

**General Description**

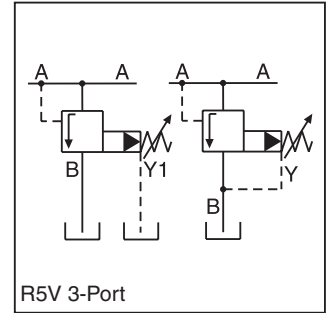
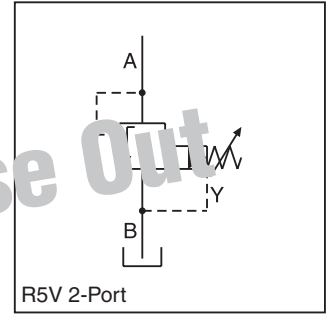
Series R5V pilot operated pressure relief valves have a similar design to the subplate mounted R4V series. The SAE flanges allow to mount the valves directly on the outlet flanges of pumps or inlet flanges of actuators to achieve a very compact design.

Valves with SAE flanges can also be bolted together to combine functions without the need of a manifold block.

**Operation**

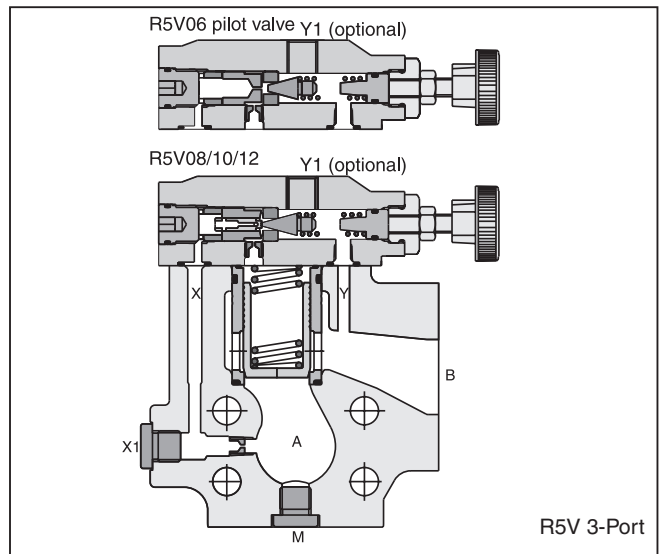
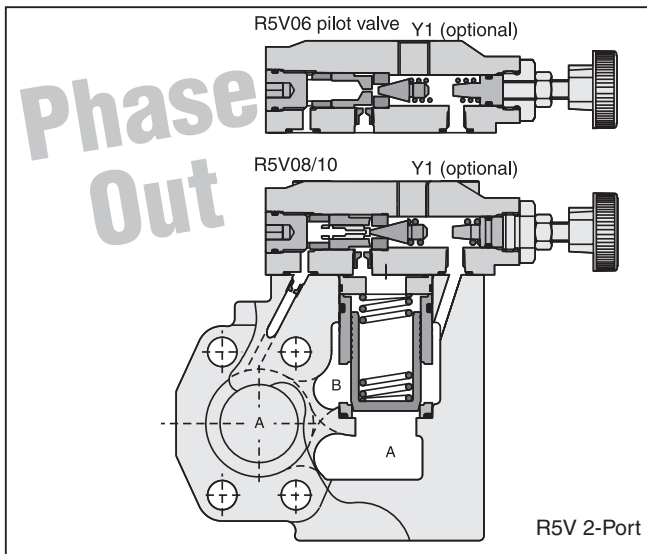
The system pressure in Port A is applied to the pilot valve and to the top surface of the main poppet via an orifice in X. The hydraulically balanced main poppet is held against the seat by the main spring. In this state there is no flow through the valve. The adjusted spring force acting on the pilot 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.

**D**

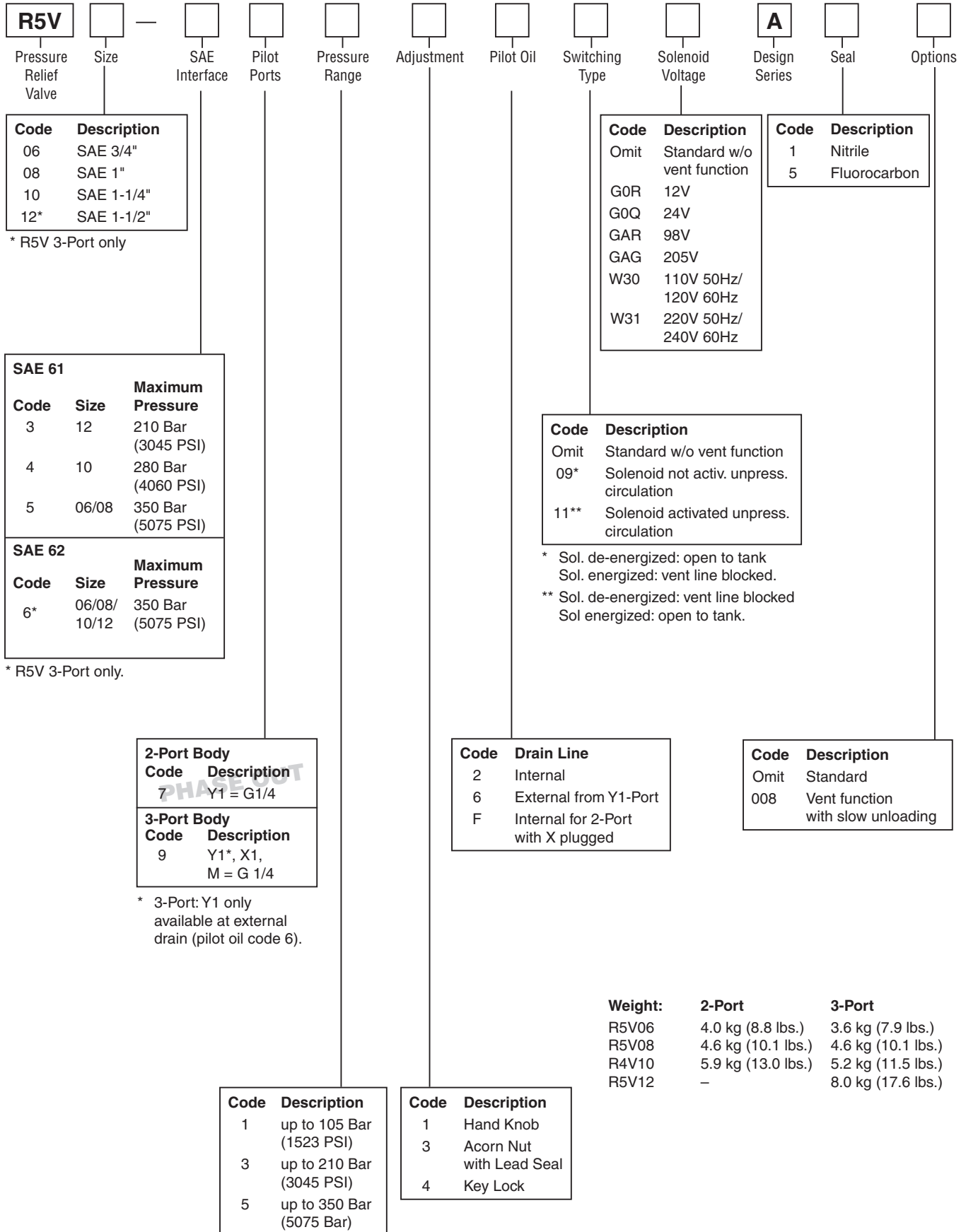


**Features**

- Pilot operated with manual adjustment
- R5V with 2-port body: **PHASE OUT**
  - 3 sizes (SAE 3/4", 1", 1-1/4")
  - SAE 61 flange
- R5V with 3-port body:
  - 4 sizes (SAE 3/4", 1", 1-1/4", 1-1/2")
  - SAE 61 and SAE 62 flange
- 3 pressure stages
- 3 adjustment modes: Hand knob, acorn nut with lead seal, or key lock
- With optional vent function



**WARNING:** This product can expose you to chemicals including Lead, Nickel (Metallic), or 1,3-Butadiene which are known to the State of California to cause cancer, and Lead or 1,3-Butadiene which is known to the State of California to cause birth defects and other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

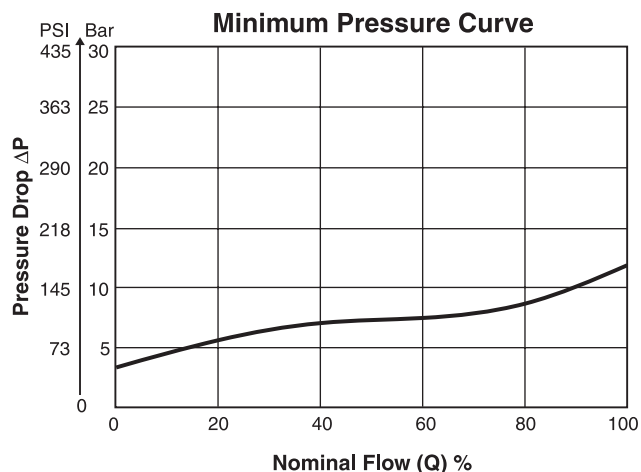
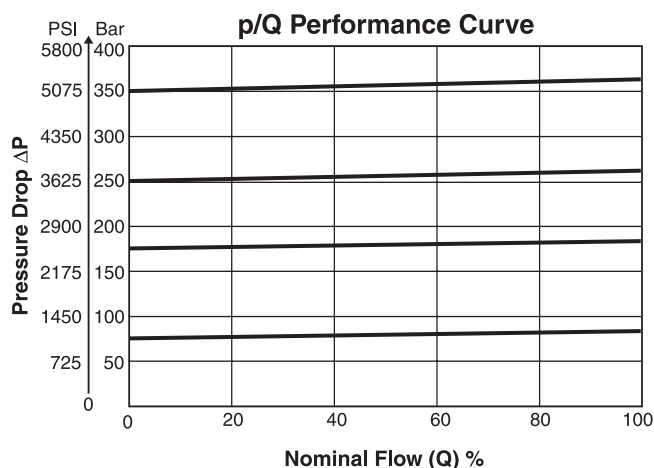


**D**

## Specifications

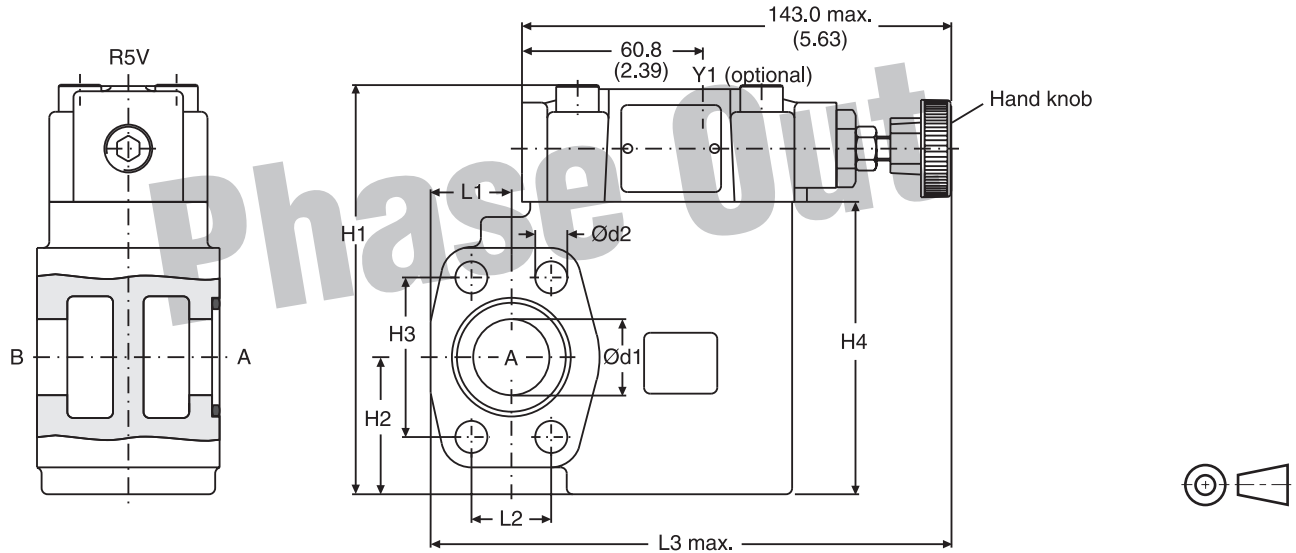
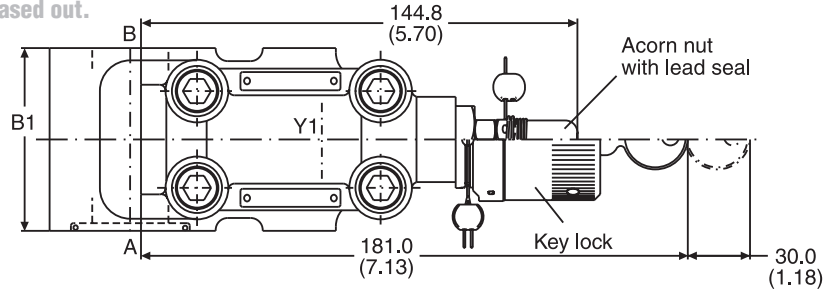
General							
<b>Size</b>		<b>06</b>	<b>08</b>	<b>10</b>	<b>12</b>		
<b>Mounting</b>	Flanged according to SAE 61 / SAE 62						
<b>Mounting Position</b>	Unrestricted						
<b>Ambient Temperature Range</b>	-20°C to +50°C (-4°F to +122°F)						
Hydraulic							
<b>Maximum Operating Pressure</b>	<b>SAE 61 Ports A, B</b>	350 Bar (5075 PSI)	350 Bar (5075 PSI)	280 Bar (4060 PSI)	210 Bar (3045 PSI)		
	<b>SAE 61 Port Y1</b>	30 Bar (435 PSI)	30 Bar (435 PSI)	30 Bar (435 PSI)	30 Bar (435 PSI)		
	<b>SAE 62 Ports A, B</b>	350 Bar (5075 PSI)	350 Bar (5075 PSI)	350 Bar (5075 PSI)	350 Bar (5075 PSI)		
	<b>SAE 62 Port Y1</b>	30 Bar (435 PSI)	30 Bar (435 PSI)	30 Bar (435 PSI)	30 Bar (435 PSI)		
<b>Pressure Ranges</b>	105 Bar (1523 PSI), 210 Bar (3045 PSI), 350 Bar (5075 PSI)						
<b>Nominal Flow</b>		90 LPM (23.8 GPM)	300 LPM (79.4 GPM)	600 LPM (158.7 GPM)	600 LPM (158.7 GPM)		
<b>Fluid</b>	Hydraulic oil as per DIN 51524 to 51525						
<b>Fluid Temperature</b>	-20°C to +80°C (-4°F to +176°F)						
<b>Viscosity</b>	<b>Permitted</b>	10 to 650 cSt / mm <sup>2</sup> /s (46 to 3013 SSU)					
	<b>Recommended</b>	30 cSt / mm <sup>2</sup> /s (139 SSU)					
<b>Filtration</b>	ISO Class 4406 (1999) 18/16/13 (acc. NAS 1638: 7)						
Electrical (Solenoid)							
<b>Duty Ratio</b>	100%						
<b>Solenoid Connection</b>	Connector as per EN175301-803						
<b>Protection Class</b>	IP65 in accordance with EN60529 (plugged and mounted)						
	<b>Code</b>	<b>G0R</b>	<b>G0Q</b>	<b>GAR</b>	<b>GAG</b>	<b>W30</b>	<b>W31</b>
<b>Supply Voltage</b>		12V	24V	98V	205V	110V at 50Hz/ 120V at 60Hz	220V at 50Hz/ 240V at 60Hz
<b>Tolerance Supply Voltage</b>		+5 to -10	+5 to -10	+5 to -10	+5 to -10	±5	±5
<b>Power Consumption</b>	<b>Hold</b>	31W	31W	31W	31W	78W	78W
	<b>In Rush</b>	31W	31W	31W	31W	264W	264W
<b>Response Time</b>	Energized / De-energized AC 20/18ms, DC 46/27 ms						
<b>Maximum Switching Frequency</b>	AC up to 7200 switchings/hour; DC up to 16,000 switchings/hour						
<b>Coil Insulation Class</b>	H (180°C) (356°F)						

## Performance Curves



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

**2-Port** Note: 2-port bodies are being phased out.



Seal Kits		
Size	Nitrile	Fluorocarbon
06	S16-91850-0	S16-91850-5
08	S16-91851-0	S16-91851-5
10	S16-91852-0	S16-91852-5

**SAE 61**

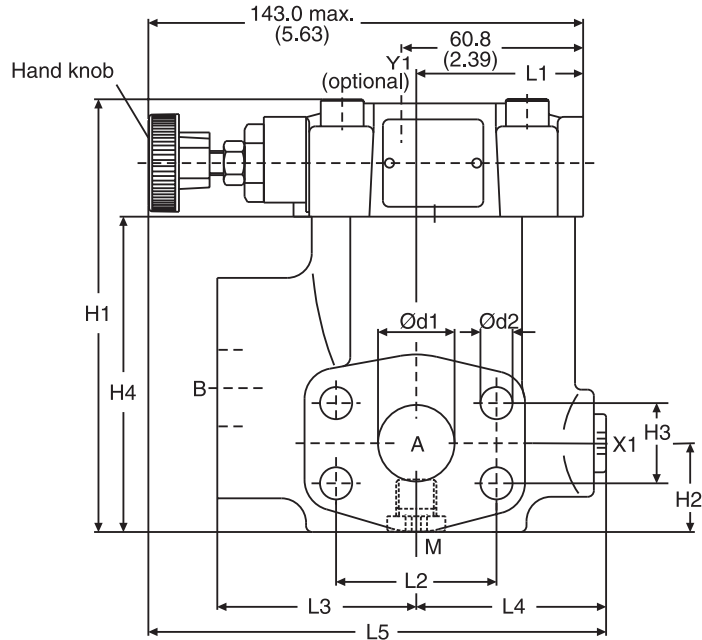
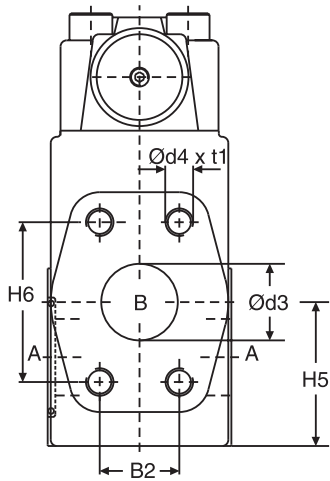
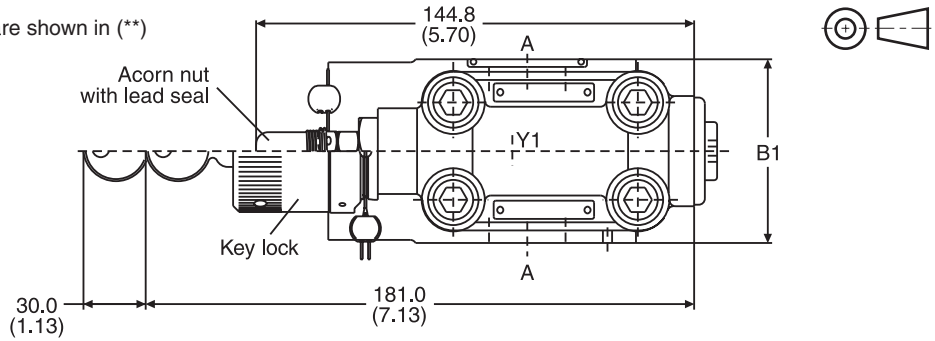
Size	B1	H1	H2	H3	H4	L1	L2	L3	d1	d2
06	60.0 (2.36)	131.6 (5.18)	37.0 (1.46)	47.6 (1.87)	90.0 (3.54)	24.6 (0.97)	22.2 (0.89)	152.0 (5.98)	19.0 (0.75)	10.5 (0.41)
08	60.0 (2.36)	137.6 (5.42)	45.0 (1.77)	52.4 (2.06)	96.0 (3.78)	26.5 (1.04)	26.2 (1.03)	171.0 (6.73)	25.0 (0.98)	10.5 (0.41)
10	75.0 (2.95)	150.6 (5.93)	48.0 (1.89)	58.7 (2.31)	109.0 (4.29)	34.0 (1.34)	30.2 (1.19)	179.0 (7.05)	32.0 (1.26)	12.5 (0.49)

Port	Function	Port Size		
		R5V06	R5V08	R5V10
A	Pressure	3/4" SAE 61	1" SAE 61	1-1/4" SAE 61
B	Tank	3/4" SAE 61	1" SAE 61	1-1/4" SAE 61
Y1	External Drain	SAE 4		

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

**3-Port**

Seal Kits		
Size	Nitrile	Fluorocarbon
06	S16-91850-0	S16-91850-5
08	S16-91851-0	S16-91851-5
10	S16-91852-0	S16-91852-5
12	S26-27421-0	S26-27421-5



**SAE 61**

Size	B1	B2	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4	L5	d1	d2	d3	t1
06	60.0 (2.36)	22.2 (0.87)	119.0 (4.69)	28.0 (1.10)	22.2 (0.87)	81.0 (3.19)	41.6 (1.64)	47.6 (1.87)	50.3 (1.98)	47.6 (1.87)	63.0 (2.48)	56.0 (2.20)	152.0 (5.98)	19.0 (0.75)	10.5 (0.41)	19.0 (0.75)	20.0 (0.79)
08	60.0 (2.36)	26.2 (1.03)	141.0 (5.55)	29.0 (1.14)	26.2 (1.03)	103.0 (4.06)	47.0 (1.85)	52.4 (2.06)	55.8 (2.20)	52.4 (2.06)	65.0 (2.56)	58.0 (2.28)	149.0 (5.87)	25.0 (0.98)	10.5 (0.41)	25.0 (0.98)	23.0 (0.91)
10	75.0 (2.95)	30.2 (1.19)	151.0 (5.94)	34.5 (1.36)	30.2 (1.19)	113.0 (4.45)	64.0 (2.52)	58.7 (2.31)	57.8 (2.28)	58.7 (2.31)	61.0 (2.40)	62.0 (2.44)	150.5 (5.93)	32.0 (1.26)	12.5 (0.49)	32.0 (1.26)	22.0 (0.87)
12	80.0 (3.15)	35.7 (1.41)	178.0 (7.01)	34.0 (1.34)	35.7 (1.41)	140.0 (5.51)	73.0 (2.87)	69.8 (2.75)	37.3 (1.47)	69.8 (2.75)	92.5 (3.64)	55.2 (2.17)	171.2 (6.74)	38.0 (1.50)	13.5 (0.53)	38.0 (1.50)	27.0 (1.06)

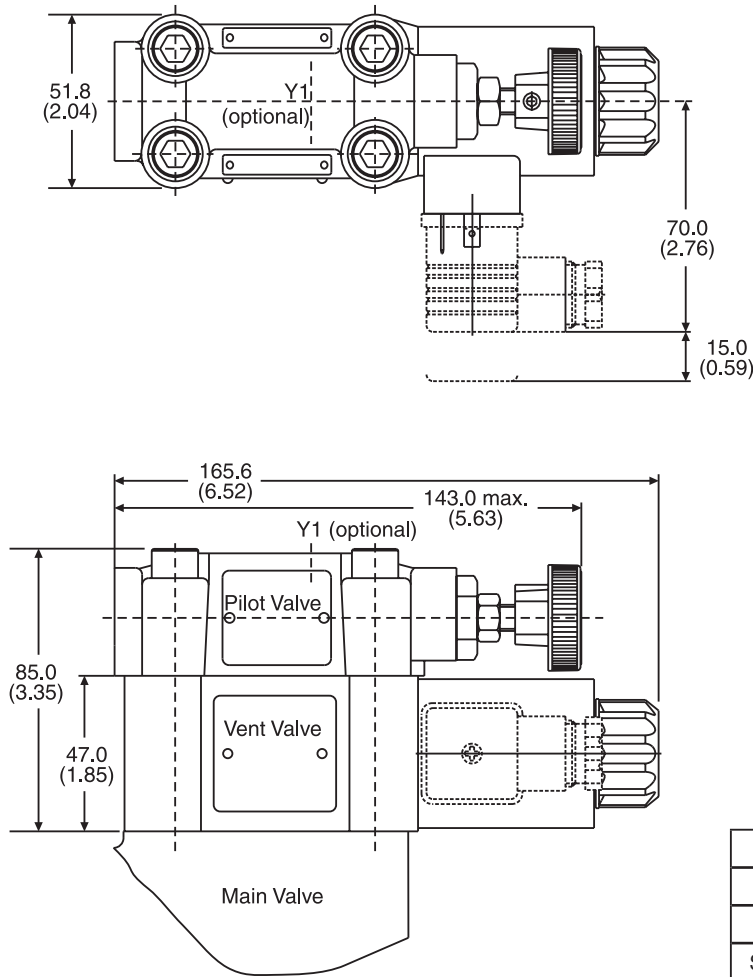
**SAE 62**

Size	B1	B2	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4	L5	d1	d2	d3	t1
06	60.0 (2.36)	23.8 (0.94)	119.0 (4.69)	28.0 (1.10)	23.8 (0.94)	81.0 (3.19)	41.6 (1.64)	50.8 (2.00)	50.3 (1.98)	50.8 (2.00)	63.0 (2.48)	56.0 (2.20)	152.0 (5.98)	19.0 (0.75)	10.5 (0.41)	19.0 (0.75)	20.0 (0.79)
08	60.0 (2.36)	27.8 (1.09)	141.0 (5.55)	29.0 (1.14)	27.8 (1.09)	103.0 (4.06)	47.0 (1.85)	57.2 (2.25)	55.8 (2.20)	57.2 (2.25)	65.0 (2.56)	58.0 (2.28)	149.0 (5.87)	25.0 (0.98)	10.5 (0.41)	25.0 (0.98)	22.0 (0.87)
10	75.0 (2.95)	31.8 (1.25)	151.0 (5.94)	34.5 (1.36)	31.8 (1.25)	113.0 (4.45)	64.0 (2.52)	66.7 (2.63)	57.8 (2.28)	66.7 (2.63)	61.0 (2.40)	62.0 (2.44)	150.5 (5.93)	32.0 (1.26)	12.5 (0.49)	32.0 (1.26)	24.0 (0.94)
12	80.0 (3.15)	36.5 (1.44)	178.0 (7.01)	34.0 (1.34)	36.5 (1.44)	140.0 (5.51)	73.0 (2.87)	79.4 (3.13)	37.3 (1.47)	79.4 (3.13)	92.5 (3.64)	55.2 (2.17)	171.2 (6.74)	38.0 (1.50)	17.0 (0.67)	38.0 (1.50)	33.0 (1.30)

Port	Function	Port size			
		R5V06	R5V08	R5V10	R5V12
A (2)	Pressure	3/4" SAE 61/62	1" SAE 61/62	1-1/4" SAE 61/62	1-1/2" SAE 61/62
B	Tank	3/4" SAE 61/62	1" SAE 61/62	1-1/4" SAE 61/62	1-1/2" SAE 61/62
X1	External pilot port *	SAE 4			
Y1	External drain	SAE 4			
M	Pressure gauge	SAE 4			

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

**with Vent Function**



Vent Valve Seal Kits	
Nitrile	Fluorocarbon
<b>DC Solenoid</b>	
S26-58515-0	S26-58515-5
<b>AC Solenoid</b>	
S26-35237-0	S26-35237-5

**Note: 2-port bodies are being phased out.**

Code	R5V 2-Port		R5V 3-Port	
	Internal Drain	External Drain	Internal Drain	External Drain
11				
09				

Phase Out

