

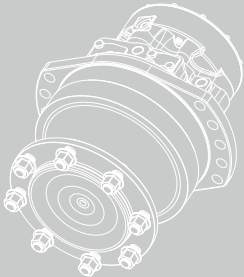
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HRP18 series

Radial piston hydraulic motor

The HRP18 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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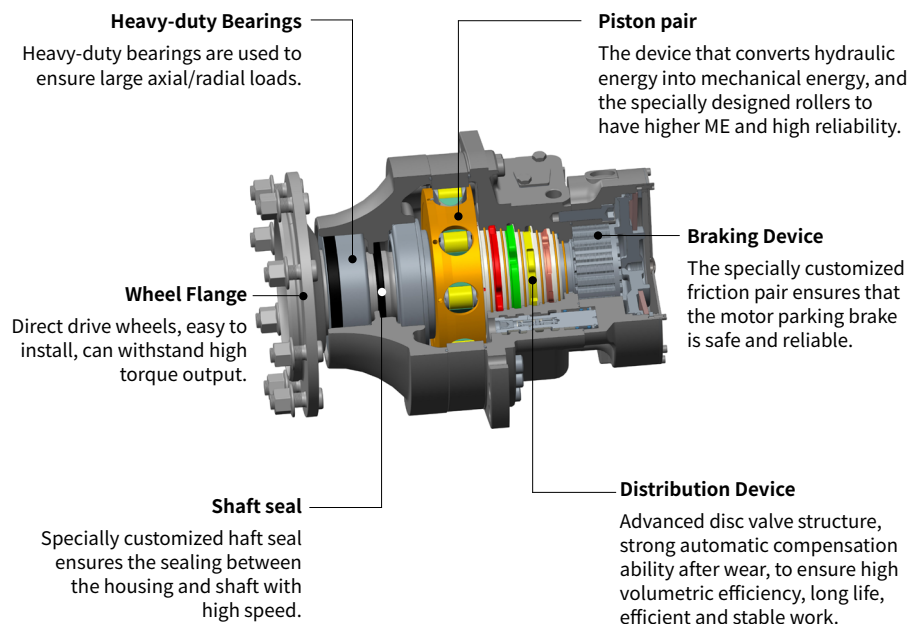
Overview

The HRP18 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 radial load.
- Advanced disc valve structure, radial large-diameter piston, high torque, high volumetric efficiency.
- More options including parking brake, speed sensor, etc.
- Smoothly 2-speeds changed.

Standard structure



Specification

| | | | | | |
|----------------------------------|---------------------------|-----------------------|---------|-------|-------|
| Series | | | HRP18 | | |
| Motor performance | | | | | |
| Displacement | | cm ³ /rev. | 1392 | 1747 | 1862 |
| Max.torque | | Nm | 9800 | 12180 | 13000 |
| Min.stable speed | | rpm | 5 | | |
| Max.speed | Displacement | rpm | 155 | 125 | 100 |
| | Variable displacement | rpm | 160 | 150 | 125 |
| Pressure | Max.differential pressure | bar | 450 | | |
| Brake | | | | | |
| Minimum static torque | | Nm | 18600 | | |
| Release pressure | | bar | 12 ~ 30 | | |
| Maximum pressure at brake port Z | | bar | 30 | | |
| Oil volume to operate brake | | cm ³ | 70 | | |

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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

| HRP18 | 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 | HRP18 |
|----|---|-------|

Single and Two Speed

| | | |
|----|------------------------------|---|
| 02 | Two speed, gear ratio 2:1 | 2 |
| | Two speed, gear ratio 2.28:1 | 3 |

Displacement cm³/rev.

| | | |
|----|---------------------------|----|
| 03 | 1392/696, Standard piston | 22 |
| | 1747/874, Standard piston | 26 |
| | 1862/816, Standard piston | 28 |

Port Connection

| | | |
|----|---|----|
| 04 | φ18.5(A, B), M22×1.5(L, L1), M22×1.5(X) | M8 |
|----|---|----|

Output Shaft

| | | |
|----|---|----|
| 05 | Pilot diameter φ220.7×18, hub bolt φ275 distribution circle 8×M20×1.5 | W2 |
|----|---|----|

Paint Option

| | | |
|----|-------------|---|
| 06 | No Paint | N |
| | Black | B |
| | Hengli blue | C |
| | Yellow | Y |

Brake

| | | |
|----|---|----|
| 07 | Static braking torque 18600Nm, port Z M16×1.5 | F1 |
|----|---|----|

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

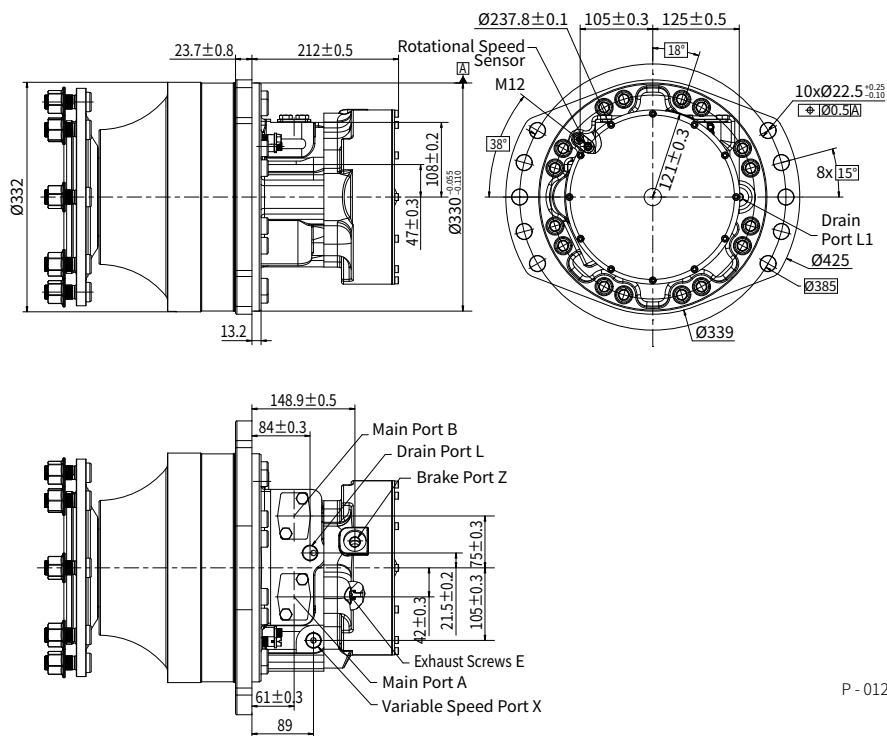
| | | |
|----|-------------------------------------|----|
| 09 | Standard | AA |
| | High temperature, FKM | V1 |
| | Low temperature | V2 |
| | Speed sensor cavity | S1 |
| | Speed sensor to determine direction | S2 |

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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

- HRP18 (Two speed)



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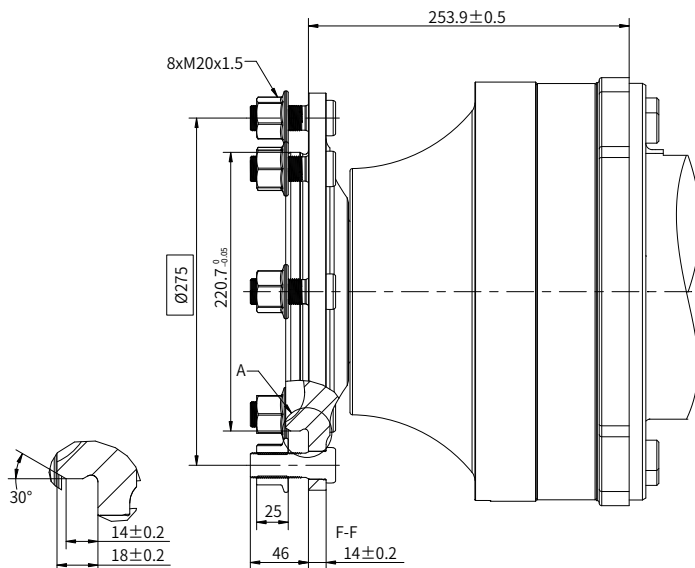
Note: The weight of the connection shown in the figure is 167.1kg.

| Name | Port function | M8 |
|------|---------------------|---------|
| A、B | Main port | φ18.5 |
| L、L1 | Drain port | M22×1.5 |
| X | Variable speed port | M22×1.5 |
| Z | Brake port | M16×1.5 |

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Shaft end dimensions

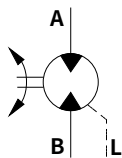
W2 Pilot diameter $\phi 220.7 \times 18$, hub bolt $\phi 275$ distribution circle $8 \times M20 \times 1.5$



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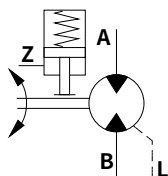
Hydraulic diagram

· Motor without brakes



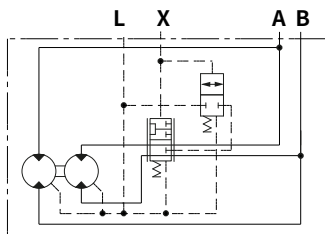
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· Motor with parking brake



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· Schematic diagram of a two-speed motor

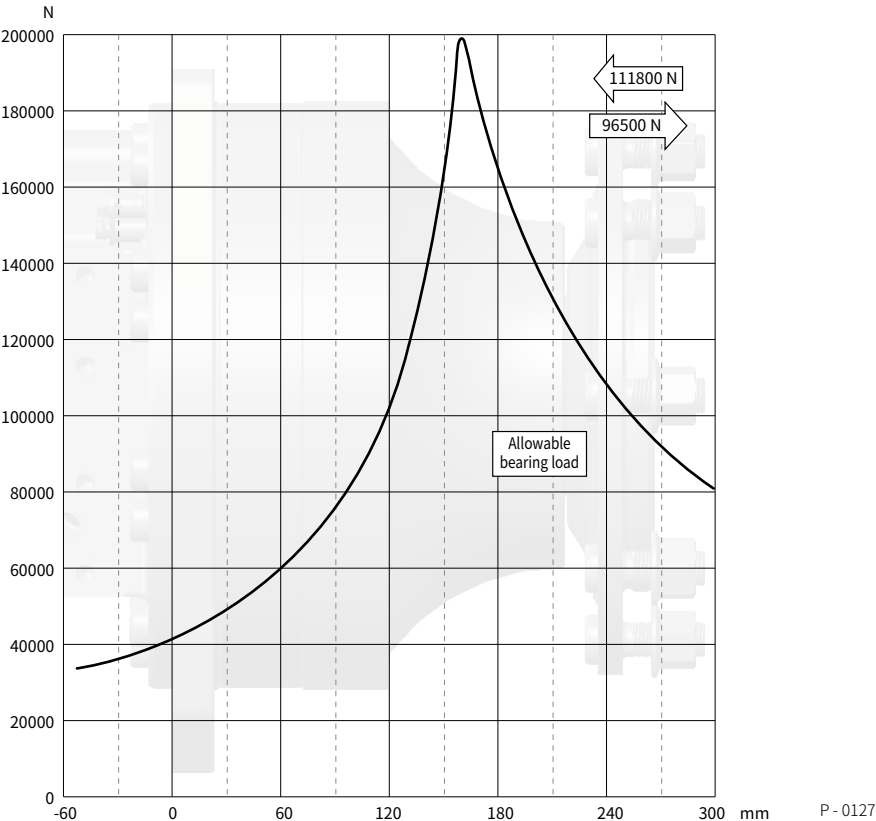


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Allowable shaft load/bearing curve

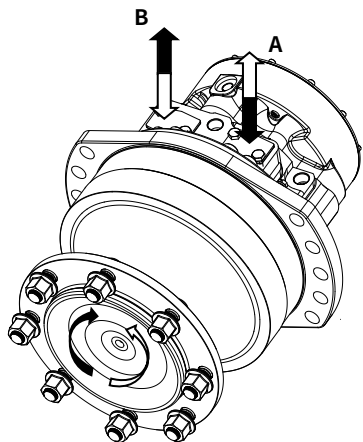
As shown in the figure, when the axial load is 0, the radial allowable load of the output shaft is related to the distance from the flange mounting surface to the load action point.

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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