

Introduction

Parker RH4 Relief Valves are designed such that when the upstream pressure exceeds the closing force exerted by the spring, the lower stem opens, permitting flow through the valve. Flow through the valve increases proportionately to the increase in upstream pressure.

Features

- ▶ Pressure settings are externally adjustable while the valve is in operation. Eight different spring ranges provide greater system sensitivity and enhanced performance.
- ▶ Captured molded seat design is blow-out and chip resistant.
- ▶ Manual Override option with positive stem retraction is available for pressures up to 1500 psig (103 bar). This option permits the user to relieve upstream pressure while maintaining the predetermined cracking pressure.
- ▶ Color coded springs and labels indicate spring cracking range.
- ▶ Lock wire feature secures a given pressure setting.

RH4

Specifications

Working Pressure:

Up to 6000 psig (414 bar) CWP.

Up to 8000 psig (552 bar) during relief with no internal seal damage.

Cracking Pressure:

Eight springs, from 50 psig to 6000 psig in the following ranges:

50-350 psig (3.4-24.1 bar)	350-750 psig (24.1-51.7 bar)	750-1500 psig (51.7-103.4 bar)
1500-2250 psig (103.4-155.1 bar)	2250-3000 psig (155.1-206.8 bar)	3000-4000 psig (206.8-275.8 bar)
4000-5000 psig (275.8-344.7 bar)	5000-6000 psig (344.7-413.7 bar)	

Temperature Rating:

Nitrile Rubber.....-30°F to +225°F (-34°C to +107°C)

Highly Fluorinated Fluorocarbon Rubber
.....-20°F to +200°F (-29°C to +93°C)

Ethylene Propylene Rubber
.....-70°F to +275°F (-57°C to +135°C)

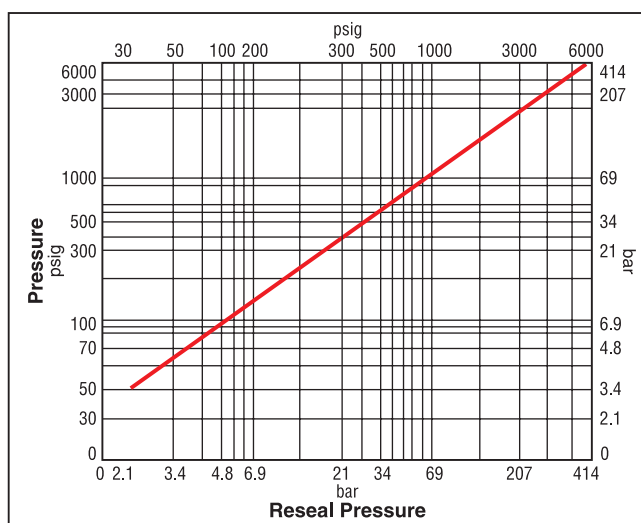
Fluorocarbon Rubber ..-10°F to +400°F (-23°C to +204°C)

Neoprene Rubber-45°F to +250°F (-43°C to +121°C)

Flow Calculations

Inlet Pressure		Pressure Drop ΔP		Water @ 60°F (16°C)		Air @ 60°F (16°C)	
psig	bar	psig	bar	gpm	m ³ /hr	SCFM	m ³ /hr
100	7	1	0.1	0.4	0.1	4.3	7.0
		10	0.7	1.3	0.3	13.2	21.0
		50	3.5	2.9	0.7	24.2	37.3
1000	69	10	0.7	1.3	0.3	40.9	69.0
		100	6.9	4.1	0.9	123.5	208.4
		500	34.5	9.2	2.1	219.1	368.6
3000	207	100	6.9	4.1	0.9	220.1	373.5
		1000	69.0	13.0	2.9	590.8	1002.4
		1500	103.4	15.9	3.6	652.1	1105.7
6000	413	1000	69.0	13.0	2.9	916.8	1556.2
		2000	137.9	18.3	4.2	1179.7	2001.3
		3000	206.8	22.5	5.1	1301.6	2207.0

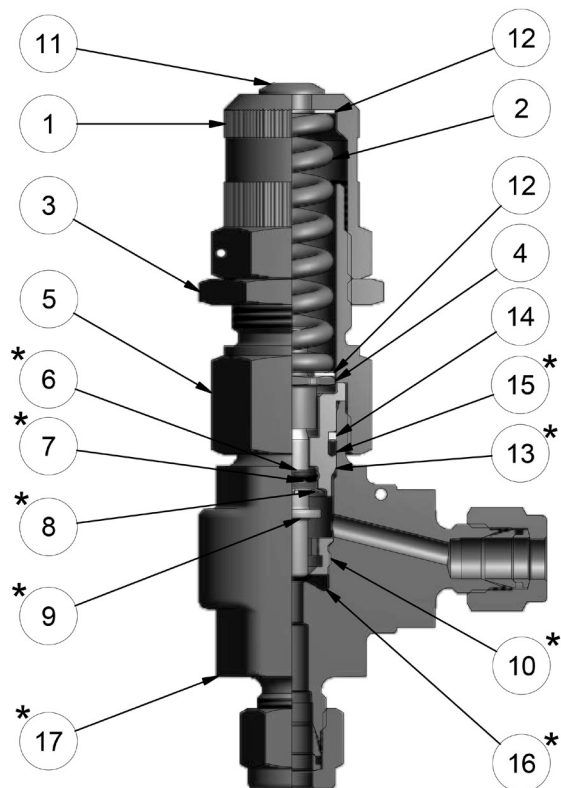
Crack Pressure vs. Reseal Pressure



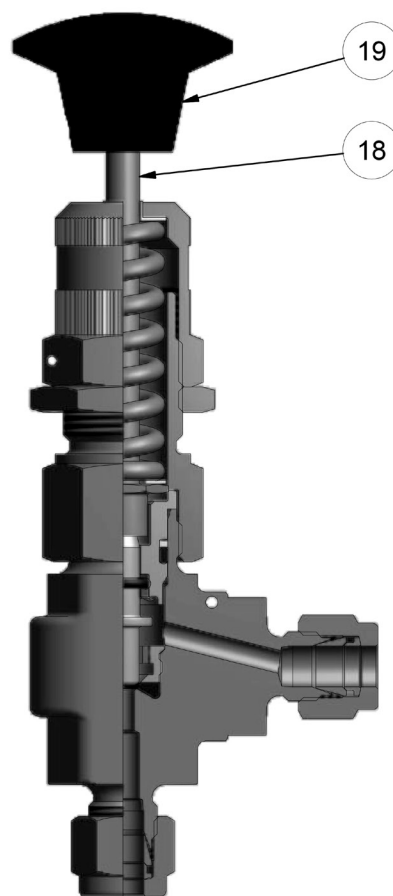
Note: Valves which are not actuated for a period of time may initially crack at higher than set crack pressures.

Note: To determine MPa, multiply bar by 0.1

Materials of Construction



Model Shown: 4A-RH4A-BNT-SS-K1



Model Shown: 4A-RH4A-VT-SS-MN-K2

RH4

Item #	Part	Material
1	Cap	ASTM A 479, Type 316
2	Spring	17-7 Stainless Steel
3	Locknut	316 Stainless Steel
4	Upper Stem	ASTM A 479, Type 316
5	Bonnet	ASTM A 479, Type 316
*6	Stem Seal	**Fluorocarbon Rubber
*7	Stem Back-up Ring	CTFE
*8	Push On Ring	PH 15-7MO Stainless Steel
*9	Lower Stem	ASTM A 479, Type 316
*10	Seat Retainer	ASTM A 479, Type 316
11	Plug	Zinc Plated Steel
12	Washer	PTFE
*13	Stem Guide	ASTM A 479, Type 316
14	Back-up Ring	PTFE
*15	Body Seal	**Fluorocarbon Rubber
*16	Seat	**Fluorocarbon Rubber
*17	Valve Body	ASTM A 182, Type F316
18	Handle Stem	ASTM A 479, Type 316
19	Handle	Phenolic

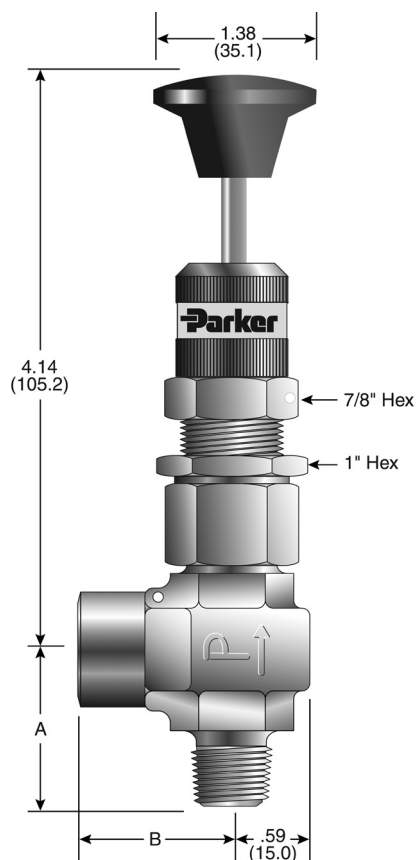
* Wetted Parts

** Optional seat and seal materials are located in How to Order section.

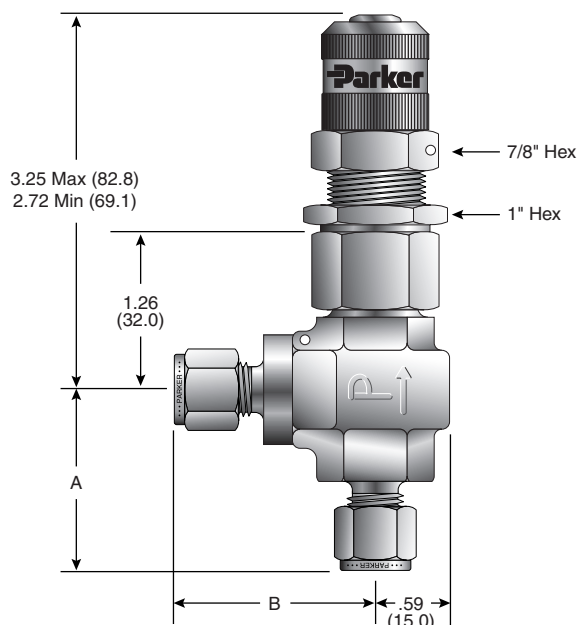
Lubrication: Perfluorinated polyether.

Dimensions / Flow Data

RH4



Model Shown:
4M4F-RH4A-VT-SS-MN



Model Shown:
4A-RH4A-BNT-SS

Dimensions in inches (millimeters) are for reference only, subject to change.

Basic Part Number	End Connections (Inlet) Port 1	Flow Data				Dimensions †				Options				
		Orifice		C _V	X _T *	A		B		Seal Material		Actuation		
		Inch	mm			inch	mm	inch	mm					
4A-RH4A-VT-SS	1/4" A-LOK® Compression	0.14	3.6	0.41	0.67	1.44	36.6	1.60	40.6	BN	Nitrile Rubber	MN	Manual Override	
4Z-RH4A-VT-SS	1/4" CPI™ Compression					1.44	36.6	1.60	40.6					
4M4A-RH4A-VT-SS	1/4" Male NPT					1.19	30.2	1.60	40.6	EPR				Ethylene Propylene Rubber
4M4Z-RH4A-VT-SS	1/4" Male NPT					1.19	30.2	1.60	40.6					
4M4F-RH4A-VT-SS	1/4" Male NPT					1.19	30.2	1.17	29.7					
4KF-RH4A-VT-SS	1/4" Female BSP/ISO Tapered					1.19	30.2	1.17	29.7	NE				Neoprene Rubber
4KM-RH4A-VT-SS	1/4" Male BSP/ISO Tapered					1.19	30.2	1.17	29.7					
M6A-RH4A-VT-SS	6mm A-LOK® Compression					1.44	36.6	1.60	40.6	KZ				Highly Fluorinated Fluorocarbon Rubber
M6Z-RH4A-VT-SS	6mm CPI™ Compression					1.44	36.6	1.60	40.6					
M8A-RH4A-VT-SS	8mm A-LOK® Compression					1.44	36.6	1.60	40.6					
M8Z-RH4A-VT-SS	8mm CPI™ Compression	1.44	36.6	1.60	40.6									

* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = x_T$.

†For CPI™ and A-LOK®: Dimensions are measured with nuts in the finger tight position.

How to Order

The part number sequence identifies product characteristics as shown in the example below.

Example: 4Z-RH4A-BNT-SS-MN Describes an RH4A Series externally adjustable relief valve equipped with 1/4" CPI™ compression inlet and outlet ports on a 1/4" angle pattern body, Nitrile seals, PTFE back-up ring, stainless steel construction and Manual Override.

4Z	-	RH4A	-	BN	T	-	SS	-	MN
Connection Size & Type		Body Size & Pattern		Seal Material	Back-Up Rings**		Body Material		Actuation

Spring Kits

Kit Part Number	Cracking Pressure Range (psig)	Cracking Pressure Range (bar)	Color Code
KIT-RH4SP-50-350	50-350	3.4-24.1	Gray
KIT-RH4SP-350-750	350-750	24.1-51.7	Red
KIT-RH4SP-750-1500	750-1500	51.7-103.4	Orange
KIT-RH4SP-1500-2250	1500-2250	103.4-155.1	Yellow
KIT-RH4SP-2250-3000	2250-3000	155.1-206.8	Light Green
KIT-RH4SP-3000-4000	3000-4000	206.8-275.8	Light Blue
KIT-RH4SP-4000-5000	4000-5000	275.8-344.7	Violet
KIT-RH4SP-5000-6000	5000-6000	344.7-413.7	Lemon Yellow



Spring Kit Contains:

Spring
Coded label
PTFE washers Locking wire / lead seal
Installation Instructions

Seal Kits

Kit Part Number	Kit Part Number (Manual Override Option)	Seat/Seal Material
KIT-RH4-SLEEVE-VT-SS	KIT-RH4-SLEEVE-MN-VT-SS	Fluorocarbon Rubber
KIT-RH4-SLEEVE-BNT-SS	KIT-RH4-SLEEVE-MN-BNT-SS	Nitrile Rubber
KIT-RH4-SLEEVE-EPRT-SS	KIT-RH4-SLEEVE-MN-EPRT-SS	Ethylene Propylene Rubber
KIT-RH4-SLEEVE-NET-SS	KIT-RH4-SLEEVE-MN-NET-SS	Neoprene Rubber
KIT-RH4-SLEEVE-KZT-SS	KIT-RH4-SLEEVE-MN-KZT-SS	Highly Fluorinated Fluorocarbon Rubber

Seal Kit Contains:

Stem Cartridge
Seat
Maintenance Instructions



RH4