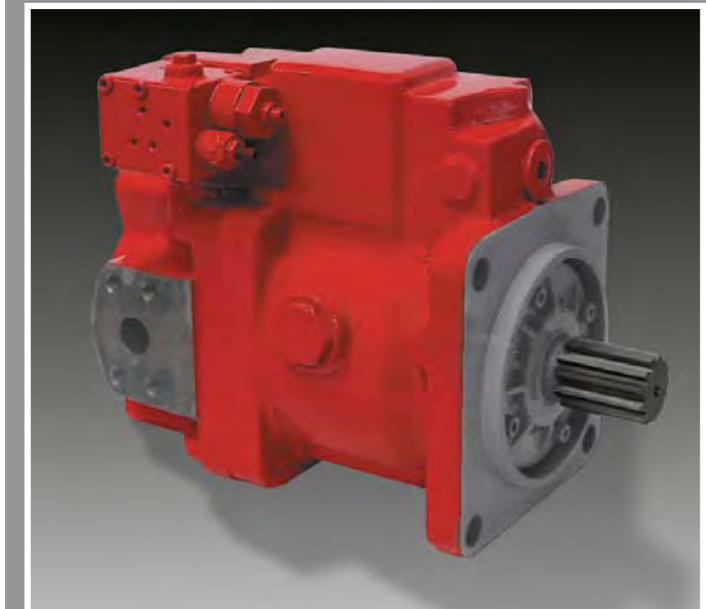
Kawasaki

K3VL

Axial Piston Pumps for Open Circuits in Mobile, Industrial and Marine Applications



KAWASAKI AXIAL PISTON PUMPS

WHERE POWER, EFFICIENCY, QUALITY & RELIABILITY COME TOGETHER

Kawasaki engineers developed our original KV Series axial piston pump in 1968. Since then, we have been at the leading edge in the development of these technologies to satisfy the demanding needs of our customers.

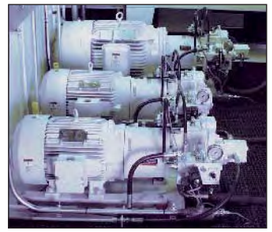
The present K3V Series pump design was first introduced in 1987. The primary application for this pump was in earth-moving and construction industries where more than 1.3 million units have been supplied. The outstanding reliability and reputation of Kawasaki Pumps in this market sector is well known.

Kawasaki introduced the K3VL Series Pumps in 2000, to satisfy American and European market requirements. This pump series features American (SAE) and International (ISO) mounting, shaft, and port configurations. In addition, design characteristics from our K3V Series Pumps were adopted to meet stringent requirements for noise, efficiency, controllability, and durability. Kawasaki piston pumps are the preferred choice where continuous, reliable, and efficient operation of equipment is necessary.

The flexibility of K3VL Series Pumps enable them to be applied in a wide variety of mobile, industrial, marine, and other industries. K3VL pumps have been successfully applied on power units, press machinery, test stands, oil field equipment, drilling and mining machinery, construction and forestry equipment and many other applications.

All pumps are rigorously tested and documented before shipment and are fully warranted.

Kawasaki K3VL Axial Piston Pumps – where power, efficiency, quality, and reliability come together.



K3VL PUMP FEATURES AND BENEFITS

Adjustable Maximum Stroke Adjustment:
This feature enables the maximum output flow to be manually adjusted to meet application requirements.

Flexible Control Module:
Dual spool design offers easy conversion from load sensing to pressure compensation models. Standard unload port enables remote pressure compensation control.

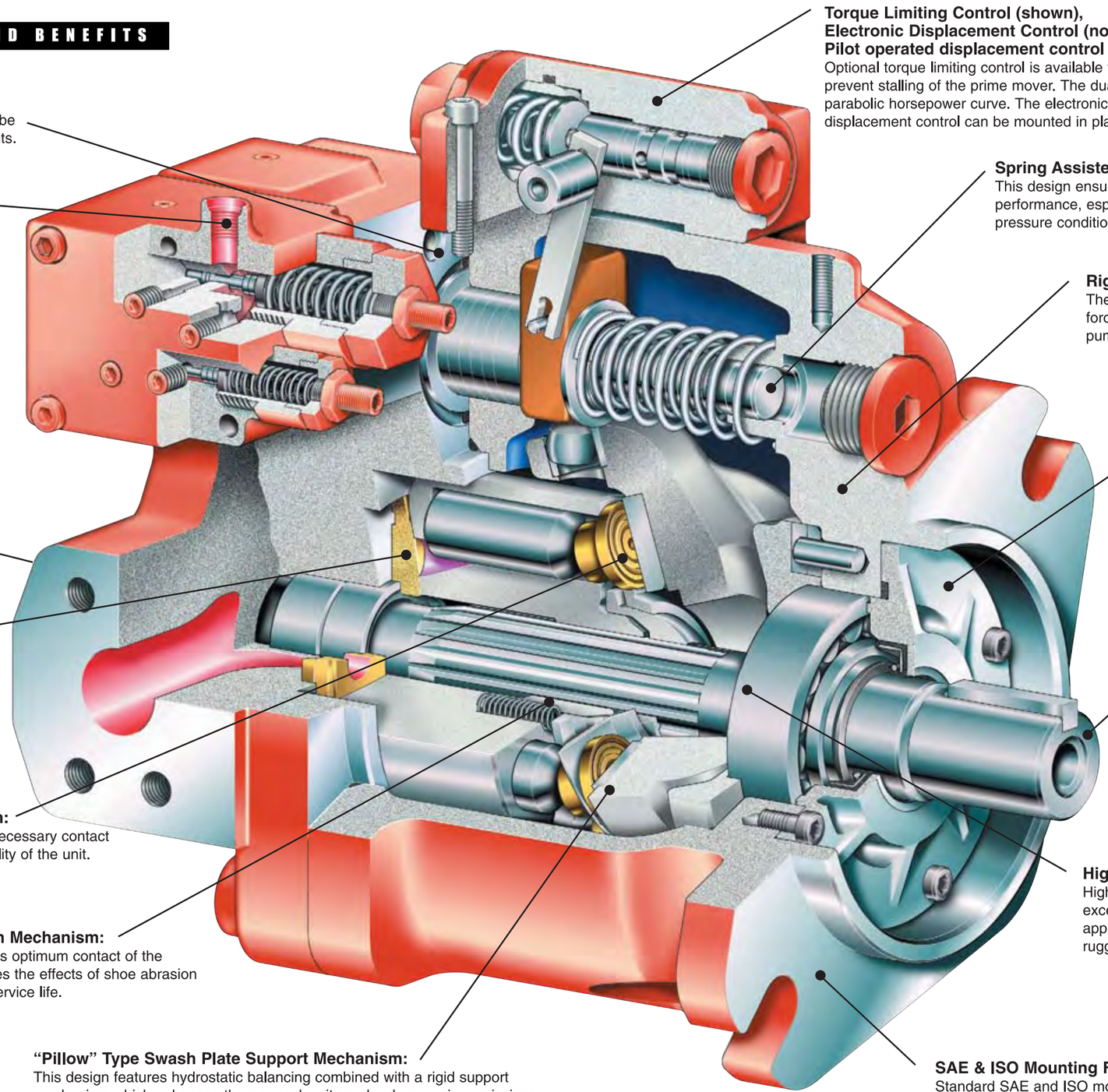
Wide Range of Controls:
Pressure cut-off and load sensing controls are standard. Optional electronic displacement control and pilot operated displacement control is available. Secondary controls include torque limiting (horsepower), solenoid operated unloading valve for remote pump unloading, and proportional relief valve for variable pressure cut-off control.

PTO Through Drive:
Optional through drive configurations are available to provide drive capability for auxiliary pumps.

Fully Balanced Spherical Valve Plate*:
This design ensures optimum contact of the cylinder block and valve plate, and due to the inherent spherical design, improves self priming capability and also minimizes the resultant bearing reaction force.
*Does not apply to K3VL 45–60 models.

Friction-Free Shoe Contacting Mechanism:
The hydrostatic balancing design minimizes the necessary contact force, thereby enhancing the reliability and durability of the unit.

Self Compensating Piston Return Mechanism:
This coil spring/set plate design ensures optimum contact of the shoe on the swash plate. This minimizes the effects of shoe abrasion and provides high reliability and long service life.



“Pillow” Type Swash Plate Support Mechanism:
This design features hydrostatic balancing combined with a rigid support mechanism which enhances the power density and reduces noise emissions. The simple and rigid construction ensures a high degree of reliability while maintaining control, responsiveness, and quiet operation.

Torque Limiting Control (shown),
Electronic Displacement Control (not shown),
Pilot operated displacement control (not shown):
Optional torque limiting control is available for engine/motor matching to prevent stalling of the prime mover. The dual spring design simulates the parabolic horsepower curve. The electronic displacement or pilot operated displacement control can be mounted in place of the torque limiting control.

Spring Assisted Servo Piston:
This design ensures rapid on-stroke performance, especially in low standby pressure conditions.

Rigid Casing:
The rigid casing design ensures that all internal forces are well supported, thereby improving pump reliability and minimizing noise emission.

Shaft Seal Cover:
This design permits easy field service of the shaft seal.

SAE & ISO Shaft Configurations:
Spline and parallel key shaft arrangements are available for meeting various application requirements.

High Load Capacity Bearings:
High load bearings are designed to ensure excellent reliability and long life for continuous duty applications, making this pump one of the most rugged in the marketplace.

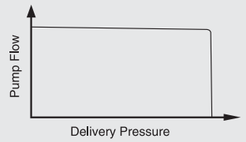
SAE & ISO Mounting Flange Configurations:
Standard SAE and ISO mounting flange configurations for easy adaptation to engine/motor drives.

K3VL PUMP CONTROL OPTIONS

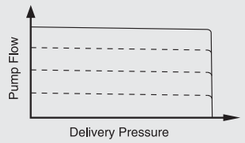
K3VL Series pumps offer a wide range of control options. Pressure cut-off and load sensing controls are standard. Optional electronic displacement control is available. Secondary controls include torque limiting (horsepower), solenoid operated unloading valve for remote pump unloading, and proportional relief valve for variable pressure cut-off control.
The K3VL pump control options are summarized as follows:

Primary Pump Controls

P0
Pressure Cut-Off Control

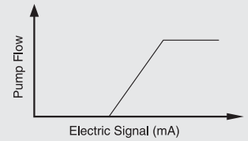


L0/L1
Load Sensing Control (with/without bleed-off for load-sensing line)



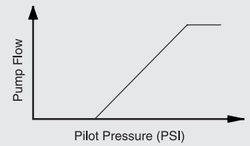
1. Standard configuration also includes pressure cut-off control.

P0/1-E0
Electronic Displacement Control



1. Standard configuration also includes Pressure-cutoff control.
2. Not available with Torque Limiting control.

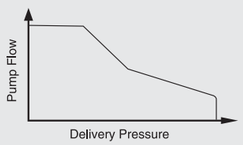
QO
Pilot Operated Displacement Control



1. Standard configuration also includes Pressure-cutoff control.
2. Not available with Torque Limiting control.

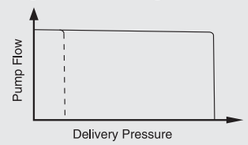
Secondary Pump Controls

****/1**
Torque Limiting Control



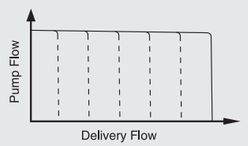
1. Available with all primary pump controls excluding electronic displacement control.

***N**
With Integral Unloading Valve



1. Available with all primary pump controls.

***V**
With Integral Proportional Valve



1. Available with all primary pump controls.

K3VL PUMP SPECIFICATIONS

Pump Model		K3VL45	K3VL60	K3VL80	K3VL112	K3VL140	K3VL200
Displacement - in^3/rev (cc/rev)		2.75 (45)	3.66 (60)	4.88 (80)	6.83 (112)	8.54 (140)	12.20 (200)
Pressure Rating - psi (bar)	Rated	4600 (320)	3625 (250)	4600 (320)	4600 (320)	4600 (320)	4600 (320)
	*1 Peak	5075 (350)	4060 (280)	5075 (350)	5075 (350)	5075 (350)	5075 (350)
Speed Rating (rpm at Max. Displacement)	*2 Self Prime	2700	2400	2400	2200	2200	1900
	*3 Maximum	3250	3000	3000	2700	2500	2200
Minimum Operating Speed - rpm		600	600	600	600	600	600
Maximum Allowable Case Drain Pressure - psi (bar)	Continuous	30 (2)					
	Peak	85 (6)					
Pump Case Prefill Capacity - Gallons (Liters)		0.16 (0.60)	0.16 (0.60)	0.21 (0.80)	0.37 (1.40)	0.37 (1.40)	.78 (3)
Weight - lb (kg)		55 (25)	55 (25)	77 (35)	143 (65)	143 (65)	220 (100)
Temperature Range - ˚F (˚C)		-4˚ to 203˚ (-20˚ to 95˚)					
*4 Viscosity Range - SUS (cSt)		55 to 4650 (10 to 1000)					
Maximum Contamination Level		20/18/15 ISO/DIS 4406 (Class 9)					
*5 Standard Mounting Flange and Shaft	Mounting	2-Bolt SAE B	2-Bolt SAE B	2-Bolt SAE C	4-Bolt SAE D	4-Bolt SAE D	4-Bolt SAE E
	Shaft	SAE B-B Spline or Key	SAE B-B Spline or Key	SAE C Spline or Key	SAE D Spline or Key	SAE D Spline or Key	SAE D Spline or Key
Optional Mounting Flange and Shaft	Mounting	-	-	-	2-Bolt SAE C	2-Bolt SAE C	-
	Shaft	SAE B Spline	SAE B Spline	-	SAE C or C-C Spline or Key	SAE C or C-C Spline or Key	-
Input Shaft Torque Rating		Refer to K3VL technical brochure (P-969-0274B)					
Through Drive Torque Rating - lb_f-ft (Nm)	SAE A	45 (61)	45 (61)	45 (61)	45 (61)	45 (61)	45 (61)
	SAE B	150 (203)	150 (203)	150 (203)	150 (203)	150 (203)	150 (203)
	SAE B-B	166 (225)*6	166 (225)*6	166 (225)	166 (225)	166 (225)	166 (225)
	SAE C	-	-	295 (400)	295 (400)	295 (400)	295 (400)
	SAE C-C	-	-	-	412 (559)*6	412 (559)*6	412 (559)*6
	SAE D	-	-	-	516 (699)*6	516 (699)*6	516 (699)*6
	SAE E	-	-	-	-	-	516 (699)*6,7

*1 Maximum allowable safety relief valve setting.
*2 Steady state inlet pressure should be greater than or equal to 0 psi (0 bar) gauge.
*3 Steady state inlet pressure should be greater than or equal to 4.5 psi (0.3 bar) gauge. However the maximum charge pressure should not exceed 50 psi (3.5 bar).
*4 At viscosities from 930 to 4650 SUS (200 to 1000 cSt), warm up at no load is required.
*5 ISO mounting and shaft also available. Contact Kawasaki for further information.
*6 Through drive torque rating exceeds torque rating of the optional input shaft.
*7 SAE E through drive uses the SAE D shaft

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