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

Automatic Operation Pumps

Performance: ISO 2548

	Standard	Optional
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	
Limitation Maximum Water Temperature	122°F/50°C (140°F/60°C intermittent duty)	
Solids	3/8" Spherical (2% by concentration)	
Synchronous Speed	3600 RPM	
Materials Casing Impeller Shaft Motor Frame Fasteners	304L Stainless Steel 304L Stainless Steel* 303 Stainless Steel 304L Stainless Steel 304L Stainless Steel	
Shaft Seal (Double)** 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

	Standard	Optional
Discharge Size	1/3 HP – 1 1/4 inch	
Range of HP	1/2 HP through 1 1/2 HP – 1 1/2 inch	
Range of Performance	1/3, 1/2, 3/4, 1, and 1 1/2 HP Capacity 2.7 to 86 GPM Head 9.3 to 61 feet	
Limitation Maximum Water Temperature	122°F/50°C (140°F/60°C intermittent duty)	
Solids	3/8" Spherical (2% by concentration)	
Synchronous Speed	3600 RPM	
Materials Casing Impeller Shaft Motor Frame Fasteners	304L Stainless Steel 304L Stainless Steel* 303 Stainless Steel 304L Stainless Steel 304L Stainless Steel	
Shaft Seal (Double)** 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

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 $\frac{3}{8}$ " 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.



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 $\frac{3}{8}$ " 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.



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.

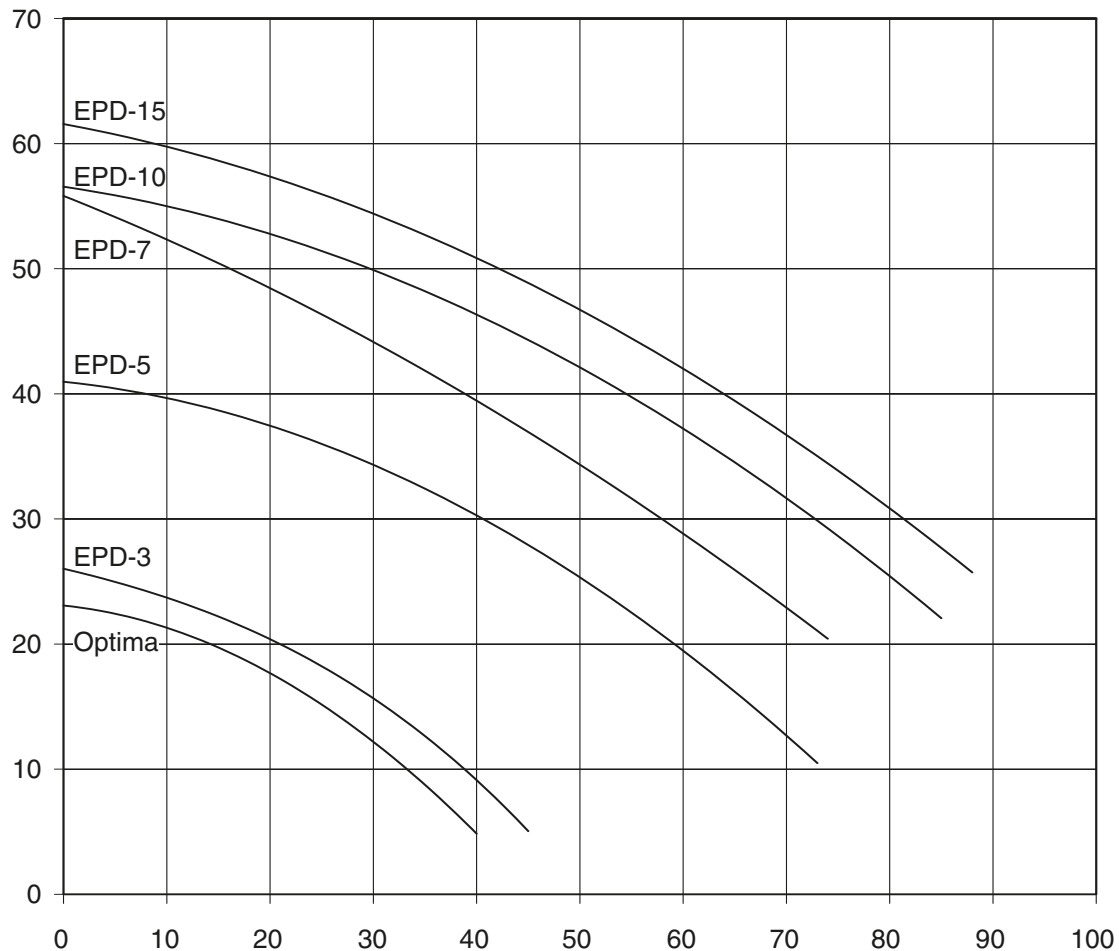


Performance Table

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	15							
EPD-3 1/3 HP	45	39	31	21	5						
EPD-5 1/2 HP		73	67	60	51	40	27	9			
EPD-7 3/4 HP				74	67	58.5	49	39	27	16	
EPD-10 1 HP				83.5	82	75	65	55	42	27	
EPD-15 1 1/2 HP					88	81.5	74	65	54	42	25

EPD/Optima Performance Curve



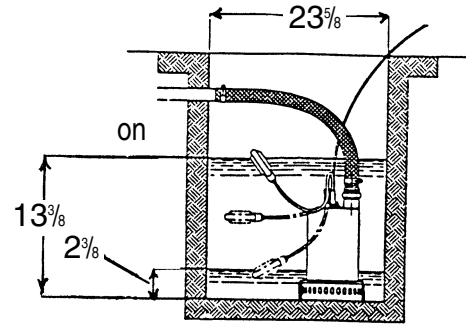
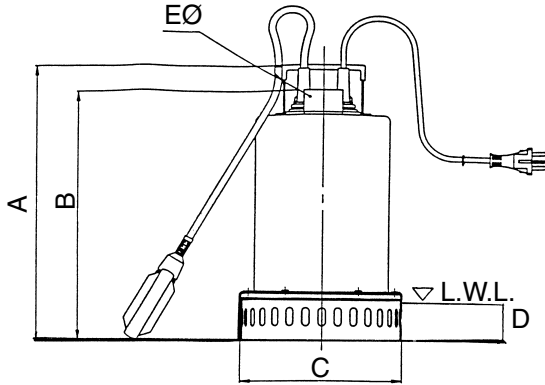
Dimensions

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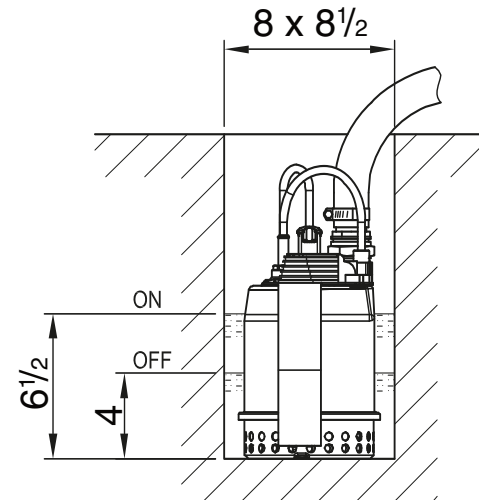
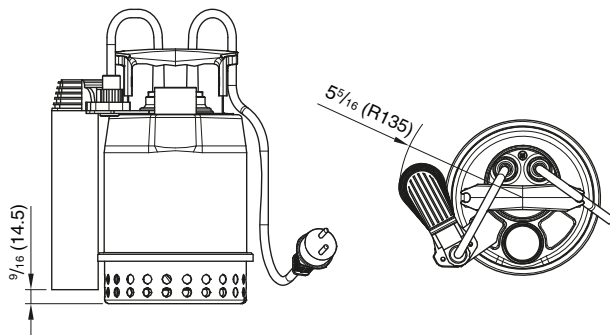
**Model Optima-3AS1, Optima-3SS1
EPD3SS1
EPD-3AS1
EPD-5AS1 and 7AS1**

Automatic Operation Pumps

Water Level in Automatic Operation



Optima-3SS1, EPD-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 3/32	6 9/16	2 3/8	1 1/4	0.335	20 FT.	11
		EPD-3AS1	1/3	10 3/4	9 3/32	6 9/16	2 3/8	1 1/4	0.335	20 FT.	11
		Optima-3SS1	1/3	10 3/4	9 3/32	6 9/16	2 3/8	1 1/4	0.335	20 FT.	11
		EPD-3SS1	1/3	10 3/4	9 3/32	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

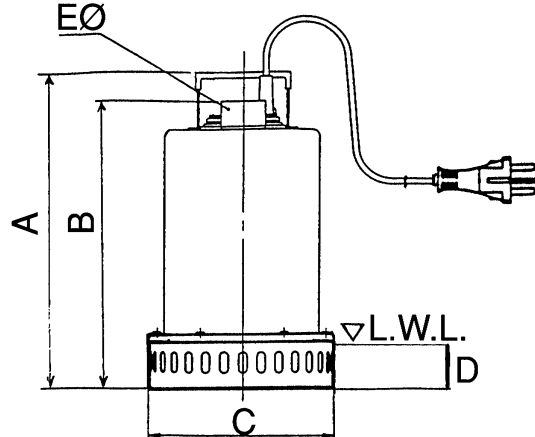
Dimensions: mm

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
		EPD-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	1 ¹ / ₄	Optima-3MS1	1 ¹ / ₃	10 ³ / ₄	9 ³ / ₃₂	6 ³ / ₁₆	2 ³ / ₈	1 ¹ / ₄	0.335	20 FT.	11
	1 ¹ / ₄	EPD-3MS1	1 ¹ / ₃	10 ³ / ₄	9 ³ / ₃₂	6 ³ / ₁₆	2 ³ / ₈	1 ¹ / ₄	0.335	20 FT.	11
	1 ¹ / ₂	EPD-5MS1	1 ¹ / ₂	17 ³ / ₁₆	13 ³ / ₈	8 ¹ / ₄	2 ³ / ₈	1 ¹ / ₂	0.335	20 FT.	26
Three	1 ¹ / ₂	EPD-5MT2	1 ¹ / ₂	13 ⁷ / ₈	12 ³ / ₈	8 ¹ / ₄	2 ³ / ₈	1 ¹ / ₂	0.335	20 FT.	26
	1 ¹ / ₂	EPD-5MT4	1 ¹ / ₂	13 ⁷ / ₈	12 ³ / ₈	8 ¹ / ₄	2 ³ / ₈	1 ¹ / ₂	0.335	20 FT.	26
Single	1 ¹ / ₂	EPD-7MS1	3 ⁴ / ₄	17 ³ / ₁₆	13 ³ / ₈	8 ¹ / ₄	2 ³ / ₈	1 ¹ / ₂	0.335	20 FT.	29
Three	1 ¹ / ₂	EPD-7MT2	3 ⁴ / ₄	13 ⁷ / ₈	12 ³ / ₈	8 ¹ / ₄	2 ³ / ₈	1 ¹ / ₂	0.335	20 FT.	29
	1 ¹ / ₂	EPD-7MT4	3 ⁴ / ₄	13 ⁷ / ₈	12 ³ / ₈	8 ¹ / ₄	2 ³ / ₈	1 ¹ / ₂	0.335	20 FT.	29
	1 ¹ / ₂	EPD-10MT2	1	14 ³ / ₁₆	13 ³ / ₈	8 ¹ / ₄	2 ³ / ₈	1 ¹ / ₂	0.335	20 FT.	31
	1 ¹ / ₂	EPD-10MT4	1	14 ¹³ / ₁₆	13 ³ / ₈	8 ¹ / ₄	2 ³ / ₈	1 ¹ / ₂	0.335	20 FT.	31
	1 ¹ / ₂	EPD-15MT2	1 ¹ / ₂	14 ¹³ / ₁₆	13 ³ / ₈	8 ¹ / ₄	2 ³ / ₈	1 ¹ / ₂	0.335	20 FT.	31
	1 ¹ / ₂	EPD-15MT4	1 ¹ / ₂	14 ¹³ / ₁₆	13 ³ / ₈	8 ¹ / ₄	2 ³ / ₈	1 ¹ / ₂	0.335	20 FT.	31

Dimensions: mm

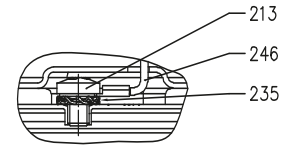
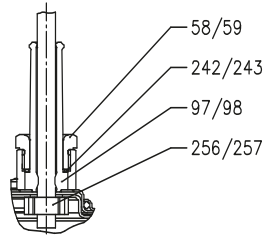
Phase	Discharge Size	Model	HP	Pump & Motor					Cable Size		Weight kg.
				A	B	C	D	E	O.D.	Length	
Single	31.75	Optima-3MS1	1 ¹ / ₃	273	231	167	60	31	8.50	6.09 M	5
	31.75	EPD-3MS1	1 ¹ / ₃	273	231	167	60	31	8.50	6.09 M	5
	38.10	EPD-5MS1	1 ¹ / ₂	437	340	210	60	38	8.50	6.09 M	12
Three	38.10	EPD-5MT2	1 ¹ / ₂	352	315	210	60	38	8.50	6.09 M	12
	38.10	EPD-5MT4	1 ¹ / ₂	352	315	210	60	38	8.50	6.09 M	12
Single	38.10	EPD-7MS1	3 ⁴ / ₄	437	340	210	60	38	8.50	6.09 M	13
Three	38.10	EPD-7MT2	3 ⁴ / ₄	352	315	210	60	38	8.50	6.09 M	13
	38.10	EPD-7MT4	3 ⁴ / ₄	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	1 ¹ / ₂	377	340	210	60	38	8.50	6.09 M	14
	38.10	EPD-15MT4	1 ¹ / ₂	377	340	210	60	38	8.50	6.09 M	14

NOTE: 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 5/8 inch.

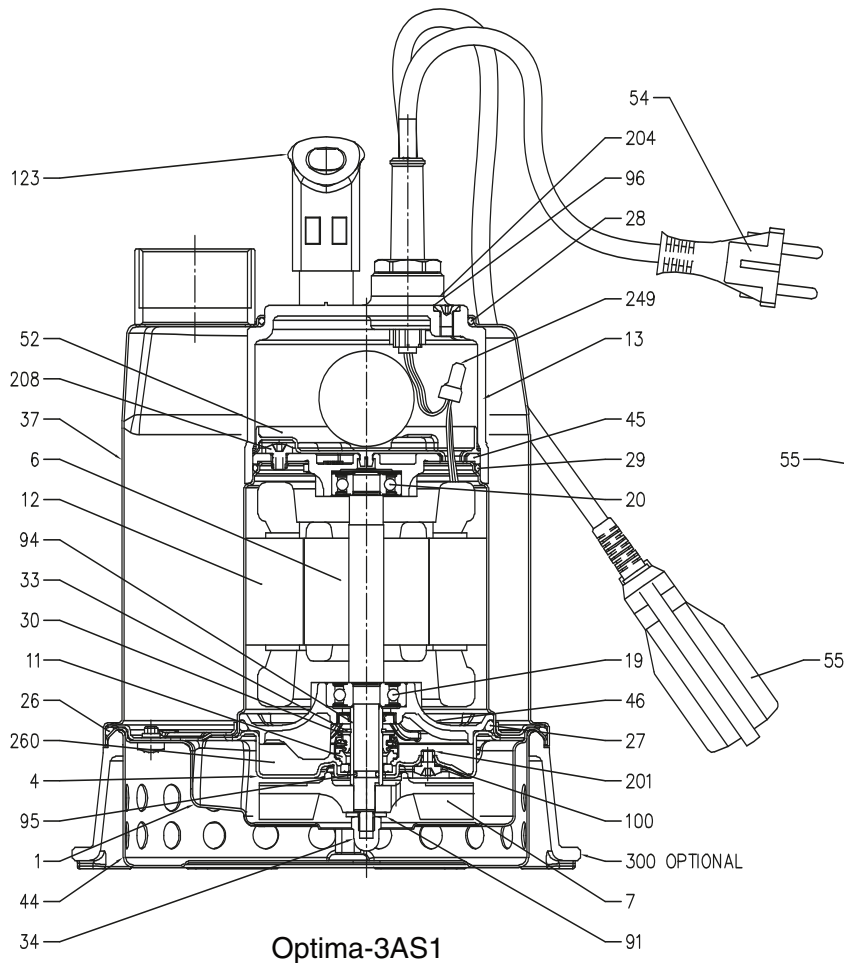
Sectional View

Project: _____ Model: _____ Chk'd: _____ Date: _____

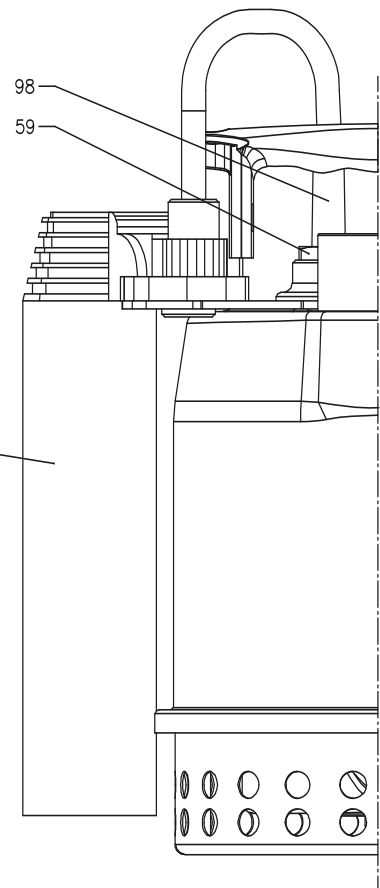
**Model Optima-3AS1
Optima-3SS1
Automatic Operation Pumps**



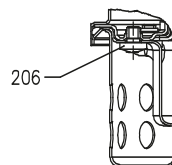
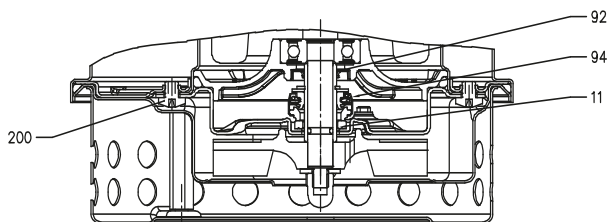
Ground Wire



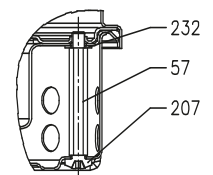
Optima-3AS1



Optima-3SS1



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	-	-



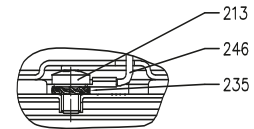
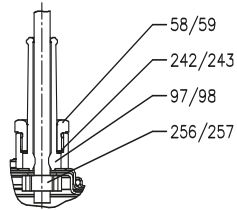
Sectional View

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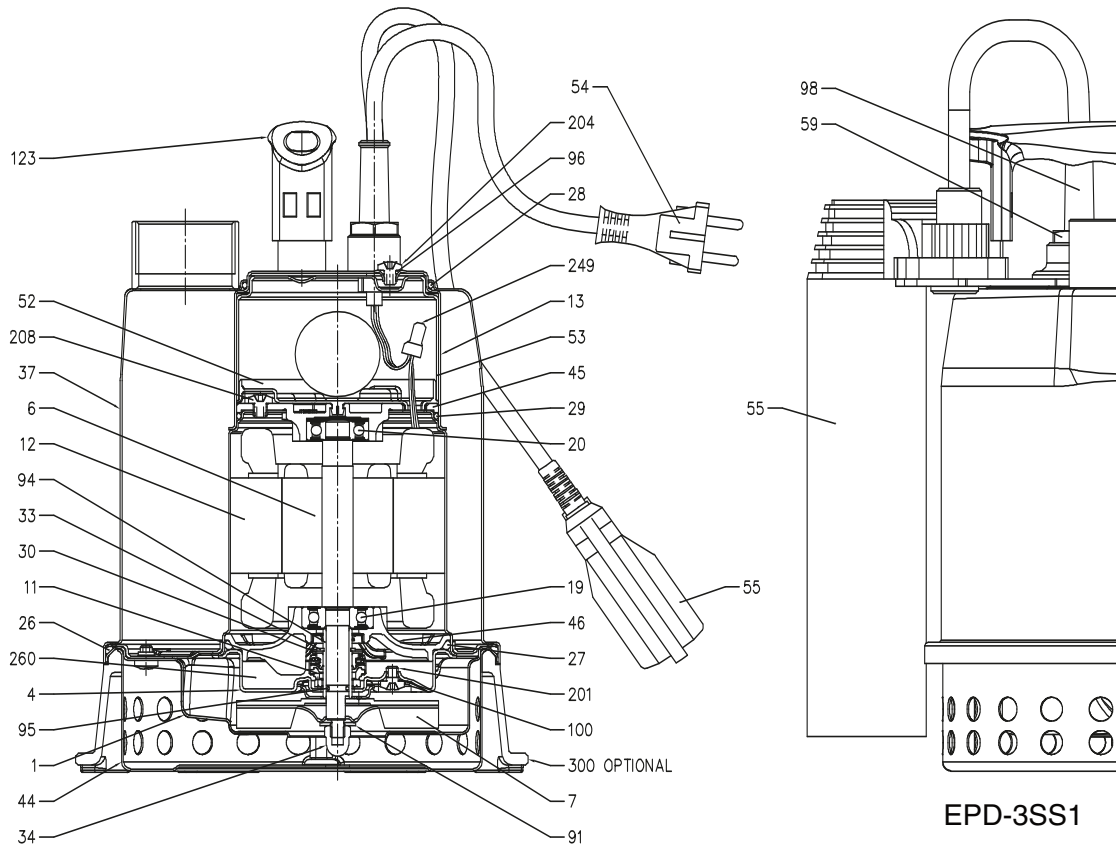
Model EPD-3AS1

EPD-3SS1

Automatic Operation Pumps

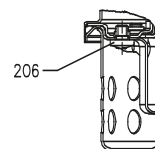
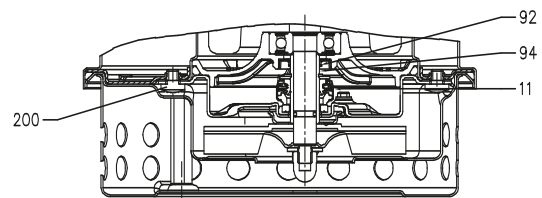


Ground Wire

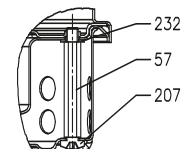


EPD-3AS1

EPD-3SS1



Suction Cover



Strainer

Sectional View – Part Number Reference

Project: _____ Model: _____ Chk'd: _____ Date: _____

**Model EPD-3AS1
EPD-3SS1
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

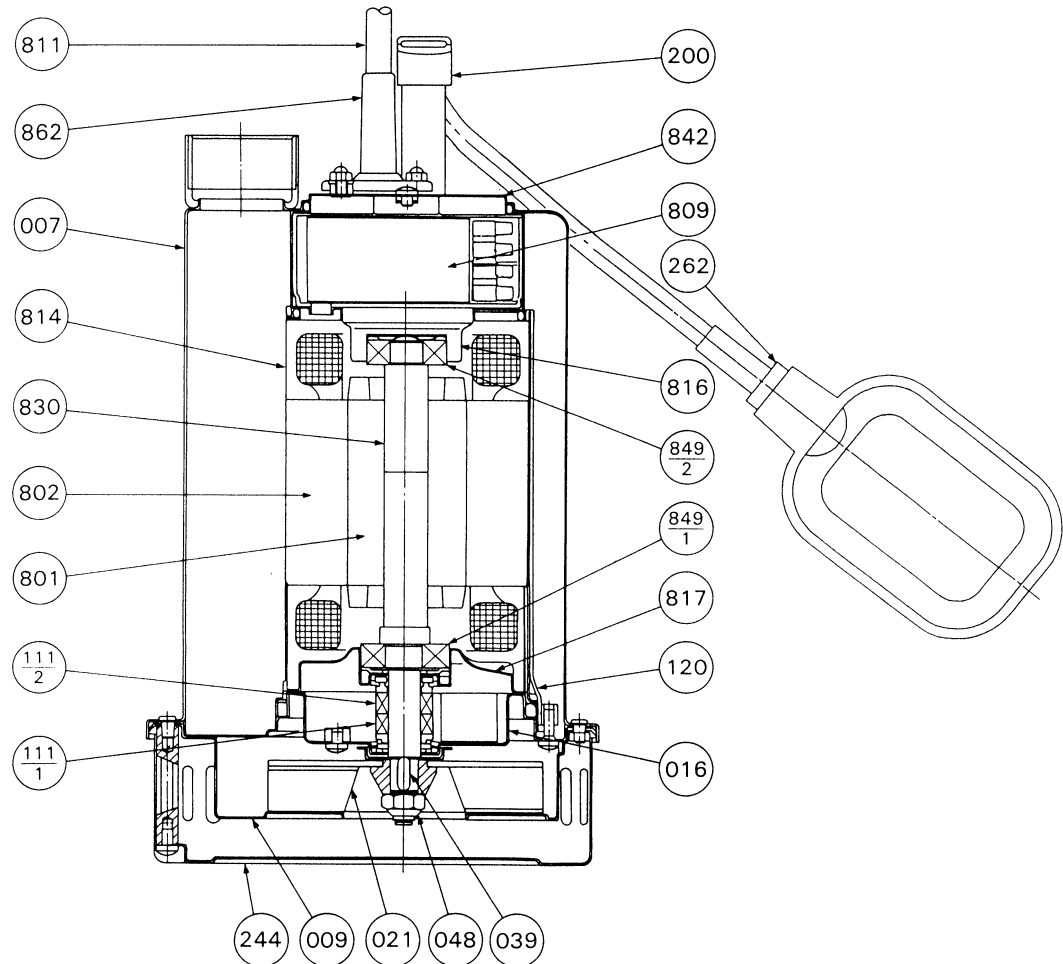
Project:

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

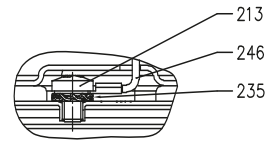
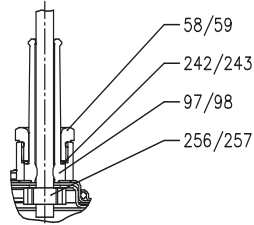
Part No.	Part Name	Material	ASTM, AISI Code	No. for 1 Unit
801	Rotor	—		1
802	Stator	—		1
809	Capacitor	—		1
811	Submersible Cable	—		1
814	Motor Frame	304 Stainless	AISI 304	1
816	Bracket	304 Stainless	AISI 304	1
817	Bracket	304 Stainless	AISI 304	1
830	Shaft	303 Stainless	AISI 303	1
842	Motor Cover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

* Recommended spare parts

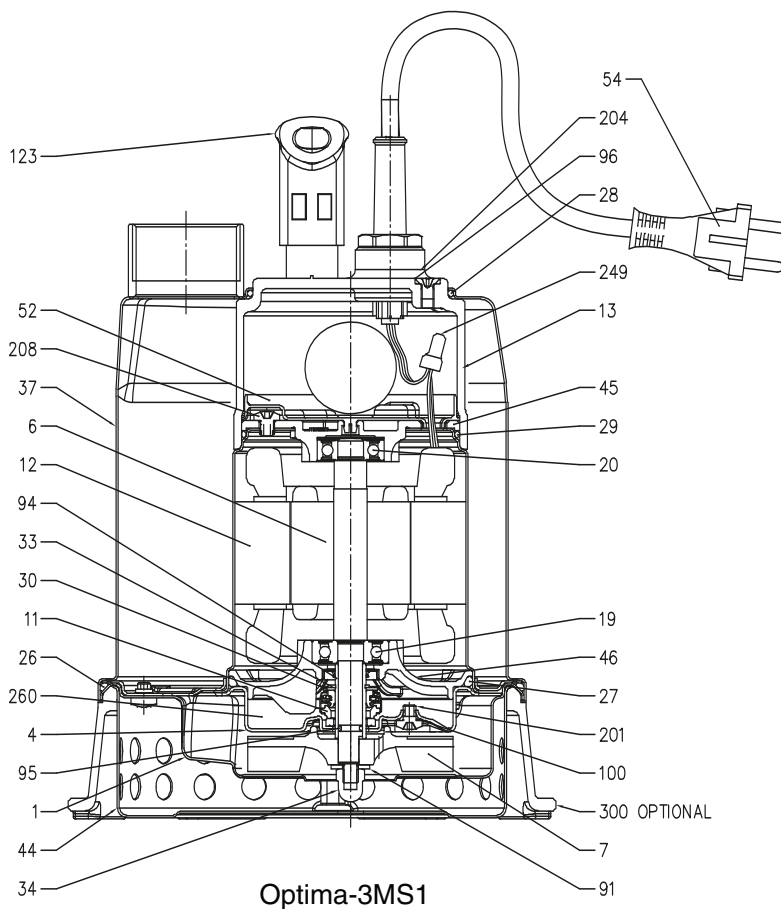
Sectional View

Project: _____ Model: _____ Chk'd: _____ Date: _____

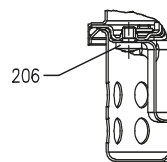
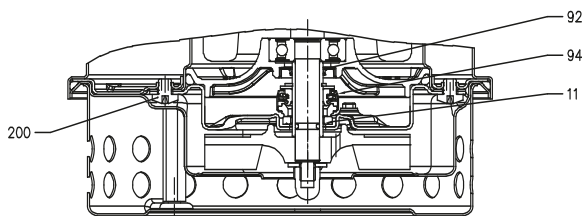
Model Optima-3MS1
Manual Operation Pumps



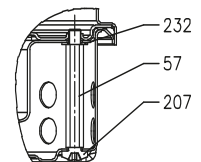
Ground Wire



Optima-3MS1



Suction Cover



Strainer

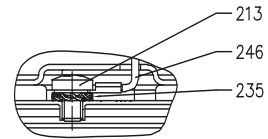
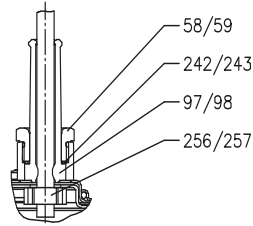
Refer to page 110 for Material Details.



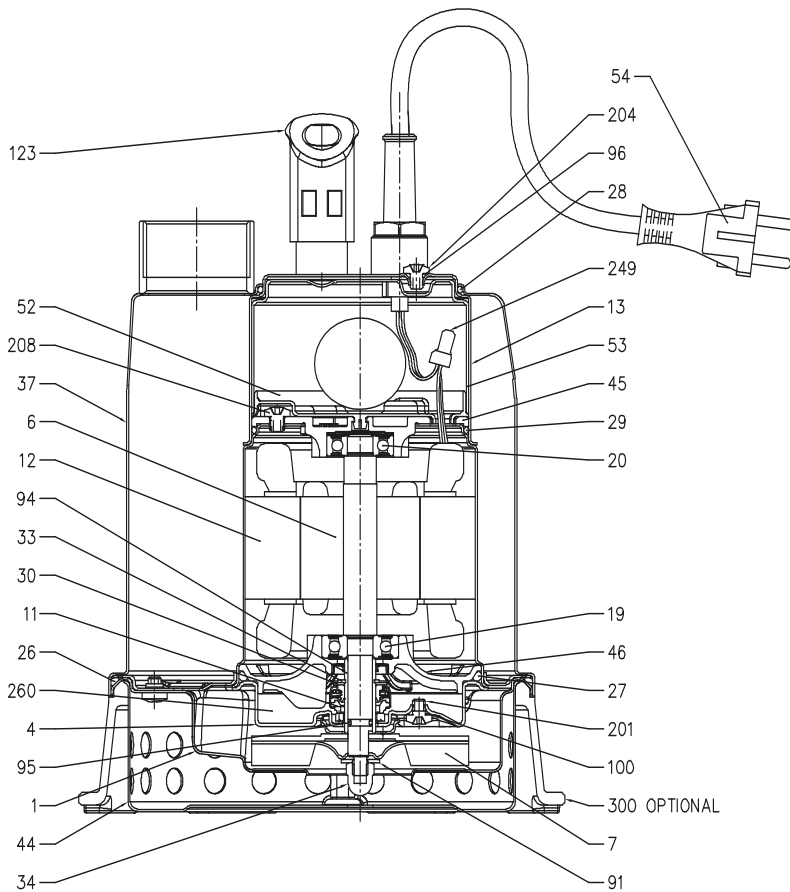
Sectional View

Project: _____ Model: _____ Chk'd: _____ Date: _____

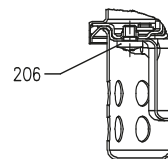
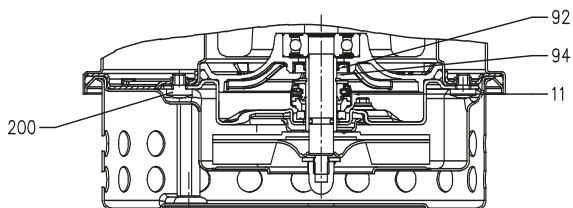
Model EPD-3MS1
Manual Operation Pumps



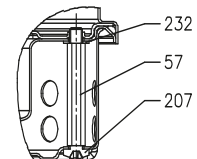
Ground Wire



EPD-3MS1



Suction Cover



Strainer

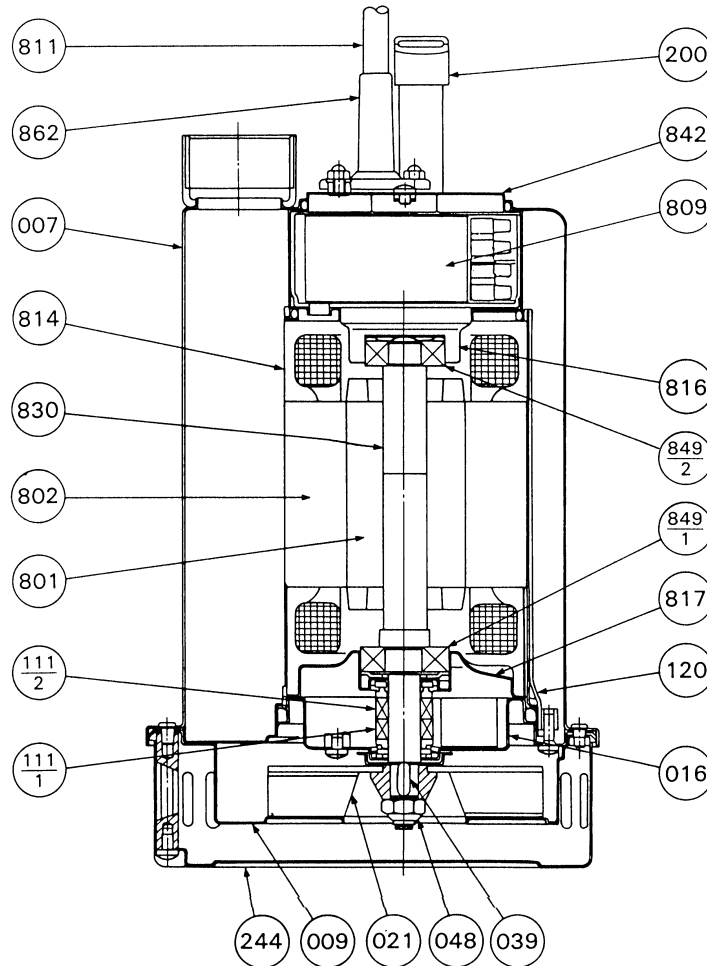
Refer to page 112 for Material Details.



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

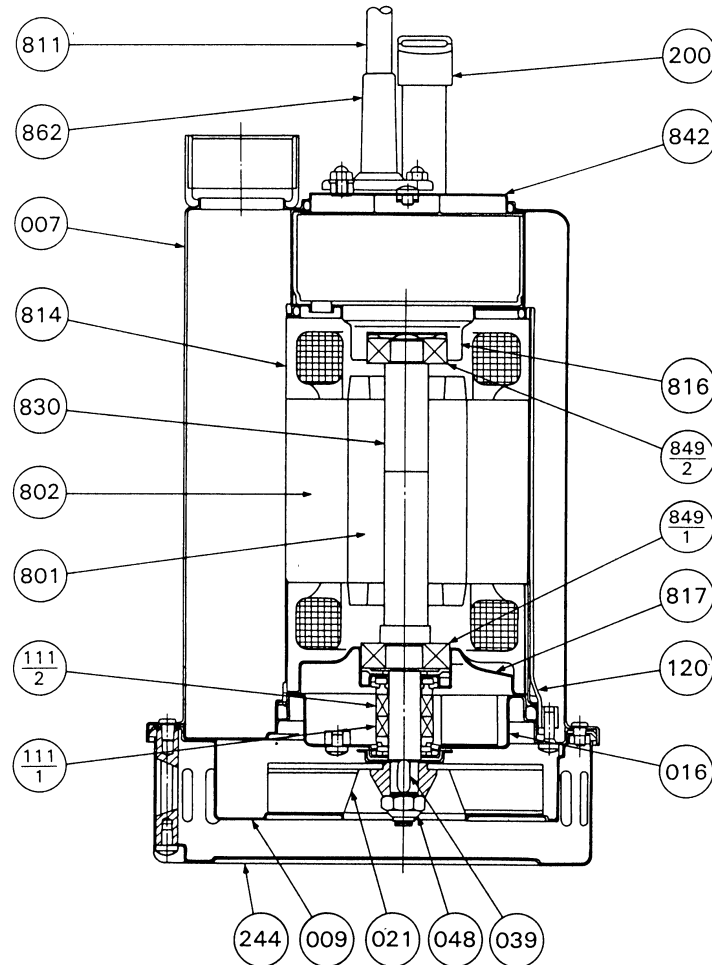
Part No.	Part Name	Material	ASTM, AISI Code	No. for 1 Unit
802	Stator	—		1
809	Capacitor	—		1
811	Submersible Cable	—		1
814	Motor Frame	304 Stainless	AISI 304	1
816	Bracket	304 Stainless	AISI 304	1
817	Bracket	304 Stainless	AISI 304	1
830	Shaft	303 Stainless	AISI 303	1
842	Motor Cover			1
*849-1	Ball 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	Part No.	Part Name	Material	ASTM, AISI Code	No. for 1 Unit
007	Outer Casing	304 Stainless	AISI 304	1	801	Rotor	—		1
009	Inner Casing	304 Stainless	AISI 304	1	802	Stator	—		1
016	Seal Cover	304 Stainless	AISI 304	1	811	Submersible Cable	—		1
021	Impeller	304 Stainless	AISI 304	1	814	Motor Frame	304 Stainless	AISI 304	1
039	Key	304 Stainless	AISI 304	1	816	Bracket	304 Stainless	AISI 304	1
048	Impeller Nut	304 Stainless	AISI 304	1 set	817	Bracket	304 Stainless	AISI 304	1
*111-1	Mechanical Seal	—		1 set	830	Shaft	303 Stainless	AISI 303	1
*111-2	Mechanical Seal	—		1 set	842	Motor Cover			1
120	Connection Band	304 Stainless	AISI 304		*849-1	Ball Bearing	—		1
200	Lifting Hanger	304 Stainless	AISI 304	1	*849-2	Ball Bearing	—		1
244	Strainer	304 Stainless	AISI 304	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 ² AWG	LENGTH Ft	EFFICIENCY %	POWER FACTOR %			
1/3	SINGLE	115	4.4	3340	10	F	BUILT-IN AUTO RESET	SOM-A	3	1.25	#16	20	67	96	4/10.6	SA/SM

Model EPD – 2 Pole Motor Specification

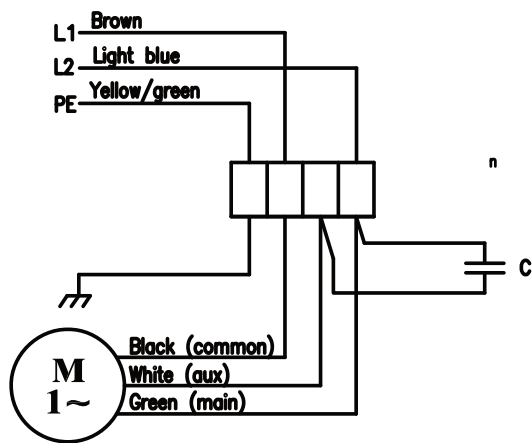
HP	PHASE	RATING			LOCKED ROTOR CURRENT A	INSULATION CLASS	OVER LOAD PROTECTION	CABLE				PERFORMANCE DATA AT RATING POINT		RESISTANCE AT 20°C OHMS	Symbols Auto/Manual	
		VOLTAGE V	CURRENT A	SPEED R.P.M.				TYPE	No. OF COND	GAUGE mm ² AWG	LENGTH Ft	EFFICIENCY %	POWER FACTOR %			
1/3	SINGLE	115	4.4	3340	10	F	BUILT-IN AUTO RESET	SOM-A	3	1.25	#16	20	67	96	4/10.6	SA/SM
1/2	SINGLE	115	9.0	3430	36		3		1.25	#16	20	66.5	93	0.98/2.6	SA/SM	
	THREE	230	3.2	3450	19		—	SOM-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	SOTOM-A	3	1.25	#16	20	66.5	96	0.75/2.3
THREE		230	3.8	3420	24		—	STOM-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

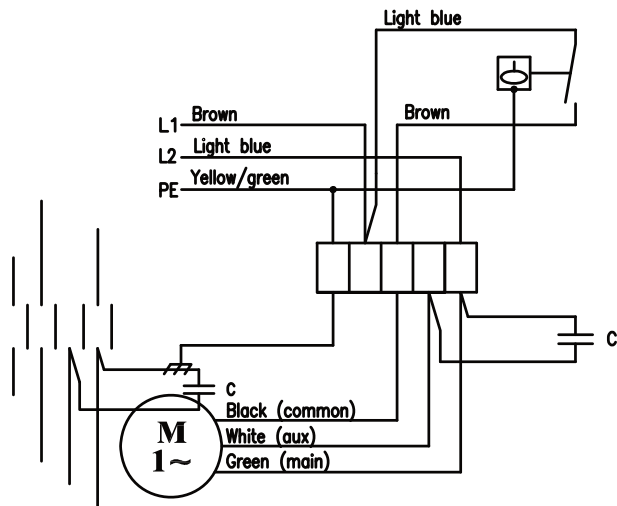
Project: _____ Model: _____ Chk'd: _____ Date: _____

- Output 1/3 HP Single Phase

WITHOUT FLOAT SWITCH



WITH FLOAT SWITCH

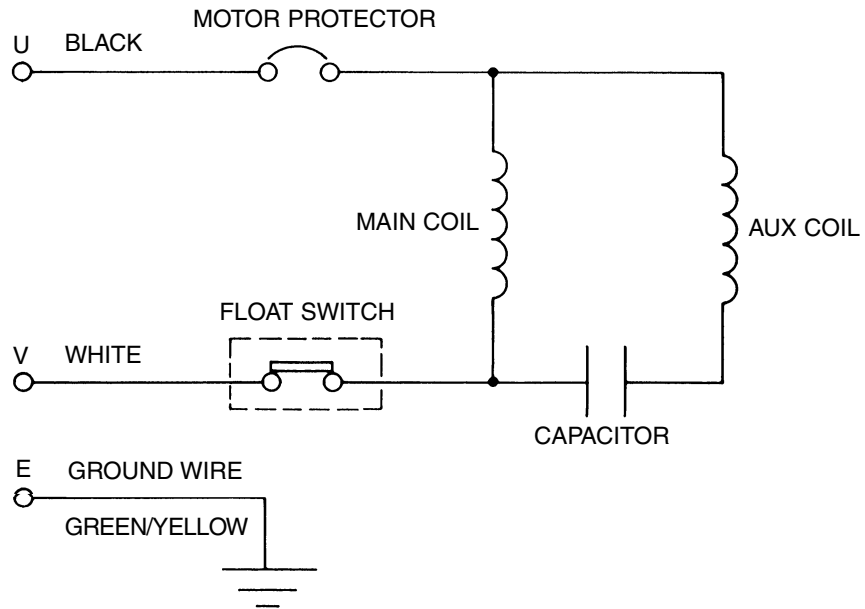


Motor Wiring Diagram

Project: _____ Model: _____ Chk'd: _____ Date: _____

Automatic Operation Type Output (Single Phase)

- Output 1/2 to 3/4 HP

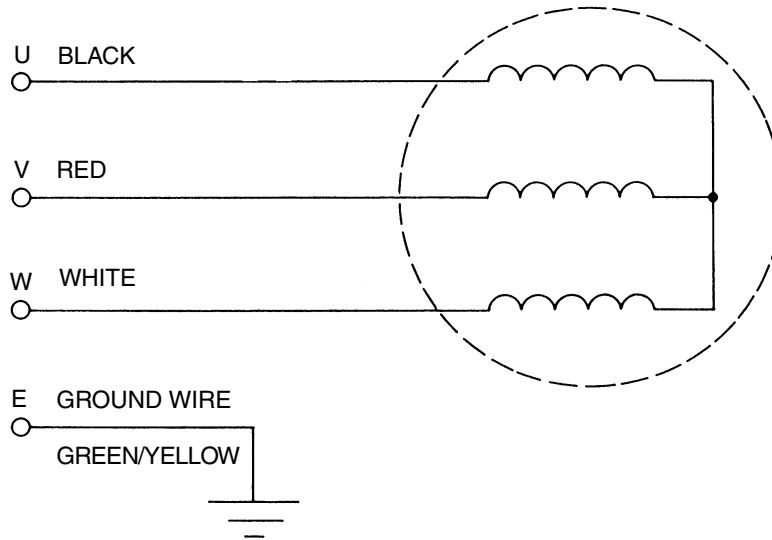


Motor Wiring Diagram

Project: _____ Model: _____ Chk'd: _____ Date: _____

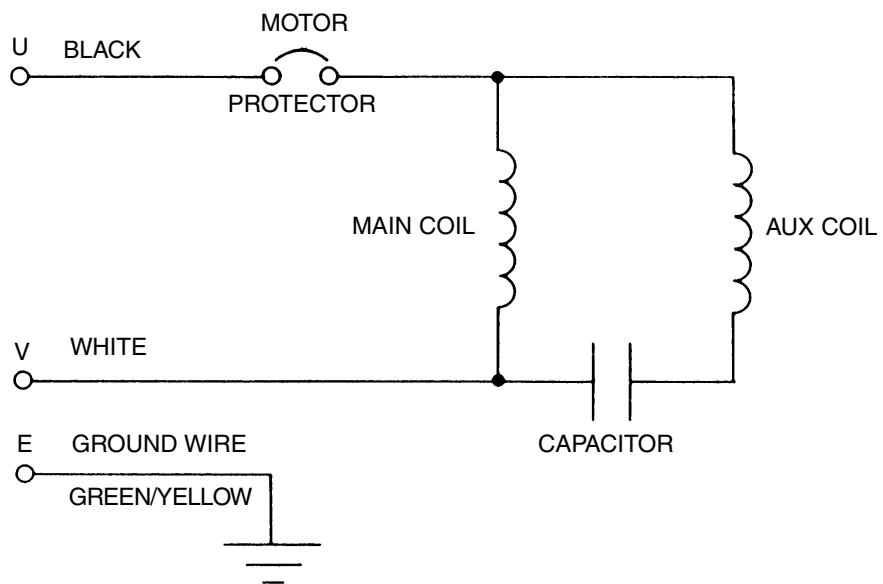
Manual Operation Type Output (Three Phase)

- 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

ITEM NO.		Optima-3	EPD-3	EPD-5	EPD-7	
Name-Plate Rating	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 μ 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 μ 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: _____

• 1/2 to 1 1/2 HP, 60HZ, Three Phase, 460 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	460	460	460	460	
	Amperes	1.55	2	2.5	2.7	
	Speed	3440	3440	3460	3430	
	Insulation Class	F	F	F	F	
Capacitor μ F	Start	—	—	—	—	
	Run	—	—	—	—	
No Load Test	Amperes	1.1	1.3	1.6	1.6	
	Watts	180	230	240	240	
Resistance at 20°C OHMS	Main Coil	21.5	16	11	11	
	Aux. Coil	—	—	—	—	
100% Load	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		

