

M-60 Electric Drivehead Gen III



M-60 Electric Drivehead

We provide a complete line of artificial lift technologies and oilfield equipment around the globe. Our entire line of direct driveheads are specifically designed for use with progressing cavity pumping systems.

Our M-60 electric drivehead employs the highly efficient and extremely safe hydrodynamic backspin braking system and is designed for low to medium horsepower applications. The M-60 brings an all cast body and a 50% increase to the thrust bearing rating. As part of our commitment to safety, all of our direct drives have a fully enclosed and hinged belt guard. Each drivehead is tested and inspected to meet our quality requirements.

Features and Benefits

- Robust frame
- Bearing box is designed with a three bearing system
- Detachable environmental stuffing box
- Large brake reservoir for heat dissipation
- Repeatable and reliable brake curve
- Induction hardened seal surfaces eliminate shaft grooving and increases seal life
- Operator-friendly guards and motor adjustments
- Easy-to-adjust hinged door for simple belt tightening
- Easy-to-adjust motor height
- Accessible fill/drain spouts for easy oil changes
- Minimal maintenance
- Service and technical support

Options

- Hydraulic motor
- Rope style stuffing box
- Jampak stuffing box
- Leak free integral stuffing box
- Retrofit stuffing box

Accessories

- Anti-ejection clamp
- Lock-out device
- Polished rod guard
- Booth guard
- Support arms
- Shipping/support stands
- Tachometer

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Specifications

Drive Type	Direct
Shaft Type	Hollow
Drive Style	Bearing Box
Input Style	Vertical
Drive Ratio	1:1
Backspin Control	Hydrodynamic
Ratings	
Max. Output Torque	1575 ft-lbs (2135 Nm)
Thrust Bearing	220,310 ISO lbf
Thrust Bearing*	57,120 Ca 90 lbf
Thrust Bearing**	30,240 750 MM cycles lbf
Maximum Speed	600 rpm
Horsepower Rating***	10 to 60
Frame Type	Single Motor
Compatible Frame Size NEMA	215T, 254T, 256T, 284T, 286T, 324T, 326T, 364T, 365T, 404T
Compatible Frame Size IEC	132M, 160M, 160L, 180M, 180L, 200M, 200L, 225S, 225M, 250S
Polish Rod Size	1 1/4" (32 mm)
Max. Operating Temp.	285° F/140° C

* Ca90 load rating is for 90 million revolutions. Reducing load one half increases life 10 times. Reducing rpm by one half doubles hours of life.

** 750 mm load rating is for 750 million revolutions (approximately 3 years at 500 rpm).

*** Maximum HP rating based on frame size only. Care must be taken in selecting motor and sheave combinations to ensure input rod torque is not exceeded.

Dimensions (excluding motor)	
Height w/Retro Stuffing Box	55 1/4" (1405 mm)
Height w/Integral Stuffing Box	40" (1015 mm)
Width	34 5/8" (880 mm)
Input Shaft Size	2 3/4" (70 mm)
Weight (No Stuffing Box)	818 lbs (372 kg)
Other Data	
API Wellhead Connection	2 7/8" EUE Pin
	3 1/8" – 3000 psi R31 Flange
	4 1/16" – 3000 psi R37 Flange
	5 1/8" – 2000 psi R41 Flange
	5 1/8" – 3000 psi R41 Flange
Prime Mover	Electric or Hydraulic
DriveN Sheave Max. Dia. ¹	28" (711 mm)
DriveR Sheave Max. Dia. ^{1,2}	14" (356 mm)
DriveR Sheave Min. Dia. ¹	Depends on Motor Size
Drive Center to Center Min. ³	19 1/2" - 24 3/8"
Drive Center to Center Max. ³	24 3/8" - 27 1/2"

¹ Sheave dia. is based on C-groove belts. Values may change when other styles of belts are used

² Consult motor manufacturer.

³ Center to center distances are based on using the smallest and largest compatible frame sizes.

Hydrodynamic Brake

We have incorporated the well-proven principle of the Hydrodynamic Brake into the M-60 direct drive to provide safe, reliable and smooth backspin control. The Hydrodynamic Brake consists of a stationary half (stator) and a rotary half (rotor). The stator is bolted into the housing and the rotor is coupled to the shaft. During normal operation the rotor spins freely. When the unit goes into backspin, the rotor begins to rotate in the counter clockwise direction. The working fluid is then forced to the outside of the rotor and creates a circular flow path inside the brake cavity. As the energized fluid from the rotor comes into contact with the stationary fins of the stator, the energy is transferred to the stator and then back to the working fluid as heat. A small amount of working fluid is continually removed from the system and replaced with new fluid. The working fluid contained in the drivehead reservoir is used as the braking medium, which allows the energy stored in the fluid column and rod string to safely dissipate without the drivehead reaching excessive backspin speeds.

Advantages of the Hydrodynamic Braking System

- Non-friction brake eliminates wear on brake components
- Brake capable of 1420 ft-lbs (minimum) resisting torque at 500 rpm
- Reliable and repeatable braking
- Backspin energy is absorbed by the working fluid reservoir
- Consistent braking with minimal maintenance throughout the drivehead's life

Hydrodynamic Brake Performance

