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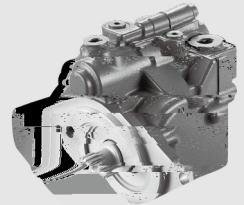
# HM5V SERIES

## Axial Piston Variable Displacement Motor

NO. HM5V series swash plate variable piston motor adopt flange design, small volume, light weight. Compact installation space, applied to the open or closed hydraulic transmission circuits.

Apply to open or close circuit

Size	35	40	45
Nominal pressure (bar)	210	175	175
Max pressure (bar)	350	350	350



## Contents

## Features

- Swash plate axial piston motor for open or close circuit.
- Flange design, widely used.
- Integration of two variable motor, servo variable piston, can set the minimum displacement of the motor.
- The side and the end are equipped with oil ports, easy to oil circuit arrangement
- High volumetric efficiency.
- Based on mature technology, excellent reliability.

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Principle 05

Installation size

· HM5V 35/40/45 Installation size 06-07

· Input Shaft type 08

## Technical data

Size		35	40	45
Max displacement (cc/rev)		35	40	45
Min displacement (cc/rev)		Can be adjusted according to the requirements		
Direction of rotation		Clockwise, Counter clockwise		
Rotation speed (at max displacement)	Rated (rpm)	3600	3500	3500
	Max (rpm)	4000	3900	3900
Rotation speed (at min displacement)	Rated (rpm)	4650	4500	4500
	Max (rpm)	5200	5050	5050
Pressure	Rated (bar)	210	175	175
	Max (bar)	415	350	350
Control Pressure	Min (bar)	14		
	Max (bar)	69		
Casting pressure	Rated (bar)	2		
	Max (bar)	6		
Weight (Kg)		15.4		
Oil viscosity (mm <sup>2</sup> /s)		7-1600, Best range: 12-80		
Oil Temperature ( )		-20-100, Best range: 10-80		
Oil Cleanliness		ISO 4406 20/18/15		

## Type introduction

HMSV	35	N	S1	R	N	N	F1513	

### Product series

	Swash plate axial piston motor	HMSV
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### Size

	Size	35	40	45
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### Speed sensor

	Without	N
	With 45 pulse/ring	S

### The input shaft

	13T 16/32 pitch ANSI B92.1-1970	S1
	15T 16/32 pitch ANSI B92.1-1970	S2

### Back cover port type

	Lateral port, 1-1/16-12UN-2B	R
	Axial port, 1-1/16-12UN-2B	Y

### Flush valve

	None (standard, if you want to flush valve please contact with us)	N
	Flow=option 1, open pressure 10.3bar (to be developed)	1

### Adjustable min displacement limiter

	None	N
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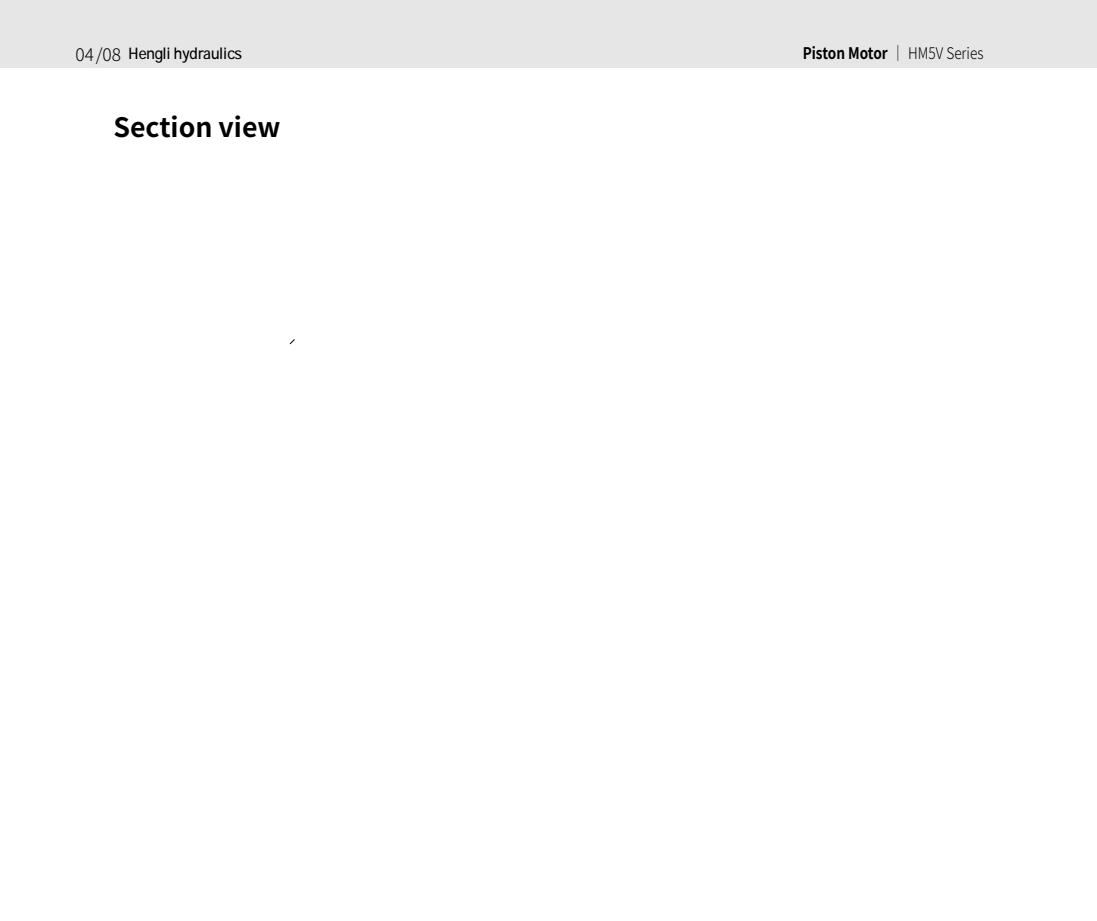
### Minimum displacement set

	10.3 cc/rev	F1030
	13.3 cc/rev	F1330
	18 cc/rev	F1800

### Paint and nameplate

	HL nameplate and black paint	None
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## Section view

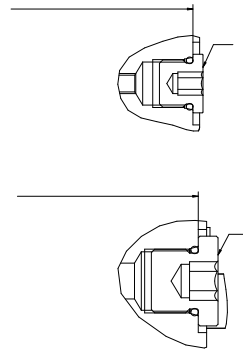
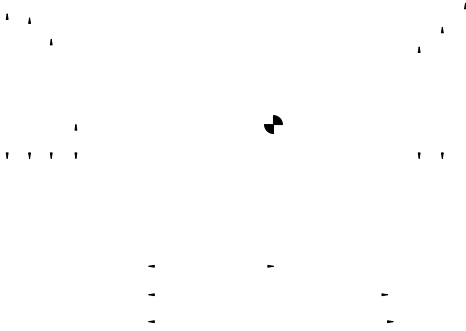
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- The image shows a section view of a piston motor, which is a hydraulic actuator. The diagram illustrates the internal components, including the servo piston, bias spring, swash plate, output shaft, shaft seal, bearing, slipper, piston, valve plate, endcap, and cylinder block. The components are numbered 1 through 11, corresponding to the legend provided below the diagram.
1. Servo piston
  2. Bias spring
  3. Swash plate
  4. Output shaft
  5. Shaft seal
  6. Bearing
  7. Slipper
  8. Piston
  9. Valve plate
  10. Endcap
  11. Cylinder block

## Principle

- 1) Two position variable motor, motor initial work location is maximum displacement location maintained by the bias spring and pressure oil to the motor control can switch the motor to minimum displacement.
- 2) On the housing there is an oil channel, which is independent with pressure relief oil line of the brake, this kind of design enables external brake control oil line through the oil duct connection to the brake relief port of the gear reducer brake.

# Installation size

## HM5V 35/40/45 Installation size



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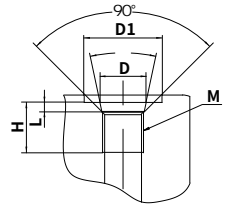
## Installation size

### • Direction of rotation and oil flow direction

Installation	Rotation
Flow A B	Clockwise
Flow B A	Counter-clockwise

### • Port details

	Port Name	Port Size and Description	Tightening Torque (N-m)
A1 A2	Inlet port and Delivery port	1-1/16-12UN-2B depth 22 mm	147
B1 B2		1-1/16-12UN-2B depth 22 mm	147
X1 X3	Control port Switch to a small displacement	9/16-18UNF-2B depth 16 mm)	25
L1 L2	Case drain port	3/4-16UNF-2B depth 17 mm)	62
X2	Control port	9/16-18UNF-2B depth 16 mm)	25



Port	H	L	M	D	D1	
A1 A2	22	3.3	1-1/16-12UN-2B	29.2	41	30°
B1 B2	22	3.3	1-1/16-12UN-2B	29.2	41	30°
X1 X3	16	2.5	9/16-18UNF-2B	15.7	24.7	24°
L1 L2	17	2.5	3/4-16UNF-2B	20.65	—	30°
X2	16	2.5	9/16-18UNF-2B	15.7	24.7	24°

## Installation size

### Input Shaft type

" S1" type shaft  
13 teeth spline+ " ,

