PRODUCT CATALOG

E-Tech

HORIZONTAL MULTISTAGE PUMPS 50 HZ

EH 20/4

franklinwater.eu

Franklin Electric

STAINLESS STEEL HORIZONTAL MULTISTAGE PUMPS

FEATURES AND BENEFITS

APPLICATIONS

Water Distribution
Pressure Boosting

Circulation of hot+cold water for heating, cooling, conditioning systems

Irrigation
Gardening, Sprinklers

Wash down unit

Domestic, industrial and agricultural systems

COMPACT CLOSE-COUPLED DESIGN

- Reinforced with tie rods and corrosion resistance (EH 15-20)
- Materials WRAS and ACS certificated
- Flexible application base plate (only for EH and EH DTm)
- Floating neck ring in PPS
- Heavy duty oversize motor shaft
- Impellers and diffusers are made of stainless steel
- Easy maintenance
- Connections: Rp threaded for inlet and outlet (NPT optional)
- Mechanical seal Type E0 = Carbon graphite / Ceramic alumina / EPDM: EH 3-5-9, EHsp 3-5; EH DTm 3-5-9
- Mechanical seal Type E1 = Carbon graphite / Silicon carbide / EPDM: EH 15-20

SUPERIOR EFFICIENCY AND PERFORMANCE

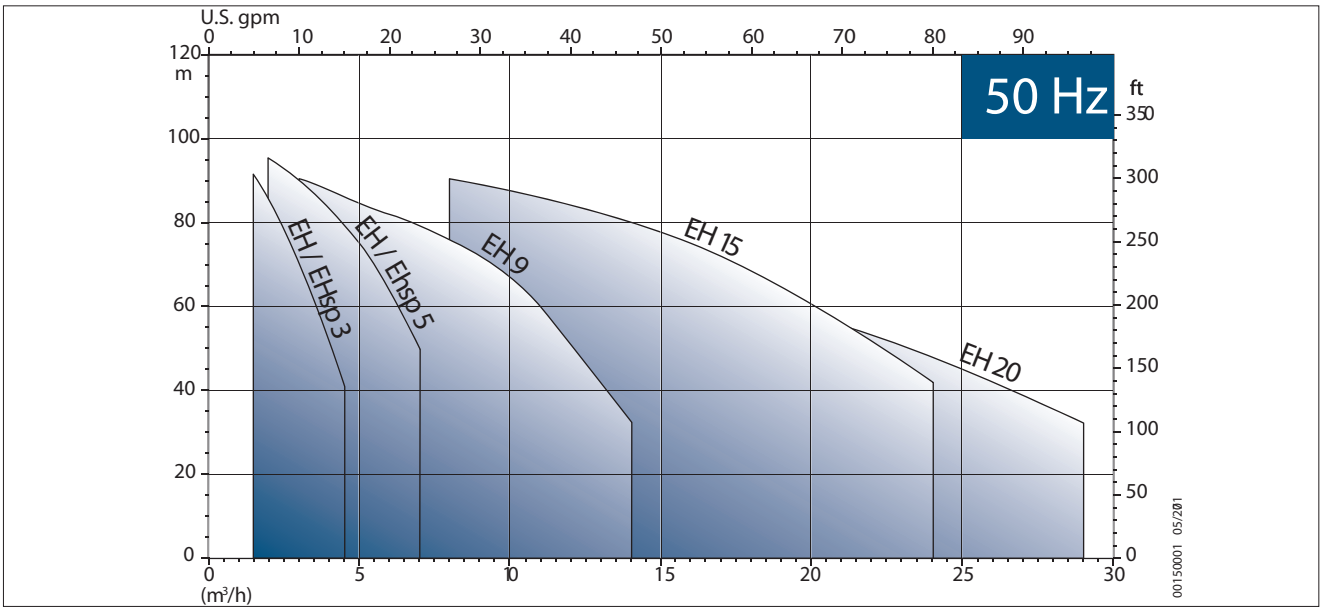
- Flow: up to 29 m^3/h
- Head: up to 104 m
- Maximum working pressure 10 Bar
- Max. altitude at nominal load: 1000 m
- Maximum allowable amount of sand: 50 g/m^3 (EH)
- Maximum ambient temperature: 40 °C
- The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B

CONSTRUCTION OPTIONS

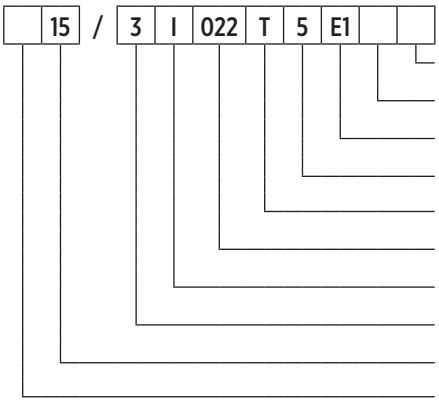
- Special mechanical seal (EH)
- Inlet and outlet connections NPT threaded

FAMILY CURVES

EH-Ehsp



PUMP IDENTIFICATION CODE



- Three-phase motor efficiency (IE3)
- Pumps speciality - “empty” (standard configuration)
- Mechanical seal type
- Frequency: 5 (50 Hz); 6 (60 Hz)
- M (Single-phase); T (Three-phase)
- Motor power kW x 10
- Pump material: I (AISI 304); N(AISI 316)
- Number of stages
- Nominal flow rate in m³/h
- Pump model: EH (standard)
  EHsp (self-priming)
  EH DTm (with Drive-Tech MINI)

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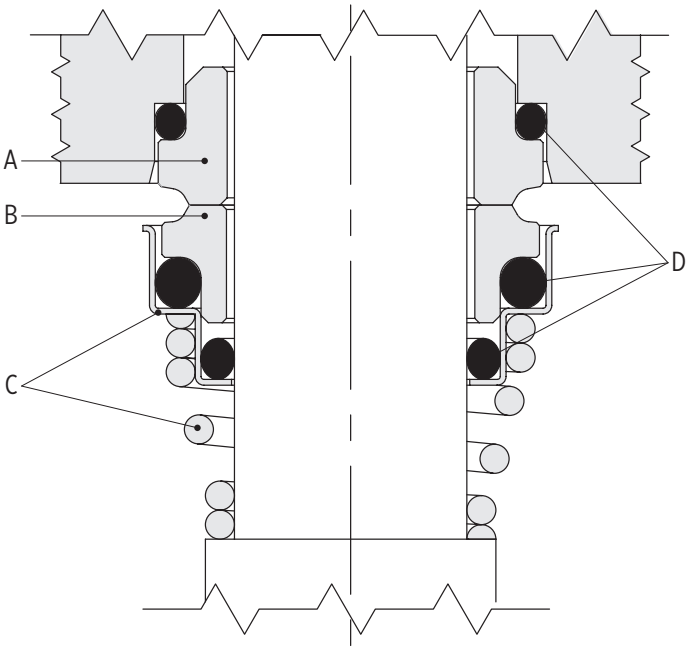
GENERAL FEATURES

Model		3	5	9	15	20
Nominal flow [m³/h]		3.2	5.1	9.1	16.4	19
Maximum liquid temperature [°C]	Single-phase	55	55	55	55	55
	Three-phase (only industrial uses)	110	110	110	110	110
	Three-phase (domestic, commercial, other uses)	85	85	85	85	85
	Three-phase (drinking water)	85	85	85	85	85
	Version with Drive-tech MINI	85	85	85	-	-
	Self-priming version	35	35	-	-	-
Max. D hydraulic [%]	Standard version	45.5	56.8	61	66.7	68.2
	Version with Drive-tech MINI	42	56.8	61	-	-
	Self-priming version	40	53	-	-	-
Range [m³/h]	Standard version	1.5 - 4.5	2 - 7	3 - 14	8 - 24	10 - 28
	Version with Drive-tech MINI	1.0 - 5.5	1.2 - 8.5	3 - 17	-	-
Pressione max. [bar]	Standard version	10	10	10	10	10
Material versions	I (AISI 304)	•	•	•	•	•
	N (AISI 316L)	•	•	•	•	•
Hydraulic connection (dimensions)	Rp (inlet - outlet) - standard	1"¼ - 1"	1"¼ - 1"	1"½ - 1"¼	2" - 1"½	2" - 1"½
	NPT (inlet - outlet) - optional	1"¼ - 1"	1"¼ - 1"	1"½ - 1"¼	2" - 1"½	2" - 1"½

"-" = not available
• = available

MECHANICAL SEAL SPECIFICATIONS



STANDARD VERSION

Model	Type				Position				Temperature [°C]
					A Stationary part	B Rotating part	C Other components	D Elastomers	
EH 3-5-9 / EHsp 3-5 / EH DTm 3-5-9									
E0	V	B	G	E	Ceramic alumina	Carbon graphite	AISI 316	EPDM	-15 / +110
EH 15-20									
E1	B	Q	G	E	Carbon graphite	Silicon Carbide	AISI 316	EPDM	-15 / +110

AVAILABLE ON REQUEST (ONLY FOR EH)

Model	Type				Position				Temperature [°C]
					A Stationary part	B Rotating part	C Other components	D Elastomers	
E2	Q	Q	G	E	Silicon Carbide	Silicon Carbide	AISI 316	EPDM	-15 / +110
V3*	Q	Q	G	V	Silicon Carbide	Silicon Carbide	AISI 316	FKM	-10 / +110
V8*	Q	U	G	V	Silicon Carbide	Tungsten Carbide	AISI 316	FKM	-10 / +110

* on request version with stopper pin

Type	Material
B	Carbon graphite
E	EPDM
G	AISI 316
Q	Silicon Carbide
V	FKM
V	Ceramic alumina
U	Tungsten Carbide

MOTOR SPECIFICATIONS 50 HZ – EH-EHsp

- Asynchronous, TEFC (Totally Enclosed, Fan-Cooled)
- 2 pole
- Protection degree: IP55
- Insulation class: F
- Frequency of starts:
  - Max. 60 starts/hour for motor power up to 3 kW (with min. 1 minute resting time)
  - Max. 30 starts/hour for motor power from 4 kW (with min. 2 minute resting time)

SINGLE-PHASE VERSION

- Standard voltage 220-240 V ± 5%
- Thermal protection built into the motor

P_N [kW]	MOTOR SIZE	INPUT CURRENT I_N [A]	Capacitor		230 V - 50 Hz						
		230V	µF	V	n_N [min^{-1}]	I_S / I_N	η %	cos φ	T_N [Nm]	T_S / T_N	T_M / T_N
0.33	71	2.5	16	450	2920	6.5	64.8	0.88	1.08	1	1.6
0.45	71	3	16	450	2890	5.4	69.7	0.92	1.5	0.72	1.6
0.55	71	3.5	16	450	2860	4.6	72.6	0.94	1.83	0.59	1.85
0.75	71	4.67	16	450	2790	3.5	72.2	0.97	2.56	0.42	1.87
0.9	71	5.45	30	450	2875	4.8	75.3	0.93	3	0.47	1.67
1.1	71	6.6	30	450	2820	3.9	77	0.96	3.7	0.38	1.86
1.3	80	7.46	30	450	2860	4.2	80.8	0.94	4.35	0.57	1.86
1.5	80	8.56	30	450	2830	3.6	79.9	0.95	5.05	0.5	1.92
1.85	90	10.9	60	450	2760	2.8	76.6	0.96	6.4	0.39	2.4
2.2	90	12.6	60	450	2870	2.2	76.7	0.99	7.3	0.51	1.99

THREE-PHASE VERSION

- Efficiency class: IE3 (Premium Efficiency) according to IEC 60034-30-1:2014
- Electrical performance according to IEC 60034-2-1:2007
- Standard voltage:
  - 220-240 / 380-415 V ± 5 % up to 3 kW
  - 380-415 / 660-690 V ± 5 % from 4 kW
- Thermal protection to be provided into the starter panel by the installer

P_N [kW]	Rendimento / Efficiency η_N %						IE
	Δ 230 V Y 400 V			Δ 400 V Y 690 V			
	4/4	3/4	2/4	4/4	3/4	2/4	
0.75	80.9	81.5	79.6	-	-	-	
1.1	82.7	84.6	84.2	-	-	-	
1.5	84.3	85.7	85.3	-	-	-	
2.2	86.1	86.7	85.4	-	-	-	3
3	87.1	87.5	86.1	-	-	-	
4	-	-	-	88.1	88.7	87.7	
5.5	-	-	-	89.2	89.4	88.1	

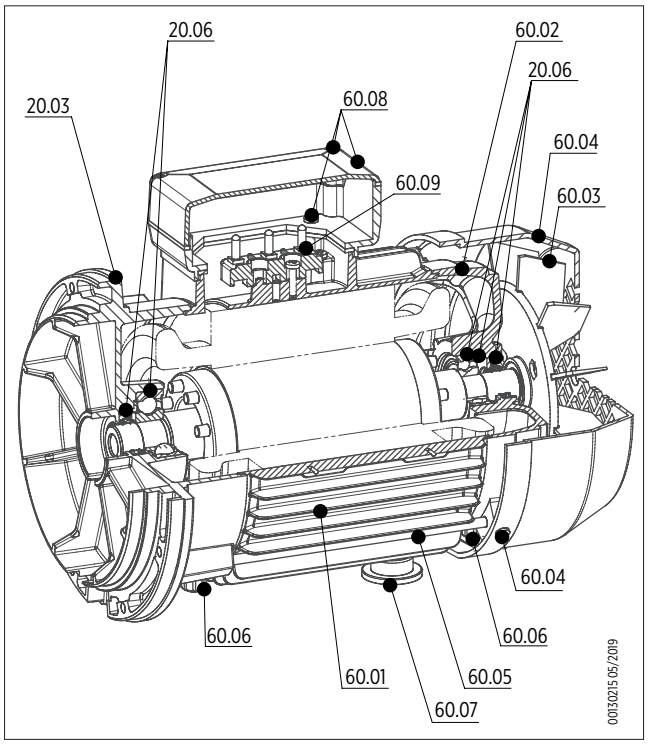
P_N [kW]	MOTOR SIZE	N. of poles	f_N [Hz]	400 V - 50 Hz				
				cos φ	I_S / I_N	T_N [Nm]	T_S / T_N	T_M / T_N
0.75	71	2	50	0.83	6.8	2.6	3.6	3.7
1.1	71			0.82	5.9	3.7	3.2	3.1
1.5	80			0.79	6.8	5.1	3.2	3.2
2.2	90			0.8	9.6	7.3	4.3	4.4
3	90			0.83	9.6	9.9	4.7	4.9
4	100			0.85	8.1	13.2	2.8	3
5.5	112			0.81	8.4	18.1	4.3	4.5

P_N [kW]	VOLTAGE U_N				n_N [min^{-1}]	Motor operating conditions		
	Δ 230 V	Y 400 V	Δ 400 V	Y 690 V		Altitude Above Sea Level [m]	T. amb min/max [°C]	ATEX
	I_N [A]							
0.75	2.8	1.6	-	-	2800	≤ 1000	-15 / +40	No
1.1	4.1	2.3	-	-	2840			
1.5	5.7	3.3	-	-	2830			
2.2	8	4.6	-	-	2880			
3	10.4	6	-	-	2900			
4	-	-	7.7	4.4	2900			
5.5	-	-	11	6.4	2900			

MOTOR SPARE PARTS

SPARE PARTS LIST

Ref. No.	Part description
20.03	Motor bracket
20.06	Kit bearings
60.01	Motor housing and stator
60.02	Bearing housing
60.03	Fan
60.04	Fan cover and screws
60.05	Motor tie rods
60.06	Kit motor spare components
60.07	Motor housing foot
60.08	Terminal box cover and base
60.09	Terminal board



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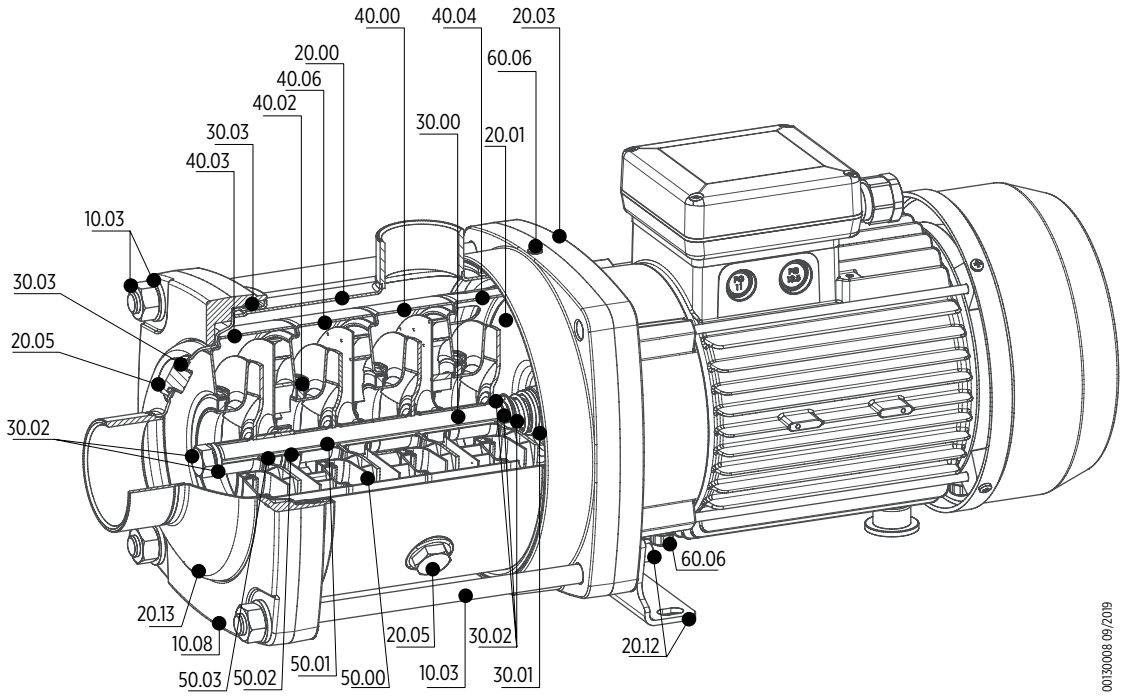
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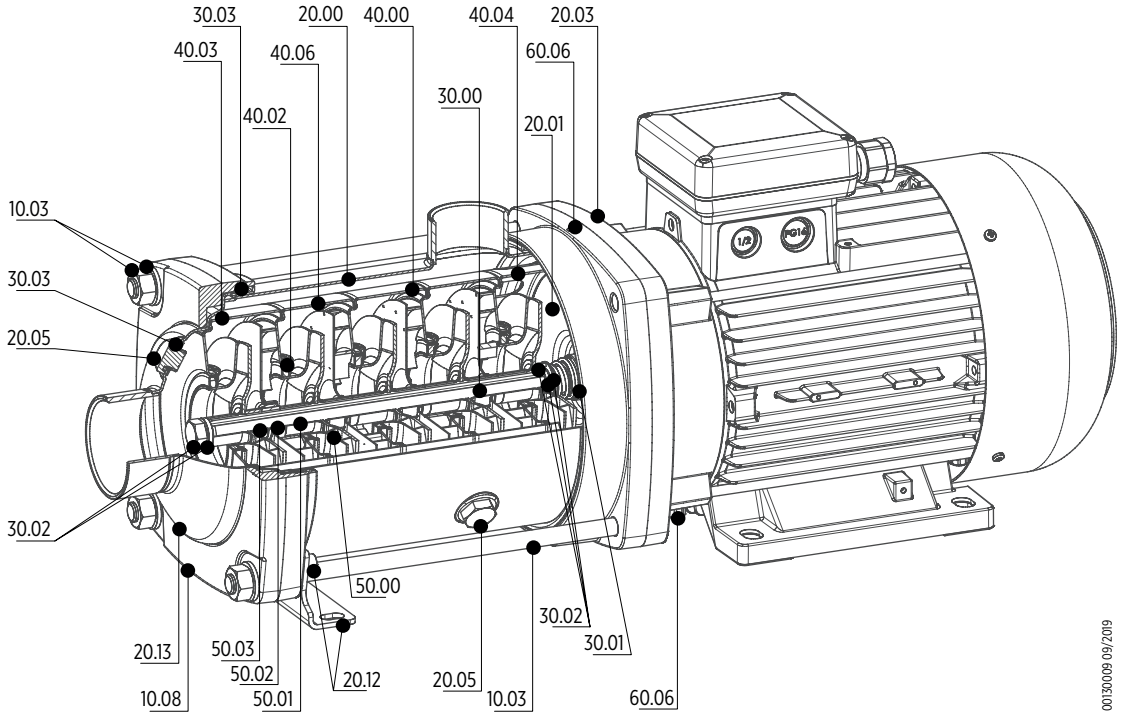
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PARTS IN CONTACT WITH LIQUID

Ref. No.	Part description	Material	Standard			
			I version		N version	
			ASTM/AISI	DIN/EN	ASTM/AISI	DIN/EN
20.00	**Outer case**	Stainless steel	AISI 304	14.301	AISI 316 L	14.404
20.01	**Mechanical seal housing**	Stainless steel	AISI 304	14.301	AISI 316	14.401
20.05	**Filling plug**	Stainless steel	AISI 304	14.301	AISI 316	14.401
20.13	**Inlet cover**	Stainless steel	AISI 304	14.301	AISI 316	14.401
30.00	**Pump shaft**	Stainless steel	AISI 304	14.301	AISI 316	14.401
30.01	**Kit mechanical seal**	Carbon graphite / Silicon Carbide (SiC) / EPDM				
30.02	**Mechanical seal fastening kit**	Stainless steel	AISI 304	14.301	AISI 316	14.401
30.03	**Kit O-rings**	EPDM				
40.00	**Stage housing and diffuser**	Stainless steel	AISI 304	14.301	AISI 316 L	14.404
40.02	**Floating neck ring**	Stainless steel and PPS	AISI 304	14.301	AISI 316 L	14.404
40.03	**Initial stage housing**	Stainless steel	AISI 304	14.301	AISI 316 L	14.404
40.04	**Last Stage with diffuser**	Stainless steel	AISI 304	14.301	AISI 316 L	14.404
40.06	**Stage housing and diffuser with bearing**	Stainless steel, Tungsten carbide (WC)	AISI 304	14.301	AISI 316 L	14.404
50.00	**Impeller**	Stainless steel	AISI 304	14.301	AISI 316 L	14.404
50.01	**Impeller spacer**	Stainless steel	AISI 304	14.301	AISI 316 L	14.404
50.02	**Intermediary sleeve**	Tungsten carbide (WC)				
50.03	**Intermediary sleeve spacer**	Stainless steel	AISI 304	14.301	AISI 316 L	14.404

SPARE PARTS LIST

Ref. No.	Part description
10.03	Tie bolts, washers and nuts
10.08	Pre-load flange
20.00	Outer case
20.01	Mechanical seal housing
20.03	Motor bracket
20.05	Filling plug
20.12	Support foot and screws
20.13	Inlet cover
30.00	Pump shaft
30.01	Kit mechanical seal
30.02	Mechanical seal fastening kit

Ref. No.	Part description
30.03	Kit O-rings
40.00	Stage housing and diffuser
40.02	Floating neck ring
40.03	Initial stage housing
40.04	Last Stage with diffuser
40.06	Stage housing and diffuser with bearing
50.00	Impeller
50.01	Impeller spacer
50.02	Intermediate sleeve
50.03	Intermediate sleeve spacer
60.06	Kit motor spare components

E-Tech

TECHNICAL DATA AND PERFORMANCE CURVES AT 50 HZ

HYDRAULIC PERFORMANCE AT 50 HZ

Pump model	Q = DELIVERY																
	l/min 0	16.7	25.0	33.3	50.0	75.0	100.0	116.7	133.3	166.7	200.0	233.3	283.3	333.3	400.0	466.7	533.3
	m³/h 0	1	1.5	2.0	3.0	4.5	6.0	7.0	8.0	10.0	12.0	14.0	17.0	20.0	24.0	28.0	32
	gpm 0	4.4	6.6	8.8	13.2	19.8	26.4	30.8	35.2	44.0	52.8	61.6	74.7	87.9	105.5	123.1	140.9
	H = TOTAL METERS HEAD OF WATER COLUMN [m]																
EH 3/2	22.4		20.0	18.7	15.5	9.7											
EH 3/3	33.2		29.3	27.4	22.5	13.8											
EH 3/4	43.7		38.3	35.6	29.1	17.5											
EH 3/5	54.0		46.8	43.4	35.2	20.7											
EH 3/6	65.1		56.7	52.6	42.8	25.4											
EH 3/7	75.3		65.1	60.2	48.7	28.4											
EH 3/8	87.6		77.0	71.7	58.8	35.6											
EH 3/9	98.0		85.8	79.8	65.2	39.1											
EH 5/2	23.5			21.7	20.5	18.3	15.0	11.8									
EH 5/3	34.8			31.9	30.0	26.5	21.3	16.5									
EH 5/4	46.2			42.4	39.9	35.2	28.4	21.9									
EH 5/5	57.3			52.1	48.8	42.7	34.0	25.8									
EH 5/6	69.5			64.0	60.3	53.4	43.2	33.6									
EH 5/7	80.7			73.9	69.5	61.3	49.2	37.9									
EH 5/8	93.9			87.1	82.6	73.8	60.6	47.9									
EH 5/9	105.4			97.5	92.3	82.4	67.4	53.0									
EH 9/2	23.7				22.0	20.8	19.7	18.9	18.1	15.6	11.9	6.9					
EH 9/3	35.3				32.7	30.8	29.1	27.9	26.6	22.8	17.2	9.7					
EH 9/4	47.4				44.2	41.9	39.7	38.2	36.5	31.7	24.3	14.4					
EH 9/5	60.1				56.6	54.0	51.4	49.7	47.8	42.1	33.0	20.7					
EH 9/6	71.8				67.4	64.2	61.0	58.9	56.5	49.5	38.5	23.7					
EH 9/7	84.3				79.4	75.8	72.2	69.9	67.1	59.2	46.5	29.3					
EH 9/8	96.0				90.3	86.1	81.9	79.2	76.0	66.8	52.2	32.5					
EH 15/2	28.5								25.0	24.0	22.9	21.7	19.2	15.9	10.3		
EH 15/3	43.3								38.3	36.9	35.3	33.5	29.9	25.0	16.5		
EH 15/4	57.9								51.4	49.5	47.4	45.0	40.3	33.8	22.5		
EH 15/5	72.6								64.5	62.2	59.6	56.7	50.8	42.7	28.6		
EH 15/6	87.5								78.2	75.5	72.5	69.0	62.1	52.5	35.6		
EH 15/7	101.9								90.8	87.5	84.0	79.8	71.7	60.5	40.7		
EH 20/2	31.2									27.9	27.2	26.5	25.3	23.1	18.5	12.7	
EH 20/3	46.8									41.9	40.8	39.8	37.8	34.6	27.7	19.0	
EH 20/4	62.5									56.0	54.6	53.2	50.6	46.3	37.2	25.6	
EH 20/5	78.5									70.6	68.9	67.3	64.1	58.9	47.6	33.2	

EH 20 - TECHNICAL DATA

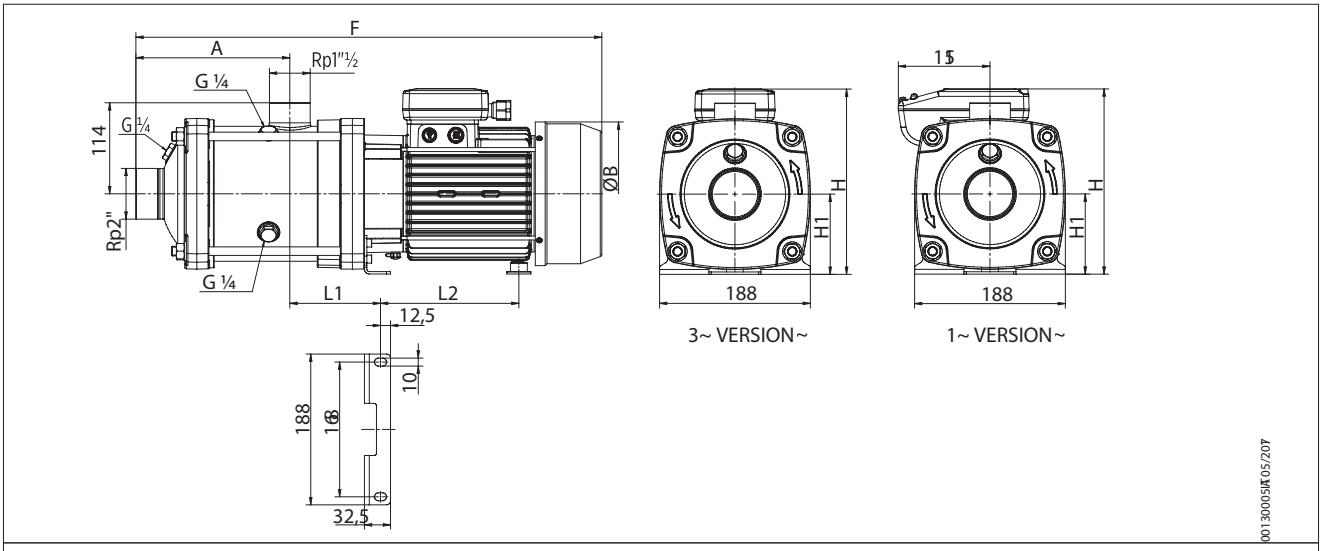
1 ~ ELECTRIC PUMP TECHNICAL DATA

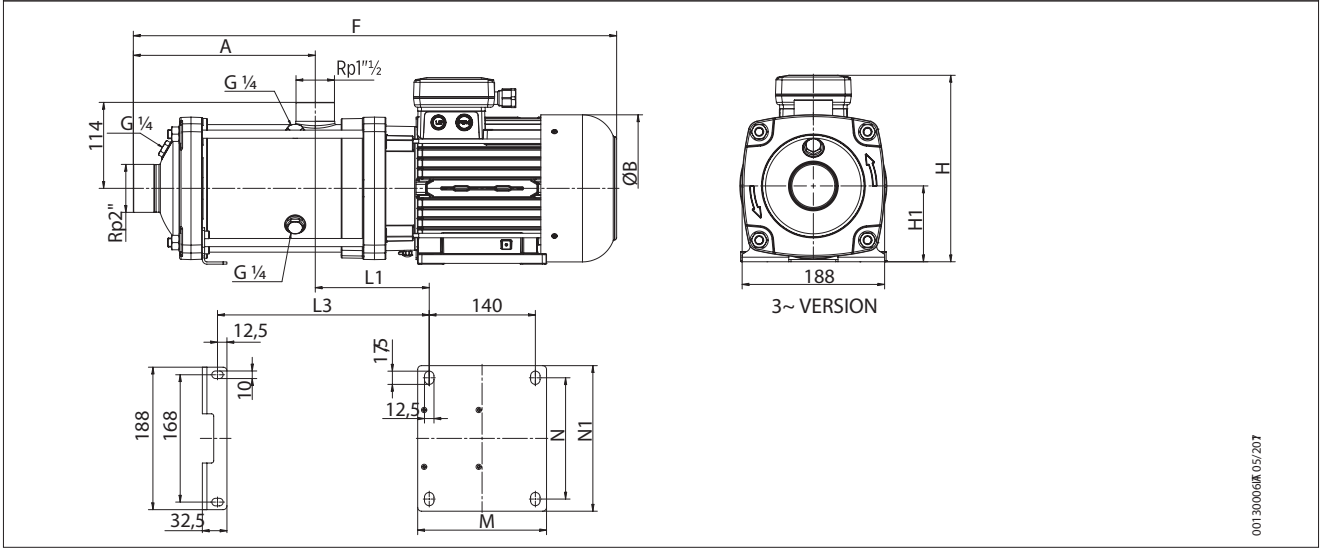
Pump model	MOTOR SIZE	MOTOR NOMINAL POWER		INPUT POWER	Capacitor 450 V	INPUT CURRENT [A]	Dimensions [mm]											Weight [Kg]
		[kW]	[HP]	[kW]	[µf]	220-240 V	A	F	ØB	H	H1	L126	L2	L3	M	N	N1	
EH 20/2	90	2.2	3	2.59	60	11.4	144	533	179	231	100	113	173	-	-	-	-	25.2

3 ~ ELECTRIC PUMP TECHNICAL DATA

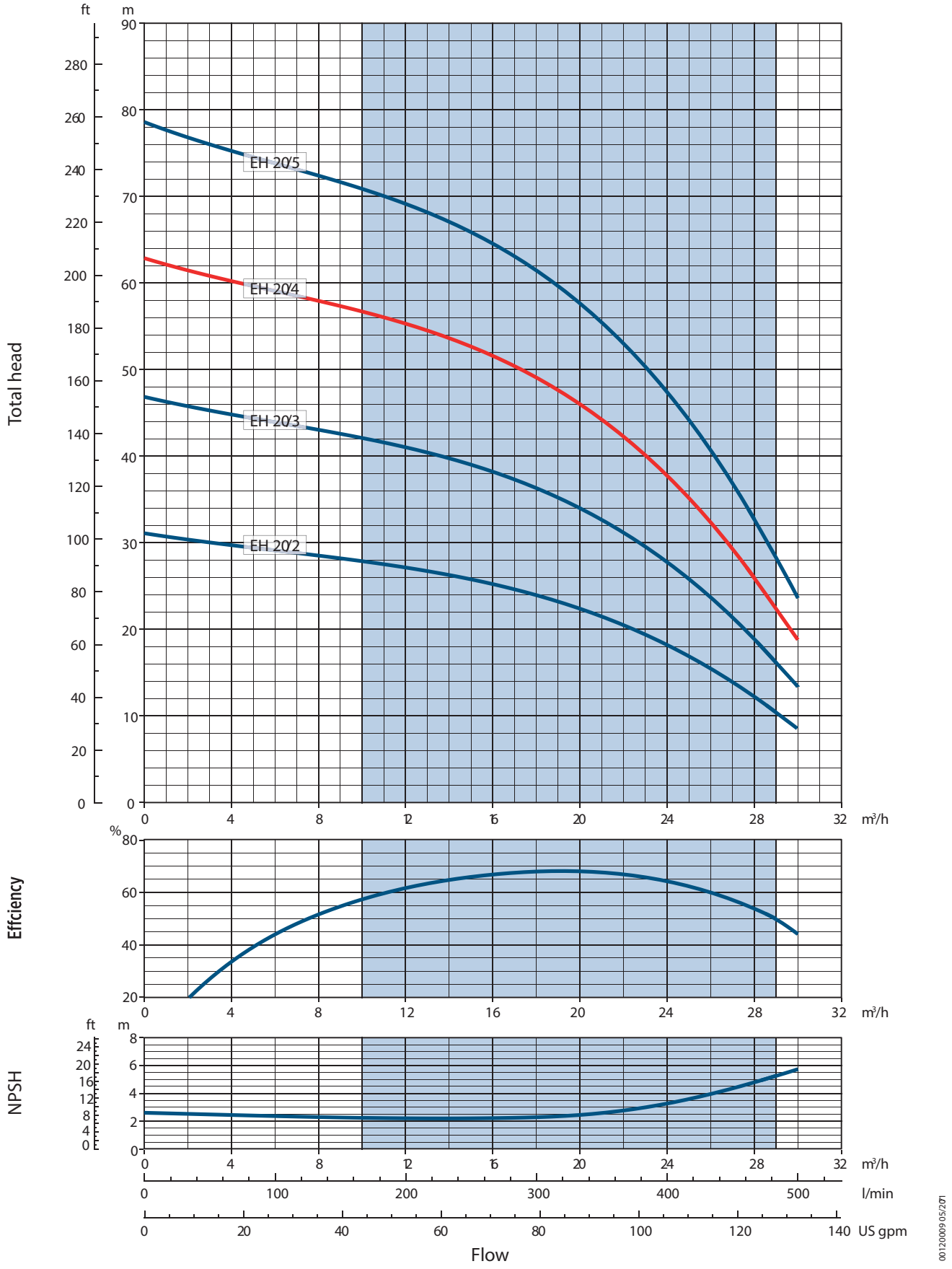
Pump model	MOTOR SIZE	MOTOR NOMINAL POWER		INPUT POWER	INPUT CURRENT [A]			Dimensions [mm]											Weight [Kg]
		[kW]	[HP]	[kW]	220-240 V	380-415 V	660-690 V	A	F	ØB	H	H1	L1	L2	L3	M	N	N1	
EH 20/2T	90	2.2	3	2.29	7.4	4.3	-	144	532	179	231	100	113	173	-	-	-	-	24.2
EH 20/3T	90	3	4	3.43	10.3	5.9	-	144	567	179	231	100	113	173	-	-	-	-	27.2
EH 20/4T	100	4	5.5	4.53	-	7.7	4.4	192	622	194	246	100	150	-	231	170	160	192	35.8
EH 20/5T	112	5.5	7.5	5.69	-	10.3	6.0	240	684	218	263	112	152	-	281	180	190	220	45

DIMENSIONAL DRAWINGS





EH 20 - PERFORMANCE CURVES AT 50 HZ



The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B

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