

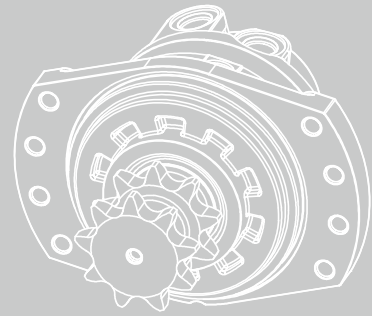
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# HRP04 series

## Radial piston hydraulic motor

The HRP04 series radial piston hydraulic motor, is a kind of low speed high torque hydraulic motor, disc valve structure, with high pressure, good stability at low speed, compact structure, small size, high volumetric efficiency and mechanical efficiency.



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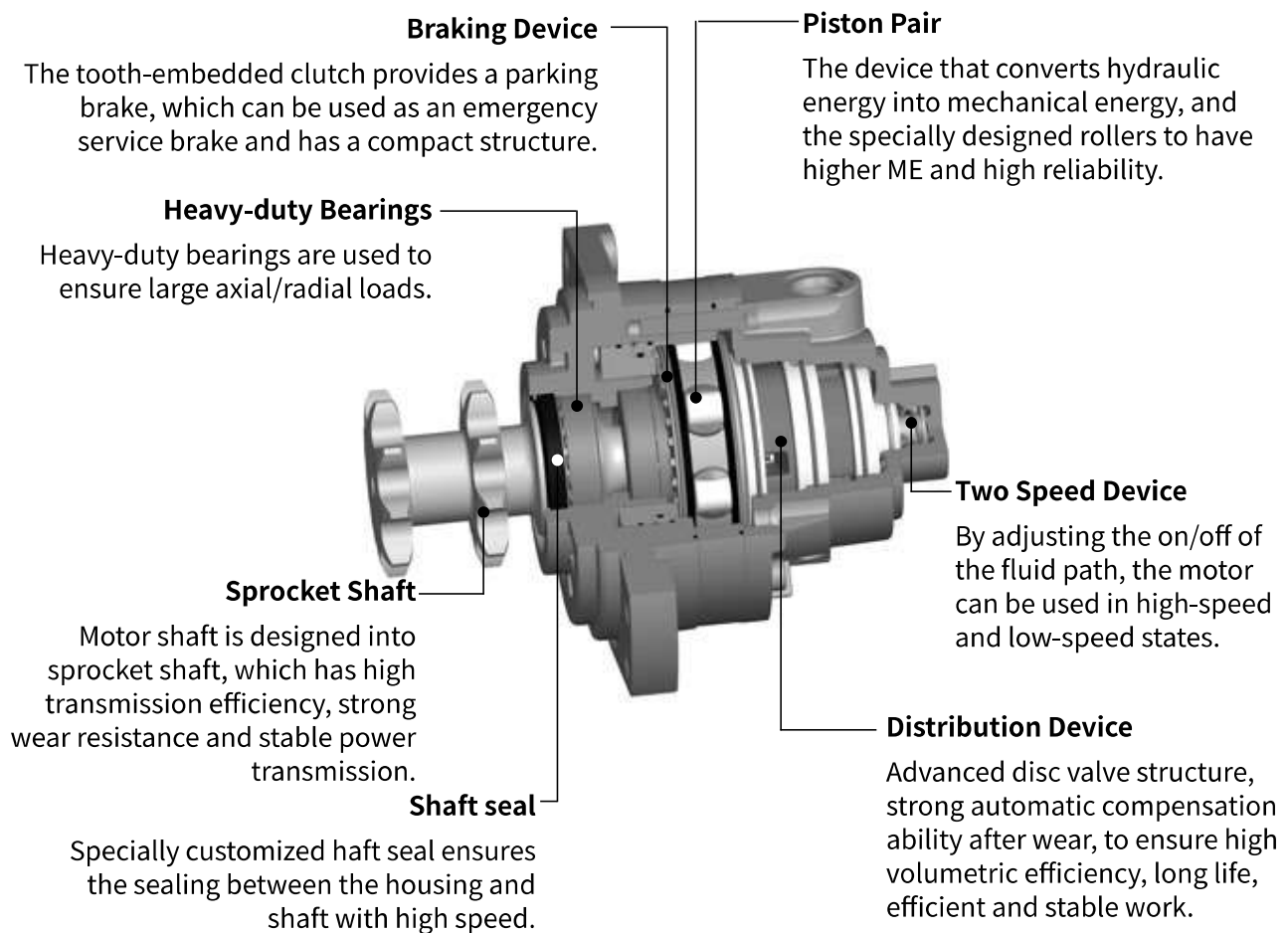
## Overview

The HRP04 series radial piston hydraulic motor, is a kind of low speed high torque hydraulic motor, disc valve structure, with high pressure, good stability at low speed, compact structure, small size, high volumetric efficiency and mechanical efficiency, the motor can be equipped with a variety of functional modules.

## Advantages

- It adopts a tooth-embedded parking brake and has a compact motor structure.
- Advanced disc valve structure, strong automatic compensation ability after wear, to ensure high volumetric efficiency, long life, efficient and stable work.
- Good stability at low speed.
- Low noise.
- Two-speed in both directions.
- Speed sensor can be installed
- Built-in flushometer.

## Standard structure



## Specification

Series		HRP04	
Motor performance			
Displacement	cm <sup>3</sup> /rev	470	
Max.torque	Nm	2292	
Min.stable speed	rpm	5	
Max.speed (Single speed)	rpm	420	
Max.speed (Two speed)	rpm	420	
Pressure	Rated pressure	bar	250
	Maximum differential pressure	bar	400
	The max.pressure of A or B	bar	420
	Max.shell drain pressure	bar	10
Weight	Single speed	kg	33
	Two speed	kg	35
Brake			
Minimum static torque	Nm	2200	
Release pressure	bar	11 ~ 15	
Maximum pressure at brake port Z	bar	40	
Oil volume to operate brake	cm <sup>3</sup>	22.9	

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- Make sure the motor is full of oil before use.
- The maximum torque is only available for small operating conditions.
- During motor running-in, it should not be operated without load at greater than 100rpm.
- The filtration standard of ISO 4406 cleaning standard 20/18/15 is recommended.
- High quality anti-wear hydraulic fluids are recommended.
- When the temperature is 50° , the minimum viscosity of the oil is recommended to be 20mm<sup>2</sup>/s.
- The recommended maximum operating temperature is 85° C.

## Ordering information

HRP04	Single and Two Speed	Displacement	Port Connection	Output Shaft	Paint Option	Brake	Flushometers	Special Features
01	02	03	04	05	06	07	08	09

### Radial Piston Series

01	Incurve multiple-action radial piston motor	HRP04
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### Single and Two Speed

02	Two speed, gear ratio 3:2	2
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### Displacement cm<sup>3</sup>/rev

03	470/310, Step piston	09
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### Port Connection

04	1-1/16-12UN(A, B), 3/4-16UNF(L), 9/16-18UNF(X)	M4
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### Output Shaft

05	Double-sprocket, 9-tooth ISO-606	S6
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### Paint Option

06	No Paint	N
	Black	B
	Hengli blue	C
	Yellow	Y

### Brake

07	Static braking torque 2200Nm, port Z 9/16-18UNF	A3
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## Ordering information

### Flushometers

08	Whether there is a flushometer or not	A
	There is a flushometer with a flow rate of 5L/min	B
	There is a flushometer with a flow rate of 7L/min	C
	There is a flushometer with a flow rate of 10L/min	D
	There is a flushometer with a flow rate of 12.5L/min	E
	There is a flushometer with a flow rate of 13.5L/min	F

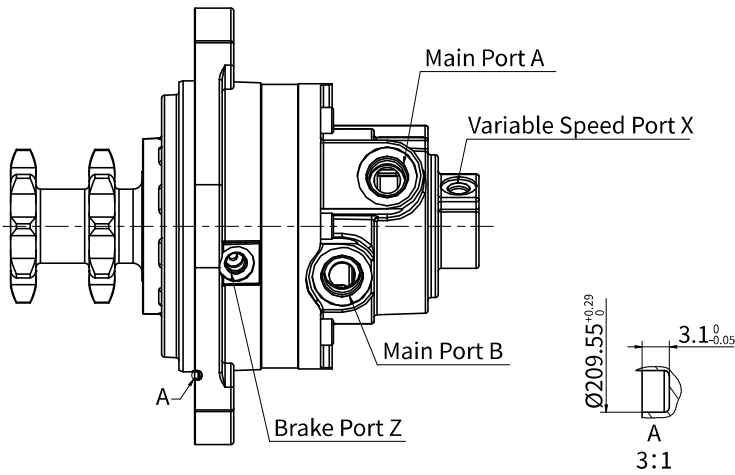
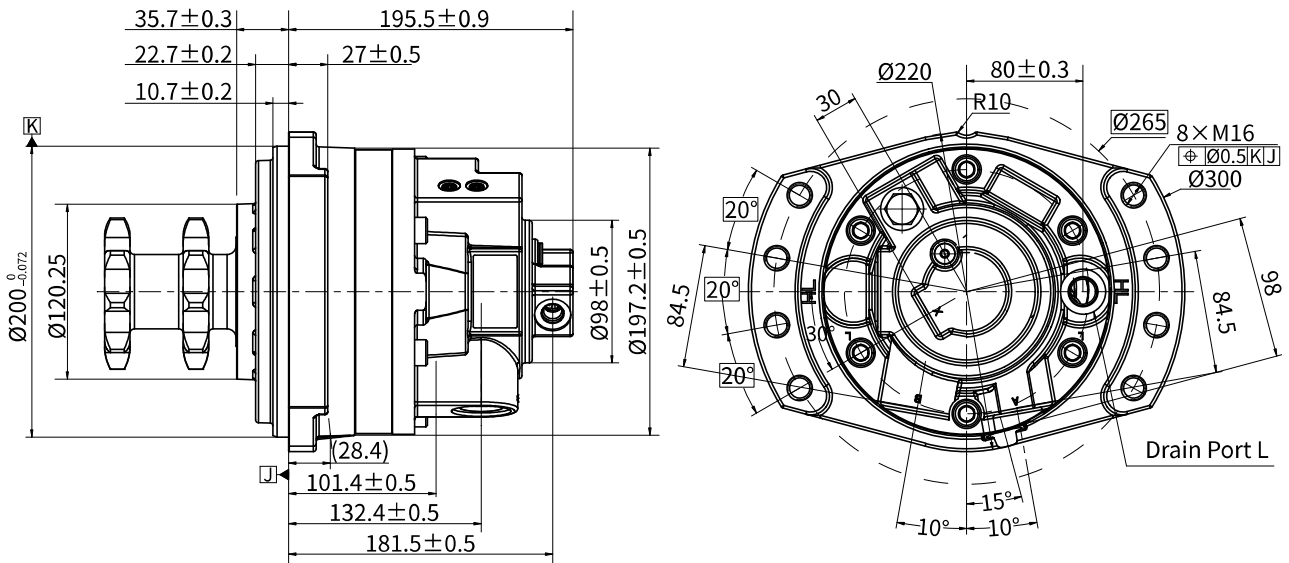
### Special Features

09	Standard	AA
	Free running	FF
	High temperature, FKM	V1
	Low temperature	V2
	Speed sensor cavity	S1
	S1+V1	S4

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# Installation size

·HRP04 (Two speed)



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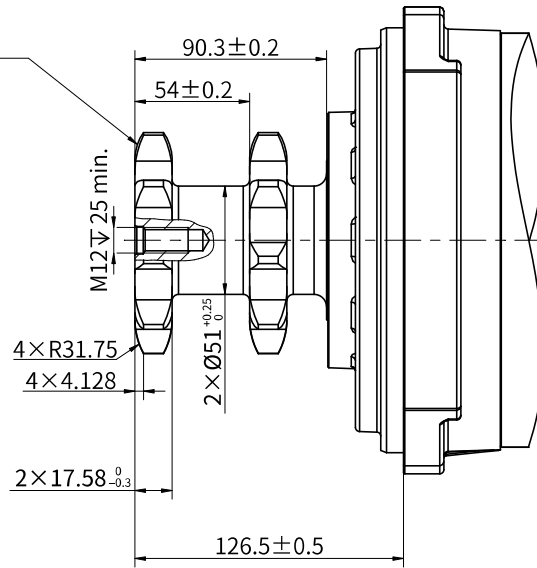
Name	Port function	M4
A、 B	Main port	1-1/16-12UN
L	Drain port	3/4-16UNF
X	Variable Speed Port	9/16-18UN
Z	Brake Port	9/16-18UN

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# Shaft end dimensions

## S6 Double-sprocket, 9-tooth ISO-606

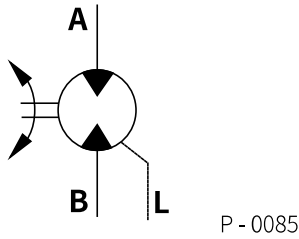
Chain Wheel Date	
Refer Standards:	ISO 606
Chain No.:	100/20A
Number of Teeth:	9
Pitch:	31.75
Pitch Diameter:	Ø92.831
Tip Diameter:	Ø106.68 <sup>0</sup> <sub>-0.25</sub>
Root Diameter:	Ø73.781 <sup>0</sup> <sub>-0.22</sub>
Pin Diameter:	Ø19.05
Measurement Over Pins:	110.47 <sup>0</sup> <sub>-0.25</sub>



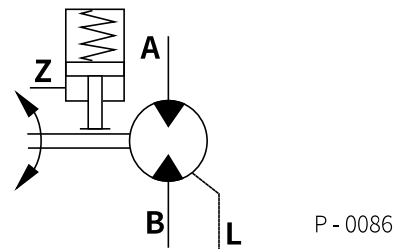
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### Hydraulic diagram

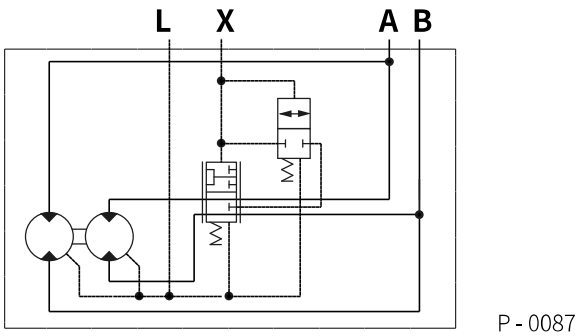
· Motor without brakes



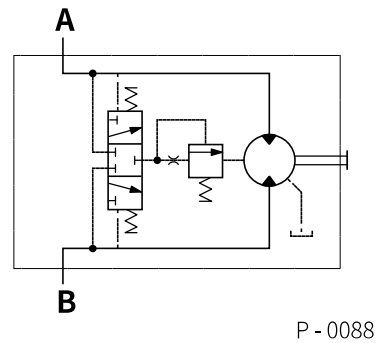
· Motor with parking brake



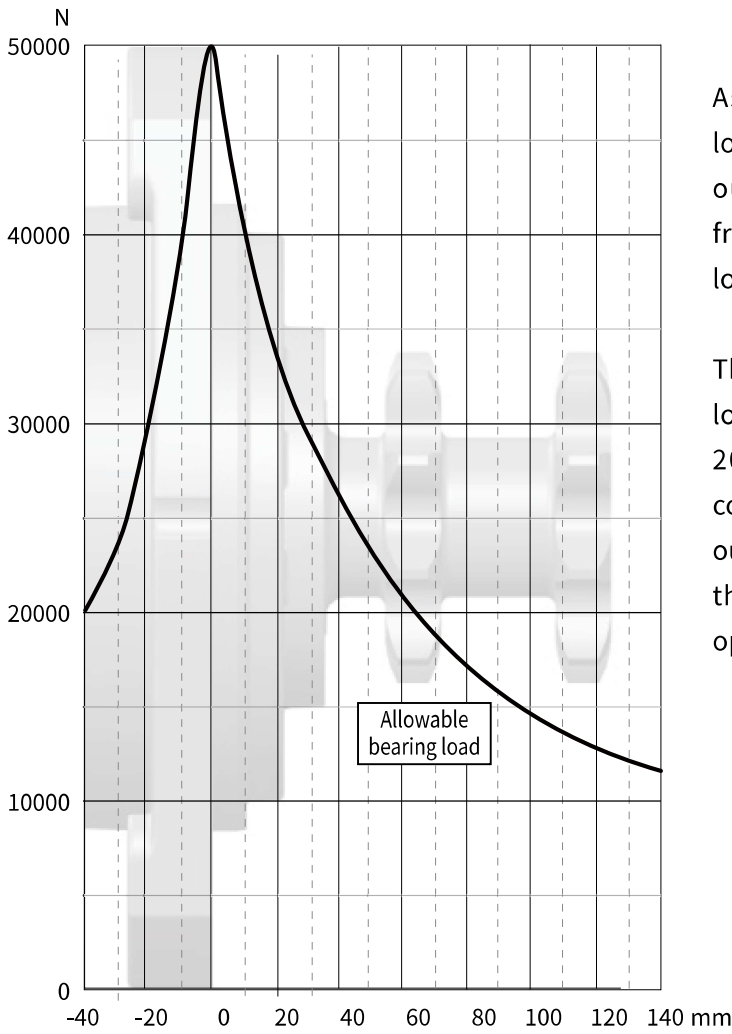
· Schematic diagram of a two-speed motor



· Flushometer schematic



### Allowable shaft load/bearing curve



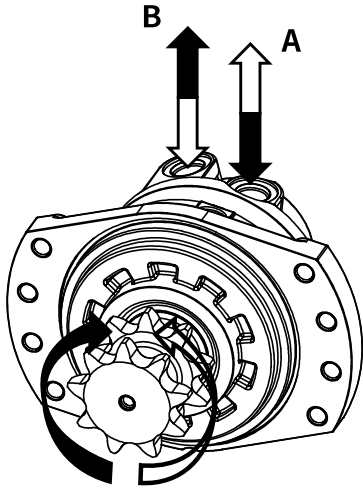
As shown in the figure, when the axial load is 0, the radial allowable load of the output shaft is related to the distance from the flange mounting surface to the load action point.

The solid line shows the allowable radial load of the bearing based on  $L_{10}$  life with 2000hrs. Denote use hydraulic fluids containing anti-wear additives, and rated output torque and motor speed of 50rpm, the differential pressure is 250 bar, the operating oil temperature is 50°C .



## Rotation direction: CW

When facing the motor shaft extension direction, port A is high pressure oil, the output shaft rotates CW; Otherwise, it rotates CCW.



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