



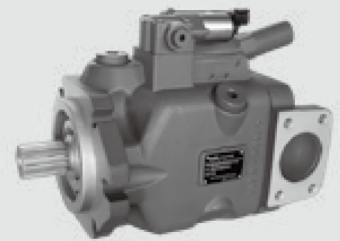
HP5V SERIES

Swash-plate Type Axial Piston Variable Displacement Pump

HP5V series piston pump is high pressure open circuit axial piston pump specially designed with a new structure, and has lighter weight, higher power density, and longer life compared with HP3V pump.

Apply to open hydraulic circuit

Displacements (cc/rev):	(S)28	28	45	60	76	85	105
Rated pressure (bar):	250	320	320	250	320	280	350
Peaking pressure (bar):	315	350	350	280	350	320	400



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Features

- Variable pump in swash-plate design for open circuit.
- High continuous pressure.
- Exceptional self-priming capability.
- 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.
- Developed for engineering, mobile vehicles, industrial, other industrial application and agricultural machinery.

Technical Data

Size	HP5VS28	HP5V28	HP5V45	HP5V60	HP5V76	HP5V85	HP5V105
Displacement (cc/rev)	28	28	45	60	76	85	104.3
Pressure	Rated pressure (bar)	250	320	320	250	320	350
	Peak pressure (bar)	315	350	350	280	350	400
Rotation speed	Max for self-priming ¹ (rpm)	3000	3000	2700	2400	2400	2200
	Max ² (rpm)	3600	3600	3250	3000	3000	2600
Weight (Kg)	17.2	20	24	24	28	28	45
Quantity of oil to fill pump case (L)	0.55	0.6	0.6	0.6	0.8	0.8	1
Input torque rating (Nm)	198	155	225	225	400	400	530
Temperature Range (°C)	-20~95						
Viscosity Range (mm ² /s)	10-1000 ^{*3} (The best use of viscosity range 16~36 mm ² /s)						

Permissible through drive torque

Input shaft code	S1	S2	S3	S4	S5	K1	K2	K3
Input torque rating (Nm)	171	272	552	925	1470	145	230	430

1. Steady state suction pressure should be 0 bar and above(at normal condition);
2. If suction pressure less than 0 bar, Boost pressure should be required;
3. In case of 200-1000mm²/s, please allow system to warm up before using machine.

Type introduction

HP5V	76	/	A	V	1	O	R	B2	S1	M	S	—	L1/1	—	D	2	—	T
①	②		③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪		⑫		⑬	⑭		⑮

Product series

①	Product series	HP5V
	Compact product series	HP5VS

Displacement

②	Displacement	cc/rev	28	45	60	76	85	105
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Design series

③	Design series	A Series	A
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Seals

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

Hydraulic circuit

⑤	Hydraulic circuit	Open circuit	I
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Through Drive

		S28	28	45	60	76	85	105	Code	
⑥	Without through drive	●	●	●	●	●	●	●	O	
	Without through drive, SAE flange ports, rear	●	○	●					NO1	
	Without through drive, Thread ports, rear			●					NO2	
	Standard configuration with gear pump 6cc/rev			●	●	●	●	○	X1	
	Standard configuration with gear pump 10cc/rev			○	○	○	○	○	X2	
	Mounting Flange	Spline shaft								
	SAE A 82-2	SAE J744-16-4 9T 16/32DP		●	●	●	●	●	●	A1
		SAE J744-19-4 11T 16/32DP			○	○	●	●	●	A2
	SAE B 101-2	SAE J744-22-4 13T 16/32DP	○	●	●	●	●	●	●	B1
		SAE J744-25-4 15T 16/32DP			●	●	●	●	●	B2
	SAE C 127-2	SAE J744-32-4 14T 12/24DP					●	●	○	C1
		SAE J744-38-4 17T 12/24DP							○	C2
SAE C 127-4	SAE J744-32-4 14T 12/24DP					●	●	●	C3	
	SAE J744-38-4 17T 12/24DP							●	C4	

Type introduction

Direction of Rotation

⑦	Viewed on drive shaft	Clockwise	R
		Counter-clockwise	L

Input Mounting flanges

⑧	Mounting flanges size	S28	28	45	60	76	85	105	Code
	SAE B 101-2	●	●	●	●				
SAE C 127-2						●	●	●	C2
SAE C 127-4						●	●	●	C4

Input Shaft

⑨	Shaft size	S28	28	45	60	76	85	105	Code
	SAE J744-22-4 13T 16/32DP	●	●	●	●	○	○		
SAE J744-25-4 15T 16/32DP			●	●	●	●			S2
SAE J744-32-4 14T 12/24DP						●	●	●	S3
SAE J744-38-4 17T 12/24DP								●	S4
SAE J744-44-4 13T 8/16DP								●	S5
SAE J744-22-1 B6.35×28 straight shaft	●	●							K1
SAE J744-25-1 B6.35×32 straight shaft			●	●					K2
SAE J744-32-1 B7.94×44 straight shaft						●	●		K3
ISO straight shaft (non through shaft)		●	●	●	●	●	●	●	P

Thread type of Flange Fixing Port

⑩	Thread type	Metric threads	M
		UNC threads	S

Connection type (except inlet and outlet port)

⑪	UNC port, ISO 11926	A
	BSPPG thread, JIS B2351	G
	Metric port, ISO 9974	M

Type introduction

Control type

Control type		S28	28	45	60	76	85	105	Code	
Apply to constant displacement pump		○	○	○	○	○	○	○	N	
⑫	Pressure cut-off	Only pressure control	●	●	●	●	●	○	DR	
		Electro-hydraulic pressure control, positive control	○	○	○					ER1
		Electro-hydraulic pressure control, negative control	●	●	●	●	●	●	●	ER2
		+Load sensing	●	●	●	●	●	●	○	L1
		Remotely operated	●	●	●	●	●	●	○	P0
Power Control	Pressure cut-off+ Load sensing	●		●	●	●	●	●	L1/1	
	Remotely operated+ Load sensing	●		●	●	●	●	○	P0/1	
	Electrically (negative control) +Pressure cut-off+ Load sensing	●				●	●	○	L1/1-E0	
	Hydraulic control + Pressure cut-off + Load sensing					●	●	○	L1/1-H0	
	+Load sensing		●						LP1	

Connector for solenoids

Connector for solenoid		S28	28	45	60	76	85	105	Code
⑬	Without solenoid	●	●	●	●	●	●	●	Blank
	AMP Junior timer; 2 contact pin, (without suppressor diode)					●	●	○	A
	Deutsch DT04-2P; 2 contact pin, (without suppressor diode)	●	●	●	●	●	●	●	D

Input Voltage

⑭	Without solenoid	Blank
	12VDC	1
	24VDC	2

Application Conditions

Application		S28	28	45	60	76	85	105	Code
⑮	Apply to excavator	●	●	●	●	●	●	●	T
	Other mobile machinery, construction machinery, industrial application	●	●	●	●	●	●	●	Blank

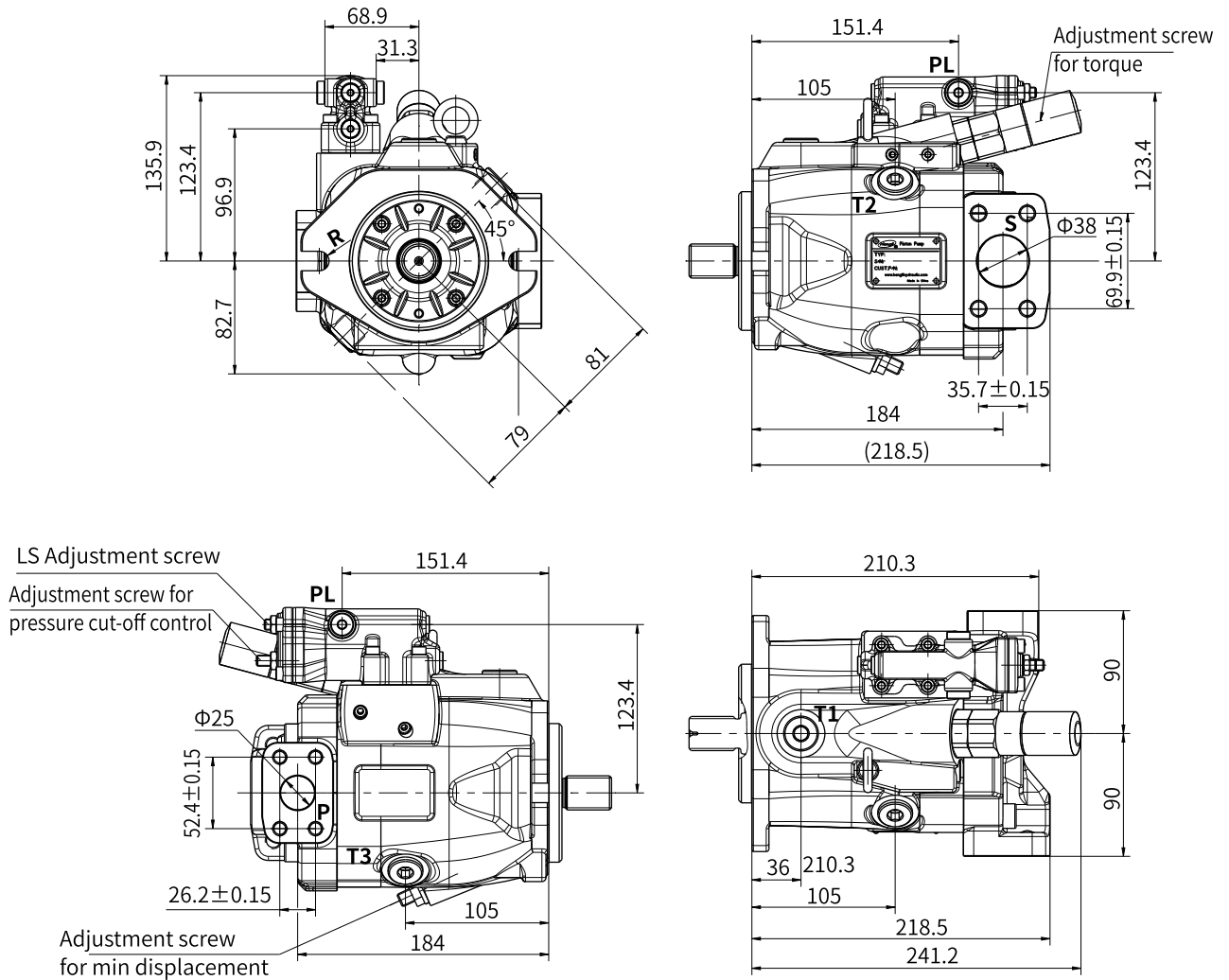
Remark: ● = available; ○ = On request;

Installation size

HP5V45/60 Installation size

HP5V45/60 with Cut-off/Load Sense Control with torque limit
(Clockwise Rotation)

For the CCW pump just reverse the inlet and outlet port.



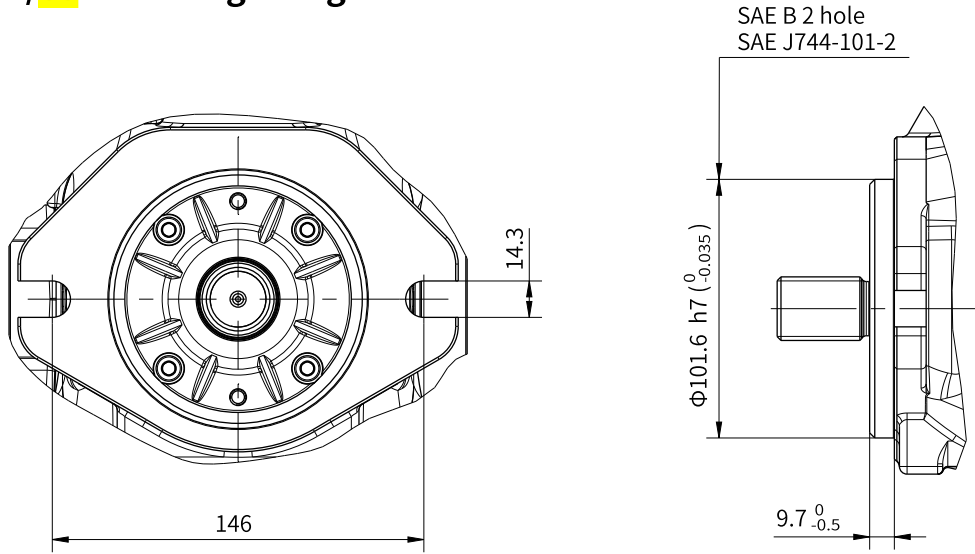
Port Details

Port Name	Port Size and Description	Tightening Torque (N-m)		
			P	Working port
S	Suction Port	1-1/2" SAE J518C Code 61 (3000psi)	M (metric) M12×1.75 (depth 20mm) S(UNC) 1/2-13UNC-2B (depth 20mm)	98
T1, T2, T3	Case drain Port	ISO 11926 (7/8-14UNF-2B) depth 13mm		120
PL	LS Control Port	ISO 11926 (7/16-20UNF-2B) depth 11.5mm		12

HP5V

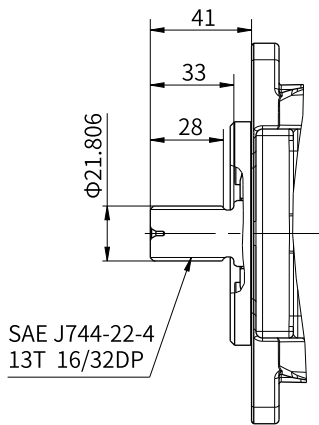
Installation size

HP5V45/60 Mounting Flange

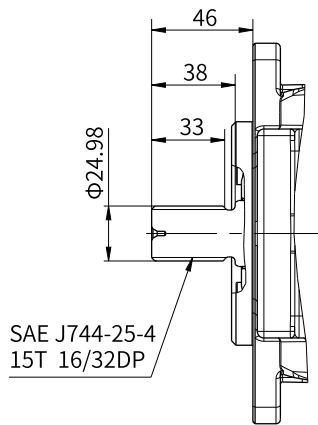


SAE "B2" type

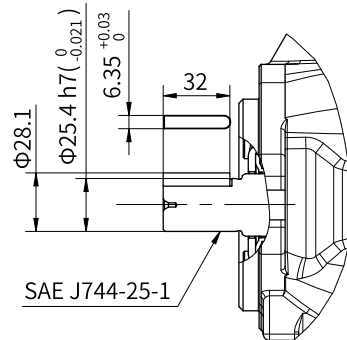
HP5V45/60 Input Shaft type



"S1" type spline shaft



"S2" type spline shaft



"K2" type straight shaft