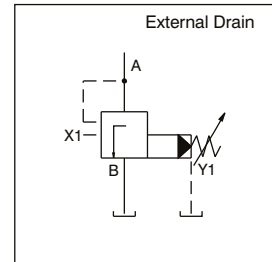
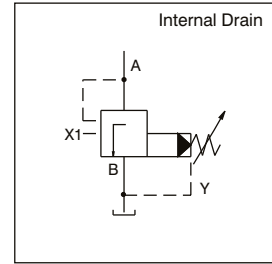


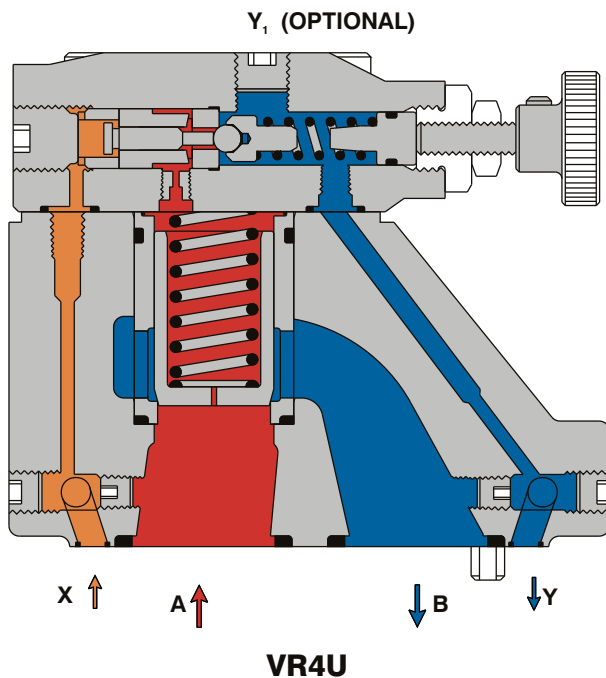
Veljan Unloading Valves series VR4U are pilot operated controls and used to unload a circuit at low pressure when pilot pressure at port X is maintained higher than that of inlet pressure at port A set by the pilot spring. A typical use of an unloader valve is to unload the low pressure side of a double pump. A Pump connected to an Accumulator circuit can also be unloaded by the VR4U valve.

VR4U consists of a high flow poppet type seat valve section controlled by the low flow, adjustable pilot section mounted on top. Pressure setting is achieved by means of knurled knob. For tamper proof setting, acorn nut with lead seal is available as option. Optional vent valve VVV01 sandwiched between pilot section and main body can be used for venting the VR4U valves.

Exceptionally fast response is obtained due to the precise ratio between the main piston area and its mass. One of the unique features of VR4U is that it works as a relief valve at the set pressure even in the absence of external pilot signal.



PC



Normally port A is connected to pump and port B to tank. At low pressure, flow entering port A is blocked by the main poppet. Pressure from port A passes to the pilot section through orifices in the main poppet and in the pilot section. No flow takes place in this portion until the pressure overcomes the spring setting of a pilot ball. The pilot ball is lifted from its seat releasing a small pilot flow to tank and resulting in a pressure drop across the main poppet. The main poppet opens and allows only enough flow from port A to port B maintaining inlet pressure at the set value of the pilot spring as in the case of a relief valve.

In this condition, the external pilot pressure from another part of system if applied at port X causes a small override piston to act against the ball pushing it further off its seat resulting in very low pressure drop across the main poppet as long as pilot pressure is maintained, the main poppet opens further and unloads the inlet flow at very low pressure drop. As soon as the pilot pressure drops to approximately 10% below the pilot setting, the main poppet closes with a snap action diverting the main pump flow back to the hydraulic system. Excessive restriction in the tank line or the pilot pressure signal at port X should be avoided to attain a correct function.

**SPECIFICATIONS**

PC

**General**

Type	:	Pilot operated Unloading Valve
Design	:	Poppet type
Mounting	:	Threaded/Subplate/Cartridge/Flange
Mounting position	:	Optional
Port sizes (nominal)	:	3/8", 3/4", 1 1/4"
Direction of flow	:	A → B
Ambient temperature	:	--20° C...+60° C (--4° F...+140° F)
Special working conditions	:	Consult VELJAN

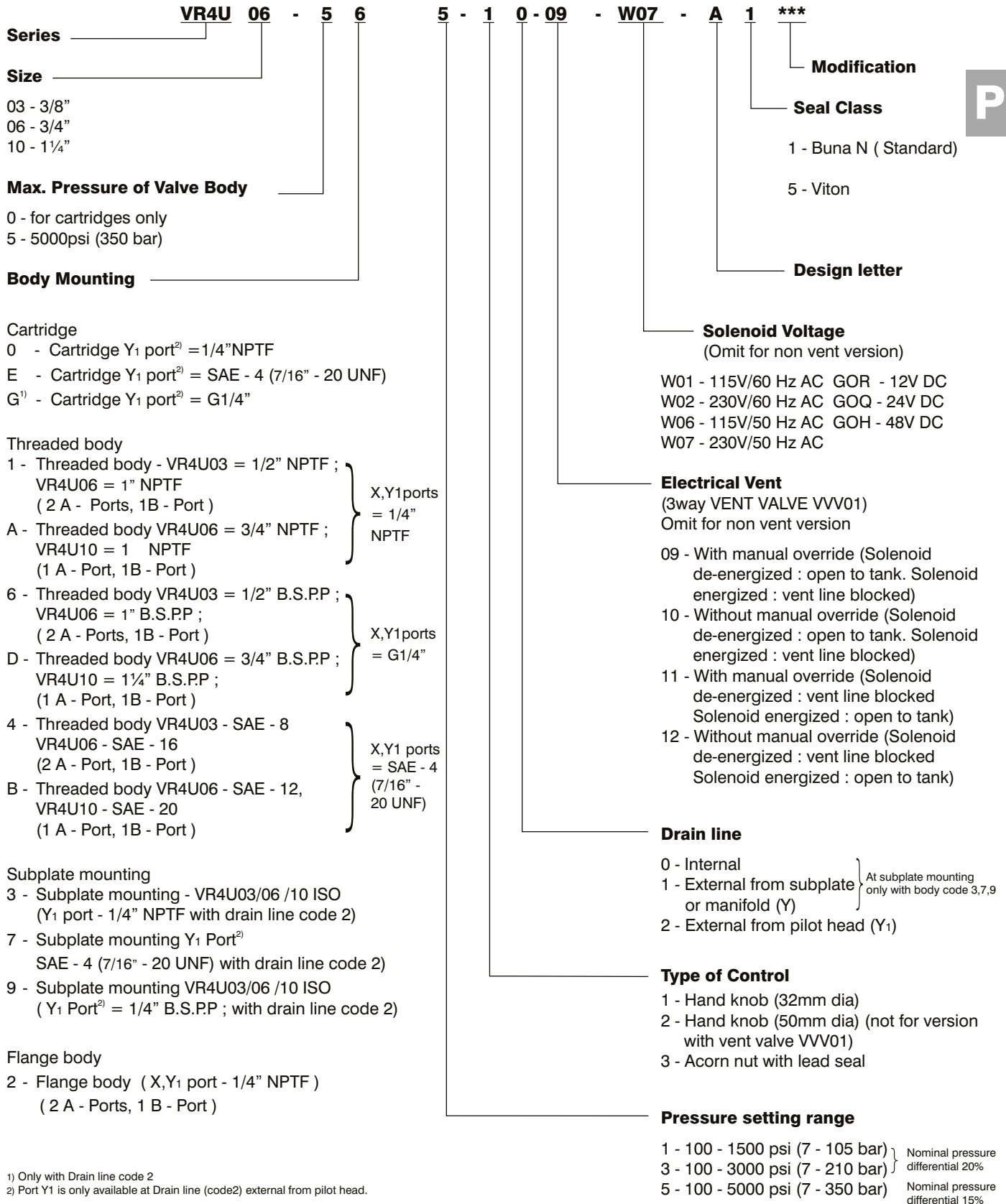
**Hydraulics**

Pressure control range	:	Minimum - depends on flow Maximum - 5000 psi (350 bar)
Maximum operating pressure	:	
Port A (inlet)		5000 psi (350 bar)
Port B (outlet)		Internal pilot drain - 50 psi (3.5 bar) External pilot drain - 430 psi (30 bar)
Port X (pilot)		5000 psi (350 bar)
Port Y, Y <sub>1</sub> (Pilot drain)		Without pressure to tank
Nominal flow gpm (lpm)	:	VR4U 03 (3/8")    VR4U 06 (3/4")    VR4U 10 (1 1/4") 15.8 (60)            52.9 (200)            119.0 (450)
Maximum flow gpm (lpm)	:	23.8 (90)            79.4 (300)            158.7 (600)
Fluid	:	Mineral oil as per DIN 51524/25 or other fluids on request
Fluid Temperature Range	:	--18° C...+80° C    (0° F...+176° F)
Viscosity Range	:	10 to 650 cSt (60 to 3900 SSU)
Optimum operating viscosity	:	30 cSt (180 SSU)
Seal compatibility	:	Code 1 (Buna N) or Code 5 (Viton) (contact Veljan with specific oil details)
Cleanliness recommended	:	Better than NAS 1638 Class 8 or ISO 17/14

**Adjustment**

Manual	:	Handwheel
Rotation	:	3.75 rev.
Operating torque	:	0.72 Nm
Electricals ( Vent Valve VVV01)	:	Solenoid
Nominal voltage	:	Refer to Ordering Code
Permissible voltage fluctuation	:	+5%...-10%
Max. coil temperature	:	+155° C (311° F)
Type of current	:	Alternating Current (AC)/Direct Current (DC)
Input power	:	31 W
Holding	:	78 VA
Inrush	:	264 VA
Relative operating period	:	100%
Type of protection	:	I P 65

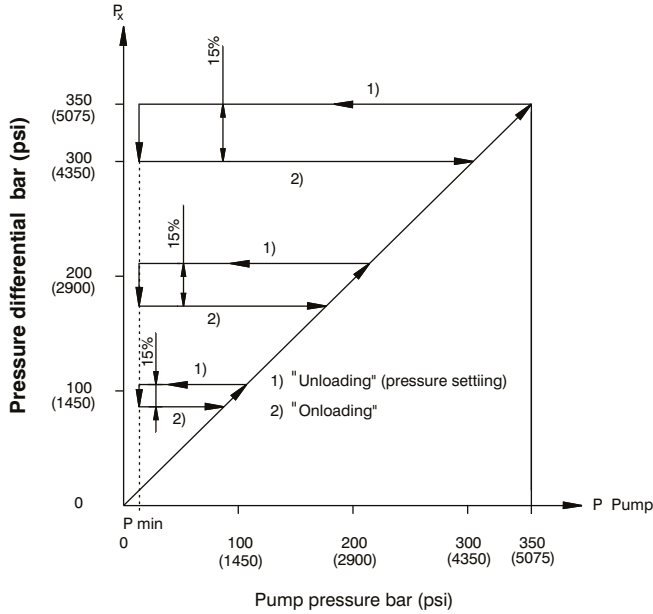
ORDERING CODE



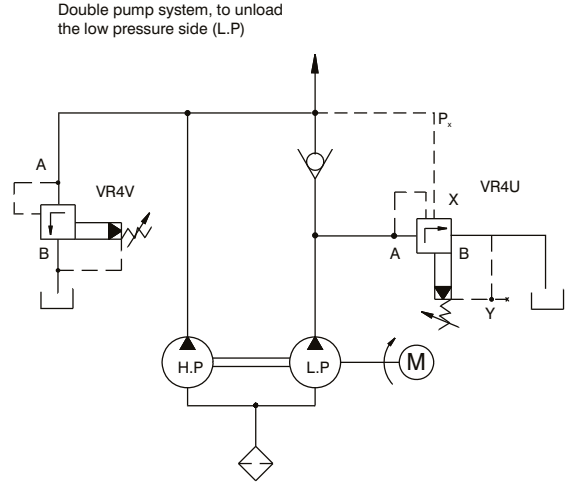
1) Only with Drain line code 2  
 2) Port Y1 is only available at Drain line (code2) external from pilot head.

PERFORMANCE CURVES

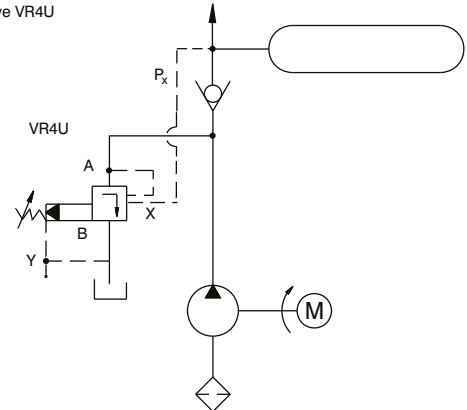
Pressure Differential Characteristics



Typical application systems



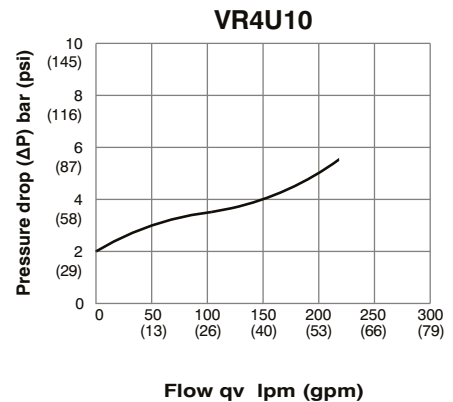
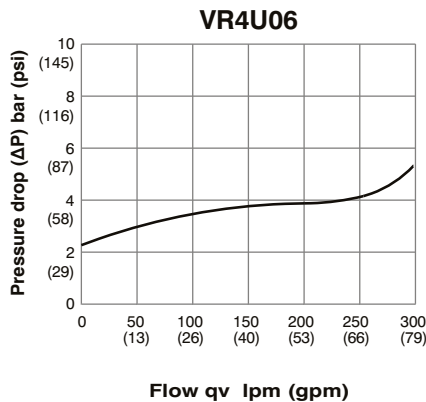
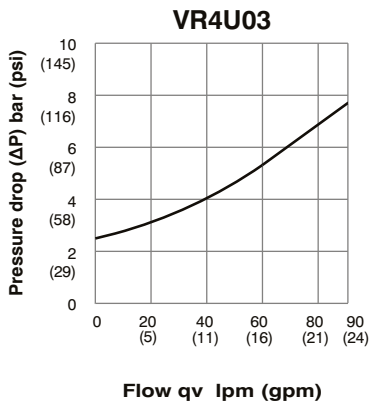
Accumulator system with unloading valve VR4U



The differential between Unloading and Onloading is typical 15%. When system pressure (for instance accumulator) drops 15% below the pilot setting, the valve closes and pump feeds the system again.

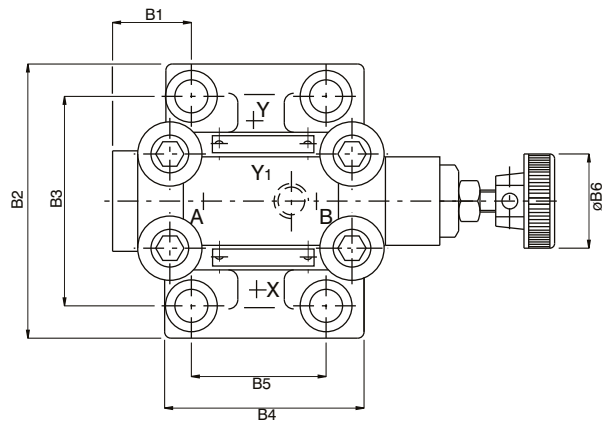
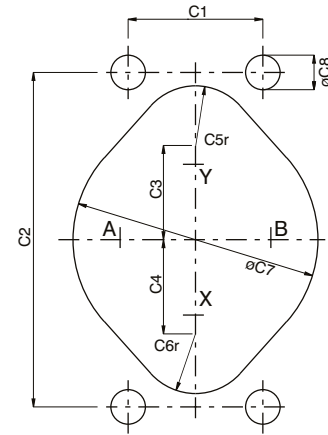
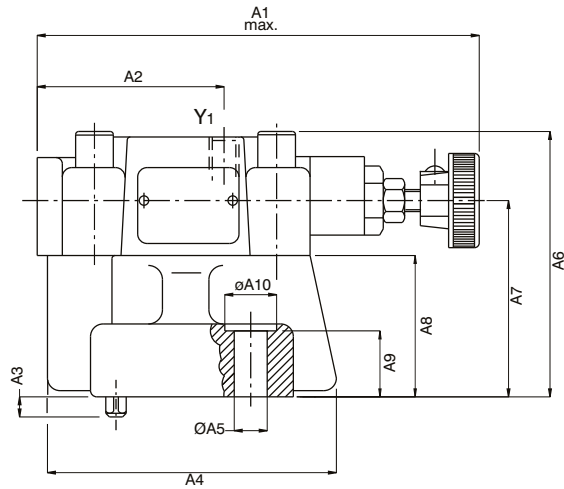
$\Delta p - q_v$  - Characteristics

(Fluid 60 cSt at 40° C  
Test temp. 50° C ± 10%)

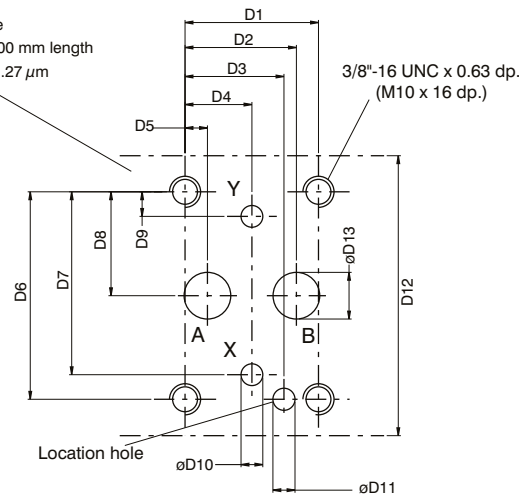


VR4U03 (3/8") SUBPLATE MOUNTING BODY ( #3, #7 & #9 )

Weight : 5.93 lbs (2.7 kg)



Block mounting face  
Flatness 0.01 mm/100 mm length  
Surface finish CLA 1.27 µm



Dimensions		
	in	mm
A1	5.55	141.0
A2	2.34	59.5
A3	0.25	6.4
A4	3.622	92.0
A5	ø 0.41	ø 10.5
A6	3.33	84.5
A7	2.46	62.5
A8	1.77	45.0
A9	0.83	21.0
A10	ø 0.65	ø 16.5

Dimensions		
	in	mm
B1	1.14	29.0
B2	3.437	87.3
B3	2.626	66.7
B4	2.5	63.5
B5	1.69	42.9
B6	ø 1.26	ø 32.0

Dimensions		
	in	mm
C1	1.69	42.9
C2	4.19	106.5
C3	1.18	30.0
C4	1.18	30.0
C5	0.75 r	19.0 r
C6	0.75 r	19.0 r
C7	ø 3.07	ø 78.0
C8	ø 0.43	ø 11.0

Dimensions		
	in	mm
D1	1.69	42.9
D2	1.41	35.8
D3	1.253	31.8
D4	0.846	21.5
D5	0.283	7.2
D6	2.626	66.7
D7	2.315	58.8
D8	1.315	33.4
D9	0.311	7.9
D10	ø 0.275	ø 7.0
D11	ø 0.28 x 0.315 dp.	ø 7.1 x 8.0 dp.
D12	3.543	90.0
D13	ø 0.59	ø 15.0

Ports	Function
A	Pressure (inlet)
B	Tank (outlet)
X <sup>1)</sup>	Remote control or vent connection
Y(Y <sub>1</sub> )	External drain <sup>1)</sup>

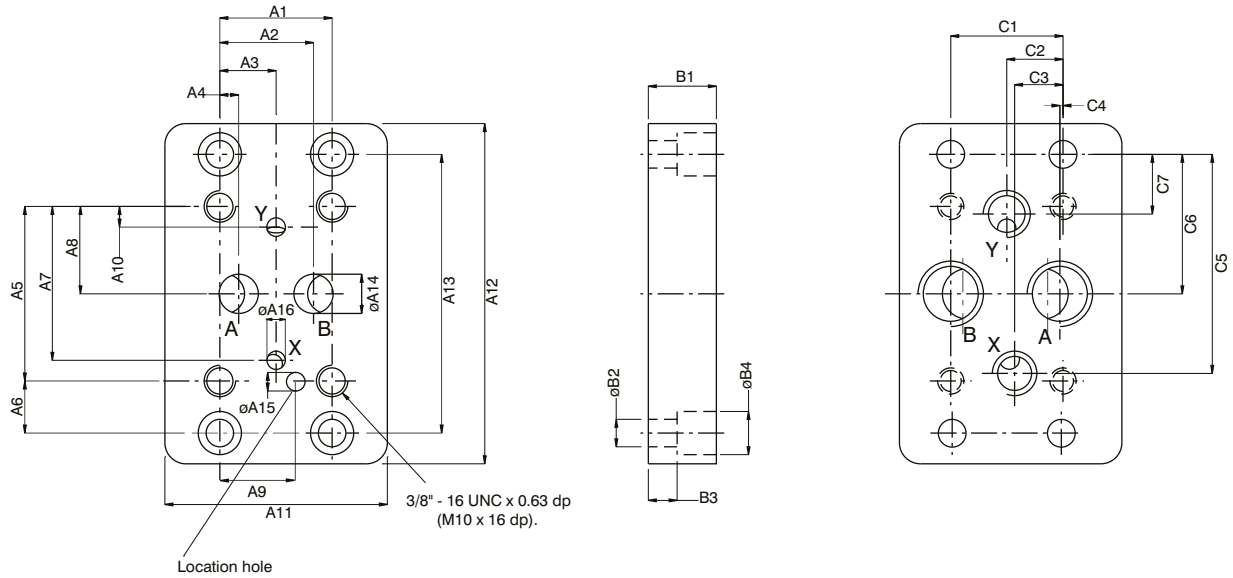
1) Optional from pilot head or subplate.  
Port Y<sub>1</sub> is only available at drain line (code 2) external from the pilot head.

Note : For details of Subplate & mtg. screws please refer page 30

VR4U03 (3/8") SUBPLATE

Weight : 4.4 lbs (2.0 kg)

PC



Dimensions	Dimensions	
	in	mm
A1	1.69	42.9
A2	1.41	35.8
A3	0.846	21.5
A4	0.283	7.2
A5	2.626	66.7
A6	0.783	19.9
A7	2.315	58.8
A8	1.315	33.4
A9	1.25	31.8
A10	0.311	7.9
A11	3.346	85.0
A12	5.12	130.0
A13	4.19	106.5
A14	ø 0.59	ø 15.0
A15	ø 0.28 x 0.315 dp.	ø 7.1 x 8.0 dp.
A16	ø 0.275	ø 7.0

Dimensions	Dimensions	
	in	mm
B1	1.024	26.0
B2	ø 0.41	ø 10.5
B3	0.433	11.0
B4	ø 0.65	ø 16.5

Dimensions	Dimensions	
	in	mm
C1	1.69	42.9
C2	0.846	21.5
C3	0.73	18.5
C4	0.047	1.2
C5	3.295	83.7
C6	2.1	53.3
C7	0.9	22.8

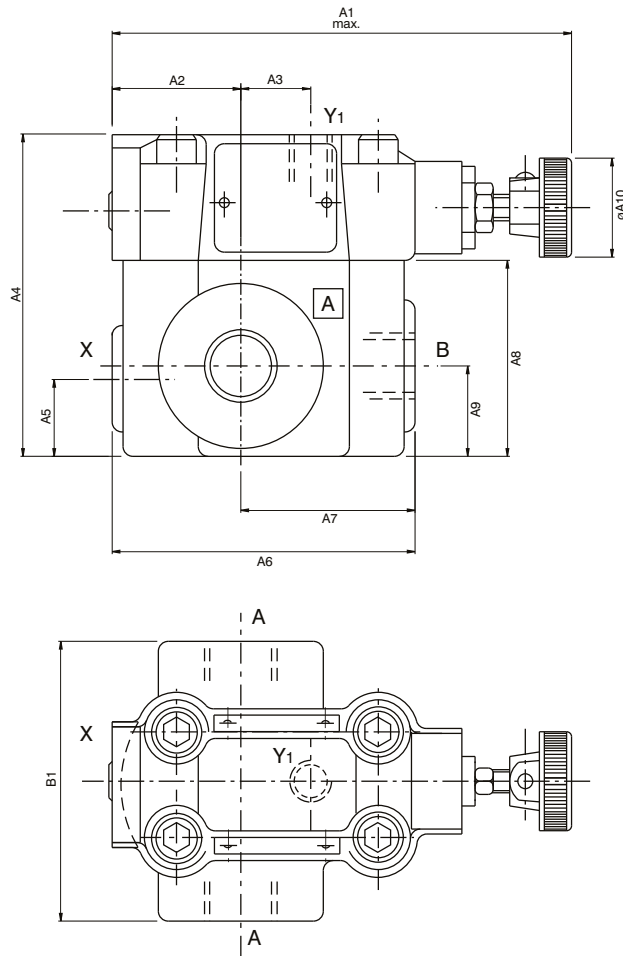
Order No.	Port sizes		4 Mounting screws*		
	A+B	X+Y	Dimension	Order no	min.tensile strength
VSS - P - 24 - G 112	½" NPTF	1/4" NPTF	3/8" - 16UNC 1¼" lg.	V358 - 16180	at p ≤ 210 bar = 100 daN/mm <sup>2</sup> (Torque 68 Nm) at p > 210 bar = 120 daN/mm <sup>2</sup> (Torque 82 Nm)
VSS - B - 24 - G 113	½" B.S.P.P	1/4" B.S.P.P.	M 10 x 35 DIN 912-12.9	V700 - 70039	

\* Mounting screws are included in subplate order.  
For valves ordered without subplate, mounting screws must be ordered separately.

VR4U03 (3/8") - THREADED BODY ( #1, #4 & #6 )

Weight : 7.03 lbs (3.2 kg)

PC



	Dimensions	
	in	mm
A1	5.55	141.0
A2	1.535	39.0
A3	0.807	20.5
A4	3.84	97.5
A5	0.92	23.3
A6	3.62	91.9
A7	2.08	52.8
A8	2.34	59.4
A9	1.08	27.4
A10	ø 1.26	ø 32.0

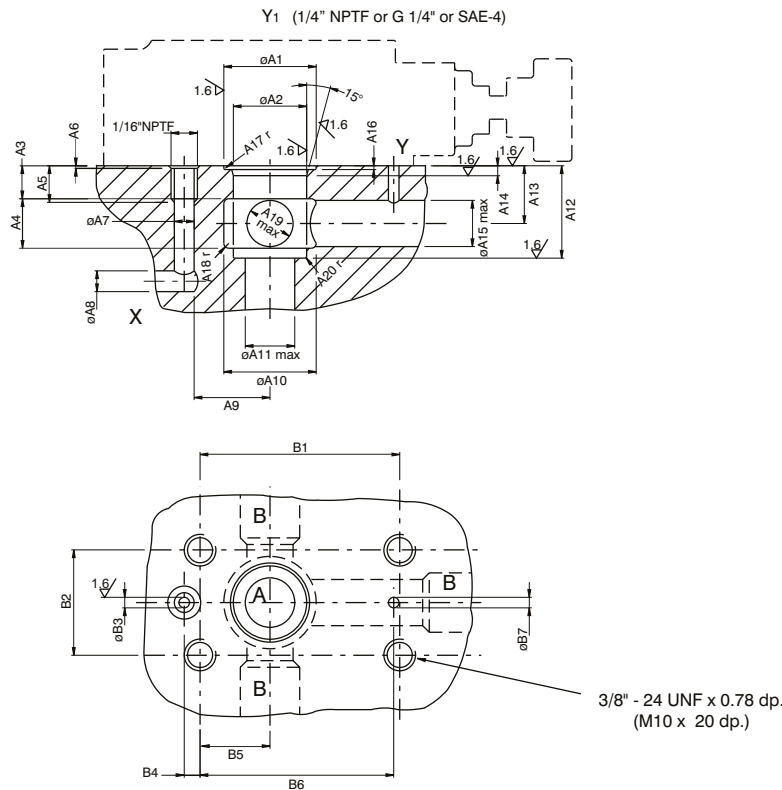
	Dimensions	
	in	mm
B1	3.34	84.8

Ports	Function	Port Sizes
A(2)	Pressure (inlet)	1/2" NPTF or G 1/2" or SAE - 8 (3/4" - 16 UNF)
B	Tank (outlet)	1/2" NPTF or G 1/2" or SAE - 8 (3/4" - 16 UNF)
X <sup>1)</sup>	Remote control or vent connection	1/4" NPTF or G 1/4" or SAE - 4 (7/16" - 20 UNF)
Y <sub>1</sub>	External drain	1/4" NPTF or G 1/4" or SAE - 4 (7/16" - 20 UNF)

CARTRIDGE WITH PILOT VALVE VR4U03 ( #0, #E & #G )

Weight : 1.31 lbs (0.6 kg)

PC



	Dimensions	
	in	mm
A1	ø 1.102 ø 1.107	ø 28.0 ø 28.1
A2	ø 0.875 ø 0.876	ø 22.225 ø 22.245
A3	0.4	10.0
A4	0.159	15.0
A5	0.437	11.1
A6	0.031	0.8
A7	ø 0.236	ø 6.0
A8	ø 0.248	ø 6.3
A9	0.905	23.0
A10	ø 1.102	ø 28.0
A11	ø 0.59	ø 15.0
A12	1.102 1.104	28.00 28.05
A13	0.69	17.5
A14	0.12	3.0
A15	ø 0.55	ø 14.0
A16	0.06/0.05	1.50/1.30
A17	0.016 r	0.4 r
A18	0.06 r	1.5 r
A19	ø 0.58	ø 14.0
A20	0.016 r	0.4 r

	Dimensions	
	in	mm
B1	2.383/2.367	60.52/60.12
B2	1.24/1.26	31.55/31.95
B3	ø 0.126	ø 3.2
B4	0.188	4.8
B5	2.311	58.7
B6	0.81	20.6
B7	ø 0.126	ø 3.2

Ports	Function
A	Pressure (Inlet)
B	Tank (Outlet)
X <sup>1)</sup>	External control connection
Y, Y <sub>1</sub> <sup>1)</sup>	Drain

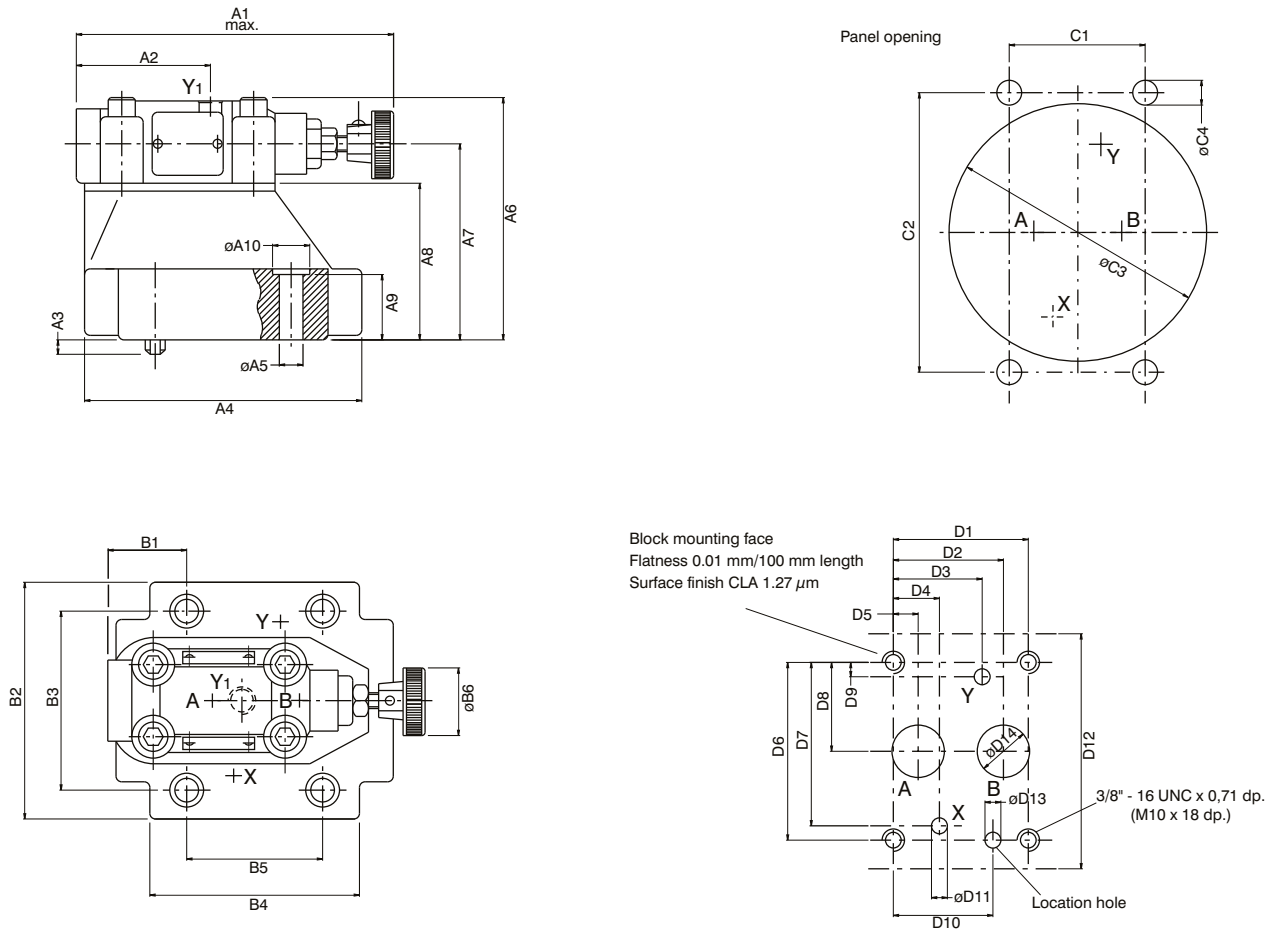
4 Mounting screws*	
Dimensions	Order No.
3/8" - 24 UNF x 1 1/4" lg. or M10 x 45mm, DIN 912 - 12.9	V359 - 15220 or V700 - 71602

1) Port Y<sub>1</sub> is only available at drain line (code 2) external from the pilot head.

\* Mounting screws must be ordered separately

VR4U06 (3/4") SUBPLATE MOUNTING BODY ( #3, #7 & #9 )

Weight : 9.89 lbs (4.5 kg)



PC

Dimensions		
	in	mm
A1	5.55	141.0
A2	2.34	59.5
A3	0.25	6.4
A4	4.842	123.0
A5	ø 0.41	ø 10.5
A6	4.232	107.5
A7	3.425	87.0
A8	2.736	69.5
A9	1.142	29.0
A10	ø 0.65	ø 16.5

Dimensions		
	in	mm
B1	1.38	35.0
B2	4.134	105.0
B3	3.126	79.4
B4	3.66	93.0
B5	2.374	60.3
B6	ø 1.26	ø 32.0

Dimensions		
	in	mm
C1	2.374	60.3
C2	4.88	124.0
C3	ø 4.645	ø 118.0
C4	ø 0.433	ø 11.0

Dimensions		
	in	mm
D1	2.374	60.3
D2	1.937	49.2
D3	1.563	39.7
D4	0.811	20.6
D5	0.437	11.1
D6	3.126	79.4
D7	2.874	73.0
D8	1.563	39.7
D9	0.25	6.4
D10	1.75	44.5
D11	ø 0.28	ø 7.1
D12	4.134	105.0
D13	ø 0.92	ø 23.4
D14	ø 0.28 x 0.433 dp.	ø 7.1 x 11.0 dp.

Ports	Function
A	Pressure (Inlet)
B	Tank (Outlet)
X	Remote control or vent connection
Y (Y1)	External drain <sup>1)</sup>

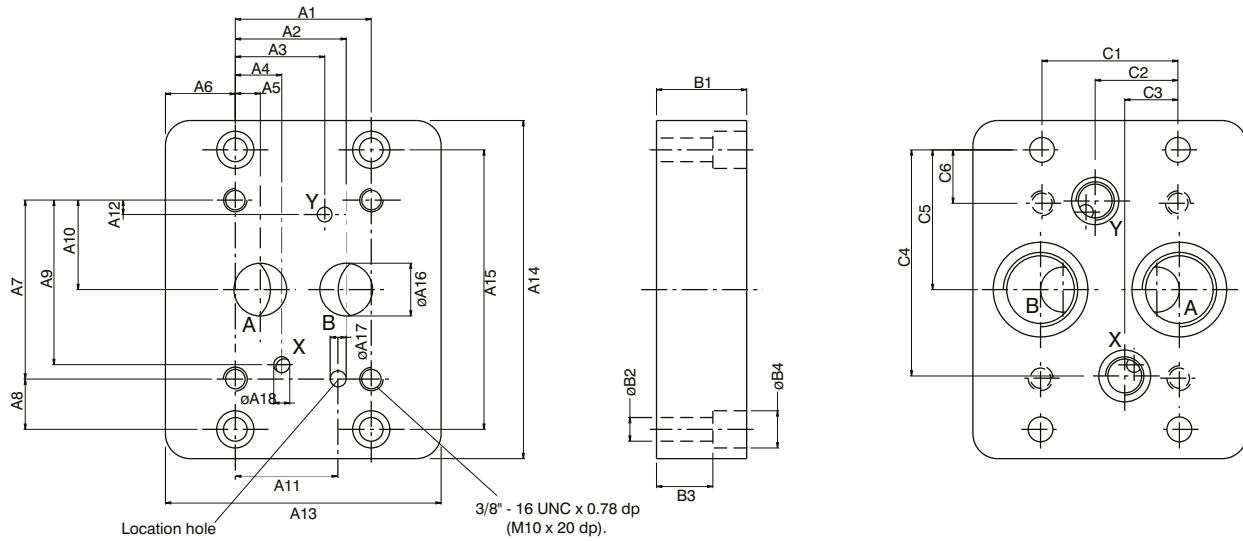
1) Optional from pilot head or subplate.  
Port Y1 is only available at drain line (code 2) external from the pilot head.

Note : For details of Subplate & mtg. screws please refer page 34

SUBPLATE FOR VR4U06 (3/4")

Weight : 10.54 lbs (4.8 kg)

PC



	Dimensions	
	in	mm
A1	2.374	60.3
A2	1.937	49.2
A3	1.563	39.7
A4	0.811	20.6
A5	0.437	11.1
A6	1.22	31.0
A7	3.126	79.4
A8	0.88	22.3
A9	2.874	73.0
A10	1.563	39.7
A11	1.75	44.5
A12	0.25	6.4
A13	4.843	123
A14	5.905	150.0
A15	4.882	124.0
A16	ø 0.92	ø 23.4
A17	ø 0.28 x 0.315 dp.	ø 7.1 x 8.0 dp.
A18	ø 0.28	ø 7.1

	Dimensions	
	in	mm
B1	1.575	40.0
B2	ø 0.41	ø 10.5
B3	0.984	25.0
B4	ø 0.65	ø 16.5

	Dimensions	
	in	mm
C1	2.374	60.3
C2	1.445	36.7
C3	0.93	23.6
C4	3.949	100.3
C5	2.44	62.0
C6	0.933	23.7

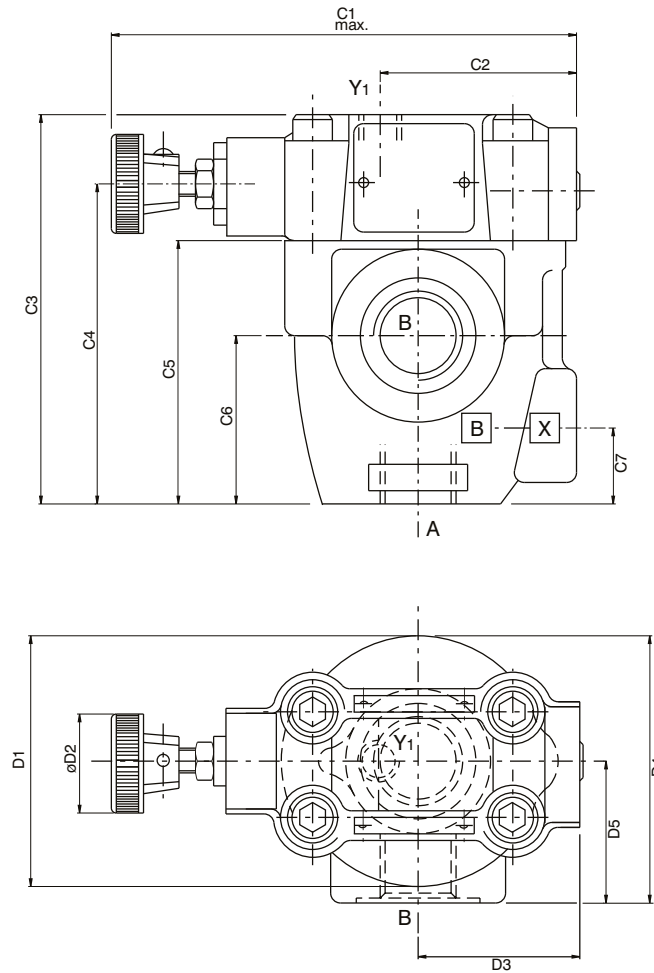
Order No.	Port sizes		4 Mounting screws*		
	A+B	X+Y	Dimension	Order no	min.tensile strength
VSS - P - 16 - G 114	1" NPTF	1/4" NPTF	3/8"-16UNC 1 1/4" lg	V358 - 16180	at p<210 bar = 100 daN/mm <sup>2</sup> (Torque 68 Nm) at p>210 bar = 120 daN/mm <sup>2</sup> (Torque 82 Nm)
VSS - B - 12 - G 115	3/4" B.S.PP.	1/4" B.S.PP.	M10 x 45mm DIN 912 - 12.9	V700 - 71602	
VSS - B - 16 - G 115	1" B.S.PP.				

\* Mounting screws are included in subplate order.  
For valves ordered without subplate, mounting screws must be ordered separately.

VR4U06 (3/4") - THREADED BODY ( #A, #B & #D )

Weight : 7.25 lbs (3.3 kg)

PC



Dimensions		
	in	mm
C1	5.55	141.0
C2	2.34	59.5
C3	4.646	118.0
C4	3.82	97.0
C5	3.15	80.0
C6	2.01	51.0
C7	0.905	23.0

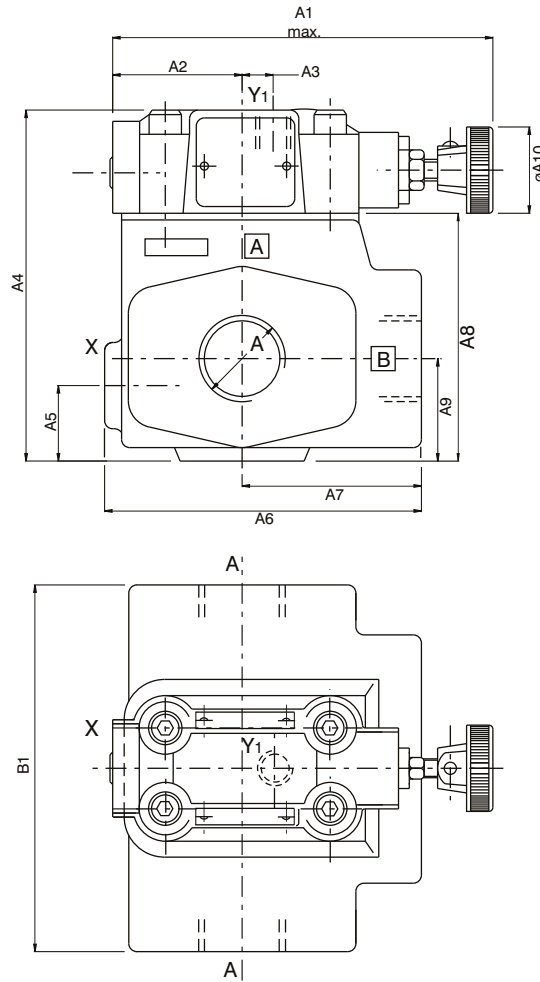
Dimensions		
	in	mm
D1	2.99	76.0
D2	ø 1.26	ø 32.0
D3	1.93	49.0
D4	3.19	81.0
D5	1.693	43.0

Ports	Function	Port Sizes
A	Pressure (inlet)	3/4" NPTF or G 3/4" or SAE - 12 (1 1/16" - 12 UNF)
B	Tank (outlet)	3/4" NPTF or G 3/4" or SAE - 12 (1 1/16" - 12 UNF)
X	Remote control or vent connection	1/4" NPTF or G 1/4" or SAE - 4 (7/16" - 20 UNF)
Y <sub>1</sub>	External drain	1/4" NPTF or G 1/4" or SAE - 4 (7/16" - 20 UNF)

VR4U06 (3/4") - THREADED BODY ( #1, #4 & #6 )

Weight : 14.5 lbs (6.6 kg)

PC



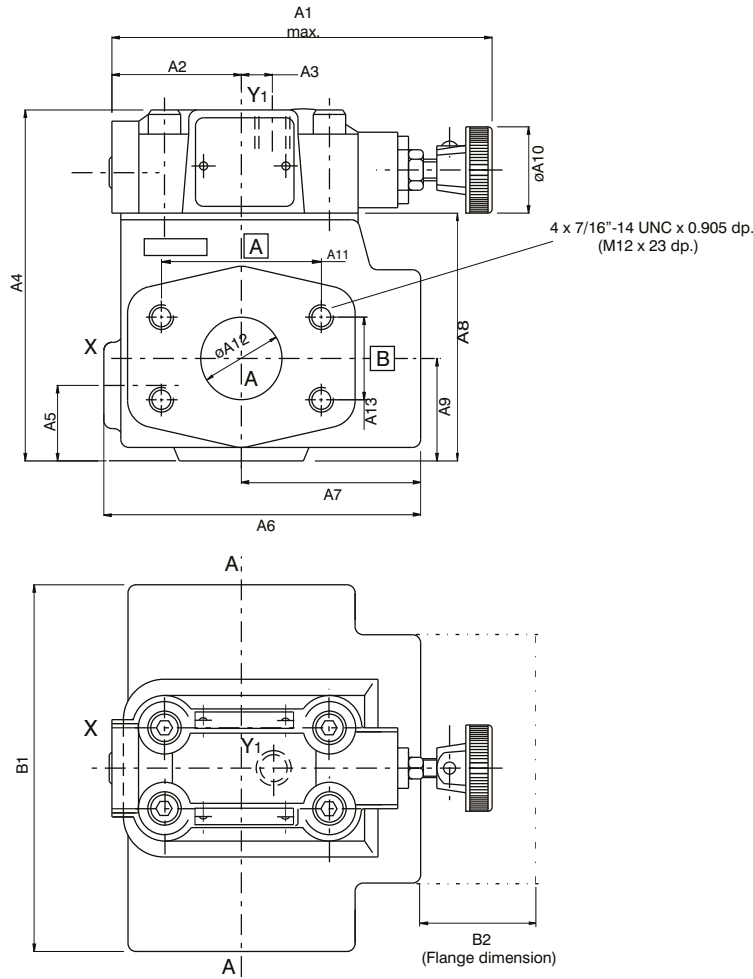
	Dimensions	
	in	mm
A1	5.55	141.0
A2	1.89	48.0
A3	0.453	11.5
A4	5.12	130.0
A5	1.102	28.0
A6	4.626	117.5
A7	2.62	66.5
A8	3.622	92.0
A9	1.496	38.0
A10	$\phi$ 1.26	$\phi$ 32.0

	Dimensions	
	in	mm
B1	5.35	136.0

Ports	Function	Port Sizes
A(2)	Pressure (inlet)	1" NPTF or G 1" or SAE - 16 ( 1 5/16" - 12 UNF)
B	Tank (outlet)	1" NPTF or G 1" or SAE - 16 ( 1 5/16" - 12 UNF)
X	Remote control or vent connection	1/4" NPTF or G 1/4" or SAE - 4 ( 7/16" - 20 UNF)
Y <sub>i</sub>	External drain	1/4" NPTF or G 1/4" or SAE - 4 ( 7/16" - 20 UNF)

VR4U06 (3/4") - FLANGE BODY ( #2 )

Weight : 14.5 lbs (6.6 kg)



PC

	Dimensions	
	in	mm
A1	5.55	141.0
A2	1.89	48.0
A3	0.453	11.5
A4	5.12	130.0
A5	1.102	28.0
A6	4.626	114.3
A7	2.5	63.5
A8	3.622	92.0
A9	1.5	38.1
A10	ø 1.26	ø 32.0
A11	2.307	58.6
A12	ø 1.18	ø 30.0
A13	1.188	30.2

	Dimensions	
	in	mm
B1	5.35	136.0
B2	1.56	39.8

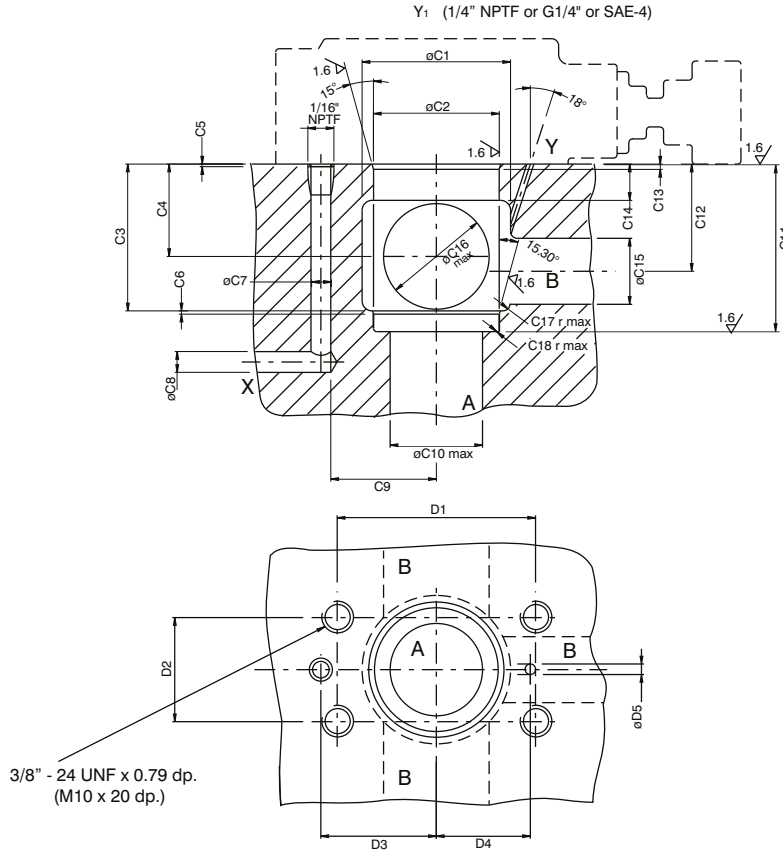
Ports	Function	Flange model no	Flange order no	Port Sizes
A(2x)	Pressure (inlet)	VFS4-B-20-26 or VFS4-P-20-26	VS14-66935 or VS14-66927	1/4" B.S.P.P or 1/4" NPTF
B	Tank (outlet)			
X	External remote control pilot	-	-	1/4" B.S.P.P or 1/4" NPTF
Y <sub>1</sub>	External drain	-	-	

Flanges must be ordered separately.  
Mounting screws are included in flange order.

CARTRIDGES WITH PILOT VALVES VR4U06/VR4U10 (#0, #E & #G)

Weight : 2.63 lbs (1.2 kg)

PC



Dimensions	in		mm	
C1	ø 1.772	ø 45.0		
	ø 1.732	ø 44.0		
C2	ø 1.501	ø 38.139		
	ø 1.500	ø 38.100		
C3	1.752	44.5		
C4	1.102/1.083	28.0/27.5		
C5	0.031	0.8		
C6	0.04	1.0		
C7	ø 0.236	ø 6.0		
C8	ø 0.248	ø 6.3		
C9	1.26	32.0		
C10	ø 1.1	ø 28.0		
C11	2.000/1.997	50.80/50.73		
C12	1.28	32.5		
C13	0.063	1.6		
C14	0.433	11.0		
C15	ø 0.79	ø 20.0		
C16	ø 1.26	ø 32.0		
C17	0.08 r	2.0 r		
C18	0.018 r	0.4 r		

Dimensions	in		mm	
D1	2.383/2.367	60.52/60.12		
D2	1.24/1.26	31.55/31.95		
D3	1.38	35.0		
D4	1.122	28.5		
D5	ø 0.126	ø 3.2		

Ports	Function
A	Pressure (Inlet)
B	Tank (Outlet)
X	External control connection
Y, Y <sub>1</sub> <sup>1)</sup>	Drain

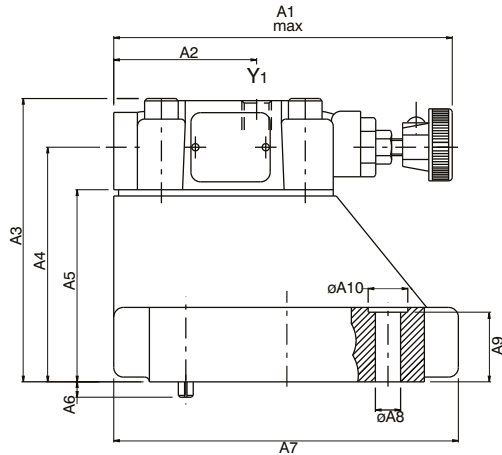
4 Mounting screws*	
Dimensions	Order Number
3/8" - 24 UNF x 1 1/4" lg. or M10 x 45mm, DIN 912 - 12.9	V359 - 15220 or V700 - 71602

1) Port Y<sub>1</sub> is only available at drain line (code 2) external from the pilot head.

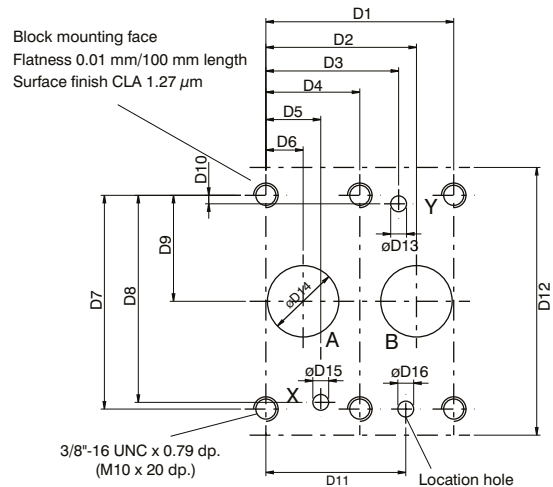
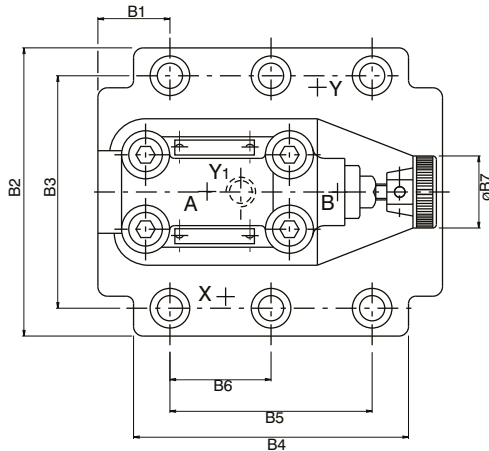
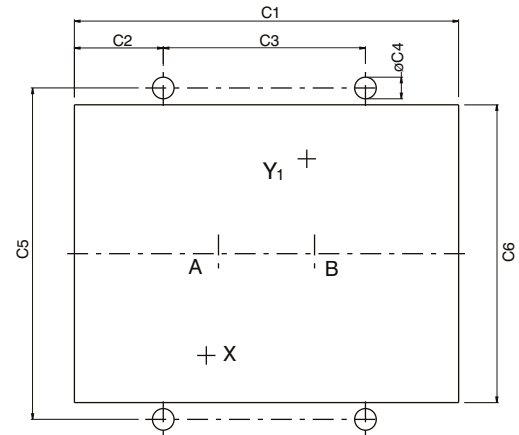
\* Mounting screws must be ordered separately

VR4U10 (1¼") SUBPLATE MOUNTING BODY ( #3, #7 & #9 )

Weight : 13.2 lbs (6.0 kg)



Panel opening



Dimensions	Dimensions	
	in	mm
A1	5.55	141.0
A2	2.34	59.5
A3	4.645	118.0
A4	3.846	97.7
A5	3.15	80.0
A6	0.25	6.4
A7	5.645	143.5
A8	ø 0.41	ø 10.5
A9	1.14	29.0
A10	ø 0.65	ø 16.5

Dimensions	Dimensions	
	in	mm
B1	1.181	30.0
B2	4.72	120.0
B3	3.8	96.8
B4	4.51	114.5
B5	3.315	84.2
B6	1.657	42.1
B7	ø 1.26	ø 32.0

Dimensions	Dimensions	
	in	mm
C1	6.3	160.0
C2	1.456	37.0
C3	3.315	84.2
C4	ø 0.35	ø 9.0
C5	5.433	138.0
C6	4.88	124.0

Dimensions	Dimensions	
	in	mm
D1	3.315	84.2
D2	2.657	67.5
D3	2.342	59.5
D4	1.657	42.1
D5	0.97	24.6
D6	0.657	16.7
D7	3.8	96.8
D8	3.653	92.8
D9	1.87	48.4
D10	0.15	3.8
D11	2.468	62.7
D12	4.724	120.0
D13	ø 0.28	ø 7.1
D14	ø 1.26	ø 32.0
D15	ø 0.28	ø 7.1
D16	ø 0.28 x 0.433 dp.	ø 7.1 x 11.0 dp.

Ports	Function
A	Pressure (Inlet)
B	Tank (Outlet)
X	Remote control or vent connection
Y(Y <sub>1</sub> )	External drain <sup>1)</sup>

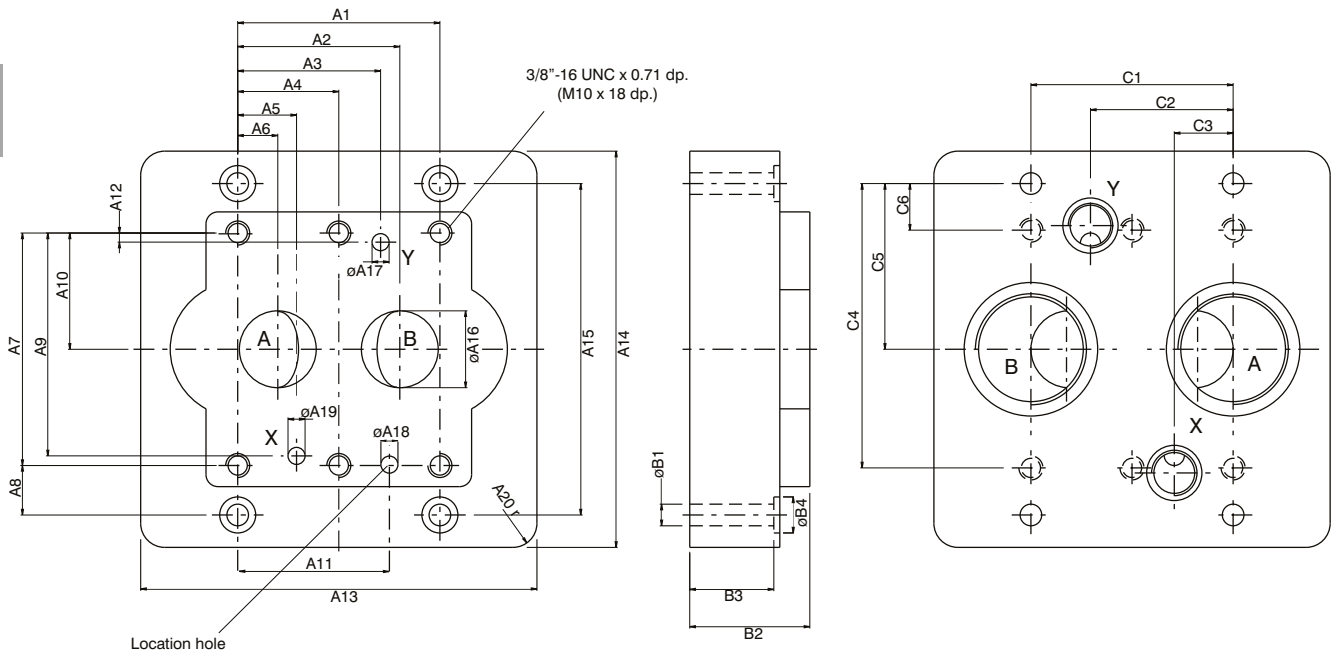
1) Optional from pilot head or subplate.  
Port Y1 is only available at drain line (code 2) external from the pilot head.

Note : For details of Subplate & mtg. screws please refer page 40

Subplate for VR4U10

Weight : 18.68 lbs (8.5 kg)

PC



Dimensions	Dimensions	
	in	mm
A1	3.315	84.2
A2	2.657	67.5
A3	2.342	59.5
A4	1.657	42.1
A5	0.968	24.6
A6	0.657	16.7
A7	3.811	96.8
A8	0.811	20.6
A9	3.653	92.8
A10	1.905	48.4
A11	2.468	62.7
A12	0.15	3.8
A13	6.535	166.0
A14	6.5	165.0
A15	5.43	138.0
A16	ø 1.26	ø 32.0
A17	ø 0.28	ø 7.1
A18	ø 0.28 x 0.315 dp.	ø 7.1 x 8.0 dp.
A19	ø 0.28	ø 7.1
A20	0.4 r	10.0 r

Dimensions	Dimensions	
	in	mm
B1	ø 0.351	ø 9.0
B2	1.97	50.0
B3	1.38	35.0
B4	ø 0.59	ø 15.0

Dimensions	Dimensions	
	in	mm
C1	3.315	84.2
C2	2.342	59.5
C3	0.97	24.6
C4	4.66	118.4
C5	2.716	69.0
C6	0.764	19.4

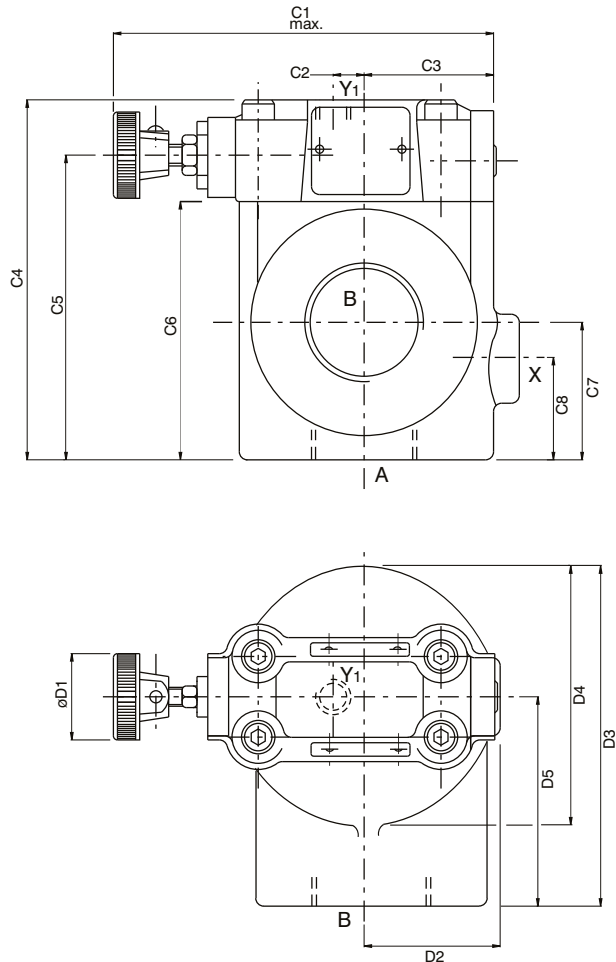
Order No.	Port sizes		Dimension	6 Mounting screws*	
	A+B	X+Y		Order no	min.tensile strength
VSS - P - 24 - G 116	1½" NPTF	1/4" NPTF	3/8" - 16UNC 1¼" lg.	V358 - 16220	at p<210 bar = 100 daN/mm <sup>2</sup> (Torque 68 Nm) at p>210 bar = 120 daN/mm <sup>2</sup> (Torque 82 Nm)
VSS - B - 24 - G 117	1½" B.S.P.P	1/4" B.S.P.P.	M 10 x 45 DIN 912-12.9	V700 - 71602	

\* Mounting screws are included in subplate order.  
For valves ordered without subplate, mounting screws must be ordered separately.

VR4U10 (1 1/4") - THREADED BODY ( #A, #B & #D )

Weight : 12.3 lbs (5.6 kg)

PC



Dimensions		
	in	mm
C1	5.55	141.0
C2	0.453	11.5
C3	1.89	48.0
C4	5.236	133.5
C5	4.45	113.0
C6	3.76	95.5
C7	2.01	51.0
C8	1.496	38.0

Dimensions		
	in	mm
D1	ø 1.26	ø 32.0
D2	2.01	51.0
D3	4.75	120.6
D4	3.374	85.7
D5	3.063	77.8

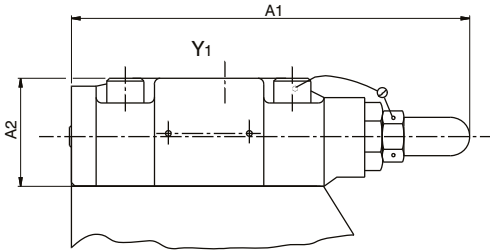
Ports	Function	Port Sizes
A	Pressure (inlet)	1 1/4" NPTF or G 1 1/4" or SAE - 20 (1 5/8" - 12 UNF)
B	Tank (outlet)	1 1/4" NPTF or G 1 1/4" or SAE - 20 (1 5/8" - 12 UNF)
X	Remote control or vent connection	1/4" NPTF or G 1/4" or SAE - 4 (7/16" - 20 UNF)
Y <sub>1</sub>	External drain	1/4" NPTF or G 1/4" or SAE - 4 (7/16" - 20 UNF)

OPTIONAL CONTROL

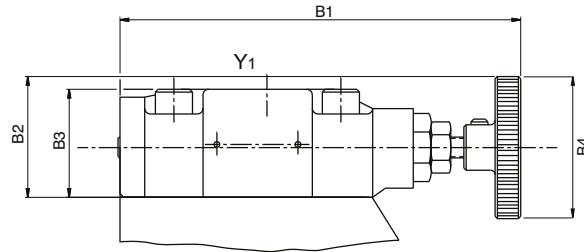
Type of control - Code 3  
Acron nut with lead seal

Type of control - Code 2  
Hand knob 50mm dia  
(not for version with vent valve VVV01)

PC



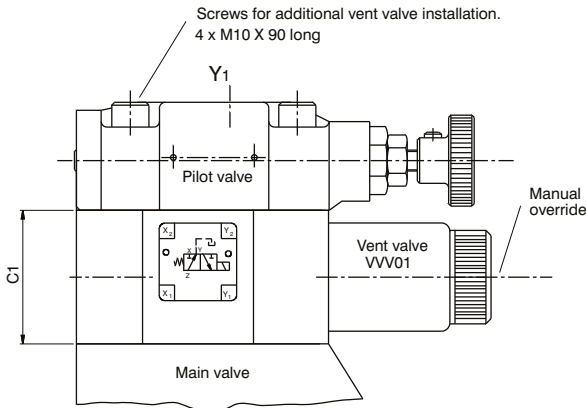
Dimensions		
	in	mm
A1	5.51	140.0
A2	1.49	38.0



Dimensions		
	in	mm
B1	5.55	141.0
B2	1.67	42.5
B3	1.49	38.0
B4	ø 1.96	ø 50.0

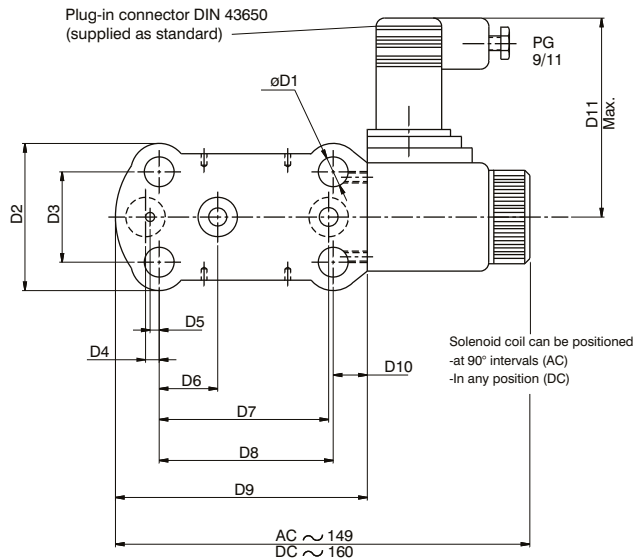
Version with Vent Valve VVV01

Weight (VVV01) : 3.73 lbs (1.7 kg)



Dimensions		
	in	mm
C1	1.85	47.0

Dimensions		
	in	mm
D1	ø 0.41	ø 10.5
D2	2.03	51.8
D3	1.25	31.8
D4	0.18	4.8
D5	0.12	3.2
D6	0.81	20.6
D7	2.31	58.7
D8	2.37	60.3
D9	3.49	88.7
D10	0.51	13.0
D11	2.75	70.0



Code	Internal Drain	External Drain
11 or 12		
09 or 10		