1.4

HP3V-S SERIES

Heavy-Duty Swash-plate Type
Axial Piston Variable Displacement Pump

Designed for open loop concrete pump and crane applications. Shorter pump suitable for limit installation space. The HP3V-75S series pump is capable of tandem pump to work with other pumps. The developed various controllers can meet requirements of all kinds of applications.

Apply to open hydraulic circuit			
Displacement (cc/rev):	75	280	300
Nominal pressure (bar):	350	350	370
Maximum pressure (bar):	400	400	420

Contents

Features

- Higher working pressure, rated working pressure up to 350 bar.
- Higher efficiency, improved by 2% ~ 3% than similar products.
- Compact design to meet tight installation space requirements, optimized axial structure with 10% shorter total length than the last generation HP3V series.
- Optimized port plate, lower noise.
- Heavy-duty bearings and increased drive shaft dimension for higher load and longer life time.
- Various controllers suitable for requirements of all kinds of applications.

Technical data

Size		HP3V 75S	HP3V280S	HP3V 300S
Displacement (cc/rev)		75	280	300
Speed	**Rated speed** (rpm) *1	2450	2000	2000
	Maximum speed (rpm) *2	3000	2000	2100
Pressure	**Rated pressure** (bar)	350	350	370
	Maximum pressure (bar)	400	400	420
Maximum torque (N•m)		415	1570	1750
Case volume (L)		1.3	3.2	3.5
Suction port pressure (abs bar)		0.8		0.9
Drain pressure	**Rated pressure** (bar)	1		
	Maximum pressure (bar)	3		
Hydraulic fluid viscosity range (mm^2/s)		10~1000 *3 (optimum viscosity range 16 ～ 36)		
Temperature range (°C)		-30~80		
Mass (Kg)		59	160	170

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 200-1000mm^2/s, please allow system to warm up before using machine.

Type introduction

HP3V	75	S	O	L	EPD	/	C2	S3	N	M	M	S
①	②	③	④	⑤	⑥		⑦	⑧	⑨	⑩	⑪	⑫

Product series

①	Product series	HP3V

Displacement

②	Displacement cc/rev	75	280	300

Structure type

③	Single pump	S

Charge pump

④	without charge pump	O
	with charge pump	H

Direction rotation

⑤	Clockwise	R
	Counter-clockwise	L

Control type

	Control type	75	280	300	Code
⑥	Electric proportional displacement + Hyperbolic torque control +Pressure Cut-off	●			EPD
	Electric proportional displacement	●	●	●	E0
	Electric proportional displacement (inverse proportion)	●			E2

Type introduction

Mounting flange

		75	280	300	Code
⑦	SAE C 127-2	●			C2
	Special 4-hole flange		●	●	G4

Input shaft

		75	280	300	Code
⑧	SAE J744-32-4 14T-12/24DP	●			S3
	JIS B1603 54×16×3		●	●	J5
	JIS B1603 60×18×3		●	●	J6

Through drive and pilot pump

		75	280	300	Code
⑨	None	●	●	●	N
	SAE B 101-2 SAE J744-22-4 13T 16/32DP	●	○	○	B1
	SAE B 101-2 SAE J744-25-4 15T 16/32DP	○	●	●	B2
	With pilot gear pump and pressure relief valve (only for none through drive)	●	●	●	K0

Connection type (except inlet and outlet port)

⑩	UNC port, ISO11926	○	A
	Metric port, ISO 6149	○	M
	BSPP G thread, JIS B2351	●	G

Thread type of Flange Port

⑪	UNC threads (only for UNC port)	○	A
	Metric thread	●	M

Standard / special version

		75	280	300	Code
⑫	Standard version	●	●	●	None
	Special version	○	○	○	S

Remark: ● = available; ○ = On request;

HP3V 75S Control principle

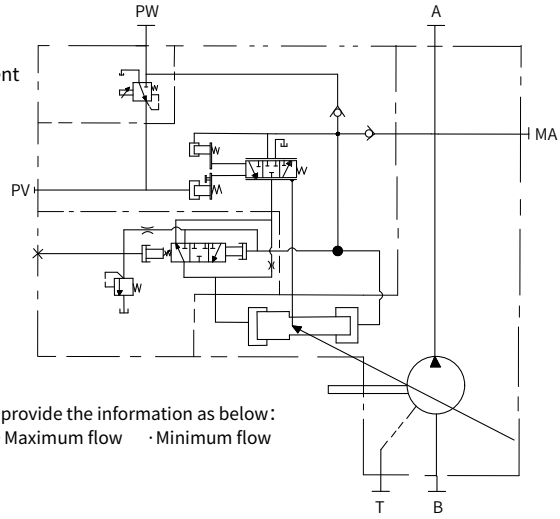
The torque limiting module is equipped with two springs to overcome the spool thrust generated by the system pressure; the appropriate input torque can be set by the adjusting screws of the inner and outer springs.

Electro-proportional displacement control: With pilot-pressure-related control, the pump displacement is adjusted in proportion to the pilot pressure. With increasing pilot pressure the pump swivels to a larger displacement. The necessary control power is taken from the operating pressure or the external control pressure applied to port P. If the pump is to be adjusted from the zero basic setting or from a low operating pressure, port P must be supplied with an external control pressure of at least 30 bar, maximum 50 bar.

When the pressure set value is reached, the pressure cut-off valve adjusts the displacement of the pump back to Vmin.。

·EPD

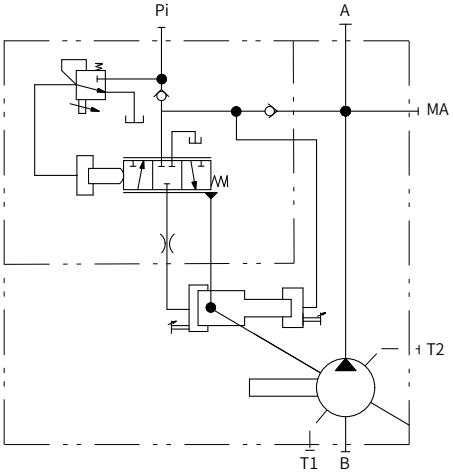
Electric proportional displacement
+ Hyperbolic torque control
+Pressure Cut-off



Note:
When ordering, please provide the information as below:
·Working pressure ·Maximum flow ·Minimum flow

·E0

Electric proportional displacement



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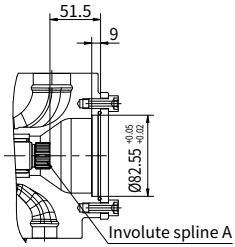
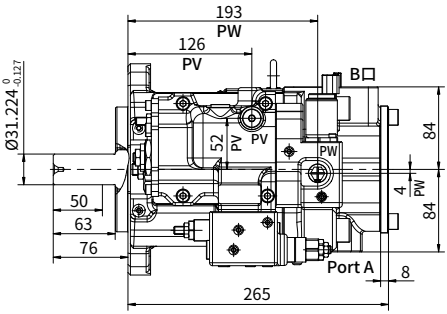
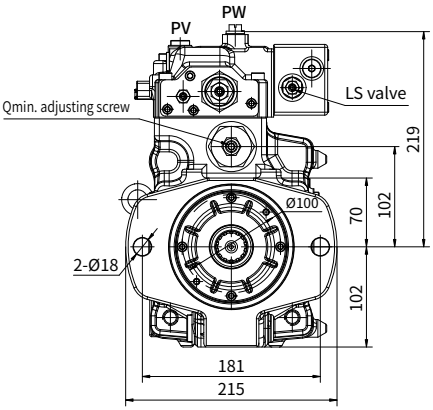
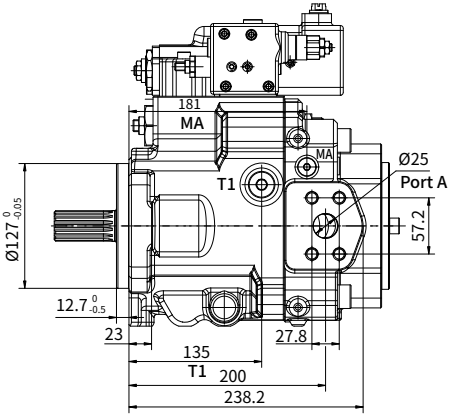
Installation size

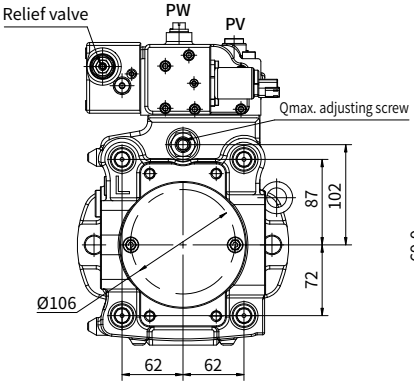
HP3V 75S Installation size

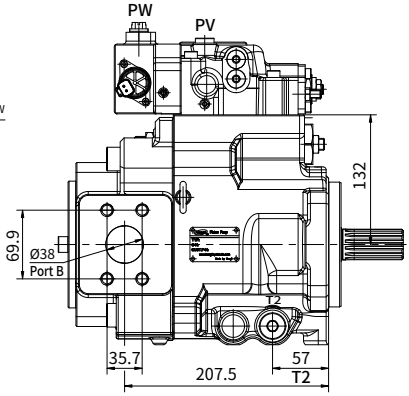






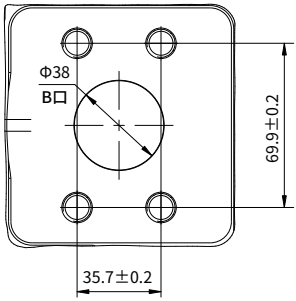


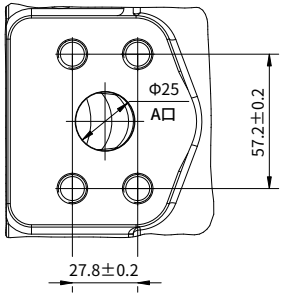




Installation size

·HP3V 75S Description of oil port



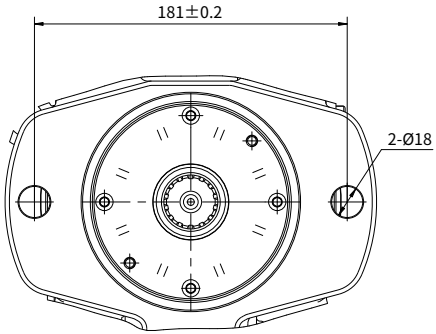


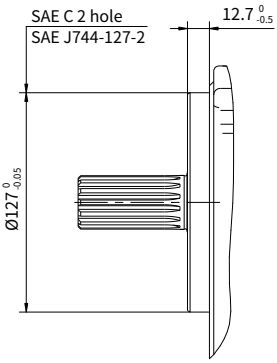
·Port Details

	Port Name	Port Size and Description
A	Output Port	SAE 1" 4-M12 depth 19mm
B	Input Port	SAE 1-1/2" 4-M12 depth 19mm
T1, T2	Drain Port	G1/2 depth 19mm
Pw	Pilot Port	G1/4 depth 12mm
MA	Pressure Measureing	G1/4 depth 15mm
Pv	Pressure Measureing	G1/4 depth 12mm

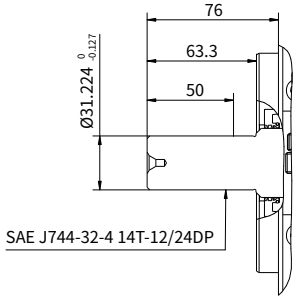
Installation size

· HP3V 75S Flywheel flange





· HP3V 75S Input shaft

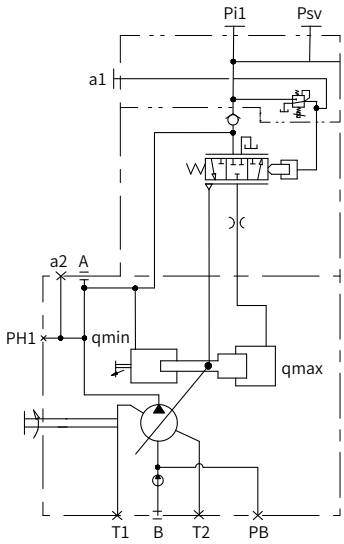


"S3" type spline shaft

HP3V 280S Control principle

·E0 Electro-proportional displacement control principle

Electro-proportional displacement control: With pilot-pressure-related control, the pump displacement is adjusted in proportion to the pilot pressure. Basic position without pilot signal is Vg min, which includes the mechanically depressurized basic position Vg_{min}. With increasing pilot pressure the pump swivels to a larger displacement. The necessary control power is taken from the operating pressure or the external control pressure applied to port P. If the pump is to be adjusted from the zero basic setting or from a low operating pressure, port P must be supplied with an external control pressure of at least 30 bar, maximum 50 bar.



Note:
When ordering, please provide the information as below:
·Working pressure
·Maximum flow
·Minimum flow

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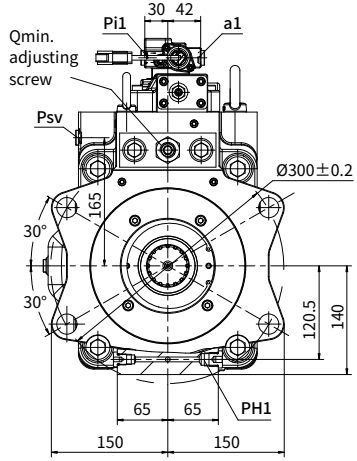
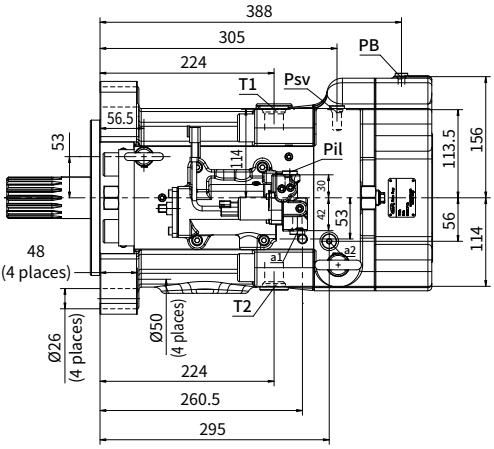
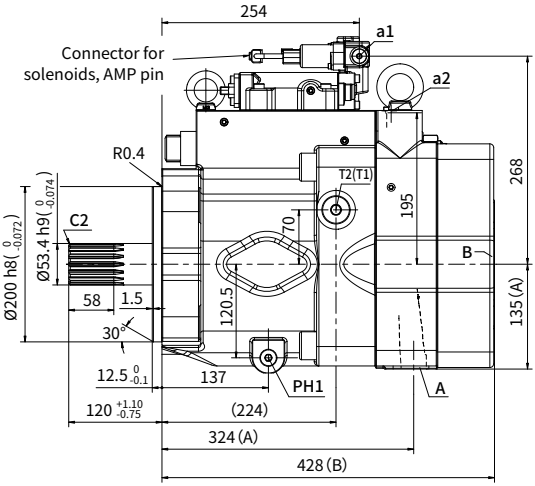
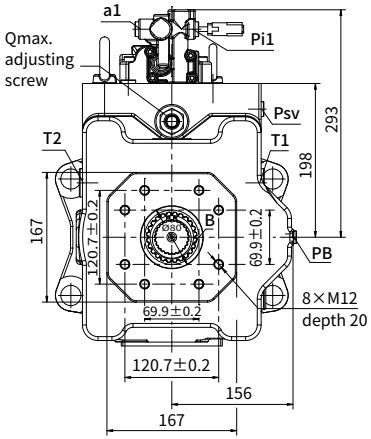
Installation size

HP3V 280S Installation size



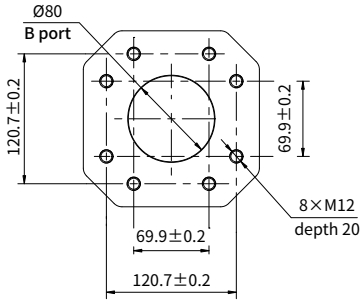


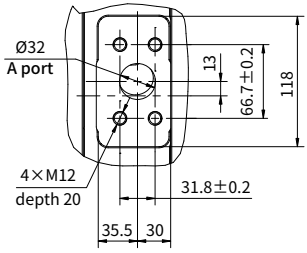




Installation size

·HP3V 280S Description of oil port



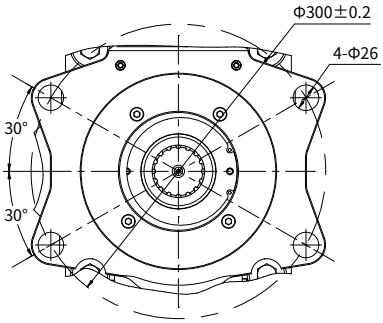


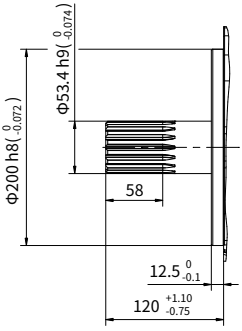
·Port Details

	Port Name	Port Size and Description	Tightening Torque (N-m)
A	Output Port	SAE 6000psi 1 1/4"	98
B	Input Port	SAE 2500psi 3 1/2''	98
T1, T2	Drain Port	G3/4 depth 20mm	170
Pi1	Pilot Port	G 1/4 depth 15mm	16
Psv		G 1/4 depth 12mm	36
a2	Pressure Measureing	G1/4 depth 12mm	36
a1		G1/4 depth 15mm	16
PB		G1/8 depth 12mm	12
PH1		G3/8 depth 15mm	74

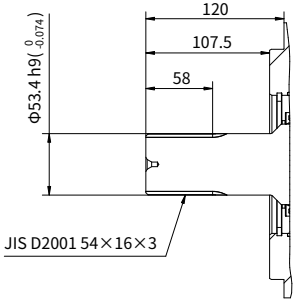
Installation size

· HP3V 280S Flywheel flange





· HP3V 280S Input shaft

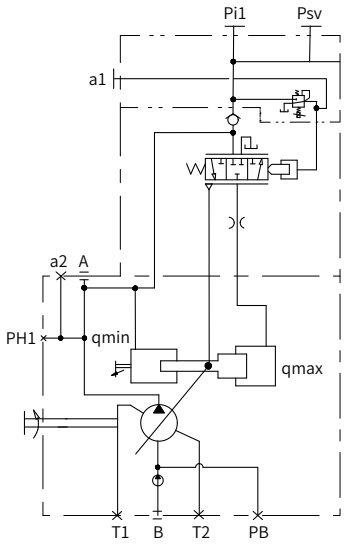


"J5" type spline shaft

HP3V 300S Control principle

·E0 Electro-proportional displacement control principle

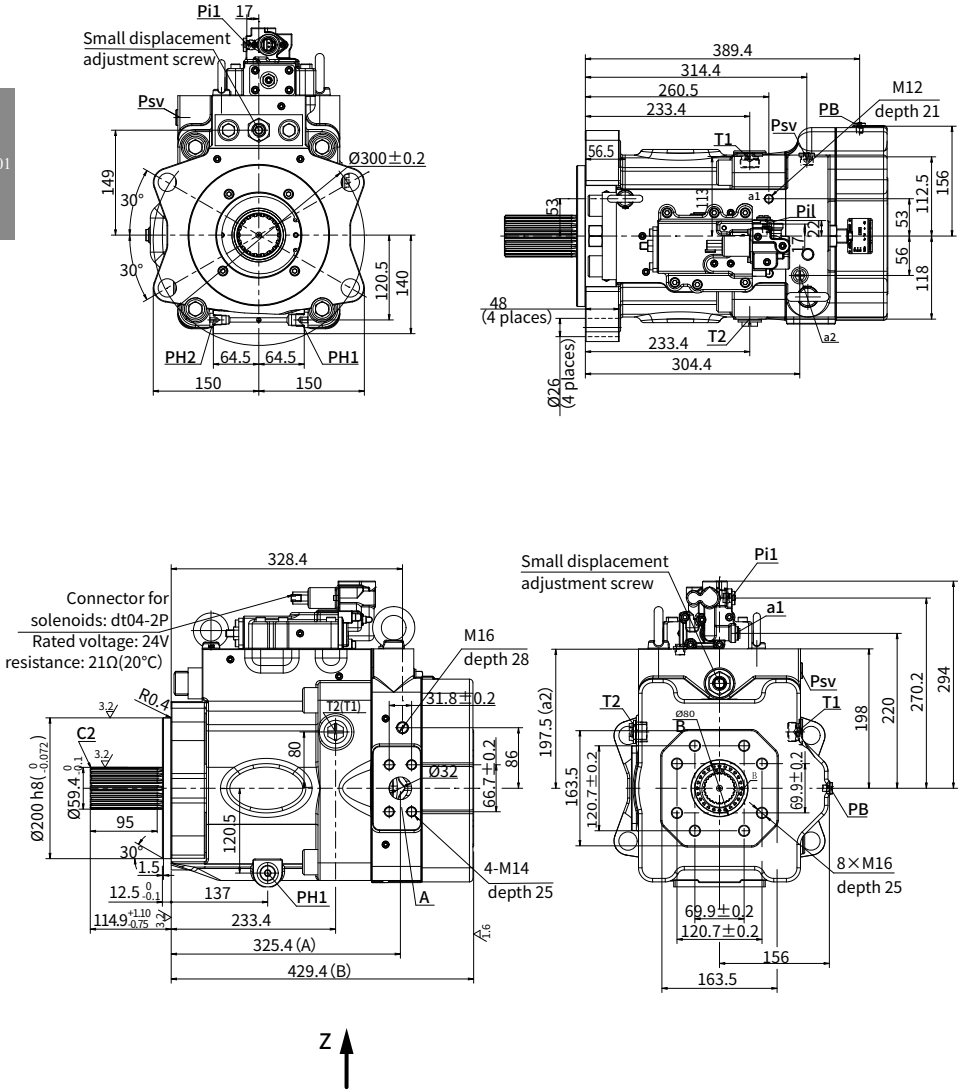
Electro-proportional displacement control: With pilot-pressure-related control, the pump displacement is adjusted in proportion to the pilot pressure. Basic position without pilot signal is Vg min, which includes the mechanically depressurized basic position Vg_{min}. With increasing pilot pressure the pump swivels to a larger displacement. The necessary control power is taken from the operating pressure or the external control pressure applied to port P. If the pump is to be adjusted from the zero basic setting or from a low operating pressure, port P must be supplied with an external control pressure of at least 30 bar, maximum 50 bar.



Note:
When ordering, please provide the information as below:
·Working pressure
·Maximum flow
·Minimum flow

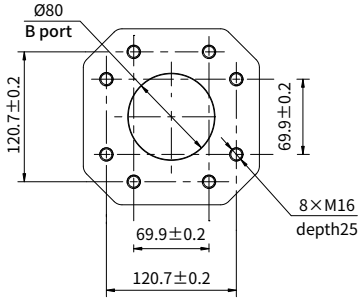
Installation size

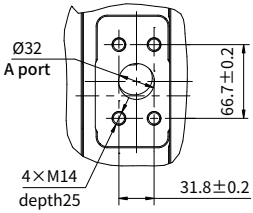
HP3V 300S Installation size



Installation size

·HP3V 300S Description of oil port



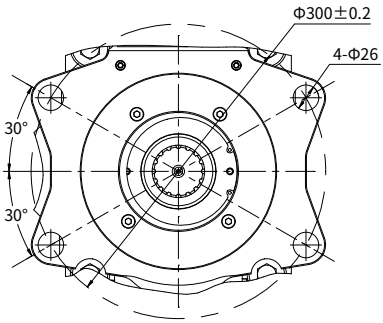


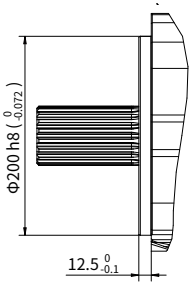
·Port Details

	Port Name	Port Size and Description	Tightening Torque (N-m)
A	Output Port	SAE 6000psi 1 1/4"	156
B	Input Port	SAE 2500psi 3 1/2''	240
T1,, T2	Drain Port	G3/4 depth 20mm	170
Psv	Pilot Port	G 3/8 depth 15mm	74
a1	Pressure Measureing	G1/4 depth 12mm	16
Pi1	Pilot Port	G1/4 depth 12mm	16
a2, PH2	Pressure Measureing	G1/4 depth 15mm	36
PB		G1/8 depth 12mm	12
PH1		G3/8 depth 15mm	74

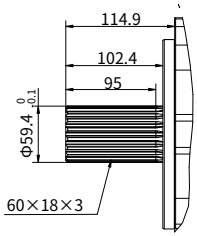
Installation size

·HP3V 300S Flywheel flange





·HP3V 300S Input shaft



"J6" type spline shaft

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