NORGREN

Excelon® Plus

Air Preparation Range
1/4", 3/8" 82 Series
3/8", 1/2", 3/4" 84 Series
Installation and Maintenance Instructions

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https://www.imi-precision.com/excelon-plus

TECHNICAL DATA

Fluid:	Compressed air
Maximum pressure:	Transparent bowl: 10 bar (145 psig) 1/4", 3/8" Metal bowl: 17 bar (245 psig) 3/8", 1/2", 3/4" Metal bowl: 20 bar (290 psig)
Operating temperature*:	Transparent bowl: -10 °C to +60 °C (+14 °F to +140 °F) Metal bowl: -20 °C to +65 °C (-4 °F to +149 °F) *Air supply must be dry enough to avoid ice formation at temperatures below +2 °C (+35 °F)
Particle removal:	5 µm & 40 µm filter elements
Oil removal:	Coalescing and vapour removal elements
Air quality:	Within ISO 8573-1, Class 6 (5 µm) and Class 7 (40 µm) ISO 8573-1, remaining oil aerosol to Class 1 (coalescing) ISO 8573-1, remaining oil aerosol to Class 0 (vapor)
Manual drain connection:	1/8"
Automatic drain connection:	1/4" PIF with PTF & 6 mm PIF with ISO G
Port threads:	1/4", 3/8", 1/2" and 3/4" PTF and ISO G
Typical flow:	1/4", 3/8"–34 l/sec 3/8", 1/2", 3/4" 100 l/sec with 10 bar (150 psig) inlet pressure, 6.3 bar (90 psig) set pressure and 1 bar (15 psig) drop from set
Materials:	Body - Aluminium Covers - ABS 1/4", 3/8" Bowl–Zinc or Polycarbonate/PP 3/8", 1/2", 3/4" Bowl–Aluminium or Polycarbonate/PP Valve - PP/Geolast® Elements - Sintered PP Elastomers - Nitrile Bowl O-ring - Chloroprene

II 2 GD
Ex h IIC T6 Gb
Ex h IIIC T85°C Db

* See overleaf for ATEX declaration of conformity.

CAUTION

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

Installation, commissioning, disassembling as well as repair and maintenance must only be carried out by qualified specialized personnel with expertise and experience on pneumatic technology and in case of electrical devices also electrical technology.

WARNINGS

1. 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.
2. Polycarbonate plastic bowls can be damaged and possibly burst if exposed to such substances as certain solvents, strong alkalis, compressor oils containing ester-based additives or synthetic oils. Fumes of these substances in contact with the polycarbonate bowl, externally or internally, can result in damage.
3. Use metal bowl in applications where a plastic bowl might be exposed to substances that are incompatible with polycarbonate.
4. An outlet pressure more than the pressure setting could cause downstream equipment to rupture or malfunction. Install a pressure relief device downstream of the filter-regulator/regulator. Do not modify or interfere with the adjusting mechanism.
5. The relief pressure and flow capacity of the relief device must satisfy system requirements.
6. The accuracy of the indication of pressure gauges can change both during shipment (despite care in packaging), and during the service life. Ensure the gauge readings are accurate if a pressure gauge is to be used with these products and if inaccurate indications may be hazardous to personnel or property.
7. Before using these products with fluids other than air, non-industrial applications or for life-support systems, consult IMI Precision Engineering.

IMI

GENERAL INSTALLATION

GI-1 Always turn off and exhaust air pressure prior to installing and servicing units. Ensure that the air is completely exhausted prior to beginning any actions.

GI-2 Connect piping to ports using pipe thread sealant on male threads only. Do not allow sealant to enter the interior of the unit. Units should be installed with air flow in the direction of the arrow on the body and as close as possible to the device being serviced.

GI-3 Install filters:

GI-3.1 Upstream of regulators, lubricators, and cycling valves and oriented vertically

GI-4 Install regulators:

GI-4.1 Upstream of lubricators and cycling valves, and downstream of filters

GI-5 Install filter/regulators:

GI-5.1 Upstream of lubricators and cycling valves, downstream of filters, and oriented vertically

GI-6 Install lubricators:

GI-6.1 Upstream of cycling valves and oriented vertically

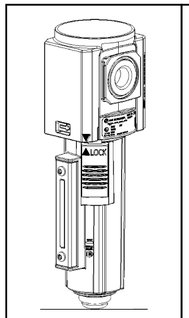
GI-6.2 Install oil-fog lubricator no more than 15 feet (4.6m) from the devices being lubricated and at the same height or higher than the device being serviced

GI-7 Special considerations for units with a/an:

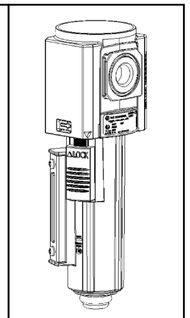
GI-7.1 Automatic drain:
- Automatic drain flexible tube requires a minimum internal diameter of 5 mm (3/16"). Drain may fail to operate if the tube ID is less than 5 mm. Avoid restrictions in the tube.

GI-7.2 Gauge port:
- Install a pressure gauge or plug the gauge port if no gauge is present.

GI-7.3 Bowl:
- Ensure the clip and cover arrows are aligned before pressurizing.



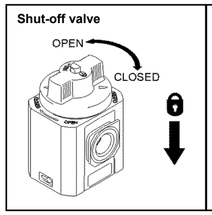
Bowl in lock position (cover and bowl arrows aligned). To unlock, pull lock clip down, push bowl up, and turn bowl left moving the clip toward the body directional arrow.

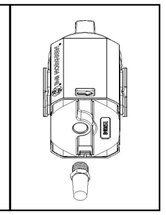


Bowl in unlocked postition (clip locking tab visible above LOCK). Bowl Bayonet tabs are in body. Turn bowl toward bowl alignment arrow on cover. Bowl will be in postion when lock clip snaps into body.

Shut-off Valve

Tamper proofing





Accessories—84/82 Series

Part No.	Description
840055-01KIT	Padlock kit
840055-02KIT	Hasp lock-out device

SO-1 To isolate the supply pressure and exhaust the downstream pressure, rotate the knob from the open to the closed position.

SO-2 To lock the valve in the closed position, push the knob down and apply a hasp or padlock.

SO-3 To reduce noise and keep contamination out of the unit, installing an exhaust muffler into the bottom port is recommended.

Filter & Filter/Regulator

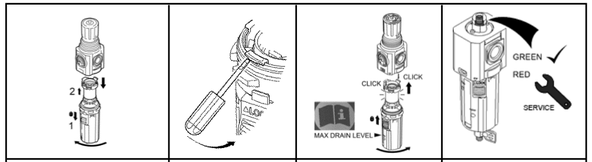
Install filters:

Upstream of regulators, lubricators, and cycling valves and oriented vertically

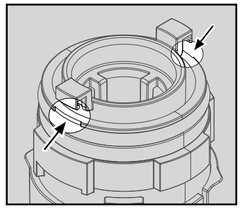
SERVICING

See illustrations below. Note, any replacement O-ring seals should be lubricated.
See IMI website for recommended lubricants. Use QR code or web link.

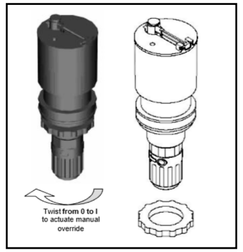
Servicing–Filter replacement



Remove bowl per GI-7.3	Unclip and remove element cartridge from bowl	Snap new filter into bowl and install bowl per GI-7.3	Coalescing elements must be replaced when indicator is fully red under flow conditions



The 82 Series filter installation requires that the filter tabs align with the recessed area in the top o-ring retention diameter.



Operating Manual Drain or Automatic Drain Override

Rotate the manual drain 1/4 turn to expel accumulated liquids. Keep liquids below the baffle (max level identified on bowl). If needed, rotate the manual override section of the automatic drain per drain override arrow to expel liquids.

Serving-Automatic Drain Replacement

F-1. Remove bowl per GI-7.3

F-2. Remove filter element.

F-3. Remove the retaining nut, auto-drain assembly, and gasket.

F-4. Replace the auto-drain assembly with the correct service kit, ensuring that the gasket is located between the auto-drain assembly and bowl.

F-5. Hand thread and torque the retaining nut to 20.0-25.0 in-lb (2.26-2.82 Nm).

F-6. Replace element and install bowl per GI-7.3

Spares—84 Series

Part No.	Description
840038-50KIT	5 µm cartridge element
840038-51KIT	40 µm cartridge element
840044-50KIT	Coalescing cartridge element
840041-50KIT	Vapour removal element

Spares—82 Series

Part No.	Description
820038-50KIT	5 µm cartridge element
820038-51KIT	40 µm cartridge element
820044-50KIT	Coalescing cartridge element
820041-50KIT	Vapour removal element

Accessories—84/82 Series

Part No.	Description
6000-60KIT	Auto drain 6 mm PIF
6000-61KIT	Auto drain 1/4" PIF

Regulator & Filter/Regulator

Install regulators:

Upstream of lubricators, cycling valves and downstream of filters

ADJUSTMENT (Regulator and filter-regulator)

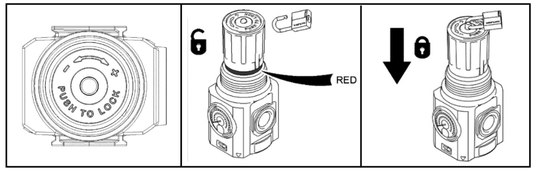
R-1. Before applying inlet pressure, pull the adjusting knob up (exposing the red indicator ring) and turn the adjusting knob in the minus direction to remove all force on the regulating spring.

R-2. Apply inlet pressure, then turn the adjusting knob the direction indicated on the knob to adjust the pressure setting.

R-3. Always approach the desired pressure from a lower pressure. When reducing from a higher to a lower setting, first reduce to some pressure less than that desired, then bring up to the desired pressure.

R-4. Once the required pressure is achieved, push the knob down (red indicator ring covered) to lock pressure and apply a padlock if required. For T-bar adjustment, tighten lock-nut to lock pressure setting.

Tamper proofing



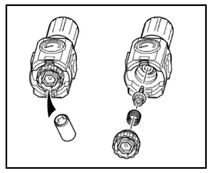
Accessories—84/82 Series

Part No.	Description
840055-01KIT	Padlock kit
840055-02KIT	Hasp lock-out device

SERVICING

See illustrations below. Use QR code or web link.

Servicing–Regulator



R-5.1 Unscrew bottom plug using socket as shown and remove spring and valve

R-5.2 Replace all damaged seal components with the corresponding component from the elastomer kit.

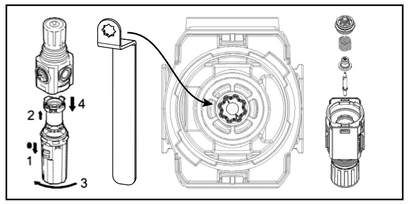
R-5.3 Valve body is separated from valve stem by pushing the valve body end against a hard surface to pop the stem lose and then pull the stem out of body. Push the stem into new valve body until it snaps into place.

R-5.4 Lubricate valve stem o-ring, valve body o-ring, bottom plug o-ring, and the bottom plug valve bore with a light coat of good quality o-ring grease.

R-5.5 Reassemble the unit

R-5.6 Torque the bottom plug to: 25-35 IN-LB (2.82-3.95 Nm) for 82 Series (13 mm socket)
20-30 IN-LB (2.26-3.39 Nm) for 84 Series (25 mm socket)

Servicing–Filter-regulator



R-6.1 Remove bowl per GI-7.3, unscrew valve retainer using spanner from FRLB kit, and remove spring & valve

R-6.2 Replace all damaged seal components with the corresponding component from the elastomer kit.

R-6.3 Valve body is separated from valve stem by pushing the valve body end against a hard surface to pop the stem lose and then pull the stem out of body. Push the stem into new valve body until it snaps into place.

R-6.4 Lubricate valve stem o-ring, valve body o-ring, bottom plug o-ring, and the valve retainer bore with a light coat of good quality o-ring grease.

R-6.5 Reassemble the unit

R-6.6 Reference valve retainer torque: 18-22 IN-LB (2.03-2.49 Nm) for 82 Series
20-30 IN-LB (2.26-3.39 Nm) for 84 Series

R-6.7 Reinstall the bowl per GI-7.3

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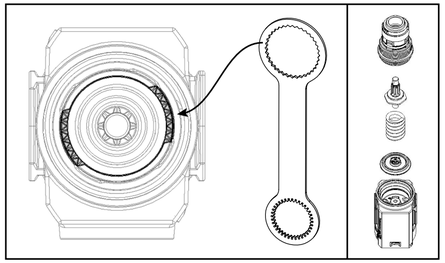
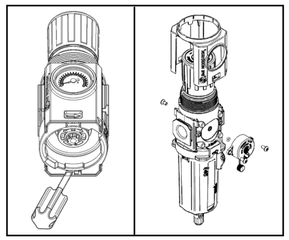
Changing Diaphragm–Filter/regulator and Regulator



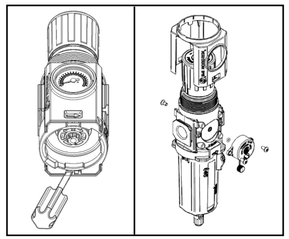
R-7.1 Pull off the knob
R-7.2 Use the spanner from the FRLB kit to remove the bonnet
R-7.3 Remove the diaphragm, adjusting screw, and spring
R-7.4 Pull apart the diaphragm seal and spring rest
R-7.5 Push the new seal completely onto the springrest, the springrest will fit into the ribs of the seal and the inside edge of the seal will be below the top of the springrest post
R-7.6 Reference bonnet torque: 80-110 IN-LB (10.2-12.4 Nm) for 82 Series
132-177 IN-LB (15-20 Nm) for 84 Series

Changing Gauge–Filter/regulator and Regulator



R-8.1 Use a flat-blade screwdriver to push out both cover tabs and remove the cover.
R-8.2 Remove the gauge screws and gauge.
R-8.3 Install the corresponding replacement gauge.
R-8.4 Torque the gauge screws to:
3.0-6.0 IN-LB (0.34-0.68 Nm) for 82 Series
7.0-16.0 IN-LB (0.8-1.8 Nm) for 84 Series
R-8.5 Install cover ensuring tabs snap into place.

Moving Gauge Right to Left Flow–Filter/regulator and Regulator



R-9.1 Use a flat-blade screwdriver to push out both cover tabs and remove the cover.
R-9.2 Remove the plug from the back side of the unit.
R-9.3 Remove the gauge screws and gauge.
R-9.4 Install the gauge on the side of unit that the plug was installed.
R-9.5 Torque the gauge screws to:
3.0-6.0 IN-LB (0.34-0.68 Nm) for 82 Series
7.0-16.0 IN-LB (0.8-1.8 Nm) for 84 Series
R-9.6 Install the plug on the side of unit that the gauge was originally installed.
Install cover ensuring tabs snap into place.
R-9.7 Torque the plug to:
22.1-26.6 IN-LB (2.50-3.00 Nm)
R-9.8 Install cover ensuring tabs snap into place.

Spares—84 Series	
Part No.	**Description**
840073-01KIT	Integrated gauge (10 bar) kit
840073-02KIT	Integrated gauge (20 bar) kit
840100-01KIT	Gauge adaptor kit 1/8" NPT
840100-02KIT	Gauge adaptor kit R1/8

Spares—82 Series	
Part No.	**Description**
820073-01KIT	Integrated gauge (10 bar) kit
820073-02KIT	Integrated gauge (20 bar) kit
820073-03KIT	Integrated gauge (4 bar) kit
820100-01KIT	Gauge adaptor kit 1/8" NPT
820100-02KIT	Gauge adaptor kit R1/8

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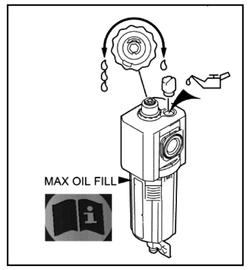
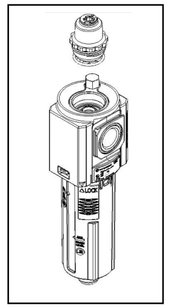
Lubricator

Lubricator–Oil level





Servicing-Bowl Replacement
L-1 Remove and install bowl per GI-7.3.

Servicing-Lubricator Sight Dome Replacement
L-2.1 Remove the sight dome and sight dome seal
L-2.2 Lubricate the new sight dome seal with a light coat of good quality o-ring grease
L-2.3 Install the sight dome and torque to 20.0-25.0 IN-LB (2.26-2.82 Nm) with a 1" socket

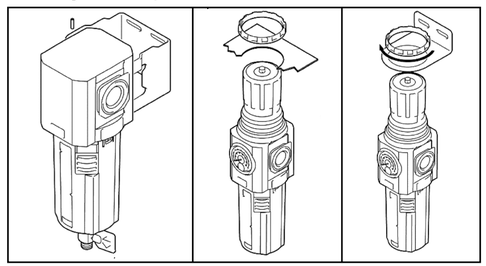
Spares—82/84 Series	
Part No.	**Description**
840055-50KIT	Micro-fog Sight dome kit
840055-51KIT	Oil-fog Sight dome kit

Spares—84 Series	
Part No.	**Description**
840003-52KIT	Metal bowl and sight glass with drain plug (closed bottom)
840025-52KIT	Guarded bowl with drain plug (closed bottom)

Spares—82 Series	
Part No.	**Description**
820003-52KIT	Metal bowl and sight glass with drain plug (closed bottom)
820025-52KIT	Guarded bowl with drain plug (closed bottom)

Single Unit Bracket

Mounting bracket options

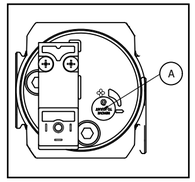


Accessories—84 Series	
Part No.	**Description**
840024-50KIT	Mounting bracket
840028-89KIT	Panel nut
840068-51KIT	Neck mount bracket and panel nut

84 Series
Recommended Panel Hole Size:
ø2.165" to 2.245" (55 to 57 mm)
Panel Thickness:
0.06" to 0.25" (2 to 6 mm)

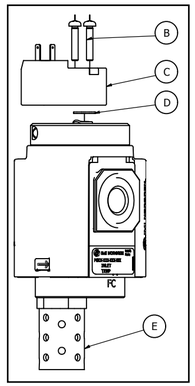
Accessories—82 Series	
Part No.	**Description**
820024-50KIT	Mounting bracket
820028-89KIT	Panel nut
820068-51KIT	Neck mount bracket and panel nut

82 Series
Recommended Panel Hole Size:
ø1.427" to 1.447" (36.25 to 36.75 mm)
Panel Thickness:
up to 0.16" (4 mm)



Adjustment

1. The time required to reach full pressure is dependent on the downstream system volume. Units shipped from factory are set to give maximum delay.
2. To adjust delay:
   a. Turn on air supply prior to applying signal to operator. Failure to do so may cause valve to continuously exhaust.
   b. Actuate the solenoid (Energize the solenoid or press and hold the solenoid override).
   c. Remove environmental protection plug (A) to access adjusting screw.
   d. Use a 3mm allen key to turn adjusting screw clockwise to increase time delay and counterclockwise to decrease time delay.
   e. Reinstall environmental protection plug (A) after setting.



Solenoid electrical connection

1) Make sure the voltage rating on the solenoid matches the electrical system being connected. See label on solenoid for voltage rating.

Solenoid replacement

1) Turn off electrical supply and shut off air to inlet of Valve.
2) Remove the electrical connector from the solenoid.
3) Remove the two solenoid mounting screws (B)
4) Remove solenoid (C) and gasket (D)
5) Verify that the electrical rating on the new solenoid matches the solenoid removed.
6) Install new gasket (D) and solenoid (C), insert two screws (B) and tighten to 4.4-6.2 IN-LB (0.5-0.7Nm) torque.
7) Attach electrical connection to solenoid and secure.
8) Restore pressure and then electrical. Test operation.

Exhaust Muffler

1) When installing the Valve into an air system, installation of an exhaust muffler (E) is recommended. The muffler needs to flow greater than the exhaust flow of the Valve and provide acceptable noise reduction for the installed environment. Suitable muffler can be found on product datasheets.

ATEX Declaration of conformity

EU Declaration of conformity (DoC) 2014/34/EU
Product: Excelon® Plus T84, F84, R84, B84, T82, F82, R82, B82
Manufacturers:

- Norgren Manufacturing de Mexico SA de CV
  Av. de la Montaña 120 Parque Industrial Querétaro, Santa Rosa Jauregui
  CP 76220 Qro, MX
- Norgren Ltd, Blenheim Way, Fradley Park, Lichfield, Staffordshire, WS13 8SY

We declare that this declaration of conformity is issued under the sole responsibility of the manufacturer.
2014/34/EU Equipment and protective systems intended for use in potentially explosive atmospheres
The following harmonised standards and technical specifications have been applied
ISO 4414:2010 – Pneumatic fluid power – General rules and safety requirements for systems and their components; ISO 80079-36:2016 – Explosive atmospheres – Part 36: Non-electrical equipment for explosive atmospheres – Basic method and requirements; ISO 80079-37:2016 – Explosive atmospheres Part 37: Non-electrical equipment for explosive atmospheres – Non-electrical type of protection constructional safety "c", control of ignition sources "b", liquid immersion "k".

II 2 GD
Ex h IIC T6 Gb
Ex h IIIC T85°C Db
ATEX Certification No.: NORGREN 18.0001X

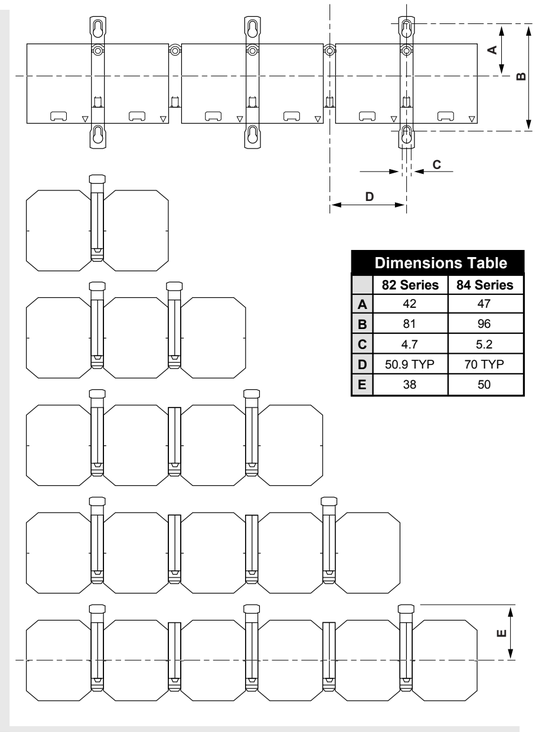
Under certain extreme circumstances, the non-metallic cover may generate an ignition-capable level of electrostatic charge. The equipment shall not be installed in a location where the external conditions are conducive to the build up of electrostatic charge on such surfaces. Additionally, the equipment shall only be cleaned with a damp cloth.

Attestation of Conformity for components in accordance with Directive 2014/34/EU
We confirm the following equipment: All lubricators (Oil-fog and Micro-fog), gauges, connections kits, filter elements, brackets, and porting blocks conform to essential Health & Safety requirements of Directive 2014/34/EU and as such contain no potential ignition hazard for explosive environments.

Technical Director:
James Robinson
June 2019

Recommended Quickclamp Locations

84/82 Series

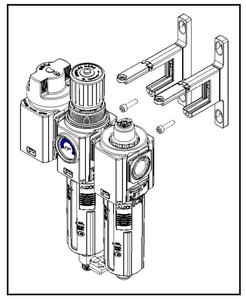


Dimensions Table		
	82 Series	**84 Series**
A	42	47
B	81	96
C	4.7	5.2
D	50.9 TYP	70 TYP
E	38	50

* Dimensions do not apply to smooth start dump valves.

Quickclamp

Quickclamp connection



Accessories—84 Series	
Part No.	**Description**
840014-51KIT	Connecting clamp
840014-52KIT	Connecting clamp and bracket

Accessories—82 Series	
Part No.	**Description**
820014-51KIT	Connecting clamp
820014-52KIT	Connecting clamp and bracket

13911-C01