

Technical Data – 5430 M & W SUBMERSIBLE SOLIDS HANDLING PUMPS

A/D5430MT/MV/W/WD	
Wet End	Vertical, solids handling impeller
Rotation	CW when viewed from driver end
Volute	Single, one-piece, constant velocity
Nozzles	Bottom suction, horizontal discharge
Impeller	Single-suction, radial flow, enclosed Bladeless (optional)
Wear Rings	Axial type wear rings (optional)
Shaft	Integral motor, shims for impeller adjustment
Bearing Frame	Motor frame
Bearing Radial/Thrust	Integral motor
Lubrication – Seal	Oil
Motor	Submersible, constant speed, squirrel cage, 3 phase, 60 Hz, 230 or 460 volt through 250 frame 320, 360, 400 and 440 frame, 460 volt only. 1.15 service factor thermal protectors and moisture sensing probes Mechanical seals with SST Nitrile components Upper mechanical seal stationary faces, ceramic with carbon rotating face Lower mechanical seal stationary faces, tungsten carbide with silicon carbide rotating face Tungsten carbide rotating and silicon carbide stationary faces for upper mechanical seals (optional) Various voltages (optional) Continuous duty in air (optional) Continuous duty in air with water cooling jacket (optional) Viton® O-rings (optional)
Lifting Bail	Pull-up lifting bail (not supplied on WD pumps 365 frame or smaller)
D5430MT	
Volute	Tangential
Discharge Coupling	Slip on flange type
Discharge Base	One-piece flanged inlet and vertical discharge
Cable	Pull-up cable (optional)
D5430MV	
Volute	Single one-piece, constant velocity
Nozzles	Bottom suction – Centerline discharge
Discharge Coupling	Pivot flange type
Discharge Base	One-piece flanged inlet and flanged vertical discharge
Cable	Pull-up cable (optional)
D5430WD	
Fronthead	Separate one-piece casting integral to volute on D5431 flanged for connection to suction elbow
Base Mount	Base and separate flanged suction elbow with cleanout
Rotation	CCW when viewed from driver end (optional)
D5430W	
Pump Mount	One-piece low profile for low liquid level pumping

Technical Data – 5430 M & W SUBMERSIBLE SOLIDS HANDLING PUMPS

	A/D5431M/W			A/D5432M/W/MV/MVK				A/D5433M/W/MV/MVK			
Pump Size (Discharge Size)	2	3	4	2	3	4	8	3	4	5	6
Suction Size (Standard)	2	3	4	2	3	4	8	3	4	5	6
Nominal Wear Ring (Axial) Clearance	.015	.015	.020	.015	.015	.020	RTF	.015	.020	.020	.025
Impeller Fastener:											
Size	1/2–13	1/2–13	1/2–13	1/2–13	1/2–13	1/2–13	RTF	5/8–11	5/8–11	5/8–11	5/8–11
Tightening Torque (lbs.-ft.)	80	80	80	80	80	80	RTF	120	120	120	120
Impeller:											
Weight (lbs.)	17.8	18.0	21.8	28.0	40.0	41.2	RTF	47.4	65.9	70.0	73.8
Inlet Area (sq. inches)	9.28	13.20	23.49	14.91	20.39	26.22	RTF	23.52	37.50	46.43	52.88
Sphere Size (Maximum)	1-1/2	2	2-1/2x3	1-1/2	2	3	RTF	2	3	3-1/2	3
Max. Hydrostatic Test, psi	65	65	65	90	90	90	RTF	125	125	125	125
Max. Casing Working, psi	45	45	45	60	60	60	RTF	85	85	85	85
Nominal Casing Thickness	5/16	5/16	5/16	3/8	3/8	3/8	RTF	3/8	1/2	1/2	1/2
Max. Operating Temperature (° F) D Series	104	104	104	104	104	104	104	104	104	104	104
Max. Operating Temperature (° F) A Series	150	150	150	150	150	150	150	150	150	150	150
Anchor Bolt Size, Recommended	7/8	7/8	7/8	7/8	7/8	7/8	RTF	7/8	7/8	7/8	7/8
Dry Pit Submersible Options:											
Suction Size (Optional)	—	4	6	—	4	6	—	4	6	8	6
Vent/Priming Tap	1/4	1/4	1/4	1/4	1/4	1/4	RTF	1/4	1/4	1/4	1/4
Volute Cleanout Diameter	—	1-1/2	2	—	4-1/2	2-7/8	N/A	2-1/4	2-7/8	4-1/4	4-7/8
Suction Elbow Cleanout Diameter	2	3	4	2	3	4	N/A	3	4	5	6
Min. Round Opening to Install Pump	28	30	32	30	32	34	RTF	36	40	40	40

All dimensions are in inches.

MV units are centerline volute discharge design.

Suction elbow available on WD units only.

For water jacketed motors, add the following weight to pump and motor:

250 frame + 85 lbs., 320 frame + 230 lbs., 360/365 frame + 245 lbs., 400 frame + 355 lbs., 440 frame + 460 lbs.

Technical Data – 5430 M & W SUBMERSIBLE SOLIDS HANDLING PUMPS

	D5434M/W					D5435M/W			D5436M/W				
Pump Size (Discharge Size)	4	5	6	8S	8L	4	8	10	5	6	6L	8	8S
Suction Size (Standard)	5	5	6	8	8	4	8	10	8	10	10	10	10
Nominal Wear Ring (Axial) Clearance	.020	.020	.025	.025	.025	.015	.025	.030	.020	.025	.025	.025	.025
Impeller Fastener:													
Size	3/4-10	3/4-10	3/4-10	3/4-10	3/4-10	7/8-9	7/8-9	7/8-9	7/8-9	1-1/4-7	1-1/4-7	7/8-9	1-1/4-7
Tightening Torque (lbs.-ft.)	200	200	200	200	200	240	240	240	240	240	240	240	240
Impeller:													
Weight (lbs.)	103.0	89.3	169.3	102.1	102.1	103.0	302.0	380.0	89.3	133.0	125	342.0	125
Inlet Area (sq. inches)	47.01	58.39	*	62.99	x	35.65	#	127.43	52.05	59.32	93.3	93.22	93.3
Sphere Size (Maximum)	3	4	*	3-1/2	x	3	5	6	3	3	3	5	3
Max. Hydrostatic Test, psi*	160	80	80	80	80	190	115	115	190	225	225	150	225
Max. Casing Working, psi*	100	75	75	75	75	125	75	75	125	150	150	100	150
Nominal Casing Thickness	9/16	1/2	1/2	1/2	1/2	9/16	3/4	3/4	11/16	7/8	7/8	3/4	7/8
Max. Operating Temperature (° F)*	104	104	104	104	104	104	104	104	104	104	104	104	104
Anchor Bolt Size, Recommended	7/8	7/8	7/8	7/8	7/8	7/8	1-1/8	1-1/8	7/8	7/8	7/8	7/8	7/8
Dry Pit Submersible Options:													
Suction Size (Optional)	6 or 8	6 or 8	8	10	10	6	10 or 12	12	10	—	—	—	—
Vent/Priming Tap	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Volute Cleanout Diameter	2-7/8	4-1/4	4-1/4	4-7/8	4-7/8	2-7/8	5-1/8	4-7/8	3-7/8	5-1/8	5-1/8	5-1/8	5-1/8
Suction Elbow Cleanout Diameter	5	5	6	6	6	3	6	6	6	6	6	6	6
Min. Round Opening to Install Pump	46	48	50	52	52	46	68	70	48	58	58	68	58
Weights:													
Pump and Motor													
210T	640	860	1075	1085	1135	850	—	—	1070	—	—	—	—
250T	1140	1095	1300	1280	1350	1590	—	—	1145	1500	—	—	—
320T	1660	1695	1750	1800	1850	1750	2550	—	1845	2000	2000	—	2100
360T	2100	2145	2200	2250	2300	—	3000	3200	2150	2450	2450	3050	2400
365T	2300	2250	2400	—	—	—	3200	3350	2350	2650	2650	3250	2750
400T	—	—	—	—	—	—	4300	4500	3250	3500	3450	4350	3550
440T	—	—	—	—	—	—	—	5900	—	5295	5295	5700	5000
MV or MT Base/Elbow Adder													
4" Elbow	110	—	—	—	—	80	—	—	—	—	—	—	—
6" Elbow	150	150	150	—	—	150	—	—	150	150	150	150	—
8" Elbow	—	230	230	230	230	—	230	—	230	230	230	230	230
8" Elbow for 400T & 440T Frame	—	—	—	—	—	—	840	840	840	840	840	840	840
10" Elbow	—	—	—	970	970	—	970	970	—	—	—	970	970
WD Base and Elbow Adder	200	230	245	305	315	200	285	375	265	410	410	410	410

All dimensions are in inches.

* TAJC5BH impeller has an inlet area of 60.58 sq. in. and can pass a 3" sphere; TAJC5BJ impeller has an inlet area of 64.55 sq. in. and can pass a 3" sphere; TAJC5DC impeller has an inlet area of 70.85 sq. in. and can pass a 4" sphere.

x T8D1A impeller has an inlet area of 62.99 sq. in. and can pass a 4" sphere; T8D1D impeller has an inlet area of 72.94 sq. in. and can pass a 4" sphere; TAKC5W impeller has an inlet area of 99.93 sq. in. and can pass a 5" sphere.

TAKE5U impeller has an inlet area of 108.36 sq. in.; TAKE5N impeller has an inlet area of 130.29 sq. in.

Suction elbow available on WD units only.

For water jacketed motors, add the following weight to pump and motor:

250 frame + 85 lbs., 320 frame + 230 lbs., 360/365 frame + 245 lbs., 400 frame + 355 lbs., 440 frame + 460 lbs.

*These are maximum values based on standard construction. If higher values are required, contact the factory.



Technical Data – 5430MV 210/250/320/360/365/400/440 FRAME CENTERLINE DISCHARGE PULL-UP SUBMERSIBLE

CABLE

Power and control cable are UL Listed and CSA Approved.

ELECTRICAL CONNECTION

Double-seal system with strain relief, consisting of a rubber grommet followed by epoxy. Individual wires have the insulation removed prior to epoxy potting to prevent wicking into the motor.

Wires are terminated with connectors secured to bronze lugs on the O-ring sealed terminal board. Stator and control leads from the motor are attached to the underside of the lugs.

SHAFT

Solid 416 stainless steel, precision machined, to ensure a tight fit of the impeller and rotor onto the shaft.

MECHANICAL SEALS

Two separate tandem mounted seals to protect the motor from the pumped liquid. Upper seal is carbon against ceramic faces. Lower seal is silicon carbide against tungsten carbide faces.

STAINLESS STEEL BOLTS

External bolts are stainless steel for ease of maintenance.

IMPELLER

Enclosed radial flow, two-vane or bladeless design, with blunt rounded leading edges and thick hydrofoil shape to pass large solids and stringy material. One-piece cast impellers are designed for circular flow to match in the equalizing-pressure, thick walled volute.

WEAR RINGS

Impeller and volute may be fitted with axial wear rings hardened to 300–350 Bhn or higher stainless steel.

SOLIDS PASSING

Spherical solids passing through the impeller and volute can also pass between the volute cutwater and a full diameter impeller.

PULL-UP SYSTEM

Two rails mounted on the discharge base/elbow provide a guide for the pump when raised or lowered.

THERMOSTATS

Imbedded in the motor windings to protect from overheating. These devices reset automatically. Excessive heat will cause the normally closed contact to open, stopping the motor.

BEARING LIFE

Oil lubricated thrust bearing and radial bearing with an L10 bearing life of 50,000 hours at BEP.

TWO MOISTURE DETECTORS

Detects moisture entering the oil cavity or stator housing and sends a signal to a compatible controller.

OIL INSPECTION PLUGS

Removable O-ring sealed plugs for easy inspection and to change oil in the seal chamber.

DISCHARGE BASE/ELBOW

Heavy-duty cast iron, 125 lb. ANSI flange supporting the total weight of the pump.

SLIDING BRACKET ASSEMBLY

Non-sparking, UL Listed hazardous location bronze. When lowered onto the discharge base/elbow, a knifing action of the vertical metal-to-metal, self-cleaning connection is secured.

Technical Data – 5430MT 210/250/320/360/365/400/440 FRAME TANGENTIAL DISCHARGE PULL-UP SUBMERSIBLE

CABLE

Power and control cable are UL Listed and CSA Approved.

ELECTRICAL CONNECTION

Double-seal system with strain relief, consisting of a rubber grommet followed by epoxy. Individual wires have the insulation removed prior to epoxy potting to prevent wicking into the motor.

Wires are terminated with connectors secured to bronze lugs on the O-ring sealed terminal board. Stator and control leads from the motor are attached to the underside of the lugs.

SHAFT

Solid 416 stainless steel, precision machined, to ensure a tight fit of the impeller and rotor onto the shaft.

MECHANICAL SEALS

Two separate tandem mounted seals to protect the motor from the pumped liquid. Upper seal is carbon against ceramic faces. Lower seal is silicon carbide against tungsten carbide faces.

STAINLESS STEEL BOLTS

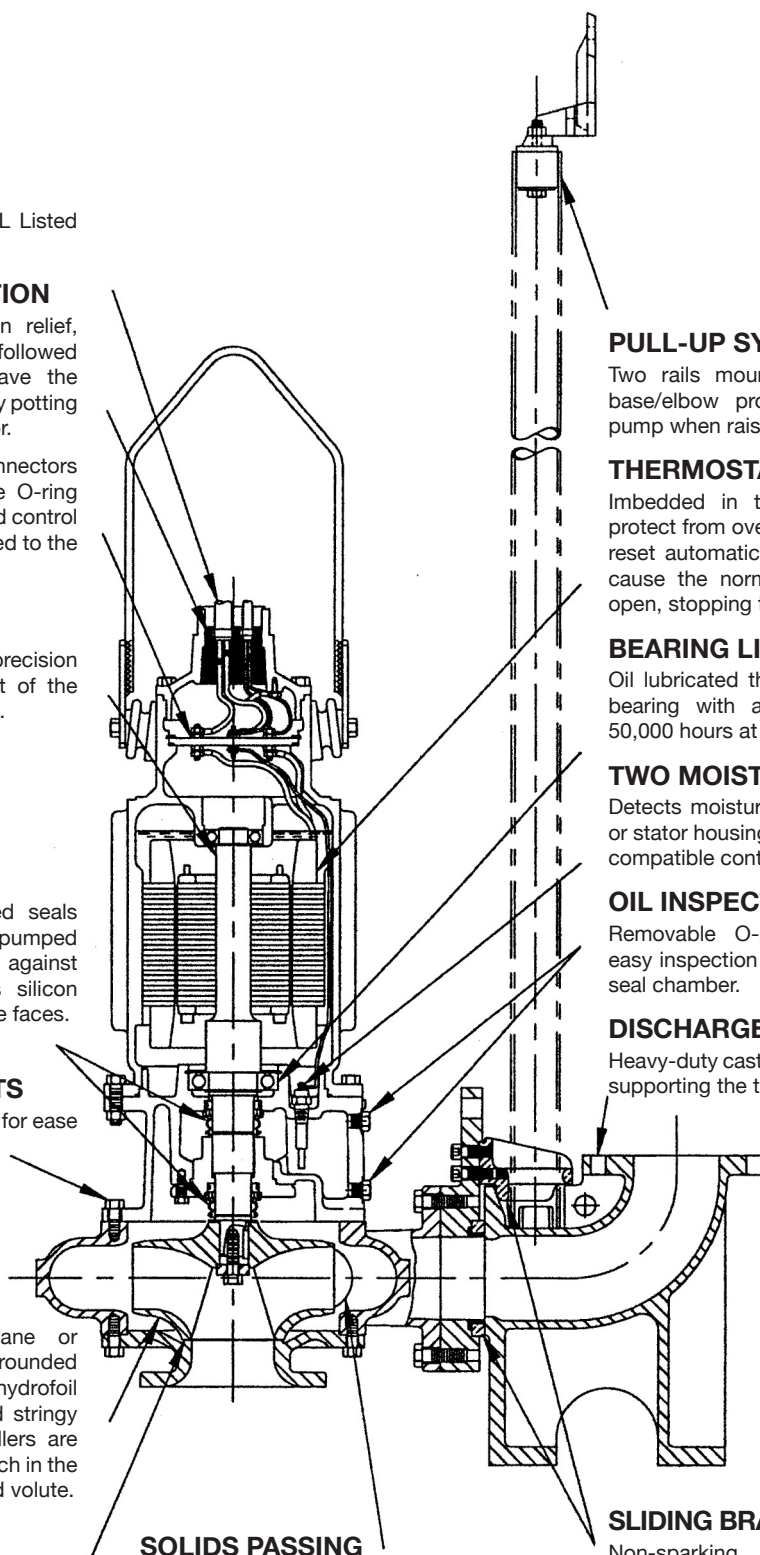
External bolts are stainless steel for ease of maintenance.

IMPELLER

Enclosed radial flow, two-vane or bladeless design, with blunt rounded leading edges and thick hydrofoil shape to pass large solids and stringy material. One-piece cast impellers are designed for circular flow to match in the equalizing-pressure, thick walled volute.

WEAR RINGS

Impeller and fronthead may be fitted with axial wear rings hardened to 300–350 Bhn or higher stainless steel.



SOLIDS PASSING

Spherical solids passing through the impeller and volute can also pass between the cutwater and a full diameter impeller.

PULL-UP SYSTEM

Two rails mounted on the discharge base/elbow provide a guide for the pump when raised or lowered.

THERMOSTATS

Imbedded in the motor windings to protect from overheating. These devices reset automatically. Excessive heat will cause the normally closed contact to open, stopping the motor.

BEARING LIFE

Oil lubricated thrust bearing and radial bearing with an L10 bearing life of 50,000 hours at BEP.

TWO MOISTURE DETECTORS

Detects moisture entering the oil cavity or stator housing and sends a signal to a compatible controller.

OIL INSPECTION PLUGS

Removable O-ring sealed plugs for easy inspection and to change oil in the seal chamber.

DISCHARGE BASE/ELBOW

Heavy-duty cast iron, 125 lb. ANSI flange supporting the total weight of the pump.

SLIDING BRACKET ASSEMBLY

Non-sparking, UL Listed hazardous location bronze. When lowered onto the discharge base/elbow, a knifing action of the vertical metal-to-metal, self-cleaning connection is secured.

Technical Data – 5430W 210/250/320/360/365/400/440 TANGENTIAL DISCHARGE BASE MOUNTED SUBMERSIBLE

ELECTRICAL CONNECTION

Double-seal system with strain relief, consisting of rubber grommet followed by epoxy. Individual wires have the insulation removed prior to epoxy potting to prevent wicking into the motor.

Wires are terminated with connectors secured to bronze lugs on the O-ring sealed terminal board. Stator and control leads from the motor are attached to the underside of the lugs.

SHAFT

Solid 416 stainless steel, precision machined, to ensure a tight fit of the impeller and rotor onto the shaft.

MECHANICAL SEALS

Two separate tandem mounted seals to protect the motor from the pumped liquid. Upper seal is carbon against ceramic faces. Lower seal is silicon carbide against tungsten carbide faces.

STAINLESS STEEL BOLTS

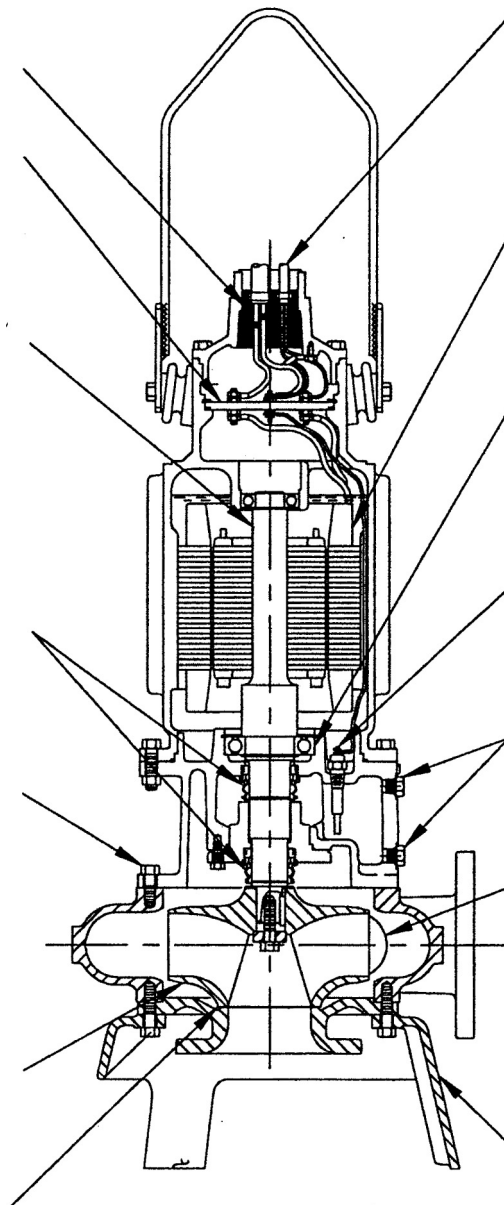
External bolts are stainless steel for ease of maintenance.

IMPELLER

Enclosed radial flow, two-vane or bladeless design, with blunt rounded leading edges and thick hydrofoil shape to pass large solids and stringy material. One-piece cast impellers are designed for circular flow to match in the equalizing-pressure, thick walled volute.

WEAR RINGS

Impeller and fronthead may be fitted with axial wear rings hardened to 300–350 Bhn or higher stainless steel.



CABLE

Power and control cable are UL Listed and CSA Approved.

THERMOSTATS

Imbedded in the motor windings to protect from overheating. These devices reset automatically. Excessive heat will cause the normally closed contact to open, stopping the motor.

BEARING LIFE

Oil lubricated thrust bearing and radial bearing with an L10 bearing life of 50,000 hours at BEP.

TWO MOISTURE DETECTORS

Detects moisture entering the oil cavity or stator housing and sends a signal to a compatible controller.

OIL INSPECTION PLUGS

Removable O-ring sealed plugs for easy inspection and to change oil in the seal chamber.

SOLIDS PASSING

Spherical solids passing through the impeller and volute can also pass between the volute cutwater and a full diameter impeller.

BASE

Heavy-duty base is designed to support the entire pump and bolts directly to the fronthead. Large opening between the base legs allows for even flow to the impeller eye.

Technical Data – 5430WD 210/250/320/360/365/400/440 TANGENTIAL DISCHARGE DRY PIT SUBMERSIBLE

ELECTRICAL CONNECTION

Double-seal system with strain relief, consisting of rubber grommet followed by epoxy. Individual wires have the insulation removed prior to epoxy potting to prevent wicking into the motor.

Wires are terminated with connectors secured to bronze lugs on the O-ring sealed terminal board. Stator and control leads from the motor are attached to the underside of the lugs.

SHAFT

Solid 416 stainless steel, precision machined, to ensure a tight fit of the impeller and rotor onto the shaft.

MECHANICAL SEALS

Two separate tandem mounted seals to protect the motor from the pumped liquid. Upper seal is carbon against ceramic faces. Lower seal is silicon carbide against tungsten carbide faces.

WEAR RINGS

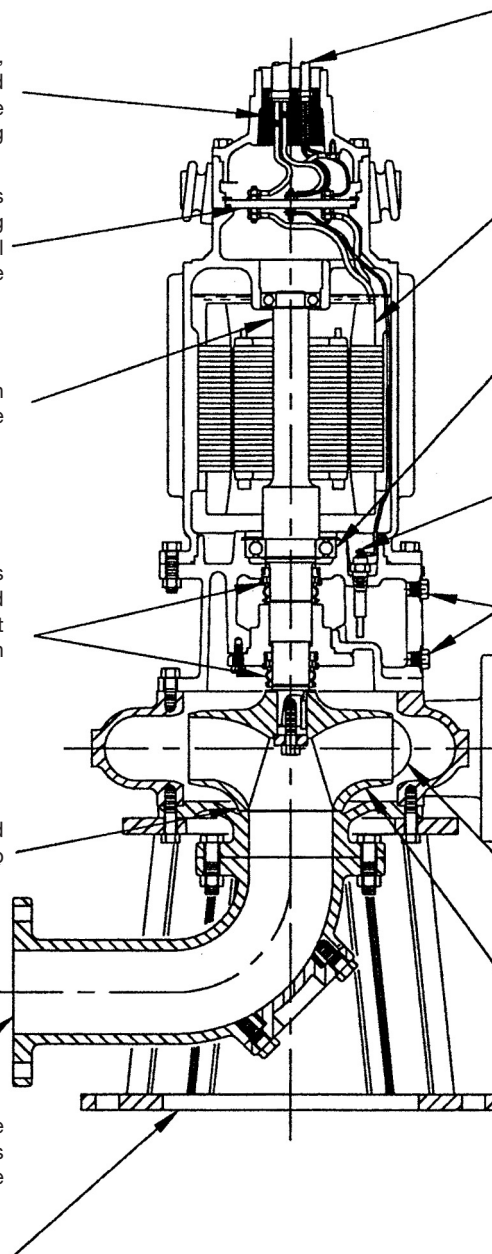
Impeller and fronthead may be fitted with axial wear rings hardened to 300–350 Bhn or higher stainless steel.

ELBOW

Suction elbow incorporates a 1/2" gauge connection and has 125 lb. flat faced flanges conforming to ANSI drilling. Elbow has large cleanout opening with contoured cover.

BASE

Heavy-duty base is designed to support the entire pump and bolts directly to the volute. Large opening between the base legs permits access to the suction elbow and cleanout.



CABLE

Power and control cable are UL Listed and CSA Approved.

THERMOSTATS

Imbedded in the motor windings to protect from overheating. These devices reset automatically. Excessive heat will cause the normally closed contact to open, stopping the motor.

BEARING LIFE

Oil lubricated thrust bearing and radial bearing with an L10 bearing life of 50,000 hours at BEP.

TWO MOISTURE DETECTORS

Detects moisture entering the oil cavity or stator housing and sends a signal to a compatible controller.

OIL INSPECTION PLUGS

Removable O-ring sealed plugs for easy inspection and to change oil in the seal chamber.

SOLIDS PASSING

Spherical solids passing through the impeller and volute can also pass between the volute cutwater and a full diameter impeller.

IMPELLER

Enclosed radial flow, two-vane or bladeless design, with blunt rounded leading edges and thick hydrofoil shape to pass large solids and stringy material. One-piece cast impellers are designed for circular flow to match in the equalizing-pressure, thick walled volute.

Technical Data – 5430 M & W SUBMERSIBLE SOLIDS HANDLING PUMPS

THE EXTERNAL COOLING REQUIREMENTS FOR SUBMERSIBLE MOTORS ARE AS FOLLOWS:

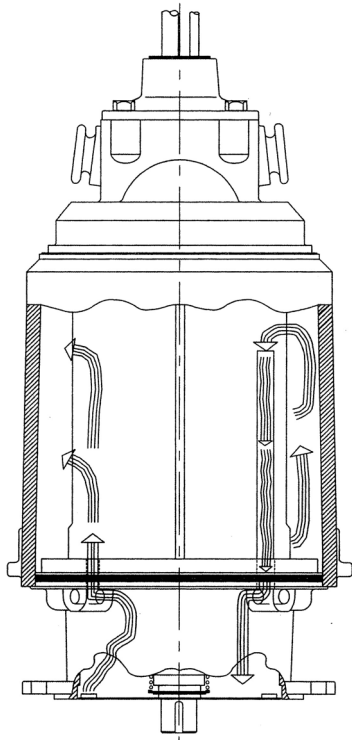
210 FRAME	NONE
250 FRAME	3 GPM
320 FRAME	6 GPM
360 FRAME	10 GPM
365 FRAME	10 GPM
400 FRAME	RTF
440 FRAME	25 GPM

THESE VALUES REQUIRE THAT THE WATER FLUSH TEMPERATURE BE 40° C OR LESS.

MAXIMUM WATER JACKET PRESSURE IS 150 PSI.

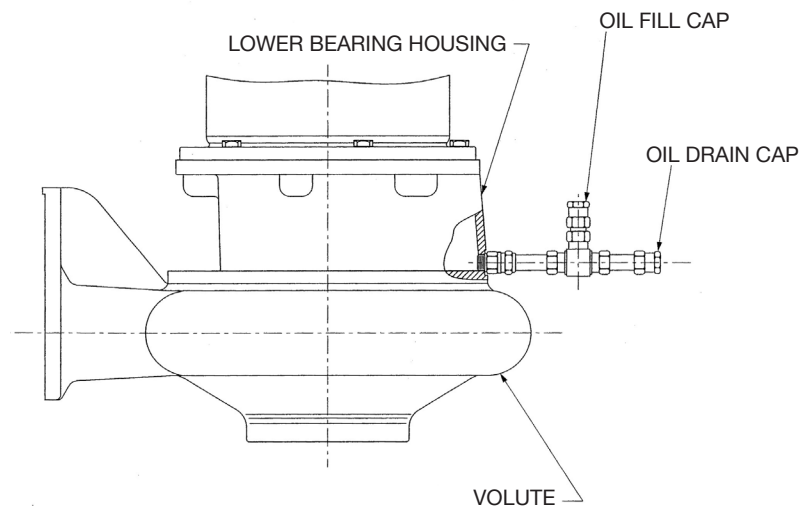
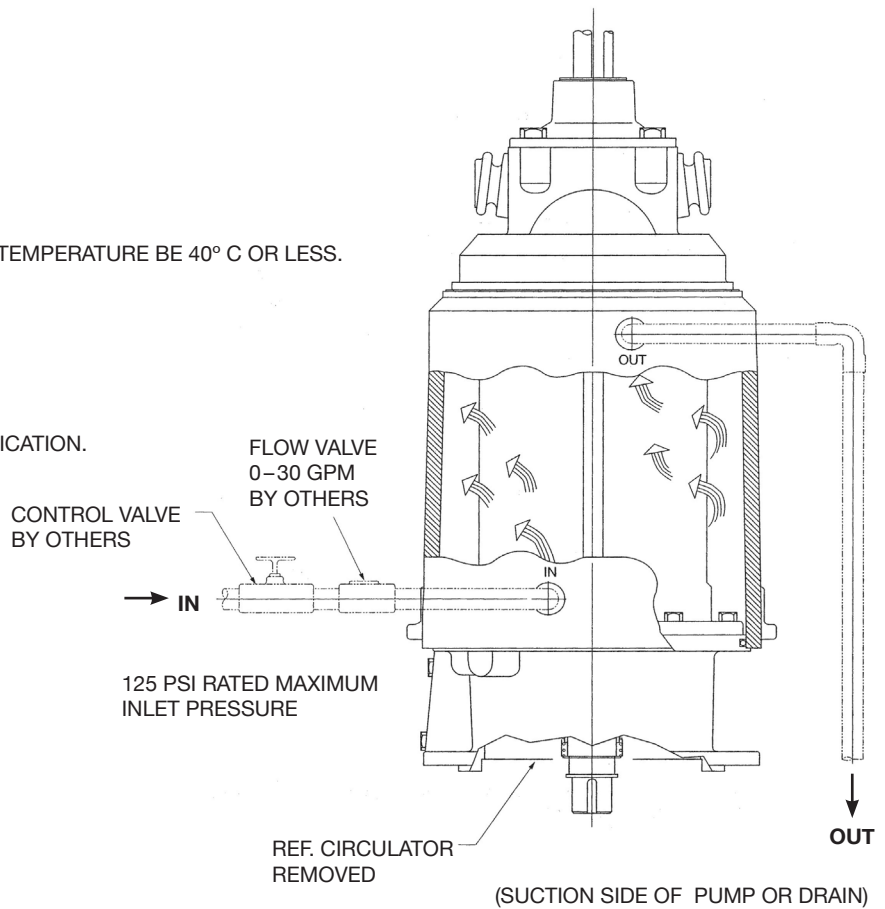
MINIMUM WATER JACKET PRESSURE IS 5 PSI ABOVE SUCTION PRESSURE WHEN PIPING THE WATER JACKET TO THE SUCTION LINE, SUCTION ELBOW OR FRONTHEAD.

EXTERNAL COOLING IS NOT A UL APPROVED APPLICATION.



COOLING WATER JACKETS CAN BE SUPPLIED ON PULL-UP SUBMERSIBLE (MT AND MV) DESIGNS AS WELL AS THE BASE-MOUNTED SUBMERSIBLE (W) DESIGNS.

THE COOLING JACKET USES A PORTION OF THE LIQUID BEING PUMPED TO COOL THE MOTORS ON APPLICATIONS THAT ARE CONTINUOUSLY NON-SUBMERGED OR NON-SUBMERGED FOR PERIODS LONGER THAN THE STANDARD DRAW-DOWN TIME. THE JACKET IS PROTECTED WITH A SELF-CLEANING ROTATING FLOW CONTROL DISC WHICH MINIMIZES ANY SOLIDS FROM ENTERING AND ACCUMULATING IN THE MECHANICAL SEAL AREA OR WATER JACKET.



THE OIL CHAMBER FILL/DRAIN DEVICE IS NOT UL APPROVED. USE OF THIS DEVICE WILL VOID THE UL LISTING ON THE MOTOR.