Industrial Flow Solutions Operating, LLC

PUMP SPECIFICATION

KB HEAVY DUTY SUBMERSIBLE
DEWATERING / LIGHT SLURRY PUMPS
CONSTRUCTION / PERFORMANCE SPECIFICATIONS

PUMP REQUIREMENTS

Supply (qty) ____, ____ inch discharge electric submersible heavy duty dewatering / light slurry pump(s). The pump shall be driven by a close coupled ___ HP, submersible electric motor with a nominal rating of _____ volts, 3 ph, 60 Hz, 3600 rpm.

The pump shall be capable of delivering _____ US GPM flow at _____ FT TDH.
The pump shall also be able to delivering _____ US GPM at _____ FT TDH.
The pump shutoff head shall be at least_____ FT TDH.

DESIGN AND CONSTRUCTION

The pump shall be designed and constructed to pump liquids containing up to 15% (concentration by weight) abrasive solids without causing excessive wear or early pump failure.

Agitator

The pump shall be designed and fitted with a replaceable agitator to lift solids that have settled to the bottom of the pumping area, and to move these solids into suspension with the pumped liquid. The agitator design shall have at least 4 conical vanes angled to propel solids into the suction inlet of the pump. The agitator shall be made of cast chrome iron with hardness of at least 600 BHN. The agitator shall be attached directly to the pump shaft at the eye of the pump impeller.

Wear Plate

The pump shall be supplied with a hardened wear plate to prevent erosion and increasing the clearance between the impeller and suction cover of the pump; a condition that would reduce the pump's hydraulic performance. The wear plate shall be replaceable, constructed of cast chrome-iron with a minimum hardness of 600 BHN, and installed in front of the impeller.

Wear plates constructed with a casting hardness less than 600 BHN shall not be accepted. Wear plates installed on the back side of the impeller shall not be accepted.

Impeller

The pump shall be supplied with a dynamically balanced semi-open, multi-vane impeller designed for superior hydraulic efficiency and capable of handling 0.39 (10mm) inch spherical solids without clogging.

Industrial Flow Solutions Operating, LLC

PUMP SPECIFICATION

KB HEAVY DUTY SUBMERSIBLE
DEWATERING / LIGHT SLURRY PUMPS
CONSTRUCTION / PERFORMANCE SPECIFICATIONS

Volute

The pump volute shall be constructed from *(choose one)*

Treated ductile iron with a hardness not less than 300 BHN

Treated ductile iron, supplied under the brand name “Hi-Hard” with hardness not less than 700 BHN

Discharge

The pump design and construction shall have a top discharge, with a NPT connection. Pumped liquid shall pass from the volute through pump housing, cast around the motor housing. The pumped liquid shall act as a water jacket to cool the motor and to permit pumping down to a depth of *(choose one*) (12) / (16) inches without overheating the motor.

The pump housing shall be constructed of treated cast ductile iron with hardness not less than 300 BHN.

Seals

The pump shall be supplied with four independent seals designed to prevent fluid from entering the motor housing.

The pump seal chamber shall be isolated from the pumped liquid by a lip seal constructed from Buna N rubber.

Two mechanical shaft seals shall be installed in an oil filled seal chamber designed to permit inspection and drainage and prevent over-filling without disassembly of the pump stand, agitator and impeller.

The two mechanical seals that shall be lubricated hydro dynamically by Shell Turbo T turbine oil (ISO 68).

The rotating and the stationary seal rings in both the lower mechanical and upper mechanical seals shall be constructed of Silicon Carbide. The rotating and stationary seal rings in the two seals shall be held in contact by a common 304SS spring.

The power cord entry shall be sealed by a cast iron gland fitted with a Buna N molded power cord boot, attached to the motor cover, and the power wire leads shall be independently connected to the motor wire leads in an epoxy potting. The potting shall be done in a manner to establish an anti-wicking block; each wire lead shall have its insulation stripped, exposing the copper conductor, connected, and then epoxied to form a solid barrier.

Industrial Flow Solutions Operating, LLC

PUMP SPECIFICATION

KB HEAVY DUTY SUBMERSIBLE
DEWATERING / LIGHT SLURRY PUMPS
CONSTRUCTION / PERFORMANCE SPECIFICATIONS

Motor

The pump motor shall be designed specifically for submersible pump usage and continuous duty of pumped liquid up to 104 degrees F. The motor shall be an induction type in an air filled chamber. The stator windings and leads shall be insulated with moisture resistant Class H insulation rated for 356 degrees F.

The motor horsepower shall be non-overloading over the full range of the performance curve, from shut-off to run-out. The combined service factor (frequency, voltage and liquid specific gravity) of the motor shall be 1.10.

The motor shall be protected from failure from overheating by a thermal switch attached to the stator and from low voltage or high amperage by a separate overload switch installed in the motor cover housing.

The motor cover shall have a threaded fitting to permit air testing of the motor cover and power cord inlet seal against leakage.

Optional: *(delete if not specified*) The motor shall be protected from shorting due to mechanical seal failure by a Seal Minder®; a 12 volt AC sensor in the seal chamber that detects water in the seal oil and transmits a signal to a remote panel or alarm box. The 12 volt wire shall be the same length as the power cord.

Power Cord

The pump shall be supplied with a 50 foot power cord connected to the motor lead wires in water and oil resistant sealed epoxy potting. The power cord shall be sized in accordance with NEC standards. The outer sheath of the power cord shall be made of oil resistant neoprene, class SOOW.

Optional: *(delete above and insert*): The pump shall be supplied with a _____ foot power cord.

The power cord shall be protected by a strain relief chain, attached to the motor cover. The strain relief chain will be sized to absorb the load and prevent the power cord leads from being separated from their connection to the motor lead wires, if the power cord is pulled, as in the act of attempting to lift the pump by the cord.

Rotor Shaft

The rotor (pump) shaft shall be constructed of corrosive resistant 410SS and be of sufficient diameter to handle radial loads over the full range of the pump's performance curve while pumping high concentrations of solids.

The rotor (pump) shaft shall be protected by a replaceable hardened shaft sleeve.

PUMP SPECIFICATION

KB HEAVY DUTY SUBMERSIBLE DEWATERING / LIGHT SLURRY PUMPS CONSTRUCTION / PERFORMANCE SPECIFICATIONS

Supporting the Pump

The pump shall be mounted on an integral stand constructed of steel. The stand shall incorporate a strainer to prevent large solids from entering the pump.

The pump shall be fitted with a lift ring, screwed into the motor cover. Lifting chains shall be supplied by others.

TESTING

The pump shall undergo the following tests, which shall be recorded and certified.

Air pressure	Winding: phase angle and impedance tests
Noise	Insulation to ground
Vibration	

A copy of the test record tag shall be attached to the pump when delivered to the customer or job site.

OVERALL

The pump shall be a BJM Pumps® KB series model _____.
The pump shall be _____inches in height, _____ inches in diameter and shall weigh _____ lbs.

BJM Pumps & Seal Minder is a registered trademark of Industrial Flow Solutions Operating, LLC

Copyright © 2020 Industrial Flow Solutions Operating, LLC. All rights reserved