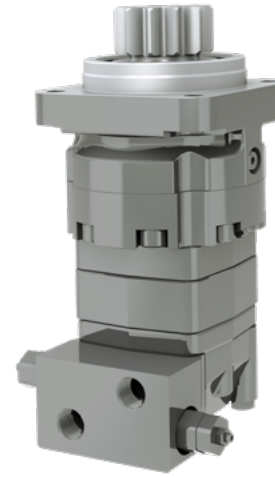
2.13

HBP swing series

Orbital hydraulic motor

HBP swing series orbital hydraulic motor is a disc-valve cycloid hydraulic motor with an integrated brake, which achieves high volumetric efficiency at high pressures and is characterised by high starting efficiency, low leakage, and good stability at low speeds. It is suitable for slewing drive of mini excavator.

Contents



Overview

HBP swing series orbital hydraulic motor is a disc-valve cycloid hydraulic motor with an integrated brake, which achieves high volumetric efficiency at high pressures and is characterised by high starting efficiency, low leakage, and good stability at low speeds. It is suitable for slewing drive of mini excavator. The integrated relief valve design ensures the safety of the motor during use.

Advantages

- Variety of pinion shafts are available.
- Bigger bearing and longer distance between two bearings for high side load capability.
- Lower leakage and high starting torque.
- Patented axial clearance adjustment design to improve the wearing of drive for high reliability.

Applications

- Mini excavator
- Sugar cane machines
- Winches

Typical mini excavator weight(ton)

0.5	0.7	1.0	1.5	2.0	Model
					HBP160
					HBP200
					HBP250

T-0252

Specification

Type	160	200	250
Displacement(cm^3/rev.)	159.2	199.4	249.3
Maximum theoretical torque(N·m)	372	482	523
Max.differential pressure (bar)	147	152	132
Max.speed(rpm)	80	80	80
Mechanical brake torque(N·m)	440 (Min.release pressure: 20bar, Max.release pressure: 40bar)		
Weight(kg)	21.0	21.5	22.0

T-0253

· 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° C, recommended oil viscosity 20-43mm^2/s.
· The recommended maximum operating temperature is 82°C .
· To assure best motor life, run motor 10-15 minutes in low speed high torque mode at approximately 50% of continuous pressure and 50% of continuous flow.
· The maximum pressure is the set pressure of the safety valve.
· External make up port is required (make up pressure 5-10 Bar).

Ordering information

HBP	250	F1	V	G1	A	B	A
①	②	③	④	⑤	⑥	⑦	⑧

Orbital Hydraulic Series

①	Orbital Hydraulic Motor	HBP

Type

②	Type	160	200	250

Mount

③	4×Ø13.5 square mount Ø147.6, pilot Ø110×10	F1
	4×Ø13.5 square mount Ø155, pilot Ø125×20	F2

Port

④	Port G1/2, drain port G1/4, integrated relief manifolds, cushion relief valves	V
	Port G3/8, drain port G3/8, integrated relief manifolds, cushion relief valves	T

Output Shaft

⑤	12-tooth, 4.5-module, gear shaft, shift factor 0.5	G1
	11-tooth, 4-module, gear shaft, shift factor 0.4	G2
	11-tooth, 3.5-module, gear shaft, shift factor 0.5	G4
	11-tooth, 4-module, gear shaft, shift factor 0.55	G5
	11-tooth, 4.5-module, gear shaft, shift factor 0.55	G6
	11-tooth, 4.5-module, gear shaft, shift factor 0.4	G7
	13-tooth, 5-module, gear shaft, shift factor 0.7	G8
	10-tooth, 4.5-module, gear shaft, shift factor 0.7	G9

Rotation Direction

⑥	CW	A

Paint option

⑦	No Paint	N
	Black	B

Special features

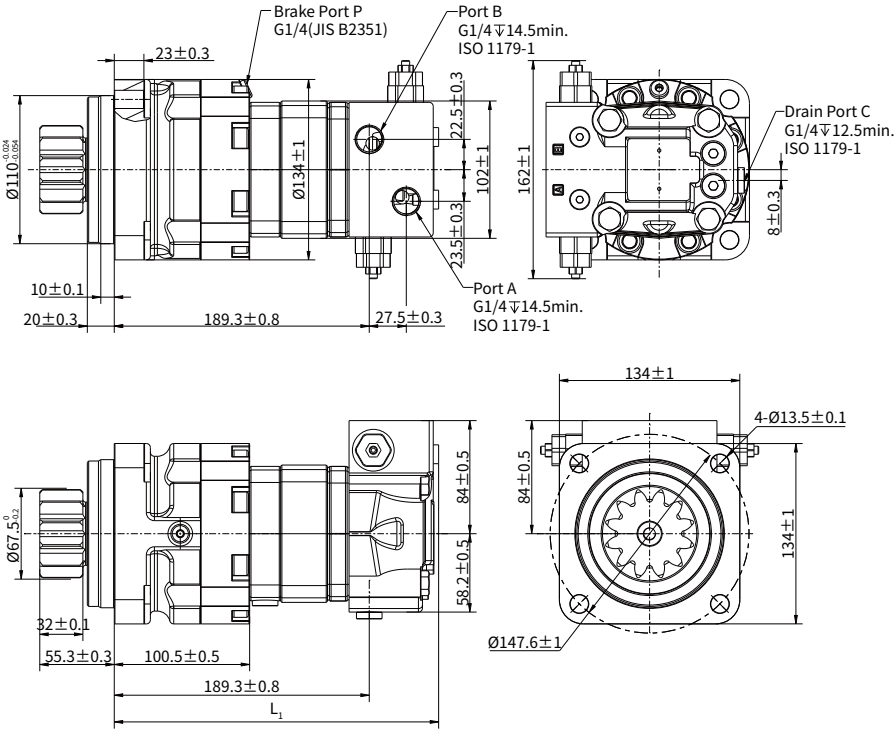
⑧	Standard	A

T - 0254

Note: When using the order information, the user can select the motor series, displacement, installation flange, port, shaft and other information. If the selected specification is not in the table or has special requirements, please contact us.

Installation size

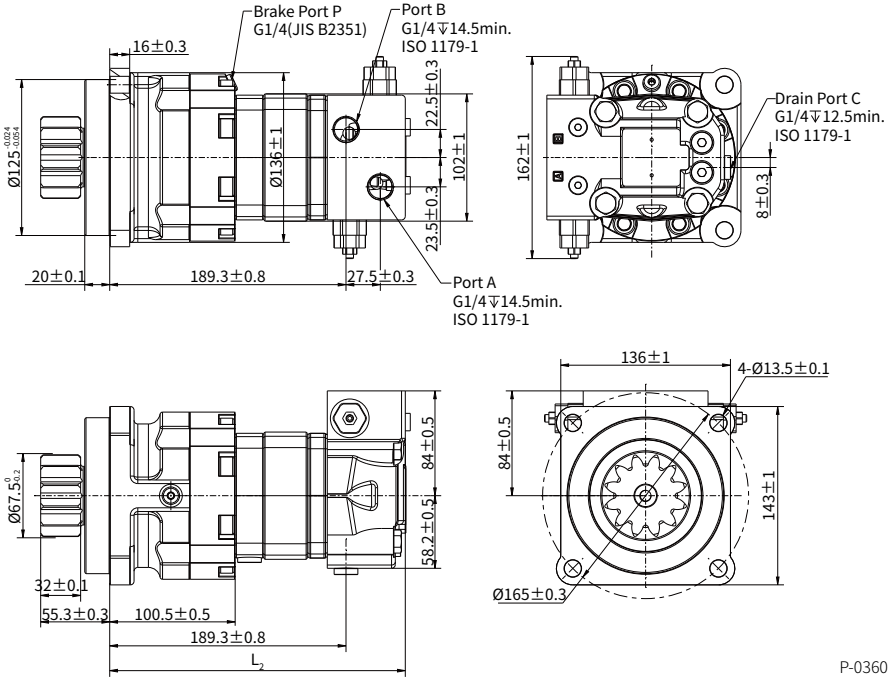
F1 4-HOLE SQUARE MOUNT



P-0358

Installation size

F2 4-HOLE SQUARE MOUNT



P-0360

Length and weight

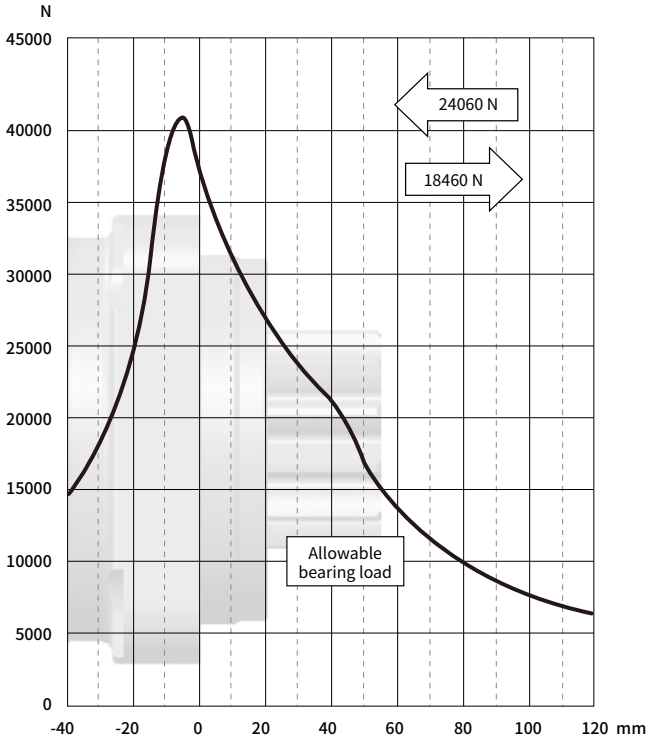
Type	L_1 mm	L_2 mm
160	233.8	229.8
200	240.8	236.8
250	240.8	236.8

T-0255

Note: Dimensions L_1,L_2 are the length from the flange mounting surface to the rear end of the motor, and the tolerance is ±0.8mm.

Allowable shaft load/bearing curve

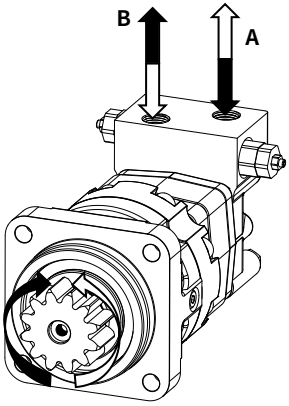
As shown in the figure, when the axial load is 0, the radial allowable load of the output shaft is related to the distance from the flange mounting surface to the load action point.
The solid line shows the allowable radial load of the bearing. It is based on L_{10} bearing life 2000 hrs at 50 RPM with rated output torque.
Any shaft load exceeding the values quoted in the curve will involve a risk of failure.



P-0355

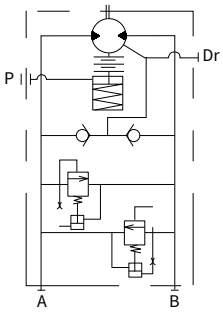
Rotation direction: CW

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



P-0355

Hydraulic diagram



P-0356