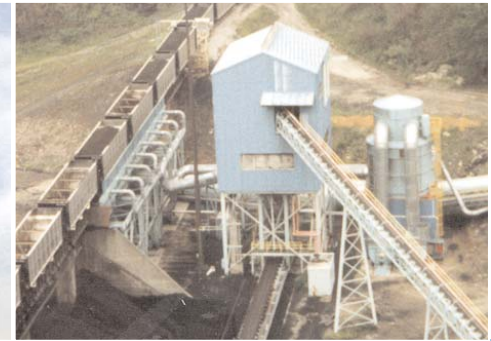
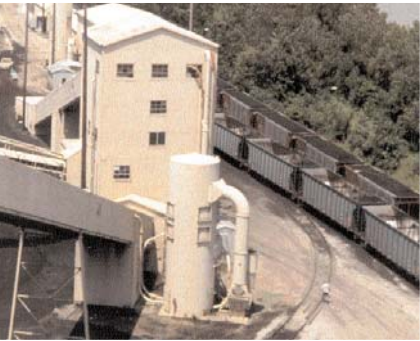
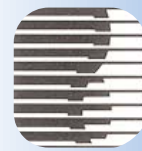


AirCure RF Dust Filter

Air pollution control / Low power / Simple operation



RF Filter



AIR CURE
INCORPORATED



AIR CURE

The **RF** Dust Filter...

It's all very simple. RF Dust Filters deliver maximum performance with dramatically lower costs. It's simple because RF filters are simple. It's simple to operate, simple to maintain, and simple to install.



Here are four of Air Cure's RF Dust Filters. The filter on the right is a 984RF16. The two on the left are both high temperature units.

Most important, however, is the fact that the RF filter can cut power costs by as much as 75%. The cleaning system of this efficient filter is powered by an air pump rather than the conventional fan. The result is the RF filter demands only 25% of the power needed by similar filters.

Of course, the RF filter cuts more than power costs. It goes on to provide substantial maintenance savings, lower installed costs and economical operating costs.

Not only recognized by its users for cost savings, but by organizations in the fields of energy conservation and air pollution control. This filter received two first place awards for reduction of energy consumption in two national design and technology competitions.

The AirCure RF filter is the most cost efficient filter available; and it's simple.

Unique design for unmatched efficiency

Because of its design features, the RF filter is accepted and respected in a variety of industries where demanding

performance is the norm. It meets and exceeds the most stringent EPA codes.

The key to the RF filter's outstanding efficiency is its unique reverse jet tube cleaning system. The RF filter maintains a consistently high level of filter porosity without wasteful over-cleaning of the filter tubes and without blocking off any one tube for more than a fraction of a second.

Most filters are not as efficient in cleaning each tube, requiring higher horsepower, consuming more energy and building higher energy costs. By contrast, the RF filter cleaning system fires a carefully calibrated pulse of air, which cleans each tube often enough, to maintain constant porosity with unmatched efficiency. At the top of the filter is a traveling plenum, which delivers a quick pulse of counter-flow air to the tubes as it moves around the filter chamber. The jet of air creates a positive snapping action of the filter tube,

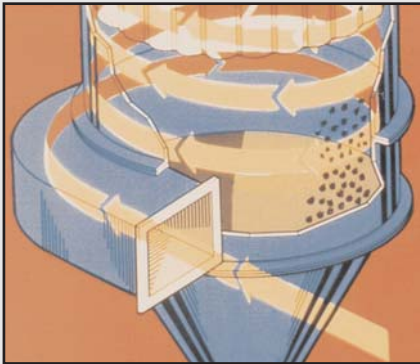


This is an Air Cure bolt together 676RF10 handling coal dust at a coal crusher house.

Maximum filter performance is simplicity itself.

which shakes loose entrapped dust particles.

The volume and pressure of the airbursts have been carefully computed to provide maximum shock action with enough backwash to carry the particulates away from the cleaned tube. The tubes have an oval design, which promotes better snapping, release and flushing of the entrained dust. Random sequence eliminates dust redeposition to adjacent, previously cleaned tubes. No adjacent bags are cleaned at the same time. The system is simple, effective with a minimum of moving parts to keep maintenance costs under control.



Outside tangential scroll inlet - allows dust to drop off the filter bags without reentrainment into inlet air stream.

The RF filter's cyclonic design promotes even more efficiency.

Dust laden air enters the RF filter on a tangent to the filter chamber and a circular baffle keeps the incoming air from moving directly to the filter tubes. Instead, it is spun around the lower portion of the filter; a cyclonic action that strips the heavier dust particles from the moving air and drops them directly into the hopper. Next, the air straightener vanes redirect the incoming air to a

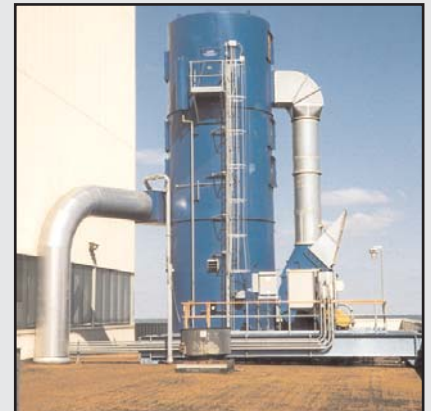
uniform upward velocity. As a result, the pre-cleaned air carries the remaining dust up through the felted filter tubes depositing the dust over the maximum surface area for maximum efficiency.

High Energy Pulse Jet (RF Filter) vs. Standard Pulse Jet

AirCure's "RF" filter cleaning system creates a high-pressure wave using a high volume of air at lower pressure (7½ psi). This fills the full length of the tube when injected into the filter tube through a mean orifice of ½"x 3" in area. Resulting in more cake release, more flexing of the media and more energy to overcome the normal pressure drop across the tube – and less electrical power cost to you. Whereas, the standard pulse jet using 80 to 100 psi cleaning air injects high pressure air through an 1/8" orifice to a filter tube of 10' to 14' in length. The result is a short burst of air enters the tube (less volume) with insufficient force to adequately flex the filter media for proper tube cleaning – and at higher electrical power cost to you. The standard pulse jet concentrates the cleaning action at the top of the filter tube rather than the full length of the filter tube.



This 984RF12 is collecting coal dust from bottom dump railroad cars.



This 484RF10 Dust Filter is collecting dust from a fully insulated high moisture application.

AirCure RF filters cut operating costs to simple minimum.

The filters begin their cost-cutting operation with a rotary air pump, which operates at approximately 7½ psi rather than a lower pressure fan or a high pressure piston pump.

The RF filter cleaning system is an electromechanical. When the air reservoir reaches approximately 7½ psi, a pressure or time derived pulse energizes the solenoid valve. The solenoid valve opens a diaphragm valve feeding air to the rotary manifold plenum and nozzles. The fact that the air pump is driven by a lower horse-power motor than those demanded by high pressure compressors or fans drops your energy consumption to 50% or less of that drawn by competitive units.

It's the amount of filter cloth area that determines a filter's capacity and efficiency. The more area put to work the more efficient the filter. AirCure's RF filter features a non-aligned arrangement of the filter tubes to provide more tubes and more filter cloth in a given area. In

Name the industry, name the dust problem and chances are there's an AirCure RF filter providing unmatched filtration performance.

In addition, the RF's unique cyclonic design with inlet deflector baffles and air straightener vanes permit the maximum exposure of incoming, dust-laden air to the filter media.

Maximum filter area, maximum exposure of available area, coupled with the most efficient, most effective cleaning method available anywhere results in the most cost efficient dust filter in the industry.

Proven performance throughout the industry.

Name the industry and name the dust problem and chances are there's an AirCure RF filter providing unmatched filtration performance.

- Light, medium and heavy dust concentrations.
- Low bulk density materials.
- Dust from wood, grain, glass, clay, coal and carbon black.
- Metallurgical fumes.
- Abrasive materials like glass cullet, taconite and soda ash.
- Sticky substances like sugar or starch.

Simple maintenance lowers labor and maintenance costs.

The design of the RF filter is simple;



7 1/2 HP cleaning air pump.



Filter tubes in the RF filter are arranged in non-aligned concentric rings, providing more filter cloth in less area since the nozzles on the traveling air plenum do not touch the filter tubes, the need for tight alignment tolerances and the possibility of tube damage are eliminated.

to keep maintenance simple and maintenance costs low. To start, it has fewer moving parts, only a single solenoid and no mechanical indexing valves. The result: fewer components that demand routine maintenance, fewer opportunities for something to go wrong.

Furthermore, the RF filter is designed to make maintenance as convenient as possible. For example, our walk-in compartment permits easy, quick access to the filter tubes from the top or clean air side of the filter. And simply by removing two bolts, the filter tube and frame can be lifted out.

The cleaning nozzle is positioned well above the filter tubes. The alignment of the nozzle manifold is not critical. There is no close clearance to create problems. Direct contact between the manifold nozzle and bag is not required because the on-rush of air creates a very short but highly effective seal while cleaning the tube.

Finally, the RF filter's air pump system virtually eliminated the problem of cold weather component freeze-up common to high pressure pulsed filters. And, the uncompli-

cated air pump can be mounted at ground level where it can be easily inspected.

Uses positive filter bag grounding.

The galvanized wire tube frames are attached to the tube sheet by two machine screws, this insures a positive ground connection is always maintained with bags and cages during operation. No straps or wire are required. With two grounding screws providing positive ground there is no problem with thick paint on tube sheet or loose straps.

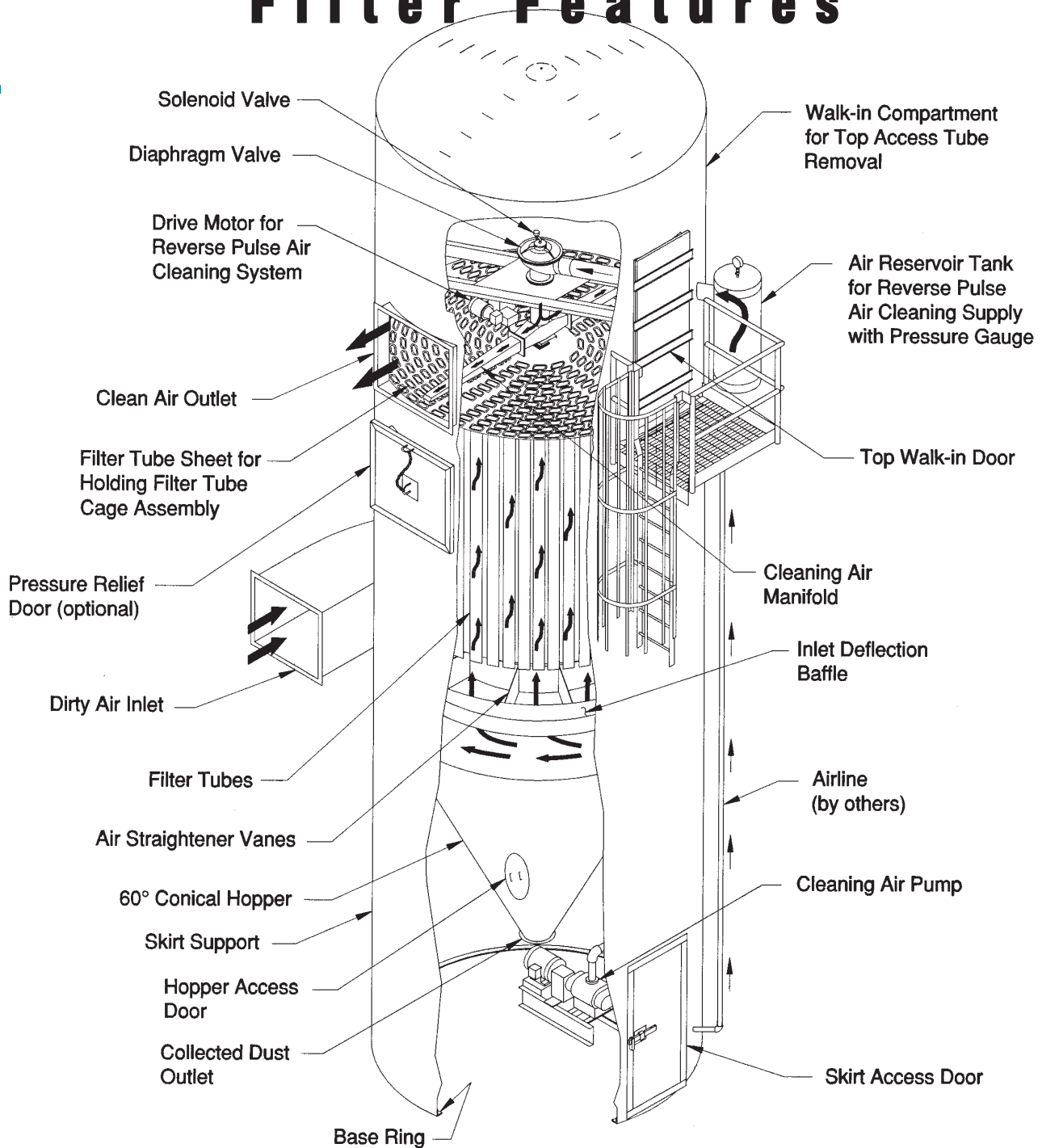


The all-welded design enables the filter to be lifted in one piece including the skirt support.

AirCure keeps costs down while the RF filter goes up.

We've done everything possible to keep your installation and expansion costs to a minimum. It's shipped as an all-welded unit, that can be lifted as one piece during installation at your site. It can also be supplied in bolt together sections if required for installation purposes. ■

Filter Features



No Adjacent Bags Cleaned at the Same Time

The exclusive pulsing technique in the bag cleaning system prevents re-entrainment of dust particles on a previously cleaned bag. No adjacent or neighboring bag is cleaned in sequence; time delay prevents redeposition of dust. This is accomplished without complex indexing electronics.

At the same time, this results in a more balanced environment within the filter's cleaning section, a more uniform airflow and less turbulence.

This means more efficient, thorough bag cleaning, longer bag life and more effective dust collection.

No other dust filter design can provide you with this patented feature.

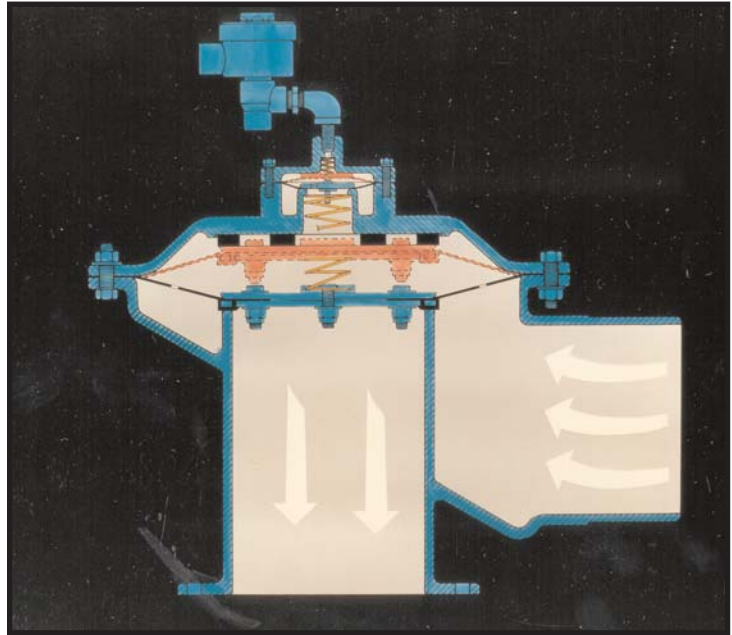
Filter Bag Cleaning System

Heart of Filter Bag Cleaning System.

Cleaning air action is created by an unbalanced pressure across the two diaphragm valves – a secondary and a primary (larger). Illustrated at right are the closed and open positions of both diaphragms. Red positions indicate both are open, dumping cleaning air into rotary manifold. Blue positions indicate both diaphragms are closed and sealed. Solenoid valve (atop diaphragm valve) is energized by a pre-set timer. In milliseconds it releases air pressure on the backside of the secondary diaphragm, which in turn, unbalances the air pressure on the primary diaphragm – allowing high volume air to enter the rotary manifold's plenum and exit through nozzles for filter bag cleaning.

Cleaning air supply originates from an air reservoir tank. This tank receives its air from a rotary air pump operating at approximately 7½ psi.

Diaphragm Valve Operation

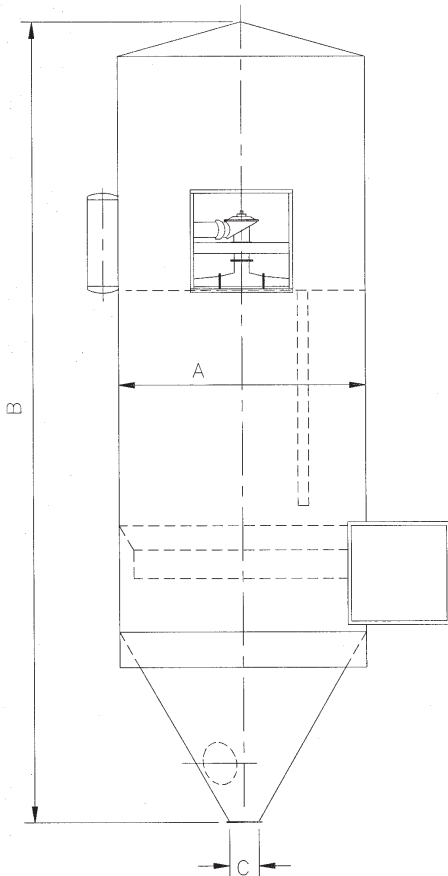


AIR CURE

Capacity								
Filter Size	Cloth Area		Air to Media Ratio				Air Pump	Drive
	Ft. ²	M ²	5 CFM	90 M ³ /HR	10 CFM	180 M ³ /HR	HP	HP
72RF6	550	51.1	2,750	4,600	5,500	9,200	1.5	1
72RF8	735	68.3	3,675	6,150	7,350	12,300	1.5	1
72RF10	920	85.5	4,600	7,700	9,200	15,400	2	1
124RF6	950	88.3	4,750	7,950	9,500	15,900	2	1
124RF8	1,265	117.5	6,325	10,600	12,650	21,200	2	1
124RF10	1,580	146.8	7,900	13,200	15,800	26,400	3	1
156RF6	1,200	111.5	6,000	10,000	12,000	20,000	2	1
156RF8	1,600	148.6	8,000	13,400	16,000	26,800	3	1
156RF10	2,000	185.8	10,000	16,700	20,000	33,400	3	1
232RF6	1,775	164.9	8,875	14,850	17,750	29,700	3	1
232RF8	2,370	220.1	11,850	19,800	23,700	39,600	3	1
232RF10	2,960	275.0	14,800	24,750	29,600	49,500	5	1
276RF6	2,115	196.5	10,575	17,700	21,150	35,400	3	1
276RF8	2,820	262.0	14,100	23,600	28,200	42,700	3	1
276RF10	3,520	327.0	17,600	29,400	35,200	58,800	5	1
376RF8	3,840	356.7	19,200	32,100	38,400	64,200	5	1
376RF10	4,800	446.0	24,000	40,100	48,000	80,200	5	1
376RF12	5,760	535.1	28,800	48,150	57,600	96,300	7.5	1
484RF10	6,180	574.1	31,000	51,700	62,000	103,400	7.5	1
484RF12	7,415	688.9	37,100	62,000	74,200	124,000	10	1
544RF10	6,945	645.2	34,725	58,050	69,450	116,100	10	1
544RF12	8,335	774.3	41,675	69,700	83,350	139,400	15	1
676RF10	8,630	801.8	43,150	72,150	86,300	144,300	15	1
676RF12	10,360	962.5	51,800	86,600	103,600	173,200	15	1
984RF12	15,100	1403.0	75,400	126,000	151,000	252,000	20	1
984RF16	20,100	1867.4	100,500	168,050	201,000	336,100	25	1

* "Filter size" also indicates number of filter bags and bag lengths: 72RF6 = 72 bags - 6 feet long. Specifications, dimensions subject to change without notice or obligation. Contact representative of Air Cure for certified drawing.

All-Welded Design



“RF” Dust Filter Dimensions

Air Cure filters are available in the following configurations:

Welded, Unitized Construction:

All welded body assembly is shipped as a single piece or unit on one truck. Available through Filter Size 544

Knock-Down/ Bolted Construction:

Filter is shipped in cylindrical pieces, depending on size. Ready to be lifted into place and bolted together. No vertical seams to be bolted, except on the Filter Size 984.

- Skirt support design available for both configurations.
- Top mounted drives for high temperature applications

Large Scale Applications:

Fully engineered multi-modular filters with integrated inlet and outlet manifolds are also available. These can be supplied with dampers for either on or off-line cleaning.

Standard Filter Equipment

1. Steel Construction; 72RF - 12 ga./ 124RF through 376RF - 10 ga./ 484RF & 544RF - 7 ga./ 676RF - 1/4" plate / 984RF - 10 ga., 7 ga., 1/4" plate, 5/16" plate
2. Air pump package
3. Manifold drive (1 HP)
4. Outside tangential scroll inlet
5. Inlet deflector baffle
6. Air straightener vanes
7. Filter tubes, Polyester felt
8. Top walk-in compartment
9. 60° hopper
10. Hopper manhole
11. NEMA IV air cleaning system pulse timer
12. Magnehelic gauge
13. Tube frames-9 ga. galvanized wire

Optional Filter Equipment

1. Pressure relief doors
2. Skirt support
3. Structural steel support
4. Caged access ladder & platform
5. staircase
6. Heavier construction for high vacuum applications
7. Skirt heater
8. Outside top drive for high temperature applications
9. Pneumatic receivers
10. Stainless steel construction or epoxy coating
11. 70° hopper
12. Hopper drain, poke holes, strike plates
13. Level indicators, differential pressure transmitter, broken bag detector, sprinklers, thermal sensors
14. Fire detection/ suppression system,
15. PLC control system w/touch screen
16. Dust disposal: pneumatic conveying & dust processing
17. Snap-in bags

DIMENSIONS

MODEL RF	A	A mm*	B	B mm	C	C mm
72RF6	5'-8"	1727	20'-10"	6350	8"	203
72RF8	5'-8"	1727	24'-10"	7569	8"	203
72RF10	5'-8"	1727	28'-10"	8636	8"	203
124RF6	8'-0"	2438	23'-8"	7214	10"	254
124RF8	8'-0"	2438	27'-8"	8407	10"	254
124RF10	8'-0"	2438	31'-8"	9576	10"	254
156RF6	8'-0"	2438	23'-8"	7214	10"	254
156RF8	8'-0"	2438	27'-8"	8407	10"	254
156RF10	8'-0"	2438	31'-8"	9576	10"	254
232RF6	10'-3"	3124	27'-0"	8230	12"	305
232RF8	10'-3"	3124	31'-0"	9449	12"	305
232RF10	10'-3"	3124	35'-0"	10719	12"	305
276RF6	10'-3"	3124	27'-0"	8230	12"	305
276RF8	10'-3"	3124	31'-0"	9449	12"	305
276RF10	10'-3"	3124	35'-0"	10719	12"	305
376RF8	11'-7 ⁵ / ₈ "	3546	33'-0"	10135	12"	305
376RF10	11'-7 ⁵ / ₈ "	3546	37'-0"	11278	12"	305
376RF12	11'-7 ⁵ / ₈ "	3546	41'-0"	12497	12"	305
484RF10	13'-1 ⁵ / ₈ "	4004	39'-6"	11697	12"	305
484RF12	13'-1 ⁵ / ₈ "	4004	43'-6"	12884	12"	305
544RF10	13'-11 ⁵ / ₈ "	4258	40'-6"	12344	12"	305
544RF12	13'-11 ⁵ / ₈ "	4258	44'-6"	13563	12"	305
676RF10	15'-6 ³ / ₈ "	4734	43'-3"	13183	12"	305
676RF12	15'-6 ³ / ₈ "	4734	47'-3"	14402	12"	305
984RF12	25'-0"	7620	51'-0"	15545	16"	406
984RF16	25'-0"	7620	51'-0" **	15545	16"	406

* Dimensions in millimeters ** Split cages

Specifications, dimensions subject to change without notice or obligation. Contact representative of Air Cure for certified drawing.

AirCure RF Dust Filter

Air pollution control / Low power / Simple operation



Advantages of Skirt Support

- Round design permits structurally stronger filter support. Filter body section extended to ground level; secured to foundation slab.
- Weather enclosure protects all the filter's mechanical equipment; dust loadout system, valve and air pump.
- Skirted enclosures can be heated to minimize and eliminate problems caused by condensation, and freeze-up in handling moisture laden dust materials.
- Skirts equipped with access doors; permits security by avoiding vandalism, and tampering.
- Permits faster erection time, less erection costs. Entire filter can be shipped as one-piece welded unit. Eliminates staging, stacking and assembling support structures.

- Another cost savings – Our special skirt anchoring system eliminates costly, time consuming problems common to anchor bolt aligning conventional leg support filters.

