DECLARATION OF COMPLIANCE (ROHS)

European Directive 2011/65/EU – RoHS (Restriction 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 know to be in any of our products.

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

RoHS COMPLIANT

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.

EX

ATEX

Following Ignition Hazard Assessments performed on the non-electrical Global Air Preparation products they are in accordance with the requirements of EN 13463-1:2009, it was considered that the equipment does not contain its own source of ignition, and therefore is not within the scope of directive 94/9/EC.

The products can be used in a Group II Category 2 environment assuming that the ATEX Directive and the following conditions are complied with:

- Installation and maintenance of the product must be undertaken by qualified personnel.
- Do not mount the products in an area where impact may occur.
- Filters must be used to limit the introduction of particles and to capture particles generated in service.
- Supply air quality must be within ISO 8573-1:2010 Class 1.4.2.
- Maximum working temperature to be as stated on product label.
- WARNING – pulsating pressure and/or a closed circuit can generate heat.
- Deposits of dust on the product must not exceed 5mm thickness. Refer to technical file for surface areas of plastics. The unit must be earthed via the compressed air supply line.
- The unit must not come into contact with liquid solvents, acids or alkalis. Refer to technical file for chemicals known to be incompatible. Product cleaning must be undertaken using a method complying with the specifications of the ATEX zone, preferably using mild soap and water or antistatic products.
- Regulators, Filter Regulators:
  - Do not use Regulators or Filter Regulators within systems that can create vibration within the Regulator / Filter Regulator unit.
- Solenoid Operated Valves:
  - Are suitable for use in an ATEX environment, (Group II Category 2) providing ATEX approved solenoids are fitted.
  - Technical file available on request.

Global Air Preparation product range is in compliance with REACH to ensure continued compliance additions to the list of SVHC (Substance of Very High Concern) are reviewed periodically.

ISO

Global Air Preparation product range has been designed and tested in accordance with ISO flow testing, envelope integrity, and catalog data presented.


Failure or improper selection or improper use of the products and/or systems described herein or related items can cause death, personal injury and property damage.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application including consequences of any failure, and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

WARNING

Ofer of Sale

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated on the separate page of this document entitled “Offer of Sale”.

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Global Air Preparation System

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Parker Global Air Preparation System

Global. Modular.

Performance you need, wherever you need it.

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

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

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
- Ball style lockout / shutoff valve
- Repair kits, gauges, etc.
Together we can power your application with clean, dry air

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.

Clean, dry pneumatic systems with Parker Global Air Preparation

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

Particulate filters are used for the removal of solid particle contaminants down to 5 micron, as well as the removal of condensed liquids. Particulate filters are designed to remove water and oil aerosols (not vapor) and particulate from air streams down to 0.01 micron in size.

Coalescing filters are designed to remove water and oil aerosols (not vapor) from air streams. Dew point reduced down to 4°C (40°F) (refrigeration) or -40°C (-40°F) (desiccant).

Refurbishment and desiccant dryers lower the air’s dew point by removing water vapors, providing appropriately dry air for the downstream application.

Hydrocarbon and oil vapors are removed using filters utilizing activated carbon. Airborne hydrocarbons are often left over from the compressor oils.
A completely modular air preparation system

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

Quick release bayonet-type integral bowl and bowl guard assembly.

Manual drain with pipe-away, auto drain available.

2-piece Patented modular body connector US Patent number 5,383,689.

NPT, BSPP or BSPT porting available.

Aluminum body.
Air Preparation

P31 Mini Series

40mm body width
1/4" Ported

Flows up to: \( \text{dm}^3/\text{s} \) (SCFM)
- Filter: 12 (25)
- Coalescer: 3.6 (7.5)
- Regulator: 32 (68)
- Filter/Regulator: 10 (22)
- Lubricator: 19 (40)

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: 39 (82)
- Coalescer: 17 (36)
- Regulator: 78 (165)
- Filter/Regulator: 64 (136)
- Lubricator: 42 (90)

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: 40 (85)
- Coalescer: 34 (72)
- Regulator: 111 (233)
- Filter/Regulator: 108 (230)
- Lubricator: 71 (150)

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.

Compact Series Complimentary Products

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

Standard Series Complimentary Products

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

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.
- Multiple spring ranges available

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

Semi Precision Regulator and Filter/Regulator
- Available in P32 compact series
- Fine adjustment sensitivity
- Good repeatability and minimal pressure drop
- Good flow capacity
- Light gray knob for easy identification

Optional Tamperproof Kits
- One facilitates the permanent tamperproofing of the Regulator and Filter/Regulator units
- Hinged black part clamps over control knob and is locked in place after sliding yellow cover over it
- Other allows for removable lockout/tagout tamperproofing
  - Four pad lock location holes tagout
  - Hinged locking clamp secures over existing knob via yellow cover which is slid over into place

Additional Options P32 Only (Consult factory for availability)
- T-Handle
- Preset
- Pressure Limiter
- Preset and Tamperproof
# 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.

### P31 Mini Series

<table>
<thead>
<tr>
<th>Number of valves that would actuate at once</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moduflex 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Isys Micro</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HB / Viking Xtreme</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moduflex 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HA / Global ISO</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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 0.5m/s

<table>
<thead>
<tr>
<th>Cyl Ø mm</th>
<th>Cylinder bore size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyl Ø inches</td>
<td>5 (5/16)</td>
</tr>
<tr>
<td>Tube Ø mm</td>
<td>Tube diameter external</td>
</tr>
<tr>
<td>Tube Ø inches</td>
<td>4 (5/32)</td>
</tr>
<tr>
<td>Number of cylinders actuating at once</td>
<td>1</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: Inlet pressure 10 bar (145 psig), Secondary pressure 6.3 bar (91.3 psig), 1 bar (14.5 psig) pressure drop.

**Filter + Regulator + Lubricator Combinations, Poly bowl**
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow Manual drain</th>
<th>Weight</th>
<th>Pulse drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>13 dm³/s 27 (scfm)</td>
<td>P31CB92GEMN5LNNW 0.46 kg (1.01 lbs)</td>
<td>P31CB92GEBN5LNNW 0.46 kg (1.01 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

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow Manual drain</th>
<th>Weight</th>
<th>Pulse drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>14 dm³/s 28 (scfm)</td>
<td>P31CA92GEMN5LNNW 0.35 kg (0.77 lbs)</td>
<td>P31CA92GEBN5LNNW 0.35 kg (0.77 lbs)</td>
<td></td>
</tr>
</tbody>
</table>

**Ball Valve + Filter + Regulator + Lubricator Combinations, Poly bowl**
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow Manual drain</th>
<th>Weight</th>
<th>Pulse drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>13 dm³/s 27 (scfm)</td>
<td>P31QB92GEMN5LNNW 0.46 kg (1.01 lbs)</td>
<td>P31QB92GEBN5LNNW 0.46 kg (1.01 lbs)</td>
<td></td>
</tr>
</tbody>
</table>

**Ball Valve + Filter/Regulator + Lubricator Combinations, Poly bowl**
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow Manual drain</th>
<th>Weight</th>
<th>Pulse drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>14 dm³/s 28 (scfm)</td>
<td>P31QA92GEMN5LNNW 0.35 kg (0.77 lbs)</td>
<td>P31QA92GEBN5LNNW 0.35 kg (0.77 lbs)</td>
<td></td>
</tr>
</tbody>
</table>

---

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

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

**Lub type**
Oil mist standard sight dome L

**Drain type**
Manual drain M, Pulse drain B

**Thread type**
BSPP 1, BSPT 2, NPT 9

**Elelment**
5µ Element E, 0.01µ Element C, 1µ Element 9, Adsorber A

**Combination type**
F/R+L A, F+R+Fc G, F+Fc M, F/Fc F

**Combination**
B/V = Ball valve

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

---

*Combination type* F = 5µ, Fc = 1µ, Fa = Adsorber

---

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

---

*Unit comes with 0-4 bar or 0-60 psig gauge respectively. Not available with poly bowl with bowl guard.*
Popular Combinations:

Filter + Regulator + Lubricator Combinations, Poly bowl
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow</th>
<th>Manual drain</th>
<th>Weight</th>
<th>Auto drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>20 dm³/s</td>
<td>42 (scfm)</td>
<td>1.29 kg (2.84 lbs)</td>
<td>P32CB92GEMGLNW</td>
<td>1.29 kg (2.84 lbs)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>32 dm³/s</td>
<td>68 (scfm)</td>
<td>1.29 kg (2.84 lbs)</td>
<td>P32CB93GEMGLNW</td>
<td>1.29 kg (2.84 lbs)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>40 dm³/s</td>
<td>85 (scfm)</td>
<td>1.29 kg (2.84 lbs)</td>
<td>P32CB94GEMGLNW</td>
<td>1.29 kg (2.84 lbs)</td>
</tr>
</tbody>
</table>

Filter/Regulator + Lubricator Combinations, Poly bowl
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow</th>
<th>Manual drain</th>
<th>Weight</th>
<th>Auto drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>22 dm³/s</td>
<td>45 (scfm)</td>
<td>1.03 kg (2.27 lbs)</td>
<td>P32CA92GEMGLNW</td>
<td>1.03 kg (2.27 lbs)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>33 dm³/s</td>
<td>70 (scfm)</td>
<td>1.03 kg (2.27 lbs)</td>
<td>P32CA93GEMGLNW</td>
<td>1.03 kg (2.27 lbs)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>43 dm³/s</td>
<td>90 (scfm)</td>
<td>1.03 kg (2.27 lbs)</td>
<td>P32CA94GEMGLNW</td>
<td>1.03 kg (2.27 lbs)</td>
</tr>
</tbody>
</table>

Ball Valve + Filter + Regulator + Lubricator Combinations, Poly bowl
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow</th>
<th>Manual drain</th>
<th>Weight</th>
<th>Auto drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>22 dm³/s</td>
<td>45 (scfm)</td>
<td>1.03 kg (2.27 lbs)</td>
<td>P32CA92GEMGLNW</td>
<td>1.03 kg (2.27 lbs)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>33 dm³/s</td>
<td>70 (scfm)</td>
<td>1.03 kg (2.27 lbs)</td>
<td>P32CA93GEMGLNW</td>
<td>1.03 kg (2.27 lbs)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>43 dm³/s</td>
<td>90 (scfm)</td>
<td>1.03 kg (2.27 lbs)</td>
<td>P32CA94GEMGLNW</td>
<td>1.03 kg (2.27 lbs)</td>
</tr>
</tbody>
</table>

Filter / Regulator coding
(use with codes: A M)

<table>
<thead>
<tr>
<th>Filter coding</th>
<th>Regulator coding</th>
<th>Lubricator coding</th>
<th>Assembly configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>(use with combo codes: B F G) For multiple filters, repeat as needed.</td>
<td>(use with combo code: A B)</td>
<td>(use with codes: A M)</td>
<td></td>
</tr>
</tbody>
</table>
**Popular Combinations:** Inlet pressure 10 bar (145 psig), Secondary pressure 6.3 bar (91.3 psig), 1 bar (14.5 psig) pressure drop.

**Filter + Regulator + Lubricator Combinations, Poly bowl**
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow</th>
<th>Manual drain</th>
<th>Auto drain</th>
<th>Weight</th>
<th>Manual drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>43 dm³/s</td>
<td>90 (scfm)</td>
<td>P33CB94GEMGLNW</td>
<td>1.84 kg (4.06 lbs)</td>
<td>P33CB94GEANGLNW</td>
<td>1.84 kg (4.06 lbs)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>52 dm³/s</td>
<td>110 (scfm)</td>
<td>P33CB96GEMGLNW</td>
<td>1.84 kg (4.06 lbs)</td>
<td>P33CB96GEANGLNW</td>
<td>1.84 kg (4.06 lbs)</td>
</tr>
</tbody>
</table>

**Filter/Regulator + Lubricator Combinations, Poly bowl**
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow</th>
<th>Manual drain</th>
<th>Auto drain</th>
<th>Weight</th>
<th>Manual drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>52 dm³/s</td>
<td>110 (scfm)</td>
<td>P33CB94GEMGLNW</td>
<td>1.51 kg (3.33 lbs)</td>
<td>P33CB94GEANGLNW</td>
<td>1.51 kg (3.33 lbs)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>71 dm³/s</td>
<td>150 (scfm)</td>
<td>P33CB96GEMGLNW</td>
<td>1.51 kg (3.33 lbs)</td>
<td>P33CB96GEANGLNW</td>
<td>1.51 kg (3.33 lbs)</td>
</tr>
</tbody>
</table>

**Ball Valve + Filter + Regulator + Lubricator Combinations, Poly bowl**
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow</th>
<th>Manual drain</th>
<th>Auto drain</th>
<th>Weight</th>
<th>Manual drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>43 dm³/s</td>
<td>90 (scfm)</td>
<td>P33B94GEMGLNW</td>
<td>1.84 kg (4.06 lbs)</td>
<td>P33CB94GEANGLNW</td>
<td>1.84 kg (4.06 lbs)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>52 dm³/s</td>
<td>110 (scfm)</td>
<td>P33B96GEMGLNW</td>
<td>1.84 kg (4.06 lbs)</td>
<td>P33CB96GEANGLNW</td>
<td>1.84 kg (4.06 lbs)</td>
</tr>
</tbody>
</table>

**Ball Valve + Filter/Regulator + Lubricator Combinations, Poly bowl**
5 micron element, 8 bar (116 psig) regulator + gauge and wall mounting brackets

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow</th>
<th>Manual drain</th>
<th>Auto drain</th>
<th>Weight</th>
<th>Manual drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>52 dm³/s</td>
<td>110 (scfm)</td>
<td>P33QA94GEMGLNW</td>
<td>1.51 kg (3.33 lbs)</td>
<td>P33QA94GEANGLNW</td>
<td>1.51 kg (3.33 lbs)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>71 dm³/s</td>
<td>150 (scfm)</td>
<td>P33QA96GEMGLNW</td>
<td>1.51 kg (3.33 lbs)</td>
<td>P33QA96GEANGLNW</td>
<td>1.51 kg (3.33 lbs)</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**

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

**Drain type**
- **Auto drain**
- **Manual drain**

**Adj. type**
- **Non-rising knob relieving**

**Lub type**
- **Oil mist standard sight dome**

**Drain type**
- **No drain; closed end**
- **Wall bracket**

**Mounting**
- **No bracket**
- **Port blocks**
- **Port blocks & wall brkt**

**Example:** If a “G” is specified for a F+L, both units would get a poly bowl with bowl guard.
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>Flow (\text{dm}^3/\text{s} \ (\text{scfm}))</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
<th>Part number†</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - manual drain</td>
<td>12 (25)</td>
<td>10 (150)</td>
<td>124.8 (4.91)</td>
<td>40 (1.58)</td>
<td>40 (1.58)</td>
<td>P31FB92EMMN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - pulse drain</td>
<td>12 (25)</td>
<td>10 (150)</td>
<td>119.6 (4.71)</td>
<td>40 (1.58)</td>
<td>40 (1.58)</td>
<td>P31FB92EGBN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - manual drain</td>
<td>12 (25)</td>
<td>17 (250)</td>
<td>124.8 (4.91)</td>
<td>40 (1.58)</td>
<td>40 (1.58)</td>
<td>P31FB92EMMN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - pulse drain</td>
<td>12 (25)</td>
<td>17 (250)</td>
<td>119.6 (4.71)</td>
<td>40 (1.58)</td>
<td>40 (1.58)</td>
<td>P31FB92EMBN</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**: 1/4, 12 dm³/s (25 scfm)
- **Operating temperature**
  - 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**
  - Plastic bowl: 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)

**Material Specifications**

- **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**

**Repair and Service Kits**

- Plastic bowl / Bowl guard manual drain: P31KB00BGM
- Metal bowl / w/o sight gauge manual drain: P31KB00BMM
- Plastic bowl / Bowl guard pulse drain: P31KB00BGB
- Metal bowl / w/o sight gauge pulse drain: P31KB00BMB
- 5µ particle filter element: P31KA00ESE
- C-bracket (fits to body): P31KA00MW
- T-bracket with body connector: P31KA00MT
- Body connector: P31KA00CB
Compact Particulate Filter - P32

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

Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Flow^‡ 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>
<th>Part number†</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - manual drain</td>
<td>24 (50)</td>
<td>10 (150)</td>
<td>190.3 (7.49)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB92EGMN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - auto drain</td>
<td>24 (50)</td>
<td>10 (150)</td>
<td>184.3 (7.26)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB92EGAN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - manual drain</td>
<td>24 (50)</td>
<td>17 (250)</td>
<td>184.3 (7.26)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB92ESMN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - auto drain</td>
<td>24 (50)</td>
<td>17 (250)</td>
<td>184.3 (7.26)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB92ESAN</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>Poly bowl - manual drain</td>
<td>37 (78)</td>
<td>10 (150)</td>
<td>190.3 (7.49)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB93EGMN</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>Poly bowl - auto drain</td>
<td>37 (78)</td>
<td>10 (150)</td>
<td>184.3 (7.26)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB93EGAN</td>
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<tr>
<td>3/8&quot;</td>
<td>Metal bowl - manual drain</td>
<td>37 (78)</td>
<td>17 (250)</td>
<td>190.3 (7.49)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB93ESMN</td>
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<tr>
<td>3/8&quot;</td>
<td>Metal bowl - auto drain</td>
<td>37 (78)</td>
<td>17 (250)</td>
<td>184.3 (7.26)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB93ESAN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - manual drain</td>
<td>39 (82)</td>
<td>10 (150)</td>
<td>190.3 (7.49)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB94EGMN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - auto drain</td>
<td>39 (82)</td>
<td>10 (150)</td>
<td>184.3 (7.26)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB94EGAN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Metal bowl - manual drain</td>
<td>39 (82)</td>
<td>17 (250)</td>
<td>190.3 (7.49)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB94ESMN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Metal bowl - auto drain</td>
<td>39 (82)</td>
<td>17 (250)</td>
<td>184.3 (7.26)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB94ESAN</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

Compact Particulate Filters

Specifications

Flow capacity* 1/4 24 dm³/s (50 scfm)
3/8 37 dm³/s (78 scfm)
1/2 39 dm³/s (82 scfm)

Operating temperature
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 pressure
Plastic bowl 10 bar (150 psig)
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)

Material Specifications

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 Nylon

Dimensions mm (inches)

Flow Charts

P32FB 1/4" Filter

P32FB 3/8" Filter

P32FB 1/2" Filter

Repair and Service Kits

Plastic bowl / Bowl guard manual drain P32KB00BGM
Metal bowl / Sight gauge manual drain P32KB00BSM
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

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

21
### Standard Particulate Filter - P33

#### 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

#### Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Flow&lt;sup&gt;2&lt;/sup&gt; dm&lt;sup&gt;3&lt;/sup&gt;/s (scfm)</th>
<th>Max. bar (psi)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
<th>Part number&lt;sup&gt;†&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - manual drain</td>
<td>40 (85)</td>
<td>10 (150)</td>
<td>213 (8.39)</td>
<td>73 (2.87)</td>
<td>73 (2.87)</td>
<td>P33FA94EGMN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - auto drain</td>
<td>40 (85)</td>
<td>10 (150)</td>
<td>207 (8.15)</td>
<td>73 (2.87)</td>
<td>73 (2.87)</td>
<td>P33FA94EGAN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Metal bowl - manual drain</td>
<td>40 (85)</td>
<td>17 (250)</td>
<td>213 (8.39)</td>
<td>73 (2.87)</td>
<td>73 (2.87)</td>
<td>P33FA94ESMN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Metal bowl - auto drain</td>
<td>40 (85)</td>
<td>17 (250)</td>
<td>207 (8.15)</td>
<td>73 (2.87)</td>
<td>73 (2.87)</td>
<td>P33FA94ESAN</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Poly bowl - manual drain</td>
<td>48 (102)</td>
<td>10 (150)</td>
<td>213 (8.39)</td>
<td>73 (2.87)</td>
<td>73 (2.87)</td>
<td>P33FA96EGMN</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Poly bowl - auto drain</td>
<td>48 (102)</td>
<td>10 (150)</td>
<td>207 (8.15)</td>
<td>73 (2.87)</td>
<td>73 (2.87)</td>
<td>P33FA96EGAN</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Metal bowl - manual drain</td>
<td>48 (102)</td>
<td>17 (250)</td>
<td>213 (8.39)</td>
<td>73 (2.87)</td>
<td>73 (2.87)</td>
<td>P33FA96ESMN</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Metal bowl - auto drain</td>
<td>48 (102)</td>
<td>17 (250)</td>
<td>207 (8.15)</td>
<td>73 (2.87)</td>
<td>73 (2.87)</td>
<td>P33FA96ESAN</td>
</tr>
</tbody>
</table>

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

<sup>‡</sup> Flow with 6.3 bar (91.3 psig) inlet pressure and 0.34 (4.9 psig) pressure drop.
Catalog 0750-3 US (Revised 01-20-15)

Global Air Preparation System

Specifications

Flow capacity* 1/2 40 dm³/s (85 scfm)
                3/4 48 dm³/s (102 scfm)

Operating temperature 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 pressure Plastic bowl 10 bar (150 psig)
                           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)

Material Specifications

Body aluminum
Body cap ABS
Bowl 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 Nylon

Dimensions mm (inches)

Flow Charts

1/2 Filter

<table>
<thead>
<tr>
<th>Primary Pressure - bar</th>
<th>Flow - dm³/s</th>
<th>Pressure Drop - bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6</td>
<td>30</td>
<td>0.4</td>
</tr>
<tr>
<td>4.0</td>
<td>60</td>
<td>0.8</td>
</tr>
<tr>
<td>6.3</td>
<td>80</td>
<td>1.6</td>
</tr>
<tr>
<td>10</td>
<td>100</td>
<td>2.3</td>
</tr>
</tbody>
</table>

3/4 Filter

<table>
<thead>
<tr>
<th>Primary Pressure - bar</th>
<th>Flow - dm³/s</th>
<th>Pressure Drop - bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6</td>
<td>30</td>
<td>0.4</td>
</tr>
<tr>
<td>4.0</td>
<td>60</td>
<td>0.8</td>
</tr>
<tr>
<td>6.3</td>
<td>80</td>
<td>1.6</td>
</tr>
<tr>
<td>10</td>
<td>100</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Material Specifications

Body aluminum
Body cap ABS
Bowl 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 Nylon

Dimensions mm (inches)

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

Manual Drain

Automatic Drain

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/globalfrl
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
- Differential Pressure Indicator (DPI) standard on Coalescing Filters
- Positive bayonet latch to ensure correct and 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:

- Basic series
- Global modular mini coalescing filter P31FB

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</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>Part number†</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - 0.01 micron - manual drain</td>
<td>3.6 (7.5)</td>
<td>10 (150)</td>
<td>136.9 (5.39)</td>
<td>40 (1.58)</td>
<td>40 (1.58)</td>
<td>P31FB92DGMN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - 0.01 micron - pulse drain</td>
<td>3.6 (7.5)</td>
<td>10 (150)</td>
<td>131.7 (5.19)</td>
<td>40 (1.58)</td>
<td>40 (1.58)</td>
<td>P31FB92DGBN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - 0.01 micron - manual drain</td>
<td>3.6 (7.5)</td>
<td>10 (150)</td>
<td>136.9 (5.39)</td>
<td>40 (1.58)</td>
<td>40 (1.58)</td>
<td>P31FB92DMMN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - 0.01 micron - pulse drain</td>
<td>3.6 (7.5)</td>
<td>10 (150)</td>
<td>131.7 (5.19)</td>
<td>40 (1.58)</td>
<td>40 (1.58)</td>
<td>P31FB92DMBN</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 0.2 (3 psig) pressure drop.
**Specifications**

**Flow capacity**
- 1.0 micron coalescing: 5.5 dm³/s (12 scfm)
- 0.01 micron coalescing: 3.6 dm³/s (7.5 scfm)
- Activated carbon adsorber: 6 dm³/s (12.7 scfm)

**Operating temperature**
- 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: 10 bar (150 psig)

**Standard filtration**
- 1.0 and 0.01 micron

**Useful retention**
- 12 cm³ (0.4 US oz.)

**Port size**
- BSPP / BSPT / NPT: 1/4

**Weight**
- 0.11 kg (0.24 lbs)

**Material Specifications**

**Body**
- Aluminum

**Body cap**
- ABS

**Bowl**
- Plastic bowl: Polycarbonate
- Metal bowl: Aluminum

**Filter element**
- 1.0 and 0.01 micron: Borosilicate cloth

**Adsorber**
- Activated carbon

**Seals**
- Nitrile

**Dimensions mm (inches)**

**Flow Charts**

**P31 - 1.0 micron flow**

**P31 - 0.01 micron flow**

**Repair and Service Kits**

- Plastic bowl / Bowl guard manual drain: P31KB00BGM
- Metal bowl / w/o sight gauge manual drain: P31KB00BMM
- Plastic bowl / Bowl guard pulse drain: P31KB00BGB
- Metal bowl / w/o sight gauge pulse drain: P31KB00BMB
- 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
- Differential pressure indicator (replacement): P31KB00RQ
## Global Air Preparation System

### Compact Coalescing and Adsorber Filters

**P32 Series**

- 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.

### Options:

#### Symbol

- **Basic series**
- **Thread type**
  - BSPP
  - BSPT
  - NPT
- **Mounting**
  - N
  - B
  - M
- **Port size**
  - 1/4"
  - 3/8"
  - 1/2"
- **Drain type**
  - M
  - A
- **Bowl type**
  - G
  - M
  - S
- **Element**
  - 0.01µ Element
  - 0.01µ Element with DPI
  - 1µ Element
  - 1µ Element with DPI
  - Adsorber

**Part number**: P32FB92DGMN

**Flow**:
- 17 (36)

**Max. bar (psig)**:
- 10 (150)

**Height (mm) (inches)**:
- 212.3 (8.36)

**Width (mm) (inches)**:
- 60 (2.36)

**Depth (mm) (inches)**:
- 60 (2.36)

**Part number**: P32FB92DGMN

---

**Bold items are most common.**

---

### Table

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Flow(^{†})</th>
<th>Max. bar (psig)</th>
<th>Height (mm) (inches)</th>
<th>Width (mm) (inches)</th>
<th>Depth (mm) (inches)</th>
<th>Part number(^{†})</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - 0.01 micron, manual drain</td>
<td>17 (36)</td>
<td>10 (150)</td>
<td>212.3 (8.36)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB92DGMN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - 0.01 micron, auto drain</td>
<td>17 (36)</td>
<td>10 (150)</td>
<td>206.3 (8.12)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB92DGAN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - 0.01 micron, manual drain</td>
<td>17 (36)</td>
<td>17 (250)</td>
<td>212.3 (8.36)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB92DSMN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - 0.01 micron, auto drain</td>
<td>17 (36)</td>
<td>17 (250)</td>
<td>206.3 (8.12)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB92DSAN</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>Poly bowl - 0.01 micron, manual drain</td>
<td>17 (36)</td>
<td>10 (150)</td>
<td>212.3 (8.36)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB93DGMN</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>Poly bowl - 0.01 micron, auto drain</td>
<td>17 (36)</td>
<td>10 (150)</td>
<td>206.3 (8.12)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB93DGAN</td>
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<td>3/8&quot;</td>
<td>Metal bowl - 0.01 micron, manual drain</td>
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<td>3/8&quot;</td>
<td>Metal bowl - 0.01 micron, auto drain</td>
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</tr>
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<td>1/2&quot;</td>
<td>Poly bowl - 0.01 micron, manual drain</td>
<td>17 (36)</td>
<td>10 (150)</td>
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<td>17 (250)</td>
<td>206.3 (8.12)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32FB94DSAN</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 0.2 (3 psig) pressure drop.
### Specifications

**Flow capacity**
- 1.0 micron coalescing: 25 dm³/s (53 scfm)
- 0.01 micron coalescing: 17 dm³/s (36 scfm)
- Activated carbon adsorber: 40 dm³/s (85 scfm)

**Operating temperature**
- 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 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**
- Plastic bowl: 51 cm³ (1.7 US oz.)

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

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

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

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

### Dimensions mm (inches)

![Dimensions Diagram]

### Material Specifications

<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>Filter element</td>
<td>1.0 and .01 micron</td>
</tr>
<tr>
<td></td>
<td>Borosilicate cloth</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>
<tr>
<td></td>
<td>Nylon</td>
</tr>
</tbody>
</table>

### Repair and Service Kits

- Plastic bowl / Bowl guard manual drain: P32KB00BGM
- Metal bowl / Sight gauge manual drain: P32KB00BSM
- Auto drain: P32KA00DA
- 1µ coalescing filter element: P32KA00ES9
- 0.01µ coalescing filter element: P32KA00ESC
- Activated carbon adsorber filter element: P32KA00ESA
- 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
P33 Series

Standard Coalescing and Adsorber Filters

Symbol

- 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>Basic series</th>
<th>Thread type</th>
<th>Mounting</th>
<th>Port size</th>
<th>Drain type</th>
<th>Bowl type</th>
<th>Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global modular standard coalescing filter P33FA</td>
<td>BSPP 1</td>
<td>N No bracket</td>
<td>1/2</td>
<td>M Manual drain</td>
<td>G Poly bowl with bowl guard</td>
<td>0.01µ Element C</td>
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<tr>
<td></td>
<td>BSPT 2</td>
<td></td>
<td>3/4</td>
<td>A Auto drain</td>
<td>M Metal bowl without sight gauge</td>
<td>0.01µ Element with DPI D</td>
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<tr>
<td></td>
<td>NPT 9</td>
<td></td>
<td></td>
<td></td>
<td>S Metal bowl with sight gauge</td>
<td>1µ Element 9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Flow(^{1}) 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>
<th>Part number(^{1})</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - 0.01 micron, manual drain</td>
<td>32 (68)</td>
<td>10 (150)</td>
<td>235 (9.25)</td>
<td>73 (2.87)</td>
<td>73 (2.87)</td>
<td>P33FA94DGGMN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - 0.01 micron, auto drain</td>
<td>32 (68)</td>
<td>10 (150)</td>
<td>229 (9.02)</td>
<td>73 (2.87)</td>
<td>73 (2.87)</td>
<td>P33FA94DGAN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Metal bowl - 0.01 micron, manual drain</td>
<td>32 (68)</td>
<td>17 (250)</td>
<td>235 (9.25)</td>
<td>73 (2.87)</td>
<td>73 (2.87)</td>
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<td>17 (250)</td>
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<td>Poly bowl - 0.01 micron, manual drain</td>
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<td>Poly bowl - 0.01 micron, auto drain</td>
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<td>73 (2.87)</td>
<td>73 (2.87)</td>
<td>P33FA96DSAN</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.
### Specifications

**Flow capacity**
- 1.0 micron coalescing: 32 dm³/s (68 scfm)
- 0.01 micron coalescing: 20 dm³/s (42 scfm)
- Activated carbon adsorber: 34 dm³/s (72 scfm)

**Operating temperature**
- Metal bowl: -25°C to 65.5°C (-13°F to 150°F)
- Plastic bowl: -25°C to 52°C (-13°F to 125°F)

**Max. supply 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†**
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.

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

### Flow Charts

#### P33 - 1.0 micron flow

- Primary Pressure - bar: 2.0, 4.0, 6.3
- Primary Pressure - psig: 29, 58, 91.4

#### P33 - 0.01 micron flow

- Primary Pressure - bar: 2.0, 4.0, 6.3
- Primary Pressure - psig: 29, 58, 91.4

### Material Specifications

**Body**
- Aluminum

**Body cap**
- ABS

**Bowls**
- Plastic bowl: Polyacarbonate
- Metal bowl: Aluminum

**Filter element**
- 1.0 and 0.01 micron: Borosilicate cloth
- Activated carbon adsorber: Activated carbon

**Seals**
- Nitrile

**Sight gauge**
- Metal bowl: Nylon

### 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
Mini Regulator - P31

Symbols

- Self relieving regulator with gauge
- Non-relieving regulator

- 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), 0-16 bar (0-232 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Relieving & Non-relieving types
- Non-rising knob

Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Flow[^4] 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>
<th>Part number[^1]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) relieving</td>
<td>32 (68)</td>
<td>20 (300)</td>
<td>104.1 (4.1)</td>
<td>40 (1.58)</td>
<td>40 (1.58)</td>
<td>P31RB92BNNP</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) + gauge</td>
<td>32 (68)</td>
<td>20 (300)</td>
<td>104.1 (4.1)</td>
<td>40 (1.58)</td>
<td>61.3 (2.41)</td>
<td>P31RB92BN5P</td>
</tr>
</tbody>
</table>

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

\[^4\] Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3) psig set pressure and 1 bar (14.5 psig) pressure drop.
Specifications

Flow capacity* 1/4 32 dm³/s (68 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)
0-16 bar (232 psig)
Port size BSPP / BSPT / NPT 1/4
Gauge port (2 ea.)** BSPP / BSPT / NPT 1/8
Weight 0.17 kg (0.37 lbs)

* Inlet pressure 10 bar (145 psig). Secondary pressure 6.3 bar (91.3 psig).
** Non-gauge option only.
† Units with square gauges: -15°C to 65.5°C (5°F to 150°F)

Material Specifications

Body Aluminum
Adjustment knob Acetal
Bonnet PBT
Diaphragm assembly Brass / Nitrile
Valve assembly Brass / Nitrile
Springs Steel
Seals Nitrile
Panel nut Acetal

Flow Charts

1/4 Regulator

<table>
<thead>
<tr>
<th>Flow - dm³/s</th>
<th>Pressure - bar</th>
<th>Pressure - psig</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>8.0</td>
<td>116</td>
</tr>
<tr>
<td>5</td>
<td>6.3</td>
<td>91.4</td>
</tr>
<tr>
<td>2.5</td>
<td>4.0</td>
<td>58</td>
</tr>
<tr>
<td>40</td>
<td>20</td>
<td>295</td>
</tr>
<tr>
<td>80</td>
<td>40</td>
<td>580</td>
</tr>
<tr>
<td>120</td>
<td>60</td>
<td>870</td>
</tr>
<tr>
<td>140</td>
<td>80</td>
<td>1160</td>
</tr>
</tbody>
</table>

Dimensions mm (inches)

NOTE: 30 mm (1.20 in.) hole required for panel nut mounting.

Gauges

Square flush mount gauge
0-4 bar K4511SCR04B
0-11 bar K4511SCR11B
0-60 psig K4511SCR060
0-160 psig K4511SCR160

Square with adapter kit
0-4 bar P6G-PR10040
0-11 bar P6G-PR10110
0-60 psig P6G-PR90060
0-160 psig P6G-PR90160

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

40mm Round 1/8" center back mount
(Not for use with Common Port Regulators)
0-30 psig / 0-2 bar K4515N18030
0-60 psig / 0-4 bar K4515N18060
0-160 psig / 0-11 bar K4515N18160

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

WARNING

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

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.
Mini Common - P1 Regulator - P31

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
- Inlet port 1/4" (NPT, BSPP & BSPT)
- Working port 1/8"
- Robust construction
- Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-16 bar (0-232 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Relieving & Non-relieving types
- Non-rising knob

Options:

<table>
<thead>
<tr>
<th>Basic series</th>
<th>Thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global modular mini common regulator P31HB</td>
<td>BSPP 1</td>
</tr>
<tr>
<td>P31HB</td>
<td>BSPT 2</td>
</tr>
<tr>
<td>NPT 9</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port size (\d)</th>
<th>Description</th>
<th>Flow(^2) dm(^3)/s (scfm)</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1/4(\d)</td>
<td>8 bar (125 psig) relieving</td>
<td>20 (42)</td>
<td>20 (300)</td>
<td>104.1 (4.1)</td>
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<td>40 (1.58)</td>
<td>P31HB92BNNP</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.

Bold items are most common.
Specifications

- **Flow capacity**: 1/4, 20 dm³/s (42 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), 0-16 bar (232 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**: Aluminum
- **Adjustment knob**: Acetal
- **Bonnet**: 33% Glass-filled PBT
- **Diaphragm assembly**: Brass / Nitrile
- **Valve assembly**: Brass / Nitrile

Dimensions mm (inches)

**NOTE**: 30 mm (1.20 in.) hole required for panel nut mounting.

Flow Charts

**1/4 Common Regulator**

![Flow Chart](image)

Repair and Service Kits

- **Regulator repair kit - relieving**: P31KB00RB
- **Regulator repair kit - non-relieving**: P31KB00RC
- **Panel mount nut - aluminum**: P31KA00MM
- **Panel mount nut - plastic**: P31KA00MP
- **Angle bracket (attaches via panel nut)**: P31KB00MR
- **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

Square with adapter kit

- **0-4 bar**: P6G-PR10040
- **0-11 bar**: P6G-PR10110
- **0-60 psig**: P6G-PR90060
- **0-160 psig**: P6G-PR90160

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

**WARNING**

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

**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.
Compact Regulator – P32

Symbols

- Self relieving regulator with gauge
- Non-relieving regulator

- 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

Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Flow(^1) 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>
<th>Part number(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) relieving</td>
<td>70 (148)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32RB92BNNP</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) relieving + gauge</td>
<td>70 (148)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>93 (3.66)</td>
<td>P32RB92BNGP</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>8 bar (125 psig) relieving</td>
<td>78 (165)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32RB93BNNP</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>8 bar (125 psig) relieving + gauge</td>
<td>78 (165)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>93 (3.66)</td>
<td>P32RB93BNGP</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) relieving</td>
<td>78 (165)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32RB94BNNP</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) relieving + gauge</td>
<td>78 (165)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>93 (3.66)</td>
<td>P32RB94BNGP</td>
</tr>
</tbody>
</table>

\(^1\) 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.

**CAUTION:**

**REGULATOR PRESSURE ADJUSTMENT** – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design. For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

**WARNING**

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

P32 Series

Compact Regulators

Specifications

| Flow capacity* | 1/4 | 70 dm³/s (148 scfm) |
| 3/8 | 78 dm³/s (165 scfm) |
| 1/2 | 78 dm³/s (165 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).

Material Specifications

- **Body**: Aluminum
- **Adjustment knob**: Acetal
- **Bonnet**: 33% Glass-filled nylon
- **Diaphragm assembly**: Nitrile / Zinc
- **Valve assembly**: Brass / Nitrile
- **Springs**: Main regulating valve - Steel S.S.
- **Seals**: Nitrile
- **Panel nut**: Acetal

Dimensions mm (inches)

NOTE: 48 mm (1.90 in.) hole required for panel nut mounting.

Repair and Service Kits

- **Regulator repair kit - relieving**: P32KB00RB
- **Regulator repair kit - non-relieving**: P32KB00RC
- **Panel mount nut - aluminum**: P32KA00MM
- **Panel mount nut - plastic**: P32KA00MP
- **Angle bracket (attaches via panel nut)**: P32KB00MR
- **T-bracket with body connector**: P32KA00MT
- **T-bracket**: P32KA00MB
- **Body connector**: P32KA00CB

Flow Charts

1/4 Regulator

3/8 Regulator

1/2 Regulator

Gauges

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

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Gauge Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-30 psig / 0-2 bar</td>
<td>K4520N14030</td>
</tr>
<tr>
<td>0-60 psig / 0-4 bar</td>
<td>K4520N14060</td>
</tr>
<tr>
<td>0-160 psig / 0-11 bar</td>
<td>K4520N14160</td>
</tr>
<tr>
<td>0-300 psig / 0-20 bar</td>
<td>K4520N14300</td>
</tr>
</tbody>
</table>

Square flush mount gauge

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Gauge Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 bar</td>
<td>K4511SCR04B</td>
</tr>
<tr>
<td>0-11 bar</td>
<td>K4511SCR11B</td>
</tr>
<tr>
<td>0-60 psig</td>
<td>K4511SCR060</td>
</tr>
<tr>
<td>0-160 psig</td>
<td>K4511SCR160</td>
</tr>
</tbody>
</table>

Square with adapter kit

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Adapter Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 bar</td>
<td>P6G-PR10040</td>
</tr>
<tr>
<td>0-11 bar</td>
<td>P6G-PR10110</td>
</tr>
<tr>
<td>0-60 psig</td>
<td>P6G-PR90060</td>
</tr>
<tr>
<td>0-160 psig</td>
<td>P6G-PR90160</td>
</tr>
</tbody>
</table>

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.
Compact Semi-Precision Regulator – P32

Symbols

- Self relieving regulator with gauge
- Non-relieving regulator

- 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

Options:

- Basic series
  - Global modular compact regulator P32

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

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

- Relief
  - Semi-Precision Relieving P
  - Semi-Precision Non-relieving T

Note: Regulators will reverse flow as standard.

- Adjustment
  - N Non-rising knob
  - T T-Handle

- Adjustment range

<table>
<thead>
<tr>
<th>With square gauge</th>
<th>With round gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>psig</td>
<td>bar</td>
</tr>
<tr>
<td>Z = 2 bar; 30 psig; 0.2 MPa</td>
<td></td>
</tr>
<tr>
<td>1 = 30*</td>
<td>V = 2*</td>
</tr>
<tr>
<td>1 = 30</td>
<td>V = 2</td>
</tr>
<tr>
<td>3 = 60</td>
<td>S = 4</td>
</tr>
<tr>
<td>5 = 125</td>
<td>T = 8</td>
</tr>
<tr>
<td>5 = 125</td>
<td>T = 8</td>
</tr>
</tbody>
</table>

* Unit comes with 0-4 bar or 0-60 psig gauge respectively.

- Mounting
  - P Plastic panel mount nut

- Part number

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Flow¹ 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>Part number¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) relieving</td>
<td>25 (63)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32RB92PNPNP</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) relieving + gauge</td>
<td>25 (63)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>93 (3.66)</td>
<td>P32RB92PNGP</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>8 bar (125 psig) relieving</td>
<td>25 (63)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32RB93PNPNP</td>
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<td>P32RB93PNGP</td>
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<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32RB94PNPNP</td>
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<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>93 (3.66)</td>
<td>P32RB94PNGP</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.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design. For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

WARNING

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

Specifications

Flow capacity*  
1/4  25 dm³/s (53 scfm)
3/8  25 dm³/s (53 scfm)
1/2  25 dm³/s (53 scfm)

Effect of supply pressure variation  
0.04 bar (0.6 PSIG) for each 1.7 bar (25 PSIG) change in P1

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).

Material Specifications

Body  
Aluminum

Adjustment knob  
Acetal

Bonnet  
33% Glass-filled nylon

Diaphragm assembly  
Nitrile / Zinc

Valve assembly  
Brass / Nitrile

Springs  
Main regulating valve  
Steel S.S.

Seals  
Nitrile

Panel nut  
Acetal

Dimensions mm (inches)

NOTE: 48 mm (1.90 in.) hole required for panel nut mounting.

Repair and Service Kits

Regulator repair kit - relieving  
P32KB00RB

Regulator repair kit - non-relieving  
P32KB00RC

Panel mount nut - aluminum  
P32KA00MM

Panel mount nut - plastic  
P32KA00MP

Angle bracket (attaches via panel nut)  
P32KB00MR

T-bracket with body connector  
P32KA00MT

T-bracket  
P32KA00MB

Body connector  
P32KA00CB

Flow Charts

1/4 Regulator

Gauges

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

0-30 psig / 0-2 bar  
K4520N14030

0-60 psig / 0-4 bar  
K4520N14060

0-160 psig / 0-11 bar  
K4520N14160

0-300 psig / 0-20 bar  
K4520N14300

Square flush mount gauge

0-4 bar  
K4511SCR04B

0-11 bar  
K4511SCR11B

0-60 psig  
K4511SCR060

0-160 psig  
K4511SCR160

Square with adapter kit

0-4 bar  
P6G-PR10040

0-11 bar  
P6G-PR100110

0-60 psig  
P6G-PR90060

0-160 psig  
P6G-PR90160

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.
Compact Common - P1 Regulator - P32

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.
- Inlet ports 1/4", 3/8" or 1/2" (NPT, BSPP & BSPT)
- Working port 1/4"
- 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

Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Flow^2 (scfm)</th>
<th>Max. bar (psig)</th>
<th>Height (mm)</th>
<th>Width (mm)</th>
<th>Depth (mm)</th>
<th>Part number\†</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) relieving</td>
<td>30 (64)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32HB92BNNP</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>8 bar (125 psig) relieving</td>
<td>30 (64)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32HB93BNNP</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) relieving</td>
<td>30 (64)</td>
<td>20 (300)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32HB94BNNP</td>
</tr>
</tbody>
</table>

**Bold items are most common.**

\† 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)
3/8  30 dm³/s (64 scfm)
1/2  30 dm³/s (64 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).

Material Specifications

Body  Aluminum
Adjustment knob  Acetal
Bonnet  33% Glass-filled nylon
Diaphragm assembly  Nitrile / Zinc
Valve assembly  Brass / Nitrile
Springs  Main regulating valve  Steel S.S.
Seals  Nitrile
Panel nut  Acetal

Dimensions  mm (inches)

NOTE: 48 mm (1.90 in.) hole required for panel nut mounting.

Flow Charts

P32 Common Port Regulator

Flow capacity*  
1/4  30 dm³/s (64 scfm)
3/8  30 dm³/s (64 scfm)
1/2  30 dm³/s (64 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).

Material Specifications

Body  Aluminum
Adjustment knob  Acetal
Bonnet  33% Glass-filled nylon
Diaphragm assembly  Nitrile / Zinc
Valve assembly  Brass / Nitrile
Springs  Main regulating valve  Steel S.S.
Seals  Nitrile
Panel nut  Acetal

Dimensions  mm (inches)

NOTE: 48 mm (1.90 in.) hole required for panel nut mounting.

Repair and Service Kits

Regulator repair kit - relieving  P32KB00RB
Regulator repair kit - non-relieving  P32KB00RC
Panel mount nut - aluminum  P32KA00MM
Panel mount nut - plastic  P32KA00MP
Angle bracket (attaches via panel nut)  P32KB00MR
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  K4520N14030
0-60 psig / 0-4 bar  K4520N14060
0-160 psig / 0-11 bar  K4520N14160
0-300 psig / 0-20 bar  K4520N14300

Square flush mount gauge
0-4 bar  K4511SCR04B
0-11 bar  K4511SCR11B
0-60 psig  K4511SCR060
0-160 psig  K4511SCR160

Square with adapter kit
0-4 bar  P6G-PR10040
0-11 bar  P6G-PR10110
0-60 psig  P6G-PR90060
0-160 psig  P6G-PR90160

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

WARNING

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

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.
### Standard Regulator - P33

**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

### Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Flow ‡</th>
<th>Max. bar (psig)</th>
<th>Height (mm)</th>
<th>Width (mm)</th>
<th>Part number $^1$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) relieving</td>
<td>110 (233)</td>
<td>20 (300)</td>
<td>149 (5.87)</td>
<td>73 (2.87)</td>
<td>P33RA94BNP</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) relieving + gauge</td>
<td>110 (233)</td>
<td>20 (300)</td>
<td>149 (5.87)</td>
<td>73 (2.87)</td>
<td>P33RA94BNGP</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>8 bar (125 psig) relieving</td>
<td>110 (233)</td>
<td>20 (300)</td>
<td>149 (5.87)</td>
<td>73 (2.87)</td>
<td>P33RA96BNP</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>8 bar (125 psig) relieving + gauge</td>
<td>110 (233)</td>
<td>20 (300)</td>
<td>149 (5.87)</td>
<td>73 (2.87)</td>
<td>P33RA96BNGP</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*  1/2  110 dm³/s (233 scfm)
              3/4  110 dm³/s (233 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  1/2, 3/4

Gauge port (2 ea.)  BSPP / BSPT / NPT  1/4

Weight  0.62 kg (1.37 lbs)

Flow Charts

1/2 Regulator

<table>
<thead>
<tr>
<th>Inlet Pressure - 10 bar (145 psig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Pressure - bar</td>
</tr>
<tr>
<td>Secondary Pressure - (psig)</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td>40</td>
</tr>
<tr>
<td>60</td>
</tr>
<tr>
<td>80</td>
</tr>
<tr>
<td>100</td>
</tr>
<tr>
<td>120</td>
</tr>
<tr>
<td>140</td>
</tr>
</tbody>
</table>

| 2.5 bar                          |
| 36.3 psig                        |
| 8.0 bar                          |
| 116 psig                         |
| 4.0 bar                          |
| 58 psig                          |
| 6.3 bar                          |
| 91.4 psig                        |

3/4 Regulator

<table>
<thead>
<tr>
<th>Inlet Pressure - 10 bar (145 psig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Pressure - bar</td>
</tr>
<tr>
<td>Secondary Pressure - (psig)</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td>40</td>
</tr>
<tr>
<td>60</td>
</tr>
<tr>
<td>80</td>
</tr>
<tr>
<td>100</td>
</tr>
<tr>
<td>120</td>
</tr>
<tr>
<td>140</td>
</tr>
</tbody>
</table>

| 2.5 bar                          |
| 36.3 psig                        |
| 8.0 bar                          |
| 116 psig                         |
| 4.0 bar                          |
| 58 psig                          |
| 6.3 bar                          |
| 91.4 psig                        |


Material Specifications

Body  Aluminum
Adjustment knob  Acetal
Body cap  ABS
Bonnet  33% Glass-filled nylon
Diaphragm assembly  Nitrile / Zinc
Bonnet  33% Glass-filled nylon
Valve assembly  Brass / Nitrile
Springs  Steel / Nitrile
Seals  Steel / Nitrile
Panel nut  Acetal

Dimensions mm (inches)

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Width</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>73 (2.87)</td>
<td>149 (5.87)</td>
<td>83.8 (3.30)</td>
</tr>
</tbody>
</table>

Gauges

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

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-160 psig/0-11 bar</td>
<td>K4520N14160</td>
</tr>
<tr>
<td>0-300 psig/0-20 bar</td>
<td>K4520N14300</td>
</tr>
</tbody>
</table>

Regulator repair kit - relieving  P33KA00RB
Regulator repair kit - non-relieving  P33KA00RC
Panel mount nut - aluminum  P33KA00MM
Panel mount nut - plastic  P33KA00MP
Angle bracket (attaches via panel nut)  P33KA00MR
T-bracket with body connector  P32KA00MT
T-bracket  P32KA00MB
Body connector  P32KA00CB

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

Repair and Service Kits

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.
Mini Filter / Regulator - P31

- 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), 0-16 bar (0-232 psig)
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation

Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</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>
<th>Part number³</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) relieving - poly bowl - manual drain</td>
<td>15 (32)</td>
<td>10 (150)</td>
<td>176.9 (6.96)</td>
<td>40 (1.58)</td>
<td>61.3 (2.41)</td>
<td>P31EB92EGMBN5P</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) relieving - poly bowl - pulse drain</td>
<td>15 (32)</td>
<td>10 (150)</td>
<td>172.0 (6.77)</td>
<td>40 (1.58)</td>
<td>61.3 (2.41)</td>
<td>P31EB92EGBBN5P</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) relieving - metal bowl - manual drain</td>
<td>15 (32)</td>
<td>17 (250)</td>
<td>176.9 (6.96)</td>
<td>40 (1.58)</td>
<td>61.3 (2.41)</td>
<td>P31EB92EMMBN5P</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) relieving - metal bowl - pulse drain</td>
<td>15 (32)</td>
<td>17 (250)</td>
<td>172.0 (6.77)</td>
<td>40 (1.58)</td>
<td>61.3 (2.41)</td>
<td>P31EB92EMBBN5P</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.
§ Not available. Without gauge.

Symbol Legend:

- #1: Integral 1/4" ports (NPT, BSPP & BSPT)
- #2: High efficiency 5 micron element as standard
- #3: Excellent water removal efficiency
- #4: Robust but lightweight aluminum construction
- #5: Positive bayonet latch to ensure correct & safe fitting
- #6: Secondary pressure ranges 0-2 bar (0-30 psig), 0-4 bar, (0-60 psig), 0-8 bar (0-125 psig), 0-16 bar (0-232 psig)
- #7: Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation

Options:

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

- Element:
  - 5µ Element E

- Adjustment:
  - B Relieving
  - N Non-relieving

- Relief:
  - B Relieving
  - N Non-relieving

- Drain type:
  - Pulse drain B
  - Manual drain M

- Bowls:
  - Poly bowl with bowl guard G
  - Metal bowl without sight gauge M

- Mounting:
  - P Plastic panel mount nut

- Adjustment Range:
  - With square gauge
    - 1 = 30 V = 2
    - 3 = 60 S = 4
    - 5 = 125 T = 8
  - With round gauge
    - Z 2 bar; 30 psig; 0.2 MPa
    - M 4 bar; 60 psig; 0.4 MPa
    - G 8 bar; 125 psig; 0.8 MPa
    - J 16 bar; 232 psig; 1.6 MPa

- Without gauge:
  - Y 2 bar; 30 psig; 0.2 MPa
  - L 4 bar; 60 psig; 0.4 MPa
  - N 8 bar; 125 psig; 0.8 MPa
  - H 16 bar; 232 psig; 1.6 MPa

- Basic Series:
  - Global modular mini filter / regulator P31EB
Specifications

Flow capacity* 1/4 15 dm³/s (32 scfm)
Operating temperature† 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 cm² (0.4 US oz.)
Adjusting range pressure 0-2 bar (30 psig) 0-4 bar (60 psig) 0-8 bar (125 psig) 0-16 bar (232 psig)

Flow Charts

1/4 Filter / Regulator

Material Specifications

Body Aluminum
Adjustment knob Acetal
Body cap ABS
Bonnet PBT

Bowl Plastic bowl Polycarbonate
Metall 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.

Repair and Service Kits

Plastic bowl / Bowl guard manual drain P31KB00BGM
Plastic bowl / Bowl guard pulse drain P31KB00BGB
Metal bowl / w/o sight gauge pulse drain P31KB00BMB
5µ particle filter element P31KA00ESE
Regulator repair kit - relieving P31KB00RB
Regulator repair kit - non-relieving P31KB00RC
Panel mount nut - aluminum P31KA00MM
Panel mount nut - plastic P31KA00MP
Angle bracket (attaches via panel nut) P31KB00MR
C-bracket (fits to body) P31KA00MW
T-bracket with body connector P31KA00MT
Body connector P31KA00CB

Gauges

Square flush mount gauge
0-4 bar K4511SCR04B
0-11 bar K4511SCR11B
0-60 psig K4511SCR060
0-160 psig K4511SCR160

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

Dimensions mm (inches)

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

WARNING

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.
**Compact Filter / Regulator - P32**

**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

**Options:**

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Flow†</th>
<th>Max. bar (psig)</th>
<th>Height (mm)</th>
<th>Width (mm)</th>
<th>Depth (mm)</th>
<th>Part number†</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) relieving - poly bowl - manual drain</td>
<td>42 (89)</td>
<td>10 (150)</td>
<td>261.6 (10.3)</td>
<td>60 (2.36)</td>
<td>93 (3.66)</td>
<td>P32EB92EGMBNGP</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) relieving - poly bowl - auto drain</td>
<td>42 (89)</td>
<td>10 (150)</td>
<td>255.6 (10.1)</td>
<td>60 (2.36)</td>
<td>93 (3.66)</td>
<td>P32EB92EGABNGP</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) relieving - metal bowl - manual drain</td>
<td>42 (89)</td>
<td>17 (250)</td>
<td>261.6 (10.3)</td>
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<td>60 (2.36)</td>
<td>93 (3.66)</td>
<td>P32EB92ESABNGP</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>8 bar (125 psig) relieving - poly bowl - manual drain</td>
<td>58 (123)</td>
<td>10 (150)</td>
<td>261.6 (10.3)</td>
<td>60 (2.36)</td>
<td>93 (3.66)</td>
<td>P32EB92ESMBNGP</td>
</tr>
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<td>8 bar (125 psig) relieving - poly bowl - auto drain</td>
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<td>10 (150)</td>
<td>255.6 (10.1)</td>
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<td>93 (3.66)</td>
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<td>17 (250)</td>
<td>261.6 (10.3)</td>
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<td>93 (3.66)</td>
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</tr>
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<td>3/8&quot;</td>
<td>8 bar (125 psig) relieving - metal bowl - auto drain</td>
<td>58 (123)</td>
<td>17 (250)</td>
<td>255.6 (10.1)</td>
<td>60 (2.36)</td>
<td>93 (3.66)</td>
<td>P32EB92ESABNGP</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) relieving - poly bowl - manual drain</td>
<td>64 (136)</td>
<td>10 (150)</td>
<td>261.6 (10.3)</td>
<td>60 (2.36)</td>
<td>93 (3.66)</td>
<td>P32EB94EGMBNGP</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) relieving - poly bowl - auto drain</td>
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<td>93 (3.66)</td>
<td>P32EB94ESABNGP</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.
Specifications

Flow capacity*  1/4  42 dm³/s (89 scfm)
               3/8  58 dm³/s (123 scfm)
               1/2  64 dm³/s (136 scfm)

Operating temperature
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 pressure
Plastic bowl  10 bar (150 psig)
Metal bowl   17 bar (250 psig)

Standard filtration  5 micron
Useful retention†  51 cm³ (1.7 US oz.)
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  0.53 kg (1.17 lbs)

* Inlet pressure 10 bar (145 psig). Secondary pressure 6.3 bar (91.3 psig).
† Useful retention refers to volume below the quiet zone baffle.

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

Material Specifications

Body  Aluminum
Adjustment knob  Acetal
Element retainer / Baffle  Acetal
Bowl  Plastic bowl  Polycarbonate
      Metal bowl  Zinc
Bowl guard  Nylon
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  Nylon

Dimensions mm (inches)

Flow Charts

1/4 Filter / Regulator

3/8 Filter/Regulator

1/2 Filter/Regulator

Repair and Service Kits

Plastic bowl / Bowl guard manual drain  P32KB00BGM
Metal bowl / Sight gauge manual drain  P32KB00BSM
Auto drain  P32KA00DA
5µ particle filter element  P32KA00ESE
Regulator repair kit - relieving  P32KB00RB
Regulator repair kit - non-relieving  P32KB00RC
Panel mount nut - aluminum  P32KA00MM
Panel mount nut - plastic  P32KA00MP
Angle bracket (fits to panel mount threads)  P32KB00MR
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

0-30 psig / 0-2 bar  K4520N14030
0-60 psig / 0-4 bar  K4520N14060
0-160 psig / 0-11 bar  K4520N14160
0-300 psig / 0-20 bar  K4520N14300

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.
**Compact Semi-Precision Filter / Regulator - P32**

**Options:**

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</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>Part number†</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) relieving - poly bowl - manual drain</td>
<td>35 (75)</td>
<td>10 (150)</td>
<td>261.6 (10.3)</td>
<td>60 (2.36)</td>
<td>93 (3.66)</td>
<td>P32EB92EGMPNGP</td>
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<td>60 (2.36)</td>
<td>93 (3.66)</td>
<td>P32EB94ESAPNGP</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.
Compact Semi-Precision Filter / Regulators

**Specifications**

| Flow capacity* | 1/4 | 35 dm³/s (75 scfm) |
| 3/8 | 35 dm³/s (75 scfm) |
| 1/2 | 35 dm³/s (75 scfm) |

Effect of supply pressure variation: 0.04 bar (0.6 PSIG) for 1.7 bar (25 PSIG) change in P1.

Operating temperature: 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 pressure: Plastic bowl 10 bar (150 psig), Metal bowl 17 bar (250 psig).

Standard filtration: 5 micron.

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

Adjusting range pressure:
- 0-2 bar (30 psig)
- 0-4 bar (60 psig)
- 0-8 bar (125 psig)
- 0-17 bar (250 psig)

Dimensions mm (inches):

**Material Specifications**

- **Body**: Aluminum
- **Adjustment knob**: Acetal
- **Element retainer / Baffle**: Acetal
- **Bowl**: Plastic bowl - Polycarbonate, Metal bowl - Zinc
- **Bowl guard**: Nylon
- **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 - Nylon

**Flow Charts**

**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)

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

**Repair and Service Kits**

- **Plastic bowl / Bowl guard manual drain**: P32KB00BGM
- **Metal bowl / Sight gauge manual drain**: P32KB00BSM
- **Auto drain**: P32KA00DA
- **5µ particle filter element**: P32KA00ESE
- **Regulator repair kit - relieving**: P32KB00RB
- **Regulator repair kit - non-relieving**: P32KB00RC
- **Panel mount nut - aluminum**: P32KA00MM
- **Panel mount nut - plastic**: P32KA00MP
- **Angle bracket (fits to panel mount threads)**: P32KB00MR
- **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**
  - 0-30 psig / 0-2 bar: K4520N14030
  - 0-60 psig / 0-4 bar: K4520N14060
  - 0-180 psig / 0-11 bar: K4520N14160
  - 0-300 psig / 0-20 bar: K4520N14300

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

**WARNING**

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

---

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

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

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Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/globalfrl
Catalog 0750-3 US (Revised 04-08-15)

Global Air Preparation System

Standard Filter / Regulator - P33

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

Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</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>Part number‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) relieving - poly bowl - manual drain</td>
<td>99 (210)</td>
<td>10 (150)</td>
<td>291 (11.44)</td>
<td>73 (2.87)</td>
<td>108 (4.27)</td>
<td>P33EA94EGMBNGP</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) relieving - poly bowl - auto drain</td>
<td>99 (210)</td>
<td>10 (150)</td>
<td>285 (11.22)</td>
<td>73 (2.87)</td>
<td>108 (4.27)</td>
<td>P33EA94EGABNGP</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) relieving - metal bowl - manual drain</td>
<td>99 (210)</td>
<td>17 (250)</td>
<td>291 (11.44)</td>
<td>73 (2.87)</td>
<td>108 (4.27)</td>
<td>P33EA94ESMBNGP</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>8 bar (125 psig) relieving - metal bowl - auto drain</td>
<td>99 (210)</td>
<td>17 (250)</td>
<td>285 (11.22)</td>
<td>73 (2.87)</td>
<td>108 (4.27)</td>
<td>P33EA94ESABNGP</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>8 bar (125 psig) relieving - poly bowl - manual drain</td>
<td>108 (230)</td>
<td>10 (150)</td>
<td>291 (11.44)</td>
<td>73 (2.87)</td>
<td>108 (4.27)</td>
<td>P33EA96EGMBNGP</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>8 bar (125 psig) relieving - poly bowl - auto drain</td>
<td>108 (230)</td>
<td>10 (150)</td>
<td>285 (11.22)</td>
<td>73 (2.87)</td>
<td>108 (4.27)</td>
<td>P33EA96EGABNGP</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>8 bar (125 psig) relieving - metal bowl - manual drain</td>
<td>108 (230)</td>
<td>17 (250)</td>
<td>291 (11.44)</td>
<td>73 (2.87)</td>
<td>108 (4.27)</td>
<td>P33EA96ESMBNGP</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>8 bar (125 psig) relieving - metal bowl - auto drain</td>
<td>108 (230)</td>
<td>17 (250)</td>
<td>285 (11.22)</td>
<td>73 (2.87)</td>
<td>108 (4.27)</td>
<td>P33EA96ESABNGP</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.
**Specifications**

- **Flow capacity**
  - 1/2: 99 dm³/s (210 scfm)
  - 3/4: 108 dm³/s (230 scfm)

- **Operating temperature**
  - 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)

- **Supply pressure**
  - Plastic bowl: 10 bar (150 psig)
  - Metal bowl: 17 bar (250 psig)

- **Standard filtration**: 5 micron

- **Useful retention**: 85 cm³ (2.8 US oz.)

- **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
  - 1/2, 3/4

- **Gauge port (2 ea.)**: BSPP / BSPT / NPT
  - 1/4

- **Weight**: 0.85 kg (1.87 lbs)

- **Inlet pressure**: 10 bar (145 psig)

- **Secondary pressure**: 6.3 bar (91.3 psig)

**Air Quality**

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

**Material Specifications**

- **Body**: Aluminum
- **Adjustment knob**: Acetal
- **Body cap**: ABS
- **Element retainer / Baffle**: Acetal
- **Bowls**
  - Plastic bowl: Polycarbonate
  - Metal bowl: Aluminum
- **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 Nylon

**Dimensions**

- **5mm (5/32) I.D. tube**
  - Body connector

- **72 (2.83)**
  - Valve body
- **73 (2.87)**
  - Body
- **104 (4.09)**
  - Manual drain (3/8" Flex Tubing)
- **108 (4.27)**
  - Round Gauge

**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

**Flow Charts**

**1/2 Filter / Regulator**

- Input Pressure - 10 bar (145 psig)

**3/4 Filter/Regulator**

- Input Pressure - 10 bar (145 psig)

**Gauges**

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

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

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

**WARNING**

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed Maximum primary pressure rating.
Mini Lubricator - P31

- Integral 1/4" 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

Options:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Flow&lt;sup&gt;‡&lt;/sup&gt; dm&lt;sup&gt;3&lt;/sup&gt;/s (scfm)</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Depth mm (inches)</th>
<th>Part number&lt;sup&gt;†&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - No drain</td>
<td>19 (40)</td>
<td>10 (150)</td>
<td>153.3 (6.04)</td>
<td>40 (1.58)</td>
<td>40 (1.58)</td>
<td>P31LB92LGNN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - No drain</td>
<td>19 (40)</td>
<td>17 (250)</td>
<td>153.3 (6.04)</td>
<td>40 (1.58)</td>
<td>40 (1.58)</td>
<td>P31LB92LMNN</td>
</tr>
</tbody>
</table>

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

<sup>‡</sup> Flow with 6.3 bar (91.3 psig) inlet pressure and 0.34 bar (4.9 psig) pressure drop.
Specifications

Flow capacity* 1/4 19 dm³/s (40 scfm)
Operating temperature 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)
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).

Material Specifications

Body Aluminum
Body cap ABS
Bowl Plastic bowl Polycarbonate
               Metal bowl Aluminum
Seals Nitrile
Sight dome Polycarbonate
Suggested lubricant ISO / ASTM VG32
Pick-up filter Sintered bronze

Dimensions mm (inches)

P31LB 1/4" Lubricator

Flow Charts

Repair and Service Kits

Plastic bowl / Bowl guard no drain P31KB00BGN
Metal bowl / w/o sight gauge no drain P31KB00BMN
Drip control assembly P32KA00PG
Fill plug P31KA00PL
C-bracket (fits to body) P31KA00MW
T-bracket with body connector P31KA00MT
Body connector P31KA00CB

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.)
Compact Lubricator - P32

Options:

- 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

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Flow‡</th>
<th>Max. bar</th>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
<th>Part number†</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>Poly bowl - No drain</td>
<td>17 (35)</td>
<td>10 (150)</td>
<td>217.3 (8.56)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32LB92LGNN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Metal bowl - No drain</td>
<td>17 (35)</td>
<td>17 (250)</td>
<td>217.3 (8.56)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32LB92LSNN</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>Poly bowl - No drain</td>
<td>33 (70)</td>
<td>10 (150)</td>
<td>217.3 (8.56)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32LB93LGNN</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>Metal bowl - No drain</td>
<td>33 (70)</td>
<td>17 (250)</td>
<td>217.3 (8.56)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32LB93LSNN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - No drain</td>
<td>42 (90)</td>
<td>10 (150)</td>
<td>217.3 (8.56)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32LB94LGNN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Metal bowl - No drain</td>
<td>42 (90)</td>
<td>17 (250)</td>
<td>217.3 (8.56)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td>P32LB94LSNN</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 17 dm³/s (38 scfm)
3/8 33 dm³/s (70 scfm)
1/2 42 dm³/s (90 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 121 cm³ (4.09 US oz.)

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

Weight 0.31 kg (0.68 lbs)

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

Material Specifications

Body Aluminum
Body cap ABS
Bowls Plastic bowl Polycarbonate
Metal bowl Aluminum

Seals Nitrile

Sight dome Polycarbonate
Sight gauge Metal bowl Nylon

Suggested lubricant ISO / ASTM VG32

Pick-up filter Sintered bronze

Dimensions mm (inches)

Flow Charts

1/4 Lubricator

Primary Pressure - bar
Primary Pressure - psig

Pressure Drop (bar)
Pressure Drop (psig)

Flow - dm³/s Flow - (scfm)

3/8 Lubricator

Primary Pressure - bar
Primary Pressure - psig

Pressure Drop (bar)
Pressure Drop (psig)

Flow - dm³/s Flow - (scfm)

1/2 Lubricator

Primary Pressure - bar
Primary Pressure - psig

Pressure Drop (bar)
Pressure Drop (psig)

Flow - dm³/s Flow - (scfm)

Repair and Service Kits

Plastic bowl / Bowl guard no drain P32KB00BQN
Metal bowl / w/o sight gauge no drain P32KB00BMN
Metal bowl / Sight gauge no drain P32KB00BSN
Drip control assembly P32KA00PG
Fill plug P32KA00PL
L-bracket (fits to body) P32KA00ML
T-bracket (fits to body connector) P32KA00MB
T-bracket with body connector P32KA00MT
Body connector P32KA00CB

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.)
Standard Lubricator - P33

- 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>Flow(^\ddagger) 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>
<th>Part number†</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>Poly bowl - No drain</td>
<td>52 (110)</td>
<td>10 (150)</td>
<td>234 (9.21)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
<td>P33LA94LGNN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Metal bowl - No drain</td>
<td>52 (110)</td>
<td>17 (250)</td>
<td>234 (9.21)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
<td>P33LA94LSNN</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Poly bowl - No drain</td>
<td>71 (150)</td>
<td>10 (150)</td>
<td>234 (9.21)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
<td>P33LA96LGNN</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Metal bowl - No drain</td>
<td>71 (150)</td>
<td>17 (250)</td>
<td>234 (9.21)</td>
<td>73 (2.9)</td>
<td>73 (2.9)</td>
<td>P33LA96LSNN</td>
</tr>
</tbody>
</table>

† 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 bar (4.9 psig) pressure drop.

Symbol:

- 1
- 2

Lubricator with drain

- 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:

- Lube type
  - Oil mist standard sight dome (L)
- Thread type
  - BSPP (1)
  - BSPT (2)
  - NPT (9)
- Mounting
  - N (No bracket)
- Drain type
  - N (No drain closed end)
- Bowl type
  - G (Poly bowl with bowl guard)
  - S (Metal bowl with sight gauge)
Specifications

Flow capacity
* 1/2 52 dm³/s (110 scfm)
* 3/4 71 dm³/s (150 scfm)

Operating temperature
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)

Useful retention 181 cm³ (6.1 US oz.)

Port size BSPP / BSPT / NPT 1/2, 3/4

Weight 0.47 kg (1.04 lbs)

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

Material Specifications

Body Aluminum
Body cap ABS
Bowl Plastic bowl Polycarbonate
Metal bowl Aluminum

Seals Nitrile
Sight dome Polycarbonate
Sight gauge Metal bowl Nylon

Suggested lubricant ISO / ASTM VG32
Pick-up filter Sintered bronze

Dimensions mm (inches)

<table>
<thead>
<tr>
<th>Plastic bowl / Bowl guard no drain</th>
<th>P33KA00BGN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal bowl / w/o sight gauge no drain</td>
<td>P33KA00BMN</td>
</tr>
<tr>
<td>Metal bowl / Sight gauge no drain</td>
<td>P33KA00BSN</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>

Repair and Service Kits

Flow Charts

1/2 Lubricator

3/4 Lubricator

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.)
Proportional Regulators - P31P & P32P

- 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)

Options:

**P31PA**

<table>
<thead>
<tr>
<th>Body size</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global modular mini (1/4&quot;)</td>
<td>P31PA</td>
</tr>
<tr>
<td>Global modular compact (1/2&quot;)</td>
<td>P32PA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thread type</th>
<th>2</th>
<th>A</th>
<th>D</th>
<th>2</th>
<th>V</th>
<th>D</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSPP</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSPT</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NPT</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Power supply**: 24 volts
- **Control signal**: V 0-10V
- **Pressure range**: Z 0 - 2 bar (0-29 PSIG), D 0 - 10 bar (0-145 PSIG)
- **Version**: Bottom ported exhaust (NC) A, Bottom ported forced exhaust (NO) E

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

**P31P Mounting brackets**

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

**P32P Mounting brackets**

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

**Cables**

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

Bold items are most common.
Technical Information

Working medium
Compressed air or inert gasses, 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 to 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 Supply</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>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
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.
  - Note: In the event of loss of both power and inlet pressure the unit will exhaust downstream pressure.
- If the P31P / P32P unit has an "E" in the 12th digit of the model number
  - When the supply voltage drops, the electronic control reverts to “Forced Exhaust Mode” and will automatically exhaust the downstream (regulated) pressure.
  - When the supply voltage is reinstated to the correct level the unit will return to normal operation and follows the control signal requirement. The display indicates the actual 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 .............................. FPV
- Solenoid Valve Housing ..............................Techno Polymer
- Regulator Body (P31P & P32P versions) ..........Aluminum
- 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 - 20mA instead of 0 - 10V. To correct this a different set point value should be input or the unit reprogrammed to correct the set point value acceptance. (via parameter 4).

Response time

<table>
<thead>
<tr>
<th>Inlet Pressure - 10 bar (145 psig)</th>
<th>P31P</th>
<th>P32P</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 to 4 bar</td>
<td>25 msecs</td>
<td>35 msecs</td>
</tr>
<tr>
<td>4 to 2 bar</td>
<td>55 msecs</td>
<td>135 msecs</td>
</tr>
<tr>
<td>6 to 1 bar</td>
<td>70 msecs</td>
<td>85 msecs</td>
</tr>
<tr>
<td>8 to 1 bar</td>
<td>80 msecs</td>
<td>225 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

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

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.

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)

Parameter Number 0 – Reset Back to Factory Settings

<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>Pxx</td>
<td>P00</td>
<td>000</td>
<td>003</td>
<td>003</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>

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.

Parameter Number 4 – Set Control Signal in Volts or Milliamps

<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>Pxx</td>
<td>P04</td>
<td>001</td>
<td>000</td>
<td>000</td>
</tr>
<tr>
<td>Description</td>
<td>Accesses changeable parameters.</td>
<td>Accesses parameter no. 4.</td>
<td>Displays current parameter value. 1 = V 0 = mA</td>
<td>Edits parameter.</td>
<td>Accepts and saves new parameter setting.</td>
</tr>
</tbody>
</table>
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” for 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><img src="image" alt="acc" /></td>
<td><img src="image" alt="△" /></td>
<td><img src="image" alt="acc" /></td>
<td><img src="image" alt="△" /></td>
<td><img src="image" alt="acc" /></td>
</tr>
<tr>
<td>Until Display Reads</td>
<td><img src="image" alt="Pxx" /></td>
<td><img src="image" alt="P06" /></td>
<td><img src="image" alt="001" /></td>
<td><img src="image" alt="###" /></td>
<td><img src="image" alt="P07" /></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><img src="image" alt="acc" /></td>
<td><img src="image" alt="△" /></td>
<td><img src="image" alt="acc" /></td>
<td><img src="image" alt="△" /></td>
<td><img src="image" alt="acc" /></td>
</tr>
<tr>
<td>Until Display Reads</td>
<td><img src="image" alt="Pxx" /></td>
<td><img src="image" alt="P08" /></td>
<td><img src="image" alt="100" /></td>
<td><img src="image" alt="###" /></td>
<td><img src="image" alt="P09" /></td>
</tr>
</tbody>
</table>
Adjust Digital Display
If necessary, adjustments can be made to the digital display when using an external pressure sensor.

### Parameter Number 9 – Adjust Digital Display Value (Pressure Calibration)

<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</td>
<td>P 09</td>
<td># # #</td>
<td># # #</td>
<td>P 10</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.

### Parameter Number 14 – Set Pressure Scale in psig or 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</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</td>
<td>P 14</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</td>
<td>P 18</td>
<td>000</td>
<td>Flashing Decimal (value between 0 and 200)</td>
<td>Flashing</td>
</tr>
<tr>
<td>Description</td>
<td>Accesses changeable parameters.</td>
<td>Accesses parameter no. 18.</td>
<td>Displays current parameter value. Incremental value is: 2 bar unit: x 2 mbar x % P19 10 bar unit: x 10 mbar x % P19</td>
<td>Edits parameter.</td>
<td>Sequences to next parameter.</td>
</tr>
</tbody>
</table>

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</td>
<td>P 19</td>
<td>100</td>
<td>Flashing Decimal (value between 0 and 100)</td>
<td>Flashing</td>
</tr>
<tr>
<td>Description</td>
<td>Accesses changeable parameters.</td>
<td>Accesses parameter no. 19.</td>
<td>Displays current parameter value. Incremental value is: % of F.S.</td>
<td>Edits parameter.</td>
<td>Sequences to next parameter.</td>
</tr>
</tbody>
</table>
### 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>acc</td>
<td>or or</td>
<td>acc</td>
<td>or</td>
<td>acc</td>
</tr>
<tr>
<td>Until Display Reads</td>
<td>P xx</td>
<td>P20</td>
<td>003</td>
<td># # #</td>
<td># # #</td>
</tr>
</tbody>
</table>
| Description | Accesses changeable parameters. | Accesses parameter no. 20. | Displays current parameter value. | Edits parameter 0 = custom set*
1 = fastest (narrow proportional band)
2 = fast
3 = normal
4 = slow
5 = slowest (proportional band is broad) | Accepts and saves new parameter setting. | Sequences to next parameter. |

* 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>acc</td>
<td>or or</td>
<td>acc</td>
<td>or</td>
<td>acc</td>
</tr>
<tr>
<td>Until Display Reads</td>
<td>P xx</td>
<td>P12</td>
<td>100</td>
<td># # #</td>
<td># # #</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 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><a href="#">ACC</a></td>
<td><a href="#">↓ or ↑</a></td>
<td><a href="#">ACC</a></td>
<td><a href="#">↓ or ↑</a></td>
<td><a href="#">ACC</a></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><a href="#">P x x</a></td>
<td><a href="#">P 13</a></td>
<td><a href="#">0 1 5</a></td>
<td><a href="#">###</a></td>
<td><a href="#">###</a></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><a href="#">ACC</a></td>
<td><a href="#">↓ or ↑</a></td>
<td><a href="#">ACC</a></td>
<td><a href="#">↓ or ↑</a></td>
<td><a href="#">ACC</a></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><a href="#">P x x</a></td>
<td><a href="#">P 2 1</a></td>
<td><a href="#">0 1 0</a></td>
<td><a href="#">###</a></td>
<td><a href="#">###</a></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><a href="#">ACC</a></td>
<td><a href="#">↓ or ↑</a></td>
<td><a href="#">ACC</a></td>
</tr>
<tr>
<td>3-6 seconds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Until Display Reads</td>
<td><a href="#">P x x</a></td>
<td><a href="#">P 3 9</a></td>
<td><a href="#">###</a></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>
P31P & P32P Series
Proportional Regulator Dimensions

Catalog 0750-3 US
Global Air Preparation System

Dimensions are in mm (Inches)
Remotely 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:**

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

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</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 kg (lbs)</th>
<th>Part number†</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>120VAC Solenoid &amp; cable plug</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>0.37 (0.8)</td>
<td>P31DA92SGNC1F †</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>24VDC Solenoid &amp; cable plug</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>0.41 (0.9)</td>
<td>P31DA92SGNC2CN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>External air pilot operated</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>0.37 (0.8)</td>
<td>P31DA92PPN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>120VAC 30mm coil &amp; cable plug incl.</td>
<td>51 (108)</td>
<td>10 (150)</td>
<td>162.5² (6.3)</td>
<td>75 (2.9)</td>
<td>57.2 (2.2)</td>
<td>0.69 (1.5)</td>
<td>P32DA94SCNA3GN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>24VDC 30mm coil &amp; cable plug incl.</td>
<td>51 (108)</td>
<td>10 (150)</td>
<td>227.5¹ (8.9)</td>
<td>75 (2.9)</td>
<td>57.2 (2.2)</td>
<td>0.91 (2.0)</td>
<td>P32DA94SCNA2CN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>External air pilot operated</td>
<td>51 (108)</td>
<td>17 (250)</td>
<td>162.5² (6.3)</td>
<td>75 (2.9)</td>
<td>57.2 (2.2)</td>
<td>0.87 (1.9)</td>
<td>P32DA94PPN</td>
</tr>
</tbody>
</table>

‡ Includes exhaust silencer
† Standard part numbers shown in bold. For other models refer to Options chart above.
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"
Gauge port: P31D - 1/8" / P32D - 1/4"

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 Specifications

Body: Aluminum
Body cover: Polyester
Seals: Nitrile NBR

Mounting Brackets

<table>
<thead>
<tr>
<th>Description</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-bracket mounting kit</td>
<td>P3HKA00ML</td>
</tr>
<tr>
<td>Foot bracket mounting kit</td>
<td>P3HKA00MC</td>
</tr>
</tbody>
</table>

Note:
For solenoid operators and cable plugs (connectors) see pages 76 to 77.

Dimensions mm (inches)

P31D

For mounting brackets see page 56.
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:

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</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 kg (lbs)</th>
<th>Part number†</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>120VAC Solenoid &amp; cable plug</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>0.37 (0.8)</td>
<td>P31SA92SGNC1FN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>24VDC Solenoid &amp; cable plug</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>0.41 (0.9)</td>
<td>P31SA92SGNC2CN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>Internal air pilot operated</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>0.37 (0.8)</td>
<td>P31SA92Y0N</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>External air pilot (1/8&quot; threaded)</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>0.37 (0.8)</td>
<td>P31SA92PPN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>120VAC 30mm coil &amp; cable plug incl.</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>0.87 (1.5)</td>
<td>P32SA94SCNA3GN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>24VDC 30mm coil &amp; cable plug</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>0.90 (2.0)</td>
<td>P32SA94SCNA2CN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Internal air pilot operated</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>0.87 (1.5)</td>
<td>P32SA94Y0N</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>External air pilot (1/8&quot; threaded)</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>0.87 (1.5)</td>
<td>P32SA94PPN</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"
Gauge port: P31S - 1/8" / P32S - 1/4"

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

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

Material Specifications

Body: Aluminum
Body cover: Polyester
Seals: Nitrile NBR

Mounting Brackets

Description Part number
L-bracket mounting kit P3HKA00ML
Foot bracket mounting kit P3HKA00MC

Note:
For solenoid operators and cable plugs (connectors) see pages 76 to 77.

Dimensions mm (inches)

P31S

166 (6.53)
136 (5.35)
37 (1.45)

P32S

174.5 (6.87)
64.5 (2.53)

Soft Start Function:

1. Start signal
2. Switching time delay
3. Gradual pressure build up
4. Operating pressure p1 = p2

For mounting brackets see page 56.
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>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P31TA92SGNC1FN</td>
<td>120VAC Solenoid &amp; cable plug</td>
</tr>
<tr>
<td>P31TA92SGNC2CN</td>
<td>24VDC Solenoid &amp; cable plug</td>
</tr>
<tr>
<td>P31TA92PPN</td>
<td>External air pilot operated</td>
</tr>
<tr>
<td>P32TA94SCNA3GN</td>
<td>120VAC 30mm coil &amp; cable plug incl.</td>
</tr>
<tr>
<td>P32TA94SCNA2CN</td>
<td>24VDC 30mm coil &amp; cable plug incl.</td>
</tr>
<tr>
<td>P32TA94PPN</td>
<td>External air pilot operated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</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 (kg lbs)</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>120VAC Solenoid &amp; cable plug</td>
<td>17 (36)</td>
<td>10 (150)</td>
<td>115.6 (4.5)</td>
<td>57 (2.2)</td>
<td>10 (150)</td>
<td>0.37 (0.8)</td>
<td>P31TA92SGNC1FN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>24VDC Solenoid &amp; cable plug</td>
<td>17 (36)</td>
<td>10 (150)</td>
<td>1681 (6.5)</td>
<td>57 (2.2)</td>
<td>10 (150)</td>
<td>0.41 (0.9)</td>
<td>P31TA92SGNC2CN</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>External air pilot operated</td>
<td>17 (36)</td>
<td>17 (250)</td>
<td>115.6 (4.5)</td>
<td>57 (2.2)</td>
<td>10 (150)</td>
<td>0.37 (0.8)</td>
<td>P31TA92PPN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>120VAC 30mm coil &amp; cable plug incl.</td>
<td>46 (97)</td>
<td>10 (150)</td>
<td>162.5 (6.3)</td>
<td>88 (3.4)</td>
<td>57.2 (2.2)</td>
<td>0.87 (1.9)</td>
<td>P32TA94SCNA3GN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>24VDC 30mm coil &amp; cable plug incl.</td>
<td>46 (97)</td>
<td>10 (150)</td>
<td>227.5 (8.9)</td>
<td>88 (3.4)</td>
<td>57.2 (2.2)</td>
<td>0.91 (2.0)</td>
<td>P32TA94SCNA2CN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>External air pilot operated</td>
<td>46 (97)</td>
<td>17 (250)</td>
<td>162.5 (6.3)</td>
<td>75 (2.9)</td>
<td>57.2 (2.2)</td>
<td>0.87 (1.9)</td>
<td>P32TA94PPN</td>
</tr>
</tbody>
</table>

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

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

**Gauge port:** P31T - 1/8” / P32T - 1/4”

**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 Specifications**

**Body:** Aluminum

**Body cover:** Polyester

**Seals:** Nitrile NBR

**Mounting Brackets**

<table>
<thead>
<tr>
<th>Description</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-bracket mounting kit</td>
<td>P3HKA00ML</td>
</tr>
<tr>
<td>Foot bracket mounting kit</td>
<td>P3HKA00MC</td>
</tr>
</tbody>
</table>

**Note:**
For solenoid operators and cable plugs (connectors) see pages 76 to 77.

**Dimensions mm (inches)**

**P31T**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>37 (1.45)</td>
<td></td>
</tr>
<tr>
<td>Width</td>
<td>136 (5.35)</td>
<td></td>
</tr>
<tr>
<td>Depth</td>
<td>166 (6.53)</td>
<td></td>
</tr>
<tr>
<td>1/8” Gauge Port</td>
<td>84 (3.30)</td>
<td></td>
</tr>
<tr>
<td>1/4” Gauge Port</td>
<td>30.5 (1.20)</td>
<td></td>
</tr>
</tbody>
</table>

**Soft Start Function:**

1. **Start signal**
2. **Switching time delay**
3. **Gradual pressure build up**
4. **Operating pressure p₂ (p₁)**

**Flow Charts**

- **P31TA 1/4” Soft Start & Dump Valve**
  - Inlet Pressure - 6.3 bar (91.3 psig)
  - Secondary Pressure - bar
  - Secondary Pressure - (psig)
  - Flow - dm³/s (scfm)

- **P32TA 1/2” Soft Start & Dump Valve**
  - Inlet Pressure - 6.3 bar (91.3 psig)
  - Secondary Pressure - bar
  - Secondary Pressure - (psig)
  - Flow - dm³/s (scfm)

For mounting brackets see page 56.
Redundant Safety Exhaust Valves

**Symbol**

- Proven control reliable technology with integrated soft start
- Soft start application of air to the system when energized; can be adjusted for slower or faster buildup of system pressure
- Rapid exhaust of downstream air when de-energized to remove stored energy and allow safe access
- Memory, monitoring, and air flow control functions are integrated into two identical valve elements. Valves lock-out if asynchronous movement of valve elements occurs during actuation or de-actuation, resulting in a residual outlet pressure of less than 1% of supply.
- Reset can only be accomplished by the integrated electrical (solenoid) reset. Cannot be reset by removing and re-applying supply pressure.
- Basic 3/2 normally closed valve function: Dirt tolerant, wear compensating poppet design for quick response and high flow capacity.
- LED indicators of main solenoid operation, reset solenoid operation, and status indicator condition.
- Optional transducer for monitoring of downstream pressure in the system.
- Dual exhaust silencers included.
- Not for use with clutch / brake applications.
- For use in conjunction with a safety relay or safety PLC.

### Options:

**P33T Schematic**

<table>
<thead>
<tr>
<th>Options</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P33TA</strong></td>
<td>9</td>
</tr>
<tr>
<td>Body size</td>
<td>Standard P33T</td>
</tr>
<tr>
<td>Port size</td>
<td>3/4* 6</td>
</tr>
<tr>
<td>Operator</td>
<td>15mm Solenoid G</td>
</tr>
<tr>
<td>Solenoid</td>
<td>Dual M12 connector without transducer F</td>
</tr>
<tr>
<td>Voltage</td>
<td>24VDC with manual override 2CN</td>
</tr>
<tr>
<td>Port size</td>
<td>Transducer 1 to 2 2 to 3</td>
</tr>
<tr>
<td>Inlet</td>
<td>3/4 3/4</td>
</tr>
<tr>
<td>Outlet</td>
<td>w/o transducer 8.5 136.0 (5.35) 17.36 (3.88) 7.3 (16.1) P33TA96RG4F2CN</td>
</tr>
<tr>
<td>Transducer</td>
<td>w/ transducer 8.5 136.0 (5.35) 17.36 (3.88) 7.4 (16.3) P33TA96RG4G2CN</td>
</tr>
</tbody>
</table>

* NPT port threads. For BSPP threads, replace “9” in the part number with a “1”.*

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Catalog 0750-3 US (Revised 07-14-15)
Global Air Preparation System

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

Pilot Solenoids: According to VDE 0580
Enclosure rating: According to DIN 400 50 IP65
Connector socket: According to DIN 43650 Form A
Three solenoids, rated for continuous duty

Standard voltages: 24VDC
Power consumption (each solenoid): 1.2 Watts on DC
Enclosure rating: IP65, IEC 60529
Electrical connection: M12, 5-pin
Ambient temperature: 15°F to 122°F (-10°C to 50°C)
Media temperature: 40°F to 175°F (4°C to 80°C)
Flow media: Compressed Air, Filtered to Minimum 40 Micron
Inlet pressure: 30 to 150 PSIG (2 to 10 bar)
Pressure switch rating (Status indicator): 5 Amps at 30 Volts DC.
Monitoring: Dynamically, cyclically, internally during each actuating and de-actuating movement. Monitoring function has memory and requires an overt act to reset unit after lockout.
Mounting orientation: Vertically with pilot solenoids on top
Port threads: 3/4 NPT, 3/4 BSPP
Control reliable: Category 4 (Cat 4); performance Level e (PLe) in accordance with Machine directive - EN ISO 13849-1 (Certification pending)

Valve Wiring

5-Pin “A” Code Female Connector (Feedback)
- BROWN 1, (+24 Volts DC)
- BLACK 4 (N.C. Status Contact)
- GRAY (Equip Ground)
- BLUE (Common)

5-Pin “A” Code Male Connector (Control Signal)
- WHITE 2 (N.O. Status Contact)
- BROWN (+24 Volts DC)
- GRAY (Reset)
- BLUE (Sol 2)
- BLACK (Sol 1)

5-Pin “A” Code Female Connector (Digital Pressure Transducer Wiring (optional))
- Input 1, Power +
- Analog Output Signal
- Input 2, Power +
- Digital Output Signal
- Digital Output 2 Signal

5-Pin “A” Code Male Connector (Digital Pressure Transducer Wiring (optional))
- WHITE 2 (Sol 2)
- GRAY (Reset)
- BROWN (+24 Volts DC)
- BLACK (Sol 1)
- BLUE (Common)

Display Angle Mounting Bracket
- 19.1 (0.75)
- 6.4 (0.25)
- 11.1 (0.44)
- 55.5 (2.2)
- 46.2 (1.82)
- 3.0 (0.12)
- 81.3 (3.2)
- 76.2 (3.0)
- 81.3 (3.2)
- 81.3 (3.2)
- 81.3 (3.2)

Dimensions mm (inches)

Repair and Service Kits

<table>
<thead>
<tr>
<th>Description</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black grill</td>
<td>1834C05-001</td>
</tr>
<tr>
<td>Body connector</td>
<td>P32KA00CB</td>
</tr>
<tr>
<td>Cables</td>
<td></td>
</tr>
<tr>
<td>M12, 5-pin female to flying lead cable, TPE; 2 m (6.6 ft)</td>
<td>RKC 4.5T-2/S1587</td>
</tr>
<tr>
<td>M12, 5-pin male to flying lead cable, TPE; 2 m (6.6 ft)</td>
<td>RSC 4.5T-2/S1587</td>
</tr>
<tr>
<td>Port block kit</td>
<td></td>
</tr>
<tr>
<td>1/2 NPT</td>
<td>P32KA94CP</td>
</tr>
<tr>
<td>3/4 NPT</td>
<td>P32KA96CP</td>
</tr>
<tr>
<td>1/2 BSPP</td>
<td>P32KA14CP</td>
</tr>
<tr>
<td>3/4 BSPP</td>
<td>P32KA16CP</td>
</tr>
<tr>
<td>1/2 BSPT</td>
<td>P32KA24CP</td>
</tr>
<tr>
<td>3/4 BSPT</td>
<td>P32KA26CP</td>
</tr>
<tr>
<td>Pressure switch</td>
<td>1227A30-001</td>
</tr>
<tr>
<td>Pressure transducer (Optional)</td>
<td>1232H30-001</td>
</tr>
<tr>
<td>T-bracket w/ body connector</td>
<td>P32KA00MT</td>
</tr>
<tr>
<td>T-bracket (Fits to body connector or port block)</td>
<td>P32KA00MB</td>
</tr>
<tr>
<td>Silencer(s) 3/4&quot;</td>
<td>5500A5013</td>
</tr>
<tr>
<td>Solenoid (Main &amp; reset)</td>
<td>1527B7916-001</td>
</tr>
<tr>
<td>Square flush mounting gauge kit, 0-160 psig</td>
<td>K4511SCR160</td>
</tr>
</tbody>
</table>

Dimensions mm (inches)

Note: Mounting bracket and installation screws included and required to install unit in the system.
Valve de-actuated (ready-to-run):

The flow of inlet air pressure to the inlet chamber of the main valve internals is restricted by a fixed orifice and an adjustable flow control as well as an air piloted 2-way normally closed poppet valve. The flow of inlet air pressure into the crossover passages is restricted by the size of the passage between the stem and the valve body opening. Flow is sufficient to quickly pressurize pilot supply / timing chambers 1 and 2. The inlet poppets prevent air flow from crossover passages into the outlet chamber. Air pressure acting on the inlet poppets and return pistons securely hold the valve elements in the closed position. (Reset adapter omitted for clarity.)

The green “Status” LED will be illuminated indicating the valve is operational.

Valve actuated:

Energizing the pilot valves simultaneously applies pressure to both pistons, forcing the internal parts to move to their actuated (open) position, where inlet air flow to crossover passages is fully open, inlet poppets are fully open and exhaust poppets are fully closed. The outlet is then pressurized at a rate allowed by the fixed orifice and the adjusted flow control. Once the air pressure in the outlet chamber reaches approximately 60% of inlet pressure, the air piloted 2-way normally closed poppet valve opens fully and the pressure in the inlet, crossovers, outlet, and timing chambers are quickly equalized. The adjustable flow control will control the time it takes for the outlet air pressure to reach approximately 60% of inlet pressure.

De-energizing the pilots quickly causes the valve elements to return to the ready-to-run position.

Solenoid 1, Solenoid 2 and the green “Status” LED’s will be illuminated indicating the valve is operating properly.

Soft start function:

1. Start signal
2. Switching time delay
3. Gradual pressure build up
4. Operating pressure p₁ (=p₂)
Valve fault and lock-out:

Whenever the valve elements operate in a sufficiently asynchronous manner, either on actuation or de-actuation, the valve will move to a locked-out position. In the locked-out position, one crossover and its related timing chamber will be exhausted, and the other crossover and its related timing chamber will be fully pressurized. The valve element (side 2) that is partially actuated has pilot air available to fully actuate it, but no air pressure on the return piston to fully de-actuate the valve element.

Air pressure in the crossover acts on the differential of side 2 stem diameters creating a latching force. Side 1 is in a fully closed position, and has no pilot air available to actuate, but has full pressure on the inlet poppet and return piston to hold the element in the fully closed position. Inlet air flow on side 1 into its crossover is restricted, and flows through the open inlet poppet on side 2, through the outlet into the exhaust port, and from the exhaust port to atmosphere. Residual pressure in the outlet is less than 1% of inlet pressure. The return springs are limited in travel, and can only return the valve elements to the intermediate (locked-out) position. Sufficient air pressure acting on the return pistons is needed to return the valve elements to a fully closed position.

The red “Status” LED will be illuminated indicating the valve in fault and lock-out must be reset.

Valve reset (electrical or manual):

The reset procedure is as follows:

• Remove the electrical signals to the main coils
• Ensure there is air supplied to the valve
• Energize the reset solenoid for a minimum of 200 ms
• Allow a 200 ms delay after de-energizing the reset solenoid and re-energizing the main solenoids

The valve will remain in the locked-out position, even if the inlet air supply is removed and re-applied.

A remote reset signal must be applied to reset the valve. A momentary, remote electrical signal must be applied to the reset solenoid to apply pressure to the reset pistons in the valve. Actuation of the reset piston physically pushes the main valve elements to their closed position. Inlet air fully pressurizes the crossovers and holds the inlet poppets on seat. Actuation of the reset piston opens the reset poppet, thereby, immediately exhausting pilot supply air, thus, preventing valve operation during reset (Reset adapter added to illustration.). De-actuation of reset pistons causes the reset poppets to close and pilot supply to fully pressurize. Reset air pressure is applied by a 3/2 normally closed solenoid, or a manual push button mounted on the reset adapter in the top valve cover.

The green “Status” LED will be illuminated once the valve is reset.
Solenoid Operators - CNOMO

Technical data -
Solenoid operators, coil combinations

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Part number</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct current</td>
<td>24VDC</td>
<td>P2FCB449</td>
</tr>
<tr>
<td>Alternative current</td>
<td>110V 50Hz, 120V 60Hz</td>
<td>P2FCB453</td>
</tr>
</tbody>
</table>

Transients

Interrupting the current through the solenoid coil produces momentary voltage peaks which, under unfavorable 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

Encapsualtion material: Thermoplastic as standard Duroplast for M12 connection

Spare Base Solenoid Pilot Operator
CNOMO NC

<table>
<thead>
<tr>
<th>Description</th>
<th>Part number</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 Coils with M12 Connection

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Part number</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct current</td>
<td>24VDC</td>
<td>P2FC6449</td>
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</tbody>
</table>

Solenoid Coils with DIN A or Industrial B Connection

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Part number</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct current</td>
<td>24VDC</td>
<td>P2FCB449</td>
</tr>
<tr>
<td>Alternative current</td>
<td>110V 50Hz, 120V 60Hz</td>
<td>P2FCB453</td>
</tr>
</tbody>
</table>

**P31 Series only - Solenoid coils 15mm NC**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Order code</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct current</td>
<td>PS2982B49P</td>
<td>0.038</td>
</tr>
<tr>
<td>Alternative current</td>
<td>PS2982B53P</td>
<td>0.038</td>
</tr>
</tbody>
</table>

**Working pressure**
- 0 to 10 bar

**Ambient temperature**
- -10°C to 60°C

**Power (DC)**
- 4.8W

**Power (AC)**
- 8.5VA

**Voltage tolerance**
- +/-10%

**Duty cycle**
- 100%

**Insulation class**
- F

**Electric connection**
- B Industrial DIN 43650A

**Protection**
- IP65

**Approval**
- UL/CSA

**Working media**
- All neutral media such as compressed air

* Limited to 50°C if use with 100% duty cycle
Solenoid Connectors / Cable Plugs EN175301-803

<table>
<thead>
<tr>
<th>Description</th>
<th>Part number</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard screw</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard IP65 without flying lead</td>
<td>PS2429BP</td>
<td>PS2028BP</td>
</tr>
<tr>
<td>With LED and protection 24VAC/DC</td>
<td>PS243079BP</td>
<td>PS203279BP</td>
</tr>
<tr>
<td>With LED and protection 110VAC</td>
<td>PS243083BP</td>
<td>PS203283BP</td>
</tr>
<tr>
<td>With cable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard with 2m cable IP65</td>
<td>PS2429JBP</td>
<td>PS2028JCP</td>
</tr>
<tr>
<td>24VAC/DC, 2m cable LED and protection IP65</td>
<td>PS2430J79BP</td>
<td>PS2032J79CP</td>
</tr>
<tr>
<td>110VAC/DC, 2m cable LED and protection IP65</td>
<td>PS2430J83BP</td>
<td>PS2032J83CP</td>
</tr>
</tbody>
</table>

**Solenoid coil dimensions mm (inches)**

<table>
<thead>
<tr>
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<th>PS2429BP</th>
<th>PS2028BP</th>
</tr>
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<tbody>
<tr>
<td>15mm</td>
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<td></td>
</tr>
<tr>
<td>23.65 (.93)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 (.59)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.5 (1.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.4 (.13)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40 (1.57)</td>
<td></td>
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</tr>
<tr>
<td>30 x 30mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 (1.18)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36 (.142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45 (1.77)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22 (0.87)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 (2.36)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22 x 30mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 (1.18)</td>
<td></td>
<td></td>
</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>60 (2.36)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Electrical schematics**

- PS2028BP
- PS243079BP
- PS203279BP
- PS2430J79BP
- PS2032J79CP
- PS2430J83BP
- PS2032J83CP
- PS2932BP
- PS294679BP
- PS294683BP
- PS2932JBP
- PS2946J79BP
- PS2946J83BP

**Cable plug dimensions mm (inches)**

- 22mm Form B Industrial Cable plugs
  - PS2429BP

- 30mm DIN 43650A Cable plugs
  - PS2028BP
Catalog 0750-3 US  (Revised 12-16-15)

Global Air Preparation System

Ball Valve / Lockout Valve

Features

The Ball / Lockout Valve shuts off downstream line pressure in the closed position with a 90° turn of the handle. In the closed position, inlet air pressure is blocked and downstream / system air is exhausted through a threaded port. To prevent unauthorized adjustment, the padlock slide may be assembled on either side. It is recommended that this slide is installed after final system assembly.

The Safety Lockout valves conform to OSHA #29 CFR part 1910 — control of hazardous energy source (lockout / tagout).

Note: This padlock slide is a permanent assembly and may not be removed later, any unauthorized tampering will void any warranty claims. The valve can only be locked in the closed position.

Specifications

Operating temperature: -40°C to 80°C (-40°F to 176°F)
Max. supply pressure: 17 bar (250 psig)
Port size: BSPP / BSPT / NPT 1/4, 3/8, 1/2, 3/4
Weight: P31: 0.15 kg (0.33 lbs)
P32: 0.36 kg (0.79 lbs)
P33: 0.55 kg (1.21 lbs)

Material Specifications

Body: Aluminum
Seals: PTFE
Ball: P31 Stainless Steel
P32 / P33 Stainless Steel
Lockout Tab: Zinc Plated Steel
Screw: Zinc Plated Steel

Dimensions mm (inches)

Ordering Information

<table>
<thead>
<tr>
<th>Model</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”</td>
<td>1/4”</td>
<td>NPT</td>
<td>20 (42.4)</td>
<td>P31VB92LBNN</td>
</tr>
<tr>
<td>P32</td>
<td>3/8”</td>
<td>1/4”</td>
<td>NPT</td>
<td>90 (190.7)</td>
<td>P32VB93LBNN</td>
</tr>
<tr>
<td></td>
<td>1/2”</td>
<td>1/4”</td>
<td>NPT</td>
<td>122 (258.5)</td>
<td>P32VB94LBNN</td>
</tr>
<tr>
<td>P33</td>
<td>1/2”</td>
<td>1/2”</td>
<td>NPT</td>
<td>265 (561.5)</td>
<td>P33VB94LBNN</td>
</tr>
<tr>
<td></td>
<td>3/4”</td>
<td>1/2”</td>
<td>NPT</td>
<td>320 (678)</td>
<td>P33VB96LBNN</td>
</tr>
</tbody>
</table>

For thread type: BSPP 1, BSPT 2, NPT 9

Symbol

P31, P32, P33 Series

Ball Valve / Lockout Valve

Catalog 0750-3 US  (Revised 12-16-15)

Global Air Preparation System

Ball Valve / Lockout Valve

Features

The Ball / Lockout Valve shuts off downstream line pressure in the closed position with a 90° turn of the handle. In the closed position, inlet air pressure is blocked and downstream / system air is exhausted through a threaded port. To prevent unauthorized adjustment, the padlock slide may be assembled on either side. It is recommended that this slide is installed after final system assembly.

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Note: This padlock slide is a permanent assembly and may not be removed later, any unauthorized tampering will void any warranty claims. The valve can only be locked in the closed position.

Specifications

Operating temperature: -40°C to 80°C (-40°F to 176°F)
Max. supply pressure: 17 bar (250 psig)
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Seals: PTFE
Ball: P31 Stainless Steel
P32 / P33 Stainless Steel
Lockout Tab: Zinc Plated Steel
Screw: Zinc Plated Steel

Dimensions mm (inches)

Ordering Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Port size</th>
<th>Exhaust port</th>
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<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”</td>
<td>1/4”</td>
<td>NPT</td>
<td>20 (42.4)</td>
<td>P31VB92LBNN</td>
</tr>
<tr>
<td>P32</td>
<td>3/8”</td>
<td>1/4”</td>
<td>NPT</td>
<td>90 (190.7)</td>
<td>P32VB93LBNN</td>
</tr>
<tr>
<td></td>
<td>1/2”</td>
<td>1/4”</td>
<td>NPT</td>
<td>122 (258.5)</td>
<td>P32VB94LBNN</td>
</tr>
<tr>
<td>P33</td>
<td>1/2”</td>
<td>1/2”</td>
<td>NPT</td>
<td>265 (561.5)</td>
<td>P33VB94LBNN</td>
</tr>
<tr>
<td></td>
<td>3/4”</td>
<td>1/2”</td>
<td>NPT</td>
<td>320 (678)</td>
<td>P33VB96LBNN</td>
</tr>
</tbody>
</table>

For thread type: BSPP 1, BSPT 2, NPT 9

Symbol

P31, P32, P33 Series

Ball Valve / Lockout Valve
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

Ordering Information

<table>
<thead>
<tr>
<th>Model</th>
<th>In / Out port size</th>
<th>Auxiliary port size top</th>
<th>Auxiliary port size bottom</th>
<th>Thread type</th>
<th>Part number</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

Material Specifications

Body: Aluminum

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 (inches)

P31

- Inlet Port 1/4" (1.61"
- Outlet Port 1/4"
- Top Port 1/4"
- Bottom Port 1/2"

P32

- Inlet Port 1/4"
- Outlet Port 1/4"
- Top Port 1/2"
- Bottom Port 1/2"

P33

- Inlet Port 3/4"
- Outlet Port 3/4"
- Top Port 3/4"
- Bottom Port 1/2"
**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)

<table>
<thead>
<tr>
<th>Size</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8 NPT</td>
<td>P31KA91CP</td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>P31KA92CP</td>
</tr>
<tr>
<td>3/8 NPT</td>
<td>P31KA93CP</td>
</tr>
<tr>
<td>1/8 BSPP</td>
<td>P31KA11CP</td>
</tr>
<tr>
<td>1/4 BSPP</td>
<td>P31KA12CP</td>
</tr>
<tr>
<td>3/8 BSPP</td>
<td>P31KA13CP</td>
</tr>
</tbody>
</table>

**Port Block Kit w/ T-Bracket**
(O-ring not shown)

<table>
<thead>
<tr>
<th>Size</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8 NPT</td>
<td>P31KA91CN</td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>P31KA92CN</td>
</tr>
<tr>
<td>3/8 NPT</td>
<td>P31KA93CN</td>
</tr>
<tr>
<td>1/8 BSPP</td>
<td>P31KA11CN</td>
</tr>
<tr>
<td>1/4 BSPP</td>
<td>P31KA12CN</td>
</tr>
<tr>
<td>3/8 BSPP</td>
<td>P31KA13CN</td>
</tr>
</tbody>
</table>

**Angle Bracket**
(Fits to regulator and filter/regulator body)
P31KB00MR
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

Angle Bracket
(Fits to regulator and filter/regulator bonnet)
P32KB00MR

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

T-Bracket
(fits to body connector or port block)
P32KA00MB

---

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

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>
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<th>Series</th>
<th>Description</th>
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<tbody>
<tr>
<td>P31</td>
<td>Panel Mount Nut (Plastic)</td>
<td>P31KA00MP</td>
</tr>
<tr>
<td>P32</td>
<td></td>
<td>P32KA00MP</td>
</tr>
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<td>P33</td>
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<td>Panel Mount Nut (Aluminum)</td>
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<td>P32 / P33</td>
<td>Auto Drain Kit</td>
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<td>P31</td>
<td>Differential Pressure Indicator Kit</td>
<td>P31KB00RQ</td>
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<td>Drip Control Assembly Kit</td>
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<td>Fill Plug Kit</td>
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<td>Lubricator - Plastic Bowl w/ Bowl Guard No Drain</td>
<td>P31KB00BGN</td>
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<td>P32KB00BGN</td>
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### Global Air Preparation System

#### Kits & Accessories

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<th>Series</th>
<th>Description</th>
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<td>P31</td>
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<td>P31KB00BMN</td>
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<td>P32KB00BMN</td>
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<td>Lubricator - Metal Bowl w/ Sight Gauge No Drain</td>
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<td>Metal Bowl w/o Sight Gauge &amp; Manual Drain</td>
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<td>P33KA00BMM</td>
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<td>Metal Bowl w/o Sight Gauge &amp; Pulse Drain</td>
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<td>Metal Bowl w/o Sight Gauge &amp; Auto Drain</td>
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<td>Metal Bowl w/ Sight Gauge &amp; Auto Drain</td>
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<td>Plastic Bowl w/ Bowl Guard &amp; Manual Drain</td>
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<td>Regulator - Non-Relieving Repair Kit</td>
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<td>Regulator - Main Adjusting Spring 0-2 bar (0-30 psig) Kit</td>
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<td>Regulator - Main Adjusting Spring 0-4.1 bar (0-60 psig) Kit</td>
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<td>Regulator - Main Adjusting Spring 0-8.6 bar (0-125 psig) Kit</td>
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<td>Regulator - Main Adjusting Spring 0-17 bar (0-250 psig) Kit</td>
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<td>P31</td>
<td>Square Flush Mounting Gauge Kit</td>
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<td>Square Mounting Gauge with Adapter Kit</td>
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<td>0-60 psig</td>
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<td>0-160 psig</td>
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<td>P31</td>
<td>1&quot; Round Gauge</td>
<td>0-60 psig / 0-4.1 bar</td>
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<td>0-160 psig / 0-10 bar</td>
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<td>P31</td>
<td>40mm Round Gauge</td>
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<td>0-160 psig / 0-10 bar</td>
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<td>Body Connector O-ring (Replacement kit)</td>
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<td>(Pack of 10)</td>
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<td>Tamperproof Knob Kit</td>
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<td>P31</td>
<td>Tamperproof Lockable Kit</td>
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Pressure Switch – PPS1

- Long life elastomer diaphragm
- High quality snap action switch
- Field adjustable
- Easily customized
- Quick delivery
- NEMA 4, 13

Operation

The pressure switch monitors the air pressure in your pneumatic system. When the pressure in your system either drops below or exceeds the set point pressure, an electrical output is given.

Options:

<table>
<thead>
<tr>
<th>PPS1</th>
<th>1</th>
<th>C</th>
<th>3</th>
<th>R</th>
<th>HM</th>
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<td>Circuit</td>
<td>SPDT</td>
<td>C</td>
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</table>

* Factory setting for calibration purposes

Note: Switch is field adjustable.

Definitions and Terminology

Repeatability — Accuracy is the maximum allowable set point deviation of a single pressure or temperature switch under one given set of environmental and operational conditions.

Single Pole Double Throw (SPDT) Switching element — A SPDT switching element has one normally open, one normally closed and one common terminal. Three terminals mean that the switch can be wired with the circuit either normally open (NO), or normally closed (NC), or both.

Dead Band — The dead band, sometimes referred to as “differential” or “hysteresis”, is the change in pressure between actuation and deactuation set points.

Specifications

Set point tolerance ±1 PSI or 5% (.07 bar)

Temperature range -40°F to 220°F (−40°C to 105°C)

Max. operating pressure (Ranges 1, 2, 3) 250 PSI (17.2 bar)

Max. operating pressure (Range 4) 2000 PSI (137.9 bar)

Deadband 10 - 20% of set pressure

Current rating 3A @ 125 VAC

2A @ 30 VDC (Resistive)

Circuit form SPDT Standard

Cycle life 1 Million

Material Specifications

Adjustment knob Anodized aluminum

Body Brass

Diaphragm Nitrile

Options:

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<thead>
<tr>
<th>PPS1</th>
<th>1</th>
<th>C</th>
<th>3</th>
<th>R</th>
<th>HM</th>
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<td>2</td>
<td>6-30 PSI</td>
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<td>3</td>
<td>20-120 PSI</td>
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<td>4</td>
<td>100-400 PSI†</td>
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† Only available in 1/4” NPT
1. GENERAL INSTRUCTIONS

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

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


1.4. Distribution: Provide a copy of this safety guide to each person that is responsible for selection, installation, or use of Valves, FRLs or Vacuum products. Do not select, or use 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.
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 or FRL sold, or by calling 1-800-CPARKER, or 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.
- Installation, servicing, and / or conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversions air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or if the product does not operate properly, do not put product or system into use.
- Warnings and specifications on the product should not be covered or painted over. If masking is not possible, contact your local representative for replacement labels.

4.9. Putting Serviced System Back into Operation: Follow the guidelines above and all relevant Installation and Maintenance Instructions supplied with the valve FRL or vacuum component to insure proper function of the system.
The goods, services or work (referred to as the “Products”) offered by Parker-Hannifin Corporation, its subsidiaries, divisions, and authorized distributors (“Seller”) are offered for sale at prices indicated in the offer, or as may be established by Seller. The offer to sell the Products and acceptance of Seller’s offer by any customer (“Buyer”) is contingent upon, and will be governed by all of the terms and conditions contained in this offer of sale. Buyer’s order for any products specified in Buyer’s purchase document or Seller’s offer, proposal or quote (“Quote”) attached to the purchase order, when communicated to Seller verbally, or in writing, shall constitute acceptance of this offer.

1. Terms and Conditions. Seller’s willingness to offer Products for sale or accept an order for the delivery of the Products is contingent upon the terms and conditions contained in this offer of sale or any newer version of the same, published by Seller electronically at www.parker.com/terms. Seller objects to any contrary or additional terms or conditions of Buyer’s order or any other document or other communication issued by Buyer.

2. Price: Payment. Prices stated on Seller’s Quote are valid for thirty (30) days, except as explicitly otherwise stated therein, and do not include any sales, use, or other taxes or duties unless specifically stated. Seller reserves the right to modify prices to adjust for any raw material price fluctuations. Unless otherwise specified by Seller, all prices are F.C.A. Seller’s prices are subject to change and shall immediately expire with any credit approved by Seller for all purchases is due thirty (30) days from the date of invoice (or such date as may be specified by Seller’s Credit Department). Unpaid invoices beyond the specified payment date interest at the rate of 1.5% per month or the maximum allowable rate under applicable law.

3. Shipment; Delivery; Title and Risk of Loss. All delivery dates are approximate. Seller is not responsible for damages resulting from any delay. Regardless of the manner of shipment, delivery occurs and title and risk of loss or damage pass to Buyer, upon placement of the Products with the shipment carrier at Seller’s facility. Unless otherwise stated, Seller may exercise its judgment in choosing the carrier and means of delivery. No shipment of order at Buyers’ request beyond the respective dates indicated will be made at no extra charge, and will indemnify, defend and hold Seller harmless from any loss and additional expense. Buyer shall be responsible for any additional shipping charges 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 (12) months from the date of delivery or 2,000 hours of normal use, whichever occurs first. All prices are based upon the exclusive limited warranty stated above, and upon the DISCLAIMER OF WARRANTY. THIS WARRANTY IS LIMITED TO THE SOLE AND ENTIRE WARRANTY PERTAINING TO PRODUCTS PROVIDED, SELLER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS AND IMPLIED, INCLUDING DESIGN, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

5. Claims; Commencement of Actions. Buyer shall promptly inspect all Products upon receipt. No claims for shortages will be allowed unless reported to the Seller within ten (10) days from the date of receipt or other claims against Seller will be upset unless asserted in writing within thirty (30) days after delivery. Buyer shall notify Seller of any alleged breach of warranty within thirty (30) days after the date the defect is or should have been discovered by Buyer. No claim or action against Seller based upon breach of contract or any other theory, including tort, negligence, or otherwise must be commenced within twelve (12) months from the date of the alleged breach or other alleged event, without regard to the date of discovery.

6. LIMITATION OF LIABILITY. IN THE EVENT OF A BREACH OF WARRANTY, SELLER’S RESPONSIBILITY, REPAIR OR REPLACE A DEFECTIVE PRODUCT, OR REFUND THE PURCHASE PRICE WITHIN A REASONABLE PERIOD OF TIME. IN NO EVENT IS SELLER LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR AS A 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, WHETHER BASED ON CONTRACT, TORT, OR ANY OTHER RULE OF LAW. IN NO EVENT WILL SELLER BE LIABLE FOR ANY LOSS OR DAMAGE TO PERSONAL OR PROPERTIES, INCLUDING ANY LOSS OR DAMAGE TO PROPERTY OF SELLER; (b) any act or omission, negligent or otherwise, of Buyer; (c) Buyer’s use of patterns, designs, or specifications furnished by Buyer to manufacture Products; or (d) Buyer’s failure to comply with these terms and conditions. Seller shall not indemnify Buyer under any circumstance except as otherwise provided.

10. Impossibility and Indemnity. Buyer shall indemnify, defend and hold Seller harmless from any losses, claims, liabilities, damages, lawsuits, judgments and costs (including attorney fees and defense costs), whether for personal injury, property damage, patent, trademark or copyright infringement, or any other claim or cause of action, whether asserted by Buyer, Buyer’s employees, or any other person, arising out of: (a) improper selection, application, design, specification or other misuse of Products purchased by Buyer from Seller; (b) any act or omission, negligent or otherwise, of Buyer; (c) Buyer’s use of patterns, plans, drawings, or Seller’s specifications furnished by Buyer to manufacture Products; or (d) Buyer’s failure to comply with these terms and conditions. Seller shall not indemnify Buyer under any circumstance except as otherwise provided.

12. Cancellation and Changes. Buyer may not cancel or modify or cancel any order after shipment, and upon written notification from Seller, Buyer represents and agrees that Buyer will not make any payment or give anything of value, directly or indirectly to any governmental official, any foreign political party or official thereof, any candidate for foreign office, or any person, firm, or corporation influencing such person to purchase Products or otherwise benefit the business of Seller.

14. Force Majeure. Seller does not assume the risk and is not liable for delay or failure to perform any of Seller’s obligations by reason of events or circumstances beyond its reasonable control (hereinafter “Events of Force Majeure”). Events of Force Majeure shall include without limitation: accidents, strikes or labor disputes, acts of any government or government agency, acts of nature, delays or failures in delivery from carriers or suppliers, shortages of materials, or any other cause beyond Seller’s reasonable control.
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