



INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

F200 SERIES FILTER HOUSINGS

COMPRESSED AIR AND GAS FILTERS

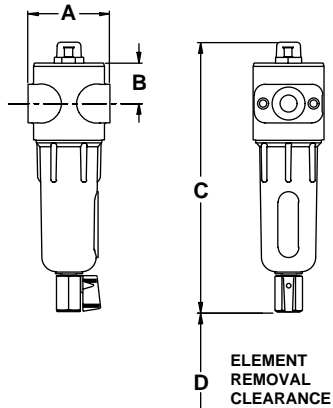
PRODUCT PURPOSE & FUNCTION:

Van Air's F200 series filter housings are designed to remove contaminants from compressed air and gas systems. Available in 1/4" to 3" connection sizes and flow capacities from 15 to 1000 scfm (at 100 psig) in 14 housings and 9 filtration grades, the F200 series can remove oil aerosols, oil vapors, water and particulates. Housings are made of cast aluminum and coated with an epoxy powder coating for corrosion resistance. All units include push-on elements with durable polyester drain layer (except RD grade). Accessories include differential pressure indicators, wall mounting kits, connector kits, and automatic drain valves.

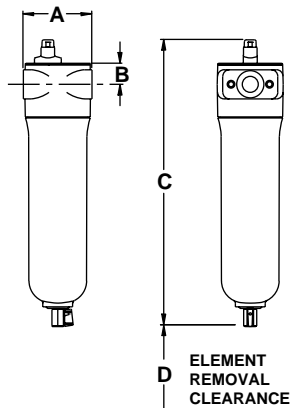
FILTER DETAILS		FLOW DIRECTION THROUGH ELEMENT			
		(COALESCING) IN/OUT 		(PARTICULATE) OUT/IN 	
FILTRATION GRADES					
APPLICATION	ELEMENT GRADE	PURPOSE	NOMINAL PARTICULATE REMOVAL	ELEMENT FLOW DIRECTION	END CAP COLOR CODE
Oil Removal (Liquids)	AA	Extra Coarse Coalescing	25.00μ	IN/OUT	BLACK
	A	Coarse Coalescing	5.00μ	IN/OUT	GREEN
	B	General Purpose Coalescing	1.00μ	IN/OUT	RED
	C	High Efficiency Coalescing	0.01μ	IN/OUT	BLUE
Solid Particulate Removal	RAA	Extra Coarse Particulate	25.00μ	OUT/IN	BLACK
	RA	Coarse Particulate	5.00μ	OUT/IN	GREEN
	RB	General Purpose Particulate	1.00μ	OUT/IN	RED
	RC	High Efficiency Particulate	0.01μ	OUT/IN	BLUE
Oil Vapor Removal	RD	Vapor Absorbing	0.01μ	OUT/IN	BLACK
OPERATING CONDITIONS					
MAXIMUM WORKING PRESSURE					
All Models	250 PSIG				
OPERATING TEMPERATURE					
Minimum	35°F				
Maximum	225°F				
MAXIMUM RECOMMENDED INLET TEMPERATURE					
AA, A, RAA, RA, RB, and RC Series	225°F				
B Series	175°F				
C Series	125°F				
RD Series	80°F				
WARNINGS					
DO NOT REPLACE ANY ITEM ON VESSEL WHILE IT IS UNDER PRESSURE.					
DO NOT OPERATE IF THERE IS A LEAK IN FILTER. TAKE FILTER OUT OF SERVICE IMMEDIATELY.					
DO NOT OPERATE ABOVE MAXIMUM WORKING PRESSURE (MWP) AT MAXIMUM OPERATING TEMPERATURE (°F).					
USE THE PROPER RULES FOR THE GAS BEING PROCESSED.					

FILTER HOUSING DIMENSIONS & WEIGHTS

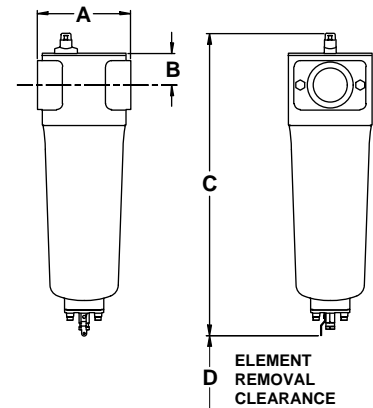
DIMENSIONS FOR:
F200-15-1/4
F200-25-3/8
F200-25-1/2



DIMENSIONS FOR:
F200-55-1/2 **F200-150-1** **F200-400-2**
F200-85-3/4 **F200-265-1-1/4** **F200-500-2**
F200-100-1 **F200-350-1-1/2**



DIMENSIONS FOR:
F200-600-3
F200-800-3
F200-1000-3



FILTER MODEL	FLOW** (SCFM)	IN/OUT CONN. (NPT)	A (INCHES)	B (INCHES)	C*** (INCHES)	D (INCHES)	HOUSING WEIGHT**** (LBS)	ELEMENT WEIGHT**** (LBS)
F200-15-1/4-(*)	15	1/4"	2-13/16	1-5/8	9-1/4	3	1.3	0.1
F200-25-3/8-(*)	25	3/8"	2-13/16	1-5/8	9-1/4	3	1.3	0.1
F200-25-1/2-(*)	25	1/2"	2-13/16	1-5/8	9-1/4	3	1.3	0.1
F200-55-1/2-(*)	55	1/2"	3-7/16	1-5/16	11-3/4	4	3.2	0.3
F200-85-3/4-(*)	85	3/4"	4-15/16	1-5/8	14-9/16	4	5.7	0.5
F200-100-1-(*)	100	1"	4-15/16	1-5/8	14-9/16	4	5.7	0.6
F200-150-1-(*)	150	1"	4-15/16	1-5/8	20-7/16	6	6.7	0.9
F200-265-1-1/4-(*)	265	1-1/4"	4-15/16	1-5/8	20-7/16	6	6.7	1
F200-350-1-1/2-(*)	350	1-1/2"	5-5/16	2-1/16	21-3/8	6	8.7	1.1
F200-400-2-(*)	400	2"	5-5/16	2-1/16	21-3/8	6	8.7	1.1
F200-500-2-(*)	500	2"	5-5/16	2-1/16	29-3/8	6	9.9	2.3
F200-600-3-(*)	600	3"	7-7/8	2-3/4	24-1/2	8	19.8	2.7
F200-800-3-(*)	800	3"	7-7/8	2-3/4	30-1/16	8	21.9	3.6
F200-1000-3-(*)	1000	3"	7-7/8	2-3/4	34-3/4	12	28.1	4.3

*Insert appropriate filtration grades here; for example F200-15-1/4-B.
 ***Dimensions include filter housing, PD-6 and manual drain.

**Flow is based on SCFM @ 100 PSIG @ 100°F.
 ****For total filter weight, add element weight to housing weight.

FLOW CAPACITIES AT VARIOUS OPERATING PRESSURES (SCFM)

FILTER MODEL	25 PSIG	50 PSIG	75 PSIG	100 PSIG	125 PSIG	150 PSIG	175 PSIG	200 PSIG	225 PSIG	250 PSIG
F200-15-1/4	8	11	13	15	17	18	20	21	23	24
F200-25-3/8	13	18	22	25	28	31	33	35	38	40
F200-25-1/2	13	18	22	25	28	31	33	35	38	40
F200-55-1/2	28	39	48	55	62	67	73	78	83	87
F200-85-3/4	43	60	74	85	95	104	112	120	128	134
F200-100-1	50	71	87	100	112	122	132	141	150	158
F200-150-1	75	107	131	150	168	183	198	212	225	237
F200-265-1-1/4	133	188	231	265	297	323	350	374	398	419
F200-350-1-1/2	175	249	305	350	392	427	462	494	525	553
F200-400-2	200	284	348	400	448	488	528	564	600	632
F200-500-2	250	355	435	500	560	610	660	705	750	790
F200-600-3	300	426	522	600	672	732	792	846	900	948
F200-800-3	400	568	696	800	896	976	1056	1128	1200	1264
F200-1000-3	500	710	870	1000	1120	1220	1320	1410	1500	1508

INSTALLATION

1. Locate compressed air and gas filters at the point of lowest operating temperature to ensure that water and oil vapor will not condense downstream of the filter.
2. Filters should be installed close to the point of use to minimize the risk of pipe scale, dirt, etc. recontaminating the compressed air or gas. This is particularly important when installing new filters on an existing installation that has not had proper filtration.
3. Protect filters from reverse flow conditions. Do not install filters downstream of quick opening valves.
4. Before installing filter, check operating temperature and pressure conditions to verify that they are within the specified ranges. **(See Operating Conditions on page 1).** Also verify that system flow rate corresponds to the rated capacity of the filter. Operating at flows above rated capacity will result in increased pressure drop. Avoid reducers or bushings to match inlet size. The resulting restriction will increase pressure drop.
5. Install filter vertically. Provide required minimum clearance below filter to allow for replacement of element. **(See Dimension D on page 2).**
6. Install inlet and outlet shutoff valves to facilitate replacement of element. Bypass piping is recommended **(See Figure 1A and 1B).** **MAKE SURE VALVES ARE CLOSED BEFORE PROCEEDING.**

IMPORTANT

THE FILTER MUST BE INSTALLED INTO THE PIPING CORRECTLY TO ENSURE PROPER OPERATION. ARROWS ON THE FILTER HEAD INDICATE THE PROPER FLOW DIRECTION. INSTALL THE FILTER IN THE DIRECTION OF THE ARROWS (SEE FLOW DIRECTION DIAGRAM ON PAGE 1).

7. Remove filter head from the bowl by turning bowl counter-clockwise. Pull element from spigot and set aside until ready to install.
8. Check to make sure that the filter head has o-ring seal for filter bowl in proper position. Check to make sure that threads on filter bowl are properly greased.
9. Apply a light coat of grease on element o-ring. Install filter element by pushing onto spigot.
10. Thread filter bowl into filter head and tighten either by hand (models F200-15 through 55) or with strap wrench (models F200-85 through 1000). Do not over tighten. Overtightening could damage filter bowl or make it difficult to remove.
11. Check drain valve to make sure valve is closed. On units equipped with ADM-2-2 auto drain, provide a drain line to remove accumulated water and oil.
12. Slowly open inlet and outlet shutoff valves. Close bypass valve if provided.
13. Filter is now in service.

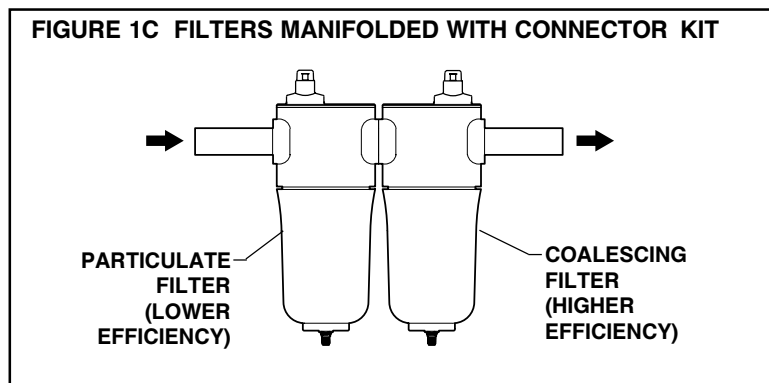
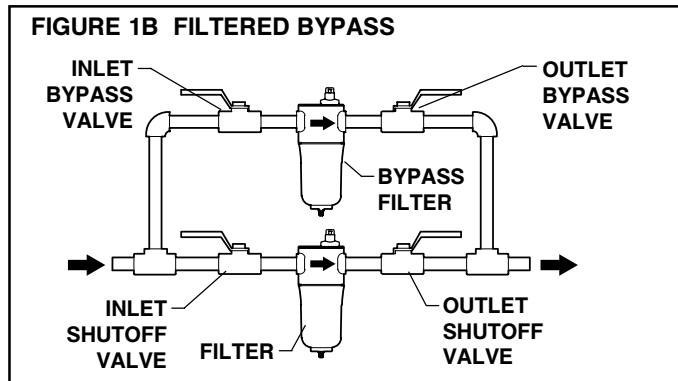
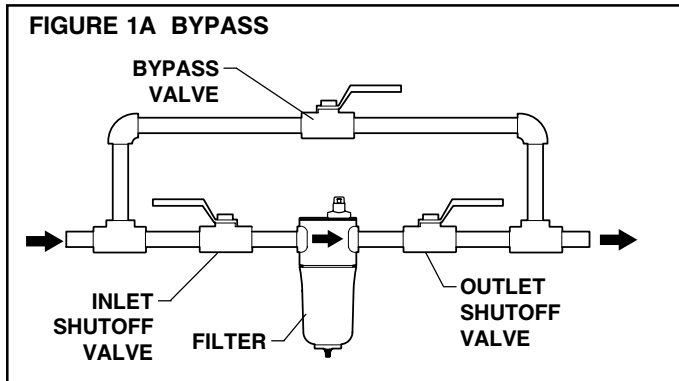


FIGURE 2A F200-15-1/4 THRU 25-1/2 REPLACEMENT PARTS

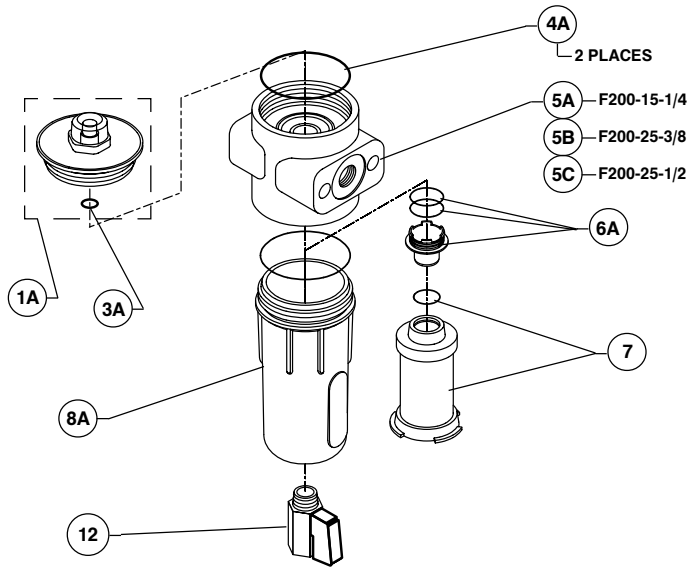


FIGURE 2B F200-55-1/2 THRU 500-2 REPLACEMENT PARTS

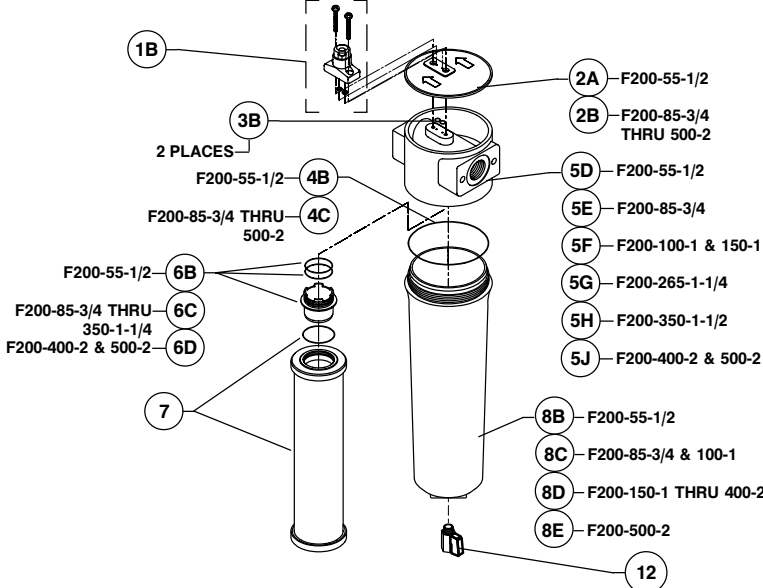
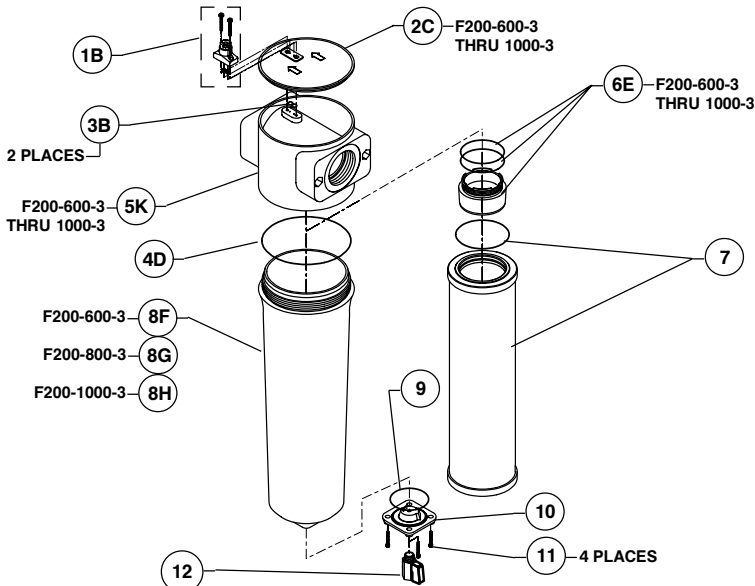


FIGURE 2C F200-600-3 THRU 1000-3 REPLACEMENT PARTS



Finding a part number

1. Find the figure that references your filter.
2. Find the replacement part you need and the item number of that part.
3. Find the item number in the first column of the **Replacement Parts** table.
4. Find the part description that best describes the part.
5. See the last column for the part number.

REPLACEMENT PARTS

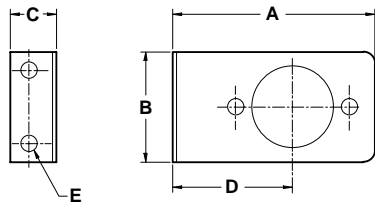
ITEM	PART DESCRIPTION	FIG 2-	QTY	PART NO.
1A	PD-6A-C DIFFERENTIAL PRESSURE INDICATOR KIT FOR COALESCING FILTERS	A	1	84-10126
	PD-6A-P DIFFERENTIAL PRESSURE INDICATOR KIT FOR PARTICULATE FILTERS	A	1	84-10127
1B	PD-6 DIFFERENTIAL PRESSURE INDICATOR KIT	B,C	1	84-10125
2A	BLANKING PLATE FOR F200-55-1/2	B	1	326-00110
2B	BLANKING PLATE FOR F200-85-3/4 THRU 500-2	B	1	326-00120
2C	BLANKING PLATE FOR F200-600-3 THRU 1000-3	B	1	326-00130
3A	BLANKING PLATE O-RING FOR F200-15-1/4 THRU 25-1/2	A	1	475-00110
3B	BLANKING PLATE O-RING FOR F200-55-1/2 THRU 1000-3	B,C	2	475-00006
4A	BODY O-RING FOR F200-15-1/4 THRU 25-1/2	A	2	475-01000
4B	BODY O-RING FOR F200-55-1/2	B	1	475-00146
4C	BODY O-RING FOR F200-85-3/4 THRU 500-2	B	1	475-00242
4D	BODY O-RING FOR F200-600-3 THRU 1000-3	C	1	475-00362
5A	1/4" NPT FILTER HEAD FOR F200-15-1/4	A	1	201-00100
5B	3/8" NPT FILTER HEAD FOR F200-25-3/8	A	1	201-00110
5C	1/2" NPT FILTER HEAD FOR F200-25-1/2	A	1	201-00120
5D	1/2" NPT FILTER HEAD FOR F200-55-1/2	B	1	201-00130
5E	3/4" NPT FILTER HEAD FOR F200-85-3/4	B	1	201-00140
5F	1" NPT FILTER HEAD FOR F200-100-1 & 150-1	B	1	201-00150
5G	1-1/4" NPT FILTER HEAD FOR F200-265-1-1/4	B	1	201-00160
5H	1-1/2" NPT FILTER HEAD FOR F200-350-1-1/2	B	1	201-00170
5J	2" NPT FILTER HEAD FOR F200-400-2 & F200-500-2	B	1	201-00180
5K	3" NPT FILTER HEAD FOR F200-600-3 THRU 1000-3	C	1	201-00200
6A	EPL1 ELEMENT ADAPTOR FOR F200-15-1/4 THRU 25-1/2	A	1	326-00005
6B	EPL2 ELEMENT ADAPTOR FOR F200-55-1/2	B	1	326-00010
6C	EPL3 ELEMENT ADAPTOR F200-85-3/4 THRU 350-1-1/2	B	1	326-00015
6D	EPL4 ELEMENT ADAPTOR FOR F200-400-2 THRU 500-2	B	1	326-00020
6E	EPL5 ELEMENT ADAPTOR FOR F200-600-3 THRU 1000-3	C	1	326-00025
7	REPLACEMENT ELEMENTS (REFER TO PAGE 5)			
8A	FILTER BOWL FOR F200-15-1/4 THRU 25-1/2	A	1	201-01000
8B	FILTER BOWL FOR F200-55-1/2	B	1	201-01010
8C	FILTER BOWL FOR F200-85-3/4 & 100-1	B	1	201-01020
8D	FILTER BOWL FOR F200-150-1 THRU 400-2	B	1	201-01030
8E	FILTER BOWL FOR F200-500-2	B	1	201-01040
8F	FILTER BOWL FOR F200-600-3	C	1	201-01050
8G	FILTER BOWL FOR F200-800-3	C	1	201-01060
8H	FILTER BOWL FOR F200-1000-3	C	1	201-01070
9	DRAIN ADAPTOR O-RING	C	1	475-00142
10	DRAIN ADAPTOR PLATE	C	1	261-00006
11	DRAIN ADAPTOR SCREW	C	4	460-00100
12	MANUAL DRAIN 1/4" KIT	A,B, C	1	84-10852

REPLACEMENT ELEMENTS

FILTER MODEL	ELEMENT MODEL	PART NUMBER	FILTER MODEL	ELEMENT MODEL	PART NUMBER
F200-15-1/4, F200-25-3/8 & F200-25-1/2	E200-15/25-AA	26-10400	F200-265-1-1/4	E200-265-RB	26-2108
	E200-15/25-RAA	26-10401		E200-265-C	26-2086
	E200-15/25-A	26-10402		E200-265-RC	26-2119
	E200-15/25-RA	26-10403		E200-265-RD	26-2156
	E200-15/25-B	26-10404	F200-350-1-1/2 & 400-2	E200-350/400-AA	26-10409
	E200-15/25-RB	26-10405		E200-350/400-RAA	26-10410
	E200-15/25-C	26-10406		E200-350/400-A	26-10411
	E200-15/25-RC	26-10407		E200-350/400-RA	26-10412
	E200-15/25-RD	26-10408		E200-350/400-B	26-10413
	F200-55-1/2	E200-55-AA		26-10032	E200-350/400-RB
E200-55-RAA		26-10107		E200-350/400-C	26-10415
E200-55-A		26-2059	E200-350/400-RC	26-10416	
E200-55-RA		26-2092	E200-350/400-RD	26-10417	
E200-55-B		26-2070	F200-500-2	E200-500-AA	26-10418
E200-55-RB		26-2103		E200-500-RAA	26-10419
E200-55-C		26-2081		E200-500-A	26-10420
E200-55-RC		26-2114		E200-500-RA	26-10421
E200-55-RD		26-2151		E200-500-B	26-10422
F200-85-3/4	E200-85-AA	26-10034		E200-500-RB	26-10423
	E200-85-RAA	26-10109		E200-500-C	26-10424
	E200-85-A	26-2061	E200-500-RC	26-10425	
	E200-85-RA	26-2094	E200-500-RD	26-10426	
	E200-85-B	26-2072	F200-600-3	E200-600-AA	26-10427
	E200-85-RB	26-2105		E200-600-RAA	26-10428
	E200-85-C	26-2083		E200-600-A	26-10429
	E200-85-RC	26-2116		E200-600-RA	26-10430
	E200-85-RD	26-2153		E200-600-B	26-10431
F200-100-1	E200-100-AA	26-10035		E200-600-RB	26-10432
	E200-100-RAA	26-10110		E200-600-C	26-10433
	E200-100-A	26-2062	E200-600-RC	26-10434	
	E200-100-RA	26-2095	E200-600-RD	26-10435	
	E200-100-B	26-2073	F200-800-3	E200-800-AA	26-10436
	E200-100-RB	26-2106		E200-800-RAA	26-10437
	E200-100-C	26-2084		E200-800-A	26-10438
	E200-100-RC	26-2117		E200-800-RA	26-10439
	E200-100-RD	26-2154		E200-800-B	26-10440
F200-150-1	E200-150-AA	26-10036		E200-800-RB	26-10441
	E200-150-RAA	26-10111		E200-800-C	26-10442
	E200-150-A	26-2063	E200-800-RC	26-10443	
	E200-150-RA	26-2096	E200-800-RD	26-10444	
	E200-150-B	26-2074	F200-1000-3	E200-1000-AA	26-10040
	E200-150-RB	26-2107		E200-1000-RAA	26-10115
	E200-150-C	26-2085		E200-1000-A	26-2067
	E200-150-RC	26-2118		E200-1000-RA	26-2100
	E200-150-RD	26-2155		E200-1000-B	26-2078
F200-265-1-1/4	E200-265-AA	26-10037		E200-1000-RB	26-2111
	E200-265-RAA	26-10112		E200-1000-C	26-2089
	E200-265-A	26-2064	E200-1000-RC	26-2122	
	E200-265-RA	26-2097	E200-1000-RD	26-2159	
	E200-265-B	26-2075			

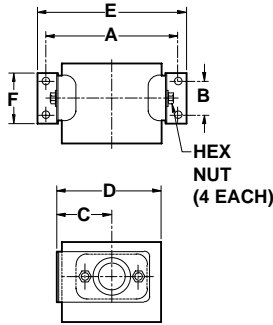
ACCESSORIES

MOUNTING BRACKET KITS



MOUNTING BRACKET DIMENSIONS

TYPE	A	B	C	D	E
MB-1	2-15/16	1-9/16	13/16	1-3/4	1/4
MB-1-2	2-15/16	1-9/16	13/16	1-3/4	1/4
MB-2	4-5/16	2-3/8	1	2-9/16	5/16
MB-2-2	4-3/4	2-3/4	1	2-3/4	5/16
MB-3-2	7-1/8	4-15/16	1-3/16	3-15/16	3/8



INSTALLED MOUNTING BRACKET KIT DIMENSIONS

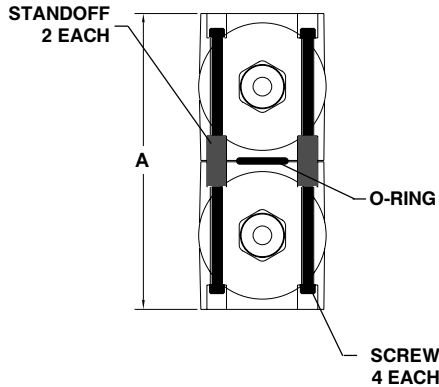
TYPE	USED ON	PART NO	A	B	C	D	E
MB-1	55	84-0720	4-1/2	1-1/4	1-3/4	3-5/16	5-1/4
MB-1-2	15 THRU 25	84-10130	3-3/4	1-1/4	1-3/4	3	4-7/16
MB-2	85 THRU 265	84-0721	5-15/16	1-9/16	2-9/16	4-7/8	6-11/16
MB-2-2	350 THRU 500	84-10131	6-1/2	2	2-3/4	5-1/4	7-5/16
MB-3-2	600 THRU 1000	84-10132	9-5/16	3-3/4	3-15/16	7-7/16	10-1/4

KITS FOR MB-1 THRU MB-2-2 INCLUDES (2) MOUNTING BRACKETS, (2) TIE RODS, (2) WASHERS, & (2) NUTS.

KIT FOR MB-3-2 INCLUDES (2) MOUNTING BRACKETS, (4) SCREWS, (4) WASHERS, & (4) NUTS.

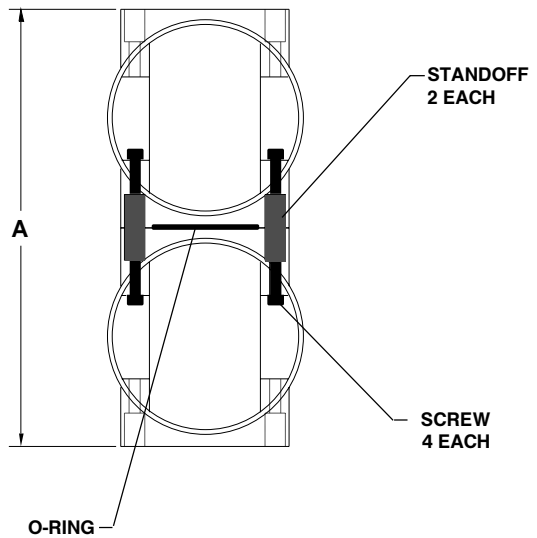
CONNECTOR KITS

CK-1 & CK-1-2



CK-2, CK-2-2 & CK-3-2

NOTE: BLANKING PLATES REMOVED FOR CLARITY.

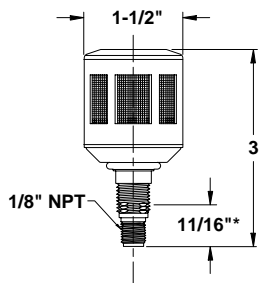


CONNECTOR KIT DETAILS

MODEL	A	USED FOR (F200-)	PART NO
CK-1	7	55	84-0723
CK-1-2	5-3/4	15 THRU 25	84-10133
CK-2	9-7/8	85 THRU 265	84-0724
CK-2-2	10-11/16	350 THRU 500	84-10134
CK-3-2	15 ⁶ / ₃₂	600 THRU 1000	84-10135

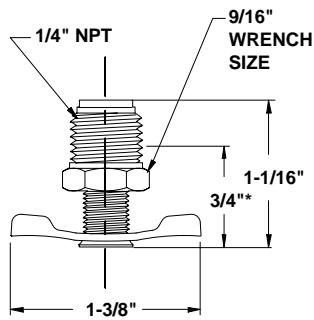
DRAIN KITS

ADM-2-2 AUTO DRAIN (P/N: 84-10120)



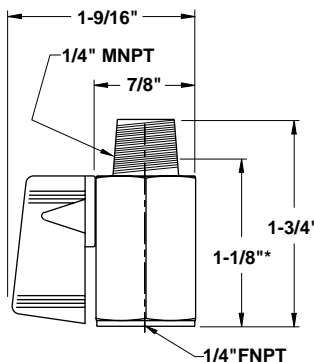
KIT INCLUDES (1) AUTO DRAIN, (1) NUT, (1) O-RING & INSTRUCTION SHEET.
* DIMENSION EXTENDING OUT OF FILTER HOUSING

1/4" PETCOCK MANUAL DRAIN (P/N: 84-10850)



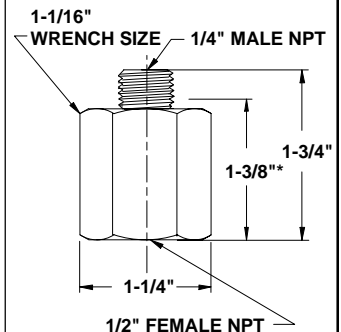
* DIMENSION EXTENDING OUT OF FILTER HOUSING

1/4" BALL VALVE MANUAL DRAIN (P/N: 84-10852)



* DIMENSION EXTENDING OUT OF FILTER HOUSING

1/4" TO 1/2" DRAIN ADAPTER (P/N: 84-10851)



* DIMENSION EXTENDING OUT OF FILTER HOUSING

ACCESSORIES CONT'D

DIFFERENTIAL PRESSURE INDICATOR KITS

PD-4 (P/N: 84-0764)	PD-5 (P/N: 84-10001)	PD-6 (P/N: 84-10125)
<p style="text-align: center;">FITS ALL MODELS EXCEPT F200-15-1/4 THRU 25-1/2.</p> <div style="text-align: center;"> </div> <p style="text-align: center;">KIT INCLUDES (1) PD-4, (2) SCREWS, (4) O-RINGS & INSTRUCTION SHEET. *DIMENSIONS EXTENDING ABOVE FILTER HOUSING.</p>	<p style="text-align: center;">FITS ALL MODELS EXCEPT F200-15-1/4 THRU 25-1/2.</p> <div style="text-align: center;"> </div> <p style="text-align: center;">KIT INCLUDES (1) PD-5, (2) SCREWS, (4) O-RINGS & INSTRUCTION SHEET. *DIMENSIONS EXTENDING ABOVE FILTER HOUSING.</p>	<p style="text-align: center;">FITS ALL MODELS EXCEPT F200-15-1/4 THRU 25-1/2.</p> <div style="text-align: center;"> </div> <p style="text-align: center;">KIT INCLUDES (1) PD-6, (2) SCREWS, (4) O-RINGS & INSTRUCTION SHEET.</p> <p style="text-align: center;">PD-6A-C (P/N: 84-10126) PD-6A-P (P/N: 84-10127)</p> <p style="text-align: center;">FITS MODELS F200-15-1/4 THRU 25-1/2 ONLY.</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>PD-6A-C FOR COALESCING FILTERS</p> <p>PD-6A-P FOR PARTICULATE FILTERS</p> </div> <div style="width: 45%; text-align: center;"> </div> </div> <p style="text-align: center;">KIT INCLUDES (1) PD-6A, (2) O-RINGS & INSTRUCTION SHEET. *DIMENSIONS EXTENDING ABOVE FILTER HOUSING.</p>

MAINTENANCE

Drain coalescing filters every shift.

Check differential pressures weekly on coalescing and particulate filters (AA, A, B, C, RA, RB, RC, and HT grades). When differential pressure reaches 10 psid, install clean elements. On adsorbing filters (grade RD), install clean elements when hydrocarbon vapors are first detected downstream or every six months, whichever comes first.

For correct replacement element model numbers, see label on filter housing and/or the bottom endcap of the element.

When changing out element, inspect housing o-ring for nicks and/or cracks. If any nicks and/or cracks are present, replace o-ring.

TROUBLE SHOOTING

CONDITION	POTENTIAL CAUSE	RECOMMENDATION
Initial pressure drop too high	Filter undersized for flow rate.	Install larger filter.
	Filter grade too fine.	Install coarser grade element.
	Filter inlet smaller than pipe size.	Install larger filter.
Oil carryover	Oil present in system before installing filter.	Clean piping.
	Excessive inlet oil >50ppm.	Check compressor and/or air/oil separator if compressor is rotary vane or screw compressor. Check lube rate if reciprocating compressor. Install coarse coalescer for prefiltration.
	Filter installed backwards.	Check installation instructions.
	Filter bowl not being drained.	Check and repair auto drain. Drain frequently if manual valve is used.
	High differential pressure.	Check element if excessive (7-10 psid or above).
	Defective seal.	Check o-ring in element.
	Incorrect element grade.	Use finer grade.
	By-pass valve leaking or open.	Close valve. Check seals on valve.
	Unfiltered air entering from source down stream of filter.	Relocate filter or install additional filter.
Short element life	Excessive contamination.	Install coarse coalescing filter immediately upstream of existing filter.
	High compression temperatures causing varnish/carbon formation.	Use compressor lubricant with good temperature stability. Lower lube rates where possible. Use coarser grade filter element.
	Oil/water emulsion overloading element.	Inspect moisture separator. Remove water with better separation.
	High viscosity oil or freeze-up due to low ambient temperature.	Raise ambient temperatures. Heat trace inlet piping and housing.

WARRANTY

I. INSTALLATION.

Unless otherwise set forth in a quotation and/or acknowledgment, Seller shall not be responsible for installation. Cost of and all risks of damage to the equipment and/or components thereof caused by installation shall be the sole responsibility of Buyer. If supervision of installation and/or supervision of start up of the equipment is to be provided by Seller, Buyer shall assume all costs incurred by Seller in furnishing supervision. If supervision of installation and/or supervision of start up of the equipment is provided by Seller, Seller shall only be responsible for any loss or damage growing out of a direct negligent act or acts of Seller's supervisor.

SELLER SHALL NOT BE RESPONSIBLE FOR IMPROPER OPERATION OF THE EQUIPMENT DUE TO FAULTY ERECTION OR INSTALLATION.

II. PERFORMANCE.

Seller shall have no responsibility for the performance of its Goods when installed under conditions varying materially from those under which the product is usually tested or operated under existing industry standards.

III. WARRANTY

All filter housings are guaranteed to be free of defective materials and workmanship for a period of **five (5) years** from the date of shipment when used in compressed air application. This warranty does not include elements, drain line components, gaskets, o-rings or any other types of seals, or any accessories or expendable items.

All goods manufactured by seller are guaranteed to be free from defective materials and workmanship for a period of one (1) year from the date of shipment. The equipment and accessories sold but not manufactured by Seller are guaranteed only to the extent that either Seller or Buyer is able to recover under the manufacturer's warranty. This warranty shall not be assignable to buyer.

The above warranties for all products described do not cover abuse, neglect, lack of normal maintenance, accidents or other exceptional circumstances.

Date of shipment will be defined as the date of departure from the factory or from distributor stock. A copy of the distributor invoice to the customer at time of shipment is required as verification of shipment from distributor stock. Equipment start up will be verified by receipt of the warranty registration card.

Seller's obligation under this warranty may, at its option, be discharged by furnishing or repairing, without charge, FOB its factory, a similar part to replace any part of its own manufacture which within the above specified periods, proves to have been defective, provided that within a reasonable time for inspection after delivery, Seller is notified of such defects and the equipment, material or part claimed to be defective is delivered pre-paid to Seller at Lake City, Pennsylvania with evidence that it has been properly maintained and used in accordance with instructions. If, in connection with such warranties, repairs are performed by the Buyer with the written authorization of Seller, then the expense in connection with such repairs shall not exceed the cost of material and direct labor. If such repairs are performed by Buyer without the written authorization of Seller, Seller will not assume any of the expenses in connection with such repairs and will immediately void any remaining warranty on the Goods.

THE REPAIR OR REPLACEMENT WARRANTY HEREIN SET FORTH IS THE EXCLUSIVE WARRANTY GIVEN BY SELLER FOR ITS GOODS. THIS WARRANTY IS GIVEN IN LIEU OF ANY OR ALL WARRANTIES, WHETHER WRITTEN OR ORAL, EXPRESSED OR IMPLIED. ANY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE ARE HEREBY EXPRESSLY EXCLUDED BY SELLER. SELLER NEITHER ASSUMES, NOR DOES IT AUTHORIZE ANY OTHER PERSON TO ASSUME ON ITS BEHALF ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF ITS GOODS.

IV. LIMITATIONS OF LIABILITIES AND INDEMNITIES.

IN NO CASE, WHETHER AS A RESULT OF BREACH OF CONTRACT, BREACH OF WARRANTY OR TORT (INCLUDING SELLER'S OR BUYER'S NEGLIGENCE OR STRICT LIABILITY) SHALL SELLER BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES INCURRED BY BUYER, INCLUDING, BUT NOT LIMITED TO, LOSS OF SALES PROFIT, REVENUE, OR GOOD WILL; LOSS OF USE OF GOODS OR ANY ASSOCIATED EQUIPMENT OR MATERIAL; COST OF CAPITAL; COST OF SUBSTITUTE PRODUCTS, FACILITIES OR SERVICES; DOWN TIME COSTS; ATTORNEY'S FEES; OR LOSSES OR CLAIMS OF CUSTOMERS OF BUYER FOR SUCH DAMAGES BUYER HEREBY AGREES TO INDEMNIFY AND HOLD HARMLESS SELLER FROM ANY AND ALL SUCH DAMAGES BUYER FURTHER AGREES TO DEFEND INDEMNIFY AND HOLD HARMLESS SELLER FROM ANY AND ALL CLAIMS, LIABILITY, DAMAGES OR EXPENSES (INCLUDING ATTORNEY'S FEES) DUE TO PERSONAL INJURIES OR DEATH, TO BUYER, ITS EMPLOYEES, AND THIRD PARTIES AND FROM PROPERTY DAMAGE RESULTING FROM THE NEGLIGENCE OR STRICT LIABILITY OF BUYER NOT WITHSTANDING THE PROVISIONS OF ANY WORKER COMPENSATION OR SIMILAR STATUTE

V. SERVICE, OPERATING PROCEDURE, WARNINGS.

Should Buyer request start up supervision by Seller, a maximum number of days required for this supervision may be included and specified in the quotation and/or acknowledgment as a separate price item. The specified days are only approximate, since start up supervision is contingent upon equipment and work supplied by others and beyond the control of Seller, and Seller shall be paid for any days actually worked in addition to those specified on a pro-rata basis.

Start up supervision and warranty supervision and warranty service time will include all elapsed time during the standard working hours, as defined by Seller, or Seller's representative from the time Seller's representative leaves his operating base or another customer's plant.

Where the service to be performed is start up supervision, Seller should be notified approximately 30 days prior to start up. Seller's representatives may be required to have standard time verification sheets approved by Buyer's authorized representative, and the name and title of this representative should be furnished to Seller with the notification.

Unless set forth in the quotation and/or acknowledgment, Seller shall not be obligated to provide special operating manuals or operating procedures for the operation of its equipment or supply special warning placards to be affixed to the equipment. If such manuals, procedures or placards are provided by Seller, Buyer shall be responsible for payment of cost of furnishing such items, for instructing any operator of the equipment as to the contents of such manuals and/or procedures; for requiring that such procedures be abided by; for insuring that warning placards remain affixed to the equipment and for requiring operators to abide by warning placards.

Any safety equipment required to be worn by any operator or maintenance person shall be provided by Buyer, and the failure to provide such equipment or the failure to require the use thereof shall be the Buyer's sole responsibility. Buyer shall indemnify and hold Seller harmless for any liability with respect thereto.

Seller shall not be responsible for providing safety devices and/or guarding of the equipment except as provided for in the quotation and/or acknowledgment, and Buyer specifically assumes all responsibility for supplying such safety devices and/or guarding necessary for the safe operation of the equipment. If safety devices and/or guarding are specified in the quotation and/or acknowledgment, Buyer shall be solely responsible for making certain that any operator of the equipment uses such safety devices and/or guarding and Buyer shall indemnify and hold Seller harmless with respect to any property damage and/or personal injury, including death, occasioned by any person by reason of such failure on the part of Buyer and/or its operator.

VAN AIR SYSTEMS INC
MAKING COMPRESSED AIR AND GAS WORK BETTER SINCE 1944.

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