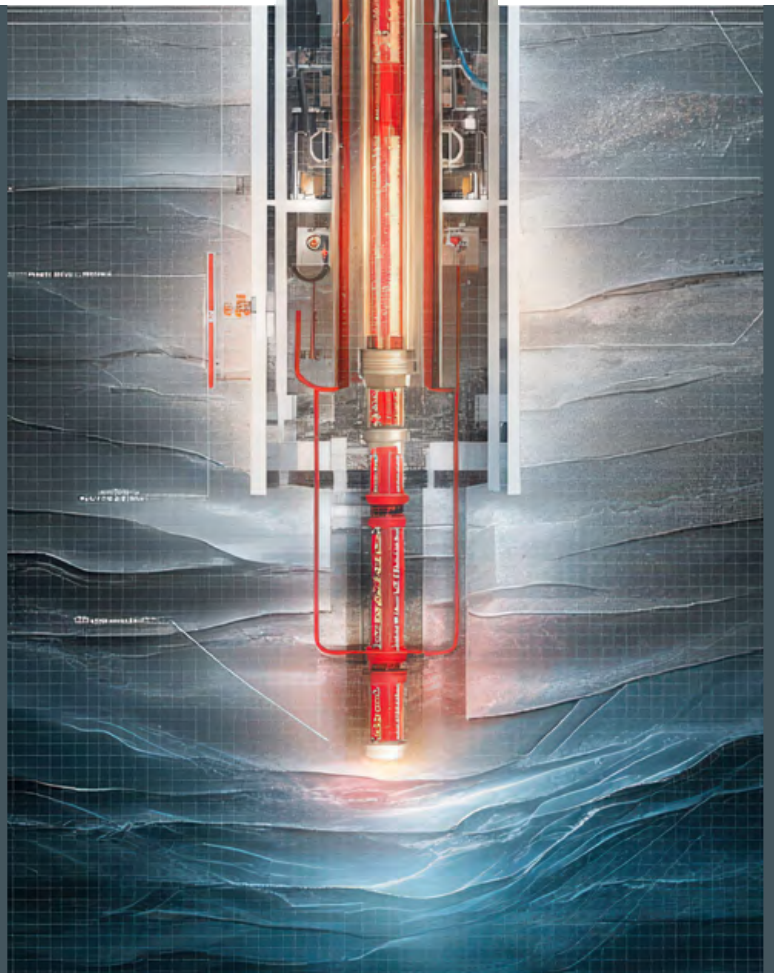




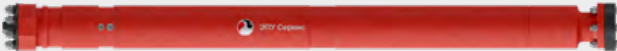
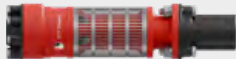
ESP Service

Design and development of oil equipment

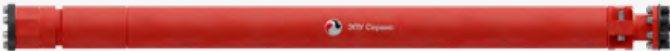
Technical product
catalog 2026 / 27



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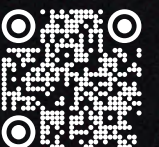
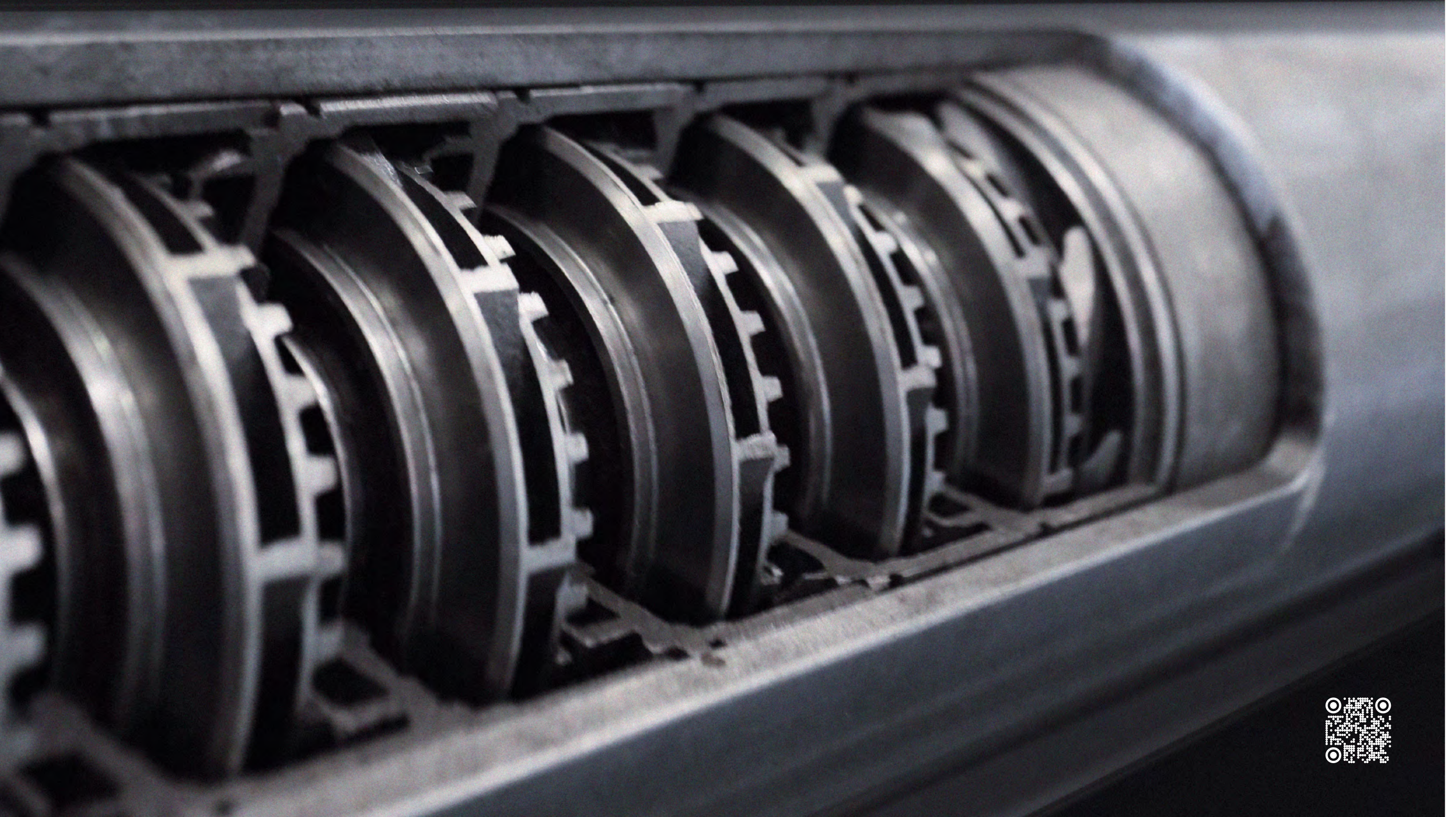
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[Quality] [Innovation] [Experience of generations]



About the company

ESP Service LLC is a recognized leader in the Russian oil and gas industry, whose history began in 1981. Over more than 40-year history of successful operation, the company has gone through an impressive development path from a small team of enthusiasts to one of the leading manufacturers of high-tech oil production equipment and a supplier of service solutions for oil and gas industry enterprises.



[Quality] [Innovation] [Experience of generations]

The accumulated experience and knowledge, unique competencies, advanced technological developments and a professional team allows us to solve problems of any complexity.

 **40+**
Years of successful work

 **100+**
Highly qualified engineers

 **3 300+**
Employees

 **100+**
Equipment units

 **7**
Divisions

 **26 000+**
Wells in service



We supply to our customers not just energy-efficient equipment, but comprehensive, modern solutions as well—from design and production, to commissioning and maintenance of the equipment throughout its entire life cycle.

Today, the company operates in 10 regions of Russia, has its own multidisciplinary Training Center, which annually provides advanced training to hundreds of specialists in 18 areas, as well as a modern scientific and production base, which ensures a high level of research and innovation.

The company has successfully implemented more than 100 innovative products that have gained practical application in the oil and gas industry.

 **10**
regions of Russia

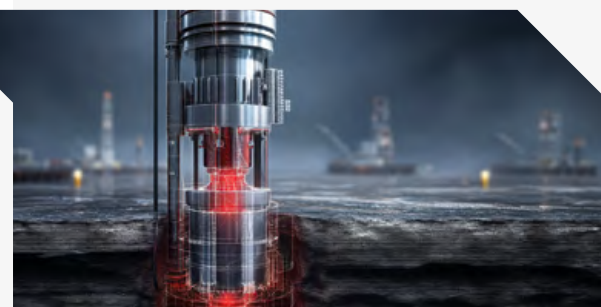
 **18**
areas of activity

 **100+**
innovative products

 **ISO and INTI**
quality standards



All technical solutions and materials used in production comply with current standards and specifications, which guarantees high quality and reliability of the products.



We are proud of our reputation as a reliable partner and we strive for continuous development to meet the highest industry standards.



Products and services

The company's production portfolio includes a full range of equipment for artificial lift



Key competencies

- | | | |
|--|------------------------|--------------------------------|
| ① Design and development of oil equipment | ③ After-sales services | ⑤ Equipment rental |
| ② Production of energy efficient equipment | ④ Major repairs | ⑥ Repair and testing equipment |

01. Electric submersible motor



02. Protector



03. Gas-handler



[Quality] [Innovation] [Experience of generations]

We offer modern solutions covering all aspects of artificial lift, starting with our own development of energy-efficient equipment that meets international standards, and ending with after-sales services and repairs.

Our company specializes in a comprehensive improvement of oil production efficiency, using advanced technological solutions and many years of professional experience.



All products are designed to meet modern requirements for production efficiency and operational reliability in challenging geological and technical conditions.



We guarantee high-quality equipment and technical support at all stages of its application.

04. Cable product and MLE



05. Electrical submersible pump



06. VSD





Electric submersible motor

Type of motors:

- Permanent magnet motors
- Induction motors

Submersible electric motors are designed to operate as part of an adjustable drive of submersible electric centrifugal (progressive cavity) pumps, used to extract reservoir fluid from oil wells.

26 – 2210 lb-ft
Torque

13–1390 hp @ 60 Hz
Power

120 – 7200 Rpm @ 60 Hz
Rotation speed

~93.7%
Max Efficiency



ESP Service LLC is the largest service company specializing in the production of submersible permanent magnet and asynchronous motors for electrical submersible and progressive cavity pumps

Advantages of PMM over Induction motor

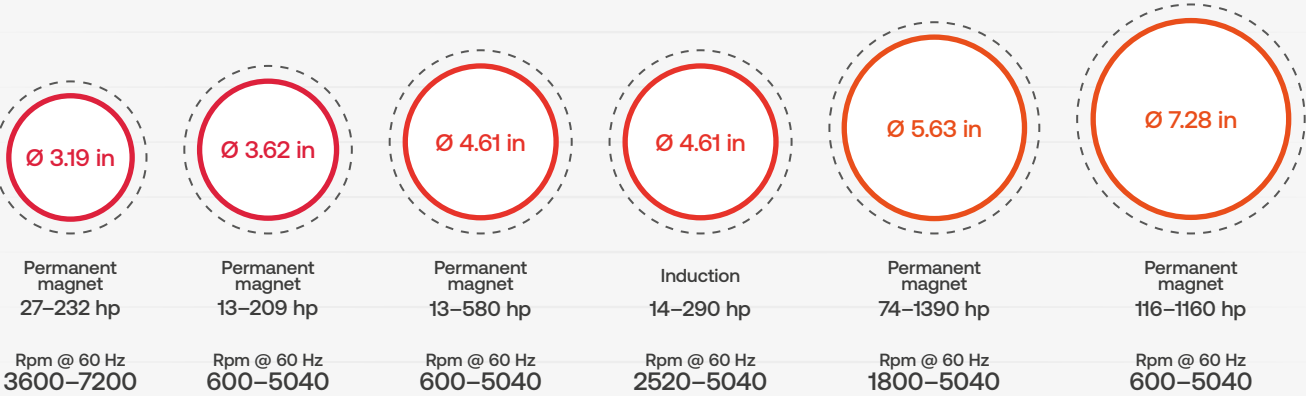
- 1 Higher efficiency (~+10%) due to permanent magnets.
- 2 Smaller length with the same power (example: 70 kW — 2.69 m vs 6.55 m).
- 3 Higher capacity rotor section: 14 kW in PMM vs 4 kW in induction motors (>x3).
- 4 Lower specific energy consumption (25% on average).
- 5 Compact size and lower weight with equal power.

Permanent magnet motors Induction motors

An induction electric submersible motor is a two-pole electric machine, the rotor of which has a squirrel-cage design.

The permanent magnet motor is a synchronous electric machine with permanent magnets installed in the rotor.

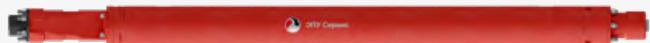
Size groups



*hp @ 60 Hz

Priorities

- Continuous improvement of production processes
- High quality products and services
- Service reliability
- Caring for the development of professional potential
- Careful attitude to the environment



Permanent magnet motors	Size	Power / Torque @ 60 Hz
for driving electrical submersible pumps	3.19 in	27–232 hp
	3.62 in	13–209 hp
	4.61 in	13–580 hp
	5.63 in	74–1390 hp
	7.28 in	116–1160 hp
for driving submersible progressive cavity pump	4.61 in	26–516 lb-ft
	5.63 in	74–1475 lb-ft
	7.28 in	221–2210 lb-ft

ELECTRIC SUBMERSIBLE MOTOR





EPMM-319-V5

Designed for use as part of a variable-speed drive in 272 Series ESP systems for pumping formation fluid from oil wells.

The motor can operate in reverse rotation for use with ESP assemblies equipped with pumps having a left-hand shaft rotation.

3.19 in

Housing diameter

3.46 in

Min Casing ID

4.02 in

Side track

90°

Deviation angle

3600–7200 Rpm @ 60 Hz

Rpm (operation range)

Formation fluid parameters

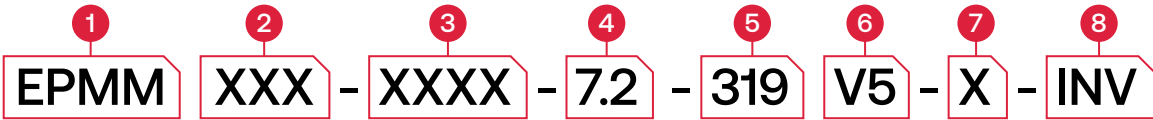
Parameter		Motor design			
		1	2	3	4
Ambient temperature, max °F		248		302	
Formation water pH value		5.0-8.5	3.0-9.0	5.0-8.5	3.0-9.0
Aggressive components, g/L, max:	H ₂ S	0.01	1.25	0.01	1.25
	CO ₂	–	1.15	–	1.15
	Cl	–	75	–	75
	HCO ₃	–	1.00	–	1.00
	Ca ²⁺	–	9	–	9
	(Na ⁺ +K ⁺)	–	40	–	40

The designation of submersible motor types consists of two parts

- 1 submersible motor designation;
- 2 designation of the installed downhole sensor unit according to the manufacturer’s technical specifications (may be omitted if the submersible unit is not installed).



Structure of the designation



No.	Variants	Description
1	EPMM	Electric Permanent Magnet Motor for ESP drive
2	Table 1	Rated power, hp @ 60 Hz
3	Table 1	Rated voltage, V @ 60 Hz
4	7.2	Nominal speed, ×1000 Rpm @ 60 Hz
5	319	Frame diameter, 3.19 in (319 Series)
6	V5	Mounting type V5
Environmental design code		
7	1	Ambient temperature 248°F (120°C)
	2	Ambient temperature 248°F (120°C), corrosion-resistant design
	3	Ambient temperature 302°F (150°C)
	4	Ambient temperature 302°F (150°C), corrosion-resistant design
Shaft spline type		
8	blank	straight spline (SS)
	INV	involute

Examples of motor designation entries for ordering and for use in documentation of other equipment

Submersible permanent magnet motor rated at 70 hp, 760 V @ 60 Hz, with involute spline shaft, designed for downhole operation in ambient temperatures up to 248 °F (120 °C).

Motor designation: EPMM-70-760-7.2-319-V5-2-INV

The same motor equipped with the downhole sensor 319M3.

Motor designation: EPMM-70-760-7.2-319-V5-2-INV

Downhole sensor: 319M3

Motor specifications – EPMM-319-V5

Table 1

Motor type	Rated parameters				Weights and overall dimensions	
	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %	Length L _o , ft	Weight, lb (max)
EPMM-46-460-7.2-319-V5-X-INV	46	460	31.6	87	5.95	88.18
EPMM-70-760-7.2-319-V5-X-INV	70	760	28.7	87.1	8.12	176.37
EPMM-93-930-7.2-319-V5-X-INV	93	930	31.6	87.3	9.20	209.44
EPMM-116-1220-7.2-319-V5-X-INV	116	1220	29.8	87.3	11.36	275.58
EPMM-139-1520-7.2-319-V5-X-INV	139	1520	28.7	87.2	13.53	341.72
EPMM-162-1820-7.2-319-V5-X-INV	162	1820	27.9	87.2	15.70	407.85
EPMM-186-2120-7.2-319-V5-X-INV	186	2120	27.4	87.2	17.86	473.99
EPMM-209-2410-7.2-319-V5-X-INV	209	2410	27	87.1	20.03	540.13
EPMM-232-2580-7.2-319-V5-X-INV	232	2580	28.2	87.3	21.11	573.20

Note:

The table provides data for standard-design motors.

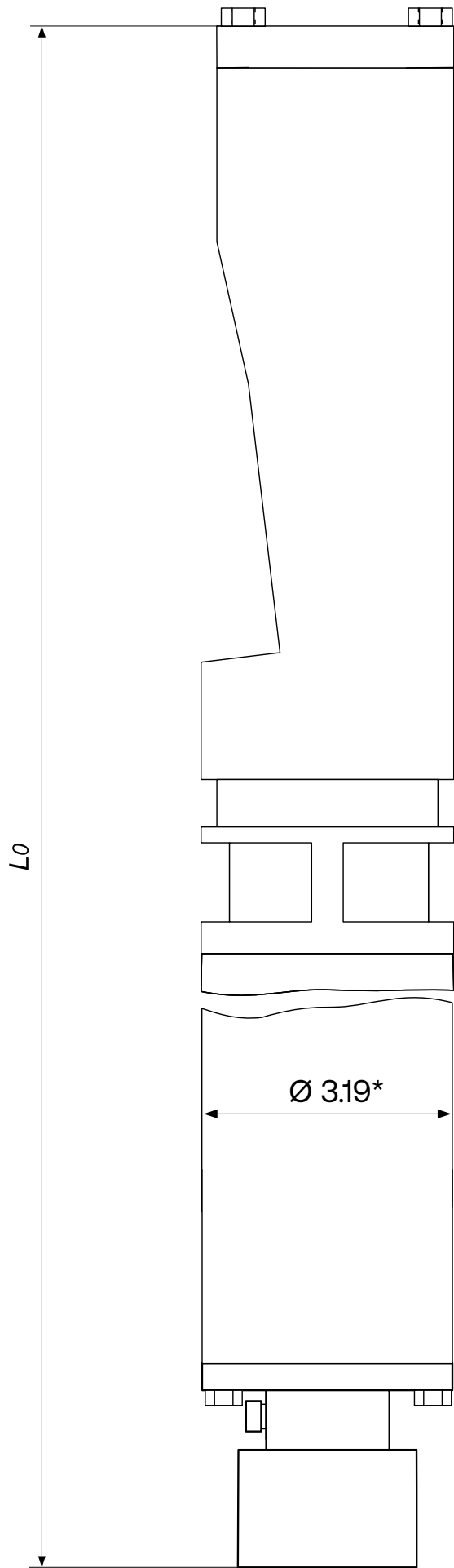
Performance parameters for motors of the same power rating, regardless of environmental design code, are identical.

For motors equipped with a submersible module, total weight and overall length are determined by the specifications of the respective submersible module.





Dimensions



EPMMS-319-V5

EPMMS-464-3740-7.2-319-V5-4-INV

Designed for use as part of a variable-speed drive in inverted-type ESP systems for pumping formation fluid from oil wells.

The motor can operate in reverse rotation for use with ESP assemblies equipped with pumps having a left-hand shaft rotation.

Installed in the well on a load-bearing cable with the ESP positioned below.

3.19 in
Housing diameter

3.94 in
Min Casing ID

60°
Deviation angle

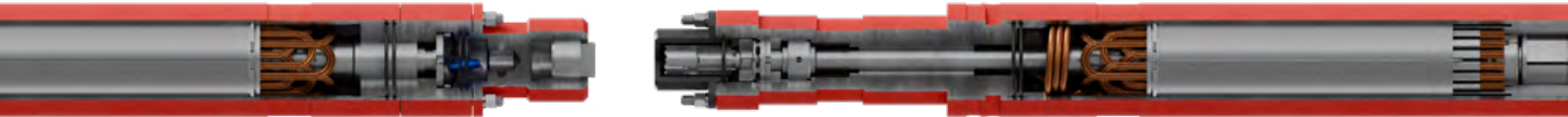
3600–7200 Rpm @ 60 Hz
Rpm (operation range)

Formation fluid parameters

Ambient temperature, max °F		302
Formation water pH value		3.0–9.0
Aggressive components, g/L, max:	H ₂ S	1.25
	CO ₂	1.15
	Cl	75
	HCO ₃	1.00
	Ca ²⁺	9
	(Na ⁺ +K ⁺)	40

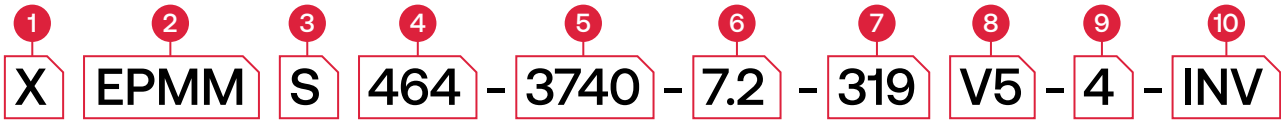
The designation of submersible motor types consists of two parts

- 1 submersible motor designation;
- 2 designation of the installed downhole sensor unit according to the manufacturer's technical specifications (may be omitted if the submersible unit is not installed).





Structure of the designation



No.	Variants	Description
Temperature sensor availability		
1	no digit	not defined
	1	IRZ DS-319PR (produced by IRZ TEK LLC)
2	EPMM	Permanent Magnet Motor (M Series) for ESP Drive
3	S	Two-section motor
4	464	Rated power, hp @ 60 Hz
5	3740	Rated voltage, V @ 60 Hz
6	7.2	Nominal speed, x1000 Rpm @ 60 Hz
7	319	Frame diameter, 3.19 in (319 Series)
8	V5	Mounting type V5
Environmental design code		
9	4	Temp. rating 302 °F corrosion-resistant version
Shaft spline type		
10	blank	straight spline (SS)
	INV	involute

Example of submersible permanent-magnet motor designation of 3.19-inch frame size, as used in orders and in documentation of other equipment:

In two-section design, rated power 464 hp @ 60 Hz, rated voltage 3740 V @ 60 Hz, rated speed 7200 rpm @ 60 Hz, with involute spline shaft, intended for operation in the following well conditions: ambient temperature 302 °F, corrosion-resistant version.

Motor designation: EPMMS-464-3740-7.2-319-V5-4-INV

The same motor equipped with an IRZ TEK downhole sensor unit 319PR:

Motor designation: 1EPMMS-464-3740-7.2-319-V5-4-INV

IRZ DS-319PR-5800 psi-V2-T2-Kn-E8-E501L-46

Motor specifications – 1EPMMS-464-3740-7.2-319-V5

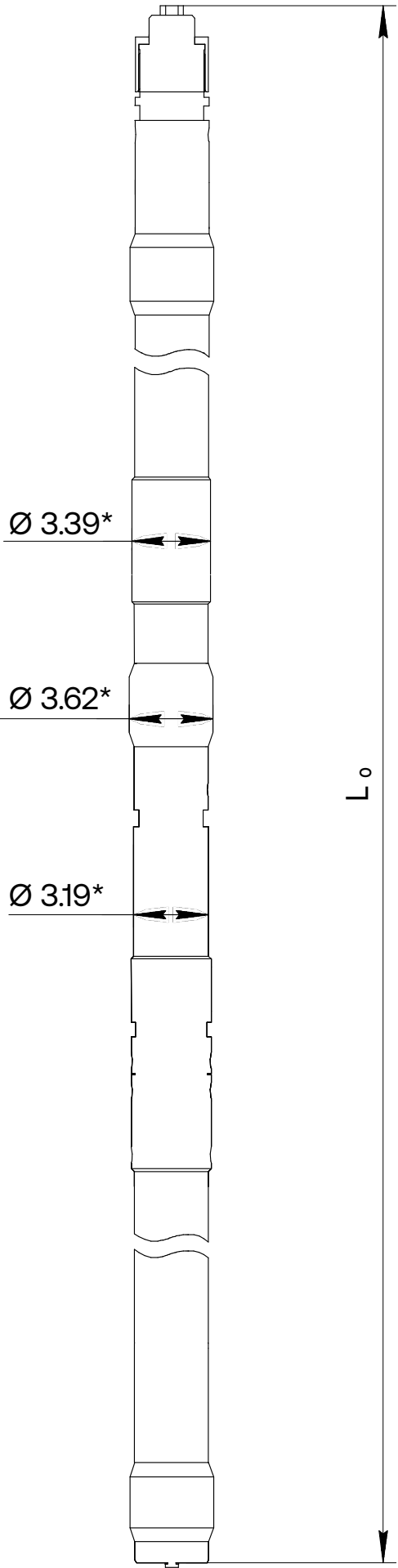
Motor type	Rated parameters				Weights and overall dimensions	
	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %	Length L _o , ft	Weight, lb (max)
1EPMMS-464-3740-7.2-319-V5	464	3740	39.9	87.7	40.83	838

Note:

1. The table provides data for motors equipped with a temperature sensor (SPT).

2. Weight and overall dimensions are given including the IRZ DS-82PR-5800 psi-V2-T2-Kn-E8-E501L-46 sensor unit.

Dimensions





EPMM-362-V5

Designed for use as part of a variable-speed drive of submersible centrifugal pumps for pumping formation fluid from oil wells.

The maximum wellbore curvature rate is 3° per 32.8 ft.

The motor’s nominal rotation speed is 3600 Rpm @ 60 Hz.

3.19 in
Housing diameter

4.41 in
Min Casing ID

60°
Deviation angle

600–5040 Rpm @ 60 Hz
Rpm (operation range)

The motor shaft rotates to the right (clockwise) when viewed from the head end.

The motor can operate in reverse rotation for use with ESP assemblies equipped with pumps having a left-hand shaft rotation, provided that a smooth start-up is ensured.

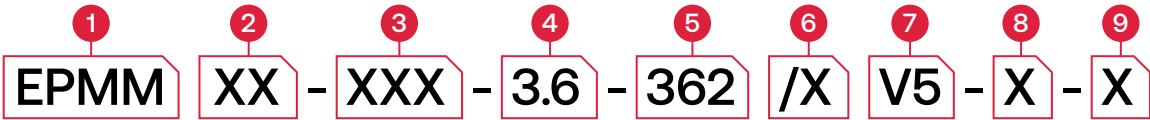
Formation fluid parameters

Parameter		Motor design			
		1	2	3	4
Ambient temperature, max °F		248		302	
Formation water pH value		5.0–8.5	3.0–9.0	5.0–8.5	3.0–9.0
Aggressive components, g/L, max:	H ₂ S	0.01	1.25	0.01	1.25
	CO ₂	-	1.15	-	1.15
	Cl	-	75	-	75
	HCO ₃	-	1.00	-	1.00
	Ca ²⁺	-	9	-	9
	(Na ⁺ +K ⁺)	-	40	-	40

The designation of submersible motor types consists of two parts

- 1
- submersible motor designation;
- 2
- designation of the installed downhole sensor unit according to the manufacturer’s technical specifications (may be omitted if the submersible unit is not installed).

Structure of the designation



No.	Variants	Description
1	EPMM	Electric Permanent Magnet Motor for ESP drive
2	Tables 1, 2, 3	Rated power, hp @ 60 Hz
3	Tables 1, 2, 3	Rated voltage, V @ 60 Hz
4	3.6	Nominal speed, x1000 Rpm @ 60 Hz
5	362	Frame diameter, 3.62 in (362 Series)
6	1	With winding wire type 1
	2	With winding wire type 2
	—	With winding wire type 3
	V5	Mounting type V5
		Environmental design code
8	1	Ambient temperature 248 °F (120 °C)
	2	Ambient temperature 248 °F (120 °C), corrosion-resistant, housing and end parts coated with TSZP-VS-013
	2n	Ambient temperature 248 °F (120 °C), corrosion-resistant, housing and end parts made of stainless steel
	3	Ambient temperature 302 °F (150 °C)
	4	Ambient temperature 302 °F (150 °C), corrosion-resistant, housing and end parts coated with TSZP-VS-013
	4n	Ambient temperature 302 °F (150 °C), corrosion-resistant, housing and end parts made of stainless steel
		Shaft spline type
9	blank	straight spline (SS)
	INV	involute

Examples of motor designation entries:

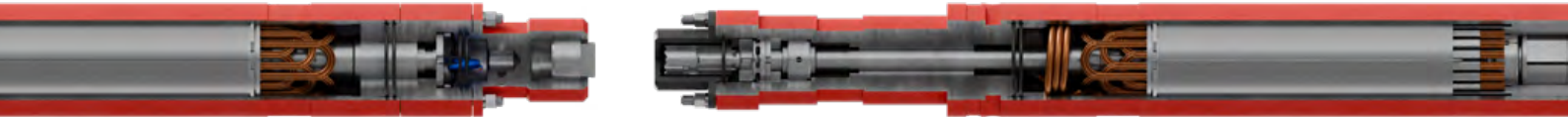
Permanent-magnet motor, rated 74 hp @ 60 Hz, nominal voltage 910 V @ 60 Hz, for operation at ambient temperature up to 248 °F.

Motor designation: EPMM74-910-3.6-362V5-1

Same motor with involute spline shaft and equipped with a downhole sensor DS-362M3L, for operation at ambient temperature up to 302 °F.

Motor designation: EPMM74-910-3.6-362/V5-3-INV

Downhole sensor: 362M3L





Motor specifications – EPMM-362-V5

Table 1

Motor type	Rated parameters				Weights and overall dimensions	
	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %	Length L _o , ft	Weight, lb (max)
EPMM-37-450-3.6-362-V5	37	450	25.1	89.1	6.52	223
EPMM-56-680-3.6-362-V5	56	680	25.3	89.4	8.82	287
EPMM-74-910-3.6-362-V5	74	910	25.5	89.5	11.11	351
EPMM-93-1140-3.6-362-V5	93	1140	25.7	89.6	13.41	415
EPMM-111-1360-3.6-362-V5	111	1360	25.9	89.6	15.69	479
EPMM-130-1590-3.6-362-V5	130	1590	26.1	89.6	17.99	542

Motor specifications – EPMM-362/1-V5

Table 2

Motor type	Rated parameters				Weights and overall dimensions	
	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %	Length L _o , ft	Weight, lb (max)
EPMM-23-330-3.6-362/1-V5	23	330	22.7	89.8	4.22	159
EPMM-46-650-3.6-362/1-V5	46	650	22.7	90.3	6.52	223
EPMM-70-970-3.6-362/1-V5	70	970	22.7	90.5	8.81	287
EPMM-93-1300-3.6-362/1-V5	93	1300	22.7	90.6	11.11	351
EPMM-116-1500-3.6-362/1-V5	116	1500	25.2	90.4	12.25	384
EPMM-139-1820-3.6-362/1-V5	139	1820	24.7	90.5	14.56	448
EPMM-162-2150-3.6-362/1-V5	162	2150	24.5	90.6	16.85	511
EPMM-186-2340-3.6-362/1-V5	186	2340	25.9	90.4	17.99	542
EPMM-209-2660-3.6-362/1-V5	209	2660	25.5	90.5	20.29	606

Motor specifications – EPMM-362/2-V5

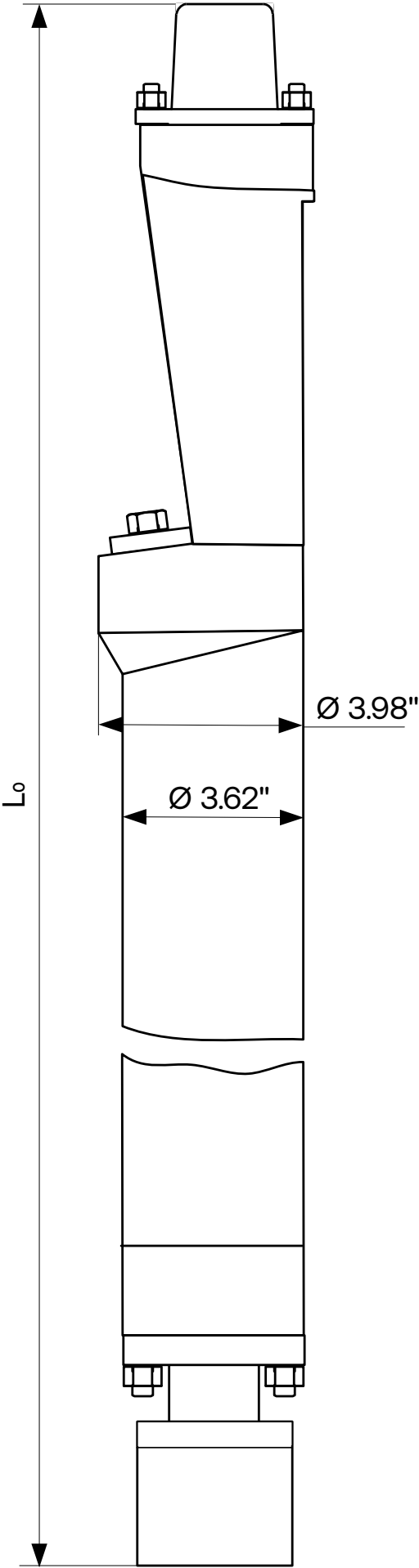
Table 3

Motor type	Rated parameters				Weights and overall dimensions	
	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %	Length L _o , ft	Weight, lb (max)
EPMM-23-300-3.6-362/2-V5	23	300	25.1	89.2	4.22	159
EPMM-46-600-3.6-362/2-V5	46	600	25.1	89.8	6.52	223
EPMM-70-890-3.6-362/2-V5	70	890	25.1	90.0	8.81	287
EPMM-93-1180-3.6-362/2-V5	93	1180	25.1	90.1	11.11	351
EPMM-104-1330-3.6-362/2-V5	104	1330	25.1	90.1	12.25	384
EPMM-128-1620-3.6-362/2-V5	128	1620	25.1	90.2	14.56	448
EPMM-146-1900-3.6-362/2-V5	146	1900	24.3	90.3	16.85	511
EPMM-162-2070-3.6-362/2-V5	162	2070	25.1	90.2	17.99	542
EPMM-186-2360-3.6-362/2-V5	186	2360	25.1	90.2	20.29	606

Note:
The weight and overall dimensions of motors with the same power rating are identical across different modifications.

For motors equipped with a submersible section, the overall length and weight are calculated as follows:
 $L_o = L_i + L_{ss}^* + 0.18 \text{ ft}$
 $M = M_m + M_{ss}^* - 4.4 \text{ lb}$
*The weight and length of the submersible section are specified in the documentation for the corresponding section type.

Dimensions





EPMM-461-V5

Designed for use as part of a variable-speed drive of submersible centrifugal pumps for pumping formation fluid from oil wells.

Nominal rotation speed — 3600 Rpm @ 60 Hz.

The motor can operate in reverse rotation for use with ESP assemblies equipped with pumps having a left-hand shaft rotation.

4.61 in

Housing diameter

4.87 in

Min Casing ID

60°

Deviation angle

600–5040 Rpm @ 60 Hz

Rpm (operation range)

Formation fluid parameters

Parameter		Motor design					
		1	2	3	4	5	6
Ambient temperature, max °F		248		302		392	
Formation water pH value		5.0-8.5	3.0-9.0	5.0-8.5	3.0-9.0	5.0-8.5	3.0-9.0
Aggressive components, g/L, max:	H ₂ S	0.01	1.25	0.01	1.25	0.01	1.25
	CO ₂	-	1.15	-	1.15	-	1.15
	Cl	-	75	-	75	-	75
	HCO ₃	-	1.00	-	1.00	-	1.00
	Ca ²⁺	-	9	-	9	-	9
	(Na ⁺ +K ⁺)	-	40	-	40	-	40

The designation of submersible motor types consists of two parts

- 1
- submersible motor designation;
- 2
- designation of the installed downhole sensor unit according to the manufacturer's technical specifications (may be omitted if the submersible unit is not installed).



Structure of the designation



No.	Variants	Description
1	EPMM	Electric Permanent Magnet Motor for ESP drive
2	—	Basic version
	2	With double-ended shaft
3	Tables 1, 2, 3	Rated power, hp
4	Tables 1, 2, 3	Rated voltage, V
5	3.6	Nominal speed, ×1000 Rpm @ 60 Hz
6	461	Frame diameter, 4.61 in (461 Series)
7	1	With winding wire type 1
	2	With winding wire type 2
	—	With winding wire type 3
8	V5	Mounting type V5
9	Environmental design code	
	1	Ambient temperature 248 °F
	2	Ambient temperature 248 °F, corrosion-resistant version
	3	Ambient temperature 302 °F
	4	Ambient temperature 302 °F, corrosion-resistant version
	5	Ambient temperature 392 °F
10	Shaft spline type	
	blank	straight spline (SS)
	INV	involute

Examples of motor designation entries used in orders and in documentation of other equipment:

Permanent-magnet motor rated 40 hp @ 60 Hz, nominal voltage 1000 V @ 60 Hz, with straight spline shaft (basic design), for operation in downhole conditions at ambient temperature up to 248 °F, corrosion-resistant version:

Motor designation: EPMM40-1000-3.6-461-V5-2

Motor of the same rating with involute spline shaft and winding wire type 1:

Motor designation: EPMM40-800-3.6-461/V5-2-INV

Motor rated 54 hp @ 60 Hz with double-ended shaft and winding wire type 2:

Motor designation: EPMM2.54-1100-3.6-461/2V5-2

Motor rated 54 hp @ 60 Hz, equipped with a downhole sensor DS-4.61M3L, with involute spline shaft and winding wire type 2:

Motor designation: EPMM54-1000-3.6-461/2V5-2-INV

Downhole sensor: 461M3L





Motor specifications – EPMM-461-V5

Table 1

Motor type	Rated parameters			
	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %
EPMM-23-420-3.6-461-V5	23	420	17.2	89.4
EPMM-23-330-3.6-461-V5		330	21.7	90.1
EPMM-46-840-3.6-461-V5	46	840	17	90.4
EPMM-46-660-3.6-461-V5		660	21.5	91
EPMM-70-1250-3.6-461-V5	70	1250	16.9	90.8
EPMM-70-1000-3.6-461-V5		1000	21.3	91.3
EPMM-93-1700-3.6-461-V5	93	1700	16.9	90.9
EPMM-93-1300-3.6-461-V5		1300	21.4	91.5
EPMM-116-2100-3.6-461-V5	116	2100	16.8	91
EPMM-116-1650-3.6-461-V5		1650	21.4	91.6
EPMM-139-2500-3.6-461-V5	139	2500	16.8	91.1
EPMM-139-2000-3.6-461-V5		2000	21.4	91.6
EPMM-162-2300-3.6-461-V5	162	2300	21.4	91.7
EPMM-162-1900-3.6-461-V5		1900	26.3	91.7
EPMM-186-2400-3.6-461-V5	186	2400	23.7	91.3
EPMM-186-1900-3.6-461-V5		1900	29.5	91.7
EPMM-209-2100-3.6-461-V5	209	2100	28.8	91.8
EPMM-209-1600-3.6-461-V5		1600	38.6	91.8
EPMM-232-2400-3.6-461-V5	232	2400	29.6	91.7
EPMM-232-1800-3.6-461-V5		1800	39.7	91.6
EPMM-255-2500-3.6-461-V5	255	2500	29.1	91.6
EPMM-255-1900-3.6-461-V5		1900	39.2	91.9
EPMM-278-2100-3.6-461-V5	278	2100	39	91.7
EPMM-302-2300-3.6-461-V5	302	2300	39	91.9
EPMM-348-2450-3.6-461-V5	348	2450	43.3	91.7
EPMM-348-2000-3.6-461-V5	348	2000	52	91.9
EPMM-406-2300-3.6-461-V5	406	2300	52.2	91.9
EPMM-464-2500-3.6-461-V5	464	2500	54.2	92

Dimensions and weights – EPMM-461-V5

Motor type	Power, hp @ 60 Hz	EPMM-461-V5		EPMM2.-461-V5	
		Length L0, ft	Weight, lb (max)	Length L0, ft	Weight, lb (max)
EPMM-23-461-V5	23	4.07	159	3.78	159
EPMM-46-461-V5	46	5.31	220	5.02	220
EPMM-70-461-V5	70	6.56	271	6.27	271
EPMM-93-461-V5	93	7.81	331	7.52	331
EPMM-116-461-V5	116	9.05	388	8.76	388
EPMM-139-461-V5	139	10.3	445	10.01	445
EPMM-162-461-V5	162	11.55	505	11.26	505
EPMM-186-461-V5	186	12.79	562	12.5	562
EPMM-209-461-V5	209	14.04	633	13.75	633
EPMM-232-461-V5	232	15.29	694	15	694
EPMM-255-461-V5	255	16.53	754	16.24	754
EPMM-278-461-V5	278	17.78	814	17.49	814
EPMM-302-461-V5	302	19.03	871	18.74	871
EPMM-348-461-V5	348	20.27	928	19.98	928
EPMM-406-461-V5	406	22.77	1056	22.48	1056
EPMM-464-461-V5	464	25.26	1177	24.97	1177

Motor specifications – EPMM-461/1-V5

Table 2

Motor type	Rated parameters			
	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %
EPMM-28-400-3.6-461/1-V5	28	400	21.1	90.6
EPMM-37-400-3.6-461/1-V5	37		28.3	
EPMM-46-800-3.6-461/1-V5	46	800	17.4	91.5
EPMM-51-800-3.6-461/1-V5	51		19.1	
EPMM-56-800-3.6-461/1-V5	56		20.8	
EPMM-65-800-3.6-461/1-V5	65		24.3	
EPMM-70-800-3.6-461/1-V5	70		26.1	
EPMM-74-800-3.6-461/1-V5	74	1200	27.9	91.9
EPMM-93-1200-3.6-461/1-V5	93		23.0	
EPMM-104-1200-3.6-461/1-V5	104		26.0	
EPMM-116-1600-3.6-461/1-V5	116	1600	21.6	92.0
EPMM-130-1600-3.6-461/1-V5	130		24.2	
EPMM-139-1600-3.6-461/1-V5	139		26.0	
EPMM-146-1600-3.6-461/1-V5	146		27.3	
EPMM-162-2000-3.6-461/1-V5	162	2000	24.2	92.1
EPMM-186-2400-3.6-461/1-V5	186	2400	23.0	92.2
EPMM-209-2400-3.6-461/1-V5	209		26.0	
EPMM-232-2400-3.6-461/1-V5	232	2400	29.2	92.4
EPMM-255-2400-3.6-461/1-V5	255		32.2	
EPMM-290-2500-3.6-461/1-V5	290	2500	35.2	92.4
EPMM-297-2500-3.6-461/1-V5	297	2500	35.7	92.4
EPMM-324-2500-3.6-461/1-V5	324		39.2	
EPMM-348-2500-3.6-461/1-V5	348	2500	42.7	92.4
EPMM-371-2300-3.6-461/1-V5	371	2300	47.7	92.3
EPMM-395-2500-3.6-461/1-V5	395	2500	46.7	92.3
EPMM-418-2700-3.6-461/1-V5	418	2700	45.9	92.2
EPMM-442-2700-3.6-461/1-V5	442		48.6	
EPMM-464-2500-3.6-461/1-V5	464	2500	56.2	92.4
EPMM-487-2500-3.6-461/1-V5	487		59.0	
EPMM-511-2600-3.6-461/1-V5	511	2600	58.4	92.1
EPMM-534-2800-3.6-461/1-V5	534	2800	57.1	92.4
EPMM-580-3100-3.6-461/1-V5	580	3100	57.0	92.1





Dimensions and weights – EPMM-461/1-V5

Motor type	Power, hp @ 60 Hz	EPMM-461/1-V5		EPMM2.-461/1-V5	
		Length L0, ft	Weight, lb (max)	Length L0, ft	Weight, lb (max)
EPMM-28-461/1-V5	28	4.07	159	3.78	159
EPMM-37-461/1-V5	37				
EPMM-46-461/1-V5	46	5.31	220	5.02	220
EPMM-51-461/1-V5	51				
EPMM-56-461/1-V5	56				
EPMM-65-461/1-V5	65				
EPMM-70-461/1-V5	70				
EPMM-74-461/1-V5	74				
EPMM-93-461/1-V5	93	6.56	271	6.27	271
EPMM-104-461/1-V5	104				
EPMM-116-461/1-V5	116	7.81	331	7.52	331
EPMM-130-461/1-V5	130				
EPMM-139-461/1-V5	139				
EPMM-146-461/1-V5	146				
EPMM-162-461/1-V5	162	9.05	388	8.76	388
EPMM-186-461/1-V5	186	10.3	445	10.01	445
EPMM-209-461/1-V5	209				
EPMM-232-461/1-V5	232	11.55	505	11.26	505
EPMM-255-461/1-V5	255				
EPMM-290-461/1-V5	290	12.79	562	12.5	562
EPMM-297-461/1-V5	297	14.04	633	13.75	633
EPMM-324-461/1-V5	324				
EPMM-348-461/1-V5	348	15.29	694	15	694
EPMM-371-461/1-V5	371	16.53	754	16.24	754
EPMM-395-461/1-V5	395	17.78	814	17.49	814
EPMM-418-461/1-V5	418	19.03	871	18.74	871
EPMM-442-461/1-V5	442				
EPMM-464-461/1-V5	464	20.27	928	19.98	928
EPMM-487-461/1-V5	487				
EPMM-511-461/1-V5	511	21.52	992	21.23	992
EPMM-534-461/1-V5	534	22.77	1056	22.48	1056
EPMM-580-461/1-V5	580	25.26	1177	24.97	1177

Motor specifications – EPMM-461/2-V5

Table 3

Motor type	Rated parameters			
	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %
EPMM-28-360-3.6-461/2-V5	28	360	23.0	90.4
EPMM-33-360-3.6-461/2-V5	33		26.9	
EPMM-46-720-3.6-461/2-V5	46	720	18.9	91.4
EPMM-51-720-3.6-461/2-V5	51		20.8	
EPMM-56-720-3.6-461/2-V5	56		22.7	
EPMM-60-720-3.6-461/2-V5	60		24.6	
EPMM-65-720-3.6-461/2-V5	65		26.6	
EPMM-74-1100-3.6-461/2-V5	74	1100	20.2	91.7
EPMM-81-1100-3.6-461/2-V5	81		22.0	
EPMM-93-1100-3.6-461/2-V5	93		25.2	
EPMM-104-1450-3.6-461/2-V5	104	1450	21.2	91.8
EPMM-116-1450-3.6-461/2-V5	116		23.5	
EPMM-130-1450-3.6-461/2-V5	130		26.4	
EPMM-146-1800-3.6-461/2-V5	146	1800	23.7	91.8
EPMM-162-1800-3.6-461/2-V5	162		26.4	
EPMM-186-2200-3.6-461/2-V5	186	2200	25.2	91.8
EPMM-209-2150-3.6-461/2-V5	209	2150	29.1	92.0
EPMM-232-2150-3.6-461/2-V5	232		32.4	
EPMM-255-2200-3.6-461/2-V5	255	2200	34.7	92.0
EPMM-267-2200-3.6-461/2-V5	267		36.2	
EPMM-278-2200-3.6-461/2-V5	278	2200	38.0	92.0
EPMM-290-2200-3.6-461/2-V5	290		39.6	
EPMM-297-2200-3.6-461/2-V5	297		40.6	
EPMM-313-2150-3.6-461/2-V5	313	2150	44.3	91.9
EPMM-324-2150-3.6-461/2-V5	324		45.9	
EPMM-348-2300-3.6-461/2-V5	348	2300	44.9	91.8
EPMM-371-2500-3.6-461/2-V5	371	2500	44.2	91.8
EPMM-395-2700-3.6-461/2-V5	395	2700	43.7	91.8
EPMM-418-2450-3.6-461/2-V5	418	2450	50.8	92.0
EPMM-442-2450-3.6-461/2-V5	442		53.7	
EPMM-464-2650-3.6-461/2-V5	464	2650	52.8	92.0
EPMM-487-2650-3.6-461/2-V5	487		55.4	
EPMM-511-2800-3.6-461/2-V5	511	2800	54.9	91.9
EPMM-534-3050-3.6-461/2-V5	534	3050	52.8	91.7
EPMM-556-3050-3.6-461/2-V5	556		55.2	
EPMM-580-3050-3.6-461/2-V5	580		57.5	

Note:
1. The weights and overall dimensions of motors with the same torque for different modifications are identical.
2. For motors equipped with a submersible section, the total weight and overall length are calculated using the following formulas:
 $L_0 = L_1 + L_{sub}^* + 0.21 \text{ ft}$
 $M = M_{mot} + M_{ss}^* - 95 \text{ lb}$
*The weight and length of the submersible section are specified in the documentation for the respective section type.



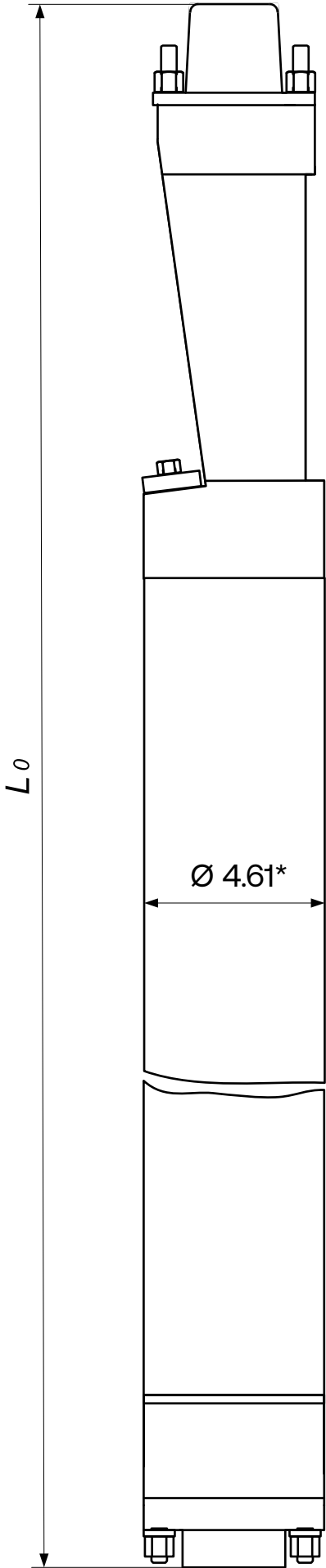


Dimensions and weights – EPMM-461/2-V5

Motor type	Power, hp @ 60 Hz	EPMM-461/2-V5		EPMM2-461/2-V5	
		Length L0*, ft	Weight*, lb (max)	Length L0*, ft	Weight*, lb (max)
EPMM-28-461/2-V5	28	4.07	159	3.78	159
EPMM-33-461/2-V5	33				
EPMM-46-461/2-V5	46	5.31	220	5.02	220
EPMM-51-461/2-V5	51				
EPMM-56-461/2-V5	56				
EPMM-65-461/2-V5	65				
EPMM-74-461/2-V5	74	6.56	271	6.27	271
EPMM-81-461/2-V5	81				
EPMM-93-461/2-V5	93				
EPMM-104-461/2-V5	104	7.81	331	7.52	331
EPMM-116-461/2-V5	116				
EPMM-130-461/2-V5	130				
EPMM-146-461/2-V5	146	9.05	388	8.76	388
EPMM-162-461/2-V5	162				
EPMM-186-461/2-V5	186	10.3	445	10.01	445
EPMM-209-461/2-V5	209	11.55	505	11.26	505
EPMM-232-461/2-V5	232				
EPMM-255-461/2-V5	255	12.79	562	12.5	562
EPMM-267-461/2-V5	267				
EPMM-278-461/2-V5	278	14.04	633	13.75	633
EPMM-290-461/2-V5	290				
EPMM-297-461/2-V5	297				
EPMM-313-461/2-V5	313	15.29	694	15	694
EPMM-324-461/2-V5	324				
EPMM-348-461/2-V5	348	16.53	754	16.24	754
EPMM-371-461/2-V5	371	17.78	814	17.49	814
EPMM-395-461/2-V5	395	19.03	871	18.74	871
EPMM-418-461/2-V5	418	20.27	928	19.98	928
EPMM-442-461/2-V5	442				
EPMM-464-461/2-V5	464	21.52	992	21.23	992
EPMM-487-461/2-V5	487				
EPMM-511-461/2-V5	511	22.77	1056	22.48	1056
EPMM-534-461/2-V5	534	25.26	1177	24.97	1177
EPMM-556-461/2-V5	556				
EPMM-580-461/2-V5	580				

Note:
1. The weights and overall dimensions of motors with the same torque for different modifications are identical.
2. For motors equipped with a submersible section, the total weight and overall length are calculated using the following formulas:
 $L_0 = L_1 + L_{sub}^* + 0.21 \text{ ft}$
 $M = M_{mot} + M_{st}^* - 9.5 \text{ lb}$
*The weight and length of the submersible section are specified in the documentation for the respective section type.

Dimensions





ELPMM-461-V5

Designed for use as part of a variable-speed drive of submersible centrifugal pumps for pumping formation fluid from oil wells.

Nominal rotation speed — 600 Rpm @ 60 Hz.

The motor shaft rotates to the right (clockwise) when viewed from the head end.

4.61 in
Housing diameter

4.87 in
Min Casing ID

60°
Deviation angle

120–1800 Rpm @ 60 Hz
Rpm (operation range)

Formation fluid parameters

Parameter		Motor design					
		1	2	3	4	5	6
Ambient temperature, max °F		248		302		392	
Formation water pH value		5.0-8.5	3.0-9.0	5.0-8.5	3.0-9.0	5.0-8.5	3.0-9.0
Aggressive components, g/L, max:	H ₂ S	0.01	1.25	0.01	1.25	0.01	1.25
	CO ₂	-	1.15	-	1.15	-	1.15
	Cl	-	75	-	75	-	75
	HCO ₃	-	1.00	-	1.00	-	1.00
	Ca ²⁺	-	9	-	9	-	9
	(Na ⁺ +K ⁺)	-	40	-	40	-	40

The designation of submersible motor types consists of two parts

- 1
- submersible motor designation;
- 2
- designation of the installed downhole sensor unit according to the manufacturer's technical specifications (may be omitted if the submersible unit is not installed).

Structure of the designation



No.	Variants	Description
1	ELPMM	Low speed permanent magnet motor to drive submersible pumps
2	Tables 1, 2, 3	Rated torque, lbf-ft
3	Tables 1, 2, 3	Rated voltage, V
4	0.6	Nominal speed, x1000 Rpm @ 60 Hz
5	461	Frame diameter, 4.61 in (461 Series)
6	1	With winding wire type 1
	2	With winding wire type 2
	—	With winding wire type 3
7	V5	Mounting type V5
Environmental design code		
8	1	Ambient temperature 248 °F
	2	Ambient temperature 248 °F, corrosion-resistant version
	3	Ambient temperature 302 °F
	4	Ambient temperature 302 °F, corrosion-resistant version
	5	Ambient temperature 392 °F
	6	Ambient temperature 392 °F, corrosion-resistant version
Shaft spline type		
9	blank	straight spline (SS)
	INV	involute

Examples of motor designation entries

Permanent-magnet low-speed motor, rated torque 155 lbf-ft, nominal voltage 385 V @ 60 Hz, straight spline shaft (basic), for operation at ambient temperature up to 248 °F, corrosion-resistant version:

Motor designation: ELPMM155-385-0.6-461-V5-2

Motor of the same torque with involute spline shaft and winding wire type 2:

Motor designation: ELPMM155-385-0.6-461/2V5-2-INV

Same motor equipped with a downhole sensor DS-461M3L:

Motor designation: ELPMM155-370-0.6-461/2V5-2-INV

Downhole sensor: 461M3L





Motor specifications – ELPMM-0.6-461-V5

Table 1

Motor type	Rated parameters					Modification by the presence of SB			
						Base version		Version with SB	
	Torque, lbf·ft (min)	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %	Length L0*, ft	Weight, lb (max)	Length L0*, ft	Weight, lb (max)
ELPMM-26-70-0.6-461-V5	26	1.8	70	22.5	75.5	4.07	159	5.59	190
ELPMM-52-130-0.6-461-V5	52	3.7	130	22.5	77.7	5.31	220	6.83	243
ELPMM-77-195-0.6-461-V5	77	5.5	195	22.5	78.5	6.56	271	8.08	300
ELPMM-103-260-0.6-461-V5	103	7.3	260	22.3	78.9	7.81	331	9.33	359
ELPMM-129-320-0.6-461-V5	129	9.2	320	22.3	79.1	9.05	388	10.57	419
ELPMM-155-385-0.6-461-V5	155	11.0	385	22.3	79.2	10.3	445	11.82	474
ELPMM-181-450-0.6-461-V5	181	12.8	450	22.3	79.3	11.55	505	13.07	534
ELPMM-206-510-0.6-461-V5	206	14.7	510	22.3	79.4	12.79	562	14.32	591
ELPMM-232-580-0.6-461-V5	232	16.5	580	22.4	79.4	14.04	633	15.56	661
ELPMM-258-640-0.6-461-V5	258	18.3	640	22.4	79.4	15.29	694	16.81	723
ELPMM-295-710-0.6-461-V5	295	20.9	710	23.3	78.9	16.53	754	18.06	783
ELPMM-333-780-0.6-461-V5	333	23.6	780	24.2	78.3	17.78	814	19.3	842
ELPMM-369-840-0.6-461-V5	369	26.2	840	25.0	77.7	19.03	871	20.55	899
ELPMM-404-910-0.6-461-V5	404	28.8	910	25.7	77.1	20.27	928	21.8	959
ELPMM-443-970-0.6-461-V5	443	31.4	970	26.6	76.4	21.52	992	23.04	1021
ELPMM-480-1030-0.6-461-V5	480	34.0	1030	27.3	75.7	22.77	1056	24.29	1085

Motor specifications – ELPMM-0.6-461/1-V5

Table 2

Motor type	Rated parameters					Modification by the presence of SB			
						Base version		Version with SB	
	Torque, lbf·ft (min)	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %	Length L0*, ft	Weight, lb (max)	Length L0*, ft	Weight, lb (max)
ELPMM-33-80-0.6-461/1-V5	33	5.3	80	23.9	74.5	4.07	159	5.59	190
ELPMM-66-160-0.6-461/1-V5	66	10.9	160	24	76.7	5.31	220	6.83	243
ELPMM-103-240-0.6-461/1-V5	103	17.2	240	25.1	76.8	6.56	271	8.08	300
ELPMM-136-310-0.6-461/1-V5	136	22.5	310	24.8	77.4	7.81	331	9.33	359
ELPMM-174-390-0.6-461/1-V5	174	28.1	390	24.7	77.7	9.05	388	10.57	419
ELPMM-207-470-0.6-461/1-V5	207	34.1	470	25.1	77.7	10.3	445	11.82	474
ELPMM-243-540-0.6-461/1-V5	243	40.1	540	25.3	77.6	11.55	505	13.07	534
ELPMM-272-610-0.6-461/1-V5	273	45	610	24.9	77.9	12.79	562	14.32	591
ELPMM-310-690-0.6-461/1-V5	310	51	690	25.2	77.8	14.04	633	15.56	661
ELPMM-339-760-0.6-461/1-V5	339	55.9	760	24.9	78	15.29	694	16.81	723
ELPMM-369-830-0.6-461/1-V5	369	60.8	830	24.7	78	16.53	754	18.06	783
ELPMM-406-900-0.6-461/1-V5	406	66.8	900	25.1	77.8	17.78	814	19.3	842
ELPMM-436-960-0.6-461/1-V5	436	71.7	960	25	77.7	19.03	871	20.55	899
ELPMM-473-1030-0.6-461/1-V5	473	76.6	1030	25	77.6	20.27	928	21.8	959
ELPMM-503-1090-0.6-461/1-V5	503	81.4	1090	24.8	77.7	21.52	992	23.04	1021
ELPMM-516-1150-0.6-461/1-V5	516	84.9	1150	24.6	77.7	22.77	1056	24.29	1085

Motor specifications – ELPMM-0.6-461/2-V5

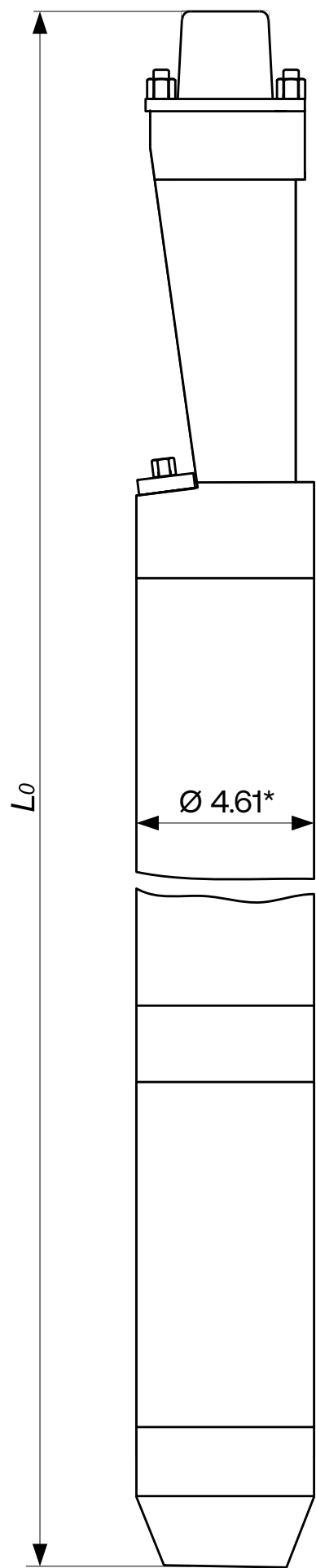
Table 3

Motor type	Rated parameters					Modification by the presence of SB			
						Base version		Version with SB	
	Torque, lbf·ft (min)	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %	Length L0*, ft	Weight, lb (max)	Length L0*, ft	Weight, lb (max)
ELPMM-30-75-0.6-461/2-V5	30	4.9	75	23.4	74.8	4.07	159	5.59	190
ELPMM-63-150-0.6-461/2-V5	63	10.2	150	24.6	76.3	5.31	220	6.83	243
ELPMM-95-230-0.6-461/2-V5	95	15.8	230	25.1	76.8	6.56	271	8.08	300
ELPMM-125-300-0.6-461/2-V5	125	20.6	300	24.7	77.4	7.81	331	9.33	359
ELPMM-155-370-0.6-461/2-V5	155	25.5	370	24.4	77.9	9.05	388	10.57	419
ELPMM-192-450-0.6-461/2-V5	192	31.6	450	25.2	77.6	10.3	445	11.82	474
ELPMM-221-520-0.6-461/2-V5	221	36.4	520	24.9	77.8	11.55	505	13.07	534
ELPMM-249-580-0.6-461/2-V5	249	41.3	580	24.8	78.0	12.79	562	14.32	591
ELPMM-280-650-0.6-461/2-V5	280	46.2	650	24.7	78.1	14.04	633	15.56	661
ELPMM-317-720-0.6-461/2-V5	317	52.2	720	25.2	77.8	15.29	694	16.81	723
ELPMM-339-780-0.6-461/2-V5	339	55.9	780	24.6	78.1	16.53	754	18.06	783
ELPMM-369-850-0.6-461/2-V5	369	60.8	850	24.7	78.0	17.78	814	19.3	842
ELPMM-398-910-0.6-461/2-V5	398	65.4	910	24.7	77.9	19.03	871	20.55	899
ELPMM-435-970-0.6-461/2-V5	435	71.7	970	25.3	77.5	20.27	928	21.8	959
ELPMM-463-1050-0.6-461/2-V5	463	76.6	1050	25.3	77.5	21.52	992	23.04	1021
ELPMM-496-1100-0.6-461/2-V5	496	81.2	1100	25.4	77.3	22.77	1056	24.29	1085





Dimensions



EPMM-563-V5

Designed for use as part of a variable-speed drive in 535 Series ESP systems for pumping formation fluid from oil wells.

Nominal rotation speed — 3600 Rpm @ 60 Hz.

The motor shaft rotates to the right (clockwise) when viewed from the head end for EPMM-563-V5 motors (standard design), and to the left (counterclockwise) for EPMM-563-V5-L motors.

5.63 in Housing diameter	6.32 in Min Casing ID	90° Deviation angle	1800–5040 Rpm @ 60 Hz Rpm (operation range)
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Formation fluid parameters

Parameter		Motor design	
		5	6
Ambient temperature, max °F		392	
Formation water pH value		5.0-8.5	3.0-9.0
Aggressive components, g/L, max:	H ₂ S	0.01	1.25
	CO ₂	-	1.15
	Cl	-	20
	HCO ₃	-	1.00
	Ca ²⁺	-	2

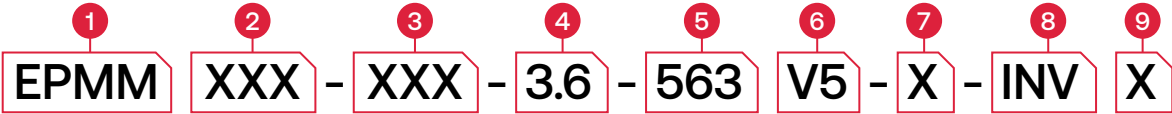
The designation of submersible motor types consists of two parts

- 1 submersible motor designation;
- 2 designation of the installed downhole sensor unit according to the manufacturer's technical specifications (may be omitted if the submersible unit is not installed).





Structure of the designation



No.	Variants	Description
1	EPMM	Electric Permanent Magnet Motor for ESP drive
2	Table 1	Rated power, hp @ 60 Hz
3	Table 1	Rated voltage, V @ 60 Hz
4	3.6	Nominal speed, x1000 Rpm @ 60 Hz
5	563	Frame diameter, 5.63 in (563 Series)
6	V5	Mounting type V5
Environmental design code		
7	5	Ambient temperature 392 °F
	6	Ambient temperature 392 °F, corrosion-resistant version
Shaft spline type		
8	blank	straight spline (SS)
	INV	involute
9	blank	With right-hand shaft rotation (basic design)
	L	With left-hand shaft rotation

Examples of motor designation entries used in orders and in documentation of other equipment:

Permanent-magnet motor rated 464 hp @ 60 Hz, nominal voltage 3000 V @ 60 Hz, corrosion-resistant version:

Motor designation: EPMM464-3000-3.6-563-V5-6-INV

Motor specifications – EPMM-563-V5

Table 1

Motor type	Rated parameters			
	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %
EPMM-74-670-3.6-563-V5	74	670	34.0	90.1
EPMM-149-1340-3.6-563-V5	149	1340	34.0	91.3
EPMM-223-2000-3.6-563-V5	223	2000	34.0	91.6
EPMM-297-2670-3.6-563-V5	297	2670	34.0	91.8
EPMM-371-3000-3.6-563-V5	371	3000	37.7	92.1
EPMM-464-3000-3.6-563-V5	464	3000	47.0	92.2
EPMM-580-2900-3.6-563-V5	580	2900	60.3	92.6
EPMM-696-2930-3.6-563-V5	696	2930	71.0	92.4
EPMM-811-2870-3.6-563-V5	811	2870	84.4	92.3
EPMM-928-2940-3.6-563-V5	928	2940	94.4	92.4
EPMM-1044-2720-3.6-563-V5	1044	2720	114.4	92.5
EPMM-1160-2900-3.6-563-V5	1160	2900	119.0	92.4
EPMM-1276-3000-3.6-563-V5	1276	3000	126.8	92.5
EPMM-1392-3160-3.6-563-V5	1392	3160	131.2	92.4

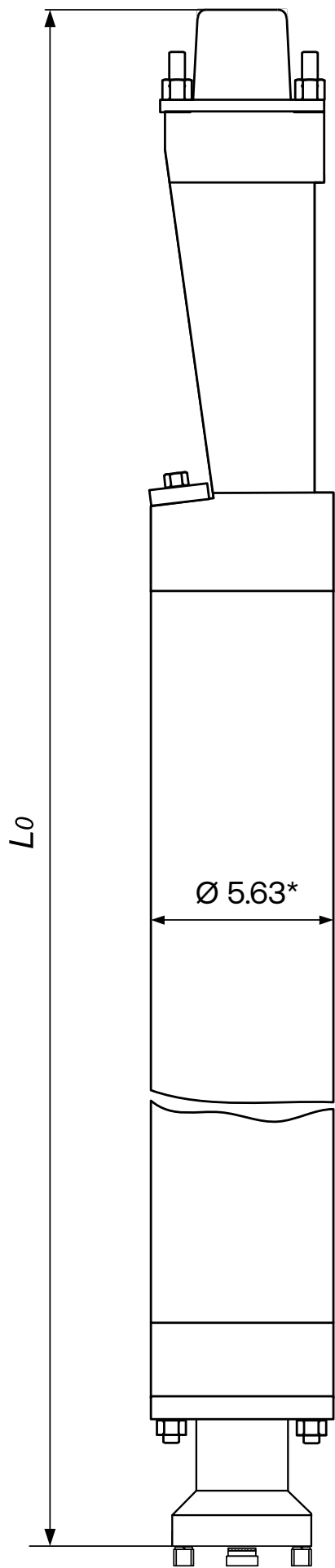
Dimensions and weights – EPMM-563-V5

Motor type	Power, hp @ 60 Hz	EPMM-563-V5		EPMM-563-V5-L	
		Length L0, ft	Weight, lb (max)	Length L0, ft	Weight, lb (max)
EPMM-74-670-3.6-563-V5	74	5.06	353	5.38	353
EPMM-149-1340-3.6-563-V5	149	6.38	441	6.7	441
EPMM-223-2000-3.6-563-V5	223	7.7	529	8.03	529
EPMM-297-2670-3.6-563-V5	297	9.03	617	9.35	617
EPMM-371-3000-3.6-563-V5	371	10.35	705	10.67	705
EPMM-464-3000-3.6-563-V5	464	11.67	794	11.99	794
EPMM-580-2900-3.6-563-V5	580	14.32	970	14.64	970
EPMM-696-2930-3.6-563-V5	696	16.96	1146	17.28	1146
EPMM-811-2870-3.6-563-V5	811	18.28	1235	18.6	1235
EPMM-928-2940-3.6-563-V5	928	19.6	1323	19.93	1323
EPMM-1044-2720-3.6-563-V5	1044	22.25	1499	22.57	1499
EPMM-1160-2900-3.6-563-V5	1160	23.57	1587	23.89	1587
EPMM-1276-3000-3.6-563-V5	1276	26.22	1764	26.54	1764
EPMM-1392-3160-3.6-563-V5	1392	27.54	1852	27.86	1852





Dimensions



Low speed permanent magnet motors

563 series

ELPMM-563-V5

Designed for use as part of a variable-speed drive of submersible progressing cavity pumps for pumping formation fluid from oil wells.

Nominal rotation speed — 600 Rpm @ 60 Hz

The motor shaft rotates to the right (clockwise) when viewed from the head end.

5.63 in Housing diameter	6.50 in Min Casing ID	60° Deviation angle	120–1800 Rpm @ 60 Hz Rpm (operation range)
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Formation fluid parameters

Parameter		Motor design			
		1	2	3	4
Ambient temperature, max °F		248		302	
Formation water pH value		5.0–8.5	3.0–9.0	5.0–8.5	3.0–9.0
Aggressive components, g/L, max:	H ₂ S	0.01	1.25	0.01	1.25
	CO ₂	-	1.15	-	1.15
	Cl	-	75	-	75
	HCO ₃	-	1.00	-	1.00
	Ca ²⁺	-	9	-	9
	(Na ⁺ +K ⁺)	-	40	-	40

The designation of submersible motor types consists of two parts

- 1 submersible motor designation;
- 2 designation of the installed downhole sensor unit according to the manufacturer’s technical specifications (may be omitted if the submersible unit is not installed).





Structure of the designation



No.	Variants	Description
1	ELPMM	Low speed permanent magnet motor to drive submersible pumps
2	Table 1	Rated torque, lbf·ft
3	Table 1	Rated voltage, V
4	0.6	Nominal speed, ×1000 Rpm @ 60 Hz
5	563	Frame diameter, 5.63 in (563 Series)
6	V5	Mounting type V5
Environmental design code		
7	3	Ambient temperature 302 °F
	4	Ambient temperature 302 °F, corrosion-resistant version
Shaft spline type		
8	blank	straight spline (SS)
	INV	involute

Examples of motor designation entries used in orders and in documentation of other equipment:

Permanent-magnet low-speed motor, rated torque 148 lbf·ft, nominal voltage 300 V @ 60 Hz, straight spline shaft (basic), for operation at ambient temperature up to 302 °F, corrosion-resistant version:

Motor designation: ELPMM148-300-0.6-563-V5-4-INV

Same motor with a downhole sensor DS-461MZL (IRZ TEK):

Motor designation: ELPMM148-300-0.6-563-V5-4-INV

Downhole sensor: IRZ DS-461-MZL-4640 psi-V2-T2-K-33

Same motor with a downhole sensor Elekton-TMSP (CJSC Elekton):

Motor designation: ELPMM148-300-0.6-563-V5-4-INV

Downhole sensor: Elekton DS-12-4640 psi-461-P0-1-K0

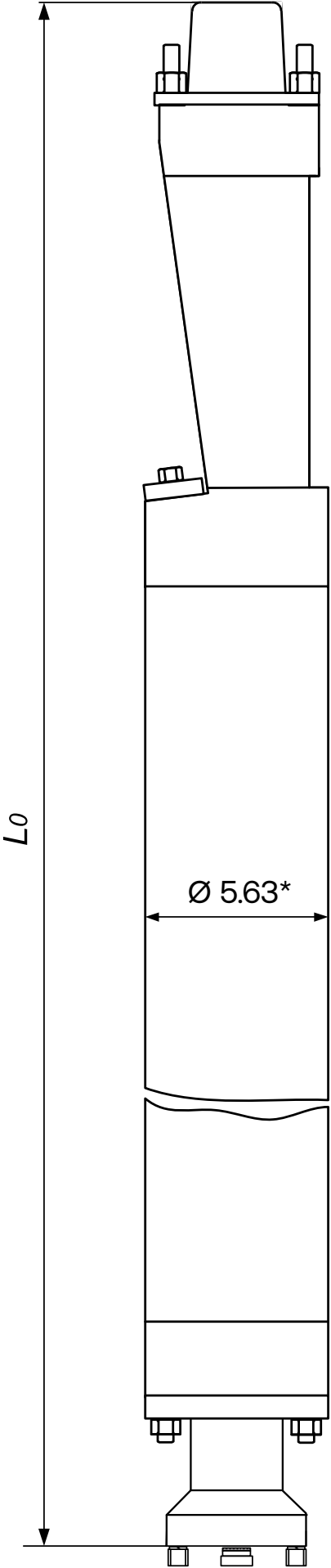
Motor specifications – ELPMM-563-V5

Motor type	Rated parameters					Weights and overall dimensions	
	Torque, lbf·ft (min)	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %	Length L0±5, ft	Weight, lb (max)
ELPMM-74-150-0.6-563-V5	74	12	150	24.8	80.4	5.06	353
ELPMM-148-300-0.6-563-V5	148	23	300	24.8	82.0	6.38	441
ELPMM-221-450-0.6-563-V5	221	37	450	24.8	82.5	7.7	529
ELPMM-295-600-0.6-563-V5	295	49	600	24.8	82.8	12.31	617
ELPMM-369-750-0.6-563-V5	369	60	750	24.8	82.9	10.35	705
ELPMM-443-900-0.6-563-V5	443	72	900	24.8	83.0	11.67	794
ELPMM-516-1050-0.6-563-V5	516	86	1050	24.8	83.1	12.99	882
ELPMM-590-1200-0.6-563-V5	590	97	1200	24.9	83.1	14.32	970
ELPMM-664-1350-0.6-563-V5	664	109	1350	24.9	83.1	15.64	1058
ELPMM-738-1500-0.6-563-V5	738	121	1500	25.0	83.1	16.96	1146
ELPMM-812-1650-0.6-563-V5	812	135	1650	25.1	83.0	18.28	1235
ELPMM-885-1800-0.6-563-V5	885	146	1800	25.2	82.9	19.6	1323
ELPMM-959-1940-0.6-563-V5	959	158	1940	25.4	82.7	20.93	1411
ELPMM-1033-2080-0.6-563-V5	1033	169	2080	25.6	82.5	22.25	1499
ELPMM-1107-2220-0.6-563-V5	1107	181	2220	25.6	82.5	23.57	1587
ELPMM-1180-2350-0.6-563-V5	1180	195	2350	25.9	82.2	24.89	1676
ELPMM-1254-2480-0.6-563-V5	1254	206	2480	26.3	81.9	26.22	1764
ELPMM-1328-2600-0.6-563-V5	1328	218	2600	26.7	81.5	27.54	1852
ELPMM-1402-2700-0.6-563-V5	1402	232	2700	27.3	80.9	28.86	1940
ELPMM-1476-2800-0.6-563-V5	1476	244	2800	27.9	80.3	30.18	2028





Dimensions



Permanent magnet motors

728 series

EPMM-728-V5

Designed for use as part of a variable-speed drive of submersible centrifugal pumps for pumping formation fluid from oil wells.

Nominal rotation speed — 3600 Rpm @ 60 Hz.

The motor can operate in reverse rotation for use with ESP assemblies equipped with pumps having a left-hand shaft rotation.

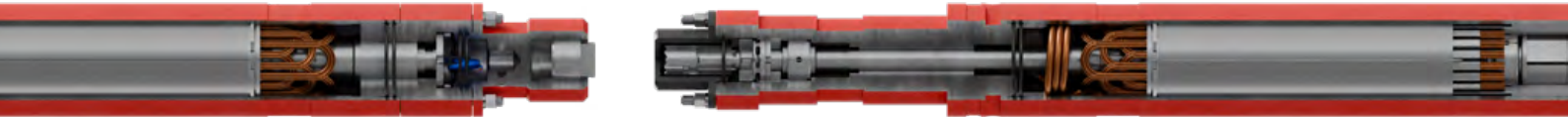
7.28 in Housing diameter	7.93 in Min Casing ID	60° Deviation angle	600–5040 Rpm @ 60 Hz Rpm (operation range)
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Formation fluid parameters

Parameter		Motor design			
		1	2	3	4
Ambient temperature, max °F		248		302	
Formation water pH value		5.0–8.5	3.0–9.0	5.0–8.5	3.0–9.0
Aggressive components, g/L, max:	H ₂ S	0.01	1.25	0.01	1.25
	CO ₂	-	1.15	-	1.15
	Cl	-	75	-	75
	HCO ₃	-	1.00	-	1.00
	Ca ²⁺	-	9	-	9
	(Na ⁺ +K ⁺)	-	40	-	40

The designation of submersible motor types consists of two parts

- 1 submersible motor designation;
- 2 designation of the installed downhole sensor unit according to the manufacturer’s technical specifications (may be omitted if the submersible unit is not installed).





Structure of the designation



No.	Variants	Description
1	EPMM	Electric Permanent Magnet Motor for ESP drive
2	Tables 1, 2	Rated power, hp @ 60 Hz
3	Tables 1, 2	Rated voltage, V @ 60 Hz
4	3.6	Nominal speed, ×1000 Rpm @ 60 Hz
5	728	Frame diameter, 728 in (728 Series)
6	2	With winding wire type 2
	—	With winding wire type 3
7	V5	Mounting type V5
Environmental design code		
8	1	Ambient temperature 248 °F
	2	Ambient temperature 248 °F, corrosion-resistant version
	3	Ambient temperature 302 °F
	4	Ambient temperature 302 °F, corrosion-resistant version
Shaft spline type		
9	blank	straight spline (SS)

Examples of motor designation entries used in orders and in documentation of other equipment:

Permanent-magnet motor rated 348 hp @ 60 Hz, nominal voltage 3200 V @ 60 Hz, with straight spline shaft, designed for operation at ambient temperature up to 248 °F:

Motor designation: EPMM348-3200-3.6-728-V5-1

Motor of the same rating, with winding wire type 2 and equipped with a downhole sensor DS-461M3 (IRZ TEK):

Motor designation: EPMM348-3600-3.6-728/2V5-1

Downhole sensor: 461M3

Motor specifications – EPMM-728-V5

Table 1

Motor type	Rated parameters				Base version	
	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %	Length L0*, ft	Weight*, lb (max)
EPMM-116-1300-3.6-728-V5	116	1300	29.6	91.9	5.22	496
EPMM-232-2550-3.6-728-V5	232	2550	29.6	92.7	6.64	650
EPMM-348-3200-3.6-728-V5	348	3200	35.5	93.1	8.06	805
EPMM-464-3400-3.6-728-V5	464	3400	44.6	93.3	9.48	959
EPMM-580-3200-3.6-728-V5	580	3200	59.5	93.9	10.9	1113
EPMM-696-3200-3.6-728-V5	696	3200	71.7	93.8	12.32	1268
EPMM-811-3000-3.6-728-V5	811	3000	89.9	93.4	13.74	1422
EPMM-928-3400-3.6-728-V5	928	3400	89.9	93.4	15.16	1576
EPMM-1044-3800-3.6-728-V5	1044	3800	89.9	93.5	16.59	1731

Motor specifications – EPMM-728/2-V5

Table 2

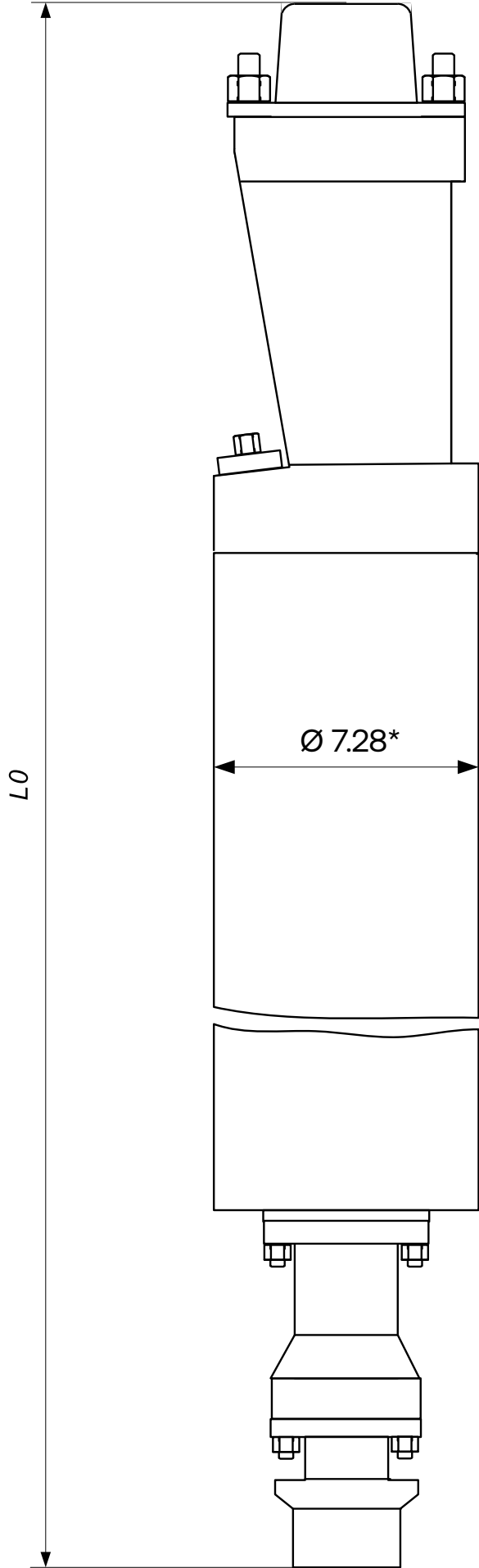
Motor type	Rated parameters				Base version	
	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %	Length L0*, ft	Weight*, lb (max)
EPMM-116-1400-3.6-728/2-V5	116	1400	27.5	91.8	5.22	496
EPMM-232-2850-3.6-728/2-V5	232	2850	27.5	92.7	6.64	650
EPMM-348-3600-3.6-728/2-V5	348	3600	32.5	93.1	8.06	805
EPMM-464-3700-3.6-728/2-V5	464	3700	42.1	93.5	9.48	959
EPMM-580-3800-3.6-728/2-V5	580	3800	51.2	93.5	10.9	1113
EPMM-696-3600-3.6-728/2-V5	696	3600	65.3	93.7	12.32	1268
EPMM-811-3800-3.6-728/2-V5	811	3800	71.9	93.4	13.74	1422
EPMM-928-3700-3.6-728/2-V5	928	3700	84.8	93.5	15.16	1576
EPMM-1044-3800-3.6-728/2-V5	1044	3800	95.1	93.7	15.16	1576
EPMM-1160-3800-3.6-728/2-V5	1160	3800	106.7	93.6	16.59	1731

Note:
1. The weights and overall dimensions of motors with the same power for different modifications are identical.
For motors equipped with a submersible section, the total weight and overall length are calculated using the following formulas:
 $L_0 = L_1 + L_{sub}^* + 0.29 \text{ ft}$
 $M = M_{mot} + M_{sub}^* - 79 \text{ lb}$
The weight and length of the submersible section are specified in the documentation for the respective section type.





Dimensions



Low speed permanent magnet motors

ELPMM-728-V5

Designed for use as part of a variable-speed drive of submersible progressing cavity pumps for pumping formation fluid from oil wells.

Nominal rotation speed — 600 Rpm @ 60 Hz.

The motor shaft rotates to the right (clockwise) when viewed from the head end.

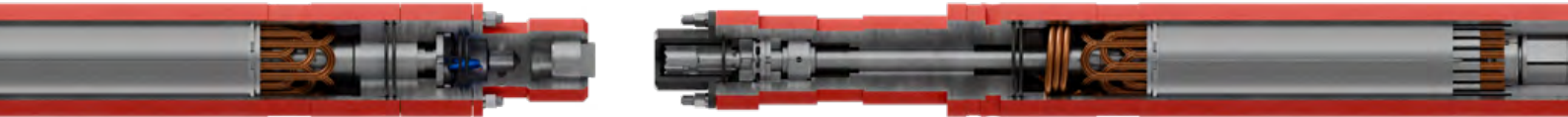
7.28 in Housing diameter	7.93 in Min Casing ID	60° Deviation angle	120–1800 Rpm @ 60 Hz Rpm (operation range)
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Formation fluid parameters

Parameter		Motor design					
		1	2	3	4	5	6
Ambient temperature, max °F		248		302		392	
Formation water pH value		5.0-8.5	3.0-9.0	5.0-8.5	3.0-9.0	5.0-8.5	3.0-9.0
Aggressive components, g/L, max:	H ₂ S	0.01	1.25	0.01	1.25	0.01	1.25
	CO ₂	-	1.15	-	1.15	-	1.15
	Cl	-	75	-	75	-	75
	HCO ₃	-	1.00	-	1.00	-	1.00
	Ca ²⁺	-	9	-	9	-	9
	(Na ⁺ +K ⁺)	-	40	-	40	-	40

The designation of submersible motor types consists of two parts

- 1 submersible motor designation;
- 2 designation of the installed downhole sensor unit according to the manufacturer's technical specifications (may be omitted if the submersible unit is not installed).





Structure of the designation



No.	Variants	Description
1	ELPMM	Low speed permanent magnet motor to drive submersible pumps
2	Table 1	Rated torque, lbf·ft
3	Table 1	Rated voltage, V
4	0.6	Nominal speed, ×1000 Rpm @ 60 Hz
5	728	Frame diameter, 7.28 in (728 Series)
6	2	With winding wire type 2
7	V5	Mounting type V5
8	Environmental design code	
	1	Ambient temperature 248 °F
	2	Ambient temperature 248 °F, corrosion-resistant version
	3	Ambient temperature 302 °F
	4	Ambient temperature 302 °F, corrosion-resistant version
	5	Ambient temperature 392 °F
	6	Ambient temperature 392 °F, corrosion-resistant version
9	Shaft spline type	
	blank	straight spline (SS)
	INV	involute

Examples of motor designation entries used in orders and in documentation of other equipment:

Permanent-magnet low-speed motor rated torque 443 lbf·ft, nominal voltage 650 V @ 60 Hz, with straight spline shaft (basic design), intended for operation at ambient temperature up to 248 °F, corrosion-resistant version:

Motor designation: ELPMM443-650-0.6-729/2V5-2

Same motor with involute spline shaft:

Motor designation: ELPMM443-650-0.6-729/2V5-2-INV

Downhole sensor: 461M3L

Same motor equipped with a downhole sensor DS-406M3L:

Motor designation: ELPMM443-650-0.6-729/2V5-2-INV

Downhole sensor: 406M3L

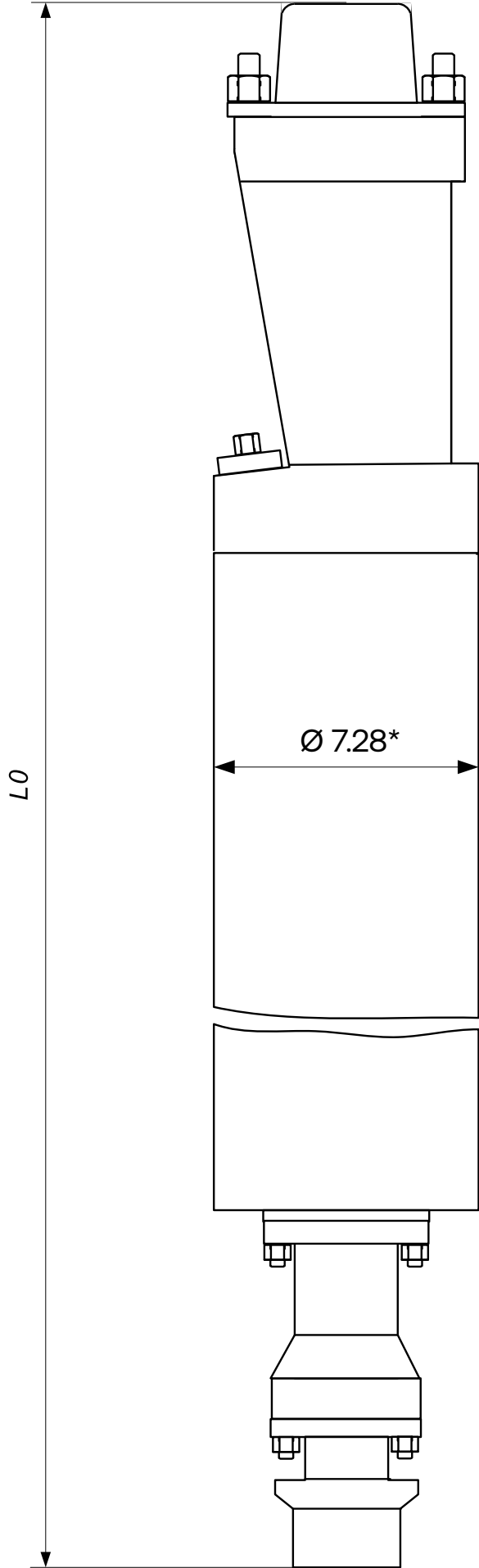
Motor specifications – ELPMM-728/2-V5

Motor type	Rated parameters					Weights and overall dimensions	
	Torque, lbf·ft (min)	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %	Length L0, ft	Weight, lb (max)
ELPMM-221-350-0.6-728/2-V5	221	36	350	40.2	82.8	5.93	529
ELPMM-443-650-0.6-728/2-V5	443	73	650	40.1	84.8	8.05	761
ELPMM-664-1000-0.6-728/2-V5	664	109	1000	40.1	85.5	10.16	992
ELPMM-886-1300-0.6-728/2-V5	886	146	1300	40.1	85.8	12.28	1224
ELPMM-1107-1650-0.6-728/2-V5	1107	182	1650	40.1	86.0	14.39	1455
ELPMM-1328-1950-0.6-728/2-V5	1328	219	1950	40.1	86.1	16.51	1687
ELPMM-1549-2300-0.6-728/2-V5	1549	255	2300	40.1	86.2	18.63	1918
ELPMM-1770-2600-0.6-728/2-V5	1770	292	2600	40.1	86.3	20.74	2150
ELPMM-1992-2950-0.6-728/2-V5	1992	329	2950	40.1	86.4	22.86	2381
ELPMM-2213-3300-0.6-728/2-V5	2213	365	3300	40.1	86.4	24.97	2612





Dimensions



Induction motor

461
series

EHAM-461-V5

Designed for use as part of a variable-speed drive of submersible centrifugal pumps for pumping formation fluid from oil wells.

Power supply frequency range — 35 to 70 Hz.

Synchronous motor shaft speed — 3600 Rpm @ 60 Hz.

The motor can operate in reverse rotation for use with ESP assemblies equipped with pumps having a left-hand shaft rotation.

4.61 in
Housing diameter

4.87 in
Min Casing ID

60°
Deviation angle

2520–5040 Rpm @ 60 Hz
Rpm (operation range)

Formation fluid parameters

Parameter		Motor design					
		1	2	3	4	5	6
Ambient temperature, max °F		248		302		338	
Formation water pH value		5.0-8.5	3.0-9.0	5.0-8.5	3.0-9.0	5.0-8.5	3.0-9.0
Aggressive components, g/L, max:	H ₂ S	0.01	1.25	0.01	1.25	0.01	1.25
	CO ₂	-	1.15	-	1.15	-	1.15
	Cl	-	75	-	75	-	75
	HCO ₃	-	1.00	-	1.00	-	1.00
	Ca ²⁺	-	9	-	9	-	9
	(Na ⁺ +K ⁺)	-	40	-	40	-	40

The designation of submersible motor types consists of two parts

- 1 submersible motor designation;
- 2 designation of the installed downhole sensor unit according to the manufacturer's technical specifications (may be omitted if the submersible unit is not installed).





Structure of the designation



No.	Variants	Description
1	E	Manufacturer ("ESP Service" LLC)
2	—	Basic voltage version
	H	Version with increased voltage
3	AM	Asynchronous motors
4		Rated power, hp @ 60 Hz
5	461	Frame diameter, 4.61 in (461 Series)
6	1	With winding wire type 1
	2	With winding wire type 2
	—	With winding wire type 3
7	V5	Mounting type V5
8	Environmental design code	
	1	Ambient temperature 248 °F
	2	Ambient temperature 248 °F, corrosion-resistant version
	3	Ambient temperature 302 °F
	4	Ambient temperature 302 °F, corrosion-resistant version
	5	Ambient temperature 338 °F
	6	Ambient temperature 338 °F, corrosion-resistant version
9	Shaft spline type	
	blank	straight spline (SS)
	INV	involute

Examples of motor designation entries used in orders and in documentation of other equipment:

Asynchronous motor rated 74 hp @ 60 Hz, with winding wire type 3, straight spline shaft (basic design), intended for operation at ambient temperature up to 248 °F, corrosion-resistant version:

Motor designation: EAM74-461-V5-2

Same motor with involute spline shaft:

Motor designation: EAM74-461-V5-2-INV

Same motor with involute spline shaft, winding wire type 1, and increased voltage:

Motor designation: EHAM74-461/1V5-2-INV

Same motor equipped with a downhole sensor DS-406M3L:

Motor designation: EHAM74-461/1V5-2-INV

Downhole sensor: 406M3L

Motor specifications – EHAM-461/X-V5

Motor type	Rated parameters				Weights and overall dimensions	
	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %	Length L0, ft	Weight, lb (max)
EAM-28-461/1-V5	28	700	13.5	84.5	6.9	278
EAM-37-461/1-V5	37	750	17.0	84.5	8.15	337
EHAM-37-461/1-V5		1500	8.5			
EAM-51-461/1-V5	51	750	23.5	84.5	9.4	397
EHAM-51-461/1-V5		1900	9.5			
EAM-58-461/1-V5	58	800	25.0	84.5	10.64	456
EHAM-58-461/1-V5		2300	9.0			
EAM-65-461-V5	65	900	25.5	84.5	11.89	516
EHAM-65-461/1-V5		2000	11.0			
EAM-74-461-V5	74	1000	25.5	84.5	13.14	575
EHAM-74-461/1-V5		2100	12.0			
EAM-93-461-V5	93	1250	25.5	84.5	15.63	694
EHAM-93-461/1-V5		2400	13.5			
EAM-104-461-V5	104	1400	25.5	84.5	16.88	754
EHAM-104-461-V5		2100	15.5			
EAM-116-461-V5	116	1500	26.5	84.5	18.12	814
EHAM-116-461/1-V5		2300	17.5			
EAM-130-461-V5	130	1650	27.0	84.5	19.37	873
EHAM-130-461/1-V5		2500	18.5			
EAM-146-461-V5	146	1900	26.5	84.5	21.86	992
EHAM-146-461/1-V5		2850	18.0			
EAM-162-461-V5	162	2000	27.5	84.5	23.11	1052
EHAM-162-461/1-V5		2800	20.0			
EAM-186-461-V5	186	2150	29.5	84.5	24.36	1111
EHAM-186-461/1-V5		3000	21.5			
EAM-209-461-V5	209	2250	31.5	84.5	25.6	1171
EHAM-209-461/1-V5		2700	26.5			
EAM-232-461/1-V5	232	2300	35.0	84.5	25.6	1171
EHAM-232-461/1-V5		2700	30.5			
EAM-255-461/1-V5	255	2150	40.5	84.5	26.85	1230
EAM-290-461/1-V5	290	2300	43.5	84.5	28.1	1290

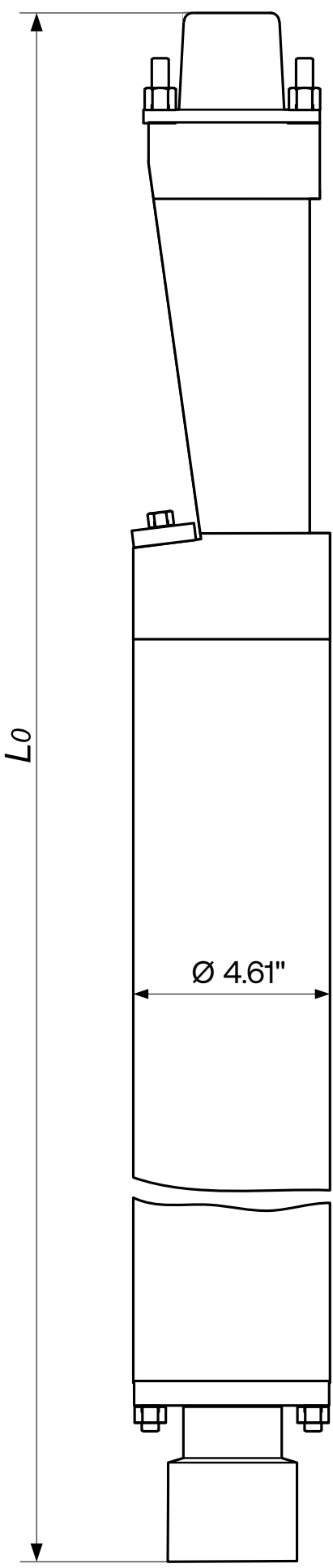




Motor specifications – EHAM-461/2-V5

Motor type	Rated parameters				Weights and overall dimensions	
	Power, hp @ 60 Hz	Line-to-line voltage, V @ 60 Hz	Current, A	Efficiency, %	Length L0, ft	Weight, lb (max)
EAM-28-461/2-V5	28	700	13.5	84.5	6.9	278
EAM-37-461/2-V5	37	750	17.0	84.5	8.15	337
EHAM-37-461/2-V5		1350	9.5			
EAM-51-461/2-V5	51	750	23.0	84.5	9.4	397
EHAM-51-461/2-V5		1700	10.5			
EAM-58-461/2-V5	58	900	22.0	84.5	10.64	456
EHAM-58-461/2-V5		2050	10.0			
EAM-65-461/2-V5	65	900	24.5	84.5	10.64	456
EHAM-65-461/2-V5		2050	11.0			
EAM-74-461/2-V5	74	1050	24.0	84.5	11.89	516
EHAM-74-461/2-V5		1950	13.0			
EAM-93-461/2-V5	93	1200	26.0	84.5	13.14	575
EHAM-93-461/2-V5		2250	14.5			
EAM-104-461/2-V5	104	1500	23.5	84.5	15.63	694
EHAM-104-461/2-V5		2800	13.0			
EAM-116-461/2-V5	116	1650	24.0	84.5	16.88	754
EHAM-116-461/2-V5		2800	14.5			
EAM-130-461/2-V5	130	1800	24.5	84.5	18.12	814
EHAM-130-461/2-V5		2300	19.5			
EAM-146-461/2-V5	146	2000	25.5	84.5	19.37	873
EAM-146-461/2-V5		2500	20.0			
EAM-162-461/2-V5	162	2150	26.0	84.5	20.62	933
EHAM-162-461/2-V5		2750	21.0			
EAM-186-461/2-V5	186	2300	28.0	84.5	21.86	992
EHAM-186-461/2-V5		2900	22.5			
EAM-209-461/2-V5	209	2200	33.5	84.5	24.36	1111
EHAM-209-461/2-V5		2600	28.0			
EAM-232-461/2-V5	232	2300	35.0	84.5	25.6	1171
EHAM-232-461/2-V5		2800	29.0			
EAM-255-461/2-V5	255	2150	40.5	84.5	26.85	1230
EAM-290-461/2-V5	290	2300	43.5	84.5	28.1	1290

Dimensions



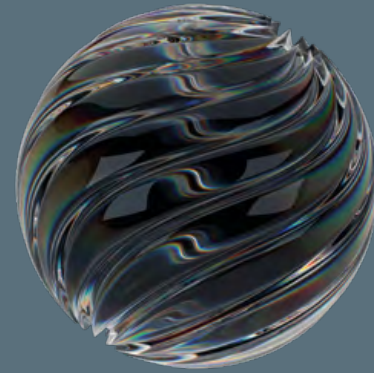


Motor protector

Design:

tandem single

The protection of the submersible electric motor from penetration of reservoir fluid is the primary and most important function of the protector. The principle of protection is based on creating a reliable barrier between the internal cavity of the electric motor and reservoir fluid.



ESP Service LLC is a leading manufacturer of Protectors for the electrical submersible pump (ESP)

Main functions

- 1 Prevention of liquid ingress into the internal cavity of the motor
- 2 Equalization of the pressure inside the motor with the fluid pressure in the well
- 3 Receiving and compensation for the thrust load of the pump
- 4 Compensation of motor oil volume changes during ESP system operations

tandem single

Protectors are designed for continuous operation with a frequency from 35 to 70 Hz, with a nominal frequency 60 Hz.

The shaft rotates clockwise when viewed from above. If required, it can be rotated in the opposite direction without any restrictions or time limits.

Compatibility and range of application

Protector is designed for comprehensive sealing of all submersible electric motors. It operates effectively in formation fluid under hydrostatic pressure of up to 40 MPa, as well as under conditions of elevated temperatures.

Competent selection of protectors, taking into account the operating parameters, guarantees maximum efficiency of the entire ESP system and significantly extends the lifespan of products.



MP 362
prevents fluid from entering into the motor, also can be designed for dual reservoir exploitation



MP 362
prevents fluid from entering into the motor and receives the load of the shafts above protector



MP 449
prevents fluid from entering into the motor, two-section, thermocorrosion-resistant design

Complex protection

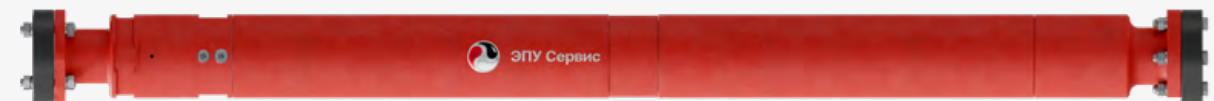
The key advantage of our products is comprehensive protection for the motor.

The unique design allows successfully receive and compensate for thrust loads generated by the pump, ensuring stable operation of the entire ESP system under the most challenging operating conditions.

A universal solution

Our modular protectors provide a universal solution for a variety of downhole products.

They are successfully used in vertical, horizontal, and directional wells, ensuring stable and reliable operation of electric submersible pumps (ESP).



MOTOR PROTECTOR





Reference characteristics of well conditions

Parameter	Indicator	
	EMP362	EMP535
Formation water, pH	5.0–8.5	5.0–8.5
Maximum mass concentration of solids, lb/ft³	0.000125	0.000625
Particle microhardness (Mohs), max	7	7
Maximum formation water content, %	99	99
Gas–liquid ratio, scf/scf	250	250
Hydrostatic pressure at motor depth, psi (min)	5800	5800
Maximum hydrogen sulfide concentration, lb/ft³	6.2 × 10 ⁻⁵	9.98 × 10 ⁻⁵
Maximum formation fluid temperature, °F	248	302

Structure of Designation



No.	Variants	Description
1	EMP	Protector
2	92	Case diameter, mm (362 series)
	136	Case diameter, mm (535 series)
Design version based on operating conditions		
3	S	sectional
	H	heat-resistant
	C	corrosion-resistant

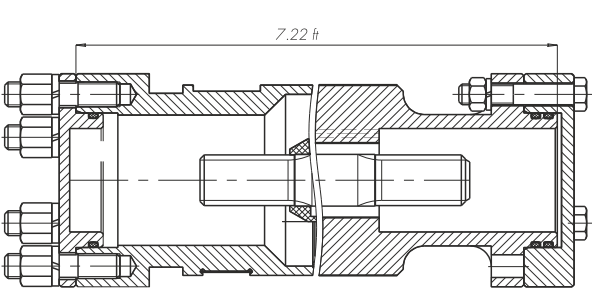
Protector Assembly Specifications (Converted to Imperial Units, 60 Hz)

Parameter	Indicator			
	EMP362	EMP362	EMP535	EMP535
Compatible motor max power, hp	836	836	928	928
Max axial load on shaft, lb	1760	220	3520	3520
Power consumption w/o axial load, hp	0.93	0.93	4.87	4.87
Power consumption with axial load, hp	2.09	2.68	7.66	7.66
Max transmitted power, hp	580	464	928	928
Shaft speed, rpm @60Hz	3600	3600	3600	3600
Number of mechanical seals	3	2	3	6
Oil volume, qt	7.9	4.8	12.7	25.4
Weight, lb	143	88	326	664

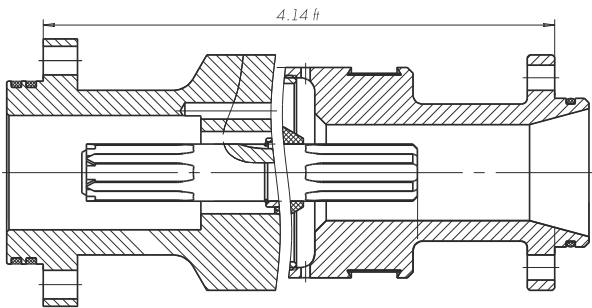
Hydraulic scheme	
EMP362	SBSB*
EMP362	SB*
EMP535	SLSBSB*
EMP535	SLSBSB-SBSBSL*

*S - Series connections B - Bag chamber L - Labyrinth chamber

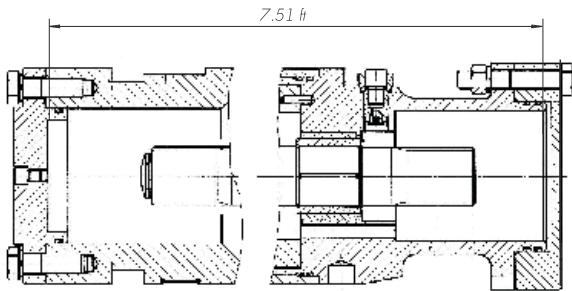
Dimensions of the motor protector



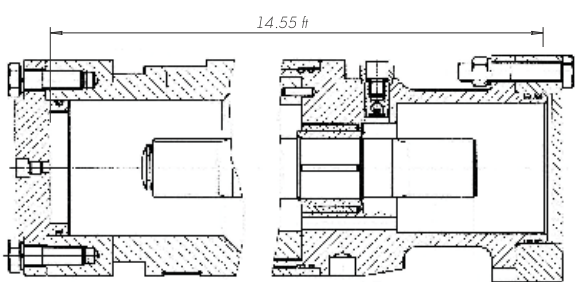
Overall and attachment dimensions of the EMP362 protector



Overall and attachment dimensions of the EMP362 protector



Overall and attachment dimensions of the EMP535 protector



Overall and attachment dimensions of the EMP535 protector





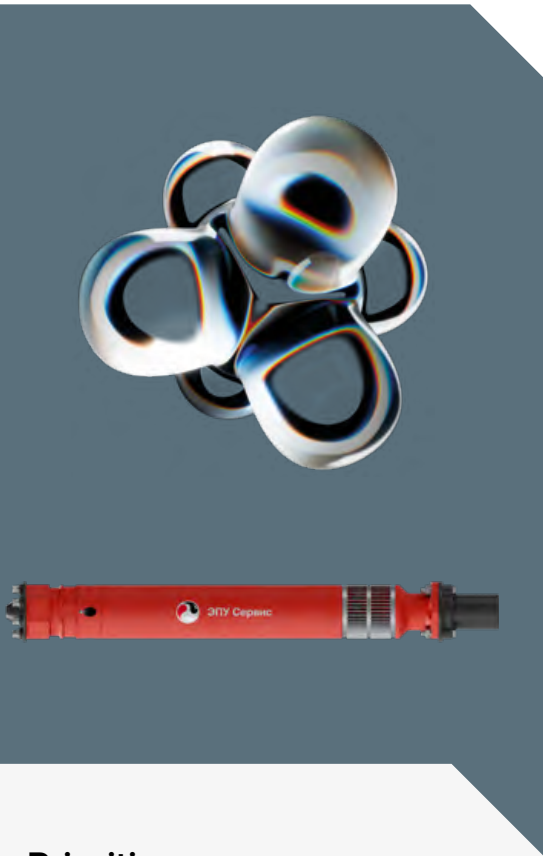
Gas handler

Specialized equipment designed to be used as part of electric submersible pumping systems (ESP). The main function of the gas-stabilizing equipment is to prevent the formation of gas plugs in the stages of the pump during operation in wells with high free gas content in the produced reservoir fluid.

Types of devices

- 1 Gas separator
- 2 AGH separator
- 3 Gas handler
- 4 Multiphase pump

Each type of device has its own unique design features and is specially designed to solve certain technological problems, depending on the specific well operating conditions.



Priorities

- Continuous improvement of production processes
- High quality products and services
- Service reliability
- Caring for the development of professional potential
- Careful attitude to the environment



Intake

An important element of the electrical submersible pump, which is designed to receive and transfer fluid from the reservoir to the pump.



Quality standards:
ISO and INTI



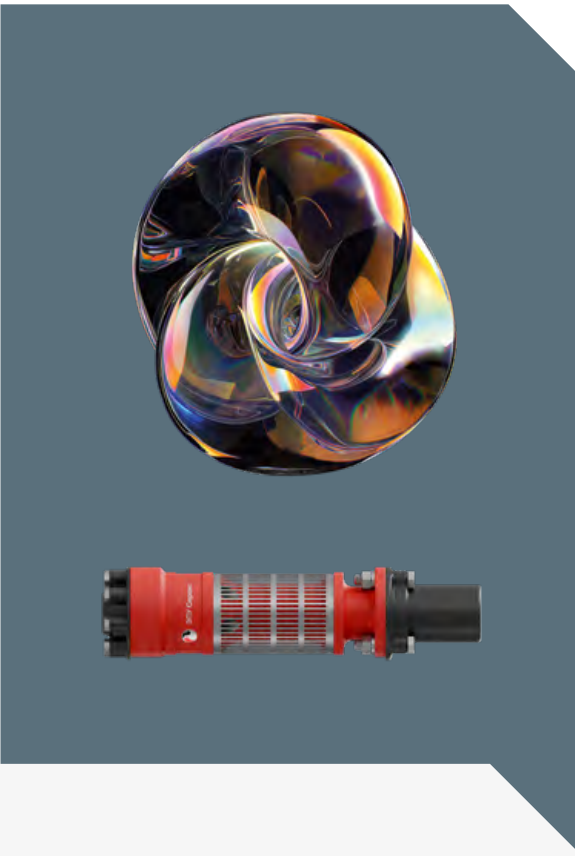
Research
base



Service centers
in the regions

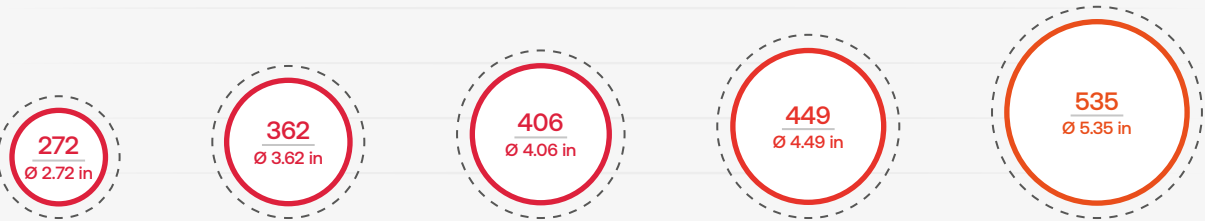


Modern
production

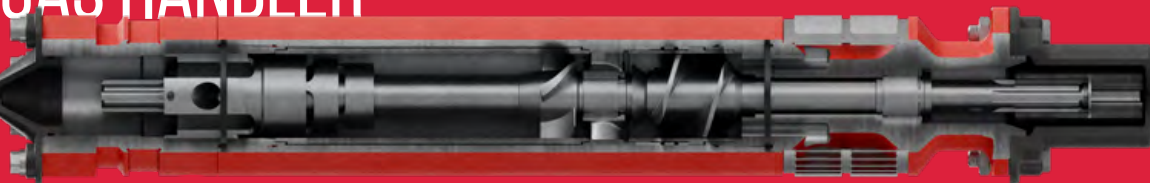


Dimensions

The intake has the same dimensions as the ESP.



GAS HANDLER



INTAKE





Thrust chamber

The crucial component for oil extraction is used in submersible pumping systems.

The primary goal is to balance the axial and radial forces that occur during operation of the pumping equipment, and to transmit torque from the electric motor to the pump.

The advantages of the design

- 1 high operational reliability under significant loads
- 2 effective compensation of axial and radial forces
- 3 stable torque transmission
- 4 long-term operation under harsh conditions
- 5 extended mean time between failures



Quality standards: ISO and INTI



R&D facilities



In-house modern production facilities



Regional service centers

It is used in progressive cavity pump units.

The thrust chamber is an essential element in the oil production process, ensuring the efficient and reliable operation of all pumping equipment.

Priorities

- Continuous improvement of production processes
- High quality products and services
- Service reliability
- Caring for the development of professional potential
- Careful attitude to the environment



Repair, assembly and testing facilities

Ensuring the quality and reliability of equipment is one of the priorities of the company.

A quality control system is provided for multi-level product inspection throughout all steps of the production process as part of the implementation of this strategy.

The key component of this system is a high-tech complex of advanced test benches equipped with innovative equipment.

The technological process involves a comprehensive analysis of the characteristics

of components under conditions that replicate the operational parameters of complex oil wells.

This approach provides the following benefits:

- reliable assessment of product performance;
- a guarantee of stable operation under extreme conditions;
- confirmation of compliance with the technical specifications.

The main types of equipment used in the production facilities of the company are:

- 1 ESP testing bench
- 2 ESP preservation bench
- 3 Motor (PMM/IM) and ESP assembly and dismantle bench
- 4 Motor testing bench
- 5 Protector testing bench
- 6 Cable rewinding and repair
- 7 Cable testing
- 8 Load test stand for VSD
- 9 Transformer testing bench





Cable products and motor lead extension

Motor Lead Extension (MLE) is used in cables designed to supply electric current to a submersible electric motor in electrical submersible pump units and progressive cavity pump units (ESP, PCP).

Design

- 1 cable splice of special design
- 2 submersible flat cable with armored covering

Sealing

- 1 special rubber seals
- 2 heat resistance up to 446 °F
- 3 reliable connection of structural components

Based on the design MLE can be manufactured of a cable with an armor made of galvanized tape or a tape made of corrosion-resistant steel (MONEL, stainless steel).

The company's products are designed to operate in oil-producing wells, taking into account the effects of harsh conditions and high temperatures. The design ensures a reliable electrical insulation and mechanical protection of power cable during operation.

Design of motor lead extension

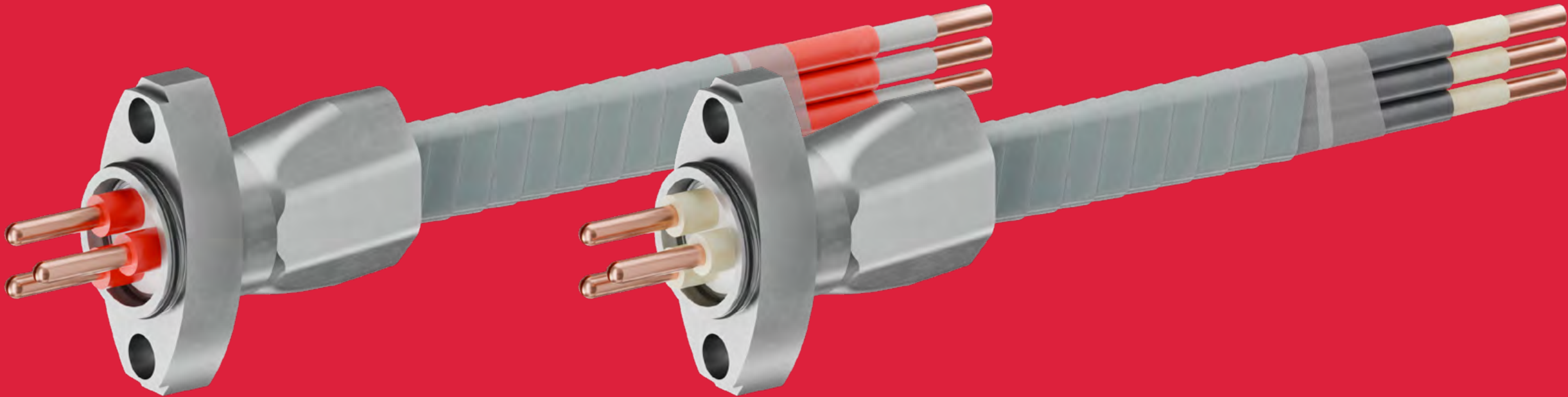
Motor Lead Extension with temperature resistance up to 248 °F (polyethylene insulation)		Motor Lead Extension with a temperature resistance up to 446 °F (lead-cover rubber insulation, fluoroplastic insulation)	
3x10	3x8	3x25	
3x13	3x10	3x33	
3x16	3x13	3x35	
3x21	3x16	-	
3x25	3x21	-	

Operating conditions of motor lead extension with galvanized armor

Parameter	Design Value		
Cable by insulation type	Polyethylene	Rubber	Fluoroplastic
Continuous operating temperature, (°F)	248 266	446 450	446
Gas factor of reservoir liquid, ft³/ft³	17.7		
Hydrogen sulfide concentration, lb/gal	3.8 × 10 ⁻⁵		
Hydrostatic pressure, psi	5800		
Mass fraction of associated water, %	100		
Hydrogen index of associated water, pH	6.0 – 8.5		

Operating conditions of motor lead extension with corrosion-resistant steel armor

Parameter	Design Value		
Cable by insulation type	Polyethylene	Rubber	Fluoroplastic
Continuous operating temperature, (°F)	248 266	446 450	446
Gas factor of reservoir liquid, ft³/ft³	17.7		
Hydrogen sulfide concentration, lb/gal	0.010		
Hydrostatic pressure, psi	5800		
Mass fraction of associated water, %	100		
Hydrogen index of associated water, pH	6.0 – 8.5		





Structure of Designation

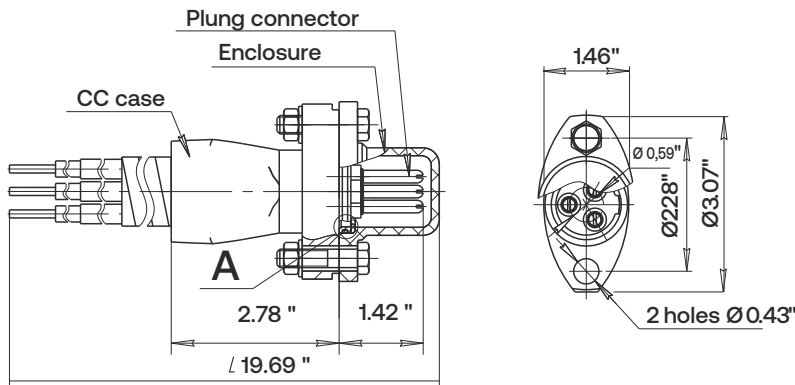


No.	Variants	Description
1	EMLE	Motor Lead Extension
2	XXX	Cable type (per manufacturer specification)
3	Cable temperature index, °C (°F)	
	120	long-term allowable temperature 120°C, (248°F)
	130	long-term allowable temperature 130°C, (266°F)
	230	long-term allowable temperature 130°C, (446°F)
	232	long-term allowable temperature 232°C, (450°F)
4	Cross-section of cores, mm² (AWG#)	
	8	cross-section of cores, mm² (AWG#8)
	10	cross-section of cores, mm² (AWG#7)
	13	cross-section of cores, mm² (AWG#6)
	16	cross-section of cores, mm² (AWG#5)
5	Execution	
	Without designation	type 1
6	2	type 2

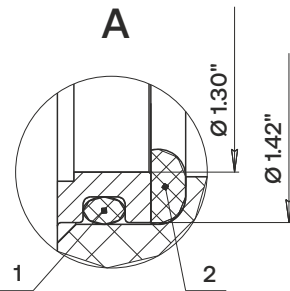
Extension cable manufacturing options

Cable type	Cable cross-section, mm²	AWG#
Cable with rubber insulation of cores in lead shell	3x8	8
	3x10	7
	3x13	6
	3x16	5
	3x21	4
Cable with insulation made of polyethylene	3x10	7
	3x16	5
	3x21	4

Configuration and Attachment Dimensions of MLE type 1

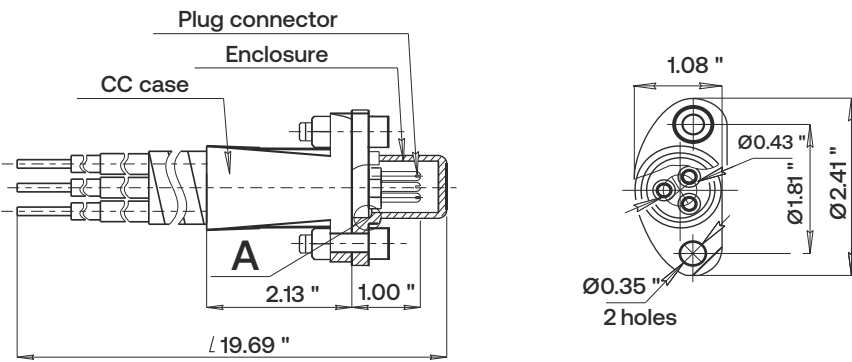


Version of the Sealing Collar of CC Case

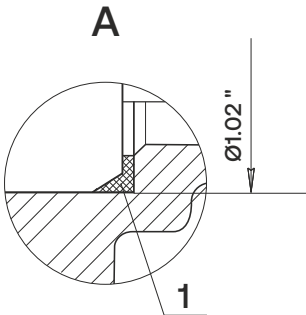


- 1. Ring 033-036-19
- 2. Ring 030-035-30

Appearance and Attachment Dimensions of MLE type 2



Version of the Sealing Collar of CC Case



- 1. Ring 022-026-25





Electric submersible pump

Stage assembly type:

- floating
- compression
- packet

Submersible pumps of ESP type, including designs with floating, compression and packet assembly configurations, manufactured by ESP Service LLC, are designed for lifting reservoir fluid from oil wells.

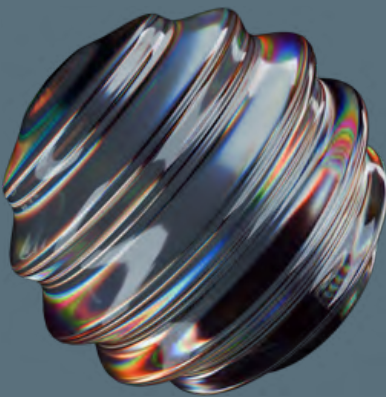
75–22700 bbl/day @ 60 Hz
Flow rate

1.3–2320 hp @ 60 Hz
Power

230 – 9840 ft @ 60 Hz
Head

1000+ days
Mean time between failures

~74%
Max efficiency



ESP Service LLC is the largest service company specializing in the production of complete ESP units

Advantages of ESP

- 1 Stable production without downtime
- 2 OPEX reduction and energy losses
- 3 Fast service, short downtime
- 4 Online monitoring, predictive diagnostics
- 5 Turnkey responsibility, SLA



Modern technological solutions and high-quality materials are used in the manufacturing of electric submersible pumps (ESPs), ensuring high operational efficiency, enhanced reliability, and an extended run life of the equipment



Quality standards:
ISO and INTI



R&D facilities



In-house modern
production facilities



Regional service
centers

ESP range



Priorities

- Continuous improvement of production processes
- High quality products and services
- Service reliability
- Caring for the development of professional potential
- Careful attitude to the environment

Housing length

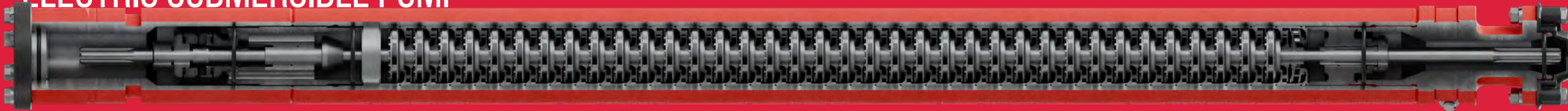


from 10 to 20 ft

In accordance with the Customers requirements the following ESPs can be manufactured:

- standart
- wear-resistant
- corrosion-resistant

ELECTRIC SUBMERSIBLE PUMP





Formation fluid parameters
(Pumped by ESP Systems)

Parameter	Value
Maximum fluid density, lb/ft³	up to 87.4
Maximum kinematic viscosity of single-phase fluid ensuring stable pump head and efficiency, cSt	1.0
Formation water pH	5.0–8.5
Maximum solids concentration (hardness up to 7 Mohs), g/L	up to 1.0
Maximum free gas content at pump intake (without gas separator), %	up to 35
Maximum hydrogen sulfide content, lb/ft³	0.00062
Fluid temperature at pump intake, °F (max)	up to 302

Note:
Formation fluid characteristic requirements may be changed upon customer request.

Structure of Designation



No.	Variants	Description
1		Assembly type
2		Section connection
3	N	Stage construction, Ni-Resist impellers
4	ESP	Pump type – Electric Submersible Pump
5	272	Housing diameter 2.72 in
	362	Housing diameter 3.62 in
	406	Housing diameter 4.06 in
	449	Housing diameter 4.49 in
	535	Housing diameter 5.35 in
6		Design of thrust chamber pair
7	Type of pump stage assembly	
	F	Floater stage
	C	Compression stage
	P	Package stage
8		Flow rate, bbl/d @ 60 Hz
9	M*	Modification number
10		Head, ft @ 60 Hz

X – modification number; if no modernization is applied, the designation and number are omitted.
1. If all modification components are zero, zeros are not indicated.
For example, “000ESP” is written as “ESP”.
2. N – stage material “Ni-Resist”, impeller type with diffusers.
3. M* – modification.

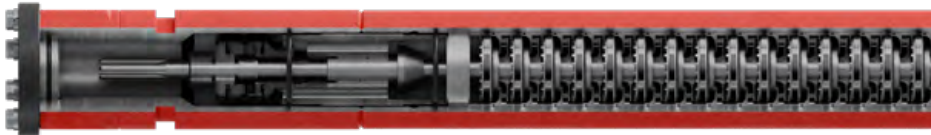
Examples of pump
designations

EFX-362-188-8040 C

Pump is equipped with a ball-type check valve and an intake module. The section is assembled with a thrust chamber (type 1); sections are connected by a flange-to-housing joint with eight M10×1 bolts. The shaft uses a straight-spline profile. The catch head has a coupling thread for smooth 2 7/8 in tubing. Pump stages feature a two-support design with Ni-Resist impellers and diffusers (N). Electric Submersible Pump (ESP), 362 Series (5 frame), thrust chamber — hard-alloy type (1), compression stage type (C), with a nominal flow rate of 188 bbl/d @ 60 Hz and a head of 8040 ft @ 60 Hz.

EHX-406-1886-9000 P

Pump is equipped with a ball-type check valve and an intake module. The section is assembled without a thrust chamber (type 5); sections are connected by a flange-to-housing joint with eight M10×1 bolts. The shaft uses a straight-spline profile. The catch head has a coupling thread for smooth 2 7/8 in tubing. Pump stages feature a two-support design with Ni-Resist impellers and diffusers (N). Electric Submersible Pump (ESP), 406 Series (5A frame), thrust chamber — steel-bronze pair (2), package stage type (P), with a nominal flow rate of 1886 bbl/d @ 60 Hz and a head of 9000 ft @ 60 Hz.





272 Series

Equipment of the 2A dimension represents an optimal technical solution for operation in wells with limited space and challenging geological conditions.

Its compact design allows for efficient performance in wells with a restricted casing diameter.

EAX225

Floater
Compression
Package

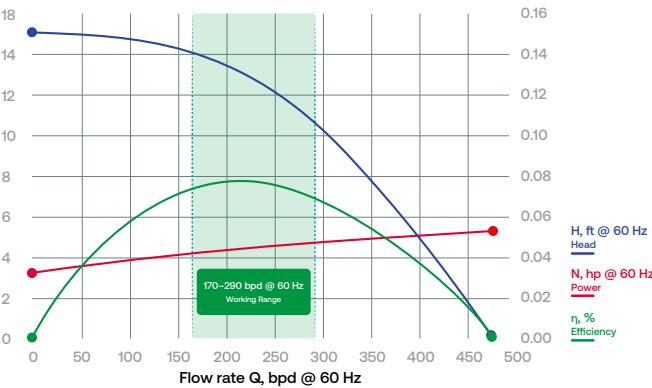
Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
1656	1	13.1 ft	125	5.8
2081	1	16.4 ft	156	7.2
4972	3	13.1 + 13.1 + 13.1 ft	375	17.2
7341	4	13.1 + 13.1 + 13.1 + 13.1 ft	500	23.0
9460	5	2 × 13.1 + 3 × 16.4 ft	718	32.7
11594	6	2 × 13.1 + 4 × 16.4 ft	874	38.5
12298	6	6 × 16.4 ft	936	42.7
13944	7	13.1 + 6 × 16.4 ft	1061	48.5

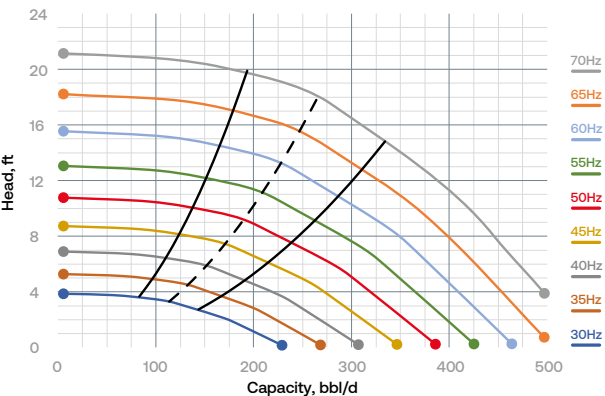
Section Configuration

3 600 Rpm @ 60 Hz
Rotation speed

62.4 lb/ft³ @ 60 Hz
Water density (reference)



Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

2.72 in Housing OD ≈ 0.50 in Shaft OD 47.6 – 88.4 hp Shaft power

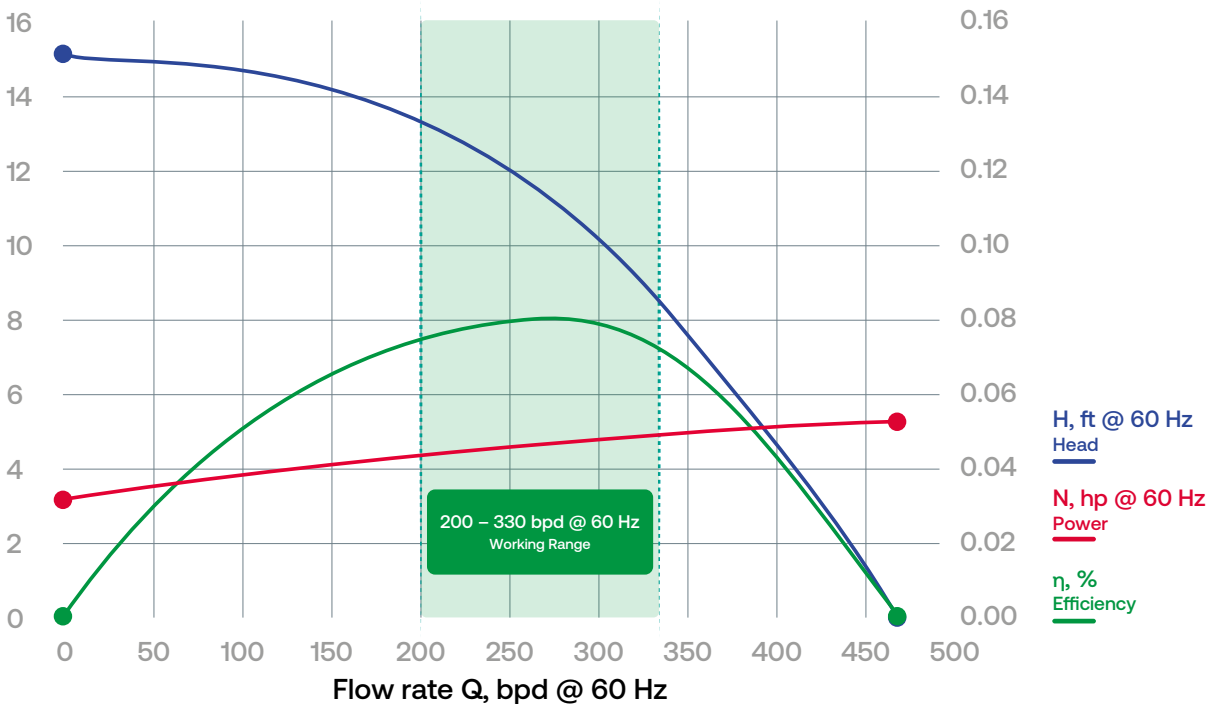
EAX265

Floater
Compression
Package

Section Configuration

3 600 Rpm @ 60 Hz
Rotation speed

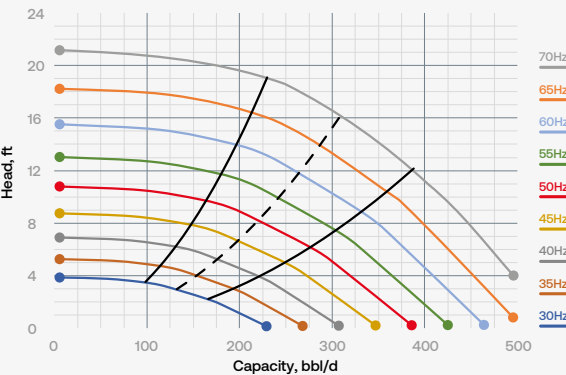
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
1466	1	13.1 ft	125	5.8
1845	1	16.4 ft	156	7.2
4825	3	13.1 + 13.1 + 16.4 ft	406	18.8
7332	4	4 × 16.4 ft	624	29.0
9224	5	5 × 16.4 ft	780	36.2
9933	6	3 × 13.1 + 3 × 16.4 ft	843	39.2
11825	7	3 × 13.1 + 4 × 16.4 ft	999	46.4
13954	8	2 × 13.1 + 6 × 16.4 ft	1186	55.0

Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

2.72 in Housing OD ≈ 0.50 in Shaft OD 47.6 – 88.4 hp Shaft power





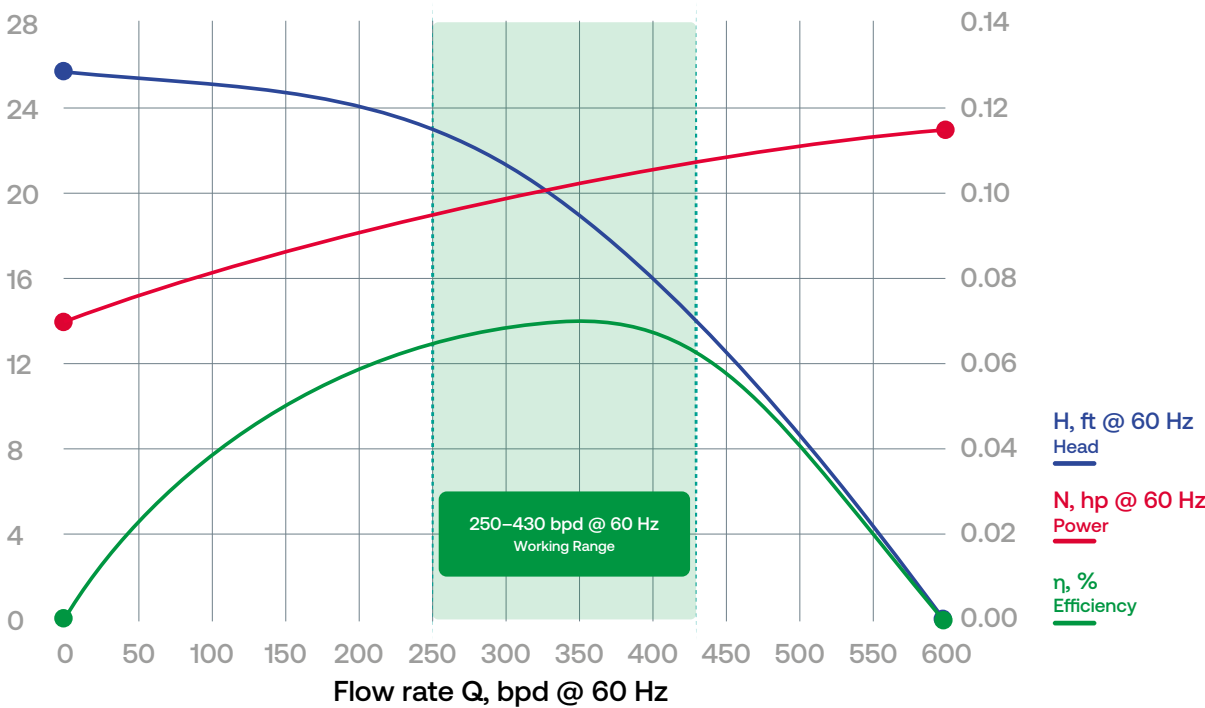
EAX340

Floater
Compression
Package

Section Configuration

4 500 Rpm @ 60 Hz
Rotation speed

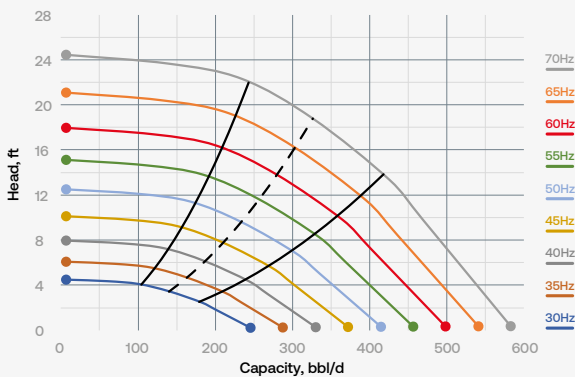
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
1797	1	9.8 ft	91	9.0
2507	1	13.1 ft	125	12.5
3122	1	16.4 ft	156	15.5
4970	2	13.1 + 13.1 ft	250	24.8
7332	3	13.1 + 13.1 + 13.1 ft	375	37.4
9224	3	16.4 + 16.4 + 16.4 ft	468	46.4
9933	4	4 × 13.1 ft	500	49.5
12298	4	4 × 16.4 ft	624	61.9
14190	5	2 × 13.1 + 3 × 16.4 ft	656	65.3

Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

2.72 in Housing OD

≈ 0.50 in Shaft OD

47.6 – 88.4 hp Shaft power

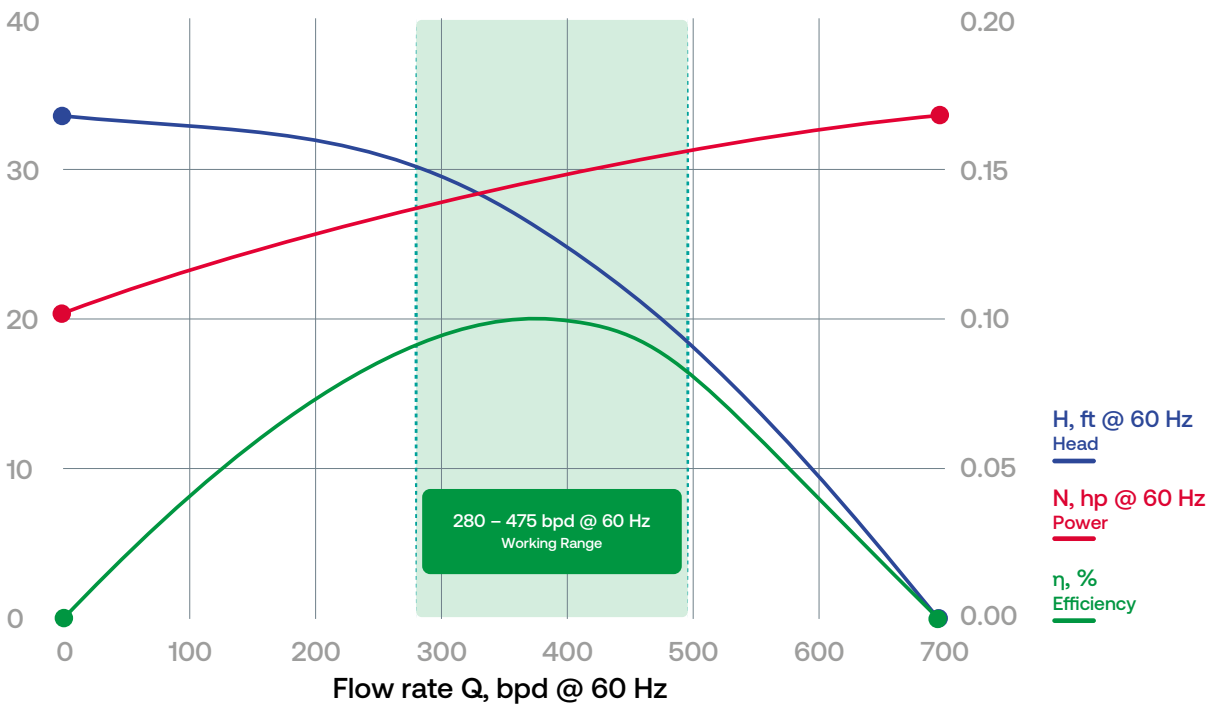
EAX375

Floater
Compression
Package

Section Configuration

5 000 Rpm @ 60 Hz
Rotation speed

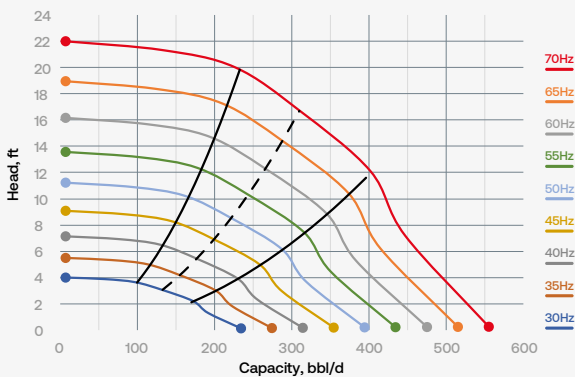
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
2176	1	9.8 ft	91	12.3
3027	1	13.1 ft	125	16.9
3784	1	16.4 ft	156	21.1
5203	2	9.8 + 13.1 ft	216	29.2
9697	3	13.1 + 13.1 + 16.4 ft	406	55.0
12062	4	4 × 13.1 ft	500	67.7
14190	4	13.1 + 3 × 16.4 ft	593	80.3

Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

2.72 in Housing OD

≈ 0.50 in Shaft OD

47.6 – 88.4 hp Shaft power



EAX455

Floater

Compression

Package

Section Configuration

6 000

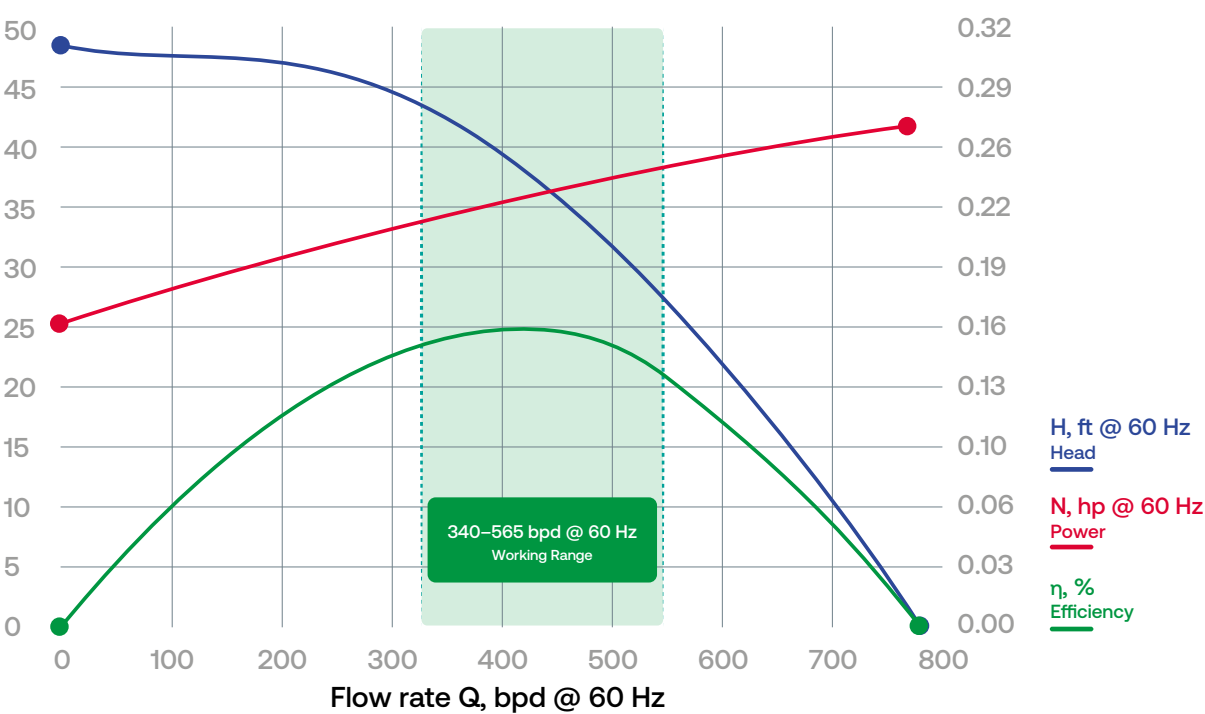
Rpm @ 60 Hz

Rotation speed

62.4

lb/ft³ @ 60 Hz

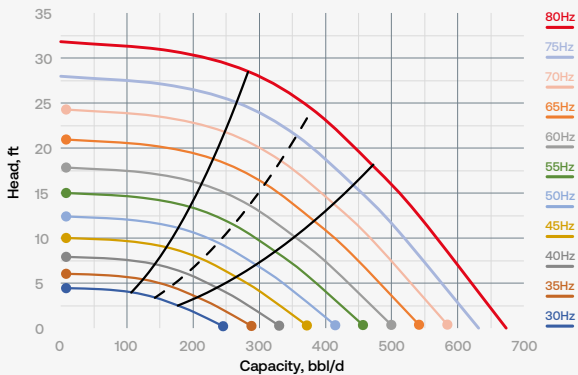
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
3179	1	9.8 ft	91	21.3
4400	1	13.1 ft	125	29.5
5440	1	16.4 ft	156	36.7
7568	2	9.8 + 13.1 ft	216	50.7
9707	2	13.1 + 16.4 ft	281	66.1
11825	3	9.8 + 13.1 + 13.1 ft	341	80.3
14190	3	13.1 + 13.1 + 16.4 ft	406	95.6

Stage characteristics at frequencies from 30 to 80 Hz



Design Characteristics

2.72 in

Housing OD

≈ 0.50 in

Shaft OD

47.6 – 88.4 hp

Shaft power

EAX605

Floater

Compression

Package

Section Configuration

5 500

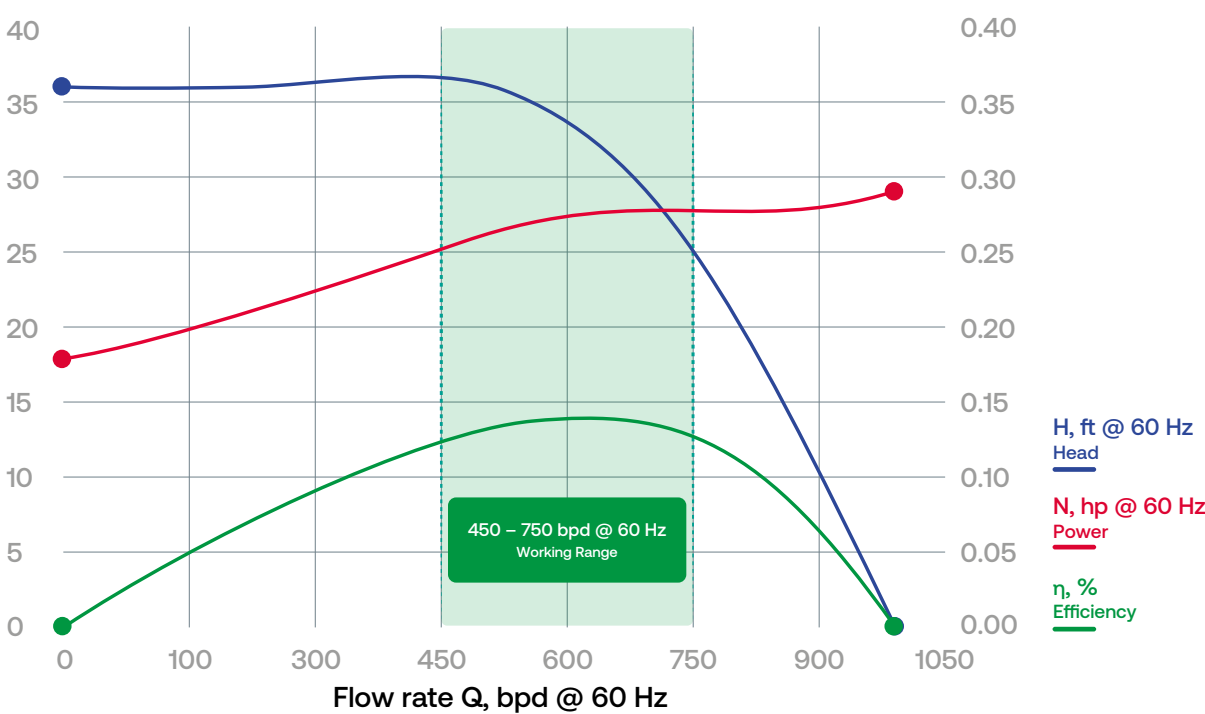
Rpm @ 60 Hz

Rotation speed

62.4

lb/ft³ @ 60 Hz

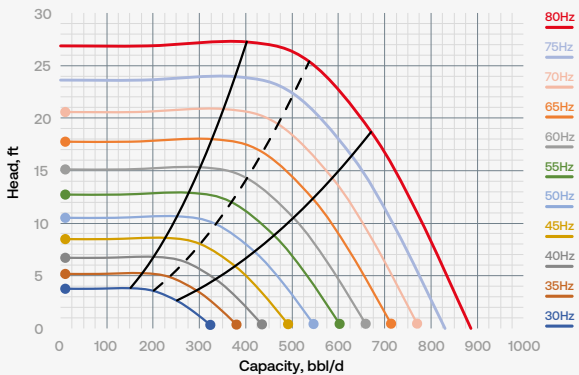
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
2861	1	9.8 ft	89	22.3
3387	1	13.1 ft	120	30.2
4890	1	16.4 ft	152	38.0
5203	2	9.8 + 9.8 ft	161	40.6
7095	2	13.1 + 13.1 ft	220	55.2
9460	2	9.8 + 9.8 + 13.1 ft	294	73.7
11825	3	13.1 + 13.1 + 16.4 ft	368	92.3
14190	3	16.4 + 16.4 + 16.4 ft	441	110.7

Stage characteristics at frequencies from 30 to 80 Hz



Design Characteristics

2.72 in

Housing OD

≈ 0.50 in

Shaft OD

47.6 – 88.4 hp

Shaft power

EAX755

Floater

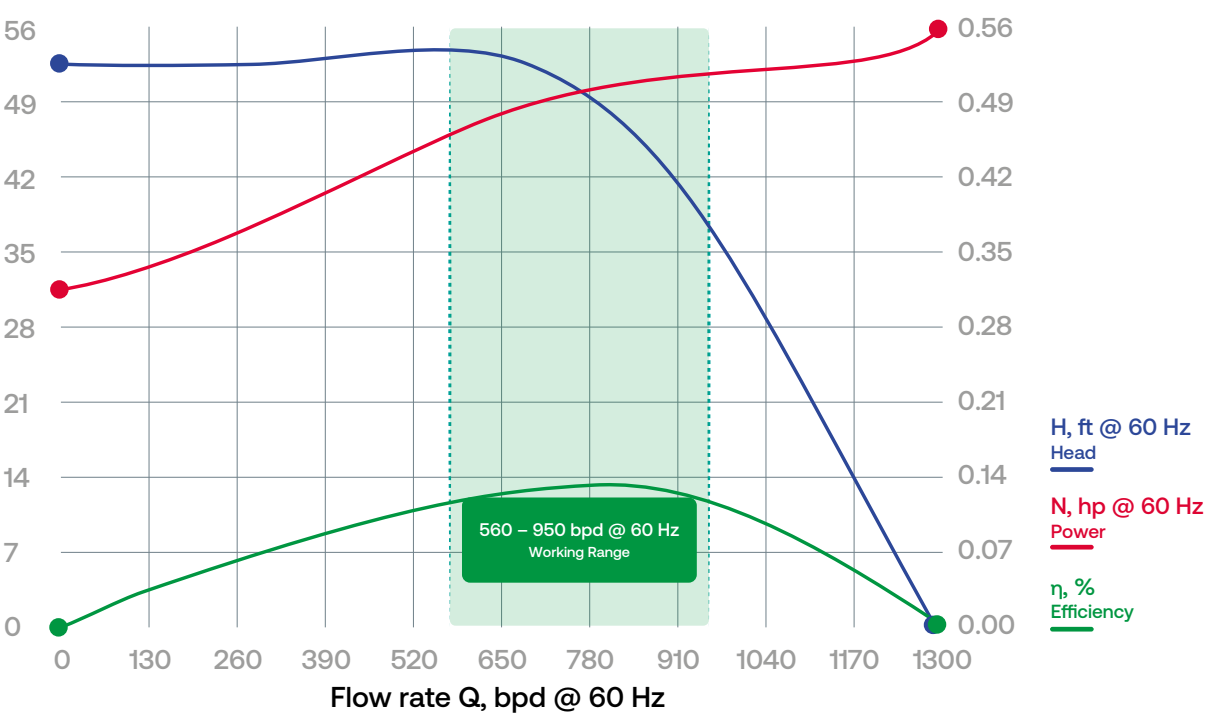
Compression

Package

Section Configuration

6 850 Rpm @ 60 Hz
Rotation speed

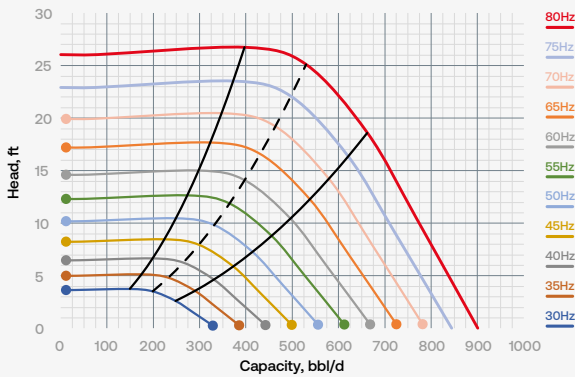
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
4545	1	9.8 ft	89	44.3
6131	1	13.1 ft	120	59.9
7766	1	16.4 ft	152	75.7
9460	2	9.8 + 9.8 ft	185	92.3
11825	2	13.1 + 13.1 ft	231	115.1
14190	3	9.8 + 9.8 + 13.1 ft	278	138.8

Stage characteristics at frequencies from 30 to 80 Hz



Design Characteristics

2.72 in Housing OD ≈ 0.50 in Shaft OD 47.6 – 88.4 hp Shaft power

EAX945

Floater

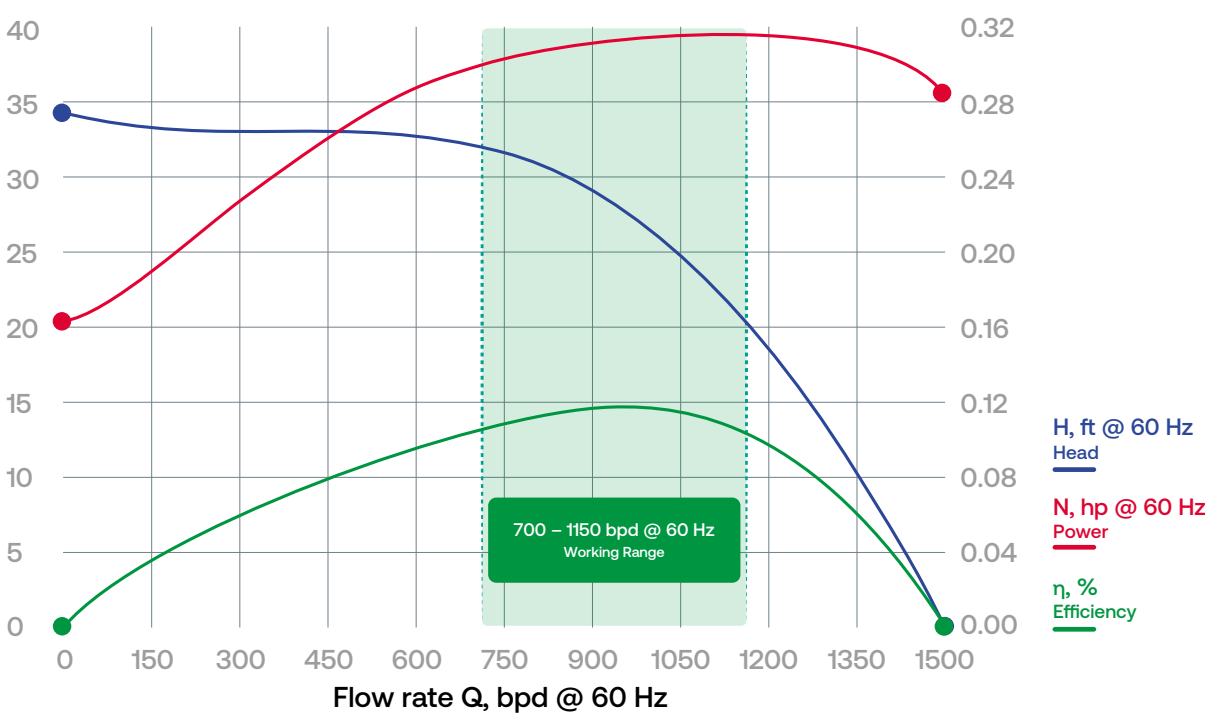
Compression

Package

Section Configuration

5 500 Rpm @ 60 Hz
Rotation speed

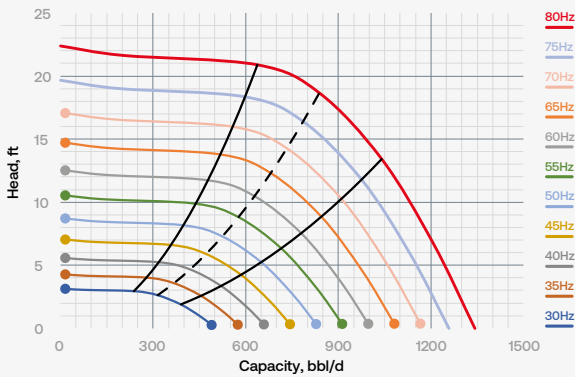
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
1940	1	9.8 ft	82	25.8
2655	1	13.1 ft	112	35.3
3350	1	16.4 ft	142	44.7
4588	2	9.8 + 13.1 ft	194	61.2
6717	2	16.4 + 16.4 ft	282	89.1
9176	4	9.8 + 9.8 + 13.1 + 13.1 ft	388	122.7
11825	5	9.8 + 9.8 + 13.1 + 13.1 + 13.1 ft	500	158.2
13784	3	16.4 + 16.4 + 16.4 ft	582	184.2

Stage characteristics at frequencies from 30 to 80 Hz



Design Characteristics

2.72 in Housing OD ≈ 0.50 in Shaft OD 47.6 – 88.4 hp Shaft power



Electric submersible pump

362 Series

EFX190

Floater
Compression
Package

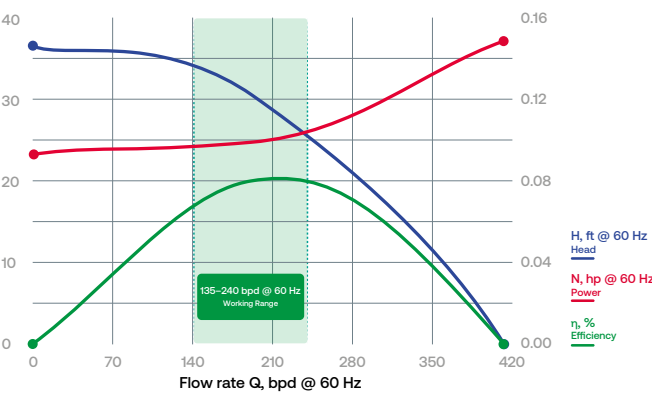
Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
3216	1	9.8 ft	126	12.5
3756	1	11.5 ft	147	13.7
4348	1	13.1 ft	170	16.9
4882	1	14.8 ft	191	19.0
5509	1	16.4 ft	213	20.9
6036	1	18.0 ft	236	23.4
6615	1	19.7 ft	259	25.8
7095	2	9.8 + 13.1 ft	296	29.5
9460	2	13.1 + 16.4 ft	385	38.3
11825	3	11.5 + 11.5 + 13.1 ft	466	46.4
14190	3	11.5 + 11.5 + 19.7 ft	561	55.0

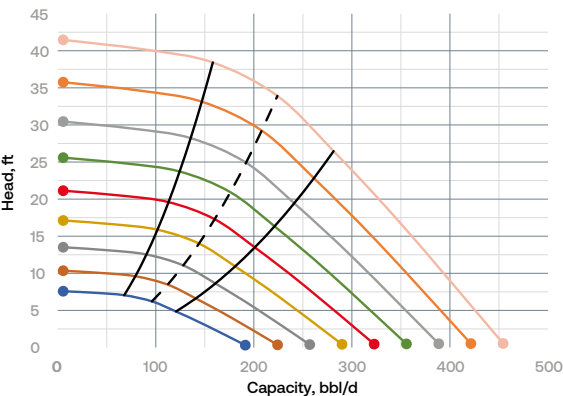
Section Configuration

3 600 Rpm @ 60 Hz
Rotation speed

62.4 lb/ft³ @ 60 Hz
Water density (reference)



Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

3.62 in Housing OD
≈ 0.67 in Shaft OD
77.5 – 142.8 hp Shaft power

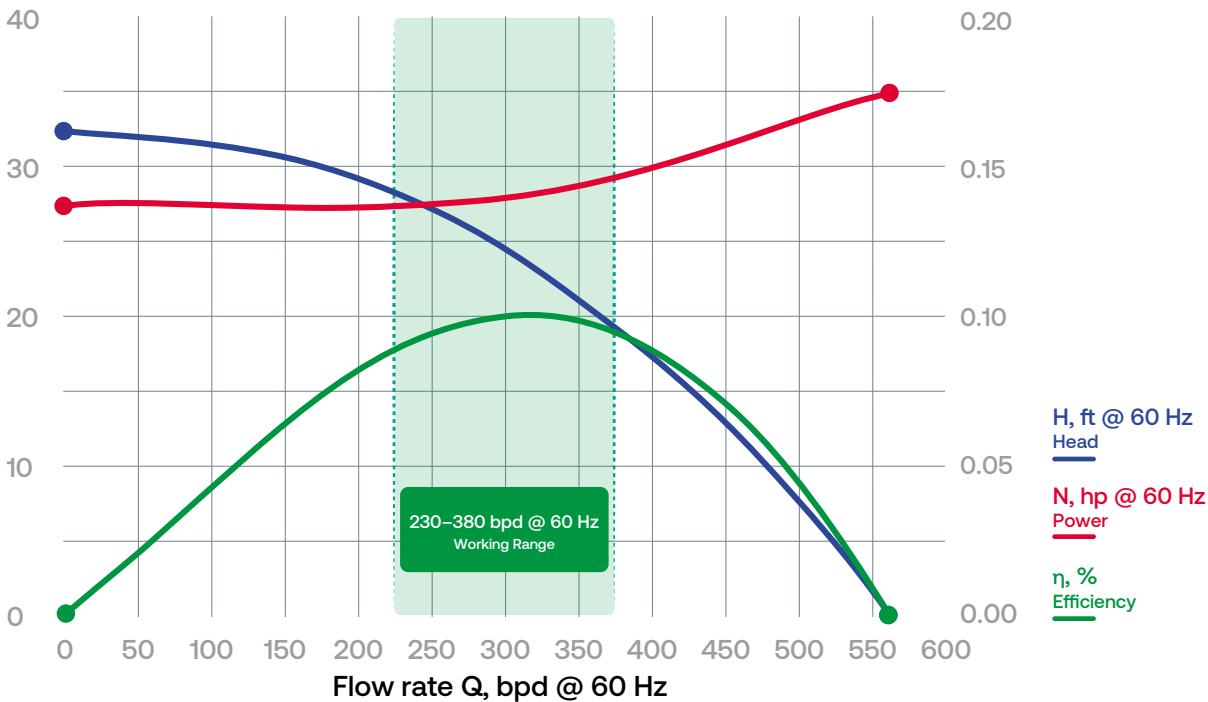
EFX300

Floater
Compression
Package

Section Configuration

3 600 Rpm @ 60 Hz
Rotation speed

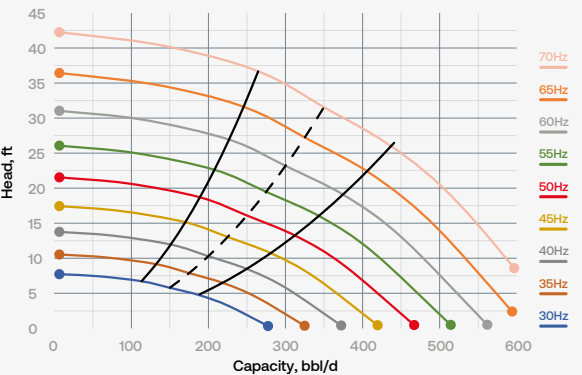
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
2602	1	9.8 ft	112	14.6
3036	1	11.5 ft	131	16.9
3527	1	13.1 ft	152	19.7
3963	1	14.8 ft	171	22.3
4446	1	16.4 ft	192	24.8
4867	1	18.0 ft	210	27.1
5355	1	19.7 ft	231	29.9
7095	2	13.1 + 13.1 + 16.4 ft	310	40.4
9460	3	9.8 + 9.8 + 13.1 ft	410	53.4
11825	3	13.1 + 14.8 + 16.4 ft	514	69.4
14190	4	13.1 + 13.1 + 13.1 + 14.8 ft	614	79.8

Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

3.62 in Housing OD
≈ 0.67 in Shaft OD
77.5 – 142.8 hp Shaft power

362 Series

Electric Submersible Pumps



EFX300-I

Floater

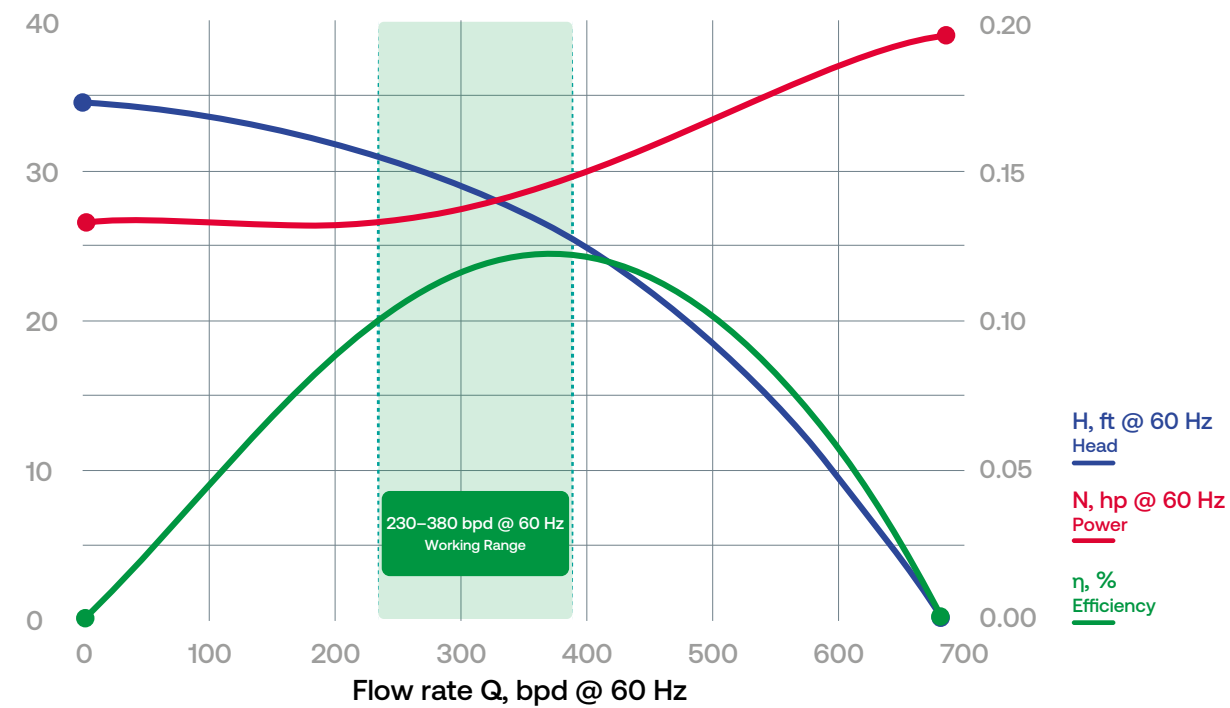
Compression

Package

Section Configuration

3 600 Rpm @ 60 Hz
Rotation speed

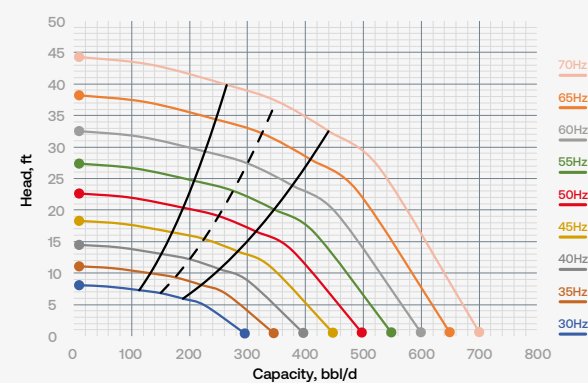
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
2602	1	9.8 ft	112	14.6
3036	1	11.5 ft	131	16.9
3527	1	13.1 ft	152	19.7
3963	1	14.8 ft	171	22.3
4446	1	16.4 ft	192	24.8
4867	1	18.0 ft	210	27.1
5355	1	19.7 ft	231	29.9
7095	2	13.1 + 13.1 + 16.4 ft	310	40.4
9460	3	9.8 + 9.8 + 13.1 ft	410	53.4
11825	3	13.1 + 14.8 + 16.4 ft	514	69.4
14190	4	13.1 + 13.1 + 13.1 + 14.8 ft	614	79.8

Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

3.62 in Housing OD ≈ 0.67 in Shaft OD 77.5 – 142.8 hp Shaft power

EFX455

Floater

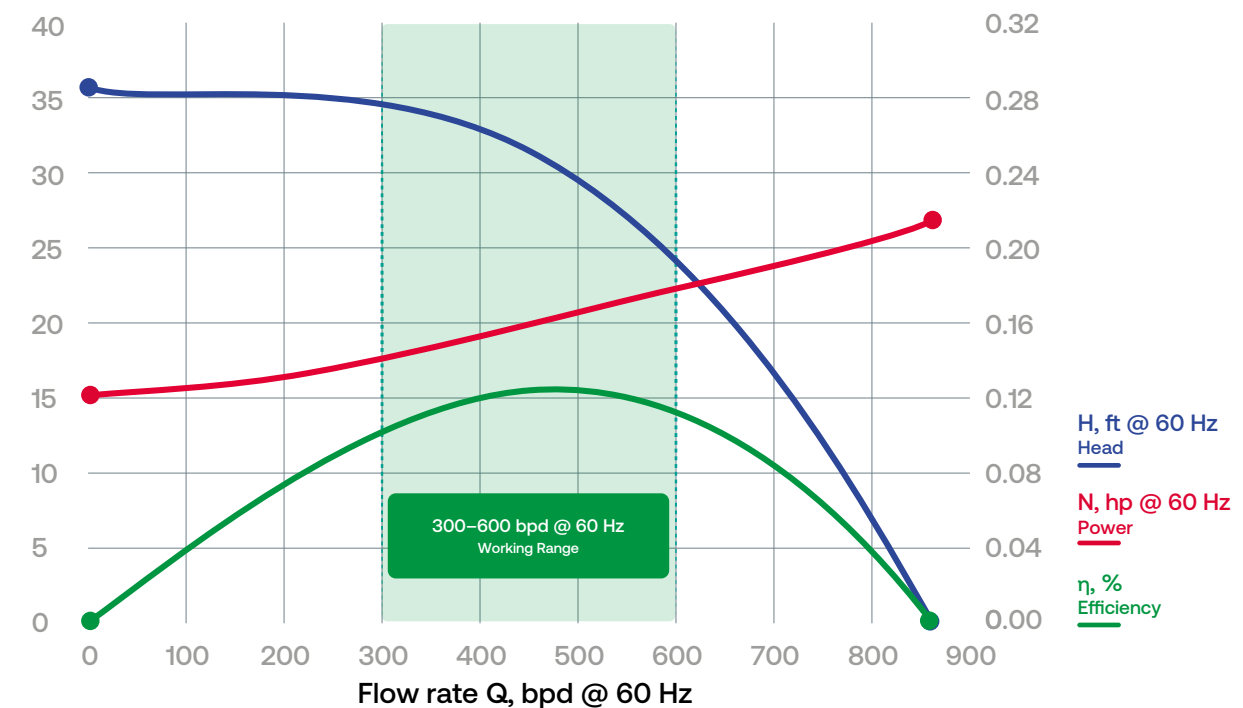
Compression

Package

Section Configuration

3 600 Rpm @ 60 Hz
Rotation speed

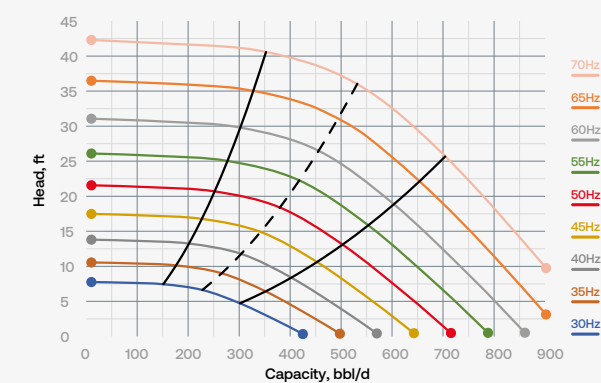
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
2959	1	9.8 ft	112	17.4
3472	1	11.5 ft	131	20.4
4024	1	13.1 ft	152	23.4
4531	1	14.8 ft	171	26.7
5085	1	16.4 ft	192	29.7
5518	1	18.0 ft	210	32.5
6112	1	19.7 ft	231	35.7
7095	2	13.1 + 13.1 ft	270	42.0
9460	2	16.4 + 16.4 ft	359	55.9
11825	3	13.1 + 13.1 + 13.1 ft	447	69.4
14190	3	16.4 + 16.4 + 16.4 ft	540	84.0

Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

3.62 in Housing OD ≈ 0.67 in Shaft OD 77.5 – 142.8 hp Shaft power



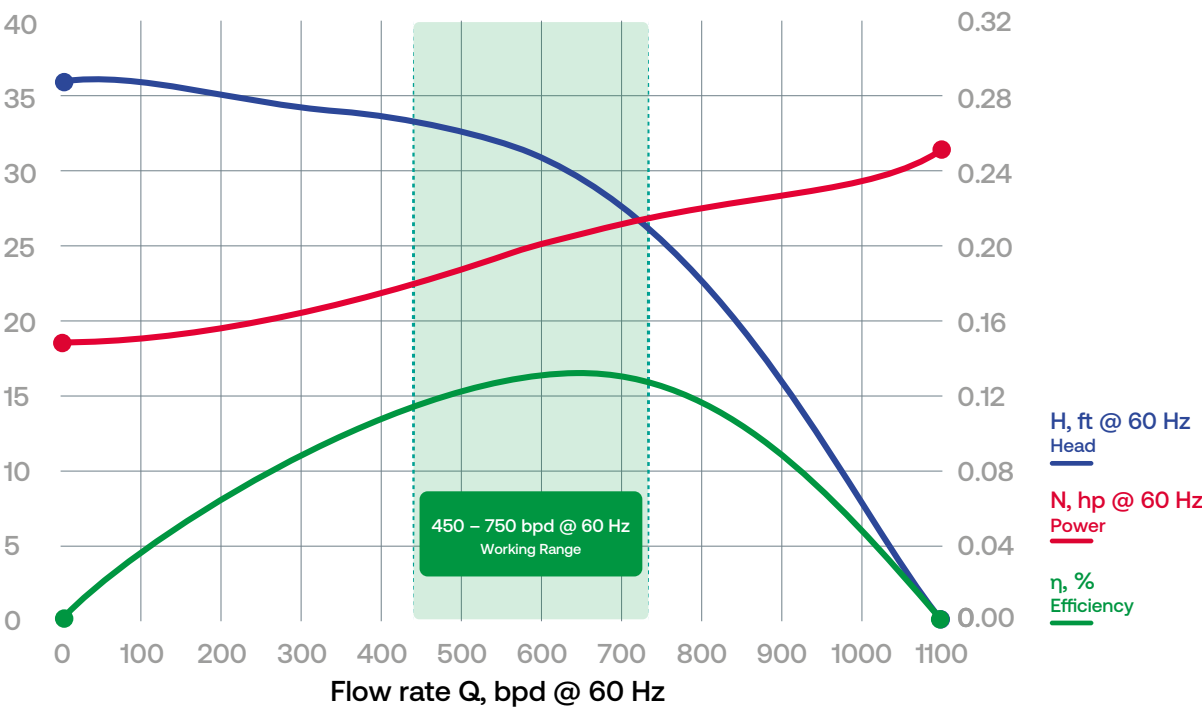
EFX605

Floater
Compression
Package

Section Configuration

3 600 Rpm @ 60 Hz
Rotation speed

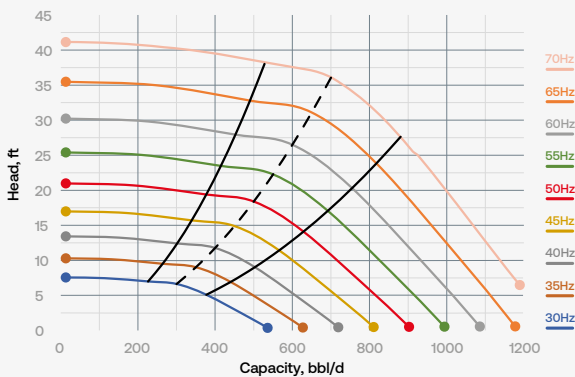
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
2729	1	9.8 ft	105	21.1
3197	1	11.5 ft	123	24.6
3718	1	13.1 ft	143	28.8
4166	1	14.8 ft	160	32.0
4683	1	16.4 ft	180	36.2
5151	1	18.0 ft	198	39.7
5634	1	19.7 ft	217	43.6
7095	2	13.1 + 13.1 ft	269	53.7
9460	2	16.4 + 16.4 ft	360	71.9
11825	3	13.1 + 13.1 + 16.4 ft	449	89.6
14190	3	16.4 + 16.4 + 16.4 ft	540	107.7

Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

3.62 in Housing OD ≈ 0.67 in Shaft OD 77.5 – 142.8 hp Shaft power

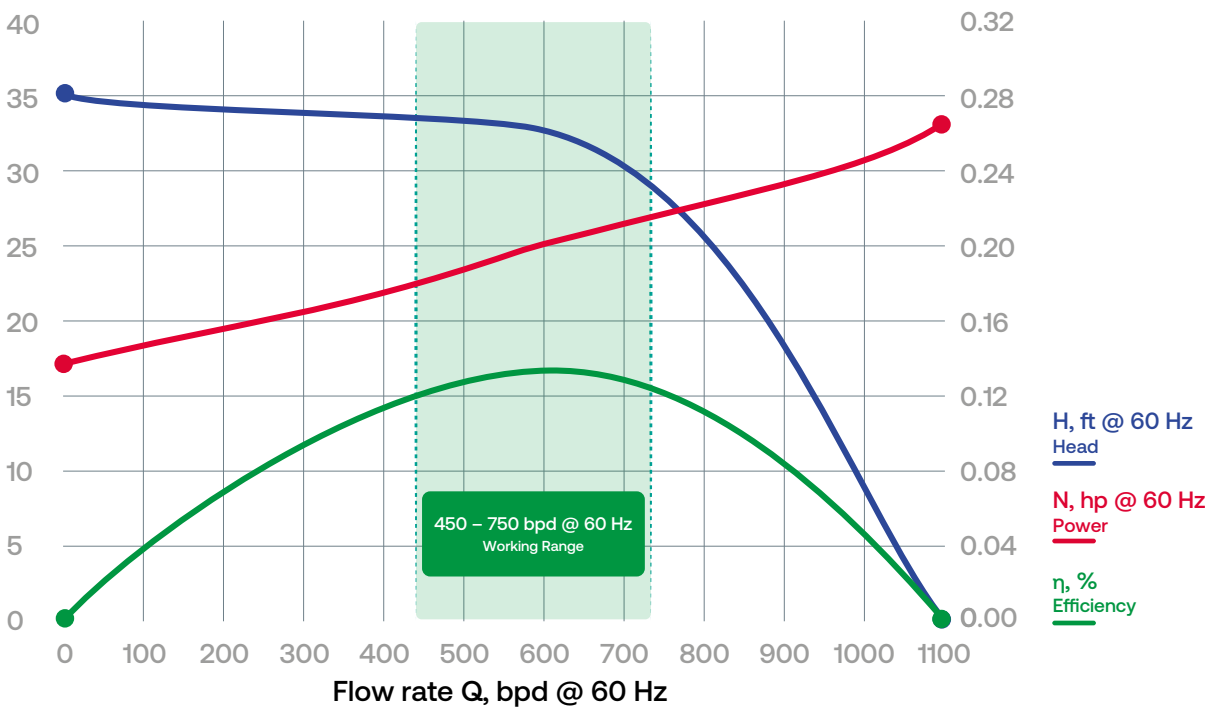
EFX605-I

Floater
Compression
Package

Section Configuration

3 600 Rpm @ 60 Hz
Rotation speed

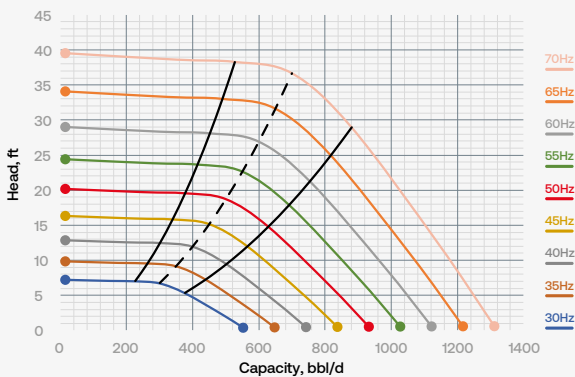
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
2830	1	9.8 ft	105	21.1
3316	1	11.5 ft	123	24.8
3855	1	13.1 ft	143	28.8
4314	1	14.8 ft	160	32.3
4852	1	16.4 ft	180	36.2
5288	1	18.0 ft	198	39.9
5846	1	19.7 ft	217	43.7
7095	2	13.1 + 13.1 ft	269	54.3
9460	2	16.4 + 16.4 ft	360	72.6
11825	3	13.1 + 13.1 + 16.4 ft	449	90.5
14190	3	16.4 + 16.4 + 16.4 ft	540	108.8

Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

3.62 in Housing OD ≈ 0.67 in Shaft OD 77.5 – 142.8 hp Shaft power



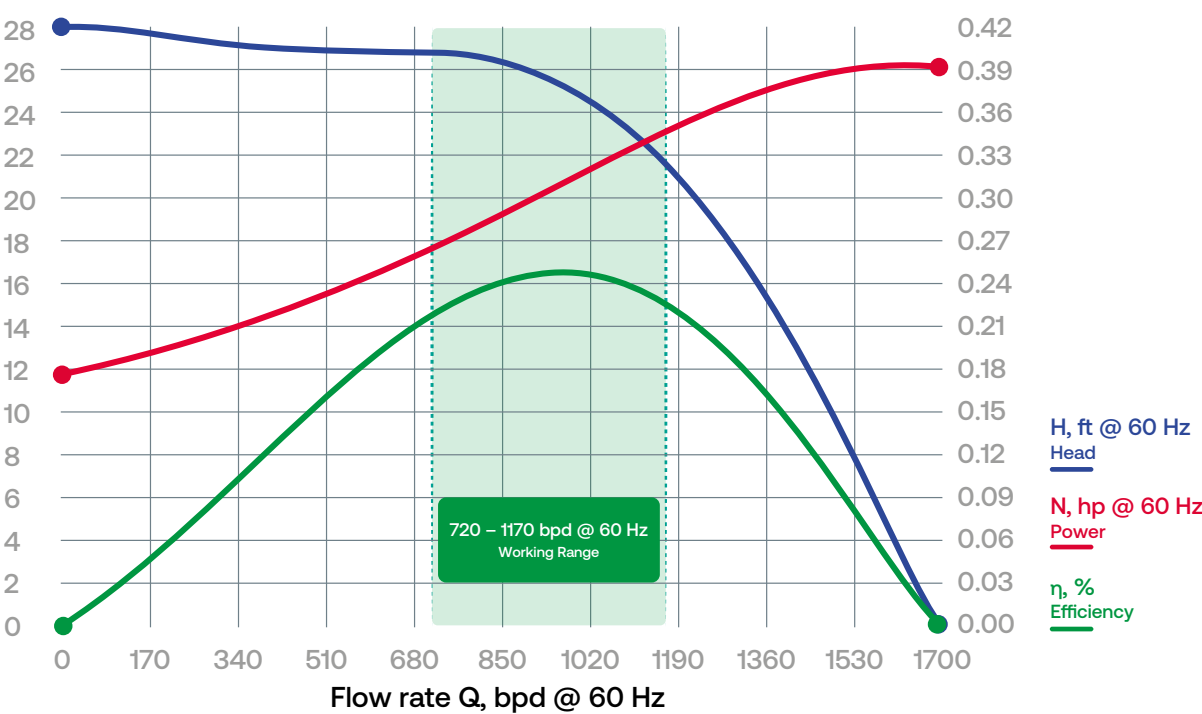
EFX945

Floater
Compression
Package

Section Configuration

3 600 Rpm @ 60 Hz
Rotation speed

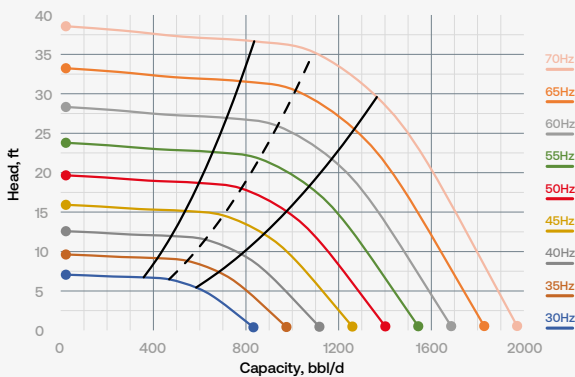
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
2393	1	9.8 ft	92	28.3
2810	1	11.5 ft	108	33.2
3193	1	13.1 ft	125	38.3
3648	1	14.8 ft	140	43.0
4021	1	16.4 ft	158	48.5
4506	1	18.0 ft	173	53.0
4943	1	19.7 ft	190	58.0
7095	2	13.1 + 16.4 ft	276	84.5
9460	3	13.1 + 13.1 + 13.1 ft	368	112.8
11825	3	16.4 + 16.4 + 16.4 ft	459	142.4
14190	4	13.1 + 13.1 + 16.4 + 16.4 ft	549	168.2

Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

3.62 in Housing OD ≈ 0.67 in Shaft OD 77.5 – 142.8 hp Shaft power

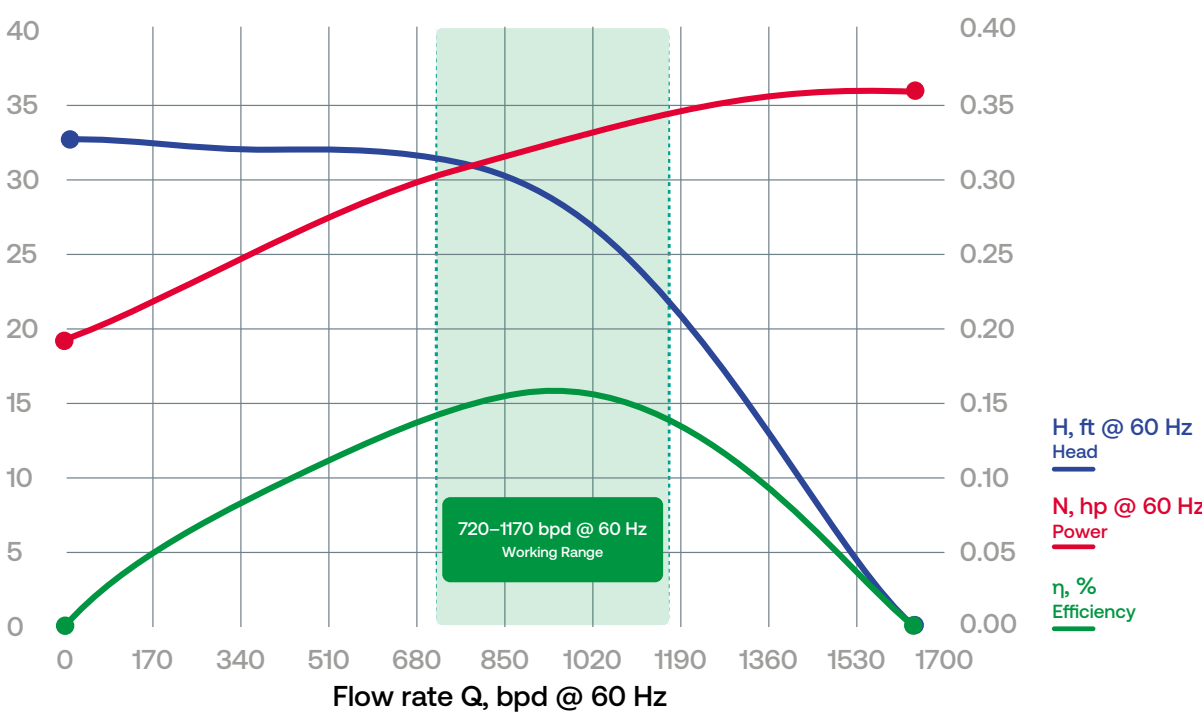
EFX945-I

Floater
Compression
Package

Section Configuration

3 600 Rpm @ 60 Hz
Rotation speed

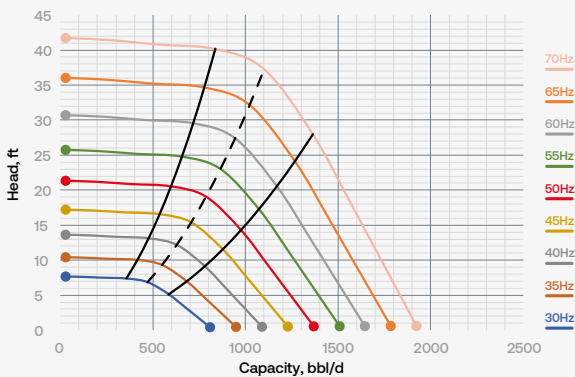
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

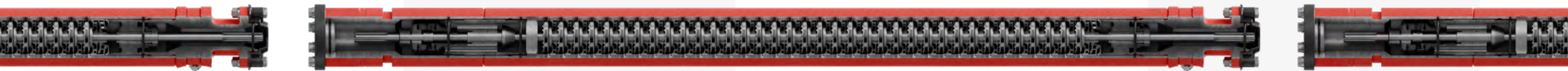
Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
2520	1	9.8 ft	92	27.4
2962	1	11.5 ft	108	32.2
3427	1	13.1 ft	125	37.4
3830	1	14.8 ft	140	41.8
4333	1	16.4 ft	158	47.1
4741	1	18.0 ft	173	51.6
5202	1	19.7 ft	190	56.9
7095	2	13.1 + 16.4 ft	258	77.0
9460	3	13.1 + 13.1 + 13.1 ft	344	102.9
11825	3	16.4 + 16.4 + 16.4 ft	431	128.9
14190	4	13.1 + 13.1 + 16.4 + 16.4 ft	517	154.6

Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

3.62 in Housing OD ≈ 0.67 in Shaft OD 77.5 – 142.8 hp Shaft power



EFX1510

Floater

Compression

Package

Section Configuration

3 600

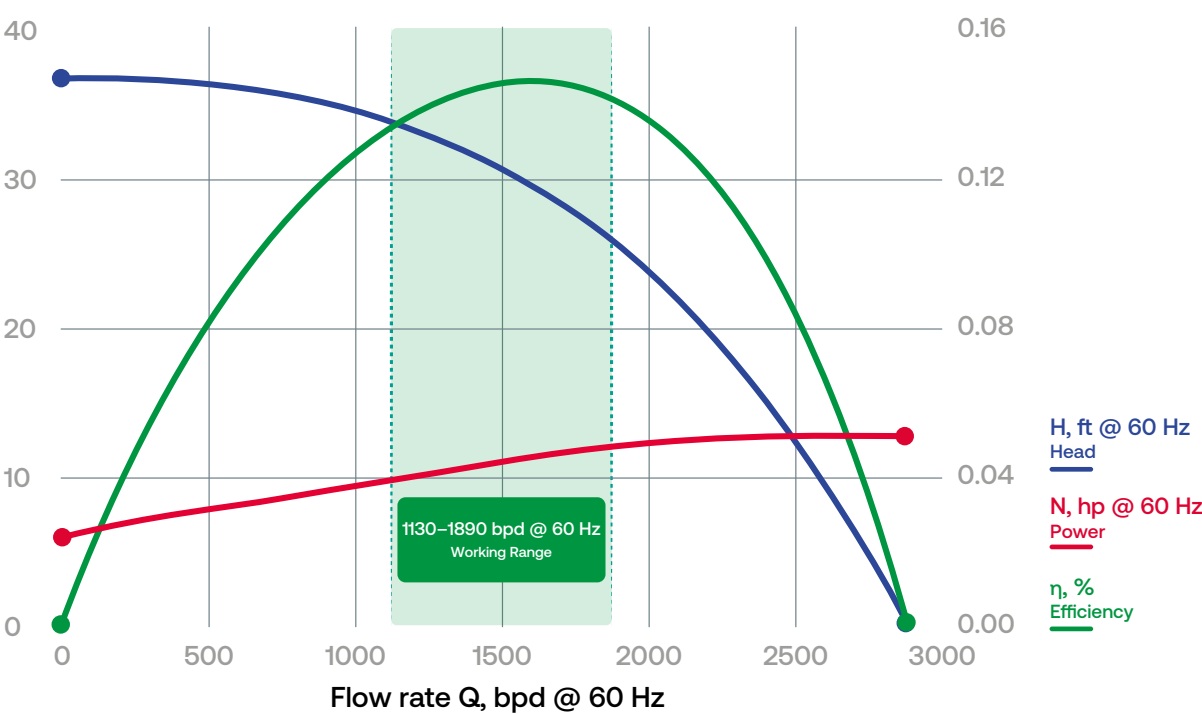
Rpm @ 60 Hz

Rotation speed

62.4

lb/ft³ @ 60 Hz

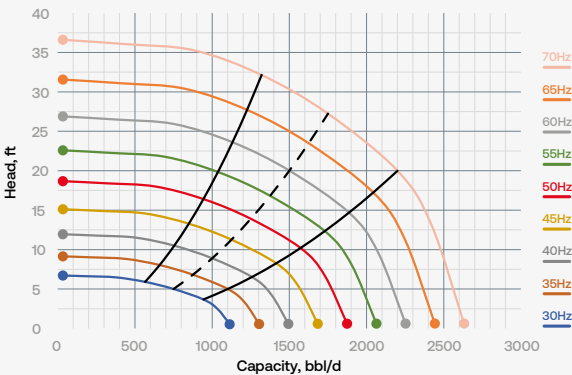
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
1633	1	9.8 ft	64	28.5
1892	1	11.5 ft	74	32.9
2194	1	13.1 ft	86	39.4
2478	1	14.8 ft	97	44.1
2786	1	16.4 ft	109	48.7
3041	1	18.0 ft	119	53.4
3344	1	19.7 ft	131	58.7
7095	3	9.8 + 16.4 + 16.4 ft	277	123.9
9460	3	19.7 + 19.7 + 19.7 ft	370	165.6
10878	3	11.5 + 18.0 + 18.0 ft	425	190.2

Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

3.62 in

Housing OD

≈ 0.79 in

Shaft OD

104.7 – 197.1

hp

Shaft power



Electric submersible pump

406

Series

EHX1210

Floater

Compression

Package

Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
3020	1	9.5 ft	90	40.4
3490	1	11.5 ft	104	46.8
4060	1	13.1 ft	121	54.3
4568	1	14.8 ft	136	59.9
5137	1	16.4 ft	153	68.7
5600	1	18.0 ft	167	74.9
6182	1	19.7 ft	184	82.6
7095	2	9.8+13.1 ft	211	92.9
9460	2	13.1+18.0 ft	281	123.9
10880	2	18.0+19.7 ft	323	142.5

Section Configuration

3 600

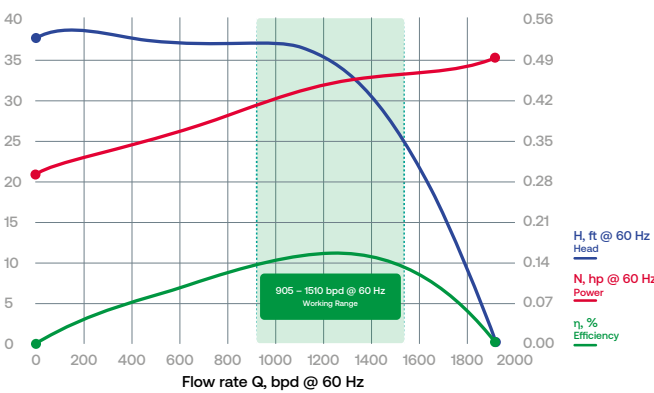
Rpm @ 60 Hz

Rotation speed

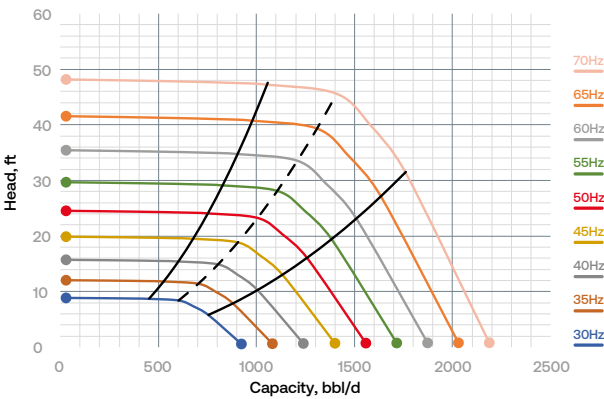
62.4

lb/ft³ @ 60 Hz

Water density (reference)



Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

4.06 in

Housing OD

≈ 0.79 in

Shaft OD

104.7 – 197.1

hp

Shaft power

EHX1510

Floater

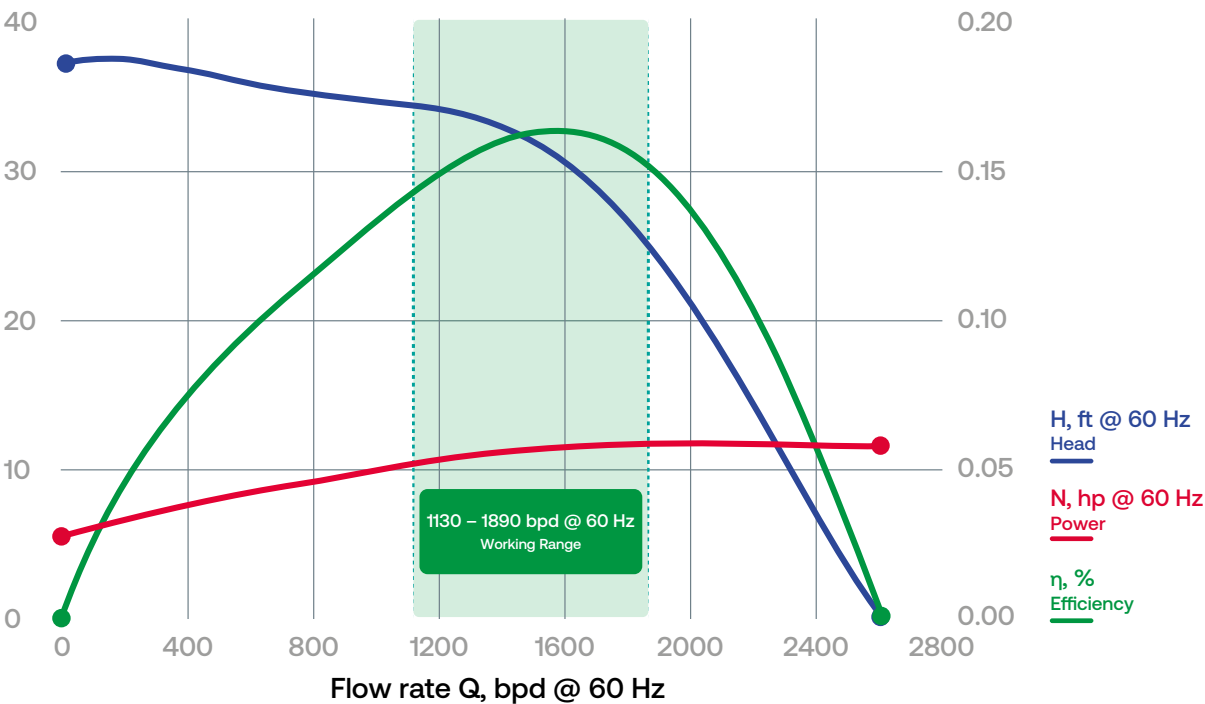
Compression

Package

Section Configuration

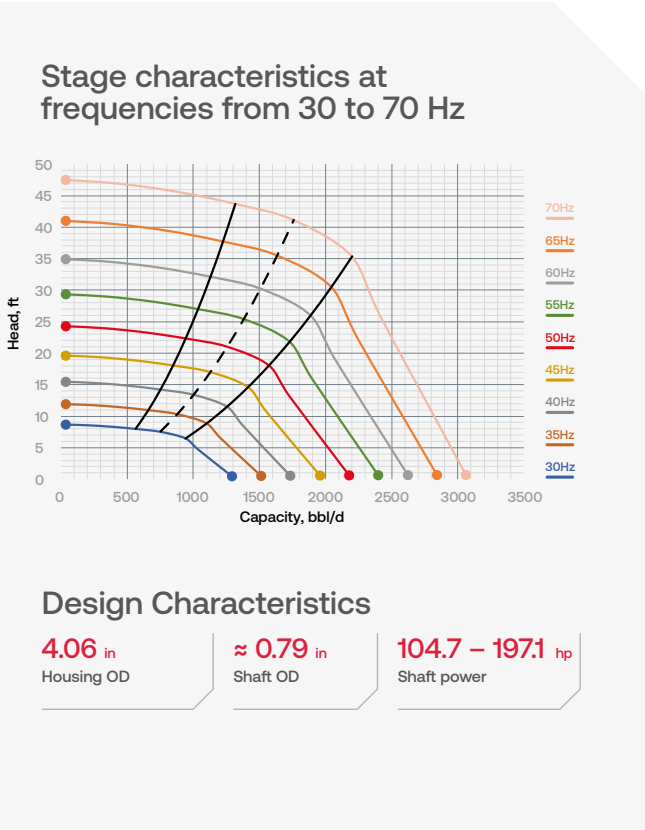
3 600 Rpm @ 60 Hz
Rotation speed

62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
2270	1	9.8 ft	75	39.0
2634	1	11.5 ft	87	45.2
3058	1	13.1 ft	101	52.7
3419	1	14.8 ft	113	59.0
3846	1	16.4 ft	127	66.1
4205	1	18.0 ft	139	72.3
4633	1	19.7 ft	153	78.9
7095	2	14.8 + 16.4 ft	234	121.6
9460	3	13.1 + 13.1 + 14.8 ft	312	162.4
10879	3	13.1 + 14.8 + 19.7 ft	359	186.5



EHX1885

Floater

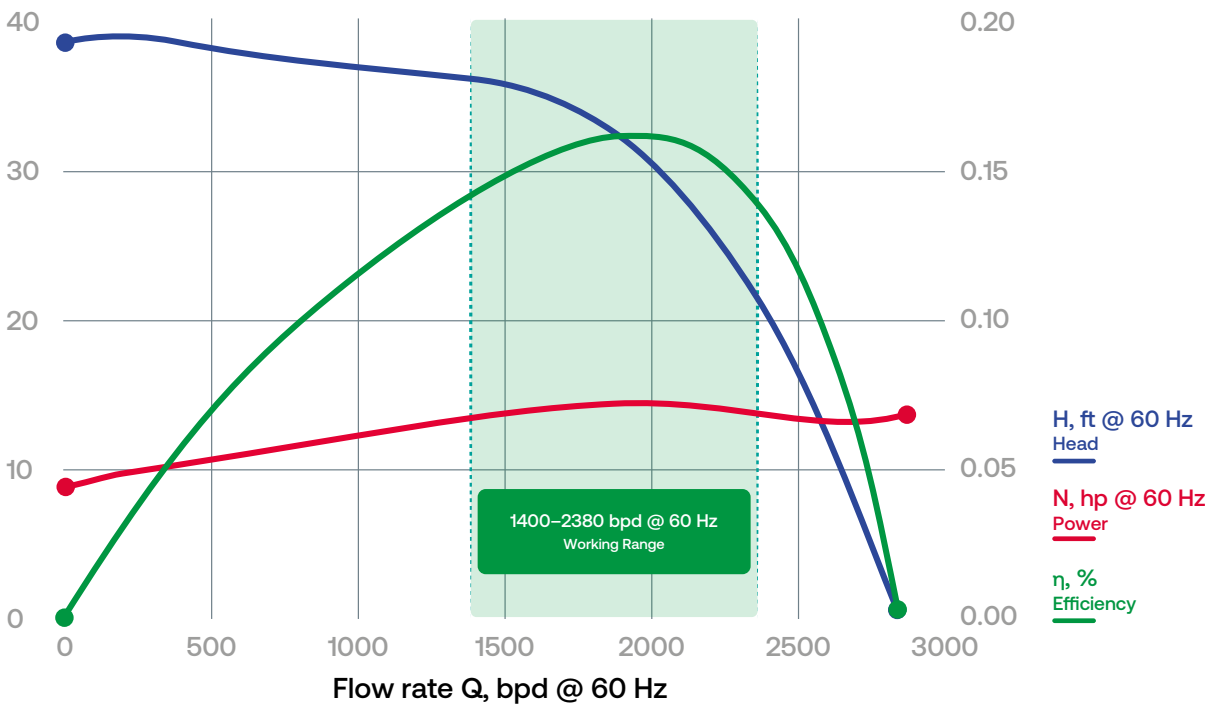
Compression

Package

Section Configuration

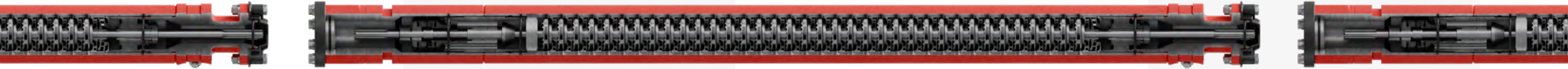
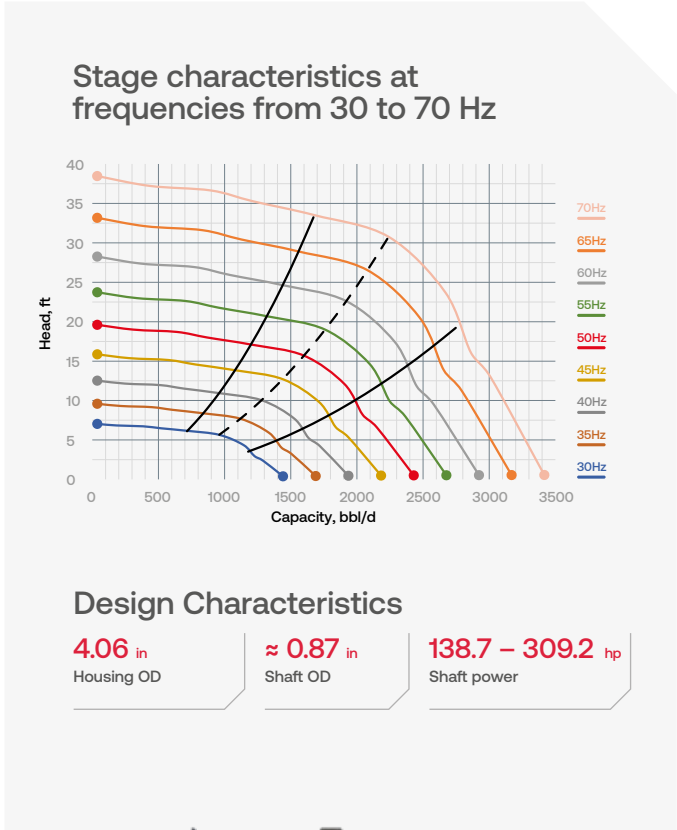
3 600 Rpm @ 60 Hz
Rotation speed

62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
2028	1	9.8 ft	66	43.6
2336	1	11.5 ft	76	50.3
2736	1	13.1 ft	89	59.0
3039	1	14.8 ft	99	66.0
3443	1	16.4 ft	112	74.2
3775	1	18.0 ft	122	80.7
4148	1	19.7 ft	135	89.5
7095	2	14.8 + 19.7 ft	230	149.4
9460	3	14.8 + 14.8 + 16.4 ft	307	199.5
10879	3	14.8 + 18.0 + 19.7 ft	353	229.2



EHX3020

Floater

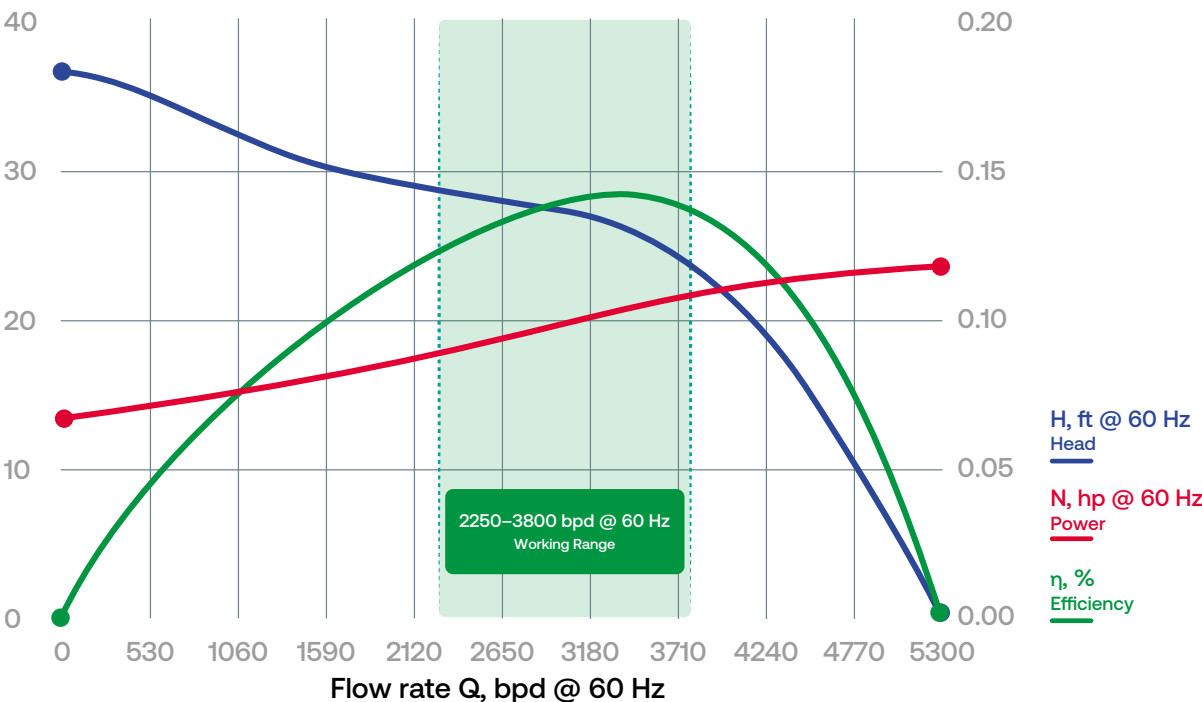
Compression

Package

Section Configuration

3 600 Rpm @ 60 Hz
Rotation speed

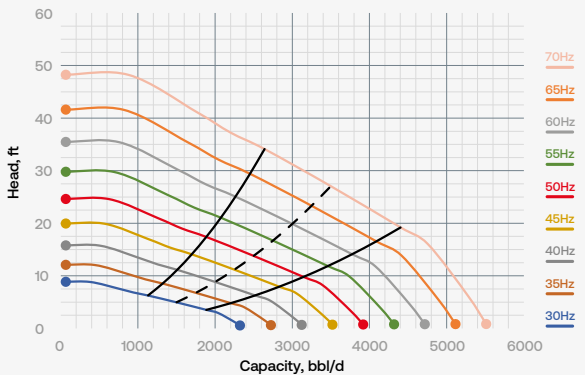
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
1263	1	9.8 ft	43	44.1
1495	1	11.5 ft	51	52.0
1732	1	13.1 ft	59	60.3
1966	1	14.8 ft	67	68.4
2199	1	16.4 ft	75	76.6
2417	1	18.0 ft	83	84.7
2666	1	19.7 ft	91	92.8
7095	3	14.8 + 18.0 + 19.7 ft	242	246.8
9460	4	14.8 + 18.0 + 19.7 ft	362	329.7
10879	5	9.8 + 11.5 + 19.7 + 19.7 ft	371	378.6

Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

4.06 in
Housing OD

≈ 0.87 in
Shaft OD

138.7 – 309.2 hp
Shaft power

EHX3775

Floater

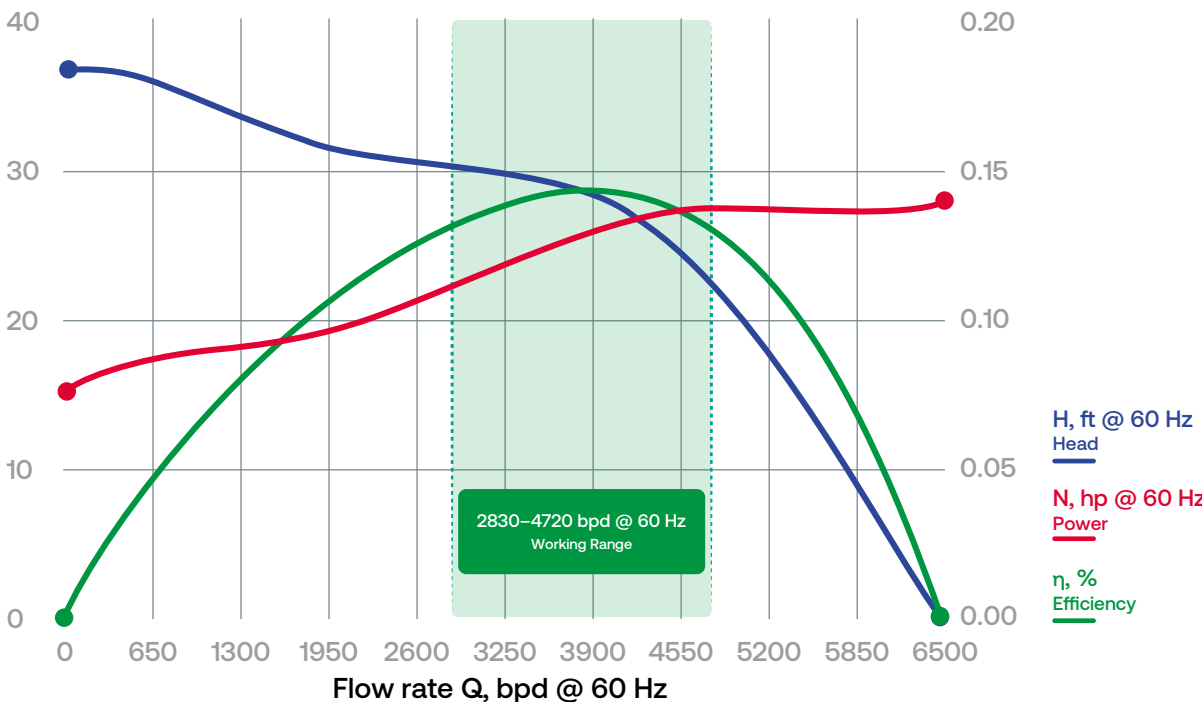
Compression

Package

Section Configuration

3 600 Rpm @ 60 Hz
Rotation speed

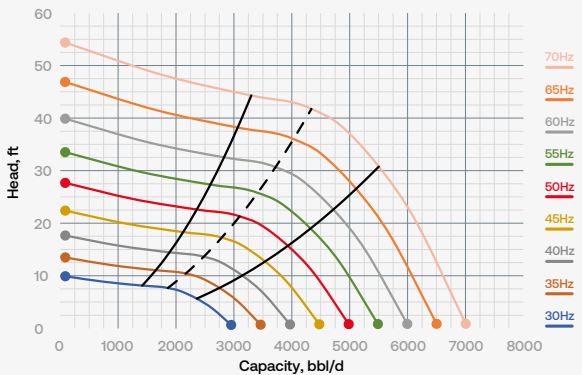
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
956	1	9.8 ft	31	41.2
1139	1	11.5 ft	37	49.2
1324	1	13.1 ft	43	57.3
1509	1	14.8 ft	49	65.5
1694	1	16.4 ft	55	73.9
1883	1	18.0 ft	61	81.9
2028	1	19.7 ft	66	88.2
7095	4	11.2 + 19.7 + 19.7 + 19.7 ft	230	306.0
9460	5	13.1 + 19.7 + 19.7 + 19.7 + 19.7 ft	307	409.3
10879	6	9.8 + 19.7 + 19.7 + 19.7 + 19.7 + 19.7 ft	353	471.4

Stage characteristics at frequencies from 30 to 70 Hz

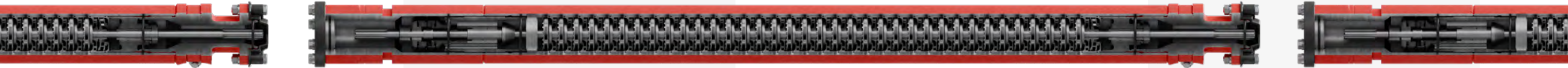


Design Characteristics

4.06 in
Housing OD

≈ 0.98 in
Shaft OD

271.9 – 571.0 hp
Shaft power



EHX5285

Floater

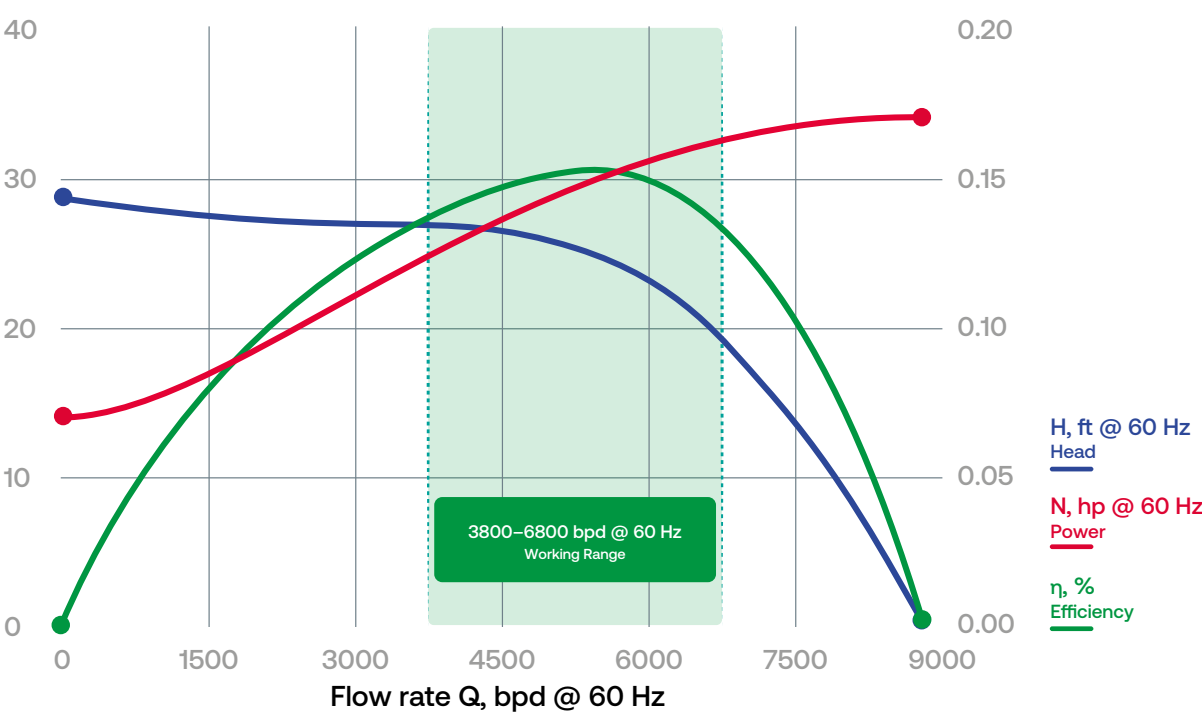
Compression

Package

Section Configuration

3 600 Rpm @ 60 Hz
Rotation speed

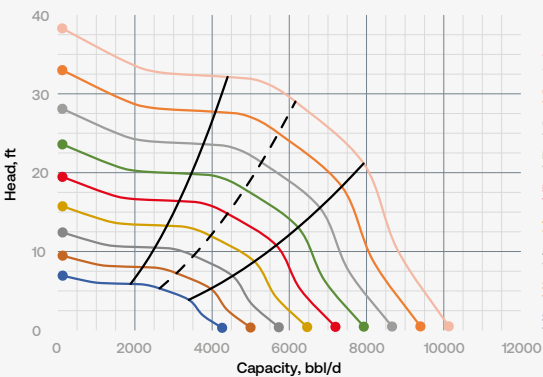
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
728	1	9.8 ft	27	41.1
836	1	11.5 ft	31	47.3
970	1	13.1 ft	36	43.4
1108	1	14.8 ft	41	49.3
1216	1	16.4 ft	45	54.3
1348	1	18.0 ft	50	60.3
1485	1	19.7 ft	55	66.0
4730	4	16.4 + 16.4 + 16.4 + 16.4 ft	175	266.8
7095	6	19.7 × 6 ft	263	398.2
9460	7	9.8 + 19.7 × 3 ft	350	533.6
10879	8	18.0 + 22.9 + 19.7 ft	403	612.5

Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

4.06 in
Housing OD

≈ 0.98 in
Shaft OD

271.9 – 571.0 hp
Shaft power



Electric submersible pump

449/535

Series

EJX7550

Floater

Compression

Package

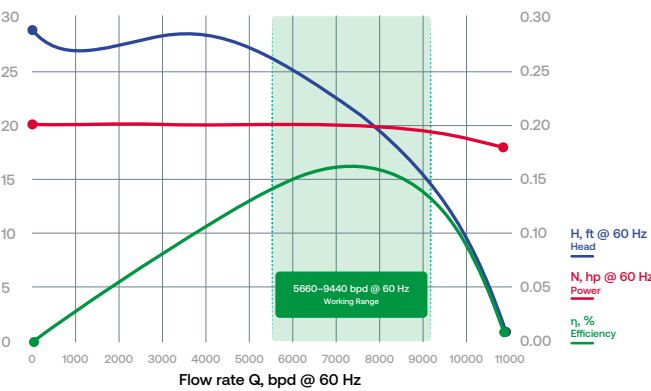
Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
527	1	9.8 ft	27	51.0
667	1	11.5 ft	32	60.6
771	1	13.1 ft	37	70.3
875	1	14.8 ft	42	79.5
980	1	16.4 ft	47	89.1
1060	1	18.0 ft	51	96.5
1163	1	19.7 ft	56	106.0
4730	4	13.1 + 19.7 ft	224	420.0
7095	7	16.4 + 19.7 + 13.1 + 9.8 ft	344	644.0
9460	9	22.9 + 19.7 + 6.6 + 11.5 ft	456	856.1
10879	10	26.2 × 19.7 + 18.0 + 9.8 ft	526	988.3

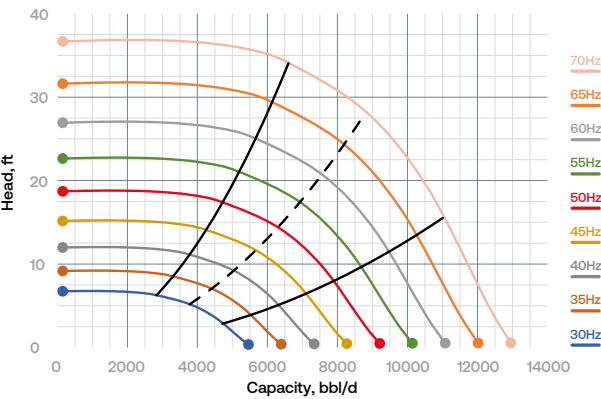
Section Configuration

3 600 Rpm @ 60 Hz
Rotation speed

62.4 lb/ft³ @ 60 Hz
Water density (reference)



Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

4.49 in
Housing OD

≈ 1.18 in
Shaft OD

407.9 – 788.6 hp
Shaft power

EPX6040

Floater

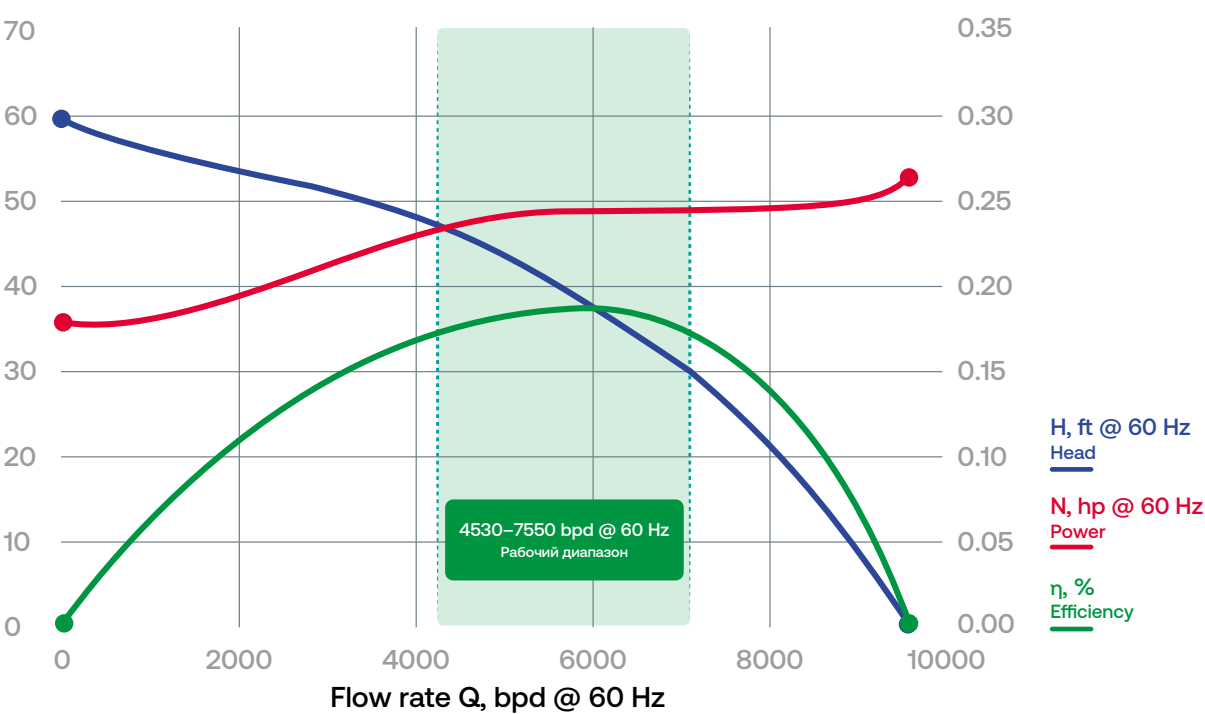
Compression

Package

Section Configuration

3 600 Rpm @ 60 Hz
Rotation speed

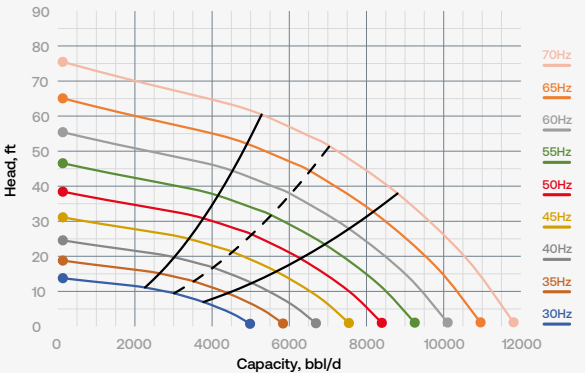
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
1709	1	9.8 ft	35	130.8
2049	1	11.5 ft	42	156.8
2338	1	13.1 ft	48	179.3
2631	1	14.8 ft	54	201.6
2970	1	16.4 ft	61	227.8

Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

5.35 in
Housing OD

≈ 0.87 in (exp.)
Shaft OD

224.3 – 394.3 hp
Shaft power

EPX7550

Floater

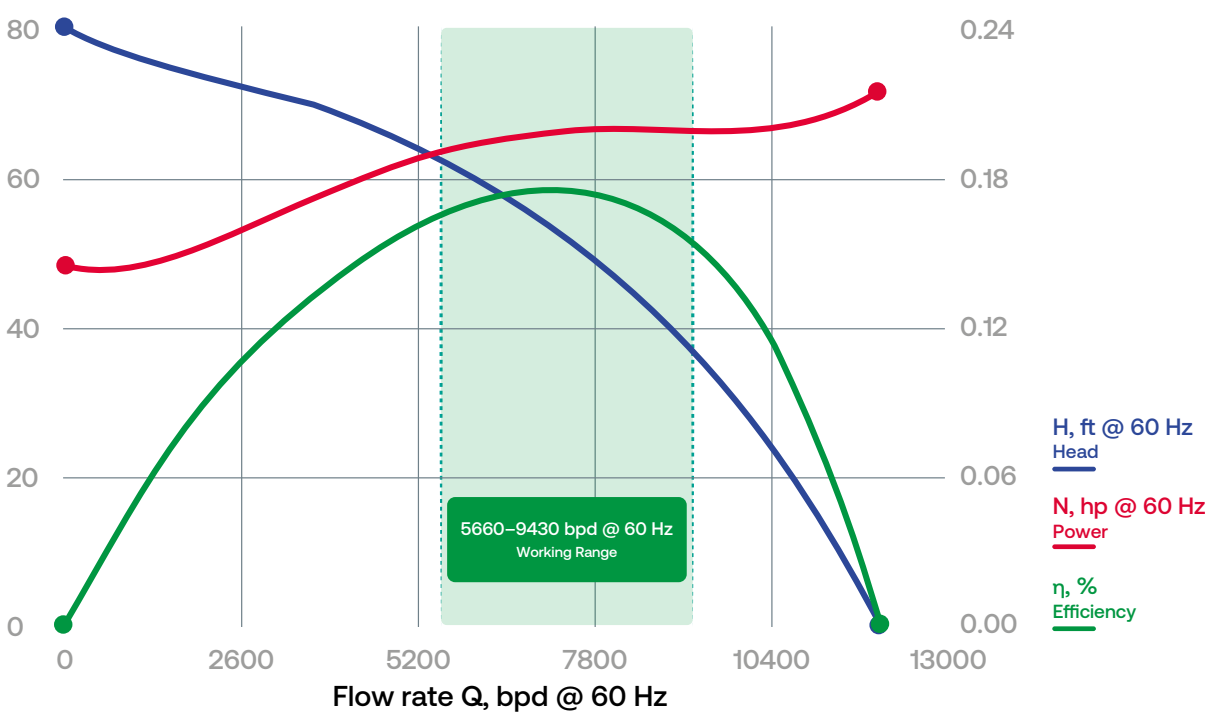
Compression

Package

Section Configuration

4 200 Rpm @ 60 Hz
Rotation speed

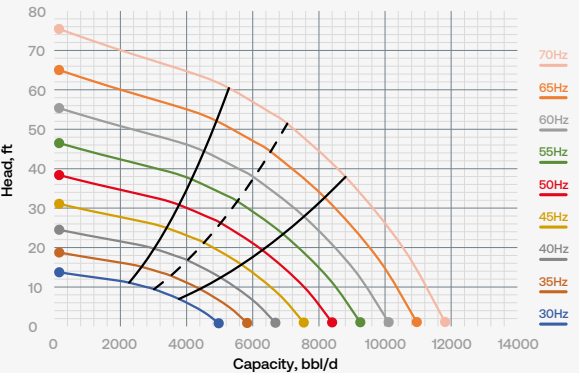
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
1821	1	9.8 ft	35	136.9
2188	1	11.5 ft	42	164.3
2498	1	13.1 ft	48	188.0
2812	1	14.8 ft	54	211.4
3175	1	16.4 ft	61	238.7
4632	2	11.5 + 14.8 ft	89	348.5
7493	3	13.1 + 13.1 + 13.1 ft	162	635.5

Stage characteristics at frequencies from 30 to 70 Hz

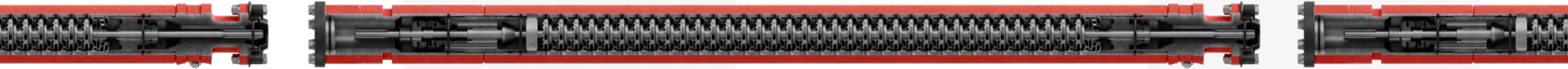


Design Characteristics

5.35 in
Housing OD

≈ 0.87 in (exp.)
Shaft OD

269.2 – 472.1 hp
Shaft power





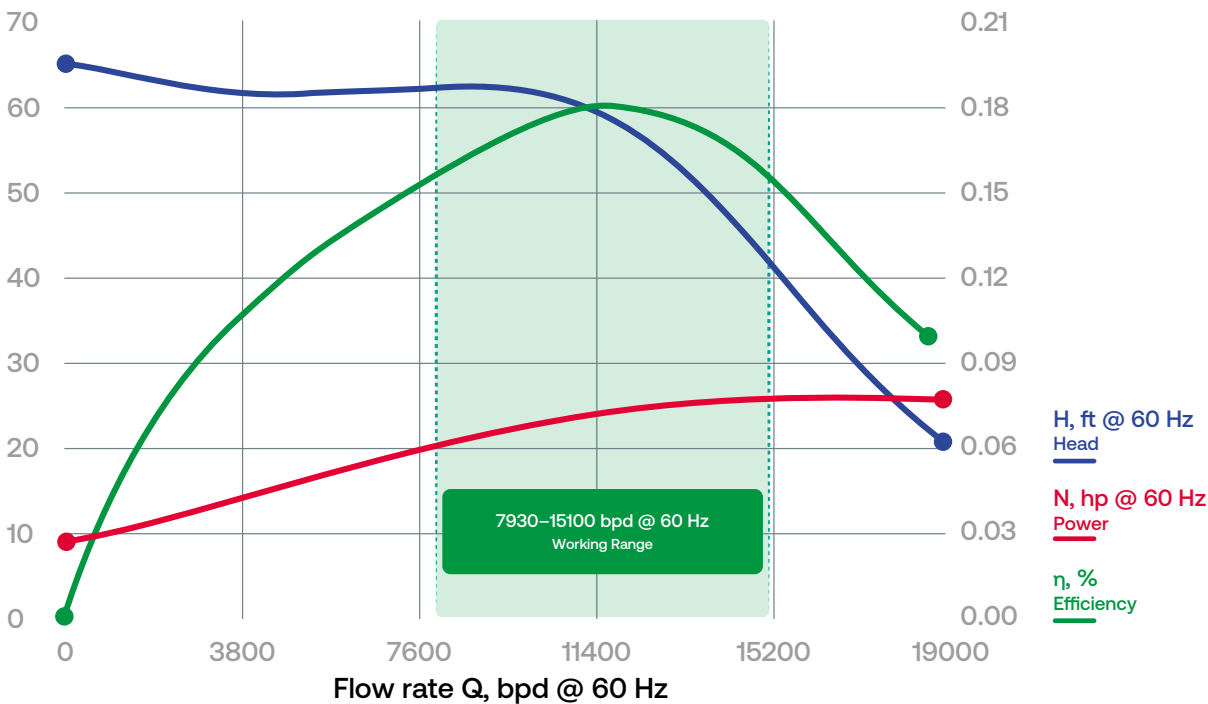
EPX11700

Floater
Compression
Package

Section Configuration

3 600 Rpm @ 60 Hz
Rotation speed

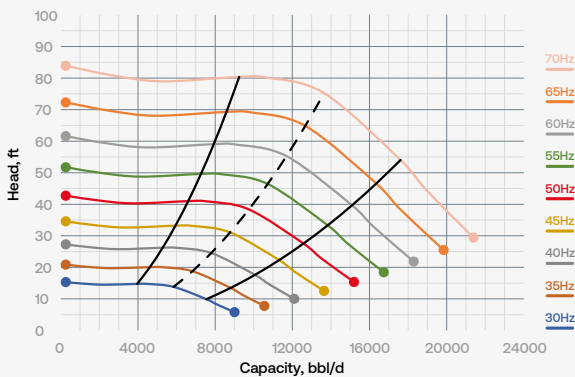
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
1771	1	9.8 ft	32	212.5
2106	1	11.5 ft	38	252.2
2435	1	13.1 ft	44	292.1
2766	1	14.8 ft	50	332.0
3096	1	16.4 ft	56	371.7

Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

5.35 in
Housing OD

≈ 1.18 in (exp.)
Shaft OD

571.0 – 1012.9 hp
Shaft power

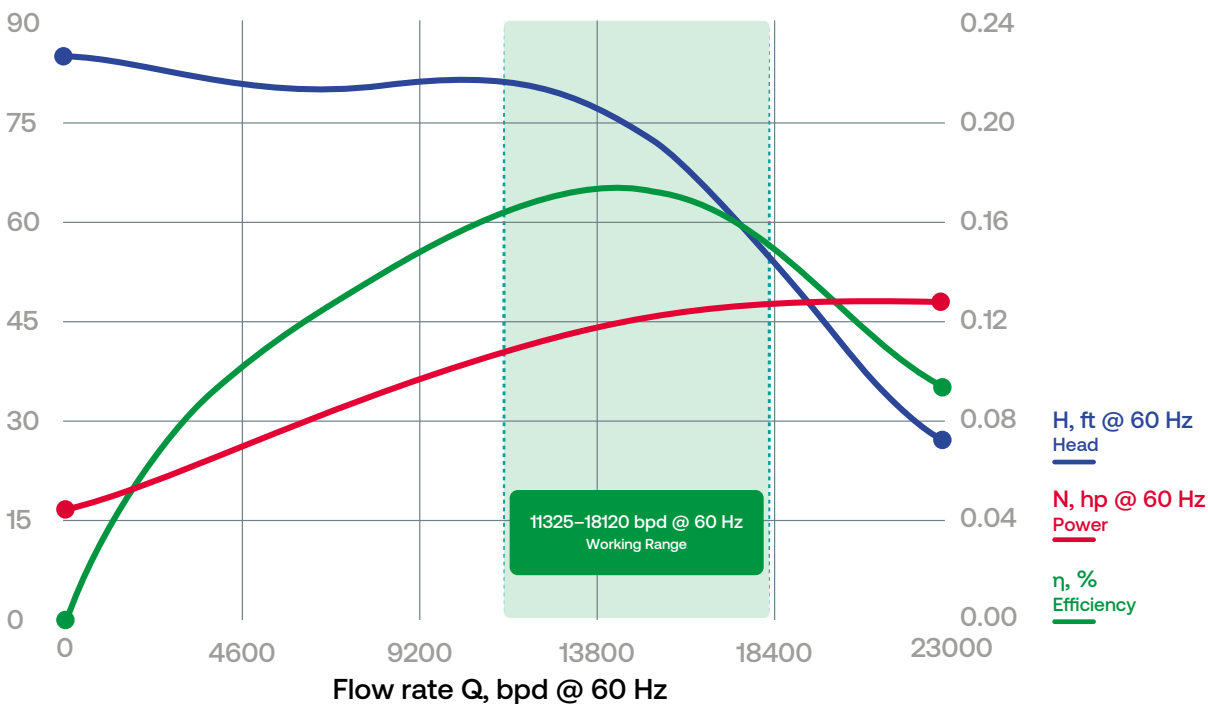
EPX15100

Floater
Compression
Package

Section Configuration

4 200 Rpm @ 60 Hz
Rotation speed

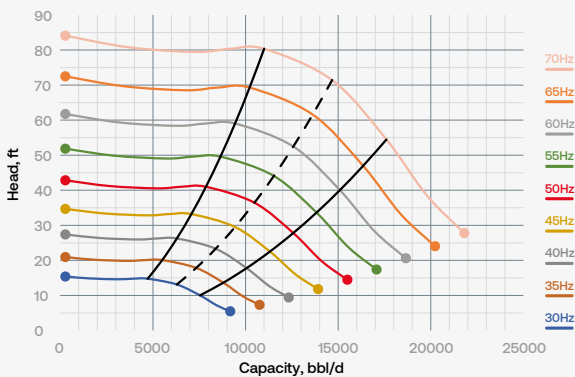
62.4 lb/ft³ @ 60 Hz
Water density (reference)



Assembly Configuration

Head, ft	Sections, pcs	Section length, ft	Stages, pcs	Shaft power, hp
2422	1	9.8 ft	32	376.5
2876	1	11.5 ft	38	447.1
3330	1	13.1 ft	44	518.8
3784	1	14.8 ft	50	589.6
4238	1	16.4 ft	56	659.9

Stage characteristics at frequencies from 30 to 70 Hz



Design Characteristics

5.35 in
Housing OD

≈ 1.18 in (exp.)
Shaft OD

639.0 – 1155.7 hp
Shaft power



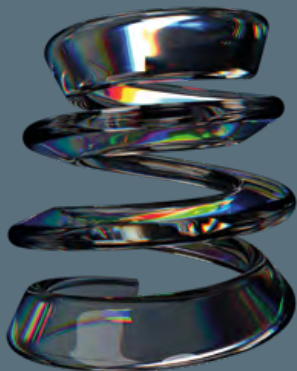


Variable speed drive

Control, monitoring of parameters and protection of submersible asynchronous and permanent magnet motors (PMM) with a capacity from 12 to 1160 hp @ 60 Hz, with the possibility of soft start-up, stop and regulation of rotation frequency.

120–7200 Rpm @ 60 Hz
Operating frequency range of the plug-in motor

3.5–300 Hz
Speed control range



ESP Service LLC is a leading manufacturer of VSDs for electrical submersible pumps

Main advantages:

- 1 Flexibility of configuration
- 2 Versatility of application
- 3 Intelligent control
- 4 Advanced service functionality
- 5 Convenience and ease of maintenance



At customer's request, it is possible to manufacture VSDs with the following rated currents of: 630, 800, 1000, 1200, 1400, 1600, 1800, 2000A for connecting more powerful motors.

Main functions:

- 1 Availability of various control modes
- 2 Parameter control
- 3 Protection of equipment from emergency conditions caused by disruptions in the electrical network and in the ESP
- 4 Data monitoring
- 5 Process automation

Connection

- to the pad remote control systems (normally closed or normally open contacts);
- to the SCADA system via the RS-232 or RS-485 interface via Modbus RTU exchange protocol;
- GPRS modem with the ability to output information to the Internet.

Options

- input network filter or active voltage rectifier (AVR) circuit to ensure the distortion factor of the sinusoidal curve of the voltage and current at the input of the control station is no more than 5%;
- automatic switching of the electric motor operation from the frequency converter to and from the power supply system without stopping the ESP (the possibility of supplying the bypass circuit of an inverter and a sine filter for interlocking of units and saving electricity when operating at a frequency is equal to the frequency of the supply voltage);
- maintaining the operability of the ESP in case of VSD voltage drops to 0 V for 100 ms;
- 12- or 18-pulse rectification circuit to reduce harmonic components of current at the VSD input.

Priorities

- Continuous improvement of production processes
- High quality products and services
- Service reliability
- Caring for the development of professional potential
- Careful attitude to the environment



Specifications

Name	Rated current of the main circuit, A	Total output power, kV·A	Recommended rated power of the connected electric motor of general industrial design, hp @ 60 Hz	Recommended rated power of the connected asynchronous SEM with a length of immersion cable up to 9840 ft, hp @ 60 Hz	Rated power of the connected PMM is up to 6000 rpm and the length of the submersible cable up to 9840 ft, hp @ 60 Hz
EVSD - 160	250	160	30 – 290 hp	55 – 95 hp	55 – 125 hp
EVSD - 315	400	250	55 – 465 hp	80 – 290 hp	80 – 370 hp



Service

The company's primary focus is to provide a full range of services to the oil and gas industry, including not only standard maintenance and repair, but also conducting full-fledged equipment tests at our own production facilities sites.



After-sales service:

- ESP field services
- Installation and dismantling of surface equipment
- 24/7 support
- Remote monitoring
- Start-up and commissioning of wells, supervising



Equipment rental:

- Equipment rental under flexible terms of cooperation
- Rental of ESP both in a complete set and separately
- Installation and dismantling of the ESP at the Customer's fields
- Comprehensive solutions for various oil production tasks
- Technical support during the entire rental period



Equipment repair and testing:

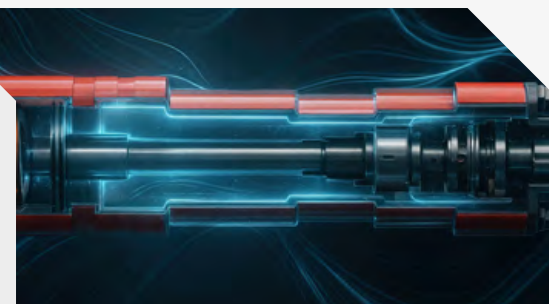
- Performing a full cycle of current and major repairs of ESP components
- Restoring factory specifications of the equipment up to 100%
- High level of quality control
- Provision of warranty obligations for equipment
- Implementation of test procedures

ESP Service LLC is a reliable partner capable of providing a full cycle of maintenance, repair and rental of equipment with a guarantee of quality and efficiency of work.



Goal

Our goal is to ensure uninterrupted operation of the equipment and maximum efficiency of production processes.



Remote monitoring

Real-time monitoring of equipment and key performance indicators.



Advantages

- 1 24/7 real-time monitoring of equipment operation
- 2 Remote control of equipment, including downloading and updating the control system
- 3 Reducing the response time to changes in equipment operating conditions, which allows faster execution of requests
- 4 Data processing and analysis to improve equipment efficiency, ensure control and more precise adjustment of operating modes



Visualization

- Event archive
- Alarm log
- Charts and graphs
- Reports
- Event notifications by email and SMS



Real-time control

- Monitoring
- Management
- Diagnostics and troubleshooting



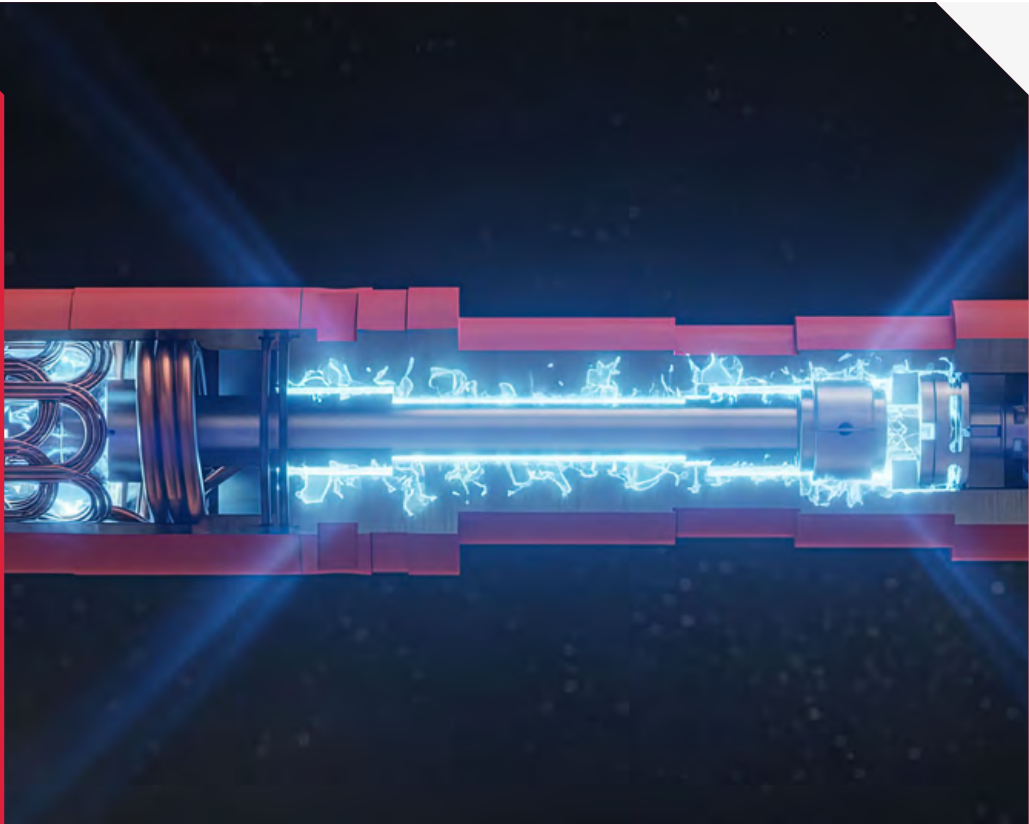
Access from any part of the world

- Mobile interface support
- Web browser interface
- Cross-platform compatibility

Innovative solutions

The company's key priority is the implementation of advanced projects in the field of hydrocarbon extraction.

We continuously improve our production processes and introduce innovative technologies to achieve maximum efficiency.



Our focus areas

Prospective areas or already implemented solutions

 Implemented

 Planning horizon until 2031

 Implementation of remote control and data collection systems, real-time monitoring of equipment operation  using AI

 Technology of load-bearing cable for wells

 The dual encapsulated ESP system

 Development of a complex of downhole equipment for artificial lift and free-flowing production of hydrocarbons with a high content of hydrogen sulfide

 Development of modern wellhead penetrators

 Well tractor

 Development of progressive cavity units with a submersible permanent magnet motor

 Development of intelligent well completion systems  upper and  lower well completion equipment

QMS and HSE

The quality management system is aimed at ensuring that products and services meet consumer expectations and legal requirements.

We are constantly improving our production processes and introducing modern methods.

We control quality and develop staff competencies to achieve high quality standards.

Special attention is paid to customer satisfaction and continuous improvement of business processes.

 The implementation of integrated quality management systems ensures a high level of product and service quality in compliance with the HSE requirements.

The company's strategic goal is to minimize the negative impact of production activities on the environment while increasing the efficiency of production processes.

Special attention is paid to compliance with environmental requirements and standards.

 We also pay special attention to ensuring safe working conditions and maintaining the health of employees at all production sites.

We provide employees with modern personal protective equipment, conduct regular occupational safety training, and create comfortable working conditions.

The priority is to prevent occupational injuries and diseases.

The company uses modern high-tech equipment, technological processes are optimized to minimize environmental impact, and the quality management system meets international standards and is constantly improved in accordance with market requirements.



Contact information

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Langepas Pokachi Uray
Khanty-Mansi
Autonomous Okrug-Yugra



Perm
Perm Region



Usinsk
Komi Republic



Nurlat
The Republic
of Tatarstan



Contact us for a consultation
on selecting high-efficiency
equipment

Where confidence
is needed – our
work begins.





ESP Service

ESP Service LLC

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