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C US

***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 = ⅓ HP
5 = ½ HP
7 = ¾ HP
10 = 1 HP
15 = 1½ 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 ⅓ **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

	Standard	Optional
Discharge Size	1/3 HP – 1 1/4 inch 1/2 HP and 3/4 HP – 1 1/2 inch	
Range of HP	1/3, 1/2, and 3/4 HP	
Range of Performance	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	304L Stainless Steel	
Impeller	304L Stainless Steel*	
Shaft	303 Stainless Steel	
Motor Frame	304L Stainless Steel	
Fasteners	304L Stainless Steel	
Shaft Seal (Double)**		
Material – Upper	NBR Fitted Carbon/Ceramic 1/2, 3/4, 1, and 1 1/2 HP	
Material – Lower	FPM Fitted Silicon Carbide/Silicon Carbide 1/2, 3/4, 1, and 1 1/2 HP	
Impeller Type	Semi-Open	
Bearing	Sealed Ball Bearing	
Motor	Air-filled, Insulation Class F, 2 Pole, Rated Continuous Duty–Permanent Split Capacitor	
Single Phase	115 Volt	
Motor Protection	Built-in Motor Protection w/Auto Reset	
Power Cord	UL/CSA SJTow-A with ECS No. 250 cap plug with grounding pin – 20 Ft. Length Rated 15 Amp 125V – NEMA 5-15P	
Automatic Float Switch	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 1/2 HP through 1 1/2 HP – 1 1/2 inch	
Range of HP	1/3, 1/2, 3/4, 1, and 1 1/2 HP	
Range of Performance	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	304L Stainless Steel	
Impeller	304L Stainless Steel*	
Shaft	303 Stainless Steel	
Motor Frame	304L Stainless Steel	
Fasteners	304L Stainless Steel	
Shaft Seal (Double)**		
Material – Upper	NBR Fitted Carbon/Ceramic 1/2, 3/4, 1, and 1 1/2 HP	
Material – Lower	FPM Fitted Silicon Carbide/Silicon Carbide 1/2, 3/4, 1, and 1 1/2 HP	
Impeller Type	Semi-Open	
Bearing	Sealed Ball Bearing	
Motor	Air-filled, Insulation Class F, 2 Pole, Rated Continuous Duty–Permanent Split Capacitor	
Single Phase	115 V	
Three Phase	230V or 460V	
Motor Protection†	Built-in Motor Protection with Auto Reset	
Power Cord		
Single Phase	UL/CSA SJTOW-A with ECS No. 250 cap plug with grounding pin – 20 Ft. Length Rated 15 Amp 125V – NEMA 5-15P	
Three Phase	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 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 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 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 1/4" 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 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 ⅜" 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 1½" 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

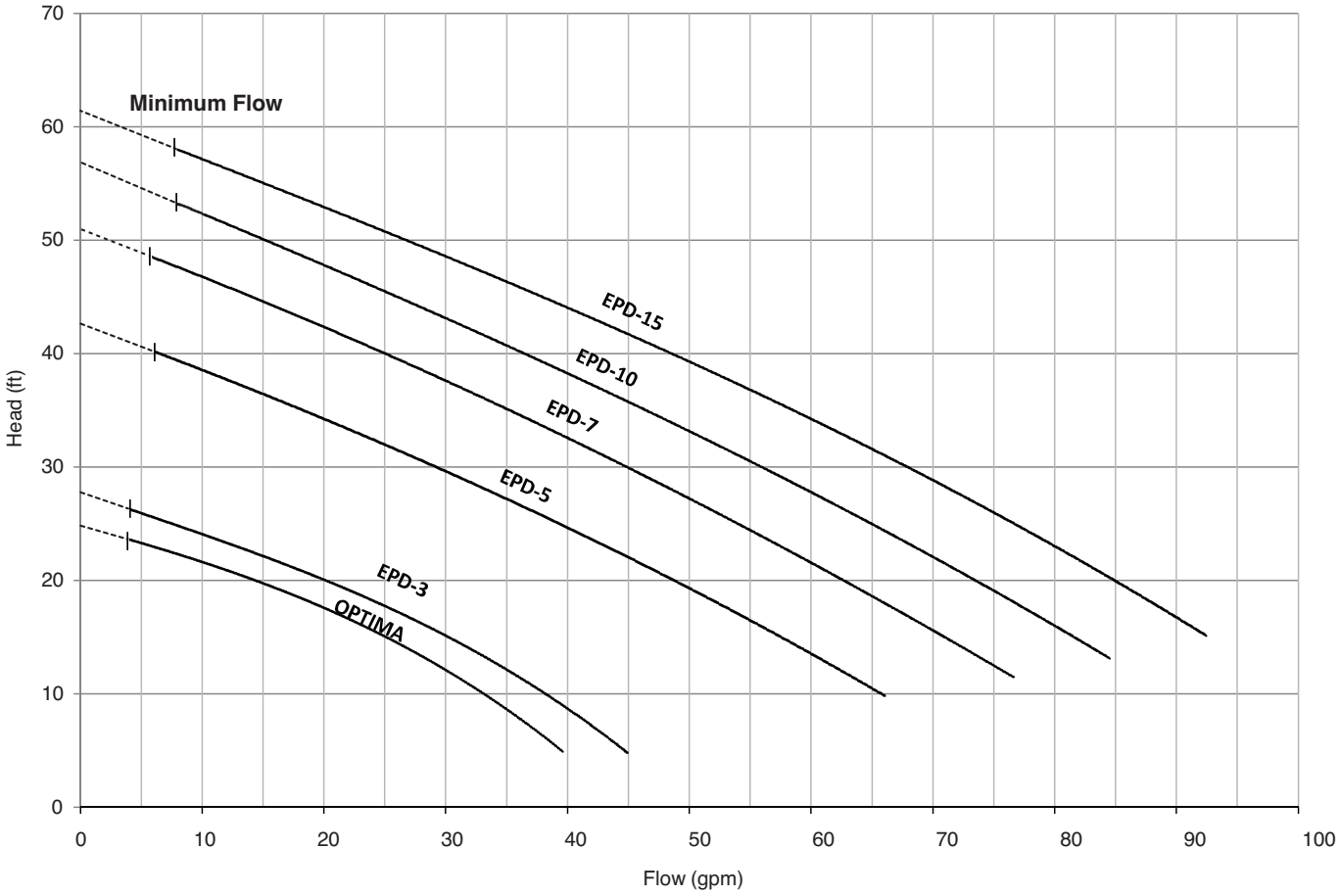
A mechanical, non-mercury float switch is available in pumps with automatic operation.

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

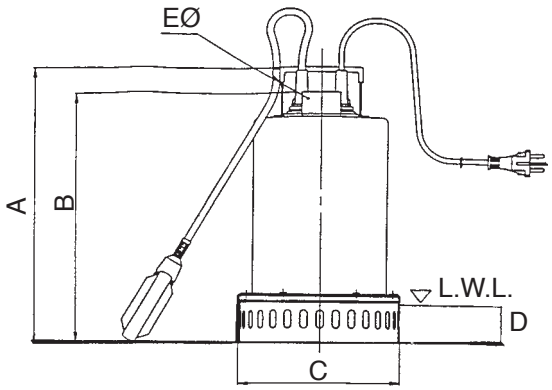
EPD/Optima Performance Curve



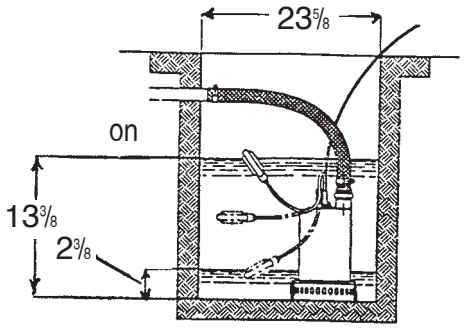
Dimensions

Project: Model: Chk'd: Date:

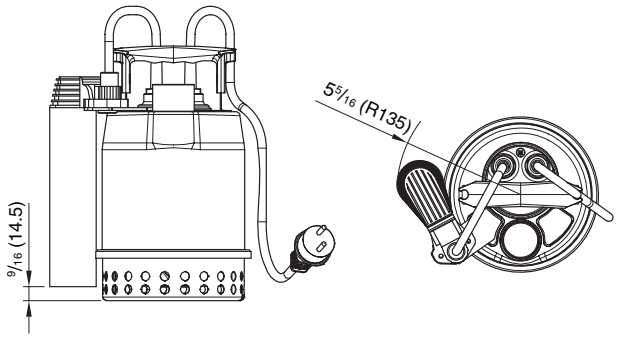
Model Optima-3AS1, Optima-3SS1
EPD-3AS1
EPD-5AS1 and 7AS1
Automatic Operation Pumps

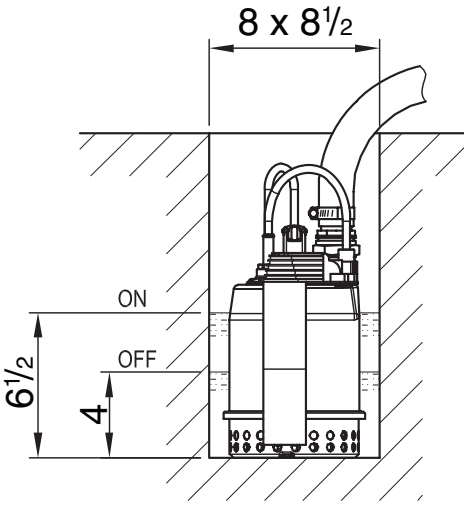


Water Level in Automatic Operation



Optima-3SS1





Dimensions: inch

Phase	Discharge Size	Model	HP	Pump & Motor A	B	C	D	E	Cable Size O.D.	Length	Weight lbs.
Single	1¼	Optima-3AS1	⅓	10¾	9³⁄₃₂	6⁹⁄₁₆	2⅜	1¼	0.335	20 FT.	11
		EPD-3AS1	⅓	10¾	9³⁄₃₂	6⁹⁄₁₆	2⅜	1¼	0.335	20 FT.	11
		Optima-3SS1	⅓	10¾	9³⁄₃₂	6⁹⁄₁₆	2⅜	1¼	0.335	20 FT.	11
	1½	EPD-5AS1	½	17³⁄₁₆	13⅜	8¼	2⅜	1½	0.335	20 FT.	26
		EPD-7AS1	¾	17³⁄₁₆	13⅜	8¼	2⅜	1½	0.335	20 FT.	26

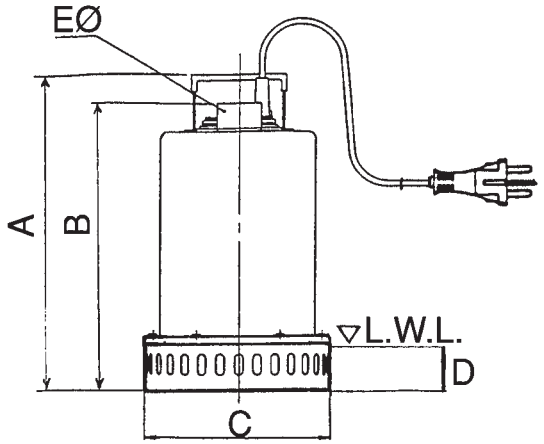
Dimensions: mm

Phase	Discharge Size	Model	HP	Pump & Motor A	B	C	D	E	Cable Size O.D.	Length	Weight kg.
Single	31.75	Optima-3AS1	⅓	273	231	167	60	31	8.50	6.09 M	5
		EPD-3AS1	⅓	273	231	167	60	31	8.50	6.09 M	5
		Optima-3SS1	⅓	273	231	167	60	31	8.50	6.09 M	5
	38.10	EPD-5AS1	½	437	340	210	60	38	8.50	6.09 M	12
		EPD-7AS1	¾	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 A*	B	C	D	E	Cable Size O.D.	Length	Weight lbs.
Single	1 1/4	Optima-3MS1	1/3	10 3/4	9 3/32	6 9/16	2 3/8	1 1/4	0.335	20 FT.	11
	1 1/4	EPD-3MS1	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-5MS1	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	1/2	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	1/2	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	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	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	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

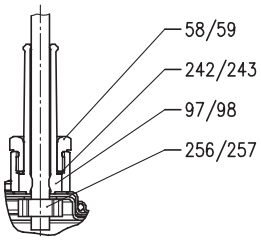
Phase	Discharge Size	Model	HP	Pump & Motor A*	B	C	D	E	Cable Size O.D.	Length	Weight kg.
Single	31.75	Optima-3MS1	1/3	273	231	167	60	31	8.50	6.09 M	5
	31.75	EPD-3MS1	1/3	273	231	167	60	31	8.50	6.09 M	5
	38.10	EPD-5MS1	1/2	437	340	210	60	38	8.50	6.09 M	12
Three	38.10	EPD-5MT2	1/2	352	315	210	60	38	8.50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

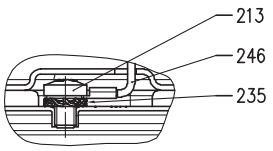
NOTE: *A dimension listed = maximum height
PIGGY-BACK Plug comes on single phase manual pumps
Three phase Pumps **DO NOT** come with plug – Jacket is removed 2 inches & conductors are stripped 5/8 inch.

Sectional View

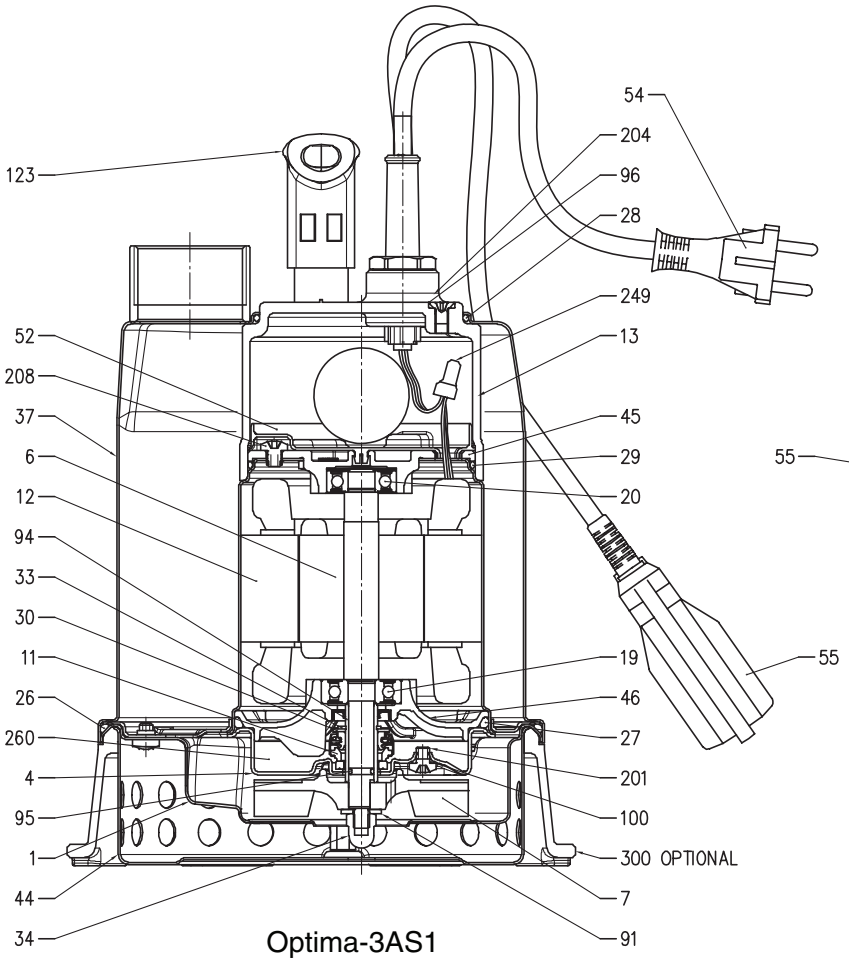
Project: Model: Chk'd: Date:

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

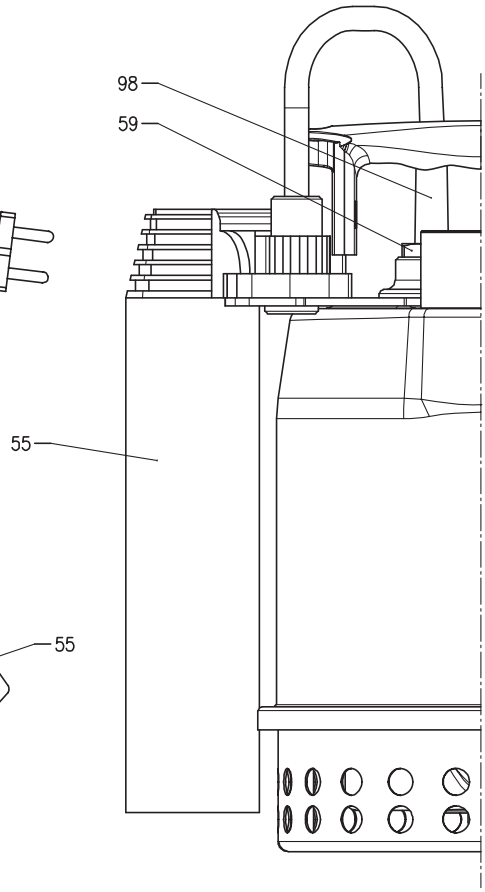




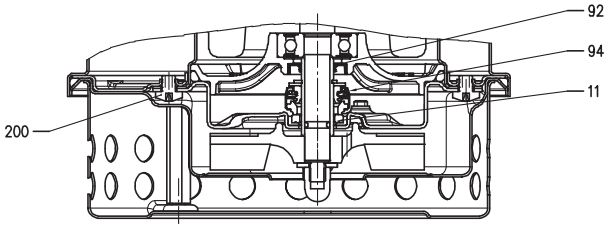
Ground Wire

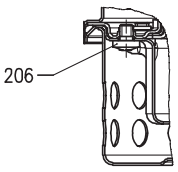


Optima-3AS1

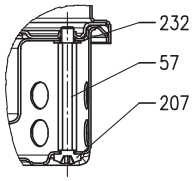


Optima-3SS1





Suction Cover



Strainer

Sectional View – Part Number Reference

Project: Model: Chk'd: Date:

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

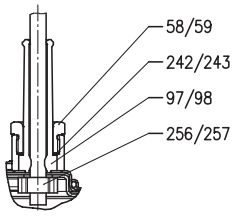
Part Number Reference

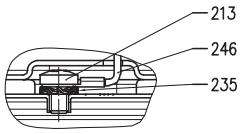
N°	PART NAME	MATERIAL	STANDARD	Qty.
1	Suction cover	EN 1.4301 (AISI 304)	-	1
4	Casing cover	EN 1.4301 (AISI 304)	-	1
6	Shaft with rotor	EN 1.4305 (AISI 303)	-	1
7	Impeller	PPE+PS-HI-GF20	-	1
11	Mechanical seal		-	1
12	Motor frame with stator	EN 1.4301 (AISI 304)	-	1
13	Motor cover	PP-GF30	-	1
19	Lower 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

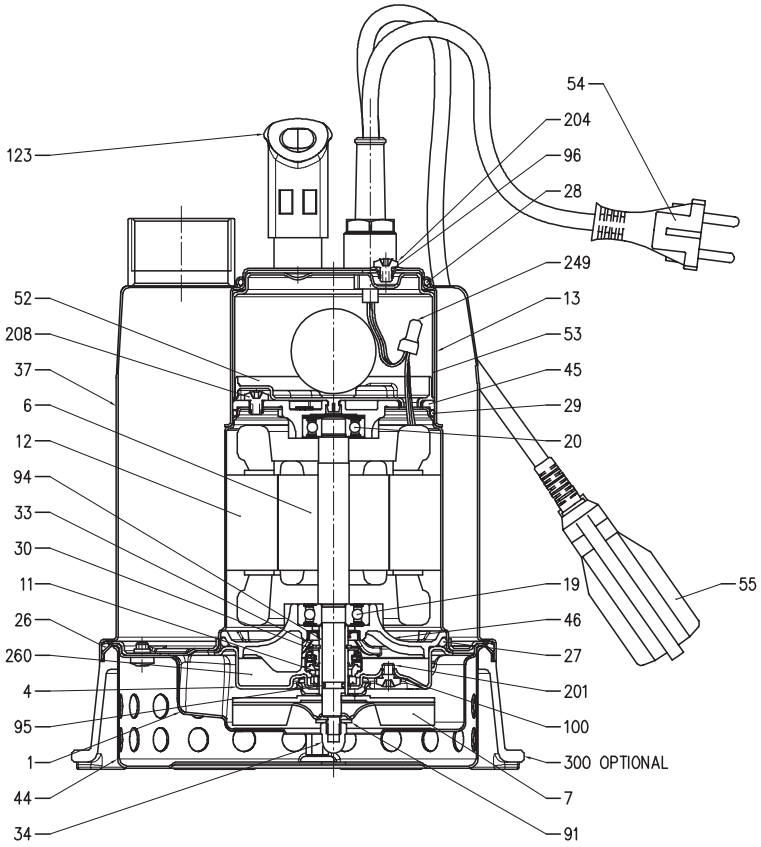
Project: Model: Chk'd: Date:

Model EPD-3AS1
Automatic Operation Pumps

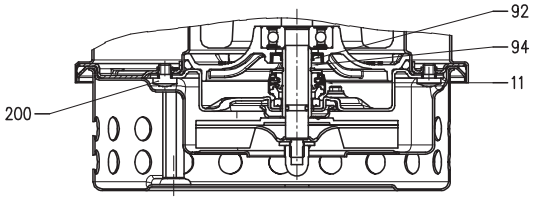


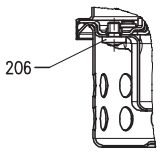


Ground Wire

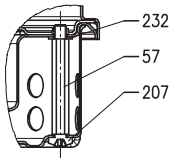


EPD-3AS1





Suction Cover



Strainer

Sectional View – Part Number Reference

Project: Model: Chk'd: Date:

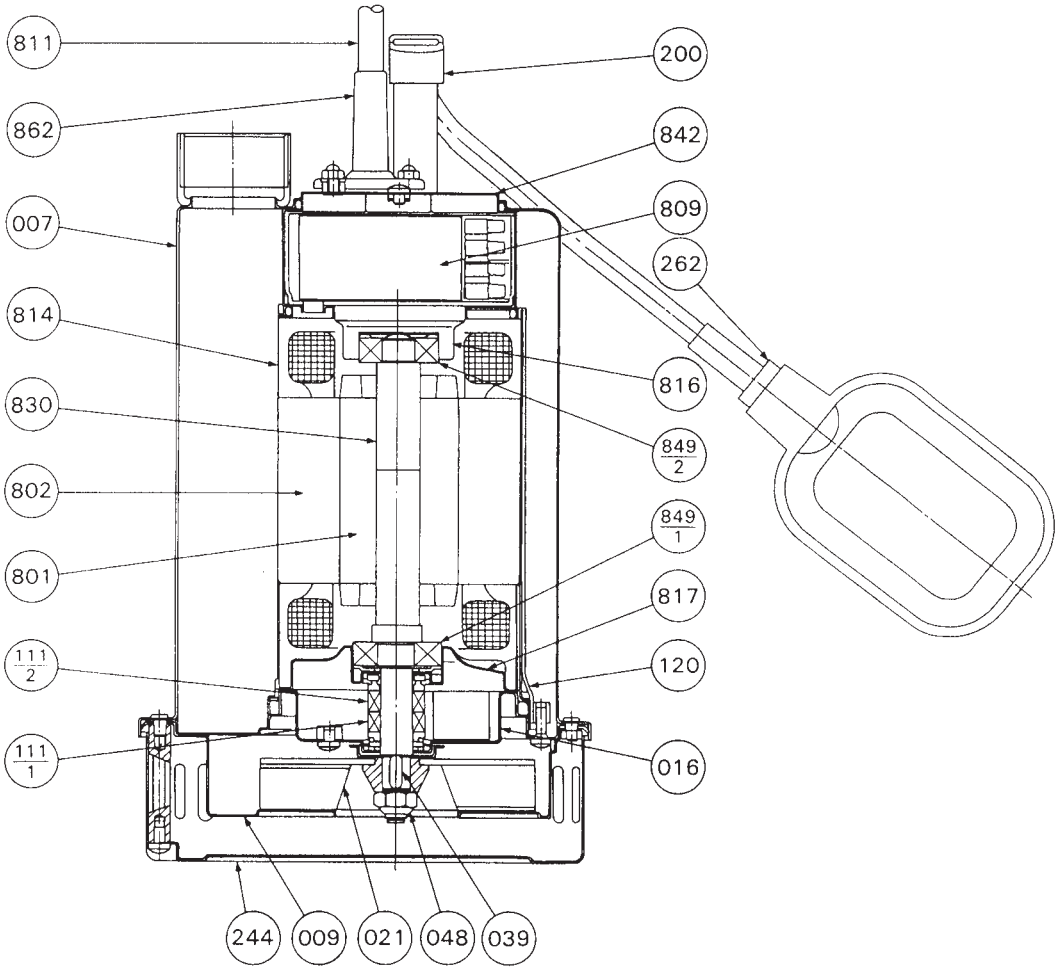
Model EPD-3AS1
EPD-3MS1

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 ½ HP to ¾ 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

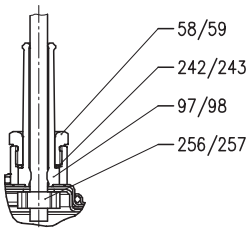
*** Recommended spare parts**

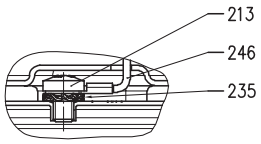
Sectional View

Project: Model: Chk'd: Date:

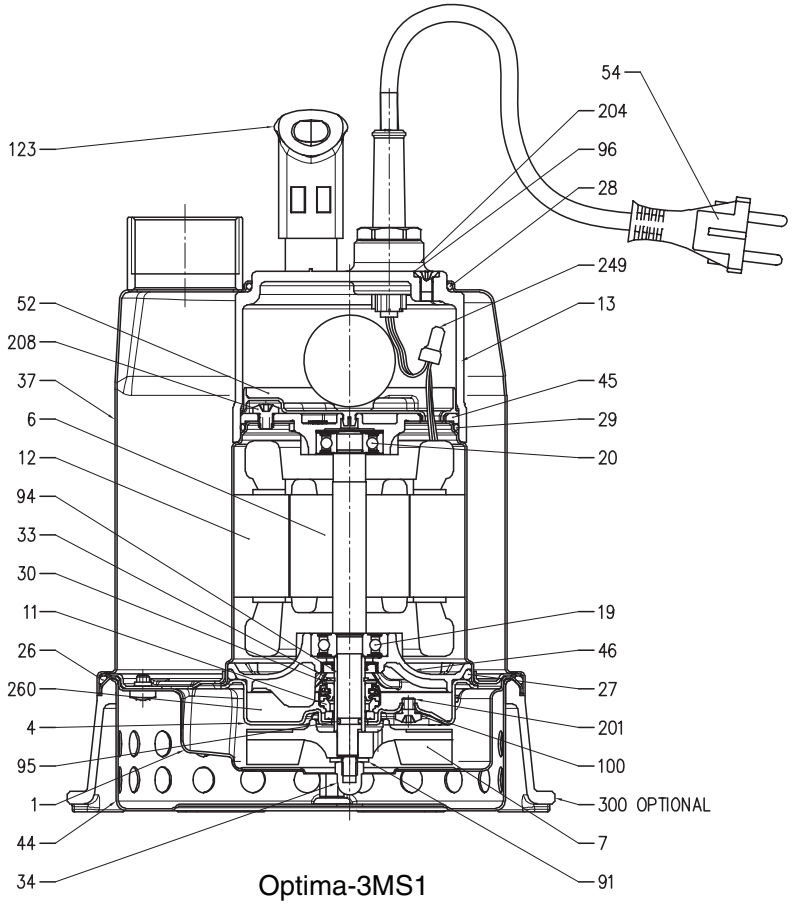
Model Optima-3MS1

Manual Operation Pumps

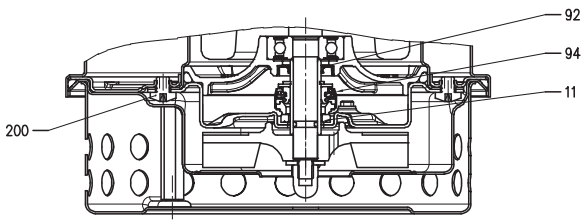


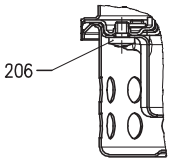


Ground Wire

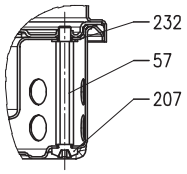


Optima-3MS1





Suction Cover



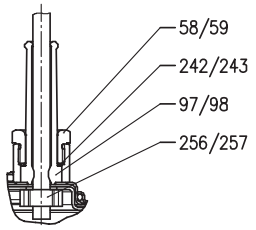
Strainer

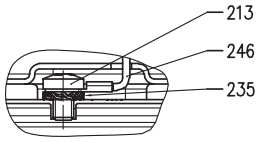
Refer to page 110 for Material Details.

Sectional View

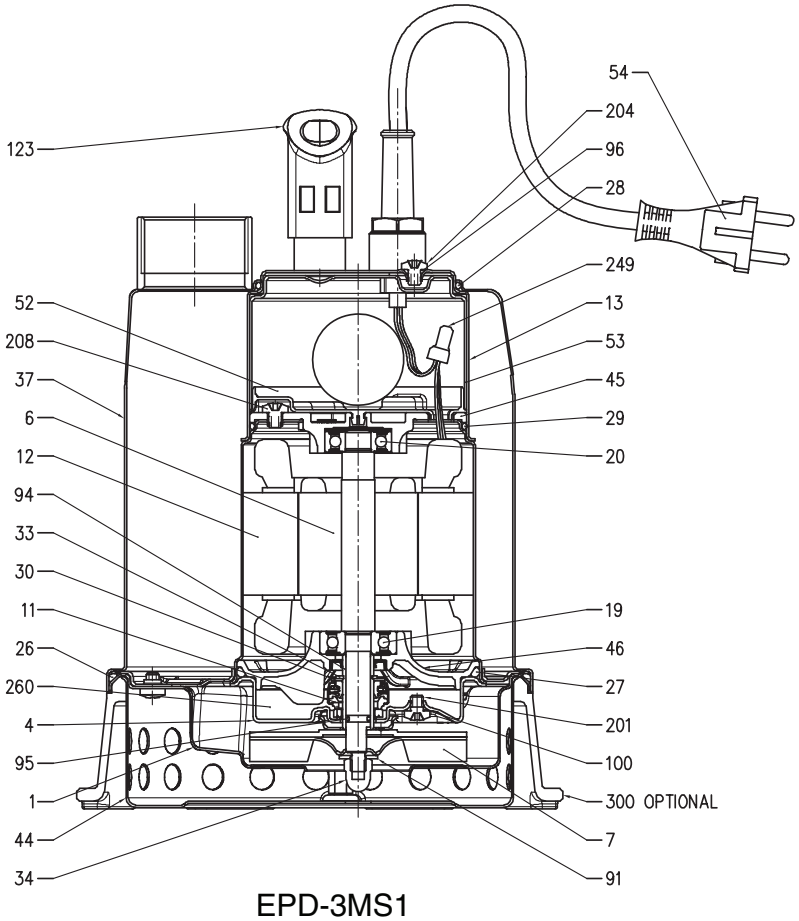
Project: Model: Chk'd: Date:

Model EPD-3MS1
Manual Operation Pumps

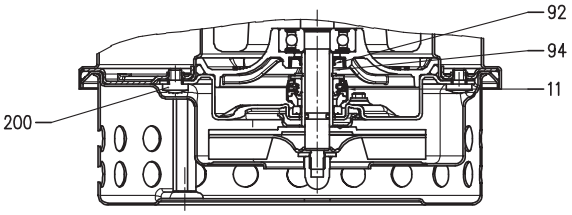


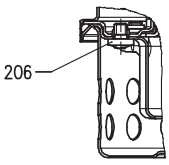


Ground Wire

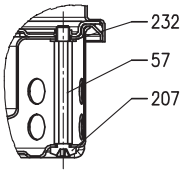


EPD-3MS1





Suction Cover



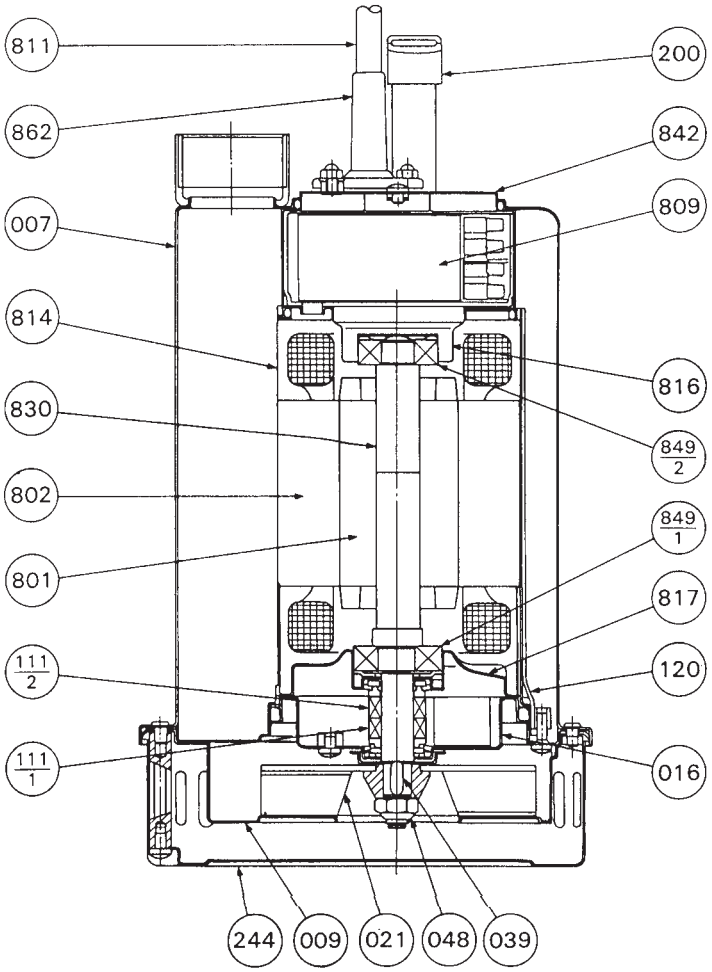
Strainer

Refer to page 112 for Material Details.

Sectional View

Project: Model: Chk'd: Date:

Manual Type Output ½ HP to ¾ 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

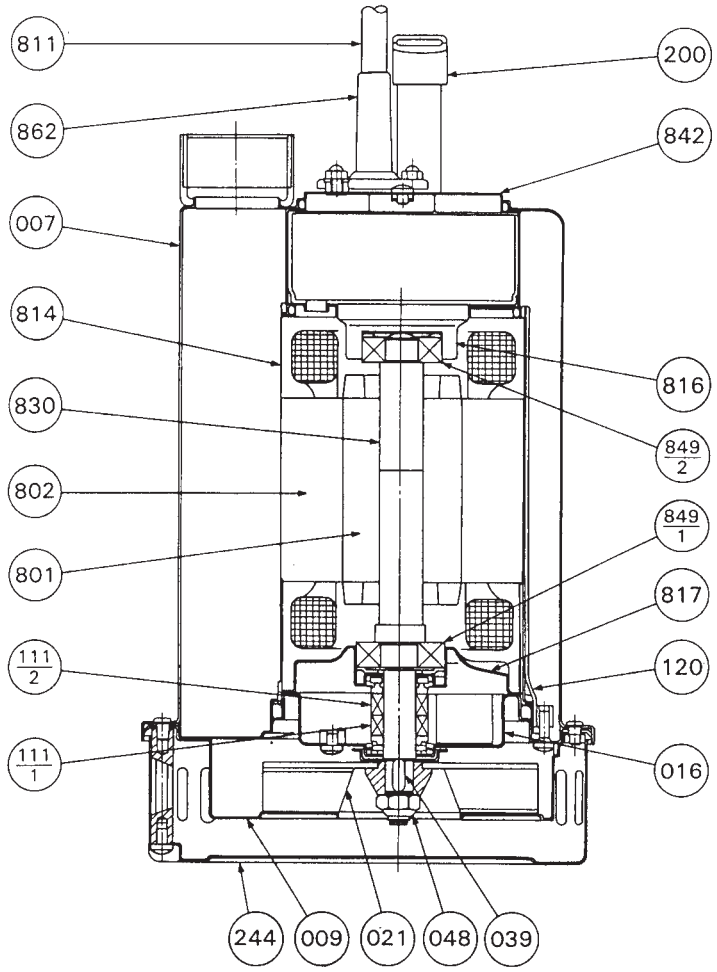
Part No.	Part Name	Material	ASTM, AISI Code	No. for 1 Unit
802	Stator	—		1
809	Capacitor	—		1
811	Submersible Cable	—		1
814	Motor Frame	304 Stainless	AISI 304	1
816	Bracket	304 Stainless	AISI 304	1
817	Bracket	304 Stainless	AISI 304	1
830	Shaft	303 Stainless	AISI 303	1
842	Motor Cover			1
*849-1	Ball 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 ½ HP to 1½ 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 mm²	GAUGE 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

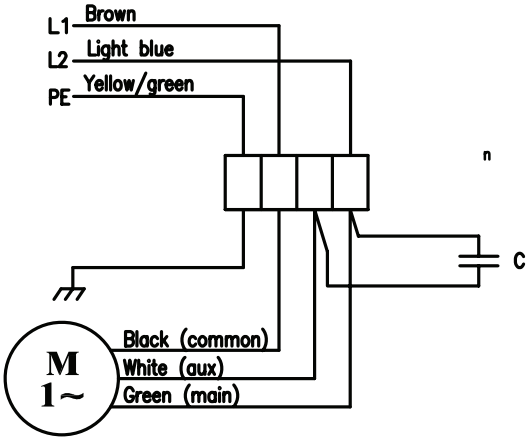
HP	PHASE	RATING			LOCKED ROTOR CURRENT A	INSULATION CLASS	OVER LOAD PROTECTION	CABLE					PERFORMANCE DATA AT RATING POINT		RESISTANCE AT 20°C OHMS	Symbols Auto/Manual
		VOLTAGE V	CURRENT A	SPEED R.P.M.				TYPE	No. OF COND	GAUGE mm²	GAUGE AWG	LENGTH Ft	EFFICIENCY %	POWER FACTOR %		
1/3	SINGLE	115	4.4	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				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	S/TOW-A	3	1.25	#16	20	66.5	96	0.75/2.3	SA/SM
	THREE	230	3.8	3420	24		_	STOW-A	4	1.25	#16	20	73	79	4.1	
		460	2	3440	12		_		4	1.25	#16	20	75.5	75	16	SM
1	THREE	230	4.8	3450	31		_		4	1.25	#16	20	76	75	3.2	
		460	2.5	3460	17		_		4	1.25	#16	20	75.5	75	11	SM
1 1/2	THREE	230	5.3	3420	31		_		4	1.25	#16	20	76	80	3.2	
		460	2.7	3430	17		_		4	1.25	#16	20	76	80	11	SM

Dimensions

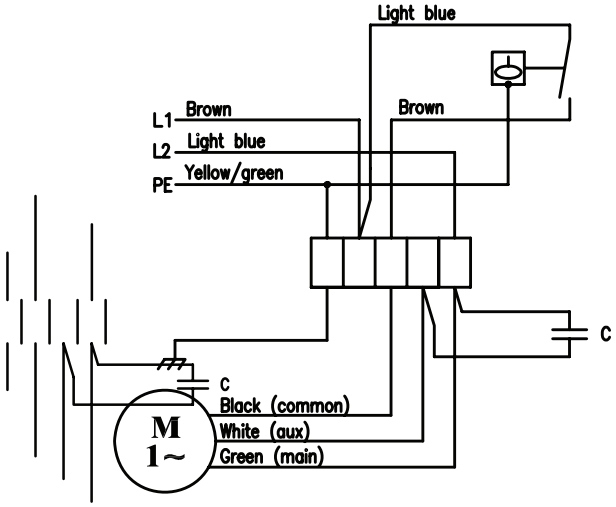
Project: Model: Chk'd: Date:

- **Output ⅓ HP Single Phase**

WITHOUT FLOAT SWICH



WITH FLOAT SWICH

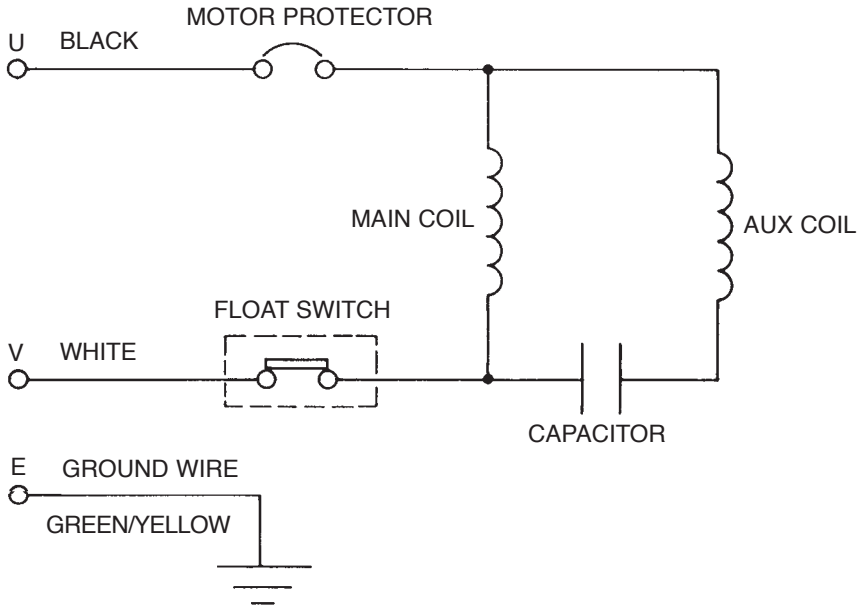


Motor Wiring Diagram

Project: Model: Chk'd: Date:

Automatic Operation Type Output (Single Phase)

- **Output ½ to ¾ HP**

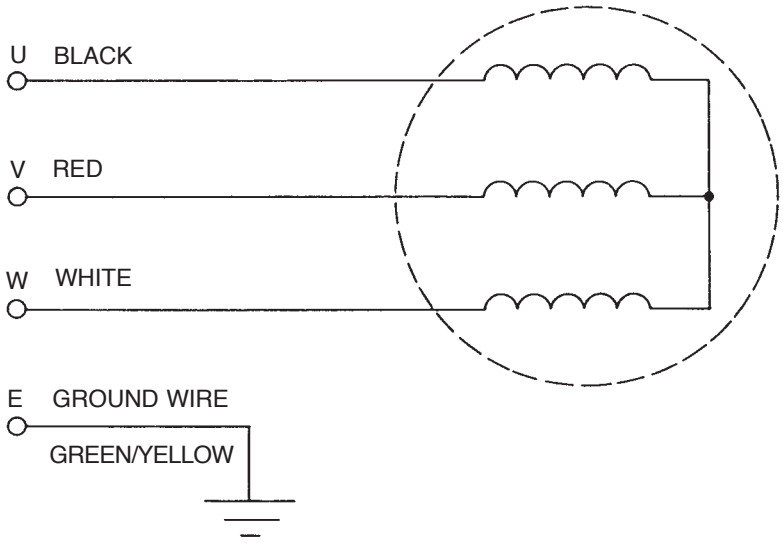


Motor Wiring Diagram

Project: Model: Chk'd: Date:

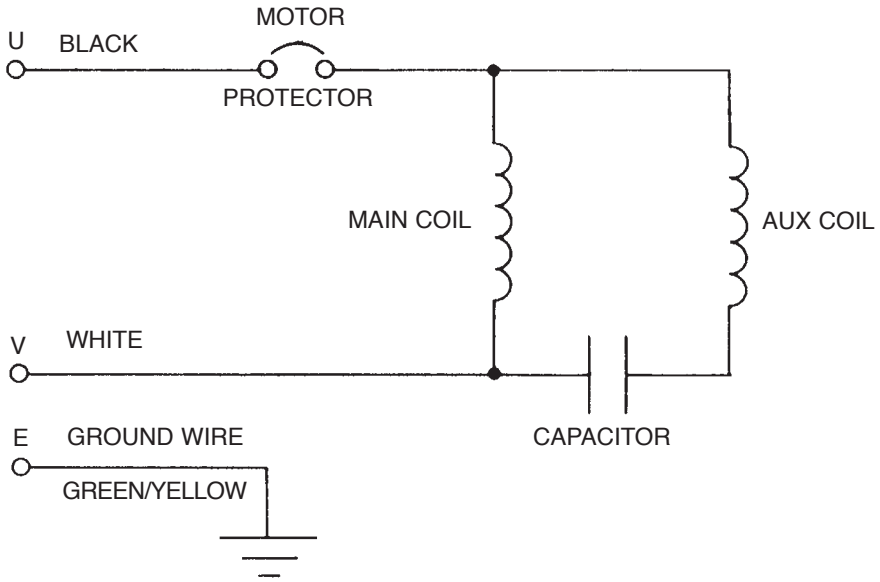
Manual Operation Type Output (Three Phase)

- **Output ½ to 1½ HP**



Manual Operation Type Output (Single Phase)

- **Output ½ to ¾ HP**



Electrical Data

Project: Model: Chk'd: Date:

- **⅓ to ¾ 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 μF	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:

- **½ to 1½ 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	1½	
	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:

- 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 20°C OHMS	Main Coil		21.5	16	11	11	
	Aux. Coil		—	—	—	—	
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	