Parker Global Air Preparation System

Bulletin 0750-B1-US

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

Parker

ENGINEERING YOUR SUCCESS.

Parker Global Air Preparation System

Global.
Economical.
Modular.

Performance you need,
wherever *you need it.*

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

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

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

www.parker.com/globalfrl

Comprehensive Offering

P31 Mini Series
1/4" ports
40mm body width

P32 Compact Series
1/4", 3/8" and 1/2"
60mm body width

P33 Standard Series
1/2" and 3/4"
73mm body width

Filters

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

Regulators

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

Filter / Regulators

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

Lubricators

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

Combinations

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

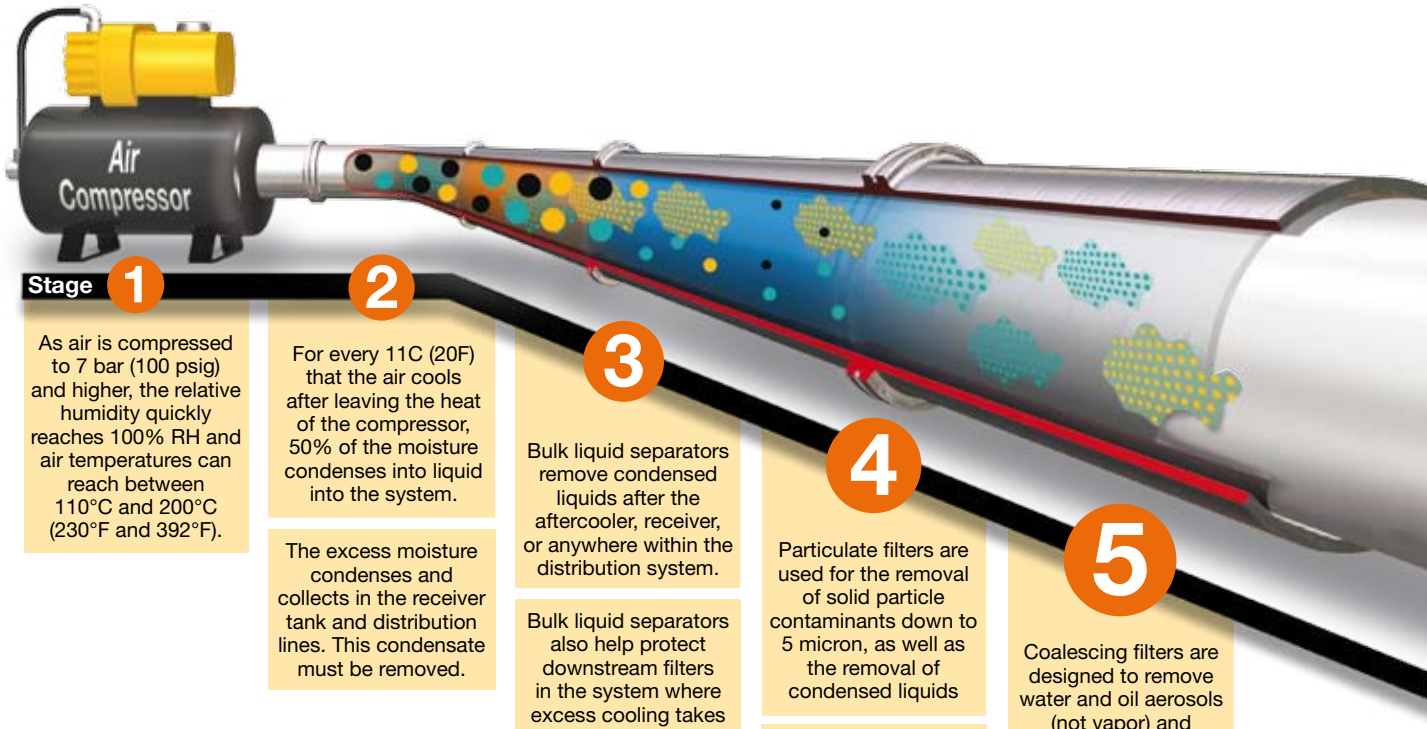
Accessories

- Solenoid operated soft start, quick dump, and soft start/quick dump valves
- Manifold blocks
- Shut-off valves (both slide and ball type)
- Repair kits, gauges, etc.

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



Stage 1

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).

Stage 2

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

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

Stage 3

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

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

Stage 4

Particulate filters are used for the removal of solid particle contaminants 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.

Stage 5

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

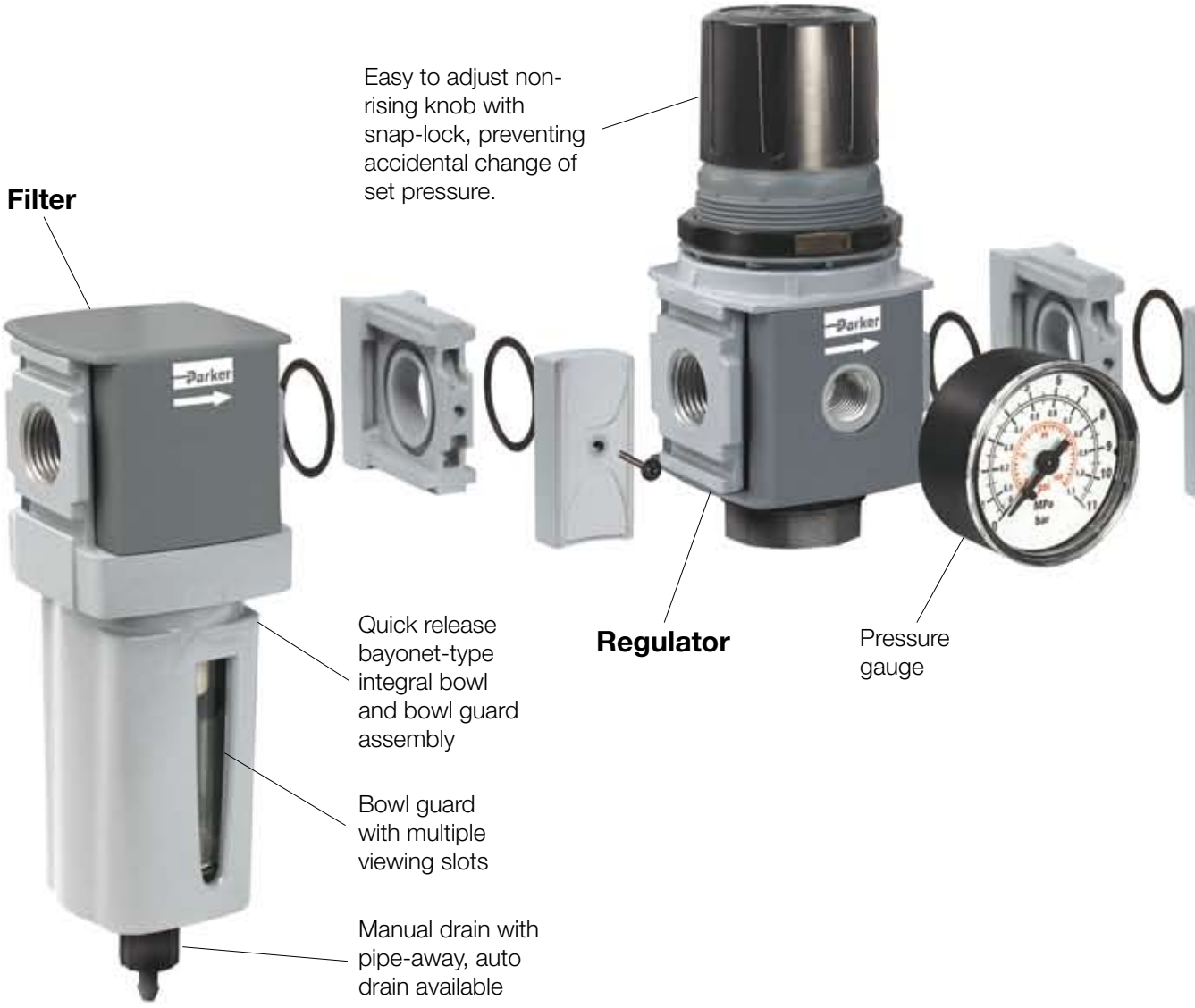
Installed in pairs, Particulate and Coalescing filters ensure a continuous supply of high quality air.

Key

- **Particulate**
- **Oil**
- **Water**
- **Oil Vapor**
- **Water Vapor**

						
Stages	1 2	3	4	5	6	7
Function	**Air Compressor**	**Bulk Liquid Removal**	**Particulate Filtration**	**Coalescing Filtration**	**Air Dryers**	**Hydrocarbon Removal**
Application	All pneumatic systems	Basic pneumatic systems	Basic pneumatic systems	Systems requiring highest quality air.	Systems requiring air with reduced moisture content	Systems requiring highest quality air for critical applications
Description	Air leaving the compressor room at 93ºC (200ºF) releases 95% of its moisture into the piping system when it cools to 38ºC (100ºF)	Removes bulk liquid contamination and protects filters where excess cooling takes place in the distribution piping	Removes solid particulates down to 5 micron, and the separation of bulk contaminants.	Removes liquid aerosols and submicron particulates (not vapor) down to 0.01 micron.	Removes water vapor from air stream. Dew point reduced down to 4ºC (40ºF) (refrigeration) or -40ºC (-40ºF) (desiccant).	Removal of odors and trace vapors for critical applications.
Parker Global Air Preparation Solution	Customer supplied	P3TF Bulk Liquid Separator	P31, P32, P33 Particulate Filter	P31, P32, P33 Coalescing Filter	PDRD Refrigeration Dryer P3TJ Regenerative Desiccant Dryer	P31, P32, P33 Activated Carbon (Adsorber) Filter

A completely modular air preparation system

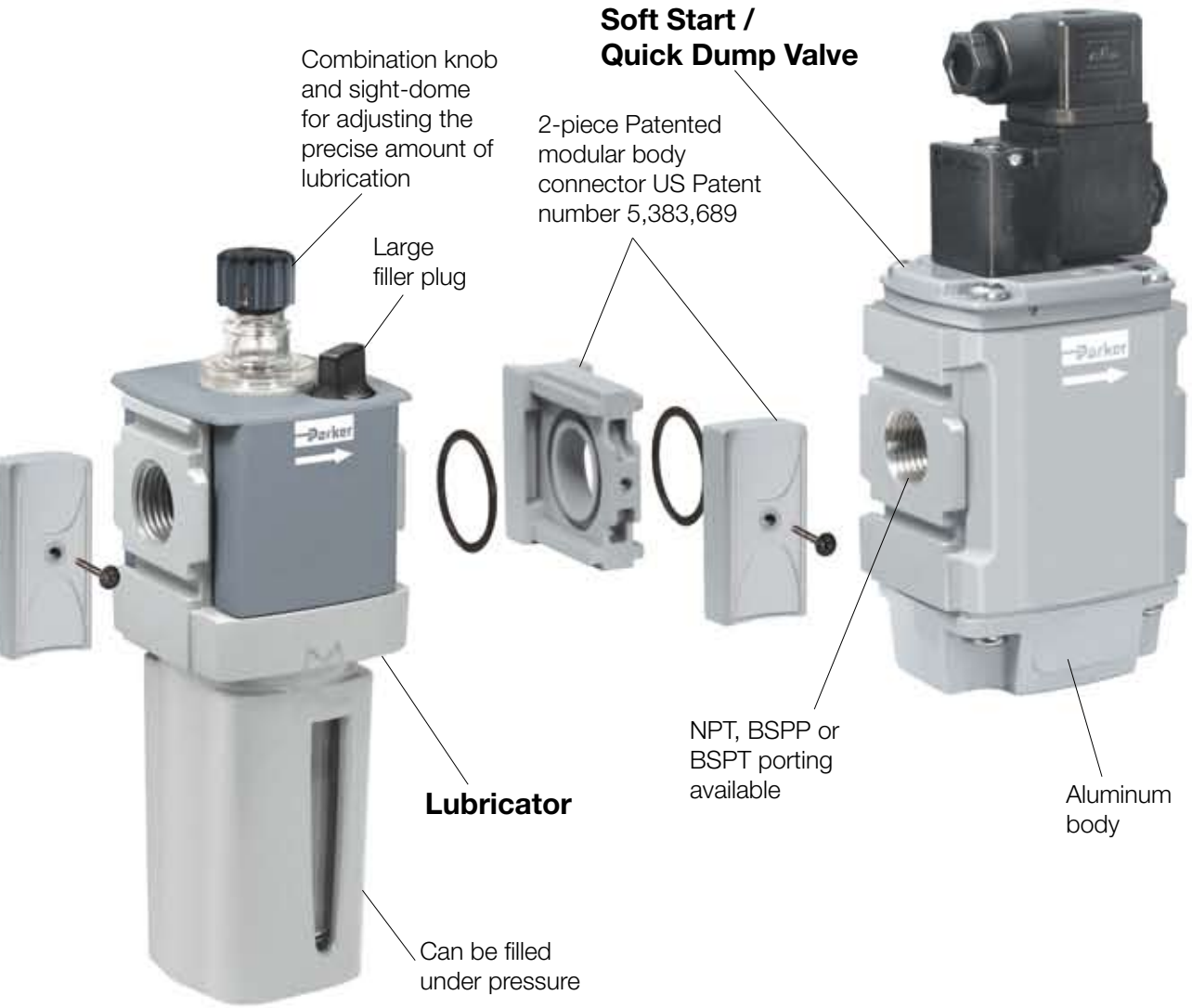


Electronic Proportional Regulator

- 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

P31P Mini Series

P32P Compact Series



Common Port Manifold Regulators

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

Air Preparation

P31 Mini Series

40mm body width
1/8" & 1/4" Ported

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

Features:

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

P32 Compact Series

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

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

Features:

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

P33 Standard Series

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

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

Features:

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

Valves and Actuators

Mini Series Complimentary Products

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

Isys Micro

Moduflex Size 1

OSP-P

P1D

P1A

Compact Series Complimentary Products

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

Isys Micro

Isys HA / HB

P1D

OSP-P

Standard Series Complimentary Products

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

Isys Size 1

Isys HA / HB

P1D

OSP-P

Complete Pneumatic System

Pressure Regulation

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

			
Function	**Single**	**Common Port Manifold**	**Electronic Proportional**
Description	For pneumatic systems requiring single pressure regulation.	For pneumatic systems requiring multiple pressures for different parts of the system, yet still having a common inlet supply.	For pneumatic systems requiring an electronic to pneumatic proportional control signal. Also allows pressure regulation to be integrated into your control systems.
Parker Global Air Preparation Solution	P31R, P32R, P33R	P31H, P32H	P31P, P32P fits Compact & Standard

Accessories

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

						
Function	**Ball Valve**	**Slide Valve**	**Soft Start / Quick Dump**	**Soft Start**	**Quick Dump**	**Manifold Block**
Soft Start Function	⊘	⊘	✓	✓	⊘	⊘
Quick Dump Function	Slow Exhaust	Slow Exhaust	✓	⊘	✓	⊘
Operation	Manual Twist	Manual Slide	Solenoid or Air Pilot	Solenoid, Air Pilot, or Internal Air Pilot	Solenoid or Air Pilot	N/A
Placement	Before or after FRL, or stand alone	Before or after FRL, or stand alone	After FRL	After FRL	After FRL	Anywhere within FRL or stand alone
Parker Global Air Preparation Solution	P31V, P32V, P33V	P31V, P32V, P33V	P31T Mini, P32T fits Compact & Standard	P31S Mini, P32S fits Compact & Standard	P31D Mini, P32D fits Compact & Standard	P31M Mini, P33M fits Compact & Standard

Application Guide

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

	P31 Mini Series					P32 Compact Series						P33 Standard Series				
																
	Number of valves that would actuate at once															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Moduflex 1																
Isys Micro																
HB / Viking Xtreme																
Moduflex 2																
HA / Global ISO																
							See Larger Parker FRL Offering									

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

Cyl Ø mm Cyl Ø inches	Cylinder bore size													
	5 (5/16)	10 (7/16)	16 (9/16)	20 (3/4)	25 (1)	28 (1-1/8)	32 (1-1/4)	40 (1-1/2)	45 (1-3/4)	50 (2)	63 (2-1/2)	75 (3)	80 (3-1/4)	100 (4)
Tube Ø mm Tube Ø inches	Tube diameter external													
	4 (5/32)	4 (5/32)	4 (5/32)	6 (1/4)	6 (1/4)	6 (1/4)	6 (1/4)	8 (5/16)	8 (5/16)	8 (5/16)	10 (3/8)	10 (3/8)	12 (1/2)	12 (1/2)
Number of cylinders actuating at once 1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
	P31 Mini Series					P32 Compact Series			P33 Standard Series			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.

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