Air Preparation
Regulators, Pressure Regulators, Lubricators and Accessories

Keeping the World Flowing
Rotork is the global market leader in valve automation and flow control. Our products and services are helping organisations around the world to improve efficiency, assure safety and protect the environment.

We strive always for technical excellence, innovation and the highest quality standards in everything we do. As a result, our people and products remain at the forefront of flow control technology.

Uncompromising reliability is a feature of our entire product range, from our flagship electric actuator range through to our pneumatic, hydraulic and electro-hydraulic actuators, as well as instruments, gearboxes and valve accessories.

Rotork is committed to providing first class support to each client throughout the whole life of their plant, from initial site surveys to installation, maintenance, audits and repair. From our network of national and international offices, our engineers work around the clock to maintain our position of trust.

Rotork. Keeping the world flowing.
Introduction

As a specialist manufacturer of stainless steel large flow air service equipment we offer comprehensive, purpose designed, engineered and manufactured solutions for filtration and regulation of compressed air and gases for the actuation industries.

Certification Options Available

[ATEX EAC]
3550 Series air service units — ¼” to ¾” Filter Regulator

A 316L stainless steel combined unit for filtration and regulation of compressed air and gases for the actuation industries.

Features and Benefits
- Specifically designed for severe environments
- Non or self-relieving
- 40 micron element stainless steel 316 as standard, 5 micron option available
- 316L stainless steel construction
- Regulated pressure range from 0.50 to 12.0 bar depending on model selection
- Large flow characteristics
- NACE: standard temperature and manual drain only

Media & Ambient Temperature Range
- Standard temperature
  -20 to + 80 °C (-4 to +176 °F)
- Low temperature version
  -50 to +80 °C (-58 to +176 °F)
Note: When product is ordered as ATEX ambient temperature is limited to +40 °C (104 °F) Ex II 2G c T6.

Maximum Relief Flow
- At 2 bar (29 psi) secondary pressure
  0.5 cc/sec (0.03 cu in/sec)

Flow
At 10 bar (145 psi) supply pressure, 6 bar (87 psi) secondary pressure, 1 bar (14.5 psi) pressure drop.
- ¼” - 3,720 l/min (130 SCFM)
- ½” and ¾” - 6,000 l/min (212 SCFM)

Maximum Inlet Pressure
- Manual drain - 20 bar (290 psi)
- Automatic drain - 17 bar (247 psi)

Ports NPT
(BSP option available - consult factory for part codes)
- ¼”, ½”, ¾”

Gauge Ports
- ¼” NPT
- ¼” NPT (option available - suffix product code with 'X')

Relief Vent Port
- ¼” NPT (fitted with breather)
  Note: Not fitted on low temperature option

Bowl Capacity
- 21 cc (1.28 cu ins)

Accessories Available
- Mounting brackets
- Stainless steel pressure gauge
- Hand wheel

See page 13-14 for ordering details

Operating Media
- Air, inert gas and sweet (natural) gas
- Sour gas (NACE) standard temperature and manual drain only
- Suitable for water and other compatible liquids - manual drain only, consult Rotork Midland for details

Note: To prevent freezing of the condensate within the product, the media dew point must be at least 10 °C below the lowest ambient temperature the product will be exposed to.

Construction Materials
- Body/bonnet/bowl: 316L stainless steel
- Internals: 316L stainless steel and Ryton R-4
  Note: on auto-drain version float is nylon, polyoxymethylene and rubber.
- Element: 40 micron 316 stainless steel
  (5 micron option available - suffix product code with '05')
- Seals: Standard option - Fluoroelastomer
  Low temperature option - EPDM¹ and Fluorosilicone

¹ The use of lubrication upstream of the product is not recommended for low temperature applications
### 3550 Series air service units – ¼” to ¾” Filter Regulators - Engineering drawings (manual drain)

<table>
<thead>
<tr>
<th>Size</th>
<th>Filter</th>
<th>Regulated Pressure bar (psi)</th>
<th>Max Inlet Pressure bar</th>
<th>A</th>
<th>B</th>
<th>Weight</th>
<th>Cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>¼”</td>
<td>Manual Drain</td>
<td>0.50 to 2.0 (7.2 to 29)</td>
<td>20</td>
<td>24</td>
<td>M4</td>
<td>1.75</td>
<td>2.4</td>
</tr>
<tr>
<td>½”</td>
<td>Manual Drain</td>
<td>0.50 to 4.0 (7.2 to 58)</td>
<td>20</td>
<td>28</td>
<td>M5</td>
<td>1.75</td>
<td>4.4</td>
</tr>
<tr>
<td>¾”</td>
<td>Manual Drain</td>
<td>0.50 to 8.0 (7.2 to 116)</td>
<td>20</td>
<td>-</td>
<td>-</td>
<td>1.95</td>
<td>5.0</td>
</tr>
<tr>
<td>¼”</td>
<td>Manual Drain</td>
<td>0.50 to 12.0 (7.2 to 174)</td>
<td>20</td>
<td>24</td>
<td>M4</td>
<td>1.75</td>
<td>2.4</td>
</tr>
<tr>
<td>½”</td>
<td>Manual Drain</td>
<td></td>
<td></td>
<td>28</td>
<td>M5</td>
<td>1.75</td>
<td>4.4</td>
</tr>
<tr>
<td>¾”</td>
<td>Manual Drain</td>
<td></td>
<td></td>
<td>-</td>
<td>-</td>
<td>1.95</td>
<td>5.0</td>
</tr>
</tbody>
</table>

- **Manual Drain**: Available only on ¼” and ½” 2 line ports
- **Self-Relieving with manual drain**: 4 - 8 x 8 deep (both ends)
- **Manual Drain**: 0.50 to 8.0 (7.2 to 116)
- **Max Inlet Pressure bar**: 20
- **Regulated Pressure bar (psi)**: 0.50 to 2.0 (7.2 to 29)
- **Regulated Pressure bar (psi)**: 0.50 to 4.0 (7.2 to 58)
- **Regulated Pressure bar (psi)**: 0.50 to 8.0 (7.2 to 116)
- **Regulated Pressure bar (psi)**: 0.50 to 12.0 (7.2 to 174)
- **Regulated Pressure bar (psi)**: 0.50 to 12.0 (7.2 to 174)
- **Regulated Pressure bar (psi)**: 0.50 to 12.0 (7.2 to 174)
## 3550 Series air service units — ¼” to ¾” Filter Regulators - Engineering Drawings (auto drain)

### Specifications

<table>
<thead>
<tr>
<th>Size</th>
<th>Filter</th>
<th>Regulated Pressure bar (psi)</th>
<th>Max Inlet Pressure bar</th>
<th>A</th>
<th>B</th>
<th>Weight kg</th>
<th>Cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>¼”</td>
<td>Auto Drain</td>
<td>0.50 to 2.0 (7.2 to 29)</td>
<td>17</td>
<td>24</td>
<td>M4</td>
<td>2.05</td>
<td>2.4</td>
</tr>
<tr>
<td>½”</td>
<td>Auto Drain</td>
<td>0.50 to 4.0 (7.2 to 58)</td>
<td>17</td>
<td>28</td>
<td>M5</td>
<td>2.05</td>
<td>4.4</td>
</tr>
<tr>
<td>¾”</td>
<td>Auto Drain</td>
<td>0.50 to 8.0 (7.2 to 116)</td>
<td>17</td>
<td>28</td>
<td>M5</td>
<td>2.05</td>
<td>4.4</td>
</tr>
<tr>
<td>¼”</td>
<td>Auto Drain</td>
<td>0.50 to 12.0 (7.2 to 174)</td>
<td>17</td>
<td>28</td>
<td>M5</td>
<td>2.05</td>
<td>4.4</td>
</tr>
</tbody>
</table>

- **Relief Port**: Available only on ¼” and ½”
- **Gauge Port (Front & Rear)**
- **2 line ports**
- **¼” NPT auto-drain port**
- **Rear gauge port plugged**
- **Self-Relieving with automatic drain**

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**Notes**

- 3550 Series air service units – ¼” to ¾” Filter Regulators
- Engineering Drawings (auto drain)

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**Dimensions**

- Relief Port: 67 (¼” to ½” versions)
- 117 (¾” Version)
- Rear gauge port plugged: 2.25
- 67: 123.5
- 117: 164.5
- 17: 57
## 3550 Series air service units – ¼” to ¾” Filter Regulator - Flow Characteristics

### 3550 Series Coding Chart - Filter Regulators

<table>
<thead>
<tr>
<th>Size</th>
<th>Type¹</th>
<th>Material</th>
<th>Seals °C (°F)</th>
<th>Regulated Pressure bar (psi)</th>
<th>Port Style</th>
<th>Revision</th>
<th>Filter Element (40 micron standard)</th>
<th>Gauge Port</th>
<th>Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>FRM</td>
<td>S Stainless</td>
<td>V Standard -20 (-4)</td>
<td>02 2 (29)</td>
<td>1  BSP</td>
<td>A</td>
<td>05 5 micron</td>
<td>X</td>
<td>¼” NPT Gauge Port</td>
</tr>
<tr>
<td>4</td>
<td>FRA²</td>
<td>S Stainless</td>
<td>F² Low Temp -50 (-58)</td>
<td>04 4 (58)</td>
<td>2  NPT</td>
<td></td>
<td>w/o option</td>
<td></td>
<td>w/o option</td>
</tr>
<tr>
<td>6</td>
<td>FRN</td>
<td>S Stainless</td>
<td>F² Low Temp -50 (-58)</td>
<td>08 8 (116)</td>
<td>12 12 (174)</td>
<td></td>
<td>w/o option</td>
<td></td>
<td>w/o option</td>
</tr>
</tbody>
</table>

¹ NACE not available in auto-drain or low temperature options

² Low temperature option not available in auto-drain

### Additional Options

- **Flow - SCFM**
- **Flow - l/sec**

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Keeping the World Flowing
3550 Series air service units – ⅛” to ⅜” Filters

A 316L stainless steel unit for filtration of compressed air and gases for the actuation industries.

Features and Benefits
- Specifically designed for severe environments
- 40 micron element stainless steel 316 as standard, 5 micron option available
- 316L stainless steel construction
- Large flow characteristics
- NACE: standard temperature and manual drain only

Media & Ambient Temperature Range
- Standard temperature
  -20 to + 80 °C (-4 to +176 °F)
- Low temperature version
  -50 to +80 °C (-58 to +176 °F)
Note: When product is ordered as ATEX ambient temperature is limited to +40 °C (104 °F) Ex II 2G c T6.

Maximum Inlet Pressure
- Manual drain - 20 bar (290 psi)
- Automatic drain - 17 bar (247 psi)

Flow
At 7 bar (102 psi) supply pressure, 0.35 bar (5 psi) pressure drop.
- ⅛” - 1,380 l/min (49 SCFM)
- ⅜” and ⅜” - 2,940 l/min (104 SCFM)

Ports NPT
(BSP option available - consult factory for part codes)
- ⅛”, ⅜”, ⅜”

Automatic Drain Port
- ⅛” NPT

Bowl Capacity
- 21 cc (1.28 cu ins)

Accessories Available
- Mounting brackets

See page 13 for ordering details

Certification Options Available

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Operating Media
- Air, inert gas and sweet (natural) gas
- Sour gas (NACE) standard temperature and manual drain only
- Suitable for water and other compatible liquids - manual drain only, consult Rotork Midland for details

Note: To prevent freezing of the condensate within the product, the media dew point must be at least 10°C below the lowest ambient temperature the product will be exposed to.

Construction Materials
- Body/bonnet/bowl and internals:
  316L stainless steel and Ryton R-4
  Note: on auto-drain version float is nylon, polyoxymethylene and rubber.
- Element: 40 micron 316 stainless steel (5 micron option available - suffix product code with ‘05’)
- Seals: Standard option - Fluoroelastomer
  Low temperature option - EPDM and Fluorosilicone

The use of lubrication upstream of the product is not recommended for low temperature applications.

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Air Flow for ¼” and ½” Filter

![Air Flow Graph](image_url)
### 3550 Series air service units – ¼” to ¾” Filters - Engineering Drawings (manual drain)

#### Table of Specifications

<table>
<thead>
<tr>
<th>Size</th>
<th>Filter</th>
<th>Max Inlet Pressure bar</th>
<th>A</th>
<th>B</th>
<th>Weight (kg)</th>
<th>Cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>¼”</td>
<td>Manual Drain</td>
<td>20</td>
<td>24</td>
<td>M4</td>
<td>1.3</td>
<td>2.4</td>
</tr>
<tr>
<td>½”</td>
<td>Manual Drain</td>
<td></td>
<td>28</td>
<td>M5</td>
<td>1.3</td>
<td>4.4</td>
</tr>
<tr>
<td>¾”</td>
<td>Manual Drain</td>
<td></td>
<td>-</td>
<td>-</td>
<td>1.5</td>
<td>5.0</td>
</tr>
</tbody>
</table>

### Diagram Notes
- **Manual Drain**
- 4 - B x 8 deep (both ends)
- 2 line ports
- Filter with manual drain
- Dimensions: 67 (¼” to ½” versions), 117 (¾” Version)
### 3550 Series air service units – ¼” to ¾” Filters - Engineering Drawings (auto drain)

#### 3550 Series Coding Chart - Filters

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Material</th>
<th>Seals °C (°F)</th>
<th>Max Inlet Pressure bar (psi)</th>
<th>Port Style</th>
<th>Revision</th>
<th>Filter Element (micron standard)</th>
<th>Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>¼” FLM Manual Drain</td>
<td>S Stainless V Standard -20 (-4)</td>
<td>17 17 (247) (FLA only)</td>
<td>1 BSP A</td>
<td>05</td>
<td>5 micron</td>
<td>IATEX II 2G E Ex T6</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>½” FLA¹ Auto Drain</td>
<td>F Low Temp -50 (-58)</td>
<td>20 20 (290) (FLA only)</td>
<td>2 NPT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>¾”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 NACE not available in auto-drain or low temperature options
2 Low temperature option not available in auto-drain
3550 Series air service units – ¼” to ¾” Pressure Regulators

A 316L stainless steel unit for the pressure regulation of compressed air and gases for the actuation industries.

Features and Benefits
- Specifically designed for severe environments
- Non or self-relieving
- 316L stainless steel construction
- Large flow characteristics
- NACE: standard temperature only

Media & Ambient Temperature Range
- Standard temperature
  -20 to + 80 °C (-4 to +176 °F)
- Low temperature version
  -50 to +80 °C (-58 to +176 °F)

Note: When product is ordered as ATEX ambient temperature is limited to +40 °C (104 °F) Ex II 2G c T6.

Maximum Relief Flow
- At 2 bar (29 psi) secondary pressure
  0.5 cc/sec (0.03 cu in/sec)

Flow
At 10 bar (145 psi) inlet pressure, 6 bar (87 psi) secondary pressure with 1 bar (14.5 psi) pressure drop.
- ¼” - 3,780 l/min (133 SCFM)
- ½” and ¾” - 6,180 l/min (218 SCFM)

Ports NPT (BSP option available - consult factory for part codes)
- ¼”", ½”", ¾”

Gauge Ports
- ¼” NPT
- ¼” NPT (option available - suffix product code with ‘X’)

Relief Vent Port
- ¼” NPT (fitted with breather)
  Note: Not fitted on low temperature option

Accessories Available
- Mounting brackets
- Stainless steel pressure gauge
- Hand wheel

See page 13-14 for ordering details

Certification Options Available

Operating Media
- Air, inert gas and sweet (natural) gas
- Sour gas (NACE) standard temperature only
- Suitable for water and other compatible liquids, consult Rotork Midland for detail

Note: To prevent freezing of the condensate within the product, the media dew point must be at least 10 °C below the lowest ambient temperature the product will be exposed to.

Construction Materials
- Body/bonnet/bowl and internals: 316L stainless steel and Ryton R-4
- Seals: Standard option - Fluoroelastomer
  Low temperature option - EPDM and Fluorosilicone

1 The use of lubrication upstream of the product is not recommended for low temperature applications.
3550 Series air service units — ¼” to ½” Pressure Regulators - Engineering Drawings

<table>
<thead>
<tr>
<th>Size</th>
<th>Regulated Pressure bar (psi)</th>
<th>Max Inlet Pressure bar (bar)</th>
<th>A</th>
<th>B</th>
<th>Weight kg</th>
<th>Cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>¼”</td>
<td>0.50 to 2.0 (7.2 to 29)</td>
<td>20</td>
<td>24</td>
<td>M4</td>
<td>1.6</td>
<td>2.4</td>
</tr>
<tr>
<td>½”</td>
<td>0.50 to 4.0 (7.2 to 58)</td>
<td>20</td>
<td>24</td>
<td>M4</td>
<td>1.6</td>
<td>2.4</td>
</tr>
<tr>
<td>¾”</td>
<td>0.50 to 8.0 (7.2 to 116)</td>
<td>20</td>
<td>24</td>
<td>M4</td>
<td>1.6</td>
<td>2.4</td>
</tr>
<tr>
<td>¼”</td>
<td>0.50 to 12.0 (7.2 to 174)</td>
<td>20</td>
<td>24</td>
<td>M4</td>
<td>1.6</td>
<td>2.4</td>
</tr>
</tbody>
</table>

3550 Series Coding Chart - Pressure Regulators

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Material</th>
<th>Seals °C (°F)</th>
<th>Regulated Pressure bar (psi)</th>
<th>Port Style</th>
<th>Revision</th>
<th>Gauge Port</th>
<th>Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>PRV</td>
<td>S</td>
<td>V Standard -20 (-4)</td>
<td>02 2 (29)</td>
<td>1 BP</td>
<td>A</td>
<td>¼&quot; NPT</td>
<td>ATEX II 2 G &amp; T6</td>
</tr>
<tr>
<td>4</td>
<td>PRN</td>
<td>S</td>
<td>V Low Temp -50 (-58)</td>
<td>04 4 (58)</td>
<td>2 NPT</td>
<td>A</td>
<td>w/o option</td>
<td>w/o option</td>
</tr>
<tr>
<td>6</td>
<td>PRN</td>
<td>S</td>
<td>F</td>
<td>08 8 (116)</td>
<td>A</td>
<td>A</td>
<td>w/o option</td>
<td>w/o option</td>
</tr>
</tbody>
</table>

1 NACE not available in low-temperature options
3550 Series air service units – Accessories for ¼" to ¾" units - supplied separately

Plastic handwheel kit

Stud mounting kit

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSF2110-75</td>
<td>¼&quot; units (Short)</td>
</tr>
<tr>
<td>SSF2110-7</td>
<td>¼&quot; units (Long)</td>
</tr>
<tr>
<td>SSF4110-7</td>
<td>½&quot;, ¾&quot; units</td>
</tr>
</tbody>
</table>

Component material 316 stainless steel. Brackets are supplied complete with fasteners.
Note: Part numbers above are for single items
3550 Series air service units – Accessories for ¼" to ¾" units - supplied separately

Pressure gauge SS-316L - Glycerine filled

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Size mm</th>
<th>Regulated Pressure bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSF153N/2GLY</td>
<td>50</td>
<td>0 to 2</td>
</tr>
<tr>
<td>SSF153N/4GLY</td>
<td>50</td>
<td>0 to 4</td>
</tr>
<tr>
<td>SSF153N/11GLY</td>
<td>50</td>
<td>0 to 11</td>
</tr>
</tbody>
</table>

Please consult factory for low temperature version if required.

Tamperproof cap kit

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSAS23/22</td>
<td>Kit comprises of 1 pressure adjusting screw and 1 tamperproof cap.</td>
</tr>
<tr>
<td></td>
<td>All material 316 stainless steel</td>
</tr>
</tbody>
</table>

Wire Lock Hole
A 316L stainless steel combined unit for filtration and regulation of compressed air and gases for the actuation industries.

**Features and Benefits**
- Specifically designed for severe environments
- 40 micron element as standard, 5 micron option available
- Non or self-relieving
- 316L stainless steel construction
- Large flow characteristics
- Bowl capacity window

**Media & Ambient Temperature Range**
- Standard temperature: -20 to + 80 °C (-4 to +176 °F)
- Low temperature version: -50 to +80 °C (-58 to +176 °F)

Note: When product is ordered as /ATEX ambient temperature is limited to +40 °C (104 °F) Ex II 2G c T6.

**Maximum Relief Flow**
- At 2 bar (29 psi) secondary pressure, 0.5 cc/sec (0.03 cu in/sec)
- At 7 bar (102 psi) supply pressure, 6 bar (87 psi) secondary pressure, 1 bar (14.5 psi) pressure drop:
  - 7,800 l/min (274 SCFM)

**Flow**
- Manual drain - 20 bar (290 psi)
- Automatic drain - 17 bar (247 psi)

**Ports NPT**
- (BSP option available - consult factory for part codes)
  - 3/4", 1"

**Gauge Ports**
- 1/8" NPT

**Relief Vent Port**
- 1/8" NPT (fitted with breather)
  - Note: Not fitted on low temperature option

**Bowl Capacity**
- 260 cc (15.87 cu ins)

**Accessories Available**
- Mounting brackets
- Stainless steel pressure gauge

See page 26-28 for ordering details

**Operating Media**
- Gases - air, inert gas and sweet (natural) gases
  - Note: To prevent freezing of the condensate within the product, the media dew point must be at least 10 °C below the lowest ambient temperature the product will be exposed to.

**Construction Materials**
- Body/bonnet/bowl and internals: 316L stainless steel
  - Note: on auto-drain version float is nylon, polyoxymethylene and rubber.
- Element: 40 micron sintered polypropylene (5 micron option available - suffix product code with '05')
- Seals: Standard option - Fluoroelastomer
  - Low temperature option - EPDM and Fluorosilicone

1 The use of lubrication upstream of the product is not recommended for low temperature applications.
### 3500 Series air service units – ¾” to 1” Filter Regulators - Engineering Drawings (manual drain)

#### Table of Specifications

<table>
<thead>
<tr>
<th>Size</th>
<th>Filter</th>
<th>Regulated Pressure bar (psi)</th>
<th>Max Inlet Pressure bar</th>
<th>Weight kg</th>
<th>Cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>¾&quot;</td>
<td>Manual Drain</td>
<td>0.50 to 2.0 (7.2 to 29)</td>
<td>20</td>
<td>5.75</td>
<td>6.5</td>
</tr>
<tr>
<td>1&quot;</td>
<td>Manual Drain</td>
<td>0.50 to 4.0 (7.2 to 58)</td>
<td>20</td>
<td>5.75</td>
<td>8.8</td>
</tr>
<tr>
<td>¾&quot;</td>
<td>Manual Drain</td>
<td>0.50 to 7.0 (7.2 to 102)</td>
<td>20</td>
<td>5.75</td>
<td>6.5</td>
</tr>
<tr>
<td>1&quot;</td>
<td>Manual Drain</td>
<td>0.50 to 10.0 (7.2 to 145)</td>
<td>20</td>
<td>5.75</td>
<td>8.8</td>
</tr>
</tbody>
</table>

- **Self-Relieving with manual drain**
- **Relief Port**
- **Gauge Port (Front & Rear)**
- **2 - M8 x 12 deep (Front & Rear)**
- **Optional Mounting Bracket**
- **2 line ports**
- **Manual Drain**
- **2-O 8.5 Mounting Holes**
- **2 line ports**
- **120° in 2 line ports**
- **2-M8 x 12 deep (Front & Rear)**
- **3500 Series air service units – ¾” to 1” Filter Regulators - Engineering Drawings (manual drain)**
- **Size**
- **Filter**
- **Regulated Pressure bar (psi)**
- **Max Inlet Pressure bar**
- **Weight kg**
- **Cv**
3500 Series air service units – ¾” to 1” Filter Regulators - Engineering Drawings (auto drain)

### Size Table

<table>
<thead>
<tr>
<th>Size</th>
<th>Filter</th>
<th>Regulated Pressure bar (psi)</th>
<th>Max Inlet Pressure bar</th>
<th>Weight kg</th>
<th>Cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>¾”</td>
<td>Auto Drain</td>
<td>0.50 to 2.0 (7.2 to 29)</td>
<td>17</td>
<td>5.75</td>
<td>6.5</td>
</tr>
<tr>
<td>1”</td>
<td>Auto Drain</td>
<td>0.50 to 4.0 (7.2 to 58)</td>
<td>17</td>
<td>5.75</td>
<td>8.8</td>
</tr>
<tr>
<td>¾”</td>
<td>Auto Drain</td>
<td>0.50 to 7.0 (7.2 to 102)</td>
<td>17</td>
<td>5.75</td>
<td>8.8</td>
</tr>
<tr>
<td>1”</td>
<td>Auto Drain</td>
<td>0.50 to 10.0 (7.2 to 145)</td>
<td>17</td>
<td>5.75</td>
<td>8.8</td>
</tr>
</tbody>
</table>

### 3500 Series Coding Chart - Filter Regulators

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Material</th>
<th>Seals °C (°F)</th>
<th>Regulated Pressure bar (psi)</th>
<th>Port Style</th>
<th>Filter Element (60 micron standard)</th>
<th>Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>FRM</td>
<td>Manual Drain</td>
<td>S Stainless</td>
<td>V Standard -20 (-4)</td>
<td>02 2 (29)</td>
<td>1 BSP</td>
<td>05 5 micron</td>
</tr>
<tr>
<td>8</td>
<td>FRA</td>
<td>Auto Drain</td>
<td>L1 Low Temp -50 (-58)</td>
<td>04 4 (58)</td>
<td>2 NPT</td>
<td>w/o option</td>
<td>w/o option</td>
</tr>
<tr>
<td></td>
<td>FRN</td>
<td>Manual Drain Non Releasing</td>
<td></td>
<td>07 7 (102)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FRB</td>
<td>Auto Drain Non Releasing</td>
<td></td>
<td>10 10 (145)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Options

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Material</th>
<th>Seals °C (°F)</th>
<th>Regulated Pressure bar (psi)</th>
<th>Port Style</th>
<th>Filter Element (60 micron standard)</th>
<th>Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>FRM</td>
<td>Manual Drain</td>
<td>S Stainless</td>
<td>V Standard -20 (-4)</td>
<td>02 2 (29)</td>
<td>1 BSP</td>
<td>05 5 micron</td>
</tr>
<tr>
<td>8</td>
<td>FRA</td>
<td>Auto Drain</td>
<td>L1 Low Temp -50 (-58)</td>
<td>04 4 (58)</td>
<td>2 NPT</td>
<td>w/o option</td>
<td>w/o option</td>
</tr>
<tr>
<td></td>
<td>FRN</td>
<td>Manual Drain Non Releasing</td>
<td></td>
<td>07 7 (102)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FRB</td>
<td>Auto Drain Non Releasing</td>
<td></td>
<td>10 10 (145)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Low temperature version not available in auto-drain

Keeping the World Flowing
3500 Series air service units – ¾” to 1” Filters

A 316L stainless steel unit for filtration of compressed air and gases for the actuation industries.

Features and Benefits
- Specifically designed for severe environments
- 40 micron element as standard,
  5 micron option available
- 316L stainless steel construction
- Large flow characteristics
- Bowl capacity window

Media & Ambient Temperature Range
- Standard temperature
  -20 to + 80 °C (-4 to +176 °F)
- Low temperature version
  -50 to +80 °C (-58 to +176 °F)
Note: When product is ordered as /ATEX ambient temperature is limited to +40 °C (104 °F) Ex II 2G c T6.

Flow
At 7 bar (102 psi) supply pressure, 0.35 bar (5 psi) pressure drop.
- 10,020 l/min (353 SCFM)

Maximum Inlet Pressure
- Manual drain - 20 bar (290 psi)
- Automatic drain - 17 bar (247 psi)
Ports NPT
(BSP option available - consult factory for part codes)
- ¾”, 1”

Bowl Capacity
- 260 cc (15.87 cu ins)

Operating Media
- Gases - air, inert gas and sweet (natural) gas
NOTE: To prevent freezing of the condensate within the product, the media dew point must be at least 10 °C below the lowest ambient temperature the product will be exposed to.

Construction Materials
- Body/bonnet/bowl and internals: 316L stainless steel
  Note: on auto-drain version float is nylon, polyoxymethylene and rubber.
- Element: 40 micron sintered polypropylene
  (5 micron option available - suffix product code with ‘05’)
- Seals: Standard option - Fluoroelastomer
  Low temperature option - EPDM and Fluorosilicone

1 The use of lubrication upstream of the product is not recommended for low temperature applications.

Accessories Available
- Mounting brackets

See page 27 for ordering details

Certification Options Available

ATEX

rotork® instruments
Air Preparation

18
### 3500 Series air service units – ¾" to 1" Filters - Engineering Drawings (manual drain)

<table>
<thead>
<tr>
<th>Size</th>
<th>Filter</th>
<th>Max Inlet Pressure bar</th>
<th>Weight kg</th>
<th>Cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>¾&quot;</td>
<td>Manual Drain</td>
<td>20</td>
<td>3.75</td>
<td>6.5</td>
</tr>
<tr>
<td>1&quot;</td>
<td>Manual Drain</td>
<td></td>
<td>3.75</td>
<td>8.8</td>
</tr>
</tbody>
</table>
### 3500 Series air service units – ⅜” to 1” Filters - Engineering Drawings (auto drain)

#### Table

<table>
<thead>
<tr>
<th>Size</th>
<th>Filter</th>
<th>Max Inlet Pressure bar</th>
<th>Weight kg</th>
<th>Cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>⅜&quot;</td>
<td>Auto Drain</td>
<td>17</td>
<td>3.75</td>
<td>6.5</td>
</tr>
<tr>
<td>1&quot;</td>
<td></td>
<td>17</td>
<td>3.75</td>
<td>8.8</td>
</tr>
</tbody>
</table>
3500 Series air service units – ¾” to 1” Filters - Flow Characteristics

### 3500 Series Coding Chart - Filters

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Material</th>
<th>Seals °C (°F)</th>
<th>Max Inlet Pressure bar (psi)</th>
<th>Port Style</th>
<th>Filter Element (40 micron standard)</th>
<th>Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>¾” FLM Manual Drain</td>
<td>S Stainless</td>
<td>Standard -20 (-4)</td>
<td>17 (247) (FLA only)</td>
<td>1 BSP</td>
<td>05 5 micron</td>
<td>E ATEX II 2G c T6</td>
</tr>
<tr>
<td>8</td>
<td>1” FLA Auto Drain</td>
<td>L Low Temp -50 (-58)</td>
<td>20 (290) (FLM only)</td>
<td>2 NPT</td>
<td>w/o option</td>
<td>w/o option</td>
<td></td>
</tr>
</tbody>
</table>

1 Low temperature version not available in auto-drain

### Flow Standard - Cubic feet/min

![Flow Standard - Cubic feet/min graph]

### Pressure Drop across filter - Barg

![Pressure Drop across filter - Barg graph]

### Pressure Drop across filter - psi

![Pressure Drop across filter - psi graph]
3500 Series air service units — ⅜” to 1” Pressure Regulators

A 316L stainless steel unit for pressure regulation of compressed air and gases for the actuation industries.

Features and Benefits
- Specifically designed for severe environments
- Non or self-relieving
- 316L stainless steel construction
- Large flow characteristics

Media & Ambient Temperature Range
- Standard temperature
  -20 to + 80 °C (-4 to +176 °F)
- Low temperature version
  -50 to +80 °C (-58 to +176 °F)

Note: When product is ordered as ATEX ambient temperature is limited to +40°C (104 °F) Ex II 2G c T6.

Maximum Relief Flow
- At 2 bar (29 psi) secondary pressure
  0.5 cc/sec (0.03 cu in/sec)

Flow
At 7 bar (102 psi) supply pressure, 6 bar (87 psi) secondary pressure, 1 bar (14.5 psi) pressure drop.
- 7,800 l/min (274 SCFM)

Ports NPT
(BSP option available - consult factory for part codes)
- ⅜”, 1”

Gauge Ports
- ⅛” NPT

Relief Vent Port
- ⅛” NPT (fitted with breather)
  Note: Not fitted on low temperature option

Operating Media
- Gases - air, inert gas, sweet (natural) gas

Note: To prevent freezing of the condensate within the product, the media dew point must be at least 10 °C below the lowest ambient temperature the product will be exposed to

Construction Materials
- Body/bonnet/bowl and internals: 316L stainless steel
- Seals: Standard option - Fluoroelastomer
  Low temperature option - EPDM and Fluorosilicone

  1 The use of lubrication upstream of the product is not recommended for low temperature applications

Accessories Available
- Mounting brackets
- Stainless steel pressure gauge
See page 26-28 for ordering details

<table>
<thead>
<tr>
<th>Size</th>
<th>Regulated Pressure bar (psi)</th>
<th>Max Inlet Pressure bar</th>
<th>Weight kg</th>
<th>Cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>⅜”</td>
<td>0.50 to 2.0 (7.2 to 29)</td>
<td>20</td>
<td>5.0</td>
<td>6.5</td>
</tr>
<tr>
<td>1”</td>
<td>0.50 to 4.0 (7.2 to 58)</td>
<td>20</td>
<td>5.0</td>
<td>8.8</td>
</tr>
<tr>
<td>⅛”</td>
<td>0.50 to 7.0 (7.2 to 102)</td>
<td>20</td>
<td>5.0</td>
<td>6.5</td>
</tr>
<tr>
<td>1”</td>
<td>0.50 to 10.0 (7.2 to 145)</td>
<td>20</td>
<td>5.0</td>
<td>8.8</td>
</tr>
</tbody>
</table>
3500 Series coding chart - Pressure Regulators

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Material</th>
<th>Seals °C (°F)</th>
<th>Regulated Pressure bar (psi)</th>
<th>Port Style</th>
<th>Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>PRV</td>
<td>S</td>
<td>V Standard -20 (-4)</td>
<td>02 2 (29)</td>
<td>1  BSP</td>
<td>II 2G c T6</td>
</tr>
<tr>
<td>8</td>
<td>PRN</td>
<td>S</td>
<td>L Low Temp -50 (-58)</td>
<td>04 4 (58)</td>
<td>2  NPT</td>
<td>w/o option</td>
</tr>
</tbody>
</table>

Additional option

- Self-Relieving
- Optional Mounting Bracket
- 2 Line Ports
- 2 - M8 x 12 deep (Front & Rear)
- Relief Port (Front & Rear)
- Gauge Port (Front & Rear)
- 2-Ø 8.5 Mounting Holes

Keeping the World Flowing
3500 Series air service units – ½” Lubricator

A 316L stainless steel unit providing lubrication of compressed air for the actuation industries.

Features and Benefits
- Specifically designed for severe environments
- Accurate drip rate adjustment
- Can be filled under pressure
- Transparent sight feed dome
- 316L stainless steel construction
- Built in flow sensor to automatically adjust lubrication delivery to meet wide air flow demand

Media & Ambient Temperature Range
- -20 to + 80 °C (-4 to +176 °F)

Note: When product is ordered as /ATEX ambient temperature is limited to +40 °C (104 °F) Ex II 2G c T6

Working Pressure
- 17 bar (247 psi)

Ports NPT
(BSP option available - consult factory for part codes)
- ½” NPT

Bowl Capacity
- 380 cc (23.2 cu ins)

Operating Media
- Gases - air, inert gas and sweet (natural) gases

Note: To prevent freezing of the condensate within the product, the media dew point must be at least 10 °C below the lowest ambient temperature the product will be exposed to.

Construction Materials
- Body/bonnet/bowl and internals: stainless steel 316L
- Seals: Nitrile
- Bowl: 316 stainless steel
- Acrylic flow and sight glass
3500 Series air service units – ½” Lubricator - Engineering Drawings

3500 Series Coding Chart - Lubricator

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Material</th>
<th>Seals</th>
<th>Pressure bar (psi)</th>
<th>Port Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>LUB</td>
<td>LUB</td>
<td>S</td>
<td>17 (246)</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>LUB</td>
<td>S</td>
<td>N</td>
<td>17</td>
<td>2</td>
</tr>
</tbody>
</table>

2-Ø 8.5 Mounting Holes

2-½” NPT Line Ports

Function Symbol

Keeping the World Flowing
3500 Series air service units – Accessories for ¾" to 1" units - supplied separately

Pressure gauge SS-316L - Glycerine filled

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Size mm</th>
<th>Regulated Pressure bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSF153N/2GLY</td>
<td>50</td>
<td>0 to 2</td>
</tr>
<tr>
<td>SSF153N/4GLY</td>
<td>50</td>
<td>0 to 4</td>
</tr>
<tr>
<td>SSF153N/11GLY</td>
<td>50</td>
<td>0 to 11</td>
</tr>
</tbody>
</table>

Please consult factory for low temperature version if required.

Tamperproof cap kit

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSAF638/22</td>
<td>Kit comprises of 1 pressure adjusting screw and 1 tamperproof cap. All material stainless steel</td>
</tr>
</tbody>
</table>
3500 Series air service units – Accessories for ¾” to 1” units - supplied separately

Mounting bracket

Filter / Regulator with Mounting Brackets

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Suitable for</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSF8110-7</td>
<td>¾” &amp; 1” units</td>
</tr>
</tbody>
</table>

Component material 316 stainless steel.
Brackets are supplied complete with fasteners.
Note: Part number above is for single item.
3500 Series air service units – Accessories for ¾" to 1" units - supplied separately

Rear mounting bracket

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSAF638-26</td>
<td>Kit comprises of 1 mounting bracket and 2 - M8 x 12 cap head screws. All material stainless steel.</td>
</tr>
</tbody>
</table>
3575 Series air service units – 1½” to 2” Filter Regulators

A 316L stainless steel combined unit for filtration and regulation of compressed air and gases for the actuation industries.

Features and Benefits
• Specifically designed for severe environments
• Self-relieving
• Manual or auto-drain
• 25 micron element stainless steel 316
• 316L stainless steel construction
• Mounting brackets supplied fitted as standard
• Gauge supplied fitted as standard
• Regulated pressure range from 0.50 to 12.0 bar depending on model selection
• Option available to supply without pilot regulator (consult factory for product code)
• Large flow paths (up to 45 Cv)
• NACE capability option available, manual drain only (consult factory)

Units ordered with a specified pressure range will be supplied complete with a pilot regulator and piped using double ferrule fittings.

Media & Ambient Temperature Range
• Standard temperature
  -20 to + 80 °C (-4 to +176 °F)
• Low temperature version
  -50 to +80 °C (-58 to +176 °F)

Ports NPT
(BSP option available - consult factory for part codes)
• 1½” , 2”

Gauge Ports
• 1/8” NPT (fitted with gauge)

Relief Vent Port
• 1/2” NPT (fitted with breather)

Maximum Relief Flow
• At 2 bar (29 psi) secondary pressure
  0.5 cc/sec (0.03 cu in/sec)

Flow
At 10 bar (145 psi) supply pressure, 6 bar (87 psi) secondary pressure, 1 bar (14.5 psi) pressure drop.
• 2” - 45,000 Vmin (1,590 SCFM)

Bowl Capacity
• 21 cc (1.28 cu ins)

Operating Media
• Air, inert gas and sweet (natural) gas
• Sour gas (NACE) manual drain only

Note: To prevent freezing of the condensate within the product, the media dew point must be at least 10 °C below the lowest ambient temperature the product will be exposed to.

Construction Materials
• Body/bonnet/bowl and internals: 316L stainless steel
  Note: on auto-drain version float is nylon, polyoxymethylene and rubber.
• Element: 25 micron 316 stainless steel
• Seals: Nitrile
3575 Series air service units — 1½” to 2” Filter Regulators - Engineering Drawings

### 3575 Series Coding Chart - Filter Regulators

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Filter</th>
<th>Regulated Pressure bar (psi)</th>
<th>Max Inlet Pressure bar</th>
<th>Weight kg</th>
<th>Cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>FRM</td>
<td>Manual Drain</td>
<td>0.50 to 2.0 (7.2 to 29)</td>
<td>20</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>FRA</td>
<td>Auto Drain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1½&quot;</td>
<td></td>
<td>Manual Drain</td>
<td>0.50 to 4.0 (7.2 to 58)</td>
<td>20</td>
<td>17</td>
<td>38</td>
</tr>
<tr>
<td>1½&quot;</td>
<td></td>
<td>Auto Drain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2&quot;</td>
<td></td>
<td>Manual Drain</td>
<td>0.50 to 8.0 (7.2 to 116)</td>
<td>20</td>
<td>17</td>
<td>38</td>
</tr>
<tr>
<td>2½&quot;</td>
<td></td>
<td>Auto Drain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2&quot;</td>
<td></td>
<td>Manual Drain</td>
<td>0.50 to 12.0 (7.2 to 174)</td>
<td>20</td>
<td>17</td>
<td>38</td>
</tr>
</tbody>
</table>

---

1 — Low temperature version not available in auto-drain

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Air Preparation
3575 Series air service units – 1½” to 2” Filter

A 316L stainless steel compressed air filter, designed to provide clean air for the actuation industries.

Features and Benefits
- Specifically designed for severe environments
- Manual or auto-drain
- 25 micron element stainless steel 316
- 316L stainless steel construction
- Mounting brackets supplied fitted as standard
- Large flow paths (up to 45 Cv)
- NACE capability option available, manual drain only (consult factory)

Media & Ambient Temperature Range
- Standard temperature -20 to + 80 °C (-4 to +176 °F)
- Low temperature version -50 to + 80 °C (-58 to +176 °F)

Ports NPT (BSP option available - consult factory for part codes)
- 1½”, 2”

Flow
At 6 bar (87 psi) supply pressure, 1 bar (14.5 psi) pressure drop.
- 2” - 45,000 l/min (1,590 SCFM)

Bowl Capacity
- 21 cc (1.28 cu ins)

Operating Media
- Air, inert gas and sweet (natural) gas
- Sour gas (NACE) manual drain only

Note: To prevent freezing of the condensate within the product, the media dew point must be at least 10 °C below the lowest ambient temperature the product will be exposed to.

<table>
<thead>
<tr>
<th>Size</th>
<th>Filter</th>
<th>Max Inlet Pressure bar</th>
<th>Weight kg</th>
<th>Cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>1½”</td>
<td>Manual Drain</td>
<td>20</td>
<td>8.7</td>
<td>38</td>
</tr>
<tr>
<td>2”</td>
<td></td>
<td></td>
<td>8.7</td>
<td>45</td>
</tr>
<tr>
<td>1½”</td>
<td>Auto Drain</td>
<td>17</td>
<td>8.7</td>
<td>38</td>
</tr>
<tr>
<td>2”</td>
<td></td>
<td></td>
<td>8.7</td>
<td>45</td>
</tr>
</tbody>
</table>
3575 Series air service units – 1½” to 2” Filters - Engineering Drawings

3575 Series Coding Chart - Filters

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Material</th>
<th>Seals °C (°F)</th>
<th>Max Inlet Pressure bar (psi)</th>
<th>Port Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>FLM</td>
<td>S</td>
<td>N Standard -20 (-4)</td>
<td>17 (247) (FLA only)</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>FLA</td>
<td>S</td>
<td>L¹ Low Temp -50 (-58)</td>
<td>20 (290) (FLM only)</td>
<td>2</td>
</tr>
</tbody>
</table>

1 – Low temperature version not available in auto-drain
3575 Series air service units – 1½” to 2” Pressure Regulators

A 316L stainless steel unit for pressure regulation of compressed air and gases for the actuation industries.

Features and Benefits
- Specifically designed for severe environments
- Self-relieving
- 316L stainless steel construction
- Mounting brackets supplied fitted as standard
- Gauge fitted as standard
- Regulated pressure range from 0.50 to 12.0 bar depending on model selection
- Large flow paths (up to 45 Cv)
- Option available to supply without pilot regulator (consult factory for product code)
- NACE capability option available (consult factory)

Units ordered with a specified pressure range will be supplied complete with a pilot regulator piped using double ferrule fittings.

Media & Ambient Temperature Range
- Standard temperature: -20 to + 80 °C (-4 to +176 °F)
- Low temperature version: -50 to +80 °C (-58 to +176 °F)

Ports NPT
(BSP option available - consult factory for part codes)
- 1½”, 2”

Gauge Ports
- 1/8” NPT (fitted with gauge)

Relief Vent Port
- 1/2” NPT (fitted with breather)

Maximum Relief Flow
- At 2 bar (29 psi) secondary pressure: 0.5 cc/sec (0.03 cu in/sec)

<table>
<thead>
<tr>
<th>Size</th>
<th>Regulated Pressure</th>
<th>Max Inlet Pressure bar</th>
<th>Weight kg</th>
<th>Cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>1½”</td>
<td>0.50 to 2.0 bar (7.2 to 29 psi)</td>
<td>20</td>
<td>11</td>
<td>38</td>
</tr>
<tr>
<td>2”</td>
<td>0.50 to 4.0 bar (7.2 to 58 psi)</td>
<td>20</td>
<td>11</td>
<td>38</td>
</tr>
<tr>
<td>1½”</td>
<td>0.50 to 8.0 bar (7.2 to 116 psi)</td>
<td>20</td>
<td>11</td>
<td>38</td>
</tr>
<tr>
<td>2”</td>
<td>0.50 to 12.0 bar (7.2 to 174 psi)</td>
<td>20</td>
<td>11</td>
<td>38</td>
</tr>
</tbody>
</table>

Flow
At 10 bar (145 psi) supply pressure, 6 bar (87 psi) secondary pressure, 1 bar (14.5 psi) pressure drop.
- 2” - 45,000 Vmin (1,590 SCFM)

Operating Media
- Air, inert gas and sweet (natural) gas
- Sour gas (NACE) manual drain only

Note: To prevent freezing of the condensate within the product, the media dew point must be at least 10 °C below the lowest ambient temperature the product will be exposed to.

Construction Materials
- Body/bonnet/bowl and internals: 316L stainless steel
  Note: on auto-drain version float is nylon, polyoxymethylene and rubber.
- Seals: Nitrile
3575 Series air service units — 1½” to 2” Pressure Regulators - Engineering Drawings

3575 Series Coding Chart - Pressure Regulators

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Material</th>
<th>Seals °C (°F)</th>
<th>Regulated Pressure bar (psi)</th>
<th>Port Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>PRV</td>
<td>S</td>
<td>N Standard -20 (-4)</td>
<td>02 2 (29)</td>
<td>1 BSP</td>
</tr>
<tr>
<td>9</td>
<td>2”</td>
<td></td>
<td>L Low Temp -50 (-58)</td>
<td>04 4 (58)</td>
<td>2 NPT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>08 8 (116)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12 12 (174)</td>
<td></td>
</tr>
</tbody>
</table>
Over Pressurisation Device – OPD

A 316L stainless steel unit providing protection to downstream equipment from over pressure events.

Features and Benefits
- Protection of equipment from regulator failure and over pressure events
- Specifically designed for severe environments
- Manifold mounted option
- Auto shut-off
- ¼ turn actuator and on/off valve protection
- Linear actuator and control valve protection
- System instrumentation equipment protection
- Process valve stem & seat saver
- Easy installation
- 316L stainless steel construction
- Compliments and protects ESD & safety instrumented system equipment

Regulated outlet pressure range
- 4 - 8 bar

Trip Pressure Range
- 4.5 - 8.5 bar (4-8 bar)

Maximum Response Time
- 30 ms (4-8 bar)

Temperature Range
- Standard: -20 to +80 °C (-4 to +176 °F)
- Low temp: -50 to +80 °C (-58 to +176 °F) optional

Maximum Inlet Pressure
- Manual drain: 20 bar
- Auto drain: 17 bar

Coding Chart - OPD

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Material</th>
<th>Seals</th>
<th>PRV Pressure Range bar (psi)</th>
<th>Port Style</th>
<th>Function</th>
<th>Secondary Pressure</th>
<th>Trip Pressure</th>
<th>Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>OPD</td>
<td>Stainless</td>
<td>V</td>
<td>4 - 8 (58 - 116)</td>
<td>1 BSP</td>
<td>3/2</td>
<td>Customer specified</td>
<td>XX Unset</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>OPA</td>
<td></td>
<td></td>
<td></td>
<td>2 NPT</td>
<td>XX</td>
<td>XX Unset</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Use two digits to specify set pressure, e.g. 49 = 4.9 bar. Must be within the PRV pressure range of 4 - 8 bar
2 Use two digits to specify trip pressure, e.g. 54 = 5.4 bar. Must be at least 0.5 bar above SECONDARY pressure but not more than 0.5 bar above the maximum PRV pressure range for the variant selected.
Over Pressurisation Device – OPD

General Description
The purpose of the OPD is to protect downstream equipment from over pressure events including regulator failure, thus preventing potential damage and downtime. Applications include the protection of ESD & Safety Instrumented Systems including positioners, actuators and process valve stems. The device includes a pressure regulator with a protection valve and sensor system.

Increases in outlet pressure can occur for many reasons, including failure of key regulator components or misadjustment. Should this occur the device will automatically fail-safe within 30 milli-seconds. The protection valve will be triggered to shut-off the outlet and vent the downstream pressure.

When the protection valve has deployed, the reset button protrudes from the housing providing a positive indication that a fault has occurred. The OPD reduces the potential for damage occurring from increased torque, thrust or pressure values within the downstream system. Once the fault has been corrected the unit can be reset by pushing the reset button on the unit. In line with today’s requirements for space saving, weight reduction and efficiency the system is all close coupled within a compact body.

Development
Failures of pressure regulators can result in the over pressurisation of the downstream line, as the self-relieving capacity of the regulator is insufficient to cope with major failures. Usually a relief valve of sufficient capacity is fitted into the system to hold the pressure down to an acceptable level.

However a relief valve flow is sized on a pressure differential between set pressure and over pressure, usually 10%. Thus on a set pressure of 4.5 barg a pressure rise to 4.95 barg would have to flow sufficiently to hold the pressure at 4.95 barg, against the flow through a failed pressure regulator. At 10 barg supply pressure the flow through the failed pressure regulators will be driven by a 10 to 4.95 i.e. 5.05 barg pressure drop. In many cases this would result in damage to sensitive & expensive equipment such as positioners, actuator diaphragms and process valve stems. An alternative is to fit an excessively large relief valve(s), which in itself could cause serious problems by dumping all of the systems air and starving other equipment resulting in plant shutdown and potential compressor damage.

Considered Regulator Failure modes
Failure modes are common to all manufacturers’ regulators unless specific design changes have been made to cope with them. Therefore to overcome these difficulties the Over Pressurisation Device was designed and engineered.

Typical Regulator Failure Modes
- Misuse and maladjustment during installation and commissioning.
- Rupture of diaphragm leading to total loss of pressure regulation.
- Failure of regulator seat leading to partial or total loss of pressure regulation.
- Blocking of the regulator relief port leading to total loss of pressure regulation.
Over Pressurisation Device – OPD

Performance Characteristics
Response times are dependant upon the actual pressures within the system at the point of failure; all times stated within the specification section are maximums taken at the lowest extreme of the pressure range (worst case).

The magnitude of any pressure spikes exceeding the trip pressure which occur during deployment of the valve are dependant upon the system downstream volume; a larger system volume decreases the likelihood of the system pressure exceeding the trip pressure (see graphs). Any pressure spikes which do occur will only do so for a fraction of a second (less than the time taken for the device to operate).

Small actuator test results.
- 4-8 bar OPD; outlet connected to a volume of 0.2 litres

Trigger Test:
- Blue = Simulated actuator pressure (bar)
- Red = Supply pressure (bar)

The graph to the left is an overpressure test result with a small 0.2 litre reservoir to simulate the actuator. An overpressure signal is applied allowing the 11 barg supply pressure to bypass the regulator, simulating a ruptured diaphragm. The response time of the device is measured as the time between the pressure within the device reaching the trip pressure and the actuator pressure returning to below the regulated pressure (see dashed lines on graph & right hand column of table).

Larger actuator test results.
- 4-8 bar OPD; outlet connected to a volume of 3 litres

Trigger Test:
- Blue = Actuator pressure (bar)
- Red = Supply pressure (bar)

The graph above is an overpressure test result with a larger 3 litre reservoir to simulate the actuator. An overpressure signal is applied allowing the 11 barg supply pressure to bypass the regulator, simulating a ruptured diaphragm. The response time of the device is measured as the time between the pressure within the device reaching the trip pressure and the actuator pressure returning to below the regulated pressure (see dashed lines on graph & right hand column of table).

Note: During this test the actuator pressure does not exceed the trip pressure value.

Test Circuit

[Diagram of test circuit with labeled components and pressure values]
Over Pressurisation Device – OPD - Engineering Drawings

4 - 8 Bar

Trip Pressure Adjuster C/W Tamperproof Cap
Gauge Port (Front & Back)
Relief Port
Reset Button
Manual Drain
Auto-Drain Port
Exhaust Port

Dimensions:
- 117 mm
- 104.5 mm
- 102.5 mm
- 121.5 mm
- 28.0 mm
- 3.0 mm
- 164.5 mm
- 181.5 mm
- 65 mm
- 78.5 mm
- 161 mm
Since our founding in 1956, we have been known internationally as one of the oil & gas industries premier designers and manufacturers of 316L stainless steel control equipment. Over the years we have developed an enviable reputation for high quality products, reliability and innovation.

We have the ability to investigate problems and provide comprehensive solutions for the control of hydraulic and pneumatic actuated process control valves across a broad range of industries and markets. This, coupled with repeatedly delivering impressive results worldwide, sets us apart from our competitors.

Rotork Instruments are experts in flow control, pressure control, flow measurement and pressure measurement. We manufacture products and components that are trusted for applications where high precision and reliability are required.

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Customer service and field support provides quick and effective response to customer requirements.

The Rotork Site Services network is represented throughout the world and provides valuable service and assistance to all industries.
A full listing of our worldwide sales and service network is available on our website.