

Technical Data - 5430 M & W SUBMERSIBLE

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	



Technical Data - 5430 M & W SUBMERSIBLE

	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
Weights:											
Pump and Motor *											
210T	355	415	565	565	565	690	RTF	582	640	880	800
250T	--	--	--	--	--	905	RTF	882	860	1095	1020
320T	--	--	--	--	--	--	RTF	--	1260	1595	1530
360T	--	--	--	--	--	--	--	--	--	--	--
365T	--	--	--	--	--	--	--	--	--	--	--
400T	--	--	--	--	--	--	--	--	--	--	--
440T	--	--	--	--	--	--	--	--	--	--	--
MV or MT Base/Elbow Adder											
3" Elbow	--	--	--	--	78	--	--	78	--	--	--
4" Elbow	80	80	80	80	80	80	--	80	80	--	--
6" Elbow	--	--	150	--	--	150	--	--	150	150	150
8" Elbow	--	--	230	--	--	230	230	--	--	230	230
10" Elbow	--	--	--	--	--	--	--	--	--	--	--
WD Base & Elbow Adder	5	20	60	5	20	95	N/A	90	115	75	115

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

	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

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.

Technical Data - 5430MV

CABLE

Power and control cable are UL Listed and

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

SHAFT

Solid 416 stainless steel, precision machined, to ensure a tight fit of the

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

STAINLESS STEEL BOLTS

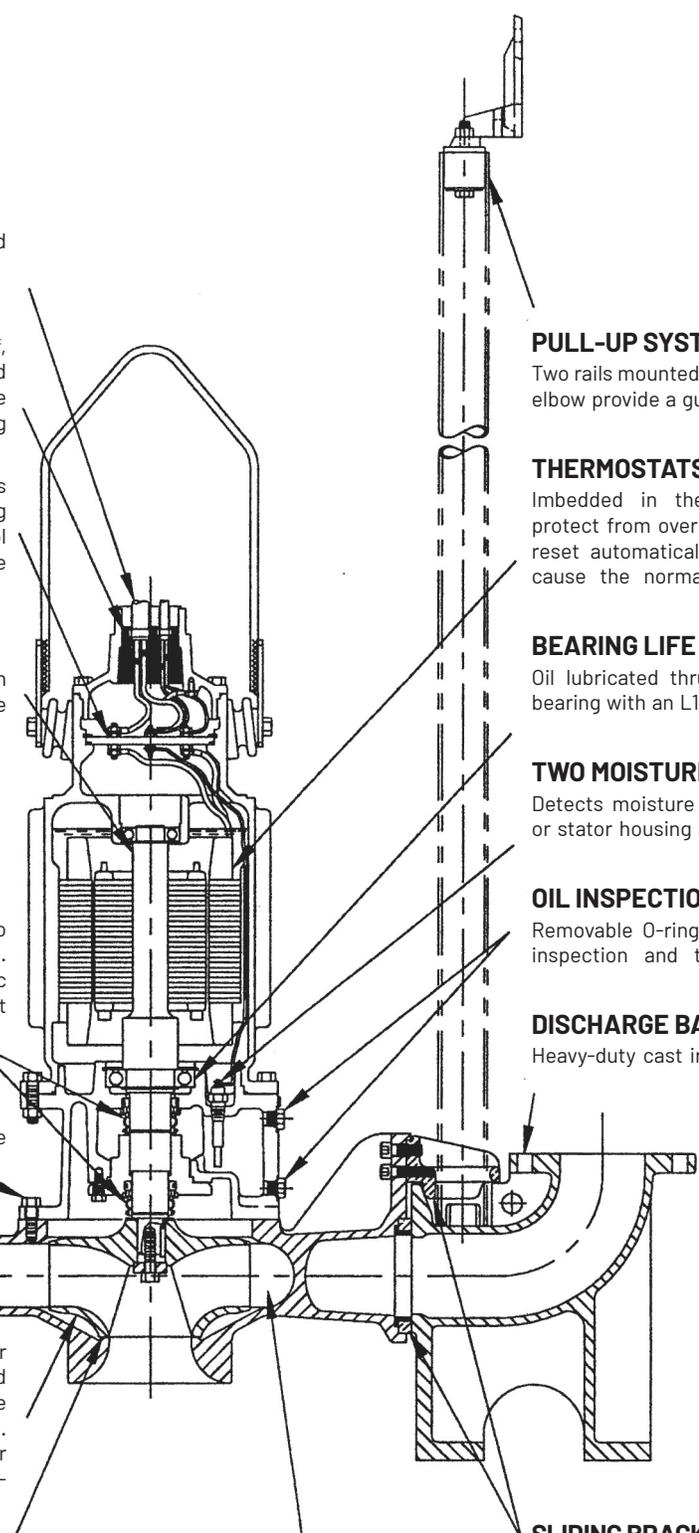
External bolts are stainless steel for ease

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-

WEAR RINGS

Impeller and volute may be fitted with axial wear rings hardened to 300 - 350 Bhn



SOLIDS PASSING

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

PULL-UP SYSTEM

Two rails mounted on the discharge base/elbow provide a guide for the pump when

THERMOSTATS

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

BEARING LIFE

Oil lubricated thrust bearing and radial bearing with an L10 bearing life of 50,000

TWO MOISTURE DETECTORS

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

OIL INSPECTION PLUGS

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

DISCHARGE BASE/ELBOW

Heavy-duty cast iron, 125 lb. ANSI flange

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

Technical Data - 5430MT

CABLE

Power and control cable are UL Listed and

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

SHAFT

Solid 416 stainless steel, precision machined, to ensure a tight fit of the

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

STAINLESS STEEL BOLTS

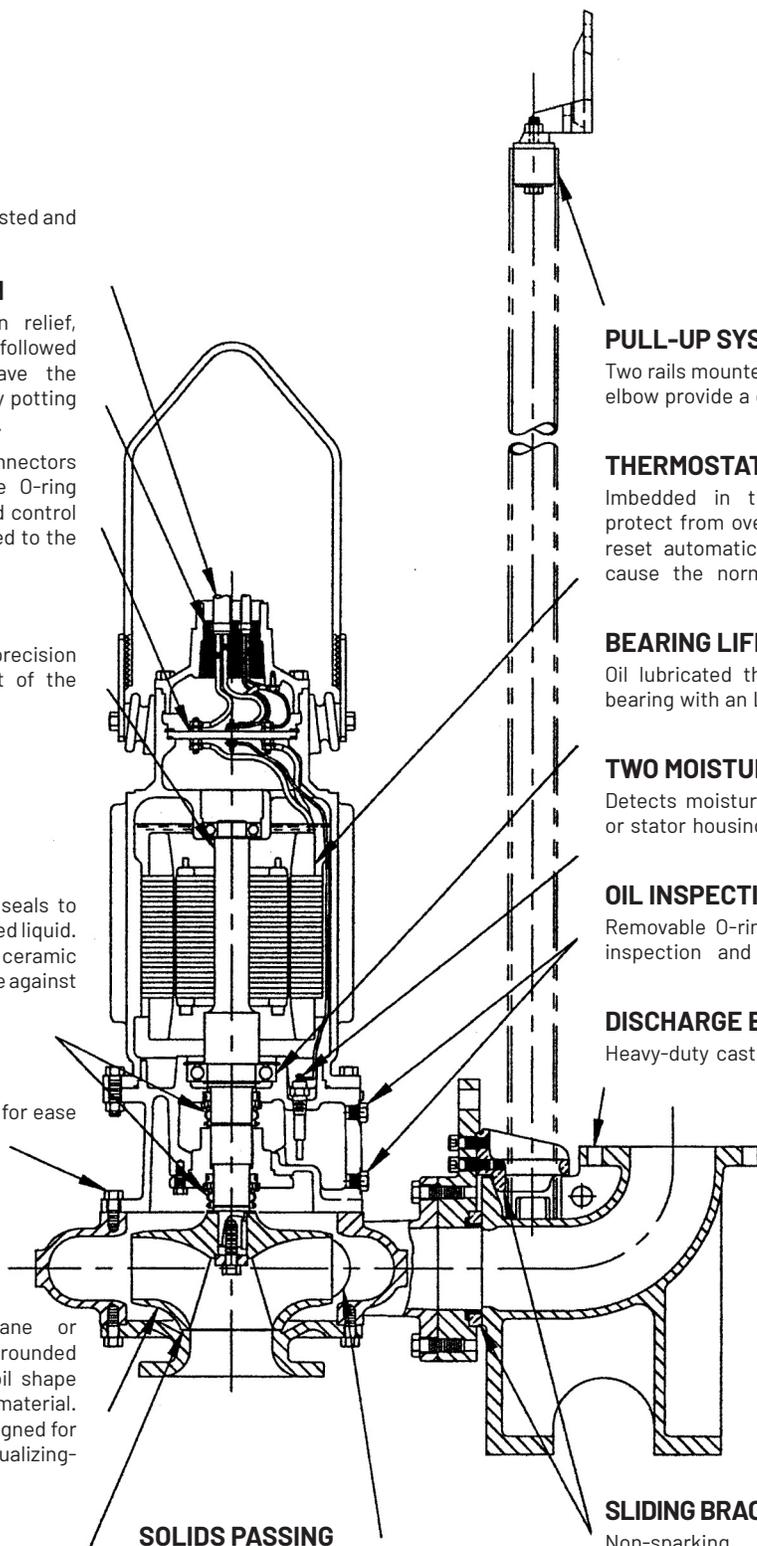
External bolts are stainless steel for ease

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-

WEAR RINGS

Impeller and fronthead may be fitted with axial wear rings hardened to 300-350 Bhn



PULL-UP SYSTEM

Two rails mounted on the discharge base/elbow provide a guide for the pump when

THERMOSTATS

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

BEARING LIFE

Oil lubricated thrust bearing and radial bearing with an L10 bearing life of 50,000

TWO MOISTURE DETECTORS

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

OIL INSPECTION PLUGS

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

DISCHARGE BASE/ELBOW

Heavy-duty cast iron, 125 lb. ANSI flange

SOLIDS PASSING

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

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

Technical Data - 5430W

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

SHAFT

Solid 416 stainless steel, precision machined, to ensure a tight fit of the

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

STAINLESS STEEL BOLTS

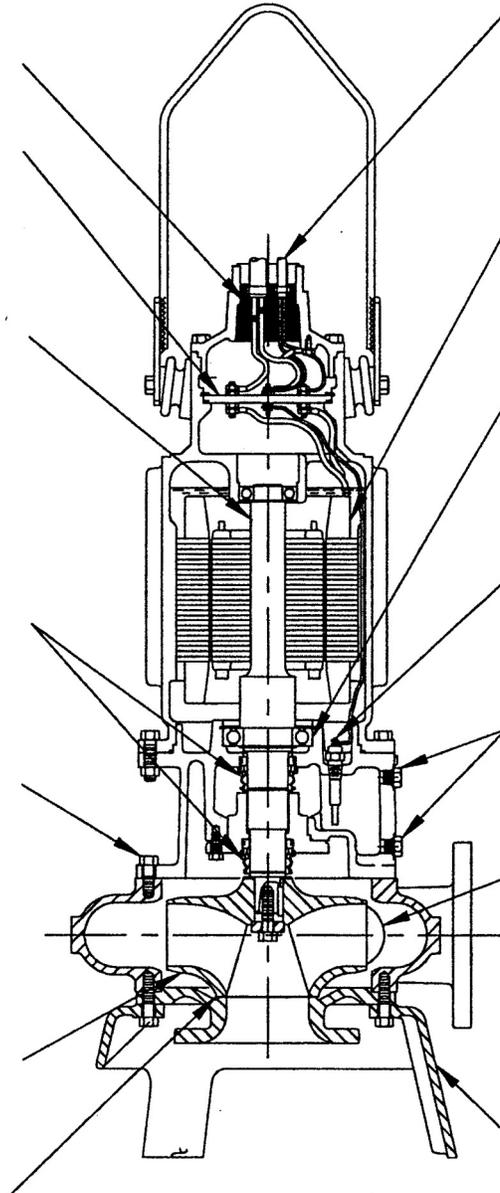
External bolts are stainless steel for ease

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-

WEAR RINGS

Impeller and fronthead may be fitted with axial wear rings hardened to 300 - 350 Bhn



CABLE

Power and control cable are UL Listed and

THERMOSTATS

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

BEARING LIFE

Oil lubricated thrust bearing and radial bearing with an L10 bearing life of 50,000

TWO MOISTURE DETECTORS

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

OIL INSPECTION PLUGS

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

SOLIDS PASSING

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

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

Technical Data - 5430WD

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

SHAFT

Solid 416 stainless steel, precision machined, to ensure a tight fit of the

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

WEAR RINGS

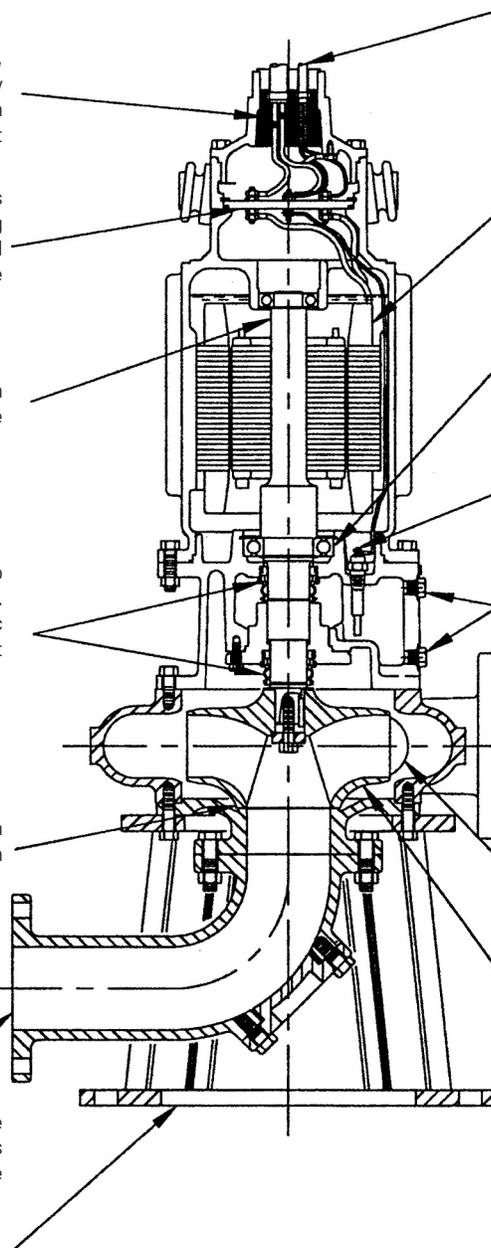
Impeller and fronthead may be fitted with axial wear rings hardened to 300 - 350 Bhn

ELBOW

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

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



CABLE

Power and control cable are UL Listed and

THERMOSTATS

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

BEARING LIFE

Oil lubricated thrust bearing and radial bearing with an L10 bearing life of 50,000

TWO MOISTURE DETECTORS

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

OIL INSPECTION PLUGS

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

SOLIDS PASSING

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

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-

Technical Data - 5430 M & W SUBMERSIBLE

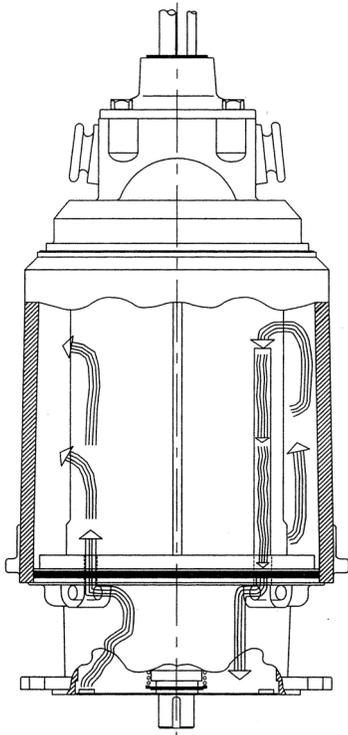
THE EXTERNAL COOLING REQUIREMENTS FOR SUBMERSIBLE MOTORS ARE AS FOLLOWS:

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

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

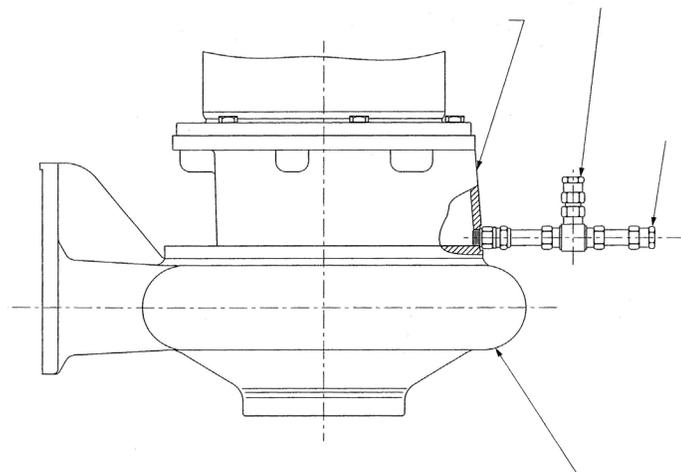
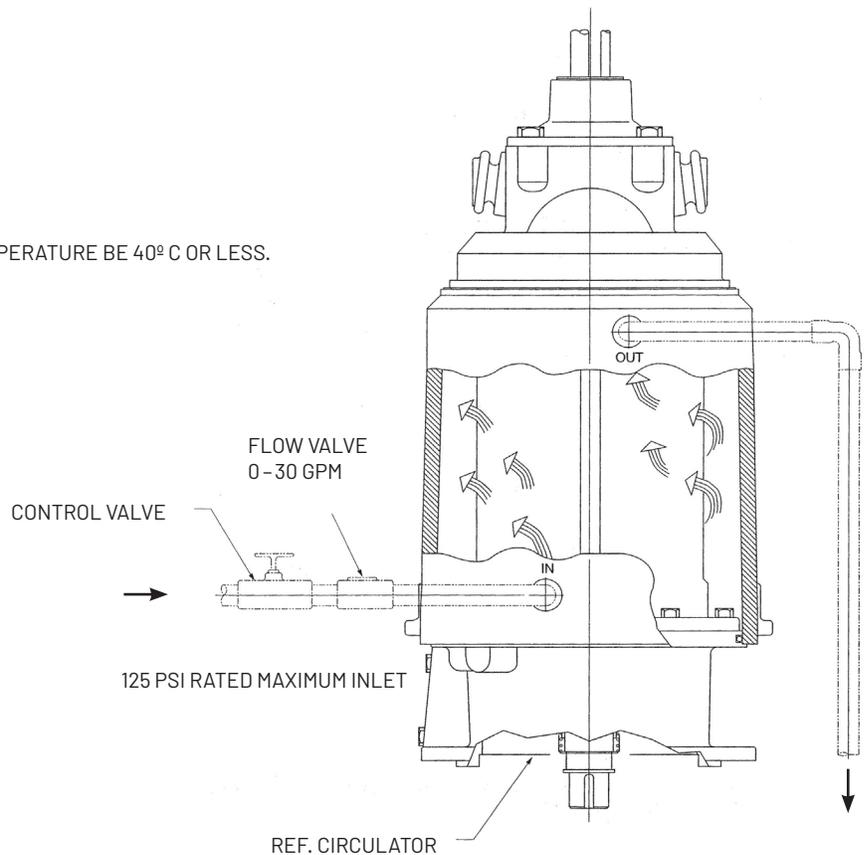
MAXIMUM WATER JACKET PRESSURE IS 150 PSI.

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



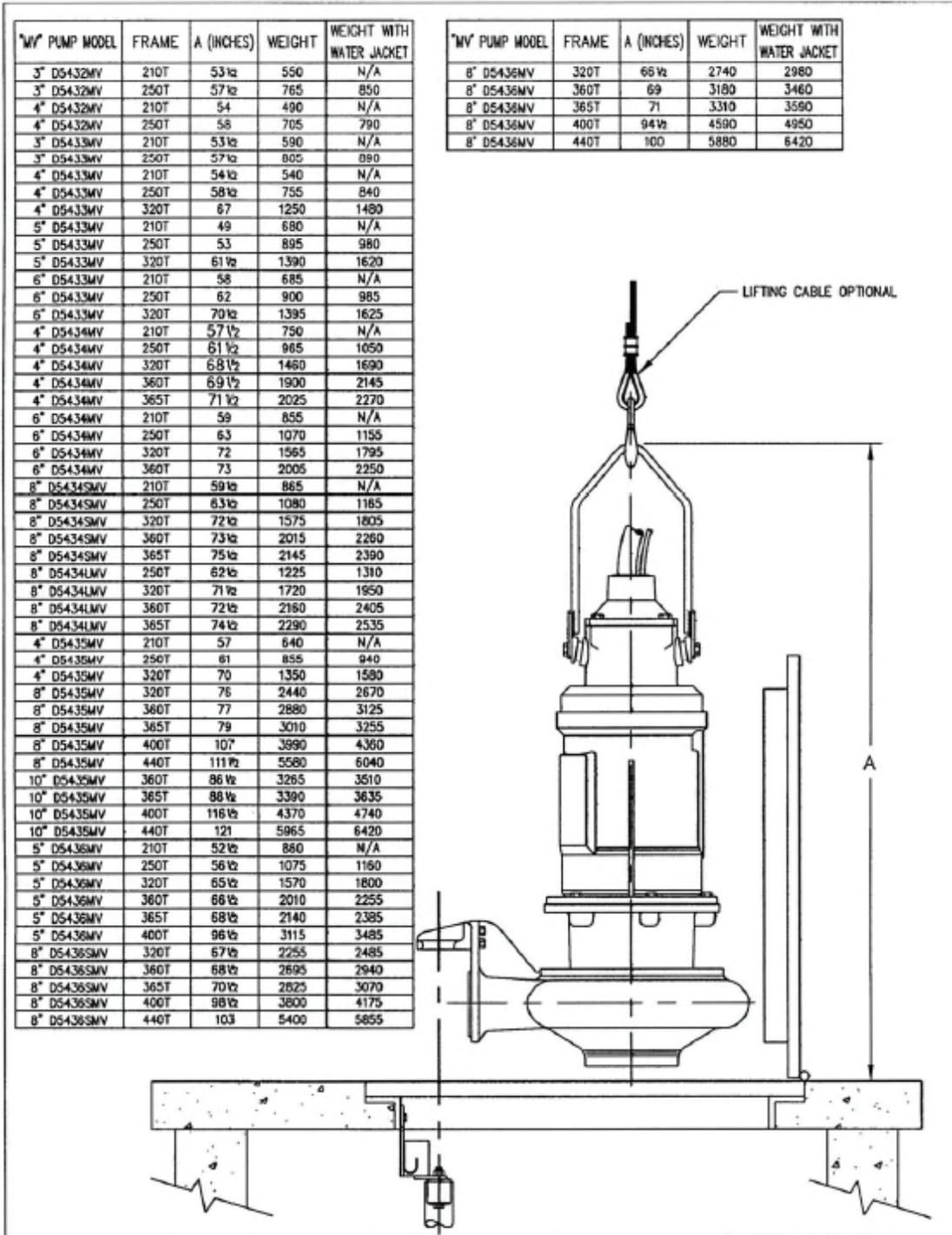
COOLING WATER JACKETS CAN BE SUPPLIED ON PULL-UP SUBMERSIBLE (MT AND MV) DESIGNS AS WELL AS THE BASE-MOUNTED SUBMERSIBLE (W) DESIGNS.

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.



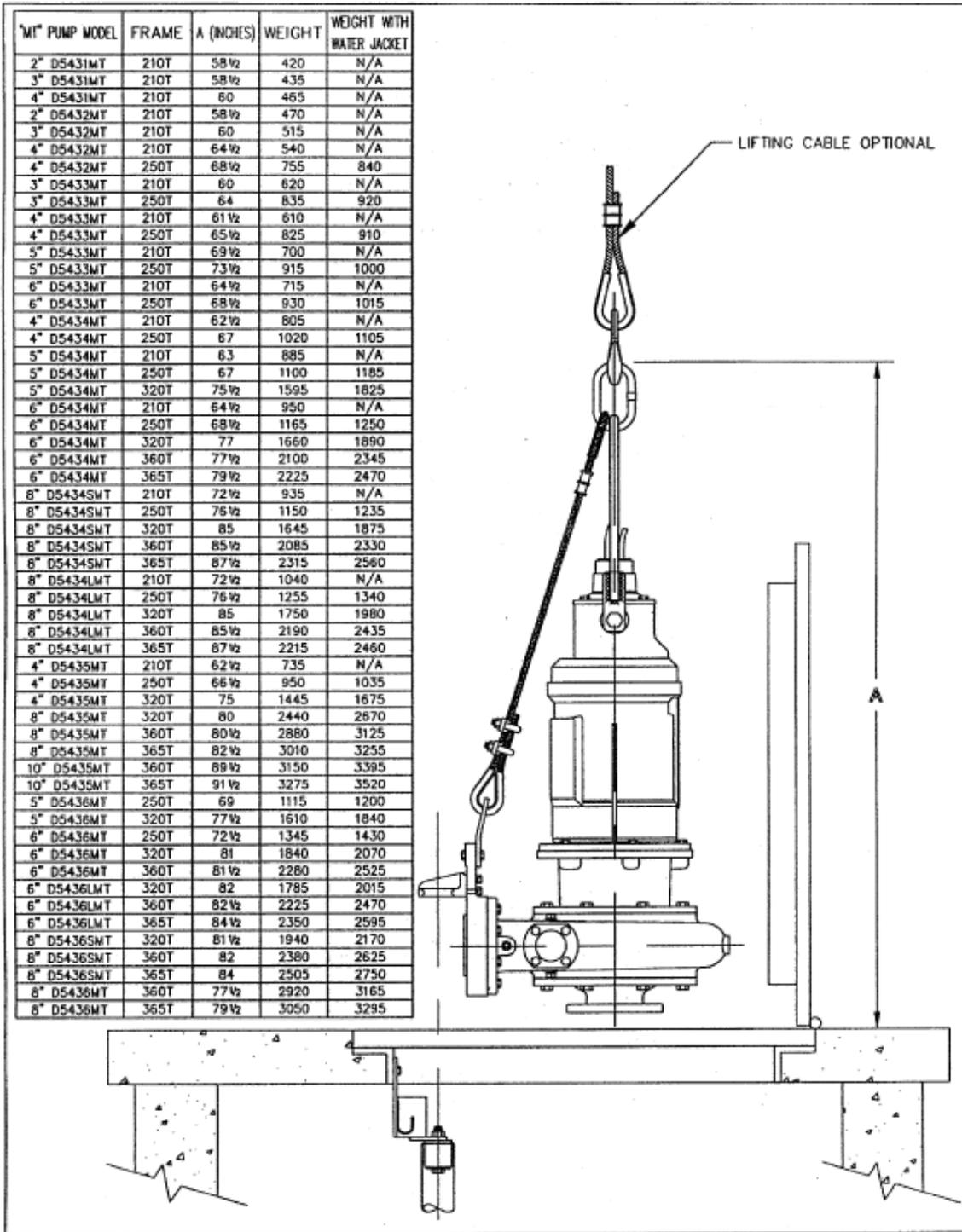
THE OIL CHAMBER FILL/DRAIN DEVICE IS NOT UL APPROVED.

D5430 M&W Submersible Solids-Handling Pumps Assembly



FMPC PUMP MV MINIMUM LIFT OUT CLEARANCE

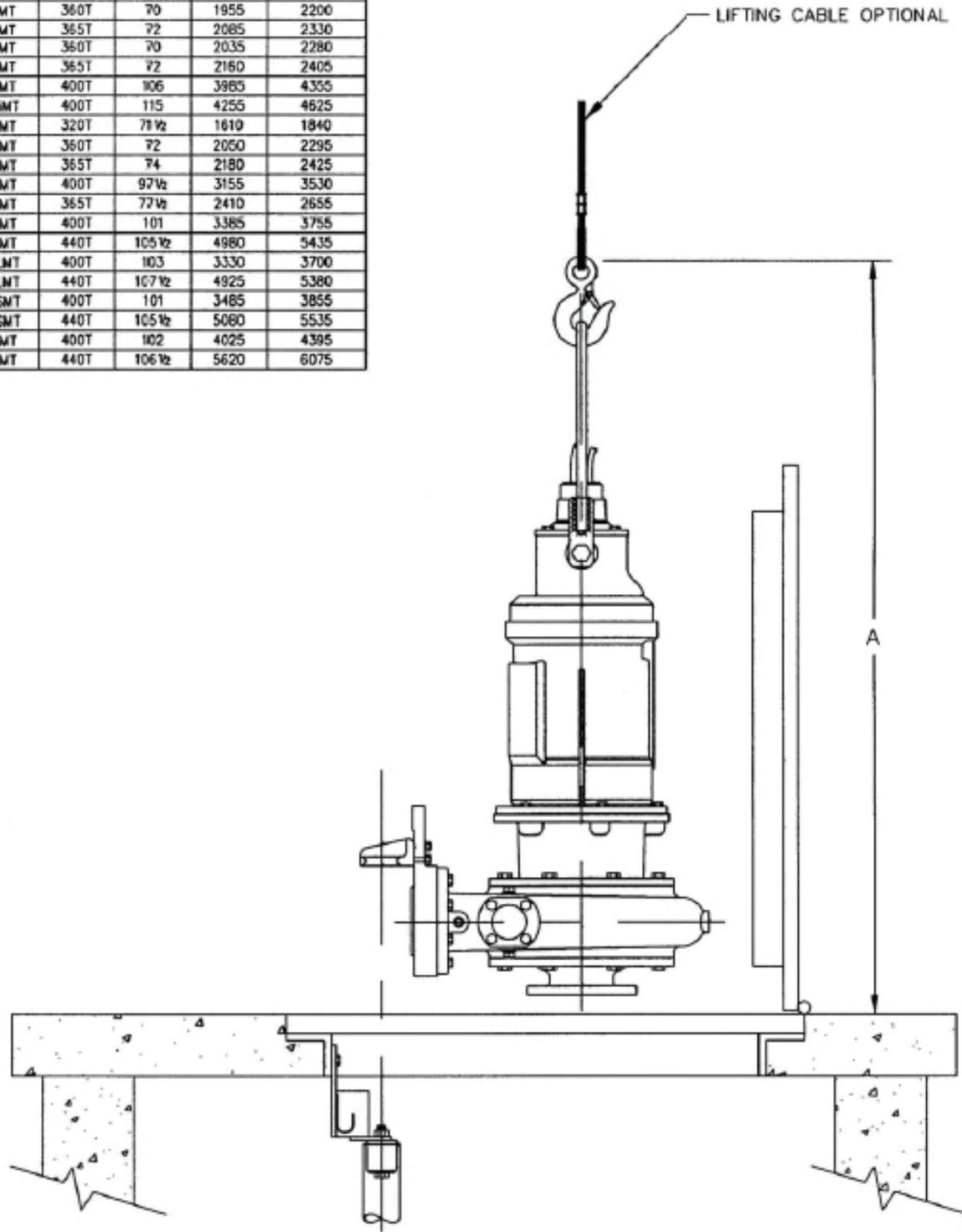
D5430 M&W Submersible Solids-Handling Pumps Assembly



FMPC PUMP, MT (AS LISTED) MINIMUM LIFT OUT CLEARANCE

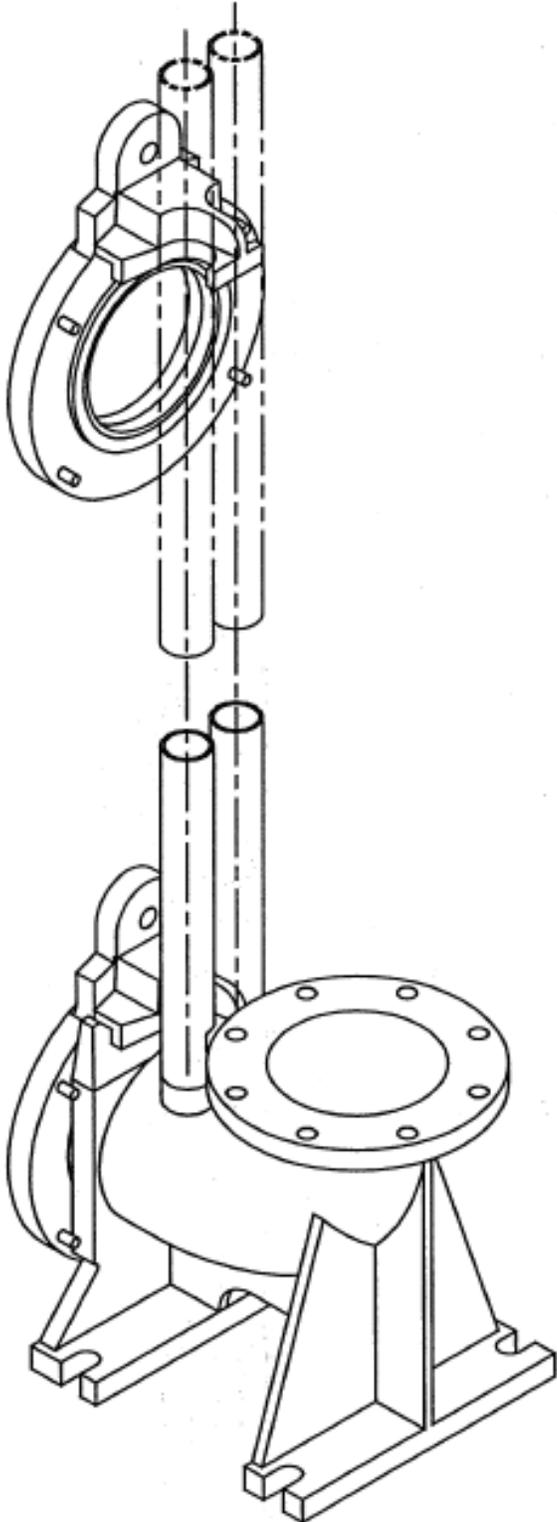
D5430 M&W Submersible Solids-Handling Pumps Assembly

"WT" PUMP MODEL	FRAME	A (INCHES)	WEIGHT	WEIGHT WITH WATER JACKET
4" D5433MT	320T	68	1320	1550
5" D5433MT	320T	67	1410	1640
6" D5433MT	320T	71	1425	1655
4" D5434MT	320T	69 1/2	1515	1745
4" D5434MT	360T	70	1955	2200
4" D5434MT	365T	72	2085	2330
5" D5434MT	360T	70	2035	2280
5" D5434MT	365T	72	2160	2405
8" D5435MT	400T	106	3965	4355
10" D5435MT	400T	115	4255	4625
5" D5436MT	320T	71 1/2	1610	1840
5" D5436MT	360T	72	2050	2295
5" D5436MT	365T	74	2180	2425
5" D5436MT	400T	97 1/2	3155	3530
6" D5436MT	365T	72 1/2	2410	2655
6" D5436MT	400T	101	3385	3755
6" D5436MT	440T	105 1/2	4980	5435
6" D5436LMT	400T	103	3330	3700
6" D5436LMT	440T	107 1/2	4925	5380
8" D5436SMT	400T	101	3485	3855
8" D5436SMT	440T	105 1/2	5080	5535
8" D5436MT	400T	102	4025	4395
8" D5436MT	440T	106 1/2	5620	6075



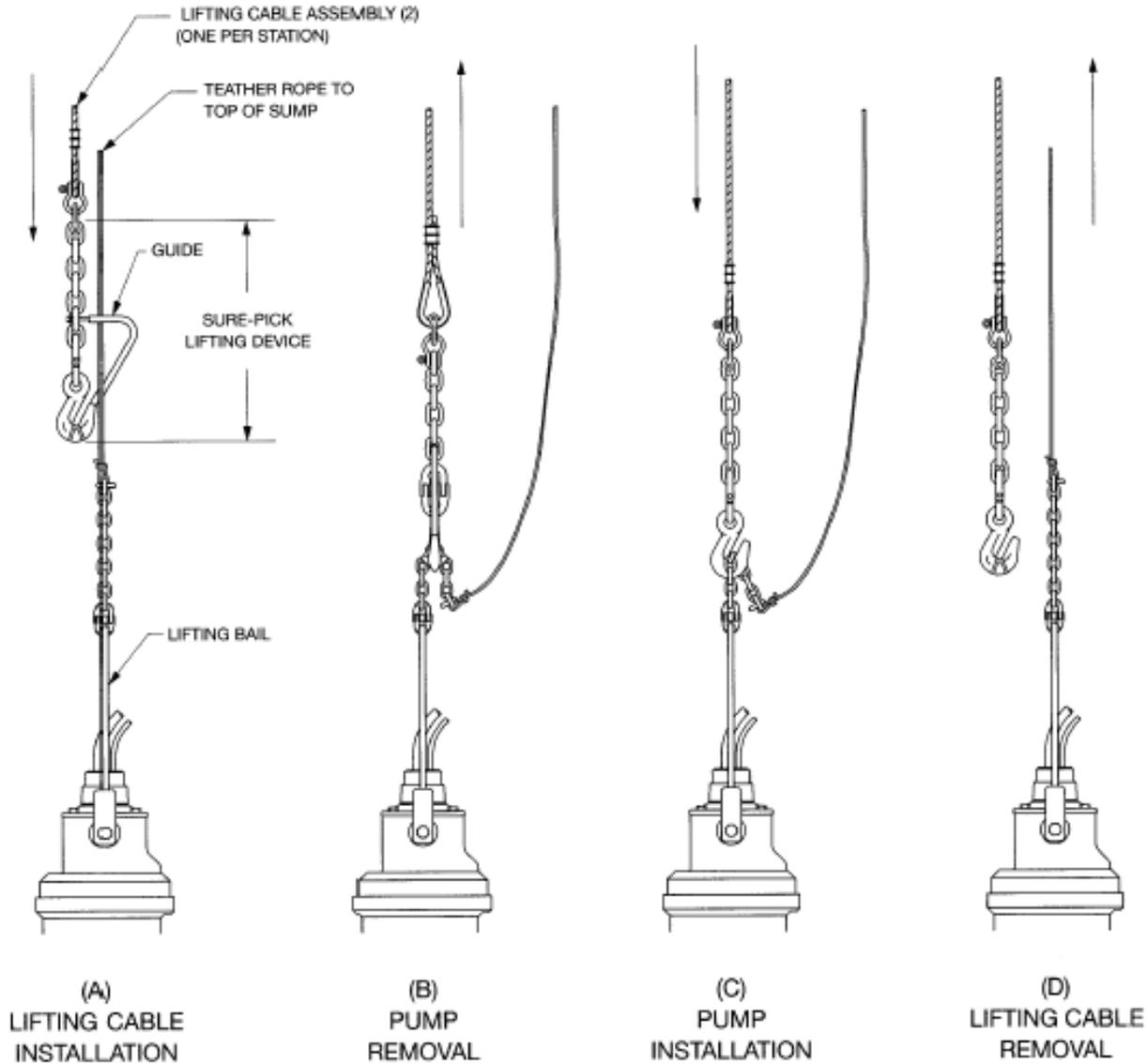
FMPC PUMP MT (AS LISTED) MINIMUM LIFT OUT CLEARANCE

D5430 M&W Submersible Solids-Handling Pumps Assembly



TYPICAL SUBMERSIBLE PULL-UP SYSTEM (MT SHOWN)

D5430 M&W Submersible Solids-Handling Pumps Assembly



PUMP REMOVAL VIEW (A & B)

1. THREAD TEATHER ROPE THROUGH HOOK AND GUIDE.
2. PULL TEATHER ROPE AND CHAIN TIGHT.
3. LOWER THE HOOK (WITH GUIDE ATTACHED) COMPLETELY TO THE BOTTOM OF THE PUMP CHAIN.
4. LET TEATHER ROPE AND LIFTING CABLE GO SLACK. TIGHTEN UP ON LIFTING CABLE UNTIL HOOK ENGAGES CHAIN.
5. LIFT PUMP FROM PIT

PUMP INSTALLATION VIEW (C & D)

1. REMOVE GUIDE FROM HOOK.
2. ENGAGE PUMP CHAIN INTO HOOK.
3. LIFT PUMP FROM FLOOR, POSITION OVER PIT, AND LOWER PUMP TO INSTALLATION WITH PUMP BASE.
4. PULL TEATHER ROPE TIGHT AND LET HOOK FALL FREE.
5. PULL HOOK OUT OF PIT.

NOTES:

1. SURE-PICK, 25FT. TEATHER ROPE AND LIFTING BAIL WITH CHAIN SUPPLIED BY FAIRBANKS MORSE.
2. LIFTING CABLE IS NOT SUPPLIED BY FAIRBANKS MORSE UNLESS SPECIFICALLY ORDERED.
3. STANDARD CONSTRUCTION IS GALVANIZED STEEL, STAINLESS STEEL IS A STANDARD OPTION THRU 385T FRAME MOTOR. FOR STAINLESS STEEL CONSTRUCTION ABOVE 385T FRAME MOTOR REFER TO FACTORY.

SURE-PICK LIFTING SYSTEM

