



Brueninghaus Hydromatik Rexroth A11VLO pump and A11VO pump

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A11VLO40, A11VLO60, A11VLO75, A11VLO95, A11VLO130, A11VLO145, A11VLO190, A11VLO260.
 A11VO40, A11VO60, A11VO75, A11VO95, A11VO130, A11VO145, A11VO190, A11VO260
 Control devices: LR, LG, DR, DRS, DRG, LRDS, DRS, HD, EP, etc.



Open circuit

Nominal pressure 5100 psi (350 bars)

Maximum pressure 5800 psi (400 bars)

The A11VLO, A11VO variable axial piston pump of swash plate design for hydrostatic drives in open circuit hydraulic system.

Designed primarily for use in mobile applications.

The pump operates under self-priming conditions, with tank pressurization, or with an optional built-in charge pump (impeller).

A comprehensive range of control options is available matching any application requirement.

Power control option is externally adjustable, even when the pump is running.

The through drive is suitable for adding gear pumps and axial piston pumps up to the same size, i.e. 100% through drive.

SAE mounting flange.

Output flow is proportional to drive speed and pump displacement and is sleeplessly variable between maximum and zero.

Technical Data

Table of values (theoretical values, without efficiency and tolerances; values rounded)

Rexroth A11VO A11VLO Pump	Des.	A11VLO40	A11VLO60	A11VLO75	A11VLO95	A11VLO130	A11VLO145	A11VLO190	A11VLO260
		A11VO40	A11VO60	A11VO75	A11VO95	A11VO130	A11VO145	A11VO190	A11VO260
Disp. Vg max Vg min	ln3/rev.	2.56	3.57	4.52	5.71	7.93	8.84	11.78	15.87
	cm3	42	58.5	74	93.5	130	145	193	260
	cm3	0	0	0	0	0	0	0	0
Speed	rpm	3000	2700	2550	2350	2100	2200	2100	1800
	rpm	3500	3250	3000	2780	2500	2500	2100	2300
Flow	g/m	33.3	41.7	49.9	58.1	72.1	84.3	107	123.6
	l/min	126	158	189	220	273	319	405	468
Power at	hp	99.2	123.4	147.5	171.7	213.2	249.4	316.5	366.1
	kW	74	92	110	128	159	186	236	273
Torque at	lb-ft	172.6	240.4	303.9	384.3	534	596	792.9	1068
	Nm	234	326	412	521	724	808	1075	1448
Rotary stiffness	lb-ft/rad.	64512	79574	105548	14883	230417	230417	282702	482244
	Nm/rad.	87467	107888	143104	196435	312403	312403	383292	653835
	lb-ft/rad.	43035	63658	75173	128117	174700	174700	191599	259628
	Nm/rad.	58347	86308	101921	173704	236861	236861	259773	352009
	lb-ft/rad.	54931	75556	92640	–	–	–	222691	418282
Moment of inertia for rotary group	kgm2	74476	102440	125603	–	–	–	301928	567115
	lbs-ft2	0.1139	0.1946	0.2729	0.4105	0.7546	0.8092	1.3052	2.0835
Angular acceleration	rad./s2	0.0048	0.0082	0.0115	0.0173	0.0318	0.0341	0.055	0.0878
	rad./s2	22000	17500	15000	13000	10500	9000	6800	4800
Filling capacity	gal	0.29	0.36	0.49	0.55	0.77	0.77	1	1.22
	L	1.1	1.35	1.85	2.1	2.9	2.9	3.8	4.6
Mass	lbs	71	88	99	117	145	168	209	276
	kg	32	40	45	53	66	76	95	125



Hydraulic fluid

We request that before starting a project detailed information about the choice of pressure fluids and application conditions are taken from our catalogue sheets RE 90220 (mineral oil), RE 90221 (environmentally acceptable hydraulic fluids) and RE 90223 (fire resistant hydraulic fluids, HF). When using HF- or environmentally acceptable hydraulic fluids possible limitations for the technical data have to be taken into consideration. If necessary please consult our technical department (please indicate type of the hydraulic fluid used for your application on the order sheet). The operation with HFA, HFB and HFC hydraulic fluids requires additional special measures.

Details regarding the choice of hydraulic fluid

The correct choice of hydraulic fluid requires knowledge of the operating temperature in relation to the ambient temperature: in an open circuit the tank temperature. The hydraulic fluid should be chosen so that the operating viscosity in the operating temperature range is within the optimum range (vopt.) – see the shaded area of the selection diagram. We recommended that the higher viscosity class be selected in each case. Example: At an ambient temperature of X°C an operating temperature of 60°C is set. In the optimum operating viscosity range (vopt; shaded area) this corresponds to the viscosity classes VG 46 and VG 68; to be selected: VG 68. Please note: The case drain temperature, which is affected by pressure and speed, is always higher than the tank temperature. At no point in the system may the temperature be higher than 115°C.

Charge pump (impeller)

The charge pump is a circulating pump with which the A11VLO (size 130...260) is filled and therefore can be operated at higher speeds. This also simplifies cold starting at low temperatures and high viscosity of the hydraulic fluid. Tank charging is therefore unnecessary in most cases. A tank pressure of a maximum 2 bar is permissible with charge pump.

Case drain pressure

The case drain pressure at the ports T1 and T2 may be a maximum of 17.5 psi (1.2 bar) higher than the inlet pressure at the port S but not higher than PL abs. max 30 psi (2 bar). An unrestricted, full size case drain line directly to tank is required.

Temperature range of the shaft seal ring

The FKM shaft seal ring is permissible for case drain temperatures of -13 °F to 240 °F (-25 °C to +115 °C).

Note: For applications below -13 °F (-25 °C), an NBR shaft seal ring is necessary (permissible temperature range: -40 °F to 194 °F (-40 °C to +90 °C).

DR Constant Pressure Control

The constant pressure control maintains the pressure in a hydraulic system constant within its control range in spite of changing pump flow requirements. The variable pump supplies only the volume of fluid required by the consumer. Should operating pressure exceed the set pressure, the pump is automatically swiveled back to a smaller angle and the deviation in control corrected.

In un-operated (zero pressure) condition, the pump is swiveled to its starting position (Vg max) by means of a control spring.

LR Constant Power Control

The constant power control controls the output volume of the pump in relation to the operating pressure so that, at a constant drive speed, the preset drive power is not exceeded.

Operating pressure applies a force on a piston within the control piston on to a rocker arm. An externally adjustable spring force is applied to the other side of the rocker arm to determine the power setting. Should the operating pressure exceed the set spring force, the pilot control valve is operated via the rocker arm, allowing the pump to swivel towards zero output. This in turn reduces the effective moment on the arm of the rocker, thus allowing the operating pressure to rise in the same ratio by which the output flow is reduced.

LRDS Power control with pressure cut-off and load sensing

The load sensing control is a flow control option that operates as a function of the load pressure to regulate the pump displacement to match the actuator flow requirement.

The flow depends here on the cross section of the external sensing orifice fitted between the pump outlet and the actuator. The flow is independent of the load pressure below the power curve and the pressure cut-off setting and within the control range of the pump.

The sensing orifice is usually a separately arranged load sensing directional valve (control block). The position of the directional valve piston determines the opening cross section of the sensing orifice and thus the flow of the pump.

The load sensing control compares pressure before and after the sensing orifice and maintains the pressure drop across the orifice (differential pressure) and with it the pump flow constant.

LRC Override with cross sensing

Cross sensing control is a summation power control system, whereby the total power, of both the A11VLO pump or A11VO pump and of a same size A11VO or A11VLO pump power controlled pump mounted onto the through drive, are kept constant.

If a pump is operating at pressures below the start of the control curve setting, then the surplus power not required, in a critical case up to 100 %, becomes available to the other pump. Total power is thus divided between two systems as demand requires.

Any power being limited by means of pressure cut-off or other override functions is not taken into account.

Half side cross sensing function When using the LRC control on the 1st pump A11VO or A11VLO pump and a power-controlled pump without cross sensing attached to the through drive, the power required for the 2nd pump is deducted from the setting of the 1st pump. The 2nd pump has priority in the total power setting. The size and start of control of the power control of the 2nd pump must be specified for rating the control of the 1st pump.

HD Hydraulic Control, Pilot Pressure Related

The pilot pressure related hydraulic control allows steeples setting of the pump displacement in relation to pilot pressure. Control is proportional to the pilot pressure applied to port Y (max. 40 bars). A pressure of 30 bars is needed for the control. The oil required for this is taken either from the high pressure or from the external adjustment pressure at port G (≥ 30 bar).

EP Electrical Control with Proportional Solenoid

Electrical control allows steeples and programmable setting of the pump displacement. Control is proportional to solenoid force (current strength). The control force at the control piston is generated by a proportional solenoid valve.

A 12V DC (EP1) or a 24V DC (EP2) supply is required for the control of the proportional solenoid.



Rexroth A11VO pump

R902050099	A11VO95DRS/10R-NSD12K82	R902094258	A11VO95LRDS/10L-NSD12N00
R902050288	A11VO190DRG/11R-NPD12K02	R902094298	A11VO130LRDS/10R-NZD12K07
R902050289	A11VO130DRS/10L-NSD12K17	R902096203	A11VO75LRDU2/10R-NSD12K01P
R902050317	A11VO40DR/10L-NZC12K01	R902097263	A11VO75LR/10R-NSD12K01
R902050335	A11VO95LG1DS/10L-NZD12N00	R902097334	A11VO40LRDS/10R-NTC12K01
R902050392	A11VO40DRG/10R-NSC12K02	R902097440	A11VO95LRDS/10L-NSD12K04
R902050449	A11VO60DRS/10R-NZC12K01	R902097555	A11VO260LRCS/11R-NZD12K07
R902051084	A11VO130LRDS/10L-NSD12N00	R902097818	A11VO260DRS/11R-NZD12K84R
R902051109	A11VO130LRDS/10R-NZD12K04	R902097819	A11VO190DRS/11R-NZD12N00R
R902051297	A11VO190LRDH1/11R-NSD12K02	R902097867	A11VO60LRDS/10R-NSC12K02
R902051353	A11VO60HD1D/10L-NZC12K61	R902097933	A11VO60LRD/10R-NSC12N00
R902051395	A11VO95HD1D/10L-NZD12K82	R902097939	A11VO260LRH1/11R-NPD12K24 K
R902051398	A11VO60DRS/10R-NSC12K04	R902097940	A11VO260LRH1/11R-NPD12K24
R902052809	A11VO75HD2D/10R-NZD12N00	R902097947	A11VO130LRD/10R-NSD12K07
R902052812	A11VO130LRDH6/10R-NZD12K83	R902099584	A11VO260LRDCH1/11R-NZD12K07V
R902052813	A11VO130LRDH6/10R-NZD12K81	R902099617	A11VO60EP2/10R-NSC12K07H
R902052934	A11VO95DRS/10L-NSD12K07	R902099820	A11VO260LRDH2/11R-NZD12K81
R902052940	A11VO95LRG/10R-NPD12N00	R902100847	A11VO95DRG/10L-NSD12K02
R902053105	A11VO190DRS/11L-NSD12K02	R902100920	AA11VO95LRDS/10R-NSD62K07
R902053107	A11VO130LRDS/10L-NZD12K02	R902100957	A11VO190EP2G/11R-NZD12K84P
R902053145	A11VO95DRS/10L-NSD12K02	R902100958	A11VO190EP2G/11R-NZD12N00P
R902053473	A11VO190DRS/11R-NPD12K84	R902100972	A11VO190EP2G/11R-NZD12K17P
R902056234	A11VO95LRDH1/10L-NZD12K02	R902102093	AA11VO60DRG/10L-NSC62N00
R902056409	A11VO95LRH2/10L-NSD12K01	R902102134	A11VO260LRDS/11R-NSD12K04
R902056421	A11VO60LR/10L-NZC12K61	R902102317	A11VO130LG2D/10L-NZD12K01 S
R902056658	A11VO260DRL/11R-NZD12K84	R902102472	A11VO145LRDH1/11R-NZD12K01
R902059487	A11VO260DRS/11L-NZD12N00	R902104058	A11VO130LRDS/10L-NZD12K83
R902059491	A11VO190DRS/11L-NZD12K84	R902104092	A11VO130EP2G/10R-NPD12K07P
R902061802	A11VO95LR3DS/10R-NZD12K07	R902104107	A11VO130LRH1/10R-NZD12K02
R902061876	A11VO130LRDS/10R-NSD12K02	R902104176	A11VO40DR/10R-NPC12K02V S
R902062514	A11VO190HD2D/11R-NSD12K04	R902104196	A11VO145LRDS/11R-NZD12K07
R902062557	A11VO95LRDS/10L-NPD12K01	R902104200	A11VO145LRDH1/11R-NSD12K52
R902062569	A11VO60LG1DS/10R-NSC12K07	R902104245	A11VO75DRG/10L-NSD12K02
R902062603	A11VO190LRDH2/11R-NZD12K01	R902104681	AA11VO95LRDS/10R-NSD62K04
R902062636	A11VO95LRS/10R-NZD12K01	R902104963	A11VO95LE2S/10R-NZD12K82H
R902062876	A11VO95DRL/10R-NPD12N00	R902105096	A11VO130LRDS/10R-NSD12K07 ES
R902063128	A11VO260LRDS/11R-NPD12N00	R902105103	A11VO145LRDS/11R-NZD12K01
R902063137	A11VO60DR/10L-NSC12K07	R902105139	A11VO95LR3S/10R-NZD12K82
R902063171	A11VO260DR/11R-NZD12N00	R902105149	A11VO190DR/11R-NSD12N00
R902063284	A11VO40DRS/10L-NSC12K02	R902105174	A11VO130LG2D/10L-NZD12K01
R902063323	A11VO130LRDS/10R-NSD12K01	R902105335	A11VO190DRG/11R-NZD12K84
R902064306	A11VO260DRS/11R-NZD12K67	R902105412	A11VO75DRL/10L-NSD12K07
R902064473	A11VO260LRDU2/11R-NPD12K67VH S	R902105416	A11VO95DRS/10R-NZD12K61
R902064562	A11VO190LRD/11R-NPD12N00	R902106175	A11VO260DRS/11L-NZD12K67
R902064582	A11VO190LRDS/11R-NSD12N00	R902106193	A11VO95EP2D/10L-NSD12K02P S
R902064882	A11VO130DRS/10L-NSD12K02	R902106276	A11VO75LRDS/10R-NSD12N00 S
R902064919	A11VO95DR/10R-NSD12N00	R902106318	A11VO260LRDS/11R-NPD12K24 K
R902066018	AA11VO190LG2S/11R-NZGXXK80R S	R902108257	A11VO145LRDS/11R-NZG12K83
R902066206	A11VO260DRL/11L-NZD12K84	R902108274	A11VO145LRDS/11R-NZD12N00
R902066245	A11VO95DRS/10L-NSD12K04	R902108328	A11VO95LE2S2/10L-NZD12N00P
R902066279	A11VO95DRS/10R-NSD12N00 S	R902108380	A11VO190LRDS/11R-NPD12K83
R902066766	A11VO95LRDS/10R-NSD12K07	R902108393	A11VO145LRDS/11R-NZD12K17
R902066783	A11VO260DRG/11R-NSD12K02	R902108414	A11VO145DRS/11R-NPD12N00
R902066872	A11VO190LRS/11R-NZD12K02	R902110516	A11VO145LRDS/11L-NZD12K83
R902067138	A11VO95DRS/10R-NZD12K82	R902110517	A11VO145DRS/11L-NSD12N00
R902067288	A11VO75LR/10R-NSD12N00	R902110978	A11VO75EP2G/10R-NZD12K81P
R902067317	A11VO260LRH2/11R-NPD12N00	R902112468	A11VO130DRL/10R-NSD12K17
R902068245	A11VO95DRS/10R-NZD12K79	R902112469	A11VO130DRL/10R-NSD12K04
R902068353	A11VO260DRL/11R-NPD12K67	R902112495	A11VO75LRDS/10L-NZD12K02
R902068354	A11VO260DRL/11R-NZD12N00	R902112552	A11VO190DRG/11L-NTD12N00
R902068372	A11VO145LR3DS/11R-NZD12K01	R902112587	A11VO130DRL/10L-NZD12K82
R902068394	A11VO260DRS/11R-NPD12K83	R902112591	A11VO75EP2G/10R-NZD12K01P
R902069145	A11VO60LRD/10L-NSC12N00	R902112749	A11VO95DRG/10R-NPD12N00R
R902069239	A11VO260LRGH6/11L-NZD12K84R S	R902112885	A11VO130DRS/10R-NZD12K82
R902070003	A11VO190LR/11L-NPD12N00	R902117017	A11VO95LRD/10R-NSD12K07
R902070008	A11VO190LR3D/11R-NZD12N00	R902117207	AA11VO95LE1S/10R-NSD62K17P
R902070143	A11VO260LRDCH1/11R-NZD12K67V	R902117208	AA11VO95LE1S/10R-NSD62K02P
R902070144	A11VO260LRDCH1/11R-NZD12N00V	R902117347	A11VO190DRS/11R-NZD12K83
R902070183	A11VO130LRDH1/10R-NZD12K01	R902117425	A11VO95LRDS/10R-NZG12K01
R902070282	A11VO95DRG/10R-NPD12K01	R902117465	A11VO95LRS/10L-NZD12N00 S
R902071539	A11VO95HD1D/10L-NZD12K01	R902118040	A11VO190LR/11R-NPD12K24 S
R902071783	A11VO130DRS/10R-NZD12K01	R902118095	A11VO95LE1X/10R-NZG12K04X S
R902073004	A11VO40DRG/10R-NSC12K01	R902118356	A11VO60LRDH1/10R-NSC12K01
R902073074	A11VO260LRDS/11R-NPD12K24	R902118358	A11VO190LRDU2/11R-NPD12K01P
R902073239	A11VO60DR/10R-NSC12K01	R902118445	A11VO145DRS/11R-NZD12K81
R902073261	A11VO190DRG/11L-NTD12K02	R902118450	A11VO40EP2D/10L-NZC12K02P
R902073301	A11VO95HD2D/10R-NZD12K07	R902118472	A11VO60HD1D/10R-NSC12N00
R902073434	A11VO260DRL/11L-NZD12N00 S	R902119004	A11VO60HD1D/10R-NZC12N00
R902073437	A11VO130DRL/10L-NZD12N00 S	R902119011	A11VO130LE1X/10R-NZG12K61X S
R902073480	A11VO190LRDH1/11L-NZD12N00	R902119013	A11VO145LE1X/11R-NZG12K01X S
R902074455	A11VO190DRS/11L-NZD12K24	R902119063	A11VO145LRDG/11R-NPD12N00V
R902074543	A11VO190DR/11R-NPD12K01	R902119065	A11VO60EP2S/10R-NZC12K61H
R902074547	A11VO190DRG/11R-NPD12K04	R902119066	A11VO60EP2S/10R-NZC12N00H
R902074580	A11VO145LRDS/11R-NSD12K02	R902119067	A11VO60LRS/10R-NZC12K61
R902074696	A11VO130LR3S/10R-NZG12K01	R902119068	A11VO60LRS/10R-NZC12N00



R902074753	A11VO95DRS/10R-NZD12K17	R902119074	A11VO75HD1D/10L-NZD12K01
R902074791	A11VO130DRS/10L-NZD12K02	R902119075	A11VO75HD1D/10L-NZD12K04
R902074825	A11VO95LRDS/10L-NSD12K02	R902119242	A11VO145LRDS/11L-NSD12N00
R902074922	A11VO95DRS/10R-NPD12K79	R902119279	A11VO260DRL/11L-NZD12K67
R902074927	A11VO190DRS/11R-NZD12K84	R902120023	A11VO190LR3S/11L-NSD12K07
R902075594	A11VO130DRS/10R-NZD12N00V	R902120127	A11VO145DRG/11R-NPD12K17V
R902075706	A11VO260DR/11R-NPD12K04	R902120184	A11VO130DRL/10L-NZD12K01
R902075792	A11VO40DR/10R-NSC12K02	R902120377	A11VO190LRDG/11R-NZD12N00
R902075795	A11VO75DRG/10L-NZD12K04	R902122049	A11VO260LRDH1/11R-NZD12K02 S
R902075846	A11VO60DRG/10L-NSC12N00	R902122262	A11VO130LRDS/10R-NZD12K61
R902075904	A11VO145LE2S/11R-NSD12K17	R902123526	A11VO145LRDS/11R-NZD12K82
R902075913	A11VO75LR3S/10R-NZD12N00	R902123615	AA11VO130DRS/10L-NSD62K02 S
R902075919	A11VO95HD2D/10R-NSD12K02	R902123779	AA11VO130DRS/10R-NSD62K02 S
R902075926	A11VO95DRG/10R-NPD12N00	R902123784	A11VO145LRDS/11R-NZD12K83
R902076667	A11VO260LRDC/11R-NZD12K67	R902079491	A11VO40DRS/10L-NSC12K04
R902076668	A11VO260LRDC/11R-NZD12K01	R902080042	A11VO145DRS/11R-NZD12N00
R902076678	A11VO130LG2D/10L-NZD12N00	R902080327	A11VO145DRS/11L-NZD12K02
R902076734	A11VO260DRS/11L-NZD12K84	R902081119	A11VO145DRL/11R-NPD12N00
R902076777	A11VO130LRDCS/10L-NZD12N00	R902081143	A11VO130LRDS/10L-NZD12K07
R902076859	A11VO190DRS/11L-NZD12K02	R902081149	A11VO40LRD/10L-NSC12N00
R902077604	A11VO75LG1H6/10L-NSD12K02	R902081397	A11VO60DRS/10L-NZC12K79
R902077642	A11VO60LG1DH2/10L-NZC12N00	R902081470	A11VO145DRS/11L-NSD12N00
R902079080	A11VO60NV/10L-XZC12K04E S	R902081765	A11VO260LRG/11R-NPD12N00
R902079120	A11VO190LRD/11R-NPD12K04	R902092472	AA11VO130DRS/10L-NSD62K17 E
R902079185	A11VO190LRH1/11R-NSD12K01	R902092494	AA11VO130DRS/10L-NSD62N00 E
R902094099	A11VO95LRDS/10R-NZD12K01	R902092607	A11VO130DRL/10R-NPD12N00 E
R902123875	A11VO260LRS/11R-NZD12K86 E	R902155743	A11VO95LRDS/10R-NSD12N00
R902127132	A11VO60LRD/10L-NSC12N00 E	R902155890	A11VO60EP2D/10R-NSC12N00P S
R902127208	A11VO130LRDS/10R-NZD12K83 S	R902157543	AA11VO130DRS/10R-NSD62K17
R902127367	A11VO40DRG/10R-NPC12N00 E	R902157545	A11VO260DRS/11L-NZD12K01
R902127447	A11VO190DRS/11R-NS12K04	R902157727	A11VO95EP2X/10L-NZD12N00P S
R902129046	AA11VO190LR3S/11L-NSD62N00	R902158110	A11VO130DRG/10R-NSD12N00
R902129048	AA11VO190LR3S/11L-NSD62K07 S	R902159250	A11VO190LRDS/11R-NSD12K04
R902129262	A11VO130EP2D/10L-NZD12K01P	R902159485	A11VO40DRG/10L-NSC12K02
R902129456	A11VO130EP2D/10R-NPD12N00VP S	R902159654	A11VO95DR/10L-NSD12K07 E
R902131376	A11VO95LRD/10L-NSD12K02	R902159989	A11VO260LRDS/11L-NSD12N00
R902131407	A11VO75LR3DS/10R-NZD12K07	R902081799	A11VO130LRDG/10R-NPD12N00V
R902131674	A11VO95LR3S/10R-NZD12N00	R902081837	A11VO190LR3DH1/11R-NZD12N00 S
R902131911	A11VO190DRS/11L-NZD12K04	R902081839	A11VO130LR3DH1/10R-NZD12N00
R902131913	A11VO145LRDH1/11R-NSD12K01	R902081840	A11VO60DRSP/10R-NZC12N00 S
R902131988	A11VO60DR/10R-NSC12K52	R902081922	A11VO60LR/10R-NSC12N00
R902133020	A11VO75HD1D/10R-NZD12K81	R902081975	A11VO60EP2D/10R-NZC12K01H
R902133022	A11VO75HD1D/10R-NZD12K01	R902083058	A11VO75LRDCS/10R-NZD12K81
R902133119	A11VO130DRG/10R-NSD12K01V	R902083059	A11VO75LRDCS/10R-NZD12N00
R902133235	A11VO190HD1/11L-NZD12K83	R902083076	A11VO260DRS/11R-NZD12K72
R902133237	A11VO130HD1/10L-NZD12K01	R902083179	A11VO40DR/10R-NZC12K02
R902133395	A11VO75DRS/10L-NZD12K04	R902083482	A11VO40DR/10L-NZC12N00
R902133415	A11VO75DRS/10R-NZD12K04	R902083622	A11VO40LE2S/10R-NZC12N00P
R902133469	A11VO95DRS/10R-NSD12N00 S	R902083854	A11VO130LR/10R-NZD12K83
R902134251	A11VO130DR/10R-NPD12N00V E	R902083935	A11VO145DRS/11L-NSD12K07
R902134256	A11VO130LRDH1/10R-NZD12K52 ES	R902083940	A11VO40DRG/10L-NZC12K02P S
R902134276	A11VO60DR/10R-NPC12N00 E	R902084780	A11VO75DR/10L-NSD12K07
R902134278	A11VO95DRS/10R-NSD12K02 S	R902084782	A11VO75DRL/10R-NPD12N00
R902134315	A11VO95LRDS/10R-NZG12K01	R902085724	A11VO60DRS/10L-NSC12K04
R902134356	A11VO145LRDS/11R-NZG12K01	R902085725	A11VO75DRS/10L-NSD12K04
R902134392	A11VO190DRG/11L-NTD12N00 E	R902085811	A11VO130DRG/10L-NSD12K17
R902134394	A11VO190DRG/11L-NTD12K02 E	R902085812	A11VO130DRG/10L-NSD12N00
R902134417	A11VO40LRG/10R-NPC12K04	R902085996	A11VO95HD1D/10L-NZD12K02
R902134475	A11VO75EP2D/10L-NZD12K81P	R902085998	A11VO95DRG/10R-NZD12N00
R902136010	A11VO190DRG/11L-NZD12K84	R902087034	A11VO145LR/11R-NPD12N00
R902136322	A11VO75DRS/10L-NSD12K52	R902087141	A11VO95LRDCS/10R-NZD12N00
R902136465	A11VO190LRDH1/11R-NZD12K52 E	R902087655	A11VO190LRDS/11R-NPD12K01
R902137276	A11VO60HD1D/10R-NZC12K61	R902088292	A11VO60HD2/10L-NZC12K07
R902137416	A11VO75LRGU2/10L-NZD12N00P	R902088402	A11VO190DRS/11L-NZD12K07
R902138675	A11VO95LRDS/10R-NSD12K17	R902089029	A11VO190DRS/11R-NSD12N00
R902138780	A11VO190DRG/11R-NPD12K02V	R902089050	A11VO60LRD/10R-NSC12K01 S
R902138800	A11VO190LR3DH1/11R-NZD12N00 E	R902089085	A11VO145LRH1/11R-NZD12K02
R902138984	A11VO260EP2D/11R-NSD12K02RP	R902089103	A11VO190LRH2/11R-NPD12K17
R902146072	A11VO60DRS/10R-NSC12K02 S	R902089104	A11VO190LRH2/11R-NSD12N00
R902146335	A11VO145DRS/11L-NSD12K04	R902089275	A11VO260LRD/11R-NPD12N00V
R902146347	A11VO95LG2D/10L-NSD12N00	R902090708	A11VO190LRDH2/11L-NZD12K84
R902146422	A11VO145LRDS/11L-NSD12N00 E	R902090762	A11VO60DRS/10L-NZC12K61
R902146455	A11VO40LRH1/10R-NSC12K01 S	R902090821	A11VO95LG2S/10R-NZD12K61 Y
R902149503	AA11VO95LRDS/10L-NSD62K07	R902092044	AA11VO95DRS/10L-NSD62K04 E
R902149605	A11VO130DRG/10R-NPD12K17V	R902092046	A11VO40DR/10R-NPC12N00 E
R902150506	AA11VO130DRS/10L-NSD62K02	R902092180	AA11VO260DRG/11R-NSD62K02 ES
R902154118	A11VO190DRG/11L-NSD12K02	R902092229	A11VO60LRDH1/10R-NZC12K52 E
R902154363	A11VO40DRL/10L-NTC12N00	R902092230	A11VO95LRDH1/10R-NZD12K52 E
R902154454	A11VO190DRS/11R-NSD12K02 S	R902092280	AA11VO95DRG/10L-VSD62N00 ES
R902154937	A11VO190LG1S/11L-NSD12N00	R902155688	A11VO75LRDS/10R-NSD12N00 S
R902155574	A11VO145LRDS/11R-NZG12K02	R902155690	A11VO75LRDS/10R-NSD12N00 S
R902155680	A11VO145LRDS/11L-NSD12K01	R902155719	A11VO145EP2D/11R-NPD12N00P

Rexroth A11VO pump

R902050099	A11VO95DRS/10R-NSD12K82	R902094258	A11VO95LRDS/10L-NSD12N00
R902050288	A11VO190DRG/11R-NPD12K02	R902094298	A11VO130LRDS/10R-NZD12K07
R902050289	A11VO130DRS/10L-NSD12K17	R902096203	A11VO75LRDU2/10R-NSD12K01P
R902050317	A11VO40DR/10L-NZC12K01	R902097263	A11VO75LR/10R-NSD12K01



R902050335	A11VO95LG1DS/10L-NZD12N00	R902097334	A11VO40LRDS/10R-NTC12K01
R902050392	A11VO40DRG/10R-NSC12K02	R902097440	A11VO95LRDS/10L-NSD12K04
R902050449	A11VO60DRS/10R-NZC12K01	R902097555	A11VO260LRCS/11R-NZD12K07
R902051084	A11VO130LRDS/10L-NSD12N00	R902097818	A11VO260DRS/11R-NZD12K84R
R902051109	A11VO130LRDS/10R-NZD12K04	R902097819	A11VO190DRS/11R-NZD12N00R
R902051297	A11VO190LRDH1/11R-NSD12K02	R902097867	A11VO60LRDS/10R-NZC12K02
R902051353	A11VO60HD1D/10L-NZC12K61	R902097933	A11VO60LRD/10R-NSC12N00
R902051395	A11VO95HD1D/10L-NZD12K82	R902097939	A11VO260LRH1/11R-NPD12K24 K
R902051398	A11VO60DRS/10R-NSC12K04	R902097940	A11VO260LRH1/11R-NPD12K24
R902052809	A11VO75HD2D/10R-NZD12N00	R902097947	A11VO130LRD/10R-NSD12K07
R902052812	A11VO130LRDH6/10R-NZD12K83	R902099584	A11VO260LRDCH1/11R-NZD12K07V
R902052813	A11VO130LRDH6/10R-NZD12K81	R902099617	A11VO60EP2/10R-NSC12K07H
R902052934	A11VO95DRS/10L-NSD12K07	R902099820	A11VO260LRDH2/11R-NZD12K81
R902052940	A11VO95LRG/10R-NPD12N00	R902100847	A11VO95DRG/10L-NSD12K02
R902053105	A11VO190DRS/11L-NSD12K02	R902100920	AA11VO95LRDS/10R-NSD62K07
R902053107	A11VO130LRDS/10L-NZD12K02	R902100957	A11VO190EP2G/11R-NZD12K84P
R902053145	A11VO95DRS/10L-NSD12K02	R902100958	A11VO190EP2G/11R-NZD12N00P
R902053473	A11VO190DRS/11R-NPD12K84	R902100972	A11VO190EP2G/11R-NZD12K17P
R902056234	A11VO95LRDH1/10L-NZD12K02	R902102093	AA11VO60DRG/10L-NSC62N00
R902056409	A11VO95LRH2/10L-NSD12K01	R902102134	A11VO260LRDS/11R-NSD12K04
R902056421	A11VO60LR/10L-NZC12K61	R902102317	A11VO130LG2D/10L-NZD12K01 S
R902056658	A11VO260DRL/11R-NZD12K84	R902102472	A11VO145LRDH1/11R-NZD12K01
R902059487	A11VO260DRS/11L-NZD12N00	R902104058	A11VO130LRDS/10L-NZD12K83
R902059491	A11VO190DRS/11L-NZD12K84	R902104092	A11VO130EP2G/10R-NPD12K07P
R902061802	A11VO95LR3DS/10R-NZD12K07	R902104107	A11VO130LRH1/10R-NZD12K02
R902061876	A11VO130LRDS/10R-NSD12K02	R902104176	A11VO40DR/10R-NPC12K02V S
R902062514	A11VO190HD2D/11R-NSD12K04	R902104196	A11VO145LRDS/11R-NZD12K07
R902062557	A11VO95LRDS/10L-NPD12K01	R902104200	A11VO145LRDH1/11R-NSD12K52
R902062569	A11VO60LG1DS/10R-NSC12K07	R902104245	A11VO75DRG/10L-NSD12K02
R902062603	A11VO190LRDH2/11R-NZD12K01	R902104681	AA11VO95LRDS/10R-NSD62K04
R902062636	A11VO95LRS/10R-NZD12K01	R902104963	A11VO95LE2S/10R-NZD12K82H
R902062876	A11VO95DRL/10R-NPD12N00	R902105096	A11VO130LRDS/10R-NSD12K07 ES
R902063128	A11VO260LRDS/11R-NPD12N00	R902105103	A11VO145LRDS/11R-NZD12K01
R902063137	A11VO60DR/10L-NSC12K07	R902105139	A11VO95LR3S/10R-NZD12K82
R902063171	A11VO260DR/11R-NZD12N00	R902105149	A11VO190DR/11R-NSD12N00
R902063284	A11VO40DRS/10L-NSC12K02	R902105174	A11VO130LG2D/10L-NZD12K01
R902063323	A11VO130LRDS/10R-NSD12K01	R902105335	A11VO190DRG/11R-NZD12K84
R902064306	A11VO260DRS/11R-NZD12K67	R902105412	A11VO75DRL/10L-NSD12K07
R902064473	A11VO260LRDU2/11R-NPD12K67VH S	R902105416	A11VO95DRS/10R-NZD12K61
R902064562	A11VO190LRD/11R-NPD12N00	R902106175	A11VO260DRS/11L-NZD12K67
R902064582	A11VO190LRDS/11R-NSD12N00	R902106193	A11VO95EP2D/10L-NSD12K02P S
R902064882	A11VO130DRS/10L-NSD12K02	R902106276	A11VO75LRDS/10R-NSD12N00 S
R902064919	A11VO95DR/10R-NSD12N00	R902106318	A11VO260LRDS/11R-NPD12K24 K
R902066018	AA11VO190LG2S/11R-NZGXXK80R S	R902108257	A11VO145LRDS/11R-NZG12K01
R902066206	A11VO260DR/11L-NZD12K84	R902108274	A11VO145LRDS/11R-NZD12N00
R902066245	A11VO95DRS/10L-NSD12K04	R902108328	A11VO95LE2S2/10L-NZD12N00P
R902066279	A11VO95DRS/10R-NSD12N00 S	R902108380	A11VO190LRDS/11R-NPD12K83
R902066766	A11VO95LRDS/10R-NSD12K07	R902108393	A11VO145LRDS/11R-NZD12K17
R902066783	A11VO260DRG/11R-NSD12K02	R902108414	A11VO145DRS/11R-NPD12N00
R902066872	A11VO190LRS/11R-NZD12K02	R902110516	A11VO145LRDS/11L-NZD12K83
R902067138	A11VO95DRS/10R-NZD12K82	R902110517	A11VO145DRS/11L-NZD12N00
R902067288	A11VO75LR/10R-NSD12N00	R902110978	A11VO75EP2G/10R-NZD12K81P
R902067317	A11VO260LRH2/11R-NPD12N00	R902112468	A11VO130DRL/10R-NSD12K17
R902068245	A11VO95DRS/10R-NZD12K79	R902112469	A11VO130DRL/10L-NSD12K04
R902068353	A11VO260DRL/11R-NPD12K67	R902112495	A11VO75LRDS/10L-NZD12K02
R902068354	A11VO260DRL/11R-NZD12N00	R902112552	A11VO190DRG/11L-NTD12N00
R902068372	A11VO145LR3DS/11R-NZD12K01	R902112587	A11VO130DRL/10L-NSD12K82
R902068394	A11VO260DRS/11R-NPD12K83	R902112591	A11VO75EP2G/10R-NZD12K01P
R902069145	A11VO60LRD/10L-NSC12N00	R902112749	A11VO95DRG/10R-NPD12N00R
R902069239	A11VO260LRGH6/11L-NZD12K84R S	R902112885	A11VO130DRS/10R-NZD12K82
R902070003	A11VO190LR/11L-NPD12N00	R902117017	A11VO95LRD/10R-NSD12K07
R902070008	A11VO190LR3D/11R-NZD12N00	R902117207	AA11VO95LE1S/10R-NSD62K17P
R902070143	A11VO260LRDCH1/11R-NZD12K67V	R902117208	AA11VO95LE1S/10R-NSD62K02P
R902070144	A11VO260LRDCH1/11R-NZD12N00V	R902117347	A11VO190DRS/11R-NZD12K83
R902070183	A11VO130LRDH1/10R-NZD12K01	R902117425	A11VO95LRDS/10R-NZG12K01
R902070282	A11VO95DRG/10R-NPD12K01	R902117465	A11VO95LRS/10L-NSD12N00 S
R902071539	A11VO95HD1D/10L-NZD12K01	R902118040	A11VO190LR/11R-NPD12K24 S
R902071783	A11VO130DRS/10R-NZD12K01	R902118095	A11VO95LE1X/10R-NZG12K04X S
R902073004	A11VO40DRG/10R-NSC12K01	R902118356	A11VO60LRDH1/10R-NSC12K01
R902073074	A11VO260LRDS/11R-NPD12K24	R902118358	A11VO190LRDU2/11R-NPD12K01P
R902073239	A11VO60DR/10R-NSC12K01	R902118445	A11VO145DRS/11R-NZD12K81
R902073261	A11VO190DRG/11L-NTD12K02	R902118450	A11VO40EP2D/10L-NZC12K02P
R902073301	A11VO95HD2D/10R-NZD12K07	R902118472	A11VO60HD1D/10R-NSC12N00
R902073434	A11VO260DRL/11L-NZD12N00 S	R902119004	A11VO60HD1D/10R-NZC12N00
R902073437	A11VO130DRL/10L-NZD12N00 S	R902119011	A11VO130LE1X/10R-NZG12K61X S
R902073480	A11VO190LRDH1/11L-NZD12N00	R902119013	A11VO145LE1X/11R-NZG12K01X S
R902074455	A11VO190DRS/11L-NZD12K24	R902119063	A11VO145LRDG/11R-NPD12N00V
R902074543	A11VO190DR/11R-NPD12K01	R902119065	A11VO60EP2S/10R-NZC12K61H
R902074547	A11VO190DRG/11R-NPD12K04	R902119066	A11VO60EP2S/10R-NZC12N00H
R902074580	A11VO145LRDS/11R-NSD12K02	R902119067	A11VO60LRS/10R-NZC12K61
R902074696	A11VO130LR3S/10R-NZG12K01	R902119068	A11VO60LRS/10R-NZC12N00
R902074753	A11VO95DRS/10R-NZD12K17	R902119074	A11VO75HD1D/10L-NZD12K01
R902074791	A11VO130DRS/10L-NZD12K02	R902119075	A11VO75HD1D/10L-NZD12K04
R902074825	A11VO95LRDS/10L-NSD12K02	R902119242	A11VO145LRDS/11L-NSD12N00
R902074922	A11VO95DRS/10R-NPD12K79	R902119279	A11VO260DRL/11L-NZD12K67
R902074927	A11VO190DRS/11R-NZD12K84	R902120023	A11VO190LR3S/11L-NSD12K07
R902075594	A11VO130DRS/10R-NZD12N00V	R902120127	A11VO145DRG/11R-NPD12K17V
R902075706	A11VO260DR/11R-NPD12K04	R902120184	A11VO130DRL/10L-NZD12K01



R902075792	A11VO40DR/10R-NSC12K02	R902120377	A11VO190LRDG/11R-NZD12N00
R902075795	A11VO75DRG/10L-NZD12K04	R902122049	A11VO260LRDH1/11R-NZD12K02 S
R902075846	A11VO60DRG/10L-NSC12N00	R902122262	A11VO130LRDS/10R-NZD12K61
R902075904	A11VO145LE2S/11R-NSD12K17	R902123526	A11VO145LRDS/11R-NZD12K82
R902075913	A11VO75LR3S/10R-NZD12N00	R902123615	AA11VO130DRS/10L-NSD62K02 S
R902075919	A11VO95HD2D/10R-NSD12K02	R902123779	AA11VO130DRS/10R-NSD62K02 S
R902075926	A11VO95DRG/10R-NPD12N00	R902123784	A11VO145LRDS/11R-NZD12K83
R902076667	A11VO260LRDC/11R-NZD12K67	R902079491	A11VO40DRS/10L-NSC12K04
R902076668	A11VO260LRDC/11R-NZD12K01	R902080042	A11VO145DRS/11R-NZD12N00
R902076678	A11VO130LG2D/10L-NZD12N00	R902080327	A11VO145DRS/11L-NZD12K02
R902076734	A11VO260DRS/11L-NZD12K84	R902081119	A11VO145DRL/11R-NPD12N00
R902076777	A11VO130LRDCS/10L-NZD12N00	R902081143	A11VO130LRDCS/10L-NZD12K07
R902076859	A11VO190DRS/11L-NZD12K02	R902081149	A11VO40LRD/10L-NSC12N00
R902077604	A11VO75LG1H6/10L-NSD12K02	R902081397	A11VO60DRS/10L-NZC12K79
R902077642	A11VO60LG1DH2/10L-NZC12N00	R902081470	A11VO145DRS/11L-NSD12N00
R902079080	A11VO60NV/10L-XZC12K04E S	R902081765	A11VO260LRG/11R-NPD12N00
R902079120	A11VO190LRD/11R-NPD12K04	R902092472	AA11VO130DRS/10L-NSD62K17 E
R902079185	A11VO190LRH1/11R-NSD12K01	R902092494	AA11VO130DRS/10L-NSD62N00 E
R902094099	A11VO95LRDS/10R-NZD12K01	R902092607	A11VO130DRL/10R-NPD12N00 E
R902123875	A11VO260LRS/11R-NZD12K86 E	R902155743	A11VO95LRDS/10R-NSD12N00
R902127132	A11VO60LRD/10L-NSC12N00 E	R902155890	A11VO60EP2D/10R-NSC12N00P S
R902127208	A11VO130LRDS/10R-NZD12K83 S	R902157543	AA11VO130DRS/10R-NSD62K17
R902127367	A11VO40DRG/10R-NPC12N00 E	R902157545	A11VO260DRS/11L-NZD12K01
R902127447	A11VO190DRS/11R-NS12K04	R902157727	A11VO95EP2X/10L-NZD12N00P S
R902129046	AA11VO190LR3S/11L-NSD62N00	R902158110	A11VO130DRG/10R-NSD12N00
R902129048	AA11VO190LR3S/11L-NSD62K07 S	R902159250	A11VO190LRDS/11R-NSD12K04
R902129262	A11VO130EP2D/10L-NZD12K01P	R902159485	A11VO40DRG/10L-NSC12K02
R902129456	A11VO130EP2D/10R-NPD12N00VP S	R902159654	A11VO95DR/10L-NSD12K07 E
R902131376	A11VO95LRD/10L-NSD12K02	R902159989	A11VO260LRDS/11L-NSD12N00
R902131407	A11VO75LR3DS/10R-NZD12K07	R902081799	A11VO130LRDG/10R-NPD12N00V
R902131674	A11VO95LR3S/10R-NZD12N00	R902081837	A11VO190LR3DH1/11R-NZD12N00 S
R902131911	A11VO190DRS/11L-NZD12K04	R902081839	A11VO130LR3DH1/10R-NZD12N00
R902131913	A11VO145LRDH1/11R-NSD12K01	R902081840	A11VO60DRSP/10R-NZC12N00 S
R902131988	A11VO60DR/10R-NSC12K52	R902081922	A11VO60LR/10R-NSC12N00
R902133020	A11VO75HD1D/10R-NZD12K81	R902081975	A11VO60EP2D/10R-NZC12K01H
R902133022	A11VO75HD1D/10R-NZD12K01	R902083058	A11VO75LRDCS/10R-NZD12K81
R902133119	A11VO130DRG/10R-NSD12K01V	R902083059	A11VO75LRDCS/10R-NZD12N00
R902133235	A11VO190HD1/11L-NZD12K83	R902083076	A11VO260DRS/10L-NZC12K72
R902133237	A11VO130HD1/10L-NZD12K01	R902083179	A11VO40DR/10R-NZC12K02
R902133395	A11VO75DRS/10L-NZD12K04	R902083482	A11VO40DR/10L-NZC12N00
R902133415	A11VO75DRS/10R-NZD12K04	R902083622	A11VO40LE2S/10R-NZC12N00P
R902133469	A11VO95DRS/10R-NSD12N00 S	R902083854	A11VO130LR/10R-NZD12K83
R902134251	A11VO130DR/10R-NPD12N00V E	R902083935	A11VO145DRS/11L-NSD12K07
R902134256	A11VO130LRDH1/10R-NZD12K52 ES	R902083940	A11VO40DRGX/10L-NZC12K02P S
R902134276	A11VO60DR/10R-NPC12N00 E	R902084780	A11VO75DR/10L-NSD12K07
R902134278	A11VO95DRS/10R-NSD12K02 S	R902084782	A11VO75DRL/10R-NPD12N00
R902134315	A11VO95LRS/10R-NZG12K01	R902085724	A11VO60DRS/10L-NSC12K04
R902134356	A11VO145LRDS/11R-NZG12K01	R902085725	A11VO75DRS/10L-NSD12K04
R902134392	A11VO190DRG/11L-NTD12N00 E	R902085811	A11VO130DRG/10L-NSD12K17
R902134394	A11VO190DRG/11L-NTD12K02 E	R902085812	A11VO130DRG/10L-NSD12N00
R902134417	A11VO40LRG/10R-NPC12K04	R902085996	A11VO95HD1D/10R-NZD12K02
R902134475	A11VO75EP2D/10L-NZD12K81P	R902085998	A11VO95DRG/10R-NZD12N00
R902136010	A11VO190DRG/11L-NZD12K84	R902087034	A11VO145LR/11R-NPD12N00
R902136322	A11VO75DRS/10L-NSD12K52	R902087141	A11VO95LRDCS/10R-NZD12N00
R902136465	A11VO190LRDH1/11R-NZD12K52 E	R902087655	A11VO190LRDS/11R-NPD12K01
R902137276	A11VO60HD1D/10R-NZC12K61	R902088292	A11VO60HD2/10L-NZC12K07
R902137416	A11VO75LRGU2/10L-NZD12N00P	R902088402	A11VO190DRS/11L-NZD12K07
R902138675	A11VO95LRDS/10R-NSD12K17	R902089029	A11VO190DRS/11R-NSD12N00
R902138780	A11VO190DRG/11R-NPD12K02V	R902089050	A11VO60LRD/10R-NSC12K01 S
R902138800	A11VO190LR3DH1/11R-NZD12N00 E	R902089085	A11VO145LRH1/11R-NZD12K02
R902138984	A11VO260EP2D/11R-NSD12K02RP	R902089103	A11VO190LRH2/11R-NPD12K17
R902146072	A11VO60DRS/10R-NSC12K02 S	R902089104	A11VO190LRH2/11R-NSD12N00
R902146335	A11VO145DRS/11L-NSD12K04	R902089275	A11VO260LRD/11R-NPD12N00V
R902146347	A11VO95LG2D/10L-NSD12N00	R902090708	A11VO190LRDH2/11L-NZD12K84
R902146422	A11VO145LRDS/11L-NSD12N00 E	R902090762	A11VO60DRS/10L-NZC12K61
R902146455	A11VO40LRH1/10R-NSC12K01 S	R902090821	A11VO95LG2S/10R-NZD12K61 Y
R902149503	AA11VO95LRDS/10L-NSD62K07	R902092044	AA11VO95DRS/10L-NSD62K04 E
R902149605	A11VO130DRG/10R-NPD12K17V	R902092046	A11VO40DR/10R-NPC12N00 E
R902150506	AA11VO130DRS/10L-NSD62K02	R902092180	AA11VO260DRG/11R-NSD62K02 ES
R902154118	A11VO190DRG/11L-NSD12K02	R902092229	A11VO60LRDH1/10R-NZC12K52 E
R902154363	A11VO40DRL/10L-NTC12N00	R902092230	A11VO95LRDH1/10R-NZD12K52 E
R902154454	A11VO190DRS/11R-NSD12K02 S	R902092280	AA11VO95DRG/10L-VSD62N00 ES
R902154937	A11VO190LG1S/11L-NZD12N00	R902155688	A11VO75LRDS/10R-NSD12N00 S
R902155574	A11VO145LRDS/11R-NZG12K02	R902155690	A11VO75LRDS/10R-NSD12N00 S
R902155680	A11VO145LRDS/11L-NSD12K01	R902155719	A11VO145EP2D/11R-NPD12N00P