HYDRAULIC MOTORS

JMDG31

RADIAL PISTON HYDRAULIC MOTOR

JMDG is one kind of low speed high torque radial piston hydraulic motor. It can be widely applied in petroleum industry, chemical industry, mining, shipping, constructing machinery, especially for plastic injection molding machinery, hydraulic winch, transmission etc.

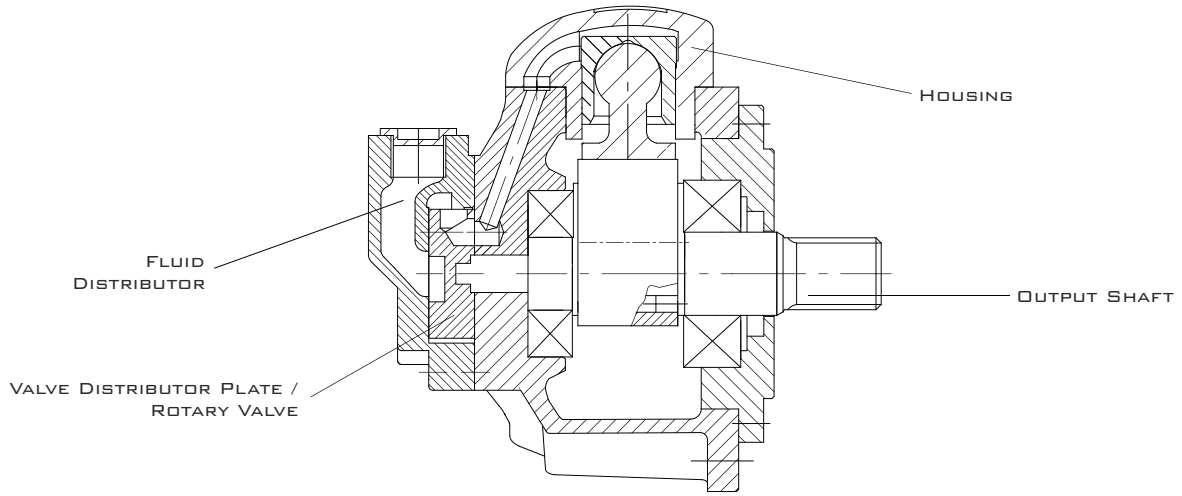
- Low nose
- High staring torque (mechanical efficiency improved to over 0.9), good stability when low speed
- High volumetric efficiency
- Higher mechanical efficiency
- Opposite rotating available
- Radial and axil load available
- Higher kw/kg ratio

Technical data

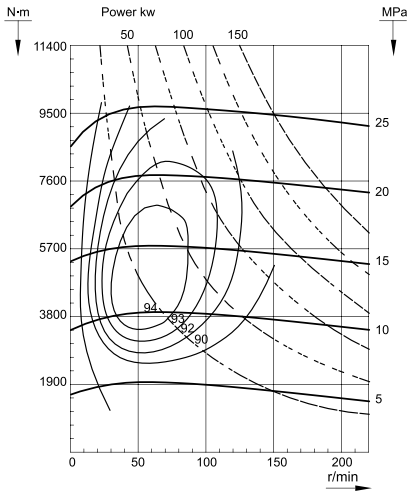
TYPE		JMDG31-2500	JMDG31-2800	JMDG31-3000	JMDG31-3150	JMDG31-3500	JMDG31-4000	JMDG31-4500	JMDG31-5000	JMDG31Y-4600	JMDG31Y-5400	JMDG31Y-6300
Displacement (ml/r)		2550	2826	3050	3142	3419	4170	4522	5190	4621	5465	6152
Max. Pressure. (MPa)	Peak.	24	24	22	22	22	22	22	20	24	24	22
	Cont.	20	20	18	18	18	18	18	16	18	18	16
Max. Torque (N·m)	Rate (N·m)	7471	8280	8043	8285	9016	10996	11924	12165	11207	13156	13643
	Theoric (N·m/MPa)	373	414	447	460	501	611	663	760	622	730	852
Speed Range (r/min)		10-200	10-200	10-200	10-200	10-200	10-200	10-160	10-160	5-125	5-125	5-125
Max. Power (cont.) (kW)		150	150	140	140	140	130	130	130	145	145	145
Weight (kg)		325	325	325	325	325	325	325	325	375	375	375

Function and configuration

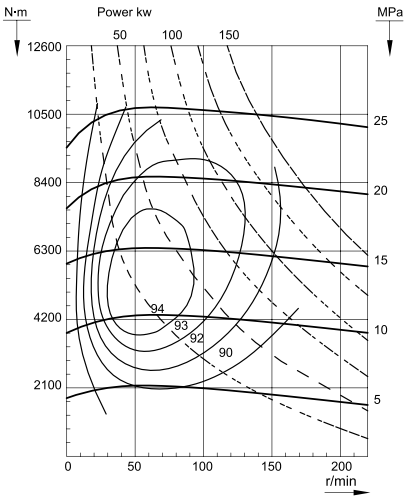
High pressure oil comes into the cylinder, working on the piston, pushing the piston is connected to the crankshaft, then the crankshaft will turn together with oil distributor. When piston walks to its lowest position, the cylinder will get through with the oil tank, then the piston goes back. Total 5 pistons work one by one, the crankshaft will turn continually. When the working oil flows oppositely, the shaft will turn in another direction.



Characteristic curves



JMDG31-2500



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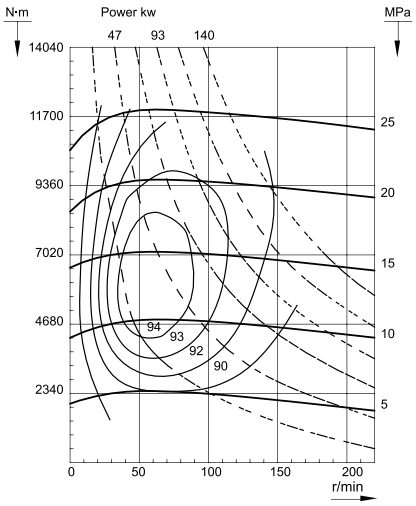

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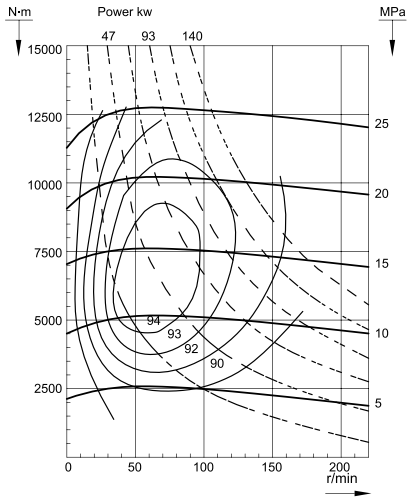

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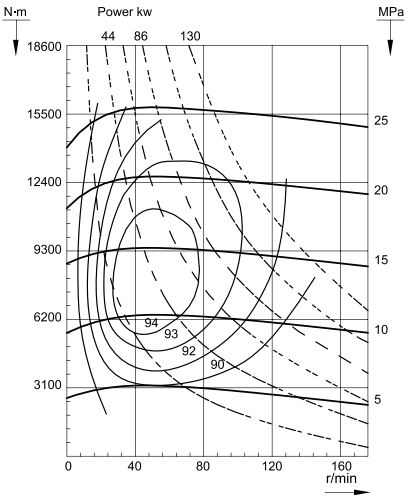
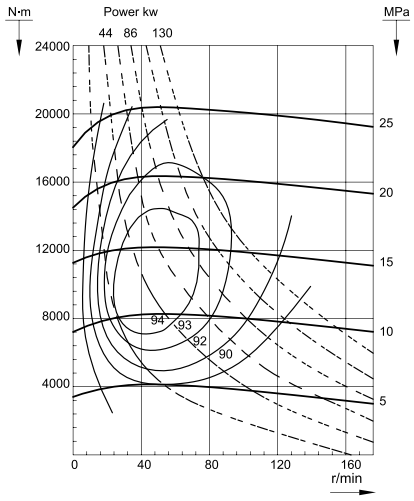


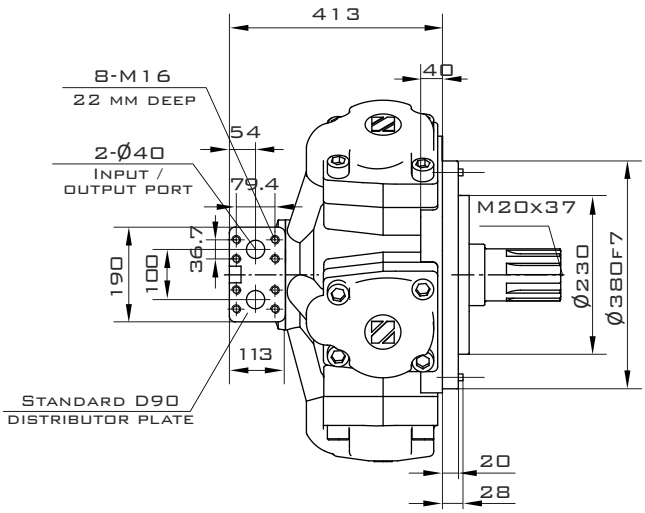
JMDG31-4000

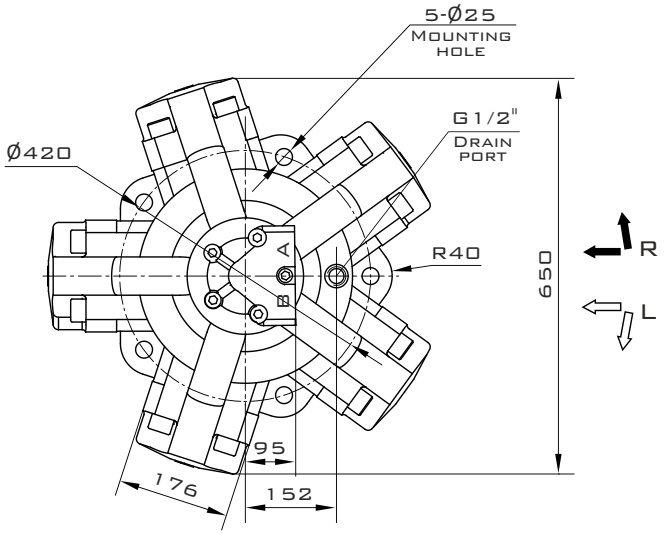


JMDG31-5000

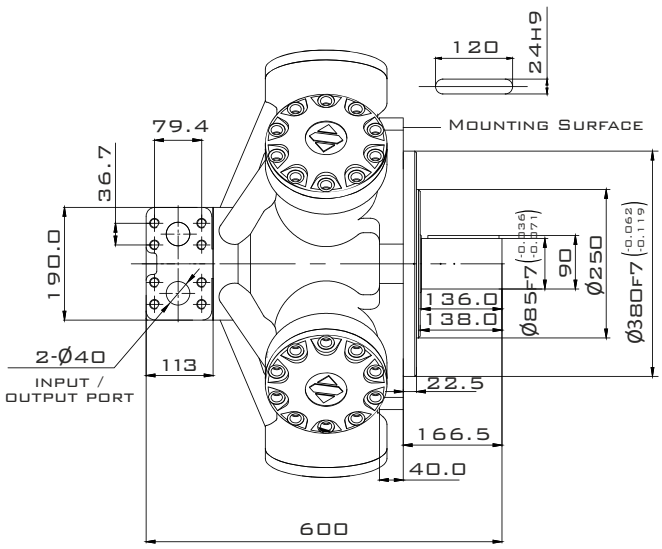
JMDG31 INSTALLATION

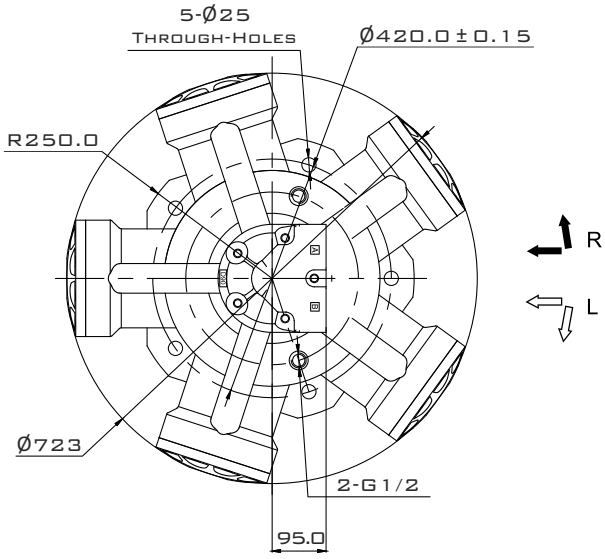
JMDG31





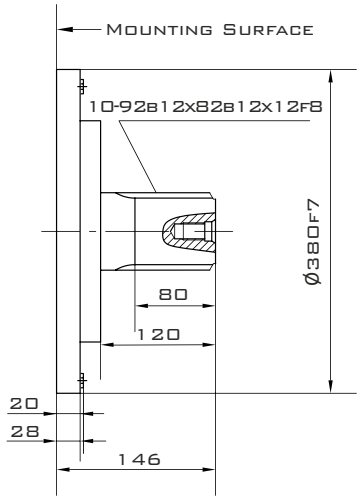
JMDG31Y



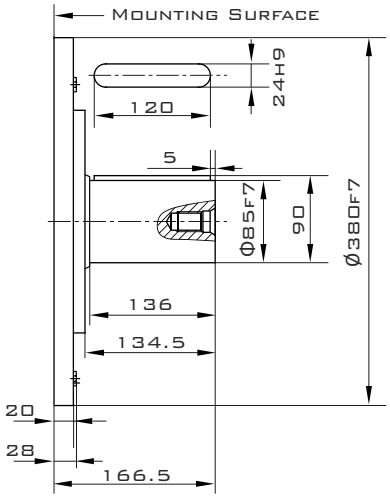


JMDG31 INSTALLATION

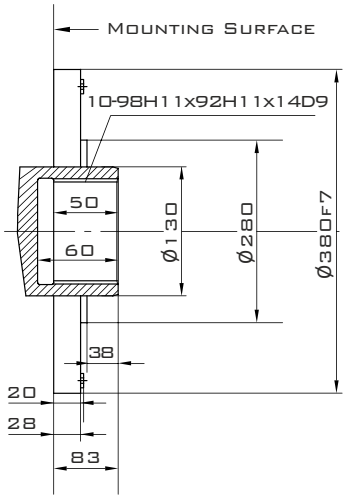
Standard External Spline JMDG31-**A

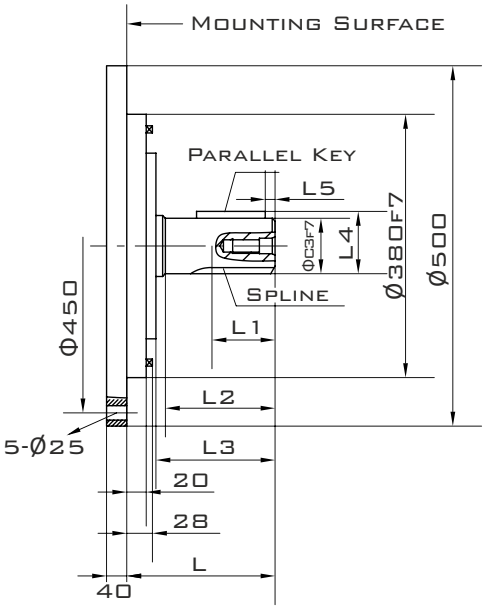


Standard Parallel Keyway JMDG31-**B



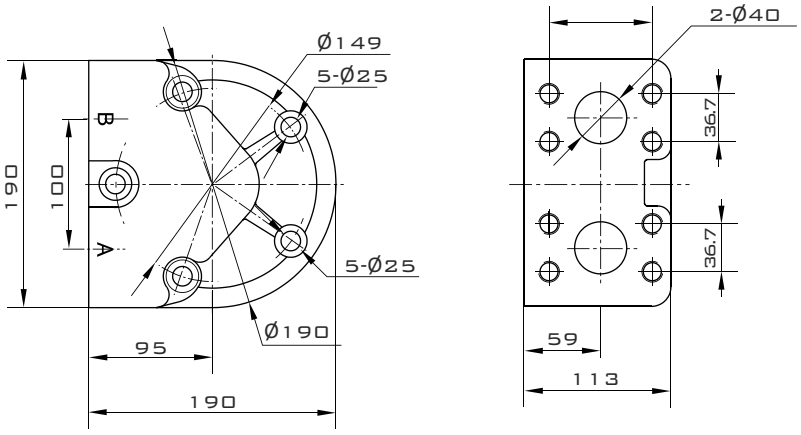
Standard Internal Spline JMDG31-**I





TYPE		JMDG31-**A	JMDG31-**B	JMDG31-**I
Distance from mounting face to shaft end	L	202	161.5	190
Effective spline length	L1	130	–	–
Distance from shaft shoulder to shaft end	L2	167	131	158
Distance from shaft end to end cover	L3	172	132	160
Overall height of shaft diameter and key	L4	–	92	106.4
Distance from shaft end to key	L5	–	5	5
Shaft Diameter	C3	92	90	101.4
Key / Spline Specifications		10-92B12x82B12x12F8	25x120	25.4x142

Oil distributor



D90

D90 with Ø40 flanges for JMDG71, JMDG16, JMDG31, JMDG100 series motors.

Valve block specification

Dual-Block Configurations					
Code	Valve Component Specification	Port Dimensions	Code	Valve Component Specification	Port Dimensions
D47PF8	CBEG-LJN Counterbalance Valve	2-M33×2	D47P2F2	2× CBEG-LJN Counterbalance Valves	2-NPT 3/4"
D47PAF8 (240)	CBGG-LJN Counterbalance Valve YF06-02-00 Relief Valve	2-M33×2	D47A2F4	2× YF06-02 Relief Valves	2-G1"
D47PAF8	CBEG-LJN Counterbalance Valve YF06-02 Relief Valve	2-M33×2	D47P2A2BF4	2× CBEG-LJN Counterbalance Valves 2× YF06-02 Relief Valves Flushing Valve Assembly	2-G1"
D47P2F8	2× CBEG-LJN Counterbalance Valves	2-M33×2	D47P2SF	2× CBEG-LJN Counterbalance Valves SF06-01-00 Shuttle Valve	2-G3/4"
Single-Block Configurations					
D90PF2	CBGG-LJN Counterbalance Valve	Ø48	D90PHF5	CBGG-LJN Counterbalance Valve 34S-25B0D Directional Control Valve	2-M33×2
D90PF5	CBGG-LJN Counterbalance Valve	2-M33×2	D90PF12(480)	GBIG-LIN Counterbalance Valve	2-M42×2
D90PAF5	CBGG-LJN Counterbalance Valve YF10-01-00 Relief Valve	2-M33×2	D90P2A2F5	2× CBGG-LJN Counterbalance Valves 2× YF10-01-00 Relief Valves	2-M33×2
D90P2F5	2× CBGG-LJN Counterbalance Valves	2-M33×2			

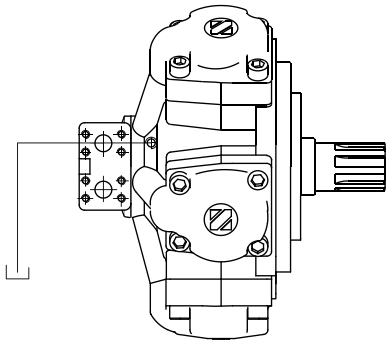
NOTE:

Counterbalance valves are selected according to system flow rate. Ensure that the selected valve matches the actual operating flow rate, otherwise excessive pressure drop or unstable operation may occur.

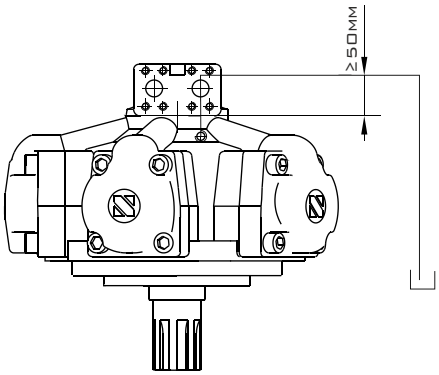
base requirement

1. Depending on the ambient air temperature and operating conditions, the selected oil should have good viscosity characteristics, resistance to deformation, anti-oxidation and anti-rust properties, and a high flash point, among other requirements. During motor operation, the oil viscosity should be within the range of (25–70) × 10 m^2/s, and the water, acid, alkali and mechanical impurity content should not exceed the allowable values.
2. Filtering Precision, Superior to 25 m under rated operation condition.
3. Oil temperature keeps 25°C -55°C in normal continuous operation, not more than 65°C in intermittent operation.
4. Under normal condition, Max. pressure for the motor body is 0.1 MPa. If pressure too high, oil seal is prone to be damaged and oil will be leaked out.
5. The motor can normal work as long as the backpressure exceeds 0.2 MPa. In case of insufficient backpressure motor will creep in low- speed operation.
6. Motor and load shall be coaxially linked. Spline shaft and the splined hole of working mechanism shall be aligned. Besides, sliding fit of both should be ensured.
7. The motor cannot work as a pump.

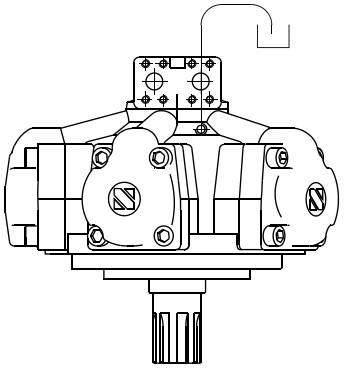
Drain connection



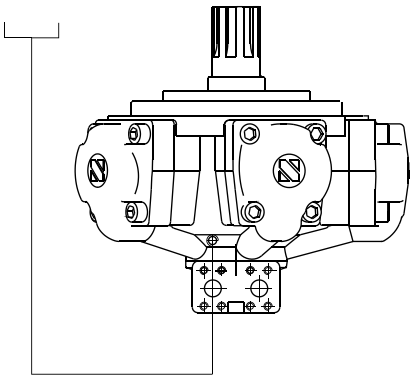
Motor axis horizontal



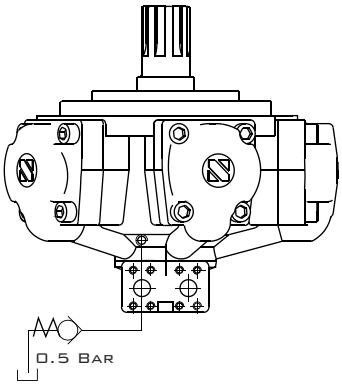
Axis vertical, shaft down



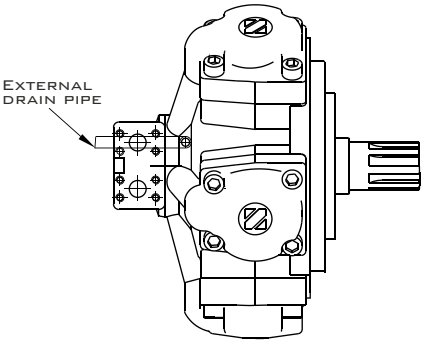
Axis vertical, shaft down



Axis vertical, shaft up



Axis vertical, shaft up



Drain pipe

NOTE:

1. Motors should be fulfilled with oil through the drain port before using.
2. The highest position of drain pipe should be higher than the highest position of the motor; the drain port should be connected with outlet port, pressure in drain pipe should not be high.

Order code

JMDG31	—							

Series JMDG31

Theoretical Displacement:

2500
2826
3050
3142
3419
4170
4522
5190
4621
5465
6152

Output Shaft:

A = Standard rectangular external spline shaft
B = Standard parallel key shaft
I = Rectangular internal spline shaft

Housing Type:

C = Special shell
OMIT = Standart

Mounting Flange Type:

F = Without adapter plate
(Standard omitted)
S = With adapter plate

Oil Distributor Type:

Distributor code
(standard distributors
are shown in the mounting
drawings for each series)
Special requirements: see page 5

Special requirements:

T = special features
OMIT = standart

Rotation Direction*:

R= Clockwise
L= Counter-clockwise

* viewed from shaft end