

1.2

HP5VS series

Swash-plate Type Axial Piston Variable Displacement Pump HP5VS series piston pump is high pressure open circuit axial piston pump specially designed with a new structure, light weight, high power density, and long life.

Apply to open hydraulic circ	uit		
Displacements (cc/rev):	45	63	85
Rated pressure (bar):	210	210	210
Peaking pressure (bar):	250	250	250



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Features

\cdot Variable pump in swash-plate design for
open circuit.
 High continuous pressure.
 Exceptional self-priming capability.
$\cdot \mbox{Available}$ with American (SAE) and Japanese
(JIS) mounting flanges and shafts.
·Excellent reliability and long life.
·High power to weight ratio.
·Variety of control options.
•Optional through drive.
·Quick control response.

·Low pressure pulsation and low noise.

Technical Data

Size	e 45 63			85	
Displacen	nent (cc/rev)	45	63	85	
Dressure	Rated pressure (bar)	210	210	210	
Pressure	Peak pressure (bar)	250	250	250	
Rotation speed	Max for self-priming ^{*1} (rpm)	2900	2700	2700	
Weight (K	g)	15	30	-	
Quantity	of oil to fill pump case (L)	0.3	0.6	0.8	
Temperature Range (°C)		-20~95			
Viscosity Range (mm²/s)		10-1000 ^{°2} (The best use of viscosity range 16~36 mm ² /s)			

Permissible through drive torque					
Input shaft code	S1	S2			
Input torque rating (Nm)	250	400			

1. Steady state suction pressure should be 0 bar and above(at normal condition);

2. In case of 200-1000mm²/s, please allow system to warm up before using machine.

Type introduction

HP5VS	45	/	В	V	00	R	B2	S1	М	G	DR	S
1	2		3	4	5	6	1	8	9	10	1)	(12)

Product series

	Compact product series	HP5VS
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Displacement

② Displacement cc/rev	45	63	85
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Design series

		45	63	85	Code
3	High speed unboost(Without filter)	۲	۲	•	В
	High speed boost (With filter)	۲	•		С

Seals

	FKM (Viton rubber: DIN ISO 1629)	FKM (Viton rubber: DIN ISO 1629)	V
4	Seals	NBR (Nitrile rubble :DIN ISO 1629)	Ν

Through Drive

		45	63	85	Code
Ē	Without through drive		•		00
3	Without through drive, SAE flange ports, rear	•	۲	•	N1
	Without through drive, Thread ports, rear		•		N2

Direction of Rotation

Viewed on drive shaft	Clockwise	R
viewed on drive shart	Counter-clockwise	L

Input Mounting flanges

	Mounting flanges size	45	63	85	Code
U	SAE B 101-2				B2

Type introduction

Input Shaft

	Shaft size	45	63	85	Code
8	SAE J744-22-4 13T 16/32DP	•	•		S1
	SAE J744-25-4 15T 16/32DP			•	S2

Remark: If you have any other needs, please contact us.

Thread type of Flange Fixing Port

	Thread turns	Metric threads	М
9	Thread type	UNC threads	S

Connection type (except inlet and outlet port)

	UNC port, ISO 11926	А
10	BSPPG thread, JIS B2351	G
	Metric port, ISO 9974	М

Control type

	Control type		45	63	85	Code
		Only pressure control	\bullet	•	•	DR
	Pressure cut-on	+Load sensing		•	•	L1
	Power Control	Pressure cut-off+ Load sensing	\bullet			LP1

Standard / special version

		45	63	85	Code
(12)	Standard version		•	\bullet	None
	Special version	0	0	0	S

Remark: ● = available; ○ = On request;

Regulators introduction

Code:	L1(DR)	
Control Type :	 1. Load sensing Standard setting: 15bar Adjustment range: 10bar-21bar (It can be set to 35 bar at most, but it is not recommended to set it too high. If you need other settings, please consult our company.) 2. Pressure Cut-off Standard setting: 320bar Adjustment range: 21bar-320bar 	NOL DE LA COMPANSION DE
Function and Features:	Load sensing + Pressure Cut-off The load sensing control is a flow control option tha pressure to regulate the pump displacement to matc. The load sensing control compares pressure before maintains the pressure drop across the orifice (differ pump flow constant. If the differential pressure Δp increases, then the pur pressure drop across the sensing orifice in the valve i $\Delta p=Pp-P_l$. Pump displacement is controlled to match the flow system differential pressure(load pressure vs delive pressure cut off function incorporated into the contro The pressure cut off control keeps the pressure in a its control range even under varying flow conditions much hydraulic fluid as is required by the actuators the set point set at the pressure control valve, the pr even deal the pressure control valve, the pr	t operates as a function of the load h the actuator flow requirement. a and after the sensing orifice and rential pressure △p) and with it the mp displacement decreases, and if up displacement increases until the s restored. v requirement as a function of the ry pressure).In addition, there is a ol. hydraulic system constant within the variable pump only moves as if the operating pressure exceeds up displacement is automatically ad

"DR" control is on the basis of "L1" control, tighten the load sensitive valve adjust screw, and the load sensitive valve doesn't work.



Regulators introduction

Code:	LP1
Control Type :	1. Load sensing
	Standard setting: 15bar

Adjustment range: 10bar-21bar (It can be set to 35 bar at most, but it is not recommended to set it too high. If you need other settings, please consult our company.) **2. Pressure Cut-off** Standard setting: 210bar Adjustment range: 21 bar-210 bar



Function and Features: LP1 Load Sense and Pressure Cut-off with Torque limiting

3. Torque limiting

The L1 control functions as previously noted. In response to a rise in delivery pressure the swash plate angle is decreased, restricting the input torque. This regulator prevents excessive load against the prime mover.

The torque limit control module is comprised of two springs that oppose the spool force by the system pressure. By turning an outer and inner spring adjustment screw, the appropriate input torque limit can be set.

Hydraulic Circuit:



HP5VS45 installation size

HP5VS45 with Cut-off/Load Sense Control



Port Details

	Port Name	Port Size and Description	Tightening Torque (N · m)
Р	Working port	M33×2 (ISO 6149)	310
S	Suction port	M48×2 (ISO 6149)	420
T1	Case drain port	M22×1.5	100
PL	LS Control port	7/16-20-UNF-2B	20

HP5VS45 Mounting Flange



SAE "B2" type

HP5VS45 Input Shaft type



"S1" type spline shaft

HP5VS63 installation size

HP5VS63 with Cut-off/Load Sense Control



(1 3/8-12UNF-2A)

<u>186.8</u> 222.8 243.6





Port Details

	Port Name	Port Size and Description	Tightening Torque (N∙m)
Р	Working port	SAE 1" MAX.5000psi M10X1.5 (depth 17mm)	57
S	Suction Port	Φ45; 2×M8	29
T1	Case drain Port	ISO 11926 7/8"-14UNF-2B	120
PL	LS Control Port	ISO 11926 7/16"-20UNF-2B	12

20

HP5VS63 Mounting Flange





SAE "B2"type

HP5VS63 Input Shaft type



"S1"type spline shaft

HP5VS85 installation size

HP5VS85 with Cut-off/Load Sense Control with torque limit (Clockwise Rotation) For the CCW pump just reverse the inlet and outlet port.

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Port Details

	Port Name	油口尺寸和类型			拧紧力矩 (N ⋅ m)
Р	Working port	1" SAE J518C Code 61 (5000psi)	M(公制)	M10×1.5(深 17mm)	57
S	Suction Port	2" SAE J518C Code 61 (3000psi)	M(公制)	M12×1.75 (深 20mm)	98
T1、T2、T3	Case drain Port	122×1.5(ISO 6149-1)		60	
PL	LS Control Port	M12×1.5(ISO 6149-1)			35

HP5VS85 Mounting Flange



SAE "C2" type

HP5VS85 Input Shaft type



"S2" type spline shaft

China +86 400 101 8889	America +01 630 995 3674	
Germany +49 (30) 72088-0	Japan +81 03 6809 1696	

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