

Reliability Efficiency Performance

Hydraulic pumps, motors and valves
Construction sector



Welcome

Kawasaki is a leading total-systems supplier to construction machinery manufacturers thanks to our world-class range of pumps, motors and control valves.

Headquartered in Japan, but with facilities around the globe, Kawasaki has over 100 years' experience in manufacturing hydraulic products for mobile, industrial, marine and many other engineering applications. Our 450 engineers in the Kawasaki Development Centre have developed everything from the world's fastest motorbike to jet engines and gas turbines.

Now, we've used this expertise and experience to introduce a best-in-class range of complete hydraulic systems and components for construction machinery.

Total systems. Total performance.

Excavators

Concrete pumps

Wheel loaders

Backhoe loaders

Rough terrain cranes

Drilling rigs

Telehandlers

Motor graders

Innovative. Efficient. Durable.

Across our 100-year history, the Kawasaki name has become synonymous with high quality and innovation. We use our investment in Research & Development (R&D) to drive optimal efficiency and unparalleled performance across multiple industries.



Total systems solutions

Kawasaki's new pumps, motors and control valves offer **cutting-edge efficiency and controllability** when used as individual components. But the real benefits come when they are combined into a complete system, saving you time and resource throughout procurement, development and maintenance.

Our new products



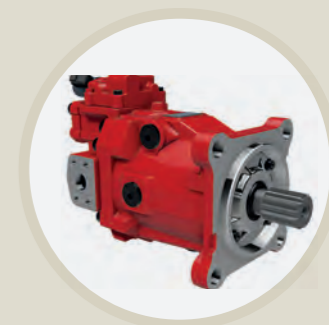
/// K3VLS
Swash plate
type axial
piston pump



/// KLSV
Load sensing
main control
valves



/// K8V
Closed loop
axial piston
pump



/// M7V
High-speed
axial piston
motor

Built on innovation

Behind each of our components is Kawasaki's 450-strong team of development engineers, 110 of whom specialise in hydraulics. And it's not just the people who make the difference - it's the high-quality manufacturing equipment and testing processes they have at their fingertips:

COMPUTATIONAL FLUID DYNAMICS

This is used throughout the design process to maximise efficiency by optimising the path the fluid takes through each component in order to reduce pressure drops.

DECREASING FRICTION

Our engineers have developed a process to minimise metal-to-metal contact, designing and building custom heat treatment machinery that is now used in the component manufacturing process.

NOISE REDUCTION

Kawasaki's on-site anechoic chamber allows the team to accurately determine the sound pressure levels of every component.

Excavators

Kawasaki has been supplying hydraulic components to the excavator market since the 1960s. And since then, thanks to our consistent focus on R&D, our engineers have been **consistently setting new standards for efficiency and control** in hydraulic pumps.



/// KMX



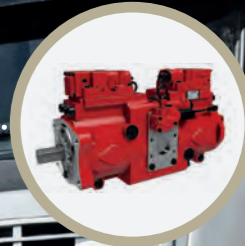
/// MCB Motor



/// KC-MC



/// M5X



/// K7V



/// Multiple Pilot Valves

Excavator range

Today's construction industry

In order to stay competitive, today's construction clients want the benefits that come from total systems solutions. We've responded by developing a range of hydraulic motors and control valves to work in unison with our hydraulic pumps. Used together, these products give operators immense power coupled with precise control. Now, delicate soil grading, trenching, rock breaking or demolition can all be carried out with market-leading efficiency.

/// KMX Valves

Main control valves for negacon, posicon and electronic posicon control systems

/// Pilot Controllers

Hydraulic and electric joysticks and foot controls

/// KC-MC

Electronic system control unit

/// M5X Motor

Swash plate type axial piston motor with reduction gear

/// MCB Motor

Swash plate type axial piston travel motor

/// K7V Pump

Tandem axial piston pump

Wheel loaders

Even in the most arduous conditions, Kawasaki's control valves, pumps and hydrostatic transmission give your operator **all the precision they need.**

Wheel loader range

/// M7V



/// **K3VL / K3VLS Pumps**

Swash plate type axial piston pumps for fan drive and working hydraulics

/// **K8V Pump**

Axial piston pump for HST System

/// **KC-FS**

Electronic system control unit for HST system

/// **KLW Valve**

Flow-sharing, load-sensing main control valve with ride control feature

/// **M7V**

High speed axial piston motor for HST system

/// KLW



/// K8V

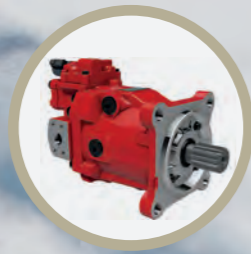


/// KC-FS



/// K3VL / K3VLS





/// M7V



/// K3VL



/// KLSV



/// M5X

Rough terrain cranes

When your terrain is challenging and your lifting is intricate, you can **rely on Kawasaki's hydraulic engineering** to give you the control and power you need. Combine our high-pressure pumps, motors for winching and precise control valves for real performance.

Rough terrain crane range

- /// **M7V**
High speed axial piston motor for winch drive
- /// **KLSV**
Load sensing main control valves

- /// **K3VL Pump**
Swash plate type axial piston pump
- /// **M5X**
Swash plate type axial piston motor for swing

Telehandlers

No matter how demanding the job, our products will ensure your telehaandler provides **maximum efficiency at all times.**

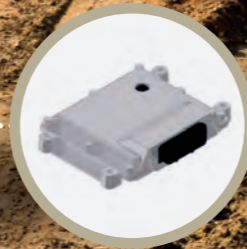
Use the components individually, or **maximise your performance by using them as a complete system.**



/// KLSV



/// ERU



/// KC-FS



/// K3VLS



/// K8V



/// M7V

Telehandler range

/// **K3VLS**

Swash plate type axial piston pump with load sensing and electronic displacement control

/// **K8V Pump**

Axial piston pump for hydrostatic transmission

/// **KC-FS**

Electronic system control unit

/// **M7V**

High speed axial piston motor for hydrostatic transmission

/// **KLSV**

Load sensing main control valves

/// **ERU**

Electrical remote control units

Concrete pump

Thanks to their high efficiency and controllability, Kawasaki's pumps, swing motors and control valves are well suited for use in concrete pumps. We use our load sensing flow sharing main control valves and swing motors with built in anti-shock valves to give your operators precision control of the boom position.

- /// **K3VLS**
Swash plate type pump for load-sensing control system
- /// **M5X**
Swash plate type axial piston motor with built in parking brake
- /// **KLSV**
Load sensing flow sharing main control valve with electrohydraulic actuation
- /// **K3V**
High pressure axial piston pump to drive concrete pumping unit

Concrete pump range



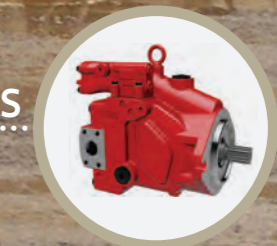
/// **KLSV**



/// **K3V**



/// **M5X**



/// **K3VLS**



Kawasaki's complete range

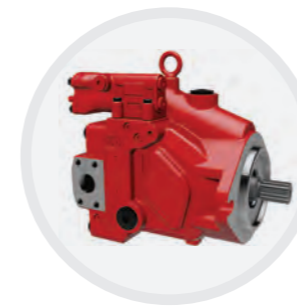
Built for **quality, efficiency and technological excellence**, Kawasaki's components are setting a new standard in construction machinery.

You can use our products individually, but for maximum machine efficiency, we highly recommend using them to **build a total system solution**:

- /// Superior controllability
- /// Greater efficiency
- /// Light and compact
- /// Low noise
- /// High reliability and long life

Hydraulic pumps

Based on Kawasaki Precision Machinery's expertise in hydraulic systems for excavators, our pumps are ideal for your construction machinery, including telehandlers, backhoe loaders and wheel loaders.



K3VLS Pump Axial piston pump

Lighter and more compact than competitor products, the K3VLS Axial Piston Pump has been developed for machines and equipment that use load-sensing or electronic control systems. Its launch follows extensive research and development as our engineers combined efficiency with simplicity to deliver the most technologically advanced medium pressure pump on the market. While most variable displacement axial piston pumps suffer a dramatic drop in efficiency at lower displacements, the K3VLS demonstrates best-in-class efficiency across the full operating range.

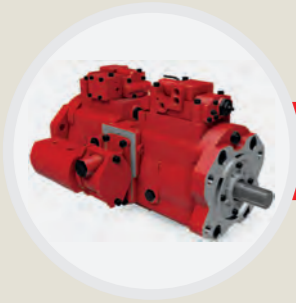
Type		K3VLS50	K3VLS65	K3VLS85	K3VLS105	K3VLS 125/150
Displacement (cc/rev)		50	65	85	105	125/150
Pressure (bar)	Rated	280				
	Peak	350				
Speed (rpm)	Max.	2,600	2,600	2,500	2,300	2,200



K3VL Pump swash plate type pump

The K3VL Series swash plate type axial piston pumps are designed to satisfy a variety of construction and off-highway applications where a medium to high pressure variable displacement pump is required.

Model		K3VL28	K3VL45	K3VL60	K3VL80	K3VL112	K3VL140	K3VL200	K3VL200H
Displacement (cc/rev)		28	45	60	80	112	140	200	200
Pressure (bar)	Rated	320		250	320				
	Peak	350		280	350				
Speed (rpm)	Max. for self priming	3,000	2,700	2,400	2,400	2,200	2,200	1,900	2,200
	Max.	3,600	3,250	3,000	3,000	2,700	2,500	2,200	2,200

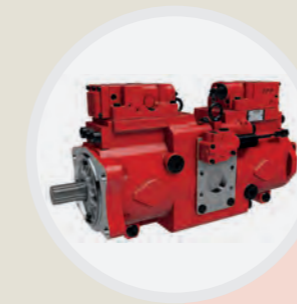


K3V Pump swash plate type axial piston pump

Kawasaki's K3V series pumps, which now include tandem type with PTO and Parallel configuration, are a first-choice option for those wanting a reliable power source for their construction machines. Choose from a variety of rotary group layouts.

Model		K3V63	K3V112	K3V140	K3V280
Displacement (cc/rev)		63	117	140	280
Pressure (bar)	Rated	343			
	Peak	392			
Speed (rpm)	Max. for self priming	2,650	2,360	2,150	2,000*
	Max.	3,250	2,700	2,500	2,000

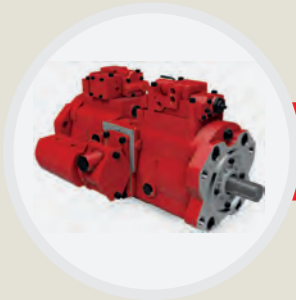
*with centrifugal pump



K7V Pump swash plate type axial piston pump

When your installation space is small, the K7V pump is an excellent choice. By optimising clearance and stabilising cylinder rotation, the pump delivers exceptionally high efficiency. Kawasaki's on-site anechoic chamber has helped our engineers achieve remarkable noise reduction, while the large capacity of bearing and the thicker shaft reduces the load on the edge of the bearing rollers to dramatically increase its life.

Model		K7V63	K7V125	K7V140	K7V160	K7V180	K7V280
Displacement (cc/rev)		63	130	140	160	180	280
Pressure (bar)	Rated	350					
	Peak	400					
Speed (rpm)	Max. for self priming	2,650	2,360	2,200	2,100	2,000	1,800
	Max.	3,250	2,700	2,500	2,350	2,300	2,000



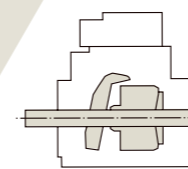
K5V Pump swash plate type axial piston pump

Thanks to new technology, the K5V series now provides an even higher power density. This series can easily handle enlargement of displacement despite having the same installation dimensions and regulator variations as the K3V. Our K5V pumps reliably deliver industry-leading reliability and a long life, meeting the requirements of larger torques.

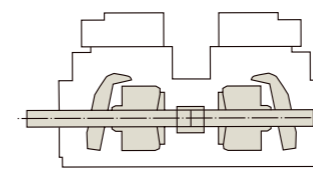
Model		K5V80	K5V140	K5V160	K5V200	K5V212
Displacement (cc/rev)		80	140	160	200	214
Pressure (bar)	Rated	343				350
	Peak	392				400
Speed (rpm)	Max. for self priming	2,460	2,160	2,000 (2,350)*	1,900 (2,200)*	2,000*
	Max.	3,000	2,500	2,350	2,200	2,000

*with centrifugal pump

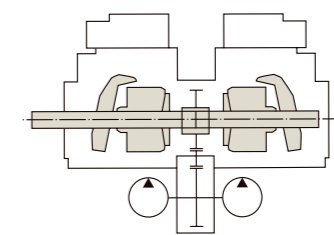
Pump configuration



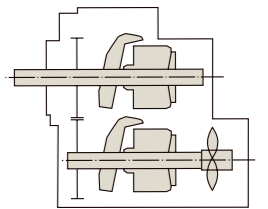
Single type
63-280cc/rev



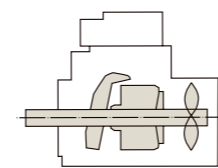
Tandem type
63-200cc/rev



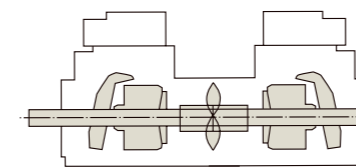
Tandem type with PTO
63-280cc/rev
* Only configuration available for K7V



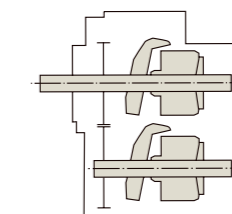
Parallel type with centrifugal pump
200/212cc/rev



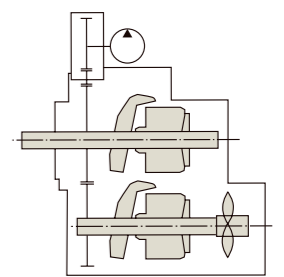
Single type with centrifugal pump
160-280cc/rev



Tandem type with centrifugal pump
160-280cc/rev



Parallel type
112/60cc/rev



Parallel type with centrifugal pump & PTO
200/212cc/rev



K7SP Pump Swash plate type axial piston pump

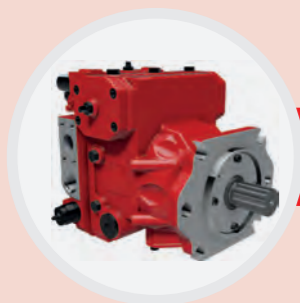
Our K7SP36 swash plate type axial piston pump is a compact, double pump for mini excavators and other industrial vehicles. Choose to install a variable displacement pump, gear pump or even a common-suction type on the pump end. We've combined the latest technology with research to produce a pump that delivers exceptionally low noise.

Model		K7SP36
Displacement (cc/rev)		36x2
Pressure (bar)	Rated	300
	Peak	320
Max. speed for self priming (rpm)		2,300



Hydraulic motors

Kawasaki's range of swash plate type axial piston motors are ideally suited to all types of construction machinery. They include versions optimised for use in swing drives and hydrostatic transmissions and their **best in class efficiency and performance** result in improved machine productivity.



K8V Closed loop axial piston pump

The K8V series is Kawasaki's new closed loop pump with excellent controllability and superior efficiency. It is used in HST system on a variety of off-highway machinery.

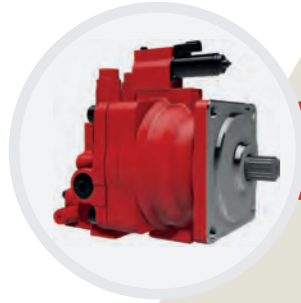
Type		K8V71	K8V90	K8V125
Displacement (cc/rev)		71	90	130
Pressure (bar)	Rated	400		
	Peak	450		
Speed (rpm)	Max.	3,300	3,050	2,850



M7V High speed axial piston motor

The M7V series is a high-speed variable displacement swash plate type axial piston motor. It's excellent reliability, low noise and high efficacy make it a best-in-class choice for HST system, drill rigs and crane winch systems.

Type		M7V85	M7V112	M7V160	M7V212
Displacement (cc/rev)		88.5	112	160	215
Pressure (bar)	Rated	400			
	Max.	450			
Max. Speed (rpm)	at q max	3,900	3,550	3,100	2900
	at $q_1 < 0.6q_{max}$	6150	5600	4900	4600 ($q_1 < 0.4q_{max}$)



M5X swash plate type axial piston motor

The M5X series has been developed to provide a lighter weight, more compact swing drive motor. The M5X includes built-in parking brake, antishock valves, deceleration valves and brake release timing valves. It can be combined with the Kawasaki reduction gearbox to provide a complete swing drive solution.

Model		M5X50	M5X80	M5X130	M5X180	M5X250
Displacement (cc/rev)		47	79	129	180	250
Pressure (bar)	Rated	280	330	324		330
	Max.	330	400	392		400
Max. Speed (rpm)		2,200	2,200	1,850	1,680	1,520

Model	M5X50		M5X80		M5X130		M5X180		M5X250	
	RG04E	RG06D	RG08E*	RG11D	RG12E*	RG14D	RG16E*	RG20D	RG23E	RG27D
Displacement (cc/rev)	880	1,520	1,580	2,590	2,590	3,600	3,600	4,540	4,540	6,300
Max output torque (N-m)	3,800	5,400	7,250	10,700	12,200	13,800	16,500	20,700	23,400	27,000
Max. Speed (rpm)	110	115	110	92	92	84	84	67	67	60

*under development

Model	M5X130 -RG17C27	M5X130 -RG23C34	M5X180 -RG17C27	M5X180 -RG23C34
Displacement (cc/rev)	3,350	4,380	4,630	5,740
Rated Pressure (bar)	302	322	230	245
Theoretical output torque N-m (Kg-f-m)	17,000 (1,730)	22,400 (2,280)	17,000 (1,730)	22,400 (2,280)
Service Brake	Handbrake	Handbrake	Handbrake	Handbrake



M3X/M3B swash plate type axial piston motor

The M3X/M3B series is a swash plate type axial piston motor with a good self-priming capability and high starting efficiency. It has been developed following Kawasaki's long history of designing swash plate type pumps and motors.

Model		M3B200	M3B280	M3B530	M3B800	M3X200	M3X280	M3X530	M3X800
Displacement (cc/rev)	Max.	195	280	533	800	195	280	533	800
	Min.	106	93	178	267				
Pressure (bar)	Rated	320	294		294				
	Max.	350	343		343				
Max. Speed (rpm)	Max.	1,900	1,700	1,400	1,200	1,900	1,700	1,400	1,200
	Min.	2,400	2,200	1,700	1,500				



MCB swash plate type axial piston motor

We've based our MCB motor on our extremely popular DNB series. It is a built-in type dual-speed motor that sets the standard for traveling excavators and other industrial vehicles.

Model	MCB195	MCB530
Displacement (cc/rev)	195/116	530/325
Rated Pressure (bar)	343	
Max. Speed (rpm)	1,900/2,300	1,400/1,690



Valves

Our new valves offer excellent efficiency and controllability when used alone. However, when combined with our pumps and motors, you will find they provide you with even greater performance and reliability.



KLSV Load sensing main control valves

The KLSV is a series of flow-sharing, load-sensing main control valves for multifunction construction machinery. The low hysteresis and excellent pressure drop characteristics provide superior performance and efficiency.

Model		KLSV18	KLSV28*
Max. Pressure (bar)		400	350
Max. Flow (L/min)	P port	240	450
	Section	180	400
		*Differential Pressure = 1.5MPa	
Max. Number of Sections		9	7

*under development



KLW/KLR Load sensing main control valves

The **KLW** is a flow-sharing, load-sensing main control valve specifically designed for wheel loaders. Their low hysteresis and excellent pressure drop characteristics provide superior performance and efficiency.

The **KLR** is a flow-sharing, load-sensing main control valve designed for skid-steer loaders. The KLR includes a self-levelling feature which improves machine productivity.

Model		KLW28	KLR18
Max. Flow (L/min)	P port	450	180
	Section	400	150
		*Differential Pressure = 1.5 MPa	
Max. Pressure (bar)		350	270
Control		Electro-hydraulic control	-
		Hydraulic control	



KMX Main control valves for Excavator

The KMX series multiple control valves are semi-monoblock type valves designed to systematically control the actuators of an excavator. The KMX has been developed with unique and original circuits with special functions with allow straight travelling, swing priority and highly pressurised traveling, confluence and differential circuits.

Model	KMX13	KMX15	KMX32	KMX36
Max. Pressure (bar)	343			
Rated Flow (L/min)	180	300	500	550





KDRDE5K Proportional pressure-reducing valve

The KDRDE5K series valves are proportional pressure reducing of cartridge type. Available in 12 and 24 VDC versions, use it to achieve the outstanding compact control solutions.

Model	KDRDE5K
Max. Pressure (bar)	88
Max. Back Pressure (bar)	10
Max. Flow (L/min)	10



KTEM8 Proportional control valve

This proportional control valve has been designed to provide precise control of the hydraulic hitch in construction machinery. The KTEM8 provides meter in and meter out control in proportion to the input currents to the solenoids irrespective of the working pressure.

Type	KTEM8/20	KTEM8/30	KTEM8/60
Max. Pressure (bar)	210		
Rated Flow	20	30	60



KHV/KHCV Holding valve

The use of a poppet type holding part minimises leakage. Our engineers have incorporated a relief valve in this valve's design, as well as position control of the spool to enable a fine control of flow rate (KHCV series).

Model	KHV	KHCV			
		10	15	20	25
Size	10	10	15	20	25
Max. Pressure (bar)	343	350			
Rated flow (L/min)	100	60	150	250	360
Leakage (20cSt) (200 bar) (L/min)	0.005	0.0008			



KWE5K solenoid-operated directional control valve

The KWE5K series valves are solenoid-operated directional control valves that work as on/off valves for various types of pilot circuits. Their reliability and efficiency under different and challenging conditions makes them particularly suitable for construction industry machinery.

Model	KWE5K	
Max. Pressure (bar)	Port P.A	88
	Port T	10
Max. Flow Rate (L/min)	16	





ERU Series Electrical controls

The ERU Series are electrical remote control units available in joystick and pedal version. They have the same look, feel and proven performance as Kawasaki's market-leading hydraulic pilot valves.

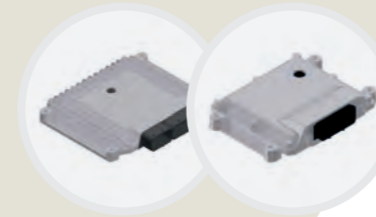
Model	ERU2	ERUP2	ERUP1	ERUS1
Type	Joystick	Twin Pedal	Single Pedal	Single Axis Lever
Temperature Range (°C)	-40 - 75			
Lever Angle (deg)	23.0	12.4	12.4	21.5
Operating Torque (Nm)	0.98-2.5	6.5-15.3	4.9-8.8	1.5-3.5
Output Type	Analog/PWM/CAN-BUS			



PV Series Pilot valves

Our PV series valves are pressure-reducing type pilot valves that allow operators to simultaneously control spools of multiple control valves as well as the tilting angle of variable displacement pumps. The operational torque can be reduced to meet your requirements (Patent registered), while the small operational force enables minute control, reduced pressure drop and quick response.

Model	PV48K	PV48M	PVD6P	PVD8P	PV6P
Inlet Pressure (max.) (bar)	70				
Outlet Pressure (max.) (bar)	0-29				
Rated Flow (L/min)	20	15	10		
Application	Excavator	Mini Excavator	(Mini) Excavator	(Mini) Excavator	Rough Terrain Crane
Features	Joystick type	Joystick type compact	Pedal for propelling with damper	Pedal for propelling with damper	Bankable type compact



KC-MC-20/KC-FS-10 series multifunction controller

The KC-MC-20/KC-FS-10 series are multifunctional controllers designed robustly for construction machinery with I/O protection and fault detection. Both products have been developed with a high degree of functionality and a large number of inputs and outputs.

Model		KC-MC-20*	KC-FS-10*
Number of Outputs	Proportional Solenoid	28 (+2)	7
	Directional Solenoid	8 (+1)	4
Number of Inputs	Analog	23	12
	Pulse	-	2
	PWM Input	9	1
	Switch	6 (+1)	7
	Resistance	3	4
Interfaces	CAN CAN-BUS	3 (+1)	2 (Maintenance:1)
	LAN	1	-

() : optional

Model		KC-MC-20*	KC-FS-10*
Power Supply Range	Nominal	24V	12V
	Available	18V~32V	9V~16V
Ambient Temperature Range	Operate	-40°C~85°C	
	Storage		
Transition Voltage (Power Supply Load Dump)		173V, 350ms, 10pulse (ISO16750-2)	173V, 350ms, 10pulse (ISO16750-2)
Radiated Immunity		100 V/m, 20MHz ~ 1GHz (ISO11452-2)	100 V/m, 20MHz ~ 1GHz (ISO11452-2)
Transient Immunity		100mA, 20MHz ~ 1GHz (ISO11452-4)	100mA, 20MHz ~ 1GHz (ISO11452-4)
Environmental Protection		IP67	IP67
Vibration Resistance		7G, 5Hz~2000Hz	7G, 5Hz~2000Hz
Safety of Machinery		-	SIL2

*under development

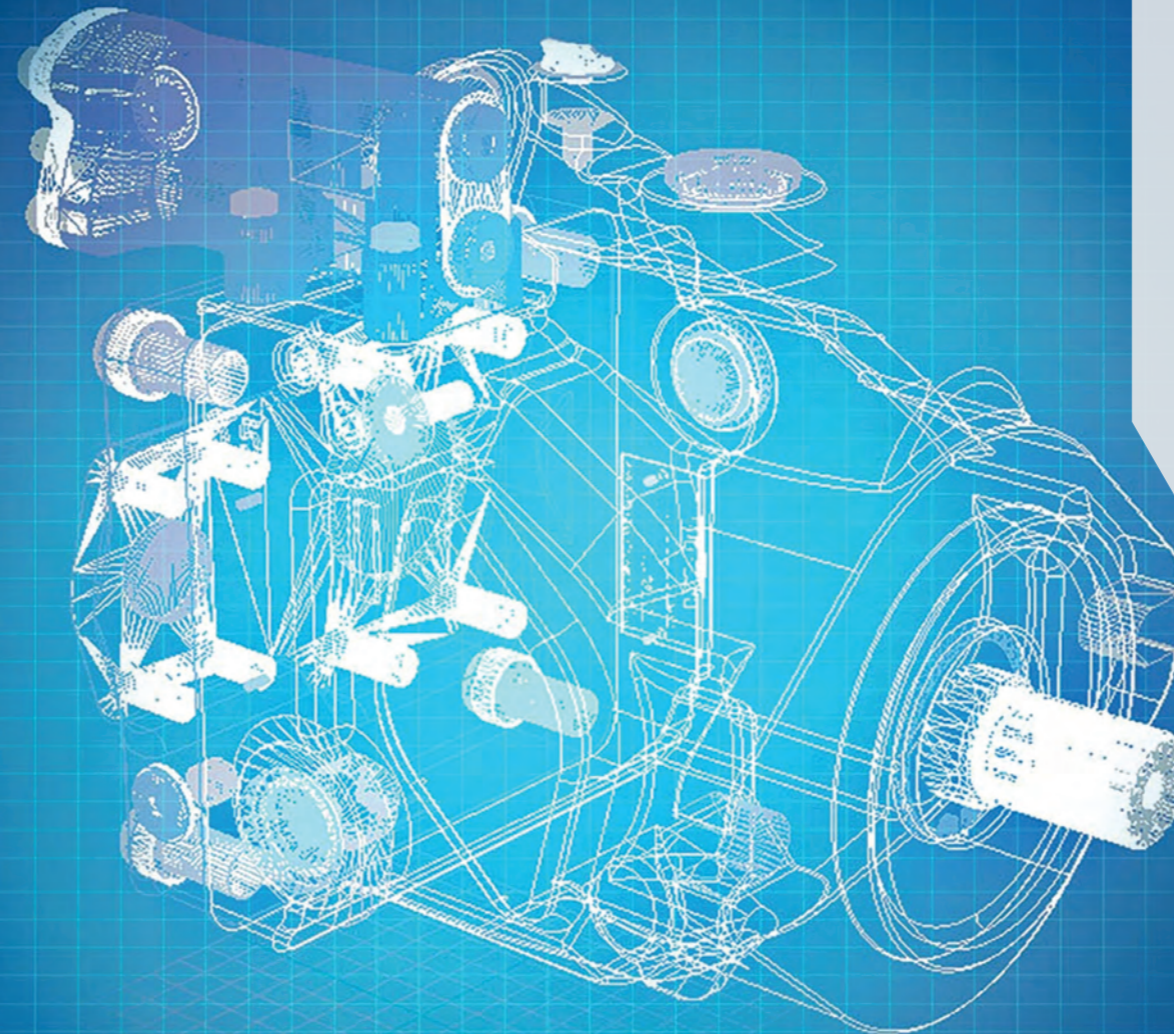
Design and innovation

Experts in design

As global leaders in hydraulics and precision machinery, our systems and individual components are based on our wealth of engineering experience right across the Kawasaki Group. Our engineers from aeronautics, marine, agriculture and many more industries collaborate not only on the big innovations, but on the smaller, incremental improvements that give our customers the efficiency and reliability they need to be competitive.

Innovative Efficient Durable

As we look to the future, we will keep building on our successes to develop the next generation of hydraulic systems and products.



Innovating for all

For the end user

We're increasing efficiency and reliability, particularly when our components are used together as a complete system.

For our customers

We're boosting efficiency and minimising waste so that our customers can reduce their costs.

For industry

We're pushing the boundaries of hydraulics, shaping the industries we work in.

For future generations

We're developing advanced technologies to help construction companies reduce their impact on the environment.

Innovative Efficient Durable

Construction / Industrial /
Marine / Agriculture / Forestry

Kawasaki Precision Machinery UK
Ernesettle Lane, Ernesettle
Plymouth PL5 2SA

Kawasaki Heavy Industries,
Precision Machinery Company
1-14-5, Kaigan, Minato-Ku Tokyo
105-8315 Japan

Kawasaki Precision Machinery (U.S.A.), Inc.
3838 Broadmoor Avenue S.E.
Grand Rapids, Michigan 49512, USA

