Parker Global Air Preparation System

Catalog 0750-3 US

ENGINEERING YOUR SUCCESS.
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 aluminum up to 0.4% and in copper alloys up to 4% and in circuit board solder) must not exceed 0.1% by weight.

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

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

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

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

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

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

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

Global Air Preparation products are RoHS compliant.

- Filters – ISO 5782-1 & ISO 5782-2: 1999

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

WARNING

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.

Offer 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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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.

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.

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

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

Note: Water and oil, in vapor form, pass through general purpose particulate filters.

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

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

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

Refrigeration and desiccant dryers lower the air’s dew point by removing water vapor, 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

Filter / Regulator

Quick release bayonet-type integral bowl and bowl guard assembly

Bowl guard with multiple viewing slots

Pressure gauge

Manual drain with pipe-away, auto drain available

Ball Valve

Padlock slide

Soft Start / Dump Valve

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

NPT, BSPP or BSPT porting available

Coalescing Filter

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

Aluminum body
**Air Preparation**

**P31 Mini Series**

40mm body width  
1/4" Ported  

Flows up to:  
- Filter: $12$ (25) dm³/s (SCFM)  
- 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:  
- Filter: $39$ (82) dm³/s (SCFM)  
- 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:  
- Filter: $40$ (85) dm³/s (SCFM)  
- 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.

<table>
<thead>
<tr>
<th>OSP-P</th>
<th>Isys Micro</th>
<th>Moduflex</th>
</tr>
</thead>
</table>

Compact Series Complimentary Products

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

<table>
<thead>
<tr>
<th>Isys ISO</th>
<th>Isys HA / HB</th>
<th>P1D</th>
<th>OSP-P</th>
</tr>
</thead>
</table>

Standard Series Complimentary Products

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

<table>
<thead>
<tr>
<th>Isys ISO</th>
<th>Isys HA / HB</th>
<th>P1D</th>
<th>OSP-P</th>
</tr>
</thead>
</table>
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.

<table>
<thead>
<tr>
<th>Number of valves that would actuate at once</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>Moduflex 1</td>
</tr>
<tr>
<td>Isys Micro</td>
</tr>
<tr>
<td>HB / Viking Xtreme</td>
</tr>
<tr>
<td>Moduflex 2</td>
</tr>
<tr>
<td>HA / Global ISO</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 0.5 m/s.

### Cylinder bore size

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

### Tube Ø mm

<table>
<thead>
<tr>
<th>Tube Ø mm</th>
<th>Tube diameter external</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 (5/32)</td>
<td></td>
</tr>
<tr>
<td>4 (5/32)</td>
<td></td>
</tr>
<tr>
<td>6 (1/4)</td>
<td></td>
</tr>
<tr>
<td>6 (1/4)</td>
<td></td>
</tr>
<tr>
<td>6 (1/4)</td>
<td></td>
</tr>
<tr>
<td>8 (5/16)</td>
<td></td>
</tr>
<tr>
<td>8 (5/16)</td>
<td></td>
</tr>
<tr>
<td>10 (3/8)</td>
<td></td>
</tr>
<tr>
<td>10 (3/8)</td>
<td></td>
</tr>
<tr>
<td>12 (1/2)</td>
<td></td>
</tr>
<tr>
<td>12 (1/2)</td>
<td></td>
</tr>
</tbody>
</table>

### Number of cylinders actuating at once

<table>
<thead>
<tr>
<th>Number of cylinders actuating at once</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
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<tr>
<td>6</td>
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<tr>
<td>7</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>10</td>
</tr>
</tbody>
</table>

See Larger Parker FRL Offering

**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</th>
<th>Manual drain</th>
<th>Weight</th>
<th>Pulse drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>13 dm³/s</td>
<td>27 (scfm)</td>
<td>P31CB92GEMN5LNW 0.46 kg (1.01 lbs)</td>
<td>P31CB92GEBN5LNW 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</th>
<th>Manual drain</th>
<th>Weight</th>
<th>Pulse drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>14 dm³/s</td>
<td>28 (scfm)</td>
<td>P31CA92GEMN5LNW 0.35 kg (0.77 lbs)</td>
<td>P31CA92GEBN5LNW 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</th>
<th>Manual drain</th>
<th>Weight</th>
<th>Pulse drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>13 dm³/s</td>
<td>27 (scfm)</td>
<td>P31QB92GEMN5LNW 0.46 kg (1.01 lbs)</td>
<td>P31QB92GEBN5LNW 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</th>
<th>Manual drain</th>
<th>Weight</th>
<th>Pulse drain</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>14 dm³/s</td>
<td>28 (scfm)</td>
<td>P31QA92GEMN5LNW 0.35 kg (0.77 lbs)</td>
<td>P31QA92GEBN5LNW 0.35 kg (0.77 lbs)</td>
<td></td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Element</th>
<th>Relief / Adjustment</th>
<th>Drain type</th>
<th>Lub type</th>
<th>Assembly configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>5µ Element</td>
<td>Non-rising knob</td>
<td>Manual drain</td>
<td>Oil mist standard sight dome</td>
<td></td>
</tr>
<tr>
<td>0.01µ Element</td>
<td></td>
<td>Pulse drain</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Relief / Adjustment

<table>
<thead>
<tr>
<th>With round gauge</th>
<th>With square gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 bar; 30 psig; 0.2 MPa</td>
<td>2 bar; 30 psig; 0.2 MPa</td>
</tr>
<tr>
<td>4 bar; 60 psig; 0.4 MPa</td>
<td>4 bar; 60 psig; 0.4 MPa</td>
</tr>
<tr>
<td>8 bar; 125 psig; 0.8 MPa</td>
<td>8 bar; 125 psig; 0.8 MPa</td>
</tr>
<tr>
<td>16 bar; 232 psig; 1.6 MPa</td>
<td>16 bar; 232 psig; 1.6 MPa</td>
</tr>
</tbody>
</table>

Drain type

<table>
<thead>
<tr>
<th>Without gauge</th>
<th>With square gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 bar; 30 psig; 0.2 MPa</td>
<td>2 bar; 30 psig; 0.2 MPa</td>
</tr>
<tr>
<td>4 bar; 60 psig; 0.4 MPa</td>
<td>4 bar; 60 psig; 0.4 MPa</td>
</tr>
<tr>
<td>8 bar; 125 psig; 0.8 MPa</td>
<td>8 bar; 125 psig; 0.8 MPa</td>
</tr>
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<td>16 bar; 232 psig; 1.6 MPa</td>
<td>16 bar; 232 psig; 1.6 MPa</td>
</tr>
</tbody>
</table>

Ball Valve = Ball valve

Combination type

<table>
<thead>
<tr>
<th>Combination</th>
<th>Thread type</th>
<th>Element</th>
<th>Relief / Adjustment</th>
<th>Drain type</th>
<th>Lub type</th>
<th>Assembly configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>B/V + Combination</td>
<td>BSPP</td>
<td>5µ Element</td>
<td>Non-rising knob</td>
<td>Manual drain</td>
<td>Oil mist standard sight dome</td>
<td></td>
</tr>
<tr>
<td>Combination + B/V</td>
<td>BSPT</td>
<td>0.01µ Element</td>
<td></td>
<td>Pulse drain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combination</td>
<td>NPT</td>
<td>1µ Element</td>
<td></td>
<td></td>
<td>A</td>
<td></td>
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</tbody>
</table>

Bowl type

<table>
<thead>
<tr>
<th>Bowl type</th>
<th>Metal bowl without sight gauge</th>
<th>Poly bowl with bowl guard</th>
</tr>
</thead>
</table>

Note: All bowl types are the same for each component.

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

* Combination type F = 5µ, Fc = .01µ, Fa = Adsorber

* Ball Valve + Filter + Regulator + Lubricator Combinations, Poly bowl

* Ball Valve + Filter/Regulator + Lubricator Combinations, Poly bowl

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

* Not available with poly bowl with bowl guard.

* For 3/8” Port Blocks please order separately. See Kits section.
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>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>P32CB92GEMGLNW 1.29 kg (2.84 lbs)</td>
<td>P32CB92GEOANLGNW 1.29 kg (2.84 lbs)</td>
<td></td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>32 dm³/s</td>
<td>68 (scfm)</td>
<td>P32CB92GEMGLNW 1.29 kg (2.84 lbs)</td>
<td>P32CB92GEOANLGNW 1.29 kg (2.84 lbs)</td>
<td></td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>40 dm³/s</td>
<td>85 (scfm)</td>
<td>P32CB94GEMGLNW 1.29 kg (2.84 lbs)</td>
<td>P32CB94GEOANLGNW 1.29 kg (2.84 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</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>P32CA92GEMGLNW 1.03 kg (2.27 lbs)</td>
<td>P32CA92GEOANLGNW 1.03 kg (2.27 lbs)</td>
<td></td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>33 dm³/s</td>
<td>70 (scfm)</td>
<td>P32CA92GEMGLNW 1.03 kg (2.27 lbs)</td>
<td>P32CA92GEOANLGNW 1.03 kg (2.27 lbs)</td>
<td></td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>43 dm³/s</td>
<td>90 (scfm)</td>
<td>P32CA94GEMGLNW 1.03 kg (2.27 lbs)</td>
<td>P32CA94GEOANLGNW 1.03 kg (2.27 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</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>P32QB92GEMGLNW 1.29 kg (2.84 lbs)</td>
<td>P32QB92GEOANLGNW 1.29 kg (2.84 lbs)</td>
<td></td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>33 dm³/s</td>
<td>70 (scfm)</td>
<td>P32QB92GEMGLNW 1.29 kg (2.84 lbs)</td>
<td>P32QB92GEOANLGNW 1.29 kg (2.84 lbs)</td>
<td></td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>43 dm³/s</td>
<td>90 (scfm)</td>
<td>P32QB94GEMGLNW 1.29 kg (2.84 lbs)</td>
<td>P32QB94GEOANLGNW 1.29 kg (2.84 lbs)</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Filter coding (use with combo code: B)</th>
<th>Regulator coding (use with combo codes: A B)</th>
<th>Lubricator coding</th>
<th>Assembly configuration</th>
</tr>
</thead>
</table>

P32 Series

Filtering, Regulating and Lubricating Systems

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/globalfrl
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 (dm³/s)</th>
<th>Manual drain Weight (kg)</th>
<th>Auto drain Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>43</td>
<td>1.84 (4.06 lbs)</td>
<td>1.84 (4.06 lbs)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>52</td>
<td>1.84 (4.06 lbs)</td>
<td>1.84 (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 (dm³/s)</th>
<th>Manual drain Weight (kg)</th>
<th>Auto drain Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>52</td>
<td>1.51 (3.33 lbs)</td>
<td>1.51 (3.33 lbs)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>71</td>
<td>1.51 (3.33 lbs)</td>
<td>1.51 (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 (dm³/s)</th>
<th>Manual drain Weight (kg)</th>
<th>Auto drain Weight (lbs)</th>
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</thead>
<tbody>
<tr>
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<td>43</td>
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<td>52</td>
<td>1.84 (4.06 lbs)</td>
<td>1.84 (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 (dm³/s)</th>
<th>Manual drain Weight (kg)</th>
<th>Auto drain Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>52</td>
<td>1.51 (3.33 lbs)</td>
<td>1.51 (3.33 lbs)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>71</td>
<td>1.51 (3.33 lbs)</td>
<td>1.51 (3.33 lbs)</td>
</tr>
</tbody>
</table>

Filter/Regulator 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

---

**Combination**

B/V = Ball valve

**Thread type**

<table>
<thead>
<tr>
<th>Combination</th>
<th>Thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>B/V + Combination</td>
<td>BSPP</td>
</tr>
<tr>
<td>Combination + B/V</td>
<td>BSPT</td>
</tr>
<tr>
<td>Combination</td>
<td>NPT</td>
</tr>
</tbody>
</table>

**Combination type**

F = 5µ
Fc1 = 1µ
Fc = .01µ
Fa = Adsorber

**Port size**

<table>
<thead>
<tr>
<th>Combination type</th>
<th>Port size</th>
<th>Flow (dm³/s)</th>
<th>Manual drain Weight (kg)</th>
<th>Auto drain Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F/R+L A</td>
<td>1/2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B+F=Fc+Fa G</td>
<td>3/4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F/R+L B</td>
<td></td>
<td>52</td>
<td>1.51 (3.33 lbs)</td>
<td>1.51 (3.33 lbs)</td>
</tr>
<tr>
<td>B=Fc+Fa M</td>
<td>3/4</td>
<td>52</td>
<td>1.51 (3.33 lbs)</td>
<td>1.51 (3.33 lbs)</td>
</tr>
<tr>
<td>+C</td>
<td></td>
<td>52</td>
<td>1.51 (3.33 lbs)</td>
<td>1.51 (3.33 lbs)</td>
</tr>
</tbody>
</table>

**Element**

- 0.01µ Element with dpi
- 0.01µ Element with dpi
- 5µ Element with dpi
- 5µ Element
- 1µ Element with dpi
- 1µ Element
- Adsorber

**Relief / Adjustment**

Non-rising knob relieving

**Drain type**

- Auto drain
- Manual drain

**Mounting**

- No bracket
- Port blocks
- Port blocks & wall brkt
- Wall bracket

---

**Bowl type**

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

**Drain type**

No drain; closed end

**Lub type**

Oil mist standard sight dome

**Adjustment range**

With round gauge
- 2 bar: 30 psig: 0.2 MPa
- 4 bar: 60 psig: 0.4 MPa
- 8 bar: 125 psig: 0.8 MPa
- 17 bar: 250 psig: 1.7 MPa

Without gauge
- 2 bar: 30 psig: 0.2 MPa
- 4 bar: 60 psig: 0.4 MPa
- 8 bar: 125 psig: 0.8 MPa
- 17 bar: 250 psig: 1.7 MPa

* Not available with poly bowl with bowl guard.
**Popular Combination Dimensions mm (inches)**

**P31C**

- **Bowl removal clearance:**
  - Manual and Auto Drain.
  - 40 (1.57)
  - 35 (1.38)
  - 35 (1.38)

**P32C**

- **Bowl removal clearance:**
  - Manual and Auto Drain.
  - 40 (1.57)
  - 35 (1.38)
  - 35 (1.38)

**P33C**

- **Bowl removal clearance:**
  - Manual and Auto Drain.
  - 40 (1.57)
  - 35 (1.38)
  - 35 (1.38)
### Mini Particulate Filter - P31

**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>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>P31FB92EGMN</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>P31FB92EEMMN</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.
**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
  - Metal 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

**Flow Charts**

**1/4 Filter**

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

<table>
<thead>
<tr>
<th>Pressure Drop - (psig)</th>
<th>Flow - dm³/s</th>
<th>Flow - (scfm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>0.1</td>
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<tr>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>

**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

- Manual drain
- Auto drain

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

Options:

- Basic series
- Global modular compact particulate filter P32FB

<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 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>190.3 (7.49)</td>
<td>60 (2.36)</td>
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<td>P32FB92ESAN</td>
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<tr>
<td>3/8&quot;</td>
<td>Poly bowl - manual 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>P32FB93EGMN</td>
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</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>
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</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

P32 Series
Compact Particulate Filters

Specifications

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

Operating temperature
Plastic bowl 25°C ± 5°C (-13°F ± 9°F)
Metal bowl 25°C ± 5°C (-13°F ± 9°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)

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
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:

- 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

<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>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>
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<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>
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<tr>
<td>3/4&quot;</td>
<td>Poly bowl - auto drain</td>
<td>48 (102)</td>
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</tr>
</tbody>
</table>

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

Specifications

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

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

Standard filtration 5 micron

Useful retention† 85 cm³ (2.8 US oz.)

Flow capacity:
- 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)

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

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

**Symbol**

- **Basic series**
  - Global modular mini coalescing filter P31FB
- **Thread type**
  - BSPP 1
  - BSPT 2
  - NPT 9

- **Mounting**
  - N No bracket

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

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

- **Element**
  - 0.01µ Element C
  - 0.01µ Element with DPI D
  - 1µ Element 9
  - 1µ Element with DPI Q
  - Adsorber A

**Port size**

<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**
  - Plastic bowl: -10°C to 52°C (14°F to 125°F)
  - Metal bowl: -10°C to 65.5°C (14°F to 150°F)

- **Max. supply**
  - Plastic bowl: 10 bar (150 psig)
  - Metal bowl: 10 bar (150 psig)

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

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

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

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

Flow Charts

**P31 Series**

**Mini Coalescing and Adsorber Filters**

**Flow Charts**

- **P31 - 1.0 micron flow**
- **P31 - 0.01 micron flow**

**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)

- **Manual Drain**
  - 40 (1.58)
  - 40 (1.58)
  - 40 (1.58)
  - 12.1 (0.48)
  - 12.1 (0.48)
  - 12.1 (0.48)
  - 124.8 (4.91)
  - 119.6 (4.71)
  - 4mm (5/32)
  - I.D. tube barb fitting
  - Bowl removal clearance

- **Pulse Drain**
  - 40 (1.58)
  - 20 (0.79)
  - 20 (0.79)
  - 12.4 (0.48)
  - 12.4 (0.48)
  - 21.4 (0.84)
  - 21.4 (0.84)

**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

**Catalog 0750-3 US**  
**Parker Hannifin Corporation**  
**Pneumatic Division**  
**Richland, Michigan**  
**www.parker.com/globalfrl**

#### Compact Coalescing and Adsorber Filter - P32

- **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:

<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>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><strong>P32FB92DGMN</strong></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><strong>P32FB92DGAN</strong></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><strong>P32FB92DSMN</strong></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>
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<td>Metal bowl - 0.01 micron, auto drain</td>
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<td>206.3 (8.12)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
<td><strong>P32FB94DSAN</strong></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.

---

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

---

Flow Charts

**P32 - 1.0 micron flow**

<table>
<thead>
<tr>
<th>Flow - dm³/s</th>
<th>Pressure Drop - bar</th>
<th>Pressure Drop - psig</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>20</td>
<td>0.1</td>
<td>2.5</td>
</tr>
<tr>
<td>40</td>
<td>0.2</td>
<td>5.0</td>
</tr>
<tr>
<td>60</td>
<td>0.3</td>
<td>7.5</td>
</tr>
<tr>
<td>80</td>
<td>0.4</td>
<td>10.0</td>
</tr>
<tr>
<td>100</td>
<td>0.5</td>
<td>12.5</td>
</tr>
<tr>
<td>120</td>
<td>0.6</td>
<td>15.0</td>
</tr>
<tr>
<td>140</td>
<td>0.7</td>
<td>17.5</td>
</tr>
</tbody>
</table>

**P32 - 0.01 micron flow**

<table>
<thead>
<tr>
<th>Flow - dm³/s</th>
<th>Pressure Drop - bar</th>
<th>Pressure Drop - psig</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>20</td>
<td>0.1</td>
<td>2.5</td>
</tr>
<tr>
<td>40</td>
<td>0.2</td>
<td>5.0</td>
</tr>
<tr>
<td>60</td>
<td>0.3</td>
<td>7.5</td>
</tr>
<tr>
<td>80</td>
<td>0.4</td>
<td>10.0</td>
</tr>
<tr>
<td>100</td>
<td>0.5</td>
<td>12.5</td>
</tr>
<tr>
<td>120</td>
<td>0.6</td>
<td>15.0</td>
</tr>
<tr>
<td>140</td>
<td>0.7</td>
<td>17.5</td>
</tr>
</tbody>
</table>

---

Material Specifications

**Body**
- Aluminum

**Body cap**
- ABS

**Bowls**
- Plastic bowl
- Metal bowl (Aluminum)

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

**Adsorber**
- Activated carbon

**Seals**
- Nitrile

**Sight gauge**
- Metal bowl

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

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

**Differential pressure indicator**
- Replacement part: P32KA00RQ

---

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
- Saturated Element

---

Dimensions mm (inches)

Manual Drain

Automatic Drain

---

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/globalfrl
Standard Coalescing and Adsorber Filter - P33

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>1/2&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>P33FA94DGMN</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>
<td>P33FA94DSMN</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>Metal bowl - 0.01 micron, auto drain</td>
<td>32 (68)</td>
<td>17 (250)</td>
<td>229 (9.02)</td>
<td>73 (2.87)</td>
<td>73 (2.87)</td>
<td>P33FA94DSAN</td>
</tr>
<tr>
<td>3/4&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>P33FA96DGMN</td>
</tr>
<tr>
<td>3/4&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>P33FA96DGAN</td>
</tr>
<tr>
<td>3/4&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>
<td>P33FA96DSMN</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Metal bowl - 0.01 micron, auto drain</td>
<td>32 (68)</td>
<td>17 (250)</td>
<td>229 (9.02)</td>
<td>73 (2.87)</td>
<td>73 (2.87)</td>
<td>P33FA96DSAN</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.

- 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.
**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**
- 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**
- 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.

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

**Dimensions mm (inches)**

**Material Specifications**

- **Body**: Aluminum
- **Body cap**: ABS
- **Bowls**: Plastic bowl, Polycarbonate; Metal bowl, Aluminum
- **Filter element**: 1.0 and 0.01 micron, Borosilicate cloth
- **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><strong>P31RB92BNNP</strong></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><strong>P31RB92BN5P</strong></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

Dimensions mm (inches)

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

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>mm (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round 30.6 (1.20)</td>
<td></td>
</tr>
<tr>
<td>76.3 (3.00) Round Gauge</td>
<td></td>
</tr>
<tr>
<td>61.3 (2.41) Square Gauge</td>
<td></td>
</tr>
<tr>
<td>40 (1.58)</td>
<td></td>
</tr>
<tr>
<td>20 (.79)</td>
<td></td>
</tr>
<tr>
<td>194.1 (4.10)</td>
<td></td>
</tr>
<tr>
<td>56.8 (2.24)</td>
<td></td>
</tr>
</tbody>
</table>

Flow Charts

1/4 Regulator

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

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

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
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

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.
Mini Common - P1 Regulator - P31

Symbols

- 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>Part number†</th>
</tr>
</thead>
<tbody>
<tr>
<td>P31HB92BNNP</td>
</tr>
</tbody>
</table>
```

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

† Working port 1/8".

P31 Series

Global Air Preparation System

Mini Common P1 Regulators

Symbols

- Self relieving regulator with gauge
- Non-relieving regulator

<table>
<thead>
<tr>
<th>Port size†</th>
<th>Description</th>
<th>Flow² (scfm)</th>
<th>Max. bar (psig)</th>
<th>Height (inches)</th>
<th>Width (inches)</th>
<th>Depth (inches)</th>
<th>Part number†</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>8 bar (125 psig) relieving</td>
<td>20 (42)</td>
<td>20 (300)</td>
<td>104.1 (4.1)</td>
<td>40 (1.58)</td>
<td>40 (1.58)</td>
<td>P31HB92BNNP</td>
</tr>
</tbody>
</table>

³ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.3) psig set pressure and 1 bar (14.5 psig) pressure drop.
Catalog 0750-3 US

Global Air Preparation System

Mini Common P1 Regulators

P31 Series

Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>1/4</th>
<th>20 dm³/s (42 scfm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow capacity*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-20°C to 65.5°C (-4°F to 150°F)</td>
<td></td>
</tr>
<tr>
<td>Max. supply pressure</td>
<td>20 bar (300 psig)</td>
<td></td>
</tr>
<tr>
<td>Adjusting range pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P1 Port size (Inlet / Outlet)</td>
<td>BSPP / BSPT / NPT</td>
<td>1/4</td>
</tr>
<tr>
<td>P2 Regulated ports (2 ea.)</td>
<td>BSPP / BSPT / NPT</td>
<td>1/8</td>
</tr>
<tr>
<td>Weight</td>
<td></td>
<td>0.30 kg (0.66 lbs)</td>
</tr>
</tbody>
</table>

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

Flow Charts

1/4 Common Regulator

<table>
<thead>
<tr>
<th>Flow - dm³/s</th>
<th>Secondary Pressure (bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>0</td>
<td>20</td>
</tr>
</tbody>
</table>

CAUTION:

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

WARNING

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

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.
Global Air Preparation System

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>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P32RB92BNNP</td>
<td>1/4&quot; 8 bar (125 psig) relieving</td>
</tr>
<tr>
<td>P32RB92BNGP</td>
<td>1/4&quot; 8 bar (125 psig) relieving + gauge</td>
</tr>
<tr>
<td>P32RB93BNNP</td>
<td>3/8&quot; 8 bar (125 psig) relieving</td>
</tr>
<tr>
<td>P32RB93BNGP</td>
<td>3/8&quot; 8 bar (125 psig) relieving + gauge</td>
</tr>
<tr>
<td>P32RB94BNNP</td>
<td>1/2&quot; 8 bar (125 psig) relieving</td>
</tr>
<tr>
<td>P32RB94BNGP</td>
<td>1/2&quot; 8 bar (125 psig) relieving + gauge</td>
</tr>
</tbody>
</table>

### Adjustment

- With square gauge
- With round gauge

<table>
<thead>
<tr>
<th>Setting</th>
<th>Max. Output</th>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = 30°</td>
<td>60 (2.36)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>3 = 60</td>
<td>60 (2.36)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
<tr>
<td>5 = 125</td>
<td>60 (2.36)</td>
<td>136 (5.4)</td>
<td>60 (2.36)</td>
<td>60 (2.36)</td>
</tr>
</tbody>
</table>

### CAUTION:

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

### WARNING

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

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.

Flow Charts

1/4 Regulator

3/8 Regulator

1/2 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-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.

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
Catalog 0750-3 US (Revised 04-08-15)
Global Air Preparation System

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:

<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 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>P32RB92PNNP</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>
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<td>P32RB94PNGP</td>
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</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 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

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

**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

### 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.
## 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:

- **Basic series**
  - Global modular compact regulator P32HB
- **Thread type**
  - BSPP 1
  - BSPT 2
  - NPT 9
- **Mounting**
  - P Plastic panel mount nut
- **Relief**
  - Relieving B
  - Non-relieving N
- **Adjustment range**
  - With square gauge
    - psig
    - bar
    - 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 17 bar; 250 psig; 1.7 MPa
  - With round 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 17 bar; 250 psig; 1.7 MPa
- **Adjustment**
  - N Non-rising knob
  - T T-Handle

### Table

<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 number†</th>
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<td>20 (300)</td>
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<td>60 (2.36)</td>
<td>P32HB94BNNP</td>
</tr>
</tbody>
</table>

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

P32 Series

Compact Common P1 Regulators

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)

NOTES:
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.

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.

Flow Charts

Inlet Pressure - 10 bar (145 psig)

Flow - dm³/s

0 10 20 30 40 50 60 70 80 90

0 2 4 6 8 10 12 14 16

0 20 40 60 80 100 120 140

8.0 bar 116 psig

6.3 bar 91.4 psig

4.0 bar 58 psig

2.5 bar 36.3 psig

1.5 bar 24 psig

0.5 bar 7.4 psig

Flow - scfm

0 20 40 60 80 100 120 140
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>Basic series</th>
<th>Global modular standard regulator P33RA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thread type</td>
<td>BSPP 1 BSPT 2 NPT 9</td>
</tr>
<tr>
<td>Port size</td>
<td>1/2 3/4</td>
</tr>
<tr>
<td>Relief</td>
<td>Relieving B Non-relieving N Reverse flow-relieving R</td>
</tr>
<tr>
<td>Adjustment</td>
<td>Non-rising knob N</td>
</tr>
<tr>
<td>Mounting</td>
<td>P Plastic panel mount nut</td>
</tr>
<tr>
<td>Adjustment range</td>
<td>With round gauge</td>
</tr>
<tr>
<td></td>
<td>Z 2 bar; 30 psig; 0.2 MPa</td>
</tr>
<tr>
<td></td>
<td>M 4 bar; 60 psig; 0.4 MPa</td>
</tr>
<tr>
<td></td>
<td>G 8 bar; 125 psig; 0.8 MPa</td>
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<tr>
<td></td>
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<td></td>
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<td></td>
<td>H 17 bar; 250 psig; 1.7 MPa</td>
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</tbody>
</table>

Bold items are most common.

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Flow\textsuperscript{‡} dm\textsuperscript{3}/s (scfm)</th>
<th>Max. bar (psig)</th>
<th>Height mm (inches)</th>
<th>Width mm (inches)</th>
<th>Part number\textsuperscript{†}</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>P33RA94BNNP</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>
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<td>8 bar (125 psig) relieving</td>
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\textsuperscript{†} Standard part numbers shown in bold. For other models refer to Options chart above.

\textsuperscript{‡} 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)

- Inlet Pressure - 10 bar (145 psig)
- Secondary Pressure - 2.5 bar
- Secondary Pressure - 8.0 bar
- Secondary Pressure - 6.3 bar

- Flow Charts

1/2 Regulator

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

3/4 Regulator

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

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: Main regulating valve, Steel S.S.
- Seals: Nitrile
- Panel nut: Acetal

Dimensions mm (inches)

- 73 (2.87) Round Gauge
- 61.8 (3.30)
- 44 (1.73)

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.

Repair and Service Kits

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

Gauges

- 50mm (2") Round 1/4" center back mount
  - 0-30 psig / 0-2 bar: 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.
Mini Filter / Regulator - 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
- 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>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>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>P31EB92EGBMBN5P</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>P31EB92EBBBN5P</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>P31EB92EEMBBN5P</td>
</tr>
<tr>
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† 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 with poly bowl with bowl guard.
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 cm³ (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)

Port size BSPP / BSPT / NPT 1/4
Gauge port (2 ea.)** BSPP / BSPT / NPT 1/8
Weight 0.19 kg (0.42 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)

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

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

Flow Charts

1/4 Filter / Regulator

Flow Charts

Material Specifications

Body Aluminum
Adjustment knob Acetal
Body cap ABS
Bonnet PBT

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.
Compact Filter / Regulator - P32

Options:

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

Symbols

- Integral 1/4", 3/8" or 1/2" ports (NPT, BSPP & BSPT)
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- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation

Port size Description Flow† (dm³/s (scfm)) Max. bar (psi) Height (mm (inches)) Width (mm (inches)) Depth (mm (inches)) Part number†
1/4" 8 bar (125 psig) relieving - poly bowl - manual drain 42 (89) 10 (150) 261.8 (10.3) 60 (2.36) 93 (3.66) P32EB92EGMBNGP
1/4" 8 bar (125 psig) relieving - poly bowl - auto drain 42 (89) 10 (150) 255.6 (10.1) 60 (2.36) 93 (3.66) P32EB92EGABNGP
1/4" 8 bar (125 psig) relieving - metal bowl - manual drain 42 (89) 17 (250) 261.8 (10.3) 60 (2.36) 93 (3.66) P32EB92ESMBNGP
1/4" 8 bar (125 psig) relieving - metal bowl - auto drain 42 (89) 17 (250) 255.6 (10.1) 60 (2.36) 93 (3.66) P32EB92ESABNGP
3/8" 8 bar (125 psig) relieving - poly bowl - manual drain 58 (123) 10 (150) 261.8 (10.3) 60 (2.36) 93 (3.66) P32EB93EGMBNGP
3/8" 8 bar (125 psig) relieving - poly bowl - auto drain 58 (123) 10 (150) 255.6 (10.1) 60 (2.36) 93 (3.66) P32EB93EGABNGP
3/8" 8 bar (125 psig) relieving - metal bowl - manual drain 58 (123) 17 (250) 261.8 (10.3) 60 (2.36) 93 (3.66) P32EB93ESMBNGP
3/8" 8 bar (125 psig) relieving - metal bowl - auto drain 58 (123) 17 (250) 255.6 (10.1) 60 (2.36) 93 (3.66) P32EB93ESABNGP
1/2" 8 bar (125 psig) relieving - poly bowl - manual drain 64 (136) 10 (150) 261.8 (10.3) 60 (2.36) 93 (3.66) P32EB94EGMBNGP
1/2" 8 bar (125 psig) relieving - poly bowl - auto drain 64 (136) 10 (150) 255.6 (10.1) 60 (2.36) 93 (3.66) P32EB94EGABNGP
1/2" 8 bar (125 psig) relieving - metal bowl - manual drain 64 (136) 17 (250) 261.8 (10.3) 60 (2.36) 93 (3.66) P32EB94ESMBNGP
1/2" 8 bar (125 psig) relieving - metal bowl - auto drain 64 (136) 17 (250) 255.6 (10.1) 60 (2.36) 93 (3.66) P32EB94ESABNGP

† 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 (4.5 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)

30 (1.18) 4mm (5/32) I.D. tube barb fitting Bowl removal clearance
97.6 (3.84) 261.6 (10.30)
30 (1.18) 58 (2.28)

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.

WARNING

Product rupture can cause serious injury. Do not connect regulator to bottled gas. Do not exceed Maximum primary pressure rating.
Catalog 0750-3 US  (Revised 03-12-15)

Global Air Preparation System

Compact Semi-Precision Filter / Regulator - P32

- 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>Part number</th>
<th>Description</th>
<th>Thread type</th>
<th>Element</th>
<th>Adjustment</th>
<th>Mounting</th>
<th>Relief</th>
<th>Adjustment range</th>
</tr>
</thead>
<tbody>
<tr>
<td>P32EB92EGMPNGP</td>
<td>1/4&quot; 8 bar (125 psig) relieving - poly bowl - manual drain</td>
<td>BSPP 1</td>
<td>5µ Element E</td>
<td>N Non-rising knob</td>
<td>P Plastic panel mount nut</td>
<td>Semi-Precision Relieving</td>
<td>psig</td>
</tr>
<tr>
<td>P32EB92EGAPNGP</td>
<td>1/4&quot; 8 bar (125 psig) relieving - poly bowl - auto drain</td>
<td>BSPP 1</td>
<td>5µ Element E</td>
<td>T T-Handle</td>
<td>P Plastic panel mount nut</td>
<td>Semi-Precision Non-relieving</td>
<td></td>
</tr>
<tr>
<td>P32EB92ESMPNGP</td>
<td>1/2&quot; 8 bar (125 psig) relieving - metal bowl - manual drain</td>
<td>NPT 9</td>
<td>5µ Element E</td>
<td>N Non-rising knob</td>
<td>P Plastic panel mount nut</td>
<td>Semi-Precision Relieving</td>
<td></td>
</tr>
<tr>
<td>P32EB92ESAPNGP</td>
<td>1/2&quot; 8 bar (125 psig) relieving - metal bowl - auto drain</td>
<td>NPT 9</td>
<td>5µ Element E</td>
<td>T T-Handle</td>
<td>P Plastic panel mount nut</td>
<td>Semi-Precision Non-relieving</td>
<td></td>
</tr>
<tr>
<td>P32EB94EGMPNGP</td>
<td>3/8&quot; 8 bar (125 psig) relieving - poly bowl - manual drain</td>
<td>BSPP 1</td>
<td>5µ Element E</td>
<td>N Non-rising knob</td>
<td>P Plastic panel mount nut</td>
<td>Semi-Precision Relieving</td>
<td></td>
</tr>
<tr>
<td>P32EB94EGAPNGP</td>
<td>3/8&quot; 8 bar (125 psig) relieving - poly bowl - auto drain</td>
<td>BSPP 1</td>
<td>5µ Element E</td>
<td>T T-Handle</td>
<td>P Plastic panel mount nut</td>
<td>Semi-Precision Non-relieving</td>
<td></td>
</tr>
<tr>
<td>P32EB94ESMPNGP</td>
<td>3/4&quot; 8 bar (125 psig) relieving - metal bowl - manual drain</td>
<td>NPT 9</td>
<td>5µ Element E</td>
<td>N Non-rising knob</td>
<td>P Plastic panel mount nut</td>
<td>Semi-Precision Relieving</td>
<td></td>
</tr>
<tr>
<td>P32EB94ESAPNGP</td>
<td>3/4&quot; 8 bar (125 psig) relieving - metal bowl - auto drain</td>
<td>NPT 9</td>
<td>5µ Element E</td>
<td>T T-Handle</td>
<td>P Plastic panel mount nut</td>
<td>Semi-Precision Non-relieving</td>
<td></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

<table>
<thead>
<tr>
<th>Flow capacity*</th>
<th>1/4</th>
<th>35 dm³/s (75 scfm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3/8</td>
<td>35 dm³/s (75 scfm)</td>
</tr>
<tr>
<td></td>
<td>1/2</td>
<td>35 dm³/s (75 scfm)</td>
</tr>
</tbody>
</table>

**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)

**Max. supply pressure** Plastic bowl 10 bar (150 psig)

**Body material** Polycarbonate

**Bowl material** Nylon

**Diaphragm assembly** Nitrile / Zinc

**Panel nut** Acetal

**Sight gauge** Metal bowl

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

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

**Adjusting range pressure** 0-2 bar (30 psig)

**Weight** 0.53 kg (1.17 lbs)

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

**Air quality**

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

## Material Specifications

<table>
<thead>
<tr>
<th>Body</th>
<th>Aluminum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjust knob</td>
<td>Acetal</td>
</tr>
<tr>
<td>Element retainer / Baffle</td>
<td>Acetal</td>
</tr>
<tr>
<td>Bowl</td>
<td>Plastic bowl Polycarbonate</td>
</tr>
<tr>
<td></td>
<td>Metal bowl</td>
</tr>
<tr>
<td>Bowl guard</td>
<td>Nylon</td>
</tr>
<tr>
<td>Filter element</td>
<td>Sintered polyethylene</td>
</tr>
<tr>
<td>Seals</td>
<td>Nitrile</td>
</tr>
<tr>
<td>Springs</td>
<td>Main regulating / valve Steel / S.S.</td>
</tr>
<tr>
<td>Valve assembly</td>
<td>Brass / Nitrile</td>
</tr>
<tr>
<td>Diaphragm assembly</td>
<td>Nitrile / Zinc</td>
</tr>
<tr>
<td>Panel nut</td>
<td>Acetal</td>
</tr>
<tr>
<td>Sight gauge</td>
<td>Metal bowl Nylon</td>
</tr>
</tbody>
</table>

## Dimensions mm (inches)

### Manual Drain

![Manual Drain Diagram]

### Automatic Drain

![Automatic Drain Diagram]

## Flow Charts

### 1/4 Filter / Regulator

![Flow Chart 1/4 Filter]

### 3/8 Filter/Regulator

![Flow Chart 3/8 Filter]

### 1/2 Filter/Regulator

![Flow Chart 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
- 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

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Code</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>0-180 psig / 0-11 bar</td>
<td>K4520N14160</td>
</tr>
<tr>
<td>0-300 psig / 0-20 bar</td>
<td>K4520N14300</td>
</tr>
</tbody>
</table>

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

---

**WARNING**

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

---

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

Standard Filter / Regulator - P33

- 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:

**Symbols**

- Port size Description
- Flow: dm³/s (scfm)
- Max. bar (psig)
- Height mm (inches)
- Width mm (inches)
- Depth mm (inches)
- Part number

<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>1/2&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>
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<td>P33EA94ESMBNGP</td>
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<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>
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<td>8 bar (125 psig) relieving - poly bowl - auto drain</td>
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<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>

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.
Specifications

Flow capacity* 1/2 99 dm³/s (210 scfm)

Flow capacity* 3/4 108 dm³/s (230 scfm)

Operating Plastic bowl -25°C to 52°C (-13°F to 125°F)

Operating Metal bowl -25°C to 65.5°C (-13°F to 150°F)

Supply Plastic bowl 10 bar (150 psig)

Supply 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)

Adjusting range pressure 0-4 bar (60 psig)

Adjusting range pressure 0-8 bar (125 psig)

Adjusting range pressure 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).

† 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

Body cap ABS

Element retainer / Baffle Acetal

Bowls Plastic bowl Polycarbonate

Bowls 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 mm (inches)

Flow Charts

1/2 Filter / Regulator

Flow Charts

3/4 Filter/Regulator

Repair and Service Kits

Plastic bowl / Bowl guard manual drain P33KA00BGM

Metal bowl / Sight gauge manual drain P33KA00BSM

Auto drain P32KA00DA

5µ particle filter element P33KA00ESE

Regulator repair kit - Relieving P33KA00RB

Regulator repair kit - Non-relieving P33KA00RC

Panel mount nut - Aluminum P33KA00MM

Panel mount nut - Plastic P33KA00MP

Angle bracket (fits to panel mount threads) P33KA00MR

T-bracket (fits to body connector) P32KA00MB

T-bracket with body connector P32KA00MT

Body connector P32KA00CB

Gauges

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

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.
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 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 - 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>

† 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.

† 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)

Flow Charts

P31LB 1/4" Lubricator

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:

<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>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.

### Features:
- 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

### Symbol

- 1: Lubricator
- 2: with drain

### Basic series
- Global modular compact lubricator P32LB

### 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

### Lube type
- Oil mist standard sight dome L
**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 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: 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

<table>
<thead>
<tr>
<th>Flow (dm³/s)</th>
<th>Pressure Drop (bar)</th>
<th>Primary Pressure - bar</th>
<th>Primary Pressure - psig</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>1.6</td>
<td>23.2</td>
</tr>
<tr>
<td>10</td>
<td>0.4</td>
<td>4.0</td>
<td>58</td>
</tr>
<tr>
<td>30</td>
<td>0.6</td>
<td>6.3</td>
<td>91.4</td>
</tr>
<tr>
<td>50</td>
<td>0.7</td>
<td>10</td>
<td>145</td>
</tr>
</tbody>
</table>

3/8 Lubricator

<table>
<thead>
<tr>
<th>Flow (dm³/s)</th>
<th>Pressure Drop (bar)</th>
<th>Primary Pressure - bar</th>
<th>Primary Pressure - psig</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>1.6</td>
<td>23.2</td>
</tr>
<tr>
<td>10</td>
<td>0.4</td>
<td>4.0</td>
<td>58</td>
</tr>
<tr>
<td>30</td>
<td>0.6</td>
<td>6.3</td>
<td>91.4</td>
</tr>
<tr>
<td>50</td>
<td>0.7</td>
<td>10</td>
<td>145</td>
</tr>
</tbody>
</table>

1/2 Lubricator

<table>
<thead>
<tr>
<th>Flow (dm³/s)</th>
<th>Pressure Drop (bar)</th>
<th>Primary Pressure - bar</th>
<th>Primary Pressure - psig</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>1.6</td>
<td>23.2</td>
</tr>
<tr>
<td>10</td>
<td>0.4</td>
<td>4.0</td>
<td>58</td>
</tr>
<tr>
<td>30</td>
<td>0.6</td>
<td>6.3</td>
<td>91.4</td>
</tr>
<tr>
<td>50</td>
<td>0.7</td>
<td>10</td>
<td>145</td>
</tr>
</tbody>
</table>

**Repair and Service Kits**

- Plastic bowl / Bowl guard no drain: P32KB00BGN
- 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**

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

![Image of Standard Lubricator - P33](image)

### Symbol

- 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>Basic series</th>
<th>Global modular standard lubricator P33LA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thread type</td>
<td>BSPP 1</td>
</tr>
<tr>
<td></td>
<td>BSPT 2</td>
</tr>
<tr>
<td></td>
<td>NPT 9</td>
</tr>
<tr>
<td>Port size</td>
<td>1/2 4</td>
</tr>
<tr>
<td></td>
<td>3/4 6</td>
</tr>
<tr>
<td>Lube type</td>
<td>Oil mist standard sight dome L</td>
</tr>
<tr>
<td></td>
<td>Lubricator with drain</td>
</tr>
</tbody>
</table>

### Flow

<table>
<thead>
<tr>
<th>Port size</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>
<th>Depth mm (inches)</th>
<th>Part number[^{1}]</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>

[^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 0.34 bar (4.9 psig) pressure drop.
Specifications

Flow capacity

<table>
<thead>
<tr>
<th>Size</th>
<th>Flow capacity</th>
<th>Pressure Drop / Pressure Drop</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>71 dm³/s (150 scfm)</td>
<td>0 - 0.2 bar/psig</td>
</tr>
<tr>
<td>3/4</td>
<td>52 dm³/s (110 scfm)</td>
<td>0 - 0.2 bar/psig</td>
</tr>
</tbody>
</table>

Operating temperature

<table>
<thead>
<tr>
<th>Size</th>
<th>Plastic bowl</th>
<th>Metal bowl</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>-10°C to 52°C (14°F to 125°F)</td>
<td>-10°C to 65.5°C (14°F to 150°F)</td>
</tr>
<tr>
<td>3/4</td>
<td>-10°C to 52°C (14°F to 125°F)</td>
<td>-10°C to 65.5°C (14°F to 150°F)</td>
</tr>
</tbody>
</table>

Max. supply pressure

<table>
<thead>
<tr>
<th>Size</th>
<th>Plastic bowl</th>
<th>Metal bowl</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>10 bar (150 psig)</td>
<td>17 bar (250 psig)</td>
</tr>
<tr>
<td>3/4</td>
<td>10 bar (150 psig)</td>
<td>17 bar (250 psig)</td>
</tr>
</tbody>
</table>

Useful retention

<table>
<thead>
<tr>
<th>Size</th>
<th>Plastic bowl</th>
<th>Metal bowl</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>181 cm³ (6.1 US oz.)</td>
<td>181 cm³ (6.1 US oz.)</td>
</tr>
<tr>
<td>3/4</td>
<td>181 cm³ (6.1 US oz.)</td>
<td>181 cm³ (6.1 US oz.)</td>
</tr>
</tbody>
</table>

Port size

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

Weight

<table>
<thead>
<tr>
<th>Size</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>0.47 kg (1.04 lbs)</td>
</tr>
<tr>
<td>3/4</td>
<td>0.47 kg (1.04 lbs)</td>
</tr>
</tbody>
</table>

* 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

Repair and Service Kits

- Plastic bowl / Bowl guard no drain: P33KA00BGN
- Metal bowl / w/o sight gauge no drain: P33KA00BMN
- Metal bowl / Sight gauge no drain: P33KA00BSN
- Drip control assembly: P32KA00PG
- Fill plug: P32KA00PL
- L-bracket (fits to body): P33KA00ML
- 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.)
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:

<table>
<thead>
<tr>
<th>P31PA</th>
<th>9</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>Body size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Global modular mini (1/4&quot;)</td>
<td>P31PA</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Global modular compact (1/2&quot;)</td>
<td>P32PA</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Thread type</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>BSPP</td>
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<td></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>
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</tr>
<tr>
<td>NPT</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global modular mini (1/4&quot;)</td>
<td>2</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Global modular compact (1/2&quot;)</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
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<td>Version</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom ported exhaust (NC)</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom ported forced exhaust (NO)†</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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>
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.

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.

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 = 100kΩ</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 ............................................ FPM
- 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 - 20m 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 (bar)</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>1 to 6 bar</td>
<td>55 msecs</td>
<td>135 msecs</td>
</tr>
<tr>
<td>4 to 2 bar</td>
<td>70 msecs</td>
<td>85 msecs</td>
</tr>
<tr>
<td>6 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
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>3-6 seconds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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>3-6 seconds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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>3-6 seconds</td>
<td>or</td>
<td>or</td>
<td>or</td>
<td></td>
</tr>
<tr>
<td>Until Display Reads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Accesses changeable parameters.</td>
<td>Accesses parameter no. 6.</td>
<td>Displays current parameter value. 1 = m factory default for P3H with analog options</td>
<td>Edits parameter. 0 = digital (NPN or PNP) 1 = analog 0..10V 2 = analog 4..20 mA</td>
<td>Sequences to next parameter.</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>3-6 seconds</td>
<td>or</td>
<td>or</td>
<td>or</td>
<td></td>
</tr>
<tr>
<td>Until Display Reads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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>Until Display Reads</td>
<td>P x x</td>
<td>P 0 9</td>
<td># # #</td>
<td># # #</td>
<td>P 1 0</td>
</tr>
<tr>
<td>Description</td>
<td>Accesses changeable parameters.</td>
<td>Accesses parameter no. 9.</td>
<td>Displays current digital display</td>
<td>Use up or down arrows and accept to adjust the display value if using an external pressure sensor.</td>
<td>Accepts and saves new parameter setting.</td>
</tr>
</tbody>
</table>

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

**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>Until Display Reads</td>
<td>P x x</td>
<td>P 1 4</td>
<td>0 0 1</td>
<td>0 0 0</td>
<td>P 1 5</td>
</tr>
</tbody>
</table>
Preset Minimum Pressure

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

### Parameter Number 18 – Set Minimum Preset Pressure

<table>
<thead>
<tr>
<th>Step</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press</td>
<td>acc</td>
<td>▼ or △</td>
<td>acc</td>
<td>▼ or △</td>
<td>acc</td>
</tr>
<tr>
<td>3-6 seconds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Until Display Reads</td>
<td>P x x</td>
<td>P 1 8</td>
<td>0 0 0</td>
<td># # #</td>
<td>P 1 9</td>
</tr>
<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>Accepts and saves new parameter setting.</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 x</td>
<td>P 1 9</td>
<td>1 0 0</td>
<td># # #</td>
<td>P 2 0</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.

<table>
<thead>
<tr>
<th>Parameter Number 20 – Set Behavior Control</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step</strong></td>
</tr>
<tr>
<td>Press</td>
</tr>
<tr>
<td>Until Display Reads</td>
</tr>
<tr>
<td>Description</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Parameter Number 12 – Set Proportional Band (P20 Must be Set to 0)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step</strong></td>
</tr>
<tr>
<td>Press</td>
</tr>
<tr>
<td>Until Display Reads</td>
</tr>
</tbody>
</table>

Sequences to next parameter.
### 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>🔄</td>
<td>🔄 or 🔄</td>
<td>🔄</td>
<td>🔄</td>
<td>🔄</td>
</tr>
<tr>
<td>3-6 seconds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Until Display Reads</td>
<td>P x x</td>
<td>P 13</td>
<td>0 1 5</td>
<td># # # #</td>
<td># # # P 1 4</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>🔄</td>
<td>🔄 or 🔄</td>
<td>🔄</td>
<td>🔄</td>
<td>🔄</td>
</tr>
<tr>
<td>3-6 seconds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Until Display Reads</td>
<td>P x x</td>
<td>P 2 1</td>
<td>0 1 0</td>
<td># # # #</td>
<td># # # P 2 2</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>🔄</td>
<td>🔄 or 🔄</td>
<td>🔄</td>
</tr>
<tr>
<td>3-6 seconds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Until Display Reads</td>
<td>P x x</td>
<td>P 3 9</td>
<td># # # #</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>
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/globalfrl

Catalog 0750-3 US
Global Air Preparation System

P31P & P32P Series
Proportional Regulator Dimensions

Dimensions are in mm (Inches)
Remote operated dump valves automatically shut off upstream pressure and exhaust the downstream pressure when the pilot pressure is released.

To maintain these units in the open position a pilot supply to the air pilot operated version or an electrical signal to the solenoid operated version must be maintained.

The valve will automatically dump when the holding signal is removed.

**Options:**

<table>
<thead>
<tr>
<th>Body size</th>
<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>P31DA</td>
<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>P31DA92SGNC1FN</td>
</tr>
<tr>
<td></td>
<td>1/4&quot;</td>
<td>24VDC Solenoid &amp; cable plug</td>
<td>17 (36)</td>
<td>10 (150)</td>
<td>166 (6.5)</td>
<td>57 (2.2)</td>
<td>40 (1.5)</td>
<td>0.41 (0.9)</td>
<td>P31DA92SGNC2CN</td>
</tr>
<tr>
<td></td>
<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></td>
<td>1/2&quot;</td>
<td>120VAC 30mm coil &amp; cable plug incl.</td>
<td>51 (108)</td>
<td>10 (150)</td>
<td>162.5 (6.3)</td>
<td>75 (2.9)</td>
<td>57.2 (2.2)</td>
<td>0.69 (1.5)</td>
<td>P32DA94SCNA3GN</td>
</tr>
<tr>
<td></td>
<td>1/2&quot;</td>
<td>24VDC 30mm coil &amp; cable plug incl.</td>
<td>51 (108)</td>
<td>10 (150)</td>
<td>227.5 (8.9)</td>
<td>75 (2.9)</td>
<td>57.2 (2.2)</td>
<td>0.91 (2.0)</td>
<td>P32DA94SCNA2CN</td>
</tr>
<tr>
<td></td>
<td>1/2&quot;</td>
<td>External air pilot operated</td>
<td>51 (108)</td>
<td>17 (250)</td>
<td>162.5 (6.3)</td>
<td>75 (2.9)</td>
<td>57.2 (2.2)</td>
<td>0.87 (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.

- 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
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

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)

P31D

P32D

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>P31SA922SGNGC1FN</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>P31SA922SGNC2CN</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>P31SA922YN</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>P31SA922PPN</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>P32SA942SCNGA3GN</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>P32SA942SCNGA2CN</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>0.90 (2.0)</td>
<td>P32SA944Y0N</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>P32SA944PPN</td>
</tr>
</tbody>
</table>

† 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"
- **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**
  - L-bracket mounting kit
  - Foot bracket mounting kit
- **Part number**
  - P31S: P3HKA00ML
  - P32S: P3HKA00MC

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

Dimensions mm (inches)

**P31S**

- 37 (1.45)
- 166 (6.53)
- 136 (5.35)
- 1/8" Gauge Port

**P32S**

- 64.5 (2.53)
- 174.5 (6.87)
- 109.5 (4.31)
- 1/4" Gauge Port

Soft Start Function:

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

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>Body size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P31TA 9 2 S G N</td>
<td>Solenoid type only</td>
</tr>
<tr>
<td></td>
<td>Actuator interface</td>
</tr>
<tr>
<td></td>
<td>G 15mm solenoid (P31 only)</td>
</tr>
<tr>
<td></td>
<td>C 30mm solenoid</td>
</tr>
<tr>
<td></td>
<td>P Threaded air pilot</td>
</tr>
<tr>
<td></td>
<td>Solenoid voltage</td>
</tr>
<tr>
<td></td>
<td>2CN 24VDC non locking manual override</td>
</tr>
<tr>
<td></td>
<td>3GN 120VAC non locking manual override</td>
</tr>
<tr>
<td></td>
<td>1FN 120VAC non locking manual override (P31 series only)</td>
</tr>
</tbody>
</table>

<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>Weight kg (lbs)</th>
<th>Part number²</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>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>166.1 (6.5)</td>
<td>57 (2.2)</td>
<td>40 (1.5)</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>40 (1.5)</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>162.5² (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>227.5² (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>162.5² (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>

Note: P32 unit used for both P32 & P33 series
Bold items are most common.

² Includes exhaust silencer. Flow with 6.3 bar (91.3) psig inlet and 1 bar (14.5 psig) pressure drop.

1 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>P3SHA00ML</td>
</tr>
<tr>
<td>Foot bracket mounting kit</td>
<td>P3SHA00MC</td>
</tr>
</tbody>
</table>

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

Dimensions mm (inches)

For mounting brackets see page 56.

Flow Charts

P31TA 1/4" Soft Start & Dump Valve

Inlet Pressure - 6.3 bar (91.3 psig)

P32TA 1/2" Soft Start & Dump Valve

Inlet Pressure - 6.3 bar (91.3 psig)
Global Air Preparation System

Redundant Safety Exhaust Valve

Options:

<table>
<thead>
<tr>
<th>P33TA</th>
<th>9</th>
<th>6</th>
<th>R</th>
<th>G</th>
<th>4</th>
<th>F</th>
<th>2CN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body size</td>
<td>Standard P33T</td>
<td>Port size</td>
<td>3/4&quot;</td>
<td>6</td>
<td>Operator</td>
<td>15mm Solenoid</td>
<td>Mounting</td>
</tr>
<tr>
<td>Thread type</td>
<td>BSPP 1</td>
<td>Solenoid pilot + gauge</td>
<td>R</td>
<td>Solenoid</td>
<td>Triple M12 connector with transducer</td>
<td>F</td>
<td>G</td>
</tr>
<tr>
<td>Type</td>
<td>NPT 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port size</td>
<td>3/4&quot;</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transducer</td>
<td>w/o transducer</td>
<td>3.7 8.5 273.8 (10.78) 136.0 (5.35) 147.6 (5.81) 7.3 (16.1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>w/ transducer</td>
<td>3.7 8.5 273.8 (10.78) 136.0 (5.35) 147.6 (5.81) 7.4 (16.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (lb)</td>
<td>Part number*</td>
<td>P33TA96RG4F2CN</td>
<td>P33TA96RG4G2CN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Options:
- **Body size**: Standard P33T
- **Port size**: 3/4"
- **Operator**: 15mm Solenoid
- **Mounting**: Cat 4 w/bracket
- **Solenoid**: Triple M12 connector with transducer
- **Voltage**: 24DC with manual override

Options for Transducer:
- **w/o transducer**
- **w/ transducer**

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

- **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.
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):**
- for primary and reset solenoids: 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)

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>
</tbody>
</table>

**Cables**

- M12, 5-pin female to flying lead cable, TPE; 2 m (6.6 ft)............. RKC 4.5T-2/S1587
- M12, 5-pin male to flying lead cable, TPE; 2 m (6.6 ft)............. RSC 4.5T-2/S1587

**Port block kit**

- 1/2 NPT.................. P32KA94CP
- 3/4 NPT.................. P32KA96CP
- 1/2 BSPP................. P32KA14CP
- 3/4 BSPP................. P32KA16CP
- 1/2 BSPT................. P32KA24CP
- 3/4 BSPT................. P32KA26CP

**Pressure switch**

- 1227A30-001

**Pressure transducer (Optional)**

- 1232H30-001

**T-bracket w/ body connector**

- P32KA00MT

**T-bracket (Fits to body connector or port block)**

- P32KA00MB

**Silencer(s) 3/4”**

- 5500A5013

**Solenoid (Main & reset)**

- 1527B7916-001

**Square flush mounting gauge kit, 0-160 psig**

- K4511SCR160

**Dimensions mm (inches)**

- **Valve Wiring**

- **Angle Mounting Bracket**

**Note:** Mounting bracket and installation screws included and required to install unit in the system.
**Global Air Preparation 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:**

- Start signal
- Switching time delay
- Gradual pressure build up
- Operating pressure $p_1$ ($p_2$)

---

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/globalfrl
**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></th>
<th>NC Normal Operator with 22 x 30 standard coil</th>
<th>NC Normal Operator with 30 x 30 standard coil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working pressure</td>
<td>0 to 10 bar</td>
<td>0 to 10 bar</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-10°C to 60°C *</td>
<td>-10°C to 60°C *</td>
</tr>
<tr>
<td>Power (DC)</td>
<td>4.8W</td>
<td>2.7W</td>
</tr>
<tr>
<td>Power (AC)</td>
<td>8.5VA</td>
<td>4.9VA</td>
</tr>
<tr>
<td>Voltage tolerance</td>
<td>+/-10%</td>
<td>+/-10%</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Insulation class</td>
<td>F</td>
<td>F</td>
</tr>
<tr>
<td>Electric connection</td>
<td>B Industrial</td>
<td>DIN 43650A</td>
</tr>
<tr>
<td>Protection</td>
<td>IP65</td>
<td>IP65</td>
</tr>
<tr>
<td>Approval</td>
<td>UL/CSA</td>
<td></td>
</tr>
<tr>
<td>Working media</td>
<td>All neutral media such as compressed air</td>
<td></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 non-lock manual override</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.

P31 Series only - Solenoid coils 15mm NC

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Order code Override, blue, non-locking flush</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>24VDC</td>
<td>PS2982B49P</td>
<td>0.038</td>
</tr>
<tr>
<td>115VAC 50Hz / 120VAC 60Hz</td>
<td>PS2982B53P</td>
<td>0.038</td>
</tr>
</tbody>
</table>

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>P2FC6449</td>
<td>0.065</td>
</tr>
<tr>
<td>24VDC</td>
<td>P2FC6449</td>
<td>0.065</td>
</tr>
</tbody>
</table>

Solenoid Coils with DIN A or Industrial B Connection

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Part number 22mm x 30mm B industrial standard</th>
<th>Weight (Kg)</th>
<th>Part number 30mm x 30mm DIN 43650A standard</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct current</td>
<td>P2FCB449</td>
<td>0.093</td>
<td>P2FCA449</td>
<td>0.105</td>
</tr>
<tr>
<td>24VDC</td>
<td>P2FCB449</td>
<td>0.093</td>
<td>P2FCA449</td>
<td>0.105</td>
</tr>
<tr>
<td>Alternative current</td>
<td>P2FCB453</td>
<td>0.093</td>
<td>P2FCA453</td>
<td>0.105</td>
</tr>
</tbody>
</table>
Solenoid Connectors / Cable Plugs EN175301-803

<table>
<thead>
<tr>
<th>Description</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard screw</td>
<td></td>
</tr>
<tr>
<td>Standard IP65 without flying lead</td>
<td>PS2429BP PS2028BP</td>
</tr>
<tr>
<td>With LED and protection 24VAC/DC</td>
<td>PS243079BP PS203279BP</td>
</tr>
<tr>
<td>With LED and protection 110VAC</td>
<td>PS243083BP PS203283BP</td>
</tr>
<tr>
<td>With cable</td>
<td></td>
</tr>
<tr>
<td>Standard with 2m cable IP65</td>
<td>PS2429JBP PS2028JBP</td>
</tr>
<tr>
<td>24VAC/DC, 2m cable LED and protection IP65</td>
<td>PS2430J79BP PS2032J79BP</td>
</tr>
<tr>
<td>110VAC/DC, 2m cable LED and protection IP65</td>
<td>PS2430J83BP PS2032J83BP</td>
</tr>
</tbody>
</table>

Cable plug dimensions mm (inches)

<table>
<thead>
<tr>
<th>22mm Form B Industrial Cable plugs</th>
<th>30mm DIN 43650A Cable plugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS2429BP</td>
<td>PS2028BP</td>
</tr>
</tbody>
</table>

Solenoid coil dimensions mm (inches)

Electrical schematics

- PS2028BP
- PS243079BP
- PS203279BP
- PS243083BP
- PS203283BP
- PS2430J79BP
- PS2032J79BP
- PS2430J83BP
- PS2032J83BP
- PS294679BP
- PS294683BP
- PS2946J79BP
- PS2946J83BP
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.

Ordering Information

<table>
<thead>
<tr>
<th>Model type</th>
<th>Port size</th>
<th>Exhaust port</th>
<th>Thread type</th>
<th>Flow dm³/s (scfm)</th>
<th>Modular ball valve flow from left to right</th>
</tr>
</thead>
<tbody>
<tr>
<td>P31</td>
<td>1/4&quot;</td>
<td>1/4&quot;</td>
<td>NPT</td>
<td>20 (42.4)</td>
<td>P31VB92LBNN</td>
</tr>
<tr>
<td>P32</td>
<td>3/8&quot;</td>
<td>1/4&quot;</td>
<td>NPT</td>
<td>90 (190.7)</td>
<td>P32VB93LBNN</td>
</tr>
<tr>
<td></td>
<td>1/2&quot;</td>
<td>1/4&quot;</td>
<td>NPT</td>
<td>122 (258.5)</td>
<td>P32VB94LBNN</td>
</tr>
<tr>
<td>P33</td>
<td>1/2&quot;</td>
<td>1/2&quot;</td>
<td>NPT</td>
<td>265 (561.5)</td>
<td>P33VB94LBNN</td>
</tr>
<tr>
<td></td>
<td>3/4&quot;</td>
<td>1/2&quot;</td>
<td>NPT</td>
<td>320 (678)</td>
<td>P33VB96LBNN</td>
</tr>
</tbody>
</table>

For thread type: BSPP 1 BSPT 2 NPT 9

Material Specifications

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

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)

Dimensions mm (inches)

P31

P32

P33
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 type</th>
<th>In / Out port size</th>
<th>Auxiliary port size top</th>
<th>Auxiliary port size bottom</th>
<th>Thread type</th>
<th>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>
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<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>
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<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)

<table>
<thead>
<tr>
<th>P31</th>
<th>P32</th>
<th>P33</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inlet Port 1/4&quot;</td>
<td>Top Port 1/4&quot;</td>
<td>Top Port 3/4&quot;</td>
</tr>
<tr>
<td>Outlet Port 1/4&quot;</td>
<td>Inlet Port 1/2&quot;</td>
<td>Outlet Port 3/4&quot;</td>
</tr>
<tr>
<td>41 (1.61)</td>
<td>42 (1.66)</td>
<td>73 (2.88)</td>
</tr>
<tr>
<td>40 (1.58)</td>
<td>60 (2.36)</td>
<td>36.5 (1.44)</td>
</tr>
<tr>
<td>19 (0.74)</td>
<td>23.9 (0.94)</td>
<td>33 (1.30)</td>
</tr>
<tr>
<td>20 (0.79)</td>
<td>47.8 (1.88)</td>
<td>66 (2.60)</td>
</tr>
<tr>
<td>1 (0.04)</td>
<td>23.9 (0.94)</td>
<td>47.8 (1.88)</td>
</tr>
<tr>
<td>1 (0.04)</td>
<td>23.9 (0.94)</td>
<td>47.8 (1.88)</td>
</tr>
<tr>
<td>0.04 (0.15)</td>
<td>23.9 (0.94)</td>
<td>47.8 (1.88)</td>
</tr>
</tbody>
</table>

Symbol
Accessories - P31 Series

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

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

Body Connector
(O-ring not shown)
P31KA00CB

Port Block Kit
(O-ring not shown)

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

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

Body Connector
(P31KA00CB)

Port Block Kit
(P31KA00MW)

Angled Bracket
(P31KB00MR)
Global Air Preparation System

Accessories - P32 Series

T-Bracket w/ Body Connector
P32KA00MT

Body Connector
P32KA00CB

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

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
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
# Global Air Preparation System

## P31, P32, P33 Series
### Kits & Accessories

<table>
<thead>
<tr>
<th>Series</th>
<th>Description</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>P31</td>
<td>Panel Mount Nut (Plastic)</td>
<td>P31KA00MP</td>
</tr>
<tr>
<td>P32</td>
<td>Panel Mount Nut (Plastic)</td>
<td>P32KA00MP</td>
</tr>
<tr>
<td>P33</td>
<td>Panel Mount Nut (Plastic)</td>
<td>P33KA00MP</td>
</tr>
<tr>
<td>P31</td>
<td>Panel Mount Nut (Aluminum)</td>
<td>P31KA00MM</td>
</tr>
<tr>
<td>P32</td>
<td>Panel Mount Nut (Aluminum)</td>
<td>P32KA00MM</td>
</tr>
<tr>
<td>P33</td>
<td>Panel Mount Nut (Aluminum)</td>
<td>P33KA00MM</td>
</tr>
<tr>
<td>P31</td>
<td>5µ Element Kit</td>
<td>P31KA00ESE</td>
</tr>
<tr>
<td>P32</td>
<td>5µ Element Kit</td>
<td>P32KA00ESE</td>
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<td>P31</td>
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<td>P31KA00ES9</td>
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<td>P31</td>
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<td>0.01µ Element Kit</td>
<td>P33KA00ESC</td>
</tr>
<tr>
<td>P31</td>
<td>Adsorber Element Kit</td>
<td>P31KA00ESA</td>
</tr>
<tr>
<td>P32</td>
<td>Adsorber Element Kit</td>
<td>P32KA00ESA</td>
</tr>
<tr>
<td>P33</td>
<td>Adsorber Element Kit</td>
<td>P33KA00ESA</td>
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<tr>
<td>P31</td>
<td>Auto Drain Kit</td>
<td>P32KA00DA</td>
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<tr>
<td>P32 / P33</td>
<td>Auto Drain Kit</td>
<td></td>
</tr>
<tr>
<td>P31</td>
<td>Differential Pressure Indicator Kit</td>
<td>P31KB00RQ</td>
</tr>
<tr>
<td>P32 / P33</td>
<td>Differential Pressure Indicator Kit</td>
<td>P32KB00RQ</td>
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<tr>
<td>P31 / P32 / P33</td>
<td>Drip Control Assembly Kit</td>
<td>P32KA00PH</td>
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<tr>
<td>P31</td>
<td>Fill Plug Kit</td>
<td>P31KA00PL</td>
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<tr>
<td>P32 / P33</td>
<td>Fill Plug Kit</td>
<td></td>
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<tr>
<td>P31</td>
<td>Lubricator - Plastic Bowl w/ Bowl Guard No Drain</td>
<td>P31KB00BGN</td>
</tr>
<tr>
<td>P32</td>
<td>Lubricator - Plastic Bowl w/ Bowl Guard No Drain</td>
<td>P32KB00BGN</td>
</tr>
<tr>
<td>P33</td>
<td>Lubricator - Plastic Bowl w/ Bowl Guard No Drain</td>
<td>P33KA00BGN</td>
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</tbody>
</table>
## Global Air Preparation System

<table>
<thead>
<tr>
<th>Series</th>
<th>Description</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>P31, P32, P33</td>
<td>Lubricator - Metal Bowl w/o Sight Gauge No Drain</td>
<td>P31KB00BMN, P32KB00BMN, P33KA00BMN</td>
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<tr>
<td>P31, P32, P33</td>
<td>Lubricator - Metal Bowl w/ Sight Gauge No Drain</td>
<td>P32KB00BSN, P33KA00BSN</td>
</tr>
<tr>
<td>P31, P32, P33</td>
<td>Metal Bowl w/o Sight Gauge &amp; Manual Drain</td>
<td>P31KB00BMM, P32KB00BMM, P33KA00BMM</td>
</tr>
<tr>
<td>P31, P32, P33</td>
<td>Metal Bowl w/o Sight Gauge &amp; Pulse Drain</td>
<td>P31KB00BMB</td>
</tr>
<tr>
<td>P31, P32, P33</td>
<td>Metal Bowl w/ Sight Gauge &amp; Auto Drain</td>
<td>P32KB00BSA, P33KA00BSA</td>
</tr>
<tr>
<td>P32, P33</td>
<td>Metal Bowl w/ Sight Gauge &amp; Manual Drain</td>
<td>P32KB00BSM, P33KA00BSM</td>
</tr>
<tr>
<td>P32, P33</td>
<td>Metal Bowl w/ Sight Gauge &amp; Auto Drain</td>
<td>P32KB00BSA, P33KA00BSA</td>
</tr>
<tr>
<td>P31, P32, P33</td>
<td>Plastic Bowl w/ Bowl Guard &amp; Manual Drain</td>
<td>P31KB00BGM, P32KB00BGM, P33KA00BGM</td>
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<tr>
<td>P31, P32, P33</td>
<td>Plastic Bowl w/ Bowl Guard &amp; Pulse Drain</td>
<td>P31KB00BGB</td>
</tr>
<tr>
<td>P32, P33</td>
<td>Plastic Bowl w/ Bowl Guard &amp; Auto Drain</td>
<td>P32KB00BGA, P33KA00BGA</td>
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<tr>
<td>P31, P32, P33</td>
<td>Regulator - Relieving Repair Kit</td>
<td>P31KB00RB, P32KB00RB, P33KA00RB</td>
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<tr>
<td>P31, P32, P33</td>
<td>Regulator - Non-Relieving Repair Kit</td>
<td>P31KB00RC, P32KB00RC, P33KA00RC</td>
</tr>
<tr>
<td>Series</td>
<td>Description</td>
<td>Connection</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
<td>------------</td>
</tr>
<tr>
<td>P31</td>
<td>Regulator - Main Adjusting Spring 0-2 bar (0-30 psig) Kit</td>
<td>P31</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P31</td>
<td>Regulator - Main Adjusting Spring 0-4.1 bar (0-60 psig) Kit</td>
<td>P31</td>
</tr>
<tr>
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<td></td>
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<tr>
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<td></td>
<td></td>
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<tr>
<td>P31</td>
<td>Regulator - Main Adjusting Spring 0-8.6 bar (0-125 psig) Kit</td>
<td>P31</td>
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<tr>
<td>P31</td>
<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>
<td>0-4 bar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0-11 bar</td>
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<td></td>
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<td>0-60 psig</td>
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<td></td>
<td></td>
<td>0-160 psig</td>
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<td>P31 / P32</td>
<td>Square Mounting Gauge with Adapter Kit</td>
<td>0-4 bar</td>
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<td></td>
<td>0-11 bar</td>
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<td>0-60 psig</td>
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<td></td>
<td></td>
<td>0-160 psig</td>
</tr>
<tr>
<td>P31</td>
<td>1&quot; Round Gauge</td>
<td>0-60 psig / 0-4.1 bar 1/8&quot;</td>
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<td></td>
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<td>0-160 psig / 0-10 bar 1/8&quot;</td>
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<tr>
<td>P31</td>
<td>40mm Round Gauge</td>
<td>0-30 psig / 0-2 bar 1/8&quot;</td>
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<td></td>
<td></td>
<td>0-60 psig / 0-4.1 bar 1/8&quot;</td>
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<tr>
<td></td>
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<td>0-160 psig / 0-10 bar 1/8&quot;</td>
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<tr>
<td>P32 / P33</td>
<td>50mm Round Gauge</td>
<td>0-30 psig / 0-2 bar 1/4&quot;</td>
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<td>0-60 psig / 0-4.1 bar 1/4&quot;</td>
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<tr>
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<td></td>
<td>0-160 psig / 0-10 bar 1/4&quot;</td>
</tr>
<tr>
<td></td>
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<td>0-300 psig / 0-20 bar 1/4&quot;</td>
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<td>Series</td>
<td>Description</td>
<td>Part number</td>
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<td>--------------------------------------------</td>
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<tr>
<td>P31</td>
<td>Body Connector O-ring (Replacement kit)</td>
<td>P31KA00CY</td>
</tr>
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<td></td>
<td>(Pack of 10)</td>
<td>P32KA00CY</td>
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<tr>
<td>P31</td>
<td>Tamperproof Knob Kit</td>
<td>P31KB00AT</td>
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<td>P32KB00AT</td>
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<tr>
<td>P31</td>
<td>Tamperproof Lockable Kit</td>
<td>P31KB00AL</td>
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<td>P32</td>
<td></td>
<td>P32KB00AL</td>
</tr>
</tbody>
</table>
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.

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:

Options:

- PPS1
- 1
- C
- 3
- R
- HM

Thread

- 1/4" NPT male
- 1/8" NPT male
- 1/4" BSPP male
- 1/8" BSPP male

Circuit

- SPDT
- C

Set Point Direction

- R
- Rising

Electrical Connection

- HM
- DIN 9.4mm
- WL
- Wire leads 18"

Range*

- 1
- 3-10 PSI
- 6-30 PSI
- 20-120 PSI
- 100-400 PSI†

Note: Switch is field adjustable.

* Factory setting for calibration purposes
† Only available in 1/4" NPT
Safety Guide For Selecting And Using Pneumatic Division Products And Related Accessories

⚠️ WARNING:

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

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

Before selecting or using any of these Products, it is important that you read and follow the instructions below.

1. GENERAL INSTRUCTIONS

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

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


1.4. 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 and greases migrating into the pneumatic components check for compatibility with the seal materials used. Consult the factory or product literature for materials of construction.

2.6. Polycarbonate Bowls and Sight Gauges: To avoid potential polycarbonate bowl failures:

- Do not locate polycarbonate bowls or sight gauges in areas where they could be subject to direct sunlight, impact blow, or temperatures outside of the rated range.
- Do not expose or clean polycarbonate bowls with detergents, chlorinated hydro-carbons, keytones, esters or certain alcohols.
- Do not use polycarbonate bowls or sight gauges in air systems where compressors are lubricated with fire resistant fluids such as phosphate ester and di-ester lubricants.
2.7. Chemical Compatibility: For more information on plastic component chemical compatibility see Pneumatic Division technical bulletins Tec-3, Tec-4, and Tec-5.

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

3. PRODUCT ASSEMBLY AND INSTALLATION INSTRUCTIONS

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

3.2. Installation Instructions: Parker published Installation Instructions must be followed for installation of Parker valves, FRLs and vacuum components. These instructions are provided with every Parker valve or FRL sold, or by calling 1-800-CPARKER, or at www.parker.com.

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

4. VALVE AND FRL MAINTENANCE AND REPLACEMENT INSTRUCTIONS

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

4.2. Installation and Service Instructions: Before attempting to service or replace any worn or damaged parts consult the appropriate Service Bulletin for the valve or FRL in question for the appropriate practices to service the unit in question. These Service and Installation Instructions are provided with every Parker valve and FRL sold, or are available by calling 1-800-CPARKER, or by accessing the Parker web site at www.parker.com.


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

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

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

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

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

4.8. Servicing or Replacing of any Worn or Damaged Parts: To avoid unpredictable system behavior that can cause death, personal injury and property damage:
   • Follow all government, state and local safety and servicing practices prior to service including but not limited to all OSHA Lockout Tagout procedures (OSHA Standard – 29 CFR, Part 1910.147, Appendix A, The Control of Hazardous Energy – Lockout / Tagout).
   • Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
   • 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, groups, 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 purchase is subject to Seller’s 1. Terms and Conditions. Seller’s willingness to offer Products for sale or accept an order for purchase is subject to the terms and conditions contained herein or any other document or application submitted by Buyer, or any other document or application submitted by Buyer, or any other document or application contained in any version of the document, unless 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 will bill each transaction except with a credit approval and credit card authorization. Payment 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.

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 will bill each transaction except with a credit approval and credit card authorization. Payment 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 on 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 shipment at Buyers’ request beyond the respective dates indicated will be made without advance written consent of Seller. Seller will indemnify, defend and hold Seller harmless against all loss and additional expense. Buyer shall be responsible for any additional shipping charges incurred by Seller due to Buyer’s acts or omissions.

4. Improper Use and Indemnity. Buyer shall promptly inspect all Products upon receipt. No claims for shortages will be allowed unless reported to the Seller within ten (10) days of receipt of the Products or other claims against Seller will be allowed unless written notice is received in writing within thirty (30) days after delivery. Buyer shall notify Seller of any alleged breach of warranty within thirty (30) days after the defect is or should have been discovered by Buyer. Any claim or action against Seller based upon breach of contract or any tort, including, but not limited to, 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.

5. LIMITATION OF LIABILITY. IN THE EVENT OF A BREACH OF WARRANTY, EXCEPT AS PROVIDED HEREIN, SELLER'S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE OF THE PRODUCTS.

6. User Responsibility. The user, through its own analysis and testing, is solely responsible for the end-use of the Product and ascertained with the performance, availability, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application and follow applicable industry standards and Product information. If Seller provides Product or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products or systems.

7. Loss to Buyer’s Property. Any graphical tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer’s property, will be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer ordering the items manufactured using such items or returning Buyer’s property, will be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer ordering the items manufactured using such items or returning Buyer's property to Buyer, upon termination of this agreement. Buyer is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products or systems.

8. Special Tools. A tooling charge may be imposed for any special tooling, including without limitation, designs, molds and patterns, acquired to manufacture Products. Such special tooling shall be and remain Seller’s property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the Products, even if such apparatus has been designed or adapted for Buyer’s use or name of Buyer, or if Buyer has paid for such charges paid by Buyer. Unless otherwise agreed, Seller has the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

9. Buyer’s Obligation; Rights of Seller. To secure payment of all sums due or otherwise accruing to Seller by Buyer or in the case of Buyer’s bankruptcy, Seller shall be entitled to a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer’s behalf all documents necessary to perfect its security interest. Buyer shall maintain in good order all tools, dies, molds, patterns, designs and other apparatus appurtenant to the manufacture, sale, or disposition of the Products or any other items to Buyer or any other item of Buyer’s manufacture provided to Buyer by 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) Seller’s use of patterns, dies, drawings, 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. 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 (hereafter “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.

11. Waiver and Severability. This agreement contains the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter are hereby merged. The terms contained herein may not be modified, amended or supplemented unless in writing and signed by an authorized representative of Buyer.

12. Compliance with Laws. Buyer agrees to comply with all applicable laws, regulations, and industry and professional standards of care, including those of the United Kingdom, the United States of America, and the country or countries in which Buyer may operate, and to obtain all necessary permits, approvals, licenses and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to this agreement.

13. Indemnity for Infringement of Intellectual Property Rights. Seller is not liable for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Section. Buyer will defend and indemnify Buyer against infringement of any patents, trademarks, copyrights, trade dress, trade secrets (“Intellectual Property Rights”), Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that a Product sold pursuant to this agreement infrings the Intellectual Property Rights of a third party, Seller will solely determine actions for settling any such claims. Buyer is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Product, replace or modify the Product so as to make it noninfringing, or other action in its sole discretion. Buyer may not cancel or modify any order for any reason and shall accept delivery of all Products and pay the purchase price. 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 (hereafter “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.

14. Waiver. No waiver by Seller of any of the provisions of this agreement will be deemed to be a waiver of any other right or provision under the agreement without the prior written consent of Seller.

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