NORGREN

# Excelon® Plus

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

CN – 欲了解更多信息和其他言版本，请二或登:
DE – Für weiterführende Informationen diesen QR-Code scannen oder siehe:
ES – Para más información y otros idiomas, escanear este código QR o visitar:
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**www.norgren.com/excelon-plus**

**Excelon® Plus TR series:**
**Part numbers preceded by the letter L are validated for Rail Applications.**
**Part numbers preceded by the letter H have a broader application temperature range for industrial application**

L variants (Rail Approved) -40° to +80 °(-40F ° to 176F °)
H variants (Extreme Temp.) -40° to +80 °(-40F ° to 176F °)
unless otherwise stated on the product label.

**For Technical Data see the data sheets on www.norgren.com**

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

* See overleaf for ATEX declaration of conformity. ATEX does not apply to B84, R84 and Q84 units with Integrated Electronic Pressure Switches.

## 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 electricxal 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. See separate product specific manual for Integrated Electronic Pressure Switch installation, operation and repair.
8. Before using these products with fluids other than air, non-industrial applications or for life-support systems, consult Norgren.

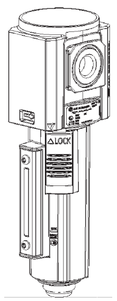
## GENERAL INSTALLATION

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:
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.

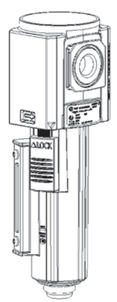
GI-7.2 Gauge port:
- Install a pressure gauge or plug the gauge port if no gauge is present.

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.

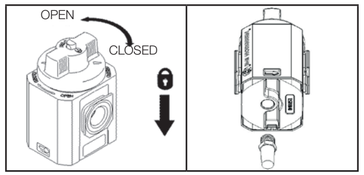



Bowl in unlocked postition (clip locking tab visible above LOCK). Bowl Bayonet tabs are in body. Turn bowl toward bowl alignment arrow on cover. Bowl will be in postion when lock clip snaps into body.

# Shut-off Valve

## Tamper Proofing

**Shut-off Valve**




**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

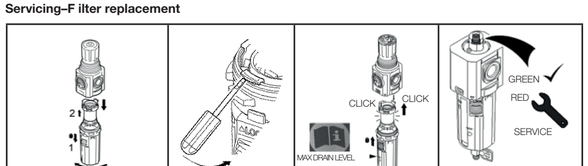
**Install filters:**

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

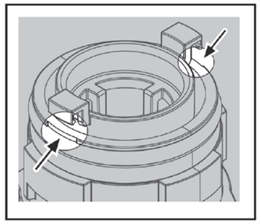
**SERVICING**

Service kits for each series are listed in table 1 below.
See illustrations below. Note, any replacement O-ring seals should be lubricated.
See Norgren website for recommended lubricants. Use QR code or web link.

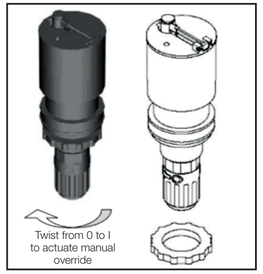
**Servicing–F ilter replacement**




| 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 |
|---|---|---|---|

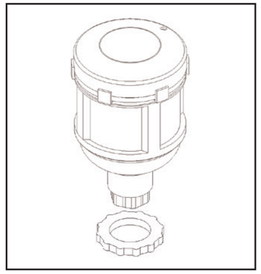


The 82 Series filter installation requires that the filter tabs align with the recessed area in the top o-ring retention diameter.




**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.



**Auto-Drain Version L-variant (Rail approved) and H-variant( Extreme Temp.)**

Exhaust Valve pin (inside bottom connector) can be pushed from below to override and lift the float 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

**Spare Parts: Bowls**

| Standard 82 Series | Standard 84 Series | Description |
|---|---|---|
| 820025-51KIT | 840025-51KIT | Guarded Poly bowl with auto drain 6mm PIF |
| 820025-50KIT | 840025-50KIT | Guarded Poly bowl with manual drain |
| 820003-51KIT | 840003-51KIT | Metal bowl S/Glass with auto drain 6mm PIF |
| 820003-51KIT | 840003-51KIT | Metal bowl S/Glass with manual drain |
| 820025-53KIT | 840025-53KIT | Guarded Poly bowl with auto drain 1/4"PIF |
| 820003-56KIT | 840003-56KIT | Metal bowl S/Glass with auto drain 1/4" PIF |

For replacement bowls required for part numbers preceded by a H or L please contact the factory

**Replacement Elements for Filters & Filter Regualtors**

| | 82 Series | 84 Series | L Version (Rail Approved) | H Version (Extreme Temp.) |
|---|---|---|---|---|
| 5 µm element | 820038-50KIT | 840038-50KIT | L840038-50KIT | H840038-50KIT |
| 40 µm element | 820038-51KIT | 840038-51KIT | L840038-51KIT | H840038-51KIT |
| Coalescing cartridge element | 820044-50KIT | 840044-50KIT | L840044-50KIT | H840044-50KIT |
| Vapour removal cartridge element | 820041-50KIT | 840041-50KIT | L840041-50KIT | H840041-50KIT |

**Replacement drain types for Filters & Filter Regualtors**

| Series | Automatic Drain | Manual drain |
|---|---|---|
| Standard (82 & 84 Series) | 6000-** | N/A |
| Preceded by 'L' | 3000-40 | 684-85 |
| Preceded by 'H' | 3000-40 | 684-85 |

** = 61 for 1/4” OD PIF
** = 60 for 6mm OD PIF
All Varinats preceded by 'L' are validated for use in rail applications.
Shock & Vibration tested to EN61373, Cat. I A&B and Cat. II

# Regulator & Filter/Regulator

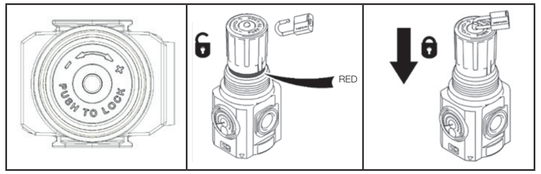
**Install regulators:**

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**

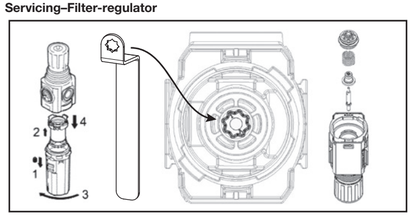
R-5.1 Unscrew bottom plug using socket as shown and remove spring and valve
R-5.2 Replace all damaged seal components with the corresponding component from the elastomer kit.
R-5.3 Valve body is separated from valve stem by pushing the valve body end against a hard surface to pop the stem lose and then 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)

**TABLE 1**

| Series | Temperature Range | Service Kit 82 Series | Service Kit 84 Series |
|---|---|---|---|
| Standard (Transparent Bowl) | -10°C to +60°C | FRLB82-KIT | FRLB84-KIT |
| Standard (Metal Bowl) | -20°C to +65°C | | |
| Preceded by 'L' (Rail approved) | -40°C to +80°C * | | L-FRLB84-KIT |
| Preceded by 'H'(Extreme Temp.) | -40°C to +80°C ** | | L-FRLB84-KIT |
| Preceded by 'H'(Extreme Temp.) Non-Relieving | -40°C to +80°C ** | | H-FRLB84NR-KIT |

Note: Service Kits contain soft seals only , for replecement elements see separate table
* Excludes all Lubricators(L), all Shut-off Valves (T), 17bar spring not currently offered for B&R units
**HL84 =,-34°C to +65 and the HT84°C = ,-20°C to +80°C
All Variants preceded by 'H' have a broader operating temperature range than the standard series

**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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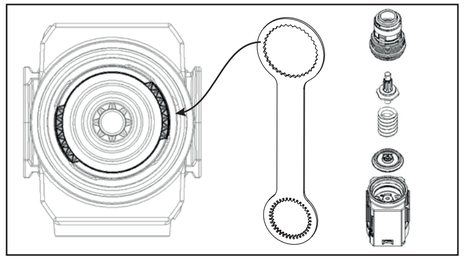
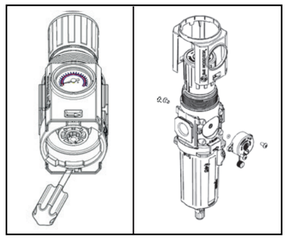
## Changing Diaphragm–Filter/regulator and Regulator



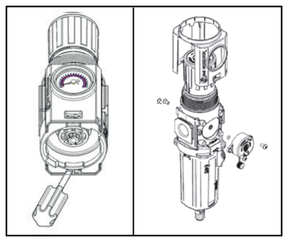
R-7.1 Pull off the knob
R-7.2 Use the spanner from the FRLB kit to remove the bonnet
R-7.3 Remove the diaphragm, adjusting screw, and spring
R-7.4 Pull apart the diaphragm seal and spring rest
R-7.5 Push the new seal completely onto the springrest, the springrest will fit into the ribs of the seal and 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



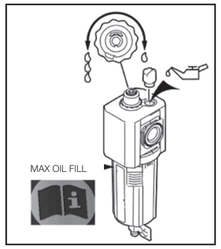
R-9.1 Use a flat-blade screwdriver to push out both cover tabs and remove the cover.
R-9.2 Remove the plug from the back side of the unit.
R-9.3 Remove the gauge screws and gauge.
R-9.4 Install the gauge on the side of unit that the plug was installed.
R-9.5 Torque the gauge screws to:
3.0-6.0 IN-LB (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.

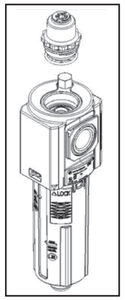
| Replacemenly Parts-Guages and Guage Adaptors | | | | |
|---|---|---|---|---|
| **Part No.** | **82 Series** | **84 series** | **L Version (Rail Approved)** | **H Version (Extreme Temp.)** |
| Intergrated gauge (10 bar) kit | 820073-01KIT | 840073-01KIT | L840073-01KIT | H840073-01KIT |
| Intergrated gauge (20 bar) kit | 820073-02KIT | 840073-02KIT | L840073-02KIT | H840073-02KIT |
| Intergrated gauge (4 bar) kit | 820073-03KIT | | | |
| Gauge adaptor kit 1/8" NPT | 820100-01KIT | 840100-01KIT | L840100-01KIT | H840100-01KIT |
| Gauge adaptor kit Rc1/8 | 820100-02KIT | 840100-02KIT | L840100-02KIT | H840100-02KIT |

Attention: Using integrated gauage in connecting with L- and H-version, the temperaturerange of the units change to -20°C to +65°C

# 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

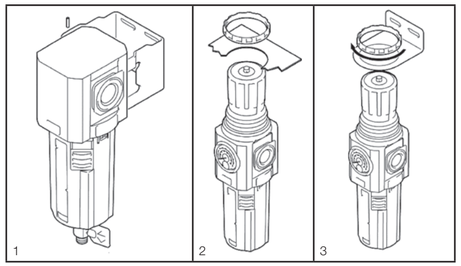
| Spares—82/84 Series | |
|---|---|
| **Part No.** | **Description** |
| 840055-50KIT | Micro-fog Sight dome kit |
| 840055-51KIT | Oil-fog Sight dome kit |

| 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: Brackets | | | | |
|---|---|---|---|---|
| **Part No.** | **82 Series** | **84 series** | **L Version (Rail Approved)** | **H Version (Extreme Temp.)** |
| Mounting Bracket | 820024-50KIT (1) | 840024-50KIT (1) | | 840024-50KIT (1) |
| Panel Nut | 820028-89KIT (2) | 840028-89KIT (2) | | 840028-89KIT (2) |
| Neck mount bracket and panel nut | 820068-51KIT (3) | 840068-51KIT (3) | | 840068-51KIT (3) |

### 82 Series

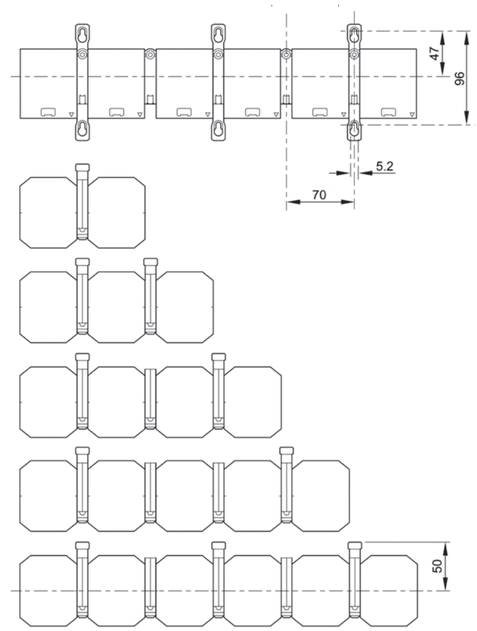
**Recommended Panel Hole Size:**
ø1.427" to 1.447" (36.25 to 36.75 mm)
**Panel Thickness:**
up to 0.16" (4 mm)

### 84 Series

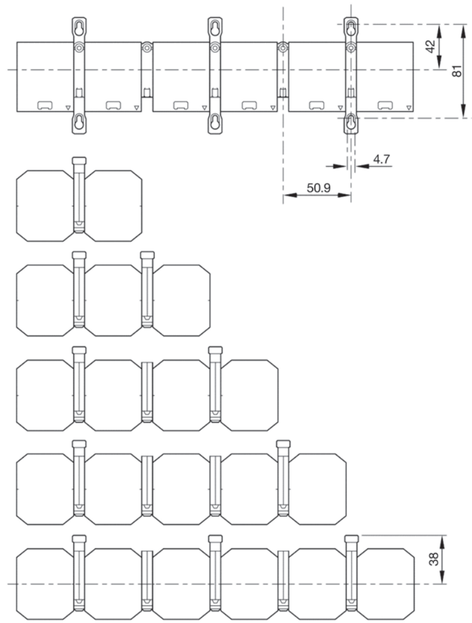
**Recommended Panel Hole Size:**
ø2.165" to 2.245" (55 to 57 mm)
**Panel Thickness:**
0.06" to 0.25" (2 to 6 mm)

# Recommended Quickclamp Locations

**84 Series**



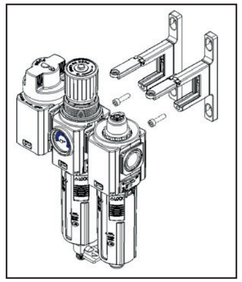

**82 Series**




* Dimensions do not apply to smooth start dump valves.

# Quickclamp

## Quickclamp connection



| Accessories: Quickclamp | | | | |
|---|---|---|---|---|
| **Part No.** | **82 Series** | **84 series** | **L Version (Rail Approved)** | **H Version (Extreme Temp.)** |
| Connecting clamp | 820014-51KIT | 840014-51KIT | L840014-51KIT | H840014-51KIT |
| Connecting clamp c/w Bracket | 820014-52KIT | 840014-52KIT | L840014-52KIT | H840014-52KIT |

**19.5-15.9 IN-LB (1.8-2.2 Nm) 3mm Hex Ddrive**

**EXCLUDED FROM THE ATEX STATEMENT BELOW ARE ALL P82/P84 VARIANTS. ADDITIONALLY ALL B84 OR R84 PART NUMBERS ENDING IN 'E' ALONG WITH THE Q84-*** AS ALL THESE VARIANTS ARE FITTED WITH THE INTEGRATED ELECTRONIC PRESSURE SENSOR.**

**ATEX Declaration of conformity**

**EU Declaration of conformity (DoC) 2014/34/EU**
**Product:** Excelon® Plus T84, F84, R84, B84, T82, F82, R82, B82, LF84G, LF84C, LF84V, LB84G,LR84G HF84G, HF84C, HF84V, HB84G,HR84G,HT84G

**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 above 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 (Micro-fog and Oil-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
2020