Parker Global Air Preparation System
Catalog 0750-2 US

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

ENGINEERING YOUR SUCCESS.
Global Air Preparation System

DECLARATION OF COMPLIANCE (ROHS)

European Directive 2011/65/EU – RoHS (Restriction us of certain Hazardous Substances in electrical and electronic equipment), restricts the use of the 6 substances in the manufacture of specified electrical equipment.

Lead: Product containing lead and its compound (except for applications of lead as an alloying element by weight in steel up to 0.35%, in aluminium up to 0.4% and in copper alloys up to 4% and in circuit board solder) must not exceed 0.1% by weight

Mercury: The concentration level must not exceed 0.1% by volume

Cadmium: The concentration level must not exceed 0.01% by volume

Hexavalent Chromium:

This is a corrosive protective finish used on our product line. Where this finish is utilized the Chromate solution is Hexavalent (Chrome 6) free.

Polybrominated Biphenyls (PBB):
The concentration level must not exceed 0.1% by weight. This substance is not known to be in any of our products.

Polybrominated Diphenyl Ethers (PBDE):
The concentration level must not exceed 0.1% by weight. This substance is not known to be in any of our products.

Global Air Preparation products supplied by Parker Hannifin have been designed and manufactured in accordance with “sound engineering practice”, as defined by Article 3 of Pressure Equipment Directive 97/23/EC.

Global Air Preparation product range has been third party Shock & Vibration tested independently in accordance to EN 61373 : 1999, Category 2.

Global Air Preparation product range has been third party Shock & Vibration tested independently in accordance to EN 61373 : 1999, Category 2.

 seguridad personal e propiedad materia.

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Global Air Preparation System

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Parker Global Air Preparation System


Performance you need, wherever you need it.

The comprehensive Global Air Preparation System is available in three body sizes with either BSPP, BSPT, or NPT to accommodate thread type requirements.

Full featured filters, regulators, filter/regulators, and lubricators are available with a wide range of standard options to meet air preparation needs.

Individual units can easily be assembled into various combinations, utilizing patented modular lightweight body connectors.

www.parker.com/globalfrl
Comprehensive Offering

**Filters**
- 5µ particulate, 1.0µ and 0.01µ coalescing, and adsorber available as standard
- Transparent or metal bowl with manual or auto float drains standard

**Regulators**
- Available as stand alone, common port and electronic proportional
- Both relieving and non-relieving versions available

**Filter / Regulators**
- Compact design for space savings
- Available with all the same standard options as the filters and regulators

**Lubricators**
- Proportional oil delivery over a wide range of air flows
- Fill under pressure

**Combinations**
- Compact design for space savings
- Easily assembled
- Many configurations available

**Accessories**
- Solenoid operated soft start, quick dump, and soft start/quick dump valves
- Manifold blocks
- Shut-off valves (both slide and ball type)
- Repair kits, gauges, etc.
Fast cycle times, high product quality, and low downtime all require a clean, dry pneumatic system to function properly. Parker has what it takes to make sure pneumatic systems perform at their best.

As air is compressed to 7 bar (100 psig) and higher, the relative humidity quickly reaches 100% RH and air temperatures can reach between 110°C and 200°C (230°F and 392°F).

For every 11°C (20°F) that the air cools after leaving the heat of the compressor, 50% of the moisture condenses into liquid into the system.

The excess moisture condenses and collects in the receiver tank and distribution lines. This condensate must be removed.

Bulk liquid separators remove condensed liquids after the aftercooler, receiver, or anywhere within the distribution system.

Bulk liquid separators also help protect downstream filters in the system where excess cooling takes place.

Particulate filters are used for the removal of solid particle contaminants down to 5 micron, as well as the removal of condensed liquids.

This type of filter should be used as a prefilter for the coalescing (oil removal) filter.

Coalescing filters are designed to remove water and oil aerosols (not vapor) and particulate from air streams down to 0.01 micron in size.

Installed in pairs, Particulate and Coalescing filters ensure a continuous supply of high quality air.

Together we can power your application with clean, dry air

Clean, dry pneumatic systems with Parker Global Air Preparation

Key
- Particulate
- Oil
- Water
- Oil Vapor
- Water Vapor

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/globalfrl
**Catalog 0750-2 US**

**Global Air Preparation System**

**Parker Global Air Preparation Products**

**Introduction**

---

### Stages

<table>
<thead>
<tr>
<th>Stages</th>
<th>Function</th>
<th>Application</th>
<th>Description</th>
<th>Parker Global Air Preparation Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Air Compressor</td>
<td>All pneumatic systems</td>
<td>Air leaving the compressor room at 98°C (200°F) releases 95% of its moisture into the piping system when it cools to 38°C (100°F)</td>
<td>Customer supplied</td>
</tr>
<tr>
<td>2</td>
<td>Bulk Liquid Removal</td>
<td>Basic pneumatic systems</td>
<td>Removes bulk liquid contamination and protects filters where excess cooling takes place in the distribution piping</td>
<td>P3TF Bulk Liquid Separator</td>
</tr>
<tr>
<td>3</td>
<td>Particulate Filtration</td>
<td>Basic pneumatic systems</td>
<td>Remover solid particulates down to 5 micron, and the separation of bulk contaminants.</td>
<td>P31, P32, P33 Particulate Filter</td>
</tr>
<tr>
<td>4</td>
<td>Coalescing Filtration</td>
<td>Systems requiring highest quality air.</td>
<td>Removes liquid aerosols and submicron particulates (not vapor) down to 0.01 micron.</td>
<td>P31, P32, P33 Coalescing Filter</td>
</tr>
<tr>
<td>5</td>
<td>Air Dryers</td>
<td>Systems requiring air with reduced moisture content</td>
<td>Removes water vapor from air stream. Dew point reduced down to 4°C (40°F) (refrigeration) or -40°C (-40°F) (desiccant).</td>
<td>PDRD Refrigeration Dryer P3TJ Regenerative Desiccant Dryer</td>
</tr>
<tr>
<td>6</td>
<td>Hydrocarbon Removal</td>
<td>Systems requiring highest quality air for critical applications</td>
<td>Removal of odors and trace vapors for critical applications.</td>
<td>P31, P32, P33 Activated Carbon (Adsorber) Filter</td>
</tr>
</tbody>
</table>

---

### Refrigeration and Desiccant Dryers

1. Refrigeration and desiccant dryers lower the air’s dew point by removing water vapor, providing appropriately dry air for the downstream application.
2. Hydrocarbon and oil vapors are removed using filters utilizing activated carbon. Airborne hydrocarbons are often left over from the compressor oils.

---

**Clean Dry Air**
A completely modular air preparation system

Easy to adjust non-rising knob with snap-lock, preventing accidental change of set pressure

Filter

Quick release bayonet-type integral bowl and bowl guard assembly

Bowl guard with multiple viewing slots

Manual drain with pipe-away, auto drain available

Regulator

Pressure gauge

Electronic Proportional Regulator

- Electro-Pneumatic regulator
- Integrated systems control
- Accurate output pressure
- Micro parameter settings
- Selectable I/O parameters
- Quick, full flow exhaust
- LED display indicates output pressure
- No air consumption in steady state
- Multiple mounting options
- Protection to IP65

P Parker Global Air Preparation Products

Introduction

P31P Mini Series

P32P Compact Series
Common Port Manifold Regulators

- Multiple output pressures (P2, P3, P4, etc.) with common inlet (P1)
- Available in two sizes P31 and P32
- Balanced valve design for accurate pressure regulation
- Outlet pressure ports in front and rear of unit.
- Four spring ranges available
Air Preparation

P31 Mini Series

40mm body width
1/4" Ported

Flows up to: \( \text{dm}^3/\text{s} \) (SCFM)
- Filter: 12 (25)
- Coalescer: 2 (4.2)
- Regulator: 30 (64)
- Filter/Regulator: 14 (30)
- Lubricator: 13 (28)

Features:
- Space saving integral gauge
- Manifold style regulators available
- OSHA compliant shut-off valves
- Soft-Start & Quick Dump valves
- Electronic Proportional Regulator

P32 Compact Series

60mm body width
1/4", 3/8", & 1/2" Ported

Flows up to: \( \text{dm}^3/\text{s} \) (SCFM)
- Filter: 38 (80)
- Coalescer: 11 (23)
- Regulator: 67 (142)
- Filter/Regulator: 64 (136)
- Lubricator: 47 (100)

Features:
- Manifold style regulators available
- OSHA Compliant shut-off valves
- Soft-Start & Quick Dump valves
- Electronic Proportional Regulator

P33 Standard Series

73mm body width
1/2" & 3/4" Ported

Flows up to: \( \text{dm}^3/\text{s} \) (SCFM)
- Filter: 48 (102)
- Coalescer: 20 (42)
- Regulator: 100 (212)
- Filter/Regulator: 98 (208)
- Lubricator: 68 (144)

Features:
- OSHA Compliant shut-off valves
- Soft-Start & Quick Dump valves (Utilizes P32 size only)
- Electronic proportional regulator (Utilizes P32 size only)
Valves and Actuators

Mini Series Complimentary Products

The P31 Mini Series FRL’s and accessories are well matched for use with these Parker valves and actuators.

- Isys Micro
- OSP-P
- P1D
- P1A

Compact Series Complimentary Products

The P32 Series FRL’s & accessories are well matched for use with these Parker valves and actuators.

- Isys Micro
- OSP-P
- P1D
- Isys HA / HB

Standard Series Complimentary Products

The P33 Series FRL’s & accessories are well matched for use with these Parker valves and actuators.

- Isys Size 1
- Isys HA / HB
- OSP-P

Moduflex Size 1
Complete Pneumatic System

Pressure Regulation

Accurate pressure regulation is important to control forces, speeds, torque, dispensing, processes, etc. Parker has a global solution to all of your pressure regulation needs, with support around the world.

<table>
<thead>
<tr>
<th>Function</th>
<th>Single</th>
<th>Common Port Manifold</th>
<th>Electronic Proportional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>For pneumatic systems requiring single pressure regulation.</td>
<td>For pneumatic systems requiring multiple pressures for different parts of the system, yet still having a common inlet supply.</td>
<td>For pneumatic systems requiring an electronic to pneumatic proportional control signal. Also allows pressure regulation to be integrated into your control systems.</td>
</tr>
</tbody>
</table>

Accessories

Today’s sophisticated pneumatic systems need more than just FRL’s. Often times peripheral accessory products are needed to complete your pneumatic system. Parker has what is needed to ensure safe and reliable start-ups, shut-downs, and lockouts, etc.

<table>
<thead>
<tr>
<th>Function</th>
<th>Ball Valve</th>
<th>Slide Valve</th>
<th>Soft Start / Quick Dump</th>
<th>Soft Start</th>
<th>Quick Dump</th>
<th>Manifold Block</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft Start Function</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quick Dump Function</td>
<td>Slow Exhaust</td>
<td>Slow Exhaust</td>
<td>Solenoid or Air Pilot</td>
<td>Solenoid, Air Pilot, or Internal Air Pilot</td>
<td>Solenoid or Air Pilot</td>
<td>N/A</td>
</tr>
<tr>
<td>Operation</td>
<td>Manual Twist</td>
<td>Manual Slide</td>
<td></td>
<td>After FRL</td>
<td>After FRL</td>
<td></td>
</tr>
<tr>
<td>Placement</td>
<td>Before or after FRL or stand alone</td>
<td>Before or after FRL or stand alone</td>
<td>After FRL</td>
<td>After FRL</td>
<td>Anywhere within FRL or stand alone</td>
<td></td>
</tr>
</tbody>
</table>
# Application Guide

**FRL to Valve:** The chart below contains recommendations for the correct selection of Global Air Preparation units to suit the number and size of valves in a typical application.

<table>
<thead>
<tr>
<th>Number of valves that would actuate at once</th>
<th>P31 Mini Series</th>
<th>P32 Compact Series</th>
<th>P33 Standard Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2</td>
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<td>3</td>
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<td>5</td>
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<td>12</td>
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<td>14</td>
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<tr>
<td>15</td>
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<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Moduflex 1 |                  |                    |                     |
| Isys Micro |                  |                    |                     |
| HB / Viking Xtreme |           |                    |                     |
| Moduflex 2 |                  |                    |                     |
| HA / Global ISO |                |                    |                     |

**Actuator to FRL:** The chart below contains recommendations for the correct selection of Global Air Preparation units suitable for each cylinder size. If you have a tube length over 2 m, choose one tube size larger than the chart. The table is based on a Maximum cylinder speed of 0.5 m/s.

<table>
<thead>
<tr>
<th>Cylinder bore size</th>
<th>Tube Ø mm (External)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 (1/16)</td>
<td>4 (5/32)</td>
</tr>
<tr>
<td>10 (7/16)</td>
<td>4 (5/32)</td>
</tr>
<tr>
<td>16 (9/16)</td>
<td>4 (5/32)</td>
</tr>
<tr>
<td>20 (3/4)</td>
<td>6 (1/4)</td>
</tr>
<tr>
<td>25 (1)</td>
<td>6 (1/4)</td>
</tr>
<tr>
<td>28 (1-1/8)</td>
<td>6 (1/4)</td>
</tr>
<tr>
<td>32 (1-1/4)</td>
<td>8 (5/16)</td>
</tr>
<tr>
<td>40 (1-1/2)</td>
<td>8 (5/16)</td>
</tr>
<tr>
<td>45 (1-3/4)</td>
<td>10 (3/8)</td>
</tr>
<tr>
<td>50 (2)</td>
<td>8 (5/16)</td>
</tr>
<tr>
<td>63 (2-1/2)</td>
<td>10 (3/8)</td>
</tr>
<tr>
<td>75 (3)</td>
<td>12 (1/2)</td>
</tr>
<tr>
<td>80 (3-1/4)</td>
<td>12 (1/2)</td>
</tr>
<tr>
<td>100 (4)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of cylinders actuating at once</th>
<th>P31 Mini Series</th>
<th>P32 Compact Series</th>
<th>P33 Standard Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
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<td></td>
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<td></td>
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<td>9</td>
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<td></td>
<td></td>
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<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Data listed above is simply a guideline for a typical application only. Proper sizing and correct flow requirements must be taken into account.
**Popular Combinations**

**Filter + Regulator + Lubricator Combinations + Poly bowl**
- 5 micron element, 8 bar (116 psig) Regulator + Gauge and Wall Mounting Brackets
- Inlet pressure 10 bar (145 psig), Secondary pressure 6.3 bar (91.3 psig), 1 bar (14.5 psig) pressure drop.

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow (dm³/s)</th>
<th>Manual Drain</th>
<th>Weight</th>
<th>Pulse Drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>13</td>
<td>27</td>
<td>P31CB92GEMN5LNW</td>
<td>0.46 kg (1.01 lbs)</td>
<td>P31CB92GEBN5LNW</td>
</tr>
</tbody>
</table>

**Filter / Regulator coding**
(Use with codes: A M)

| Filter coding (use with combo codes: B F G) | For multiple filters, repeat as needed |

**Regulator coding**
(Use with combo code: B)

| Lubricator coding | (Use with combo codes: A B) |

**Assembly configuration**

---

**Filter + Regulator + Lubricator Combinations + Poly bowl**
- 5 micron element, 8 bar (116 psig) Regulator + Gauge and Wall Mounting Brackets
- Inlet pressure 10 bar (145 psig), Secondary pressure 6.3 bar (91.3 psig), 1 bar (14.5 psig) pressure drop.

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow (dm³/s)</th>
<th>Manual Drain</th>
<th>Weight</th>
<th>Pulse Drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>14</td>
<td>28</td>
<td>P31CA92GEMN5LNW</td>
<td>0.35 kg (0.77 lbs)</td>
<td>P31CA92GEBN5LNW</td>
</tr>
</tbody>
</table>

---

**P 3 1**

- **Combination**
  - B/V + Combination: Q
  - Combination + B/V: X
  - Combination + Shut off: Y
  - Shut off + Combination: Z

- **Thread type**
  - BSPP: 1
  - BSPT: 2
  - NPT: 9

- **Combination type**
- F/R+L: A
- F+Fc+Fa: G
- F+R+Fc: M
- F+Fc: F
- F+Fc1+Fc: Q

- **Port size**: 1/4
- **Drain type**
  - Manual drain: M
  - Pulse drain: B

- **Bowl type**
  - Poly bowl with bowl guard: G
  - Metal bowl without sight gauge: M

- **Example**: If a “G” is specified for a F+L, both units would get a poly bowl with bowl guard.

---

**Relief / Adjustment**
- Non-rising knob: N

**Adjustment range**

<table>
<thead>
<tr>
<th>With square gauge</th>
<th>psig</th>
<th>bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>30” = 1</td>
<td>60 = 3</td>
<td>4 = S</td>
</tr>
<tr>
<td>60 = 5</td>
<td>125 = 8</td>
<td>T</td>
</tr>
</tbody>
</table>

**Without gauge**

<table>
<thead>
<tr>
<th>psig</th>
<th>bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>Y</td>
</tr>
<tr>
<td>60</td>
<td>L</td>
</tr>
<tr>
<td>125</td>
<td>N</td>
</tr>
</tbody>
</table>

- Unit comes with 0-4 bar or 0-60 psig gauge respectively.
- Order round gauges separately - see page 31.

---

**Mounting**
- No bracket: A
- Port blocks: C
- Port blocks & wall brkt: D
- Wall bracket: W

---

* For 3/8" Port Blocks please order separately. See Kits section.
## Global Air Preparation System

### Popular Combinations

**Filter + Regulator + Lubricator Combinations + Poly bowl**

- 5 micron element, 8 bar (116 psig) Regulator + Gauge and Wall Mounting Brackets
- Inlet pressure 10 bar (145 psig), Secondary pressure 6.3 bar (91.3 psig), 1 bar (14.5 psig) pressure drop.

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow (dm³/s)</th>
<th>Manual Drain</th>
<th>Weight Manual Drain</th>
<th>Auto Drain</th>
<th>Weight Auto Drain</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>20</td>
<td>22</td>
<td>P32CB92GEMNGLNW</td>
<td>1.29 kg</td>
<td>P32CB92GEANGLNW</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>32</td>
<td>33</td>
<td>P32CB93GEMNGLNW</td>
<td>1.29 kg</td>
<td>P32CB93GEANGLNW</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>40</td>
<td>43</td>
<td>P32CB94GEMNGLNW</td>
<td>1.29 kg</td>
<td>P32CB94GEANGLNW</td>
</tr>
</tbody>
</table>

**Filter/Regulator Combinations + Poly bowl**

- 5 micron element, 8 bar (116 psig) Regulator + Gauge and Wall Mounting Brackets
- Inlet pressure 10 bar (145 psig), Secondary pressure 6.3 bar (91.3 psig), 1 bar (14.5 psig) pressure drop.

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow (dm³/s)</th>
<th>Manual Drain</th>
<th>Weight Manual Drain</th>
<th>Auto Drain</th>
<th>Weight Auto Drain</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>22</td>
<td>22</td>
<td>P32CA92GEMNGLNW</td>
<td>1.03 kg</td>
<td>P32CA92GEANGLNW</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>33</td>
<td>33</td>
<td>P32CA93GEMNGLNW</td>
<td>1.03 kg</td>
<td>P32CA93GEANGLNW</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>43</td>
<td>43</td>
<td>P32CA94GEMNGLNW</td>
<td>1.03 kg</td>
<td>P32CA94GEANGLNW</td>
</tr>
</tbody>
</table>

### Filter / Regulator coding

- Use with codes: A M

<table>
<thead>
<tr>
<th>Filter coding (use with combo codes: B F G)</th>
<th>Regulator coding (use with combo code: B)</th>
<th>Lubricator coding (use with combo codes: A B)</th>
<th>Assembly configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter/Regulator + Lubricator + Poly bowl</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bowl type**

- Poly bowl with bowl guard
- Metal bowl without sight gauge
- Metal bowl with sight gauge

**Example:** If a “G” is specified for a F+L, both units would get a poly bowl with bowl guard.

---

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/globalfrl
Global Air Preparation System

Popular Combinations

Filter + Regulator + Lubricator Combinations + Poly bowl
5 micron element, 8 bar (116 psig) Regulator + Gauge and Wall Mounting Brackets
Inlet pressure 10 bar (145 psig), Secondary pressure 6.3 bar (91.3 psig),
1 bar (14.5 psig) pressure drop.

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow dm³/s (scfm)</th>
<th>Manual Drain</th>
<th>Weight</th>
<th>Auto Drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>52</td>
<td>110</td>
<td>P33CB94GEMNGLNW 1.84 kg (4.06 lbs)</td>
<td>P33CB94GEANGLNW 1.84 kg (4.06 lbs)</td>
<td></td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>71</td>
<td>150</td>
<td>P33CA94GEMNGLNW 1.51 kg (3.33 lbs)</td>
<td>P33CA94GEANGLNW 1.51 kg (3.33 lbs)</td>
<td></td>
</tr>
</tbody>
</table>

Filter/Regulator + Lubricator Combinations + Poly bowl
5 micron element, 8 bar (116 psig) Regulator + Gauge and Wall Mounting Brackets
Inlet pressure 10 bar (145 psig), Secondary pressure 6.3 bar (91.3 psig),
1 bar (14.5 psig) pressure drop.

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow dm³/s (scfm)</th>
<th>Manual Drain</th>
<th>Weight</th>
<th>Auto Drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>43</td>
<td>90</td>
<td>P33CB94GEMNGLNW 1.84 kg (4.06 lbs)</td>
<td>P33CB94GEANGLNW 1.84 kg (4.06 lbs)</td>
<td></td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>52</td>
<td>110</td>
<td>P33CA96GEMNGLNW 1.51 kg (3.33 lbs)</td>
<td>P33CA96GEANGLNW 1.51 kg (3.33 lbs)</td>
<td></td>
</tr>
</tbody>
</table>

Filter & Regulator coding
(use with combo codes: A M)

<table>
<thead>
<tr>
<th>Element</th>
<th>0.01µ Element</th>
<th>0.01µ Element with dpi</th>
<th>1µ Element</th>
<th>1µ Element with dpi</th>
<th>Adsorber</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>A</td>
</tr>
</tbody>
</table>

Relief / Adjustment

<table>
<thead>
<tr>
<th>Adjustment range</th>
<th>With round gauge</th>
<th>Without gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>With gauge</td>
<td>2 bar; 30 psig; 0.2 MPa</td>
<td>2 bar; 30 psig; 0.2 MPa</td>
</tr>
<tr>
<td></td>
<td>4 bar; 60 psig; 0.4 MPa</td>
<td>4 bar; 60 psig; 0.4 MPa</td>
</tr>
<tr>
<td></td>
<td>8 bar; 125 psig; 0.8 MPa</td>
<td>8 bar; 125 psig; 0.8 MPa</td>
</tr>
<tr>
<td></td>
<td>17 bar; 250 psig; 1.7 MPa</td>
<td>17 bar; 250 psig; 1.7 MPa</td>
</tr>
<tr>
<td>Without gauge</td>
<td>2 bar; 30 psig; 0.2 MPa</td>
<td>2 bar; 30 psig; 0.2 MPa</td>
</tr>
<tr>
<td></td>
<td>4 bar; 60 psig; 0.4 MPa</td>
<td>4 bar; 60 psig; 0.4 MPa</td>
</tr>
<tr>
<td></td>
<td>8 bar; 125 psig; 0.8 MPa</td>
<td>8 bar; 125 psig; 0.8 MPa</td>
</tr>
<tr>
<td></td>
<td>17 bar; 250 psig; 1.7 MPa</td>
<td>17 bar; 250 psig; 1.7 MPa</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drain type</th>
<th>No drain; closed end</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Mounting</th>
<th>No bracket</th>
<th>Port blocks &amp; wall brkt</th>
</tr>
</thead>
</table>

Example: If a “G” is specified for a F/R, both units would get a poly bowl with bowl guard.
Popular Combination Dimensions  \( \text{mm (inches)} \)

**P31C**

- 4mm (5/32") I.D. Tube Barb fitting
- Bowl removal clearance

**P32C**

- 4.8 mm (.19) I.D. Tube Barb fitting
- Bowl removal clearance, (Manual and Auto Drain.)

**P33C**

- 4.8 mm (.19) I.D. Tube Barb fitting
- Bowl removal clearance, (Manual and Auto Drain.)
Mini Particulate Filter - P31

Symbols

- Integral 1/4" ports (NPT, BSPP & BSPT)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminum construction
- One hand operation for easy element cartridge removal
- Positive bayonet latch to ensure correct & safe fitting

Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code</th>
<th>Flow $^\dagger$ (dm$^3$/s (scfm))</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - Manual drain</td>
<td>P31FA92EGMN</td>
<td>12 (25)</td>
<td>10 (150)</td>
<td>116.3 (4.58)</td>
<td>40 (1.58)</td>
<td>42.7 (1.68)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - Pulse drain</td>
<td>P31FA92EGBN</td>
<td>12 (25)</td>
<td>10 (150)</td>
<td>116.3 (4.58)</td>
<td>40 (1.58)</td>
<td>42.7 (1.68)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - Manual drain</td>
<td>P31FA92EMMN</td>
<td>12 (25)</td>
<td>17 (250)</td>
<td>116.3 (4.58)</td>
<td>40 (1.58)</td>
<td>42.7 (1.68)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - Pulse drain</td>
<td>P31FA92EMBN</td>
<td>12 (25)</td>
<td>17 (250)</td>
<td>116.3 (4.58)</td>
<td>40 (1.58)</td>
<td>42.7 (1.68)</td>
</tr>
</tbody>
</table>

$^\dagger$ Standard part numbers shown in bold. For other models refer to Options chart above.

$^\ddagger$ Flow with 6.3 bar (91.3 psig) inlet pressure and 0.34 (4.9 psig) pressure drop.
Global Air Preparation System

Specifications

Flow Capacity*  1/4  12 dm³/s (25 scfm)
Operating Pressure
Plastic Bowl -10°C to 52°C (14°F to 125°F)
Metal Bowl -10°C to 65.5°C (14°F to 150°F)
Max. Supply Pressure
Plastic Bowl 10 bar (150 psig)
Metal Bowl 17 bar (250 psig)
Standard Filtration 5 Micron
Useful Retention† 12 cm³ (0.4 US oz.)
Port Size BSPP / BSPT / NPT 1/4
Weight 0.11 kg (0.24 lbs)

* Inlet pressure 6.3 bar (91.3 psig). Pressure drop 0.34 bar (4.9 psig).
† Useful retention refers to volume below the quiet zone baffle.

Air quality:
Within ISO 8573-1: 1991 Class 3 (Particulates)
Within ISO 8573-1: 2001 Class 6 (Particulates)

Materials of Construction

Body Aluminum
Body Cap ABS
Bowl Polycarbonate
Bowl Guard Nylon
Element Retainer Acetal
Baffle Acetal
Filter Element Sintered Polyethylene
Seals Nitrile

Dimensions mm (inches)

Flow Charts

1/4 Filter

<table>
<thead>
<tr>
<th>Pressure Drop (bar)</th>
<th>Flow (dm³/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td>0</td>
</tr>
<tr>
<td>0.2</td>
<td>5</td>
</tr>
<tr>
<td>0.3</td>
<td>20</td>
</tr>
<tr>
<td>0.4</td>
<td>40</td>
</tr>
</tbody>
</table>

Repair and Service Kits

Plastic bowl / Bowl guard manual drain  P31KA00BGM
Metal bowl / w/o sight gauge manual drain  P31KA00BMM
Plastic bowl / Bowl guard pulse drain  P31KA00BGB
Metal bowl / w/o sight gauge pulse drain  P31KA00BMB
5µ particle filter element  P31KA00ESE
C-Bracket (fits to body)  P31KA00MW
T-Bracket with body connector  P31KA00MT
Body connector  P31KA00CB
Global Air Preparation System

Compact Particulate Filter - P32

Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code</th>
<th>Flow† dm³/s (scfm)</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - Manual drain</td>
<td>P32FA92EGMN</td>
<td>18 (38)</td>
<td>10 (150)</td>
<td>188 (7.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - Auto drain</td>
<td>P32FA92EGAN</td>
<td>18 (38)</td>
<td>10 (150)</td>
<td>182 (7.2)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - Manual drain</td>
<td>P32FA92ESMN</td>
<td>18 (38)</td>
<td>17 (250)</td>
<td>188 (7.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - Auto drain</td>
<td>P32FA92ESAN</td>
<td>18 (38)</td>
<td>17 (250)</td>
<td>182 (7.2)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>Poly bowl - Manual drain</td>
<td>P32FA93EGMN</td>
<td>30 (64)</td>
<td>10 (150)</td>
<td>188 (7.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>Poly bowl - Auto drain</td>
<td>P32FA93EGAN</td>
<td>30 (64)</td>
<td>17 (250)</td>
<td>182 (7.2)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>Metal bowl - Manual drain</td>
<td>P32FA93ESMN</td>
<td>30 (64)</td>
<td>17 (250)</td>
<td>188 (7.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>Metal bowl - Auto drain</td>
<td>P32FA93ESAN</td>
<td>30 (64)</td>
<td>17 (250)</td>
<td>182 (7.2)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - Manual drain</td>
<td>P32FA94EGMN</td>
<td>38 (80)</td>
<td>10 (150)</td>
<td>188 (7.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - Auto drain</td>
<td>P32FA94EGAN</td>
<td>38 (80)</td>
<td>10 (150)</td>
<td>182 (7.2)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Metal bowl - Manual drain</td>
<td>P32FA94ESMN</td>
<td>38 (80)</td>
<td>17 (250)</td>
<td>188 (7.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Metal bowl - Auto drain</td>
<td>P32FA94ESAN</td>
<td>38 (80)</td>
<td>17 (250)</td>
<td>182 (7.2)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
</tbody>
</table>

Symbols:

- Manual drain
- Auto drain

- Integral 1/4", 3/8" or 1/2" ports (NPT, BSPP & BSPT)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminum construction
- Positive bayonet latch to ensure correct & safe fitting

Options:

- Bowl type:
  - Poly bowl with bowl guard
  - Metal bowl without sight gauge
  - Metal bowl with sight gauge

- Drain type:
  - Manual drain
  - Auto drain

- Mounting:
  - No bracket

- Thread type:
  - BSPP
  - BSPT
  - NPT

- Port size:
  - 1/4"
  - 3/8"
  - 1/2"

- Element:
  - 5µ Element

† Standard part numbers shown in bold. For other models refer to Options chart above.
‡ Flow with 6.3 bar (91.3 psig) inlet pressure and 0.34 (4.9 psig) pressure drop.
**Specifications**

<table>
<thead>
<tr>
<th>Operating Pressure</th>
<th>1/4</th>
<th>3/8</th>
<th>1/2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic Bowl</td>
<td>-25°C to 52°C (-13°F to 125°F)</td>
<td>-25°C to 52°C (-13°F to 125°F)</td>
<td>-25°C to 52°C (-13°F to 125°F)</td>
</tr>
<tr>
<td>Metal Bowl</td>
<td>-25°C to 65.5°C (-13°F to 150°F)</td>
<td>-25°C to 65.5°C (-13°F to 150°F)</td>
<td>-25°C to 65.5°C (-13°F to 150°F)</td>
</tr>
</tbody>
</table>

Max. Supply Plastic Bowl 10 bar (150 psig)

Max. Supply Metal Bowl 17 bar (250 psig)

Standard Filtration 5 Micron

Useful Retention† 51 cm³ (1.7 US oz.)

Port Size BSPP / BSPT / NPT 1/4, 3/8, 1/2

Weight 0.28 kg (0.62 lbs)

* Inlet pressure 6.3 bar (91.3 psig). Pressure drop 0.34 bar (4.9 psig).
† Useful retention refers to volume below the quiet zone baffle.

**Air quality:**
- Within ISO 8573-1: 1991 Class 3 (Particulates)
- Within ISO 8573-1: 2001 Class 6 (Particulates)

**Materials of Construction**

- **Body** Aluminum
- **Body Cap** ABS
- **Bowls**
  - Plastic Bowl Polycarbonate
  - Metal Bowl Aluminum
- **Bowl Guard** Nylon
- **Deflector** Polypropylene
- **Element Retainer / Baffle** Acetal
- **Filter Element** Sintered Polyethylene
- **Seals** Nitrile
- **Sight Gauge**
  - Metal Bowl Polycarbonate

**Dimensions** mm (inches)

- **Manual Drain**
  - 60 (2.36)
  - 30 (1.18)
  - 188 (7.4)
  - 4.8 mm (0.19”)
  - I.D. Tube Barb fitting

- **Automatic Drain**
  - 60 (2.36)
  - 25 (1.0)
  - Use 10mm or 3/8” Flex Tubing

**Flow Charts**

1/4 Filter

<table>
<thead>
<tr>
<th>Primary Pressure - bar</th>
<th>1.6</th>
<th>23.2</th>
<th>4.0</th>
<th>58</th>
<th>6.3</th>
<th>91.4</th>
<th>10</th>
<th>145</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Pressure - psig</td>
<td>23.2</td>
<td>23.2</td>
<td>58</td>
<td>58</td>
<td>91.4</td>
<td>91.4</td>
<td>10</td>
<td>145</td>
</tr>
</tbody>
</table>

3/8 Filter

<table>
<thead>
<tr>
<th>Primary Pressure - bar</th>
<th>1.6</th>
<th>23.2</th>
<th>4.0</th>
<th>58</th>
<th>6.3</th>
<th>91.4</th>
<th>10</th>
<th>145</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Pressure - psig</td>
<td>23.2</td>
<td>23.2</td>
<td>58</td>
<td>58</td>
<td>91.4</td>
<td>91.4</td>
<td>10</td>
<td>145</td>
</tr>
</tbody>
</table>

1/2 Filter

<table>
<thead>
<tr>
<th>Primary Pressure - bar</th>
<th>1.6</th>
<th>23.2</th>
<th>4.0</th>
<th>58</th>
<th>6.3</th>
<th>91.4</th>
<th>10</th>
<th>145</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Pressure - psig</td>
<td>23.2</td>
<td>23.2</td>
<td>58</td>
<td>58</td>
<td>91.4</td>
<td>91.4</td>
<td>10</td>
<td>145</td>
</tr>
</tbody>
</table>

**Repair and Service Kits**

- Plastic bowl / Bowl guard manual drain P32KA00BGM
- Metal bowl / Sight gauge manual drain P32KA00BSM
- Auto drain P32KA00DA
- 5µ particle filter element P32KA00ESE
- L-Bracket (fits to body) P32KA00ML
- T-Bracket (fits to body connector) P32KA00MB
- T-Bracket with body connector P32KA00MT
- Body connector P32KA00CB
- Differential pressure indicator (replacement) P32KA00RQ

**Flow Capacity**

- 1/4 18 dm³/s (38 scfm)
- 3/8 30 dm³/s (64 scfm)
- 1/2 38 dm³/s (80 scfm)

**Flow Capacity**

- 1/4 18 dm³/s (38 scfm)
- 3/8 30 dm³/s (64 scfm)
- 1/2 38 dm³/s (80 scfm)
Global Air Preparation System

Standard Particulate Filter - P33

Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code</th>
<th>Flow† (dm³/s (scfm))</th>
<th>Max. bar (psig)</th>
<th>Height (mm) (inches)</th>
<th>Width (mm) (inches)</th>
<th>Depth (mm) (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - Manual drain</td>
<td>P33FA94EGMN</td>
<td>40 (85)</td>
<td>10 (150)</td>
<td>213 (8.4)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - Auto drain</td>
<td>P33FA94EAN</td>
<td>40 (85)</td>
<td>10 (150)</td>
<td>207 (8.2)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Metal bowl - Manual drain</td>
<td>P33FA94ESMN</td>
<td>40 (85)</td>
<td>10 (150)</td>
<td>213 (8.4)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Poly bowl - Manual drain</td>
<td>P33FA96EGMN</td>
<td>48 (102)</td>
<td>10 (150)</td>
<td>213 (8.4)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Poly bowl - Auto drain</td>
<td>P33FA96EAN</td>
<td>48 (102)</td>
<td>10 (150)</td>
<td>207 (8.2)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Metal bowl - Manual drain</td>
<td>P33FA96ESMN</td>
<td>48 (102)</td>
<td>10 (150)</td>
<td>213 (8.4)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Metal bowl - Auto drain</td>
<td>P33FA96EAN</td>
<td>48 (102)</td>
<td>10 (150)</td>
<td>207 (8.2)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
</tbody>
</table>

† Standard part numbers shown in bold. For other models refer to Options chart above.
‡ Flow with 6.3 bar (91.3 psig) inlet pressure and 0.34 (4.9 psig) pressure drop.
Global Air Preparation System

Specifications

| Flow Capacity* | 1/2 | 40 dm³/s (85 scfm) |
| | 3/4 | 48 dm³/s (102 scfm) |
| Operating | Plastic Bowl | -25°C to 52°C (-13°F to 125°F) |
| | Metal Bowl | -25°C to 65.5°C (-13°F to 150°F) |
| Max. Supply | Plastic Bowl | 10 bar (150 psig) |
| Pressure | Metal Bowl | 17 bar (250 psig) |
| Standard Filtration | 5 Micron |
| Useful Retention† | 85 cm³ (2.8 US oz.) |
| Port Size | BSPP / BSPT / NPT | 1/2, 3/4 |
| Weight | 0.46 kg (1.01 lbs) |

* Inlet pressure 6.3 bar (91.3 psig). Pressure drop 0.34 bar (4.9 psig).
† Useful retention refers to volume below the quiet zone baffle.

Air quality:
Within ISO 8573-1: 1991 Class 3 (Particulates)
Within ISO 8573-1: 2001 Class 6 (Particulates)

Materials of Construction

- Body: Aluminum
- Body Cap: ABS
- Bowls: Plastic Bowl - Polycarbonate, Metal Bowl - Aluminum
- Bowl Guard: Nylon
- Deflector: Polypropylene
- Element Retainer / Baffle: Acetal
- Filter Element: Sintered Polyethylene
- Seals: Nitrile
- Sight Gauge: Metal Bowl - Polycarbonate

Dimensions mm (inches)

- 4.8 mm (.19) I.D. Tube Barb fitting
- 73 (2.9) Barb fitting Bowl removal clearance. (Manual and Auto Drain.)
- 73 (2.9)
- 36 (1.4)
- 26 (1.0)

Flow Charts

1/2 Filter

<table>
<thead>
<tr>
<th>Primary Pressure - bar</th>
<th>Primary Pressure - psig</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>1.6</td>
</tr>
<tr>
<td>0.4</td>
<td>2.3</td>
</tr>
<tr>
<td>0.3</td>
<td>3.0</td>
</tr>
<tr>
<td>0.2</td>
<td>3.7</td>
</tr>
<tr>
<td>0.1</td>
<td>4.4</td>
</tr>
</tbody>
</table>

3/4 Filter

<table>
<thead>
<tr>
<th>Primary Pressure - bar</th>
<th>Primary Pressure - psig</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>1.6</td>
</tr>
<tr>
<td>0.4</td>
<td>2.3</td>
</tr>
<tr>
<td>0.3</td>
<td>3.0</td>
</tr>
<tr>
<td>0.2</td>
<td>3.7</td>
</tr>
<tr>
<td>0.1</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Repair and Service Kits

- Plastic bowl / Bowl guard manual drain: P33KA00BGM
- Metal bowl / Sight gauge manual drain: P33KA00BSM
- Auto drain: P32KA00DA
- 5µ particle filter element: P33KA00ESE
- L-Bracket (fits to body): P33KA00ML
- T-Bracket (fits to body connector): P32KA00MB
- T-Bracket with body connector: P33KA00MT
- Body connector: P32KA00CB
- Differential pressure indicator (replacement): P32KA00RQ
Mini Coalescing and Adsorber Filters - P31

- Integral 1/4" ports (NPT, BSPP & BSPT)
- Removes liquid aerosols and sub micron particles
- Oil free air for critical applications, such as air gauging, pneumatic instrumentation and control
- Positive bayonet latch to ensure correct & safe fitting
- Adsorbing activated carbon element removes oil vapors and most hydrocarbons

**Note:** To optimize the life of coalescing element, it is advisable to install a P31F pre-filter with a 5 micron element upstream of the coalescing filter.

To optimize the life of an Adsorber it is advisable to install a P31 Coalescing Filter upstream of the Adsorber. Adsorber element should be replaced approximately every 1000 hours of service.

### Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code</th>
<th>Flow ‡ (dm³/s (scfm))</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot; Poly bowl</td>
<td>Manual drain, 0.01µ Element</td>
<td>P31FA92CGMN</td>
<td>2 (4.2)</td>
<td>10 (150)</td>
<td>116.3 (4.58)</td>
<td>40 (1.58)</td>
<td>42.7 (1.68)</td>
</tr>
<tr>
<td>1/4&quot; Poly bowl</td>
<td>Pulse drain, 0.01µ Element</td>
<td>P31FA92CGBN</td>
<td>2 (4.2)</td>
<td>10 (150)</td>
<td>116.3 (4.58)</td>
<td>40 (1.58)</td>
<td>42.7 (1.68)</td>
</tr>
<tr>
<td>1/4&quot; Metal bowl</td>
<td>Manual drain, 0.01µ Element</td>
<td>P31FA92CMMN</td>
<td>2 (4.2)</td>
<td>17 (250)</td>
<td>116.3 (4.58)</td>
<td>40 (1.58)</td>
<td>42.7 (1.68)</td>
</tr>
<tr>
<td>1/4&quot; Metal bowl</td>
<td>Pulse drain, 0.01µ Element</td>
<td>P31FA92CMBN</td>
<td>2 (4.2)</td>
<td>17 (250)</td>
<td>116.3 (4.58)</td>
<td>40 (1.58)</td>
<td>42.7 (1.68)</td>
</tr>
</tbody>
</table>

1 Standard part numbers shown in bold. For other models refer to Options chart above.

‡ Flow with 6.3 bar (91.3 psig) inlet pressure and 0.2 (3 psig) pressure drop.
Catalog 0750-2 US
Global Air Preparation System

Specifications

Flow Capacity

<table>
<thead>
<tr>
<th>Micron Coalescing</th>
<th>Flow Capacity</th>
<th>Energy Efficient Flow</th>
<th>Maximum Flow**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>dm³/s SCFM</td>
<td>3.8 (8)</td>
<td>6 (13)</td>
</tr>
<tr>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Micron Coalescing</th>
<th>Energy Efficient Flow</th>
<th>Maximum Flow**</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01</td>
<td>2 (4.2)</td>
<td>3.8 (8)</td>
</tr>
</tbody>
</table>

Activated Carbon Adsorber

| Rated Flow* | 6 (13) |

Operating

| Plastic Bowl | -10°C to 52°C (14°F to 125°F) |
| Metal Bowl   | -10°C to 65.5°C (14°F to 150°F) |

Max. Supply

| Plastic Bowl | 10 bar (150 psig) |
| Metal Bowl   | 17 bar (250 psig) |

Pressure

| Plastic Bowl | 10 bar (150 psig) |
| Metal Bowl   | 17 bar (250 psig) |

Standard Filtration

1.0 and 0.01 Micron

Adsorber

Max. oil carryover (ppm w/w) 0.003 @ 21°C (70°F)

Useful Retention† 12 cm³ (0.4 US oz.)

Port Size

BSPP / BSPT / NPT 1/4

Weight

0.11 kg (0.24 lbs)

* Inlet pressure 6.3 bar (91.3 psig), Pressure drop 0.2 bar (3 psig), Saturated Element.

** Inlet pressure 6.3 bar (91.3 psig), Pressure drop 0.4 bar (6 psig), Saturated Element.

† Useful retention refers to volume below the quiet zone baffle.

Materials of Construction

Body Aluminum

Body Cap ABS

Bowl Plastic Bowl Polycarbonate

Metal Bowl Aluminum

Filter Element 1.0 and .01 Micron Borosilicate Cloth

Adsorber Activated Carbon

Seals Nitrile

Dimensions mm (inches)

Repair and Service Kits

Plastic bowl / Bowl guard manual drain P31KA00BGM

Metal bowl / w/o sight gauge manual drain P31KA00BMM

Plastic bowl / Bowl guard pulse drain P31KA00BGB

Metal bowl / w/o sight gauge pulse drain P31KA00BMB

1µ coalescing filter element P31KA00ES9

0.01µ coalescing filter element P31KA00ESC

Activated carbon adsorber filter element P31KA00ESA

C-Bracket (fits to body) P31KA00MW

T-Bracket with body connector P31KA00MT

Body connector P31KA00CB
## Compact Coalescing and Adsorber Filter - P32

### Options:

- Integral 1/4", 3/8" or 1/2" ports (NPT, BSPP & BSPT)
- Removes liquid aerosols and sub micron particles
- Oil free air for critical applications, such as air gauging, pneumatic instrumentation and control
- Differential Pressure Indicator (DPI) standard on Coalescing Filters
- Positive bayonet latch to ensure correct & safe fitting
- Adsorbing activated carbon element removes oil vapors and most hydrocarbons

**Note:** To optimize the life of coalescing element, it is advisable to install a P32F pre-filter with a 5 micron element upstream of the coalescing filter.

To optimize the life of an Adsorber it is advisable to install a P32 Coalescing Filter upstream of the Adsorber. Adsorber element should be replaced approximately every 1000 hours of service.

### Specifications

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code</th>
<th>Flow(^\d) dm(^3)/s (scfm)</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - 0.01 Micron, Manual drain</td>
<td>P32FA92DGMN</td>
<td>11 (23)</td>
<td>10 (150)</td>
<td>209 (8.2)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - 0.01 Micron, Auto drain</td>
<td>P32FA92DGAN</td>
<td>11 (23)</td>
<td>10 (150)</td>
<td>203 (8.0)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - 0.01 Micron, Manual drain</td>
<td>P32FA92DSMN</td>
<td>11 (23)</td>
<td>17 (250)</td>
<td>209 (8.2)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - 0.01 Micron, Auto drain</td>
<td>P32FA92DSAN</td>
<td>11 (23)</td>
<td>17 (250)</td>
<td>203 (8.0)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>Poly bowl - 0.01 Micron, Manual drain</td>
<td>P32FA93DGMN</td>
<td>11 (23)</td>
<td>10 (150)</td>
<td>209 (8.2)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>Poly bowl - 0.01 Micron, Auto drain</td>
<td>P32FA93DGAN</td>
<td>11 (23)</td>
<td>17 (250)</td>
<td>203 (8.0)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>Metal bowl - 0.01 Micron, Manual drain</td>
<td>P32FA93DSAN</td>
<td>11 (23)</td>
<td>10 (150)</td>
<td>209 (8.2)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>Metal bowl - 0.01 Micron, Auto drain</td>
<td>P32FA93DSAN</td>
<td>11 (23)</td>
<td>17 (250)</td>
<td>203 (8.0)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - 0.01 Micron, Manual drain</td>
<td>P32FA94DGMN</td>
<td>11 (23)</td>
<td>10 (150)</td>
<td>209 (8.2)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - 0.01 Micron, Auto drain</td>
<td>P32FA94DGAN</td>
<td>11 (23)</td>
<td>17 (250)</td>
<td>203 (8.0)</td>
<td>60 (2.36)</td>
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</tr>
<tr>
<td>1/2&quot;</td>
<td>Metal bowl - 0.01 Micron, Manual drain</td>
<td>P32FA94DSMN</td>
<td>11 (23)</td>
<td>17 (250)</td>
<td>209 (8.2)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Metal bowl - 0.01 Micron, Auto drain</td>
<td>P32FA94DSAN</td>
<td>11 (23)</td>
<td>17 (250)</td>
<td>203 (8.0)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
</tbody>
</table>

\(^\d\) Standard part numbers shown in bold. For other models refer to Options chart above.

\(^\d\) Flow with 6.3 bar (91.3 psig) inlet pressure and 0.2 (3 psig) pressure drop.
Global Air Preparation System

Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Capacity</td>
<td>1.0 Micron Coalescing: 17 (SCFM)</td>
</tr>
<tr>
<td></td>
<td>0.01 Micron Coalescing: 11 (SCFM)</td>
</tr>
<tr>
<td></td>
<td>Maximum Flow**</td>
</tr>
<tr>
<td></td>
<td>27 (57)</td>
</tr>
<tr>
<td></td>
<td>28 (38)</td>
</tr>
<tr>
<td>Activated Carbon Adsorber</td>
<td>Rated Flow*</td>
</tr>
<tr>
<td></td>
<td>27 (57)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>Plastic Bowl: -25°C to 52°C (-13°F to 125°F)</td>
</tr>
<tr>
<td></td>
<td>Metal Bowl: -25°C to 65.5°C (-13°F to 150°F)</td>
</tr>
<tr>
<td>Max. Supply</td>
<td>Plastic Bowl: 10 bar (150 psig)</td>
</tr>
<tr>
<td></td>
<td>Metal Bowl: 17 bar (250 psig)</td>
</tr>
<tr>
<td>Standard Filtration</td>
<td>1.0 and 0.01 Micron</td>
</tr>
<tr>
<td>Adsorber</td>
<td>Max. oil carryover (ppm w/w): 0.003 @ 21°C (70°F)</td>
</tr>
<tr>
<td>Weight</td>
<td>0.32 kg (0.71 lbs)</td>
</tr>
<tr>
<td>Port Size</td>
<td>BSPP / BSPT / NPT: 1/4, 3/8, 1/2</td>
</tr>
<tr>
<td>* Inlet pressure 6.3 bar (91.3 psig), Pressure drop 0.2 bar (3 psig), Saturated Element.</td>
<td></td>
</tr>
<tr>
<td>** Inlet pressure 6.3 bar (91.3 psig), Pressure drop 0.4 bar (6 psig), Saturated Element.</td>
<td></td>
</tr>
<tr>
<td>† Useful retention refers to volume below the quiet zone baffle.</td>
<td></td>
</tr>
</tbody>
</table>

Flow Charts

P32 - 1.0 micron flow

P32 - 0.01 micron flow

Materials of Construction

<table>
<thead>
<tr>
<th>Component</th>
<th>Body Material</th>
<th>Cap Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowls</td>
<td>Plastic Bowl</td>
<td>Polycarbonate</td>
</tr>
<tr>
<td></td>
<td>Metal Bowl</td>
<td>Aluminum</td>
</tr>
<tr>
<td>Filter Element</td>
<td>1.0 Micron</td>
<td>Borosilicate Cloth</td>
</tr>
<tr>
<td>Adsorber</td>
<td>Activated Carbon</td>
<td></td>
</tr>
<tr>
<td>Seals</td>
<td>Nitrile</td>
<td></td>
</tr>
<tr>
<td>Sight Gauge</td>
<td>Metal Bowl</td>
<td>Polycarbonate</td>
</tr>
</tbody>
</table>

Repair and Service Kits

<table>
<thead>
<tr>
<th>Kit Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic bowl / Bowl guard manual drain</td>
<td>P32KA00BGM</td>
</tr>
<tr>
<td>Metal bowl / Sight gauge manual drain</td>
<td>P32KA00BSM</td>
</tr>
<tr>
<td>Auto drain</td>
<td>P32KA00DA</td>
</tr>
<tr>
<td>1µ coalescing filter element</td>
<td>P32KA00ES9</td>
</tr>
<tr>
<td>0.01µ coalescing filter element</td>
<td>P32KA00ESC</td>
</tr>
<tr>
<td>Activated carbon adsorber filter element</td>
<td>P32KA00ESA</td>
</tr>
<tr>
<td>L-Bracket (fits to body)</td>
<td>P32KA00ML</td>
</tr>
<tr>
<td>T-Bracket (fits to body connector)</td>
<td>P32KA00MB</td>
</tr>
<tr>
<td>T-Bracket with body connector</td>
<td>P32KA00MT</td>
</tr>
<tr>
<td>Body connector</td>
<td>P32KA00CB</td>
</tr>
<tr>
<td>Differential pressure indicator (replacement)</td>
<td>P32KA00RQ</td>
</tr>
</tbody>
</table>

Dimensions

**Port Size**: BSPP / BSPT / NPT: 1/4, 3/8, 1/2

**Weight**: 0.32 kg (0.71 lbs)

**Useful retention**: 51 cm³ (1.7 US oz.)

**Standard Filtration**: 1.0 and 0.01 Micron

**Adsorber**: Max. oil carryover (ppm w/w): 0.003 @ 21°C (70°F)

**Flow Capacity**: 1.0 Micron Coalescing: 17 (SCFM)

**Maximum Flow**: 27 (57)

**Activated Carbon Adsorber**: Rated Flow* 27 (57)

**Operating Temperature**: Plastic Bowl: -25°C to 52°C (-13°F to 125°F)

**Pressure**: Plastic Bowl: 10 bar (150 psig)

**Useful retention**: 51 cm³ (1.7 US oz.)

**Weight**: 0.32 kg (0.71 lbs)

**Port Size**: BSPP / BSPT / NPT: 1/4, 3/8, 1/2
Global Air Preparation System

Standard Coalescing and Adsorber Filter - P33

- Integral 1/2" or 3/4" ports (NPT, BSPP & BSPT)
- Removes liquid aerosols and sub micron particles
- Oil free air for critical applications, such as air gauging, pneumatic instrumentation and control
- Differential Pressure Indicator (DPI) standard on Coalescing Filters
- Positive bayonet latch to ensure correct & safe fitting
- Adsorbing activated carbon element removes oil vapors and most hydrocarbons

**Note:** To optimize the life of coalescing element, it is advisable to install a P33F pre-filter with a 5 micron element upstream of the coalescing filter.

To optimize the life of an Adsorber it is advisable to install a P33 Coalescing Filter upstream of the Adsorber. Adsorber element should be replaced approximately every 1000 hours of service.

---

**Options:**

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code¹</th>
<th>Flow² dm³/s (scfm)</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - 0.01 Micron, Manual drain</td>
<td>P33FA94DGMN</td>
<td>20 (42)</td>
<td>10 (150)</td>
<td>235 (9.3)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - 0.01 Micron, Auto drain</td>
<td>P33FA94DGAN</td>
<td>20 (42)</td>
<td>10 (150)</td>
<td>229 (9.0)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Metal bowl - 0.01 Micron, Manual drain</td>
<td>P33FA94DSMN</td>
<td>20 (42)</td>
<td>17 (250)</td>
<td>235 (9.3)</td>
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<td>17 (250)</td>
<td>235 (9.3)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Metal bowl - 0.01 Micron, Auto drain</td>
<td>P33FA96DSAN</td>
<td>20 (42)</td>
<td>17 (250)</td>
<td>229 (9.0)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
</tbody>
</table>

¹ Standard part numbers shown in bold. For other models refer to Options chart above.

² Flow with 6.3 bar (91.3 psig) inlet pressure and 0.2 (3 psig) pressure drop.

---

- Engr. level
  - Current A
- Thread type
  - BSPP 1
  - BSPT 2
  - NPT 9
- Port size
  - 1/2" 4
  - 3/4" 6
- Bowl type
  - Poly bowl with bowl guard G
  - Metal bowl without sight gauge M
  - Metal bowl with sight gauge S
- Drain type
  - Manual drain M
  - Auto drain A
- Mounting
  - No bracket N
- Element
  - 0.01µ Element C
  - 0.01µ Element with dpi D
  - 1µ Element 9
  - 1µ Element with dpi Q
  - Adsorber A

---

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/globalfrl
Specifications

<table>
<thead>
<tr>
<th>Flow Capacity</th>
<th>dm³/s</th>
<th>SCFM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Micron Coalescing</td>
<td>32</td>
<td>(68)</td>
</tr>
<tr>
<td>Maximum Flow*</td>
<td>44</td>
<td>(93)</td>
</tr>
<tr>
<td>0.01 Micron Coalescing</td>
<td>20</td>
<td>(42)</td>
</tr>
<tr>
<td>Maximum Flow**</td>
<td>34</td>
<td>(72)</td>
</tr>
</tbody>
</table>

Activated Carbon Adsorber Rated Flow* 44 (93)

Operating Plastic Bowl -25°C to 52°C (-13°F to 125°F)
Temperature Metal Bowl -25°C to 65.5°C (-13°F to 150°F)

Max. Supply Plastic Bowl 10 bar (150 psig)
Pressure Metal Bowl 17 bar (250 psig)

Standard Filtration 1.0 and 0.01 Micron
Adsorber Max. oil carryover (ppm w/w) 0.003 @ 21°C (70°F)

Useful Retention† 85 cm³ (2.8 US oz.)

Port Size BSPP / BSPT / NPT 1/2, 3/4
Weight 0.50 kg (1.10 lbs)

* Inlet pressure 6.3 bar (91.3 psig), Pressure drop 0.2 bar (3 psig), Saturated Element.
** Inlet pressure 6.3 bar (91.3 psig), Pressure drop 0.4 bar (6 psig), Saturated Element.
† Useful retention refers to volume below the quiet zone baffle.

Dimensions mm (inches)

Flow Charts

P33 - 1.0 micron flow

P33 - 0.01 micron flow

Materials of Construction

<table>
<thead>
<tr>
<th>Body</th>
<th>Aluminum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Cap</td>
<td>ABS</td>
</tr>
<tr>
<td>Bowls</td>
<td>Plastic Bowl</td>
</tr>
<tr>
<td></td>
<td>Metal Bowl</td>
</tr>
<tr>
<td>Filter Element</td>
<td>1.0 and .01 Micron</td>
</tr>
<tr>
<td>Adsorber</td>
<td>Activated Carbon</td>
</tr>
<tr>
<td>Seals</td>
<td>Nitrile</td>
</tr>
<tr>
<td>Sight Gauge</td>
<td>Metal Bowl</td>
</tr>
</tbody>
</table>

Repair and Service Kits

| Plastic bowl / Bowl guard manual drain | P33KA00BGM     |
| Metal bowl / Sight gauge manual drain | P33KA00BSM     |
| Auto drain                               | P32KA00DA      |
| 1µ coalescing filter element             | P33KA00ES9     |
| 0.01µ coalescing filter element          | P33KA00ESC     |
| Activated carbon adsorber filter element | P33KA00ESA     |
| L-Bracket (fits to body)                  | P33KA00ML      |
| T-Bracket (fits to body connector)        | P32KA00MB      |
| T-Bracket with body connector             | P32KA00MT      |
| Body connector                            | P32KA00CB      |
| Differential pressure indicator (replacement) | P32KA00RQ |
## Global Air Preparation System

### Mini Regulator - P31

**Options:**

![Image of Mini Regulator - P31](image)

**Symbols**

- Integral 1/4” ports (NPT, BSPP & BSPT)
- Robust but lightweight aluminum construction
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Relieving & Non-relieving types
- Non-rising knob

### Table: P31 Series

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code (with gauge)</th>
<th>Flow (dm³/s-scfm)</th>
<th>Max. bar (psig)</th>
<th>Height (mm-inches)</th>
<th>Width (mm-inches)</th>
<th>Depth (mm-inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) relieving</td>
<td>P31RA92BNNP</td>
<td>30 (64)</td>
<td>20 (300)</td>
<td>100.1 (3.94)</td>
<td>40 (1.58)</td>
<td>40 (1.58)</td>
</tr>
<tr>
<td>1/4&quot;†</td>
<td>8 bar (125 psig) + gauge</td>
<td>P31RA92BN5P</td>
<td>30 (64)</td>
<td>20 (300)</td>
<td>100.1 (3.94)</td>
<td>40 (1.58)</td>
<td>64.3 (2.53)</td>
</tr>
</tbody>
</table>

† Standard part numbers shown in bold. For other models refer to Options chart above.
‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3 psig) set pressure and 1 bar (14.5 psig) pressure drop.
# Global Air Preparation System

## Specifications

- **Flow Capacity**: 1/4, 30 dm³/s (64 scfm)
- **Operating Temperature**: -20°C to 65.5°C (-4°F to 150°F)
- **Max. Supply Pressure**: 20 bar (300 psig)
- **Adjusting Range Pressure**: 0-2 bar (30 psig), 0-4 bar (60 psig), 0-8 bar (125 psig)
- **Port Size**: BSPP / BSPT / NPT, 1/4
- **Gauge Port (2 ea.)**: BSPP / BSPT / NPT, 1/8
- **Weight**: 0.17 kg (0.37 lbs)

### Materials of Construction

- **Body**: Aluminum
- **Adjustment Knob**: Acetal
- **Body Cap**: ABS
- **Bonnet**: PBT
- **Diaphragm Assembly**: Brass / Nitrile
- **Bottom Plug**: 33% Glass-Filled Nylon
- **Valve Assembly**: Brass / Nitrile
- **Springs**: Steel
- **Seals**: Nitrile
- **Panel Nut**: Acetal

### Dimensions

- **Body Dimensions**: 100.1 (3.94) mm
- **Adjustment Knob**: 34.1 (1.34) mm
- **Port Size**: 40 (1.58) mm
- **Gauge Port**: 37 (1.46) mm

### Flow Charts

#### 1/4 Regulator

![Flow Chart Image]

#### Repair and Service Kits

- **Regulator repair kit - Relieving**: P31KA00RB
- **Regulator repair kit - Non-relieving**: P31KA00RC
- **Panel mount nut - Aluminum**: P31KA00MM
- **Panel mount nut - Plastic**: P31KA00MP
- **Angle Bracket (uses panel mount threads)**: P31KA00MR
- **C-Bracket (fits to body)**: P31KA00MW
- **T-Bracket with body connector**: P31KA00MT
- **Body connector**: P31KA00CB

### Gauges

- **Square flush mount gauge**
  - 0-4 bar: K4511SCR04B
  - 0-10 bar: K4511SCR11B
  - 0-60 psig: K4511SCR060
  - 0-150 psig: K4511SCR150

### 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.

---

**NOTE:** 31.7 mm (1.25 in.) hole required for panel nut mounting.

---

**WARNING**

Product rupture can cause serious injury. Do not connect regulator to bottled gas. Do not exceed Maximum primary pressure rating.
Global Air Preparation System

Mini Common - P1 Regulator - P31

Options:

Symbols

- Manifold style regulator with line pressure on both sides.
- Pressure output is at front or rear.
- Integral 1/4" ports (NPT, BSPP & BSPT)
- Robust construction
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Relieving & Non-relieving types
- Non-rising knob

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code(\dagger)</th>
<th>Flow(\dagger) (\text{dm}^3/\text{s (scfm)})</th>
<th>Max. bar (psig)</th>
<th>Height (\text{mm (inches)})</th>
<th>Width (\text{mm (inches)})</th>
<th>Depth (\text{mm (inches)})</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) Relieving</td>
<td>P31HA92BNNP</td>
<td>18 (38)</td>
<td>20 (300)</td>
<td>100.1 (3.94)</td>
<td>40 (1.58)</td>
<td>40 (1.58)</td>
</tr>
</tbody>
</table>

\(\dagger\) Standard part numbers shown in bold. For other models refer to Options chart above.

\(\dagger\) Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3 psig) set pressure and 1 bar (14.5 psig) pressure drop.
Global Air Preparation System

Specifications

Flow Capacity* 1/4 18 dm³/s (38 scfm)
Operating Temperature -20°C to 65.5°C (-4°F to 150°F)
Max. Supply Pressure 20 bar (300 psig)
Adjusting Range Pressure 0-2 bar (30 psig)
0-4 bar (60 psig)
0-8 bar (125 psig)
P1 Port Size (Inlet / Outlet) BSPP / BSPT / NPT 1/4
P2 Regulated Ports (2 ea.) BSPP / BSPT / NPT 1/8
Weight 0.30 kg (0.66 lbs)

* Inlet pressure 10 bar (145 psig). Secondary pressure 6.3 bar (91.3 psig).

Materials of Construction

Body Zinc
Adjustment Knob Acetal
Body Cap ABS
Bonnet 33% Glass-filled PBT
Diaphragm Assembly Brass / Nitrile
Bottom Plug 33% Glass-filled Nylon
Valve Assembly Brass / Nitrile

Dimensions mm (inches)

NOTE: 31.7 mm (1.25 in.) hole required for panel nut mounting.

![Diagram of P31 Series regulator]

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.

Flow Charts

1/4 Common Regulator

![Graph showing flow charts]

Repair and Service Kits

Regulator repair kit - Relieving P31KA00RB
Regulator repair kit - Non-relieving P31KA00RC
Panel mount nut - Aluminum P31KA00MM
Panel mount nut - Plastic P31KA00MP
Angle Bracket (uses panel mount threads) P31KA00MR
T-Bracket with body connector P31KA00MT
Body connector P31KA00CB

Gauges

1.00" Round 1/8" center back mount
0-60 psig / 0-4 bar K4510N18060
0-160 psig / 0-11 bar K4510N18160

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

Compact Regulator – P32

Options:

- Integral 1/4"., 3/8" or 1/2" ports (NPT, BSPP & BSPT)
- Robust but lightweight aluminum construction
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-17 bar (0-250 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Relieving & Non-relieving types
- Non-rising knob

Symbols

- Self relieving regulator with gauge
- Non relieving regulator

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code</th>
<th>Flow(^2) dm(^3)/s (scfm)</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) Relieving</td>
<td>P32RA92BNNP</td>
<td>41 (81)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) Relieving + Gauge</td>
<td>P32RA92BNGP</td>
<td>41 (81)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>8 bar (125 psig) Relieving</td>
<td>P32RA93BNNP</td>
<td>65 (138)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>8 bar (125 psig) Relieving + Gauge</td>
<td>P32RA93BNGP</td>
<td>65 (138)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) Relieving</td>
<td>P32RA94BNNP</td>
<td>67 (142)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) Relieving + Gauge</td>
<td>P32RA94BNGP</td>
<td>67 (142)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
</tbody>
</table>

\(^1\) Standard part numbers shown in bold. For other models refer to Options chart above.
\(^2\) Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3) psig set pressure and 1 bar (14.5 psig) pressure drop.
**Global Air Preparation System**

**Specifications**

- **Flow Capacity**: 1/4: 41 dm³/s (81 scfm), 3/8: 65 dm³/s (138 scfm), 1/2: 67 dm³/s (142 scfm)
- **Operating Temperature**: -25°C to 65.5°C (-13°F to 150°F)
- **Max. Supply Pressure**: 20 bar (300 psig)
- **Adjusting Range Pressure**: 0-2 bar (30 psig), 0-4 bar (60 psig), 0-8 bar (125 psig), 0-17 bar (250 psig)
- **Port Size**: BSPP / BSPT / NPT: 1/4, 3/8, 1/2
- **Gauge Port (2 ea.)**: BSPP / BSPT / NPT: 1/4
- **Weight**: 0.41 kg (0.90 lbs)

*Inlet pressure 10 bar (145 psig), Secondary pressure 6.3 bar (91.3 psig).

**Materials of Construction**

- **Body**: Aluminum
- **Adjustment Knob**: Acetal
- **Body Cap**: ABS
- **Bonnet**: 33% Glass-filled nylon
- **Diaphragm Assembly**: Nitrile / Zinc
- **Bottom Plug**: 33% Glass-filled nylon
- **Valve Assembly**: Brass / Nitrile
- **Springs**: Main Regulating Valve: Steel S.S., Nitrile
- **Seals**: Nitrile
- **Panel Nut**: Acetal

**Dimensions** mm (inches)

- 60 (2.36)
- 65 (2.57)
- 93 (3.66)
- 78.7 (3.1)
- 136 (5.4)
- 30 (1.2)

NOTE: 51 mm (2.00 in.) hole required for panel nut mounting.

**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.

**Flow Charts**

**1/4 Regulator**

**3/8 Regulator**

**1/2 Regulator**

**Repair and Service Kits**

- Regulator repair kit - Relieving: P32KA00RB
- Regulator repair kit - Non-relieving: P32KA00RC
- Panel mount nut - Aluminum: P32KA00MM
- Panel mount nut - Plastic: P32KA00MP
- Angle Bracket (uses panel mount threads): P32KA00MR
- T-Bracket with body connector: P32KA00MT
- T-Bracket: P32KA00MB
- Body connector: P32KA00CB

**Gauges**

- 50mm (2”) Round 1/4” center back mount:
  - 0-30 psig / 0-2 bar / 0-0.2 MPa
  - 0-60 psig / 0-4 bar / 0-0.4 MPa
  - 0-160 psig / 0-11 bar / 0-1.1 MPa
  - 0-300 psig / 0-20 bar / 0-2 MPa

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

Compact Common P1 Regulator - P32

Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code</th>
<th>Flow† dm³/s (scfm)</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) Relieving</td>
<td>P32HA92BNNP</td>
<td>28 (59)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>8 bar (125 psig) Relieving</td>
<td>P32HA93BNNP</td>
<td>28 (59)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) Relieving</td>
<td>P32HA94BNNP</td>
<td>28 (59)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
</tbody>
</table>

† Standard part numbers shown in bold. For other models refer to Options chart above.
‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3) psig) set pressure and 1 bar (14.5 psig) pressure drop.

Symbols

- Self relieving regulator with gauge
- Non relieving regulator
- Manifold style regulator with line pressure on both sides.
- Pressure output is at front or rear.
- Integral 1/4", 3/8" or 1/2" ports (NPT, BSPP & BSPT)
- Robust construction
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-17 bar (0-250 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Relieving & Non-relieving types
- Non-rising knob

Adjustment range

Without gauge

<table>
<thead>
<tr>
<th>Relief</th>
<th>2 bar; 30 psig; 0.2 MPa</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4 bar; 60 psig; 0.4 MPa</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>8 bar; 125 psig; 0.8 MPa</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>17 bar; 250 psig; 1.7 MPa</td>
<td>H</td>
</tr>
</tbody>
</table>

Order gauges separately- see next page.
Flow Capacity* | 1/4 | 28 dm³/s (59 scfm) | 3/8 | 28 dm³/s (59 scfm) | 1/2 | 28 dm³/s (59 scfm)
---|---|---|---|---|---|---
Operating Temperature | -25°C to 65.5°C (-13°F to 150°F)
Max. Supply Pressure | 20 bar (300 psig)
Adjusting Range Pressure | 0-2 bar (30 psig) | 0-4 bar (60 psig) | 0-8 bar (125 psig) | 0-17 bar (250 psig)
Port Size | BSPP / BSPT / NPT | 1/4, 3/8, 1/2
Gauge Port (2 ea.) | BSPP / BSPT / NPT | 1/4
Weight | 0.50 kg (1.10 lbs)
* Inlet pressure 10 bar (145 psig). Secondary pressure 6.3 bar (91.3 psig).

Materials of Construction

- **Body**: Zinc
- **Adjustment Knob**: Acetal
- **Body Cap**: ABS
- **Bonnet**: 33% Glass-filled nylon
- **Diaphragm Assembly**: Nitrile / Zinc
- **Bottom Plug**: 33% Glass-filled Nylon
- **Valve Assembly**: Brass / Nitrile
- **Springs**: Main Regulating - Steel / Valve - S.S.
- **Seals**: Nitrile / Panel Nut - Acetal

Dimensions mm (inches)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Width</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>Body Height</td>
<td>78.7 (3.1)</td>
</tr>
<tr>
<td>Body Depth</td>
<td>136 (5.4)</td>
</tr>
<tr>
<td>Gauge Width</td>
<td>65 (2.57)</td>
</tr>
<tr>
<td>Gauge Height</td>
<td>94 (3.73)</td>
</tr>
<tr>
<td>Gauge Depth</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>Gauge Hole</td>
<td>30 (1.2)</td>
</tr>
</tbody>
</table>

NOTE: 51 mm (2.00 in.) hole required for panel nut mounting.

---

**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.

---

**Flow Charts**

**P32 Common Port Regulator**

- Inlet Pressure - 10 bar (145 psig)
- Secondary Pressure - 0-2 bar (30 psig)
- Secondary Pressure - 0-4 bar (60 psig)
- Secondary Pressure - 0-8 bar (125 psig)
- Secondary Pressure - 0-17 bar (250 psig)

**Repair and Service Kits**

- Regulator repair kit - Relieving: P32KA00RB
- Regulator repair kit - Non-relieving: P32KA00RC
- Panel mount nut - Aluminum: P32KA00MM
- Panel mount nut - Plastic: P32KA00MP
- Angle Bracket (uses panel mount threads): P32KA00MR
- T-Bracket with body connector: P32KA00MT
- T-Bracket: P32KA00MB
- Body connector: P32KA00CB

**Gauges**

50mm (2") Round 1/4" center back mount

- 0-30 psig / 0-2 bar / 0-0.2 MPa: K4520N14030
- 0-60 psig / 0-4 bar / 0-0.4 MPa: K4520N14060
- 0-160 psig / 0-11 bar / 0-1.1 MPa: K4520N14160
- 0-300 psig / 0-20 bar / 0-2 MPa: K4520N14300

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.
# Global Air Preparation System

## P33 Series

### Standard Regulator - P33

![Image of P33 Series regulator](image)

### Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code</th>
<th>Flow†</th>
<th>Max. bar (psig)</th>
<th>Height (mm)</th>
<th>Width (mm)</th>
<th>Depth (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) Relieving</td>
<td>P33RA94BNNP</td>
<td>100 (212)</td>
<td>20 (300)</td>
<td>149 (5.9)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) Relieving + Gauge</td>
<td>P33RA94BNGP</td>
<td>100 (212)</td>
<td>20 (300)</td>
<td>149 (5.9)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>8 bar (125 psig) Relieving</td>
<td>P33RA96BNNP</td>
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<td>73 (2.9)</td>
</tr>
</tbody>
</table>

† Standard part numbers shown in bold. For other models refer to Options chart above.

‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3 psig) set pressure and 1 bar (14.5 psig) pressure drop.

### Symbols

- **Self relieving regulator with gauge**
- **Non relieving regulator**

- Integral 1/2" or 3/4" ports (NPT, BSPP & BSPT)
- Robust but lightweight aluminum construction
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-17 bar (0-250 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Relieving & Non-relieving types
- Non-rising knob
**Global Air Preparation System**

### Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Capacity*</td>
<td>1/2: 100 dm³/s (212 scfm)</td>
</tr>
<tr>
<td></td>
<td>3/4: 100 dm³/s (212 scfm)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>25°C to 65.5°C (-13°F to 150°F)</td>
</tr>
<tr>
<td>Max. Supply Pressure</td>
<td>20 bar (300 psig)</td>
</tr>
<tr>
<td>Adjusting Range Pressure</td>
<td>0-2 bar (30 psig)</td>
</tr>
<tr>
<td></td>
<td>0-4 bar (60 psig)</td>
</tr>
<tr>
<td></td>
<td>0-8 bar (125 psig)</td>
</tr>
<tr>
<td></td>
<td>0-17 bar (250 psig)</td>
</tr>
<tr>
<td>Port Size</td>
<td>BSPP / BSPT / NPT</td>
</tr>
<tr>
<td></td>
<td>1/2, 3/4</td>
</tr>
<tr>
<td>Gauge Port (2 ea.)</td>
<td>BSPP / BSPT / NPT</td>
</tr>
<tr>
<td></td>
<td>1/4</td>
</tr>
<tr>
<td>Weight</td>
<td>0.62 kg (1.37 lbs)</td>
</tr>
</tbody>
</table>

* Inlet pressure 10 bar (145 psig). Secondary pressure 6.3 bar (91.3 psig).

### Materials of Construction

- **Body**: Aluminum
- **Adjustment Knob**: Acetal
- **Body Cap**: ABS
- **Bonnet**: 33% Glass-filled Nylon
- **Diaphragm Assembly**: Nitrile / Zinc
- **Valve Assembly**: Brass / Nitrile / Acetal
- **Springs**: Main Regulating Steel / S.S.
- **Seals**: Nitrile
- **Panel Nut**: Acetal

### Dimensions (mm (inches))

- **Height**: 83.8 (3.3)
- **Base Diameter**: 149 (5.9)
- **Panel Nut Diameter**: 72 (2.83)
- **Flow Inlet**: 108 (4.27)
- **Flow Outlet**: 73 (2.9)

NOTE: 61 mm (2.40 in.) hole required for panel nut mounting.

---

**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.

---

### Flow Charts

#### 1/2 Regulator

- Inlet Pressure - 10 bar (145 psig)
- Secondary Pressure - 2.5 bar / 36.3 psig
- Secondary Pressure - 3.0 bar / 44 psig
- Secondary Pressure - 6.3 bar / 91.4 psig

#### 3/4 Regulator

- Inlet Pressure - 10 bar (145 psig)
- Secondary Pressure - 2.5 bar / 36.3 psig
- Secondary Pressure - 3.0 bar / 44 psig
- Secondary Pressure - 6.3 bar / 91.4 psig

### Repair and Service Kits

- Regulator repair kit - Relieving: P33KA00RB
- Regulator repair kit - Non-relieving: P33KA00RC
- Panel mount nut - Aluminum: P33KA00MM
- Panel mount nut - Plastic: P33KA00MP
- Angle Bracket (uses panel mount threads): P33KA00MR
- T-Bracket with body connector: P32KA00MT
- T-Bracket: P32KA00MB
- Body connector: P32KA00CB

### Gauges

- **50mm (2") Round 1/4" center back mount**
  - 0-30 psig / 0-2 bar / 0-0.2 MPa: K4520N14030
  - 0-60 psig / 0-4 bar / 0-0.4 MPa: K4520N14060
  - 0-160 psig / 0-11 bar / 0-1.1 MPa: K4520N14160
  - 0-300 psig / 0-20 bar / 0-2 MPa: K4520N14300

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

Mini Filter / Regulator - P31

Options:

- Integral 1/4" ports (NPT, BSPP & BSPT)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminum construction
- Positive bayonet latch to ensure correct & safe fitting
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation

Symbols

- Integral 1/4" ports (NPT, BSPP & BSPT)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminum construction
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- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation

Table:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code†</th>
<th>Flow‡ dm³/s (scfm)</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) Relieving - Poly bowl - Manual drain</td>
<td>P31EA92EGMBN5P</td>
<td>14 (30)</td>
<td>10 (150)</td>
<td>164.1 (6.46)</td>
<td>40 (1.58)</td>
<td>64 (2.53)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) Relieving - Poly bowl - Pulse drain</td>
<td>P31EA92EGBBN5P</td>
<td>14 (30)</td>
<td>10 (150)</td>
<td>164.1 (6.46)</td>
<td>40 (1.58)</td>
<td>64 (2.53)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) Relieving - Metal bowl - Manual drain</td>
<td>P31EA92EMMBN5P</td>
<td>14 (30)</td>
<td>17 (250)</td>
<td>164.1 (6.46)</td>
<td>40 (1.58)</td>
<td>64 (2.53)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) Relieving - Metal bowl - Pulse drain</td>
<td>P31EA92EMBBN5P</td>
<td>14 (30)</td>
<td>17 (250)</td>
<td>164.1 (6.46)</td>
<td>40 (1.58)</td>
<td>64 (2.53)</td>
</tr>
</tbody>
</table>

† Standard part numbers shown in bold. For other models refer to Options chart above.
‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3) psig) set pressure and 1 bar (14.5 psig) pressure drop.
Catalog 0750-2 US
Global Air Preparation System

Specifications

Flow Capacity* 1/4 14 dm³/s (30.0 scfm)
Operating Pressure
- Plastic Bowl -10°C to 52°C (14°F to 125°F)
- Metal Bowl -10°C to 65.5°C (14°F to 150°F)
Temperature
Max. Supply Pressure
- Plastic Bowl 10 bar (150 psig)
- Metal Bowl 17 bar (250 psig)
Pressure
Standard Filtration 5 Micron
Useful Retention 12 cm³ (0.4 US oz.)
Adjusting Range Pressure
- 0-2 bar (30 psig)
- 0-4 bar (60 psig)
- 0-8 bar (125 psig)
Secondary Pressure - 6.3 bar (91.3 psig)
Flow - dm³/s (1/4) 14 dm³/s (30.0 scfm)
Flow - (scfm) 1/4 14 (30.0)

Air quality:
Within ISO 8573-1: 1991 Class 3 (Particulates)
Within ISO 8573-1: 2001 Class 6 (Particulates)

Materials of Construction

Body Aluminum
Adjustment Knob Acetal
Body Cap ABS
Bonnet PBT
Bowl Plastic Bowl Polycarbonate
Metal Bowl Aluminum
Bowl Guard Nylon
Filter Element Polyethylene
Seals Nitrile
Springs Steel
Valve Assembly Brass / Nitrile
Diaphragm Assembly Brass / Nitrile
Panel Nut Acetal

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

Dimensions mm (inches)

Note:
Flush-mounted gauge kits will not fit units originally purchased with threaded gauge ports.

Flow Charts

1/4 Filter/Regulator

Inlet Pressure - 10 bar (145 psig)
Flow - dm³/s
Secondary Pressure - bar


Gauges

Square flush mount gauge

0-4 bar K4511SCR04B
0-10 bar K4511SCR11B
0-60 psig K4511SCR060
0-150 psig K4511SCR150

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

Repair and Service Kits

Plastic bowl / Bowl guard manual drain P31KA00BGM
Metal bowl / w/o sight gauge manual drain P31KA00BMM
Plastic bowl / Bowl guard pulse drain P31KA00BGB
Metal bowl / w/o sight gauge pulse drain P31KA00BMB
5µ particle filter element P31KA00ESE
Regulator repair kit - Relieving P31KA00RB
Regulator repair kit - Non-relieving P31KA00RC
Panel mount nut - Aluminum P31KA00MM
Panel mount nut - Plastic P31KA00MP
Angle Bracket (uses panel mount threads) P31KA00MR
C-Bracket (fits to body) P31KA00MW
T-Bracket with body connector P31KA00MT
Body connector P31KA00CB

WARNING
Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed Maximum primary pressure rating.
Global Air Preparation System

Compact Filter / Regulator - P32

Options:

- Integral 1/4", 3/8" or 1/2" ports (NPT, BSPP & BSPT)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminum construction
- Positive bayonet latch to ensure correct & safe fitting
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-17 bar (0-250 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code†</th>
<th>Flow‡</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) Relieving - Poly bowl - Manual drain</td>
<td>P32EA92EGMBNGP</td>
<td>42 (89)</td>
<td>10 (150)</td>
<td>254 (10.0)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) Relieving - Poly bowl - Auto drain</td>
<td>P32EA92EGABNGP</td>
<td>42 (89)</td>
<td>10 (150)</td>
<td>248 (9.76)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) Relieving - Metal bowl - Manual drain</td>
<td>P32EA92ESMBNGP</td>
<td>42 (89)</td>
<td>17 (250)</td>
<td>245 (9.66)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) Relieving - Metal bowl - Auto drain</td>
<td>P32EA92ESABNGP</td>
<td>42 (89)</td>
<td>17 (250)</td>
<td>254 (10.0)</td>
<td>60 (2.36)</td>
<td>95 (3.74)</td>
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<td>3/8&quot;</td>
<td>8 bar (125 psig) Relieving - Poly bowl - Manual drain</td>
<td>P32EA93EGMBNGP</td>
<td>58 (123)</td>
<td>10 (150)</td>
<td>254 (10.0)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
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<td>8 bar (125 psig) Relieving - Metal bowl - Manual drain</td>
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<td>17 (250)</td>
<td>245 (9.66)</td>
<td>60 (2.36)</td>
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<td>3/8&quot;</td>
<td>8 bar (125 psig) Relieving - Metal bowl - Auto drain</td>
<td>P32EA93ESABNGP</td>
<td>58 (123)</td>
<td>17 (250)</td>
<td>254 (10.0)</td>
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<td>95 (3.74)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) Relieving - Poly bowl - Manual drain</td>
<td>P32EA94EGMBNGP</td>
<td>64 (136)</td>
<td>10 (150)</td>
<td>245 (9.66)</td>
<td>60 (2.36)</td>
<td>95 (3.74)</td>
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<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
</tbody>
</table>

† Standard part numbers shown in bold. For other models refer to Options chart above.
‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3 psig) set pressure and 1 bar (14.5 psig) pressure drop.

Symbols

- Integral 1/4", 3/8" or 1/2" ports (NPT, BSPP & BSPT)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminum construction
- Positive bayonet latch to ensure correct & safe fitting
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-17 bar (0-250 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation

Adjustment range

<table>
<thead>
<tr>
<th>With round gauge</th>
<th>Without gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 bar; 30 psig; 0.2 MPa</td>
<td>2 bar; 30 psig; 0.2 MPa</td>
</tr>
<tr>
<td>4 bar; 60 psig; 0.4 MPa</td>
<td>4 bar; 60 psig; 0.4 MPa</td>
</tr>
<tr>
<td>8 bar; 125 psig; 0.8 MPa</td>
<td>8 bar; 125 psig; 0.8 MPa</td>
</tr>
<tr>
<td>17 bar; 250 psig; 1.7 MPa</td>
<td>17 bar; 250 psig; 1.7 MPa</td>
</tr>
</tbody>
</table>

Mounting

- Plastic panel mount nut

Not available with poly bowl with bowl guard.

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/globalfrl
### Specifications

<table>
<thead>
<tr>
<th>Product</th>
<th>1/4</th>
<th>3/8</th>
<th>1/2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Capacity</td>
<td>42 dm³/s (89 scfm)</td>
<td>58 dm³/s (123 scfm)</td>
<td>64 dm³/s (136 scfm)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-25°C to 52°C (-13°F to 125°F)</td>
<td>-25°C to 65.5°C (-13°F to 150°F)</td>
<td></td>
</tr>
<tr>
<td>Max. Supply</td>
<td>Plastic Bowl</td>
<td>10 bar (150 psig)</td>
<td>17 bar (250 psig)</td>
</tr>
<tr>
<td>Pressure</td>
<td>Metal Bowl</td>
<td>40 bar (60 psig)</td>
<td>80 bar (120 psig)</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.

### Materials of Construction

- **Body**: Aluminum
- **Adjustment Knob**: Acetal
- **Body Cap**: ABS
- **Element Retainer / Baffle**: Acetal
- **Bowl**: Plastic Bowl
  - Metal Bowl
- **Filter Element**: Sintered Polyethylene
- **Seals**: Nitrile
- **Springs**: Main Regulating / Valve Steel / S.S.
- **Valve Assembly**: Brass / Nitrile
- **Diaphragm Assembly**: Nitrile / Zinc
- **Panel Nut**: Acetal
- **Sight Gauge**: Metal Bowl
- **Polycarbonate**

### Dimensions (mm (inches))

#### 1/4 Filter/Regulator

- **Port Size**: BSPP / BSPT / NPT 1/4, 3/8, 1/2
- **Gauge Port (2 ea.)**: BSPP / BSPT / NPT 1/4
- **Weight**: 0.53 kg (1.17 lbs)

* Inlet pressure 10 bar (145 psig). Secondary pressure 6.3 bar (91.3 psig).

1. Useful retention refers to volume below the quiet zone baffle.

**Air quality:**
Within ISO 8573-1: 1991 Class 3 (Particulates)
Within ISO 8573-1: 2001 Class 6 (Particulates)

### Flow Charts

#### 1/4 Filter/Regulator

![Flow Chart 1/4 Filter/Regulator](chart1.png)

#### 3/8 Filter/Regulator

![Flow Chart 3/8 Filter/Regulator](chart2.png)

### Repair and Service Kits

- Plastic bowl / Bowl guard manual drain: P32KA00BGM
- Metal bowl / Sight gauge manual drain: P32KA00BSM
- Auto drain: P32KA00DA
- 5µ particle filter element: P32KA00ESE
- Regulator repair kit - Relieving: P32KA00RB
- Regulator repair kit - Non-relieving: P32KA00RC
- Panel mount nut - Aluminum: P32KA00MM
- Panel mount nut - Plastic: P32KA00MP
- Angle Bracket (fits to panel mount threads): P32KA00MR
- T-Bracket (fits to body connector): P32KA00MB
- T-Bracket with body connector: P32KA00MT
- Body connector: P32KA00CB

### Gauges

- **50mm (2”) Round 1/4” center back mount**

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>91.4 psig / 6.3 bar</td>
<td>K4520N14030</td>
</tr>
<tr>
<td>116 psig / 8.0 bar</td>
<td>K4520N14060</td>
</tr>
<tr>
<td>125°F / 7.1 bar</td>
<td>K4520N14160</td>
</tr>
<tr>
<td>160 psig / 11 bar</td>
<td>K4520N14300</td>
</tr>
</tbody>
</table>

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

Standard Filter / Regulator - P33

Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code†</th>
<th>Flow‡ dm³/s (scfm)</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) Relieving - Poly bowl - Manual drain</td>
<td>P33EA94EGMBNGP</td>
<td>90 (191)</td>
<td>10 (150)</td>
<td>291 (11.44)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) Relieving - Poly bowl - Auto drain</td>
<td>P33EA94EGBNGP</td>
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<td>1/2&quot;</td>
<td>8 bar (125 psig) Relieving - Metal bowl - Manual drain</td>
<td>P33EA94E5MBNGP</td>
<td>90 (191)</td>
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<td>8 bar (125 psig) Relieving - Metal bowl - Auto drain</td>
<td>P33EA94E5ABNGP</td>
<td>90 (191)</td>
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<tr>
<td>3/4&quot;</td>
<td>8 bar (125 psig) Relieving - Poly bowl - Manual drain</td>
<td>P33EA96EGMBNGP</td>
<td>98 (208)</td>
<td>10 (150)</td>
<td>282 (11.0)</td>
<td>73 (2.9)</td>
<td>108 (4.27)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>8 bar (125 psig) Relieving - Poly bowl - Auto drain</td>
<td>P33EA96EGBNGP</td>
<td>98 (208)</td>
<td>10 (150)</td>
<td>285 (11.22)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>8 bar (125 psig) Relieving - Metal bowl - Manual drain</td>
<td>P33EA96E5MBNGP</td>
<td>98 (208)</td>
<td>17 (250)</td>
<td>291 (11.44)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>8 bar (125 psig) Relieving - Metal bowl - Auto drain</td>
<td>P33EA96E5ABNGP</td>
<td>98 (208)</td>
<td>17 (250)</td>
<td>282 (11.0)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
</tbody>
</table>

† Standard part numbers shown in bold. For other models refer to Options chart above.
‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3 psig) set pressure and 1 bar (14.5 psig) pressure drop.

Symbols

- Integral 1/2" or 3/4" ports (NPT, BSPP & BSPT)
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminum construction
- Positive bayonet latch to ensure correct & safe fitting
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-17 bar (0-250 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation

Adjustment range

<table>
<thead>
<tr>
<th>With round gauge</th>
<th>Without gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 bar; 30 psig: 0.2 Mpa</td>
<td>2 bar; 30 psig: 0.2 Mpa</td>
</tr>
<tr>
<td>4 bar; 60 psig: 0.4 Mpa</td>
<td>4 bar; 60 psig: 0.4 Mpa</td>
</tr>
<tr>
<td>8 bar; 125 psig: 0.8 Mpa</td>
<td>8 bar; 125 psig: 0.8 Mpa</td>
</tr>
<tr>
<td>17 bar; 250 psig: 1.7 Mpa</td>
<td>17 bar; 250 psig: 1.7 Mpa</td>
</tr>
</tbody>
</table>

* Not available with poly bowl with bowl guard.

---

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/globalfrl

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**Specifications**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Capacity</td>
<td>1/2: 90 dm³/s (191 scfm)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>Plastic Bowl: -25°C to 52°C (-13°F to 125°F)</td>
</tr>
<tr>
<td>Supply</td>
<td>Plastic Bowl: 10 bar (150 psig)</td>
</tr>
<tr>
<td>Standard Filtration</td>
<td>5 Micron</td>
</tr>
<tr>
<td>Useful Retention†</td>
<td>85 cm³ (2.8 US oz.)</td>
</tr>
<tr>
<td>Adjusting Range Pressure</td>
<td>0-2 bar (30 psig)</td>
</tr>
<tr>
<td></td>
<td>0-4 bar (60 psig)</td>
</tr>
<tr>
<td></td>
<td>0-8 bar (125 psig)</td>
</tr>
<tr>
<td></td>
<td>0-17 bar (250 psig)</td>
</tr>
<tr>
<td>Weight</td>
<td>0.85 kg (1.87 lbs)</td>
</tr>
</tbody>
</table>

† Inlet pressure 10 bar (145 psig). Secondary pressure 6.3 bar (91.3 psig).

**Materials of Construction**

- **Body**: Aluminum
- **Adjustment Knob**: Acetal
- **Body Cap**: ABS
- **Element Retainer / Baffle**: Acetal
- **Bows**: Plastic Bowl / Metal Bowl
- **Filter Element**: Sintered Polyethylene
- **Seals**: Nitrile
- **Springs**: Main Regulating / Valve: Steel / S.S., Valve Assembly: Brass / Nitrile
- **Diaphragm Assembly**: Nitrile / Zinc
- **Panel Nut**: Acetal
- **Sight Gauge**: Metal Bowl / Polycarbonate

**Dimensions (mm) (inches)**

<table>
<thead>
<tr>
<th>Part</th>
<th>Measurement (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Drain</td>
<td>37 (1.44)</td>
</tr>
<tr>
<td>I.D. Tube</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>Barb fitting</td>
<td>291 (11.44)</td>
</tr>
<tr>
<td>Use 10mm or 3/8&quot; Flex</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>Barb</td>
<td>104 (4.1)</td>
</tr>
<tr>
<td>Bowls removal</td>
<td>28.3 (1.11)</td>
</tr>
<tr>
<td>clearance</td>
<td>108 (4.27)</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.

**Flow Charts**

**1/2 Filter/Regulator**

**3/4 Filter/Regulator**

**Repair and Service Kits**

- Plastic bowl / Bowl guard manual drain: P33KA00BGM
- Metal bowl / Sight gauge manual drain: P33KA00BSM
- Auto drain: P32KA00DA
- 5µ particle filter element: P33KA00ESE
- Regulator repair kit - Relieving: P33KA00RB
- Regulator repair kit - Non-relieving: P33KA00RC
- Panel mount nut - Aluminum: P33KA00MM
- Panel mount nut - Plastic: P33KA00MP
- Angle Bracket (fits to panel mount threads): P33KA00MR
- T-Bracket (fits to body connector): P32KA00MB
- T-Bracket with body connector: P32KA00MT
- Body connector: P32KA00CB

**Gauges**

**50mm (2") Round 1/4" center back mount**

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-30 psig / 0-2 bar / 0-0.2 MPa</td>
<td>K4520N14030</td>
</tr>
<tr>
<td>0-60 psig / 0-4 bar / 0-0.4 MPa</td>
<td>K4520N14060</td>
</tr>
<tr>
<td>0-160 psig / 0-11 bar / 0-1.1 MPa</td>
<td>K4520N14160</td>
</tr>
<tr>
<td>0-300 psig / 0-20 bar / 0-2 MPa</td>
<td>K4520N14300</td>
</tr>
</tbody>
</table>

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

[Catalog 0750-2 US Global Air Preparation System](#)
Catalog 0750-2 US
(Revised 05-08-12)

Global Air Preparation System

Mini Lubricator - P31

Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code</th>
<th>Flow‡ dm³/s (scfm)</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - No drain</td>
<td>P31LA92LGNN</td>
<td>13 (28)</td>
<td>10 (150)</td>
<td>147.5 (5.80)</td>
<td>40 (1.58)</td>
<td>42.7 (1.68)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - No drain</td>
<td>P31LA92LMNN</td>
<td>13 (28)</td>
<td>17 (250)</td>
<td>147.5 (5.80)</td>
<td>40 (1.58)</td>
<td>42.7 (1.68)</td>
</tr>
</tbody>
</table>

† Standard part numbers shown in bold. For other models refer to Options chart above.
‡ Flow with 6.3 bar (91.3 psig) inlet pressure and 0.34 bar (4.9 psig) pressure drop.
Global Air Preparation System

Specifications

Flow Capacity*  1/4  13 dm³/s (28 scfm)
Operating  Plastic Bowl  -10°C to 52°C (14°F to 125°F)
Temperature  Metal Bowl  -10°C to 65.5°C (14°F to 150°F)
Max. Supply  Plastic Bowl  10 bar (150 psig)
Pressure  Metal Bowl  17 bar (250 psig)
Useful Retention  18 cm³ (0.6 US oz.)
Port Size  BSPP / BSPT / NPT  1/4
Weight  0.13 kg (0.29 lbs)

* Inlet pressure 6.3 bar (91.3 psig). Pressure drop 0.34 bar (4.9 psig).

Materials of Construction

<table>
<thead>
<tr>
<th>Body</th>
<th>Aluminum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Cap</td>
<td>ABS</td>
</tr>
<tr>
<td>Bowl</td>
<td>Plastic Bowl  Polycarbonate</td>
</tr>
<tr>
<td></td>
<td>Metal Bowl  Aluminum</td>
</tr>
<tr>
<td>Seals</td>
<td>Nitrile</td>
</tr>
<tr>
<td>Sight Dome</td>
<td>Polycarbonate</td>
</tr>
<tr>
<td>Suggested Lubricant</td>
<td>ISO / ASTM VG32</td>
</tr>
<tr>
<td>Pick-up Filter</td>
<td>Sintered Bronze</td>
</tr>
</tbody>
</table>

Dimensions  mm (inches)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>(1.58)</td>
</tr>
<tr>
<td>147.5</td>
<td>(5.8)</td>
</tr>
<tr>
<td>42.7</td>
<td>(1.68)</td>
</tr>
<tr>
<td>21.3</td>
<td>(0.84)</td>
</tr>
<tr>
<td>57.2</td>
<td>(2.25)</td>
</tr>
<tr>
<td>Bowl removal clearance</td>
<td></td>
</tr>
</tbody>
</table>

Flow Charts

1/4 Lubricator

<table>
<thead>
<tr>
<th>Primary Pressure - bar</th>
<th>Primary Pressure - psig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6</td>
<td>23.2</td>
</tr>
<tr>
<td>4.0</td>
<td>56.0</td>
</tr>
<tr>
<td>6.3</td>
<td>91.4</td>
</tr>
<tr>
<td>10</td>
<td>145.0</td>
</tr>
</tbody>
</table>

Repair and Service Kits

<table>
<thead>
<tr>
<th>Kit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P31KA00BGN</td>
<td>Plastic bowl / Bowl guard no drain</td>
</tr>
<tr>
<td>P32KA00PG</td>
<td>Drip control assembly</td>
</tr>
<tr>
<td>P31KA00PL</td>
<td>Fill plug</td>
</tr>
<tr>
<td>P31KA00MW</td>
<td>C-Bracket (fits to body)</td>
</tr>
<tr>
<td>P31KA00MT</td>
<td>T-Bracket with body connector</td>
</tr>
<tr>
<td>P31KA00CB</td>
<td>Body connector</td>
</tr>
</tbody>
</table>

Suggested Lubricant: F442 Oil
Petroleum based oil of 100 to 200 SUS viscosity at 38°C (100°F) and an aniline point greater than 93°C (200°F)
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)
Catalog 0750-2 US  
(Revised 05-08-12)  
Global Air Preparation System

Parker Hannifin Corporation  
Pneumatic Division  
Richland, Michigan  
www.parker.com/globalfrl

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Compact Lubricator - P32

Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code†</th>
<th>Flow‡ dm³/h (scfm)</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - No drain</td>
<td>P32LA92LGN</td>
<td>18 (38)</td>
<td>10 (150)</td>
<td>211 (8.30)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - No drain</td>
<td>P32LA92LSNN</td>
<td>18 (38)</td>
<td>17 (250)</td>
<td>211 (8.30)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>Poly bowl - No drain</td>
<td>P32LA93LGN</td>
<td>32 (68)</td>
<td>10 (150)</td>
<td>211 (8.30)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>Metal bowl - No drain</td>
<td>P32LA93LSNN</td>
<td>32 (68)</td>
<td>17 (250)</td>
<td>211 (8.30)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - No drain</td>
<td>P32LA94LGN</td>
<td>47 (100)</td>
<td>10 (150)</td>
<td>211 (8.30)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Metal bowl - No drain</td>
<td>P32LA94LSNN</td>
<td>47 (100)</td>
<td>17 (250)</td>
<td>211 (8.30)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
</tbody>
</table>

† Standard part numbers shown in bold. For other models refer to Options chart above.  
‡ Flow with 6.3 bar (91.3 psig) inlet pressure and 0.34 bar (4.9 psig) pressure drop.

Symbols

- Integral 1/4", 3/8" or 1/2" ports (NPT, BSPP & BSPT)
- Robust but lightweight aluminum construction
- Proportional oil delivery over a wide range of air flows
- Finger tip ratchet control for precise oil drip rate adjustment
- Fill from top under system pressure

1/4", 3/8" or 1/2" ports (NPT, BSPP & BSPT)
Flow with 6.3 bar (91.3 psig) inlet pressure and 0.34 bar (4.9 psig) pressure drop.

Engr. level  
Current A

Thread type
BSPP 1  
BSPT 2  
NPT 9

Port size
1/4" 2  
3/8" 3  
1/2" 4

Type
Oil mist standard sight dome L

Bowl type
Poly bowl with bowl guard G  
Metal bowl with sight gauge S

Drain type
No drain; closed end N

Mounting
No bracket N

Notes:
- Integral 1/4", 3/8" or 1/2" ports (NPT, BSPP & BSPT)
- Robust but lightweight aluminum construction
- Proportional oil delivery over a wide range of air flows
- Finger tip ratchet control for precise oil drip rate adjustment
- Fill from top under system pressure

P 3 2 L  
Thread type
BSPP 1  
BSPT 2  
NPT 9

A

L

N

N
Specifications

<table>
<thead>
<tr>
<th>Flow Capacity</th>
<th>1/4</th>
<th>18 dm³/s (38 scfm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3/8</td>
<td>32 dm³/s (68 scfm)</td>
</tr>
<tr>
<td></td>
<td>1/2</td>
<td>47 dm³/s (100 scfm)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operating</th>
<th>Plastic Bowl</th>
<th>-10°C to 52°C (14°F to 125°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Metal Bowl</td>
<td>-10°C to 65.5°C (14°F to 150°F)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Max. Supply</th>
<th>Plastic Bowl</th>
<th>10 bar (150 psig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure</td>
<td>Metal Bowl</td>
<td>17 bar (250 psig)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Useful Retention</th>
<th>121 cm³ (4.09 US oz.)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Port Size</th>
<th>BSPP / BSPT / NPT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1/4, 3/8, 1/2</td>
</tr>
</tbody>
</table>

| Weight          | 0.31 kg (0.68 lbs) |

*Inlet pressure 6.3 bar (91.3 psig), Pressure drop 0.34 bar (4.9 psig).

Materials of Construction

<table>
<thead>
<tr>
<th>Body</th>
<th>Aluminum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Cap</td>
<td>ABS</td>
</tr>
<tr>
<td>Bowls</td>
<td>Plastic Bowl</td>
</tr>
<tr>
<td></td>
<td>Polycarbonate</td>
</tr>
<tr>
<td></td>
<td>Metal Bowl</td>
</tr>
<tr>
<td></td>
<td>Aluminum</td>
</tr>
<tr>
<td>Seals</td>
<td>Nitrile</td>
</tr>
<tr>
<td>Sight Dome</td>
<td>Polycarbonate</td>
</tr>
<tr>
<td>Sight Gauge</td>
<td>Metal Bowl</td>
</tr>
<tr>
<td></td>
<td>Polycarbonate</td>
</tr>
<tr>
<td>Suggested Lubricant</td>
<td>ISO / ASTM VG32</td>
</tr>
<tr>
<td>Pick-up Filter</td>
<td>Sintered Bronze</td>
</tr>
</tbody>
</table>

Dimensions mm (inches)

Repair and Service Kits

<table>
<thead>
<tr>
<th>Plastic bowl / Bowl guard no drain</th>
<th>P32KA00BGN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drip control assembly</td>
<td>P32KA00PG</td>
</tr>
<tr>
<td>Fill plug</td>
<td>P32KA00PL</td>
</tr>
<tr>
<td>L-Bracket (fits to body)</td>
<td>P32KA00ML</td>
</tr>
<tr>
<td>T-Bracket (fits to body connector)</td>
<td>P32KA00MB</td>
</tr>
<tr>
<td>T-Bracket with body connector</td>
<td>P32KA00MT</td>
</tr>
<tr>
<td>Body connector</td>
<td>P32KA00CB</td>
</tr>
</tbody>
</table>

Suggested Lubricant

Petroleum based oil of 100 to 200 SUS viscosity at 38°C (100°F) and an aniline point greater than 93°C (200°F)

(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)
### Global Air Preparation System

#### Standard Lubricator - P33

![Image of lubricator](image)

**Symbols**

- Integral 1/2" or 3/4" ports (NPT, BSPP & BSPT)
- Robust but lightweight aluminum construction
- Proportional oil delivery over a wide range of air flows
- Finger tip ratchet control for precise oil drip rate adjustment
- Fill from top under system pressure

### Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code</th>
<th>Flow† dm³/s (scfm)</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - No drain</td>
<td>P33LA94LGNN</td>
<td>48 (102)</td>
<td>10 (150)</td>
<td>234 (9.21)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Metal bowl - No drain</td>
<td>P33LA94LSNN</td>
<td>48 (102)</td>
<td>17 (250)</td>
<td>234 (9.21)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Poly bowl - No drain</td>
<td>P33LA96LGNN</td>
<td>68 (144)</td>
<td>10 (150)</td>
<td>234 (9.21)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Metal bowl - No drain</td>
<td>P33LA96LSNN</td>
<td>68 (144)</td>
<td>17 (250)</td>
<td>234 (9.21)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
</tr>
</tbody>
</table>

† Standard part numbers shown in bold. For other models refer to Options chart above.
‡ Flow with 6.3 bar (91.3 psig) inlet pressure and 0.34 bar (4.9 psig) pressure drop.
Catalog 0750-2 US
Global Air Preparation System

Specifications

Flow Capacity

<table>
<thead>
<tr>
<th>Size</th>
<th>Flow Capacity</th>
<th>Capacity (scfm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>48 dm³/s</td>
<td>102 scfm</td>
</tr>
<tr>
<td>3/4</td>
<td>68 dm³/s</td>
<td>144 scfm</td>
</tr>
</tbody>
</table>

Operating Pressure

<table>
<thead>
<tr>
<th>Bowl Type</th>
<th>Pressure Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic</td>
<td>-10°C to 52°C (14°F to 125°F)</td>
</tr>
<tr>
<td>Metal</td>
<td>-10°C to 65.5°C (14°F to 150°F)</td>
</tr>
</tbody>
</table>

Useful Retention

181 cm³ (6.1 US oz.)

Port Size

1/2, 3/4

Weight

0.47 kg (1.04 lbs)

Materials of Construction

<table>
<thead>
<tr>
<th>Part</th>
<th>Body Material</th>
<th>Cap Material</th>
<th>Bowl Material</th>
<th>Gauge Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>Aluminum</td>
<td>ABS</td>
<td>Polycarbonate</td>
<td>Polycarbonate</td>
</tr>
<tr>
<td>Body Cap</td>
<td>Aluminum</td>
<td>ABS</td>
<td>Polycarbonate</td>
<td>Polycarbonate</td>
</tr>
<tr>
<td>Bowls</td>
<td>Plastic</td>
<td>Polycarbonate</td>
<td>Aluminum</td>
<td>Aluminum</td>
</tr>
<tr>
<td>Seals</td>
<td>Nitrile</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sight Dome</td>
<td>Polycarbonate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sight Gauge</td>
<td>Aluminum</td>
<td></td>
<td>Polycarbonate</td>
<td></td>
</tr>
<tr>
<td>Suggested Lubricant</td>
<td>ISO / ASTM VG32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pick-up Filter</td>
<td>Sintered Bronze</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Flow Charts

1/2 Lubricator

3/4 Lubricator

Repair and Service Kits

<table>
<thead>
<tr>
<th>Part</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic bowl / Bowl guard no drain</td>
<td>P33KA00BGN</td>
</tr>
<tr>
<td>Drip control assembly</td>
<td>P32KA00PG</td>
</tr>
<tr>
<td>Fill plug</td>
<td>P32KA00PL</td>
</tr>
<tr>
<td>L-Bracket (fits to body)</td>
<td>P33KA00ML</td>
</tr>
<tr>
<td>T-Bracket (fits to body connector)</td>
<td>P32KA00MB</td>
</tr>
<tr>
<td>T-Bracket with body connector</td>
<td>P32KA00MT</td>
</tr>
<tr>
<td>Body connector</td>
<td>P32KA00CB</td>
</tr>
</tbody>
</table>

Suggested Lubricant

Petroleum based oil of 100 to 200 SUS viscosity at 38°C (100°F) and an aniline point greater than 93°C (200°F)

(Do not use oils with additives, compounded oils containing solvents, graphite, detergents, or synthetic oils.)
Global Air Preparation System

Order Key

<table>
<thead>
<tr>
<th>P 3</th>
<th>PA</th>
<th>1</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global Mini (1/4&quot;)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global Compact (1/2&quot;)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thread type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSPP</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSPT</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NPT</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global Mini (1/4&quot;)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global Compact (1/2&quot;)</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Version</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom ported exhaust (NC)</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom ported forced exhaust (NO)*</td>
<td>E</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* When the supply voltage is lost the unit will automatically exhaust the regulated pressure to 0 bar (atmospheric pressure)

<table>
<thead>
<tr>
<th>Pressure range</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 2 bar (0-29 psig)</td>
</tr>
<tr>
<td>0 - 10 bar (0-145 psig)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 volts</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Control signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10 V†</td>
</tr>
</tbody>
</table>

† Factory setting is 0-10 V control signal. 4-20 mA control signal available via parameter 4 on keypad.

<table>
<thead>
<tr>
<th>Output signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital, PNP</td>
</tr>
<tr>
<td>PNP or 0-10V</td>
</tr>
<tr>
<td>NPN or 0-10V</td>
</tr>
<tr>
<td>4-20mA fixed</td>
</tr>
</tbody>
</table>

D) Digital PNP output only, no analog output selectable
P) Digital PNP and analogue 0-10V outputs selectable, by means of parameter 6. (Factory default 0-10V)
N) Digital NPN and analog 0-10 V outputs selectable by means of parameter 6. (Factory default 0-10V)
M) Analog 4-20mA output only.
Note: On all analog outputs the F.S. value can be adjusted by means of parameter 8

<table>
<thead>
<tr>
<th>Input connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>M12 (4 pin)</td>
</tr>
</tbody>
</table>

P31P Mounting brackets

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P3HKA00ML</td>
<td>L-Bracket mounting kit</td>
</tr>
<tr>
<td>P3HKA00MC</td>
<td>Foot bracket mounting kit</td>
</tr>
</tbody>
</table>

Cables

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB-M12-4P-2M</td>
<td>2 mtr. cable with moulded straight M12x1 connector</td>
</tr>
</tbody>
</table>

P32P Mounting brackets

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P3KKA00ML</td>
<td>L-Bracket mounting kit</td>
</tr>
<tr>
<td>P3KKA00MC</td>
<td>Foot bracket mounting kit</td>
</tr>
</tbody>
</table>

Note:
These brackets fit both Proportional Regulators and Combined Soft Start & Dump Valves.

- Very fast response times
- Accurate output pressure
- Micro parameter settings
- Selectable I/O parameters
- Quick, full flow exhaust
- LED display indicates output pressure
- No air consumption in steady state
- Multiple mounting options
- Protection to IP65
- P31P flows to 19 dm³/s (40 scfm)
- P32P flows to 57 dm³/s (120 scfm)
Technical Information

Working medium
Compressed air or inert gases, filtered to 40µ.

Supply pressure
Max. Operating Pressure:
- 2 bar unit: ...................... 3 bar (43.5 psig)
- 10 bar unit: ................... 10.5 bar (152 psig)
Min. Operating Pressure .... P2 Pressure + 0.5 bar (7.3 psig)

Pressure control range
Available in three pressure ranges, 0-2 bar (0-29 psig), 0-7 bar (0-101.5 psig) or 0-10 bar (0-145 psig). Pressure range can be changed through the software at all times.
(parameter 19)

Temperature range
0°C up to +50°C (32°F up to 122°F)

Weights:
P31P = 0.291 kg (0.64 lbs)
P32P = 0.645 kg (1.42 lbs)

Air consumption
No consumption in stable regulated situation.

Display
The regulator is provided with a digital display, indicating the output pressure, either in bar or psig.
The factory setting is as indicated on the label, can be changed through software at all times (parameter 14)

Supply voltage
24 VDC +/- 10%

Power consumption
Max. 1.1W with unloaded signal outputs

Control signals
The electronic pressure regulator can be externally controlled through an analogue control signal of either
0-10V or 4-20mA, (parameter 4).

Output signals
As soon as the output pressure is within the signal band a signal is given of 24VDC, PNP Ri = 1 kOhm
Outside the signal band this connection is 0V.

Connections
(In case of output signal (Option D)
Central M12 connector 4-pole
The electrical connections are as follows:

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Function</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>24 V</td>
<td>Brown</td>
</tr>
<tr>
<td>2</td>
<td>0 to 10 V Control Signal Ri = 100k Ω</td>
<td>White</td>
</tr>
<tr>
<td></td>
<td>4 to 20mA Control Signal Ri = 500 Ω</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0 V (GND) Supply</td>
<td>Blue</td>
</tr>
<tr>
<td>4</td>
<td>24 V Alarm Output Signal</td>
<td>Black</td>
</tr>
</tbody>
</table>

Schematic

![Schematic Diagram]
Global Air Preparation System

Technical information

Dead band
The dead band is preset at 1.3% of Full Scale*, adjustable via parameter 13.

Accuracy
Linearity: = < 0.3% of Full Scale.*

Proportional band
The proportional band is preset at 10% of Full Scale.*

Fail safe operation
- If the P31P / P32P unit has an “0” or “A” in the 12th digit of the model number
  - When the supply voltage drops, the electronic control reverts to the fail safe mode. The last known output pressure is maintained at approximately the same level depending upon air consumption. The digital display indicates the last known pressure setting.
  - When the supply voltage is reinstated to the correct level, the valve moves from the fail safe mode and the output pressure immediately follows the control signal requirement. The display indicates the actual output pressure.

- If the unit has been programmed in manual mode (not with a control signal) the unit will EXHAUST and the regulator will need to be reset when power is applied.

Full exhaust
Complete exhaust of the regulator is defined as P2 ≤ 1% Full Scale

* Full scale (F.S.)
For 2 bar (29 psig) versions this will be 2 bar (29 psig), for the 10 bar (145 psig) version full scale will be 10 bar (145 psig).

Degree of protection
- IP65

EU conformity
- CE: standard
- EMC: according to directive 89/336/EEC

The new pressure regulator is in accordance with:
- EN 61000-6-1:2001
- EN 61000-6-2:2001
- EN 61000-6-3:2001
- EN 61000-6-4:2001

These standards ensure that this unit meets the highest level of EMC protection.

Mounting position
Preferably vertical, with the cable gland on top.

Materials: P31P & P32P
- Magnet Core ................................................................. Steel
- Solenoid Valve Poppet ................................................. FPM
- Solenoid Valve Housing ............................................. Techno Polymer
- Regulator Body (P31P & P32P versions) .........................Aluminium
- Regulator Top Housing .............................................. Nylon
- Valve Head ................................................................. Brass & NBR
- Remaining Seals .......................................................... NBR

Advanced functionality

Pilot valve protection
When the required output pressure can not be achieved because of a lack of input pressure the unit will open fully and will display NoP. Approximately every 10 seconds the unit will retry. The output pressure will then be approximately equal to the inlet pressure. As soon as the input pressure is back on the required level, the normal control function follows.

Safety exhaust
Should the control signal fall below 0.1 volts the valve will automatically dump downstream system pressure.

Input protection
The unit has built-in protection against failure and burnout resulting from incorrect input value, typically:
- The 24VDC supply is incorrectly connected to the setpoint input, the display will show ‘OL’, as an overload indication. The unit will need to be rewired and when correctly connected will operate normally.
- The overload indicator ‘OL’ will also appear should the wrong input value be applied or the wrong input value be programmed: 4 - 20m instead of 0 - 10V. To correct this a different set point value should be entered or the unit reprogrammed to correct the set point value acceptance. (via parameter 4).

Response time
<table>
<thead>
<tr>
<th>P31P</th>
<th>P32P</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 to 4 bar</td>
<td>25 msecs</td>
</tr>
<tr>
<td>1 to 6 bar</td>
<td>55 msecs</td>
</tr>
<tr>
<td>4 to 2 bar</td>
<td>70 msecs</td>
</tr>
<tr>
<td>6 to 1 bar</td>
<td>80 msecs</td>
</tr>
</tbody>
</table>

To fill volume of:
- 100cm³ - P31P
- 330cm³ - P32P
connected to the outlet of the regulator.

Settings
The regulator is pre-set at the factory. If required, adjustments can be made.

Flow Charts

P31P Regulator 1/4” Ports

P32P Regulator 1/2” Ports
How to change parameters
Pressing the Accept key “acc” for more than 3 seconds, will activate parameter change mode. The user can then select the parameters by pressing up or down key. (display will show Pxx). When parameter number is correct, pressing accept again will enter parameter number.(display will show parameter value).

Pressing the up or down key will change the parameter itself. (display will flash indicating parameter editing mode). Pressing the accept key will accept the new parameter value. (all digits will flash whilst being accepted).

After releasing all keys, the next parameter number will be presented on the display. (you may step to the next parameter). When no key is pressed, after 3 seconds the display will show the actual output pressure.

Back to Factory Setting
After start up. (Power is on)

Entering this value in parameter 0 will store the calibrated factory data into the working parameters.

(Default calibration data is used)

<table>
<thead>
<tr>
<th>Parameter Number 0 – Reset Back to Factory Settings</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step</strong></td>
<td><strong>1</strong></td>
<td><strong>2</strong></td>
<td><strong>3</strong></td>
<td><strong>4</strong></td>
<td><strong>5</strong></td>
</tr>
<tr>
<td>Press</td>
<td>![Acc icon] (3-6 seconds)</td>
<td>![Down or Up icon]</td>
<td>![Acc icon]</td>
<td>![Down or Up icon]</td>
<td>![Acc icon]</td>
</tr>
<tr>
<td>Until Display Reads</td>
<td>![Pxx icon]</td>
<td>![P00 icon]</td>
<td>![003 icon]</td>
<td>![P01 icon]</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Accesses changeable parameters.</td>
<td>Accesses parameter no. 0.</td>
<td>Displays current parameter value.</td>
<td>Edits parameter. 3 = standard factory settings. If other than 3, use Up or Down Arrow and accept 3</td>
<td>Accepts and saves new parameter setting.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter Number 4 – Set Control Signal in Volts or Milliamps</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step</strong></td>
<td><strong>1</strong></td>
<td><strong>2</strong></td>
<td><strong>3</strong></td>
<td><strong>4</strong></td>
<td><strong>5</strong></td>
</tr>
<tr>
<td>Press</td>
<td>![Acc icon] (3-6 seconds)</td>
<td>![Down or Up icon]</td>
<td>![Acc icon]</td>
<td>![Down or Up icon]</td>
<td>![Acc icon]</td>
</tr>
<tr>
<td>Until Display Reads</td>
<td>![Pxx icon]</td>
<td>![P04 icon]</td>
<td>![001 icon]</td>
<td>![000 icon]</td>
<td>![P05 icon]</td>
</tr>
<tr>
<td>Description</td>
<td>Accesses changeable parameters.</td>
<td>Accesses parameter no. 4.</td>
<td>Displays current parameter value. I = V 0 = mA</td>
<td>Edits parameter.</td>
<td>Accepts and saves new parameter setting.</td>
</tr>
</tbody>
</table>

When the unit is initially powered up allow approximately 10 seconds for the unit to “boot-up” before changing parameter settings.

Only parameter numbers 0, 4, 6, 8, 9, 14, 18, 19, 20, 12, 13 and 21 are accessible to edit. All other parameters are fixed.

Manual mode:
When keys DOWN and UP are pressed during startup, (connecting to the 24V power supply) manual mode is activated. This means that the user is able to in/decrease the output pressure of the regulator, by pressing the UP or DOWN key. During this action the display will blink, indicating that the manual mode is activated. After powering up again, the unit will revert back to normal mode.

Set Control Signal
The unit is factory set for 0-10 V control signal. If 4-20 mA control signal is required, change parameter 4.
## Set Output Signal

Parameter 6 is used to set the type of output signal to your PLC. This parameter is used as follows:

- **Output Signal option “0” = Digital Output – PNP**
  - Factory set at “0” Non Adjustable

- **Output Signal option “P” = Digital PNP or Analog 1-10V**
  - Factory set at “1” Analog Signal
  - Convert to Digital PNP by changing parameter to “0” setting

- **Output Signal option “N” = Digital NPN or Analog 1-10V**
  - Factory set at “1” Analog Signal
  - Convert to Digital NPN by changing parameter to “0”

- **Output Signal option “M” = Analog 4-20 mA**
  - Factory set at “2” Non Adjustable

### Parameter Number 6 – Set Output Signal

<table>
<thead>
<tr>
<th>Step</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press</td>
<td>acc&lt;br&gt;3-6 seconds</td>
<td>▼ or ▲</td>
<td>acc</td>
<td>▼ or ▲</td>
<td>acc</td>
</tr>
<tr>
<td>Until Display Reads</td>
<td>Pxx</td>
<td>P06</td>
<td>001</td>
<td># # #</td>
<td>P07</td>
</tr>
<tr>
<td>Description</td>
<td>Accesses changeable parameters.</td>
<td>Accesses parameter no. 6.</td>
<td>Displays current parameter value. 1 = m factory default for P3H with analog options</td>
<td>Edits parameter. 0 = digital (NPN or PNP) 1 = analog 0..10V 2 = analog 4..20 mA</td>
<td>Accepts and saves new parameter setting.</td>
</tr>
</tbody>
</table>

## Adjust Span Analog Output Signal

Set value is a % of Full Analog range. As an example for a 0-10V output signal, the original factory setting of 100% will give you an adjustment of 0-10V. If you reset Parameter 8 to 50%, the new output range would be 0-5V or 50% of the full range.

In the event that the output signal is too low, in a certain application, you can adjust it by increasing Parameter 8 to a maximum value of 130% of scale.

Note that all values are nominal and that an actual measurement may be required to ensure signal strength.

### Parameter Number 8 – Adjust Span Analog Output Signal

<table>
<thead>
<tr>
<th>Step</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press</td>
<td>acc&lt;br&gt;3-6 seconds</td>
<td>▼ or ▲</td>
<td>acc</td>
<td>▼ or ▲</td>
<td>acc</td>
</tr>
<tr>
<td>Until Display Reads</td>
<td>Pxx</td>
<td>P08</td>
<td>100</td>
<td># # #</td>
<td>P09</td>
</tr>
</tbody>
</table>
## Adjust Digital Display

If necessary, adjustments can be made to the digital display when using an external pressure sensor.

<table>
<thead>
<tr>
<th>Step</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press</td>
<td>![ACC] 3-6 seconds</td>
<td>![△ or ▽]</td>
<td>![ACC]</td>
<td>![△ or ▽]</td>
<td>![ACC]</td>
</tr>
<tr>
<td>Until Display Reads</td>
<td>![P x x]</td>
<td>![P 0 9]</td>
<td>![###]</td>
<td>![###]</td>
<td>![P 1 0]</td>
</tr>
<tr>
<td>Description</td>
<td>Accesses changeable parameters.</td>
<td>Accesses parameter no. 9.</td>
<td>Displays current digital display</td>
<td>Use up or down arrows and accept to adjust the display value if using an external pressure sensor.</td>
<td>Accepts and saves new parameter setting.</td>
</tr>
</tbody>
</table>

## Set Pressure Scale

Units with NPT port threads are supplied with a factory set psig pressure scale. Use parameter 14 to change scale to bar.

<table>
<thead>
<tr>
<th>Step</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press</td>
<td>![ACC] 3-6 seconds</td>
<td>![△ or ▽]</td>
<td>![ACC]</td>
<td>![△ or ▽]</td>
<td>![ACC]</td>
</tr>
<tr>
<td>Until Display Reads</td>
<td>![P x x]</td>
<td>![P 1 4]</td>
<td>![0 0 1]</td>
<td>![0 0 0]</td>
<td>![P 1 5]</td>
</tr>
</tbody>
</table>
Preset Minimum Pressure

If there is a need for a pre-set Minimum pressure, use parameter 18. (Note: preset pressure is affected by % P19.)

Parameter Number 18 – Set Minimum Preset Pressure

<table>
<thead>
<tr>
<th>Step</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press</td>
<td>acc</td>
<td>▼ or ▲</td>
<td>acc</td>
<td>▼ or ▲</td>
<td>acc</td>
</tr>
<tr>
<td>3-6 seconds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Until Display Reads</td>
<td>P x x</td>
<td>P 1 8</td>
<td>0 0 0</td>
<td># # #</td>
<td>P 1 9</td>
</tr>
</tbody>
</table>

- Accesses changeable parameters.
- Displays current parameter value. Incremental value is:
  - 2 bar unit: \( \times 2 \text{ mbar} \times \% \text{ P19} \)
  - 10 bar unit: \( \times 10 \text{ mbar} \times \% \text{ P19} \)
- Edits parameter.
- Sequences to next parameter.
- Accepts and saves new parameter setting.

Set Pressure Correction

Pressure correction allows the user to set a Maximum pressure as a percentage of secondary pressure F.S.

Example: If F.S. is 10 bar, set parameter 19 to 50 for Maximum preset pressure of 5 bar.

Pressure correction also affects the Minimum preset pressure in parameter 18.

Example: If F.S. is 10 bar and parameter 18 is set to a value of 100 (1 bar), and parameter 19 is set to 50%, then the actual Minimum preset pressure seen is 0.5 bar.

Parameter Number 19 – Set Maximum Preset Pressure

<table>
<thead>
<tr>
<th>Step</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press</td>
<td>acc</td>
<td>▼ or ▲</td>
<td>acc</td>
<td>▼ or ▲</td>
<td>acc</td>
</tr>
<tr>
<td>3-6 seconds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Until Display Reads</td>
<td>P x x</td>
<td>P 1 9</td>
<td>1 0 0</td>
<td># # #</td>
<td># # #</td>
</tr>
</tbody>
</table>

- Accesses changeable parameters.
- Displays current parameter value. Incremental value is: \% of F.S.
- Edits parameter.
- Sequences to next parameter.
- Accepts and saves new parameter setting.
Behavior Control
The regulation speed of the pressure regulator can be modified by means of one parameter. (P 20)
The value in this parameter has a range from 0-5. A higher value indicates slower regulation speed, but will be more stable.

Parameter Number 20 – Set Behavior Control

<table>
<thead>
<tr>
<th>Step</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press</td>
<td><img src="" alt="" /></td>
<td><img src="" alt="" /> or <img src="" alt="" /></td>
<td><img src="" alt="" /> or <img src="" alt="" /></td>
<td><img src="" alt="" /> or <img src="" alt="" /></td>
<td><img src="" alt="" /> or <img src="" alt="" /></td>
</tr>
<tr>
<td>Until Display Reads</td>
<td>![P](value between 0 and 5)</td>
<td>003</td>
<td>![Flashing Decimal](value between 50 and 250)</td>
<td>![Flashing Decimal](value between 0 and 5)</td>
<td>![Flashing Decimal](value between 0 and 5)</td>
</tr>
<tr>
<td>Description</td>
<td>Accesses changeable parameters.</td>
<td>Accesses parameter no. 20.</td>
<td>Displays current parameter value.</td>
<td>Edits parameter 0 = custom set* 1 = fastest (narrow proportional band) 2 = fast 3 = normal 4 = slow 5 = slowest (proportional band is broad)</td>
<td>Accepts and saves new parameter setting.</td>
</tr>
</tbody>
</table>

* When the value 0 is entered, you are able to create your own custom settings true parameters 12, 13 and 21.

Fine Settings
Set Proportional Band
Proportional band is used for setting the reaction sensitivity of the regulator. The displayed value is X 10 mbar and has a range between 50 (0.5 bar) and 250 (2.5 bar).

Parameter Number 12 – Set Proportional Band (P20 Must be Set to 0)

<table>
<thead>
<tr>
<th>Step</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press</td>
<td><img src="" alt="" /></td>
<td><img src="" alt="" /> or <img src="" alt="" /></td>
<td><img src="" alt="" /> or <img src="" alt="" /></td>
<td><img src="" alt="" /> or <img src="" alt="" /></td>
<td><img src="" alt="" /> or <img src="" alt="" /></td>
</tr>
<tr>
<td>Until Display Reads</td>
<td>![P](value between 0 and 5)</td>
<td>P 12</td>
<td>100</td>
<td>![Flashing Decimal](value between 50 and 250)</td>
<td>![Flashing Decimal](value between 0 and 5)</td>
</tr>
</tbody>
</table>
Set Deadband
Deadband is the Minimum limit of accuracy at which the regulator is set for normal operation. The displayed value is $X \times 10$ mbar and has a range between 4 (40 mbar) and 40 (400 mbar).

**Parameter Number 13 – Set Deadband (P20 Must be Set to 0)**

<table>
<thead>
<tr>
<th>Step</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press</td>
<td>acc</td>
<td>▼ or ▲</td>
<td>acc</td>
<td>▼ or ▲</td>
<td>acc</td>
</tr>
<tr>
<td>Until Display Reads</td>
<td></td>
<td></td>
<td>Flashing Decimal</td>
<td>Flasing Decimal (value between 4 and 40)</td>
<td>Flashing</td>
</tr>
<tr>
<td>Description</td>
<td>Accesses changeable parameters.</td>
<td>Accesses parameter no. 13</td>
<td>Displays current parameter value. Incremental value is $X \times 10$ mbar</td>
<td>Edits parameter.</td>
<td>Accepts and saves new parameter setting.</td>
</tr>
</tbody>
</table>

Proportional Effect

**Parameter Number 21 – Set Proportional Effect (P20 Must be Set to 0)**

<table>
<thead>
<tr>
<th>Step</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press</td>
<td>acc</td>
<td>▼ or ▲</td>
<td>acc</td>
<td>▼ or ▲</td>
<td>acc</td>
</tr>
<tr>
<td>Until Display Reads</td>
<td></td>
<td></td>
<td>Flashing Decimal</td>
<td>Flashing Decimal (value between 5 and 100)</td>
<td>Flashing</td>
</tr>
<tr>
<td>Description</td>
<td>Accesses changeable parameters.</td>
<td>Accesses parameter no. 21</td>
<td>Displays current parameter value.</td>
<td>Edits parameter. $5 = $ fastest regulation $100 = $ slowest regulation.</td>
<td>Accepts and saves new parameter setting.</td>
</tr>
</tbody>
</table>

**Parameter Number 39 – Displays Current Software Version**

<table>
<thead>
<tr>
<th>Step</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press</td>
<td>acc</td>
<td>▼ or ▲</td>
<td>acc</td>
</tr>
<tr>
<td>Until Display Reads</td>
<td></td>
<td></td>
<td>Flashing Decimal</td>
</tr>
<tr>
<td>Description</td>
<td>Accesses changeable parameters.</td>
<td>Accesses parameter no. 39.</td>
<td>Displays current parameter value. $XXX = $ current software version</td>
</tr>
</tbody>
</table>
Catalog 0750-2 US
Global Air Preparation System

P31P

Proportional Regulators

Dimensions are in mm (Inches)

P32P

L-Bracket

Foot Bracket

Foot Bracket
Parker Global Series Combined Soft Start / Dump Valves, provide for the safe introduction of pressure to machines or systems. Soft Start / Dump Valves when set, allow the pressure to gradually build to the set point before fully opening to deliver full flow at line pressure.

The controlled introduction of pressure can be an important safety factor and prevent damage to tooling when air pressure is introduced at machine or system start up. To maintain these units in the open position a pilot supply to the air pilot operated version or an electrical signal to the solenoid operated version must be maintained. The valve will automatically dump when the holding signal is removed.

**Options:**

<table>
<thead>
<tr>
<th>P</th>
<th>3</th>
<th>TA</th>
<th>T</th>
<th>A</th>
<th>N</th>
<th>P</th>
<th>S</th>
<th>C</th>
<th>A</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body size</td>
<td>Mini (1/4&quot;)</td>
<td>1</td>
<td>Compact (1/2&quot;)</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thread Type</td>
<td>BSPG</td>
<td>1</td>
<td>BSPT</td>
<td>2</td>
<td>NPT</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port size</td>
<td>Mini (1/4&quot;)</td>
<td>2</td>
<td>Compact (1/2&quot;)</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pilot type</td>
<td>External Air Pilot</td>
<td>P</td>
<td>Solenoid Pilot</td>
<td>S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actuator interface</td>
<td>15mm solenoid (P31 only)</td>
<td>G</td>
<td>30mm solenoid</td>
<td>C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Threaded air pilot</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Compact combined soft start dump valve**

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code</th>
<th>Flow³ (dm³/s (scfm))</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
<th>Weight kg (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>120VAC Solenoid &amp; cable plug</td>
<td>P31TA92SGNC1FN</td>
<td>17 (36)</td>
<td>10 (150)</td>
<td>115.6 (4.5)</td>
<td>57 (2.2)</td>
<td>40 (1.5)</td>
<td>0.37kg (0.8lbs)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>24VDC Solenoid &amp; cable plug</td>
<td>P31TA92SGNC2CN</td>
<td>17 (36)</td>
<td>10 (150)</td>
<td>166¹ (6.5)</td>
<td>57 (2.2)</td>
<td>40 (1.5)</td>
<td>0.41kg (0.9lbs)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>External air pilot operated</td>
<td>P31TA92PPN</td>
<td>17 (36)</td>
<td>17 (250)</td>
<td>115.6 (4.5)</td>
<td>57 (2.2)</td>
<td>40 (1.5)</td>
<td>0.37kg (0.8lbs)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>120VAC 30mm coil &amp; cable plug incl.</td>
<td>P32TA94SCNA3GN</td>
<td>46 (97)</td>
<td>10 (150)</td>
<td>162.5¹ (6.3)</td>
<td>88 (3.4)</td>
<td>57.2 (2.2)</td>
<td>0.87kg (1.9lbs)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>24VDC 30mm coil &amp; cable plug incl.</td>
<td>P32TA94SCNA2CN</td>
<td>46 (97)</td>
<td>10 (150)</td>
<td>227.5¹ (8.9)</td>
<td>88 (3.4)</td>
<td>57.2 (2.2)</td>
<td>0.91kg (2.0lbs)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>External air pilot operated</td>
<td>P32TA94PPN</td>
<td>46 (97)</td>
<td>17 (250)</td>
<td>162.5¹ (6.3)</td>
<td>75 (2.9)</td>
<td>57.2 (2.2)</td>
<td>0.87kg (1.9lbs)</td>
</tr>
</tbody>
</table>

¹ Includes exhaust silencer. Flow with 6.3 bar (91.3) psig inlet and 1 bar (14.5 psig) pressure drop.

² Standard part numbers shown in bold. For other models refer to Options chart above.

**Symbols**

- Modular design with 1/4" or 1/2" integral ports (NPT, BSPG & BSPT)
- Provides for the safe introduction of pressure
- The 3-way, 2-position function automatically dumps downstream pressure on the loss of pilot signal
- Adjustable slow start
- Solenoid or air pilot options
- High flow & exhaust capability
- Silencer included

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Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/globalfrl
Global Air Preparation System

Technical Information

Fluid: Compressed air
Max. pressure Solenoid operated: 10 bar (150 psig)
Max. pressure Air Pilot operated: 17 bar (250 psig)
Min. operating pressure: 3 bar (44 psig)
Temperature Max.* Solenoid operated: -10°C to 50°C (14°F to 122°F)
Temperature Max.* Air Pilot operated: -20°C to 80°C (-4°F to 176°F)
Air Pilot port: 1/8"
Exhaust port: P31T - 1/4" / P32T - 1/2"

Typical flow with 6.3 bar
inlet pressure and 1 bar
pressure drop:
P31T 17 dm³/s (36 scfm)
P32T 48 dm³/s (101 scfm)

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C
Snap pressure: Full flow when downstream pressure reaches 50% of the inlet pressure

Material Specification

Body: Aluminum
Body cover: Polyester
Seals: Nitrile NBR

Mounting Brackets

Description
L-Bracket mounting kit
Foot bracket mounting kit

Order code
P3HKA00ML
P3HKA00MC

Note:
For solenoid operators and cable plugs (connectors) see pages 68 to 69.

Dimensions mm (inches)

P31T

For mounting brackets see page 52

Flow characteristics

1/4 Soft Start & Dump Valve

Inlet Pressure - 6.3 bar (91.3 psig)

1/2 Soft Start & Dump Valve

Inlet Pressure - 6.3 bar (91.3 psig)

Dimensions

For P31T

88 (3.46)
174.5 (6.87)
2.27 (8.95)

For P32T

64.5 (2.53)
109.5 (4.31)
53 (2.08)

Pressures

Start signal
Switching time delay
Gradual pressure build up
Operating pressure p’ (=p1)


Remote operated dump valves automatically shut off upstream pressure and exhaust the downstream pressure when the pilot pressure is released.

To maintain these units in the open position a pilot supply to the air pilot operated version or an electrical signal to the solenoid operated version must be maintained. The valve will automatically dump when the holding signal is removed.

**Options:**

- **Body size:** Mini (1/4”) 1, Compact (1/2”) 2
- **Thread Type:** BSPP (G) 1, BSPT 2, NPT 9
- **Port size:** Mini (1/4”) 2, Compact (1/2”) 4
- **Pilot type:** External Air Pilot S, Solenoid Pilot P
- **Actuator interface:** 15mm solenoid (P31 only) G, 30mm solenoid C, Threaded air pilot P
- **Solenoid type only:** 24VDC non locking manual override 2CN, 120VAC non locking manual override 3GN, 120VAC non locking manual override (P31 series only) 1FN

**Remote operated dump valve**

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Order Code†</th>
<th>Flow dm³/s (scfm)</th>
<th>Max. bar (psig)</th>
<th>Height (inches)</th>
<th>Width (inches)</th>
<th>Depth (inches)</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4”</td>
<td>120VAC Solenoid &amp; cable plug</td>
<td>P31DA92SGNC1FN</td>
<td>17 (36)</td>
<td>10 (150)</td>
<td>115.6 (4.5)</td>
<td>57 (2.2)</td>
<td>40 (1.5)</td>
<td>0.37kg (0.8lbs)</td>
</tr>
<tr>
<td>1/4”</td>
<td>24VDC Solenoid &amp; cable plug</td>
<td>P31DA92SGNC2CN</td>
<td>17 (36)</td>
<td>10 (150)</td>
<td>166 (6.5)</td>
<td>57 (2.2)</td>
<td>40 (1.5)</td>
<td>0.41kg (0.9lbs)</td>
</tr>
<tr>
<td>1/4”</td>
<td>External air pilot operated</td>
<td>P31DA92PPN</td>
<td>17 (36)</td>
<td>17 (250)</td>
<td>115.6 (4.5)</td>
<td>57 (2.2)</td>
<td>40 (1.5)</td>
<td>0.37kg (0.8lbs)</td>
</tr>
<tr>
<td>1/2”</td>
<td>120VAC 30mm coil &amp; cable plug incl.</td>
<td>P32DA94SCNA3GN</td>
<td>51 (108)</td>
<td>10 (150)</td>
<td>162.5 (6.3)</td>
<td>75 (2.9)</td>
<td>57.2 (2.2)</td>
<td>0.69kg (1.5lbs)</td>
</tr>
<tr>
<td>1/2”</td>
<td>24VDC 30mm coil &amp; cable plug incl.</td>
<td>P32DA94SCNA2CN</td>
<td>51 (108)</td>
<td>10 (150)</td>
<td>227.5 (8.9)</td>
<td>75 (2.9)</td>
<td>57.2 (2.2)</td>
<td>0.91kg (2.0lbs)</td>
</tr>
<tr>
<td>1/2”</td>
<td>External air pilot operated</td>
<td>P32DA94PPN</td>
<td>51 (108)</td>
<td>17 (250)</td>
<td>162.5 (6.3)</td>
<td>75 (2.9)</td>
<td>57.2 (2.2)</td>
<td>0.87kg (1.9lbs)</td>
</tr>
</tbody>
</table>

† Includes exhaust silencer

† Standard part numbers shown in bold. For other models refer to Options chart above.
Global Air Preparation System

Technical Information

Fluid: Compressed air
Max. pressure Solenoid operated: 10 bar (150 psig)
Max. pressure Air Pilot operated: 17 bar (250 psig)
Min. operating pressure: 3 bar (44 psig)
Temperature Max.* Solenoid operated: -10°C to 50°C
(14°F to 122°F)
Temperature Max.* Air Pilot operated: -20°C to 80°C
(-4°F to 176°F)
Air Pilot port: 1/8"
Exhaust port: P31D - 1/4" / P32D - 1/2"

Typical flow with 6.3 bar inlet pressure and 1 bar pressure drop:
P31D 17 dm³/s (36 scfm)
P32D 51 dm³/s (108 scfm)

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Snap Pressure: Full flow when downstream pressure reaches 50% of the inlet pressure

Material Specification

Body: Aluminum
Body cover: Polyester
Seals: Nitrile NBR

Mounting Brackets

Description Order code
L-Bracket mounting kit P3HKA00ML
Foot bracket mounting kit P3HKA00MC

Dimensions mm (inches)

P31D

37 (1.45)
24 (0.94)
57 (2.24)
136 (5.35)
166 (6.53)

P32D

88 (3.46)
64.5 (2.53)
109.5 (4.31)
174.5 (6.87)
2.27 (0.95)

For mounting brackets see page 52

Flow characteristics

1/4 Remote Dump Valve

Inlet Pressure - 6.3 bar (91.3 psig)

1/2 Remote Dump Valve

Inlet Pressure - 6.3 bar (91.3 psig)
Parker Global Series Soft Start Valves, provide for the safe introduction of pressure to machines or systems. Soft Start Valves, allow the pressure to gradually build to the set point before fully opening to deliver full flow at line pressure.

The controlled introduction of pressure can be an important safety factor and prevent damage to tooling when air pressure is introduced at machine or system start up.

**Note:** Soft Start Valves must be installed downstream of a 3/2 valve with exhaust capability.

### Options:

- **Body size**
  - Mini (1/4")
  - Compact (1/2")
- **Thread Type**
  - BSPP (G)
  - BSPT
  - NPT
- **Port size**
  - Mini (1/4")
  - Compact (1/2")
- **Pilot type**
  - External Air Pilot
  - Internal Air Pilot
- **Actuator interface**
  - Internal Pilot
  - 15mm solenoid (P31 only)
  - 30mm solenoid
  - Threaded air pilot

Note: P32 unit used for both P32 & P33 series

### Chart:

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Code 1</th>
<th>Flow dm³/s (scfm)</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot; 120VAC Solenoid &amp; cable plug</td>
<td>P31SA92SGNC1FN</td>
<td>17 (36)</td>
<td>10 (150)</td>
<td>115.6 (4.5)</td>
<td>57 (2.2)</td>
<td>40 (1.5)</td>
<td>0.37kg (0.8lbs)</td>
</tr>
<tr>
<td>1/4&quot; 24VDC Solenoid &amp; cable plug</td>
<td>P31SA92SGNC2CN</td>
<td>17 (36)</td>
<td>10 (150)</td>
<td>166.0 (6.5)</td>
<td>57 (2.2)</td>
<td>40 (1.5)</td>
<td>0.41kg (0.9lbs)</td>
</tr>
<tr>
<td>1/4&quot; Internal air pilot operated</td>
<td>P31SA92Y0N</td>
<td>17 (36)</td>
<td>17 (250)</td>
<td>115.6 (4.5)</td>
<td>57 (2.2)</td>
<td>40 (1.5)</td>
<td>0.37kg (0.8lbs)</td>
</tr>
<tr>
<td>1/2&quot; External air pilot (1/8&quot; threaded)</td>
<td>P32SA92PPN</td>
<td>17 (36)</td>
<td>17 (250)</td>
<td>115.6 (4.5)</td>
<td>57 (2.2)</td>
<td>40 (1.5)</td>
<td>0.37kg (0.8lbs)</td>
</tr>
<tr>
<td>1/2&quot; 120VAC 30mm coil &amp; cable plug incl.</td>
<td>P32SA94SCNA3GN</td>
<td>48 (101)</td>
<td>10 (150)</td>
<td>162.5 (6.3)</td>
<td>88 (3.4)</td>
<td>57.2 (2.28)</td>
<td>0.87kg (1.5lbs)</td>
</tr>
<tr>
<td>1/2&quot; 24VDC 30mm coil &amp; cable plug</td>
<td>P32SA94SCNA2CN</td>
<td>48 (101)</td>
<td>10 (150)</td>
<td>227.5 (8.9)</td>
<td>88 (3.4)</td>
<td>57.2 (2.28)</td>
<td>0.90kg (2.0lbs)</td>
</tr>
<tr>
<td>1/2&quot; Internal air pilot operated</td>
<td>P32SA94Y0N</td>
<td>48 (101)</td>
<td>17 (250)</td>
<td>162.5 (6.3)</td>
<td>75 (2.9)</td>
<td>57.2 (2.28)</td>
<td>0.90kg (2.0lbs)</td>
</tr>
<tr>
<td>1/2&quot; External air pilot (1/8 threaded)</td>
<td>P32SA94PPN</td>
<td>48 (101)</td>
<td>17 (250)</td>
<td>162.5 (6.3)</td>
<td>75 (2.9)</td>
<td>57.2 (2.28)</td>
<td>0.87kg (1.5lbs)</td>
</tr>
</tbody>
</table>

† Standard part numbers shown in bold. For other models refer to Options chart above.
Global Air Preparation System

Technical Information

Fluid: Compressed air
Max. pressure Solenoid operated: 10 bar (150 psig)
Max. pressure Air Pilot operated: 17 bar (250 psig)
Min. operating pressure: 3 bar (44 psig)
Temperature Max.* Solenoid operated: -10°C to 50°C (14°F to 122°F)
Temperature Max.* Air Pilot operated: -20°C to 80°C (-4°F to 176°F)
Air Pilot port: 1/8"

Typical flow with 6.3 bar inlet pressure and 1 bar pressure drop:
- P31S: 17 dm³/s (36 scfm)
- P32S: 48 dm³/s (101 scfm)

* Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Material Specification

Body: Aluminum
Body cover: Polyester
Seals: Nitrile NBR

Mounting Brackets

Description | Order code
--- | ---
L-Bracket mounting kit | P3HKAO00ML
Foot bracket mounting kit | P3HKAO00MC

Note:
For solenoid operators and cable plugs (connectors) see pages 68 to 69.

Dimensions mm (inches)

<table>
<thead>
<tr>
<th>Description</th>
<th>P31S</th>
<th>P32S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40 (1.57)</td>
<td>88 (3.46)</td>
<td></td>
</tr>
<tr>
<td>37 (1.45)</td>
<td>2.27 (8.95)</td>
<td></td>
</tr>
<tr>
<td>136 (5.35)</td>
<td>174.5 (6.87)</td>
<td></td>
</tr>
<tr>
<td>57 (2.24)</td>
<td>75 (2.95)</td>
<td></td>
</tr>
</tbody>
</table>

Flow characteristics

1/4 Soft Start Valve

1/2 Soft Start Valve

For mounting brackets see page 52.
Solenoid Operator - CNOMO

Technical data - Solenoid operators, coil combinations

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Power (W)</th>
<th>Code</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct current</td>
<td>1.2W</td>
<td>PS2982B449</td>
<td>0.065</td>
</tr>
<tr>
<td>Alternative</td>
<td>1.1W</td>
<td>PS2982B53P</td>
<td>0.038</td>
</tr>
</tbody>
</table>

Solenoid coils with M12 connection

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Order code</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct current</td>
<td>P2FC8449</td>
<td>0.065</td>
</tr>
</tbody>
</table>

Solenoid coils with Din A or Industrial B connection

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Code</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct current</td>
<td>P2FC8B449</td>
<td>0.093</td>
</tr>
<tr>
<td>Alternative</td>
<td>P2FC8B53P</td>
<td>0.038</td>
</tr>
</tbody>
</table>

Transients

Interrupting the current through the solenoid coil produces momentary voltage peaks which, under unfavourable conditions, can amount to several hundred times the rated operating voltage. Normally, these transients do not cause problems, but to achieve the Maximum life of relays in the circuit (and particularly of transistors, thyristors and integrated circuits) it is desirable to provide protection by means of voltage-dependent resistors (varistors). All connectors/cable plugs EN175301-803 with LED’s include this type of circuit protection.

Materials

Pilot Valve

- **Body:** Polyamide
- **Armature tube:** Brass
- **Plunger & core:** Corrosion resistant Cr-Ni steel
- **Seals:** Fluorocarbon
- **Screws:** Stainless steel

Coil

- **Encapsulation material:** Thermoplastic as standard for M12 connection

Spare solenoid operators

<table>
<thead>
<tr>
<th>Description</th>
<th>Order code</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Duty</td>
<td>P2FP23N4B</td>
<td>0.065</td>
</tr>
<tr>
<td>No Override</td>
<td>P2FP23N4A</td>
<td>0.065</td>
</tr>
</tbody>
</table>

Note: Solenoid pilot operators are fitted to the Global range. Order the above part numbers for spares. The operators are supplied with mounting screws and interface ‘O’ rings. Coils and connectors must be ordered separately.
Solenoid connectors / Cable plugs EN175301-803

<table>
<thead>
<tr>
<th>Description</th>
<th>Order code 15mm Form C</th>
<th>Order code 22mm Form B</th>
<th>Order code 30mm Form A DIN 43650A</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard screw</td>
<td>PS2932BP</td>
<td>PS2429BP</td>
<td>PS2028BP</td>
</tr>
<tr>
<td>Standard IP65 without flying lead</td>
<td>PS294679BP</td>
<td>PS243079BP</td>
<td>PS203279BP</td>
</tr>
<tr>
<td>With LED and protection 24VAC/DC</td>
<td>PS294683BP</td>
<td>PS243083BP</td>
<td>PS203283BP</td>
</tr>
<tr>
<td>With LED and protection 110VAC</td>
<td>PS2946J79BP</td>
<td>PS2430J79BP</td>
<td>PS2032J79CP</td>
</tr>
<tr>
<td>With cable with 2m cable IP65</td>
<td>PS2932JBP</td>
<td>PS2429JBP</td>
<td>PS2028JCP</td>
</tr>
<tr>
<td>24VAC/DC, 2m cable LED and protection IP65</td>
<td>PS2946J79BP</td>
<td>PS2430J79BP</td>
<td>PS2032J79CP</td>
</tr>
<tr>
<td>110VAC/DC, 2m cable LED and protection IP65</td>
<td>PS2946J83BP</td>
<td>PS2430J83BP</td>
<td>PS2032J83CP</td>
</tr>
</tbody>
</table>

Solenoid coil
Dimensions mm (inches)

Cable plug Dimensions mm (inches)

<table>
<thead>
<tr>
<th>15mm ISO 15217 Cable plugs</th>
<th>22mm Form B Industrial Cable plugs</th>
<th>30mm DIN 43650A Cable plugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS2932BP</td>
<td>PS2429BP</td>
<td>PS2028BP</td>
</tr>
<tr>
<td>PS294679BP</td>
<td>PS243079BP</td>
<td>PS203279BP</td>
</tr>
<tr>
<td>PS294683BP</td>
<td>PS243083BP</td>
<td>PS203283BP</td>
</tr>
<tr>
<td>PS2946J79BP</td>
<td>PS2430J79BP</td>
<td>PS2032J79CP</td>
</tr>
<tr>
<td>PS2932JBP</td>
<td>PS2429JBP</td>
<td>PS2028JCP</td>
</tr>
<tr>
<td>PS2946J83BP</td>
<td>PS2430J83BP</td>
<td>PS2032J83CP</td>
</tr>
</tbody>
</table>

Electrical schematics
Safety Lockout Valves

**Features**
- The Safety Lockout valve is a manually operated, slide-type, 2-position, 3-way valve. In the closed position, downstream air pressure is exhausted to atmosphere.
- The valve slide can be locked in the closed position with a customer supplied padlock.
- The Safety Lockout valves conform to OSHA #29 CFR part 1910 – control of hazardous energy source (lockout / tagout).
- Left to right flow — orange slide
- Right to left — yellow slide

**Ordering Information**

<table>
<thead>
<tr>
<th>Model type</th>
<th>Port size</th>
<th>Thread type</th>
<th>Flow dm³/s (scfm)</th>
<th>Safety Lockout Valve Flow from left to right</th>
<th>Safety Lockout Valve Flow from right to left</th>
</tr>
</thead>
<tbody>
<tr>
<td>P31</td>
<td>1/4&quot;</td>
<td>NPT</td>
<td>47.2 (100)</td>
<td>P31VA92LSAN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3/8&quot;</td>
<td>NPT</td>
<td>101.9 (216)</td>
<td>P32VA93LSBN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1/2&quot;</td>
<td>NPT</td>
<td>128.4 (272)</td>
<td>P32VA94LSBN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3/4&quot;</td>
<td>NPT</td>
<td>141.6 (300)</td>
<td>P33VA96LSBN</td>
<td></td>
</tr>
</tbody>
</table>

For thread type: BSPP 1  
BSPT 2  
NPT 9

**Materials of Construction**

- **Body**: Zinc
- **Blade**: Acetal
- **Seals**: Nitrile

**Specifications**

- **Operating temperature**
  - P31: -10°C to 65.5°C (14°F to 150°F)
  - P32/P33: -25°C to 65.5°C (-13°F to 150°F)
- **Max. supply pressure**: 10 bar (150 psig)
- **Port size**: BSPP / BSPT / NPT
- **Weight**
  - P31: 0.30 kg (0.66 lbs)
  - P32: 0.34 kg (0.74 lbs)
  - P33: 0.41 kg (0.90 lbs)

**Dimensions** mm (inches)
Global Air Preparation System

Modular Ball Valves

Features

The Modular Ball Valves provide shut off line pressure with a non-sticking 90° turn handle to prevent unauthorised adjustment. When the inlet pressure is turned off the downstream air pressure vents through the exhaust port. The padlock slide may be assembled on either side. It is recommended that this is assembled after mounting.

Note: This padlock slide is a permanent assembly and may not be removed later.

Ordering Information

<table>
<thead>
<tr>
<th>Model type</th>
<th>Port size</th>
<th>Exhaust port</th>
<th>Thread type</th>
<th>Flow dm³/s (scfm)</th>
<th>Modular ball valve flow from left to right</th>
</tr>
</thead>
<tbody>
<tr>
<td>P31</td>
<td>1/4&quot;</td>
<td>1/4&quot;</td>
<td>NPT</td>
<td>20 (42.4)</td>
<td>P31VA92LBNN</td>
</tr>
<tr>
<td>P32</td>
<td>3/8&quot;</td>
<td>1/4&quot;</td>
<td>NPT</td>
<td>90 (190.7)</td>
<td>P32VA93LBNN</td>
</tr>
<tr>
<td></td>
<td>1/2&quot;</td>
<td>1/4&quot;</td>
<td>NPT</td>
<td>122 (258.5)</td>
<td>P32VA94LBNN</td>
</tr>
<tr>
<td>P33</td>
<td>1/2&quot;</td>
<td>1/2&quot;</td>
<td>NPT</td>
<td>265 (561.5)</td>
<td>P33VA94LBNN</td>
</tr>
<tr>
<td></td>
<td>3/4&quot;</td>
<td>1/2&quot;</td>
<td>NPT</td>
<td>320 (678)</td>
<td>P33VA96LBNN</td>
</tr>
</tbody>
</table>

For thread type: BSPP 1  BSPT 2  NPT 9

Specifications

Operating temperature -20°C to 80°C (-4°F to 176°F)
Max. supply pressure 17 bar (250 psig)
Weight
- P31: 0.19 kg (0.41 lbs)
- P32: 0.47 kg (1.00 lbs)
- P33: 0.80 kg (1.70 lbs)

Materials of Construction

<table>
<thead>
<tr>
<th>Body</th>
<th>Seals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>PTFE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ball</th>
</tr>
</thead>
<tbody>
<tr>
<td>P31</td>
</tr>
<tr>
<td>P32 / P33</td>
</tr>
</tbody>
</table>

Chrome plated brass

Dimensions mm (inches)

P31

P32

P33
Global Air Preparation System

Manifold Blocks

Features
- Available in 1/4" or 3/4" threaded inlet / outlet ports
- Two additional top and bottom auxiliary ports standard
- Can be mounted anywhere in the FRL system
- Includes one pipe plug

Ordering Information

<table>
<thead>
<tr>
<th>Model type</th>
<th>In / Out port size</th>
<th>Auxiliary port size top</th>
<th>Auxiliary port size bottom</th>
<th>Thread type</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>P31</td>
<td>1/4&quot;</td>
<td>1/4&quot;</td>
<td>1/4&quot;</td>
<td>NPT</td>
<td>P31MA92022N</td>
</tr>
<tr>
<td>P32</td>
<td>1/2&quot;</td>
<td>1/4&quot;</td>
<td>1/2&quot;</td>
<td>NPT</td>
<td>P32MA94024N</td>
</tr>
<tr>
<td>P33</td>
<td>3/4&quot;</td>
<td>1/4&quot;</td>
<td>1/2&quot;</td>
<td>NPT</td>
<td>P33MA96024N</td>
</tr>
</tbody>
</table>

For thread type: BSPP 1    BSPT 2    NPT 9

Materials of Construction

Body: Aluminum

Note:
P33 unit used for both P32 & P33 series

Specifications

Operating temperature: -40°C to 65.5°C (-40°F to 150°F)
Max. supply pressure: 20.7 bar (300 psig)
Weight: P31: 0.19 kg (0.26 lbs), P33: 0.34 kg (0.42 lbs)

Dimensions (mm)
Global Air Preparation System

Accessories - P31 Series

C-Bracket
(Fits to filter and lubricator body)
P31KA00MW

T-Bracket w/ Body Connector
(O-ring not shown)
P31KA00MT

Body Connector
(O-ring not shown)
P31KA00CB

Port Block Kit
(O-ring not shown)
1/8 NPT .......... P31KA91CN 1/8 BSPT .......... P31KA21CN
1/4 NPT .......... P31KA92CN 1/4 BSPT .......... P31KA22CN
3/8 NPT .......... P31KA93CN 3/8 BSPT .......... P31KA23CN
1/8 BSPP ........ P31KA11CN
1/4 BSPP ........ P31KA12CN
3/8 BSPP ........ P31KA13CN

Angle Bracket
(Fits to regulator and filter/regulator body)
P31KA00MR

Port Block Kit w/ T-Bracket
(O-ring not shown)
1/8 NPT .......... P31KA91CN 1/8 BSPT .......... P31KA21CN
1/4 NPT .......... P31KA92CN 1/4 BSPT .......... P31KA22CN
3/8 NPT .......... P31KA93CN 3/8 BSPT .......... P31KA23CN
1/8 BSPP ........ P31KA11CN
1/4 BSPP ........ P31KA12CN
3/8 BSPP ........ P31KA13CN

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/globalfrl

(Revised 12-14-10)
Global Air Preparation System

Accessories - P32 Series

T-Bracket w/ Body Connector
P32KA00MT

Body Connector
P32KA00CB

Port Block Kit
1/4 NPT ............... P32KA92CP
3/8 NPT ............... P32KA93CP
1/2 NPT ............... P32KA94CP
3/4 NPT ............... P32KA96CP
1/4 BSPP .......... P32KA12CP
3/8 BSPP .......... P32KA13CP
1/2 BSPP .......... P32KA14CP
3/4 BSPP .......... P32KA16CP

L-Bracket
(Fits to filter and lubricator body)
P32KA00ML

Angle Bracket
(Fits to regulator and filter/regulator bonnet)
P32KA00MR

T-Bracket
(fits to body connector or port block)
P32KA00MB
Global Air Preparation System

Accessories - P33 Series

T-Bracket w/ Body Connector
P32KA00MT

Body Connector
P32KA00CB

Port Block Kit
1/4 NPT.................. P32KA92CP
3/8 NPT.................. P32KA93CP
1/2 NPT.................. P32KA94CP
3/4 NPT.................. P32KA96CP
1/4 BSPP.................. P32KA12CP
3/8 BSPP.................. P32KA13CP
1/2 BSPP.................. P32KA14CP
3/4 BSPP.................. P32KA16CP

Angle Bracket
(Fits to regulator and filter/regulator bonnet)
P33KA00MR

L-Bracket
(Fits to filter and lubricator body)
P33KA00ML

T-Bracket
(fits to body connector or port block)
P32KA00MB
<table>
<thead>
<tr>
<th>Series</th>
<th>Description</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>P31</td>
<td>Panel Mount Nut (Plastic)</td>
<td>P31KA00MP</td>
</tr>
<tr>
<td>P32</td>
<td>Panel Mount Nut (Aluminum)</td>
<td>P32KA00MP</td>
</tr>
<tr>
<td>P33</td>
<td>Panel Mount Nut (Plastic)</td>
<td>P33KA00MP</td>
</tr>
<tr>
<td>P31</td>
<td>Panel Mount Nut (Aluminum)</td>
<td>P31KA00MM</td>
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<td>Panel Mount Nut (Aluminum)</td>
<td>P32KA00MM</td>
</tr>
<tr>
<td>P33</td>
<td>Panel Mount Nut (Aluminum)</td>
<td>P33KA00MM</td>
</tr>
<tr>
<td>P31</td>
<td>5µ Element Kit</td>
<td>P31KA00ESE</td>
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<tr>
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<td>P33KA00ESC</td>
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<tr>
<td>P32</td>
<td>Auto Drain Kit</td>
<td>P32KA00DA</td>
</tr>
<tr>
<td>P32</td>
<td>Differential Pressure Indicator Kit</td>
<td>P32KA00RQ</td>
</tr>
<tr>
<td>P31</td>
<td>Fill Plug Kit</td>
<td>P31KA00PL</td>
</tr>
<tr>
<td>P32</td>
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</tr>
<tr>
<td>P33</td>
<td>Fill Plug Kit</td>
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<tr>
<td>P32</td>
<td>Auto Drain Kit</td>
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<td>P31</td>
<td>Differential Pressure Indicator Kit</td>
<td>P32KA00RQ</td>
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<td>P32</td>
<td>Auto Drain Kit</td>
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<tr>
<td>P31</td>
<td>Differential Pressure Indicator Kit</td>
<td>P32KA00RQ</td>
</tr>
<tr>
<td>P33</td>
<td>Fill Plug Kit</td>
<td>P32KA00PL</td>
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<td>Fill Plug Kit</td>
<td>P32KA00PL</td>
</tr>
<tr>
<td>P32</td>
<td>Auto Drain Kit</td>
<td>P32KA00DA</td>
</tr>
</tbody>
</table>
# Global Air Preparation System

## Kits

<table>
<thead>
<tr>
<th>Series</th>
<th>Description</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>P31</td>
<td>Plastic Bowl w/ Bowl Guard &amp; Manual Drain</td>
<td>P31KA00BGM</td>
</tr>
<tr>
<td>P32</td>
<td>Plastic Bowl w/ Bowl Guard &amp; Auto Drain</td>
<td>P32KA00BGA</td>
</tr>
<tr>
<td>P33</td>
<td>Plastic Bowl w/ Bowl Guard &amp; Pulse Drain</td>
<td>P31KA00BMB</td>
</tr>
<tr>
<td>P31</td>
<td>Plastic Bowl w/ Bowl Guard &amp; Manual Drain</td>
<td>P31KA00BGM</td>
</tr>
<tr>
<td>P32</td>
<td>Metal Bowl w/o Sight Gauge &amp; Manual Drain</td>
<td>P31KA00BMM</td>
</tr>
<tr>
<td>P32</td>
<td>Metal Bowl w/o Sight Gauge &amp; Auto Drain</td>
<td>P32KA00BMA</td>
</tr>
<tr>
<td>P33</td>
<td>Metal Bowl w/o Sight Gauge &amp; Auto Drain</td>
<td>P33KA00BMA</td>
</tr>
<tr>
<td>P32</td>
<td>Lubricator - Plastic Bowl w/ Bowl Guard No Drain</td>
<td>P31KA00BGN</td>
</tr>
<tr>
<td>P32</td>
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Safety Guide For Selecting And Using Pneumatic Division Products And Related Accessories

⚠️ 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.

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.

1.3 Relevant International Standards: For a good guide to the application of a broad spectrum of pneumatic fluid power devices see:


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 Parker valves, FRLs or vacuum products without thoroughly reading and understanding this safety guide as well as the specific Parker 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 Parker 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 Parker technical service department if you have any questions or require any additional information. See the Parker publication for the product being considered or used, or call 1-800-CPARKER, or go to www.parker.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 Gauges: To avoid potential polycarbonate bowl failures:

- Do not locate polycarbonate bowls or sight gauges 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 gauges in air systems where compressors are lubricated with fire resistant fluids such as phosphate ester and di-ester lubricants.
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: Parker published Installation Instructions must be followed for installation of Parker valves, FRLs and vacuum components. These instructions are provided with every Parker valve or FRL sold, or by calling 1-800-CPARKER, or at www.parker.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 Parker valve and FRL sold, or are available by calling 1-800-CPARKER, or by accessing the Parker web site at www.parker.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:
- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to system and Pneumatic Division products before installation, service, or conversion.
- Installations, 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.
1. Terms and Conditions. Seller’s willingness to offer Products, or accept an order for Products, to or from Buyer is subject to these Terms and Conditions. If any terms or conditions found on-line at www.buyer.com conflict with these Terms and Conditions, Seller objects to any contrary or additional terms or conditions of Buyer’s order or any other document issued by Buyer.

2. Prices and Payments. Prices stated on Seller’s quote or other documentation offered by Seller are valid for 30 days, and do not include any sales, use, or other taxes unless specifically stated. Unless otherwise specified by Seller, all prices are F.O.C.A. Seller’s facility (INCOTERMS 2010). Payment is subject to credit approval and is due in full within fifteen (15) days of receipt of invoice or as otherwise agreed upon in Seller’s Credit Department, after which Buyer shall pay interest on unpaid invoices at the rate of 1.5% per month or the maximum allowable rate under applicable law.

3. Delivery Dates, Title and Risk; Shipment. All delivery dates are approximate and Seller shall not be responsible for any damages resulting from any delay. Regardless of the manner of shipment, title to any products and risk or damage shall pass to Buyer upon fulfillment of the purchase order or shipment carrier at Seller’s facility. Unless otherwise stated, Seller may exercise its judgment in choosing the carrier and means of delivery. No dehaling of shipment at Buyers request beyond the respective dates indicated will be made except on terms that will indemnify, defend and hold Seller harmless against all loss and additional expense. Buyer shall be responsible for any additional charge incurred by Seller due to Buyer’s acts or omissions.

4. Warranty. Seller warrants that the Products sold hereunder shall be free from defects in material or workmanship for a period of twelve months from the date of delivery to Buyer or 2,000 hours of normal use, whichever occurs first. The prices charged for Seller’s Products shall be full and complete for all Products except for the following: (a) any goods subcontracted by Seller to third persons; and (b) the mail order goods purchased by Buyer from Seller through the mail. The warranty period for such mail order goods shall be the same as the above. Any action based upon breach of this warranty shall be commenced within 12 months from the date of the breach without regard to the date discovery is made.

5. LIMITATION OF LIABILITY. UPON NOTIFICATION, SELLER WILL, AT ITS OPTION, REPAIR OR REPLACE A DEFECTIVE PRODUCT, OR REFUND THE PURCHASE PRICE. IN NO EVENT SHALL SELLER BE LIABLE TO BUYER FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL DAMAGES ARISING OUT OF, OR AS THE RESULT OF, THE SALE, DELIVERY, NON-DELIVERY, SERVICING, USE OR LOSS OF USE OF THE PRODUCTS OR ANY PART THEREOF, OR FOR ANY CHARGES OR EXPENSES OF ANY NATURE INCURRED WITHOUT SELLER’S WRITTEN CONSENT, EVEN IF SELLER HAS BEEN NEGLIGENT, WHETHER IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL SELLER’S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE OF THE PRODUCTS.

7. User Responsibility. The user, through its own analysis and testing, is solely responsible for making the final selection of the system and Product and asserting that all performance, endurance, maintenance, safety and warning requirements of the applicable industry standards are met. The user must analyze all aspects of the application and follow all performance, endurance, maintenance, safety and warning requirements of the applicable standards. The user must analyze all aspects of the application and follow all performance, endurance, maintenance, safety and warning requirements of the applicable standards. The user must analyze all aspects of the application and follow all performance, endurance, maintenance, safety and warning requirements of the applicable standards.

8. Loss to 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 defective and may be destroyed by Seller after two consecutive years have elapsed without Buyer ordering the items manufactured using such property. Seller shall not be responsible for any loss or damage to such property or its possession or control. Seller shall be liable for any loss or damage to any property while it is in Seller’s possession or control.

9. Special Tooling. A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture Products. Such special tooling shall be and remain Seller’s property notwithstanding payment of any tooling charge. Buyer agrees, if any event will Buyer acquire any interest in appreciation to a Product which is utilized in the manufacture of the Products, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard and otherwise condition any special tooling or other property in its discretion, Seller at any time.

10. Buyer’s Obligation; Rights of Seller. To secure payment of all sums due or otherwise owed to Seller, a security interest in all amounts due from Buyer is created upon the delivery of Products and all other items purchased by Buyer from Seller from the date of shipment thereof. Seller shall be deemed a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file Buyer’s behalf all documents Seller deems necessary to perfect its security interest.

11. Indemnity. Buyer shall indemnify, defend, and hold Seller harmless from any claim, liability, damages, lawsuits, and costs (including attorney fees), whether for personal injury, property damage, patent, trademark or copyright infringement or any other claim, brought by or incurred by Buyer, Buyer’s employees, or any other person, arising out of: (a) improper selection, improper application or other similar errors by Buyer; (b) any misrepresentation made or delivered by Buyer; (c) Buyer’s use of patterns, plans, drawings, or specifications furnished by Buyer to manufacture Product; or (d) Buyer’s failure to comply with these terms and conditions. Seller shall not indemnify Buyer under any circumstance except as provided.

12. Cancellations and Changes. Orders shall not be subject to cancellation or change by Buyer for any reason, except with Seller’s written consent and upon terms acceptable to Seller. Seller’s willingness to offer Products, or accept an order for Products, to or from Buyer is subject to these Terms and Conditions. If any terms or conditions found on-line at www.buyer.com conflict with these Terms and Conditions, Seller objects to any contrary or additional terms or conditions of Buyer’s order or any other document issued by Buyer.

13. Limitation on Assignment. Buyer may not assign its rights or obligations under this agreement without the prior written consent of Seller.

14. Force Majeure. Seller does not assume the risk and shall not be liable for delay or failure to perform any of Seller’s obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter “Events of Force Majeure”). Indemnity Buyer’s responsibility for making the final selection of the system and Product and assuring that all performance, endurance, maintenance, safety and warning requirements of the applicable standards are met. The user must analyze all aspects of the application and follow all performance, endurance, maintenance, safety and warning requirements of the applicable standards.

15. Waiver and Severability. Failure to enforce any provision of this agreement will not waive that provision nor will any such failure prejudice Seller’s right to enforce that provision in the future. Invalidation of any provision of this agreement by legislation or other rule of law shall not invalidate any other provision herein. The remaining provisions of this agreement will remain in full force and effect.

16. Termination. Seller may terminate this agreement for any reason and at any time by giving Buyer thirty (30) days written notice of termination. Termination will be immediately effective. In addition, Seller may terminate this agreement, in whole or in part, if Buyer: (a) fails to make a payment of an invoice of this agreement (b) appoints a trustee, receiver orcustodian for all or any part of Buyer’s property (c) files a petition for relief in bankruptcy on its own behalf, or by a third party (d) makes an assignment for the benefit of creditors, or (e) the dissolves or liquidates all or a majorities of its assets.

17. Governing Law. This agreement and the sale and delivery of all Products hereunder shall be deemed to have taken place in and shall be governed and construed in accordance with the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Guaynabo, Puerto Rico with respect to any dispute, controversy or claim arising out of or relating to this agreement.

18. Indemnification for Infringement of Intellectual Property Rights. Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Section. Seller shall not indemnify Buyer against allegations of infringement of U.S. patents, trademarks, copyrights, trade dress and trade secrets (“Intellectual Property Rights”). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought by a third party based on an allegation that an Item infringes an Intellectual Property Right of a third party. Seller’s obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer first becomes aware of such infringement, and Buyer continuing to defend and hold Seller harmless over the defense of any allegations or actions including all negotiations for settlement or compromise. If a Product is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller will at its sole expense and option, procure for Buyer the right to continue using the Product, replace or modify the Product so as to make it noninfringing, or offer to accept return of the Product and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to Products delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any Product sold hereunder. The foregoing provisions of this Section shall constitute Seller’s sole and exclusive liability and Buyer’s sole and exclusive remedy for infringement of Intellectual Property Rights.

19. Entire Agreement. This agreement contains the entire agreement between the parties hereto and constitutes the final, complete and exclusive expression of the terms of sale. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter are herein merged.

20. Compliance with Law. U. K. Bribery Act and U.S. Foreign Corrupt Practices Act. Buyer agrees to comply with all applicable laws and regulations, including both those of the United Kingdom and the United States of America, and of the countries or territories in the Territory in which Buyer may operate, including without limitation the U. K. Bribery Act, the U.S. Foreign Corrupt Practices Act (“FCPA”) and the U.S. Anti-Kickback Act (the “Anti-Kickback Act”), and agrees to indemnify and hold harmless Seller from the consequences of any violation of such provisions by Buyer, its employees, or agents. Buyer acknowledges that they are familiar with the provisions of the U. K. Bribery Act, the FCPA, the Anti-Kickback Act, and any other relevant anti-corruption laws or regulations applicable to the sale or purchase of Products purchased by Buyer or, directed to Products delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any Product sold hereunder. The foregoing provisions of this Section shall constitute Seller’s sole and exclusive liability and Buyer’s sole and exclusive remedy for infringement of Intellectual Property Rights.