

Byron Jackson® H2O+ Premium Water-Filled Submersible Motors





Highly reliable and long-lasting deep well performance

Byron Jackson H2O+ Premium water-filled, wet-wound motors from Flowserve are environmentally friendly, provide high efficiency, and offer outstanding reliability. They're available in 6 in. (MS6), 8 in. (MS8) and 10 in. (MS10) sizes.

Water-tight insulated windings ensure easy service, improve cooling, and extend motor life.

Each unit is pre-filled with food-grade, NSF-approved glycol for freeze and rust protection and lubrication, making them suitable for potable water applications.

The Byron Jackson H2O+ Premium water-filled submersible motors are stocked regionally with a 304 stainless steel stator and coated cast iron end bells. The heavy-duty thrust bearing design, a 100% pressure compensation system, asynchronous three-phase rewindable stators and a squirrel cage rotor make Byron Jackson H2O+ Premium water-filled submersible motors an exceptional value. Other materials suited for specific applications are available with longer lead times. Consult your Flowserve sales representative for details.

Applications

- Cooling water
- Dewatering
- Groundwater development
- Water supply and distribution
 - Water wells (agricultural, domestic, municipal)
 - Mining and industrial
 - Potable water applications
- Fountains

Certifications and standards

Byron Jackson H2O+ Premium water-filled motors are certified to NSF/ANSI Standards 61 and 372.



Features and benefits

- **Winding:** Electrolytic solid copper wire wrapped in BOPP insulation rated for temperatures over 100°C (212°F) that allows more copper in the stator slots. This technology enables the motor to run much cooler and achieve higher than normal horsepower ratings in standard frame sizes.
- **Stator:** All motors include an increased stator stack length and combined M800 low-loss electrical magnetic laminations for a cooler-running motor.
- **Rotor:** Increased stack length with M800 low-loss electrical magnetic laminations assembled and designed with newest technology and high-grade copper bars
- **Spline shaft:** AISI 420 stainless steel induction hardened and ground shaft (6 in. and 8 in. splined shafts; 10 in. keyed shaft) to operate in severe conditions; dimensions according to international NEMA standards
- **Shaft bearings:** Dual water-lubricated guide bearings made of high-grade carbon are fixed in upper and lower brackets for optimal operation in sandy wells and pump vibration control.
- **Thrust bearings:** All Flowserve submersible motors have Kingsbury-type thrust bearing. The thrust assembly consists of a high-quality carbon disc with hardened stainless steel shoes to handle necessary pump thrust loads. Available with an axial load capacity of 2,722 to 8,165 kg (6,000 to 18,000 lbs).
- **Seal configuration:** Flowserve offers a triple-seal configuration that consists of two outer back-to-back lip seals in nitrile butadiene rubber (NBR) with an inner silicon tungsten carbide seal for optimum protection in sandy wells.
- **Pressure-equalizing system:** Pressure compensation is managed by using a suitably sized NBR bellow to allow for expansion of the internal water as it heats up or from external pressure due to the depth of submergence.
- **Bearing housings:** High-resistance, cast iron upper and lower bearing housings with NSF-certified epoxy coating
- **Filler fluid:** Water mixed with NSF-compliant mono propylene glycol (MPG) for optimal cooling, lubrication and corrosion resistance

Specifications

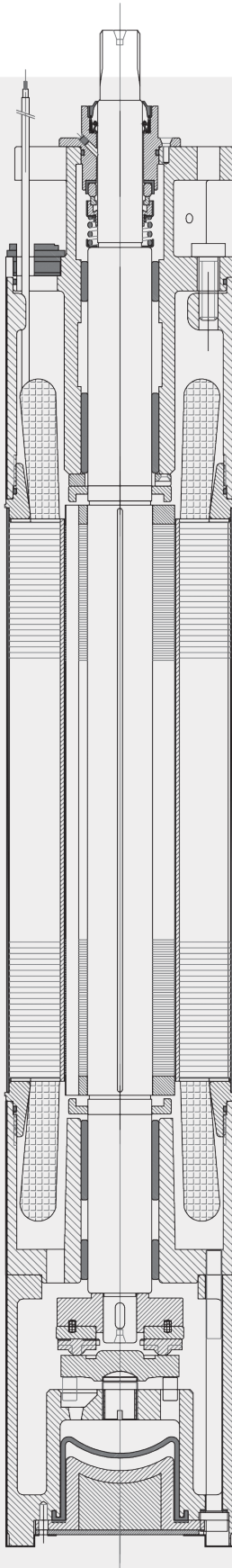
• Degree of protection	IP68
• Insulation class	Y; higher class available
• Working temperature	50°C (122°F)
• Voltage tolerance	+6%/-10%
• Mounting position	Vertical/horizontal
• Minimum-maximum flow rate	0.15 to ~3.7 m/s (0.5 to ~12 ft/s)
• Maximum immersion depth	650 ft
• Maximum starts per hour	6 in.: 20 starts; 8 and 10 in.: 10 starts

Trusted supplier of choice for water resources

For more than 150 years, Flowserve has been in the forefront of virtually every significant advancement in pumping technology to meet water-handling challenges.

Today, Flowserve offers the world's most complete line of submersible pumps with water-filled motors and systems for water applications. In addition, customers benefit from our global network of Quick Response Centers (QRCs), which provide technical and service support.





MS6

6 in. H2O+ Premium water-filled submersible electric motor

Specifications

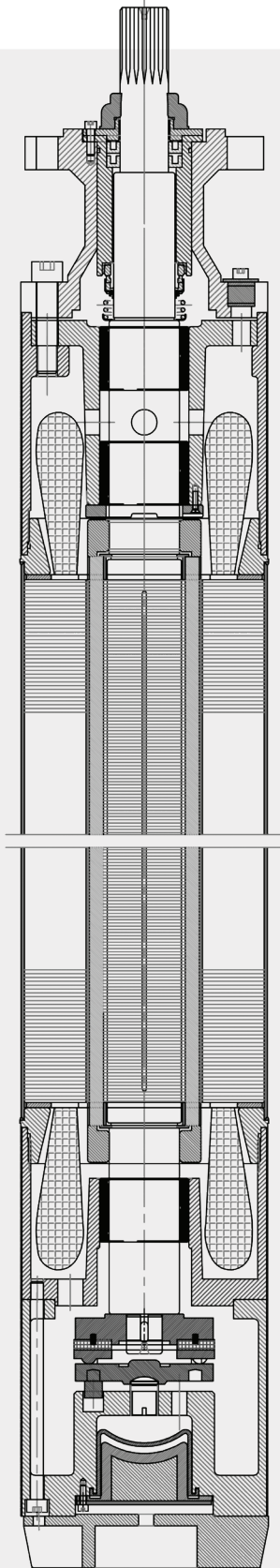
- **Horsepower:** 5.5 to 70 hp (4 to 52 kW)
- **Voltages:**
 - 415 V (50 Hz)
 - 460 V (60 Hz)
- **Speed:** Two-pole
- **Insulation class:** Y (standard)
- **Materials of construction:** 304 stainless steel body with NSF-coated cast iron end bells

Features and benefits

- **13-ft motor leads**
 - **Lead cable** coming out of the lower flange with a braided stainless protection sleeve minimizes the chance of damage during assembly and installation.
 - **Fully independent and robust cable sealing** ensures safe and reliable operation owing to a rubber gasket sandwiched in nylon plates and secured by steel plate.
- **High-grade, spring-loaded mechanical seal** made of tungsten carbide
 - Ensures perfect sealing in extreme conditions
 - Highly resistive to fine and coarse sand particles
 - Ensures safe operation in sandy wells
- **Double-carbon bearings** in upper and lower portions are water-lubricated and provide greater stability and vibration-free motor operation.
 - Provide maximum rotor stability
 - Tapered design of balancing ring in lower radial bearing assembly helps guide fluid into the carbon bearings, ensuring water passage for better lubrication and heat dissipation.
- **Stator and rotor** include increased stack length and combined M800 low-loss electrical magnetic laminations for a cooler-running motor.
 - Stator design provides low core losses, higher efficiency, and lower ampere consumption and heat generation.
 - Rotor produced with high-grade copper bars

- **Robust, Kingsbury-type thrust bearings** made of high-grade 400 Series stainless steel shoes and a high-quality carbon disc to handle necessary pump thrust loads
 - Water-lubricated to reduce friction and provide high durability
 - Axial load capacities of 6,000 lbs (up to 50 hp) and 13,849 lbs (60 to 70 hp)
- **Superior triple-mechanical seal configuration** for optimum protection in sandy wells
 - Two outer back-to-back lip seals made with NBR
 - Inner silicon tungsten carbide seal
- **Two-flange top case design** per NEMA standards
 - Tapped holes
 - Provides a more secure pump connection
 - Enables greater service flexibility versus stud-type design
- **Provision for installation of PT100 temperature sensor** for real-time motor monitoring and control
 - Adds protection in special application conditions
- **Upper bearing housing** made of grade GG25 cast iron with 8 mm wall thickness and covered with SS304 sheet to provide strength and surface protection
 - 100% leak-proof and explosion-proof
 - Resists corrosion
 - Better structural integrity
- **High-grade AISI 420 stainless steel rotor shaft** induction hardened to 40 HRC and ground to operate in severe conditions
 - Integral single-piece design ensures better stiffness and dimensional accuracy.
 - Fully machined and ground throughout length
 - Dimensions meet NEMA standards.
- **Pure copper winding wire** with BOPP Insulation for higher temperatures and better insulation compared to PE2/PA insulation
 - Mechanized coil insertion maintains quality and precision.
 - Over-sized wire gauge ensures longer service life and higher efficiency.
- **Lower bearing housing** made of grade GG25 cast iron with 8 mm wall thickness and covered with SS304 sheet to provide strength and surface protection
 - 100% leak-proof and explosion-proof
 - Better structural integrity
- **Robust and over-designed lower support** with 304 stainless steel cover provides a stable foundation for the motor and corrosion resistance.
 - Provides more space for more coolant water that contributes to better heat dissipation
- **Pressure-equalizing system** utilizes an NBR bellow to allow for expansion of the internal water as it heats up, or from external pressure due to the depth of submergence.





MS8

8 in. H2O+ Premium water-filled submersible electric motor

Specifications

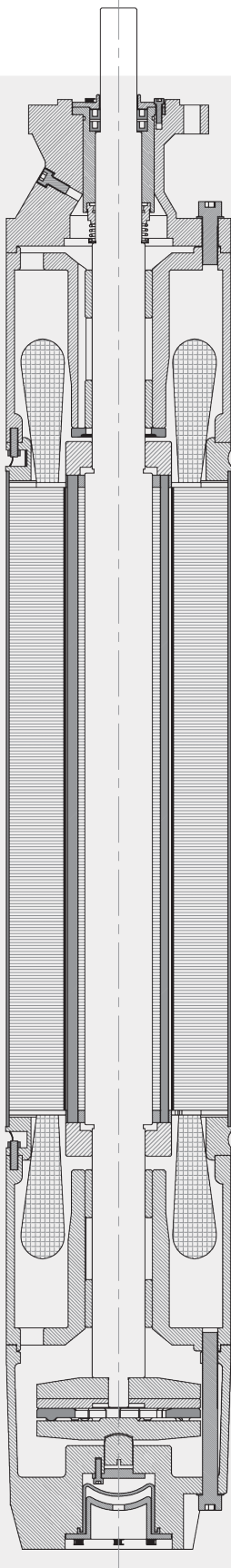
- **Horsepower:** 40 to 175 hp (30 to 130 kW)
- **Voltages:**
 - 415 V (50 Hz)
 - 460 V (60 Hz)
- **Speed:** Two-pole
- **Insulation class:** Y (standard)
- **Materials of construction:** 304 stainless steel body with NSF-coated cast iron end bells

Features and benefits

- **16-ft motor leads**
 - **Lead cable** coming out of the lower flange with a braided stainless protection sleeve minimizes the chance of damage during assembly and installation.
 - **Fully independent and robust cable sealing** ensures safe and reliable operation owing to a rubber gasket sandwiched in nylon plates and secured by steel plate.
- **Slanted water-filling holes**
 - Easily accessible, even with a coupled pump
 - Optimum location along with slanted design ensures maximum fluid level inside the motor.
- **High-grade, spring-loaded mechanical seal** made of tungsten carbide
 - Ensures perfect sealing in extreme conditions
 - Highly resistive to fine and coarse sand particles
- **Double-carbon bearings** in upper and lower portions are water-lubricated and provide greater stability and vibration-free motor operation.
 - Provide maximum rotor stability
 - Tapered design of balancing ring in lower radial bearing assembly helps guide fluid into the carbon bearings, ensuring water passage for better lubrication and heat dissipation.

- **Stator and rotor** include increased stack length and combined M800 low-loss electrical magnetic laminations for a cooler-running motor.
 - Stator design provides low core losses, higher efficiency, and lower ampere consumption and heat generation.
 - Rotor produced with high-grade copper bars
- **Robust, Kingsbury-type thrust bearings** made of high-grade 400 Series stainless steel shoes and a high-quality carbon disc to handle necessary pump thrust loads
 - Water-lubricated to reduce friction and provide long lifecycle
 - Axial load capacity of 18,000 lbs
- **Superior triple-mechanical seal configuration** for optimum protection in sandy wells
 - Two outer back-to-back lip seals made with NBR
 - Inner silicon tungsten carbide seal
- **Provision for installation of PT100 temperature sensor** for real-time motor monitoring and control
 - Adds protection in special application conditions
- **High-grade AISI 420 stainless steel rotor shaft** induction hardened to 40 HRC and ground to operate in severe conditions
 - Integral single-piece design ensures better stiffness and dimensional accuracy.
 - Fully machined and ground throughout length
 - Dimensions meet NEMA standards.
- **Pure copper winding wire** with BOPP insulation for higher temperatures and better insulation compared to PE2/PA insulation
 - Mechanized coil insertion maintains quality and precision.
 - Over-sized wire gauge ensures longer service life and higher efficiency.
- **Robust and over-designed lower support** covered with stainless steel cover provides a stable foundation for the motor.
 - Design easily accommodates larger thrust bearings.
 - Provides more space for more coolant water that contributes to better heat dissipation
- **Pressure-equalizing system** utilizes an NBR bellow to allow for expansion of the internal water as it heats up, or from external pressure due to the depth of submergence.





MS10

10 in. H2O+ Premium water-filled submersible electric motor

Specifications

- **Horsepower:** 75 to 270 hp (55 to 200 kW)
- **Voltages:**
 - 415 V (50 Hz)
 - 460 V (60 Hz)
- **Speed:** Two-pole
- **Insulation class:** Y (standard)
- **Materials of construction:** 304 stainless steel body with NSF-coated cast iron end bells

Features and benefits

- **16-ft motor leads**
 - **Lead cable** coming out of the lower flange with a braided stainless protection sleeve minimizes the chance of damage during assembly and installation.
 - **Fully independent and robust cable sealing** ensures safe and reliable operation owing to a rubber gasket sandwiched in nylon plates and secured by steel plate.
- **Slanted water-filling holes**
 - Easily accessible, even with a coupled pump
 - Optimum location along with slanted design ensures maximum fluid level inside the motor.
- **High-grade, spring-loaded mechanical seal** made of tungsten carbide
 - Ensures perfect sealing in extreme conditions
 - Highly resistive to fine and coarse sand particles
- **Double-carbon bearings** in upper and lower portions are water-lubricated and provide greater stability and vibration-free motor operation.
 - Avoid damage to motor internal parts, even in sandy wells
 - Tapered design of balancing ring helps guide fluid into the carbon bearings, ensuring water passage for better lubrication and heat dissipation.
 - Provides maximum rotor stability

- **Stator and rotor** include increased stack length and combined M800 low-loss electrical magnetic laminations for a cooler-running motor.
 - Stator design provides low core losses, higher efficiency, and lower ampere consumption and heat generation.
 - Rotor produced with high-grade copper bars
- **Robust, Kingsbury-type thrust bearings** made of high-grade 400 Series stainless steel shoes and a high-quality carbon disc to handle necessary pump thrust loads
 - Water-lubricated to reduce friction and provide a long lifecycle
 - Axial load capacity of 18,000 lbs
- **Superior triple-mechanical seal configuration** for optimum protection in sandy wells
 - Two outer back-to-back lip seals made with NBR
 - Inner silicon tungsten carbide seal
- **Provision for installation of PT100 temperature sensor** for real-time motor monitoring and control
 - Adds protection in special application conditions
- **High-grade AISI 420 stainless steel keyed shaft** induction hardened to 40 HRC and ground to operate in severe conditions
 - Integral single-piece design ensures better stiffness and dimensional accuracy.
 - Fully machined and ground throughout length
 - Dimensions meet NEMA standards.
- **Pure copper winding wire** with BOPP insulation for higher temperatures and better insulation compared to PE2/PA insulation
 - Mechanized coil insertion maintains quality and precision.
 - Over-sized wire gauge ensures longer service life and higher efficiency.
- **Robust and over-designed lower support** covered with stainless steel cover provides a stable foundation for the motor.
 - Design easily accommodates larger thrust bearings.
 - Provides more space for more coolant water that contributes to better heat dissipation
- **Pressure-equalizing system** utilizes an NBR bellow to allow for expansion of the internal water as it heats up, or from external pressure due to the depth of submergence.



MS6 parts and materials of construction

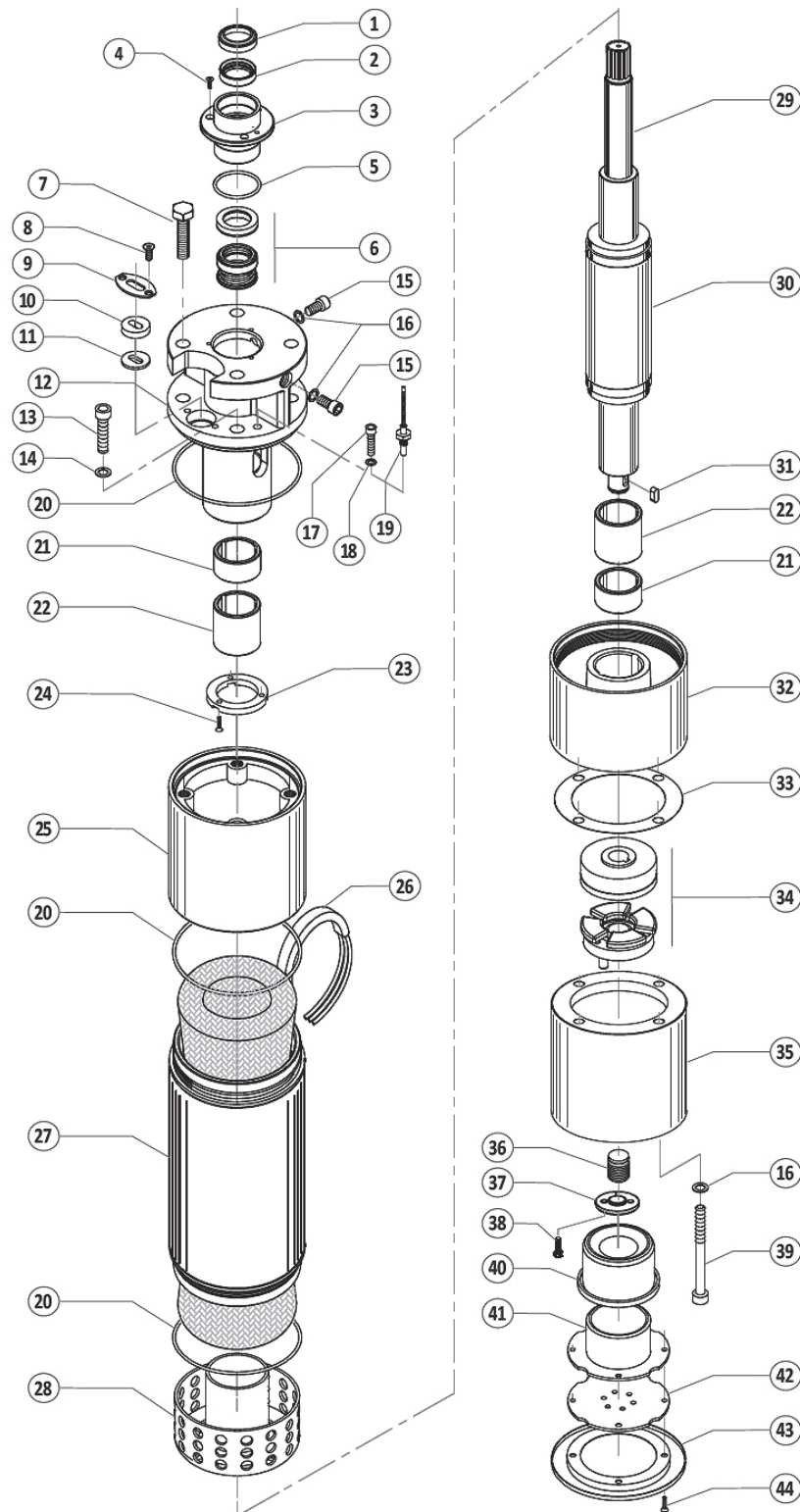


Table 1: MS6 parts list with materials and quantities

Pos.	Item code	Part name	Material	Qty.
1	60101480	Wiper seal	NBR + stainless steel	1
2	60101475	Lip seal / oil seal	NBR + stainless steel	1
3	60101090	Seal support KM6	Stainless steel	1
4	60101075	Allen bolt (seal support)	NBR + stainless steel	3
5	60101095	O-ring (seal support)	NBR	1
6	60101080	Mechanical seal	Silicon tungsten carbide (WC) + NBR + stainless steel	1
7	60101110	Hex bolt 0.5 x 1 1/2 in. 20TPI	Stainless steel	4
8	60101077	Screw (tail cable)	Stainless steel	2
9	601011XX	Cable top plate (tail cable)	Stainless steel	1
10	601011XX	Gasket rubber (tail cable)	NBR	1
11	601011XX	Cable washer (tail cable)	Stainless steel	1
12	60101005	Upper support / top piece (double flange)	Cast iron	1
13	60161245	Allen bolt M12 X 45	Stainless steel	4
14	60101156	Washer bonded / Dowty seal M12	NBR + carbon steel	4
15	60101068	Allen bolt (top piece)	Stainless steel	2
16	60101157	Washer bonded / Dowty seal M10	NBR + stainless steel	6
17	60161250	Allen bolt M8 X 20	Stainless steel	1
18	60161267	Washer bonded / Dowty seal M8	NBR/stainless steel	1
19	60101485	PT100 sensor (optional)		1
20	60101065	O-ring 3500	NBR	3
21	60101058	Carbon bush small (lower and upper)	Carbon	2
22	60101055	Carbon bush large (lower and upper)	Carbon	2
23	60101087	Upper thrust bearing	Brass	1
24	60101142	Screw (upper thrust) CSK M4X10	Stainless steel	3
25	60101010	Upper bearing housing	Cast iron	1
26	601011XX	Motor tail cable (03 core)	Copper + rubber	13
27	60101305	Stator stack (assembly)	Silicon steel (M800-50A)	1
28	60101202	Winding protection cover (lower)	LDPE	1
29	601063XX	Rotor shaft	Stainless steel	1
30	60101350	Rotor lamination (assembly)	Silicon steel (M800-50A)	1
31	60101145	Key for rotor shaft	Stainless steel	1
32	60101013	Lower bearing housing	Cast iron	1
33	60101212	Gasket	TESNIT®	1
34	601010XX	Thrust bearing	Stainless steel + carbon	1
35	60101018	Thrust support	Cast iron	1
36	60101030	Adjustment bolt (thrust bearing)	Stainless steel	1
37	60161010	Lock washer adj. bolt	Mild steel	1
38	60161252	Bolt allen M6 x 20	Stainless steel	2
39	60101071	Bolt allen M10x170	Carbon steel 12,9	4
40	60101045	Diaphragm rubber	NBR	1
41	60101216	Diaphragm support	Polycarbonate	1
42	60101050	End cover of diaphragm	Stainless steel	1
43	60101052	Cover for thrust support	Stainless steel	1
44	60101143	Allen bolt (lower thrust plate)	Stainless steel	4

Motor data

Table 2: MS6 @ 50 Hz, three-phase, 415-volt, two-pole

Model	Power		Axial load, kN	Speed n_N , rpm	I N, A	I A, A	Motor efficiency at % load, %			Power factor (cos. ϕ) at % load, %			Length, mm	Weight, kg
	hp	kW					@50%	@75%	@100%	@50%	@75%	@100%		
MS6-4k-2	5.5	4	6,000	2,850	10	47	70	76	75	60	72	79	711.96	55.34
MS6-5.5k-2	7.5	5.5	6,000	2,850	13.1	48	71	77	76	68	77	81	711.96	55.34
MS6-7.5k-2	10	7.5	6,000	2,850	17.2	56	72	77	77	70	78	82	762	60.33
MS6-11k-2	15	11	6,000	2,855	24.8	90	77	81	80	68	77	81	847.09	70.31
MS6-15k-2	20	15	6,000	2,850	32.7	135	79	82	81	71	78	82	937.01	79.38
MS6-18.5k-2	25	18.5	6,000	2,855	40.2	165	79	83	82	70	78	82	1,026.92	89.36
MS6-22k-2	30	22	6,000	2,855	48.2	218	79	83	82	70	78	82	1,112.01	98.43
MS6-30k-2	40	30	6,000	2,860	65.2	322	80	83	82	68	77	81	1,246.89	112.49
MS6-37k-2	50	37	6,000	2,845	80.6	408	80	83	82	69	78	82	1,246.89	112.49
MS6-45k-2	60	45	13,849	2,850	97	531	77	83	82	71	78	82	1,315	117.48
MS6-52k-2	70	52	13,849	2,850	114.2	631	78	82	81	71	79	82	1,374.90	125.19

Table 3: MS6 @ 60 Hz, three-phase, 460-volt, two-pole

Model	Power		Axial load, kN	Speed n _N , rpm	I N, A	I A, A	Motor efficiency at % load, %			Power factor (cos. ϕ) at % load, %			Length, in	Weight, lb
	hp	kW					@50%	@75%	@100%	@50%	@75%	@100%		
MS6-5.5H-2	5.5	4	6,000	3,460	8.6	51	70	75	76	60	72	78	28.03	122
MS6-7.5H-2	7.5	5.5	6,000	3,470	11.6	54	71	76	76	71	77	79	28.03	122
MS6-10H-2	10	7.5	6,000	3,460	15.3	66	72	78	77	68	76	80	30	133
MS6-15H-2	15	11	6,000	3,460	21.5	98	78	81	80	68	77	81	33.35	155
MS6-20H-2	20	15	6,000	3,460	28.4	154	80	82	81	71	78	82	36.89	175
MS6-25H-2	25	18.5	6,000	3,460	34.9	184	79	83	82	70	78	82	40.43	197
MS6-30H-2	30	22	6,000	3,460	42.5	246	80	83	82	69	77	81	43.78	217
MS6-40H-2	40	30	6,000	3,470	56.8	351	81	83	82	68	77	81	49.09	248
MS6-50H-2	50	37	6,000	3,460	71	450	80	83	82	70	77	81	49.09	248
MS6-60H-2	60	45	13,849	3,470	84.3	533	77	83	82	70	77	81	51.77	259
MS6-70H-2	70	52	13,849	3,460	99.3	633	78	82	81	71	79	82	54.13	276

MS8 parts and materials of construction

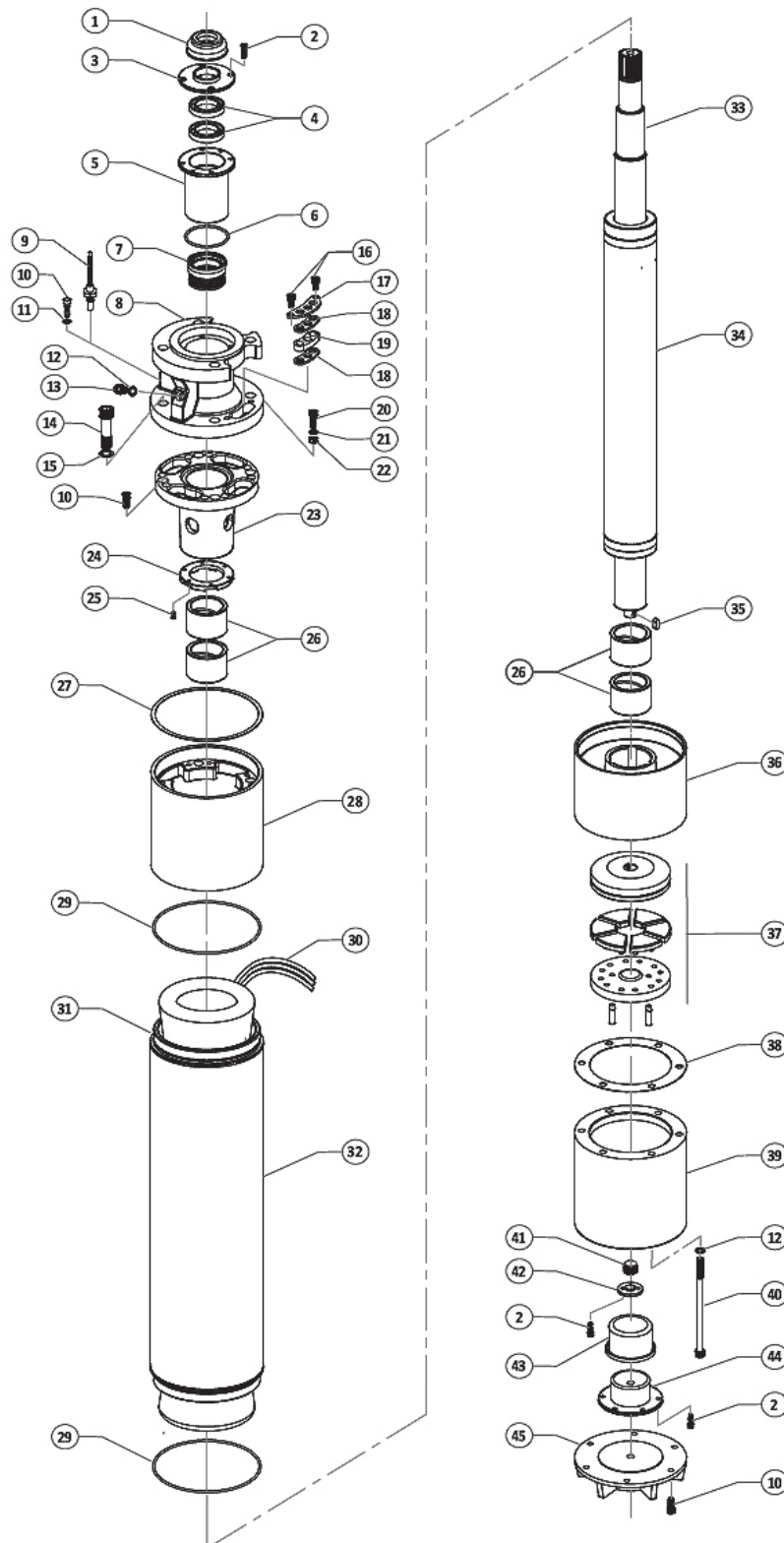


Table 4: MS8 parts list with materials and quantities

Pos.	Item code	Part name	Material	Qty.
1	60161050	Sand guard	Rubber	1
2	60161252	Bolt allen M6 x 20	Stainless steel	14
3	60161085	Mechanical seal cover	Stainless steel	1
4	60161127	Oil seal 38x60x10	NBR	2
5	60161125	Bush seal support	Cast iron	1
6	60161220	O-ring 65x2,5	NBR	1
7	60161275	Mechanical seal complete	Silicon tungsten carbide (WC) + NBR + stainless steel	1
8	60161065	Top piece / upper support double flange	Cast iron	1
9	60101485	PT 100 sensor	Stainless steel	1
10	60161250	Bolt allen M8x20	Stainless steel	14
11	60161267	Washer bonded / Dowty seal M8	NBR/stainless steel	1
12	60101157	Washer bonded / Dowty seal M10	NBR/stainless steel	8
13	60101068	Bolt allen M10 x 16	Stainless steel	2
14	60161255	Bolt allen M16 x 65	Stainless steel	4
15	60161272	Washer bonded / Dowty seal M16	NBR/stainless steel	4
16	60161253	Bolt allen M8 x 25	Stainless steel	2
17	60161150	Cable top cover plate	Carbon steel	2
18	60161092	Washer nylon	Nylon	2
19	60161095	Gasket rubber	NBR	1
20	60161254	Bolt allen M8 x 35	Stainless steel	1
21	60161263	Spring washer M8	Stainless steel	1
22	60161262	Nut hex M8	Stainless steel	1
23	60161080	Upper bearing housing	Cast iron	1
24	60161105	Upper thrust bearing	Brass	1
25	60101142	Screw CSK M4x10	Stainless steel	6
26	60161020	Carbon bush	Carbon	4
27	60161042	Gasket top piece	Tesnit	1
28	60161315	Upper threaded socket	Cast iron	1
29	60161215	O-ring 165x2,5	NBR	2
30A	601611XX	Cable tail (1x10 mm ² /16 mm ² /25 mm ² /35 mm ²)	PVC + copper	48
30B	60101197	Cable for earth 1x10 mm ²	PVC + copper	16
31	60161594	Flange (200-140-46)	Stainless steel	2
32	601616XX	Stator stack (assembly)	Silicon steel (50C800) + (50C800) + stainless steel	1
33	601063XX	Rotor shaft	Stainless steel	1
34	60161660	Rotor lamination (including shaft + copper bars + end ring)	Silicon steel (50C800) + stainless steel + copper	1
35	60101145	Key for end shaft	Stainless steel	1
36	60161320	Lower bearing housing	Cast iron	1
37	60161280K	Thrust bearing	Stainless steel / carbon	1
38	60161040	Gasket thrust support	Tesnit	1
39	60161070	Thrust support	Cast iron	1
40	60161260	Bolt allen M10x190	Carbon steel 12,9	6
41	60161000	Adjustment bolt	Stainless steel	1
42	60161010	Lock washer adj. bolt	MS	1
43	60101045	Diaphragm rubber	NBR	1
44	60161130	Diaphragm support	Cast iron	1
45	60161037	Bottom plate	Cast iron	1

Motor data

Table 5: MS8 @ 50 Hz, three-phase, 415-volt, two-pole

Model	Power		Axial load, kN	Speed n_N , rpm	I N, A	I A, A	Motor efficiency at % load, %			Power factor (cos. ϕ) at % load, %			Length, mm	Weight, kg
	hp	kW					@50%	@75%	@100%	@50%	@75%	@100%		
MS8-30K-2	40	30	18,000	2,880	61.9	293	80	84	84	71	79	83	1,239.52	180.08
MS8-37K-2	50	37	18,000	2,900	76	363	83	86	84	70	79	84	1,338.58	198.67
MS8-45K-2	60	45	18,000	2,895	89.6	470	82	86	85	70	80	85	1,419.86	208.65
MS8-55K-2	75	55	18,000	2,885	110.7	613	83	87	86	71	80	84	1,638.30	247.21
MS8-75K-2	100	75	18,000	2,900	149.1	859	82	87	86	70	79	84	1,828.80	279.87
MS8-93K-2	125	93	18,000	2,890	183.4	1,154	81	87	87	72	80	84	1,927.86	302.09
MS8-110K-2	150	110	18,000	2,900	217.6	1,432	83	87	87	72	81	85	2,029.46	327.95
MS8-130K-2	175	130	18,000	2,895	259.8	1,713	83	87	86	72	80	84	2,138.68	346.55

Table 6: MS8 @ 60 Hz, three-phase, 460-volt, two-pole

Model	Power		Axial load, kN	Speed n _N , rpm	I N, A	I A, A	Motor efficiency at % load, %			Power factor (cos. ϕ) at % load, %			Length, in	Weight, lb
	hp	kW					@50%	@75%	@100%	@50%	@75%	@100%		
MS8-40H-2	40	30	18,000	3,460	56.2	346	80	83	83	69	77	81	48.8	397
MS8-50H-2	50	37	18,000	3,460	66.4	413	84	86	84	69	79	84	52.7	438
MS8-60H-2	60	55	18,000	3,480	81.1	551	84	86	84	69	78	83	55.9	460
MS8-75H-2	75	56	18,000	3,465	97.6	676	84	88	87	70	79	83	64.5	545
MS8-100H-2	100	75	18,000	3,470	129.9	969	82	87	86	70	79	84	72	617
MS8-125H-2	125	93	18,000	3,70	162.6	1,296	80	85	86	72	80	84	75.9	666
MS8-150H-2	150	112	18,000	3,460	197.4	1,595	83	87	86	71	79	83	79.9	723
MS8-175H-2	175	130	18,000	3,460	226.7	1,866	84	88	87	71	79	83	84.2	764

MS10 parts and materials of construction

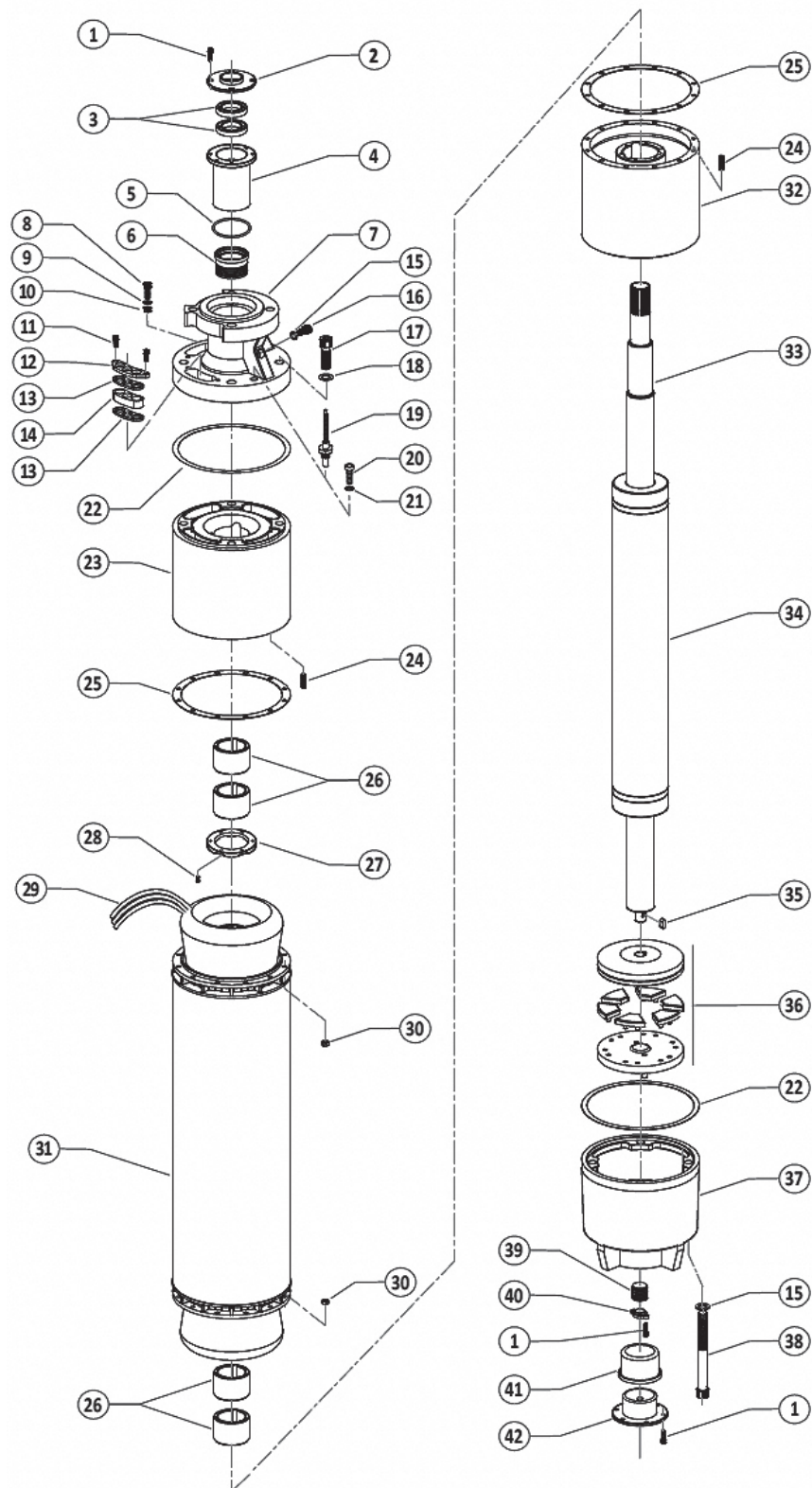


Table 7: MS10 parts list with materials and quantities

Pos.	Item Code	Part Name	Material	Qty.
1	60161252	Bolt allen M6 x 20	Stainless steel	12
2	60161085	Mechanical seal cover	Stainless steel	1
3	60161127	Oil seal 38x60x10	NBR	2
4	60161125	Bush seal support	Cast iron	1
5	60161115	O-ring 65x2,5	NBR	1
6	60161275	Mechanical seal complete	Silicon tungsten carbide (WC) + NBR + stainless steel	1
7	60271000	Top piece / upper support double flange	Cast iron	1
8	60161254	Bolt allen M8 x 35	Stainless steel	1
9	60161263	Spring washer M8	Stainless steel	1
10	60161262	Nut hex M8	Stainless steel	1
11	60161253	Bolt allen M8 x 25	Stainless steel	2
12	60161150	Cable top cover plate	Carbon steel	2
13	60271165	Washer nylon	nylon	2
14	60271180	Gasket rubber	NBR	1
15	60101157	Washer bonded / Dowty seal M10	NBR/stainless steel	2
16	60101068	Bolt allen M10 x 16	Stainless steel	2
17	60161255	Bolt allen M16 x 75	Stainless steel	4
18	60161272	Washer bonded / Dowty seal M16	NBR/Stainless steel	8
19	60101485	PT 100 sensor	Stainless steel	1
20	60161250	Bolt allen M8x20	Stainless steel	14
21	60161267	Washer bonded / Dowty seal M8	NBR/stainless steel	1
22	60271150	Gasket upper and lower	Tesnit	2
23	60161080	Upper bearing housing	Cast iron	1
24	60271170	Stud bolt M8x35		24
25	60271152	Gasket stator	Tesnit	2
26	60271100	Carbon bush	Carbon	4
27	60271030	Upper thrust bearing	Brass	1
28	60101142	Screw CSK M4x10	Stainless steel	6
29A	601011XX	Cable tail (1x10 mm ² /16 mm ² /25 mm ² /35 mm ²)	PVC + copper	48
29B	60101185	Cable tail 1x10 mm ² (for earthing)	PVC + copper	16
30	60161262	Nut hex M8		24
31	602712XX	Stator stack (assembly)	Silicon steel (50C800) + stainless steel	1
32	60271040	Lower bearing housing	Cast iron	1
33	602713XX	Motor shaft	Stainless steel	1
34	60271330	Rotor lamination (including shaft + copper bars + end ring)	Silicon steel (50C800) + stainless steel + copper	1
35	60101145	Key for end shaft	Stainless steel	1
36	60271050	Thrust bearing complete	Stainless steel/carbon	1
37	60271020	Thrust support	Cast iron	1
38	60271142	Tolt allen M16x180	Carbon steel	4
39	60271140	Adjustment bolt	Stainless steel	1
40	60161010	Lock washer adj. bolt	MS	1
41	60271130	Diaphragm rubber	NBR	1
42	60271135	Diaphragm support	Cast iron	1

Motor data

Table 8: MS10 @ 50 Hz, three-phase, 415-volt, two-pole

Model	Power		Axial load, kN	Speed n _N , rpm	I N, A	I A, A	Motor efficiency at % load, %			Power factor (cos. φ) at % load, %			Length, mm	Weight, kg
	hp	kW					@50%	@75%	@100%	@50%	@75%	@100%		
MS10-056K-2	75	56	18,000	2,900	114	524	83	86	86	73	82	86	1,183.64	180.08
MS10-075K-2	100	75	18,000	2,890	150	696	84	86	86	74	82	86	1,432.56	249.93
MS10-093K-2	125	93	18,000	2,895	185	908	84	86	86	73	82	86	1,432.56	309.8
MS10-112K-2	150	112	18,000	2,905	221	1,105	85	87	87	73	81	86	1,531.62	370.13
MS10-130K-2	175	130	18,000	2,910	259	1,362	86	87	87	70	80	84	1,732.28	469.92
MS10-150K-2	200	150	18,000	2,910	301	1,586	86	87	87	70	80	85	1,732.28	469.92
MS10-186K-2	250	186	18,000	2,905	371	2,080	86	87	86	75	82	85	1,932.94	579.69

Table 9: MS10 @ 60 Hz, three-phase, 460-volt, two-pole

Model	Power		Axial load, kN	Speed n _N , rpm	I N, A	I A, A	Motor efficiency at % load, %			Power factor (cos. ϕ) at % load, %			Length, in	Weight, lb
	hp	kW					@50%	@75%	@100%	@50%	@75%	@100%		
MS10-075H-2	75	56	18,000	3,485	97	504	84	86	86	71	80	84	46.6	397
MS10-100H-2	100	75	18,000	3,492	128	681	85	86	87	72	81	85	56.4	551
MS10-125H-2	125	93	18,000	3,500	162	890	85	87	86	71	80	84	56.4	683
MS10-150H-2	150	112	18,000	3,505	194	1,153	85	87	87	70	80	84	60.3	816
MS10-175H-2	175	130	18,000	3,505	219	1,312	85	87	87	69	78	83	68.2	1,036
MS10-200H-2	200	150	18,000	3,505	253	1,544	85	87	87	69	79	83	68.2	1,036
MS10-250H-2	250	186	18,000	3,500	312	2,046	85	87	87	74	81	84	76.1	1,278
MS10-270H-2	270	200	18,000	3,505	333	2,232	85	87	87	74	82	85	80	1,388

Power cable information

Table 10: Direct on line (DOL)

Rated ampere	Copper wire, 460-volt, at 60°C (140°F)														
	Number of conductors x size in AWG														
	3x14	3x12	3x10	3x8	3x6	3x4	3x3	3x2	3x1	3x1/0	3x2/0	3x3/0	3x4/0	250	300
10	459	722	1,160	1,838	2,911	4,640									
15	306	481	773	1,225	1,940	3,093	3,881								
20		361	580	919	1,455	2,320	2,911	3,666							
25			464	735	1,164	1,856	2,329	2,933	3,694						
30			386	612	970	1,546	1,940	2,444	3,079	3,903					
35				525	831	1,325	1,663	2,095	2,639	3,345					
40				458	727	1,160	1,455	1,833	2,309	2,927	3,688				
45				408	646	1,031	1,293	1,629	2,052	2,602	3,278				
50					582	928	1,164	1,466	1,847	2,342	2,950	3,721			
55					529	843	1,058	1,333	1,679	2,129	2,682	3,381			
60					485	773	970	1,222	1,539	1,951	2,458	3,101	3,903		
65					447	713	895	1,128	1,421	1,801	2,269	2,862	3,603		
70						662	831	1,047	1,319	1,672	2,107	2,658	3,345		
75						618	776	977	1,231	1,561	1,967	2,480	3,122		
80						580	727	916	1,154	1,463	1,844	2,325	2,927		
85						545	685	862	1,086	1,377	1,735	2,188	2,755		
90						515	646	814	1,026	1,301	1,639	2,067	2,602		
95							612	771	972	1,232	1,553	1,958	2,465		
100							582	733	923	1,171	1,475	1,860	2,342		
105							554	698	879	1,115	1,405	1,772	2,230		
110							529	666	839	1,064	1,341	1,691	2,129		
120								611	769	975	1,229	1,550	1,951	2,316	2,772
140								523	659	836	1,053	1,329	1,672	1,985	2,376
160									577	731	922	1,162	1,463	1,737	2,079
180										650	819	1,033	1,301	1,544	1,848
200											737	930	1,171	1,389	1,663
230											641	808	1,018	1,209	1,446
260												715	900	1,069	1,279
290													807	958	1,147
320													731	868	1,039
350														749	950
380															875
410															811

*Cable length calculations are based on voltage drop of 5% and above mentioned working temperature.

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