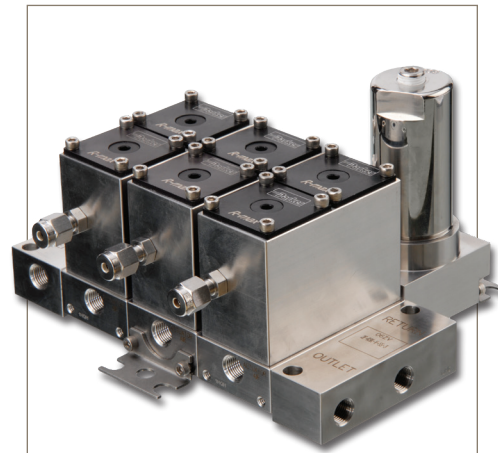


Gen II R-max™

Stream Switching System

Switching • Filtering • Gasses • Liquids



Value Proposition:

The Parker Gen II R-max™ is a multi-functional system capable of integrating both stream switching and filtering into one unique compact assembly. The system is designed to control both gases and liquids in analytical systems ranging from vacuum to 500 psig (34 bar) while requiring 65psig (5 bar) actuation pressure (by addition of a LP actuator the valve may be actuated at 35psig (2.4 bar)). The system was engineered with a focus on improved product reliability and reduced cost of ownership.

The Parker Gen II R-max™ Stream Switching System utilizes surface mount technology to reduce leak paths, internal volume, and dead volume. With surface mounting, system components may be easily removed and replaced without breaking process connections.

Product Features:

- Modular valve design offers maximum serviceability for quick and easy in-system repair, reduced downtime and can be utilized for valve module check procedures.
- Low internal volume insures maximum system efficiency by reducing purge time and expensive purge gas.
- Enhanced position indicator enables easy recognition of valve position for maximum system safety.
- Captured vent provides a low pressure header that separates sample stream from actuation air preventing cross contamination.
- Backward compatibility allows the enhanced features to be added to existing units.
- Surface mount technology enhances maximum system flexibility and enables the user to add additional streams to a system without interrupting installed units.
- The Gen II R-max™ is available for ANSI/ISA-76.00.02 (NeSSI) mounting.
- Maximum Application Flexibility is achieved by utilizing multiple available valve functions within a single assembly
- US Patent 6619321



INSTRUMENTATION PRODUCTS DIVISION

ENGINEERING YOUR SUCCESS.

Gen II R-max™

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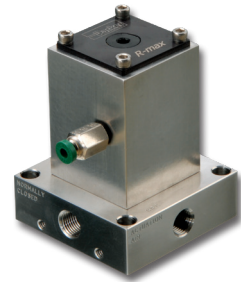
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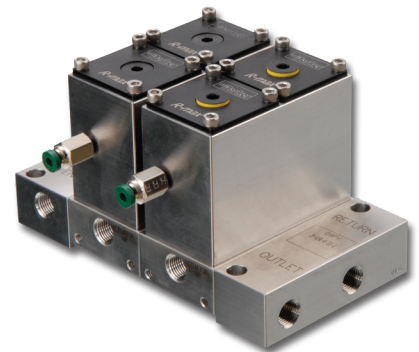
Gen II R-max™

Specifications:

Functional Performance	
Pressure Rating	500 psig (34 bar) CWP
Minimum Actuation Pressure	65 psig (4.5 bar)
With Low Pressure Actuator	35 psig (2.4 bar)
Temperature Rating	Fluorocarbon Rubber: -15°F to 400°F (-26°C to 204°C) Buna-N Rubber: -30°F to 275°F (-34°C to 135°C) Ethylene Propylene Rubber: -70°F to 275°F (-57°C to 135°C) Neoprene Rubber: -45°F to 250°F (-43°C to 121°C) Highly Fluoronated Fluorocarbon Rubber: -25°F to 300°F (-32°C to 150°C)
Flow Data	Stream 1: $C_v = 0.154$

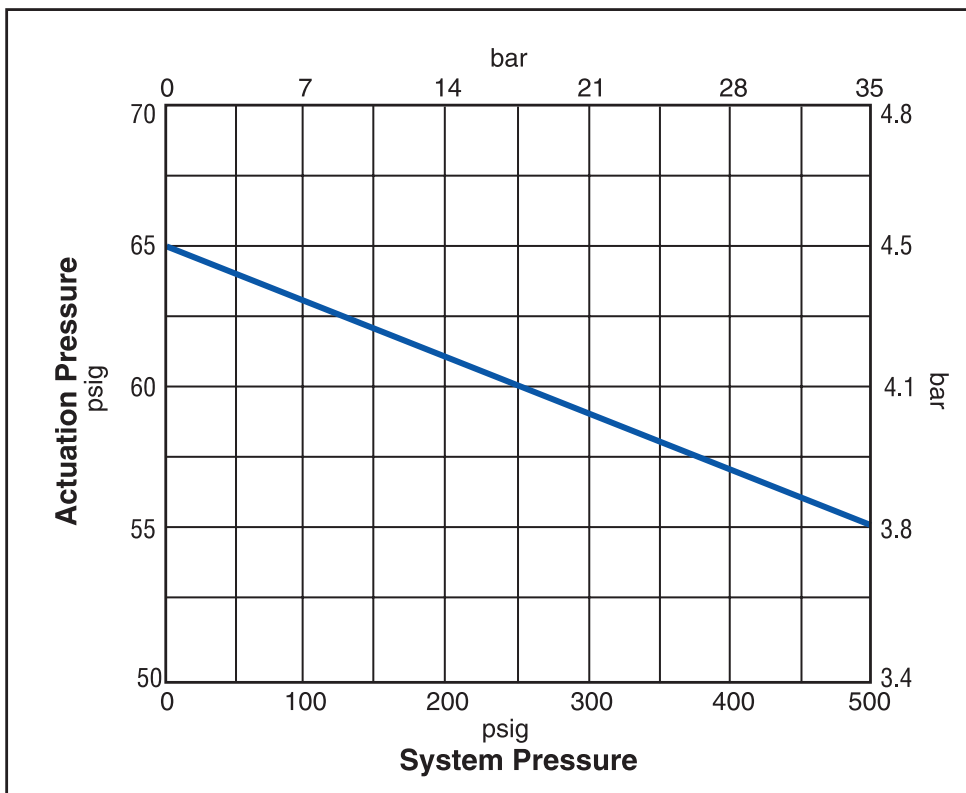


Single 3 Way Valve



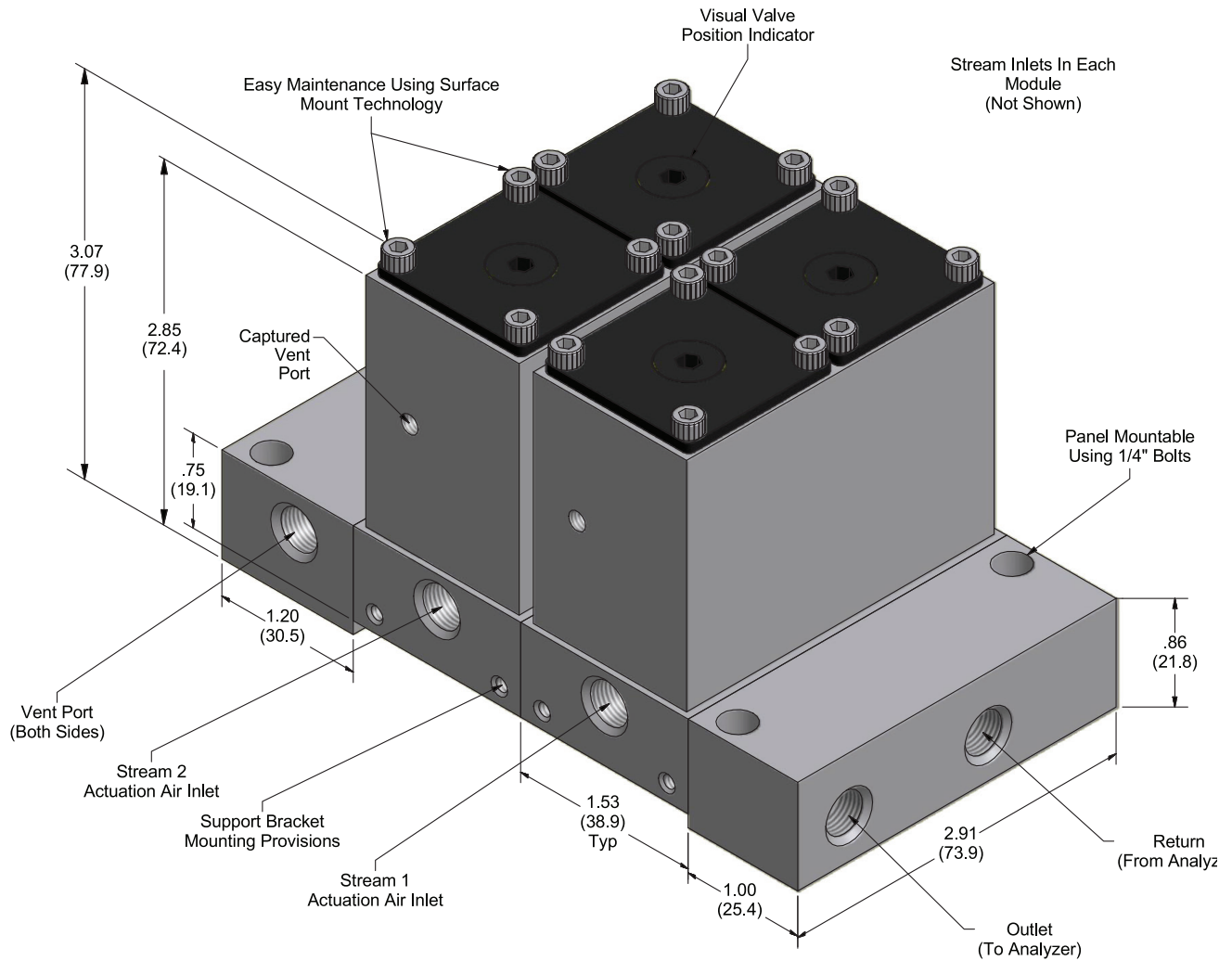
2 Stream DBB Assembly

Actuation Pressure vs. System Pressure:



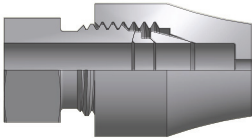
Gen II R-max™

Exterior Dimensions:

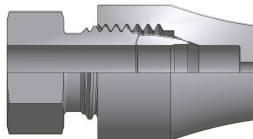


Available End Connections:

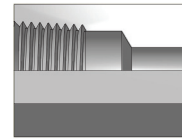
4A7 - 1/4" inverted two ferrule A-LOK® compression port



4Z7 - 1/4" inverted single ferrule CPI™ compression port



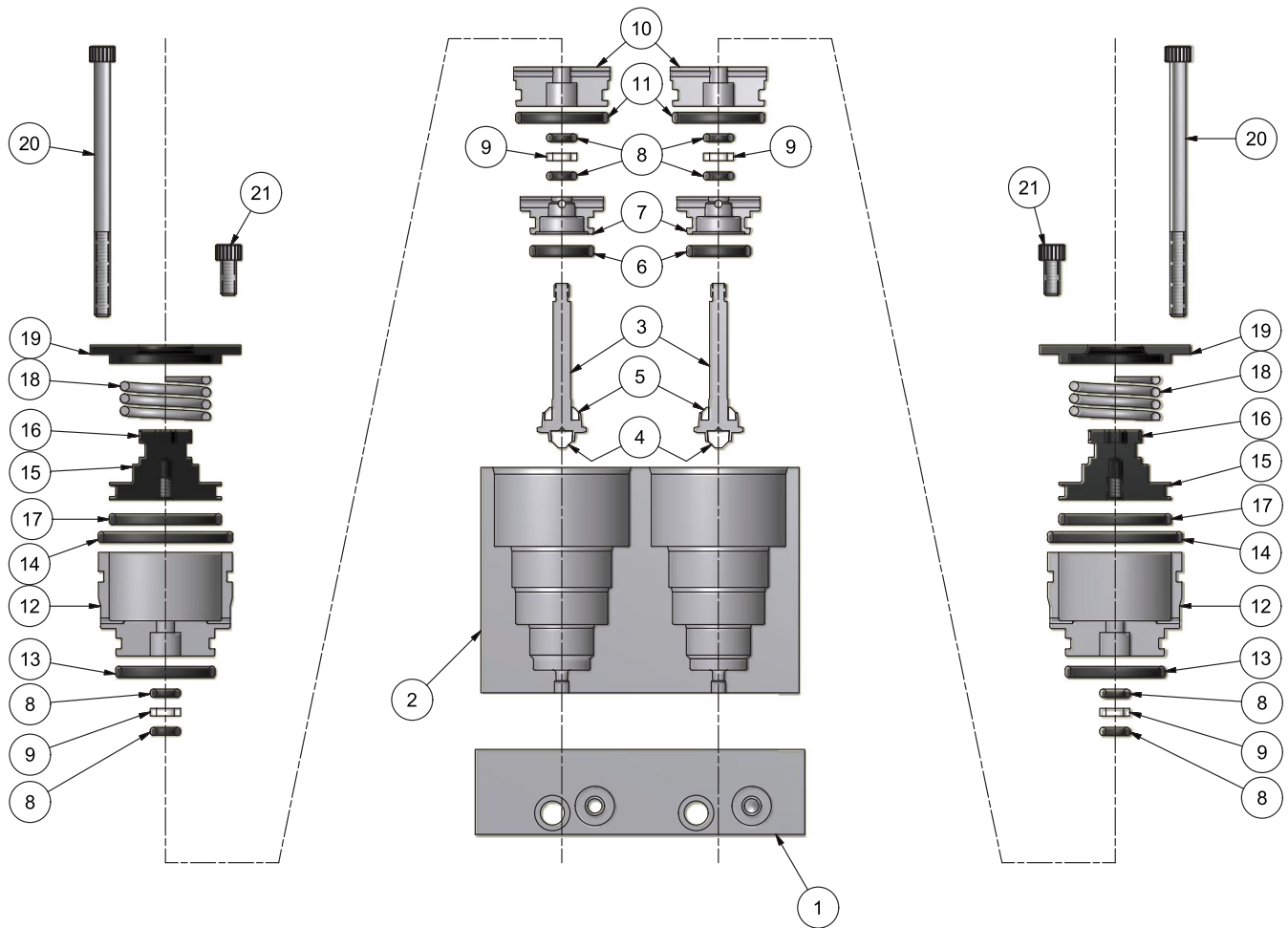
2F - 1/8" ANSI/ASME B1.20.1 internal pipe threads



Note: Actuator air porting and vent porting is always 1/8" FNPT.

Gen II R-max™

Valve Module Exploded View:



Material of Construction:

Item	Part Description	Material
1	Base	ASTM A 479, type 316
2	Valve Body	ASTM A 479, type 316
3	Stem	ASTM A 479, type 316
4	Seat	PCTFE
5	Backseat	PCTFE
6	2-013 O-Ring	Optional elastomers
7	Lower Bonnet	ASTM A 479, type 316
8	2-007 O-Ring	Optional elastomers
9	Backup Ring	PTFE
10	Center Bonnet	ASTM A 479, type 316
11	2-017 O-Ring	Optional elastomers

Item	Part Description	Material
12	Upper Bonnet	ASTM A 479, type 316
13	2-018 O-Ring	Optional elastomers
14	2-023 O-Ring	Optional elastomers
15	Piston	ASTM B 611, Alloy 6061
16	Indicator	Flexible polyolefin
17	2-020 O-Ring	Optional elastomers
18	Spring	ASTM A 546, type 630
19	Cap	ASTM B 211, Alloy 6061
20	Bolt (6-32 x 2.25)	Stainless steel
21	Bolt (6-32 x 5/16)	Stainless steel

Note: Material for Stream Switching Vent and Analyzer End Plates (not shown) is ASTM A 479, type 316.
Material for Base Plate Bolts is ASTM A 276, type 316.

Lubrication: Perfluorinated polyether

Gen II R-max™

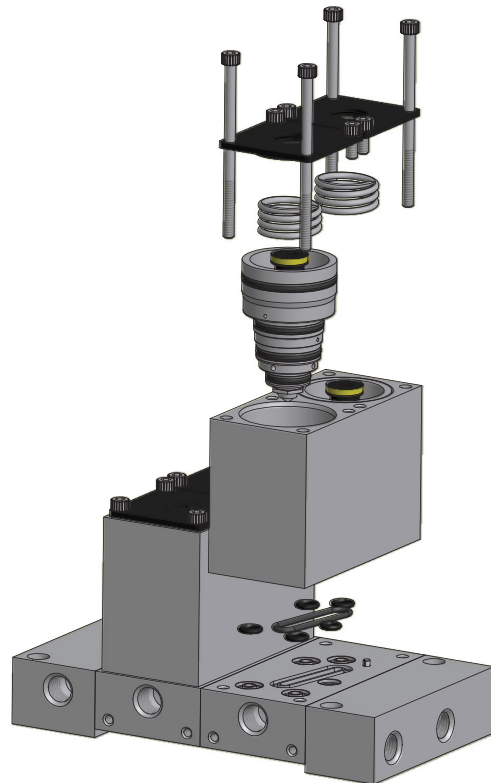
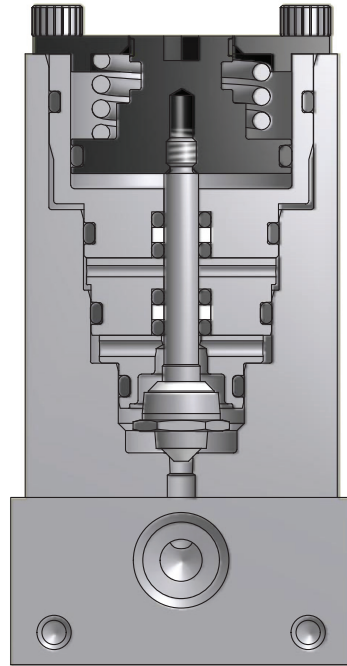
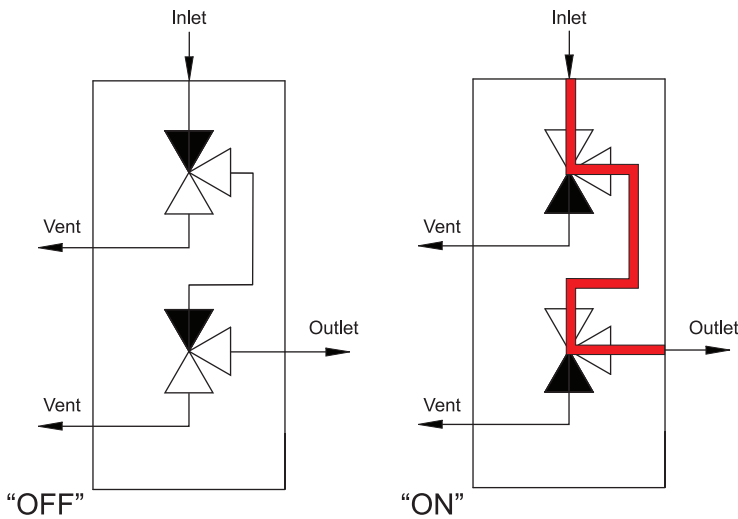
Valve Module:

The Parker Gen II R-max™ Stream Switching System centers around the Valve Module, which contains two 3-way valves. Each Valve Module is factory mounted to a base plate configured to provide the desired function. The Stream Switching Valve Module provides a double block and bleed arrangement preventing cross contamination of the sample streams.

Valve Module Features:

- Each Valve Module has a flow inlet (1/8" FNPT or 1/4" Inverted Compression) and a 1/8" FNPT valve air actuation port.
- Each Valve Module employs two valves.

Valve Module Flow Diagram:



Valve Expansion Module - R3EM

Valve Expansion Modules may be added or removed from the Parker Gen II R-max™ Stream Switching System. The Valve Expansion Module consists of a Valve Module plus two base plate bolts. They may be inserted between the vent and analyzer end plates to add one or more streams to a system. (See How to Order on pages 12-14.)

Note: Valve Modules may only be added to an existing stream switching system.

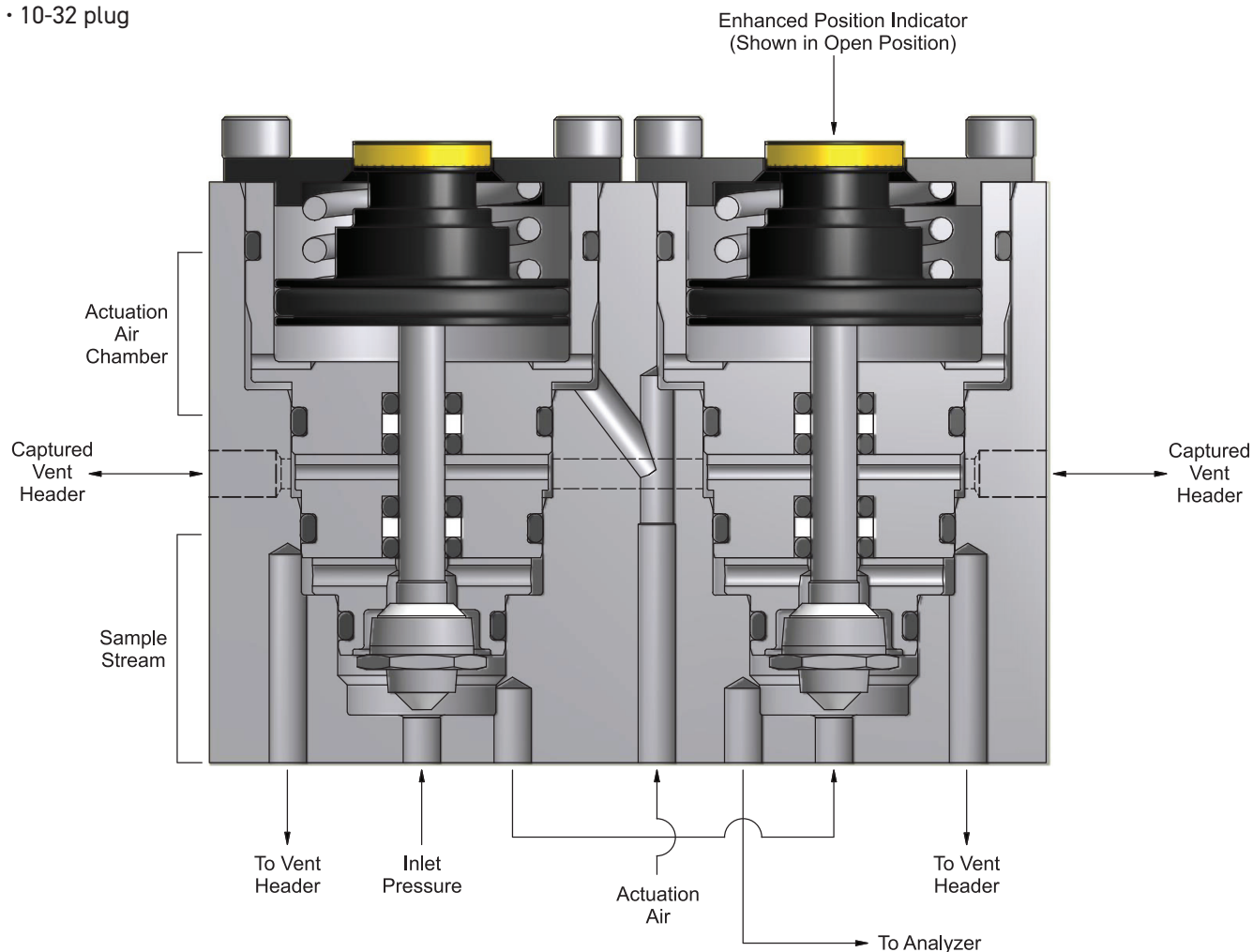
Gen II R-max™

Captured Vent

The Parker Gen II R-max™ is designed with a captured vent header which isolates the sample stream from the actuation air preventing cross contamination. The Captured Vent has 10-32 threads which allows the captured vent to be directed to a containment device.

Porting options include fittings for use with:

- 1/8" plastic tubing
- 1/8" SS tubing
- 1/8" pipe
- 10-32 plug



Enhanced Position Indicator

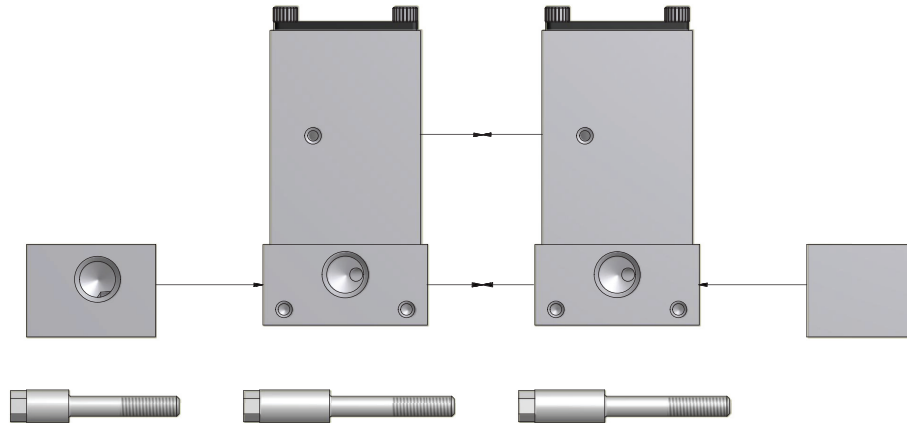
The Parker Gen II R-max™ is designed with an enhanced position indicator. The cap and piston are black anodized aluminum. The visual indicator, when actuated open, shows bright yellow against the black background giving easy indication for the open stream.

The visual indicator is also backwards compatible with the R2 Series R-max™ Stream Select System. Any R-max™ Stream Select Systems in service can easily be retrofitted with the enhanced indication.

Gen II R-max™

Multi-Stream Switch -R3:

A Multi-Stream Switch consists of individual Valve Modules bolted together between vent and analyzer end plates to create an internal, self-purging system with an integral outlet header. This unique design eliminates dead volume and the need for an external loop.

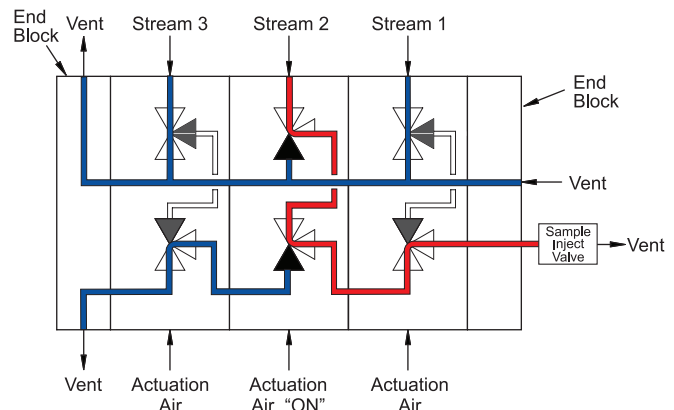


Fast Loop Options:

Internal Fast Loop

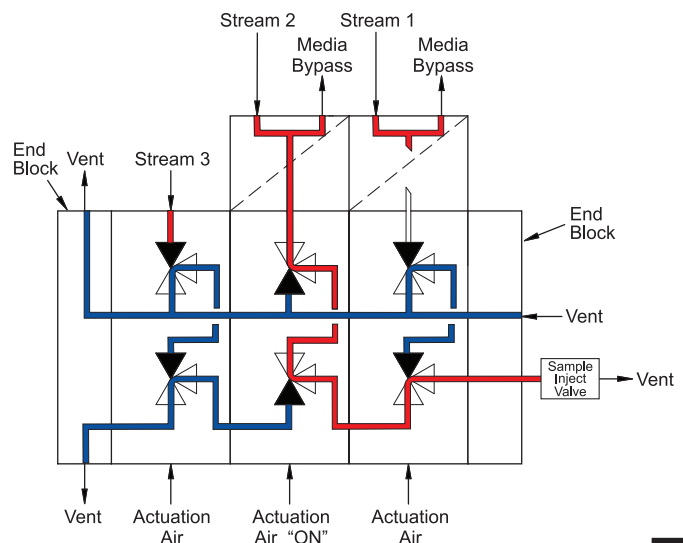
Example shown is a three stream switching system with an internal fast loop that maintains the double block and bleed feature. Illustrates Streams 1 and 3 in the "off" position, with these two streams flowing to the common vent. Stream 2 is illustrated in the "on" position, closing the bypass and directing the flow to the analyzer. To order, add the suffix -IF to the end of the Stream Switching System part number. (How to Order; see pages 12-14.)

Example: 2F-R3K-BN-SS-3-IF



Fast loop Filters

Example shown is a three stream switching system with two filter bypasses. Bypass Filter Kits may be incorporated into the Parker Gen II R-max™ Stream Switching System to enhance your system design. (How to Order; see pages 22-23.)

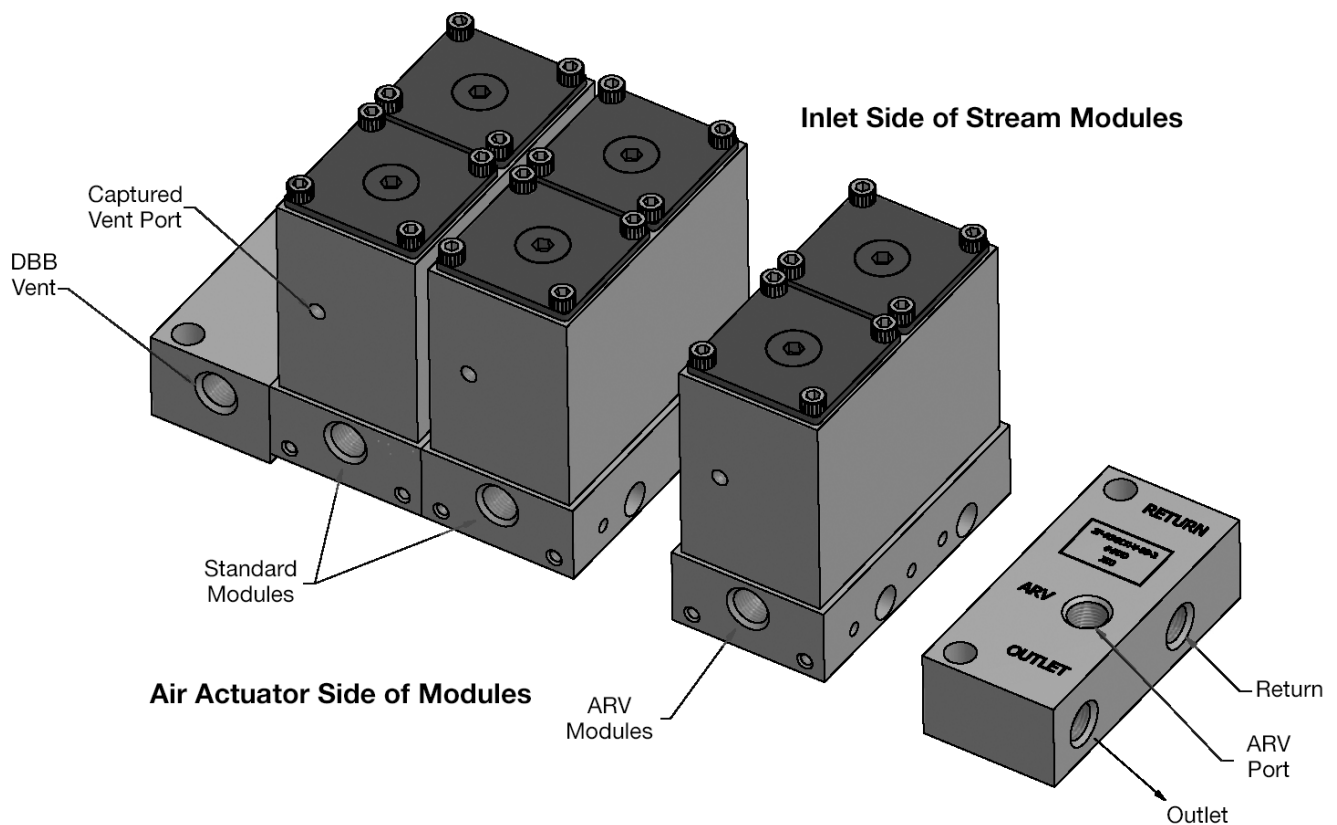


Atmospheric Reference Vent (ARV) Module

The Atmospheric Reference Vent Module provides many advantages and benefits within a modular footprint. It can be installed inline with existing Stream Switching Modules or act as a stand alone unit.

When the ARV Module is positioned between the analyzer and stream switching units it allows for sample shut-off and equilibration of the sample loop pressure to atmosphere. This insures a consistent sample volume in repetitive analysis. When the ARV Module is actuated, the sample flows from the actuated (open) stream, through the GC analyzer and is routed to the low pressure header.

The improved features on the Stream Switching Units are included on the ARV Modules. This includes the Captured Vent and Enhanced Position Indicator. It is provided with a new end block which has a dedicated atmosphere reference port.

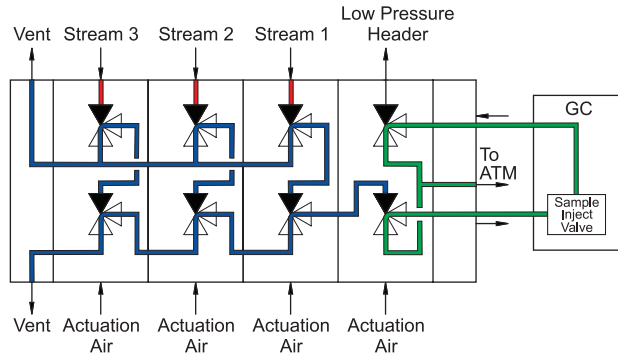


Gen II R-max™

Stream Switch with ARV Module Function - Three Stream Examples

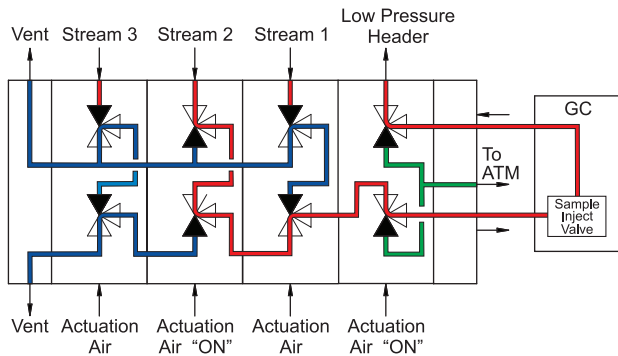
Example 1

All valves are in the "off" position. The system is "open" to vent.



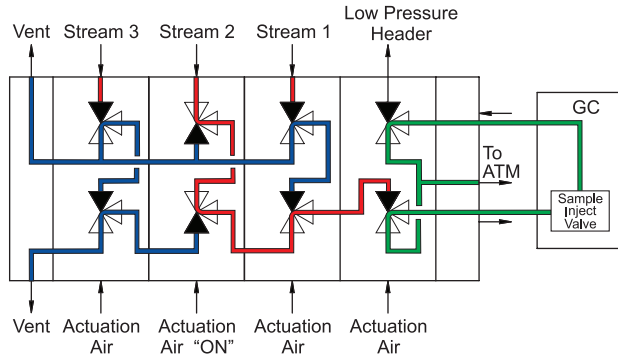
Example 2

Stream 2 and the ARV Module are in the "on" position, purging the sample loop to the low pressure header.



Example 3

Stream 2 is in the "on" position and the ARV Module is in the "off" position, equilibrating the sample loop pressure to vent pressure.



Backward Compatibility Features:

Aspects of the R3 Series Gen II R-max™ can be applied for use with existing R2 (Gen I R-Max) Series units.

Valve Bodies: The valve bodies are maintained using four 6-32 bolts. Removing these allows the existing R2 Series Body to be removed and the new R3 Series Body to be installed with new 6-32 bolts.

Example for Valve Body Kit: KIT-R3K-BODY-**-SS

Position Indicator: The Enhanced Position Indicator used on the R3 Series Gen II R-max™ provides a yellow indicator that is easily identifiable against a black background. This Indicator can be fitted onto the R2 Series R-max™ for the same easy identification of valve position. **Example for Position Indicator Kit:** KIT-R3-EPI-**

Redesigned ARV (Atmospheric Reference Vent) Option: R2 Series Stream Select Units can be installed with the redesigned ARV End Plate. Note: This also requires a special stream select module to block the ARV Port from the Vent Port.

Example: KIT-R3GCK-Retrofit-**-SS

** designated elastomer selection required: V, KZ, BN, etc.

How to Order Stream Switching Systems and Accessories

The correct part number is easily derived by following the sequence shown below. The eight product characteristics required are coded as shown below.



Example: **2F - R3 K - V - SS - 2 - E**

The example above describes a two stream switching system having 1/8" female NPT inlet and outlet ports, PCTFE valve seats, fluorocarbon rubber seals, stainless steel construction, a fitting for 1/8" plastic tubing on the captured vent port (inlet side) and a 10-32 plug on the other captured vent port.

End Connection ⁽¹⁾	Valve Series	Base Options ⁽²⁾	Seat Material	Seal Material	Body Material ⁽³⁾	Number of Modules	Captured Vent Fittings ⁽⁴⁾
2F	R3	Blank None	K PCTFE	V Fluorocarbon Rubber	SS Stainless Steel	Numeric value	A 1/8" plastic tubing
4A7		GC ARV Module	PK Virgin PEEK	BN Buna-N Rubber	*Check with factory regarding alloy material options	Blank EM Base Options	B 1/8" CPI™ compression
4Z7		EM Valve Expansion Module	VE Vespel	EPR Ethylene Propylene Rubber			C 1/8" A-LOK® compression
		NO Normally Open		NE Neoprene Rubber			D 1/8" FNPT
				KZ Highly Fluorinated Fluorocarbon Rubber			E 10-32 plug
							F No fitting

⁽¹⁾ See page 3.

⁽²⁾ The expansion module (EM) option allows for adding additional modules to existing stream switching units. A sample part number for an ARV expansion module is 2F-R3EMK-V-SS-ARV-FF. When adding an ARV expansion module, the base to the adjoining module must be changed for proper function.

⁽³⁾ Contact Customer Service for availability of exotic alloys such as Monel® and Hastelloy®.

⁽⁴⁾ In the part numbering scheme, the first captured vent letter designator is for the inlet side of the R-max™ Module. All captured vent fittings have a 10-32 thread for assembly into the valve body.

How to Order Additional Options

Oxygen Cleaning: Add the suffix **-C3** to the end of the part number to receive stream switching systems or accessories cleaned and assembled for oxygen service in accordance with Parker specification ES8003.

Add the suffix **-RTK** to the end of the part number to receive stream switching systems or accessories coated with the inert, silicon-based chemical coating Silconert™ 1000 (formerly Silcosteel®).

Add the suffix **-SUL** to the end of the part number to receive stream switching systems or accessories coated with the inert, silicon-based chemical coating Silconert™ 2000 (formerly Sulfinert®).

Internal Fast Loop: Add the suffix **-IF** to the end of the part number to receive an internal fast loop on all modules. To designate a portion of the total number of modules contact Customer Service.

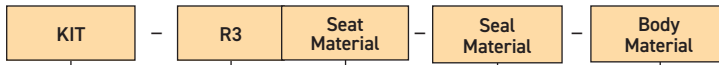
Low Pressure Actuators: Available factory assembled or as kits for field assembly. Refer to page 19 for part number configuration.

Gen II R-max™

How to Order Kits

In using this section, the items in **BOLD CAPITALIZED PRINT** are included within the part number of the Kit. The italicized items require a designator to complete the part number. Refer to the How To Order section on page 14 for the designators.

Stem Seal Kit: Components required to rebuild the soft goods in one cartridge.

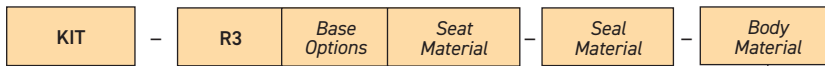


Example: **KIT** - **R3** - **K** - **V** - **SS**

This example describes a kit consisting of one stainless steel stem with PCTFE upper and lower seats, fluorocarbon O-rings, associated PTFE back-up rings and maintenance instructions.

Note: This kit is also used for Single Valve Cartridge maintenance.

Valve Module Kit: Components required to rebuild the soft goods in one valve module. This includes the **base and cartridges' seals**.

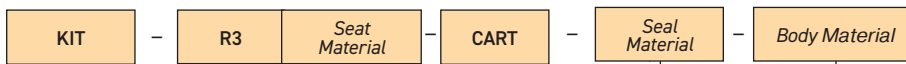


Example: **KIT** - **R3** - **EM** - **K** - **BN** - **SS**

This example describes a kit consisting of two stainless steel stems with PCTFE upper and lower seats, Buna-N O-rings, associated PTFE back-up rings and maintenance instructions.

Note: For kit part numbers, choose GC, NO and EM for the base option.

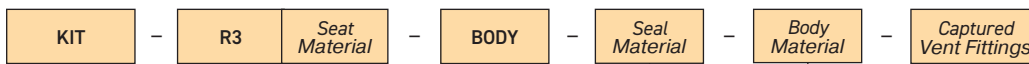
Valve Cartridge Kit: Components to replace one valve cartridge.



Example: **KIT** - **R3** - **K** - **CART** - **EPR** - **SS**

This example describes a kit consisting of one completely assembled valve cartridge having PCTFE seats, ethylene propylene O-rings, stainless steel metallic components and maintenance instructions.

Valve Body Kit: Components required to replace one valve body assembly. This includes the cartridges.



Example: **KIT** - **R3** - **K** - **BODY** - **V** - **SS** - **FF**

This example describes a kit consisting of one complete valve body and cartridge assembly having PCTFE seats, fluorocarbon O-rings, stainless steel metallic components and maintenance instructions.

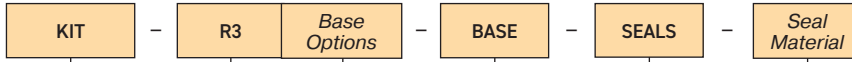
Note: The springs, screws and caps are included, but not assembled.

Kits continued on the following page.

Gen II R-max™

How to Order Kits (continued)

Base Seal Kit: Components to replace the soft goods in one base.



Example: KIT - R3 EM - BASE - SEALS - KZ

This example describes a kit consisting of highly fluorinated fluorocarbon O-rings and maintenance instructions.

Note: For the base option, include NO for normally open or GC for ARV options.

End Block Seal Kit: Components to replace the soft goods in one end block.

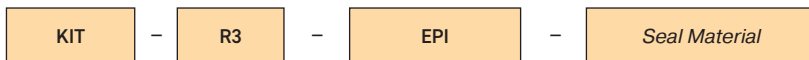


Example: KIT - R3 - END - SEALS - V

This example describes a kit consisting of fluorocarbon O-rings and maintenance instructions.

Note: For the end block option, choose GC for ARV end blocks.

Position Indication Kit: The R3 Series Gen II R-max™ Position Indicator is backwards compatible to R2 Series R-max™ Units. Simply remove the piston and cap from an existing R2 Series Cartridge and replace with the R3 Series piston and cap. Functionality and performance will remain the same but will include enhanced visual awareness of when the unit is actuated open.



Example: KIT - R3 - EPI - V

This example describes a kit consisting of enhanced visual indicator piston and cap, fluorocarbon O-ring and maintenance instructions.

Captured Vent Fitting Kit: The R3 Series Gen II R-max™ Captured Vent Header features 10-32 threads on the side of each module. There is a variety of fittings available to direct fluid in this header to a containment device. These fittings can be ordered individually based upon the following part numbers:

Description	Part Number ⁽¹⁾
1/8" plastic tubing ⁽²⁾	KIT-R3-CVF-2PLP
1/8" CPI™ compression	KIT-R3-CVF-2Z-V-SS
1/8" A-LOK® compression	KIT-R3-CVF-2A-V-SS
1/8" female NPT	KIT-R3-CVF-2F-V-SS
10-32 plug	KIT-R3-CVF-PLUG-V-SS

⁽¹⁾ For the elastomer option, choose V, BN, EPR, NE or KZ.

⁽²⁾ This fitting is nickel-plated brass with a nitrile flat washer.

Maintenance: Spare Parts and Rebuild Kits

Description	Part Number
Cartridge Kit	KIT-R3K-CART-**-SS- (SUL, RTK if required)
Valve Body Kit	KIT-R3K-BODY-**-SS- (SUL, RTK if required)
Valve Expansion Module Kit	2F-R3EMK-**-SS-++
Valve Base Seal Kit	KIT-R3EM-BASE-SEALS-**
Valve End Seal Kit	KIT-R3-END-SEALS-**
Single 3-Way Base Seal	KIT-R3S-BASE-SEALS-**
Single 3-Way Body Kit	KIT-R3SK-BODY-**-SS-++
Upgrading from Stream Selection Module to GC Module	KIT-R3GC-RETROFIT-**-SS

** Elastomer

++ Captured Vent Fitting

Maintenance: Typical R-Max II Maintenance Kits (examples)

EXAMPLE: Valve Assembly: 2F-R3GCK-KZ SS-3-BB

Kits:

KIT-R3K-CART-KZ-SS (qty. 8)

KIT-R3EM-BASE-SEALS-KZ (qty. 3)

KIT-R3GC-BASE-SEALS-KZ (qty. 1)

KIT-R3GC-END-SEALS-KZ (qty. 1)

KIT-R3-END-SEALS-KZ (qty. 1)

EXAMPLE: Valve Assembly: 2F-R3K-KZ-SS-3-BB

Kits:

KIT-R3K-CART-KZ-SS (qty. 6)

KIT-R3EM-BASE-SEALS-KZ (qty. 3)

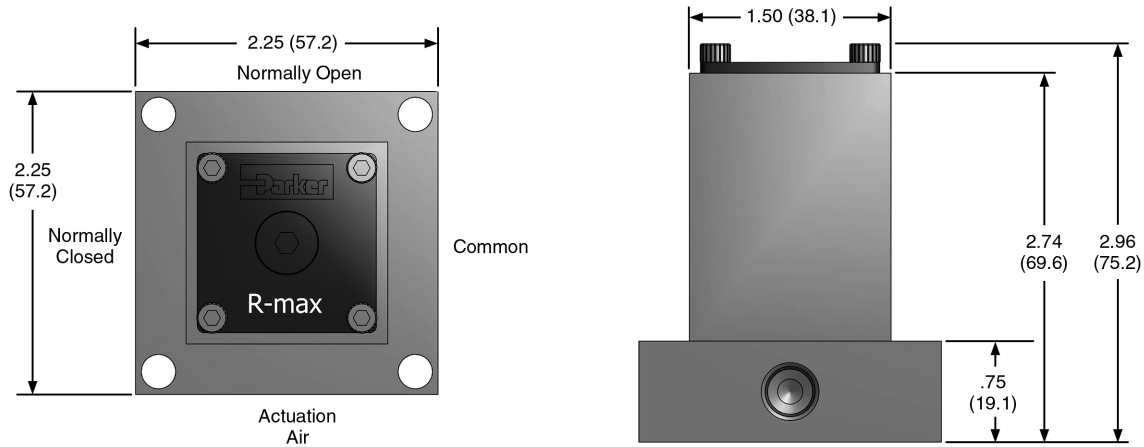
KIT-R3-END-SEALS-KZ (qty. 2)

Gen II R-max™

Single Valve

The Parker Gen II R-max™ Single Valve shares the same technology, features, and options found in the Stream Switching System. The pneumatically actuated valve serves as a three-way diverting valve with common, normally open, and normally closed porting.

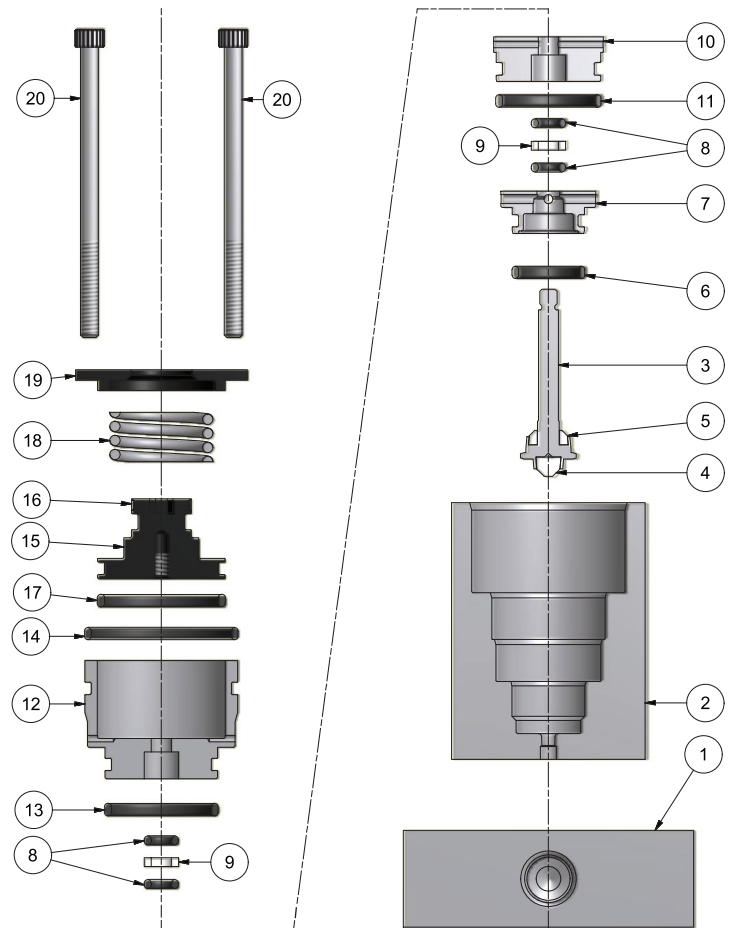
External Dimensions



Exploded View

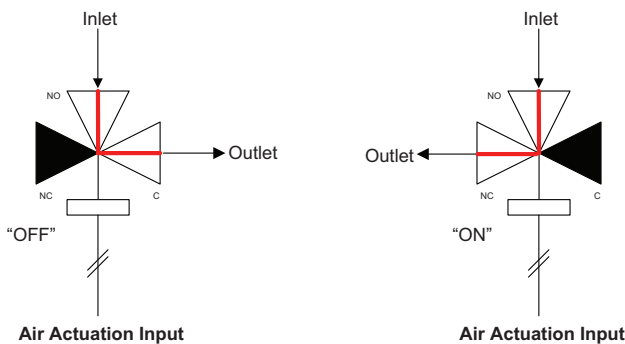
The Single Valve shares similar components with the Double Block and Bleed Unit. With the exception of the Valve Body and Base, the components are identical and can be identified using the numbering system on page 6. Materials are identical and also can be identified on page 6.

Note: Valve component designations are found on page 6



Single 3-Way R-Max II

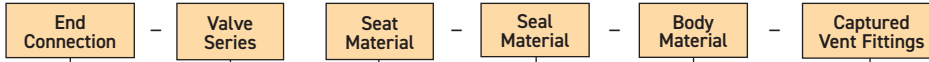
Example Part#: 2F-R3SK-V-SS-F



Gen II R-max™

How to Order - Single Valve

The correct part number is easily derived by following the sequence shown below. The six product characteristics required are coded as shown below.



Example: 2F - R3S K - V - SS - A

The example above describes a two stream switching system having 1/8" female NPT inlet and outlet ports, PCTFE valve seats, fluorocarbon rubber seals, stainless steel construction and fitting for 1/8" plastic tubing on the captured vent.

End Connection ⁽¹⁾	Valve Series	Seat Material	Seal Material	Body Material ⁽³⁾	Captured Vent Fittings ⁽⁴⁾
2F	R3S	K PCTFE	V Fluorocarbon Rubber	SS Stainless Steel	A 1/8" plastic tubing
4A7		PK Virgin PEEK	BN Buna-N Rubber		B 1/8" CPI™ compression
4Z7		VE Vespel	EPR Ethylene Propylene Rubber		C 1/8" A-LOK® compression
			NE Neoprene Rubber		D 1/8" FNPT
			KZ Highly Fluorinated Fluorocarbon Rubber		E 10-32 plug
					F No fitting

* See page 3.

** Contact Customer Service for availability of exotic alloys such as Monel® and Hastelloy®.

*** Only one captured vent fitting is required for the single valve. All fittings have a 10-32 thread for assembly into the valve body.

How to Order Additional Options

Maintenance Kits:

KIT-R3S-BASE-SEALS-** (** = Elastomer Designation)

KIT-R3SK-BODY**-SS-* (* = Captured Vent Fitting, ** = Elastomer Designation)

Note: Gen I R-Max valve upgrade to Gen II R-Max valves please purchase KIT-R3SK-BODY-***

Oxygen Cleaning: Add the suffix **-C3** to the end of the part number to receive stream switching systems or accessories cleaned and assembled for oxygen service in accordance with Parker specification ES8003.

Add the suffix **-RTK** to the end of the part number to receive stream switching systems or accessories coated with the inert, silicon-based chemical coating Silconert™ 1000 (formerly Silcosteel®).

Add the suffix **-SUL** to the end of the part number to receive stream switching systems or accessories coated with the inert, silicon-based chemical coating Silconert™ 2000 (formerly Sulfinert®).

Low Pressure Actuators: Available factory assembled or as kits for field assembly. Refer to page 19 for part number configuration.

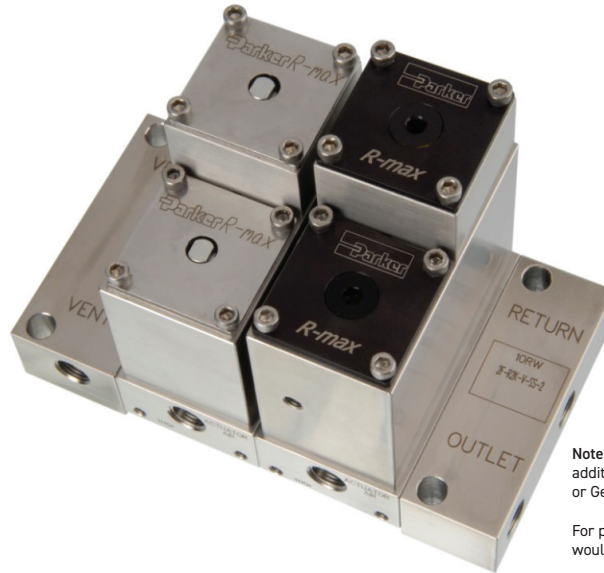
Gen II R-max™

Low Pressure Actuator

The Parker Gen II R-max™ Stream Switching System can be adapted to control both gases and liquids in analytical systems from vacuum to 500 psig while requiring only 35 psig actuating air pressure. The low pressure actuator assembly can be incorporated onto existing R-max™ Stream Switching Systems without affecting existing feature enhancements including the captured vent, enhanced visual indication or backwards compatibility.

Features

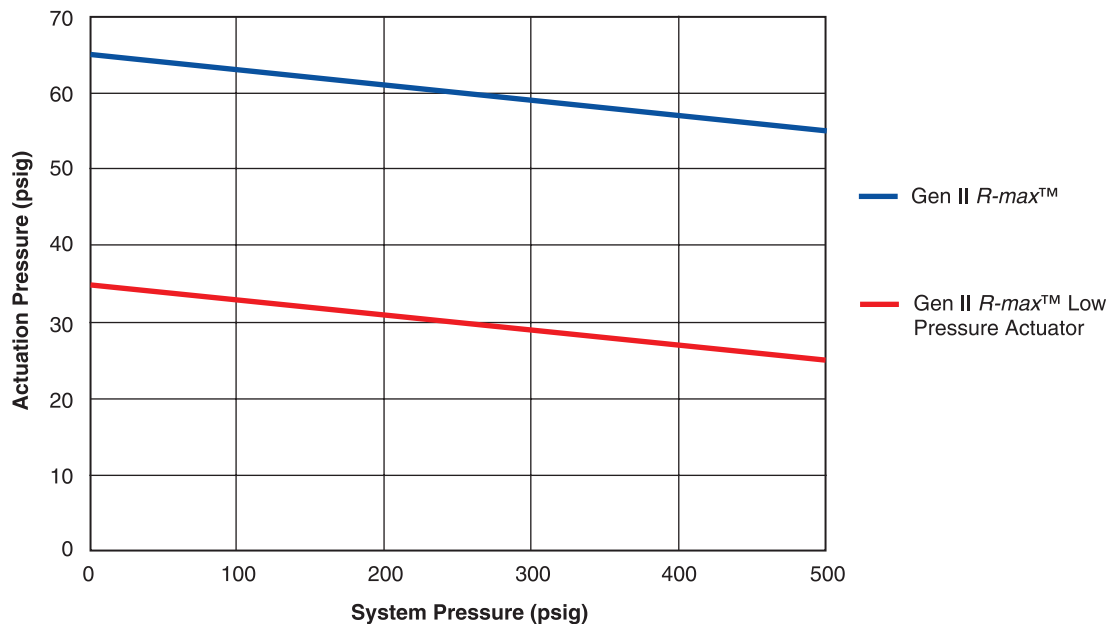
- 35 psig actuation air pressure
- Compatible with R-max™ and Gen II R-max™ units
- Factory installed or field retrofitable
- Backwards compatible
- Wide variety of elastomeric seals
- 316 stainless steel construction
- 100% factory tested



Note: Valve assembly shown demonstrates addition of a low pressure actuator to a Gen I or Gen II valve configuration.

For proper operation, each stream module would require two LP actuators.

Actuation Pressure vs System Pressure

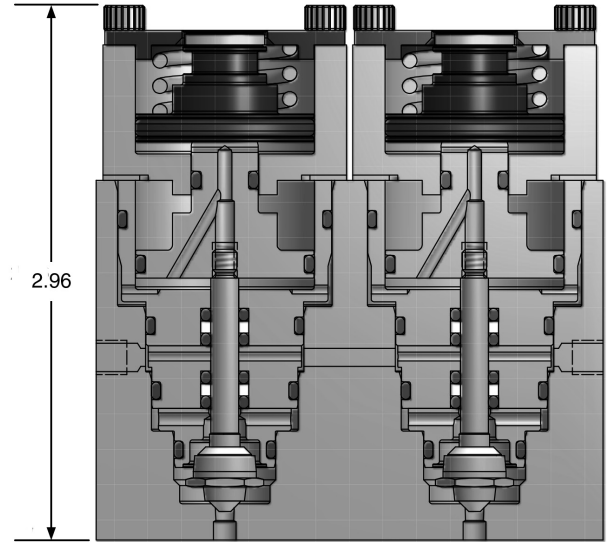
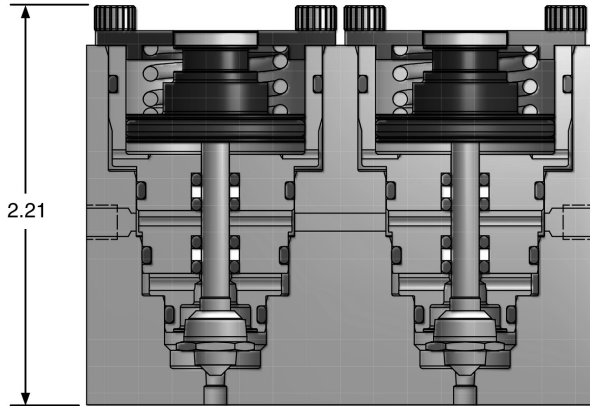


Note: The picture highlights the difference between the assembled low pressure actuator and a standard unit on first and second generation R-max™ valves. It is not recommended to use this actuator adapter on a single cartridge within a two cartridge module.

Gen II R-max™

Low Pressure Actuator

The Parker Gen II R-max™ Stream Switching System can be converted into a low pressure actuation unit with the addition of two components and associated seals. All other functional aspects of the R-max™ Stream Switching System remain the same.



How to Order Low Pressure Actuator

For a factory assembled and tested R-max™ Stream Switching Systems with the low pressure actuator add the suffix - LP to the end of the part number.

For example: 2F-R3K-KZ-SS-2-FF-LP.

Note: See page 12 for Gen II R-max™ Stream Switching System part numbering.

For a kit to retrofit an existing unit, whether R-max™ or Gen II R-max™ Stream Switching System, use the following part numbers.

Description	Part Number ⁽¹⁾
For R-max™ Stream Switching System	KIT-R2LP-*-SS
For single R-max™ Stream Switching System	KIT-R2SLP-*-SS
For Gen II R-max™ Stream Switching System	KIT-R3LP-*-SS
For single Gen II R-max™ Stream Switching System	KIT-R3SLP-*-SS

* Elastomeric options include fluorocarbon rubber (V), ethylene propylene rubber (EPR), buna-n (BN), neoprene (NE) or highly fluorinated fluorocarbon (KZ).

Gen II R-max™

Fast loop Filters

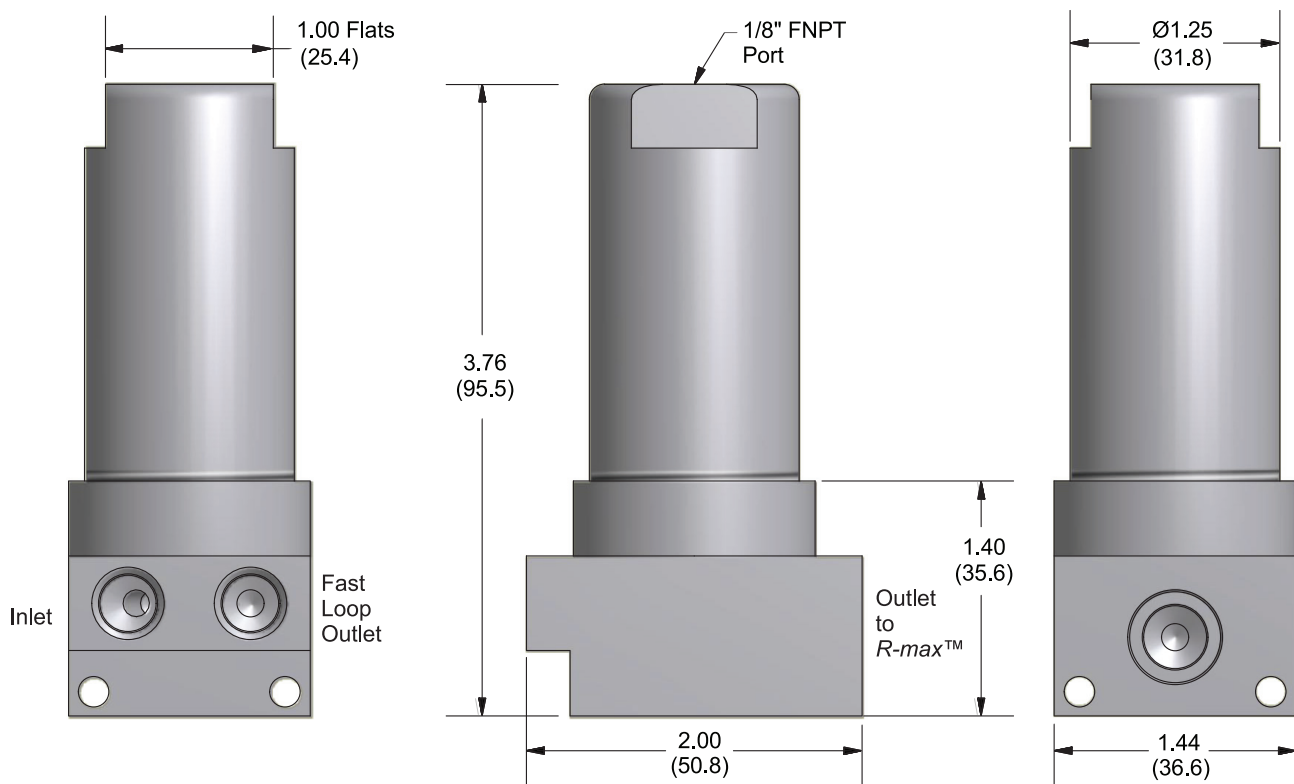
Designed to be used on the stream inlet ports of the Parker Gen II R-max™ Stream Switching System. Multiple filtration options are available using technology developed and designed by Parker Filtration and Separation Divisions. Filtration options include particulate, coalescing and SS sintered.

The particulate filter is housed in a bypass filter that diverts approximately 90% of the inlet flow around the cartridge filter and provides fresh filtered media to the stream switch.

The coalescing filter allows liquid droplets to collect and drain from the media as it enters the stream switch.

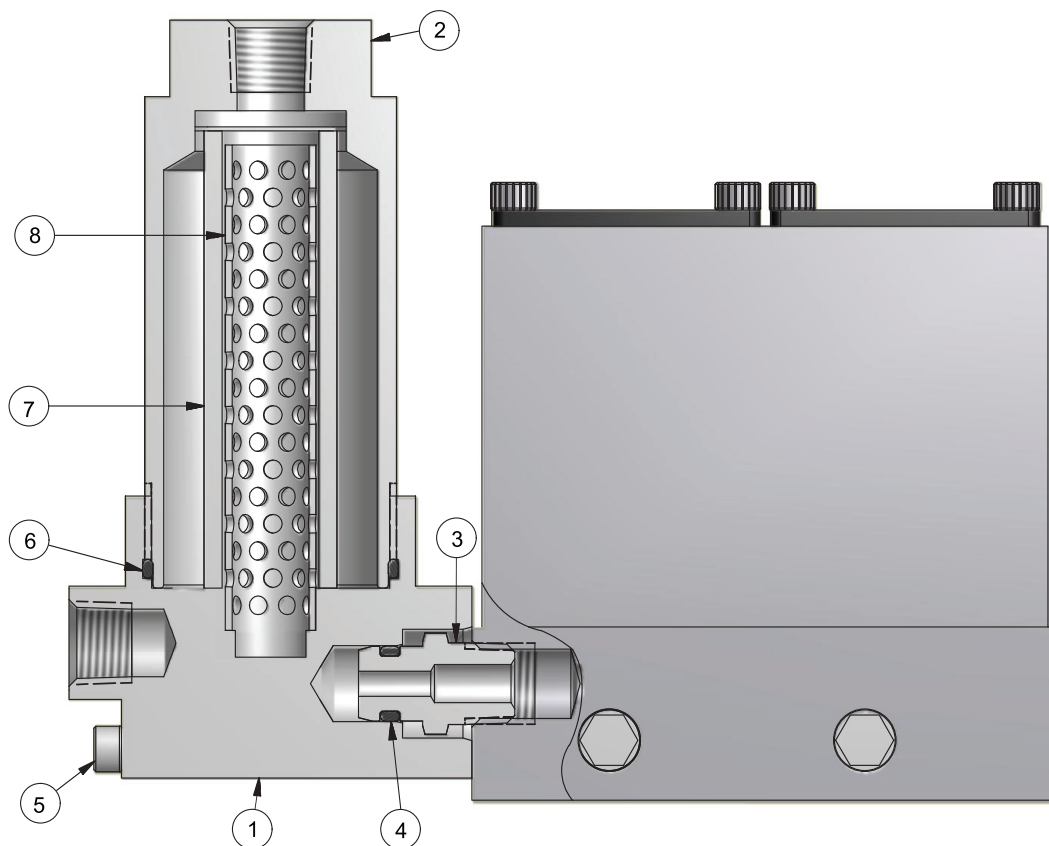
The SS sintered filters are designed to protect the Stream Switching System from dirt, chips, scale and other contaminants.

Dimensions: Fast loop Filters



Gen II R-max™

Cross Section View



Note: The captured vent port nearest an assembled filter must be a plug or an open port.

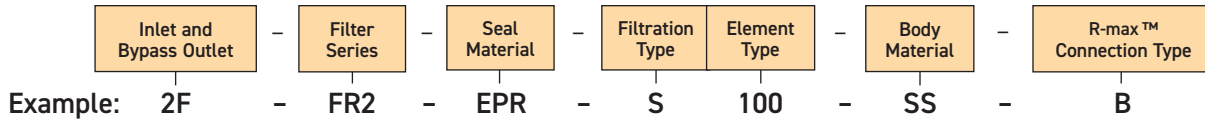
Materials of Construction

Item	Part Description	Material
1	Body	ASTM A 479, type 316
2	Bowl	ASTM A 479, type 316
3	Adapter	ASTM A 479, type 316
4	O-Ring 2-008	Optional elastomers
5	Body Bolt	Stainless steel
6	O-Ring 2-025	Optional elastomers
7	Element	316SS and Microfibre
8	Support Core	316SS

Gen II R-max™

How to Order - Fast Loop Filters

The correct part number is easily derived by following the sequence shown below. The seven product characteristics required are coded as shown below.



The example above describes an FR2 Series Fast Loop Filter with 1/8" FNPT inlet and bypass outlets, ethylene propylene rubber seals, 100 micron 316SS sintered metal filter element and stainless steel construction. It is designed to be attached to a Parker Gen II R-max™ Stream Switch having inverted CPI™ or A-LOK® stream inlet ports.

Inlet and Bypass Outlet	Filter Series	Seal Material	Filtration Type	Element Type		Body Material	R-max™ Connection Type				
				Balston® (P and C)	Sintered Metal (S)						
2F	FR2	V	Fluorocarbon Rubber	P	Particulate	93	93% microfibre	100	100 micron	SS Stainless Steel	A 2F B 4A7 or 4Z7
		BN	Buna-N Rubber	C	Coalescing	99	99% microfibre	70	70 micron		
		EPR	Ethylene Propylene Rubber	S	Sintered			40	40 micron		
		NE	Neoprene Rubber					20	20 micron		
		KZ	Highly Fluorinated Fluorocarbon Rubber					10	10 micron		
						5	5 micron				

How to Order Additional Options

Oxygen Cleaning: Add the suffix -C3 to the end of the part number to receive stream switching systems or accessories cleaned and assembled for oxygen service in accordance with Parker specification ES8003.

Add the suffix -RTK to the end of the part number to receive stream switching systems or accessories coated with the inert, silicon-based chemical coating Silconert™ 1000 (formerly Silcosteel®).

Add the suffix -SUL to the end of the part number to receive stream switching systems or accessories coated with the inert, silicon-based chemical coating Silconert™ 2000 (formerly Sulfinert®).

How to Order Kits - Fast Loop Filters

In using this section, the items in **BOLD CAPITALIZED PRINT** are included within the part number of the Kit. The italicized items require a designator to complete the part number. Refer to the How To Order section on page 19 for the designators.

Filter Seal Kit: Components required to replace the O-rings.



Example: **KIT** - **FR2** - **V**

This example describes a kit consisting of fluorocarbon O-rings and maintenance instructions.

Filter Element Kit: Components to replace the filter element.



Example: **KIT** - **FR2** - **P** - **93**

This example describes a kit consisting of a 93% filtration particulate filter element.

Filter Element & Sample Kit: Components to replace the filter element and O-rings.



Example: **KIT** - **FR2** - **V** - **C** - **99**

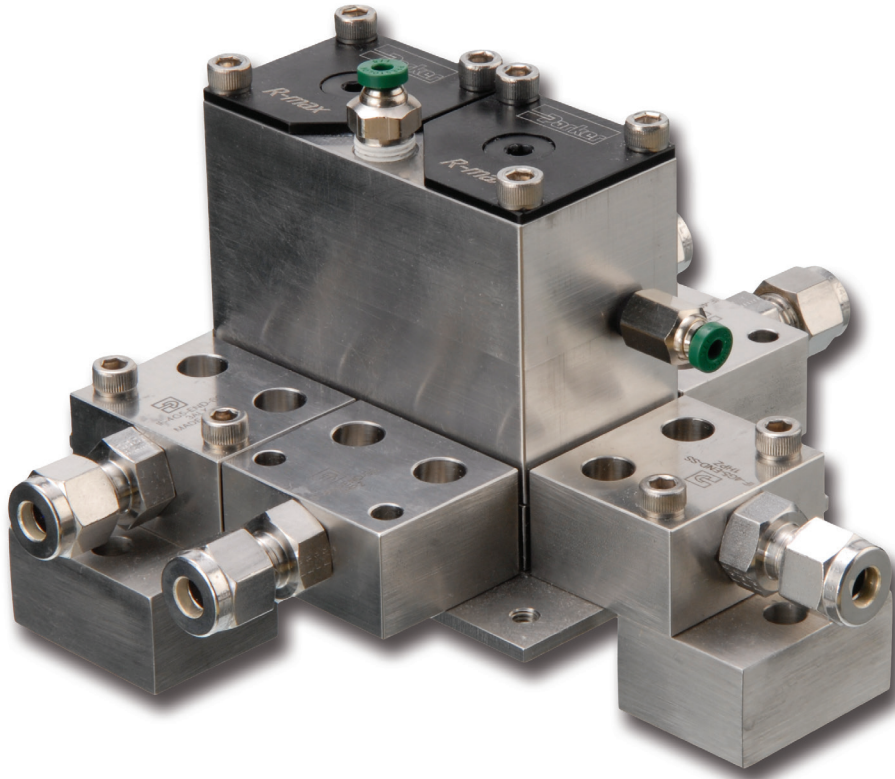
This example describes a kit consisting of fluorocarbon O-rings, 99% filtration coalescing filter element and maintenance instructions.

Gen II R-max™

Parker Gen II R-max™ Stream Switching System and Parker IntraFlow™

The Parker Gen II R-max™ Stream Switching System is also available on the IntraFlow™ ANSI/ISA-76.00.02 Compliant Modular Surface Mount System. All the features and benefits such as the enhanced visual indicator and captured vent available to the Parker Gen II R-max™ can also be achieved on the modular platform.

Refer to Catalog 4250 for further information regarding the Parker IntraFlow™ Modular Surface Mount Systems.



All aspects of the Parker Gen II R-max™ Stream Switching System are available within the IntraFlow™ product line. This includes standard modules, atmospheric reference vent (ARV) modules and normally open modules. Single valve units and filters are also available. The modular design of the IntraFlow™ system allows for maximum flexibility within a minimal space.

How to Order: Intraflow (SP76) Compliant R-Max Single 3-Way and DBB Valves

Example of Single 3-Way Module: IF-R3K-V-SS-F

Example of DBB Module: IF-RD3K-V-SS-FF

ISA SP76 Interface	Series	Seat	Elastomer	Material	Captured Vent Fittings	Options
IF	RD3	K, PK, or VE	BN, EPR, KZ, NE or V	SS	A, B,C,D, E, F	RTK, SUL
	R3					

For the DBB module there can be any designation of two captured vent fittings

For the Single 3-Way Valve there will be only one captured vent fitting

Gen II R-max™

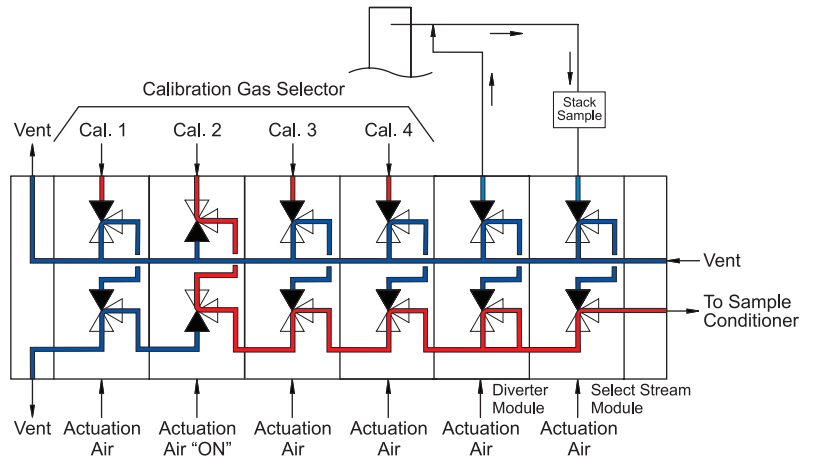
Application: CEMS (Continuous Emissions Monitoring System)

The Parker Gen II R-max™ stream selection system can be configured for Continuous Emissions Monitoring and associated stack gas monitoring applications, analyzer calibration and validation routines that are crucial for maintaining environmental compliance. These environmental regulations require a complete system check and validation which includes the sample extraction probe, transport lines, sample conditioning system, as well as the analyzer.

The complete system check is called an "Up-Stack" calibration. This Up-Stack calibration can be easily achieved by inserting a "diverter" module into the Parker Gen II R-max™ system. The diverter valve will direct the selected calibration gas either up the stack or allow the gas to go directly to the analyzer. To perform an up-stack calibration simply actuate the diverter valve. Multiple diverter valves can be added if there is more than one stack.

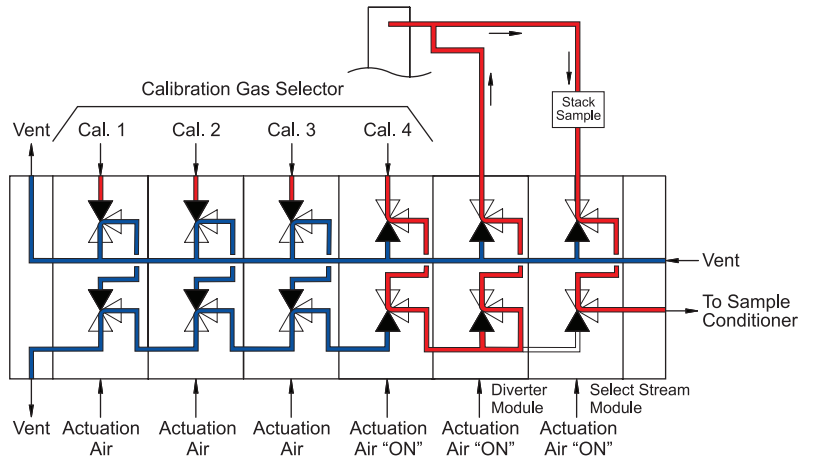
CEMS Example 1

The Calibration Stream 2 is in the "on" position and flowing through the Parker Gen II R-max™ system and out to Sample Conditioner.



CEMS Example 2

The Calibration Stream 4, Diverter Module and Stream Selector Module are in the "on" position. Calibration gas is flowing through the Diverter Valve to the Stack and then back through the Stream Selector Module to the Sample Conditioner.



How to Order

Example part number: 2F-R3DMSK-V-SS-4-FF

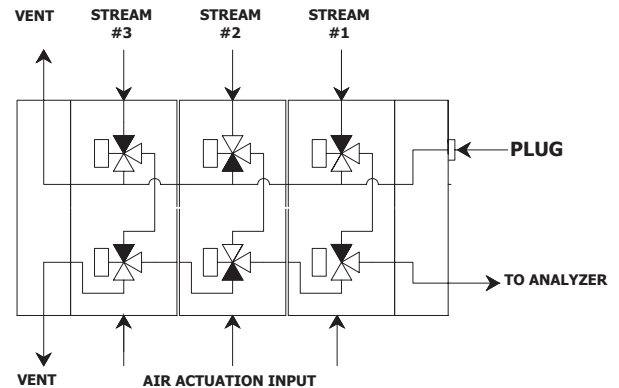
To order the Parker Gen II R-max™ stream selection system for use in CEMS related applications, the part numbering is identical to the How to Order on page 12 with the exception of the base options. To determine this, choose from the following options.

Base Options	Description
DMS	Distributor module and standard module
DMSGC	Distributor module, standard module and ARV module

Applications

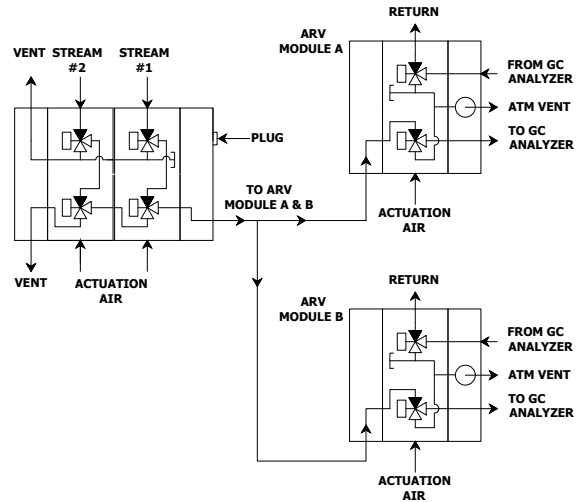
Normally Open

- The R-Max II assembly may also be offered with NO (Normally Open) modules
- The NO module is typically supplied within an assembly and with only a single NO module
- This configuration allows for flow directly to the analyzer from the stream #2 module



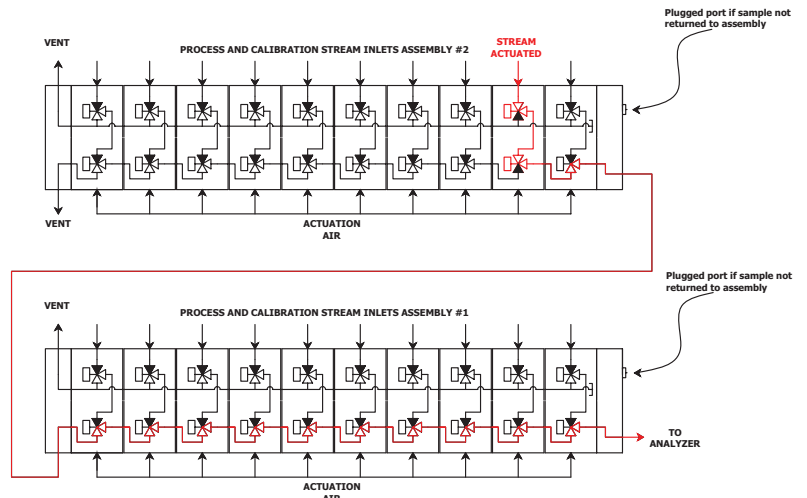
Remote ARV Modules

- Allows the use of R-Max II with multiple injection valves
- Flow control architecture allowed upstream of ARV module
- Separation of ARV modules allows for trace analysis with different injection valves
- Targeted spacing within confined enclosures integration flexibility



Valve Daisy-Chaining

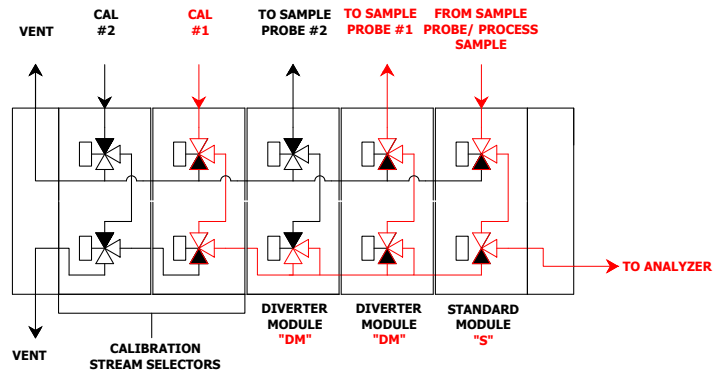
- R-Max II two header system allows connection between two or more assemblies
- Integration flexibility minimizes spacing constraints within a sample system enclosure
- For high stream counts the valve assemblies can be spaced as needed within an enclosure



Applications

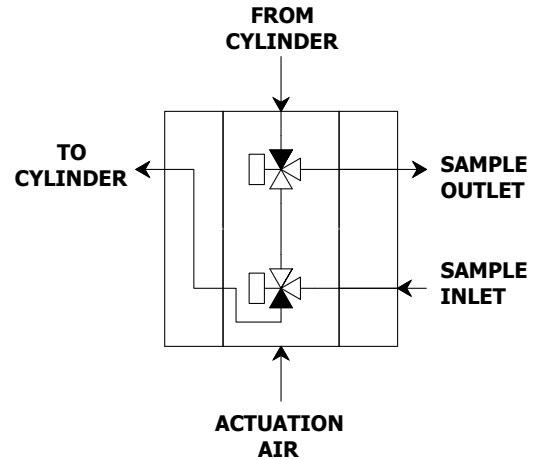
Dual-Stack Gas Monitoring

- The R-Max II valve architecture provides the capability to evaluate analyzer systems and for validating sample system operation
- The “diverter” modules are actuated to send calibration gas to the stack for evaluation



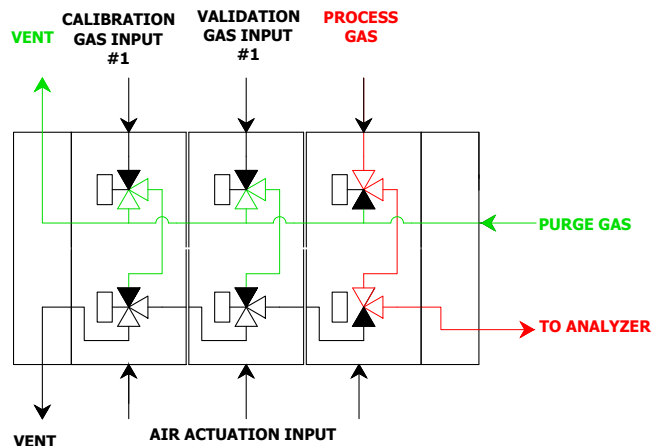
Lab Sampler

- The R-Max II lab sampler module allows collection of sample by actuating the valve module
- The lab sample module may also be used as a bypass module. Sample can be ‘cycled’ to an analyzer or conditioning system from this module
- Liquid and gaseous samples may be collected from this module
- Pneumatic actuation allows the customer to remotely select or manually select (from solenoid valve) sample



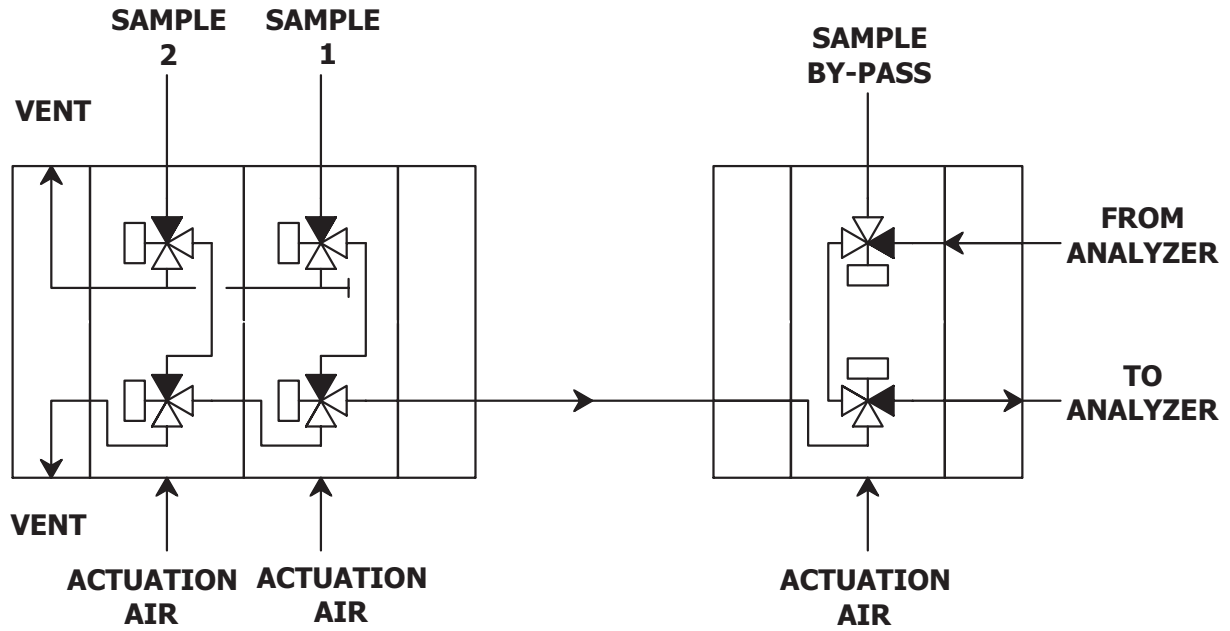
Valve Purging

- R-Max II can be purged between stream select operations
- Effective in trace oxygen applications
- The purge gas can also be applied to analyzer vent header to purge analyzer cell



Gen II R-max™

Application: Hazardous Sample By-Pass, DeEnergized State

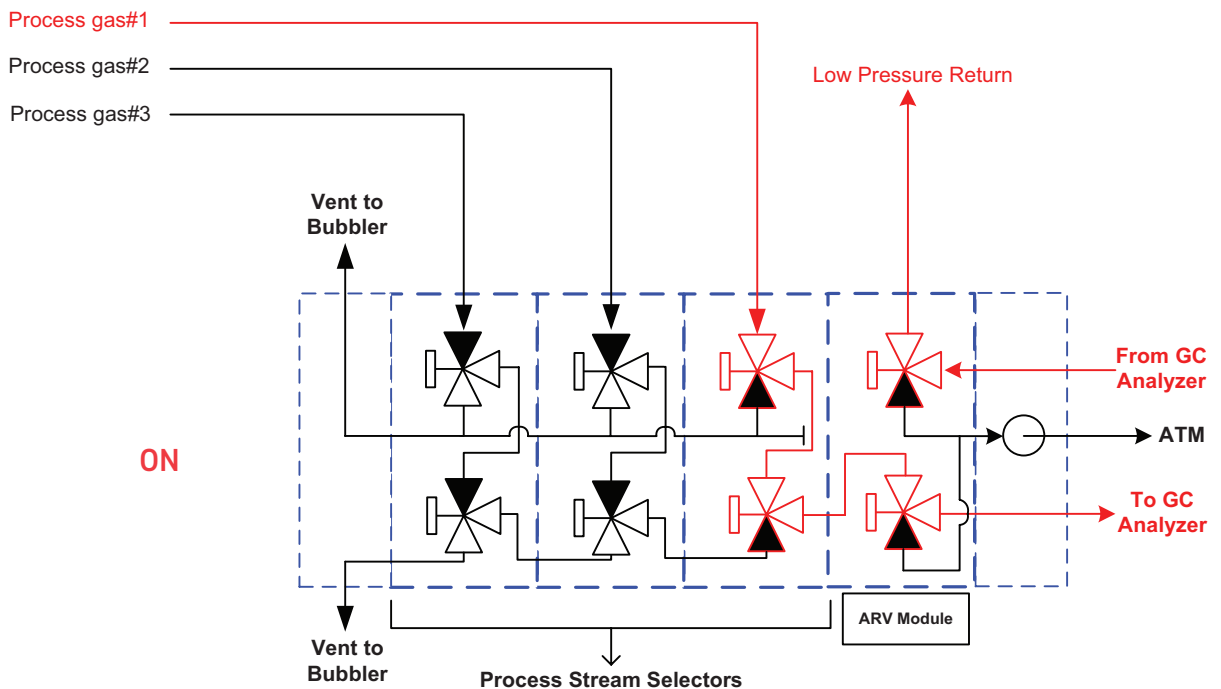
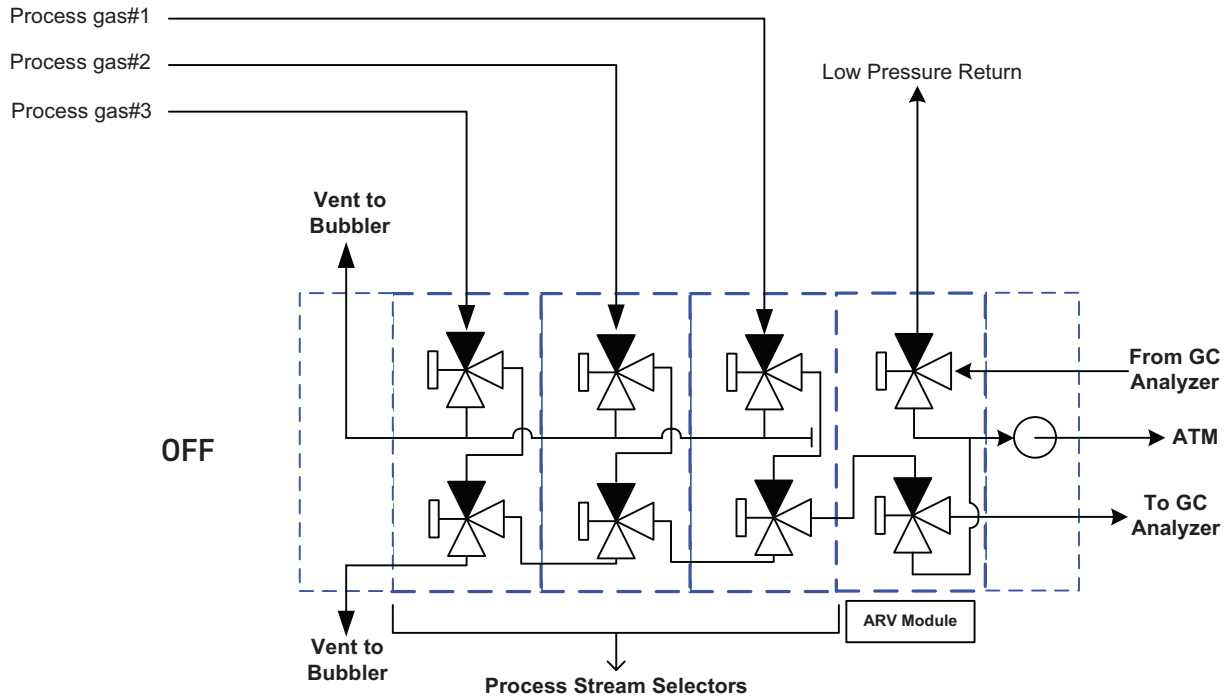


Gen II R-max™

Operational Flow Review

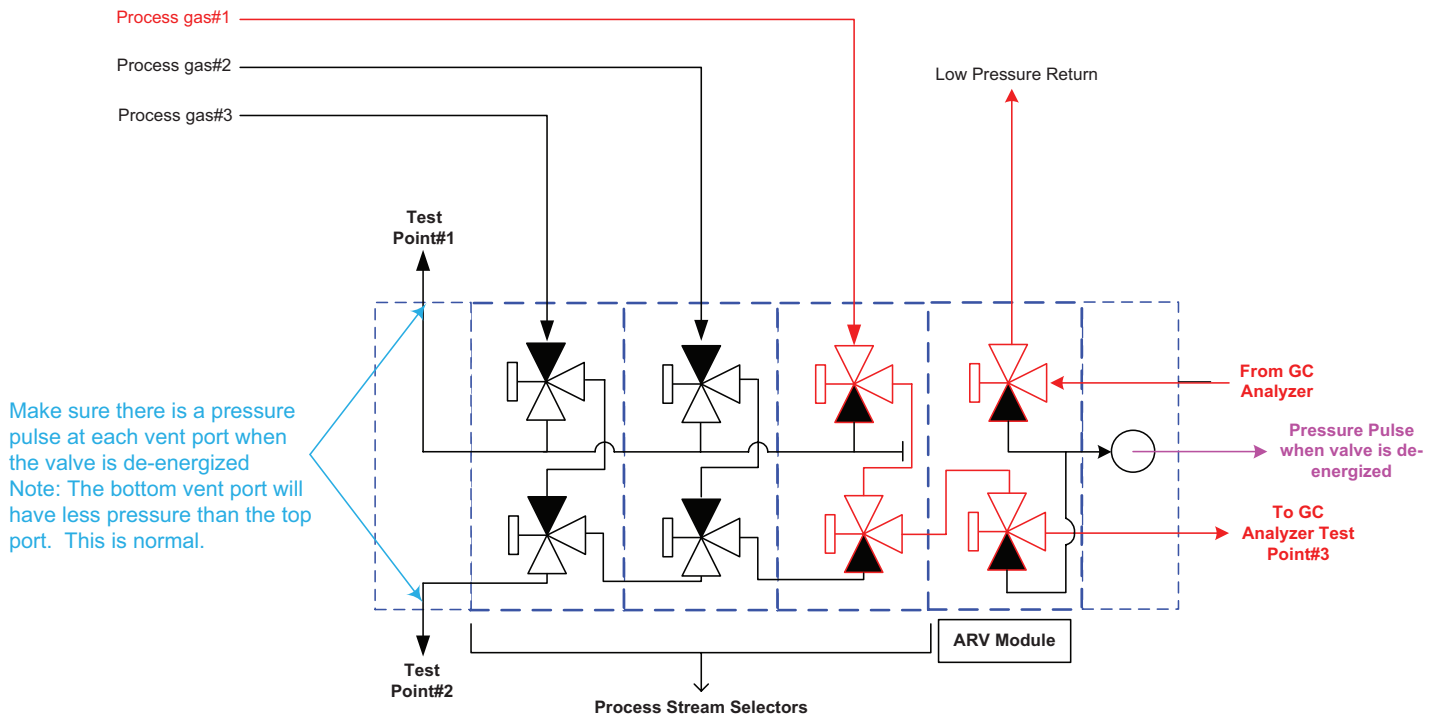
Stream #1 and ARV Actuated

Example Part #: 2F-R3GCK-V-SS-3-FF



Valve Function Test

Example Part #: 2F-R3GCK-V-SS-3-FF

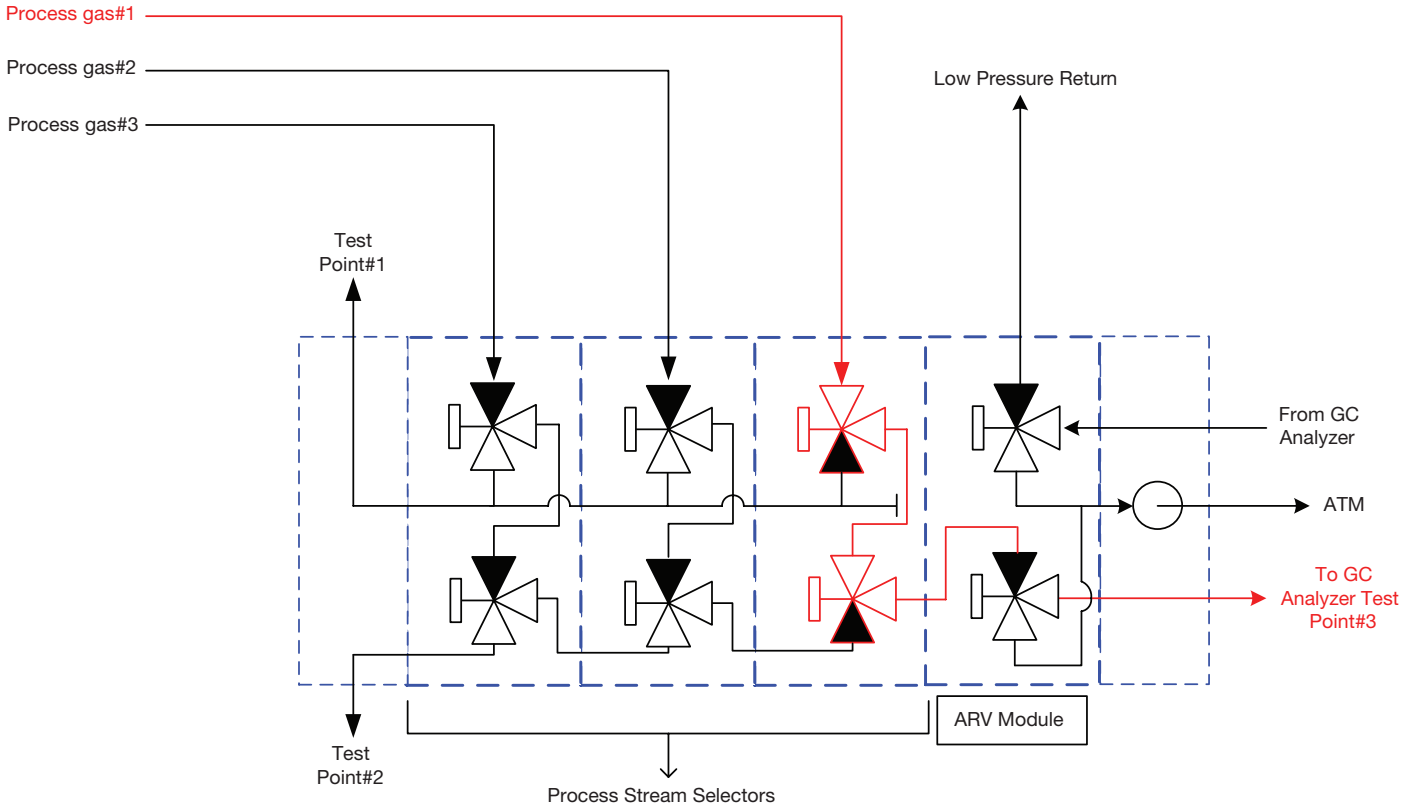


- Functionality Test: Actuate each stream and ARV together to make sure gas flows out of the end plate outlet port and returns through the return port and there is consistent flow.
- Deactuate the valves and make sure a pressure pulse is felt at the DBB vent ports (valve vent plate) and at the ARV ATM vent port

Gen II R-max™

Stream Back Seat Test

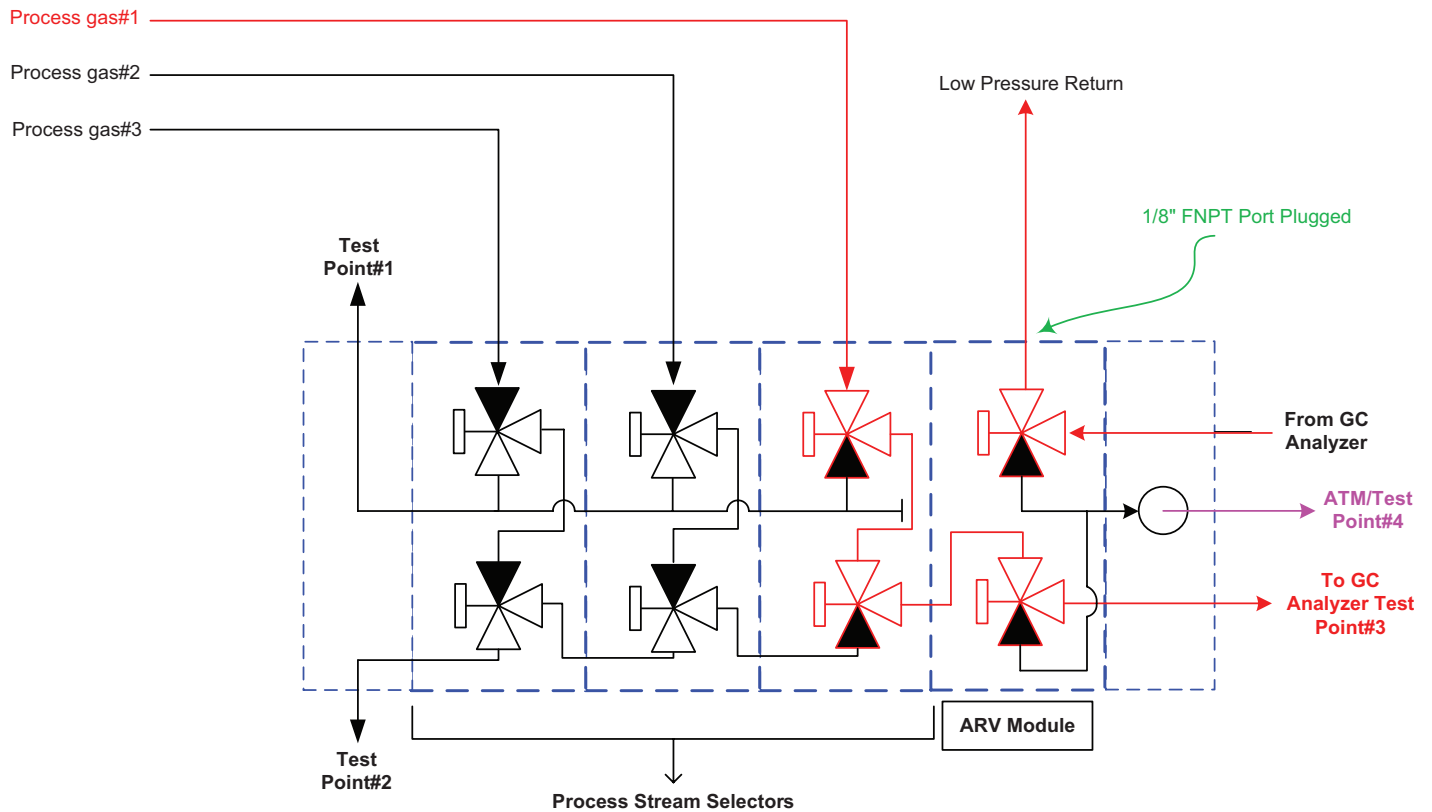
Example Part #: 2F-R3GCK-V-SS-3-FF



Stream#1 back seat test at locations #1 and #2. Repeat for all streams in the assembly (actuation minimum 65psig, stream pressure minimum 50psig). Test should be run for minimum of 30 seconds without bubble formation

GC/ARV Back Seat Test

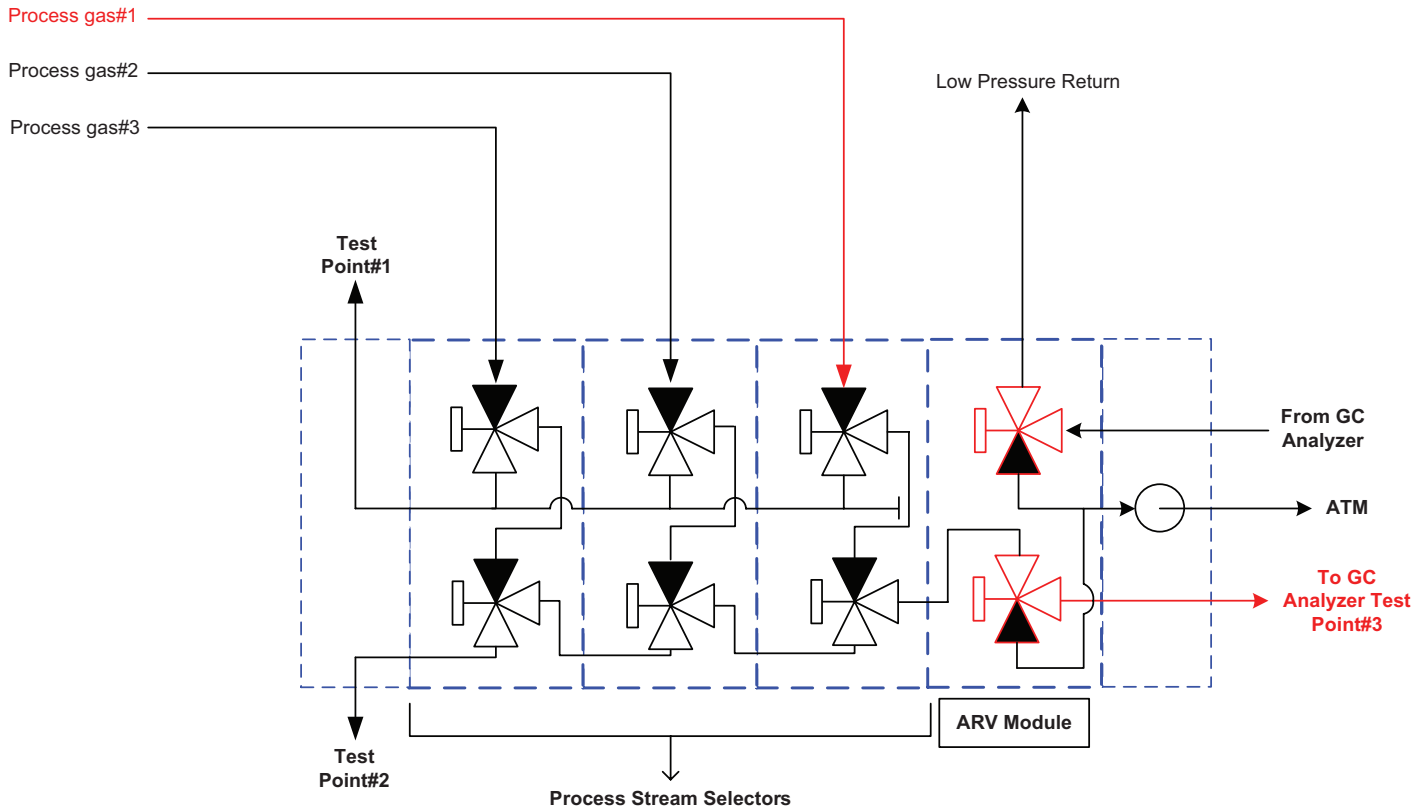
Example Part #: 2F-R3GCK-V-SS-3-FF



- ARV back seat test (65psig minimum actuation and 50psig minimum stream pressure)
- After actuation, observe ATM vent port/ Test point#4 for a minimum of 30 seconds. No bubble formation should be present.

Front Seat Test

Example Part #: 2F-R3GCK-V-SS-3-FF

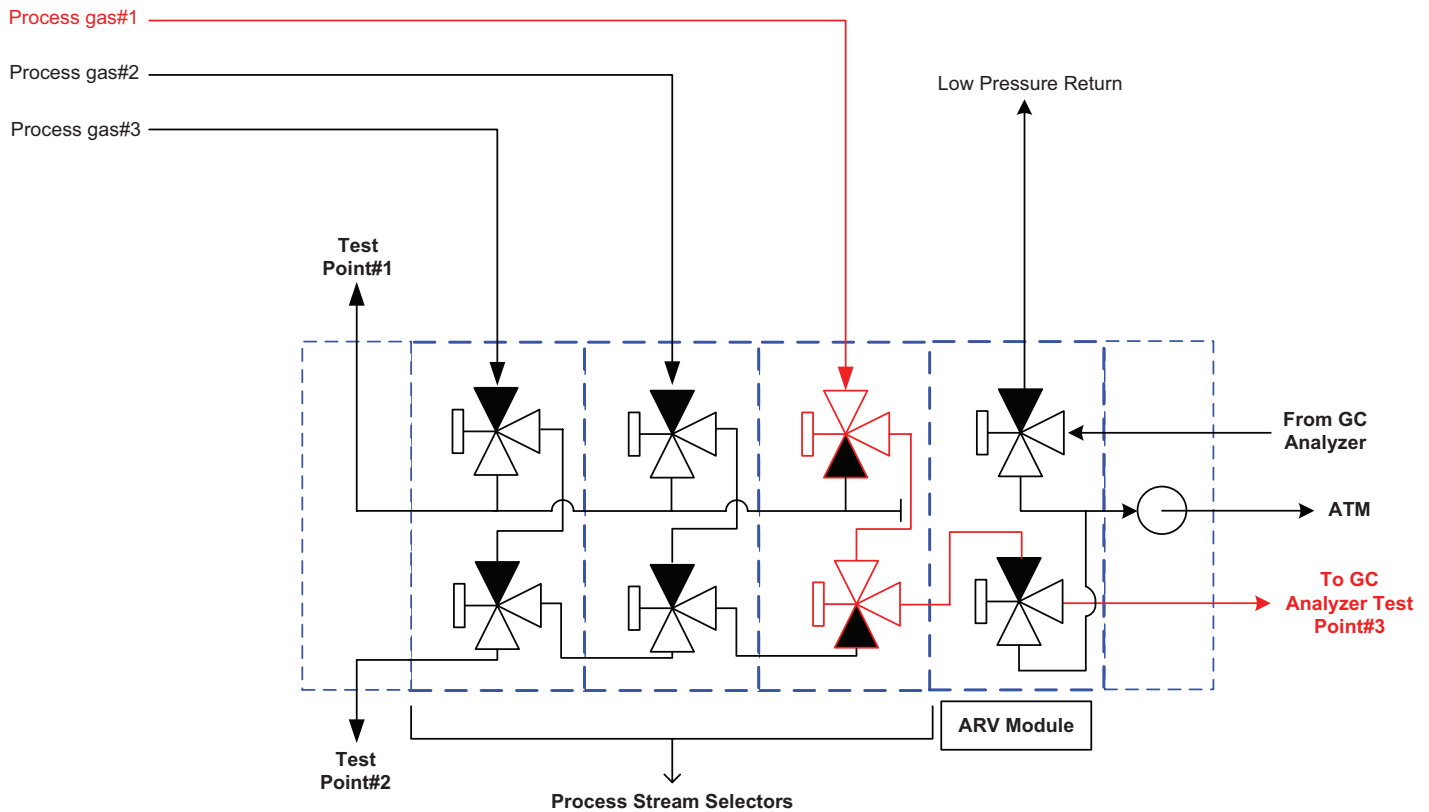


- Stream#1 front seat test. With stream pressure applied, actuate ARV module but do not actuate stream valve being tested.
- There should be no flow or bubble formation out of the outlet port or test point#3
- This may be repeated for all streams.

Gen II R-max™

Front Seat Test - continued

Example Part #: 2F-R3GCK-V-SS-3-FF



- With stream pressure applied, actuate one of the streams and keep ARV module deactivated. If there is flow or bubble formation out of the outlet NPT port/Test point #3 then the front seat is leaking.

Offer of Sale

Offer of Sale

1. Definitions. As used herein, the following terms have the meanings indicated. "Buyer" means any customer receiving a Quote for Products. "Buyer's Property" means any tools, patterns, plans, drawings, designs, specifications materials, equipment, or information furnished by Buyer, or which are or become Buyer's property. "Confidential Information" means any technical, commercial, or other proprietary information of Seller, including, without limitation, pricing, technical drawings or prints and/or part lists, which has been or will be disclosed, delivered, or made available, whether directly or indirectly, to Buyer. "Goods" means any tangible part, system or component to be supplied by Seller. "Intellectual Property Rights" means any patents, trademarks, copyrights, trade dress, trade secrets or similar rights. "Products" means the Goods, Services and/or Software as described in a Quote. "Quote" means the offer or proposal made by Seller to Buyer for the supply of Products. "Seller" means Parker-Hannifin Corporation, including all divisions, subsidiaries and businesses selling Products under these Terms. "Seller's IP" means patents, trademarks, copyrights, or other intellectual property rights relating to the Products, including without limitation, names, designs, images, drawings, models, software, templates, information, any improvements or creations or other intellectual property developed prior to or during the relationship contemplated herein. "Services" means any services to be provided by Seller. "Software" means any software related to the Goods, whether embedded or separately downloaded. "Special Tooling" means equipment acquired by Seller or otherwise owned by Seller necessary to manufacture Goods, including but not limited to tools, jigs, and fixtures. "Terms" means the terms and conditions of this Offer of Sale.

2. Terms. All sales of Products by Seller will be governed by, and are expressly conditioned upon Buyer's assent to, these Terms. These Terms are incorporated into any Quote provided by Seller to Buyer. Buyer's order for any Products whether communicated to Seller verbally, in writing, by electronic data interface or other electronic commerce, shall constitute acceptance of these Terms. Seller objects to any contrary or additional terms or conditions of Buyer. Reference in Seller's order acknowledgement to Buyer's purchase order or purchase order number shall in no way constitute an acceptance of any of Buyer's terms or conditions of purchase. Any Quote made by Seller to Buyer shall be considered a firm and definite offer and shall not be deemed to be otherwise despite any language on the face of the Quote. Seller reserves all rights to accept or reject any purported acceptance by Buyer to Seller's Quote if such purported acceptance attempts to vary the terms of the Quote. If Seller ships Products after Buyer issues an acceptance to the Quote, any additional or different terms proposed by Buyer will not become part of the parties' business relationship unless agreed to in a writing that is signed by an authorized representative of Seller, excluding email correspondence. If the transaction proceeds without such agreement on the part of Seller, the business relationship will be governed solely by these Terms and the specific terms in Seller's Quote.

3. Price; Payment. The Products set forth in the Quote are offered for sale at the prices indicated in the Quote. Unless otherwise specifically stated in the Quote, prices are valid for thirty (30) days and do not include any sales, use, or other taxes or duties. Seller reserves the right to modify prices for any reason and at any time by giving ten (10) days prior written notice. Unless otherwise specified by Seller, all prices are F.C.A. Seller's facility (INCOTERMS 2020). All sales are contingent upon credit approval and full payment for all purchases is due thirty (30) days from the date of invoice (or such date as may be specified in the Quote). Under any circumstances, Buyer as a deduction, set-off or recoupment of any amount, claim or dispute with Seller. Unpaid invoices beyond the specified payment date incur interest at the rate of 1.5% per month or the maximum allowable rate under applicable law. Seller reserves the right to require advance payment or provision of securities for first and subsequent deliveries if there is any doubt, in Seller's sole determination, regarding the Buyer's creditworthiness or for other business reasons. If the requested advance payment or securities are not provided to Seller's satisfaction, Seller reserves the right to suspend performance or reject the purchase order, in whole or in part, without prejudice to Seller's other rights or remedies, including the right to full compensation. Seller may revoke or shorten any payment periods previously granted in Seller's sole determination. The rights and remedies herein reserved to Seller are cumulative and in addition to any other or further rights and remedies available at law or in equity. No waiver by Seller of any breach by Buyer of any provision of these terms will constitute a waiver by Seller of any other breach of such provision.

4. Shipment; Delivery; Title and Risk of Loss. All delivery dates are approximate, and Seller is not responsible for damages or additional costs resulting from any delay. All deliveries are subject to our ability to procure materials from our suppliers. Regardless of the manner of shipment, delivery occurs and title and risk of loss or damage pass to Buyer, upon placement of the Products with the carrier at Seller's facility. Unless otherwise agreed prior to shipment and for domestic delivery locations only, Seller will select and arrange, at Buyer's sole expense, the carrier and means of delivery. When Seller selects and arranges the carrier and means of delivery, freight and insurance costs for shipment to the designated delivery location will be prepaid by Seller and added as a separate line item to the invoice. Buyer shall be responsible for any additional shipping charges incurred by Seller due to Buyer's acts or omissions. Buyer shall not return or repackage any Products without the prior written authorization from Seller, and any return shall be at the sole cost and expense of Buyer.

5. Warranty. The warranty for the Products is as follows: (i) Goods are warranted against defects in material or workmanship for a period of twelve (12) months from the date of delivery or 2,000 hours of use, whichever occurs first; (ii) Services shall be performed in accordance with generally accepted practices and using the degree of care and skill that is ordinarily exercised and customary in the field to which the Services pertain and are warranted for a period of six (6) months from the date of completion of the Services; and (iii) Software is only warranted to perform in accordance with applicable specifications provided by Seller to Buyer for ninety (90) days from the date of delivery or, when downloaded by a Buyer or end-user, from the date of the initial download. All prices are based upon the exclusive limited warranty stated above, and upon the following disclaimer:
EXEMPTION CLAUSE; DISCLAIMER OF WARRANTY, CONDITIONS, REPRESENTATIONS;

THIS WARRANTY IS THE SOLE AND ENTIRE WARRANTY, CONDITION, AND REPRESENTATION, PERTAINING TO PRODUCTS. SELLER DISCLAIMS ALL OTHER WARRANTIES, CONDITIONS, AND REPRESENTATIONS, WHETHER STATUTORY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THOSE RELATING TO DESIGN, NON-INFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE. SELLER DOES NOT WARRANT THAT THE SOFTWARE IS ERROR-FREE OR FAULT-TOLERANT, OR THAT BUYER'S USE THEREOF WILL BE SECURE OR UNINTERRUPTED, UNLESS OTHERWISE AUTHORIZED IN WRITING BY SELLER, THE SOFTWARE SHALL NOT BE USED IN CONNECTION WITH HAZARDOUS OR HIGH-RISK ACTIVITIES OR ENVIRONMENTS. EXCEPT AS EXPRESSLY STATED HEREIN, ALL PRODUCTS ARE PROVIDED "AS IS".

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

7. LIMITATION OF LIABILITY. IN THE EVENT OF A BREACH OF WARRANTY, SELLER WILL, AT ITS OPTION, REPAIR OR REPLACE THE NON-CONFORMING PRODUCTS, RE-PERFORM THE SERVICES, OR REFUND THE PURCHASE PRICE PAID WITHIN A REASONABLE PERIOD OF TIME. IN NO EVENT IS SELLER LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING ANY LOSS OF REVENUE OR PROFITS, WHETHER BASED IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL SELLER'S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE PAID FOR THE PRODUCTS.

8. Confidential Information. Buyer acknowledges and agrees that Confidential Information has been and will be received in confidence and will remain the property of Seller. Buyer further agrees that it will not use Seller's Confidential Information for any purpose other than for the benefit of Seller and shall return all such Confidential Information to Seller within thirty (30) days upon request.

9. Loss to Buyer's Property. Buyer's Property will be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer ordering the Products manufactured using Buyer's Property. Also, Seller shall not be responsible for any loss or damage to Buyer's Property while it is in Seller's possession or control. 10. Special Tooling. Seller may impose a tooling charge for any Special Tooling. Special Tooling shall be and remain Seller's property. In no event will Buyer acquire any interest in the Special Tooling, even if such Special Tooling has been specially converted or adapted for manufacture of Goods for Buyer and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller has the right to alter, discard or otherwise dispose of any Special Tooling or other property owned by Seller in its sole determination at any time.

11. Security Interest. To secure payment of all sums due from Buyer, Seller retains a security interest in all Products delivered to Buyer and, Buyer's acceptance of these Terms is deemed to be a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer's behalf all documents Seller deems necessary to perfect Seller's security interest.

12. User Responsibility. Buyer, through its own analysis and testing, is solely responsible for making the final selection of the Products and assuring that all performance, endurance, maintenance, safety and warning requirements of the application of the Products are met. Buyer must analyze all aspects of the application and follow applicable industry standards, specifications, and any technical information provided with the Quote or the Products, such as Seller's instructions, guides and specifications. If Seller provides options of or for Products based upon data or specifications provided by Buyer, Buyer is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products. In the event Buyer is not the end-user of the Products, Buyer will ensure such end-user complies with this paragraph.

13. Use of Products, Indemnity by Buyer. Buyer shall comply with all instructions, guides and specifications provided by Seller with the Quote or the Products. If Buyer uses or resells the Products in any way prohibited by Seller's instructions, guides or specifications, or Buyer otherwise fails to comply with Seller's instructions, guides and specifications, Buyer acknowledges that any such use, resale, or non-compliance is at Buyer's sole risk. Further, Buyer shall indemnify, defend, and hold Seller harmless from any losses, claims, liabilities, damages, lawsuits, judgments and costs (including attorney fees and defense costs), whether for personal injury, property damage, intellectual property infringement or any other claim, arising out of or in connection with: (a) improper selection, design, specification, application, or any misuse of Products; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's use of Buyer's Property; (d) damage to the Products from an external cause, repair or attempted repair by anyone other than Seller, failure to follow instructions, guides and specifications provided by Seller, use with goods not provided by Seller, or opening, modifying, deconstructing, tampering with or repackaging the Products; or (e) Buyer's failure to comply with these Terms, including any legal or administrative proceedings, collection efforts, or other actions arising from or relating to such failure to comply. Seller shall not indemnify Buyer under any circumstance except as otherwise provided in these Terms.

14. Cancellations and Changes. Buyer may not cancel or modify, including but not limited to movement of delivery dates for the Products, any order for any reason except with Seller's written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage and any additional expense. Seller, at any time, may change features, specifications, designs and availability of Products.

Offer of Sale

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

16. Force Majeure. Seller is not liable for delay or failure to perform any of its obligations by reason of any events or circumstances beyond its reasonable control. Such circumstances include without limitation: accidents, labor disputes or stoppages, government acts or orders, acts of nature, pandemics, epidemics, other widespread illness, or public health emergency, cyber related disruptions, cyber-attacks, ransomware sabotage, delays or failures in delivery from carriers or suppliers, shortages of materials, sudden increases in the price of raw material or components, shutdowns or slowdowns affecting the supply of raw materials or components, or the transportation thereof, oil shortages or oil price increases, energy crisis, energy or fuel interruption, war (whether declared or not) or the serious threat of same, riots, rebellions, acts of terrorism, embargoes, fire or any reason whether similar to the foregoing or otherwise. Seller will resume performance as soon as practicable after the event of force majeure has been removed. All delivery dates affected by an event of force majeure shall be tolled for the duration of such event of force majeure and rescheduled for mutually agreed dates as soon as practicable after the event of force majeure ceases to exist. The right to allocate capacity is in the Seller's sole discretion. An event of force majeure shall not include financial distress, insolvency, bankruptcy, or other similar conditions affecting one of the parties, affiliates and/or subcontractors. An event of force majeure in the meaning of these Terms means any circumstances beyond Seller's control that permanently or temporarily hinders performance, even where that circumstance was already foreseen. Buyer shall not be entitled to cancel any orders following its claim of an event of force majeure.

17. Waiver and Severability. Failure to enforce any provision of these Terms will not invalidate that provision; nor will any such failure prejudice either party's right to enforce that provision in the future. Invalidation of any provision of these Terms shall not invalidate any other provision herein and, the remaining provisions will remain in full force and effect.

18. Duration. Unless otherwise stated in the Quote, any agreement governed by or arising from these Terms shall: (a) be for an initial duration of one (1) year; and (b) shall automatically renew for successive one-year terms unless terminated by Buyer with at least 180-days written notice to Seller or if Seller terminates the agreement pursuant to Section 19 of these Terms.

19. Termination. Seller may, without liability to Buyer, terminate any agreement governed by or arising from these Terms for any reason and at anytime by giving Buyer thirty (30) days prior written notice. Seller may immediately terminate, in writing, if Buyer: (a) breaches any provision of these Terms, (b) becomes or is deemed insolvent, (c) appoints or has appointed a trustee, receiver or custodian for all or any part of Buyer's property, (d) files a petition for relief in bankruptcy on its own behalf, or one is filed against Buyer by a third party, (e) makes an assignment for the benefit of creditors; or (f) dissolves its business or liquidates all or a majority of its assets.

20. Ownership of Rights. Buyer agrees that (a) Seller (and/or its affiliates) owns or is the valid licensee of Seller's IP and (b) the furnishing of information, related documents or other materials by Seller to Buyer does not grant or transfer any ownership interest or license in or to Seller's IP to Buyer, unless expressly agreed in writing. Without limiting the foregoing, Seller retains ownership of all Software supplied to Buyer. In no event shall Buyer obtain any greater right in and to the Software than a right in a license limited to the use thereof and subject to compliance with any other terms provided with the Software. Buyer further agrees that it will not, directly or through intermediaries, reverse engineer, decompile, or disassemble any Software (including firmware) comprising or contained within a Product, except and only to the extent that such activity may be expressly permitted, either by applicable law or, in the case of open source software, the applicable open source license.

21. Indemnity for Infringement of Intellectual Property Rights. Seller is not liable for infringement of any Intellectual Property Rights except as provided in this Section. 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 a third-party claim that one or more of the Products infringes the Intellectual Property Rights of a third party in the country of delivery of the Products by Seller to Buyer. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of any such claim, and Seller having sole control over the defense of the claim including all negotiations for settlement or compromise. If one or more Products is subject to such a claim, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Products, replace or modify the Products to render them non-infringing, or offer to accept return of the Products and refund the purchase price less a reasonable allowance for depreciation. Seller has no obligation or liability for any claim of infringement: (i) arising from information provided by Buyer (including Seller's use of Buyer's Property); or (ii) directed to any Products for which the designs are specified in whole or part by Buyer; or (iii) resulting from the modification, combination or use in a system of any Products. The foregoing provisions of this Section constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for claims of infringement of Intellectual Property Rights.

22. Governing Law. These Terms, the terms of any Quote, and the sale and delivery of all Products are deemed to have taken place in, and shall be governed and construed in accordance with, the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to the sale and delivery of the Products.

23. Entire Agreement. These Terms, along with the terms set forth in the Quote, forms the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale and purchase. In the event of a conflict between any term set forth in the Quote and these Terms, the terms set forth in the Quote shall prevail. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter shall have no effect. No modification to these Terms will be binding on Seller unless agreed to in a writing that is signed by an authorized representative of Seller, excluding email correspondence, "clickwrap" or other purported electronic assent to different or additional terms. Sections 2-25 of these Terms shall survive termination or cancellation of any agreement governed by or arising from these Terms.

24. No 'Wrap' Agreements/No Authority to Bind. Seller's clicking any buttons or any similar action, such as clicking "I Agree" or "Confirm," to utilize Buyer's software or webpage for the placement of orders, is NOT an agreement to Buyer's Terms and Conditions. NO EMPLOYEE, AGENT OR REPRESENTATIVE OF SELLER HAS THE AUTHORITY TO BIND SELLER BY THE ACT OF CLICKING ANY BUTTON OR SIMILAR ACTION ON BUYER'S WEBSITE OR PORTAL.

25. Compliance with Laws. Buyer agrees to comply with all applicable laws, regulations, and industry and professional standards, including those of the United States of America, and the country or countries in which Buyer may operate, including without limitation the U.S. Foreign Corrupt Practices Act ("FCPA"), the U.S. Anti-Kickback Act ("Anti-Kickback Act"), U.S. and E.U. export control and sanctions laws ("Export Laws"), the U.S. Food and Drug Administration ("FDA"), and the rules and regulations promulgated by the U.S. Food and Drug Administration ("FDA"), each as currently amended. Buyer agrees to indemnify, defend, and hold harmless Seller from the consequences of any violation of such laws, regulations and standards by Buyer, its employees or agents. Buyer represents that it is familiar with all applicable provisions of the FCPA, the Anti-Kickback Act, Export Laws, the FDCA and the FDA and certifies that Buyer will adhere to the requirements thereof and not take any action that would make Seller violate such requirements. Buyer represents and agrees that Buyer will not make any payment or give anything of value, directly or indirectly, to any governmental official, foreign political party or official thereof, candidate for foreign political office, or commercial entity or person, for any improper purpose, including the purpose of influencing such person to purchase Products or otherwise benefit the business of Seller. Buyer further represents and agrees that it will not receive, use, service, transfer or ship any Products from Seller in a manner or for a purpose that violates Export Laws or would cause Seller to be in violation of Export Laws. Buyer agrees to promptly and reliably provide Seller all requested information or documents, including end-user statements and other written assurances, concerning Buyer's ongoing compliance with Export Law.

09/2022

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WARNING

FAILURE, 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 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. Proposition 65 Warning: This product contains chemicals known to the state of California to cause cancer or birth defects or other reproductive harm.

Offer of Sale

The items described in this document are available for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. Any sale contract entered by Parker will be governed by the provisions stated in Parker's standard terms and conditions of sale (copy available upon request).

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