



Shah Pneumatics

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ProAir is a trademark of Shah Pneumatics.

Compressed Air Treatment Products

ProAir

High Efficiency Die Cast filter housings

INSTALLATION OPERATION & MAINTENANCE INSTRUCTIONS



Grades
XF,XO,XA,XC,
XCS,XR

Models
0019G - 1314G
XC0013G - 0178G

Sizes
3 mm - 80 mm
(G1/8) - (G3)

Filters for Compressed Air & Gases

INTRODUCTION

ProAir filters, when used in accordance with these instructions, are designed to remove oil, oil mist, liquid water and dirt from compressed air. Consult the factory for suitability of these filters for any other compressed gas or gas mixture.

The use of replacement parts or elements other than those specified in the replacement parts list provided in this manual may cause failure of the filter. Therefore, **Shah Pneumatics** bears no responsibility for the consequences of the use of equipment in which non-approved parts are used. Carefully follow the instructions given in this manual for filter installation and element replacement.

SAFETY

Compressed air can be dangerous. Safety precautions must be observed in the use of compressed air and compressed air equipment. Before changing the element or doing any work on this equipment be sure the internal pressure has been completely vented to the atmosphere.

ProAir filters are designed and built with safety as a prime consideration. Each **ProAir** filter is tested prior to shipment from the factory.

Do not use the filter at pressures or temperatures which exceed the maximum pressure and temperature shown on the filter label.

WARNING

A zero differential pressure does not mean the housing is under zero Pressure (depressurized). Never remove the indicator or gauge and/or the filter housing without depressurizing the filter housing and adjacent piping. Failure to heed this warning may result in serious personal harm and/or damage to the filterhousing or Indicator and gauge.

INSTALLATION

Immediately upon receipt of your **ProAir** filter, carefully inspect it for any damage that may have occurred during shipping. If there is any sign of damage to any of the components do not install the filter. Contact the factory or your supplier for action to be taken.

Piping

ProAir filter must be selected on the basis of compressed air flow rate (scfm, m³/h) and pressure, not on the basis of pipe size. If new pipework is installed, pipe size must also be selected on the basis of air flow rate and pressure, and not the size of the filter connections, if your filter is installed in existing piping, a threaded reducer may be needed to match the piping to the filter connections.

Be sure all piping is supported.

Connections and fittings must be rated for the maximum operating pressure given on the filter nameplate and must be in accordance with industry codes.

Location in System

Maximum operating temperature of the **ProAir** Filter is 65°C.

However, since filter performance is improved at lower operating temperatures, it is recommended that filtration temperature does not exceed 50°C.

Install your filter downstream of an aftercooler or at any other location in the system where the compressed air temperature does not exceed 65°C. If a refrigerated air dryer is installed in the air system, locate the filter downstream of the dryer. The dryer will remove a considerable quantity of dirt and condensed liquids, reducing the contaminant load on the filter and increasing the element life.

Allow enough clearance under the filter for dismantling and element replacement. In general, clearance equal to 1 times the overall length of the filter is adequate. Inlet and outlet air connections are marked on all models. Do not reverse connections, since the filter is not designed for reverse flow. Element failure will occur if the filter connections are reversed.

When the filter is installed in an existing piping system, locate the filter as near as possible to the point of use. Oil and dirt that have accumulated at the use point will be removed more quickly with the filter at this location.

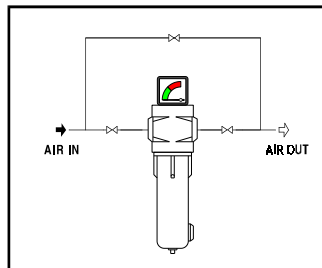
Filter Bypass

A 3-valve bypass around the filter is recommended so that elements can be changed without shutting down the branch line or the complete air system. A typical bypass arrangement is shown in the schematics below. Do not allow the piping to place any stress on the filter connections.

For applications that cannot tolerate oil during element replacement, a second filter should be installed in the bypass.

Commissioning Procedure

After the filter has been mounted according to the above procedure, slowly open the air inlet of the filter and look for possible air leaks. If any, investigate the source, turn off air supply and correct fault.



3 Valve bypass

MAINTENANCE RECORD

Date of Purchase _____

From Name _____

Address _____

Tel. _____

Fax _____

Filter Model No. _____

Process Connection _____

Element Model No. _____

No. of Element in each Housing _____

Date of Installation _____

Location _____

Estimated Date of Element Change _____

ACCESSORIES

AUTOMATIC DRAIN

©



MODEL : AD-D

MANUAL DRAIN



SC 05

ELECTRONIC DRAIN VALVE



SIZE	MODEL
3mm (G1/8)	MEDV-01
6mm (G1/4)	EDV-02

Diff. Pressure Indication



DPI

Diff. Pressure Gauge



DPG

Sight Glass Indicator Kit

Ⓐ



MODEL : SFLB-09A



- THIS FILTER MUST BE INSTALLED AND MAINTAINED BY A COMPETENT PERSON.

XO Filters

The XO filter is designed on the interception principle to remove particles down to 1 micron. The filter can be used for a wide range of applications such as removing water and condensate, dust, metal particles and pipescale. The XO filter can also be used as a prefilter to the high efficiency XA filter.

XA Filter

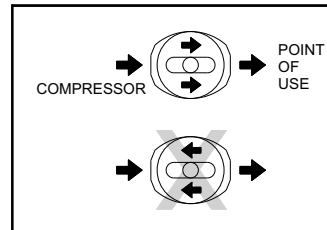
The XA filter is a high efficiency filter. This filter is a must for applications where high quality air is required with particles not greater than 0.01 micron and a remaining oil content in the air not exceeding 0.01 ppm (at 20°C). The XA filter is particularly suited to such applications as protecting instrumentation systems and gauging equipment, air bearings, advanced pneumatics and in sophisticated process and electronic plants.

XCS filters

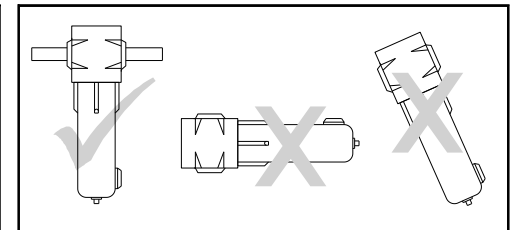
The XCS carbon filter is installed where oil vapour, smell and taste need to be removed. When installed after the XO and XA filter the XCS filter guarantees the highest quality system air required.

Consult the factory for suitability of these filters for any other compressed gas or gas mixture.

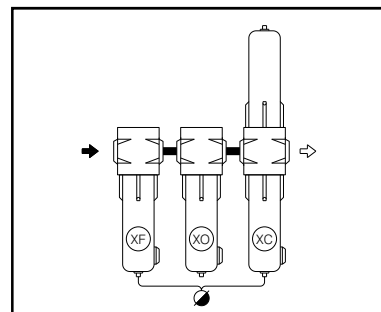
INSTALLATION



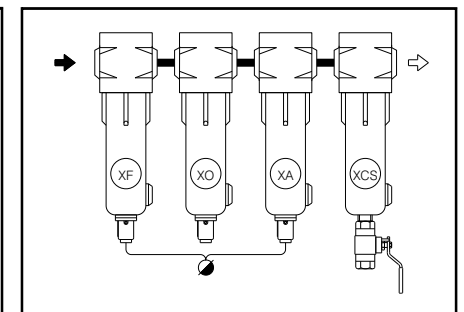
LOOK FOR ARROW / FLOW DIRECTION



INSTALL UPRIGHTLY.



DRAIN

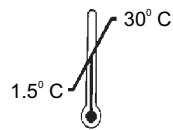
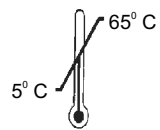
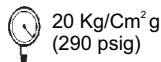
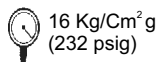


INSTALL AS PER SEQUENCE

TECHNICAL SPECIFICATIONS

Maximum Working Pressure

Maximum Working Temperature



XF, XO, XA, XC,

XR, XCS

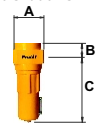
XF, XO, XA, XR

XC, XCS

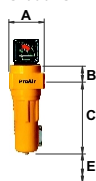
		mm							
		A	B	C	D	E	F	Kgs	
(*)0019 G XC0013 G	G 1/4	77	35	134	134	75	75	0.70	XC 0.92
(*)0036 G XC0027 G	G 1/2	88.5	41.5	196	196	135	135	1.2	1.75
(*)0064 G XC0053 G	G 1/2	88.5	41.5	196	196	135	135	1.2	1.75
(*)0127 G XC0084 G	G 3/4	119.5	61	352	352	275	225	3.0	4.6
(*)0170 G XC0136 G	G 1	119.5	61	352	352	275	225	3.0	4.6
(*)0254 G XC0178 G	G 1 1/4	119.5	61	352	352	275	225	3.0	4.6
(*)0307 G	G 1 1/2	119.5	61	352	--	275	--	3.0	
(*)0424 G	G 1 1/2	161.5	70	514	--	325	--	7.0	
(*)0466 G	G 2	161.5	70	514	--	325	--	7.0	
(*)0699 G	G 2	161.5	70	820	--	630	--	10.5	
(*)0848 G	G 2 1/2	200	80.5	842	--	630	--	18.5	
(*)0911 G	G 3	200	80.5	842	--	630	--	18.5	
(*)1314 G	G 3	200	80.5	842	--	630	--	18.5	

(*) GRADE

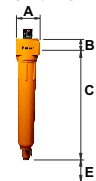
0019G-0064G



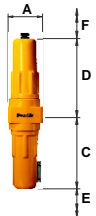
0127G-0307G



0424G-1314G



XC
XC0013G-0178G



FILTER ELEMENT REPLACEMENT

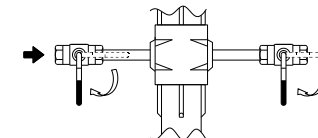
XC
0013 G - 0178 G

The activated carbon filter must always be preceded by an 0.01 micron coalescing filter Grade XA. Since the filtration principle of the Grade XC/ XCS filter is based on adsorption, saturation of the element cannot be detected by a Differential Pressure Indicator. Elements have to be changed periodically.

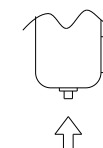
The illustrations (fig. 3, 4 and 5) indicate the sequence of element replacement. If there is an accumulation of material in the bowl, wash only with soap and water. Inspect all filter parts for damage and replace where necessary.

Note : Differential Pressure indicators may only be installed on Grade XO and XA filters. Never install a Differential Pressure Indicator on XC filters, since element saturation on XC filters cannot be detected by an increasing pressure drop over the filter.

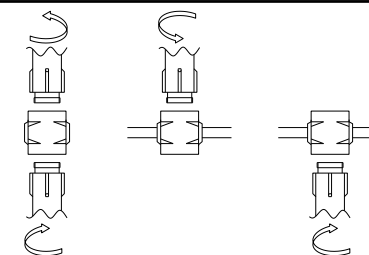
(1) ISOLATE AIR SUPPLY



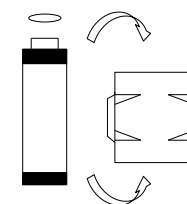
(2) DEPRESSURISE FILTER HOUSING



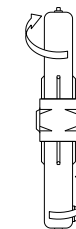
(3) OPEN BOWLS



(4) REPLACE FILTER ELEMENT



(5) RE-FIX BOWLS

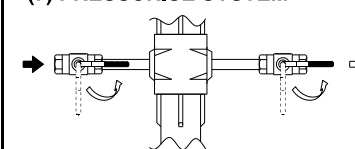


(6) FIX NEW STICKER

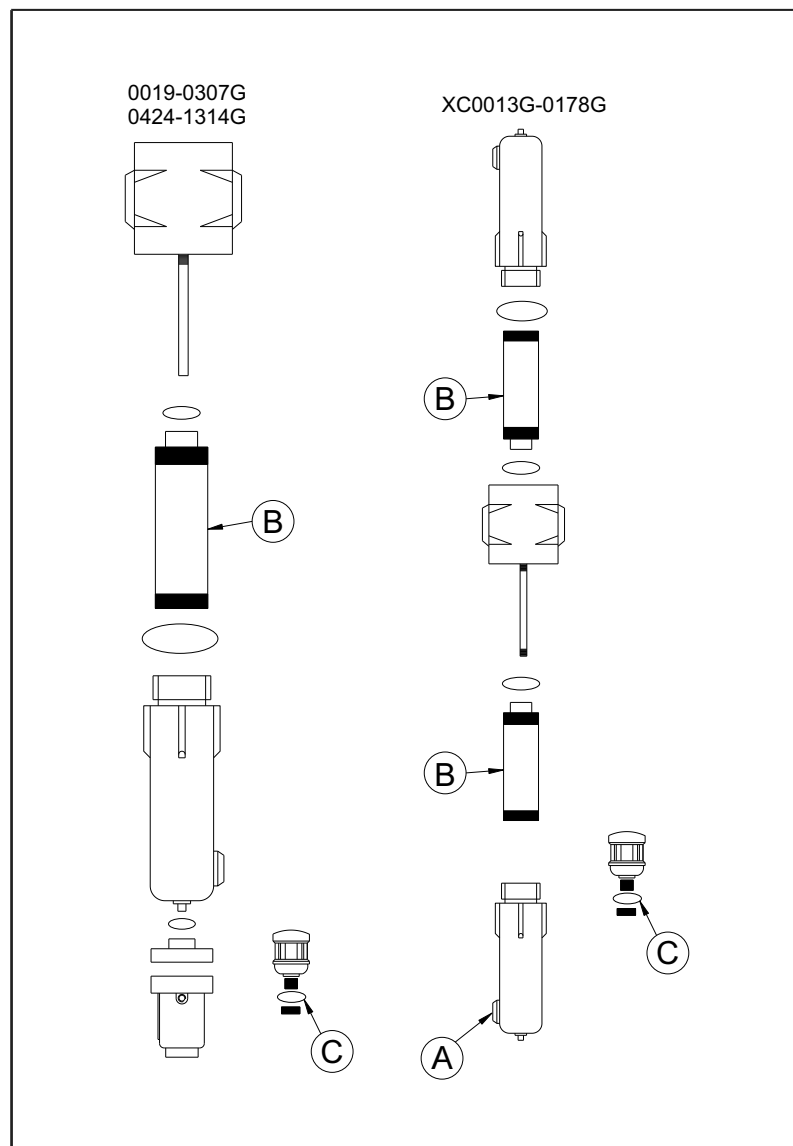


STICKER / LABEL

(7) PRESSURISE SYSTEM



MAINTENANCE



(A) (B) (C) - SEE ACCESSORIES

FILTER ELEMENTS NECESSARY FOR SERVICING

FILTER TYPE	PIPE SIZE	REPLACEMENT ELEMENTS GRADE-XF/XO/XA/XR/XCS
(GRADE) 0006 G	3 mm (G1/8)	E 0006 (GRADE) x 1
(GRADE) 0019 G	6 mm (G1/4)	E 0019 (GRADE) x 1
(GRADE) 0036 G	15 mm (G1/2)	E 0036 (GRADE) x 1
(GRADE) 0064 G	15 mm (G1/2)	E 0064 (GRADE) x 1
(GRADE) 0127 G	20 mm (G3/4)	E 0127 (GRADE) x 1
(GRADE) 0170 G	25 mm (G1)	E 0307 (GRADE) x 1
(GRADE) 0254 G	32 mm (G1.1/4)	E 0307 (GRADE) x 1
(GRADE) 0307 G	40 mm (G1.1/2)	E 0307 (GRADE) x 1
(GRADE) 0424 G	40 mm (G1.1/2)	E 0466 (GRADE) x 1
(GRADE) 0466 G	50 mm (G2)	E 0466 (GRADE) x 1
(GRADE) 0699 G	50 mm (G2)	E 0699 (GRADE) x 1
(GRADE) 0848 G	63 mm (G2.1/2)	E 0911 (GRADE) x 1
(GRADE) 0911 G	75 mm (G3)	E 0911 (GRADE) x 1
(GRADE) 1314 G	75 mm (G3)	E 1314 (GRADE) x 1

FILTER TYPE	PIPE SIZE	REPLACEMENT ELEMENTS GRADE-XC
XC-0013G	6 mm (G1/4)	E 0019 XA x 1
		E 0013 XC x 1
XC-0027G	15 mm (G1/2)	E 0036 XA x 1
		E 0027 XC x 1
XC-0053G	15 mm (G1/2)	E 0064 XA x 1
		E 0053 XC x 1
XC-0084G	20 mm (G3/4)	E 0127 XA x 1
		E 0084 XC x 1
XC-0136G	25 mm (G1)	E 0307 XA x 1
		E 0136 XC x 1
XC-0178G	32 mm (G1.1/4)	E 0307 XA x 1
		E 0178 XC x 1

FILTER ELEMENT REPLACEMENT

With the filter in service, the element will gradually become saturated. This saturation in turn, causes a rising pressure drop (indicated on the Differential Pressure Indicator).

The element must be changed when the Pop-Up indicator has turned red for 100% or when the gauge needle moves into the red area.

Failure to do so may cause element damage, or oil being forced through the element into the air line. Furthermore, the ever increasing pressure drop will cost a vast amount of energy loss.

XF, XO, XA,
XCS, XR,
0019 G - 1314 G

(1) ISOLATE AIR SUPPLY

(2) DEPRESSURISE FILTER HOUSING

Vent filter Internal air pressure to atmosphere.

(3) Remove filter bowl. A strap or chain wrench may be required to unscrew filter bowl from body casting.

Remove and discard saturated element.

Clean Inside of bowl. Use only soap and water.

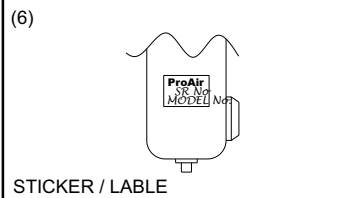
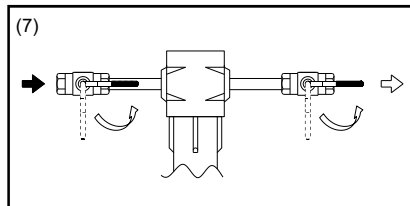
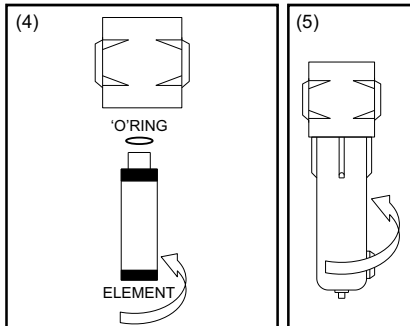
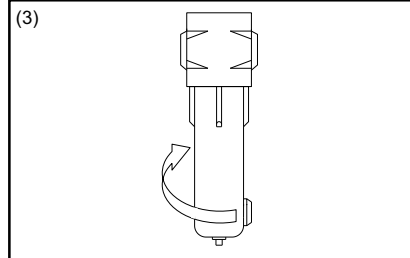
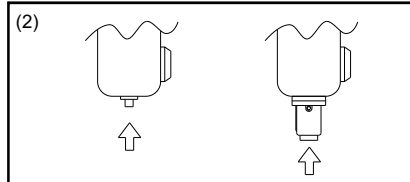
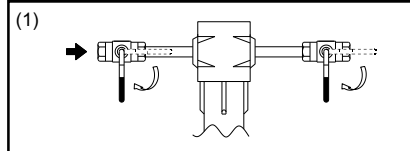
(4) Insert new element in head.

check O-rings in the locations shown in figure.

(5) Attach bowl to top body casting.

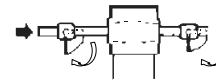
(6) Fix / record data of change of element.

(7) Slowly repressurize filter before startup to avoid element damage.

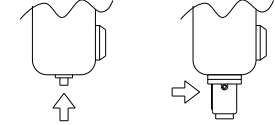


FITTING DIFFERENTIAL PRESSURE GAUGE / INDICATOR

ISOLATE AIR SUPPLY



DEPRESSURISE FILTER HOUSING



1. Remove the Indicator or gauge from the packaging and remove the dust cap from the gauge.
2. Remove the top coverplate & the 2 O-rings from the filter-head casting by removing the two screws. (see figure)
3. Ensure the holes are at the Left/Right of the filterhead when installing the indicator or gauge.

Note :

The flow direction from the filters is now from the left to the right, see arrows on the filterhead pointing to the right.

4. Assemble and mount the indicator or gauge to the housing as shown in figure. Ensure that the 'pressure holes' of the DPI/DPG are positioned on the 'pressure holes' of the filterhead and that the 4 O-rings are in place. Ensure that the needle of the gauge is pointing to the left and the 4 O-Rings are in place as shown in figure.
5. Tighten the fixing screws firmly. Do not overtighten, damage may occur to the indicator or gauge and/or the filterhead.
6. Reinstall the dust cap on the gauge.

