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*\*Note: UL and CSA listed; Model Optima UL certified only.*

**Model Designation**



**MODEL TYPE**

**EPD** – Ebara PRO Drainer  
**Optima\*** – Ebara, Plastic impeller, PRO Drainer

**HP**

**3** = 1/3 HP  
**5** = 1/2 HP  
**7** = 3/4 HP  
**10** = 1 HP  
**15** = 1 1/2 HP

**OPERATION**

**M** = Manual  
**A** = Automatic  
**S** = Slimline Automatic

**PHASE**

**S** – single phase  
**T** – three phase

**VOLTAGE**

**1** – 115  
**2** – 230  
**4** – 460

**\*Note:** Only the 1/3 HP units offer both a plastic impeller and a stainless steel impeller.



**Specifications**

**Model Optima-3AS1  
EPD-3AS1  
Optima-3SS1  
EPD-5AS1 and EPD-7AS1**

Automatic Operation Pumps

Performance: ISO 2548

	<b>Standard</b>	<b>Optional</b>
Discharge Size	1/3 HP – 1 1/4 inch	
Range of HP	1/2 HP and 3/4 HP – 1 1/2 inch	
Range of Performance	1/3, 1/2, and 3/4 HP Capacity 2.7 to 72 GPM Head 9.3 to 57 feet	
<b>Limitation</b> Maximum Water Temperature	122°F/50°C (140°F/60°C intermittent duty)	
<b>Solids</b>	3/8" Spherical (2% by concentration)	
<b>Synchronous Speed</b>	3600 RPM	
<b>Materials</b> Casing Impeller Shaft Motor Frame Fasteners	304L Stainless Steel 304L Stainless Steel* 303 Stainless Steel 304L Stainless Steel 304L Stainless Steel	
<b>Shaft Seal (Double)**</b> Material – Upper Material – Lower  Impeller Type Bearing Motor  Single Phase Motor Protection Power Cord  Automatic Float Switch	NBR Fitted Carbon/Ceramic 1/2, 3/4, 1, and 1 1/2 HP FPM Fitted Silicon Carbide/Silicon Carbide 1/2, 3/4, 1, and 1 1/2 HP  Semi-Open Sealed Ball Bearing  Air-filled, Insulation Class F, 2 Pole, Rated Continuous Duty–Permanent Split Capacitor 115 Volt  Built-in Motor Protection w/Auto Reset  UL/CSA SJTow-A with ECS No. 250 cap plug with grounding pin – 20 Ft. Length Rated 15 Amp 125V – NEMA 5-15P  Mechanical Float	

\* ITEM NO. Optima-3AS1 – Impeller material is Thermo Plastic-Noryl GFN2

\*\* Optima-3 & EPD-3 – 1/3 HP Shaft Seal is single mechanical seal (lower side) and 1 lip seal (upper side)  
– Mechanical Seal material: Carbon/Ceramic/FPM

**Specifications**

**Model Optima-3MS1  
EPD-3MS1  
EPD-5 to 15**

Manual Operation Pumps  
Performance: ISO 2548

	<b>Standard</b>	<b>Optional</b>
Discharge Size Range of HP Range of Performance	1/3 HP – 1 1/4 inch 1/2 HP through 1 1/2 HP – 1 1/2 inch 1/3, 1/2, 3/4, 1, and 1 1/2 HP Capacity 2.7 to 86 GPM Head 9.3 to 61 feet	
<b>Limitation</b> Maximum Water Temperature	122°F/50°C (140°F/60°C intermittent duty)	
<b>Solids</b>	3/8" Spherical (2% by concentration)	
<b>Synchronous Speed</b>	3600 RPM	
<b>Materials</b> Casing Impeller Shaft Motor Frame Fasteners	304L Stainless Steel 304L Stainless Steel* 303 Stainless Steel 304L Stainless Steel 304L Stainless Steel	
<b>Shaft Seal (Double)**</b> Material – Upper Material – Lower  Impeller Type Bearing Motor  Single Phase Three Phase Motor Protection† Power Cord Single Phase  Three Phase	NBR Fitted Carbon/Ceramic 1/2, 3/4, 1, and 1 1/2 HP FPM Fitted Silicon Carbide/Silicon Carbide 1/2, 3/4, 1, and 1 1/2 HP Semi-Open Sealed Ball Bearing Air-filled, Insulation Class F, 2 Pole, Rated Continuous Duty–Permanent Split Capacitor 115 V 230V or 460V Built-in Motor Protection with Auto Reset  UL/CSA SJTOW-A with ECS No. 250 cap plug with grounding pin – 20 Ft. Length Rated 15 Amp 125V – NEMA 5-15P  UL/CSA STOW-A water resistant, stripped end jacket removed 2" and conductor stripped 5/8" – 20 Ft. length	

\* ITEM NO. Optima-3MS1 – Impeller material is Thermo Plastic-Noryl GFN2

\*\* Optima-3 & EPD-3 – 1/3 HP Shaft Seal is single mechanical seal (lower side) and 1 lip seal (upper side)  
– Mechanical Seal material: Carbon/Ceramic/FPM

† Three Phase models require user to provide motor protection

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**Sample Specifications**

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**1. Scope of supply**

Furnish and install EBARA Model \_\_\_\_\_ Submersible Stainless Steel Pump(s). Each unit shall be rated at \_\_\_\_\_ GPM at \_\_\_\_\_ feet TDH.

The pump(s) shall be designed to pump dirty waters containing  $\frac{3}{8}$ " spherical solids without damage during operation. The pump(s) shall be designed so that the pump shaft horsepower (BHP) shall not exceed motor rated horsepower throughout the entire operating range of the pump performance curve. Pump(s) shall be built to operate whether fully or partially submerged.

**2. Casing and Impeller**

Major parts of the pumping unit shall be manufactured of stainless steel. The casing, motor frame, and fasteners shall be manufactured of 304 stainless steel. The impeller and diffuser material shall be Thermo Plastic-Noryl GFN(2). The impeller shall be semi-open design. The pump(s) shall have a discharge size of 1 $\frac{1}{4}$ " NPT.

**3. Shaft seal**

The pump(s) shall be furnished with a single mechanical and a single lip seal (rubber).

**4. Motor**

The pump motor shall be  $\frac{1}{3}$  HP, 0.3 K.W., 115 Volt, 60Hz, single phase. Motor shall be air filled with Class F insulation and shall be of split capacitor design. The motor shall be supplied with built-in thermal protection with automatic reset and shall be rated for continuous duty. Motor shaft shall be 303 stainless steel.

**5. Motor cable**

Pump motor cable shall be suitable for submersible pump applications. Cable shall have 20 feet UL/CSA approved water resistant #16 AWG cord.

**6. Option**

A mechanical, non-mercury float switch is available in pumps with automatic operation.



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**Sample Specifications**

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**1. Scope of supply**

Furnish and install EBARA Model \_\_\_\_\_ Submersible Stainless Steel Pump(s). Each unit shall be rated at \_\_\_\_\_ GPM at \_\_\_\_\_ feet TDH.

The pump(s) shall be designed to pump dirty waters containing  $\frac{3}{8}$ " spherical solids without damage during operation. The pump(s) shall be designed so that the pump shaft horsepower (BHP) shall not exceed motor rated horsepower throughout the entire operating range of the pump performance curve. Pump(s) shall be built to operate whether fully or partially submerged.

**2. Casing and Impeller**

Major parts of the pumping unit shall be manufactured of stainless steel. The casing, impeller, motor frame, and fasteners shall be manufactured of 304 stainless steel. The impeller shall be semi-open design. The pump(s) shall have a discharge size of 1 $\frac{1}{4}$ " NPT.

**3. Shaft seal**

The pump(s) shall be furnished with a single mechanical and a single lip seal (rubber).

**4. Motor**

The pump motor shall be  $\frac{1}{3}$  HP, 0.3 K.W., 115 Volt, 60Hz, single phase. Motor shall be air filled with Class F insulation and shall be of split capacitor design. The motor shall be supplied with built-in thermal protection with automatic reset and shall be rated for continuous duty. Motor shaft shall be 303 stainless steel.

**5. Motor cable**

Pump motor cable shall be suitable for submersible pump applications. Cable shall have 20 feet UL/CSA approved water resistant #16 AWG cord.

**6. Option**

A mechanical, non-mercury float switch is available in pumps with automatic operation.



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**Sample Specifications**

---

**1. Scope of supply**

Furnish and install EBARA Model \_\_\_\_\_ Submersible Stainless Steel Pump(s). Each unit shall be rated at \_\_\_\_\_ GPM at \_\_\_\_\_ feet TDH.

The pump(s) shall be designed to pump dirty waters containing 3/8" spherical solids without damage during operation. The pump(s) shall be designed so that the pump shaft horsepower (BHP) shall not exceed motor rated horsepower throughout the entire operating range of the pump performance curve. Pump(s) shall be built to operate whether fully or partially submerged.

**2. Casing and Impeller**

Major parts of the pumping unit shall be manufactured of stainless steel. The casing, impeller, motor frame, and fasteners shall be manufactured of 304 stainless steel. The impeller shall be semi-open design. The pump(s) shall have a discharge size of 1 1/2" NPT.

**3. Shaft seal**

The pump(s) shall be furnished with a double mechanical seal.

**4. Motor**

The pump motor shall be \_\_\_\_ HP, \_\_\_\_ K.W., 60Hz, single phase. Motor shall be air filled with Class F insulation and shall be of split capacitor design. The motor shall be rated for continuous duty. Motor shaft shall be 303 stainless steel.

**5. Motor cable**

Pump motor cable shall be suitable for submersible pump applications. Cable shall be 20 feet UL/CSA approved water resistant #16 AWG cord.

**6. Option**

A mechanical, non-mercury float switch is available in pumps with automatic operation.

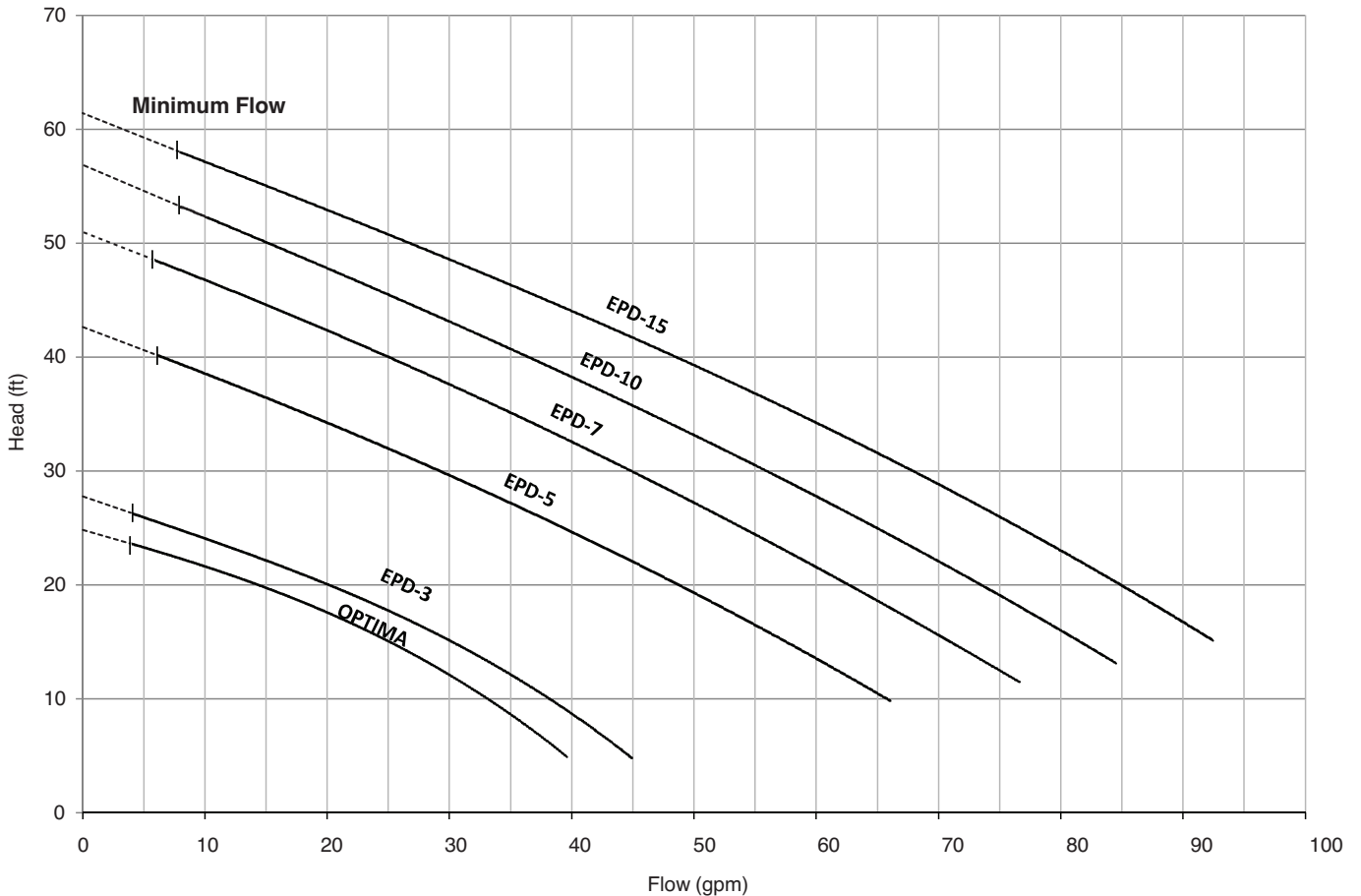


Performance Table

Capacity in Gallons Per Minute

Total Head Item No	5	10	15	20	25	30	35	40	45	50	55
Optima-3 1/3 HP	40	33	25	14							
EPD-3 1/3 HP	45	38	30	20	7						
EPD-5 1/2 HP		66	57	49	40	29	17				
EPD-7 3/4 HP			71	63	54	45	35	25	14		
EPD-10 1 HP			81	74	65	56	46	36	26	15	
EPD-15 1 1/2 HP				85	77	68	58	48	38	26	15

EPD/Optima Performance Curve



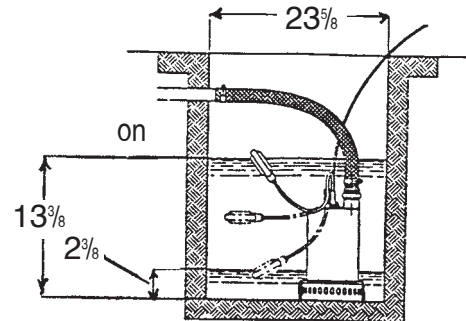
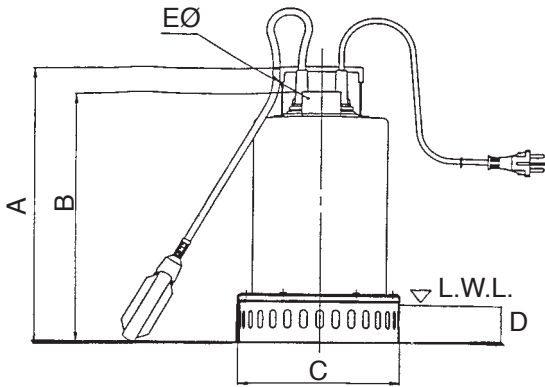


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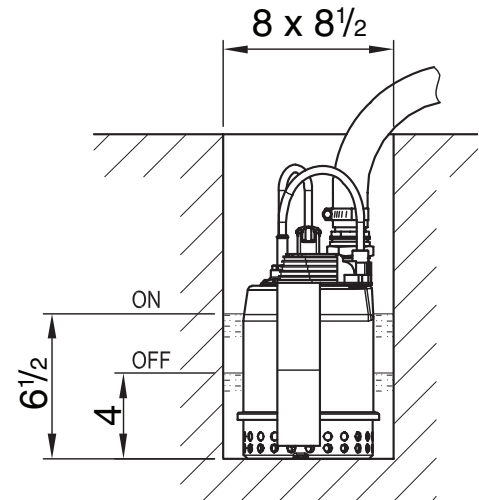
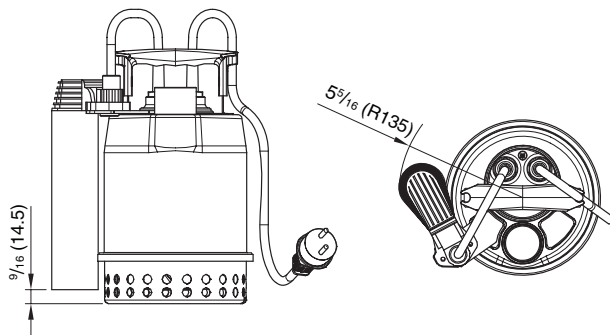
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**Model Optima-3AS1, Optima-3SS1  
EPD-3AS1  
EPD-5AS1 and 7AS1**  
Automatic Operation Pumps

**Water Level in Automatic Operation**



**Optima-3SS1**



**Dimensions: inch**

Phase	Discharge Size	Model	HP	Pump & Motor					Cable Size		Weight lbs.
				A	B	C	D	E	O.D.	Length	
Single	1 1/4	Optima-3AS1	1/3	10 3/4	9 9/32	6 9/16	2 3/8	1 1/4	0.335	20 FT.	11
		EPD-3AS1	1/3	10 3/4	9 9/32	6 9/16	2 3/8	1 1/4	0.335	20 FT.	11
		Optima-3SS1	1/3	10 3/4	9 9/32	6 9/16	2 3/8	1 1/4	0.335	20 FT.	11
	1 1/2	EPD-5AS1	1/2	17 3/16	13 3/8	8 1/4	2 3/8	1 1/2	0.335	20 FT.	26
		EPD-7AS1	3/4	17 3/16	13 3/8	8 1/4	2 3/8	1 1/2	0.335	20 FT.	26

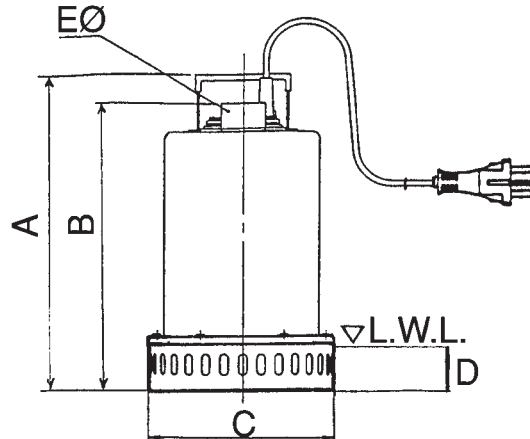
**Dimensions: mm**

Phase	Discharge Size	Model	HP	Pump & Motor					Cable Size		Weight kg.
				A	B	C	D	E	O.D.	Length	
Single	31.75	Optima-3AS1	1/3	273	231	167	60	31	8.50	6.09 M	5
		EPD-3AS1	1/3	273	231	167	60	31	8.50	6.09 M	5
		Optima-3SS1	1/3	273	231	167	60	31	8.50	6.09 M	5
	38.10	EPD-5AS1	1/2	437	340	210	60	38	8.50	6.09 M	12
		EPD-7AS1	3/4	437	340	210	60	38	8.50	6.09 M	12

**Dimensions**

Project: \_\_\_\_\_ Model: \_\_\_\_\_ Chk'd: \_\_\_\_\_ Date: \_\_\_\_\_

**Model Optima-3MS1  
EPD-3MS1  
EPD-5 to 15M**  
Manual Operation Pumps



**Dimensions: inch**

Phase	Discharge Size	Model	HP	Pump & Motor					Cable Size		Weight lbs.
				A*	B	C	D	E	O.D.	Length	
Single	1¼	Optima-3MS1	⅓	10¾	9 <sup>3</sup> / <sub>32</sub>	6 <sup>9</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>8</sub>	1¼	0.335	20 FT.	11
	1¼	EPD-3MS1	⅓	10¾	9 <sup>3</sup> / <sub>32</sub>	6 <sup>9</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>8</sub>	1¼	0.335	20 FT.	11
	1½	EPD-5MS1	½	17 <sup>3</sup> / <sub>16</sub>	13 <sup>3</sup> / <sub>8</sub>	8¼	2 <sup>3</sup> / <sub>8</sub>	1½	0.335	20 FT.	26
Three	1½	EPD-5MT2	½	13 <sup>7</sup> / <sub>8</sub>	12 <sup>3</sup> / <sub>8</sub>	8¼	2 <sup>3</sup> / <sub>8</sub>	1½	0.335	20 FT.	26
	1½	EPD-5MT4	½	13 <sup>7</sup> / <sub>8</sub>	12 <sup>3</sup> / <sub>8</sub>	8¼	2 <sup>3</sup> / <sub>8</sub>	1½	0.335	20 FT.	26
Single	1½	EPD-7MS1	¾	17 <sup>3</sup> / <sub>16</sub>	13 <sup>3</sup> / <sub>8</sub>	8¼	2 <sup>3</sup> / <sub>8</sub>	1½	0.335	20 FT.	29
Three	1½	EPD-7MT2	¾	13 <sup>7</sup> / <sub>8</sub>	12 <sup>3</sup> / <sub>8</sub>	8¼	2 <sup>3</sup> / <sub>8</sub>	1½	0.335	20 FT.	29
	1½	EPD-7MT4	¾	13 <sup>7</sup> / <sub>8</sub>	12 <sup>3</sup> / <sub>8</sub>	8¼	2 <sup>3</sup> / <sub>8</sub>	1½	0.335	20 FT.	29
	1½	EPD-10MT2	1	14 <sup>3</sup> / <sub>16</sub>	13 <sup>3</sup> / <sub>8</sub>	8¼	2 <sup>3</sup> / <sub>8</sub>	1½	0.335	20 FT.	31
	1½	EPD-10MT4	1	14 <sup>13</sup> / <sub>16</sub>	13 <sup>3</sup> / <sub>8</sub>	8¼	2 <sup>3</sup> / <sub>8</sub>	1½	0.335	20 FT.	31
	1½	EPD-15MT2	1½	14 <sup>13</sup> / <sub>16</sub>	13 <sup>3</sup> / <sub>8</sub>	8¼	2 <sup>3</sup> / <sub>8</sub>	1½	0.335	20 FT.	31
	1½	EPD-15MT4	1½	14 <sup>13</sup> / <sub>16</sub>	13 <sup>3</sup> / <sub>8</sub>	8¼	2 <sup>3</sup> / <sub>8</sub>	1½	0.335	20 FT.	31

**Dimensions: mm**

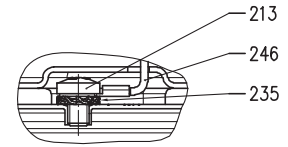
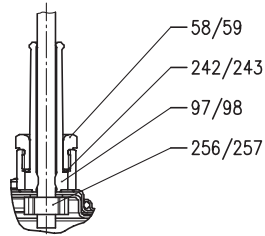
Phase	Discharge Size	Model	HP	Pump & Motor					Cable Size		Weight kg.
				A*	B	C	D	E	O.D.	Length	
Single	31.75	Optima-3MS1	⅓	273	231	167	60	31	8.50	6.09 M	5
	31.75	EPD-3MS1	⅓	273	231	167	60	31	8.50	6.09 M	5
	38.10	EPD-5MS1	½	437	340	210	60	38	8.50	6.09 M	12
Three	38.10	EPD-5MT2	½	352	315	210	60	38	8.50	6.09 M	12
	38.10	EPD-5MT4	½	352	315	210	60	38	8.50	6.09 M	12
Single	38.10	EPD-7MS1	¾	437	340	210	60	38	8.50	6.09 M	13
Three	38.10	EPD-7MT2	¾	352	315	210	60	38	8.50	6.09 M	13
	38.10	EPD-7MT4	¾	352	315	210	60	38	8.50	6.09 M	13
	38.10	EPD-10MT2	1	377	340	210	60	38	8.50	6.09 M	14
	38.10	EPD-10MT4	1	377	340	210	60	38	8.50	6.09 M	14
	38.10	EPD-15MT2	1½	377	340	210	60	38	8.50	6.09 M	14
	38.10	EPD-15MT4	1½	377	340	210	60	38	8.50	6.09 M	14

**NOTE:** \*A dimension listed = maximum height  
 PIGGY-BACK Plug comes on single phase manual pumps  
 Three phase Pumps **DO NOT** come with plug – Jacket is removed 2 inches & conductors are stripped ¾ inch.

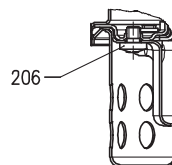
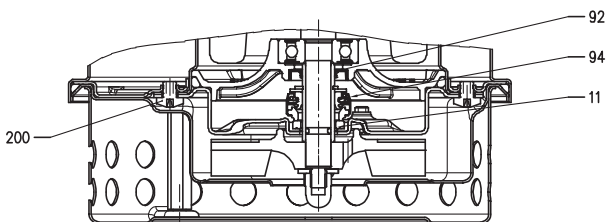
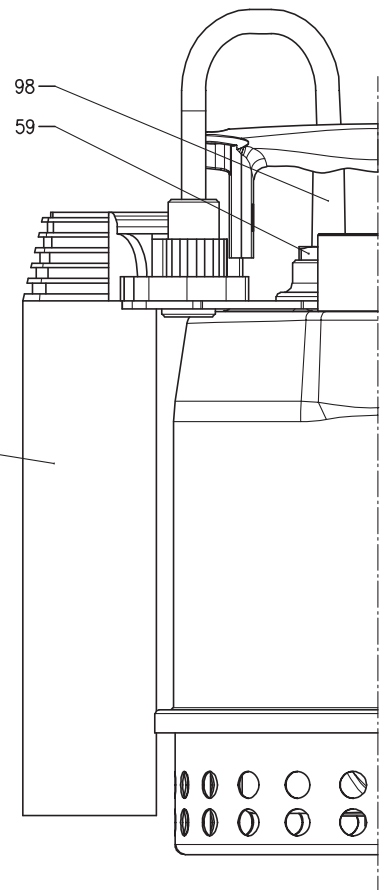
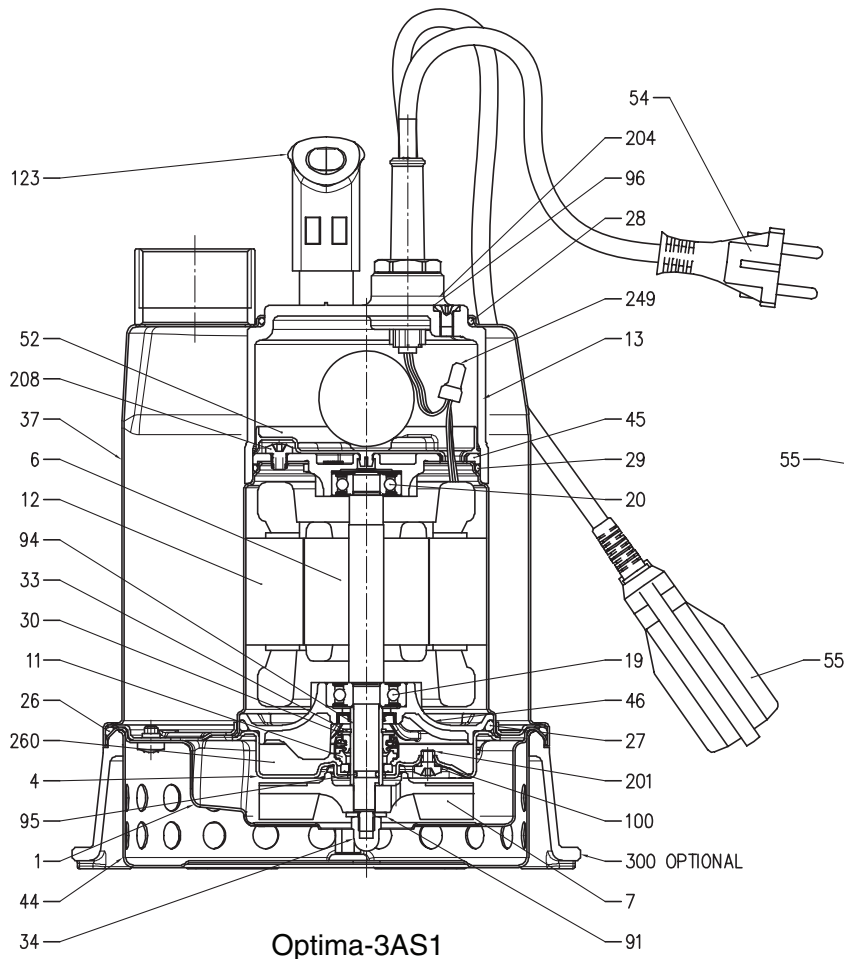
**Sectional View**

Project: \_\_\_\_\_ Model: \_\_\_\_\_ Chk'd: \_\_\_\_\_ Date: \_\_\_\_\_

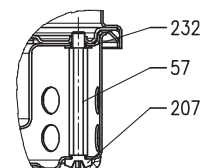
**Model Optima-3AS1  
Optima-3SS1**  
Automatic Operation Pumps



**Ground Wire**



**Suction Cover**



**Strainer**

**Sectional View – Part Number Reference**

Project: \_\_\_\_\_ Model: \_\_\_\_\_ Chk'd: \_\_\_\_\_ Date: \_\_\_\_\_

**Model Optima-3AS1  
Optima-3SS1  
Optima-3MS1**

**Part Number Reference**

N°	PART NAME	MATERIAL	STANDARD	Qty.
1	Suction cover	EN 1.4301 (AISI 304)	-	1
4	Casing cover	EN 1.4301 (AISI 304)	-	1
6	Shaft with rotor	EN 1.4305 (AISI 303)	-	1
7	Impeller	PPE+PS-HI-GF20	-	1
11	Mechanical seal		-	1
12	Motor frame with stator	EN 1.4301 (AISI 304)	-	1
13	Motor cover	PP-GF30	-	1
19	Lower ball bearing	-	-	1
20	Upper ball bearing	-	-	1
21	Adjusting ring	-	-	1
23	Capacitor	-	-	1
26	O-ring	NBR	-	1
27	O-ring	NBR	-	1
28	O-ring	NBR	-	1
29	O-ring	NBR	-	1
30	Washer	EN 1.4301 (AISI 304)	-	1
33	Seeger ring	Carbon steel TC80	UNI 7435	1
34	Impeller nut	A2 - 70 UNI 7323	UNI 5721	1
37	Outer casing	EN 1.4301 (AISI 304)	-	1
44	Strainer	EN 1.4301 (AISI 304)	-	1
45	Upper bearing housing	EN 1706 AC-46000 D	-	1
46	Lower bearing housing	EN 1706 AC-46000 D	-	1
52	Terminal insulating base	PA6	-	1
54	Power cable	-	-	1
55	Switch	-	-	1
57	Spacer	EN 1.4301 (AISI 304)	-	2
58	Power cable connector	PA66-GF30	-	1
59	Switch cable connector	PA66-GF30	-	1
91	Washer	EN 1.4301 (AISI 304)	-	1
92	Lip seal	NBR	-	1
94	Shaft sleeve	EN 1.4305 (AISI 303) ceramic coated	-	1
95	O-ring	NBR	-	1
96	O-ring	NBR	-	1
97	Power cable boot	NBR	-	1
98	Switch cable boot	NBR	-	1
100	O-ring	NBR	-	1
123	Handle	PP	-	1
200	Screw	A2 - 70 UNI 7323	UNI 7687	4
201	Screw	A2 - 70 UNI 7323	UNI 7687	1
204	Screw	A2 - 70 UNI 7323	UNI 7687	1
206	Screw	A2 - 70 UNI 7323	UNI 7687	3
207	Screw	A2 - 70 UNI 7323	UNI 7687	2
208	Screw	A2 - 70 UNI 7323	UNI 7687	3
213	Screw	A2 - 70 UNI 7323	UNI 7687	1
232	Washer	PA6	-	2
235	Washer	Zinked Steel	UNI 8842	1
242	Washer	EN 1.4301 (AISI 304)	-	1
243	Washer	EN 1.4301 (AISI 304)	-	1
246	Ground wire	-	-	1
256	Cable holder	-	-	1
257	Cable holder	-	-	1
260	Oil	Esso Marcol 152	-	40 cc
300	Minimum suction system	Thermoplastic elastomer vulcanizate	-	-

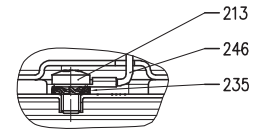
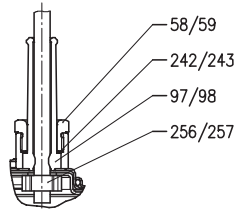


**Sectional View**

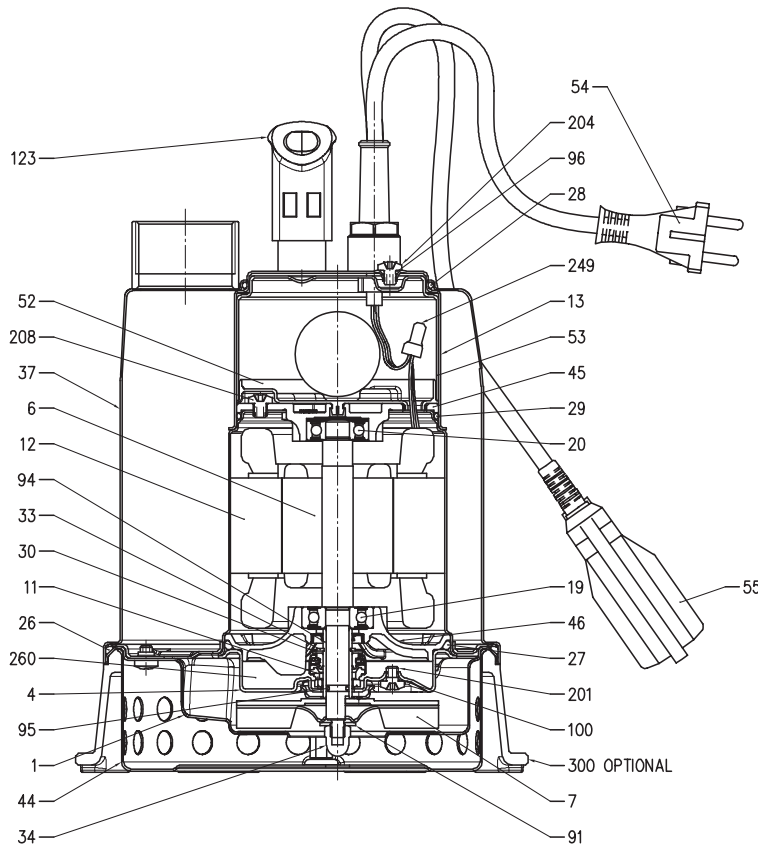
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**Model EPD-3AS1**

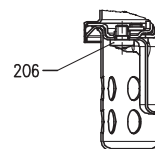
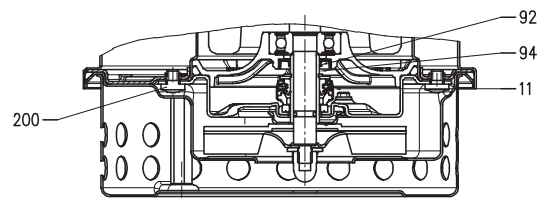
Automatic Operation Pumps



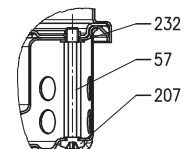
Ground Wire



**EPD-3AS1**



Suction Cover



Strainer

**Sectional View – Part Number Reference**

Project: \_\_\_\_\_ Model: \_\_\_\_\_ Chk'd: \_\_\_\_\_ Date: \_\_\_\_\_

**Model EPD-3AS1  
EPD-3MS1**

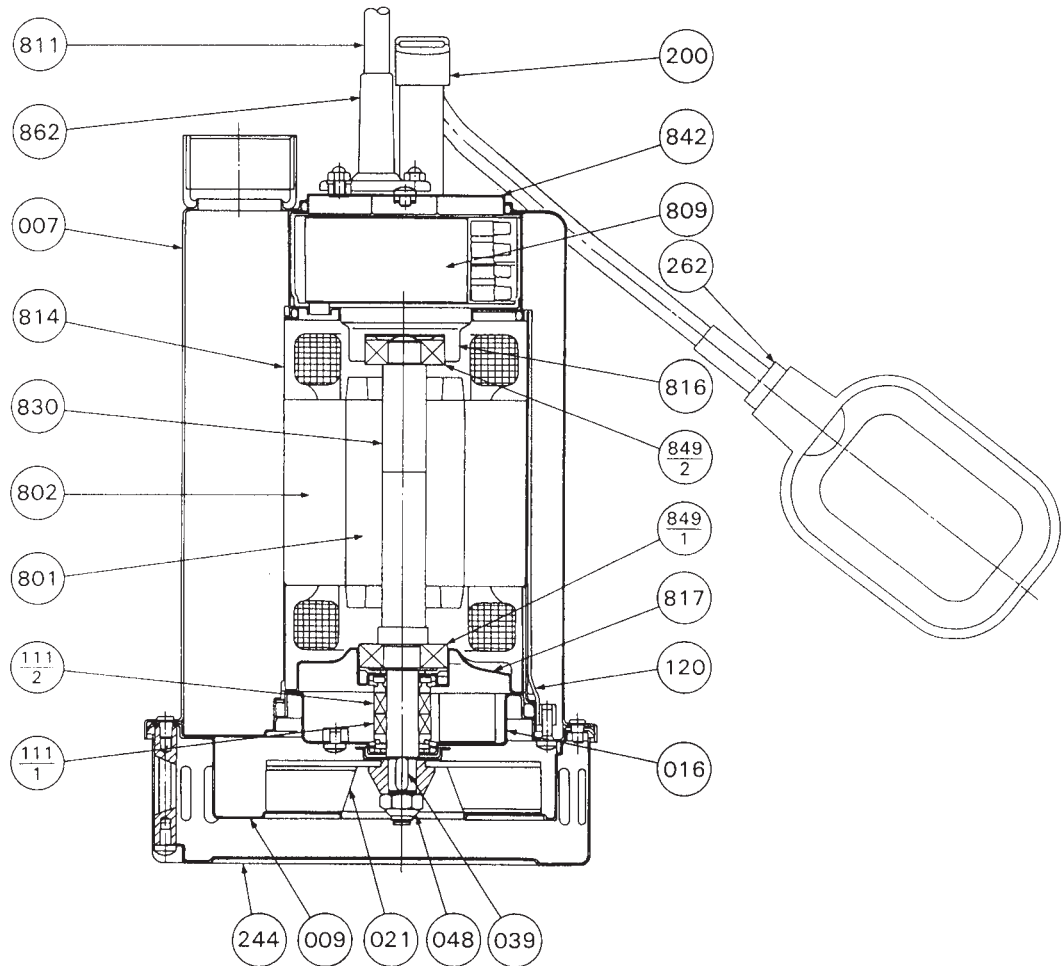
N°	PART NAME	MATERIAL	STANDARD	Qty.
1	Suction cover	EN 1.4301 (AISI 304)	-	1
4	Casing cover	EN 1.4301 (AISI 304)	-	1
6	Shaft with rotor	EN 1.4305 (AISI 303)	-	1
7	Impeller	EN 1.4301 (AISI 304)	-	1
11	Mechanical seal		-	1
12	Motor frame with stator	EN 1.4301 (AISI 304)	-	1
13	Motor cover	EN 1.4301 (AISI 304)	-	1
19	Lower ball bearing	-	-	1
20	Upper ball bearing	-	-	1
21	Adjusting ring	-	-	1
23	Capacitor	-	-	1
26	O-ring	NBR	-	1
27	O-ring	NBR	-	1
28	O-ring	NBR	-	1
29	O-ring	NBR	-	1
30	Washer	EN 1.4301 (AISI 304)	-	1
33	Seeger ring	Carbon steel TC80	UNI 7435	1
34	Impeller nut	A2 - 70 UNI 7323	UNI 5721	1
37	Pump casing	EN 1.4301 (AISI 304)	-	1
44	Strainer	EN 1.4301 (AISI 304)	-	1
45	Upper bearing housing	EN 1706 AC-46000 D	-	1
46	Lower bearing housing	EN 1706 AC-46000 D	-	1
52	Terminal insulating base	PA6	-	1
53	Terminal insulating box	PA6	-	1
54	Power cable	-	-	1
55	Switch	-	-	1
57	Spacer	EN 1.4301 (AISI 304)	-	2
58	Power cable connector	OT 58 UNI 5705-65 Nickel-plated Brass	-	1
59	Switch cable connector	OT 58 UNI 5705-65 Nickel-plated Brass	-	1
91	Washer	EN 1.4301 (AISI 304)	-	1
92	Lip seal	NBR	-	1
94	Shaft sleeve	EN 1.4305 (AISI 303) ceramic coated	-	1
95	O-ring	NBR	-	1
96	O-ring	NBR	-	1
97	Power cable connector	NBR	-	1
98	Switch cable connector	NBR	-	1
100	O-ring	NBR	-	1
123	Handle	PP	-	1
200	Screw	A2 - 70 UNI 7323	UNI 7687	4
201	Screw	A2 - 70 UNI 7323	UNI 7687	1
204	Screw	A2 - 70 UNI 7323	UNI 7687	1
206	Screw	A2 - 70 UNI 7323	UNI 7687	3
207	Screw	A2 - 70 UNI 7323	UNI 7687	2
208	Screw	A2 - 70 UNI 7323	UNI 7687	3
213	Screw	A2 - 70 UNI 7323	UNI 7687	1
232	Washer	PA6	-	1
235	Washer	Zinked Steel	UNI 8842	1
242	Washer	EN 1.4301 (AISI 304)	-	1
243	Washer	EN 1.4301 (AISI 304)	-	1
246	Ground wire	-	-	1
256	Strain relief	-	-	1
257	Strain relief	-	-	1
260	Oil	Esso Marcol 152	-	40 cc
300	Minimum suction system	Thermoplastic elastomer vulcanizate	-	-



**Sectional View**

Project: \_\_\_\_\_ Model: \_\_\_\_\_ Chk'd: \_\_\_\_\_ Date: \_\_\_\_\_

**Automatic Type Output 1/2 HP to 3/4 HP (Single Phase)**



Part No.	Part Name	Material	ASTM, AISI Code	No. for 1 Unit
007	Outer Casing	304 Stainless	AISI 304	1
009	Suction Cover	304 Stainless	AISI 304	1
016	Seal Cover	304 Stainless	AISI 304	1
021	Impeller	304 Stainless	AISI 304	1
039	Key	304 Stainless	AISI 304	1
048	Impeller Nut	304 Stainless	AISI 304	1 set
*111-1	Mechanical Seal	—		1 set
*111-2	Mechanical Seal	—		1 set
120	Connection Band	304 Stainless	AISI 304	
200	Lifting Hanger	304 Stainless	AISI 304	1
244	Strainer	304 Stainless	AISI 304	1
262	Float Switch	—		1

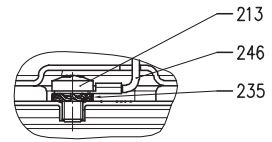
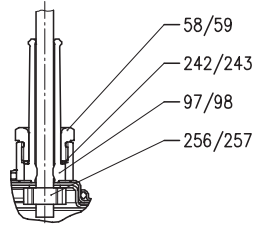
Part No.	Part Name	Material	ASTM, AISI Code	No. for 1 Unit
801	Rotor	—		1
802	Stator	—		1
809	Capacitor	—		1
811	Submersible Cable	—		1
814	Motor Frame	304 Stainless	AISI 304	1
816	Bracket	304 Stainless	AISI 304	1
817	Bracket	304 Stainless	AISI 304	1
830	Shaft	303 Stainless	AISI 303	1
842	Motor Cover			1
*849-1	Ball Bearing	—		1
*849-2	Ball Bearing	—		1
862	Cable Boot	NBR		1

\* Recommended spare parts

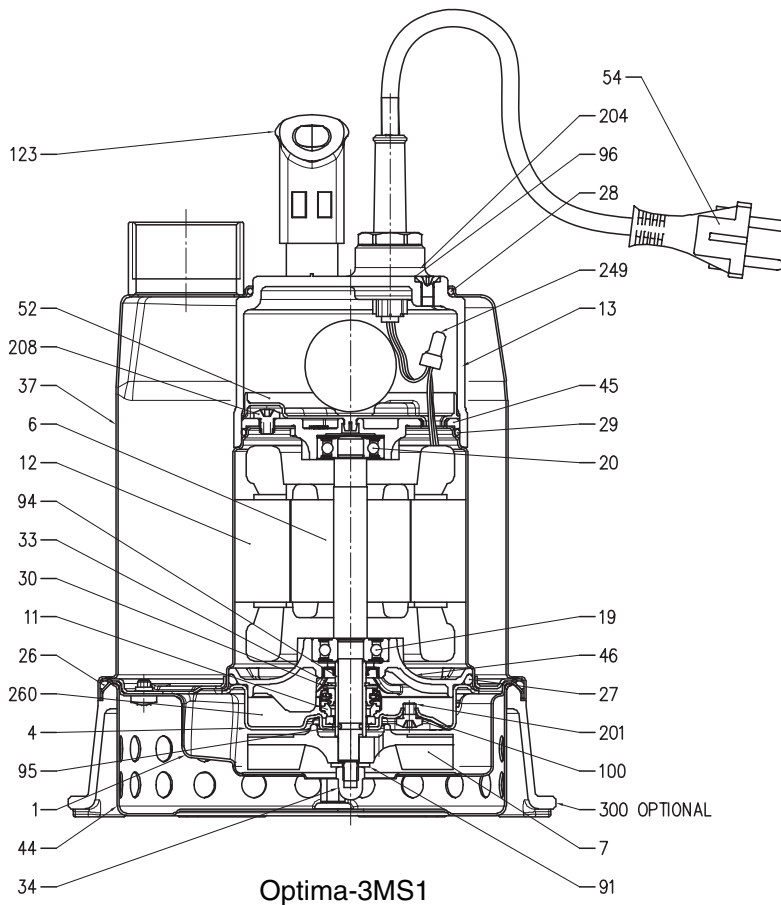
**Sectional View**

Project: \_\_\_\_\_ Model: \_\_\_\_\_ Chk'd: \_\_\_\_\_ Date: \_\_\_\_\_

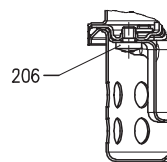
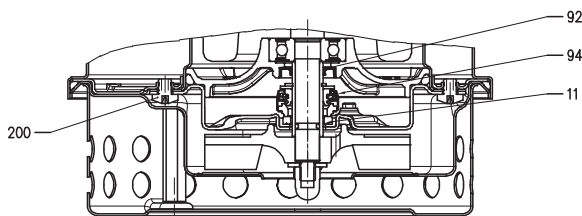
**Model Optima-3MS1**  
Manual Operation Pumps



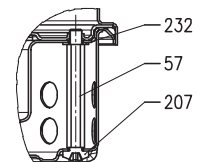
Ground Wire



Optima-3MS1



Suction Cover



Strainer

Refer to page 110 for Material Details.

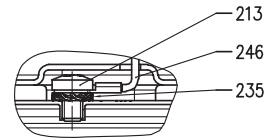
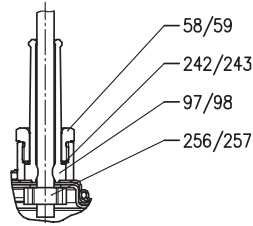




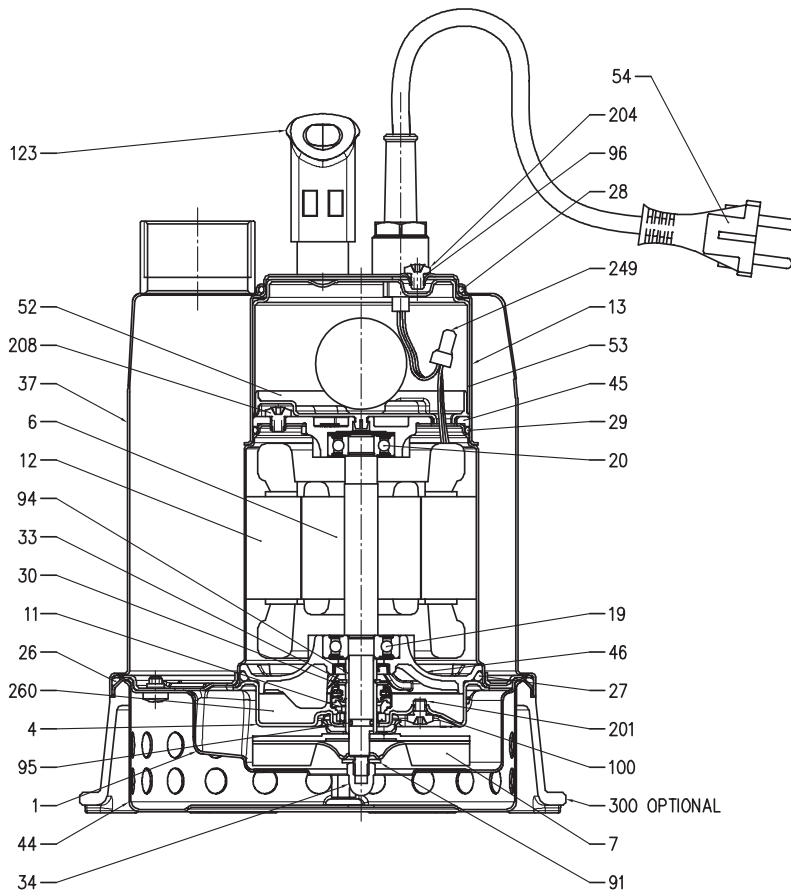
**Sectional View**

Project: \_\_\_\_\_ Model: \_\_\_\_\_ Chk'd: \_\_\_\_\_ Date: \_\_\_\_\_

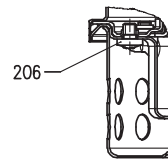
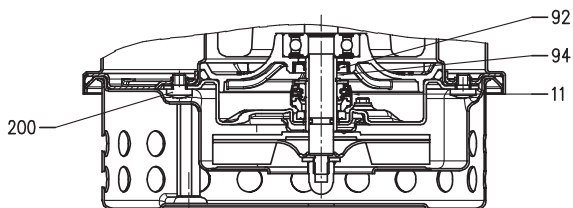
**Model EPD-3MS1**  
Manual Operation Pumps



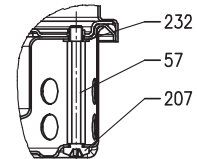
**Ground Wire**



**EPD-3MS1**



**Suction Cover**



**Strainer**

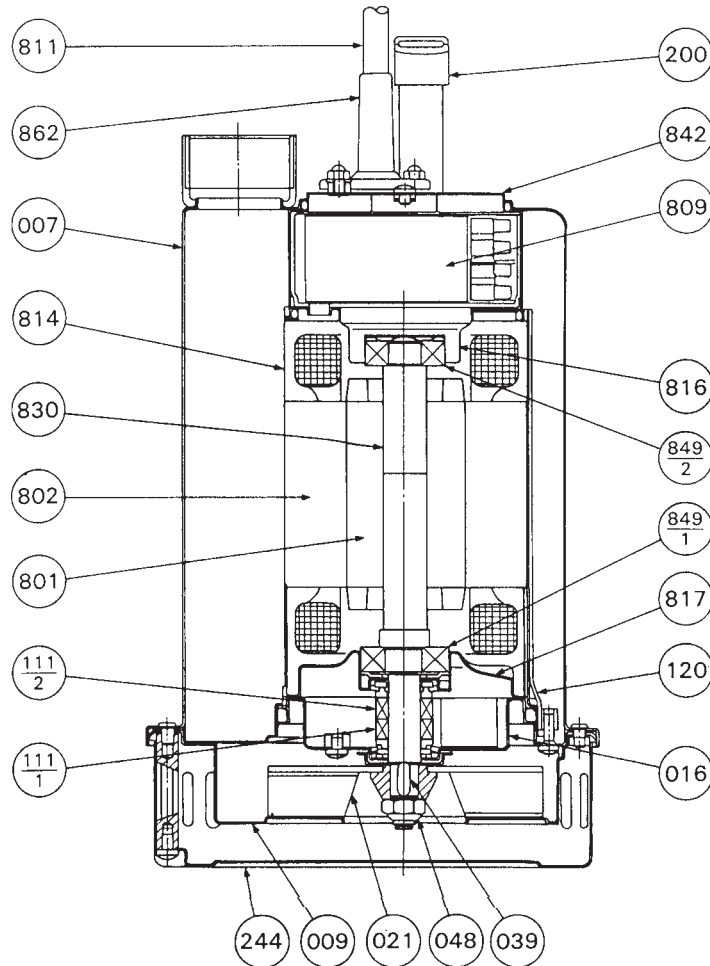
*Refer to page 112 for Material Details.*



**Sectional View**

Project: \_\_\_\_\_ Model: \_\_\_\_\_ Chk'd: \_\_\_\_\_ Date: \_\_\_\_\_

**Manual Type Output 1/2 HP to 3/4 HP (Single Phase)**



Part No.	Part Name	Material	ASTM, AISI Code	No. for 1 Unit
007	Outer Casing	304 Stainless	AISI 304	1
009	Inner Casing	304 Stainless	AISI 304	1
016	Seal Cover	304 Stainless	AISI 304	1
021	Impeller	304 Stainless	AISI 304	1
039	Key	304 Stainless	AISI 304	1
048	Impeller Nut	304 Stainless	AISI 304	1 set
*111-1	Mechanical Seal	—		1 set
*111-2	Mechanical Seal	—		1 set
120	Connection Band	304 Stainless	AISI 304	1
200	Lifting Hanger	304 Stainless	AISI 304	1
244	Strainer	304 Stainless	AISI 304	1
801	Rotor	—		1

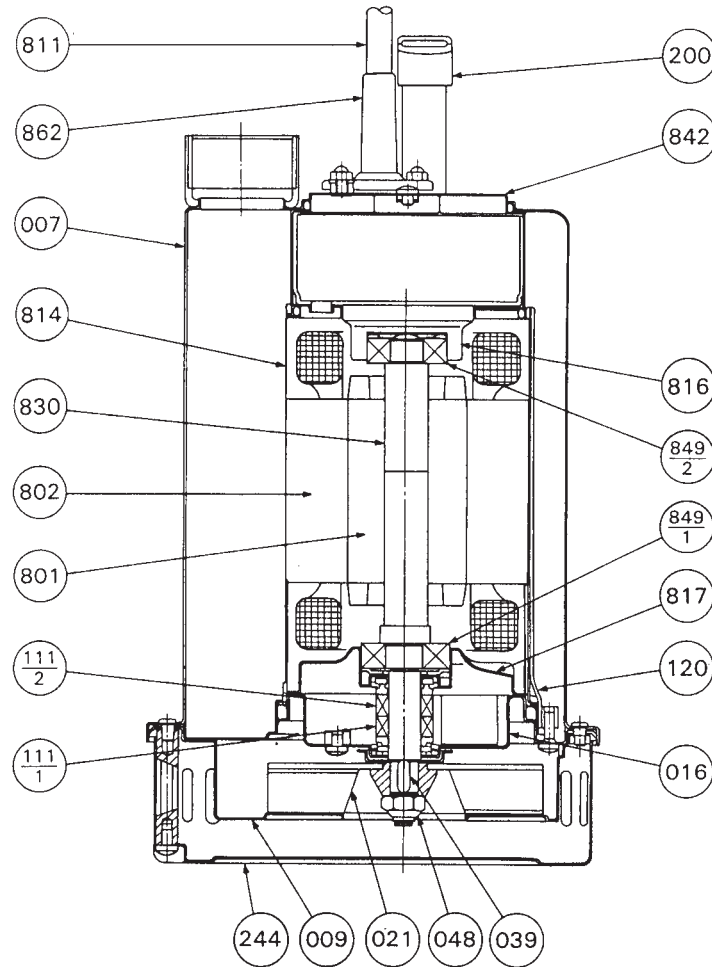
Part No.	Part Name	Material	ASTM, AISI Code	No. for 1 Unit
802	Stator	—		1
809	Capacitor	—		1
811	Submersible Cable	—		1
814	Motor Frame	304 Stainless	AISI 304	1
816	Bracket	304 Stainless	AISI 304	1
817	Bracket	304 Stainless	AISI 304	1
830	Shaft	303 Stainless	AISI 303	1
842	Motor Cover			1
*849-1	Ball Bearing	—		1
*849-2	Ball Bearing	—		1
862	Cable Boot	NBR		1

\* Recommended spare parts

**Sectional View**

Project: \_\_\_\_\_ Model: \_\_\_\_\_ Chk'd: \_\_\_\_\_ Date: \_\_\_\_\_

**Manual Type Output 1/2 HP to 1 1/2 HP (Three Phase)**



Part No.	Part Name	Material	ASTM, AISI Code	No. for 1 Unit
007	Outer Casing	304 Stainless	AISI 304	1
009	Inner Casing	304 Stainless	AISI 304	1
016	Seal Cover	304 Stainless	AISI 304	1
021	Impeller	304 Stainless	AISI 304	1
039	Key	304 Stainless	AISI 304	1
048	Impeller Nut	304 Stainless	AISI 304	1 set
*111-1	Mechanical Seal	—		1 set
*111-2	Mechanical Seal	—		1 set
120	Connection Band	304 Stainless	AISI 304	
200	Lifting Hanger	304 Stainless	AISI 304	1
244	Strainer	304 Stainless	AISI 304	1

Part No.	Part Name	Material	ASTM, AISI Code	No. for 1 Unit
801	Rotor	—		1
802	Stator	—		1
811	Submersible Cable	—		1
814	Motor Frame	304 Stainless	AISI 304	1
816	Bracket	304 Stainless	AISI 304	1
817	Bracket	304 Stainless	AISI 304	1
830	Shaft	303 Stainless	AISI 303	1
842	Motor Cover			1
*849-1	Ball Bearing	—		1
*849-2	Ball Bearing	—		1
862	Cable Foot	NBR		1

\* Recommended spare parts

**Motor Specification**

Project: \_\_\_\_\_ Model: \_\_\_\_\_ Chk'd: \_\_\_\_\_ Date: \_\_\_\_\_

**Model Optima 3A, 3M and 3S – 2 Pole Motor Specification**

OUTPUT (HP)	PHASE	RATING			LOCKED ROTOR CURRENT A	INSULATION CLASS	OVER LOAD PROTECTION	CABLE				PERFORMANCE DATA AT RATING POINT		RESISTANCE AT 20°C OHMS	Symbols Auto/Manual	
		VOLTAGE V	CURRENT A	SPEED R.P.M.				TYPE	No. OF COND	GAUGE mm <sup>2</sup> AWG	LENGTH Ft	EFFICIENCY %	POWER FACTOR %			
1/3	SINGLE	115	4.4	3340	10	F	BUILT-IN AUTO RESET	SOW-A	3	1.25	#16	20	67	96	4/10.6	SA/SM

**Model EPD – 2 Pole Motor Specification**

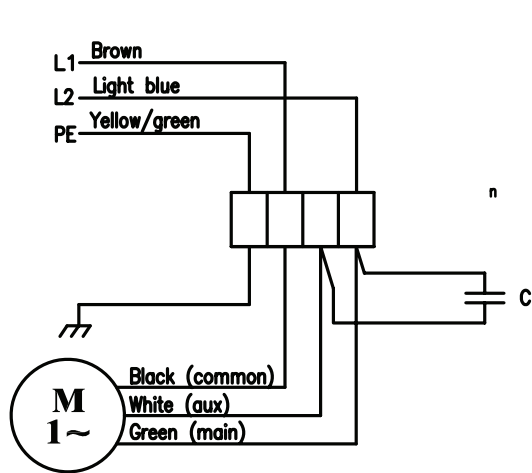
HP	PHASE	RATING			LOCKED ROTOR CURRENT A	INSULATION CLASS	OVER LOAD PROTECTION	CABLE				PERFORMANCE DATA AT RATING POINT		RESISTANCE AT 20°C OHMS	Symbols Auto/Manual	
		VOLTAGE V	CURRENT A	SPEED R.P.M.				TYPE	No. OF COND	GAUGE mm <sup>2</sup> AWG	LENGTH Ft	EFFICIENCY %	POWER FACTOR %			
1/3	SINGLE	115	4.4	3340	10	F	BUILT-IN AUTO RESET	SOW-A	3	1.25	#16	20	67	96	4/10.6	SA/SM
1/2	SINGLE	115	9.0	3430	36		BUILT-IN AUTO RESET		3	1.25	#16	20	66.5	93	0.98/2.6	SA/SM
	THREE	230	3.2	3450	19		—	SOW-A	4	1.25	#16	20	72.5	76	5	SM
		460	1.55	3440	9.5		—		4	1.25	#16	20	72.5	70	21.5	
	3/4	SINGLE	115	12.2	3440		48	BUILT-IN AUTO RESET	SOW-A	3	1.25	#16	20	66.5	96	0.75/2.3
THREE		230	3.8	3420	24		—	STOW-A	4	1.25	#16	20	73	79	4.1	SM
		460	2	3440	12		—		4	1.25	#16	20	75.5	75	16	
1	THREE	230	4.8	3450	31		—		4	1.25	#16	20	76	75	3.2	SM
		460	2.5	3460	17		—		4	1.25	#16	20	75.5	75	11	
1 1/2	THREE	230	5.3	3420	31		—		4	1.25	#16	20	76	80	3.2	SM
		460	2.7	3430	17		—		4	1.25	#16	20	76	80	11	

**Dimensions**

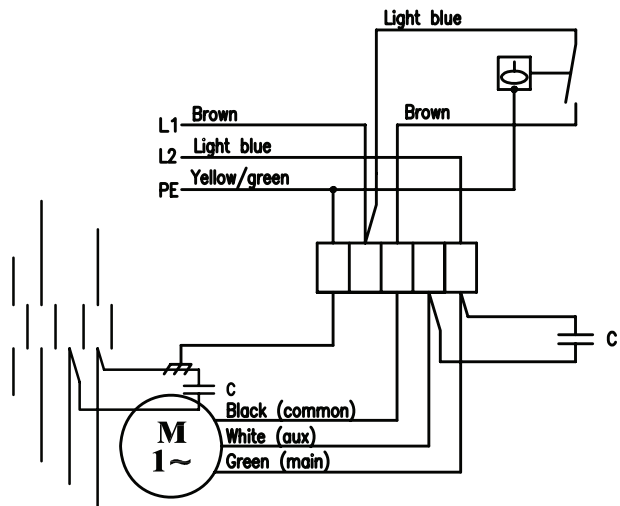
Project: \_\_\_\_\_ Model: \_\_\_\_\_ Chk'd: \_\_\_\_\_ Date: \_\_\_\_\_

- Output 1/3 HP Single Phase

WITHOUT FLOAT SWITCH



WITH FLOAT SWITCH

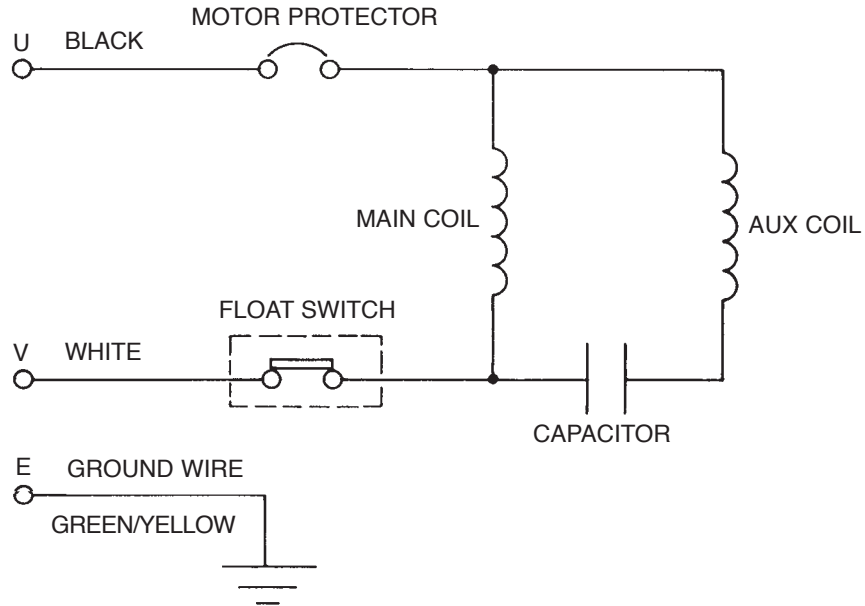


**Motor Wiring Diagram**

Project: \_\_\_\_\_ Model: \_\_\_\_\_ Chk'd: \_\_\_\_\_ Date: \_\_\_\_\_

**Automatic Operation Type Output (Single Phase)**

- Output 1/2 to 3/4 HP

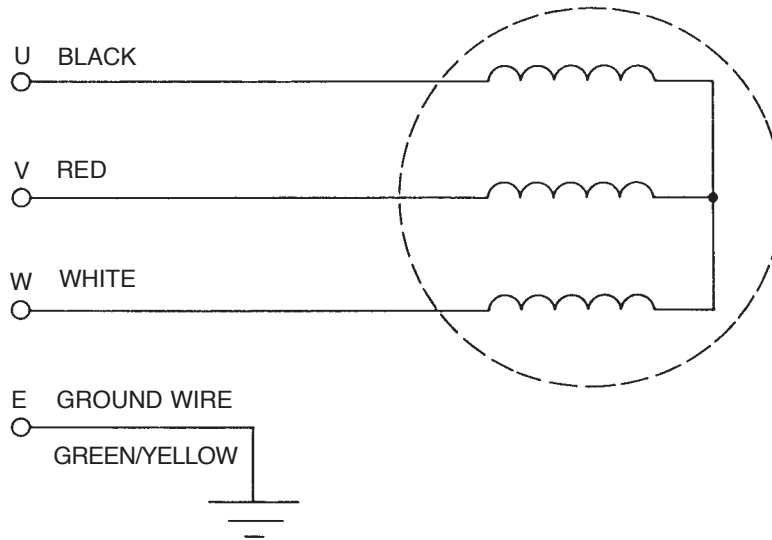


**Motor Wiring Diagram**

Project: \_\_\_\_\_ Model: \_\_\_\_\_ Chk'd: \_\_\_\_\_ Date: \_\_\_\_\_

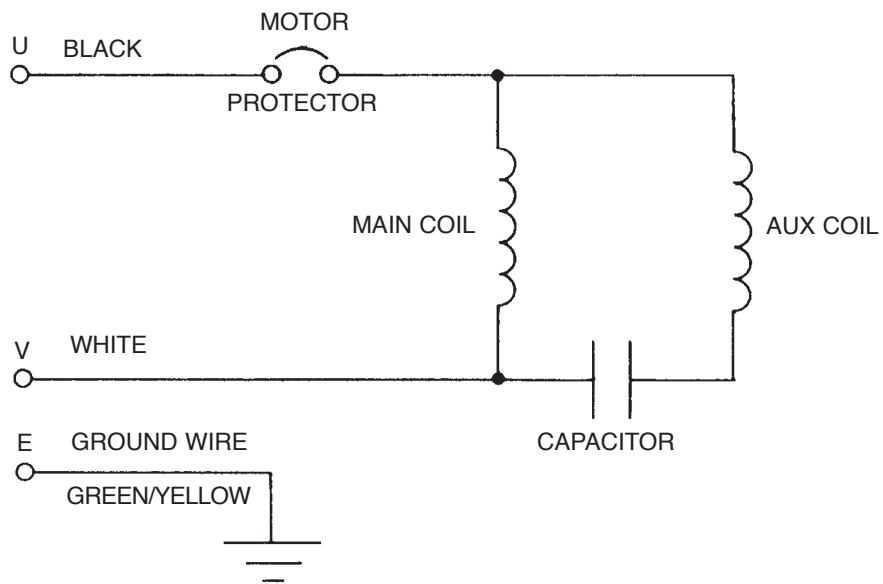
**Manual Operation Type Output (Three Phase)**

- Output 1/2 to 1 1/2 HP



**Manual Operation Type Output (Single Phase)**

- Output 1/2 to 3/4 HP



**Electrical Data**

Project: \_\_\_\_\_ Model: \_\_\_\_\_ Chk'd: \_\_\_\_\_ Date: \_\_\_\_\_

• 1/3 to 3/4 HP, 60HZ, Single Phase, 115 Volt

Name-Plate Rating	ITEM NO.	Optima-3	EPD-3	EPD-5	EPD-7	
	Output (HP)	1/3	1/3	1/2	3/4	
	Phase	1	1	1	1	
	Poles	2	2	2	2	
	Volts	115	115	115	115	
	Amperes	4.4	4.4	9	12.2	
	Speed	3350	3350	3430	3410	
	Insulation Class	F	F	F	F	
Capacitor $\mu$ F	Start	—	—	—	—	
	Run	20	20	55	63	
No Load Test	Amperes	3.4	3.4	5.5	5.6	
	Watts	180	180	300	300	
Resistance at 20°C OHMS	Main Coil	4	4	0.98	0.75	
	Aux. Coil	10.6	10.6	2.6	2.3	
100% Load	Current Amp.	4.4	4.4	9	12.2	
	Efficiency %	67	67	66.5	66.5	
	Power Factor %	96	96	93	96	
	Speed RPM	3340	3340	3430	3440	
Locked Rotor Torque	%	36	36	53	47	
Locked Rotor Current	Amp.	10	10	36	48	
Vibration	Micron					
Noise	Phon (50 cm)					
Number Starts Per Hour		20	20	20	20	
Design Standard		NEMA (EQUIVALENT)				
Voltage Tolerance	%	±5				
Frequency Tolerance	%	±5				
(Ref. data Mfr.'s Symbols) Auto/Manual		SA/SM	SA/SM	SA/SM	SA/SM	



**Electrical Data**

Project: \_\_\_\_\_ Model: \_\_\_\_\_ Chk'd: \_\_\_\_\_ Date: \_\_\_\_\_

**• 1/2 to 1 1/2 HP, 60HZ, Three Phase, 230 Volt**

Name-Plate Rating	ITEM NO.	EPD-5	EPD-7	EPD-10	EPD-15	
	Output (HP)	1/2	3/4	1	1 1/2	
	Phase	3	3	3	3	
	Poles	2	2	2	2	
	Volts	230	230	230	230	
	Amperes	3.2	3.8	4.8	5.3	
	Speed	3450	3420	3450	3420	
	Insulation Class	F	F	F	F	
Capacitor $\mu$ F	Start	—	—	—	—	
	Run	—	—	—	—	
No Load Test	Amperes	2.2	2.6	2.9	2.9	
	Watts	190	180	250	250	
Resistance at 20°C OHMS	Main Coil	5	4.1	3.2	3.2	
	Aux. Coil	—	—	—	—	
100% Load	Current Amp.	3.2	3.8	4.8	5.3	
	Efficiency %	72.5	75.5	76	76	
	Power Factor %	76	79	75	80	
	Speed RPM	3450	3420	3450	3420	
Locked Rotor Torque	%	450	430	440	370	
Locked Rotor Current	Amp.	19	24	31	31	
Vibration	Micron					
Noise	Phon (50 cm)					
Number Starts Per Hour		20	20	20	20	
Design Standard		NEMA (EQUIVALENT)				
Voltage Tolerance	%	±5				
Frequency Tolerance	%	±5				
(Ref. data Mfr.'s Symbols)		SM	SM	SM	SM	



**Electrical Data**

Project: \_\_\_\_\_ Model: \_\_\_\_\_ Chk'd: \_\_\_\_\_ Date: \_\_\_\_\_

• ½ to 1½ HP, 60HZ, Three Phase, 460 Volt

Name-Plate Rating	ITEM NO.	EPD-5	EPD-7	EPD-10	EPD-15	
	Output (HP)	½	¾	1	1½	
	Phase	3	3	3	3	
	Poles	2	2	2	2	
	Volts	460	460	460	460	
	Amperes	1.55	2	2.5	2.7	
	Speed	3440	3440	3460	3430	
	Insulation Class	F	F	F	F	
Capacitor μF	Start	—	—	—	—	
	Run	—	—	—	—	
No Load	Amperes	1.1	1.3	1.6	1.6	
	Watts	180	230	240	240	
Test Resistance at	Main Coil	21.5	16	11	11	
	Aux. Coil	—	—	—	—	
20°C OHMS 100%	Current Amp.	1.55	2	2.5	2.7	
	Efficiency %	72.5	75.5	75.5	76	
	Power Factor %	70	75	70	80	
	Speed RPM	3440	3440	3460	3430	
Locked Rotor Torque	%	480	470	550	460	
Locked Rotor Current	Amp.	9.5	12	17	17	
Vibration	Micron					
Noise	Phon (50 cm)					
Number Starts Per Hour		20	20	20	20	
Design Standard		NEMA (EQUIVALENT)				
Voltage Tolerance	%	±5				
Frequency Tolerance	%	±5				
(Ref. data Mfr.'s Symbols)		SM	SM	SM	SM	

