Installation / Operating / Maintenance Instructions
Filter Regulator Combination

Prod. No. 408888, 408889

Specifications

Model	AFRH34 / AFRH1	
Port size	3/4	1
Pressure gauge port size	1/4	
Max. supply pressure	140 psi (10 bar)	
Set pressure	Refer to product nameplate	
Installation	Vertical (as shown)	
Medium	Compressed air - Filtered	
Ambient / media temperature	5° - 60° C (41° - 140° F)	
Bowl material	Polycarbonate	

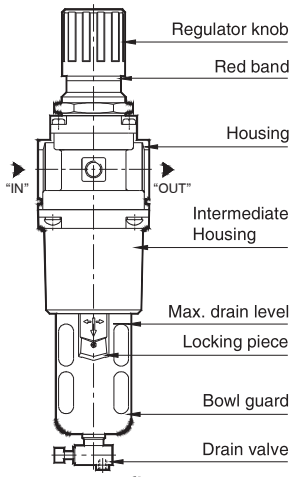


fig. 1

Important

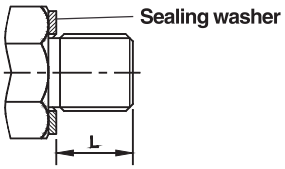
Since this equipment is used in compressed air line, proper precautions are to be taken for safety.

Installation Instructions

1. Install in a clean / acid free environment.
2. Before installation of the unit, check whether the unit is as per the specification - especially the port size and the corresponding fittings to be used on the unit.
3. Flush the piping for dirt, dust, rust and other foreign particles.
4. Connect the supply pressure to IN port and take the outlet from OUT port. (If the unit is connected in the reverse direction the air will continuously flow through the bonnet and the setting of the pressure is not possible.)
5. Use proper thread seals for (R) taper thread nipple, or face washer for (G) parallel thread nipple.
6. Set the pressure in the Regulator within the specified Set Pressure. Otherwise the spring may break.
7. Tighten the piping / nipples to the housing ports using proper tools. Do not over torque when tightening.

Thread Size	Tightening torque, Nm / in (Lb)	Length (L) of thread
G3/4	34 - 40 (300 - 354)	15mm max
G1	45 - 52 (398 - 460)	18mm max

8. Ensure foreign particles / tape, etc. do not enter the valve during assembly.



Length of G parallel thread

Operating Instructions

1. To set the Regulator, pull the regulating knob till " Red band " (Indicator ring) is visible (refer to figure 1).
2. To increase the pressure, turn the regulating knob in clockwise direction (see the marking on the knob)
3. To reduce the pressure, turn the regulating knob in counter clockwise direction
4. Always set the pressure in an ascending manner.
5. For draining the condensate water collected in the bowl (27.1.1), press the knob of the drain valve (27.2).
6. It is advisable to drain the bowl every day. The frequency of draining can be decided based on the condensate collection. However, take care that the condensate level does not cross the " Max. level " marked on the bowl guard.

Maintenance Instructions

a. Before dismantling the unit for maintenance: 1. Check for any leaks. 2. Check for any restricted flow. 3. Check if the drain works properly. 4. Check that the set pressure has changed. 5. Completely exhaust the air in the line.

b. To clean the filter element (25) and the bowl (27.1.1)

Removing the bowl guard (27.3): Lift the bowl guard (27.3) upwards, pull down the locking piece (27.4), turn the bowl guard 45° and pull down.

Dismantle the components and clean the filter element in kerosene and blow with compressed air. Clean the bowl with soap water or neutral detergent. Do not use thinner, kerosene, petrol, synthetic oil, trichloroethylene or other aromatic hydrocarbons. (Polycarbonate bowl may get damaged and possibly fail if exposed to these solvents).

c. Check for damages in the 'O' rings and at sealing areas in the valve cone rubber, spherical seating, seating area of the housing etc., Replace if needed (or) clean and reassemble.

d. For assembly of the unit: apply NLGI Grade 2 grease on the 'O' rings and on the surface of the housing (11) where the 'O' ring enters the housing and on the cylindrical surface of the valve cone (15.1), on threads of the adjusting screw (7), and on the bearing washer (6). Reassemble all the components.

Assembling the bowl guard: Position the projected lug portion of the bowl guard to the corresponding slot of the housing. Push the bowl guard fully. Turn the bowl guard 45° until the locking piece enters into the housing slot fully.

Assembly / Spare Parts List

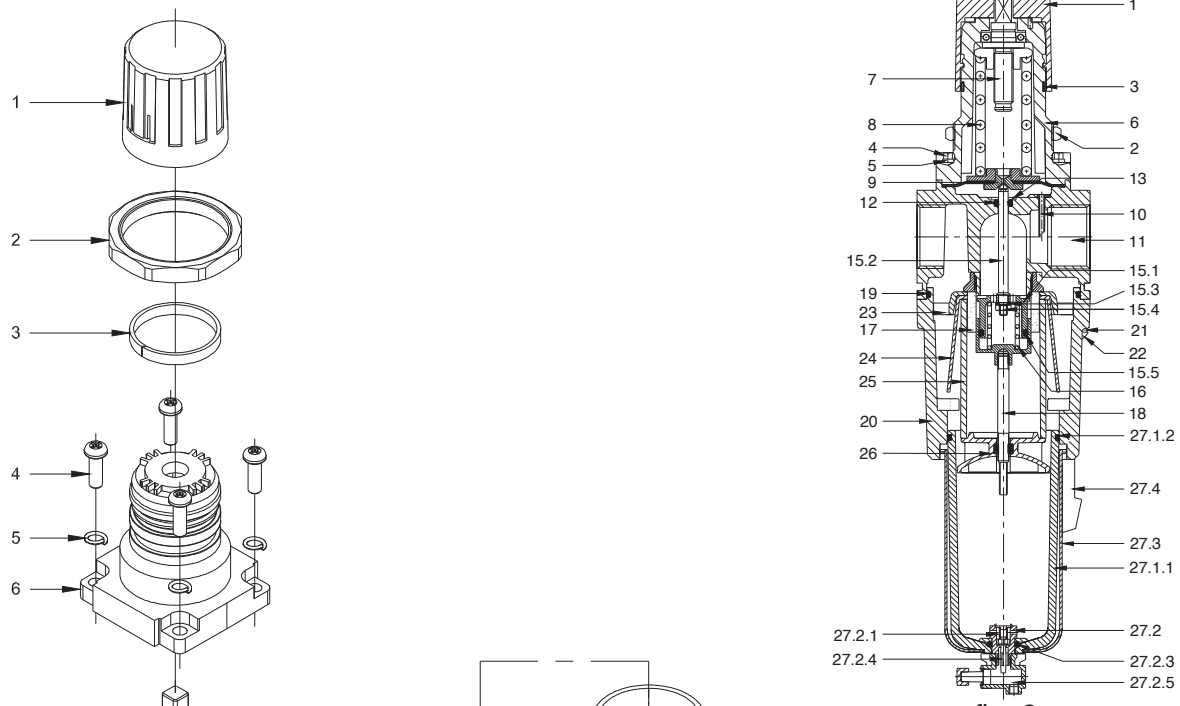


fig. 3

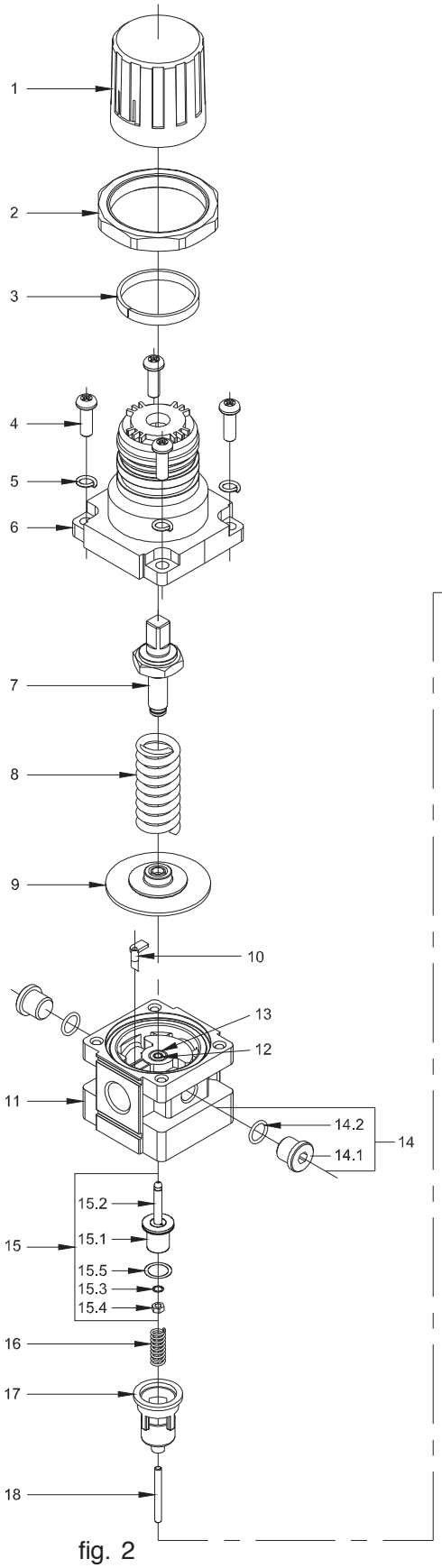
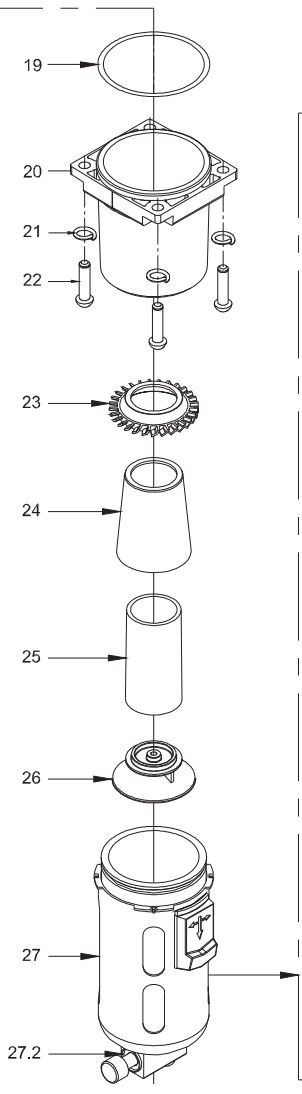
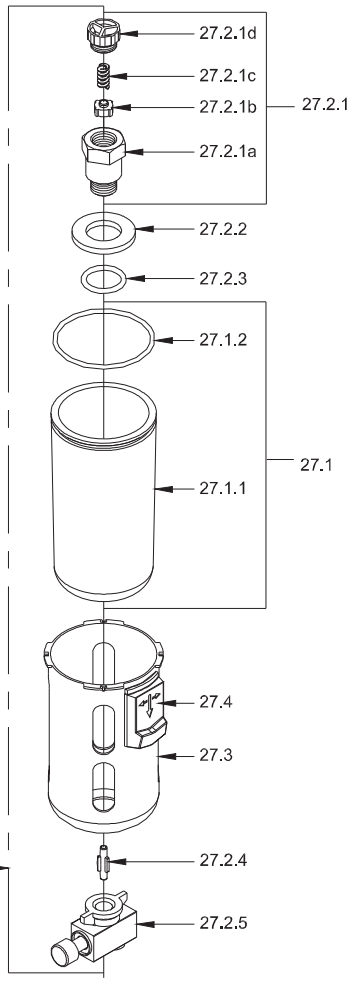


fig. 2





Spare Parts List
Filter Regulator Combination

Ref. No.	No. off.	Part name	Ordering No. for AFRH34 / AFRH1
1	1	Knob	-
2	1	Locknut	-
3	1	Indicator ring	-
4	4	Combination head screw	-
5	4	Spring washer	-
6	1	Bonnet	-
7	1	Adjusting screw assembly	LA2202
8	1	Main spring	*
*	-	0.2 - 2 bar	062061
*	-	0.2 - 4 bar	062062
*	-	0.5 - 7 bar	062063
*	-	0.5 - 10 bar	062060
9	1	Diaphragm assembly	SA2202
10	1	Venturi tube	-
11	1	Housing	-
12	1	'O' ring	-
13	1	Washer	-
14	2	Port plug assembly	-
14.1	2	Plug	-
14.2	2	Sealing washer	-
15	1	Valve cone assembly	SA2209
15.1	1	Valve cone complete	-
15.2	1	Stem complete	-
15.3	1	Washer	-
15.4	1	Nut	-
15.5	1	'O' ring	650119
16	1	Bottom spring	-
17	1	Spring seat	-
18	1	Stud	-
19	1	'O' ring	651119
20	1	Intermediate housing	-
21	4	Spring washer	-
22	4	Socket button head cap screw	-
23	1	Separator	782018
24	1	Shield	762001
25	1	Filter element**	**
**	-	Filter element - 5 microns	582049
**	-	Filter element - 25 microns	582050
**	-	Filter element - 40 microns	582051
**	-	Filter element - 50 microns	582052
**	-	Filter element - 100 microns	582053
26	1	Filter holder	712013
27	1	Bowl & Bowl guard assembly	-
27.1	1	Bowl assembly	LA2002
27.1.1	1	Bowl	-
27.1.2	2	'O' ring	650110
27.2	1	Drain valve assembly	SC2004
27.2.1	1	Gland assembly	SA2009
27.2.1a	1	Gland	-
27.2.1b	1	Valve seat	-
27.2.1c	1	Spring	-
27.2.1d	1	Spring guide nut	-
27.2.2	1	Sealing washer	-
27.2.3	1	'O' ring	650121
27.2.4	1	Actuator	722001
27.2.5	1	Stem housing assembly	SA2002
27.3	1	Bowl guard	-
27.4	1	Locking piece	-

Denotes for ordering items. For example, **Bowl Assembly (27.1)** Will be supplied as kit, consisting of Bowl (27.1.1), 'O' ring (27.1.2) accordingly.

***** (27.2 - Drain valve assembly) - Serviceable type

Filter Regulator Combination

Trouble shooting

TROUBLE	CAUSE	SOLUTION
1. Continuous leak / flow through the knob (1)	Wrong port connection	Change port connection
2. Continuous leak through the knob (1)	1. Diaphragm (9) damaged	1. Replace diaphragm assembly (9)
	2. Damaged seating of the valve cone (15)	2. Replace the valve cone assembly (15)
	3. Dirt found in between the seating and the valve cone (15)	3. Clean and reassemble
3. Setting pressure goes on increasing slowly	1. Damaged seating area of valve cone (15)	1. Replace the valve cone assembly (15)
	2. Seating area in the housing damaged	2. Clean the seating area
	3. Dirt found in between the seating and the valve cone (15)	3. Clean and reassemble
4. After frequent use of adjustment, the pressure setting becomes not possible	Wearing out of the adjusting screw (7)	Replace after applying general purpose grease on threads and at bearing washer (6)
5. Supply pressure directly connected to outlet port and pressure setting not possible	Valve cone (15) got stuck	Dismantle the valve cone assembly (15). Clean using kerosene and air. Reassemble after applying general purpose grease on 'O' ring (22) and on the valve cone cylindrical portion
6. Restricted air flow	Filter element (25) clogged	Clean the filter element or replace
7. Water level not visible	Dirt on the inner surface of the bowl	Clean the bowl (27.1.1)
8. Air leaks at housing (11) and bowl guard (27.3)	'O' ring (27.1.2) damaged	Replace the 'O' ring (27.1.2)
9. Air leaks at the bottom of the bowl	'O' ring (27.2.3) damaged	Replace the 'O' ring (27.2.3)
10. Air leaks continuously through the drain valve (27.2)	1. Valve seat (27.2.1b) damaged	1. Replace the valve seat (27.2.1b)
	2. Dust in valve seat (27.2.1b)	2. Clean the valve seat and reassemble
11. The knob of drain valve does not return	Valve components get stuck	Pull the knob and operate. If the valve gets stuck again - Replace.

Remarks:
When the unit is installed in a salty environment, there is a good chance of formation of Aluminum Oxide inside the housing. This may cause the valve cone to get stuck. In this case dismantle the components and clean them using kerosene and air. During reassembly apply general purpose grease on all the inside surfaces of the housing as protection against corrosion. Also apply grease on the 'O' rings and cylindrical portion of the valve cone.

How to order spare parts:

Mention the spare parts and model numbers as given in the tables.
Example: 'O' ring 650110 for AFRH34

Subject to change

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