力盛液压
MINGHE CORPORATION






宁波明和力盛液压科技有限公司
地址: 中国宁波北仑区小港纬三路85号
电话: 0574-55223663 / 55223591 / 55223595
邮箱: sale@nbmhls.com
网站: www.nbmhls.com

NINGBO LIXON HYDRAULIC TECHNOLOGY CO.,LTD.
Add: Beilun XiaoGang WeiSan Road No.85,Ningbo,China.
Tel: +86-574-55223663 / 55223591 / 55223595
Email: sale@nbmhls.com
Web: www.nbmhls.com

Lixon
力盛液压
MINGHE CORPORATION

Lixon

NINGBO LIXON HYDRAULIC TECHNOLOGY CO.,LTD.
宁波明和力盛液压科技有限公司



LA4VSO series
LA10VSO series
LA10V0 series
LA11V0 series
LA2F0 series
LA20V0 series

Company Information
企业简介



宁波明和企业成立至今，已积累了三十余年的机械制造经验，致力打造集液压泵、数控机床、注塑机等重型设备协同发展的综合性制造实体，研发生产的机械设备广泛应用于海内外锻压、冶金、船舶、矿山、石油、机床、工程等项目之中.2005年，力盛液压与美国公司友好合作。充分利用共同投资的五千万资金。新建近3万余平米的现代化高标准厂房，并于2007年正式投入使用。

近年来，为顺应高效、节能、环保的国际发展趋势，力盛液压先后与浙江大学，上海大学等液压专家合作，引进了国内外高效率高精度的自动化生产检测设备及高精尖实验技术，并与白俄罗斯籍Khroustalev•Boris院士合作建立院士研究站。公司目前已取得实用型专利23项。，获得了“北仑工程中心”“浙江省高成长科技型中小企业”“宁波智囊创业项目”等荣誉称号。

力盛液压始终坚持"质量第一，用户至上"的原则，宁波明和力盛液压科技有限公司在近年来对技术的大力投入，是确保产品质量和提升产品质量，促使企业发展、赢得市场、获得利润的核心。宁波明和力盛液压科技有限公司的目标是强化质量基础支持，推动标准与国际水平对接，提升产品和服务品质，让国内外更多客户选择中国制造，中国服务。

Ningbo Minghe Lixon Hydraulic Technology Co. Ltd. has accumulated more than 30 years of experience in machinery since its establishment. It is committed to build a comprehensive manufacturing entity by integrating hydraulic pumps, CNC, injection machines and other heavy equipments. The equipment is widely used in forging, metallurgy, shipbuilding, mining, petroleum, machine tools, engineering and other projects. In 2005, Lixon Hydraulics cooperated with American companies, make full use of the 50 million co-invested funds, a modern high-standard factory building of nearly 30,000 square meters was built, and it was officially put into use in 2007.

In recent years, in order to comply with the international development trend of high efficiency, energy saving and environmental protection, Lixon Hydraulic has cooperated with hydraulic experts such as Zhejiang University and Shanghai University to introduce high-efficiency and high-precision automated production testing equipment and high-precision experimental technology world wide. And cooperated with the Belarusian academician Khroustalev•Boris to establish an academician research station. The company has obtained 23 utility patents. Won the honorary titles of "Beilun Engineering Center", "Zhejiang High-growth High-tech Small and Medium-sized Enterprises", "Ningbo Think Tank Entrepreneurship Project" and other honorary titles.

Lixon Hydraulic has always adhered to the principle of "quality first, customer first". Ningbo Minghe Lixon Hydraulic Technology Co., Ltd. has invested heavily in technology in recent years to ensure and improve product quality, so as to promote the development of the enterprise, win the market, and make the core of profit. The mission of Ningbo Minghe Lixon Hydraulic Technology Co., Ltd. is to strengthen the basic support for quality products, promote to align standards with international standards, improve the quality of products and services, allowing more domestic and foreign customers to choose Made in China and Service in China.









力盛液压
MINGHE CORPORATION



LA4VSO

Axial piston variable pump

Used for hydraulic drives in open loop ciruits

Features

Swashplate axial piston pump.
Adjust the angle of swashplate to realize the stepless variable.
Good suction characteristic.
Have the structural design of compact, light weight, low noise characteristics.
The sensitivity of control system.
Flow is proportional to the drivek speed and to the displacement.
Nominal pressure reach to 35 Mpa.
Long service life, high-precision bearings.
Hydrostatic balance slipper, improve the life of pump.
With swashplate angle indicator.

LA4VSO Axial piston variable pump

Ordering Code

L	-		A4VS	O			/			-					
Lisheng hydraulic		Hydraulic fluid	Axial piston unit	Type of operation	Size	Mode of operation		Series	Direction of rotation		Seals	Shaft end	Mounting flange	Service ports	Through drive

Model Description

Lisheng hydraulic	L

Hydraulic fluid

Mineral oils	N/A
HFB and HFC-Mediums	E

Axial piston unit

Variable displacement pump, industrial uses	A4VS

Type of operation

Pump,open circuits	O

Size

▲ Displacement Vg max(ml/r)	40	71	125	180	250	355	500	

Mode of operation

Pressure control	DR	√	√	√	√	√	√	√	DR...
Power control with Hyperbolic open,curve	LR	√	√	√	√	√	√	√	LR...
Manual control	MA	√	√	√	√	√	√	√	MA...
Electronic control	EO	√	√	√	√	√	√	√	EO...
Hydraulic control, pilot pressure dependent	HD	√	√	√	√	√	√	√	HD...

Series

√	√	—	—	—	√	—	10
—	—	√	√	√	√	√	22
—	√	√	√	√	√	√	30

Direction of rotation

With view on shaft end	C lockwise	R
	Counterclockwise	L

Seals

NBR Nitrile rubber	P
FKM Fluoro-rubber	V

LA4VSO Axial piston variable pump

Shaft end

Keyed parallel shaft	P
Splined shaft	Z

Mounting flange	40	71	125	180	250	355	500	
ISO 4 hole	√	√	√	√	√	√	—	B

Service ports

Port B and port S 90°offset; auxiliary pressure port B1 Metric fixing screws	√	√	√	√	√	√	√	13
Port B and port S 90°offset; pressure connection B1 connected by flange	√	√	√	√	√	√	√	25

Through drive

Without auxiliary pump, without through drive	√	√	√	√	√	√	√	N00

Note: √Available; △in preparation; - not available

Technical Data

Performance parameters(these figures did not consider the efficiency of mechanical and volumetric efficiency)

Size			40	71	125	180	250	355	500
Displacement (Vg max)		cm^3/r	40	71	125	180	250	355	500
Max.speed (n max1)		rpm	2600	2200	1800	1800	1500	1500	1320
Max.Output flow	n=nmax	L/min	104	156	225	324	375	532	600
	n=1500rpm	L/min	60	107	186	270	375	532	–
Max.power	n=nmax	kW	61	91	131	189	219	310	385
	n=1500rpm	kW	35	62	109	158	219	310	–
Max.torque	(△P=35MPa)	N.m	223	395	696	1002	1391	1976	2783
Torque	(△P=10MPa)	N.m	64	113	199	286	398	564	795
Weight(approximately)		kg	40	54	87	103	186	206	318

Flow $q_v = \frac{V_g \cdot n \cdot \eta_v}{1000}$ [L/min]

Drive torque $T = \frac{1,59 \cdot V \cdot \triangle p}{1000 \cdot \eta_{mh}}$ [N.m]

Drive power $P = \frac{2\pi \cdot T \cdot n}{60000} = \frac{T \cdot n}{9549} = \frac{q_v \cdot \triangle p}{600 \cdot \eta_t}$ [kW]

V_g = Geometry displacement each rotate [cm^3]

$\triangle p$ = Pressuredrop/differential [bar]

n= Rotary speed [rpm]

η_v = Cubage's efficiency

η_{mh} = Mehanical hydraulic efficiency

η_t = ($\eta_t = \eta_v \cdot \eta_{mh}$) Overall efficiency



LA10VSO 31

LA10VSO 31series Axial piston variable pump

Used for hydraulic drives in open loop ciruits

Features
Swashplate axial piston pump.
Adjust the angle of swashplate to realize the stepless variable.
Good suction characteristic.
Have the structural design of compact, light weight, low noise characteristics.
The sensitivity of control system.
Flow is proportional to the drivek speed and to the displacement.
Nominal pressure reach to 28 Mpa.
Long service life, high-precision bearings.
Hydrostatic balance slipper, improve the life of pump.
Axial and radial loading of drive shaft possible

LA10VSO Axial piston variable pump

Model Description

LA10V(S) Model variable pump, swashplate design
Rated pressure 280bar
Peak pressure 350bar

O Mode of oper ation pump, open circuit

28 18、28、45、71、100、140 (ml/r) Displacement: 18、28、45、71、100、140 (ml/r)

DR Model of Operation

	18	28	45	71	100	140
DG －－ Two-point control, direct operated	√	√	√	√	√	√
DR－－ Pressure control	√	√	√	√	√	√
DRG－－Remote Pressure Control	√	√	√	√	√	√
DFR－－ Pressure / Flow Control	√	√	√	√	√	√
DFR1－－Pressure / Flow Control, X Close	√	√	√	√	√	√
DFLR－－Pressure / Flow Control / Power Control		√	√	√	√	√

/

31 Product series: 31 series

-

R Direction of Rotation
R-- Clockwise
L-- Anti-clockwise

P Seale
P- Perbunan
V- Viton

S Shaft end

	18	28	45	71	100	140
P-Metric parallel with key	√	√	√	√	√	√
S-SAE SAE splined	√	√	√	√	√	√
R-SAE SAE splined(higher through drive torque)	√	√	√	√		
K-SAE SAE parallel with key	√	√	√	√	√	√
U-SAE SAE splined reduced dia, Not for through drive	√		√		√	
W-SAE Similar to shaft "U", higher input torque, not for through drive			√		√	

C Mountng flange

	18	28	45	71	100	140
ISO 2-hole	√	√	√	√	√	
SAE 2-hole	√	√	√	√	√	
ISO 4-hole						√
SAE 4-hole						√

62 Port for service lines

	18	28	45	71	100	140
11--SAE flange rear, fixing thread metric		√	√	√	√	√
61-- SAE flange rear, fixing thread NUC		√	√	√	√	√
12-- SAE flange on opposite side, fixing thread metric	√	√	√	√	√	√
62-- SAE flange on opposite NUC	√	√	√	√	√	√
41(91)--SAE flange rear, fixing thread metric (NUC)				√		
42(92)-- SAE flange on opposite side, fixing thread metric (NUC)				√		

N00 Through drive

With through drive to accept an axial piston pump or gear pump	18	28	45	71	100	140	
Without through drive	√	√	√	√	√	√	N00

Technical Data

Operating pressure range-inlet
Absolute pressure at pore S

Pabs min	0.8 bar
Pabs max	30 bar

Operating pressure range-inlet
Pressure at pore B

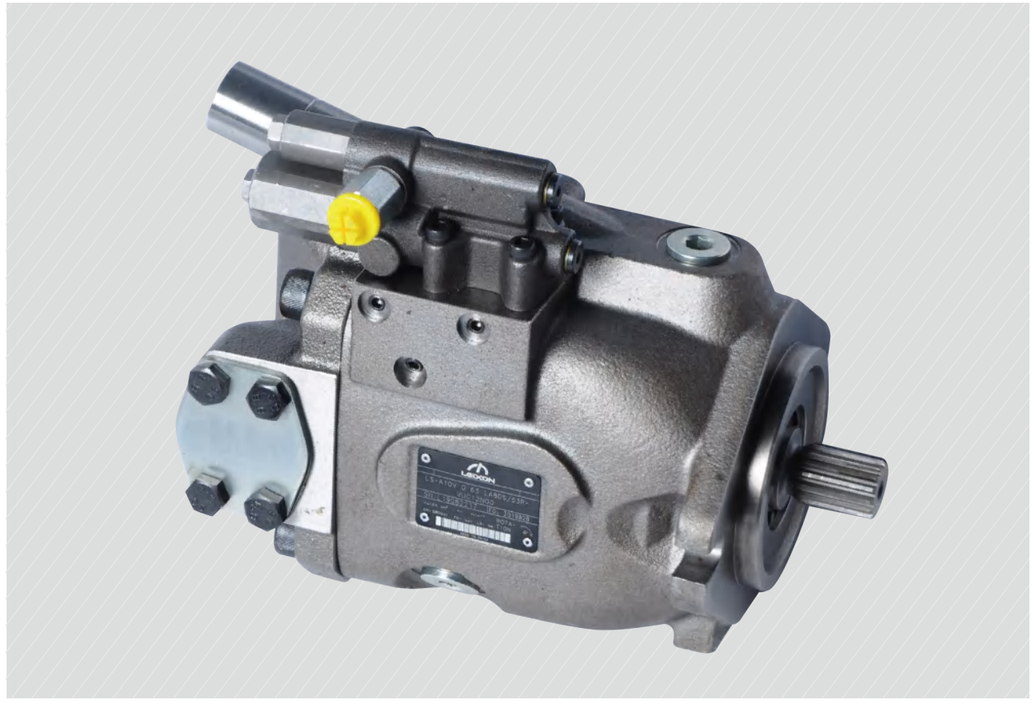
Nominal pressure PN	280 bar
Peak pressure Pmax	350 bar

Applications sith intermittent operating pressures up to 315 bar at 10% duty are permissible.

Case drain pressure

Maximum permissible pressure of leakage fluid (at port L, L1);
Maximum 0.5 bar higher than the inlet pressure at port S,
but nohigher than 2 bar absolute.

Size				18	28	45	71	100	140
Displacement		V_{gmax}	cm^3	18	28	45	71	100	140
Max.speed		n_{max}	rpm	3300	3000	2600	2200	2000	1800
Max.Output flow	in n_{max}	q_v	L/min	59.4	84	117	156	200	252
	in 1500r/min	q_v	L/min	27	42	68	107	150	210
Max.power (△p=280bar)	in n_{max}	P_{max}	kW	27.7	39	55	73	93	118
	in 1500r/min	P_{max}	kW	12.6	20	32	50	70	98
Max.torque (△p=280bar)	in V_{gmax}	T_{max}	Nm	80.1	125	200	316	445	623
Weigh		m	kg	12	15	21	33	45	60



LA10VO 52/53 Series

Axial piston variable pump

Features

Variable pump with axial piston rotary group in swashplate.
design for hydrostatic drives in open circuit.
The flow is proportional to the drive speed and the displacement.
The flow can be infinitely varied by adjusting the swashplate angle.
Stable bearing for long service life.
High permissible drive speed.
Favorable power-to-weight ratio – compact dimensions.
Low noise.
Excellent suction characteristics.
Electro-hydraulic pressure control.
Power control.
Electro-proportional swivel angle control.
Short response times.

LA10VO Axial piston variable pump

Ordering code series 52

01	02	03	04		05	06		07	08	09	10	11	12
LA10V(S)	O			/	52		–	V					

Axial iston unit							**10**	**28**	**45**	**60**	**85**	
01	Swashplate design, variable, nominal pressure 250 bar, maximum pressure 315 bar						●	–	–	–	–	LA10VS
							–	●	●	●	●	LA10V
Operation mode												
02	Pump, open circuit											O
Size (NG)												
03	Displacement						**10**	**28**	**45**	**60**	**85**	
Control devices												
04	Pressure control	hydraulic					●	●	●	●	●	DR
	with flow controller	hydraulic	X-T open				●	●	●	●	●	DFR
			X-T plugged	with flushing function			●	●	●	●	●	DFR1
				without flushing function			–	●	●	●	●	DRSC
	with pressure cut-off	hydraulic	remotely operated				●	●	●	●	●	DRG
		electric	negative control	U = 12 V			–	●	●	●	●	ED71
				U = 24 V			–	●	●	●	●	ED72
		electric	positive control	U = 12 V			–	●	●	●	●	ER71
				U = 24 V			–	●	●	●	●	ER72
	Differential pressure control	electric control (negative control)					–	○	○	○	●	EF..[1]
Series							**10**	**28**	**45**	**60**	**85**	
05	Series 5, Index 2						●	●	●	●	●	52
Direction of rotation												
06	View on drive shaft	clockwise										R
		counter-clockwise										L
Sealing material												
07	FKM (fluor-caoutchouc)											V
Drive shaft												
08	splined shaft ANSI B92.1a	standard shaft					●	●	●	●	●	S
		similar to shaft "S" however for higher input torque					–	●	●	●	●	R
		reduced diameter, limited suitability for through drive					●	●	●	●	●	U
		similar to shaft "U", however for higher torque					–	●	●	●	●	W
		Parallel keyed shaft DIN 6885 limited suitability for through drive					●	–	–	–	–	P
Mounting flange												
09	ISO 3019-2 (ISO)	2-hole					●	–	–	–	–	A
	ISO 3019-1 (SAE)	2-hole					●	●	●	●	●	C
		4-hole					–	–	–	●	–	D
Working port												
10	SAE flange port fastening thread, metric	rear	not for through drive				–	●	●	●	●	11
		at side, opposite	for through drive				–	●	●	●	●	12
		at side, offset 90°	not for through drive; available only for counter-clockwise direction of rotation				–	–	●	–	–	13
	Threaded p or,t metric	rear	not for through drive				●	–	–	–	–	14
Through drive												
11	without through drive						●	●	●	●	●	N00
Connector for solenoids												
12	Without connector (without solenoid, with hydraulic control only without code)						●	●	●	●	●	
	DEUTSCH – molded connector, 2-pin – without suppressor diode (for electric controls)						–	●	●	●	●	P

● = Available ○ = On request – = Not available

Ordering code series 53

01	02	03	04		05	06		07	08	09	10	11	12
LA10V	O			/	53		–	V					

Axial piston unit

		18	28	45	63	72	85	100	
01	Swashplate design, variable, nominal pressure 250 bar, maximum pressure 315 bar	●	●	●	●	●	●	●	LA10V

Operation mode

02	Pump, open circuit	O

Size (NG)

		18	28	45	63	72	85	100
03	Displacement							

Control devices

					18	28	45	63	72	85	100	
04	Pressure control	hydraulic			●	●	●	●	●	●	●	DR
	with flow controller	hydraulic	X-T open		●	●	●	●	●	●	●	DRF
			X-T plugged	with flushing function	●	●	●	●	●	●	●	DRS
				without flushin function	●	●	●	●	●	●	●	DRSC
		hydraulic	remotely operated		●	●	●	●	●	●	●	DRG
	with pressure cut-off	electric	negative control	*U* = 12 V	●	●	●	●	●	●	●	ED71
				U = 24 V	●	●	●	●	●	●	●	ED72
		electric	positive control	*U* = 12 V	●	●	●	●	●	●	●	ER71
				U = 24 V	●	●	●	●	●	●	●	ER72
	Differential pressure control		electric control (negative control)		○	○	○	○	○	●	●	EF..[1]
	Power control with pressure cut-off	hydraulic	start of control	from 10 to 35 bar	●	●	●	●	●	●	●	LA5D
				36 to 70 bar	●	●	●	●	●	●	●	LA6D
				71 to 105 bar	●	●	●	●	●	●	●	LA7D
				106 to 140 bar	●	●	●	●	●	●	●	LA8D
				141 to 230 bar	●	●	●	●	●	●	●	LA9D
	remotely operated	hydraulic	start of control	see LA.D	●	●	●	●	●	●	●	LA.DG
	flow control, X-T plugged	hydraulic	start of control	see LA.D	●	●	●	●	●	●	●	LA.DS
		electrically overridable (negative control)	start of control	see LA.D .	●	●	●	●	●	●	●	LA.S

Series

05	Series 5, index 3	●	●	●	●	●	●	●	53

Direction of rotation

06	View on drive shaft	clockwise	R
		counter-clockwise	L

Sealing material

07	FKM (fluor-caoutchouc)		V

Drive Shaft

08	Splined shaft ANSI B92.1a	standard shaft	●	●	●	●	●	●	●	S
		similar to shaft "S" however for higher input torque	●	●	●	●	●	●	–	R
		reduced diameter, limited suitability for through drive	●	●	●	●	●	●	●	U
		similar to shaft "U", however for higher torque	–	●	●	●	●	●	●	W

Mounting flange

09	ISO 3019-1 (SAE)	2-hole	●	●	●	●	●	●	●	C
		4-hole	–	–	–	●	●	●	●	D

Working port

10	SAE flange port fastening thread, metric	rear	not for through drive	●	●	●	●	●	●	●	11
		at side, opposite	for through drive	●	●	●	●	●	●	●	12
		at side, offset 90°	not for through drive; available only for counter-clockwise direction of rotation	–	–	●	–	–	–	–	13

01	02	03	04		05	06		07	08	09	10	11	12
LA10V	O			/	53		–	V					

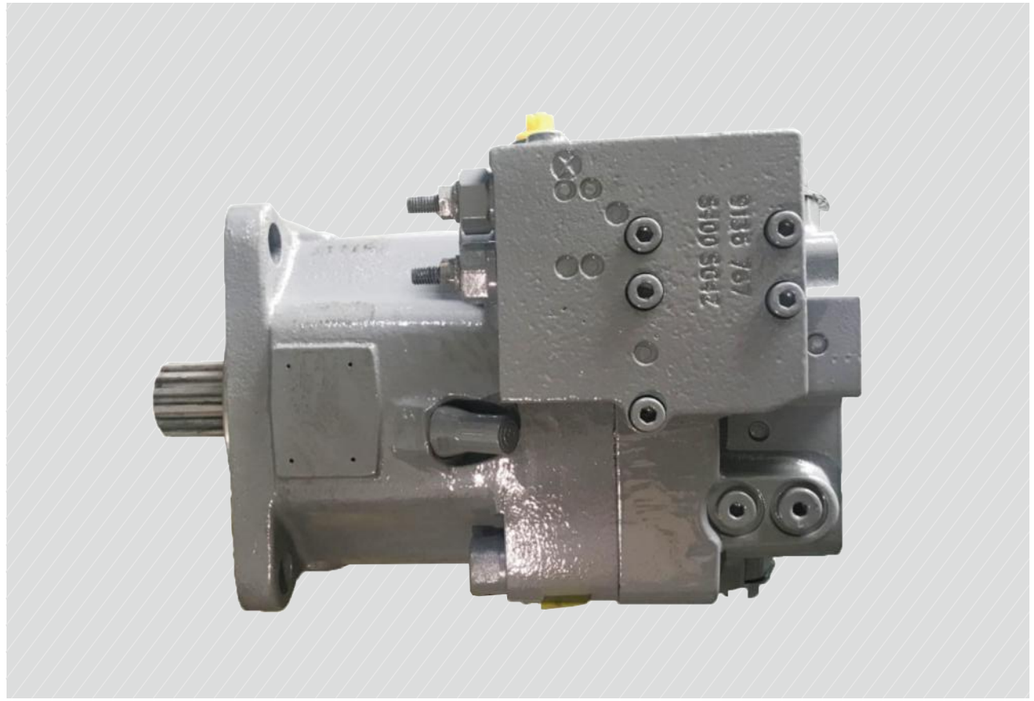
Through drive

		18	28	45	63	72	85	100	
11	without through drive	●	●	●	●	●	●	●	N00

Connector for solenoids

12	Without connector (without solenoid, with hydraulic control only, without code)	●	●	●	●	●	●	●	
	DEUTSCH – molded connector, 2-pin – without suppressor diode (for electric controls)	●	●	●	●	●	●	●	P

● = Available ○ = On request – = Not available



LA11V0

Axial Piston Variable Pump

Features

- Variable axial piston pump of swashplate 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, i.e. 100% through drive.
- The output flow is proportional to the drive speed and infinitely variable between $q_{V\,max}$ and $q_{V\,min} = 0$.

Ordering Code / Standard Program

LA11V		O			/	1			–	N							
01	02	03	04	05		06	07	08		09	10	11	12	13	14	15	16

Axial piston unit

01	Swashplate design, variable, nominal pressure 350 bar, maximum pressure 400 bar	LA11V

Charge pump (impeller)

		40	60	75	95	130	145	190	260	
02	without charge pump (no code)	●	●	●	●	●	●	●	●	
	with charge pump	–	–	–	–	●	●	●	●	L

Operation

03	Pump, open circuit	O

Size

		40	60	75	95	130	145	190	260
04	≈ Displacement $V_{g\,max}$ in cm³	40	60	75	95	130	145	190	260

Control unit

05	Power control			LR					●	●	●	●	●	●	●	●	LR
	with pressure cut-off				D				●	●	●	●	●	●	●	●	L . D. .
	with load sensing							S	●	●	●	●	●	●	●	●	L . . . S
	with stroke limiter	negative characteristic	Δp = 25 bar					H1	●	●	●	●	●	●	●	●	L . . . H1
			Δp = 10 bar					H5	●	●	●	●	●	●	●	●	L . . . H5
		positive characteristic	Δp = 25 bar					H2	●	●	●	●	●	●	●	●	L . . . H2
			Δp = 10 bar					H6	●	●	●	●	●	●	●	●	L . . . H6
			U = 12 V					U1	●	●	●	●	●	●	●	●	L . . . U1
			U = 24 V					U2	●	●	●	●	●	●	●	●	L . . . U2
	Pressure control			DR					●	●	●	●	●	●	●	●	DR
		with load sensing		DRS					●	●	●	●	●	●	●	●	DRS
		remote controlled		DRG					●	●	●	●	●	●	●	●	DRG
	Electric control with proportional solenoid		U = 12 V	EP1					●	●	●	●	●	●	●	●	EP1
		(positive characteristic)	U = 24 V	EP2					●	●	●	●	●	●	●	●	EP2
		with pressure cut-off			D				●	●	●	●	●	●	●	●	EP. D

Series

06		1

Index

07	Size 40 ... 130	0
	Size 145 ... 260	1

Ordering Code / Standard Program

LA11V		O			/	1			–	N							
01	02	03	04	05		06	07	08		09	10	11	12	13	14	15	16

Direction of rotation

08	Viewed from shaft end	clockwise	R
		counter-clockwise	L

Seals

09	NBR (nitrile-caoutchouc), shaft seal ring in FKM (fluor-caoutchouc)	N

Shaft end (see page 156 for permissible input and through drive torques)

			40	60	75	95	130	145	190	260	
10	Splined shaft DIN 5480 for single and combination pump		●	●	●	●	●	●	●	●	Z
	Parallel keyed shaft DIN 6885		●	●	●	●	●	●	●	●	P
	Splined shaft ANSI B92.1a–1976	for single pump	●	●	●	●	●	●	●	●	S
		for combination pump	●	●	●	–[1]	–[1]	–[1]	●	●	T

Mounting flange

		40	60	75	95	130	145	190	260	
11	SAE J744 – 2-hole	●	●	–	–	–	–	–	–	C
	SAE J744 – 4-hole	–	–	●	●	●	●	●	●	D
	SAE J617 [2] (SAE 3)	–	–	–	●	●	●	●	–	G

Service line ports

		40	60	75	95	130	145	190	260	
12	Pressure and suction port SAE, at side, opposite side (with metric fastening threads)	●	●	●	●	●	●	●	●	12

Through drive

	Flange SAE J744 [3]		Coupler for splined shaft		40	60	75	95	130	145	190	260	
13	–		–		●	●	●	●	●	●	●	●	N00
	82-2	(A)	5/8in	9T 16/32DP (A)	●	●	●	●	●	●	●	●	K01
			3/4in	11T 16/32DP (A-B)	❍	●	❍	●	●	●	❍	❍	K52
	101-2	(B)	7/8in	13T 16/32DP (B)	●	●	●	●	●	●	●	●	K02
			1 in	15T 16/32DP (B-B)	●	●	●	●	●	●	●	●	K04
			W35	2x30x16x9g	●	●	●	●	●	●	●	●	K79
	127-2	(C) [4]	1 1/4in	14T 12/24DP (C)	–	●	●	●	●	●	●	●	K07
			1 1/2in	17T 12/24DP (C-C)	–	–	–	●	●	●	●	●	K24
			W30	2x30x14x9g	–	●	●	●	●	●	●	●	K80
			W35	2x30x16x9g	–	●	●	●	●	●	●	●	K61
	152-4	(D)	1 1/4in	14T 12/24DP (C)	–	–	●	●	●	●	●	●	K86
			1 3/4in	13T 8/16DP (D)	–	–	–	–	●	●	●	●	K17
			W40	2x30x18x9g	–	–	●	●	●	●	●	●	K81
			W45	2x30x21x9g	–	–	–	●	●	●	●	●	K82
			W50	2x30x24x9g	–	–	–	–	●	●	●	●	K83
	165-4	(E)	1 3/4in	13T 8/16DP (D)	–	–	–	–	–	–	●	●	K72
			W50	2x30x24x9g	–	–	–	–	–	–	●	●	K84
			W60	2x30x28x9g	–	–	–	–	–	–	–	●	K67

Ordering Code / Standard Program

LA11V		O			/	1			–	N							
01	02	03	04	05		06	07	08		09	10	11	12	13	14	15	16

Swivel angle indicator

		40	60	75	95	130	145	190	260	
14	without swivel angle indicator (no symbol)	●	●	●	●	●	●	●	●	
	with optical swivel angle indicator	●	–	●	●	●	●	●	●	V
	with electric swivel angle sensor	●	–	●	●	●	●	●	●	R

Connector for solenoids

		40	60	75	95	130	145	190	260	
15	DEUTSCH connector molded, 2-pin – without suppressor diode	●	●	●	●	●	●	●	●	P

Standard / special version

16	Standard version	without symbol	
		combined with attachment part or attachment pump	-K
	Special version		-S
		combined with attachment part or attachment pump	-SK

[1] **S**-shaft suitable for combination pump!
[2] To fit the flywheel case of the combustion engine
[3] 2 ≙ 2-hole; 4 ≙ 4-hole
[4] Size 190 and 260 with 2 + 4-hole flange

● = available ● = on request – = not available ▭ = preferred program

Ordering code for standard program

	A2F		O		/	6			–	V				
01	02	03	04	05		06	07	08		09	10	11	12	13

Hydraulic fluid

01	Mineral oil and HFD. HFD for sizes 250 to 1000 only in combination with long-life bearings "L" (without code)		
	HFB, HFC hydraulic fluid	Sizes 5 to 200 (without code)	
		Sizes 250 to 1000 (only in combination with long-life bearings "L")	E-

Axial piston unit

02	Bent-axis design, fixed	A2F

Drive shaft bearing

		5 to 200	250 to 500	710 to 1000	
03	Standard bearing (without code)	●	●	–	
	Long-life bearing	–	●	●	L

Operating mode

04	Pump, open circuit	O

Sizes (NG)

05	Displacement																					
		5	10	12	16	23	28	32	45	56	63	80	90	107	125	160	180	200	250	355	500	710	1000

Series

06		6

Index

07		NG10 to 180	1
		NG200	3
		NG5 and 250 to 1000	0

Directions of rotation

08	Viewed on drive shaft	clockwise	R
		counter-clockwise	L

Seals

09	FKM (fluor-caoutchouc)	V

Drive shafts

		5	10	12	16	23	28	32	45	56	63	80	90	107	125	160	180	200	250 to 1000	
10	Splined shaft DIN 5480	–	●	●	●	●	●	●	–	●	●	●	●	●	●	●	●	●	–	A
		–	●	●	–	●	●	–	●	●	–	●	–	●	–	●	–	–	●	Z
	Parallel keyed shaft DIN 6885	●	●	●	●	●	●	●	–	●	●	●	●	●	●	●	●	●	–	B
		–	●	●	–	●	●	–	●	●	–	●	–	●	–	●	–	–	●	P
	Conical shaft[1]	●	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	C

Mounting flanges

			5 to 250	355 to 1000	
11	ISO 3019-2	4-hole	●	–	B
		8-hole	–	●	H

● = Available ❍ = On request – = Not available ▭ = Preferred program

1) Conical shaft with threaded pin and woodruff key (DIN 6888). The torque must be transmitted via the tapered press fit.

Ordering code for standard program

	A2F		O		/	6			–	V				
01	02	03	04	05		06	07	08		09	10	11	12	13

Port plates for service lines[2]

		5	10 to 16	23 to 250	355 to 1000	
12	SAE flange port A/B at side and SAE flange port S at rear	–	–	●	–	05
	Threaded port A/B at side and threaded port S at rear	–	●	–	–	06
	SAE flange ports A/B and S at rear	–	–	–	●	11
	Threaded ports A/B and S at side	●	–	–	–	07

Standard / special version

13	Standard version (without code)	
	Standard version with installation variants, e. g. T ports against standard open or closed	-Y
	Special version	-S

● = Available ❍ = On request – = Not available ▭ = Preferred program

2) Fastening thread or threaded ports, metric

Ordering Code / Standard Program

A20V		O			/	10		–					
01	02	03	04	05		06	07		08	09	10	11	12

Axial piston unit

01	Swashplate design, variable (Back to back - design)	A20V

	Charge pump (impeller)	**60**	**95**	**190**	**260**	**520**	
02	without charge pump (no code)	●	●	–	–	●	
	with charge pump	–	–	●	●	–	L

Operation

03	Double pump, open circuit	O

	Size	**60**	**95**	**190**	**260**	**520**	
04	≈ Displacement $V_{g\,max}$ in cm³ (per rotary group)						

	Control devices	**60**	**95**	**190**	**260**	**520**	
05	A10VO/53	●	–	–	–	–	
	A11VO	–	●	●	●	–	
	A4VSO	–	–	–	–	●	

Series

06	Series 1, Index 0	10

Direction of rotation

07	viewed on shaft end	clockwise	R
		counter-clockwise	L

	Seals	**60**	**95**	**190**	**260**	**520**	
08	NBR (nitril-caoutchouc), shaft seal ring in FKM (fluor-caoutchouc)	●	●	●	●	–	N
	FKM (fluor-caoutchouc)	–	–	–	–	●	V

	Shaft end	**60**	**95**	**190**	**260**	**520**	
10	Splined shaft DIN 5480	–	●	●	●	●	Z
	Splined shaft, ANSI B92.1a-1976	●	●	–	–	–	S
		–	–	●	●	–	T
	Parallel keyed shaft, DIN 6885	–	–	–	–	●	P

	Mounting flange	**60**	**95**	**190**	**260**	**520**	
09	SAE J744 – 4-hole	●	●	●	●	–	D
	To fit flywheel housing (conformin to SAE J617) of internal combustion engine (details on request)	–	●	●	–	–	G
	ISO 3019-2 – 8-hole	–	–	–	–	●	H

	Service line ports	**60**	**95**	**190**	**260**	**520**	
11	Two service line ports and one scution port at site, opposite (fastening thread metric)	●	●	●	●	–	24
	At the site two service line ports each, opposite and one suction port displaced by 90° (fastening thread metric)	–	–	–	–	●	26

	Boost pump and through drive[1)]			**60**	**95**	**190**	**260**	**520**	
12	without boost pump, without through drive			●	●	●	●	–	N00
	without boost pump, with through drive								
	Flange SAE J744	Splined shaft hub							
	82-2 (A)	5/8 in	9T 16/32DP (A)	❍	❍	❍	❍	–	K01
	127-2 (C)	1 1/4in	14T 12/24DP (C)	–	–	–	–	●	K07
	with through drive shaft, without hub, without intermediate flange, closed by a cover			–	–	–	–	●	K99

● = available ❍ = available on request – = not available

[1)] Please contact us

Technical Data

Table of values (theoretical values, without efficiencies η_{mh} and η_v; values rounded)

Size	*without* **charge pump** *with* **charge pump**		**60**	**95**	**190**	**260**	**520**
Displacement	$V_{g\,max}$	cm³	60	93,8	192,7	260	520
(per rotary group)	$V_{g\,min}$	cm³	0	0	0	0	0
Speed							
maximal [1)] at $V_{g\,max}$	n_{max}	min^{-1}	2700	2350	2500 [2)]	2300 [2)]	1450
Speed max. [3)]							
at $V_g \leq V_{g\,max}$	n_{max}	min^{-1}	3200	2780	2500	2300	1720
Flow							
at n_{max} and $V_{g\,max}$	$q_{v\,max}$	L/min	2x162	2x220	2x482	2x598	2x754
Power at $q_{V\,max}$ and $\Delta p = 350$ bar	P_{max}	kW	135[4)]	257	562	698	880
Torque at $V_{g\,max}$							
at long-term ($\Delta p = 350$ bar)	T_{max}	Nm	477 [4)]	1045	2147	2897	5793
max. perm., short term ($\Delta p = 400$ bar)	T_{max}	Nm	602 [4)]	1194	2454	3310	6621
Moment of inertia (of the rotating parts)	J	kgm^2	0,0113	0,0346	0,0604	0,0912	0,696
Mass approx.	m	kg	44				640

[1)] The values are quoted for an absolute pressure (p_{abs}) of 1 bar at suction port S and mineral operating fluid.
[2)] The values are quoted for an absolute pressure (p_{abs}) of at least 0.8 bar at suction port S and mineral operating fluid.
[3)] The values are quoted for $V_g < V_{g\,max}$ or increase of the input pressure p_{abs} at suction port S.
[4)] $\Delta p = 250$ bar (long-term operation) or rather 315 bar (short term).

Through Drive

Please contact us.

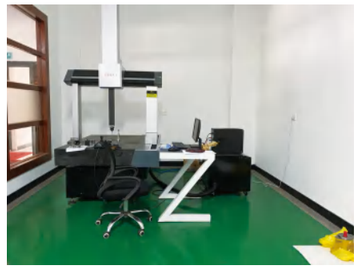
ADVANTAGE

Technical team:We have a technical cooperation studio with Amount of professors of different university .
Dedicated to improving the issue of running in between accessories.

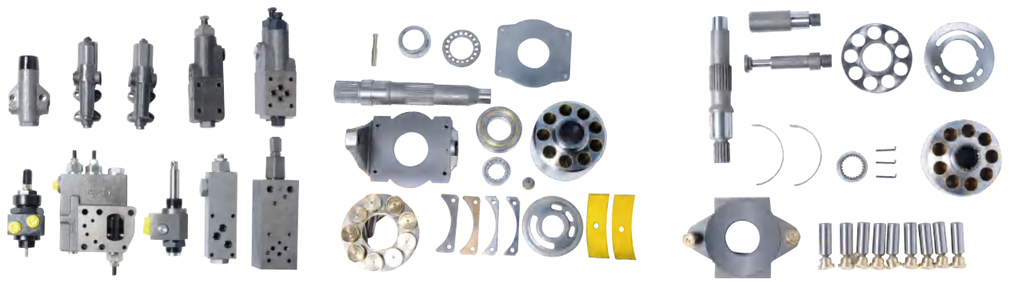





Professional quality testing platform: There are about ten experienced technical and debugging teams.


Has a unique structural design : The internal structure has its own patent,more suitable and higher cost than the original structure.



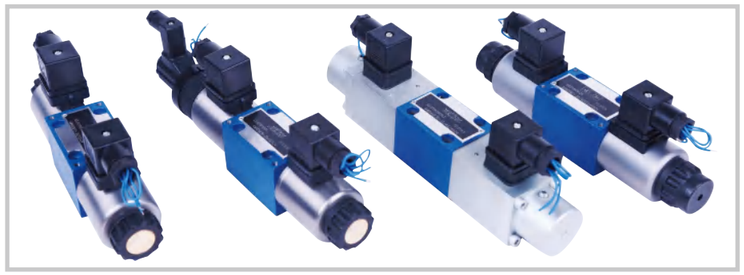
Professional production workshop.





ADVANTAGE

Wide range of alternative product suppliers.


Proportional valve


Orbit Motor


Hydraulic Motor


Hydraulic Motor


Hydraulic Motor


Internal Hydraulic Motor


Hydraulic Motor


Hydraulic Motor


Hydraulic Motor


Reducer


Reducer


Winch


Rotary Reducer


Rotary Reducer