

**Technical Data** (continued)

For applications outside the following parameters, please consult Kawasaki Precision Machinery (UK) Ltd.

Pump Model		63	112	180	280	180DT	280DT
Displacement	cm <sup>3</sup> /rev	63	112	180	280	360	560
Rated Pressure <sup>(1)</sup>	bar	350	350	350	350	350	350
Peak Pressure <sup>(2)</sup>	bar	400	400	400	400	400	400
Rated Power (kW)		70	125	200	255	405	510
Max Flow (@ rated speed)	l/min	106	193	310	390	621	780
Rated Speeds at suction pressures >or = to -0.1 bar	rpm	1800	1800	1800	1500	1800	1500
Maximum operating Speeds at suction pressures >or = to +1 bar	rpm	3250	2700	2300	2000	2300	2000
Mass	kg	48	68	86	160	160	300

**NOTES:** <sup>(1)</sup> Pressure at which life and durability of the pump will not be affected.

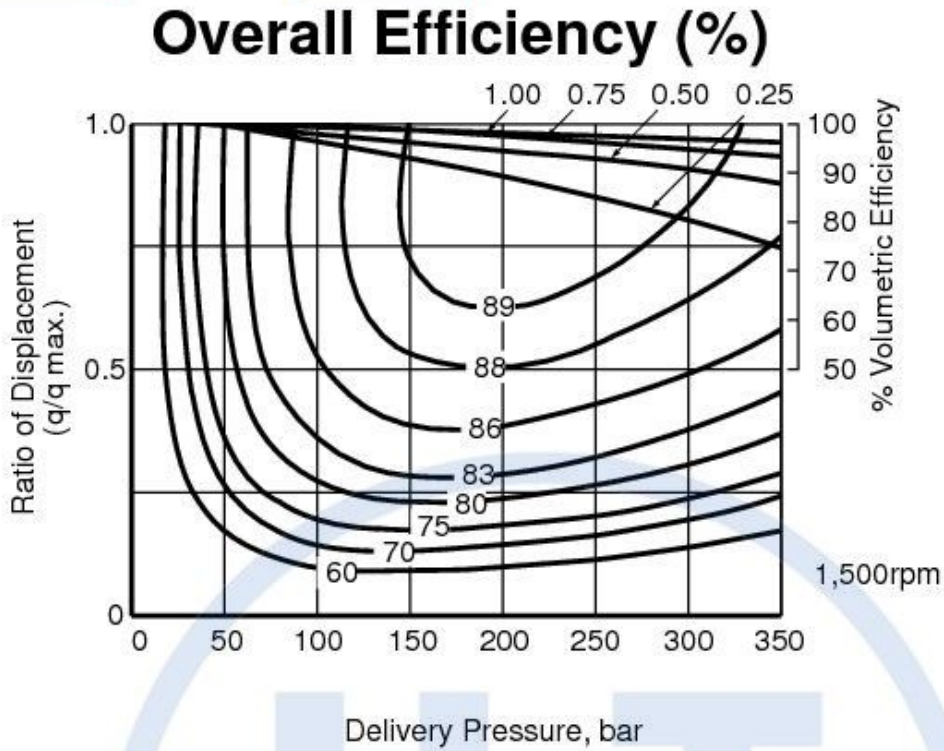
<sup>(2)</sup> Pressure at which functionality of pump is not affected but life and durability will be shortened. Please contact Kawasaki for recommendations.

**CAUTIONS!**

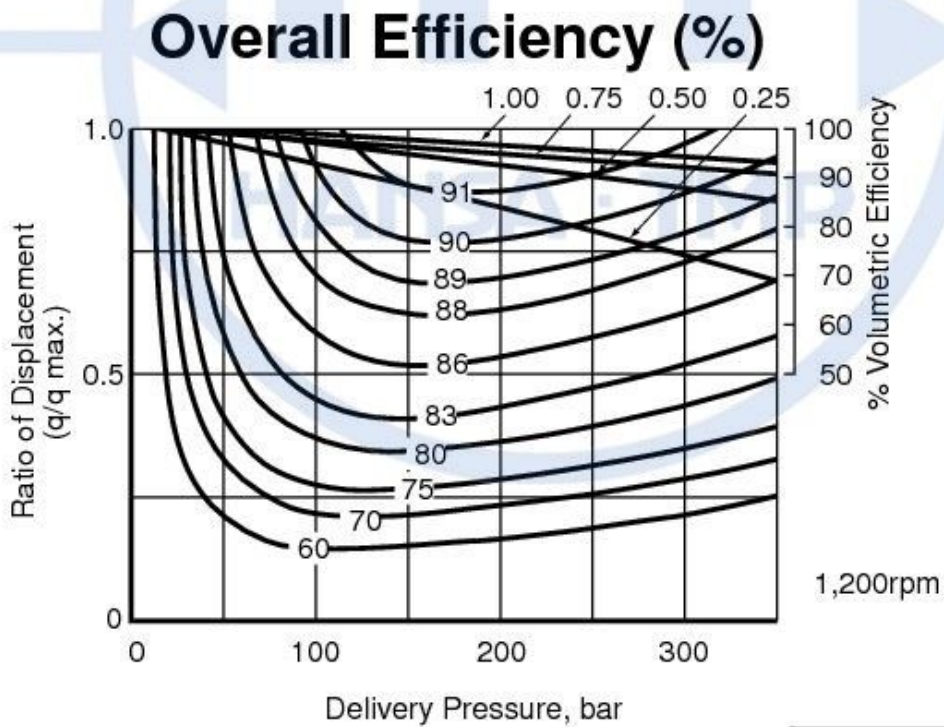
1. Make sure the pump case is filled with clean, filtered fluid of the type used in the system before operation.
2. The pump case must be full at all times to ensure lubrication of the internal components.
3. When installing the tandem pumps (K3VG180DT and K3VG280DT) make sure that both the front and rear pumps are filled with oil through both case drain ports.



Performance Curves - K3VG180 and K3VG180DT



Performance Curves - K3VG280 and K3VG280 DT




**Kawasaki**  
Hydraulic Products

**Ordering Code – K3VG Series Variable Displacement, Axial Piston, Open Loop Pump**

**K3VG 180DT - 1 O N R S - 1PM1 0 1**

<p><b>K3VG Series Pump</b></p> <p><b>Maximum displacement</b> Single type: 63            63 cm<sup>3</sup>/rev 112           112 cm<sup>3</sup>/rev 180           180 cm<sup>3</sup>/rev 280           280 cm<sup>3</sup>/rev Tandem type: <b>180DT      360 cm<sup>3</sup>/rev</b> 280DT      560 cm<sup>3</sup>/rev</p> <p><b>Hydraulic Fluid Type</b> -            Mineral oil W           Water glycol Z           Phosphate ester</p> <p><b>Circuit type</b> <b>1            Open Loop</b></p>	<p><b>Auxiliary Gear Pump (Tandem Units only)</b> Blank    Without pump 1           With pump: (Refer to gear pump arrangements on Page 5)</p> <p><b>Confluent Block (Tandem Units only)</b> Blank    Single pump 0:        Tandem Pumps without confluent block R:        Rear Outlet Type S:        Side Outlet Type</p> <p><b>Regulator Ordering Code</b> See Page 5.</p> <p><b>Mounting Orientation</b> -           Standard Horizontal Mounting <b>V           Vertical Mounting (shaft up only)</b></p> <p><b>Series</b> <b>S           Low Pulsation (Standard)</b></p> <p><b>Direction of Rotation (Viewed from shaft end)</b> <b>R           Clockwise</b> L           Counterclockwise (Tandem only)</p> <p><b>Mounting Bracket/Port Flanges</b> <b>N:        No bracket, no flange</b> 0:        Without bracket, with flange F:        With bracket, with flange B:        With bracket, without flange</p>	<p><b>Gear Pumps, Gear Pump mounting provision and Pressure Assist Options</b></p> <p>0 Without gear pump. Without pressure assist port</p> <p>1 10 cm<sup>3</sup>/rev with built in relief valve 40 bar setting (50 bar max) (not available on tandem)</p> <p>2 15 cm<sup>3</sup>/rev with built in relief valve 40 bar setting (50 bar max) (not available on tandem)</p> <p>3 Without gear pump, with pressure assist port</p> <p>6 With pressure assist port. With mounting provision for customer supplied gear pump with SAE 'A' mounting and 13 tooth spline. (refer to page 27)</p> <p>H With pressure assist port. With mounting provision for customer supplied gear pump with SAE 'A' mounting and 9 tooth spline (refer to page 27)</p> <p>7 Without pressure assist port. With mounting provision for customer supplied gear pump with SAE 'A' mounting and 13 tooth spline. (refer to page 27)</p> <p>G Without pressure assist port. With mounting provision for customer supplied gear pump with SAE 'A' mounting and 9 tooth spline (refer to page 27)</p> <p><b>A SAE 'B' mounting provision for 280, 180DT and 280DT only (refer to page 27)</b></p>
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**Ordering Code – Regulator**

1 P M 1

**Power/Pressure Control**

0	Without Power or Pressure Control.
1	Power Control.
4	Pressure Compensation.
7	Power Control and Pressure Compensation

**Power Setting Code**

0	No Power Control.
1-4}	See Power Setting Codes on Pages 7 & 8

**Displacement Control**

0	Without Displacement Control.
P	Positive Displacement Control.
N	Negative Displacement Control.
E	Electrical positive displacement control.
L	Load Sense.

**Power Control Mode**

H	High Power Band.
M	Medium Power Band.
L	Low Power Band.
0	No Power Control.

**Standard Gear Pump Arrangements**

Pump Size and Ordering Code	Gear Pump Displacement
K3VG 63 - 1 1 # # - ####	10 cm <sup>3</sup> /rev
K3VG 112 - 1 1 # # - ####	10 cm <sup>3</sup> /rev
K3VG 180 - 1 1 # # - ####	10 cm <sup>3</sup> /rev
K3VG 280 - 1 2 # # - ####	15 cm <sup>3</sup> /rev
K3VG 180DT - 1 A # # - #### # 1	25.3 cm <sup>3</sup> /rev
K3VG 280DT - 1 A # # - #### # 1	32.5 cm <sup>3</sup> /rev

**Note:** The "#" denotes any available selection for the pump - See the [Ordering Code for the Pump](#).



## Summary of Control Options

Power/Pressure Control Code	Displacement Control Code	Description
0	P	Infinitely variable positive displacement control by pilot pressure
0	N	Infinitely variable negative displacement control by pilot pressure
0	E	Infinitely variable positive displacement control by Electrical Proportional Valve
1	0	Power control with maximum displacement stop
1	P	Power and positive displacement control by pilot pressure
1	N	Power and negative displacement control by pilot pressure
1	E	Power and positive electrical displacement control
4	0	Pressure compensation
4	L	Load sense control
7	0	Power and pressure compensation
7	P	Power, pressure compensation and positive displacement control
7	N	Power, pressure compensation and negative displacement control
7	E	Power, pressure compensation and electrical positive displacement control
7	L	Power control and Load sensing. (also available with a combined displacement control option)

**Note:**

When using displacement control at pump delivery pressures below 40bar, a pressure assist signal is required to maintain adequate response.

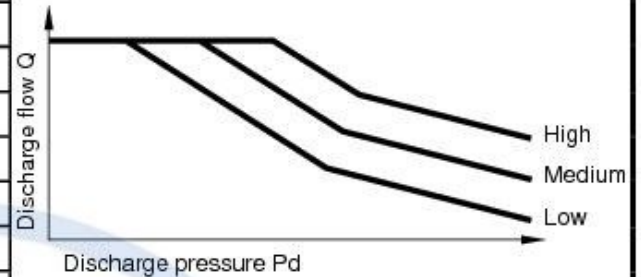
The pressure assist signal can be provided by either an attached gear pump or an external source.

The optional attached gear pump is recommended for use with all displacement control options.

All displacement control hydraulic circuit diagrams illustrate the attached gear pump.

**Power Setting Codes**

Standard Regulator code at 1500 rpm – pumps without auxiliary gear pump						
Motor Power kW	K3VG Pump Frame Size					
	63	112	180	280	180DT	280DT
11	L4					
15	L1					
18.5	M2					
22	M1	L3				
30	H2	M3	L3			
37		M1	L1			
45		H5	M4			
55		H3	M2	L2		
75			H4	M4	L2	
90			H2	M2	M4	
110				H4	M2	L3
132				H2	H4	L1
160					H2	M3
200						M1
250						H4
280						H2



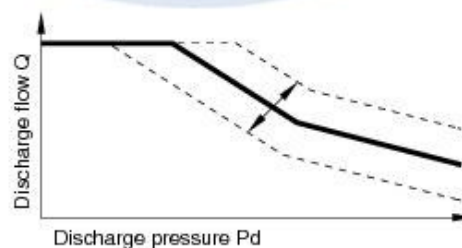
Example 1 Without gear pump:

Pump: K3VG112-10NR-10??  
 Electric Motor: 22 kW at 1500 rpm  
 Power Set Code: L3  
 Final Mode/Code: K3VG112-10NR-10L3

**Power Adjustment Range**

The power setting can be adjusted via external adjusting screws. The adjustment range of the power control settings at 1500 rpm is given in the table below.

Power control settings (kW) at 1500 rpm						
Pump model	K3VG63	K3VG112	K3VG180	K3VG280	K3VG180DT	K3VG280DT
H - High Power	22.0~33.8	37.0~62.1	55.0~96.5	90.0~150.1	109.4~192.9	197.3~300.3
M - Medium Power	15.6~22.4	27.1~45.6	43.9~75.0	67.3~113.5	87.9~134.5	137.2~239.2
L - Low Power	10.6~18.9	19.1~30.7	29.9~45.6	46.8~75.0	59.9~91.1	93.5~160.0

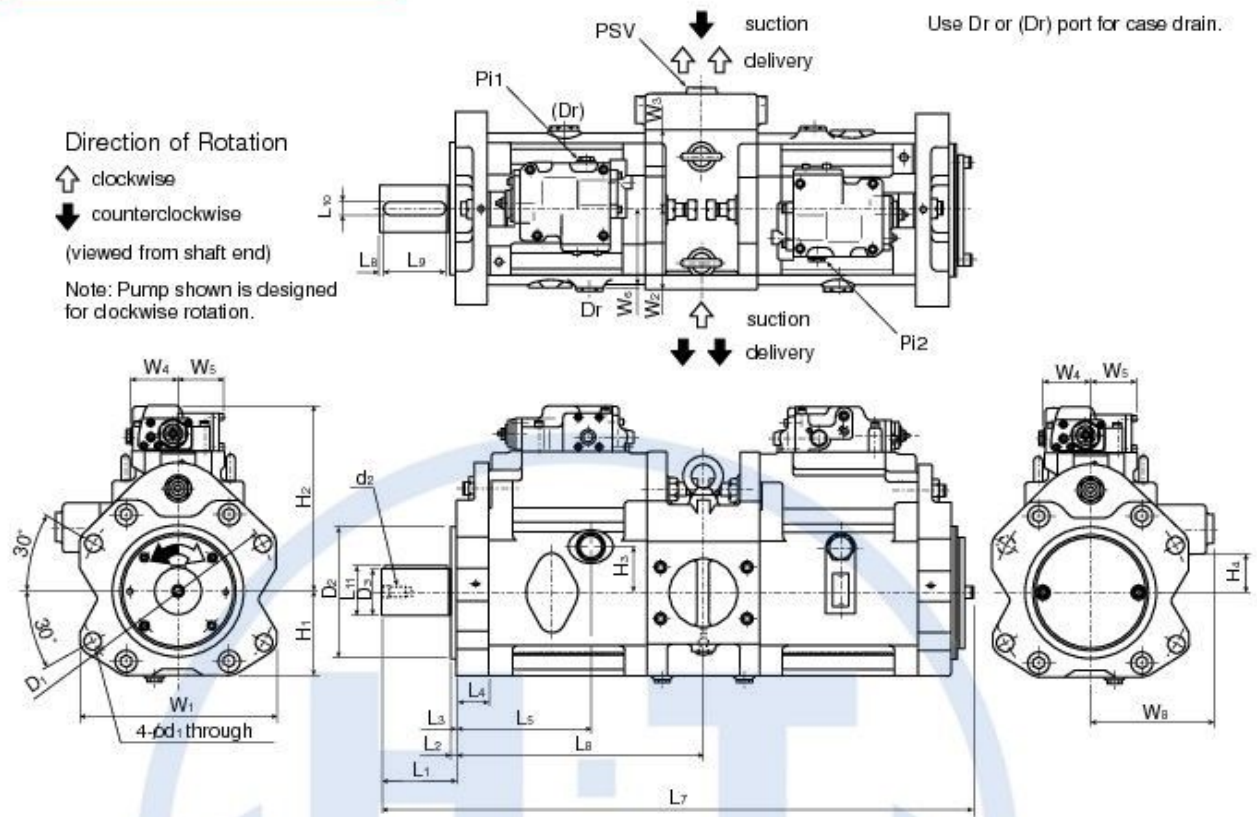


**Note:**

For additional speed and power settings contact Kawasaki Precision Machinery (UK) Ltd.



**Unit Dimensions – K3VG180DT/280DT**



Dimensions of double pumps without gear pump (dimensions in mm)

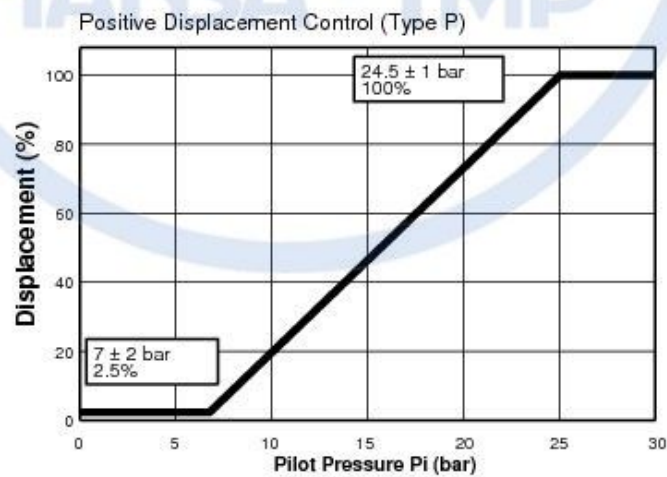
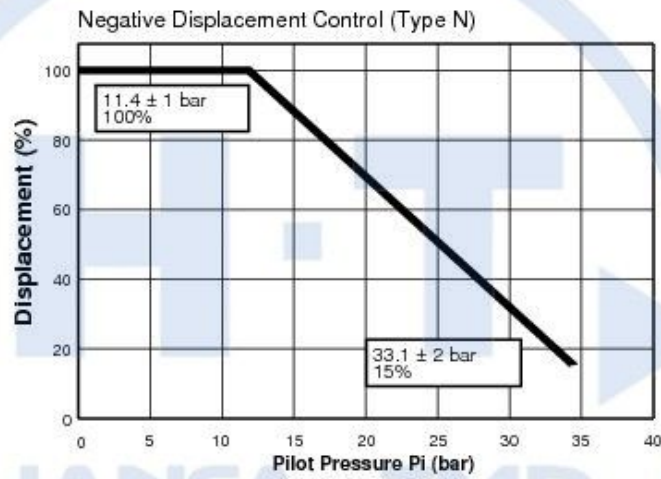
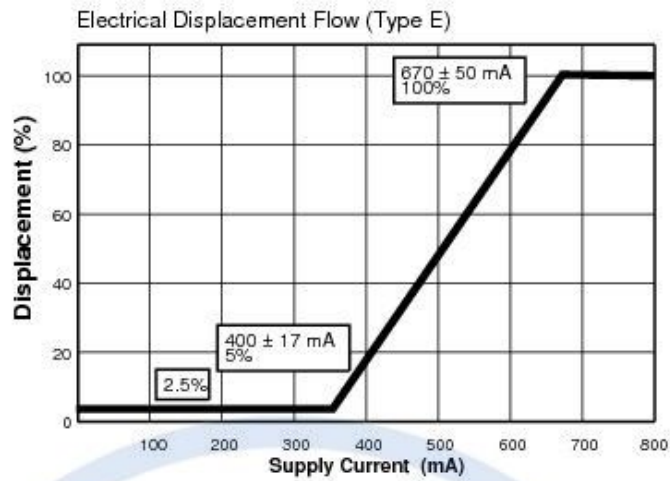
Pump size	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	L <sub>6</sub>
180DT	250	180 <sup>-0.050 -0.090</sup>	60 <sup>k6</sup>	115	10	8	36	190	311
280DT	300	200 <sup>-0.050 -0.090</sup>	70 <sup>k6</sup>	115	10	9	50	203	374

Pump size	L <sub>7</sub>	L <sub>8</sub>	L <sub>9</sub>	L <sub>10</sub>	L <sub>11</sub>	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>
180DT	786	5	95	18	64	112	245	53	51
280DT	896	5	95	20	74.5	127	286	70	59

Pump size	W <sub>1</sub>	W <sub>2</sub>	W <sub>3</sub>	W <sub>4</sub>	W <sub>5</sub>	W <sub>6</sub>	W <sub>8</sub>	d <sub>1</sub>	d <sub>2</sub>
180DT	256	100	100	72	69	101	165	22	M16
280DT	300	120	120	72	69	118	185	26	M16

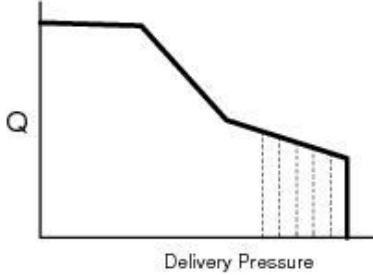
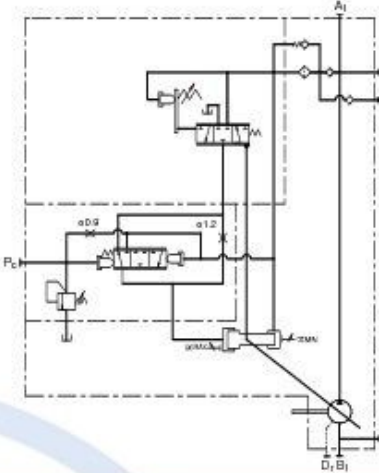
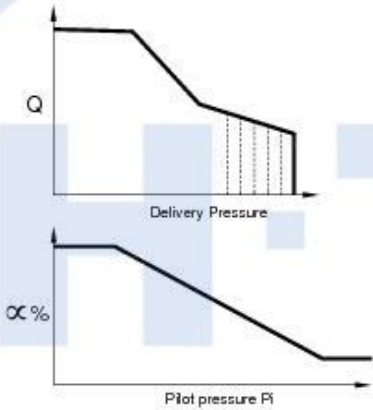


**Displacement control Curves - K3VG180/180DT**





**Functional Description of Regulator (continued)**

Regulator Code	Control Curves	Hydraulic Circuit
<p><b>70 Power and Pressure Compensation</b></p> <p>This regulator combines the Power with Pressure Compensated Control.</p> <p><b>Note:</b> Standard factory pressure setting is 320 bar with an adjustable range of 80 bar to 350 bar.</p>	 <p style="text-align: center;">Delivery Pressure</p>	
<p><b>7N Power, Pressure Compensation and Negative Displacement control</b></p> <p>This regulator combines the Power Control with Pressure Compensated Control. By adding a pilot signal to the Pi port the discharge flow can be infinitely adjusted within the pump range. An increase in pilot signal will result in a decrease in flow, hence the Negative control.</p> <p><b>Note:</b> Standard factory pressure setting is 320 bar with an adjustable range of 80 bar to 350 bar.</p>	 <p style="text-align: center;">Pilot pressure Pi</p> <p style="text-align: center;"><b>Range of Displacement control 100-15%</b></p>	