

## V Series AXIAL PISTON PUMP

### ORDER CODE

V 15 A 1 R B S - A 10 D X A 1001

**Pump Series V**

**Max. Displacement (cm<sup>3</sup>/n):**  
15, 18, 23, 25, 38, 42, 50, 70

**Pump Control Type** (See pages 14-17):

- A** - Pressure Compensator Control
- B** - Multi stage flow-Single stage Pressure Control (with cylinder)
- C** - 2 stage Pressure & Flow Control
- CG** - 2 stage remote Pressure & Flow Control
- D** - Solenoid controlled Pressure Compensator with unloading device
- DG** - Solenoid controlled Pressure Compensator with unloading & remote device
- E** - Dual Pressure Control
- EG** - Dual & Remote Pressure Control
- F** - 2 Flow - 2 Pressure Pressure Control by Solenoid Operated Valve
- FG** - 2 Flow - 2 Pressure Pressure Control by Solenoid Operated & remote Valve
- G** - Remote Pressure Compensator Control
- GJ** - Proportional pressure with interface NG6
- GM** - Remote interface (pilot valve not included)
- HL\*** - Load-sensing Compensator
- HJ** - Load-sensing & Proportional Electro-hydraulic Pilot Relief Valve
- HK** - Proportional Electro-hydraulic Load-sensing Control
- HQ** - Load-sensing & Proportional Flow Control

**\* HL Compensator Pressure setting:**

- none** - Standard pressure 0,7 MPa (7 bar)
- B** - Medium pressure 1,4 MPa (14 bar)
- C** - High pressure 2,1 MPa (21 bar)

**Pump Pressure Setting:**

- 1 - 0,8 - 6,9 MPa (8 - 70 bar)
- 2 - 1,5 - 13,7 MPa (15 - 140 bar)
- 3 - 2,0 - 20,6 MPa (20 - 210 bar)
- 4 - 2,0 - 24,5 MPa (20 - 250 bar)

**Shaft Rotation** (view from shaft end):

- R** - Clockwise rotation (Right)
- L** - Counter Clockwise rotation (Left)

**Direction of Pipe Connection:**

- none** - Side port (Standard)
- B** - Rear axial port

**Customers demand**

**Links Type** (only V 15-18):

- none - Standard
- A** -SAE A 2 bolts

**Design Number:**

- X** = Standard
- Y** = Low pressure
- Z** = Idling Relief

**Rear Flange:**

- none = single pump
- C** = SAE AA, Ø 50,8 mm.
- D** = SAE A, Ø 82,55 mm.
- E** = SAE B, Ø 101,6 mm.
- F** = SAE C, Ø 127 mm.
- I** = Metric, Ø 63 mm.
- J** = Metric, Ø 80 mm.
- K** = Metric, Ø 100 mm.
- L** = Metric, Ø 125 mm.

**Threads Code:**

- 10** = PT (Pipe tape)
- 40** = BSPP (G)
- 50** = NPT
- 60** = SAE (O Ring Flange)
- 70** = M (Metric)

**Electric Supply** (only for electric control devices):

- A** = 100 V AC - 50 / 60 Hz
- B** = 110 V AC - 60 Hz
- C** = 200 V AC - 50 / 60 Hz
- D** = 220 V AC - 60 Hz
- E** = 12 V DC
- F** = 24 V DC

**Mounting Shaft and Type:**

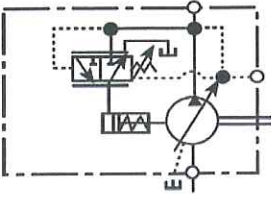
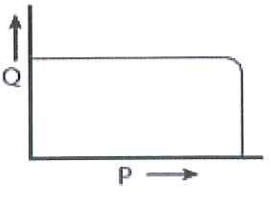
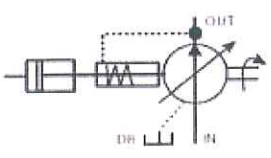
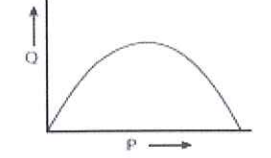
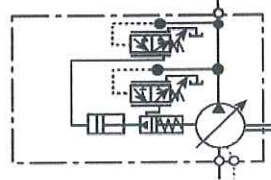
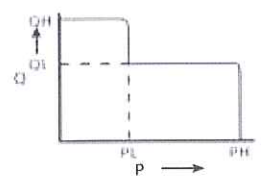
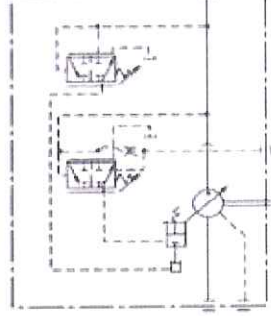
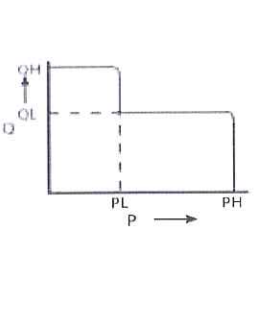
- none - Parallel shaft with key
- S\*** - Splined shaft SAE J 498 b

- \* **V 15 - V 18 S** z = 13 - 16/32 DP
- S<sub>1</sub>** z = 9 - 16/32 DP
- S<sub>2</sub>** z = 11 - 16/32 DP

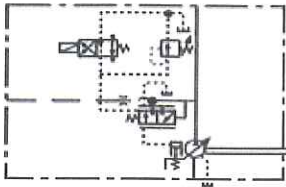
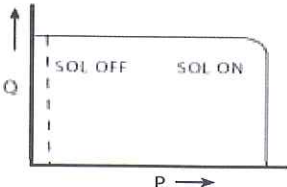
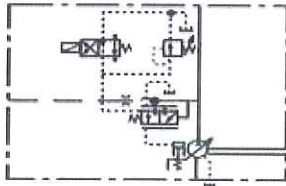
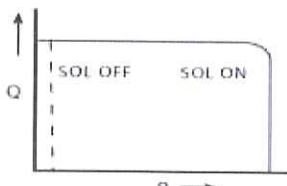
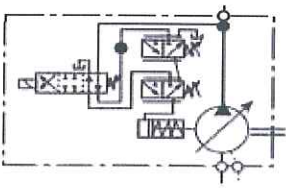
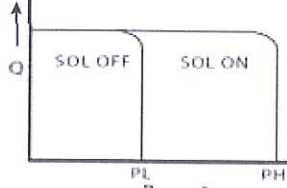
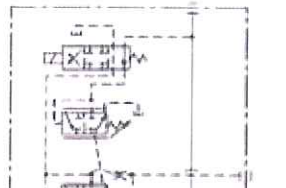
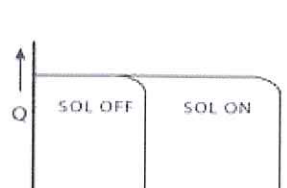
- \* **V 23 - V 25 - V 38 - V 42 S** z = 13 - 16/32 DP
- S<sub>1</sub>** z = 15 - 16/32 DP

- \* **V 50 - V 70 S** z = 14 - 12/24 DP
- S<sub>1</sub>** z = 17 - 12/24 DP

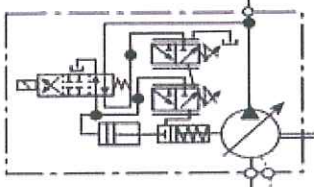
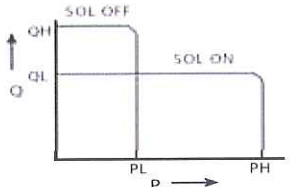
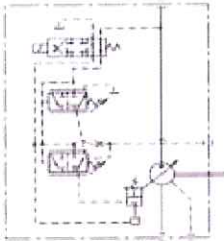
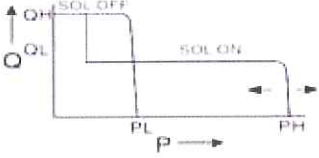
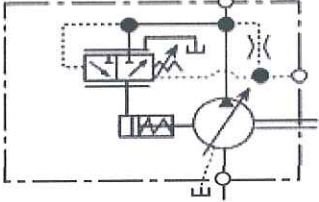
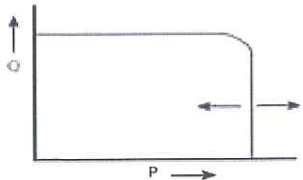
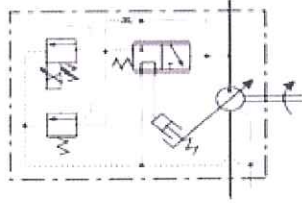
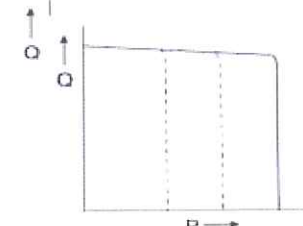
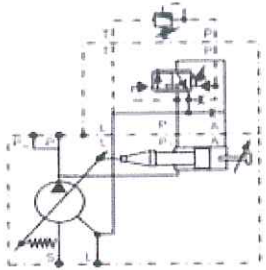
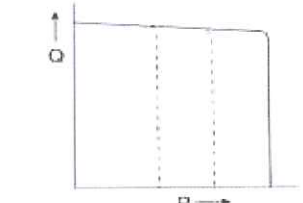
# FUNCTIONAL DESCRIPTION OF REGULATOR

Control Type	Hydraulic Symbol	Control Curve
<p><b>A - Pressure compensator control</b></p> <p>1 - When system pressure increase and reach preset pressure the flow decrease automatically and pressure maintain without changing.</p> <p>2 - Flow and pressure can be adjusted manually.</p>		
<p><b>B - Multi-stage flow &amp; single-stage pressure control (with cylinder)</b></p> <p>1 - Flow can be adjusted form zero to maximum and pressure can have been maintaining at preset pressure.</p> <p>2 - Absorbing impact and vibration which are produced by up and down motions of actuators.</p> <p>It is suitable for lifting equipment etc...</p>		
<p><b>C - Two-stage pressure &amp; flow control</b></p> <p>1 - Low consumption electric motor can be selected to save energy because of the functions of high flow at low pressure and low flow at high pressure.</p> <p>2 - When pressure increase and reach preset pressure "PH", flow is reduced to "QL".</p> <p>3 - Pressure "PH-PL" and Flow "QH QL" can be adjusted optionally.</p> <p>4 - It is applied to actuators requiring long unloaded or short loaded strokes. Speedy and horse-power efficient.</p>		
<p><b>CG - Two-stage remote pressure &amp; flow control</b></p> <p>1 - The same function of "C" control type.</p> <p>2 - The pressure range can be adjusted remotely by the integrated remote pressure control valve.</p> <p>3 - Proportional Electro-Hydraulic pressure control can be applied with proportional valve.</p>		

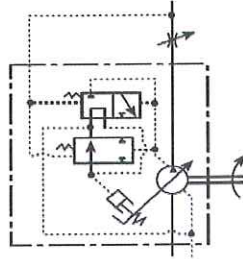
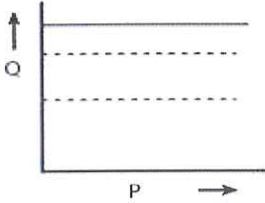
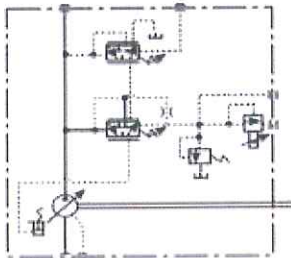
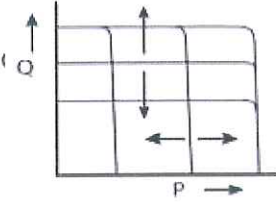
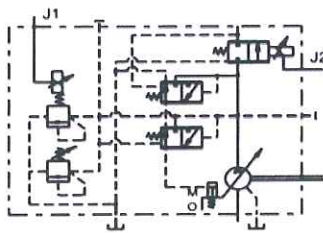
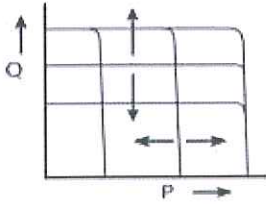
# FUNCTIONAL DESCRIPTION OF REGULATOR

Control Type	Hydraulic Symbol	Control Curve
<p><b>D - Solenoid controlled pressure compensating control with unloading device</b></p> <p>1 - Same as Type "A" and unloading function added.</p> <p>2 - It is applied to systems requiring long time unloading operation.</p> <p>3 - When solenoid is turned off, the pump operates under unloading conditions. This results in less noise and heat generation.</p>		
<p><b>DG - Solenoid controlled pressure compensating control with unloading &amp; remote device</b></p> <p>1 - The same function of "D" control type</p> <p>2 - The pressure range can be adjusted remotely by the integrated remote pressure control valve.</p> <p>3 - Proportional Electro-hydraulic pressure control can be applied with proportional valve.</p>		
<p><b>E - Dual pressure control</b></p> <p>1 - High and low pressure can be controlled by switching directions of solenoid control valve.</p> <p>2 - This type is applied to actuators requiring 2-stage pressures with single speed.</p> <p>3 - One of "PL" and "PH" relief valves can optionally be high pressure.</p>		
<p><b>EG - Dual &amp; remote pressure control</b></p> <p>1 - The same function of "E" control type</p> <p>2 - The pressure range can be adjusted remotely by the integrated remote pressure control valve.</p> <p>3 - Proportional Electro-hydraulic pressure control can be applied with proportional valve.</p>		

# FUNCTIONAL DESCRIPTION OF REGULATOR

Control Type	Hydraulic Symbol	Control Curve
<p><b>F - Two flow - Two pressure p.c. by solenoid operated valve</b></p> <p>1 - Actuators can be shifted slowly (high pressure low flow) and quickly (low pressure high flow) by switching directions of solenoid control valve.</p> <p>2 - This type is applied to actuator requiring operations to shift speed from high to low or low to high.</p> <p>3 - Pressure "PL, PH" and flow "QL, QH" can be adjusted optionally.</p>		
<p><b>FG - Two flow - Two pressure p.c. by solenoid operated &amp; remote valve</b></p> <p>1 - The same function of "F" control type.</p> <p>2 - The pressure range can be adjusted remotely by the integrated remote pressure control valve.</p> <p>3 - Proportional Electro-hydraulic pressure control can be applied with proportional valve.</p>		
<p><b>G - Remote pressure compensator control</b></p> <p>1 - The same function of "A" control type.</p> <p>2 - The pressure range can be adjusted remotely by the integrated remote pressure control valve.</p>		
<p><b>GJ - Proportional pressure with interface</b></p> <p>1 - The same function of "GM" control type and proportional valve added.</p> <p>2 - The proportional valve is installed on the NG 6 interface to reach proportional electro-hydraulic control to save energy.</p>		
<p><b>GM - Remote interface (valve not included)</b></p> <p>1 - GM control with a NG6 interface, supply an installation for pilot valve to prove the operating pressure. The pressure setting can be set directly from the control panel of the machine.</p> <p>2 - The remote pressure compensator responds faster and offer more stable pressure.</p> <p>3 - The adjustment can also be manual or proportional pressure control.</p>		

# FUNCTIONAL DESCRIPTION OF REGULATOR

Control Type	Hydraulic Symbol	Control Curve
<p><b>HL - Load sensing compensator control</b></p> <p>1 - The pump outlet can be controlled by the setting pressure value of control valve. An ideal energy conservation system can be configured by combining the proportional directional control.</p> <p>2 - When setting pressure value, flow is changed depending on the throttle valve. The sensing flow feedback function can reach to low oil heat generation and saving energy.</p>		
<p><b>HJ - Load sensing &amp; proportional electro-hydraulic pilot relief valve</b></p> <p>1 - The same function of "HL" and proportional function added.</p> <p>2 - Supplied with proportional electro-hydraulic pilot relief valve can reach to power saving.</p>		
<p><b>HK- Proportional electro-hydraulic load sensing control</b></p> <p>1 - This control type supply the system pressure and flow depending on the proportional pressure and flow, voltage and load value to save energy. When in waiting circle, the outlet displacement and horse-power loss are close to zero. When pressure reaches to preset value, the flow decrease to the min. and the pressure is constant to reach low oil heat generation and energy loss.</p> <p>2 - HK control type can save 30-50% energy compared to vane and gear pump + PQ valve. It is an energy saving and environmental design.</p>		
<p><b>HQ - Load sensing proportional flow control</b></p> <p>1 - The same function of "HL" control type and proportional flow function added.</p> <p>2 - The proportional flow control allows the adjustment of the pump output flow with an electric input signal. Pump flow rate are controlled proportionally to the input current to the control device on the pump and the input current is regulated by the specific amplifier.</p>	