TFP ELIMINATOR

Installation & Operating Instructions for

ME500XF, ME500XC, ME800XF, ME800XC, ME1400XF, ME1400XC, ME1400XCM, ME2000XC, ME2000XF, ME2500XCR, ME2500XFR, ME4000XF, ME4000XC, ME6000XF, ME6000XC

Features

- High efficiency collection for wet mist
- Low power consumption
- motors available in various voltages
- Durable epoxy powder paint
- Low maintenance
- Easy to change collectors
- Compact design
- Optional 3rd stage filters

Applications

- Machining centers
- Boring mills
- Screw Machines
- Die casting machines
- High speed grinders

Mounting

1. The TFP ELIMINATOR can be suspended from above, attached directly to the top of the machine or bolted to a support frame. Make sure that the support has adequate strength. For congested areas, purchase the column mount which will fit into a small floor space and will place the TFP-ELIMINATOR 7 feet above the floor.

2. To provide access for maintenance, a minimum clearance of 30" (77cm) is required above the ME500XF, ME800XF, ME1400XF, ME1400XCM, ME2000XF, ME2500XFR, and ME2500XCR. The minimum clearance above the ME4000XF and ME6000XF is 50" (127 cm).

3. When suspending the smaller units ME500, ME800, ME1400, ME2000XF and ME2500XC and ME2500XF series units, use the four mounting holes at each top corner. A chain or cable can be attached to these holes to suspend the unit from overhead steelwork. When mounting on a support frame, bolt to the frame using the four holes at the bottom of the ME500XF, ME800XF, ME1400XF, ME2000XF, ME2500XC and ME2500XF series units and the eight holes at the bottom of the ME4000XF and ME6000XF units.

4. Check to make sure that the unit is level. Attach the collection duct to the inlet end of the TFP ELIMINATOR. When installing with parts washers refer to section 10 for additional requirements

5. Connect liquid traps/drainage tubes to the drains on the bottom of the unit. For proper operation traps must be incorporated into the drainage system. (see diagram on page 6 for dimensions). A suitable trap can be made by creating a loop in a flexible plastic tube providing the dimensions in the diagram are adhered to. As an alternate to the drain traps, the drain outlet tubes can be immersed in liquid to prevent air from being drawn into the unit.

6. Provide suitable electrical power to the motor. Test the unit to confirm that the blower is rotating in the direction indicated by the arrow located on the back above the motor.

7. Fill the traps with liquid if the end of the drainage tubes do not terminate in liquid.

8. Check to make sure that the clamping frame is securely locked in place to prevent by-pass.

9. The unit is now ready for mist collection.

Additional Requirements for Installation with Parts Washers

For optimum results with Parts Washers, install a “T” or “Y” on the inlet side of the TFP ELIMINATOR. A manually adjusted damper or blast gate should be installed in the “Y” or “T” branch as shown in Figure 1.

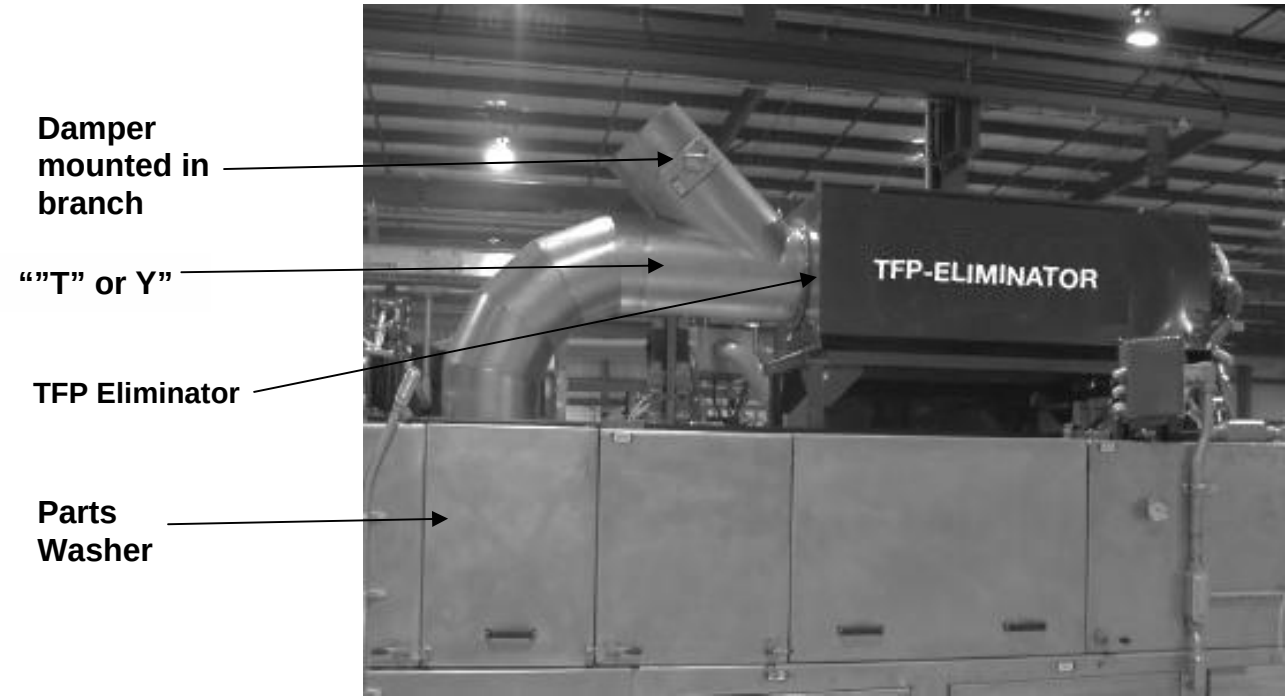


Figure 1.

Adjusting the Damper to Control the Mist from Parts Washer

1. To find the proper damper setting, start the parts washer

2. Let it achieve normal operating temperature

3. Then, beginning with the damper in the wide open position, close it gradually until the mist ceases to escape from the parts washer and lock in that position. This will ensure that mist is collected with the least amount of disturbance to the parts washer.

Preventative Maintenance

Motor
For information on maintaining the motor, refer to the motor installation and maintenance manual.

Inspection Intervals
The TFP ELIMINATOR can operate for long periods without maintenance. To establish the maintenance intervals, inspect the unit every 3 weeks until the frequency for required Maintenance has been established. During this inspection, examine the optional filters (if installed) for sagging and replace if necessary.

At each inspection

Before Shutting Down
Before shutting the unit down for internal inspection, examine the air being exhausted for signs of visible mist. If there is no visible mist, the TFP cartridge and optional 3rd stage filters (if present) will not normally require cleaning or replacement. Check the traps on the inlet end and center for suction. If there is suction, refill the trap. Check the inlet for sufficient air flow.

Shutting Down
When shutting down the unit for internal inspection, be sure to follow the lock-out procedures for your facility. After shutting down, perform the following procedures:

Prefilters
Inspect the pre-filters for damage and plugging. If aluminum mesh filters have been installed, it is normal for them to darken with use. Check for damage on the frame and aluminum mesh. Check for plugging. Solid deposition in the pre-filter compartment may have to be scooped out. Replace or clean the pre-filters as required. Parts Washer models (XC models) are equipped with grease filters. The grease filters are also installed in some of the XF models. These are impingement type filters that should be examined for excessive build up. If necessary, remove them for cleaning and replace them before start up.

TFP Cartridges

Inspect the foam collectors for plugging with particulate, tearing, and severe deformation. Plugged foam can be washed or replaced. When installing foam blocks, it is essential to locate the aligning hole in the same position in each column of foam. Replace torn foam blocks. In normal operation each column of foam may be compressed up to 2" from front to back. This will not affect collection efficiency. If the front face of the foam is discolored, do not replace as this is normal.

Optional Filters

If no there was no visible mist noticed in the exhaust air prior to shut down, the optional filters should not need replacing. If there was visible mist noticed and the TFP collector is in serviceable condition, replace the optional filter. On the square filters, make sure that the pleats are vertical for proper drainage. Check for gaps at the top of the filter media. If present, replace the optional filter. Ensure that the gasket is in place and sealing against the TFP collector cell.

Gaskets

Check the gaskets for tears, deformation and sagging. Re-attach sagging gaskets. Please note that if replacement gaskets are needed, they are only available from your AIRIA Inc. supplier. The door gaskets are clipped on while the filter stop gaskets are glued onto the frame with Permabond 102. If gaskets on the optional filter are damaged, replace with air tight weather stripping

Drain Lines

Check drain lines for plugging. If plugging is suspected, pour liquid into the unit to see if it emerges from the drain line. If a drain is plugged clear it before putting the unit back into service.

Annually

TFP Cartridges

Inspect caulking on the TFP cartridge. If the caulking beads are broken, clean off the affected area and reseal with Loctite Ultra Copper or Ultra Black. Allow caulking to dry for at least 8 hours.

Blower Wheel & Venturi Ring

Inspect the impeller for cracks. If cracks are present, replace the impeller. Inspect the circumference of the impeller that goes over the venturi ring for evidence of rubbing. Replace the impeller if evidence of rubbing is found. Inspect venturi ring for wear due to rubbing on the impeller and replace if necessary. Ensure bolts are tight. If the blower compartment is lined with insulation, Inspect it to make sure that it is still attached. If it is not, order a new parts washer kit which will consist of new foam and cement to attach it to the inside of the blower compartment.

Wash Down

It is desirable but not essential to wash out the inside of the unit annually. Wipe down the outside.

Installation & Replacement of TFP Cartridge or Optional 3rd Stage Filter

Disconnect power to unit and follow your lock-out procedure. Be sure to wear protective gloves when working on the unit.

To replace cartridge or filter, undo the latches and remove the top cover. Release the clamps holding the cartridge(s) and/or filter(s) in place. Lift out the old cartridge(s) or filter(s) and replace with new ones. Make sure to orient correctly as indicated by the flow direction arrows. Tighten the clamp and secure the top cover. Make sure that the optional filter is placed in position nearest to the blower to avoid premature filter failure.

Filter Alignment (ME4000XF & ME6000XF only)

To ensure a proper seal between the Optional 3rd Stage Filters and TFP Cartridges, line up the marks located on the cartridge and filter labels. If this is not done, mist may bypass the filter.

Troubleshooting

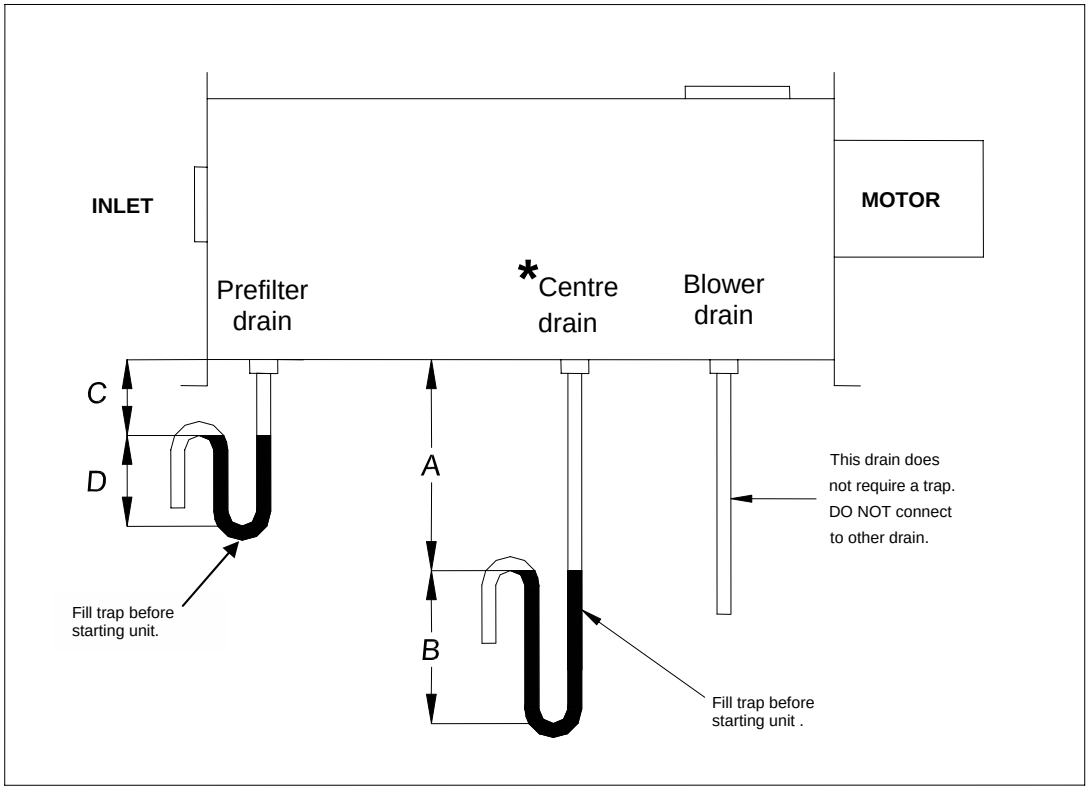
Insufficient air flow

1. This can be caused by a worn out 3rd stage filter. Replace filter to restore airflow.
2. Check connecting duct for blockage. Remove any item that could impede flow.
3. Check direction of motor rotation. If the motor is running in reverse, airflow will be inadequate and the impeller may fail. Rewire the motor to correct the problem.
4. Inspect cartridge for blocked holes. If holes are blocked, clean or replace the media or install a new TFP cartridge.

Visible Emissions

1. Failure to adhere to trap dimensions or filling the trap before startup will eventually lead to visible emissions. Check trap dimensions and make sure that it is full of liquid.
2. It is most often caused by a worn out optional 3rd stage filter. Replace filter if worn out.
3. In systems collecting from grinders or high speed machines generating smoke, it could be caused either by a worn out filter or a clogged TFP cartridge. Replace the appropriate items.

Drain Trap Information



Models	A	B	C	D
ME500XC, ME500XF	12”	8”	4”	3”
ME800XC, ME800XF	14”	12”	4”	3”
ME1400XC, ME1400XCM, ME1400XF	14”	12”	4”	3”
ME2000XC, ME2000XF	14”	12”	4”	3”
ME2500XC, ME2500XCS, ME2500XF	14”	12”	4”	3”
*ME4000XC, ME4000XF	20”	16”	4”	3”
*ME6000XC, ME6000XF	20”	16”	4”	3”

*The ME4000XF has two centre drains and the ME6000XF has three centre drains. It is only necessary to use one centre drain on each unit. Choose the most convenient one and leave the other capped.

IMPORTANT:
For the liquid to drain from your TFP-Eliminator it is necessary to connect the drainage system as shown in this drawing.

ALTERNATIVE TO TRAP:
If the drain lines can be terminated below the surface of the liquid in a collection tank, this will create an effective trap and the trap as shown in the above illustration will not be required.

Specifications

	ME 500XF	ME 800XF	ME 1400XF	ME 2000XF	ME 2500XF
FLOW CAPACITY	500 CFM	800 CFM	1400 CFM	2000 CFM	2500 CFM
LENGTH	59" (150 cm)	65" (165 cm)	65.375" (166 cm)	75" (190 cm)	77" (196 cm)
HEIGHT	24" (61 cm)	24" (61 cm)	24" (61 cm)	24" (61cm)	24" (61 cm)
WIDTH	15" (39 cm)	23.25" (59 cm)	23.25" (59 cm)	28" (71cm)	28" (71 cm)
INLET	7" (18 cm)	9" (28cm)	10" (28cm)	14" (36 cm)	14" (36cm)
MOTOR	3/4 H.P.	1.5 H.P.	3 H.P.	3 H.P.	5 H.P.
SOUND LEVEL	69 db@ 10'	71 db @ 10'	72 db @ 10'	72 db @ 10'	74 db @ 10'
WEIGHT	195 Lb (88 kg)	225 Lb (102 kg)	235 Lb (107 kg)	300 Lb (136 kg)	330 Lb (150 kg)
TFPCELLS	1	1	1	2	2
PREFILTERS	2	2	2	2	2

	ME 500XC	ME 800XC	ME 1400XC	ME1400XCM	ME 2000XC	ME 2500XC
FLOW CAPACITY	500 CFM	800 CFM	1400 CFM	1400 CFM	2000 CFM	2500 CFM
LENGTH	48” (122 cm)	58” (147 cm)	59” (150 cm)	59” (150 cm)	58” (147 cm)	59” (150 cm)
HEIGHT	24" (61 cm)	24" (61 cm)	24" (61 cm)	24" (61 cm)	24" (61cm)	24" (61 cm)
WIDTH	15" (39 cm)	23.25" (59 cm)	23.25" (59 cm)	23.25" (59 cm)	28" (71cm)	28" (71 cm)
INLET	7" (18 cm)	9" (28cm)	10" (28cm)	10" (28cm)	14" (36 cm)	14" (36cm)
MOTOR	3/4 H.P.	1.5 H.P.	3 H.P.	3 H.P.	3 H.P.	5 H.P.
SOUND LEVEL	69 db@ 10'	71 db @ 10'	72 db @ 10'	72 db @ 10'	72 db @ 10'	74 db @ 10'
WEIGHT	175 Lb (79 kg)	200 Lbs (91 kg)	210 Lb (95 kg)	255 Lb (116 kg)	270 Lb (122 kg)	310 Lb (141 kg)
TFPCELLS	1	1	1	1	2	2
PREFILTERS	1	1	1	1	1	1

Specifications

	ME4000XF	ME6000XF
FLOW CAPACITY	4000 CFM	6000 CFM
LENGTH	86-1/2" (220 cm)	93" (236 cm)
HEIGHT	26-3/4" (68 cm)	27-5/8" (70 cm)
WIDTH	48-1/4" (123 cm)	67" (170 cm)
INLET	18" (46 cm)	24" (315 cm)
MOTOR	10 H.P.	15 H.P.
SOUND LEVEL	79 db @ 10'	83 db @ 10'
WEIGHT	950 LBS (432 kg)	1500 LBS (682)
TFPCELLS	2	3
PREFILTERS	4	6

Replacement Part Numbers

	ME 500XF	ME 500XC	ME800XF	ME800XC	ME1400XF	ME1400XC,XCM
Door Seal	13-112	13-112	13-112	13-112	13-112	13-138
Partition Seal	13-137	13-137	13-137	13-137	13-137	13-137
Impeller	40-113	40-105	40-105	40-105	40-109	40-109
Venturi Ring	40-114	40-114	40-104	40-104	40-111	40-111
Blower Grille	61-666-10	61-666-10	61-800-17	61-800-17	61-800-17	61-800-17
Door Latch	91-108	91-108	91-108	91-108	91-108	91-108
Prefilters *	65-221	65-343	65-216	65-341	65-216	65-341
TFP-Cartridge	53-500X	53-500X	53-800XF	53-800XF	53-1402XF	53-1402XF
Motor – 110/220v 1 phase	23-229	23-280	Not available	Not available	Not available	Not available
Motor – 220/460 3 phase	23-293	23-293	23-283	23-283	23-285	23-285
Motor – 575v 3 phase	23-295	23-295	23-281	23-281	23-288	23-288

* Note: For applications with heavy particulate loading the prefilters for the XC models are recommended in the XF models.

Replacement Part Numbers

	ME 2000XF	ME2000XC	ME 2500XC/XCR	ME 2500XF/XFR
Door Seal	13-112	13-112	13-112	13-112
Partition Seal	13-137	13-137	13-137	13-137
Impeller	40-109	40-109	40-125	40-125
Venturi Ring	40-111	40-111	40-112	40-112
Blower Grille	61-2501-13	61-2501-13	61-2501-13	61-2501-13
Door Latch	91-108	91-108	91-108	91-108
Prefilter *	65-223	65-342	65-342	65-223
TFP-Cartridge	53-2000XF	53-2000XF	53-2000XF	53-2000XF
Motor – 220/460 3 phase	23-285	23-285	23-291	23-291
Motor – 575v 3 phase	23-288	23-288	23-289	23-289

	ME4000XF	ME6000XF
Door Seal	13-112	13-112
Partition Seal	13-137	13-137
Impeller kit with venturi ring	40-115	40-118
Blower Grille	inquire	inquire
Door Latch	91-123	91-123
Prefilter *	**1** 65-216 or 65-341	**2** 65-216 or 65-341
TFP-Cartridge	53-1402XF	53-1402XF
Motor – 110/220v 1 phase	N/A	N/A
Motor – 220/460 3 phase	23-303	23-298
Motor – 575v 3 phase	23-296	23-297

* Note: For applications with heavy particulate loading the prefilters for the XC models are recommended in the XF models.

1 Standard prefilters supplied are 4 aluminum mesh filters stock code 65-216.
If ordered with impinger style prefilters they are supplied with 2 prefilters stock code 65-341

2 Standard prefilters supplied are 6 aluminum mesh prefilters stock code 65-216.
If ordered with impinger style prefilters they are supplied with 3 prefilters stock code 65-341

W

TFP ELIMINATOR® Warranty

AIRIA Energy Systems Inc. (AIRIA ®) warrants to the purchaser of the TFP-Eliminator® models and accessories referred to below, to be free of manufacturing defects.

This Warranty is personal to AIRIA and is in effect from the date of the original purchase for a period of two years with the following exceptions:

- Prefilters, TFP cells and optional 3rd stage filters are consumable items and are only warranted to be free of manufacturing defects at the time of purchase.

- The motor is warranted by the motor manufacturer and may vary with the manufacturer. In general, it is warranted for two years.

Damage resulting from all other causes, including but not limited to: lighting, hurricane, tornado, earthquake or any other acts of God; improper installation, modification, alteration or misuse of the TFP-Eliminator or its operation in a manner contrary to the instructions accompanying the unit at the time of sale; accidental or intentional damage, neglect, improper care, or other failure by the owner to provide reasonable and necessary maintenance of the product; any attempt at repair by an unqualified person or not in accordance with this warranty; or any other causes beyond the control of AIRIA, are excluded from this warranty.

If you feel that the TFP-Eliminator you purchased is not free from manufacturing defects, please contact AIRIA ENERGY SYSTEMS INC., 511 McCormick Blvd., London, Ontario N5W 4C8, 519-457-1904 or fax 519-457-1676.

AIRIA ® reserves the right to replace the entire unit or to refund the original purchase price in lieu of repair.

AIRIA ® MAKES NO EXPRESS WARRANTIES EXCEPT FOR THOSE THAT ARE SET FORTH HEREIN AND SHALL NOT BE LIABLE FOR ANY INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES WITH RESPECT TO TFP-ELIMINATOR® COVERED BY THIS WARRANTY. AIRIA'S COMPLETE LIABILITY AND THE OWNER'S EXCLUSIVE REMEDY BEING LIMITED TO REPAIR OR REPLACEMENT ON THE TERMS STATED HEREIN. ANY IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTY OF MERCHANTABILITY AND OF FITNESS FOR ANY PARTICULAR PURPOSE, ARE EXPRESSLY EXCLUDED.

NO PERSON IS AUTHORIZED TO CHANGE THE WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY UNLESS SUCH CHANGES ARE MADE IN WRITING AND SIGNED BY AN OFFICER OF AIRIA ®.

MODEL NUMBER _____

UNIT SERIAL NUMBER: _____

INSTALLED BY: _____

DATE: _____

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