November 2016
P/N 432-10016-E

VAN AIR SYSTEMS

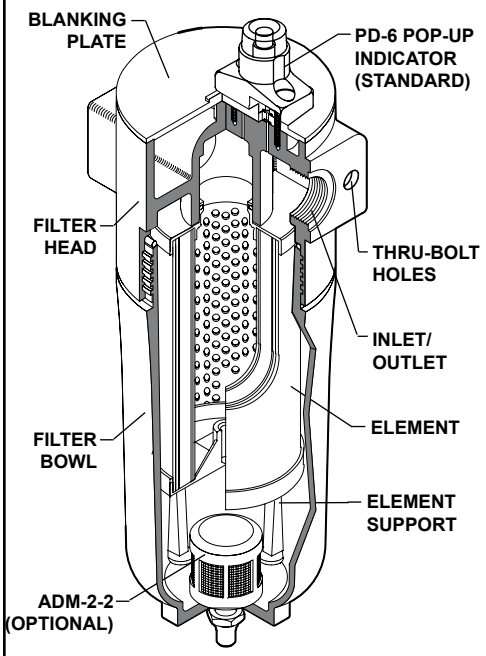
INSTALLATION, OPERATION & MAINTENANCE INSTRUCTION

F200 SERIES
COMPRESSED AIR FILTERS

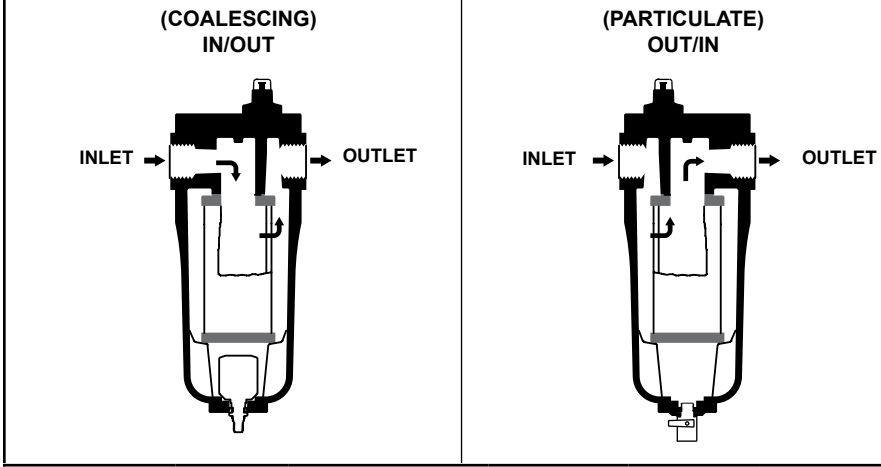
PRODUCT PURPOSE & FUNCTION:

Van Air's F200 series filters are designed to remove contaminants from compressed air systems. Available in 1/4" to 3" connection sizes and flow capacities from 15 to 1600 SCFM (at 100 psig) in 16 housings and 9 filtration grades, the F200 series can remove oil aerosols, oil vapors, water and particulates. Housings are made of cast aluminum. They are E-coated and epoxy powder coated 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



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

FILTRATION GRADES

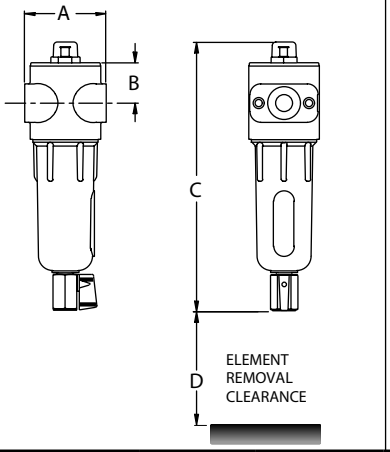
APPLICATION	ELEMENT GRADE	PURPOSE	NOMINAL PARTICULE REMOVAL	ELEMENT FLOW DIRECTION	COLOR CODE
OIL REMOVAL (LIQUIDS)	AA	Extra Coarse Coalescing	25.00 µ	IN/OUT	WHITE
	A	Coarse Coalescing	5.00 µ	IN/OUT	GREEN
	B	General Purpose Coalescing	1.00 µ	IN/OUT	RED
	C	High Efficiency Coalescing	0.01 µ	IN/OUT	BLUE
PARTICULATE REMOVAL (SOLIDS)	RAA	Extra Coarse Particulate	25.00 µ	OUT/IN	WHITE
	RA	Coarse Particulate	5.00 µ	OUT/IN	GREEN
	RB	General Purpose Particulate	1.00 µ	OUT/IN	RED
	RC	High Efficiency Particulate	0.01 µ	OUT/IN	BLUE
OIL VAPOR REMOVAL	RD	Vapor Adsorbing	0.01 µ	OUT/IN	WHITE

WARNINGS

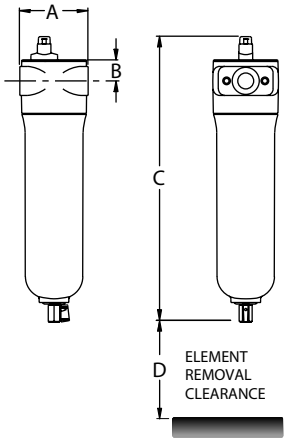
- **DO NOT REPLACE ANY ITEM ON FILTER WHILE IT IS PRESSURIZED.**
- **DO NOT OPERATE A LEAKING FILTER. TAKE FILTER OUT OF SERVICE IMMEDIATELY.**
- **DO NOT OPERATE ABOVE MAXIMUM WORKING PRESSURE (MWP) AT MAXIMUM OPERATING TEMPERATURE (°F).**

FILTER HOUSING DIMENSIONS & WEIGHTS

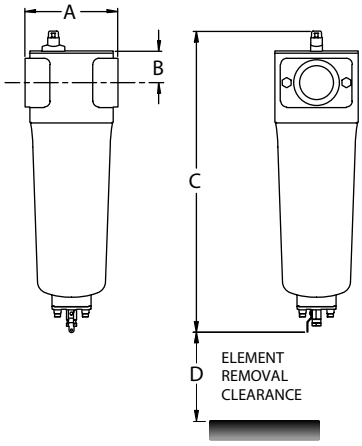
DIMENSIONS FOR:
F200-15-1/4
F200-25-3/8
F200-25-1/2



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 **F200-1250-3**
F200-800-3 **F200-1600-3**
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
F200-1250-3-(*)	1250	3"	7-7/8	2-3/4	34-3/4	12	28.1	4.3
F200-1600-3-(*)	1600	3"	9	2-5/8	42	13-3/4	33.7	4.6

*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	5	8	12	15	18	22	25	28	31	35
F200-25-3/8	9	14	20	25	30	36	41	47	52	58
F200-25-1/2	9	14	20	25	30	36	41	47	52	58
F200-55-1/2	19	31	43	55	67	79	91	103	115	127
F200-85-3/4	29	48	66	85	104	122	141	159	178	196
F200-100-1	35	56	78	100	122	144	165	187	209	231
F200-150-1	52	85	117	150	183	215	248	281	313	346
F200-265-1-1/4	92	149	207	265	323	381	438	496	554	612
F200-350-1-1/2	121	197	274	350	426	503	579	655	731	808
F200-400-2	138	226	313	400	487	574	662	749	836	923
F200-500-2	173	282	391	500	609	718	827	936	1045	1154
F200-600-3	208	338	469	600	731	862	992	1123	1254	1385
F200-800-3	277	451	626	800	974	1149	1323	1497	1672	1846
F200-1000-3	346	564	782	1000	1218	1436	1654	1872	2090	2308
F200-1250-3	433	705	978	1250	1522	1795	2067	2340	2612	2885
F200-1600-3	554	903	1251	1600	1949	2297	2646	2995	3344	3692

INSTALLATION

1. 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.

2. Locate Filter at the point of lowest operating temperature to ensure that water and oil vapor do not condense downstream of the filter. Filter should be installed close to the point of use to minimize the risk of pipe scale, dirt, etc. recontaminating the compressed air. This is particularly important when installing a new filter on an existing system that has not had proper filtration.

3. Install filter vertically. Provide required minimum clearance below filter to allow for replacement of element. **(See Element Removal Clearance on page 2).**

4. Protect filter from reverse flow conditions. Do not install filter downstream of quick opening valves.

5. Remove filter head from the bowl by turning bowl counterclockwise. Pull element from locator. Set bowl and element aside for use later.

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.**

7. Connect filter head into piping. Avoid reducers or bushings to match inlet size. The resulting restriction will increase pressure drop. Make sure head is installed with flow arrows pointing in proper direction. Use pipe thread compound as required.

IMPORTANT

INSTALL FILTER HEAD INTO THE PIPING WITH ARROWS POINTING IN THE PROPER DIRECTION TO ENSURE PROPER OPERATION. (SEE FLOW DIRECTION DIAGRAM BELOW).

8. Install element by pushing onto element locator on filter head.

9. Check to make sure that the o-ring in the head is in the proper position. Thread filter bowl into filter head and tighten either by hand (models F200-15 through 55) or with strap wrench (models F200-85 through 1600). Do not over tighten. Overtightening could damage filter bowl or make it difficult to remove.

10. Make sure drain valve on bottom of filter is closed. On filters equipped with ADM2-2 auto drain, provide a drain line to remove accumulated water and oil.

11. Pressurize system and slowly open inlet and outlet shutoff valves.

12. Check piping for leaks. Depressurize system and repair leaks as needed.

13. Re-pressurize system and slowly open inlet and outlet shutoff valves. Close bypass valve if provided.

14. Filter is now in service.

FIGURE 1A BYPASS

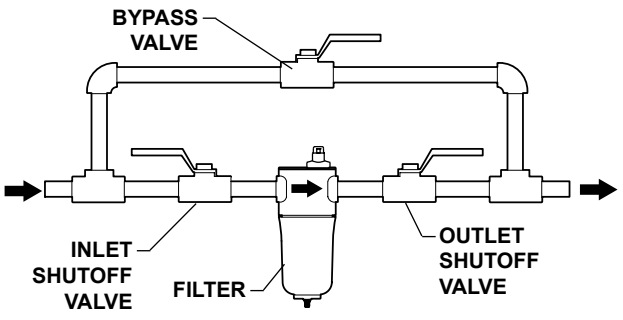


FIGURE 1B FILTERED BYPASS

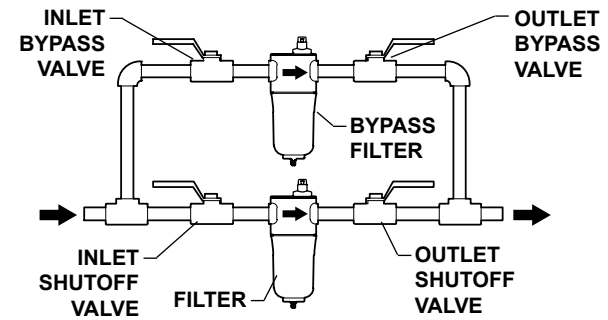


FIGURE 1C FILTERS MANIFOLDED WITH CONNECTOR KIT

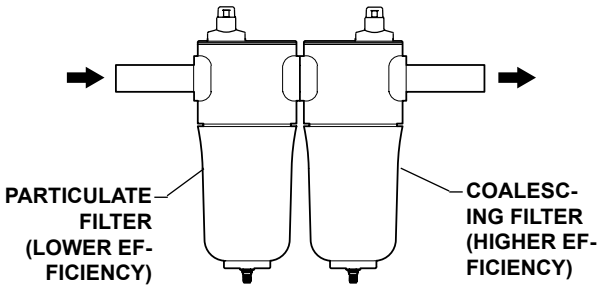


FIGURE 2A F200-15-1/4 THRU 25-1/2 REPLACEMENT PARTS

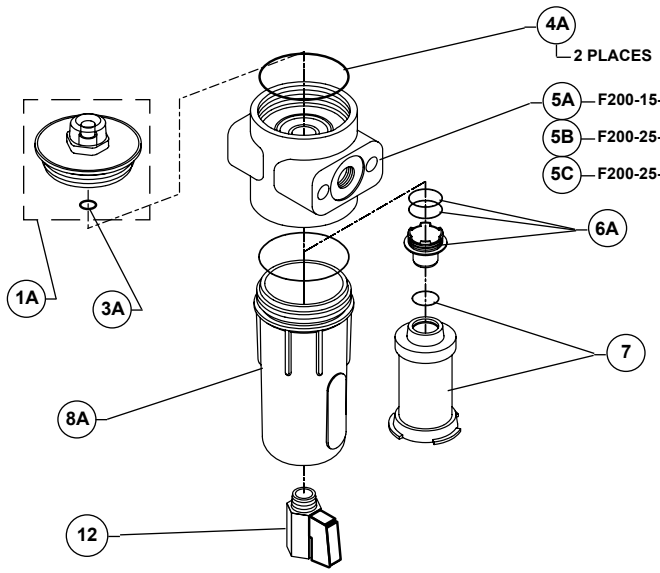


FIGURE 2B F200-55-1/2 THRU 500-2 REPLACEMENT PARTS

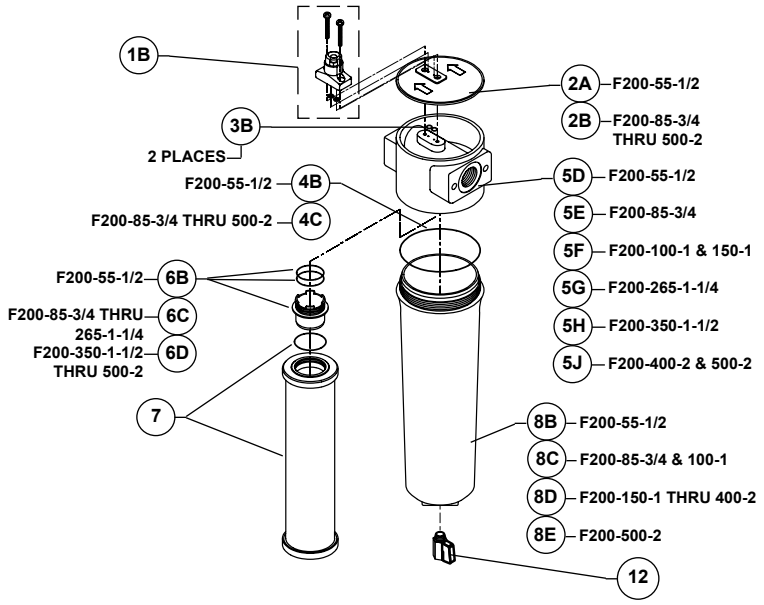
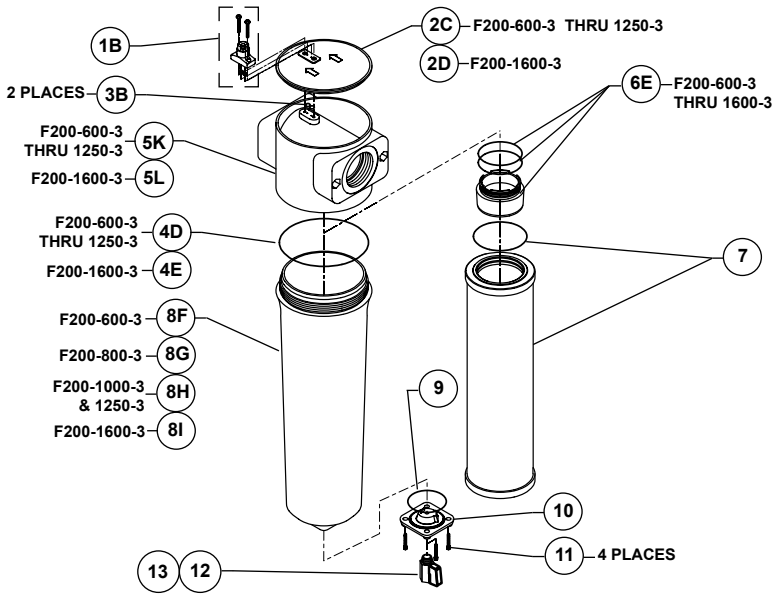


FIGURE 2C F200-600-3 THRU 1600-3 REPLACEMENT PARTS



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 1250-3	C	1	326-00130
2D	BLANKING PLATE FOR F200-1600-3	C	1	326-00140
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 1600-3	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 1250-3	C	1	475-00362
4E	BODY O-RING FOR F200-1600-3	C	1	475-00367
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 1250-3	C	1	201-00200
5L	3" NPT FILTER HEAD FOR F200-1600-3	C	1	201-00220
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 265-1-1/4	B	1	326-00015
6D	EPL4 ELEMENT ADAPTOR FOR F200-350-1-1/2 THRU 500-2	B	1	326-00020
6E	EPL5 ELEMENT ADAPTOR FOR F200-600-3 THRU 1600-3	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 & 1250-3	C	1	201-01070
8I	FILTER BOWL FOR F200-1600-3	C	1	201-01080
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	DRAIN ADAPTER FITTING	C	1	551-00008
13	MANUAL DRAIN 1/4" KIT	A,B,C	1	84-10852

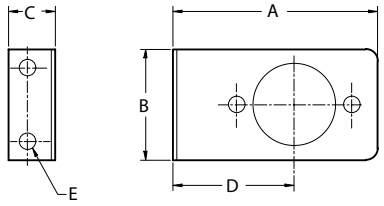
REPLACEMENT ELEMENTS

FILTER MODEL	ELEMENT MODEL	PART NO.
F200-15-1/4, F200-25-3/8, & F200-25-1/2	E200-15/25-AA/RAA	26-10400
	E200-15/25-A/RA	26-10402
	E200-15/25-B/RB	26-10404
	E200-15/25-C/RC	26-10406
	E200-15/25-RD	26-10408
F200-55-1/2	E200-55-AA/RAA	26-10032
	E200-55-A/RA	26-2059
	E200-55-B/RB	26-2070
	E200-55-C/RC	26-2081
	E200-55-RD	26-2151
F200-85-3/4	E200-85-AA/RAA	26-10034
	E200-85-A/RA	26-2061
	E200-85-B/RB	26-2072
	E200-85-C/RC	26-2083
	E200-85-RD	26-2153
F200-100-1	E200-100-AA/RAA	26-10035
	E200-100-A/RA	26-2062
	E200-100-B/RB	26-2073
	E200-100-C/RC	26-2084
	E200-100-RD	26-2154
F200-150-1	E200-150-AA/RAA	26-10036
	E200-150-A/RA	26-2063
	E200-150-B/RB	26-2074
	E200-150-C/RC	26-2085
	E200-150-RD	26-2155
F200-265-1-1/4	E200-265-AA/RAA	26-10037
	E200-265-A/RA	26-2064
	E200-265-B/RB	26-2075
	E200-265-C/RC	26-2086
	E200-265-RD	26-2156
F200-350-1-1/2, & F200-400-2	E200-350/400-AA/RAA	26-10409
	E200-350/400-A/RA	26-10411
	E200-350/400-B/RB	26-10413
	E200-350/400-C/RC	26-10415
	E200-350/400-RD	26-10417

FILTER MODEL	ELEMENT MODEL	PART NO.
F200-500-2	E200-500-AA/RAA	26-10418
	E200-500-A/RA	26-10420
	E200-500-B/RB	26-10422
	E200-500-C/RC	26-10424
	E200-500-RD	26-10426
F200-600-3	E200-600-AA/RAA	26-10427
	E200-600-A/RA	26-10429
	E200-600-B/RB	26-10431
	E200-600-C/RC	26-10433
	E200-600-RD	26-10435
F200-800-3	E200-800-AA/RAA	26-10436
	E200-800-A/RA	26-10438
	E200-800-B/RB	26-10440
	E200-800-C/RC	26-10442
	E200-800-RD	26-10444
F200-1000-3	E200-1000-AA/RAA	26-10040
	E200-1000-A/RA	26-2067
	E200-1000-B/RB	26-2078
	E200-1000-C/RC	26-2089
	E200-1000-RD	26-2159
F200-1250-3	E200-1250-AA/RAA	26-7510
	E200-1250-A/RA	26-7509
	E200-1250-B/RB	26-7511
	E200-1250-C/RC	26-7512
	E200-1250-RD	26-7517
F200-1600-3	E200-1600-AA/RAA	26-10041
	E200-1600-A/RA	26-2068
	E200-1600-B/RB	26-2079
	E200-1600-C/RC	26-2090
	E200-1600-RD	26-2160

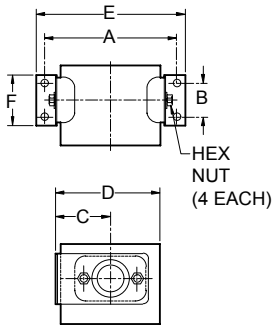
ACCESSORIES

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	4-15/16"	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

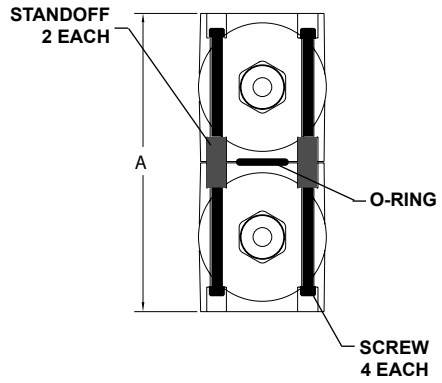
TYPE	USED ON	PART NO	A	B	C	D	E
MB-1	55	84-0720	4-1/2"	1-1/4"	1-3/4"	3-5/16"	5-1/4"
MB-1-2	15 THRU 25	84-10130	3-3/4"	1-1/4"	1-3/4"	3"	4-7/16"
MB-2	85 THRU 265	84-0721	5-15/16"	1-9/16"	2-9/16"	4-7/8"	6-11/16"
MB-2-2	350 THRU 500	84-10131	6-1/2"	2"	2-3/4"	5-1/4"	7-5/16"
MB-3-2	600 THRU 1250	84-10132	9-5/16"	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

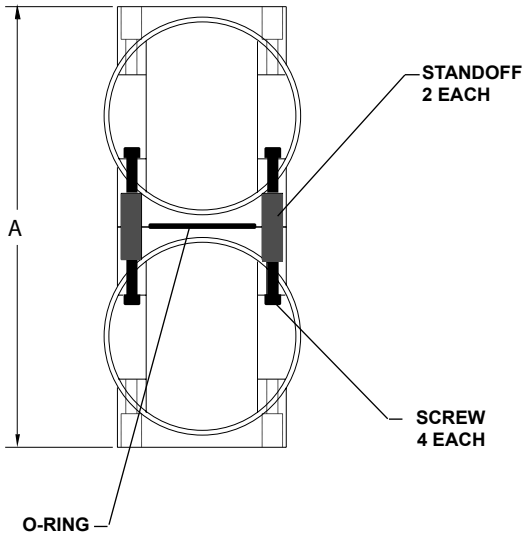


CONNECTOR KIT DETAIL

TYPE	USED ON	PART NO	A
CK-1	55	84-0723	7"
CK-1-2	15 THRU 25	84-10133	5-3/4"
CK-2	85 THRU 265	84-0724	9-7/8"
CK-2-2	350 THRU 500	84-10134	10-11/16"
CK-3-2	600 THRU 1250	84-10135	15-3/4"

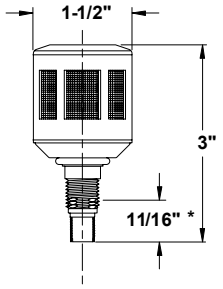
CK-2, CK-2-2 & CK-3-2

NOTE: BLANKING PLATES REMOVED FOR CLARITY.



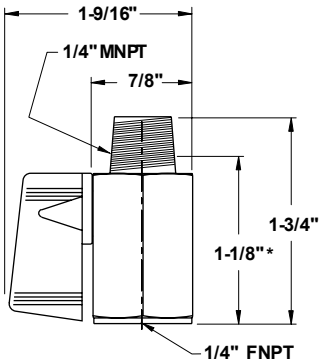
DRAIN KITS

ADM-2-2 AUTODRAIN (P/N: 84-10120)



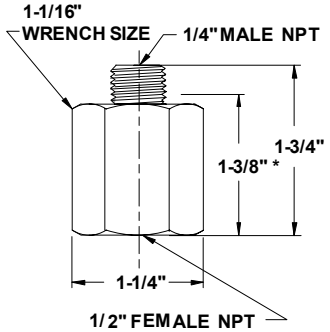
KIT INCLUDES (1) AUTO DRAIN, (1) NUT, (1) O-RING & INSTRUCTION SHEET.
*** DIMENSION EXTENDING OUT OF FILTER HOUSING**

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)



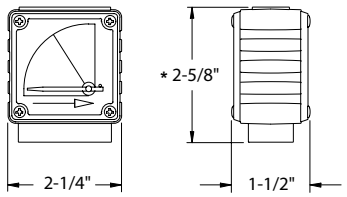
*** DIMENSION EXTENDING OUT OF FILTER HOUSING**

ACCESSORIES CONT'D

DIFFERENTIAL PRESSURE INDICATOR KITS

PD-5 (P/N: 84-10001)

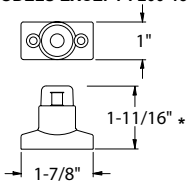
FITS ALL MODELS EXCEPT F200-15-1/4 THRU 25-1/2.



KIT INCLUDES (1) PD-5, (2) SCREWS, (4) O-RINGS & INSTRUCTION SHEET.
*DIMENSIONS EXTENDING ABOVE FILTER HOUSING.

PD-6 (P/N: 84-10125)

FITS ALL MODELS EXCEPT F200-15-1/4 THRU 25-1/2.



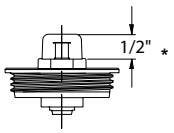
KIT INCLUDES (1) PD-6, (2) SCREWS, (4) O-RINGS & INSTRUCTION SHEET.

PD-6A-C (P/N: 84-10126)
PD-6A-P (P/N: 84-10127)

FITS MODELS F200-15-1/4 THRU 25-1/2 ONLY.

PD-6A-C
FOR COALESCING FILTERS

PD-6A-P
FOR PARTICULATE FILTERS



KIT INCLUDES (1) PD-6A, (2) O-RINGS & INSTRUCTION SHEET.
*DIMENSIONS EXTENDING ABOVE FILTER HOUSING.

MAINTENANCE

- Drain coalescing filters every shift.
- Check differential pressures weekly on coalescing and particulate filters (AA/RAA, A/RA, B/RB, and C/RC grades). When the indicator is red on differential pressure indicator, 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, the bottom endcap of the element, or page 5 of this instruction manual.
- When changing out element, inspect housing o-ring for nicks and/or cracks. If 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 gas/oil separator if compressor is rotary vane or screw type. Check lube rate if reciprocating compressor. Install coarse coalescer for prefiltration.
	Filter installed backwards.	Check flow direction (See page 1).
	Filter bowl not being drained.	Drain more frequently.
	High differential pressure.	Check differential pressure indicator, replace element if necessary.
	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 gas entering from source down stream of filter.	Relocate filter or install additional filter.
	High operating temperatures.	Install, clean, replace or relocate aftercooler, or relocate filter.
	Cooling by refrigerated dryer.	Install grade C filter downstream of dryer.
Short element life	Excessive contamination.	Install coarse particulate filter immediately upstream of existing filter.
	High compression temperatures causing varnish/ carbon formation.	Use compression 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.

SAFETY PRECAUTIONS

Safety is everybody's business and is based on your use of good common sense. All situations or circumstances cannot always be predicted and covered by established rules. Therefore, use your past experience, watch out for safety hazards and be cautious.

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