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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.

Contents

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

· Patented tooth-embedded brake and high reliability of parking on large gradient.
· Compact structure, suitable for a wide range of vehicles in small spaces.
· Good stability at low speed.
· Low noise.
· Two-speed in both directions.
· Speed sensor can be installed.
· Built-in flushometer.

Standard structure

Braking Device

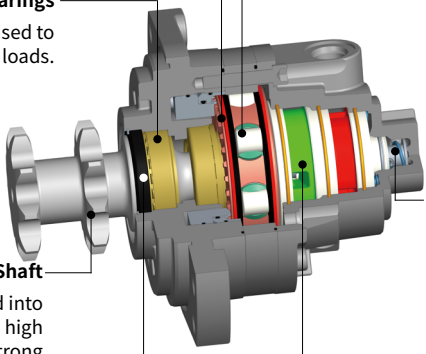
The tooth-embedded clutch provides a parking brake, which can be used as an emergency service brake and has a compact structure.

Piston Pair

The device that converts hydraulic energy into mechanical energy, and the specially designed rollers to have higher ME and high reliability.

Heavy-duty Bearings

Heavy-duty bearings are used to ensure large axial/radial loads.



Two Speed Device

By adjusting the on/off of the fluid path, the motor can be used in high-speed and low-speed states.

Sprocket Shaft

Motor shaft is designed into sprocket shaft, which has high transmission efficiency, strong wear resistance and stable power transmission.

Distribution Device

Advanced disc valve structure, strong automatic compensation ability after wear, to ensure high volumetric efficiency, long life, efficient and stable work.

Shaft seal

Specially customized haft seal ensures the sealing between the housing and shaft with high speed.

P - 0134

Specification

Series			HRP04
Motor performance			
Displacement		cm^3/rev.	470
Max.torque		Nm	2292
Min.stable speed		rpm	5
Max.speed	Displacement	rpm	420
	Variable displacement	rpm	420
Pressure	Max.differential pressure	bar	400
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^3	22.9

T - 0089

01

· 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 20mm^2/s.
· The recommended maximum operating temperature is 85° C.

Ordering information

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

Radial Piston Series

01	Incurve multiple-action radial piston motor	HRP04

Single and Two Speed

02	Two speed, gear ratio 3:2	2

Displacement $cm^3/rev.$

03	470/310, Step piston	09

Port Connection

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

Output Shaft

05	Double-sprocket 9 teeth, Chain No. 100(ISO 606)	S6

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

Ordering information

Flushing Valve

08	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

09	Standard	AA
	High temperature, FKM	V1
	Low temperature	V2
	Speed sensor cavity	S1
	Speed sensor to determine direction	S2

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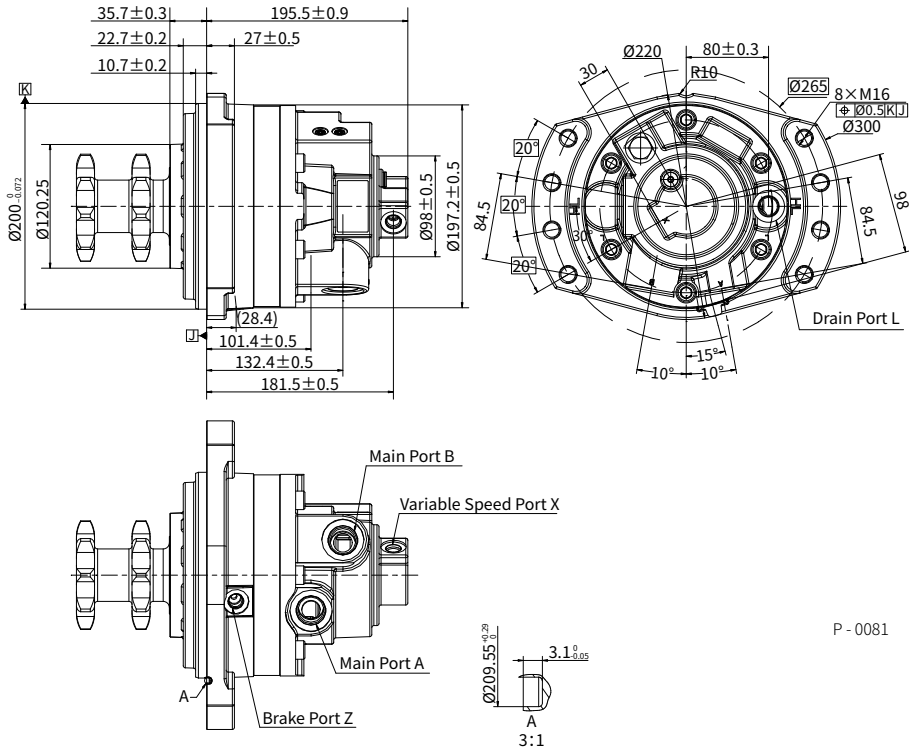
Note: For the other types of port forms, output forms and brake port orienttations, please contact Hengli's application engineer for consultation.

Installation size

·HRP04（Two speed）



P - 0081

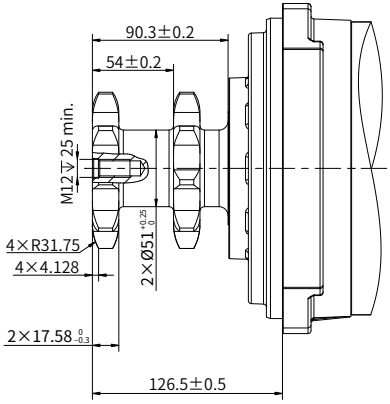
Note: The weight of the connection shown in the figure is 35kg.

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

T - 0090

Shaft end dimensions

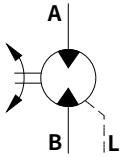
S6 **Double-sprocket 9 teeth, Chain No. 100(ISO 606)**



P - 0082

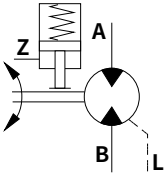
Hydraulic diagram

· Motor without brakes



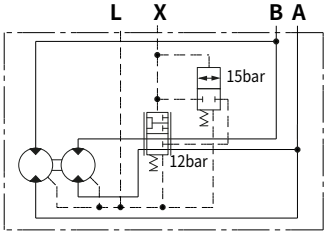
P - 0085

· Motor with parking brake



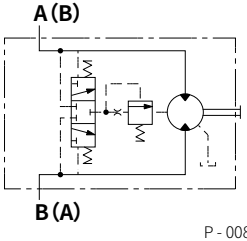
P - 0086

· Schematic diagram of a two-speed motor



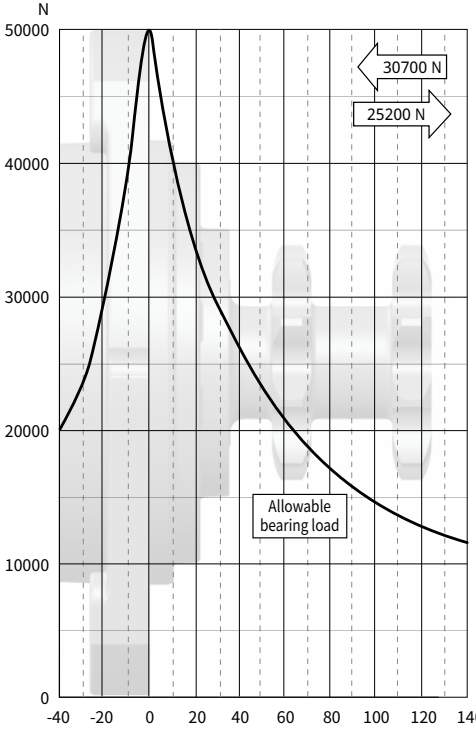
P - 0087

· Flushing valve schematic



P - 0088

Allowable shaft load/bearing curve



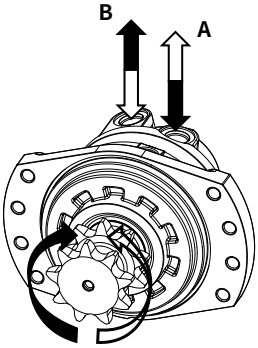
P - 0083

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℃ .

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.



P - 0084