

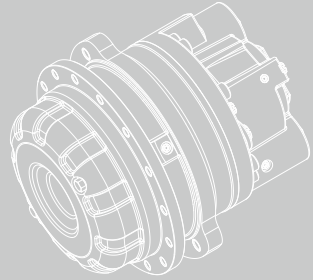
1.9



HRP5T series

Radial piston hydraulic motor

The HRP5T 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.



Contents

Overview	02
Advantages	02
Standard structure	02
Specification	03
Ordering information	04-05
Installation size	06
Speed sensor	07-08
Shaft end dimensions	09
Hydraulic diagram	09
Allowable shaft load/bearing curve	10
Rotation direction	11



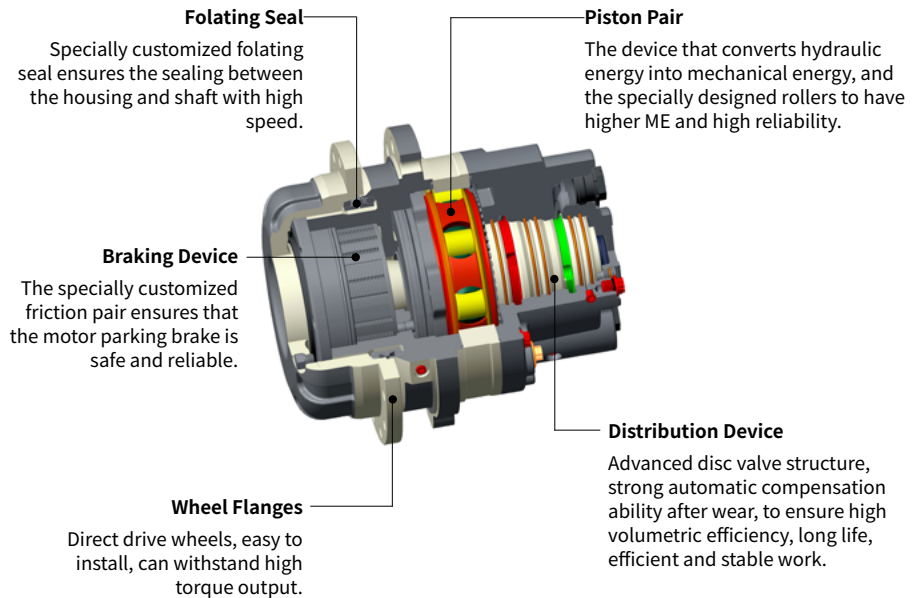
Overview

The HRP5T 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

- Patented compact design with front brake.
- Front end adopts mechanical seal, which can be used on dirt and water roads.
- Output shaft diameter is 2.5 times thicker, can support larger radial load.
- Advanced disc valve structure, high volumetric efficiency and high reliability.
- More options including flushing valve, speed sensor, etc.
- Smoothly 2-speeds changed.

Standard structure



Specification

Series		HRP5T	
Motor performance			
Displacement	cm ³ /rev.	820	
Variable Displacement	cm ³ /rev.	410	
Max.torque	N·m	5200	
Min.stable speed	rpm	5	
Max.speed	Displacement	rpm	210
	Variable displacement	rpm	230
Pressure	Max.differential pressure	bar	400
Max.power	kW	35	
Weight	kg	72	
Brake			
Static braking torque	N·m	4500	
Release pressure	bar	12 ~ 16	
Maximum pressure at brake port Z	bar	40	
Oil volume to operate brake	cm ³	20	

T - 0143

- Make sure the motor is full of oil before use.
- 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

HRP5T	2	15	H1	S8	N	B1	B	V1
①	②	③	④	⑤	⑥	⑦	⑧	⑨

Radial Piston Series

①	Incurve multiple-action radial piston motor	HRP5T
---	---	-------

Single and Two Speed

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

Displacement cm³/rev.

③	820, Step piston	15
---	------------------	----

Port Connection

④	1-5/16-12UN(A, B), 3/4-16UNF(L), 3/4-16UNF(F), 9/16-18UNF(X, Z)	H1
---	---	----

Output Shaft

⑤	Pilot $\varnothing 230 \times 17$, $15 \times 1/2-13$ UNC distribution circle $\varnothing 260$	S8
---	--	----

Paint Option

⑥	No Paint	N
	Black	B
	Hengli blue	C
	Yellow	Y

Brake

⑦	Static braking torque 4500N·m	B1
---	-------------------------------	----

Ordering information

Flushing Valve

	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
⑧	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

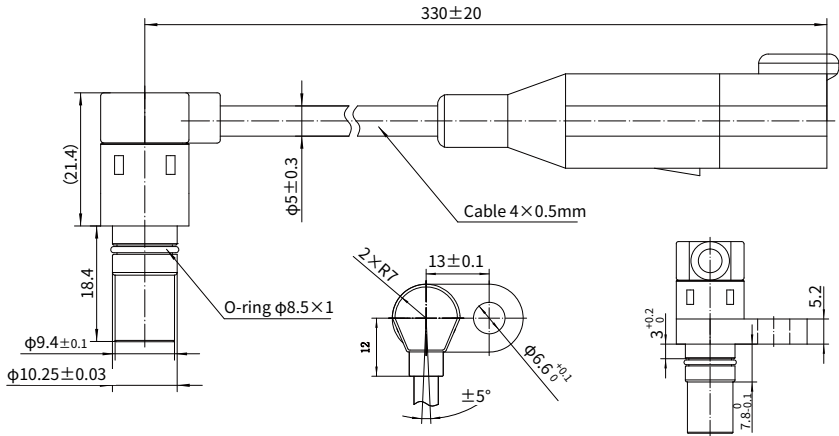
	High temperature, FKM	V1
⑨	Speed sensor (with direction judgement), High temperature, FKM	S3
	Speed sensor cavity, High temperature, FKM	S4

T - 0143

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

Speed sensor

· Speed sensor: S3



P - 0272

Dimensions	Ø10.25 /L=18.4mm
Voltage	8-32VDC
Input Current	<15mA
Sensing distance	0.2~2mm
Power reverse protection (Y/N)	Yes
Power input overcurrent and overvoltage protection (Y/N)	Yes
Maximum output current	50mA
Voltage drop	≤ 3VDC
Working frequency	0-20KHz
Output signal	A, B
Operating temperature	-40°C ~+125°C
Protection	IP67/IP69K
Shell material	Copper/plastic
Pressure resistance of measuring surface	10bar
Connector	Cable 0.33m, Injection 4-core DEUTSCH DT04-4P-EP04 plug

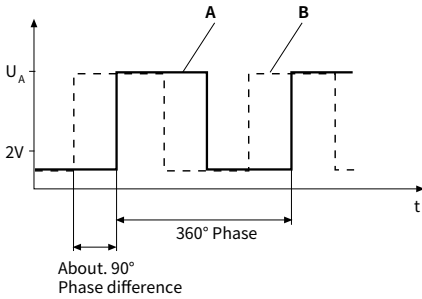
T - 0208

Speed sensor

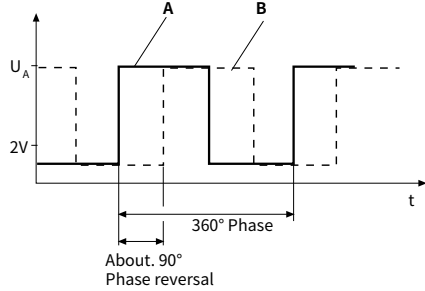
· Speed sensor: S3

■ OUTPUT SIGNAL

⌚ The measured gear rotates clockwise



⌚ The measured gear rotates counterclockwise



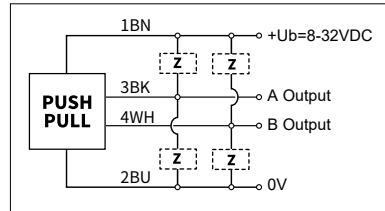
P - 0273

■ TERMINAL ASSIGNMENT

Signal		+Ub	0V	A	B
Color		BN	BU	BK	WH
4 core plug DT04		1	2	3	4

P - 0274

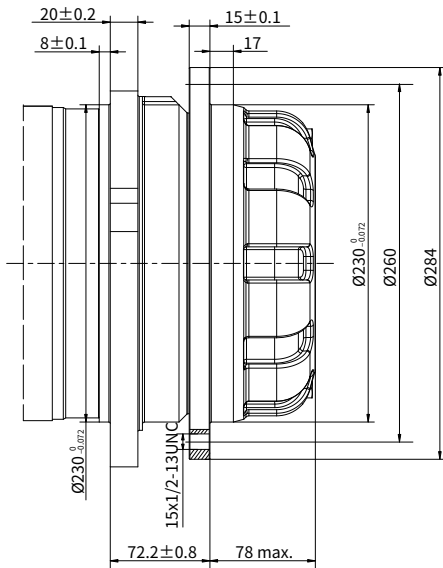
■ WIRING DIAGRAM



P - 0275

Shaft end dimensions

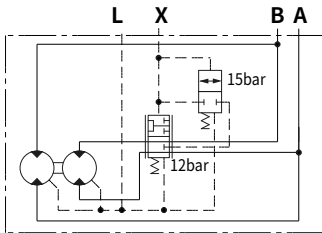
S8 Pilot $\text{Ø}230 \times 17$, $15 \times 1/2-13\text{UNC}$ distribution circle $\text{Ø}260$



P - 0170

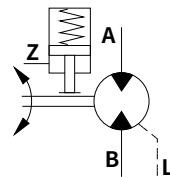
Hydraulic diagram

· Schematic diagram of a two-speed motor



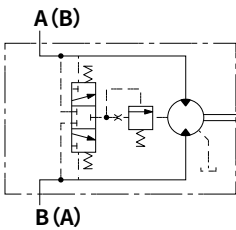
P - 0087

· Motor with parking brake



P - 0086

· Flushing valve schematic

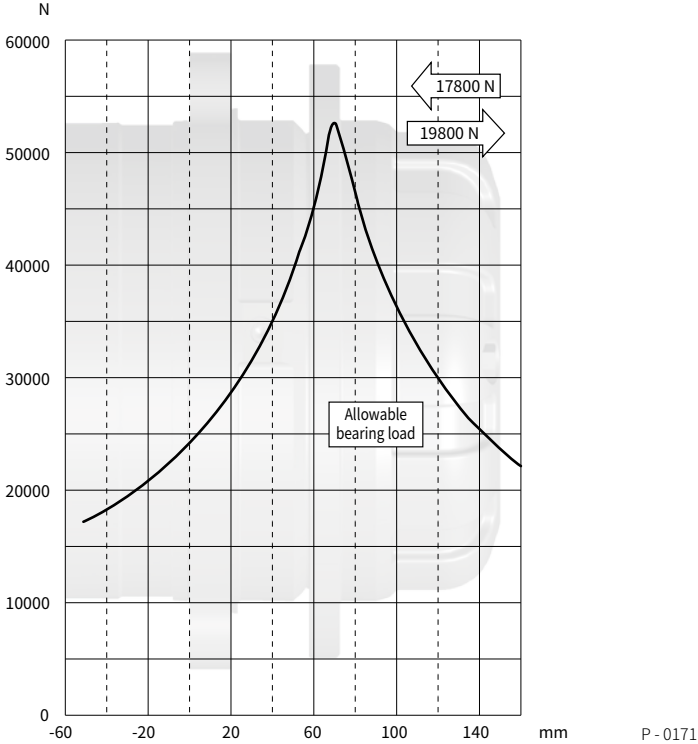


P - 0088

Allowable shaft load/bearing curve

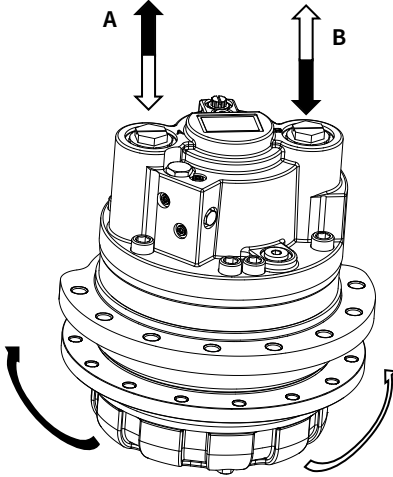
As shown in the figure, when the axial load is 0, the radial allowable load of the output shaft is related to the distance from the flange mounting surface to the load action point.

The solid line shows the allowable radial load of the bearing based on 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 .



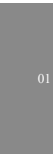
Rotation direction: CW

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



P - 0172

01



01