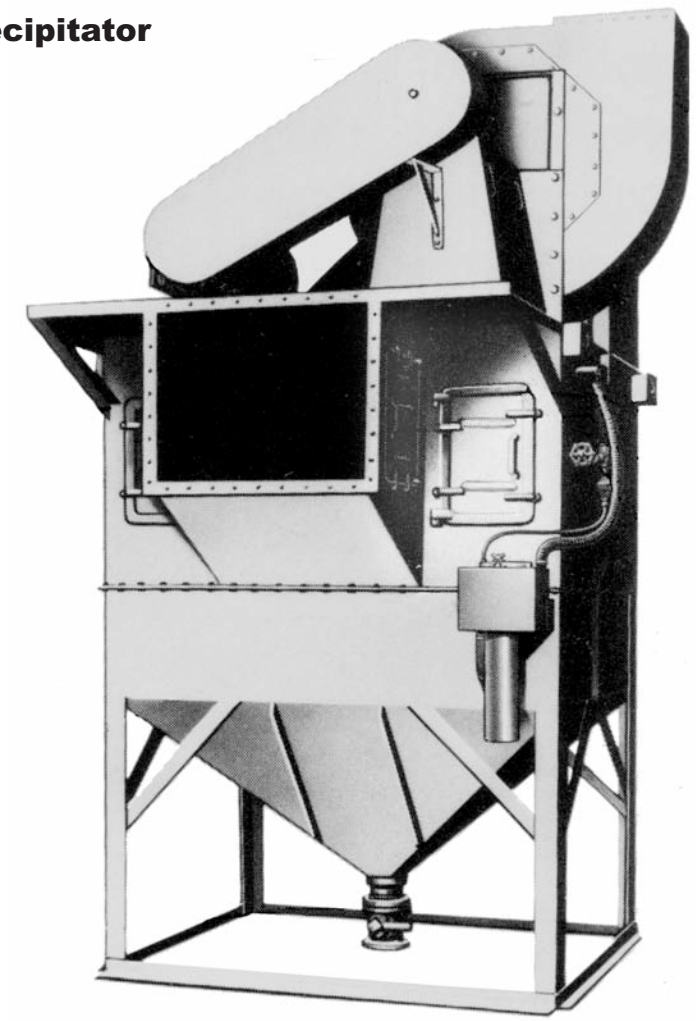
AAF INTERNATIONAL *Better Air is Our Business®*

AmericanAirFilter®
Type N RotoClone®

Model B, Arrangement D Hydrostatic Precipitator
Design 2 or 3, Size 1½ thru 6
Design 4 or 5, Size 8 thru 48

Installation, Operation and Maintenance Instructions



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1.0 Introduction

The Type N RotoClone® is a complete dust control unit. Designed to perform its various functions automatically, the RotoClone requires very little maintenance. Like any other mechanical equipment, however, it should have regular attention to insure long life and trouble-free service.

Design 2 and 4 have the exhauster on the clean air side of the Type N RotoClone. In the Design 3 and 5, the exhauster is on the dirty air side and discharges into the Type N RotoClone.

See back page to write in your design number, operating line, type of water level control and wiring diagram that apply to your Type N RotoClone.

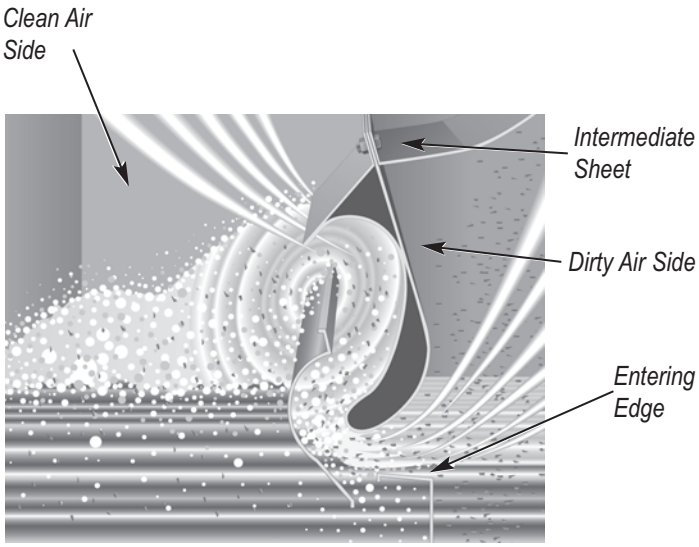


Figure 1. Cross section of Type N RotoClone Impeller.

2.0 Operating Principle

Type N RotoClone cleans the air by the combined action of centrifugal force and a thorough intermixing of water and dust-laden air. The dust is separated from the air by means of a water curtain, created by the flow of air through a partially submerged stationary impeller (see Figure 1). Air flowing through the impeller at a high velocity conveys water with it in a very turbulent sheet. Additional water is introduced at the narrowest portion of the impeller opening through a specially designed slot in the bottom. Since there is a certain pressure drop through the impeller, the water flows upward through the slot in an attempt to reach the water level on the clean air side. This water flow upward through the slot creates increased interaction between the dust and water, thus, increased collection efficiency. Since the water flows upward in an attempt to reach the level on the clean air side of the impeller, the impeller opening can be decreased (resulting in higher pressure drop and collection efficiency) by raising the water level in the unit. This is accomplished by means of an exclusive and patented variable water level control box. The centrifugal force exerted by rapid changes in direction of airflow causes the dust particles to penetrate the water film and become permanently trapped (Figure 1).

Any entrained moisture in the cleaned air is removed by specially designed, wide-space chevron eliminators made in removable sections for sizes 1½ through 6 and curved entrainment baffles for size 8 and larger.

The water in the reservoir is continually reused, and since the water curtain is produced by the airflow, no pumps or nozzles are required. The water level is maintained by the overflow weir in the control box as long as a small amount of fresh water is supplied through the make-up water connection or by electrical controls that automatically add water, as required, to compensate for evaporation and water lost as the collected dust is removed from the unit.

The design 2 and 3, sizes 1½ thru 6, have a single sludge hopper; Design 4 and 5, size 8 thru 20, have a single hopper; Design 4 and 5, sizes 24 thru 40, have double hoppers, and Design 4 and 5, sizes 44-48, have three (3) sludge hoppers. The sludge hopper is designed with steep sloping sides to prevent material building up on the hopper walls. Continuous or intermittent sluicing of collected material from the hopper is accomplished through the drain valve located at the bottom of the hopper(s).

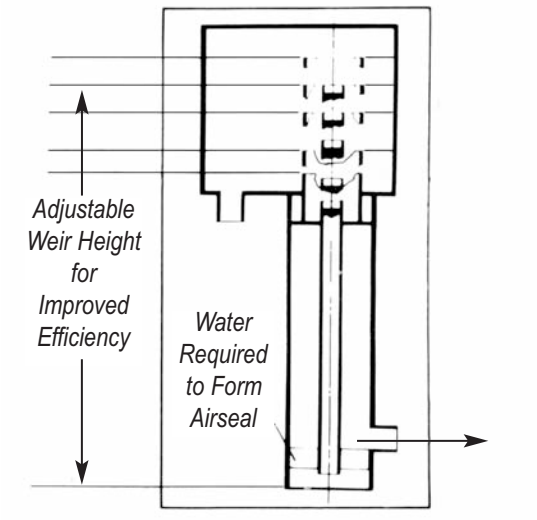


Figure 2. Water Level Control Box

3.0 Installation Instructions

Read following instructions completely and carefully.

3.1 Foundations

Foundations must be true, level and rigid enough to prevent vibration and to support the weight of the RotoClone with its maximum dust and water load given below.

Table 1. RotoClone Weights

Size	Maximum Operating Wt. Lbs.[1]	Normal Operating Wt. Lbs.[2]	Water Capacity Gallons	Erecting Weight	
				RotoClone Only	Exhauster Only
1 1/2	3,700	2,960	120	2,000	290
2 1/2	3,800	3,140	120	2,200	390
4	5,200	4,250	180	2,800	425
6	8,100	6,520	330	3,800	600
8	10,700	8,560	390	5,300	785
12	15,000	10,765	605	5,700	1,210
16	20,800	16,250	900	8,800	2,200
20	26,800	20,700	1,250	10,300	2,200
24	31,400	25,120	1,290	14,400	3,270
28	36,800	28,310	1,510	15,800	3,270
32	43,500	33,610	1,925	17,600	4,000
36	50,000	37,850	2,250	19,100	4,000
40	58,300	55,850	2,500	24,100	4,500
44	62,900	45,600	2,690	26,400	4,500
48	67,400	52,650	2,880	28,700	5,100

[1]Weight based on maximum sludge capacity with a sludge weight of 100 pounds per cubic foot.

[2]Weight based on weight of water, 62.4 pounds per cubic foot.

3.2 RotoClone Erection

1. Set RotoClone on foundation and adjust base until unit is level. Place spirit level on the leveling strips welded on two or more sides of the hopper. Use care in leveling in both directions as functioning of RotoClone depends on accuracy of this operation.

NOTE: This level can be checked by filling the unit with water until the level reaches the entering edge (Figure 1) of the impeller. This entering edge should be level with the water along its entire length with maximum variation of 1/8" plus or minus (see item 4.1, Operating Instructions).

2. For sizes 1 1/2 thru 6, check eliminator sections through the access door of the RotoClone. Correct location of these eliminator sections is shown on drawing 76P-1400415. For size 8 and larger, the entrainment baffles are fixed in place as an integral part of the unit and it is not necessary to make any adjustments.
3. RotoClones, size 1 1/2 thru 6, are shipped fully assembled. Size 8 thru 48 are shipped with the transition, motor, and exhauster disassembled from the RotoClone. When shipment is in major subassemblies the gasket/sealer for the flange between the RotoClone and transition outlet is packed in a box with the necessary bolts.

   The nominal 5/8" gap between the transition piece outlet and exhauster inlet will be sealed with the three inch sealing tape which is also included in the box of bolts.
4. Where required, field assembly of cleaning section and hopper will require the following:
   a. Install gaskets/sealers on top of hopper external flange.
   b. Set cleaning section in place so its bolting flange matches hopper flange. Lower carefully watching for interference between intermediate sheets and impellers. Walls of interior center section, formed by the two intermediate sheets must be inside impeller bolting surface (Figures 1 and 3).
   c. Bolt outside flanges of cleaning section and hopper section.
   d. Impellers are bolted to intermediate sheets. Before tightening, entering edge (Figure 1) of impellers must be in a straight line. Impellers were aligned at the factory and each impeller section matched drilled with holes in intermediate sheet. Check alignment before tightening the remaining bolts in the slotted holes in impellers and drilled holes in intermediate sheets.
   e. A removable section of grating is located near the bottom of each hopper discharge.

3.3 Lubrication

All bearings are packed with grease before leaving the factory. Do not add more grease during installation. See Bearing Manufacturer for greasing instructions and schedules.

3.4 Duct Connections

In order to prevent surging within the RotoClone, four to five duct diameters length of straight run prior to the inlet will provide uniform distribution at the inlet. If an elbow is required due to space limitations, turning vanes must be used in the elbow to evenly distribute the air and prevent surging.

Inlet and exhaust duct must be supported from floor, wall or ceiling; **not** from RotoClone or exhauster. Depending on the application and local conditions, the discharge from the exhauster may be either returned to the workroom or discharged to the atmosphere. It may be desirable to have both outside and inside discharges fitted with a selective damper. This will save heat in the winter with recirculation and aid ventilation by discharging outside during the summer months. Where discharge duct is required, it should extend above adjacent roof lines and should discharge vertically upward. As long as there is a drain in the fan housing, a drain cap or weather hood need not be used. Cross-section of the discharge duct should not be less than the exhauster outlet area.

3.5 Water Supply Connection

Connect a 1" line for sizes 1 1/2 thru 6 or a 2" line for size 8 and larger at a point shown in Figure 4. Supply piping with standard volumes and orifice sizes are shown in Figure 5. Variations in the supply volume can be provided by changing the flow switch and flow control valve.

CAUTION: Any change made in the water supply rate will usually require changing the orifice in the drain valve. Select a new orifice by referring to figure 5. Always supply enough to provide a small flow over the weir in the control box plus the drain volume.

3.6 Drain Connection

A drain valve is provided on each hopper for drainage control. An orifice located in the base plate of the valve provides a constant drainage rate. Standard orifice size for the different RotoClone sizes is shown in Figure 8. Variation in the drainage rates can be obtained by referring to Figure 8 and selecting a new orifice. Drainage is normally continuous but may be intermittent where collected material does not have a pronounced bridging or packing characteristics, or where a light dust load is being exhausted.

The drain valves should never be directly connected to the drain line but should feed into a trough. This provides visual observation that the RotoClone is draining properly and gives a constant head. The drain line from the control box or boxes can feed into the same disposal point.

3.7 Electrical Connections

Electrical connections to the RotoClone are the exhauster motor, motor starters, solenoid valve, and flow switch. Each connection is to be made in accordance with the appropriate wiring schematic enclosed with the RotoClone instruction packet, NEC and local codes.

1. Exhauster motor – The motor nameplate will show the connection hookup of the motor leads.

CAUTION: After connecting motor leads, insure that the exhauster rotates in the proper direction as indicated by the arrow on exhauster housing.

2. Motor starter – The exhauster motor starter may or may not be supplied by American Air Filter.
3. Solenoid valve – This valve is normally supplied in the water supply line. A solenoid valve is furnished with sizes 1½ through 28 on the model "SV", Model "SV" with low water safety control, and Model "A" controls.
4. Flow switch – It is an electrical interlocking protective flow switch wired in series with exhauster starter holding coil circuit. This prevents operation of the RotoClone until the solenoid water valve is opened. In the event of a water supply failure, the flow switch contacts open and the RotoClone stops. This flow switch is used only on the Model "SV" water level control.

CAUTION: For some applications, damage to the process or equipment would occur if the RotoClone is stopped during its operating cycle. In such cases, the flow switch should be wired to an alarm bell or signal light to indicate a water supply failure.

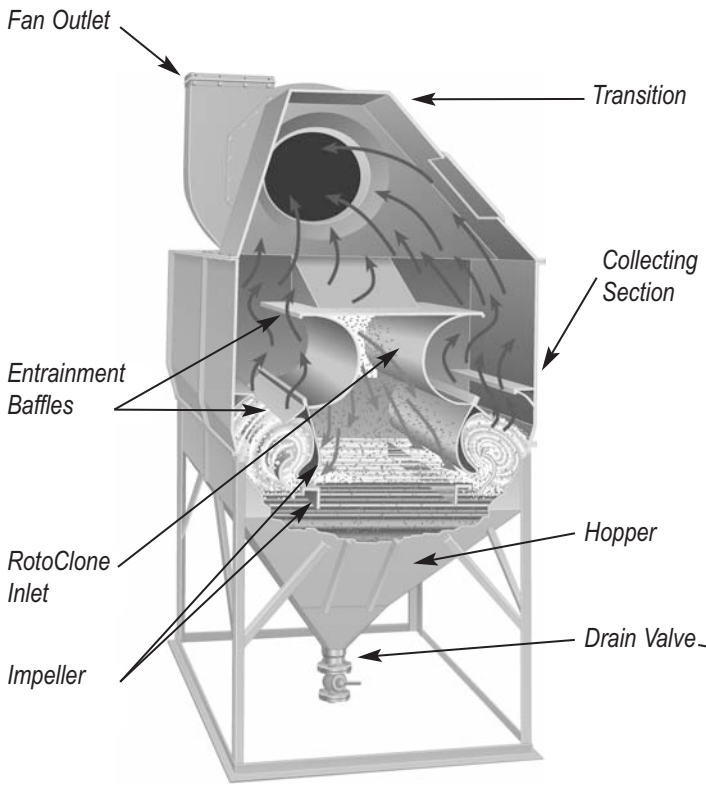


Figure 3. Cutaway section of typical Type N RotoClone, Arrangement D, size 8 thru 20.

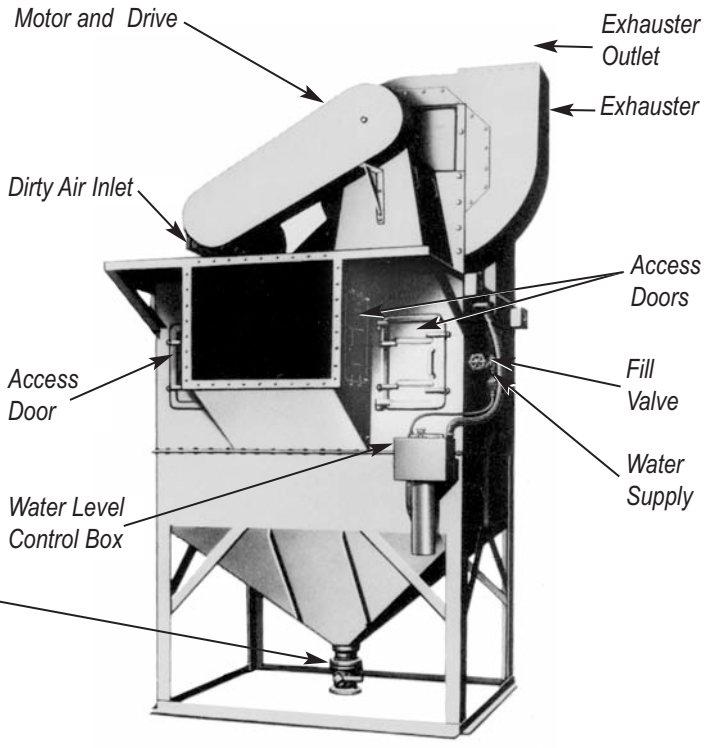
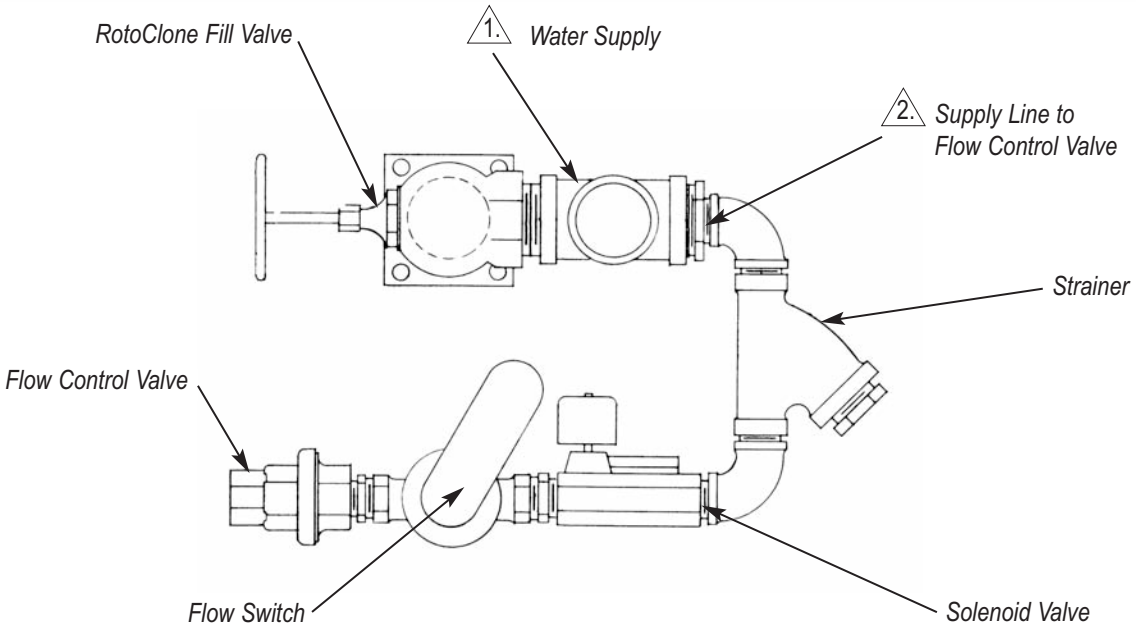


Figure 4. Typical Type N RotoClone, Arrangement D, size 8 thru 20.

Supply Piping and Volumes



1. 1" Supply and Fill Line on RotoClone Sizes 1 1/2 thru 6.
   2" Supply and Fill Line on RotoClone Sizes 8 thru 48.

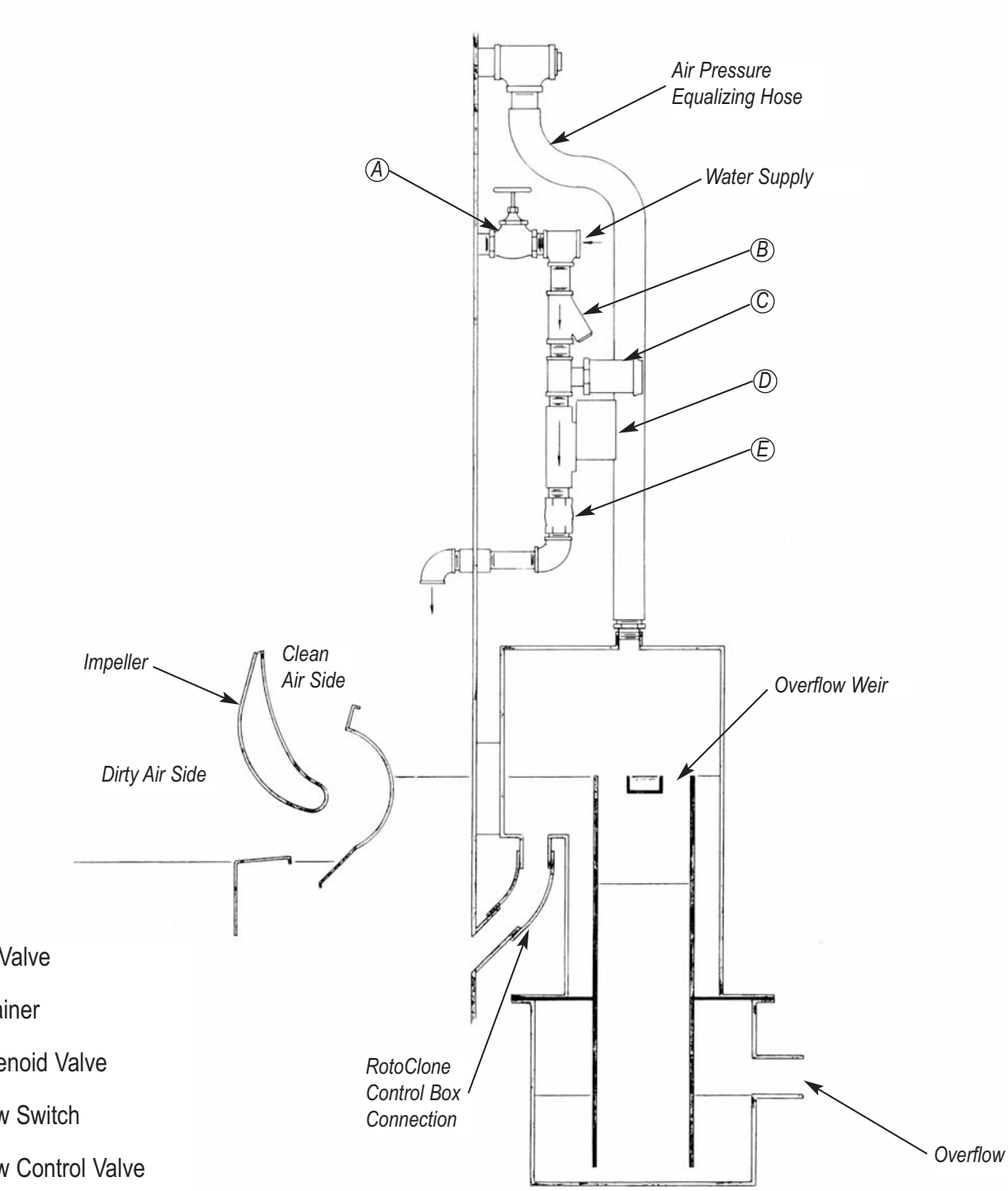
2. Supply Line to Flow Control Valve:
   Size 1 1/2 and 2 1/2, 1/2" piping.
   Size 4 and 6, 3/4" piping.
   Size 8 thru 20, 1" piping.
   Size 24 thru 40, 1 1/4" piping.
   Size 44 thru 48 1 1/2" piping.

Rotoclone	**1 1/2**	**2 1/2**	**4**	**6**	**8**	**12**	**16**	**20**	**24**	**28**	**32**	**36**	**40**	**44**	**48**
Drain Orifice Diameter	3/8"	3/8"	1/2"	1/2"	5/8"	5/8"	3/4"	3/4"	5/8"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Drain Volume GPM	3.1	3.1	5.5	6.3	10.3	10.4	16.6	17	31	31	33.8	33.8	33.8	54.3	54.3
Make-Up GPM* SV-HV Control	6	6	8	8	11	14	22	22	34	40	40	40	40	60	60

* Supply flow rate at 40 PSI supply pressure.

Figure 5. Schematic arrangement of supply piping and volumes.

Water Level Control Box Arrangements



A Fill Valve

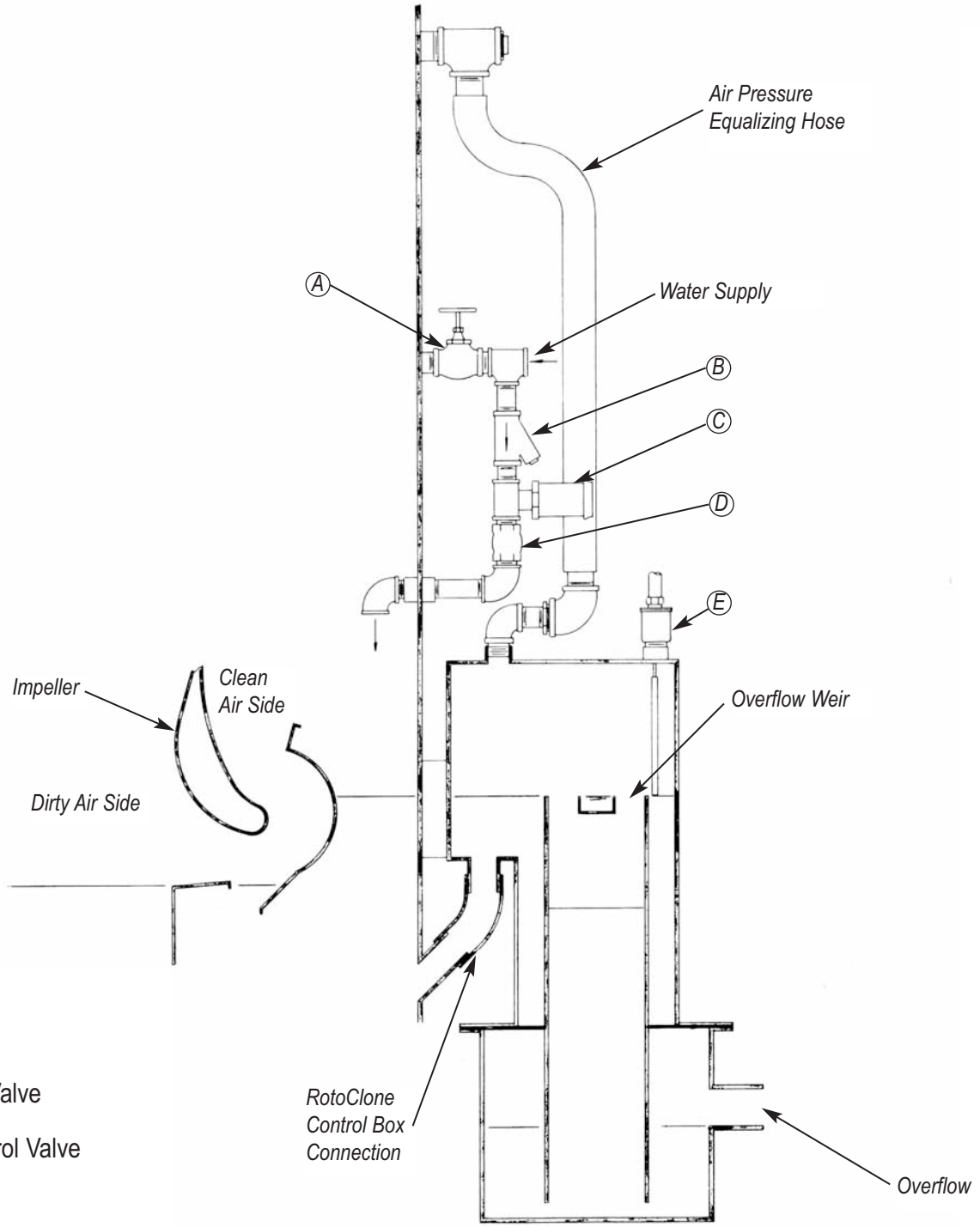
B Strainer

C Solenoid Valve

D Flow Switch

E Flow Control Valve

Figure 6. Control Schematic, Model "SV-HV" Water Level (Type N RotoClone, Model B).



A Fill Valve

B Strainer

C Solenoid Valve

D Flow Control Valve

E Electrode

Figure 7. Control Schematic, Model "SV-HV" High Volume with LWSC (Type N RotoClone, Model B).

Hopper Drain Volume

RotoClone Size	1 1/2	2 1/2	4	6	8	12	16	20	24	28	32	36	40	44	48
Head in Feet	3.4	3.4	3.4	4.4	4.8	5.4	6.1	6.4	5.3	5.3	6.3	6.3	6.3	7.2	7.2
Hoppers per R/C	1	1	1	1	1	1	1	1	2	2	2	2	2	3	3
Orifice Diameter	3/8"	3/8"	1/2"	1/2"	5/8"	5/8"	3/4"	3/4"	5/8"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Volume (GPM)	3.1	3.1	5.5	6.3	10.3	10.9	16.6	17	21.6	31	33.8	33.8	33.8	54.3	54.3
Control Box	S	S	S	S	S	S	H	H	2H	2H	2H	2H	2H	3H	3H

Flow of Water (GPM) From Each Hopper

Orifice Diameter	Area Sq. In.	Head in Feet								
		3.4	4.4	4.8	5.3	5.4	6.1	6.3	6.4	7.2
1/4"	.0491	1.3	1.5	1.6	1.7	1.7	1.8	1.8	1.8	2.0
3/8"	.110	3.1	3.5	3.6	3.8	3.8	4.1	4.2	4.2	4.5
1/2"	.196	5.5	6.3	6.5	6.8	6.9	7.3	7.5	7.5	8.0
5/8"	.307	8.6	9.8	10.3	10.7	10.9	11.5	11.7	11.8	12.5
3/4"	.442	12.4	14.1	14.7	15.5	15.6	16.6	16.9	17.0	18.1
7/8"	.602	16.9	19.2	20.1	21.1	21.3	22.6	23.0	23.2	24.6
1"	.7854	22.0	25.1	26.2	27.5	27.8	29.5	30.0	30.3	32.1
1 1/4"	1.227	34.5	39.2	40.9	42.6	43.4	46.2	46.9	47.3	50.2
1 1/2"	1.767	49.6	56.5	59.0	62.0	62.6	66.5	67.6	68.1	72.3

These figures based on $Q = CA\sqrt{2gh}$ C = 0.61 x 3.12 (Conversion factor for units)

Control Boxes		
Height of Flow over Weir	Standard Volume (S)	High Volume (H)
1/4"	7.5 GPM	19 GPM
7/16"	14 GPM	26 GPM
1/2"	Floods	30 GPM
9/16"	Floods	Floods

Figure 8. Hopper Drain Volumes for Various Orifice Sizes; Control Box Volumes

3.8 Water Level Control Options

Supply water makeup for the RotoClone is required because of water losses from evaporation overflow through the control box, and continuous sluicing through the hopper drain. This makeup water will maintain the proper water level in the unit by entering the RotoClone through the RotoClone/CONTROL BOX connection.

There are two (2) standard types of water level controls available on the Type N RotoClone, Model B, Arrangement D, the "SV-HV", and Model "SV-HV" with low water safety control. If you didn't know which control is applicable, contact your local AAF office with the name plate information from your unit.

1. Model "SV-HV" Control – This is the standard water level control for the Type N RotoClone Arrangement D (Figure 6). It prevents operation of the RotoClone when there is insufficient water flow. It also allows a continuous water flow over the running level weir, down the drain pipe, and into the overflow. The water supply system contains a fill valve, solenoid valve, strainer, flow switch and flow control valve. As long as the solenoid valve remains open, there will be a constant water flow into the control box.

   The air pressure equalizing hose is connected directly to a port in the top of the control box. This connection permits the air pressure on the clean air side of the RotoClone to equal the air pressure in the control box. Consequently, the water level on the clean air side of the RotoClone and in the control box will be the same.

2. Model "SV-HV" with low water safety control. This control should be used for any explosive dusts. In addition to the standard "SV" controls, this model contains an electrode, electrode holder, and a timing relay. It does not use the flow switch (Figure 7).

   The low water safety control prevents operation of the RotoClone if the water level in the unit is too low.

   The electrode and holder are installed in one of the ports on the top of the control box. This low water safety device is designed to maintain continuous contact with the water in the control box. If the water level in the control box drops below the electrode, a 3-minute timer relay activates. The water level must reach the electrode within three (3) minutes or the RotoClone fan will shut down automatically and the RotoClone operation stops.

   As long as the unit operates, the solenoid remains open. When the fan stops, the solenoid valve closes and the water flow to the control box stops.

   The air pressure equalizing hose is attached to a separate port on the top of the control box. This keeps the air pressure on the clean air side in the RotoClone the same as in the control box. Hence, the water level in the RotoClone and the control box will be the same.

   A continuous flow of make-up water is needed in the RotoClone. The water flows into the unit through the pipe connection to the air inlet chamber. Approximately 90% of the water flows to drain through the orifice located in the hopper bottom. The balance of the water flows into the control box and over the weir to drain.

   This model gives continuous flow of water over the control box weir.

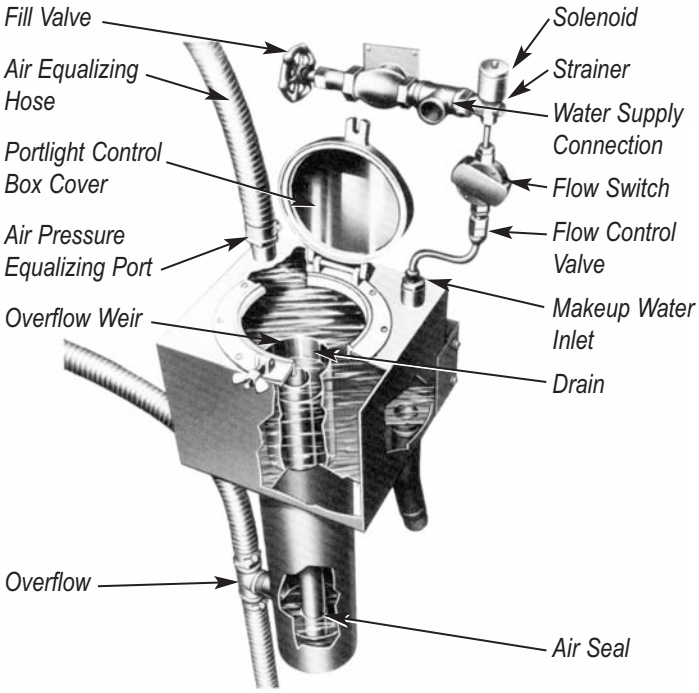


Figure 9. Cutaway of Standard Water Level Control Box.

3. When there can be no water overflow from the Rotoclone, the drain valve can be closed, the orifice plate removed, and Model A controls supplied. Makeup water will be added to the system only when a requirement exists. This control also prevents the RotoClone from operating when there is insufficient water level.

   The water supply system contains a fill valve, strainer, solenoid valve, electrode, electrode holder, and a timing relay.

   The electrode and holder are installed in one of the ports on the top of the box. This low water safety device is designed to be in continuous contact with the water in the control box. When the water level drops below the electrode, the solenoid valve opens to supply the required makeup water to the system. When the control box water level is again in contact with the electrode, the solenoid valve closes and stops the makeup water flow. This prohibits a continuous water overflow at the weir.

   If the water level has not reached the electrode within three (3) minutes, the timer will turn off the RotoClone exhauster and stop the RotoClone operation.

   NOTE: The drain connection at the bottom of the water level control box must be capped.

4.0 Operating Instructions

4.1 To Fill RotoClone

1. Be certain drain valve in RotoClone hopper (Figure 3 or 4) is closed.
2. Open fill valve (Figure 4) and add water until it reaches a point two (2) inches below running level weir in water level control box.

   When filling for the first time:

   a. First bring water level to entering edge of the impeller (Figure 1) and check that RotoClone was properly leveled during erection (see Item 3.2.1, Installation Instructions.)

   b. Pour water down control box drain until a constant level is maintained to make a water seal in the bottom of the pipe (Figure 9.)
3. Close and tighten control box cover. It must be air tight or incorrect water level in RotoClone will result.

4.2 To Start RotoClone

1. Check control box cover and be certain cover is tight.
2. Open Drain Valve in hopper drain.
3. Check water supply.
4. Press start button for the RotoClone exhauster. Solenoid valve in water supply line should be interlocked to open simultaneously with fan start-up. (Except with Model A controls)

4.3 To Stop RotoClone

1. Press stop button for RotoClone exhauster. Solenoid valve in water supply line should be interlocked to close simultaneously with fan stoppage.
2. Shut off Drain Valve hopper drain.

5.0 Maintenance Instructions

5.1 Routine Maintenance

To insure proper operation of the RotoClone, these procedures should be followed as a minimum. More frequent cleaning may be required for certain applications.

1. Water Level Control Box.
   a. Observe water in control box frequently. Be certain that water level is at the running level weir (Figure 9). Observe frequently through glass portlight in control box top. DO NOT open portlight when unit is running because air leakage will alter water level.

   b. Open portlight each week while RotoClone is stopped and remove any accumulations in the box, check air equalizing port for pluggage, check running level weir, electrode (if supplied), and drain pipe for build-up and wear (Figures 6 or 7). Clean cover glass and secure portlight, carefully tightening hold-downs.

   c. Remove Strainer in water makeup line after first 24 hours of service and clean. Clean monthly thereafter. Strainer may be located in solenoid valve on sizes $1^{1}/_{2}$ - 16.
2. Eliminator Plates (Design 2 and 3):
   a. Inspect each week and remove any accumulations. Cleaning methods will vary with material collected. Hosing in place is effective for many materials. Removal of plates and scraping or washing may be necessary. After cleaning install correctly. See drawing 1400415.
3. RotoClone Housing:
   After one month's operation, drain RotoClone and check for build up on any surface. Check all impeller surfaces and hopper walls carefully and wash down with water hose, if required. Frequency of this operation can be extended until proper cycle for a given application has been determined.
4. Metering Drain Orifice:
   If there is evidence of plugging, clean the hopper orifice. Check the screening grid in hopper to determine if it is clogged (the screening grid which is positioned approximately 18 inches above the metering orifice).
5. Exhauster:
   a. Check exhauster for excessive vibration each month while checking V-Belt drive. Be certain exhauster is rotating in proper direction.

   b. Check exhauster wheel and housing at least every three months and remove any accumulation.

   c. Remove old grease from bearings at least every six months, replacing with medium (No. 2) grade straight mineral grease. Excessive grease can cause bearings to overheat. If too much grease has been added, remove grease fitting and run exhauster until excessive grease is driven from the bearing. Replace grease fitting.

   d. For exhausters with oil lubricated bearings, see lubrication instructions included with units.
6. V-Belt Drive:
   Check belt tension each week for the first month of operation; monthly thereafter. Loose belts reduce airflow through the RotoClone and cause excessive belt wear.
5. Replacement Parts:
   a. Parts of the Arrangement D RotoClone will not require frequent replacements and spare part stock is seldom necessary.

   b. Replacement of impeller sections will be required at prolonged intervals. Routine inspection will give ample warning of need to order these parts.

WHEN ORDERING ANY PARTS GIVE PART NAME AND NUMBER, PART LIST NUMBER, RotoClone SIZE, TYPE AND SERIAL NUMBER.

5.2 Correction of Poor RotoClone Operation

Most difficulties that may be encountered in RotoClone operation will be discovered and corrected by one or more of the following:

1. Reduction in air flow at exhaust hoods:
   a. Reduced exhauster speed due to belt slippage.
   b. Accumulations in ducts or hoods due to sticky nature of dust or settling in ducts caused by low conveying velocities.
   c. Addition of more exhaust points to the system.
   d. During winter when doors and windows are closed, insufficient makeup air to the exhaust system will create high negative pressure in room.
   e. High water level in RotoClone can be observed through closed portlight in control box. Water level above running level weir can be caused by:
      - Plugged drain line from control box.
      - Open or leaky fill valve that allows water to flow into RotoClone raising the level over running level weir 1/4" or more.
      - Air leak in control box due to portlight cover not closed tight or failure to pour water in drain pipe to provide water seal (see Item 4.1.3, Operating Instructions).
   f. Plugged eliminator plates or accumulations in impellers or dirty air chamber.
   g. Plugged air equalizing hose.
2. Reduced dust collection efficiency can be caused by:
   a. Extreme reduction in air flow indicated in Item 5.2.1, Maintenance Instructions.
   b. Corrosion or abrasion to impeller sections.
   c. Low water level in RotoClone. Can be observed through closed portlight. Water level below running level weir can be caused by:
      - Insufficient water supply due to plugged strainer in makeup water line. Prolonged periods of low water pressure can reduce water supply rate below water evaporation rate in RotoClone. Evaporation will be greatest on hot, dry days.
      - Incorrect flow valve. Contact your AAF representative for replacement.
      - Solenoid valve sticking in closed position.
      - Accumulation on electrode in Model “SV” with low water safety control.
      - The unit out of level (see Item 3.2.1, Installation Instructions).
3. Accumulations in hopper caused by excessive dust loading:
   a. Increase drainage rate from RotoClone by increasing orifice size in supply line and hopper drain.
   b. Allow RotoClone to drain for a definite amount of time after the operation has stopped. This will insure that any suspended material will be emptied before starting up the RotoClone the next time. Normally, a half hour after shut down is sufficient. Be sure to refill this RotoClone before starting.
4. Water entrainment in Discharge:
   a. Rain or snow draining into exhauster housing during erection or shut down (Design 2 or 4).
   b. Incorrect position of water eliminator plates in Design 2 or 3 (see Item 5.2.2, Maintenance Instructions).
   c. Excessive air flow through RotoClone. Overrating can be checked by measuring the pressure drop across the RotoClone. This can be done by subtracting the static pressure directly upstream of the inlet of the RotoClone from the static pressure directly downstream of the exhaust plenum (between the RotoClone and the exhauster on the draw-thru systems). If the pressure drop of the RotoClone exceeds the maximum allowable for the operating line in the RotoClone was sized for this usually indicates excessive airflow. The maximum allowable pressure drop for each operating line can be determined from the operating line chart in Figure 10. The maximum allowable pressure drop for a particular operating line occurs at its intersection with the “maximum pressure drop” line.

      To stop entrainment caused by excessive airflow, increase static pressure or reduce exhauster speed.
   d. A plugged air equalizing hose will cause the water level control box to maintain a too high water level in the unit. Clean the hose and readjust the water level (Operating Instructions 4.1.2).
   e. Surging of the RotoClone is a rocking of the water from end to end in the unit. This can be caused by running the unit well below its rated capacity. Contact your AAF sales representative for assistance.
      - Surging can also be caused by a duct elbow at the RotoClone inlet. Four to five duct diameters length of straight run will give an even flow at the inlet. If an elbow is required due to space limitations, turning vanes in the elbow will evenly distribute the air and eliminate surging.
   f. If the unit is out of level, water entrainment may result (see item 3.2.1, Installation Instructions).
   g. Loss of water trap in water level control box will result in a too high water level in the unit. Pour water down center of overflow weir and quickly close portlight.

AmericanAirFilter®
Type N RotoClone®

Type N RotoClone Performance Curves

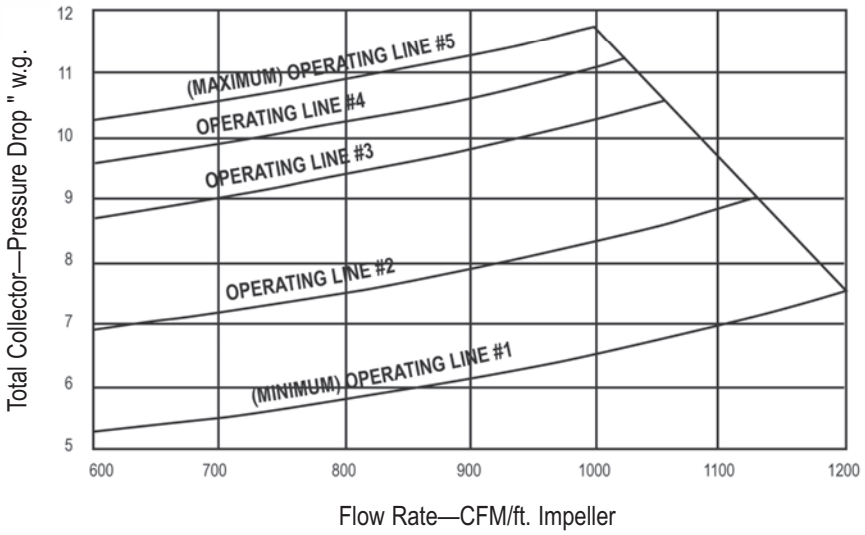


*Figure 10. Typical chart of Type N RotoClone pressure loss for exhaust volume variations and given operating lines. The Type N RotoClone **must operate on one of the operating lines**. RotoClone size multiplied by CFM./ft. impeller gives rating in CFM.*

Operating Line	Maximum Pressure Drop in. w.g.
1	7.5
2	9.0
3	10.6
4	11.2
5	11.7

RotoClone Size No. _____ Serial No. _____

1. Design (2) (3) (4) (5)

2. With water level control (Model SV)
   (Model SV with High Volume Control Box(es)
   (Model SV HIgh Volume with Low Water Safety Control)
   (Model A Control)

3. Wiring Diagram No. _____

4. Operating Line (1) (2) (3) (4) (5)

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