

# SUN STAR TYPE "D" WATER-FILLED MOTOR

The Sun Star Type "D" motor is a water-filled, high efficiency, submersible motor. All exposed metal components are 316 series stainless steel. The motor is completely sealed and employs an internal pressure balancing system. The mounted flange dimensions ensure a standard fit to most pump manufacturers. The Type "D" motor is designed for "across-the-line" and reduced voltage starting. It is also approved for operation with Variable Frequency Drives (VFD).

## MANUFACTURING & REPAIR OF WATER FILLED MOTORS SINCE 1977

### ● ENGINEERING & DESIGN

Type "D" motors are an engineered product and can be custom designed to fit most applications.



### ● FACILITY CAPABILITIES & CAPACITY

All welding, machining, component fabrication, winding, assembly, electrical and run testing accomplished in house.

### ● EXPERIENCE

Sun-Star Electric has been designing and manufacturing motors for over 40 years. Our combined expertise with submersible motors culminates to hundreds of years of experience.



2 POLE			4 POLE		
FRAME	H.P.	VOLT	FRAME	H.P.	VOLT
10"	75	2300	12"	150	2300
	100			200	
	125				
12"	200	2300	14"	200	460 2300
	250			250	
	300			300	
	350			400	
14"	300	460 2300 4160	16"	300	460 2300 4160
	350			350	
	400			400	
	450			450	
16"	400	2300 4160	20"	500	2300 4160 6600
	450			600	
	500			700	
	600			800	
	700			900	
SPEEDS					
3600RPM / 1800RPM (2P / 4P)					
AMBIENT TEMP					
25°C ambient standard w/Hi-Temp options available					
MATERIALS OF CONSTRUCTION					
316 series SS, Super Duplex, and NiAlBr available					

**Different configurations on request**



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**SUN-STAR ELECTRIC, INC.**  
AN EMPLOYEE OWNED COMPANY  
WWW.SUNSTARUSA.COM

# SUN STAR TYPE "D" WATER-FILLED MOTOR

The Sun Star Water-Filled Type "D" motor was developed for specialized, large motor applications. The need for more readily available, large horsepower, medium voltage submersible motors compelled Sun-Star Electric, Inc. to standardize the design and the manufacture of the Type "D" motor.

## MOTOR LEADS

Type "D" motor leads are internally connected to the winding and the individual cables extend through the compression fittings in the mounting bracket. This maintains a completely sealed unit. Lead cables are sized for submerged operation and extend to a length of 16 feet outside the motor. Longer continuous lengths are available on request.

## STATOR

The all stainless-steel stator shell provides superior protection against erosion and corrosion of the exterior shell. This allows for larger diameter stator laminations and superior motor cooling capabilities.

## GUIDE BEARINGS

Replaceable, carbon composite guide bearings are located at each end of the rotor. This material allows for close bearing clearances while providing critical rotor alignment.

## GUIDE BEARING JOURNALS

Guide bearing journals are replaceable chromed sleeves. These sleeves provide exceptional wear characteristics and easy replacement.

## THRUST BEARING

The thrust bearing is a Kingsbury type bearing. A proven pivotal shoe design with polished stainless steel shoes, and a polished phenolic-resin, or carbon composite rotating driver face.

## SHAFT SEAL(S)

The standard Type "D" motor uses a double rubber lip seal for sealing at the shaft. This configuration ensures the highest reliability in conditions of suspended solids. The motor is also available in a single mechanical seal design.

## INTERNAL FLUID

The motor is internally filled with a solution of fresh, potable water and FDA approved, food grade, propylene glycol. This mixture prevents fluid freezing during transport and storage.

## WINDING

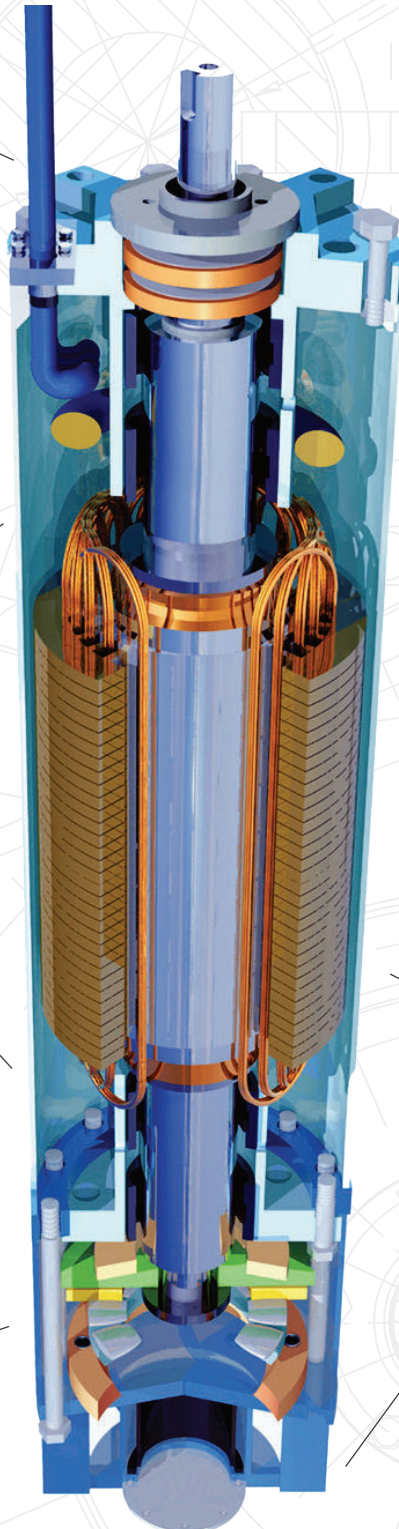
Water tight class Y winding materials are used in all standard Type "D" motors. Our special winding wire has an epoxy enamel layer over the conductor, surrounded by waterproof polypropylene (460 volt) or polyethylene (2300-4160 volt) insulation layer. An outer nylon sheath applied over the insulation provides additional mechanical protection.

## ROTOR

The rotor shaft is a two-piece shaft composed of high strength magnetic steel and a 316 stainless steel stub shaft that extends through the mounting bracket. The squirrel cage rotor assembly is dynamically balanced to operate with minimum vibration.

## INTERNAL PRESSURE BALANCING SYSTEM

Internal and external motor pressures are balanced by means of an expansion diaphragm. The diaphragm allows for internal fluid expansion during operation and prevents the exchange of internal and external fluids.



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The Type "D" motor is designed for a wide variety of specific applications. It is suitable to operate in vertical, horizontal and near horizontal positions.