

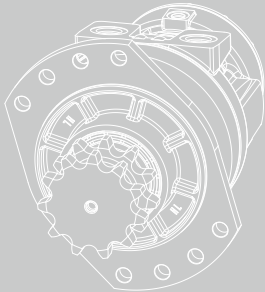
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HRP05 series

Radial piston hydraulic motor

The HRP05 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, high volumetric efficiency and mechanical efficiency.



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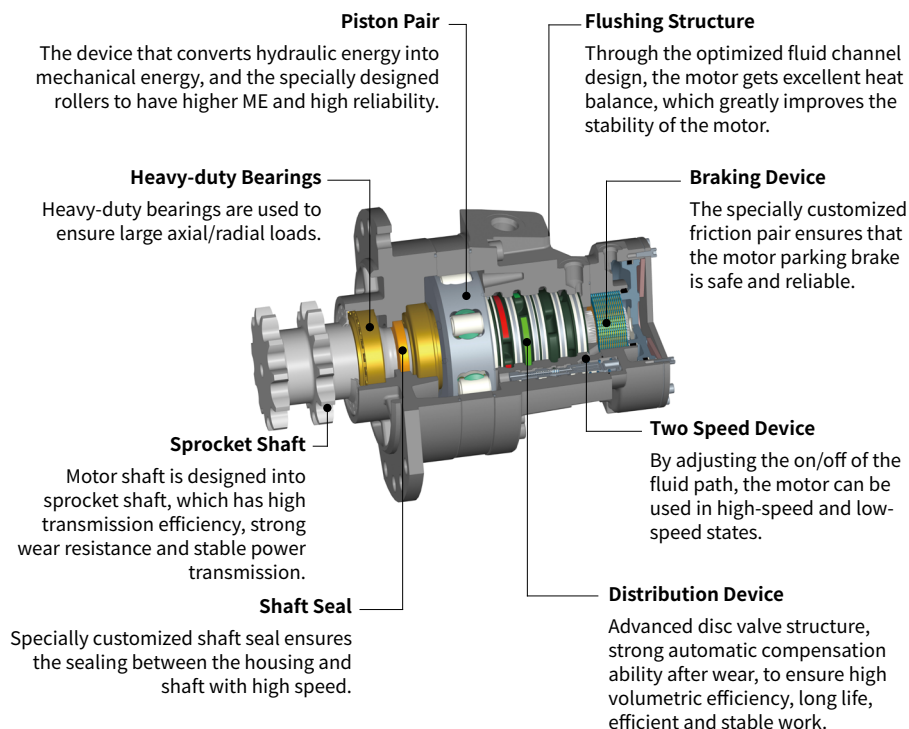
Overview

The HRP05 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, high volumetric efficiency and mechanical efficiency, the motor can be equipped with a variety of functional modules.

Advantages

- Using tapered roller bearing structure, can support larger axial and radial load.
- Advanced disc valve structure, strong automatic compensation ability after wear, to ensure high volumetric efficiency, long life, high efficiency and stable work.
- Various function modules can be selected, such as flushing valve, brake, variable speed valve, speed sensor, etc., are available to meet the needs of users in various fields.

Standard structure



Specification

Series		HRP05				
Motor performance						
Displacement		cm ³ /rev.	470	520	565	750
Max.torque		N·m	3030	3350	3640	4300
Min.stable speed		rpm	5			
Max.speed	Displacement	rpm	385	350	320	240
	Variable displacement	rpm	465	420	385	290
Pressure	Max.differential pressure	bar	450			400
Brake						
Minimum static torque		N·m	2200			
Release pressure		bar	11 ~ 15			
Maximum pressure at brake port Z		bar	30			
Oil volume to operate brake		cm ³	23			

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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(at least 20 hours), 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 20mm²/s.
- The recommended maximum operating temperature is 85° C.

Ordering information

HRP05	1	09	MD	S1	N	A1	B	AA
①	②	③	④	⑤	⑥	⑦	⑧	⑨

Radial Piston Series

①	Incurve multiple-action radial piston motor	HRP05
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Single and Two Speed

②	Single speed	1
	Two speed, gear ratio 2:1	2

Displacement cm³/rev.

③	470, Standard piston	09
	520, Standard piston	10
	565, Standard piston	11
	750, Step piston	14

Port Connection

④		1	2	Code
	1-1/16-12UN(A, B), 3/4-16UNF(L), 3/4-16UNF(F)	●		MD
	G3/4(A, B), G3/8(L), G1/2(F)	●		MF
	1-1/16-12UN(A, B), 3/4-16UNF(L), 3/4-16UNF(F), 9/16-18UNF(X)		●	M6
	G3/4(A, B), G3/8(L), G1/2(F), G1/4(X)		●	M5

Output Shaft

⑤		MD	MF	M6	M5	Code
	Double-sprocket 9 teeth, Chain No. 100(GB/T 1243)	●	●			S1
	17 teeth spline DIN5480-W55x3x17x8f	●	●			S2
	17 teeth spline DIN5480-W55x3x17x8f			●	●	S3
	Double-sprocket 11 teeth, Chain No. 100(ISO 606)			●	●	S4
	Double-sprocket 11 teeth, Chain No. 100(ISO 606)	●	●			SA
	Double-sprocket 10 teeth, Chain No. 100(ISO 606)	●	●			S5
	56 teeth spline ANSIB92.1	●	●			S6
	Double-sprocket 10 teeth, Chain No. 16A(ISO606)	●	●			S9
	Φ50 straight shaft, parallel key 14x9x70	●	●			SJ
	56 teeth spline ANSIB92.1			●	●	SK

Ordering information

Paint Option

⑥	No Paint	N
	Black	B
	Hengli blue	C
	Yellow	Y

Brake

⑦		MD	MF	M6	M5	Code
	No brakes	●	●			AA
	Static braking torque 2200N·m, port Z G1/4	●	●			A1
	Static braking torque 2200N·m, port Z 9/16-18UNF			●	●	A2

Flushing Valve

⑧		MD	MF	M6	M5	Code
	Whether there is a flushing valve or not		●			A
	There is a flushing valve with a flow rate of 5L/min	●		●	●	B
	There is a flushing valve with a flow rate of 7L/min	●		●	●	C
	There is a flushing valve with a flow rate of 10L/min	●		●	●	D
	There is a flushing valve with a flow rate of 12.5L/min	●		●	●	E
	There is a flushing valve with a flow rate of 13.5L/min	●		●	●	F

Special Features

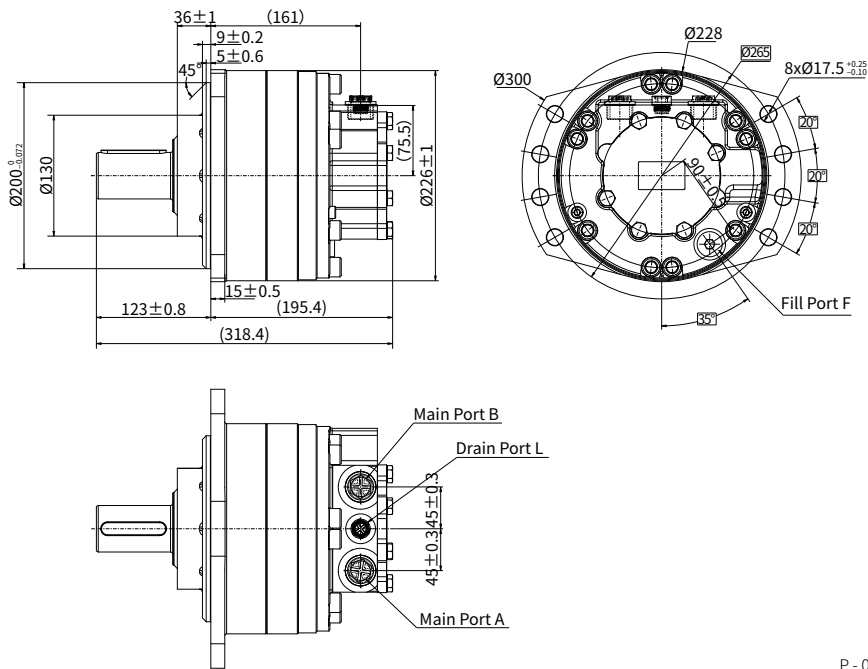
⑨		MD	MF	M6	M5	Code
	Standard	●	●	●	●	AA
	High temperature, FKM	●	●	●	●	V1
	Low temperature	●	●	●	●	V2
	Speed sensor cavity			●		S1
	Speed sensor to determine direction			●		S2

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Note: ● =Available; For the other types of port forms, output forms and brake port orientations, please contact Hengli's application engineer for consultation.

Installation size

· HRP05 (Single speed)



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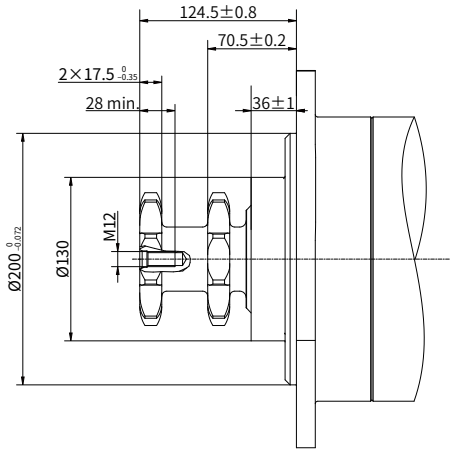
Note: The weight of the connection shown in the figure is 46.8kg.

Name	Port function	MD	MF
A、 B	Main Port	1-1/16-12UN	G3/4
L	Drain Port	3/4-16UNF	G3/8
F	Fill Port	3/4-16UNF	G1/2

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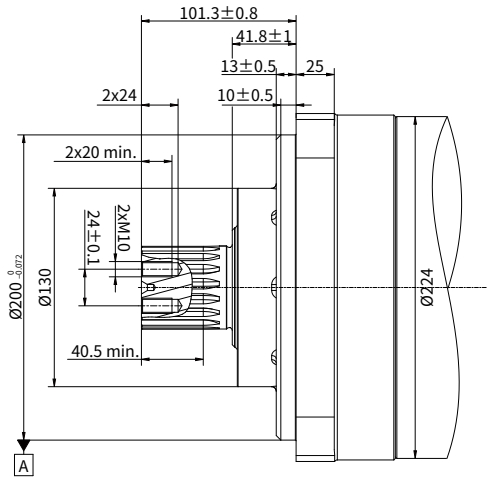
Shaft end dimensions

S1 Double-sprocket 9 teeth, Chain No. 100(GB/T 1243)



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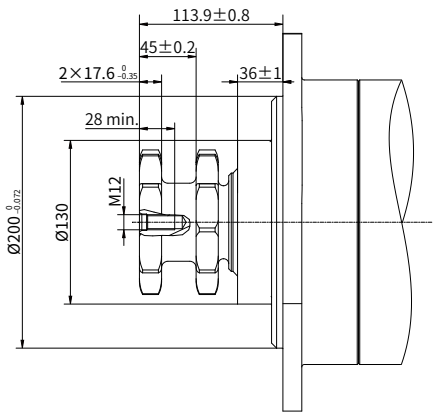
S2/S3 17 teeth spline DIN5480-W55x3x17x8f



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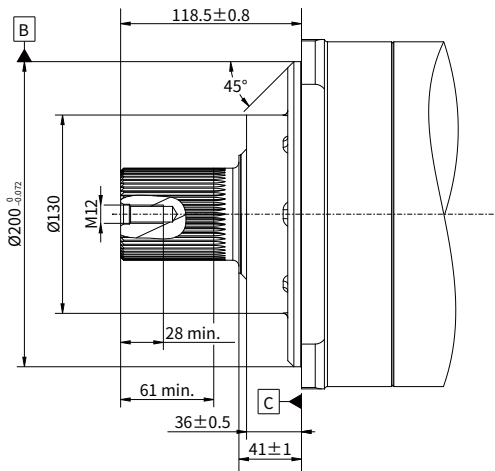
Shaft end dimensions

S5 Double-sprocket 10 teeth, Chain No. 100(ISO 606)



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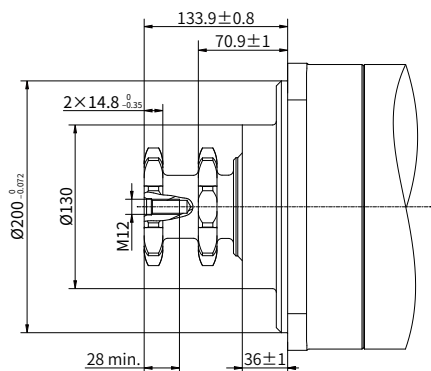
S6/SK 56 teeth spline ANSIB92.1



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Shaft end dimensions

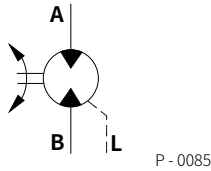
S9 Double-sprocket 10 teeth, Chain No. 16A(ISO606)



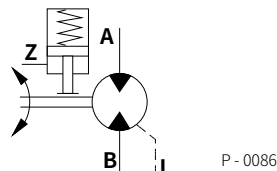
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Hydraulic diagram

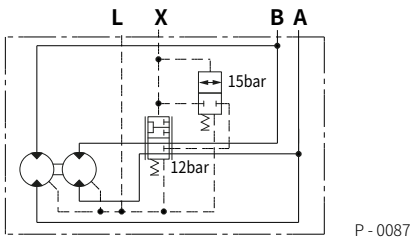
· Motor without brakes



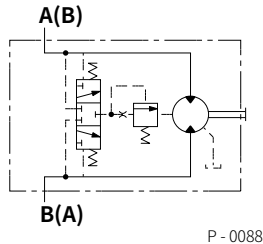
· Motor with parking brake



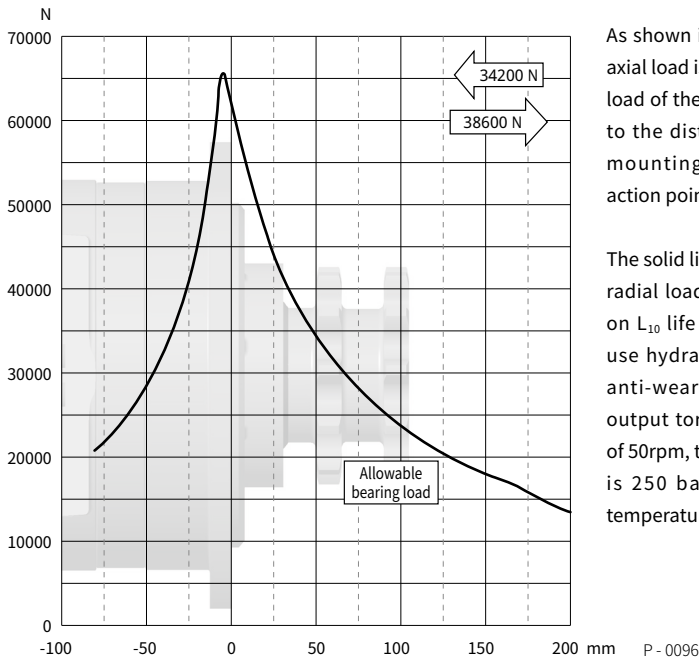
· Schematic diagram of a two-speed motor



· Flushing valve schematic



Allowable shaft load/bearing curve

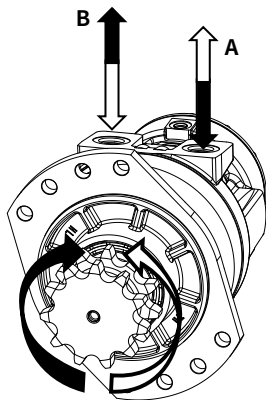


As shown in the figure, when the axial load is 0, the radial allowable load of the output shaft is related to the distance from the flange mounting surface to the load action point.

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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