

Port	Option	Service Indicator	Drain	Element	Bowl	Thread Form
B....1-1/2"	0....Standard body and element	0....Without	A....Automatic	0....Coalescing	D....0,2 litre (7 fluid ounce) metal with sight glass	A....PTF
C....2"	2....High flow body and element (use only with 2" ports)	1....With mechanical indicator	M....Manual, 1/4 turn		M....0,2 litre (7 fluid ounce) metal without sight glass	B....ISO Rc taper
		4....With electrical service indicator				G....ISO G parallel

* See Norgren publication IM-900.920 for specifications and electrical wire connections of the optional electric service indicator.

TECHNICAL DATA

Fluid: Compressed air
 Maximum pressure: 17 bar (250 psig)
 Operating temperature: * -34° to +80°C (-30° to +175°F)
 * Air supply must be dry enough to avoid ice formation at temperatures below +2°C (+35°F)
 Particle removal: Down to 0,01 µm
 Air quality: Within ISO 8573-1, Class 1 (particulates) and Class 2 (oil content)
 Maximum remaining oil content in outlet air: 0.01 ppm at +20°C (+70°F) with an inlet concentration of 17 ppm
 Maximum flow for oil-saturated element at 6,3 bar (90 psig) inlet pressure to maintain stated oil removal performance:

1 1/2" Ports: 118 dm³/s (250 scfm)
 2" Ports: 142 dm³/s (300 scfm)
 2" Ports, high flow element: 283 dm³/s (600 scfm)
 Typical flow for dry element at 6,3 bar (90 psig) inlet pressure and 0,3 bar (5 psid) pressure drop:

1 1/2" Ports: 368 dm³/s (780 scfm)
 2" Ports: 392 dm³/s (830 scfm)
 2" Ports, high flow element: 1086 dm³/s (2300 scfm)
 Nominal bowl size: 0,2 litre (7 fluid ounce)
 Drain connection: 1/8" pipe thread

Automatic drain operating conditions (float operated):
 Bowl pressure required to close drain: Greater than 0,3 bar (5 psig)

Bowl pressure required to open drain: Less than 0,2 bar (3 psig)
 Minimum air flow required to close drain:
 1 dm³/s (2 scfm)

Manual operation: Depress pin inside drain outlet
 Materials:
 Body, intermediate body, bowl: Aluminum
 Bowl sight glass: Transparent nylon
 Filter element: Synthetic fiber and polyurethane foam
 Elastomers: Neoprene and nitrile
 Service indicator body: Transparent nylon
 Service indicator internal parts: Acetal
 Service indicator spring: Stainless steel

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REPLACEMENT ITEMS

F47 service kit (includes items circled on exploded view)	
Standard element	3203-02
High flow element	3203-05
Liquid level lens kit	
Current, 1996 (27, 29, 30, 31, 40, 42, 43, 44)	4380-050
1990 - 1995 (47, 49 thru 52)	2273-20
Prior to 1990 (70, 71, 72)	2273-08
Mechanical service indicator (1)	5797-50
Electrical service indicator (6)	4020-51R
Manual drain, 1/4 turn (21, 22, 23) (34, 35, 36)	619-50
Manual drain, petcock (54, 62)	2796-52
Automatic drain (58, 59, 60) (66, 67, 68)	3000-10

INSTALLATION

- Shut-off air pressure. Install filter in air line -
 - vertically (bowl down),
 - with air flow in direction of arrow on body,
 - upstream of regulators, lubricators, and cycling valves,
 - as close as possible to the air supply when used as a main line filter,
 - as close as possible to the device being serviced when used as a final filter.
- Connect piping to proper ports using pipe thread sealant on male threads only. Do not allow sealant to enter interior of unit.
- Before applying air pressure, make sure bowls (32, 45, 53, 74) are turned fully into intermediate body (15, 15A). See steps 7 and 8 of **ASSEMBLY**.
- Flexible tube with 3mm (0.125") minimum I.D. can be connected to the automatic drain. Avoid restrictions in the tube.

SERVICING

- Open manual drain to expel accumulated liquids. Keep liquids below top of liquid level lens.
- Replace filter element when pressure drop across element exceeds 0,7 bar (10 psig). Mechanical service indicator shows approximately all red and optional electrical service indicator provides an electrical output when pressure drop reaches 0,7 bar (10 psig).

DISASSEMBLY

- Filter can be disassembled without removal from air line.
- Shut off inlet pressure. Reduce pressure in inlet and outlet lines to zero.
- Disassemble in general accordance with the item numbers on exploded view. Do not remove the drains or the service indicators (1, 6) unless replacement is necessary. Remove and replace only if they malfunction.

CLEANING

- Element (19) cannot be cleaned. Clean mechanical indicator lens (3) with warm water only. Clean electrical indicator (6) with dry, clean cloth. Clean other parts with warm water and soap.
- Rinse and dry parts. Blow out internal passages in body (14) with clean, dry compressed air.
- Inspect parts. Replace those found to be damaged.

ASSEMBLY

- Lubricate o-rings with o-ring grease.
- Bowl Assembly (Current and 1996 Bowls)**
 If the 1/4 turn manual drain was removed, lubricate the portion of the drain body (21, 34) that contacts the bowl, and the hole in the manual drain body that accommodates the stem of drain valve (22, 35) with o-ring grease. Press body (21, 34) thru hole from inside of bowl. Place retainer o-ring (23, 36) over body (21, 34) and position in groove. Press drain valve (22, 35) thru hole in body (21, 34). Assemble the liquid indicator parts to bowl as shown on the exploded view. Tighten screws (27, 40) to 1,7 to 3,4 N-m (15 to 30 inch-pounds).
- Bowl Assembly (1990 - 1995 Bowl)**
 Tighten drain nut (55, 59) to 2,3 to 2,8 N-m (20 to 25 inch-pounds). Assemble the liquid indicator parts (47 thru 51) to bowl. Apply a 0,9 to 1,8 kg (2 to 4 pound) clamping force to upper and lower brackets (48) to pull brackets together. Tighten screws (47) to 0,9 to 1,1 N-m (8 to 10 inch-pounds).
- Bowl Assembly (Bowl Prior to 1990)**
 Tighten drain nut (63, 67) to 2,3 to 2,8 N-m (20 to 25 inch-pounds). Assemble the liquid indicator parts to bowl as shown on the exploded view. Tighten retainer (69) to 1,1 to 1,7 N-m (10 to 15 inch-pounds).
- Lubricate male threads on metal bowl (53, 74) and intermediate body (15, 15A) with a small amount of anti-seize compound.
- Assemble filter as shown on the exploded view. Arrows on indicator (3, 8) and body (14) must point in same direction. Tighten screws (2, 7) to 2,8 to 3,9 N-m (25 to 35 inch-pounds). Install element (17) with the larger end against end cap gasket (18). Tighten end cap (19) to 7,9 to 8,5 N-m (70 to 75 inch-pounds). Tighten intermediate body (15, 15A) to approximately 16 N-m (12 foot-pounds) - snug with two hands.
- Bowl Installation (Current and 1996 Bowls)**
 Push bowl assembly (20, 33) into intermediate body and turn fully clockwise.
- Bowl Installation (All Bowls Prior to 1996)**
 Turn bowl assembly (46, 61) fully into intermediate body, approximately five full turns. Unscrew bowl no more than one full turn to position liquid level lens for best visibility.

CAUTION

Water vapor will pass through these units and could condense into liquid form downstream as air temperature drops. Install an air dryer if water condensation could have a detrimental effect on the application.

WARNING

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under **Technical Data**.

Before using these products with fluids other than air, for nonindustrial applications, or for life-support systems consult Norgren.

