

V33D-250 CLOSED LOOP

Variable displacement axial piston pump type V33D closed loop, Peak pressure 420 bar

Tradition – Quality – Future

HIGH-PERFORMANCE PUMPS - MADE IN GERMANY





V33D Benefits

- ► High performance
- ► High drive speed
- ► High efficiency
- ► Low noise level
- ► Full range of controller
- ► Save directional valve, low pressure loss
- Save energy

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Type code

V33D	-250	R	D	G	Ν	-2	-1	-1	-2	-XX	/VH	-200	-350	
V33D	-250	R	D	G	N	-2 Housing V 1 no thr 2 thru-s	-1 Swash an 0 none 1 with in 2 with p version ru-shaft haft	-1 Boost uni 0 withou 1 with ir 2 with ir gle indicator ivoting and	-2 Setting u 1 unilat 2 doubl mech t ut interme diat ntermediat or gle pick up	-XX HAWE InL nit teral setting le-sided set anical feed diate flange te flange an te flange	/VH Controlle Line serial in unit with : ting unit w back and Feed d Feed- / E	-200 Torque se KW at rpr r see tab. no. zero center vith zero center d- / Boost pump	-350 Pressure etting (Nm m) ing ntering & ump	(bar) /
					Seal N NBR V FKM C FKM s	suitable for	HFC, see r	estrictions						
				G DIN F SAE	rsion									
			Shaft vers D spline K key sh S spline	sion shaft haft / Parall shaft for S	allel key r SAE									
	Rotation direction L counter-clockwise R clockwise													
	Nominal s	size												
Basic type	e													

Main characters closed loop						
Working principle	iple Variable displacement axial piston pump acc. to swash plate principle					
Installation	Flange or bracket mounting					
Direction of rotation	Clockwise / Counter-clockwise					
Mounting position	Optional					
Pressure fluid	Hydraulic fluid (DIN 51524 table 2 and 3); ISO VG 10 to 68 (DIN 51519) Viscosity range: min. 10; max. 1000 mm2/s, optimal operation range: 1035 mm2/s Also suitable are biodegradable pressure fluids of the type HEES (synth. Ester) at operation tempe- ratures up to +70°C.					
Temperature	Ambient: -40 +60°C Fluid: -25+80°C, pay attention to the viscosity range! Start temperature down to -40°C are allowable (Pay attention to the viscosity range during start!), as long as the operation temperature during consequent running is at least 20K (Kelvin) higher.					
Filtration	19/17/14 conform to ISO 4406					

Lob Control	lor ono	oldo d	lion	lagamont
- I dU. COHUO	пегопе	SILLE U	150	асещен

Coding: Discription:

- ...V The controller V is used to control flow or speed in electronic or computer controlled systems. The V controller consists of a proportional solenoid acting on a servo valve that determines the position of the pump setting piston. The displacement of the pump is proportional to the current through the 24 V DC solenoid (about 250 750 mA). In order to minimize valve hysteresis, a pulse width modulated control signal of approx. 80-100 Hz frequency is recommended.
- ...VH The VH is a flow controller. It is similar to the V controller but the control signal is hydraulic. The required signal range is 7...32 bar (215...725 psi). The pump displacement is determined by the control signal (refer to the diagram). Pilot pressure can be supplied either from the system through a pressure reducing valve, or from an auxiliary pump. The pump should provide a pulsating flow of about 100 Hz; gear pump with 7 teeth and 750 rpm f the system pressure is below 40...60 bar (580...870 psi) (depending on size) a small auxiliary pump is required to secure proper functioning of the controller.

...N Pressure controller, adjustable directly at the pump. Pressure controller automatically maintains a constant system pressure independant of the required flow. Therefore it is suited for constant pressure systems, where differing flow is required or as efficient pressure limitation of the hydraulic system.

...P Remotely adjustable pressure setting; the pressure is set with a pilot relief valve. The pilot relief can be positioned up to 20 m (60 ft) from the pump.

...L The V33 D pump with power controller is used in applications with highly varying pressure demands and where it is important to protect the electric motor (engine) from overload. The controller limits the hydraulic power (at constant shaft speed) according to the ideal curve "pressure x flow = constant". The product of pressure and flow cannot exceed the pre-set power value. If, for example, the pressure doubles (at max power) the flow is automatically reduced by 50%.

- ...Lf Means that there is a hydraulic displacement limiter included. The displacement can be increased by a pilot pressure from an outside source. ...Lf1 Means that there is a hydraulic displacement limiter included.
- The displacement can be reduced by a pilot pressure from an outside source.

Tab. Controller double side displacement:

Coding: Discription:

- ...V The controller V is used to control flow or speed in electronic or computer controlled systems. The V controller consists of a proportional solenoid acting on a servo valve that determines the position of the pump setting piston. The displacement of the pump is proportional to the current through the 24 V DC solenoid (about 250 750 mA). In order to minimize valve hysteresis, a pulse width modulated control signal of approx. 80-100 Hz frequency is recommended.
- ...VH The VH is a flow controller. It is similar to the V controller but the control signal is hydraulic. The required signal range is 7...32 bar (215...725 psi). The pump displacement is determined by the control signal (refer to the diagram). Pilot pressure can be supplied either from the system through a pressure reducing valve, or from an auxiliary pump. The pump should provide a pulsating flow of about 100 Hz; gear pump with 7 teeth and 750 rpm is recommended. If the system pressure is below 40...60 bar (580...870 psi) (depending on size) a small auxiliary pump is required to secure proper functioning of the controller.
- ...N Pressure controller, adjustable directly at the pump. Pressure controller automatically maintains a constant system pressure independant of the required flow. Therefore it is suited for constant pressure systems, where differing flow is required or as efficient pressure limitation of the hydraulic system.
- ...P Remotely adjustable pressure setting; the pressure is set with a pilot relief valve. The pilot relief can be positioned up to 20 m (60 ft) from the pump.

technical data					
Max. swash plate angle	± 17,5°				
Min. inlet pressure (absolute) for Feed- and Servo pump abs	0,85 bar abs				
Max. speed rpm	2000 rpm				
Min. continuous speed rpm	500 rpm				
Torque (theor.) at 1000 psi	414 Nm				
Input power at 250 bar and 1450 rpm	180 kW				
Weight (approx. kg) without Servo pump / with Servo pump	168 kg / 180 kg				
Moment of inertia	0,085 kg/m²				
L10 bearing life at 250 bar/1450 rpm and max. displacement	23000 h				
Max. dynamic torque	Spline shaft (D) input 3100 Nm Spline shaft (D) output 1550 Nm Key shaft (K) input 1550 Nm Spline shaft (S) input 1200 Nm Spline shaft (S) output 1000 Nm				
Noise level at 250bar; 1450 rpm and max. displacement (measured in a semi-anechoic room according DIN ISO 4412/distance 1m	77 dB(A)				

History

V33D pump closed loop: HAWE InLine is closing a gap

Axial piston pump from Berlin are well known for demanding heavy-duty and high pressure applications since decades. The enlargement of our product range to truck-mounted pumps has been our focus during the last years. Currently we are working on integrating medium pressure pumps and this makes our product range of variable axial-piston pumps quite complete – but so far only in open loop applications.



Nowadays our pumps are running with pressurized suction and mooring operation as well as bi-directional use, however the real operation in full size closed loop systems we know only from our past: pumps from Berlin have experienced as VOLVO-pumps various applications and installations in closed loop.

We built on this experience when it came to the demand on closing the gap in today product portfolio. Based on our actual serial design we do have V33D-250 available now – our new pump for closed loop. We combined leading technology from our heavy duty product range together with existing experience in Berlin and latest demand for pumps running in full four quadrant operation.





What's new at V33D?







Valve plate and end housing for high pressure on both sides



Version for one (right) direction of rotation

Applications



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