

PRE-FILL EXHAUST VALVE - PVT



Tank Mounted | Pilot Operated | NG63 - NG300

Specification/ Technical Data

Maximum Pressure	315 bar
Maximum Flow	11,800 LPM
Max. Internal Leakage	0.3ml/min
Cracking Pressure	0.125 bar
Min. Pilot Pressure	10 bar
Design	Tank Mounted
Decompression	Standard
Material	Carbon Steel
Media	Mineral Oil
Oil Temperature Range	+10 to 80°C
Oil Viscosity	ISO VG 46-100
Oil Cleanliness (ISO 4406)	20/18 /15
Orientation	Any
Weight	10 - 400Kg

Note: Refer PVF for Flange mounted version or FPV for sandwich version
Consult factory for NG 400 & NG 500 valves

Ordering Information

Basic Code	Tank mounted	PVT
Size/ NG	63...300	63...300
Decomp.	Standard	No code
Cracking Pr.	0.125bar	No code
Seal Material	Viton	No code
Version		1x



Pre-fill valves are check valves with hydraulic (pilot) release function. They are also referred to as exhaust valves and are generally installed between a cylinder and oil reservoir in hydraulic presses and injection moulding machines where high speed operation is required. The use of these valves enables the manufacturer to use a smaller capacity pump and motor and at the same time achieve the expected cycle time of the equipment.

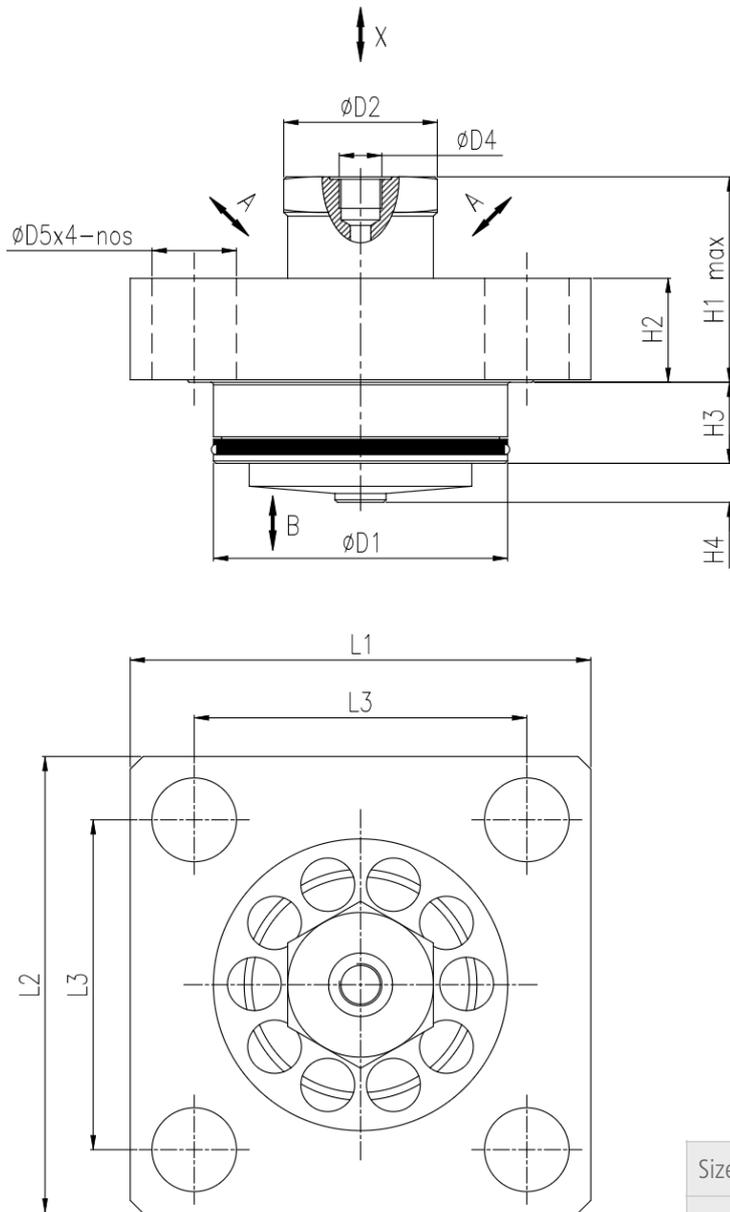
During the high speed forward stroke of cylinder, the pre-fill valves draws a large amount of oil from the reservoir needed to fill the cylinder and the main pump-motor now sized optimally is used to achieve the required pressure. During pressurisation, the valve closes completely and prevents reverse oil flow. For the return stroke, the valve is opened by supplying a pilot pressure that opens the path back to reservoir and retract the cylinder. The decompression feature is built-in to the valve to enable controlled pressure release.

PVT valves have a unique tank mount design that enables the valve to be mounted directly on the cylinder and come with decompression feature as standard.

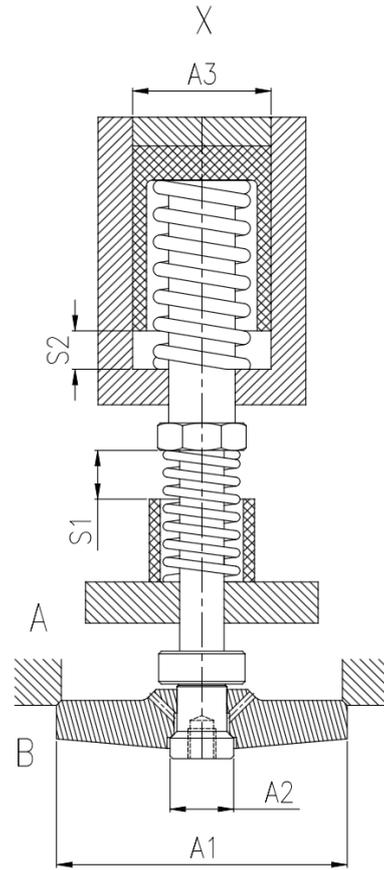
Nominal Size	Nominal Flow lpm at 0.3bar ΔP	Max. Flow lpm at 0.4bar ΔP	Pilot Area Ratio k	Weight Kg
NG 63	250	450	4.2	10
NG 80	400	750	4.0	15
NG 100	600	1400	4.9	18
NG 125	1000	2200	6.7	20
NG 150	1500	3200	6.3	40
NG 200	2500	5200	5.2	85
NG 300	5800	11800	6.4	~400

For optimal performance flow at 0.3bar ΔP to be considered

Size NG 63 - NG 80



Poppet Design



Size	A1	A2	A3	S1	S2	Pilot Oil Vol.
NG 63	32.2	2.26	9.62	13	10	9.6 cm ³
NG 80	59.4	3.14	12.56	15	10	12.5 cm ³

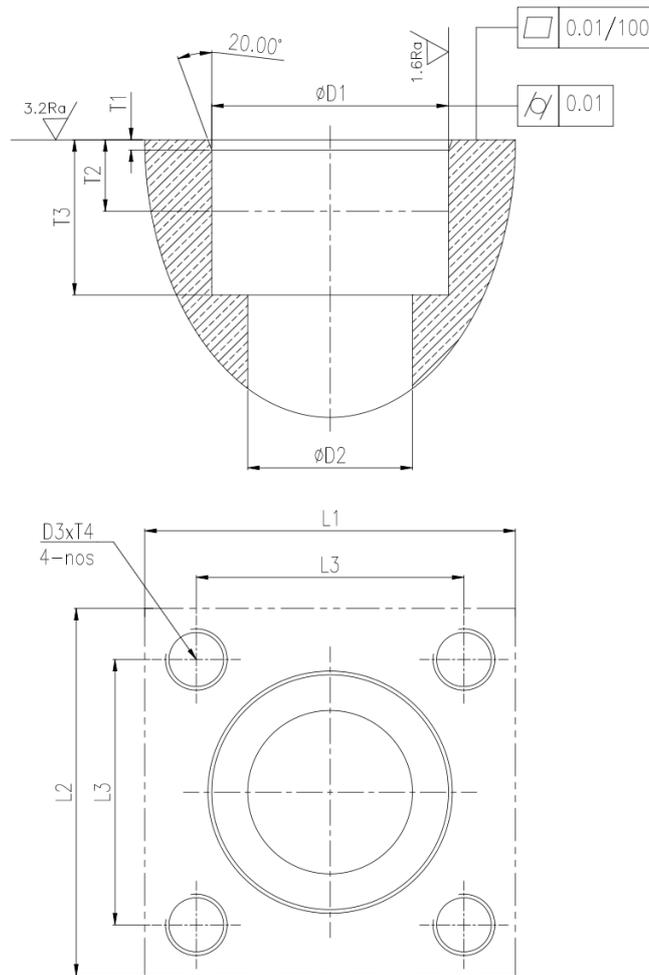
Pilot Ratio (k) = $A3 / A2$

Area in cm²

Size	$\phi D1$	$\phi D2$	$\phi D4$	$\phi D5$	H1	H2	H3	H4	L1	L2	L3	Mounting Bolt	Torque N-m
NG 63	95	A/F 50	G 3/8"	26	100	31	30	14	145	145	105	M24 x 70L	880
NG 80	115	A/F 60	G 3/8"	33	100	41	32	16	180	180	130	M30 x 85L	1800

All dimensions in mm
Use Bolt of Gr. 12.9

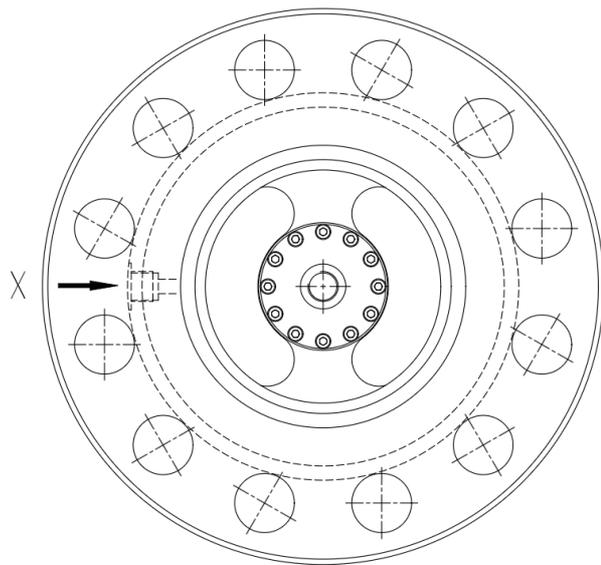
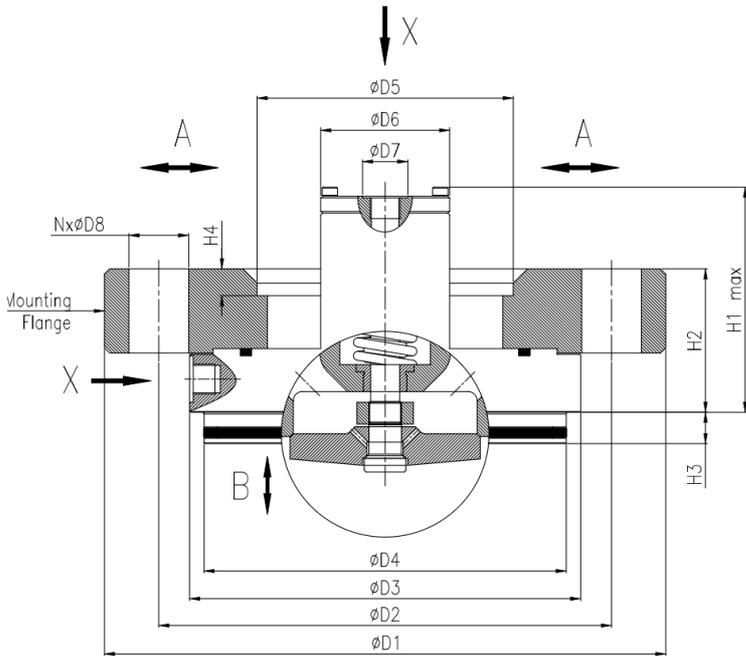
Interface Dimensions NG 63 - 80



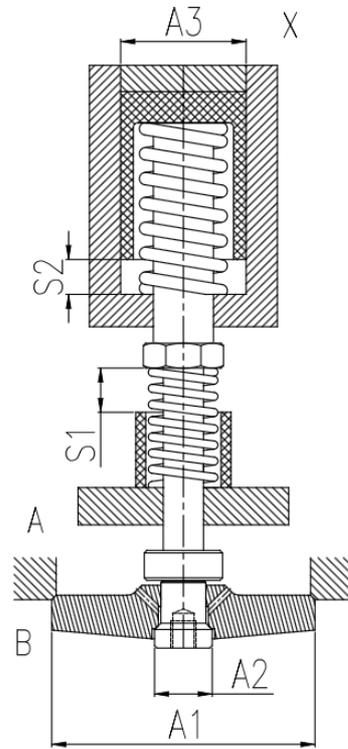
Size	ØD1	ØD2 (max)	ØD3	T1	T2	T3 (min)	T4	L1	L2	L3
NG 63	95	60	M24	5	35	64	40	145	145	105
NG 80	115	80	M30	5	35	76	47	180	180	130

All dimensions in mm

Size NG 100 - NG 200



Poppet Design



Size	A1	A2	A3	S1	S2	Pilot Oil Vol.
NG 100	86.5	4.0	19.5	22	14	27.5 cm ³
NG 125	126.5	5.0	33.0	29	20	66.5 cm ³
NG 150	208.5	10.0	63.5	30	25	160 cm ³
NG 200	346.0	18.0	95.0	53	50	475 cm ³

Pilot Ratio (k) = A3/ A2

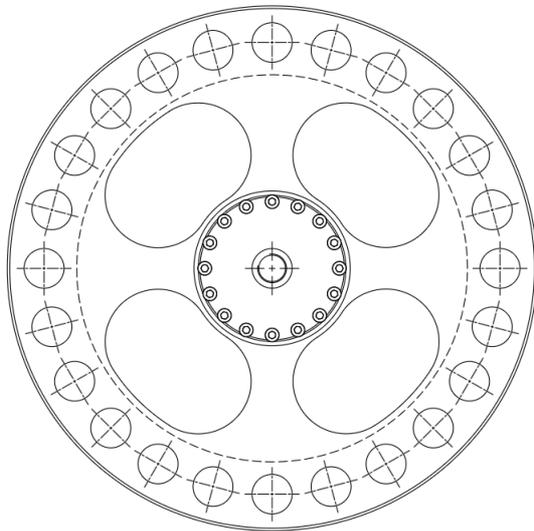
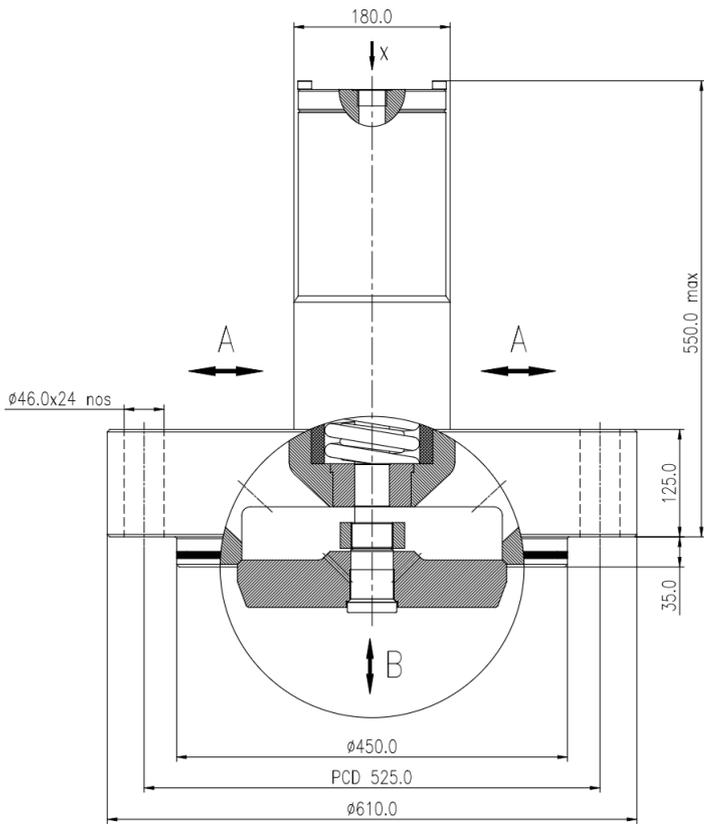
Area in cm²

Size	$\phi D1$	$\phi D2$	$\phi D3$	$\phi D4$	$\phi D5$	$\phi D6$	$\phi D7$	$\phi D8$	H1	H2	H3	H4	N	Mounting	Torque
NG 100	310	250	216	200	141.5	71.5	G3/8"	33	150	80	17.5	15	12	M30x125	650 Nm
NG 125	380	310	263	250	168.5	88	G3/8"	40	175	90	20	15	12	M36x140	1250 Nm
NG 150	420	350	310	290	219	119	G1/2"	40	225	100	30	15	15	M36x150	1250 Nm
NG 200	530	445	400	380	324	148	G3/4"	46	275	120	35	15	18	M42x180	2000 Nm

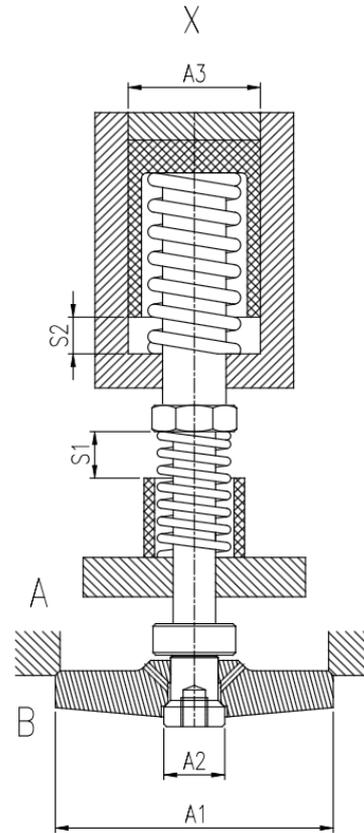
All dimensions in mm

Use Bolt of Gr. 12.9

Size NG 300



Poppet Design



Size	A1	A2	A3	S1	S2	Pilot Oil Vol.
NG 300	755	24.0	154	78	70	1080 cm ³

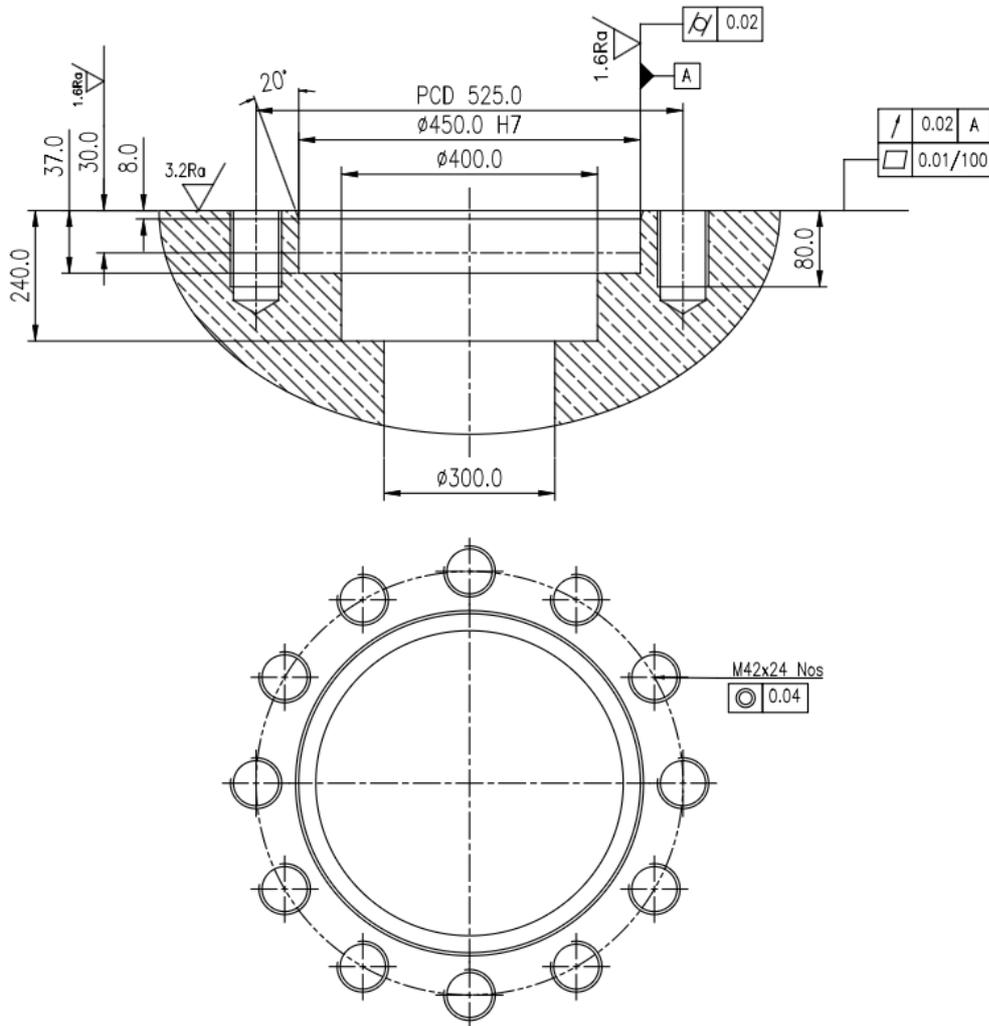
Pilot Ratio (k) = A3/ A2

Area in cm²

Size	X	Mounting Bolt	Torque N-m
NG 300	1" BSP	M46 x 200L	1750

All dimensions in mm
Use Bolt of Gr. 12.9

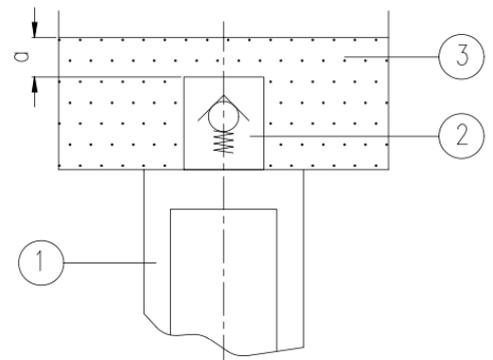
Interface Dimensions NG 300



Spares List

Seal Kit PVT63	SSVPVT0631x
Seal Kit PVT80	SSVPVT0801x
Seal Kit PVT100	SSVPVT1001x
Seal Kit PVT125	SSVPVT1251x
Seal Kit PVT150	SSVPVT1501x
Seal Kit PVT200	SSVPVT2001x
Seal Kit PVT300	SSVPVT3001x

Installation Guidelines



- 1 - Cylinder
- 2 - Pre-fill - Exhaust Valve PVT
- 3 - Reservoir/ Oil Tank

a: min. 300mm with cylinder extended
max.1000mm with cylinder retracted