

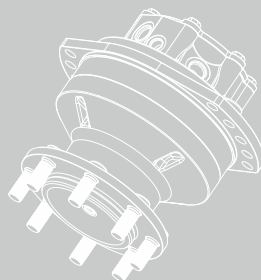
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Hengli®

HRP08 series

Radial piston hydraulic motor

The HRP08 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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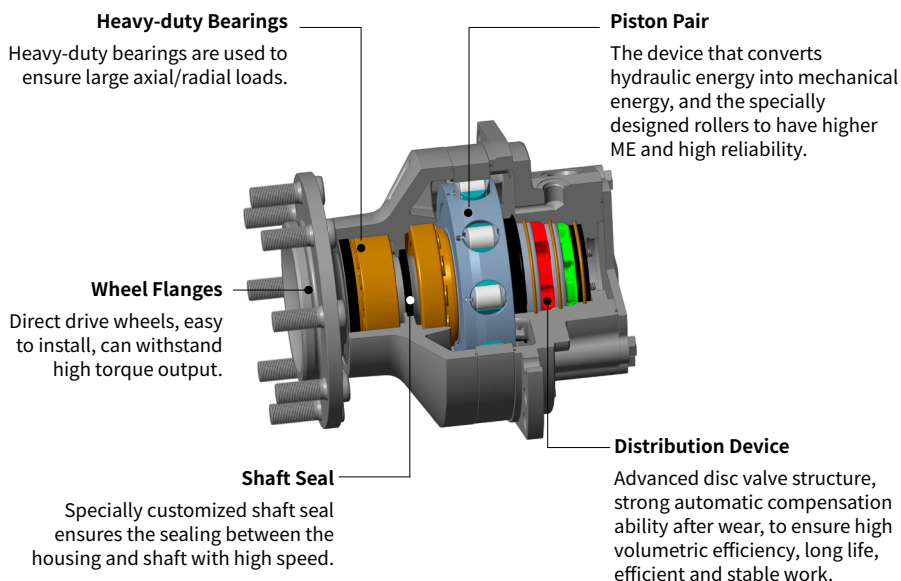
Overview

The HRP08 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 bearings, can support large radial loads.
- Advanced disc valve structure, radial piston, high torque and high volumetric efficiency.
- Smoothly 2-speeds changed.
- More options including brake, variable speed valve, speed sensor, etc.

Standard structure



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Specification

Series			HRP08		
Motor performance					
Displacement		cm ³ /rev.	934	1248	1356
Max.torque		N·m	6022	7949	8036
Min.stable speed		rpm	5		
Max.speed (Displacement)		rpm	140	100	155
Pressure	Max.differential pressure	bar	450	400	
Brake					
Static braking torque		N·m	9000		
Release pressure		bar	12~30		
Maximum pressure at brake port Z		bar	30		
Oil volume to operate brake		cm ³	40		

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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.

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Ordering information

HRP08	1	17	B1	W1	N	AA	A	AA
①	②	③	④	⑤	⑥	⑦	⑧	⑨

Radial Piston Series

①	Incurve multiple-action radial piston motor	HRP08
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Single and Two Speed

②	Single speed	1
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Displacement cm³/rev.

③	934, Standard piston	17
	1248, Step piston	35
	1356, Step piston	39

Port Connection

④	1-1/16-12UN(A, B), 3/4-16UNF(L), 3/4-16UNF(F)	B1
	ISO6162 Ø13, connection hole 2-4×M8(A, B), M18×1.5(L), M18×1.5(F)	B4

Output Shaft

⑤		B1	B4	Code
	Pilot diameter Ø150.9×17, hub bolt Ø203.2, distribution circle 8×M20×1.5	●		W1
	46T spline ANSI B92.1-1993 16/32 pressure angle of indeing circle 30° class 5 tolerance		●	S1
	German standard spline DIN5480-W70×3×30° ×22×8h		●	S2
	Gear shaft module 10, number of teeth 11, shift coefficient +0.404		●	G1

Paint Option

⑥	No Paint	N
	Black	B
	Hengli blue	C
	Yellow	Y

Ordering information

Brake

		B1	B4	Code
⑦	No brakes	●	●	AA
	Static brake torque 9000N·m, port Z M16×1.5		●	A9

Flushing Valve

⑧	No flushing valve	A
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Special Features

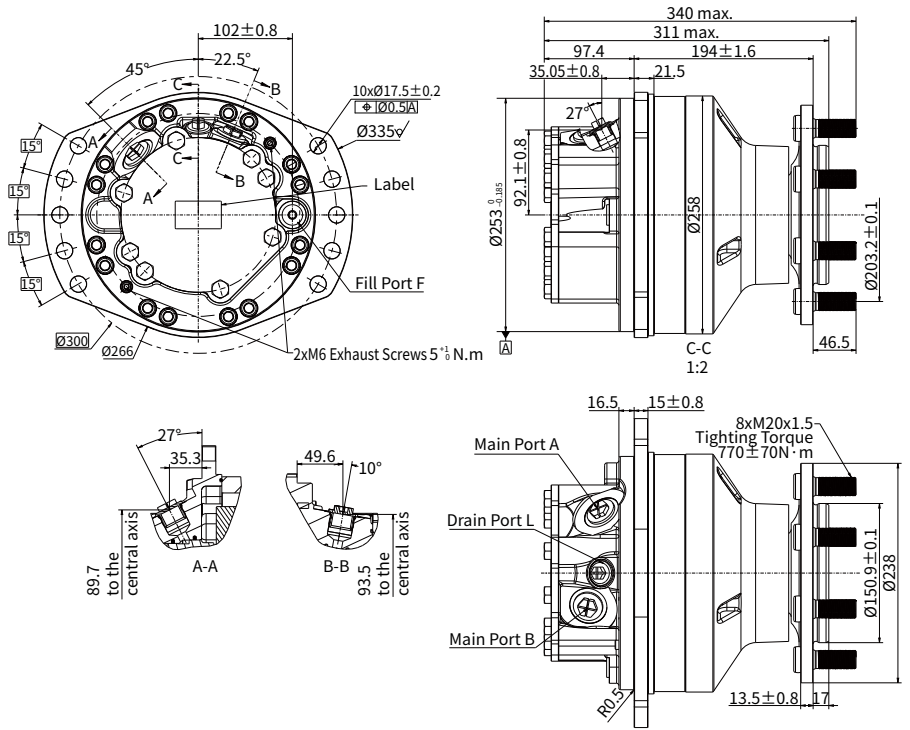
	Standard	AA
	Speed sensor cavity	S1
⑨	Speed sensor (with direction judgement)	S6
	Emergency release brake cover	HH
	High speed, +30%	HS

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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

· HRP08 (Single speed wheel output)



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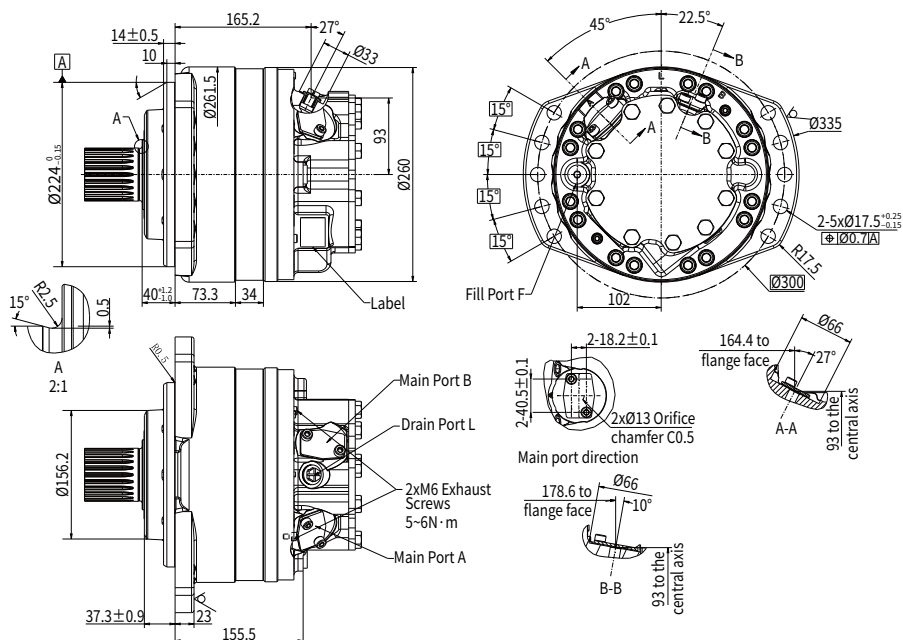
Note: The weight of the connection shown in the figure is 63.6kg.

Name	Port Function	B1
A, B	Main Port	1-1/16-12UN
L	Drain Port	3/4-16UNF
F	Fill Port	3/4-16UNF

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Installation size

- HRP08 (Single speed shaft output)



External Spline Parameters 65x24x2.5(E22-141)

Module	m	2.5
Number of teeth	N	24
Pressure angle	α	20°
Addendum modification coefficient	x	0.8
Pin diameter	U	4.5
Pin spacing value	F	69.463–69.559
Centring method	Face centring	
Fitting method	Slide fit	

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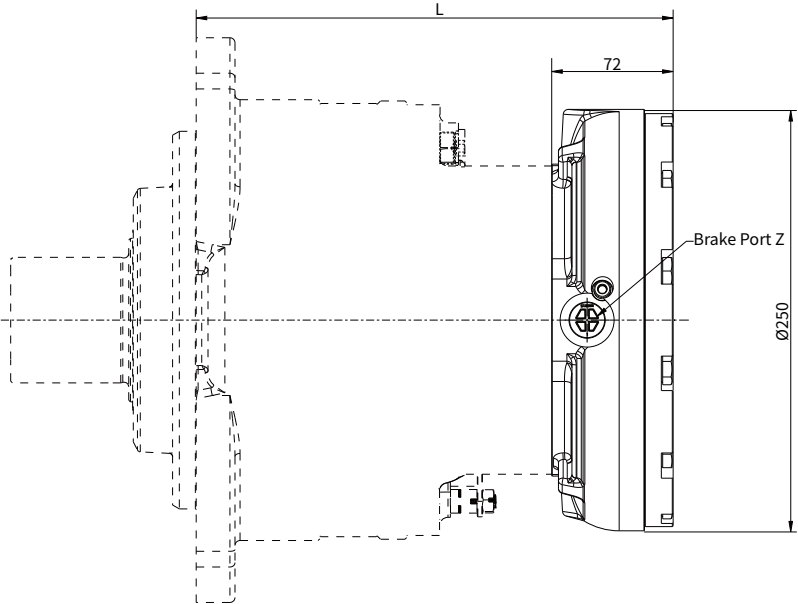
Note: The weight of the connection shown in the figure is 66.5kg.

Name	Port Function	B4
A, B	Main Port	4×M8
L	Drain Port	M18×1.5
F	Fill Port	M18×1.5

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Installation size

Parking brake: Order code "A9"



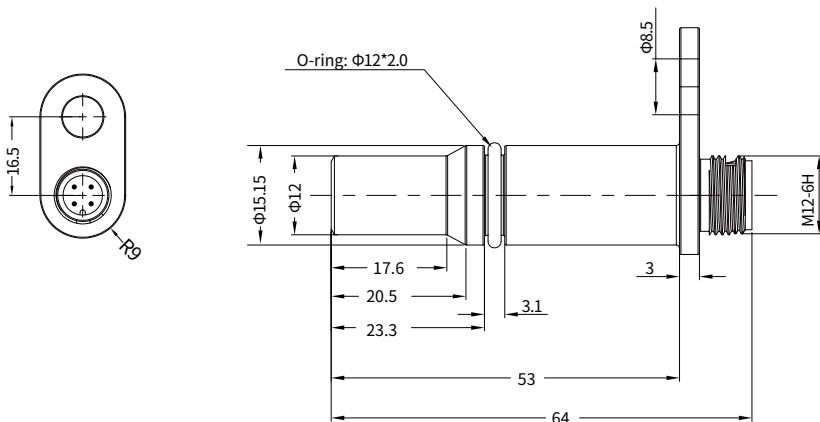
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Single and Two speed	L	Z
Single speed shaft output	282.8	M16×1.5

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Speed sensor

·Speed sensor: S6



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Dimensions	Ø12 /L=53mm
Voltage	8-32VDC
Input Current	<20mA
Sensing distance	0.2~1.15mm
Output circuitry	Push-Pull
Output overcurrent protection (Y/N)	Yes
Maximum output current	≤ 200mA
Voltage drop	≤ 3.5VDC
Working frequency	0-15KHz
Output signal	A, B
Operating temperature	-40°C ~+125°C
Protection	IP67
Shell material	Copper/plastic
Pressure resistance of measuring surface	10bar
Connector	M12
Weigh	55g
Installation depth	53mm
Reverse polarity protection	Yes
Dielectric strength	500VDC

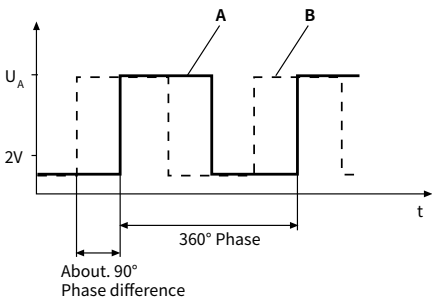
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Speed sensor

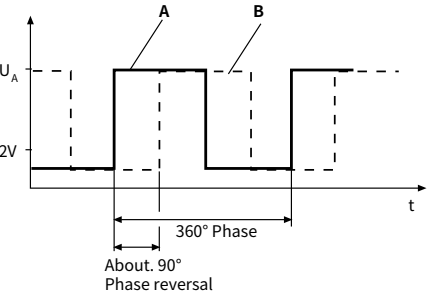
· Speed sensor: S6

■ OUTPUT SIGNAL

⌚ The measured gear rotates clockwise



⌚ The measured gear rotates counterclockwise



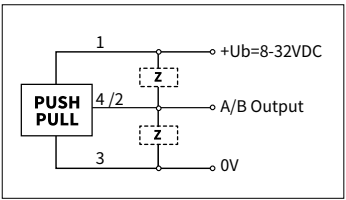
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■ TERMINAL ASSIGNMENT

Signal		+Ub	0V	A	B
4 core plug DT04		1	3	4	2

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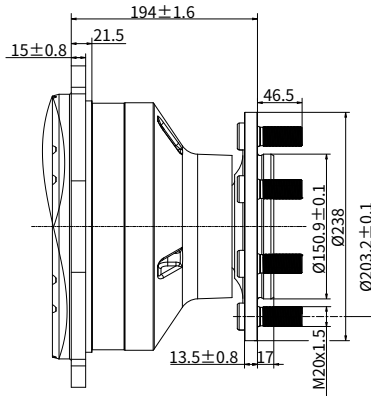
■ WIRING DIAGRAM



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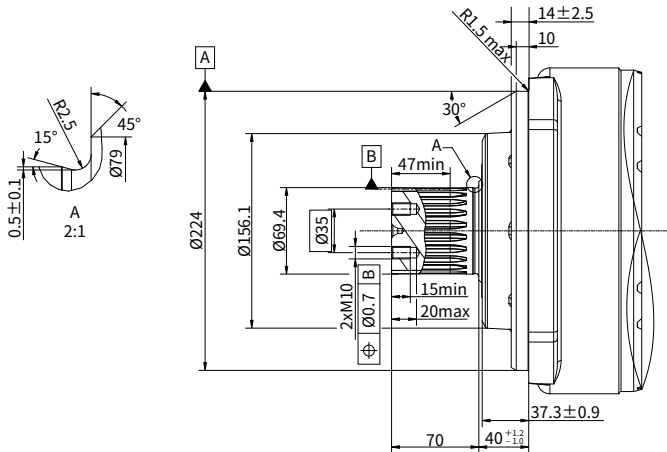
Shaft end dimensions

W1 Pilot diameter $\varnothing 150.9 \times 17$, hub bolt $\varnothing 203.2$, distribution circle $8 \times M20 \times 1.5$



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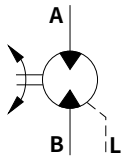
S2 German standard spline DIN5480-W70 $\times 3 \times 30^\circ \times 22 \times 8h$



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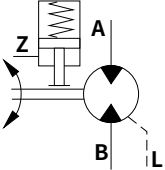
Hydraulic diagram

· Motor without brakes



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· Motor with parking brake



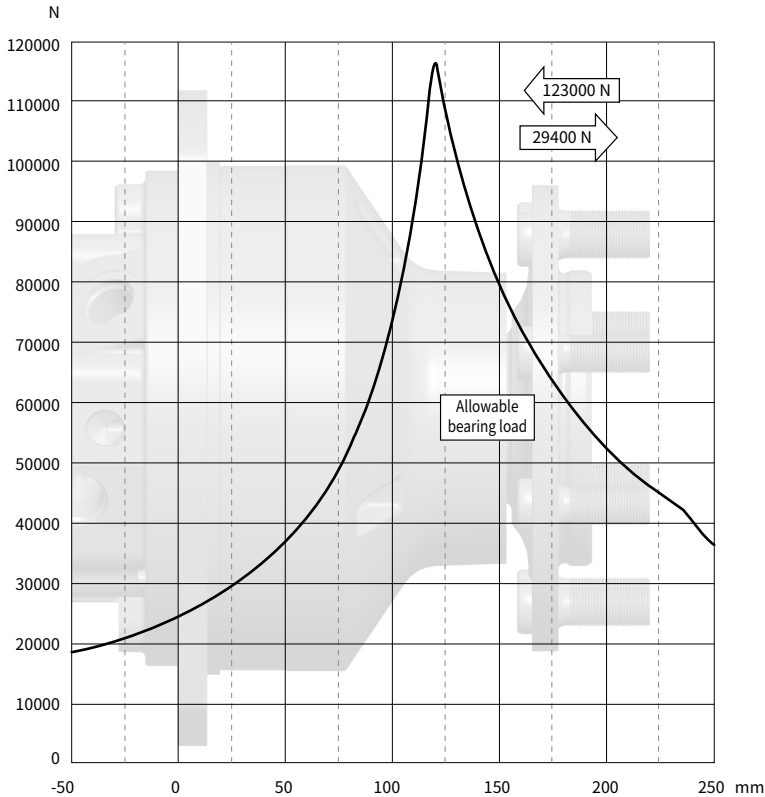
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Allowable shaft load/bearing curve

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 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 .

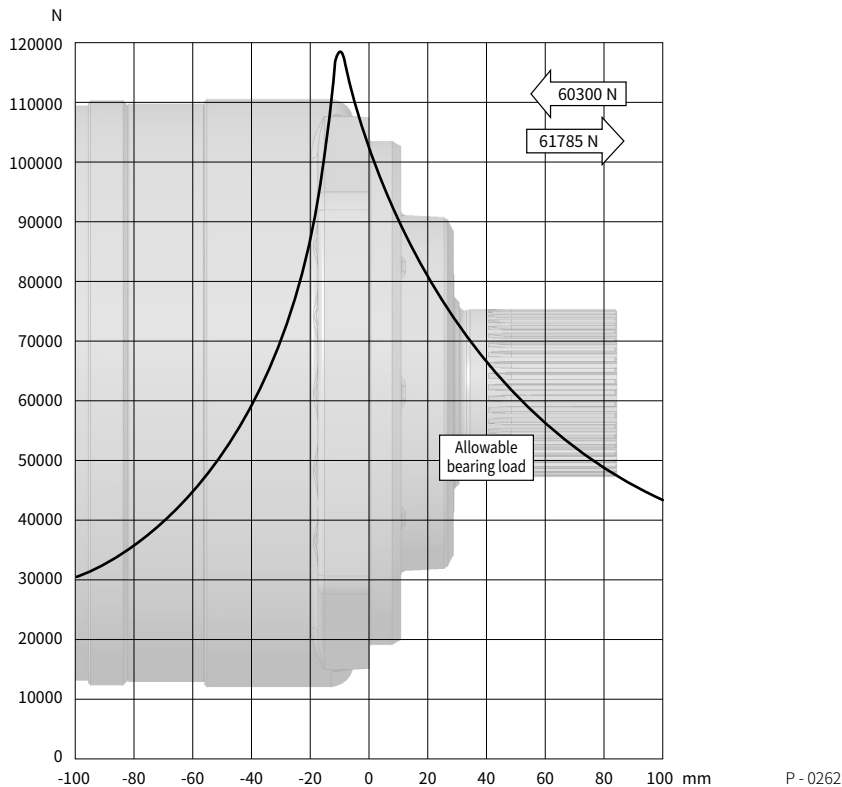
· Wheel Output Bearing Curve



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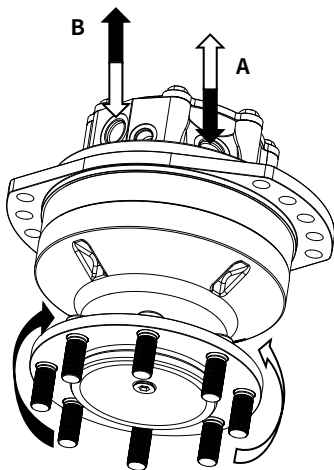
Allowable shaft load/bearing curve

· Shaft Output Bearing Curve



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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