Dial-Air™ Regulator Numbering System

<table>
<thead>
<tr>
<th>Unit Function</th>
<th>Family</th>
<th>Thread Type</th>
<th>Pipe Size</th>
<th>Options</th>
<th>Options</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>2</td>
<td>1 - 0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Options**

- 0 Standard 5-160 PSIG
- L Low Pressure 2-40 PSIG
- R Remote Air Pilot
- V Fluorocarbon*

* Not available on R11.

**NOTE:** When selecting from the options columns, please enter letters in alphabetical order for positions 6, 7, and 8. For example:

R21 - 0 3 - 0 0 0

1 ISO, R228 (G Series)

**NOTE:** Standard pressure adjustment is plastic “snap lock” knob and plastic bonnet with plastic panel mount nut.
Dial-Air™ Regulator

**R11**

**Features**
- Pressure Reference Indicating Dial Face
- Non-rising Pressure Adjustment Knob
- Self-Relieving
- Full Pressure Adjustment in Less Than One Full Turn
- Recommended for Pilot-Air Applications (Low Flow)

**Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Capacity*</td>
<td>1/4 0.8 SCFM (0.377 dm³/s)</td>
</tr>
<tr>
<td>Adjusting Range Pressure</td>
<td>0 to 40 PSIG (0 to 2.8 bar)</td>
</tr>
<tr>
<td></td>
<td>0 to 160 PSIG (0 to 11 bar)</td>
</tr>
<tr>
<td>Bleed Rate</td>
<td>0.05 SCFM (0.024 dm³/s)</td>
</tr>
<tr>
<td>Maximum Supply Pressure</td>
<td>300 PSIG (20.7 bar)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>32°F to 150°F (0°C to 65.5°C)</td>
</tr>
<tr>
<td>Port Size</td>
<td>NPT / BSPP-G 1/4</td>
</tr>
<tr>
<td>Weight</td>
<td>lb. (kg) 1.3 (0.5)</td>
</tr>
</tbody>
</table>

* Inlet pressure 100 PSIG (6.9 bar). Secondary pressure 90 PSIG (6.2 bar).

**Materials of Construction**

<table>
<thead>
<tr>
<th>Component</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>Zinc</td>
</tr>
<tr>
<td>Bonnet</td>
<td>Zinc / Brass</td>
</tr>
<tr>
<td>Piston</td>
<td>Acetal</td>
</tr>
<tr>
<td>Seals</td>
<td>Nitrile</td>
</tr>
<tr>
<td>Springs</td>
<td>Steel</td>
</tr>
<tr>
<td>Valve Assembly</td>
<td>Brass / Nitrile / Acetal</td>
</tr>
</tbody>
</table>

**WARNING**

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

**CAUTION:**

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

**Dimensions**

<table>
<thead>
<tr>
<th>Model</th>
<th>Inches (mm)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Unit</td>
<td></td>
<td>2.60</td>
<td>2.60</td>
<td>2.40</td>
<td>.40</td>
<td>2.80</td>
<td>2.20</td>
<td>1.30</td>
<td>1.25</td>
<td>.18</td>
<td>1.56</td>
</tr>
<tr>
<td>R11-02-000</td>
<td></td>
<td>(66)</td>
<td>(66)</td>
<td>(60.9)</td>
<td>(10)</td>
<td>(71)</td>
<td>(55.9)</td>
<td>(33)</td>
<td>(31.8)</td>
<td>(4.6)</td>
<td>(39.8)</td>
</tr>
</tbody>
</table>

**NOTE:** Panel mounting requires (2) 11/16" (69mm) diameter holes and (4) 7/32" (5.5mm) screw holes. Unit can be mounted on material up to 1-1/4" (32mm) thick.
Replacement Kits
Conversion Kit (Series A to Series B) ....................... RRP-95-765
O-ring, Repair Kit ......................................................... GRP-95-260
Spring, Regulating, Belleville Washer –
2 to 40 PSIG (0.1 to 3 bar) ................................ RRP-95-906
5 to 160 PSIG (0.4 to 11 bar) .............................. RRP-95-905
Valve, Pilot with O-ring and Valve Spring ................. RRP-96-934

Accessories
Tamper Resistant Kit ..................................................... RRP-95-585

Ordering Information

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Port Size</th>
<th>Standard Pressure</th>
<th>Low Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot</td>
<td>1/4</td>
<td>5 to 160 PSIG (0.4 to 11 bar)</td>
<td>2 to 40 PSIG (0.1 to 3 bar)</td>
</tr>
</tbody>
</table>

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.
R21 / 31 / 41-XX-RXX
Principal Regulator (Remote Operated)

Remote-control Dial-Air™ Regulator

Incorporates all the features of the standard Dial-Air™ Regulator plus the additional advantage of remote installation using the R11 model Pilot Regulator. Maximum inlet operating pressure and temperature ratings are 300 PSIG (20.7 bar) and 150°F (65.5°C).

The Remote-control Dial-Air™ Regulators are available in five pipe sizes, with 1/4" NPT connections on the pilot regulator and pilot port of remote-controlled regulators. Typical installation is shown below. For other remote models, see R21, R31 & R41.

Dial-Air™

Dial-Air™ regulators feature a transparent, pressure-calibrated, non-rising adjustment dial for quick adjustment of secondary pressure. If a gauge (R21, R31, R41) is required for monitoring reasons, two 1/4" gauge ports are provided; however, these are usually used for additional outlet ports. The full reduced pressure range can be dialed in less than 270° of dial rotation. This feature is particularly advantageous if secondary pressure must be changed frequently. The transparent dial can be color or graphics coded for easy reference to required pressure changes. Dial-Air™ regulators can be mounted in any position so dial face is always visible. All Dial-Air™ units have a slight constant air bleed: 0.05 SCFM (0.024 dm³/s), @100 PSIG (6.9 bar) inlet and 90 PSIG (6.2 bar) outlet.
Dial-Air™ Regulator

R21

R21-02-000

Features

- Balanced Valve Design
- Non-Rising Pressure Adjusting Dial
- High-Relief Flow (3/16" Relief Orifice)
- Two 1/4" NPT Gauge Ports, Usually Used for Additional Outlets
- Piston Operated

Specifications

- Flow Capacity* 1/4 117 SCFM (55 dm³/s)
  3/8 180 SCFM (85 dm³/s)
  1/2 195 SCFM (92 dm³/s)
  3/4 220 SCFM (103 dm³/s)
- Adjusting Range Pressure 0 to 40 PSIG (0 to 2.8 bar)
  0 to 160 PSIG (0 to 11 bar)
- Bleed Rate 0.05 SCFM (0.024 dm³/s)
- Gauge Port (2 ea.) NPT / BSPT-Rc 1/4
- Maximum Supply Pressure 300 PSIG (20.7 bar)
- Operating Temperature 32° to 150°F (0° to 65.5°C)
- Port Size NPT / BSPP-G 1/4, 3/8, 1/2, 3/4
- Weight lb. (kg) 2.3 (1.04)

Materials of Construction

- Body Zinc
- Bonnet Zinc / Brass
- Piston Acetal
- Seals Nitrile
- Springs Steel
- Valve Assembly Brass / Nitrile / Acetal

WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Dimensions

<table>
<thead>
<tr>
<th>Models</th>
<th>Inches (mm)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Unit</td>
<td>2.60 (66)</td>
<td>3.19 (81)</td>
<td>3.14 (79.8)</td>
<td>.95 (24)</td>
<td>4.09 (104)</td>
<td>2.20 (55.9)</td>
<td>—</td>
<td>1.61 (41)</td>
<td>2.08 (52.8)</td>
<td>.18 (4.6)</td>
<td>2.07 (52.6)</td>
<td></td>
</tr>
<tr>
<td>With Gauge (order separately)</td>
<td>2.60 (66)</td>
<td>3.19 (81)</td>
<td>3.14 (79.8)</td>
<td>.95 (24)</td>
<td>4.09 (104)</td>
<td>2.20 (55.9)</td>
<td>2.70 (68.5)</td>
<td>1.61 (41)</td>
<td>2.08 (52.8)</td>
<td>.18 (4.6)</td>
<td>2.07 (52.6)</td>
<td></td>
</tr>
<tr>
<td>Remote Operated</td>
<td>2.60 (66)</td>
<td>3.19 (81)</td>
<td>2.24 (56.9)</td>
<td>.95 (24)</td>
<td>3.19 (81)</td>
<td>2.20 (55.9)</td>
<td>1.33 (33.8)</td>
<td>1.61 (41)</td>
<td>2.08 (52.8)</td>
<td>.18 (4.6)</td>
<td>1.11 (28.2)</td>
<td></td>
</tr>
</tbody>
</table>
Replacement Kits

Adjustment Dial Knob .................................................. RRP-16-024-000
Conversion Kit (Series A to Series B) .................. RRP-95-766
Cover Kit (Remote) –
  Bonnet and Nitrile, O-ring (Series B) ............. RRP-95-910
  Bonnet and Fluorocarbon, O-ring (Series B) .... RRP-95-911
O-ring, Repair Kit ..................................................... GRP-95-260
Piston, Bottom and O-ring Seal.................. RRP-95-192
Spring, Regulating, Belleville Washer –
  2 to 40 PSIG (0.1 to 3 bar) .................. RRP-95-906
  5 to 160 PSIG (0.4 to 11 bar) .................. RRP-95-905
Valve, Main with U-cup Seal.................. RRP-95-151
Valve, Main with U-cup Seal and Bottom Plug –
  Nitrile Elastomers .......................... RRP-95-914
  Fluorocarbon Elastomers .................... RRP-95-915
Valve, Main (Remote) with U-cup Seal .......... RRP-96-952

Option - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Replacement Kits

Valve, Main (Remote) with U-cup Seal and Bottom Plug –
  Nitrile Elastomers ........................................ RRP-95-912
  Fluorocarbon Elastomers .......................... RRP-95-913
Valve, Pilot with O-ring and Valve Spring........... RRP-96-934

Accessories

Wall Mounting Bracket, Gauge Port Adapter,
  1/4 NPT................................................................. RRP-95-590
Gauge, Pressure –
  0 to 60 PSIG (0 to 4 bar), 2” Dial Face,
    1/4 NPT, CBM ................................................... K4520N14060
  0 to 160 PSIG (0 to 11 bar), 2” Dial Face,
    1/4 NPT, CBM ................................................... K4520N14160
Tamper Resistant Kit.............................................. RRP-95-585

Ordering Information

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Port Size</th>
<th>High Flow 5 to 160 PSIG (0.4 to 11 bar)</th>
<th>Low Pressure 2 to 40 PSIG (0.1 to 3 bar)</th>
<th>Remote 5 to 160 PSIG (0.4 to 11 bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relieving</td>
<td>1/4</td>
<td>R21-02-000</td>
<td>R21-02-L00</td>
<td>R21-02-R00</td>
</tr>
<tr>
<td></td>
<td>3/8</td>
<td>R21-03-000</td>
<td>R21-03-L00</td>
<td>R21-03-R00</td>
</tr>
<tr>
<td></td>
<td>1/2</td>
<td>R21-04-000</td>
<td>R21-04-L00</td>
<td>R21-04-R00</td>
</tr>
<tr>
<td></td>
<td>3/4</td>
<td>R21-06-000</td>
<td>R21-06-L00</td>
<td>R21-06-R00</td>
</tr>
</tbody>
</table>

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.
Dial-Air™ Regulator

R31

R31-06-000

Features

- Balanced Valve Design
- Non-Rising Pressure Adjusting Dial
- High-Relief Flow (3/16" Relief Orifice)
- Two 1/4" NPT / BSPT-Rc Gauge Ports, Usually Used for Additional Outlets
- Piston Operated

Specifications

**Flow Capacity**

- 3/4
- 1
- 1-1/4

<table>
<thead>
<tr>
<th>Flow Capacity</th>
<th>SCFM (dm^3/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4</td>
<td>400 (189)</td>
</tr>
<tr>
<td>1</td>
<td>650 (307)</td>
</tr>
<tr>
<td>1-1/4</td>
<td>700 (330)</td>
</tr>
</tbody>
</table>

**Adjusting Range Pressure**

- 0 to 40 PSIG (0 to 2.7 bar)
- 0 to 160 PSIG (0 to 11 bar)

**Bleed Rate**

- 0.05 SCFM (0.024 dm^3/s)

**Gauge Port**

- NPT / BSPT-Rc 1/4

**Maximum Supply Pressure**

- 300 PSIG (20.7 bar)

**Operating Temperature**

- 32° to 150°F (0° to 65.5°C)

**Port Size**

- NPT / BSPP-G 3/4, 1, 1-1/4

**Weight**

- 4.0 lb. (1.8 kg)

Materials of Construction

- **Body** Zinc
- **Bonnet** Zinc / Brass
- **Piston** Acetal
- **Seals** Nitrile
- **Springs** Steel
- **Valve Assembly** Brass / Nitrile / Acetal

![Dimensions Table]

**CAUTION:**

REGULATOR PRESSURE ADJUSTMENT - The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

**WARNING**

Product rupture can cause serious injury. Do not connect regulator to bottled gas. Do not exceed maximum primary pressure rating.

NOTE: Panel mounting requires (2) 11/16" (69mm) diameter holes and (4) 7/32" (5.5mm) screw holes. Unit can be mounted on material up to 1-1/4" (32mm) thick.
Replacement Kits

Adjustment Dial Knob .................................... RRP-16-024-000
Conversion Kit (Series A to Series B) .................... RRP-95-766
O-ring, Repair Kit .......................................... GRP-95-261
Piston, Bottom and O-ring seal ............................ RRP-95-192
Spring, Regulating, Belleville Washer –
  2 to 40 PSIG (0.1 to 3 bar).............................. RRP-95-906
  5 to 160 PSIG (0.4 to 11 bar)............................ RRP-95-905
Valve, Main with O-ring Seal ............................ RRP-95-152
Valve, Main (Remote) with O-ring Seal ................ RRP-96-950
Valve, Pilot with O-ring and Valve Spring............... RRP-96-935

Accessories

Gauge, Pressure –
  0 to 60 PSIG (0 to 4 bar), 2” Dial Face,
  1/4 NPT, CBM.......................................................... K4520N14060
  0 to 160 PSIG (0 to 11 bar), 2” Dial Face,
  1/4 NPT, CBM.......................................................... K4520N14160
Tamper Resistant Kit........................................ RRP-95-585
Wall Mounting Bracket, Gauge Port Adapter,
  1/4 NPT................................................................. RRP-95-590

Ordering Information

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Port Size</th>
<th>High Flow 5 to 160 PSIG (0.4 to 11 bar)</th>
<th>Low Pressure 2 to 40 PSIG (0.1 to 3 bar)</th>
<th>Remote 5 to 160 PSIG (0.4 to 11 bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relieving</td>
<td>3/4</td>
<td>R31-06-000</td>
<td>R31-06-L00</td>
<td>R31-06-R00</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>R31-08-000</td>
<td>R31-08-L00</td>
<td>R31-08-R00</td>
</tr>
<tr>
<td></td>
<td>1-1/4</td>
<td>R31-0A-000</td>
<td>R31-0A-L00</td>
<td>R31-0A-R00</td>
</tr>
</tbody>
</table>

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.
Dial-Air™ Regulator

R41

Features

- Balanced Valve Design
- Non-Rising Pressure Adjusting Dial
- High-Relief Flow (3/16” Relief Orifice)
- Two 1/4” NPT / BSPT-Rc Gauge Ports, Usually Used for Additional Outlets
- Piston Operated

Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Standard Unit R41-XX-000</th>
<th>With Gauge (order separately) R41-XX-XXX</th>
<th>Remote Operated R41-XX-R00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Capacity*</td>
<td>1-1/2, 2</td>
<td>1-1/2, 2</td>
<td>1-1/2, 2</td>
</tr>
<tr>
<td>Adjusting Range Pressure</td>
<td>0 to 160 PSIG (0 to 11 bar)</td>
<td>0 to 160 PSIG (0 to 11 bar)</td>
<td>0 to 160 PSIG (0 to 11 bar)</td>
</tr>
<tr>
<td>Bleed Rate</td>
<td>0.05 SCFM (0.024 dm³/s)</td>
<td>0.05 SCFM (0.024 dm³/s)</td>
<td>0.05 SCFM (0.024 dm³/s)</td>
</tr>
<tr>
<td>Maximum Supply Pressure</td>
<td>300 PSIG (20.7 bar)</td>
<td>300 PSIG (20.7 bar)</td>
<td>300 PSIG (20.7 bar)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>32° to 150°F (0° to 65.5°C)</td>
<td>32° to 150°F (0° to 65.5°C)</td>
<td>32° to 150°F (0° to 65.5°C)</td>
</tr>
<tr>
<td>Port Size</td>
<td>NPT / BSPP-G</td>
<td>NPT / BSPT-Rc</td>
<td>NPT / BSPT-Rc</td>
</tr>
<tr>
<td>Gauge Port (2 ea.)</td>
<td>NPT / BSPT-Rc</td>
<td>NPT / BSPT-Rc</td>
<td>NPT / BSPT-Rc</td>
</tr>
<tr>
<td>Weight</td>
<td>9 (4.1)</td>
<td>5.29 (134.6)</td>
<td>3.00 (76)</td>
</tr>
</tbody>
</table>

Materials of Construction

<table>
<thead>
<tr>
<th>Component</th>
<th>Standard Unit</th>
<th>With Gauge (order separately)</th>
<th>Remote Operated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>Zinc</td>
<td>Zinc</td>
<td>Zinc</td>
</tr>
<tr>
<td>Bonnet</td>
<td>Zinc</td>
<td>Zinc</td>
<td>Zinc</td>
</tr>
<tr>
<td>Piston</td>
<td>Zinc</td>
<td>Zinc</td>
<td>Zinc</td>
</tr>
<tr>
<td>Seals</td>
<td>Nitrile</td>
<td>Nitrile</td>
<td>Nitrile</td>
</tr>
<tr>
<td>Springs</td>
<td>Steel</td>
<td>Steel</td>
<td>Steel</td>
</tr>
<tr>
<td>Valve Assembly</td>
<td>Brass / Nitrile / Acetal</td>
<td>Brass / Nitrile / Acetal</td>
<td>Brass / Nitrile / Acetal</td>
</tr>
</tbody>
</table>

WARNING

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REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.
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<table>
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<tr>
<th>Models</th>
<th>Inches (mm)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Unit R41-XX-000</td>
<td></td>
<td>5.31</td>
<td>3.58</td>
<td>4.02</td>
<td>2.79</td>
<td>6.81</td>
<td>1.79</td>
<td>—</td>
<td>1.15</td>
</tr>
<tr>
<td>With Gauge (order separately) R41-XX-XXX</td>
<td></td>
<td>5.31</td>
<td>3.58</td>
<td>4.02</td>
<td>2.79</td>
<td>6.81</td>
<td>1.79</td>
<td>5.29</td>
<td>1.15</td>
</tr>
<tr>
<td>Remote Operated R41-XX-R00</td>
<td></td>
<td>5.31</td>
<td>3.58</td>
<td>3.11</td>
<td>2.79</td>
<td>5.90</td>
<td>1.50</td>
<td>3.00</td>
<td>1.15</td>
</tr>
</tbody>
</table>
Replacement Kits
Adjustment Dial Knob ........................................ RRP-16-024-000
Conversion Kit (Series A to Series B) ...................... RRP-95-766
O-ring, Repair Kit ................................................. GRP-95-262
Piston, Bottom and O-ring Seal .................... RRP-95-192
Spring, Regulating, Belleville Washer –
2 to 40 PSIG (0.1 to 3 bar) ........................................ RRP-95-906
5 to 160 PSIG (0.4 to 11 bar) ............................. RRP-95-905
Spring, Valve .................................................. RRP-95-024
Valve –
Main with O-ring Seal ........................................... RRP-95-153
Main (Remote) with O-ring Seal .................... RRP-96-951
Pilot with O-ring and Valve Spring ................ RRP-96-935

Accessories
Gauge, Pressure –
0 to 60 PSIG (0 to 4 bar), 2” Dial Face,
1/4 NPT, CBM.......................................................... K4520N14060
0 to 160 PSIG (0 to 11 bar), 2” Dial Face,
1/4 NPT, CBM.......................................................... K4520N14160
Tamper Resistant Kit .............................................. RRP-95-585
Wall Mounting Bracket, Gauge Port Adapter, 1/4 NPT ........................................ RRP-95-590

Ordering Information

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Port Size</th>
<th>High Flow 5 to 160 PSIG (0.4 to 11 bar)</th>
<th>Low Pressure 2 to 40 PSIG (0.1 to 3 bar)</th>
<th>Remote 5 to 160 PSIG (0.4 to 11 bar)</th>
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<tbody>
<tr>
<td>Relieving</td>
<td>1-1/2</td>
<td>R41-0B-000</td>
<td>R41-0B-L00</td>
<td>R41-0B-R00</td>
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<td></td>
<td>2</td>
<td>R41-0C-000</td>
<td>R41-0C-L00</td>
<td>R41-0C-R00</td>
</tr>
</tbody>
</table>

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

= “Most Popular”

Wilkerson®
Pneumatic Division
Richland, Michigan
www.wilkersoncorp.com

B143
1. GENERAL INSTRUCTIONS

1.1. Scope: This safety guide is designed to cover general guidelines on the installation, use, and maintenance of Pneumatic Division Valves, FRLs (Filters pressure Regulators and Lubricators), Vacuum products and related accessory components.

1.2. Fail-Safe: Valves, FRLs, Vacuum products and their related components can and do fail without warning for many reasons. Design all systems and equipment in a fail-safe mode, so that failure of associated valves, FRLs or Vacuum products will not endanger persons or property.


1.4. Distribution: Provide a copy of this safety guide to each person that is responsible for selection, installation, or use of Valves, FRLs or Vacuum products. Do not select, or use Wilkerson valves, FRLs or vacuum products without thoroughly reading and understanding this safety guide as well as the specific Wilkerson publications for the products considered or selected.

1.5. User Responsibility: Due to the wide variety of operating conditions and applications for valves, FRLs, and vacuum products Wilkerson and its distributors do not represent or warrant that any particular valve, FRL or vacuum product is suitable for any specific end use system. This safety guide does not analyze all technical parameters that must be considered in selecting a product. The user, through its own analysis and testing, is solely responsible for:
   • Making the final selection of the appropriate valve, FRL, Vacuum component, or accessory.
   • Assuring that all user’s performance, endurance, maintenance, safety, and warning requirements are met and that the application presents no health or safety hazards.
   • Complying with all existing warning labels and / or providing all appropriate health and safety warnings on the equipment on which the valves, FRLs or Vacuum products are used; and,
   • Assuring compliance with all applicable government and industry standards.

1.6. Safety Devices: Safety devices should not be removed, or defeated.

1.7. Warning Labels: Warning labels should not be removed, painted over or otherwise obscured.

1.8. Additional Questions: Call the appropriate Wilkerson technical service department if you have any questions or require any additional information. See the Wilkerson publication for the product being considered or used, or call 269-629-2550, or go to www.wilkersoncorp.com, for telephone numbers of the appropriate technical service department.

2. PRODUCT SELECTION INSTRUCTIONS

2.1. Flow Rate: The flow rate requirements of a system are frequently the primary consideration when designing any pneumatic system. System components need to be able to provide adequate flow and pressure for the desired application.

2.2. Pressure Rating: Never exceed the rated pressure of a product. Consult product labeling, Pneumatic Division catalogs or the instruction sheets supplied for maximum pressure ratings.

2.3. Temperature Rating: Never exceed the temperature rating of a product. Excessive heat can shorten the life expectancy of a product and result in complete product failure.

2.4. Environment: Many environmental conditions can affect the integrity and suitability of a product for a given application. Pneumatic Division products are designed for use in general purpose industrial applications. If these products are to be used in unusual circumstances such as direct sunlight and/or corrosive or caustic environments, such use can shorten the useful life and lead to premature failure of a product.

2.5. Lubrication and Compressor Carryover: Some modern synthetic oils can and will attack nitrile seals. If there is any possibility of synthetic oils or greases migrating into the pneumatic components check for compatibility with the seal materials used. Consult the factory or product literature for materials of construction.

2.6. Polycarbonate Bowls and Sight Glasses: To avoid potential polycarbonate bowl failures:
   • Do not locate polycarbonate bowls or sight glasses in areas where they could be subject to direct sunlight, impact blow, or temperatures outside of the rated range.
   • Do not expose or clean polycarbonate bowls with detergents, chlorinated hydro-carbons, keytones, esters or certain alcohols.
   • Do not use polycarbonate bowls or sight glasses in air systems where compressors are lubricated with fire resistant fluids such as phosphate ester and di-ester lubricants.

1. WARNING:

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF PNEUMATIC DIVISION PRODUCTS, ASSEMBLIES OR RELATED ITEMS (“PRODUCTS”) CAN CAUSE DEATH, PERSONAL INJURY, AND PROPERTY DAMAGE. POSSIBLE CONSEQUENCES OF FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THESE PRODUCTS INCLUDE BUT ARE NOT LIMITED TO:

• Unintended or mistimed cycling or motion of machine members or failure to cycle
• Work pieces or component parts being thrown off at high speeds.
• Failure of a device to function properly for example, failure to clamp or unclamp an associated item or device.
• Explosion
• Suddenly moving or falling objects.
• Release of toxic or otherwise injurious liquids or gasses.

Before selecting or using any of these Products, it is important that you read and follow the instructions below.
2.7. Chemical Compatibility: For more information on plastic component chemical compatibility see Pneumatic Division technical bulletins Tec-3, Tec-4, and Tec-5

2.8. Product Rupture: Product rupture can cause death, serious personal injury, and property damage.
   • Do not connect pressure regulators or other Pneumatic Division products to bottled gas cylinders.
   • Do not exceed the maximum primary pressure rating of any pressure regulator or any system component.
   • Consult product labeling or product literature for pressure rating limitations.

3. PRODUCT ASSEMBLY AND INSTALLATION INSTRUCTIONS

3.1. Component Inspection: Prior to assembly or installation a careful examination of the valves, FRLs or vacuum products must be performed. All components must be checked for correct style, size, and catalog number. DO NOT use any component that displays any signs of nonconformance.

3.2. Installation Instructions: Wilkerson published Installation Instructions must be followed for installation of Wilkerson valves, FRLs and vacuum components. These instructions are provided with every Wilkerson valve or FRL sold, or by calling 269-629-2550, or at www.wilkersoncorp.com.

3.3. Air Supply: The air supply or control medium supplied to Valves, FRLs and Vacuum components must be moisture-free if ambient temperature can drop below freezing

4. VALVE AND FRL MAINTENANCE AND REPLACEMENT INSTRUCTIONS

4.1. Maintenance: Even with proper selection and installation, valve, FRL and vacuum products service life may be significantly reduced without a continuing maintenance program. The severity of the application, risk potential from a component failure, and experience with any known failures in the application or in similar applications should determine the frequency of inspections and the servicing or replacement of Pneumatic Division products so that products are replaced before any failure occurs. A maintenance program must be established and followed by the user and, at minimum, must include instructions 4.2 through 4.10.

4.2. Installation and Service Instructions: Before attempting to service or replace any worn or damaged parts consult the appropriate Service Bulletin for the valve or FRL in question for the appropriate practices to service the unit in question. These Service and Installation Instructions are provided with every Wilkerson valve and FRL sold, or are available by calling 269-629-2550, or by accessing the Wilkerson web site at www.wilkersoncorp.com.


4.4. Visual Inspection: Any of the following conditions requires immediate system shut down and replacement of worn or damaged components:
   • Air leakage: Look and listen to see if there are any signs of visual damage to any of the components in the system. Leakage is an indication of worn or damaged components.
   • Damaged or degraded components: Look to see if there are any visible signs of wear or component degradation.
   • Kinked, crushed, or damaged hoses. Kinked hoses can result in restricted air flow and lead to unpredictable system behavior.
   • Any observed improper system or component function: Immediately shut down the system and correct malfunction.
   • Excessive dirt build-up: Dirt and clutter can mask potentially hazardous situations.

Caution: Leak detection solutions should be rinsed off after use.

4.5. Routine Maintenance Issues:
   • Remove excessive dirt, grime and clutter from work areas.
   • Make sure all required guards and shields are in place.

4.6. Functional Test: Before initiating automatic operation, operate the system manually to make sure all required functions operate properly and safely.

4.7. Service or Replacement Intervals: It is the user’s responsibility to establish appropriate service intervals. Valves, FRLs and vacuum products contain components that age, harden, wear, and otherwise deteriorate over time. Environmental conditions can significantly accelerate this process. Valves, FRLs and vacuum components need to be serviced or replaced on routine intervals. Service intervals need to be established based on:
   • Previous performance experiences.
   • Government and / or industrial standards.
   • When failures could result in unacceptable down time, equipment damage or personal injury risk.

4.8. Servicing or Replacing of any Worn or Damaged Parts: To avoid unpredictable system behavior that can cause death, personal injury and property damage:
   • Follow all government, state and local safety and servicing practices prior to service including but not limited to all OSHA Lockout Tagout procedures (OSHA Standard – 29 CFR, Part 1910.147, Appendix A, The Control of Hazardous Energy – Lockout / Tagout).
   • Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
   • Installation, servicing, and / or conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
   • After installation, servicing, or conversions air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or if the product does not operate properly, do not put product or system into use.
   • Warnings and specifications on the product should not be covered or painted over. If masking is not possible, contact your local representative for replacement labels.

4.9. Putting Serviced System Back into Operation: Follow the guidelines above and all relevant Installation and Maintenance Instructions supplied with the valve FRL or vacuum component to insure proper function of the system.
Warning: Use Limitations

Wilkerson's warranties are void, and Wilkerson assumes no responsibility for any resulting cost, loss, injury or any other damages whatsoever, with respect to any plastic bowl unit for which a bowl guard is standard equipment if the unit is placed in service without the bowl guard and, except as otherwise specified in writing by Wilkerson, with respect to any Wilkerson products which are used in other than compressed air service. Specific warnings with respect to these and other use limitations appear elsewhere in this catalog.

Wilkerson maintains a policy of ongoing product development and improvement. We therefore reserve the right to change dimensions specification and design without notice.

Do not place plastic bowl unit in service without bowl guard installed.

Plastic bowl units are sold only with bowl guards with the exception to miniature units (C04, F00, L00, & M00). To minimize the danger of flying fragments in the event of plastic bowl failure, the bowl guards should not be removed. If the unit is in service without the bowl guard installed, manufacturer's warranties are void, and the manufacturer assumes no responsibility for any resulting loss.

If the unit has been in service and does not have a bowl guard, order one and install before placing back in service.

Caution

Certain compressor oils, chemicals, household cleaners, solvents, paints and fumes will attack plastic bowls and can cause bowl failure. Do not use near these materials. When bowl becomes dirty, do not place plastic bowl unit in service without bowl guard installed. Immediately replace any crazed, cracked, damaged or deteriorated plastic bowl with a bowl or a new plastic bowl and bowl guard.

Caution

Except as otherwise specified by the manufacturer, this product is specifically designed for compressed air service, and use with any other fluid (liquid or gas) is a misapplication. For example, use with or injection of certain hazardous liquids or gases in the system (such as alcohol or liquid petroleum gas) could be harmful to the unit or result in a combustible condition or hazardous external leakage. Before using with fluids other than air, or for non-industrial applications, or for life support systems, consult Wilkerson Operations for written approval.

Some of the Materials that will Attack Polycarbonate Plastic Bowls

<table>
<thead>
<tr>
<th>Material</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetalddehyde</td>
<td>Chloroform</td>
</tr>
<tr>
<td>Acetic acid (conc.)</td>
<td>Cresol</td>
</tr>
<tr>
<td>Acetone</td>
<td>Cyclohexanol</td>
</tr>
<tr>
<td>Acrylonitrile</td>
<td>Cyclohexane</td>
</tr>
<tr>
<td>Ammonia</td>
<td>Dimethyl Formamide</td>
</tr>
<tr>
<td>Ammonium Fluoride</td>
<td>Dioxide</td>
</tr>
<tr>
<td>Ammonium Hydroxide</td>
<td>Ethane tetrachloride</td>
</tr>
<tr>
<td>Ammonium Sulfide</td>
<td>Ethylene Chlorohydrin</td>
</tr>
<tr>
<td>Anaerobic adhesives</td>
<td>Ethylene Dichloride</td>
</tr>
<tr>
<td>Trichloride and Sealants</td>
<td>Ethylene Glycol</td>
</tr>
<tr>
<td>Antifreeze</td>
<td>Formic Acid (conc.)</td>
</tr>
<tr>
<td>Benzene</td>
<td>Freon (Refrig. &amp; Propell.)</td>
</tr>
<tr>
<td>Benzal Alcohol</td>
<td>Freon (High Aromatic)</td>
</tr>
<tr>
<td>Brake Fluids</td>
<td>Gasoline</td>
</tr>
<tr>
<td>Bromobenzene</td>
<td>Hydrazine</td>
</tr>
<tr>
<td>Butyric Acid</td>
<td>Hydrochloric Acid (conc.)</td>
</tr>
<tr>
<td>Carboxolic Acid</td>
<td>Lacquer Thinner</td>
</tr>
<tr>
<td>Carbon Disulfide</td>
<td>Methyl Alcohol</td>
</tr>
<tr>
<td>Carbon Tetrachloride</td>
<td>Methylen Chloride</td>
</tr>
<tr>
<td>Caustic Potash Solution</td>
<td>Methylene Salicylate</td>
</tr>
<tr>
<td>Caustic Soda Solution</td>
<td>Methylene Chloride</td>
</tr>
<tr>
<td>Chlorobenzene</td>
<td>Propionic Acid</td>
</tr>
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</table>

Trade Names of some Compressor Oils, Rubber Compounds and other Materials that will Attack Polycarbonate Plastic Bowls

<table>
<thead>
<tr>
<th>Trade Name</th>
<th>Trade Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlas &quot;Perma-Guard&quot;</td>
<td>National Compound #111</td>
</tr>
<tr>
<td>Buna N</td>
<td>&quot;Nylon&quot; VC-3</td>
</tr>
<tr>
<td>Cellulube #150 and #220</td>
<td>Parco #1306 Neoprene</td>
</tr>
<tr>
<td>Crylex #6 cement</td>
<td>&quot;Permabond 910&quot;</td>
</tr>
<tr>
<td>Eastman 910</td>
<td>Petron PD287</td>
</tr>
<tr>
<td>Garlock #98403 (polyurethane)</td>
<td>Prestone</td>
</tr>
<tr>
<td>Haskel #568-023</td>
<td>Pydraul AC</td>
</tr>
<tr>
<td>Hilgard Co.'s hil phene</td>
<td>Sears Regular Motor Oil</td>
</tr>
<tr>
<td>Houghton &amp; Co. oil #1120, #1130 &amp; #1055</td>
<td>Sinclair oil &quot;Lily White&quot;</td>
</tr>
<tr>
<td>Houtou SAFE 1000</td>
<td>Stauffer Chemical FYRQUEL #150</td>
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<tr>
<td>Kano Kroil</td>
<td>Stillman #SR 269-75 (polyurethane)</td>
</tr>
<tr>
<td>Keystone penetrating oil #2</td>
<td>Stillman #SR 513-70 (neoprene)</td>
</tr>
<tr>
<td>*Loctite 271</td>
<td>Tannergas</td>
</tr>
<tr>
<td>*Loctite 290</td>
<td>Teal</td>
</tr>
<tr>
<td>*Loctite 601</td>
<td>Tenneco andor #495 &amp; #500 oils</td>
</tr>
<tr>
<td>*Loctite Teflon-Seatant</td>
<td>Titon</td>
</tr>
<tr>
<td>Marvel Mystery Oil</td>
<td>*Vibra-tite</td>
</tr>
<tr>
<td>Minn. Rubber 366Y</td>
<td>Zerex</td>
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</table>

We cannot possibly list all harmful substances, so check with Mobay or the General Electric office for further information on polycarbonate plastic.

The trade names “EconOmist” and “Flow-Guide” are registered at the United States Patent Office.

“Auto-Fill”, “Dial-Air”, “Flex-Drain”, “Mainliner” and “Whirl-Flo” are tradenames of Wilkerson.

Claims and Shortages: Risk of loss passes to buyer when goods are delivered to the carrier. Inspect all shipments for damage at time of receipt. Claims should be filed by the consignee against the carrier.

Changes: Wilkerson maintains a policy of ongoing product development and improvement. We therefore reserve the right to change dimensions, specifications and design without notice.
Offer of Sale

The items described in this document and other documents or descriptions provided by The Company, its subsidiaries and its authorized distributors, are hereby offered for sale at prices to be established by The Company, its subsidiaries and its authorized distributors. This offer and its acceptance by any customer (“Buyer”) shall be governed by all of the following Terms and Conditions. Buyer’s order for any such item, when communicated to The Company, its subsidiaries or an authorized distributor (“Seller”) verbally or in writing, shall constitute acceptance of this offer.

1. Terms and Conditions of Sale: All descriptions, quotations, proposals, offers, acknowledgments, acceptances and sales of Seller’s products are subject to the terms and conditions stated herein. Buyer’s acceptance of any offer to sell is limited to these terms and conditions. Any terms or conditions in addition to, or inconsistent with those stated herein, proposed by Buyer in any acceptance of an offer by Seller, are hereby objected to. No such additional, different or inconsistent terms and conditions shall become part of the contract between Buyer and Seller unless expressly accepted in writing by Seller. Seller’s acceptance of any offer to purchase by Buyer is expressly conditional upon Buyer’s assent to all the terms and conditions stated herein, including any terms in addition to, or inconsistent with those contained in Buyer’s offer. Acceptance of Seller’s products shall in all events constitute such assent.

2. Payment: Payment shall be made by Buyer net 30 days from the date of delivery of the items purchased hereunder. Amounts not timely paid shall bear interest at the maximum rate permitted by law for each month or portion thereof that the Buyer is late in making payment. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 30 days after Buyer’s receipt of the shipment.

3. Delivery: Unless otherwise provided on the face hereof, delivery shall be made F.O.B. Seller’s plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller’s delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery.

4. Warranty: Seller warrants that the items sold hereunder shall be free from defects in material or workmanship for a period of 18 months from Seller’s date of manufacture of the items or from the date of delivery to Buyer, whichever occurs first. Seller makes no other warranty, guarantee, or representation of any kind whatsoever. Seller’s sole and exclusive liability and Buyer’s sole and exclusive remedy will be either repair or replacement of such items delivered hereunder, whichever is determined to be necessary by Seller. Seller’s obligations under this warranty will be null and void if the cause of action accrues more than two (2) years after the date hereof. Seller’s obligation to defend and indemnify Buyer pursuant to this warranty is subject to Buyer’s compliance with all of Seller’s terms and conditions set forth herein. Seller’s warranty does not extend to any item that has been previously purchased, repaired, modified, altered, or used in any manner other than as intended by Seller. Buyer shall be solely responsible for the design, manufacture, operation, and maintenance of any item purchased hereunder.

5. Limitation of Remedy: Seller’s liability arising from or in any way connected with the sale of items sold or refunded under this contract shall be limited exclusively to repair or replacement of the items sold or refunded, subject to a claim made by Buyer. Seller’s sole option is to replace the items, and Buyer may request to cancel or request a price adjustment. Buyer shall be liable for any incidental, consequential or special damages of any kind or nature whatsoever, including but not limited to lost profits arising from or in any way connected with this Agreement or items sold hereunder, whether alleged to arise from breach of contract, express or implied warranty, or in tort, including without limitation, negligence, failure to warn or strict liability.

6. Changes, Reschedules and Cancellations: Buyer may request to modify the designs or specifications for the items sold hereunder as long as such modifications are communicated in writing to Seller prior to the start of production. Seller shall have no liability for any delays in delivery caused by such modifications. Seller may cancel any portion of this order, however, no such requested modification or cancellation shall become part of the contract between Buyer and Seller unless accepted by Seller in a written amendment to this Agreement. Acceptance of any such requested modification or cancellation shall be at Seller’s discretion, and shall be upon such terms and conditions as Seller may require.

7. Special Tooling: A tooling charge may be imposed for any special tooling, including without limitations, dies, fixtures, molds, and patterns, acquired to manufacture items sold pursuant to this contract. Special tooling shall remain the property of Seller and may not be used by Buyer for any purpose other than to manufacture items specified in the contract. Buyer shall be responsible for the design, manufacture, operation, and maintenance of any tooling purchased hereunder. Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

8. Buyer’s Property: Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer, or any other items which become Buyer’s property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller’s possession or control.

9. Taxes: Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupation or similar or other taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Seller agrees to pay all such taxes or to reimburse Buyer therefore upon receipt of its statement or other claim for such amounts. Customer shall bear interest at the maximum rate permitted by law for each month or portion thereof that the Buyer is late in making payment. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 30 days after Buyer’s receipt of the shipment.

10. Entire Agreement/Governing Law: This Agreement, together with any amendments, modifications and any different terms or conditions expressly accepted by Buyer in writing, shall constitute the entire Agreement concerning the items sold, and there are no other representations, promises, agreements or understandings made by Seller in connection herewith. All other warranties, representations, promises, agreements or understandings made by Seller shall be void. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.

Pneumatic Division
Richland, Michigan
www.wilkersoncorp.com