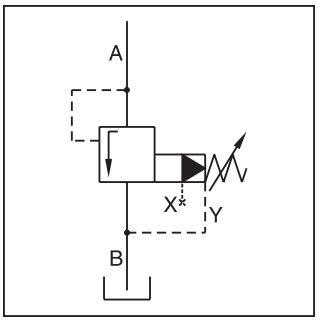
General Description

Series R4V pilot operated, pressure relief valves for in-line mounting have a similar design to the subplate mounted R4V series. For single functions where no manifold blocks are used, the valves can be directly placed in the pipework.

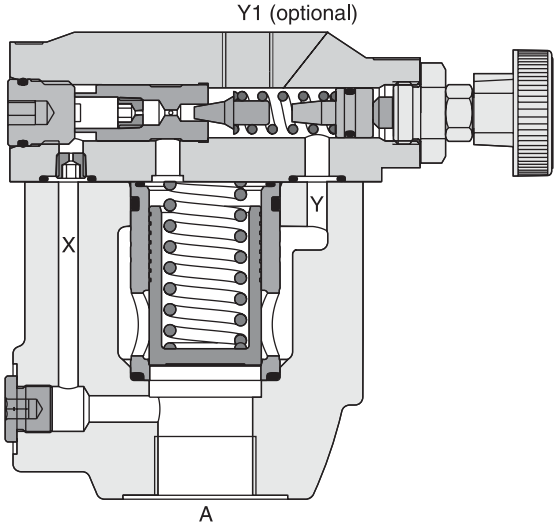
The R4V valves are available with 2 ports (L-body) for in-line relief function or with 3 ports (T-body) for relief functions in the bypass.



Operation

The system pressure in Port A is applied to the pilot valve and to the top surface of the main poppet via an orifice in X. The hydraulically balanced main poppet is held against the seat by the main spring. In this state there is no flow through the valve. The adjusted spring force acting on the pilot cone determines the relief pressure. If the pressure in Port A exceeds the set point, the pilot cone is lifted from its seat, releasing a small pilot flow to tank. The flow through the control orifice in X creates a pressure drop which limits the pressure at the top of the main poppet to the set point. The higher system pressure in Port A now lifts the main poppet off its seat and allows flow to Port B. In the resulting float position only enough flow is passed from Port A to Port B to maintain the inlet pressure in Port A at the set point. When the pressure in Port A falls below the set point, the hydraulic balance on the main poppet is restored. The main spring then forces the main poppet to close.

R4V06 L-Body



Features

- Pilot operated with manual adjustment.
- 2 interfaces:
  - L-body (R4V06-SAE 12, R4V10-SAE 20)
  - T-body (R4V03-SAE 8, R4V06-SAE 16)
- 3 pressure stages.
- 3 adjustment modes:
  - Hand knob
  - Acorn nut with lead seal
  - Key lock
- With optional vent function.

Ordering Information

R4V ☐ — **5** ☐ ☐ ☐ ☐ ☐ ☐ ☐ **A** ☐ ☐

Pressure Relief Valve	Size	Max Pressure 350 Bar (5075 PSI)	Body	Pressure Range	Adjustment	Drain Line	Switching Type	Solenoid Voltage (Optional)	Design Series	Seal	Options Check with Factory

Code	Description
03	NG10 (SAE 8)
06	NG25 (SAE 16 – T-Body) (SAE 12 – L-Body)
10	NG32 (SAE 20)

Code	Description
4	R4V03 T-Body R4V06 T-Body
B	R4V06 L-Body R4V10 L-Body

Code	Description
1	up to 105 Bar (1523 PSI)
3	up to 210 Bar (3045 PSI)
5	up to 350 Bar (5075 Bar)

Code	Description
1	Hand Knob
3	Acorn Nut with Lead Seal
4	Key Lock

Code	Description
0	Internal
2	External from Pilot Head (Y1)

Code	Description
Omit	Standard w/o vent function
09*	Solenoid not activ. unpress. circulation
11**	Solenoid activated unpress. circulation

* Sol. de-energized: open to tank
Sol. energized: vent line blocked

** Sol. de-energized: vent line blocked
Sol energized: open to tank

Code	Description
Omit	Standard w/o vent function
G0R	12V
G0Q	24V
GAR	98V
GAG	205V
W30	110V 50Hz/ 120V 60Hz
W31	220V 50Hz/ 240V 60Hz

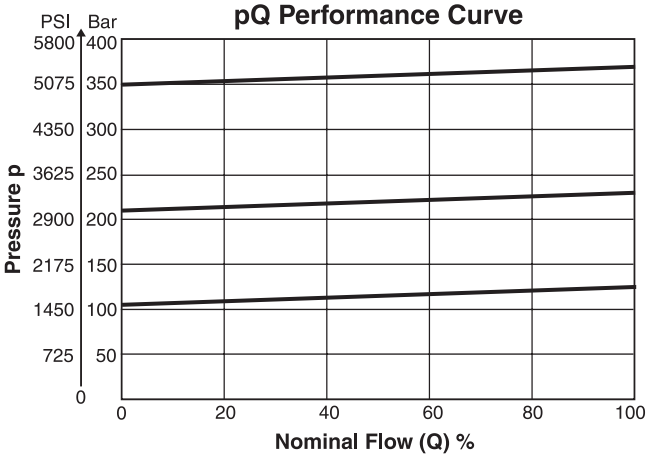
Code	Description
1	Nitrile
5	Fluorocarbon

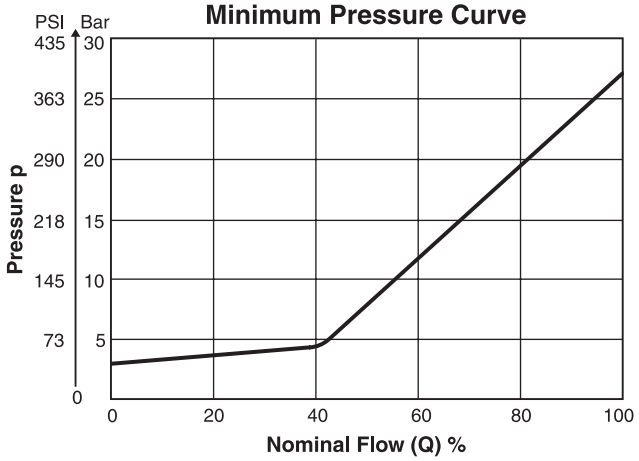
Weight:

R4V03 3.2 kg (7.1 lbs.)
R4V06*4 6.6 kg (14.6 lbs.)
R4V06*B 3.3 kg (8.2 lbs.)
R4V10 5.6 kg (12.3 lbs.)

D

Performance Curves*





* The performance curves are measured with external drain. For internal drain, the tank pressure has to be added to the curve.

R4V.indd, dd

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Hydraulic Valve Division
Elyria, Ohio, USA

R4V

General				
	T-Body		L-Body	
Size	**03 (SAE 8)**	**06 (SAE 16)**	**06 (SAE 12)**	**10 (SAE 20)**
Mounting	Threaded Body			
Mounting Position	Unrestricted			
Ambient Temp. Range	-20°C to +50°C (-4°F to +122°F)			
Hydraulic				
Max. Operating Pressure	Ports A and X up to 350 Bar (5075 PSI); Ports B and Y 30 Bar (435 PSI)			
Pressure Ranges	105 Bar (1523 PSI), 210 Bar (3045 PSI), 350 Bar (5075 PSI)			
Nominal Flow	60 LPM (15.9 GPM)	200 LPM (52.9 GPM)	200 LPM (52.9 GPM)	450 LPM (119.0 GPM)
Fluid	Hydraulic oil as per DIN 51524 ... 51525			
Fluid Temperature	-20°C to +80°C (-4°F to +176°F)			
Viscosity **Permitted** **Recommended**	 10 to 650 cSt / mm^2/s (46 to 3013 SSU 30 cSt / mm^2/s (139 SSU)			
Filtration	ISO Class 4406 (1999) 18/16/13 (acc. NAS 1638: 7)			

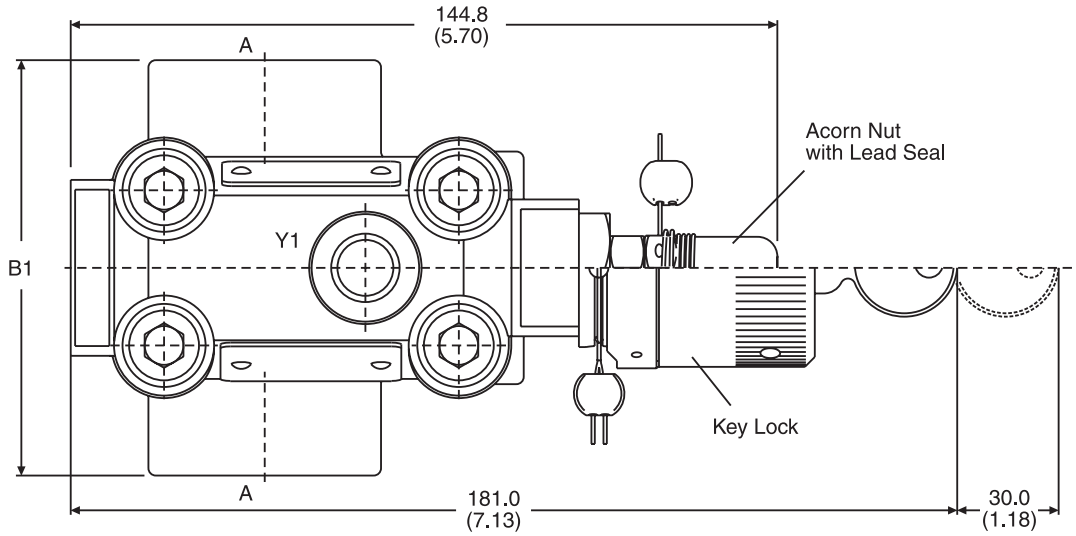
D

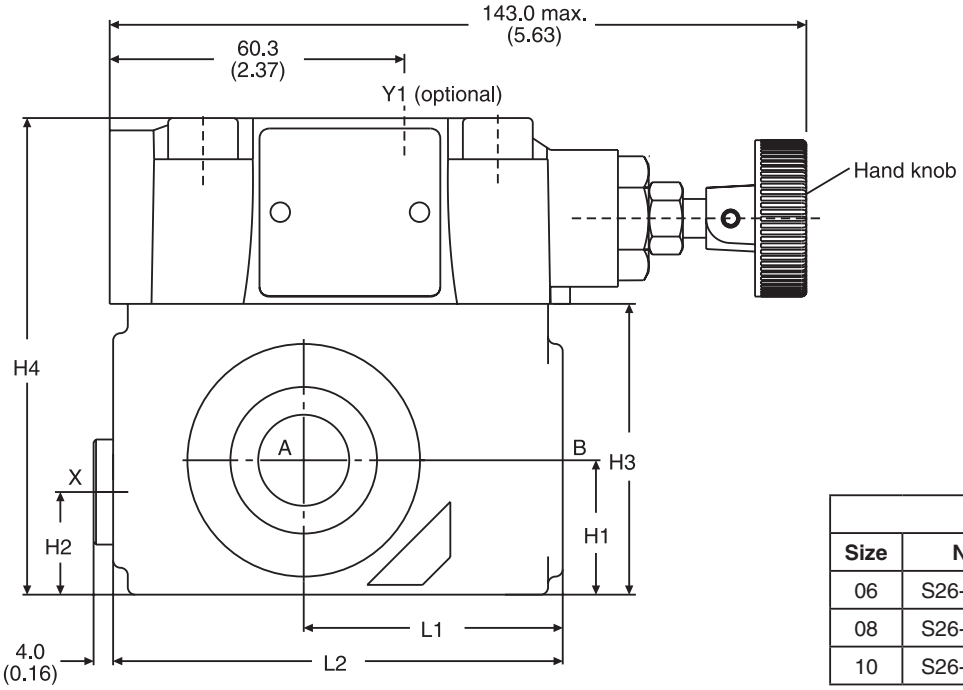
R4V with Vent Function

General						
	T-Body		L-Body			
Size	**03 (SAE 8)**	**06 (SAE 16)**	**06 (SAE 12)**	**10 (SAE 20)**		
Mounting	Threaded Body					
Mounting Position	Unrestricted					
Ambient Temp. Range	-20°C to +50°C (-4°F to +122°F)					
Weight	3.2 kg (7.0 lbs)	6.6 kg (14.5 lbs)	3.3 kg (7.3 lbs)	5.6 kg (12.3 lbs)		
Electrical (Solenoid)						
Duty Ratio	100%					
Response Time	Energized / De-energized AC: 20/18ms, DC: 46/27 ms					
Code	**G0R**	**G0Q**	**GAR**	**GAG**	**W30**	**W31**
Supply Voltage	12V	24V	98V	205V	110V at 50Hz 120V at 60Hz	220V at 50Hz 240V at 60Hz
Tolerance Supply Voltage	+5 to -10	+5 to -10	+5 to -10	+5 to -10	±5	±5
Power Consumption Hold	31W	31W	31W	31W	78W	78W
In Rush	31W	31W	31W	31W	264W	264W
Maximum Switching Frequency	AC up to 7,200 switchings per hour DC up to 16,000 switchings per hour					
Solenoid Connection	Connector as per EN175301-803					
Protection Class	IP65 in accordance with EN60529 (plugged and mounted)					
Coil Insulation Class	H (180°C) (356°F)					

T-Body

Inch equivalents for millimeter dimensions are shown in (**)





Seal Kits		
Size	**Nitrile**	**Fluorocarbon**
06	S26-58507-0	S26-58507-5
08	S26-58475-0	S26-58475-5
10	S26-58508-0	S26-58508-5

Size	Body	B1	B2	B3	B4	H1	H2	H3	H4	H5	H6	H7	H8	L1	L2	L3
03	T-body	85.0 (3.35)	–	–	–	27.5 (1.08)	21.0 (0.83)	59.5 (2.34)	97.5 (3.84)	–	–	–	–	53.0 (2.09)	92.0 (3.62)	–
06	T-body	136.0 (5.35)	–	–	–	38.0 (1.50)	28.0 (1.10)	93.0 (3.66)	131.0 (5.16)	–	–	–	–	66.5 (2.62)	117.5 (4.63)	–

Ports	Function	Port size	
		R4V03 T-body	**R4V06 T-body**
A	Pressure (inlet)	SAE 8	SAE 16
B	Tank (outlet)	SAE 8	SAE 16
X[1)]	Ext. Remote Control or Vent Connection	SAE 4	
Y1[2)]	External Drain		

[1)] closed when supplied

[2)] port Y1 is only available at drain line (code 2) external from the pilot head

R4V.indd, dd

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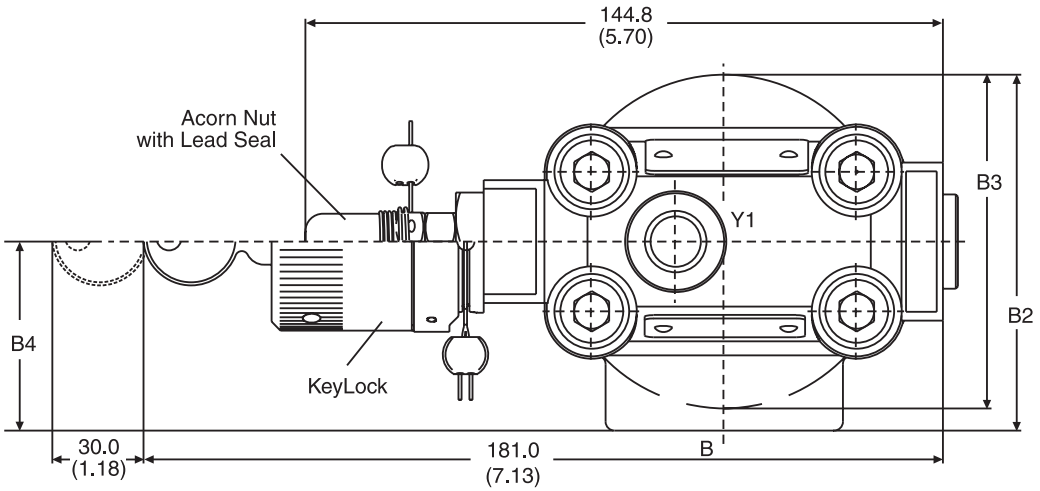
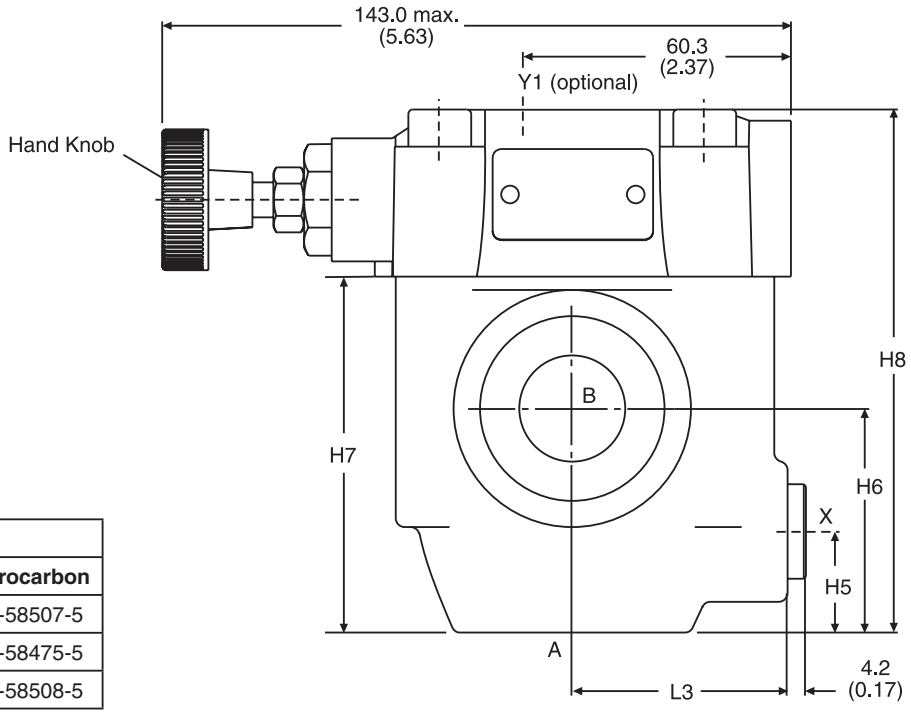
Hydraulic Valve Division
Elyria, Ohio, USA

L-Body

Inch equivalents for millimeter dimensions are shown in (**)





Seal Kits		
Size	**Nitrile**	**Fluorocarbon**
06	S26-58507-0	S26-58507-5
08	S26-58475-0	S26-58475-5
10	S26-58508-0	S26-58508-5

Size	Body	B1	B2	B3	B4	H1	H2	H3	H4	H5	H6	H7	H8	L1	L2	L3
06	L-body	–	81.0 (3.19)	76.0 (2.99)	43.0 (1.69)	–	–	–	–	23.0 (0.91)	51.0 (2.01)	81.0 (3.19)	119.0 (4.69)	–	–	49.0 (1.93)
10	L-body	–	120.7 (4.75)	85.8 (3.38)	77.8 (3.06)	–	–	–	–	31.8 (1.25)	50.8 (2.00)	96.0 (3.78)	134.0 (5.78)	–	–	49.8 (1.96)

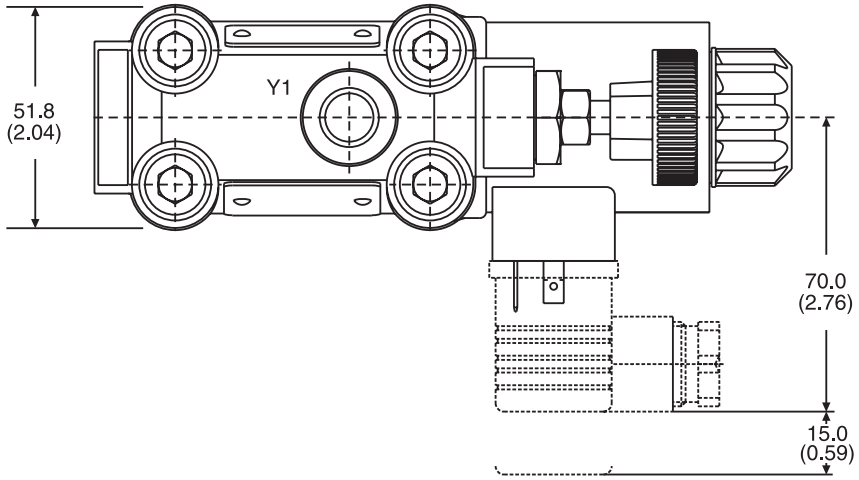
Ports	Function	Port size	
		R4V06 L-body	R4V10 L-body
A	Pressure (inlet)	SAE 12	SAE 20
B	Tank (outlet)	SAE 12	SAE 20
X[1)]	Ext. Remote Control or Vent Connection	SAE 4	
Y1[2)]	External Drain		

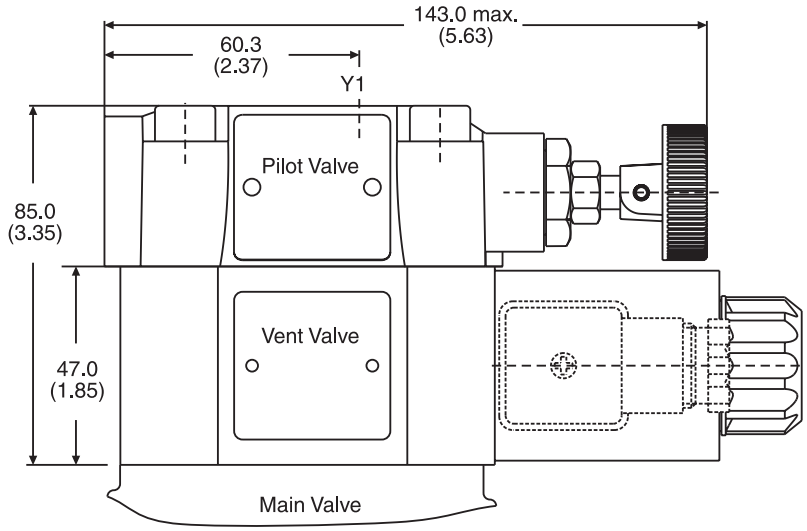
[1)] closed when supplied

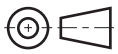
[2)] port Y1 is only available at drain line (code 2) external from the pilot head

R4V.indd, dd

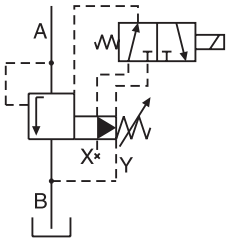
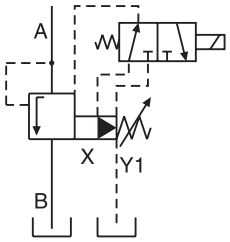
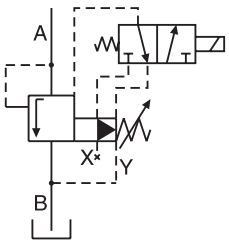
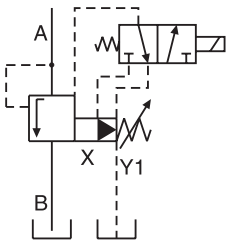
Inch equivalents for millimeter dimensions are shown in (**)







Vent Valve Seal Kits	
Nitrile	**Fluorocarbon**
DC Solenoid	
S26-58515-0	S26-58515-5
AC Solenoid	
S26-35237-0	S26-35237-5

Code	Internal Drain	External Drain
11		
09		

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