PRODUCT CATALOG

E-Tech

EM SERIES 60 Hz

VERTICAL CLOSE-COUPLED MULTISTAGE PUMPS

franklinwater.eu

Franklin Electric

INDEX

EM SERIES WITH 3~ IE1 MOTORS

EM SERIES WITH 3~ IE3 MOTORS

VERTICAL CLOSE-COUPLE MULTISTAGE PUMPS

APPLICATIONS

- Small domestic and industrial systems / Domestic water supply
- Water distribution / pressure boosting
- Irrigation / Gardening / Sprinklers / Rainwater collection
- Industrial plants / Wash down unit
- Cooling and chilling / Heating and conditioning / Air conditioning systems
- Pumping of clear non-loaded fluids
- Other various installations

FEATURES

- Compact close-coupled design, robust and corrosion resistant / Superior efficiency and performance
- Floating neck ring in PPS
- Heavy duty oversize motor shaft
- Impellers and diffusers are made of stainless steel in order to achieve durability
- Easy maintenance
- Strong and sealed motor ball bearing fitted in the motor
- Mechanical seal Type E0 = Carbon graphite / Ceramic Alumina /EPDM

PUMP SPECIFICATIONS

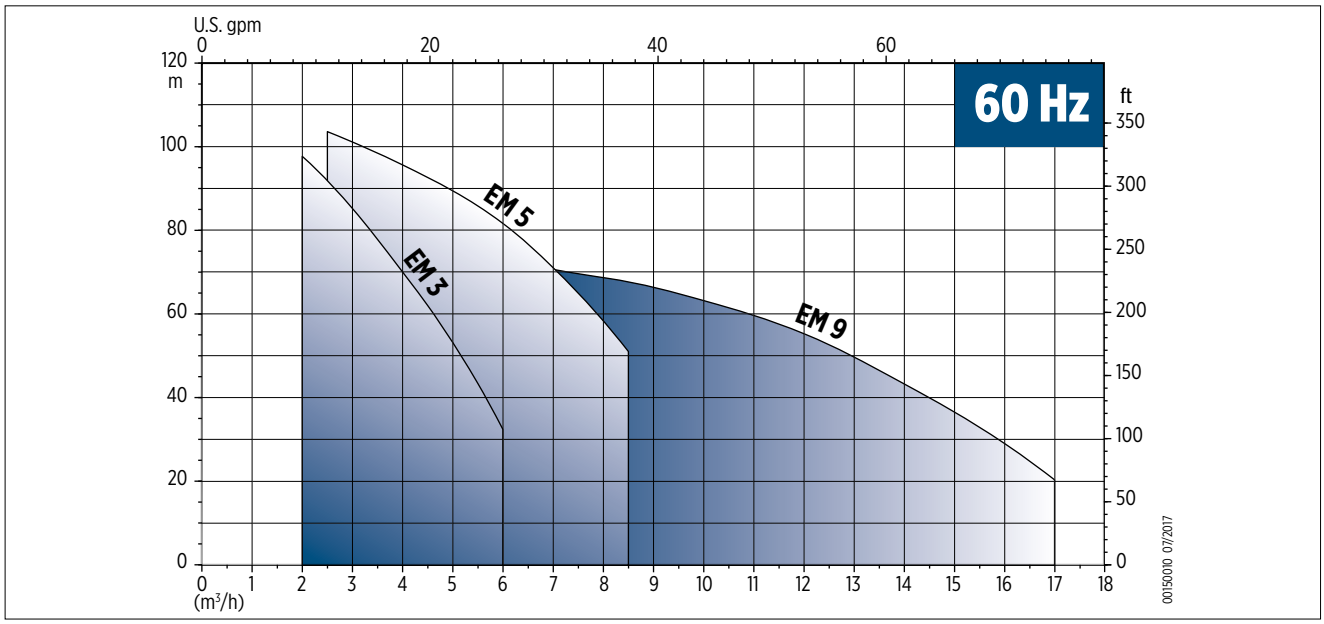
- Flow: up to 17 m^3/h
- Head: up to 104 m
- Discharge and Suction ports: Threaded or Oval connections
- Maximum working pressure: 12 Bar
- Direction of rotation: clockwise looking at the pump from the top down
- Maximum ambient temperature: 40 °C
- Liquid temperature range:
  - Minimum: - 15 °C
  - Maximum: + 90 °C for domestic use (uses covered by EN standard 60335-2-41);
    + 110 °C only for industrial use (uses other than those covered by EN standard 60335-2-41)
- The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B

MOTOR SPECIFICATIONS

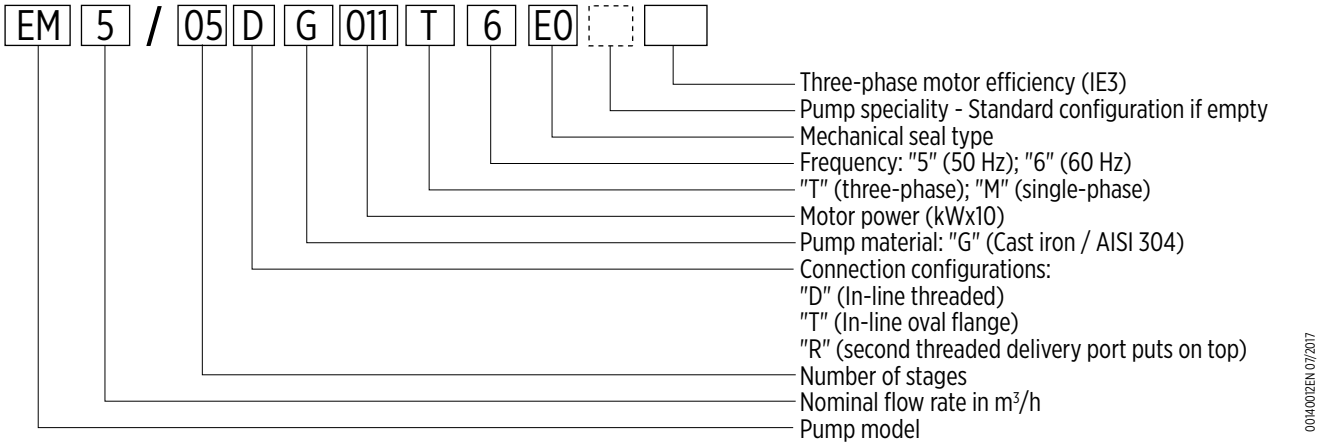
- Single-phase
- Three-phase motors efficiency class IE1 or IE3
- Asynchronous, TEFC (Totally Enclosed, Fan-Cooled)
- 2 pole
- Protection degree: IP55
- Insulation class: F

E-Tech

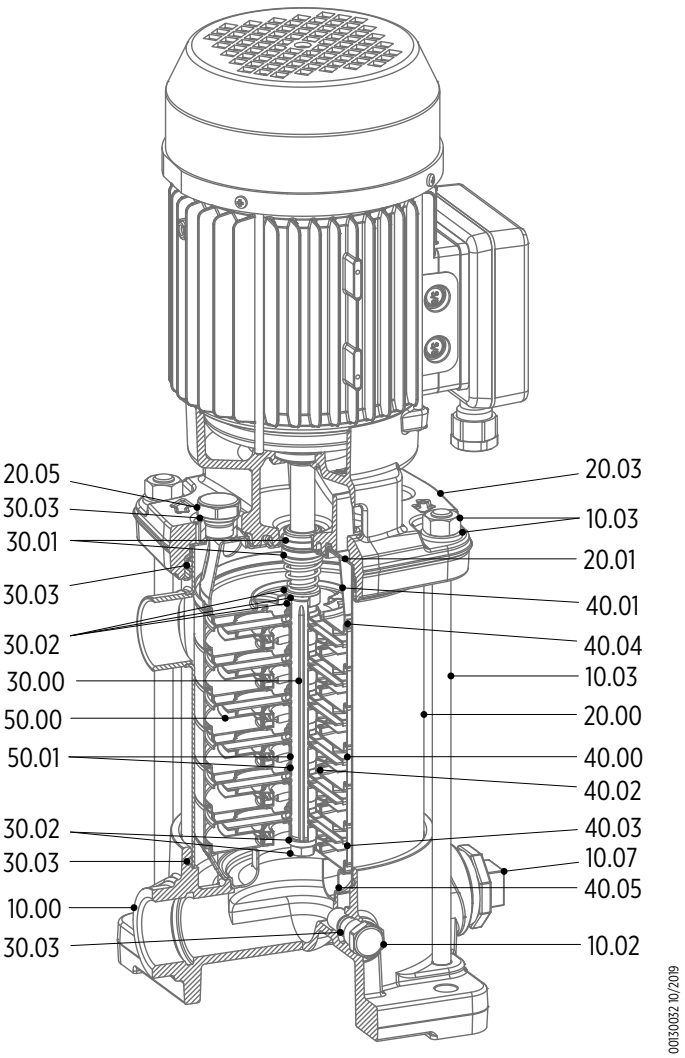
FAMILY CURVES



PUMP IDENTIFICATION CODE



SPARE PARTS AND MATERIAL



SPARE PARTS

Ref. No.	Part desciption
10.00	Pump casing
10.02	Draining plug
10.03	Tie bolts, washers and nuts
10.07	Pump casing plug*
20.00	Outer case
20.01	Mechanical seal housing
20.03	Motor bracket
20.05	Filling plug
30.00	Pump shaft
30.01	Kit mechanical seal
30.02	Mechanical seal fastening kit
30.03	Kit O-rings
40.00	Stage housing and diffuser
40.01	Stage Centering outlet
40.02	Floating neck ring
40.03	Initial stage housing
40.04	Last Stage with diffuser
40.05	Stage Centering inlet
50.00	Impeller
50.01	Impeller spacer

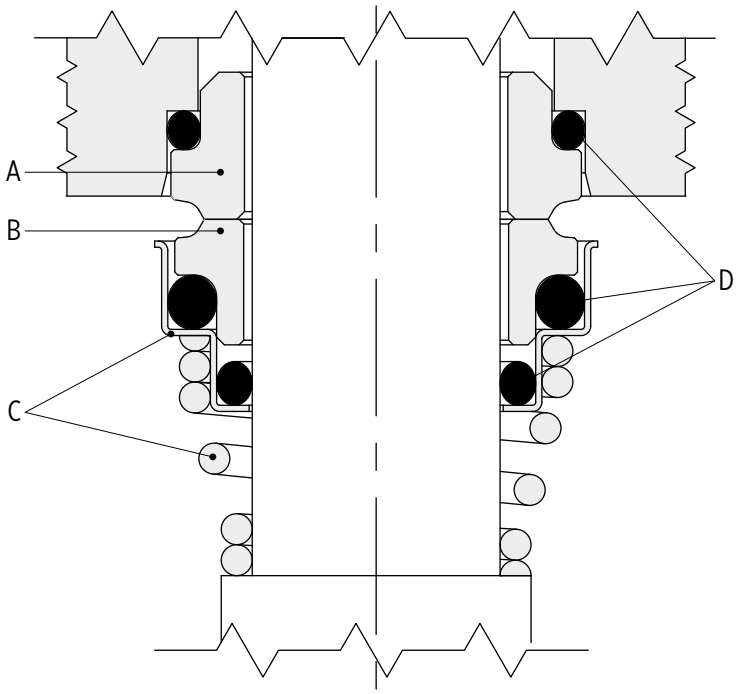
* Only for R version

PARTS IN CONTACT WITH LIQUID

Ref. No.	Part description	Material	Standard	
			ASTM/AISI	DIN/EN
10.00	**Pump casing**	Cast Iron	A48 Class 35	GJL-250
10.02	**Draining plug**	Stainless Steel	AISI 304	1.4301
10.07	**Pump casing plug***	Zinc coated steel	-	-
20.00	**Outer case**	Stainless Steel	AISI 304	1.4301
20.01	**Mechanical seal housing**	Stainless Steel	AISI 304	1.4301
20.05	**Filling plug**	Stainless Steel	AISI 304	1.4301
30.00	**Pump shaft**	Stainless Steel	AISI 304	1.4301
30.01	**Kit mechanical seal**	Ceramic / Carbon graphite / EPDM	-	-
30.02	**Mechanical seal fastening kit**	Stainless Steel	AISI 304	1.4301
30.03	**Kit O-rings**	EPDM	-	-
40.00	**Stage housing and diffuser**	Stainless Steel	AISI 304	1.4301
40.01	**Stage Centering outlet**	Stainless Steel	AISI 304	1.4301
40.02	**Floating neck ring**	Stainless steel, PPS	AISI 304	1.4301
40.03	**Initial stage housing**	Stainless Steel	AISI 304	1.4301
40.04	**Last Stage with diffuser**	Stainless Steel	AISI 304	1.4301
40.05	**Stage Centering inlet**	Stainless Steel	AISI 304	1.4301
50.00	**Impeller**	Stainless Steel	AISI 304	1.4301
50.01	**Impeller spacer**	Stainless Steel	AISI 304	1.4301

* Only for R version

MECHANICAL SEAL SPECIFICATIONS



STANDARD VERSION

Model	Type				Position				Temperature [°C]
					A Stationary part	B Rotating part	C Other components	D Elastomers	
EM 3 - 5 - 9									
E0	V	B	G	E	Ceramic	Graphite	AISI 316	EPDM	-15 / +110

Type	Material
B	Carbon graphite
E	EPDM
G	AISI 316
V	Ceramic alumina

EM Series with 3~ IE1 motors

HYDRAULIC PERFORMANCE AT 60 HZ

SINGLE-PHASE VERSION

Pump model	Q = DELIVERY																		
	l/min 0	33,3	41,7	50,0	58,3	66,7	75,0	83,3	91,7	100,0	116,7	133,3	141,7	150,0	166,7	200,0	233,3	266,7	283,3
	m^3/h 0	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	7,0	8,0	8,5	9,0	10,0	12,0	14,0	16,0	17,0
	US GMP 0	8,8	11,0	13,2	15,4	17,6	19,8	22,0	24,2	26,4	30,8	35,2	37,4	39,6	44,0	52,8	61,6	70,3	74,7
	H=TOTAL M.HEAD OF WATER COLUMN [m]																		
EM 3/26	32,2	28,2	26,6	24,8	22,8	20,6	18,3	15,8	13,0	9,9									
EM 3/36	47,6	40,9	38,4	35,6	32,5	29,2	25,7	22,0	17,8	13,0									
EM 3/46	64,1	55,6	52,4	48,7	44,6	40,3	35,6	30,6	25,0	18,7									
EM 3/56	79,4	68,1	63,9	59,1	54,0	48,5	42,6	36,4	29,4	21,5									
EM 3/66	97,1	84,4	79,7	74,0	68,0	61,5	54,4	46,9	38,6	29,1									
EM 3/76	112,6	97,2	91,5	84,8	77,7	70,1	61,8	53,1	43,3	32,3									
EM 5/26	32,7		30,1	29,4	28,6	27,8	26,8	25,8	24,7	23,5	20,8								
EM 5/36	49,3		45,5	44,4	43,3	42,1	40,7	39,2	37,5	35,8	31,7								
EM 5/46	66,5		61,7	60,3	58,9	57,3	55,5	53,5	51,4	49,1	43,7								
EM 5/56	82,6		76,1	74,3	72,4	70,3	67,9	65,4	62,7	59,7	52,9								
EM 9/26	34,0									30,1	29,3	28,4	27,9	27,4	26,3	23,1	18,4	12,9	9,4
EM 9/36	51,4									45,7	44,4	43,2	42,4	41,7	40,1	35,4	28,4	20,1	14,9

THREE-PHASE VERSION

Pump model	Q = DELIVERY																		
	l/min 0	33,3	41,7	50,0	58,3	66,7	75,0	83,3	91,7	100,0	116,7	133,3	141,7	150,0	166,7	200,0	233,3	266,7	283,3
	m^3/h 0	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	7,0	8,0	8,5	9,0	10,0	12,0	14,0	16,0	17,0
	US GMP 0	8,8	11,0	13,2	15,4	17,6	19,8	22,0	24,2	26,4	30,8	35,2	37,4	39,6	44,0	52,8	61,6	70,3	74,7
	H=TOTAL M.HEAD OF WATER COLUMN [m]																		
EM 3/2T6	32,1	28,0	26,4	24,6	22,6	20,4	18,1	15,6	12,8	9,7									
EM 3/3T6	47,4	40,6	38,1	35,3	32,3	29,0	25,5	21,8	17,5	12,8									
EM 3/4T6	64,0	55,4	52,2	48,4	44,4	40,1	35,4	30,4	24,8	18,5									
EM 3/5T6	79,2	67,8	63,7	58,9	53,8	48,3	42,5	36,3	29,3	21,3									
EM 3/6T6	96,2	83,7	78,9	73,4	67,3	60,9	53,9	46,4	38,0	28,5									
EM 3/7T6	111,5	96,4	90,8	84,2	77,2	69,6	61,4	52,7	43,0	31,8									
EM 5/2T6	32,6		29,9	29,2	28,4	27,6	26,6	25,6	24,6	23,4	20,6								
EM 5/3T6	49,2		45,3	44,2	43,1	41,9	40,5	39,0	37,4	35,6	31,5								
EM 5/4T6	65,9		61,1	59,7	58,3	56,8	55,0	53,0	50,9	48,6	43,3								
EM 5/5T6	81,8		75,4	73,6	71,8	69,7	67,4	64,9	62,3	59,3	52,5								
EM 5/6T6	97,5		89,3	87,0	84,8	82,2	79,4	76,3	73,0	69,4	61,2								
EM 5/7T6	114,5		105,1	102,5	99,9	97,0	93,7	90,1	86,3	82,1	72,6								
EM 9/2T6	33,9									29,9	29,1	28,3	27,8	27,3	26,2	23,1	18,4	12,8	9,3
EM 9/3T6	50,9									45,3	44,1	42,9	42,2	41,5	39,9	35,3	28,2	19,9	14,7
EM 9/4T6	68,0									60,3	58,7	57,0	56,0	55,1	53,0	46,7	37,4	26,3	19,3
EM 9/5T6	84,3									73,7	71,6	69,3	68,1	66,9	64,1	56,0	44,1	30,2	21,4

MOTORS SPECIFICATIONS

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

SINGLE-PHASE VERSION AT 60 HZ

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

P_N [kW]	Motor size	INPUT CURRENT I_N [A]	Capacitor		230 V 60 Hz						
		230 V	µF	[V]	n_N [min^{-1}]	I_S / I_N	η %	cos φ	T_N [Nm]	T_S / T_N	T_M / T_N
0.55	71	3.6	16	450	3460	6.6	73.5	0.93	1.5	0.5	2.8
0.75	71	4.8	16	450	3410	4.4	75.3	0.95	2.1	0.4	2.0
0.9	71	5.4	30	450	3470	5.7	80.6	0.96	2.5	0.6	2.4
1.1	71	5.8	30	450	3430	5.3	81.5	0.97	3.0	0.5	2.0
1.3	80	8.5	30	450	3470	3.9	80.0	0.97	3.6	0.6	3.9
1.5	80	9.3	30	450	3370	3.5	80.0	0.98	4.1	0.5	3.4

THREE-PHASE IE1 VERSION AT 60 HZ

- IE1 Motors Efficiency
- IE efficiency according to IEC 60034-30-1:2014
- Electrical performance according to IEC 60034-2-1:2007
- Standard voltage: 220-380 V ± 5 % (thermal protection to be provide 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	
0.55	73.4	70.4	64.2	-	-	-	1
0.75	74.9	73.5	69.2	-	-	-	
0.9	78.6	75.9	70.5	-	-	-	
1.1	79.2	78.0	73.3	-	-	-	
1.3	77.4	74.5	69.9	-	-	-	
1.5	79.0	76.0	71.7	-	-	-	
1.85	79.5	78.3	74.0	-	-	-	
2.2	81.3	81.0	78.1	-	-	-	
3	80.3	81.2	80.9	-	-	-	

P_N [kW]	Motor size	N. of poles	f_N [Hz]	400 V 60 Hz				
				cos φ	I_S / I_N	T_N [Nm]	T_S / T_N	T_M / T_N
0.55	71	2	60	0.68	-	1.5	-	-
0.75	71			0.78	-	2.1	-	-
0.9	71			0.63	-	2.5	-	-
1.1	71			0.70	-	3.0	-	-
1.3	80			0.71	-	3.5	-	-
1.5	80			0.75	-	4.1	-	-
1.85	80			0.81	-	5.1	-	-
2.2	90			0.80	-	6.1	-	-
3	90			0.87	-	8.4	-	-

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]							
0.55	2.9	1.7	-	-	3455	≤ 1000	-15 / +40	No
0.75	3.5	2.0	-	-	3390			
0.9	4.6	2.7	-	-	3471			
1.1	5.0	2.9	-	-	3437			
1.3	6.0	3.4	-	-	3492			
1.5	6.4	3.7	-	-	3473			
1.85	7.3	4.2	-	-	3439			
2.2	8.5	4.9	-	-	3454			
3	10.9	6.3	-	-	3387			

Technical data and Performance curves

EM 3 - TECHNICAL DATA

1 ~ ELECTRIC PUMP TECHNICAL DATA

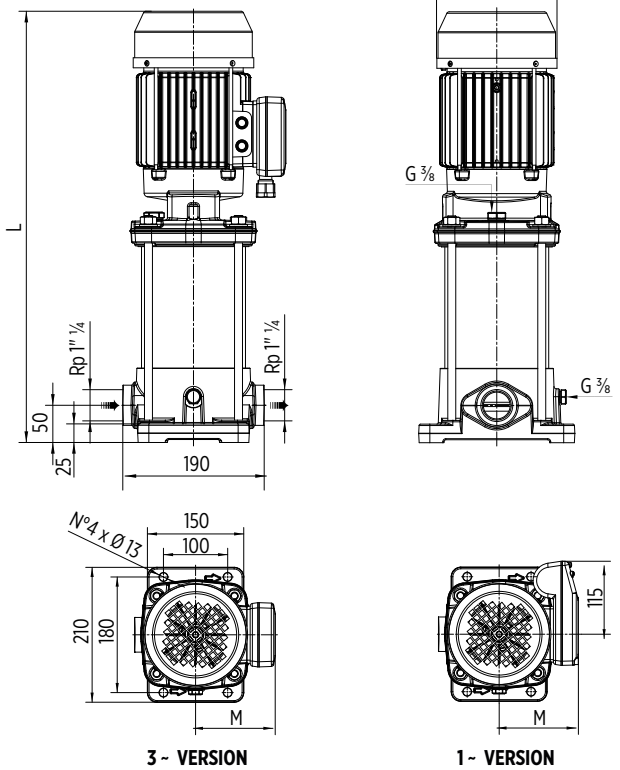
Pump model	Motor Size	MOTOR NOMINAL POWER		INPUT POWER	Capacitor 450V	INPUT CURRENT [A]	Dimensions [mm]				Weight [Kg]
		[kW]	[HP]	[kW]	[µF]	220-230 V	L	L2	ØD	M	
EM 3/26	71	0.55	0.75	0.8	16	3.6	441.5	87	144	117	19.4
EM 3/36	71	0.75	1	1	16	4.8	465.5	111	144	117	20
EM 3/46	71	0.9	1.2	1.3	30	6.0	489.5	135	144	117	22.5
EM 3/56	71	1.1	1.5	1.6	30	7.2	513.5	159	144	117	23.1
EM 3/66	80	1.5	2	2	30	9.9	579.5	183	162	124	27.4
EM 3/76	80	1.5	2	2.3	30	11.0	603.5	207	162	124	28

3 ~ IE1 ELECTRIC PUMP TECHNICAL DATA

Pump model	Motor Size	MOTOR NOMINAL POWER		INPUT POWER	INPUT CURRENT [A]		Dimensions [mm]				Weight [Kg]
		[kW]	[HP]	[kW]	220-230 V	380-400 V	L	L2	ØD	M	
EM 3/2T6	71	0.55	0.75	0.8	2.9	1.7	441.5	87	144	117	19.2
EM 3/3T6	71	0.75	1	1	3.4	2.0	465.5	111	144	117	19.9
EM 3/4T6	71	0.9	1.2	1.3	4.7	2.7	489.5	135	144	117	22.3
EM 3/5T6	71	1.1	1.5	1.6	5.3	3.0	513.5	159	144	117	23
EM 3/6T6	80	1.5	2	2	6.5	3.7	579.5	183	162	124	27.2
EM 3/7T6	80	1.5	2	2.3	7.1	4.1	603.5	207	162	124	27.9

DIMENSIONAL DRAWINGS

D version



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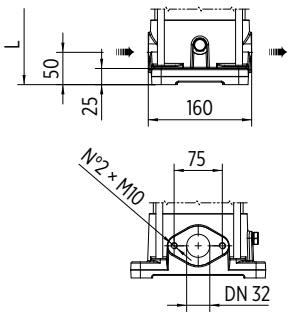
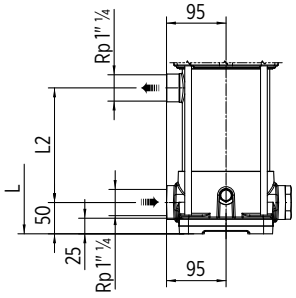
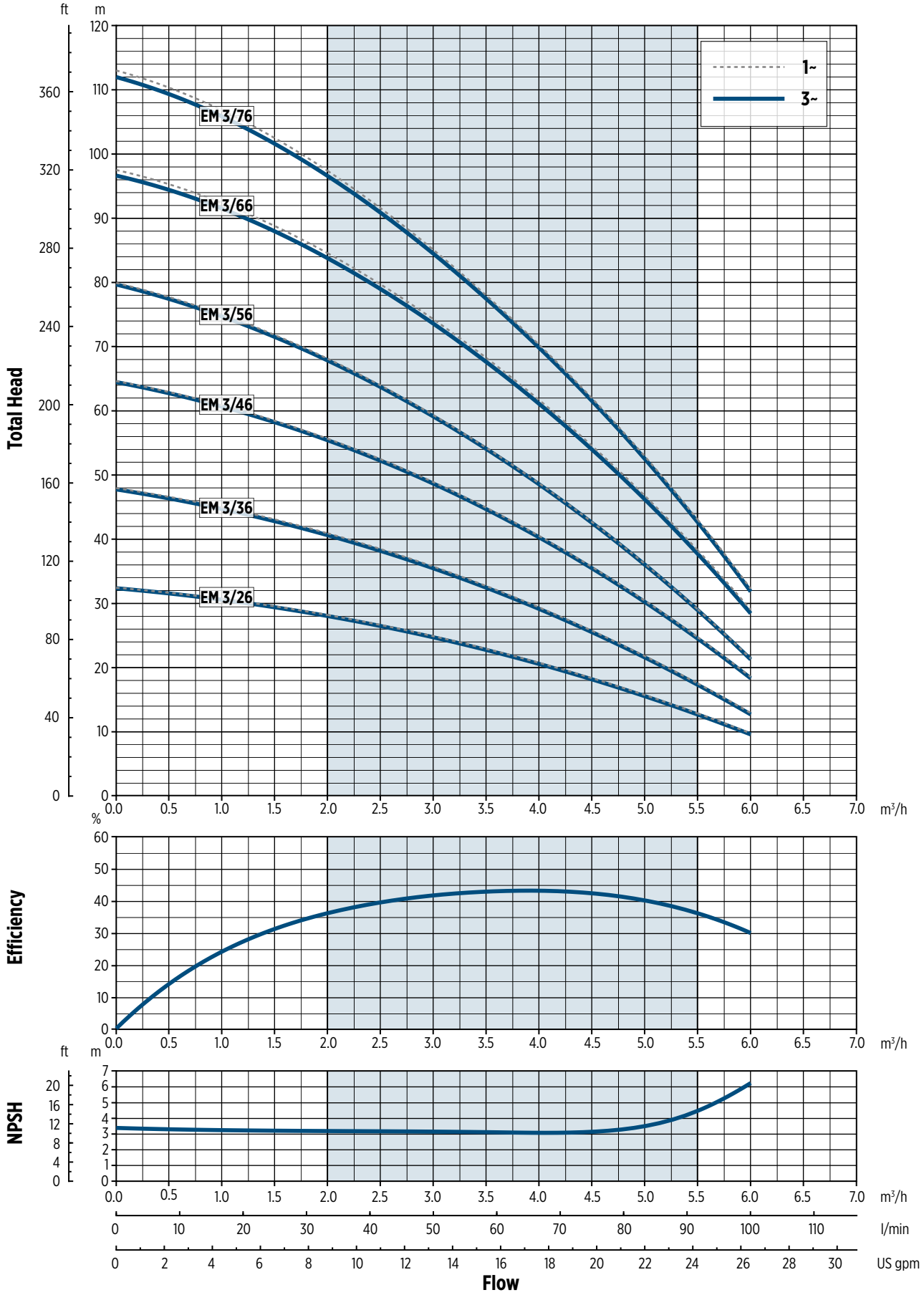


R version



EM 3 - PERFORMANCE CURVES 60 HZ (3 ~ IE1)



00120158EN 07/2017

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

EM 5 - TECHNICAL DATA

1 ~ ELECTRIC PUMP TECHNICAL DATA

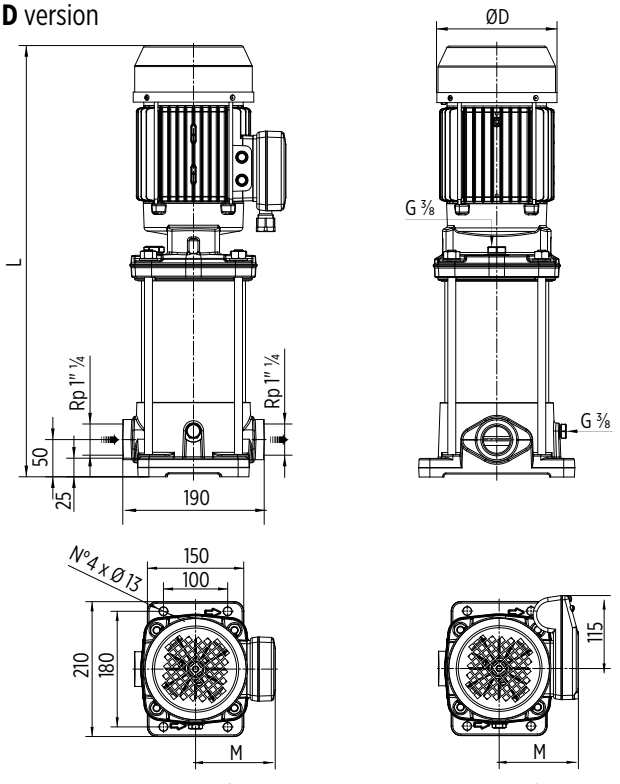
Pump model	Motor Size	MOTOR NOMINAL POWER		INPUT POWER	Capacitor 450V	INPUT CURRENT [A]	Dimensions [mm]				Weight [Kg]
		[kW]	[HP]	[kW]	[µF]	220-230 V	L	L2	ØD	M	
EM 5/26	71	0.75	1	1	16	4.6	441.5	87	144	117	19.4
EM 5/36	71	0.9	1.2	1.4	30	6.3	465.5	111	144	117	21.8
EM 5/46	80	1.3	1.8	1.9	30	9.4	531.5	135	162	124	26.1
EM 5/56	80	1.5	2	2.3	30	11.0	555.5	159	162	124	26.8

3 ~ IE1 ELECTRIC PUMP TECHNICAL DATA

Pump model	Motor Size	MOTOR NOMINAL POWER		INPUT POWER	INPUT CURRENT [A]		Dimensions [mm]				Weight [Kg]
		[kW]	[HP]	[kW]	220-230 V	380-400 V	L	L2	ØD	M	
EM 5/2T6	71	0.75	1	1	3.3	1.9	441.5	87	144	117	19.2
EM 5/3T6	71	0.9	1.2	1.4	4.8	2.8	465.5	111	144	117	21.7
EM 5/4T6	80	1.3	1.8	1.9	6.2	3.6	531.5	135	162	124	26
EM 5/5T6	80	1.5	2	2.3	7.1	4.1	555.5	159	162	124	26.6
EM 5/6T6	80	1.85	2.5	2.7	8.1	4.7	579.5	183	162	124	27.3
EM 5/7T6	80	2.2	3	3	9.4	5.4	603.5	207	162	124	29.5

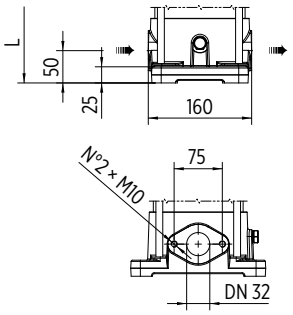
DIMENSIONAL DRAWINGS

D version



3 ~ VERSION **1 ~ VERSION**

T version



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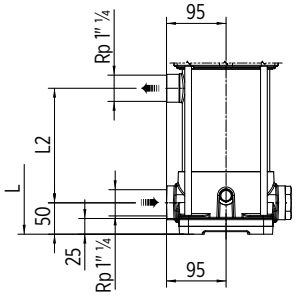
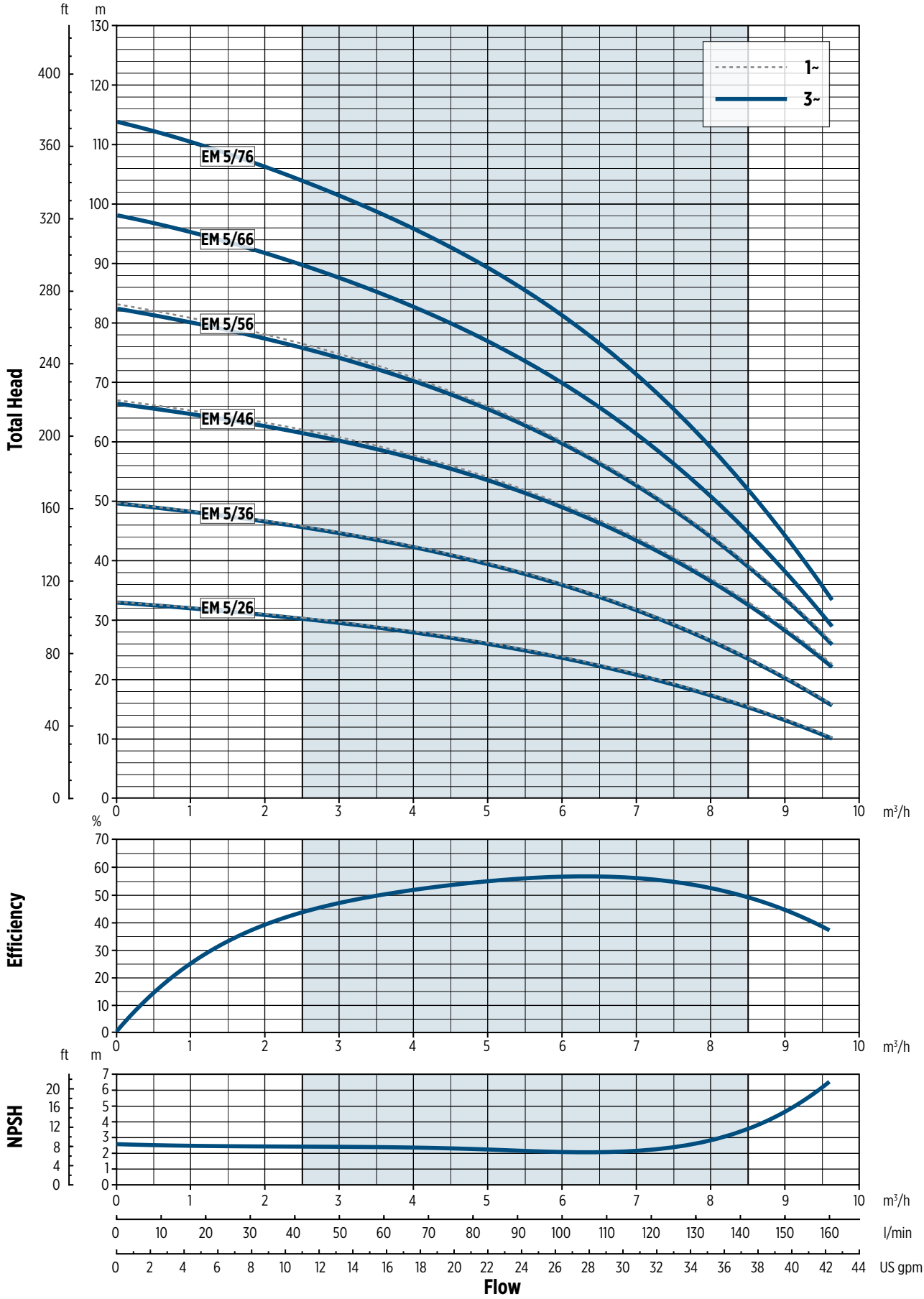


EM 5 - PERFORMANCE CURVES 60 HZ (3 ~ IE1)



0012059EN 07/2017

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

EM 9 - TECHNICAL DATA

1 ~ ELECTRIC PUMP TECHNICAL DATA

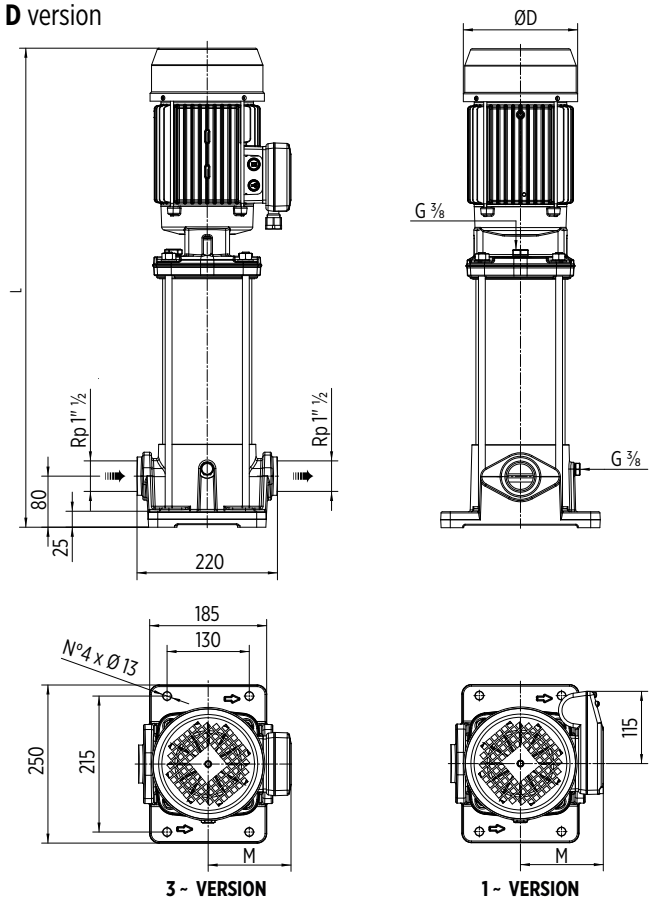
Pump model	Motor Size	MOTOR NOMINAL POWER		INPUT POWER	Capacitor 450V	INPUT CURRENT [A]	Dimensions [mm]				Weight [Kg]
		[kW]	[HP]	[kW]	[µF]	220-230 V	L	L2	ØD	M	
EM 9/26	71	1.1	1.5	1.6	30	7.2	483.5	99	144	117	24.7
EM 9/36	80	1.5	2	2.4	30	11.5	555.5	129	162	124	29.2

3 ~ IE1 ELECTRIC PUMP TECHNICAL DATA

Pump model	Motor Size	MOTOR NOMINAL POWER		INPUT POWER	INPUT CURRENT [A]		Dimensions [mm]				Weight [Kg]
		[kW]	[HP]	[kW]	220-230 V	380-400 V	L	L2	ØD	M	
EM 9/2T6	71	1.1	1.5	1.6	5.2	3.0	483.5	99	144	117	24.6
EM 9/3T6	80	1.5	2	2.4	7.4	4.3	555.5	129	162	124	29
EM 9/4T6	80	2.2	3	3.1	9.4	5.4	585.5	159	162	124	31.4
EM 9/5T6	80	3	4	3.4	11.2	6.5	615.5	189	162	124	32.1

DIMENSIONAL DRAWINGS

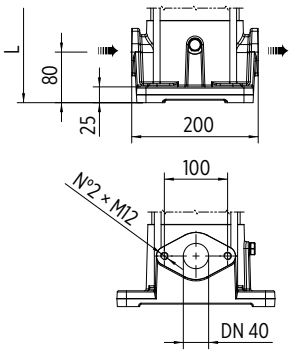
D version



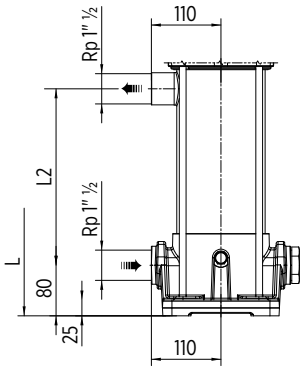
3 ~ VERSION

1 ~ VERSION

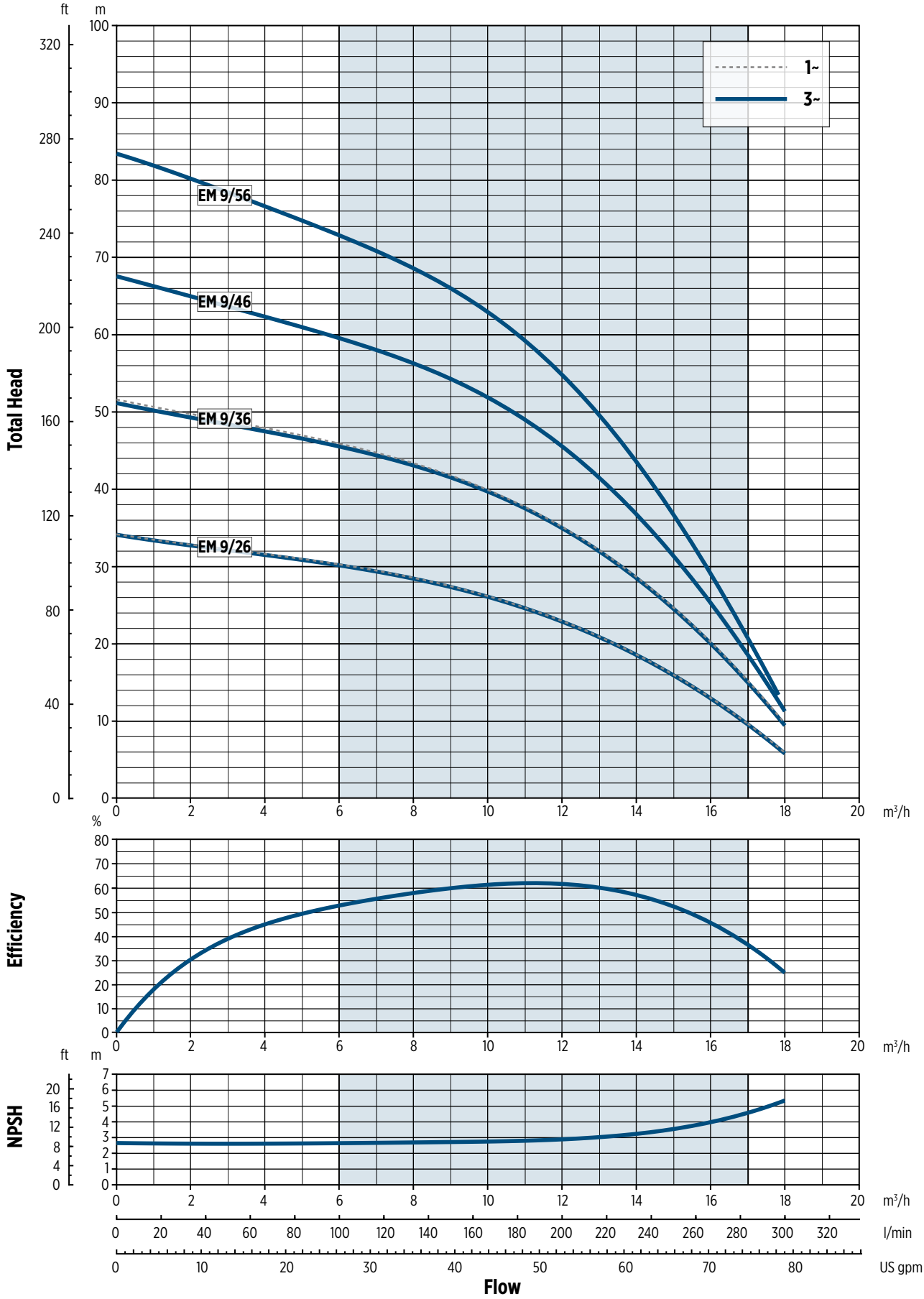
T version



R version



EM 9 - PERFORMANCE CURVES 60 HZ (3 ~ IE1)



00120040EN 07/2017

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

EM Series with 3~ IE3 motors

HYDRAULIC PERFORMANCE AT 60 HZ

SINGLE-PHASE VERSION

Pump model	Q = DELIVERY																		
	l/min 0	33,3	41,7	50,0	58,3	66,7	75,0	83,3	91,7	100,0	116,7	133,3	141,7	150,0	166,7	200,0	233,3	266,7	283,3
	m^3/h 0	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	7,0	8,0	8,5	9,0	10,0	12,0	14,0	16,0	17,0
	US GMP 0	8,8	11,0	13,2	15,4	17,6	19,8	22,0	24,2	26,4	30,8	35,2	37,4	39,6	44,0	52,8	61,6	70,3	74,7
	H=TOTAL M.HEAD OF WATER COLUMN [m]																		
EM 3/26	32,2	28,2	26,6	24,8	22,8	20,6	18,3	15,8	13,0	9,9									
EM 3/36	47,6	40,9	38,4	35,6	32,5	29,2	25,7	22,0	17,8	13,0									
EM 3/46	64,1	55,6	52,4	48,7	44,6	40,3	35,6	30,6	25,0	18,7									
EM 3/56	79,4	68,1	63,9	59,1	54,0	48,5	42,6	36,4	29,4	21,5									
EM 3/66	97,1	84,4	79,7	74,0	68,0	61,5	54,4	46,9	38,6	29,1									
EM 3/76	112,6	97,2	91,5	84,8	77,7	70,1	61,8	53,1	43,3	32,3									
EM 5/26	32,7		30,1	29,4	28,6	27,8	26,8	25,8	24,7	23,5	20,8								
EM 5/36	49,3		45,5	44,4	43,3	42,1	40,7	39,2	37,5	35,8	31,7								
EM 5/46	66,5		61,7	60,3	58,9	57,3	55,5	53,5	51,4	49,1	43,7								
EM 5/56	82,6		76,1	74,3	72,4	70,3	67,9	65,4	62,7	59,7	52,9								
EM 9/26	34,0									30,1	29,3	28,4	27,9	27,4	26,3	23,1	18,4	12,9	9,4
EM 9/36	51,4									45,7	44,4	43,2	42,4	41,7	40,1	35,4	28,4	20,1	14,9

THREE-PHASE VERSION

Pump model	Q = DELIVERY																		
	l/min 0	33,3	41,7	50,0	58,3	66,7	75,0	83,3	91,7	100,0	116,7	133,3	141,7	150,0	166,7	200,0	233,3	266,7	283,3
	m^3/h 0	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	7,0	8,0	8,5	9,0	10,0	12,0	14,0	16,0	17,0
	US GMP 0	8,8	11,0	13,2	15,4	17,6	19,8	22,0	24,2	26,4	30,8	35,2	37,4	39,6	44,0	52,8	61,6	70,3	74,7
	H=TOTAL M.HEAD OF WATER COLUMN [m]																		
EM 3/2T6	32,5	28,5	27,0	25,1	23,1	21,0	18,7	16,2	13,4	10,2									
EM 3/3T6	48,1	41,6	39,2	36,3	33,3	30,0	26,5	22,8	18,6	13,8									
EM 3/4T6	64,4	55,8	52,6	48,9	44,8	40,5	35,8	30,8	25,3	18,9									
EM 3/5T6	81,5	71,5	67,6	63,0	58,0	52,6	46,8	40,6	33,6	25,8									
EM 3/6T6	97,2	84,8	80,1	74,5	68,5	62,0	55,0	47,5	39,2	29,7									
EM 3/7T6	114,3	100,6	95,3	88,9	81,8	74,4	66,3	57,4	47,8	36,7									
EM 5/2T6	33,0		30,5	29,8	29,0	28,2	27,3	26,3	25,2	24,1	21,4	17,8	15,7						
EM 5/3T6	49,5		45,6	44,5	43,4	42,2	40,8	39,3	37,7	35,9	31,9	26,6	23,4						
EM 5/4T6	66,6		61,8	60,5	59,1	57,5	55,7	53,8	51,7	49,4	44,1	37,1	32,9						
EM 5/5T6	83,6		78,0	76,4	74,7	72,8	70,6	68,3	65,7	62,9	56,3	47,7	42,4						
EM 5/6T6	99,9		92,9	90,9	88,8	86,5	83,8	80,9	77,8	74,3	66,3	55,9	49,6						
EM 5/7T6	117,3		109,7	107,5	105,1	102,6	99,5	96,2	92,6	88,6	79,4	67,5	60,2						
EM 9/2T6	34,6									31,4	30,7	29,9	29,5	29,0	28,1	25,2	20,6	15,1	11,7
EM 9/3T6	51,9									47,2	46,1	44,9	44,3	43,6	42,2	37,8	31,1	22,8	17,7
EM 9/4T6	69,5									63,3	61,9	60,4	59,6	58,7	56,8	51,1	42,1	31,1	24,4
EM 9/5T6	86,5									78,3	76,5	74,6	73,5	72,3	69,9	62,6	51,2	37,5	29,0

MOTORS SPECIFICATIONS

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

SINGLE-PHASE VERSION AT 60 HZ

- Standard voltage 220-230 V ± 5%
- Thermal protection built into the motor

P_N [kW]	Motor size	INPUT CURRENT I_N [A]	Capacitor		230 V 60 Hz						
		230 V	µF	V	n_N [min^{-1}]	I_S / I_N	η %	cos φ	T_N [Nm]	T_S / T_N	T_M / T_N
0.55	71	3.6	16	450	3460	6.6	73.5	0.93	1.5	0.5	2.8
0.75	71	4.8	16	450	3410	4.4	75.3	0.95	2.1	0.4	2.0
0.9	71	5.4	30	450	3470	5.7	80.6	0.96	2.5	0.6	2.4
1.1	71	5.8	30	450	3430	5.3	81.5	0.97	3.0	0.5	2.0
1.3	80	8.5	30	450	3470	3.9	80.0	0.97	3.6	0.6	3.9
1.5	80	9.3	30	450	3370	3.5	80.0	0.98	4.1	0.5	3.4

THREE-PHASE IE3 VERSION AT 60 HZ

- IE3 Motors Efficiency
- IE efficiency according to IEC 60034-30-1:2014
- Electrical performance according to IEC 60034-2-1:2007
- Standard voltage: 220-230 / 380-400 V ± 5 % up to 3 kW (thermal protection to be provide into the starter panel by the installer)

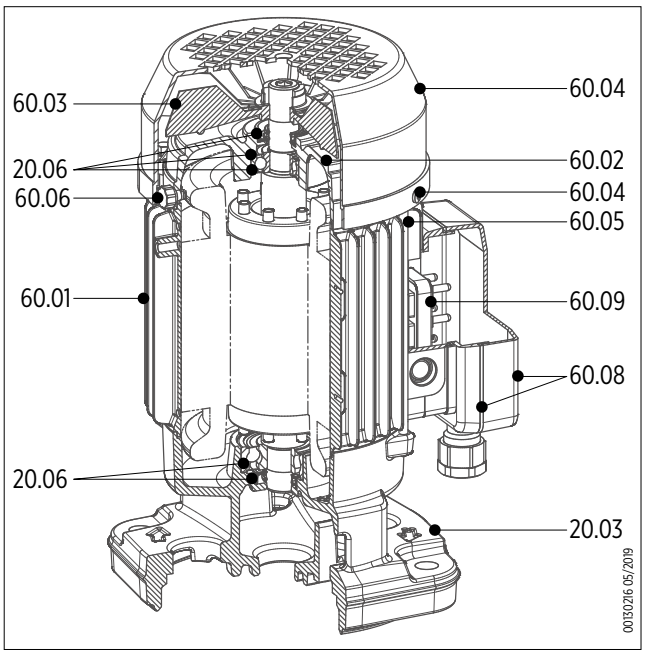
P_N [kW]	Rendimento / Efficiency η_N %						IE
	Δ 230 V Y 400 V			Δ 400 V Y 690 V			
	4/4	3/4	2/4	4/4	3/4	2/4	
0.75	82.5	82.6	80.4	-	-	-	3
1.1	84	84.5	82.8	-	-	-	
1.5	85.5	85.7	83.7	-	-	-	
2.2	86.9	87.6	86.8	-	-	-	
3	88.5	88.5	86.9	-	-	-	
4	-	-	-	88.6	88.6	87.2	
5.5	-	-	-	89.5	90.0	88.9	

P_N [kW]	Motor size	N. of poles	f_N [Hz]	400 V 60 Hz				
				cos φ	I_S / I_N	T_N [Nm]	T_S / T_N	T_M / T_N
0.75	71	2	60	0.85	7.9	2.1	3.9	4
1.1	71			0.85	6.6	3.1	3	3.1
1.5	80			0.85	8.2	4.1	3.1	3.2
2.2	90			0.89	9.8	6.0	4	4.1
3	90			0.85	9.8	8.2	3.6	3.7
4	100			0.88	11.2	10.9	4.8	4.9
5.5	112			0.87	11	14.9	4.9	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	-	-	3440	≤ 1000	-15 / +40	No
1.1	4.0	2.3	-	-	3440			
1.5	5.4	3.1	-	-	3480			
2.2	7.5	4.3	-	-	3490			
3	10.5	6.1	-	-	3510			
4	-	-	7.8	4.5	3520			
5.5	-	-	10.7	6.2	3520			

MOTOR SPARE PARTS

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



Technical data and Performance curves

EM 3 - TECHNICAL DATA

1 ~ ELECTRIC PUMP TECHNICAL DATA

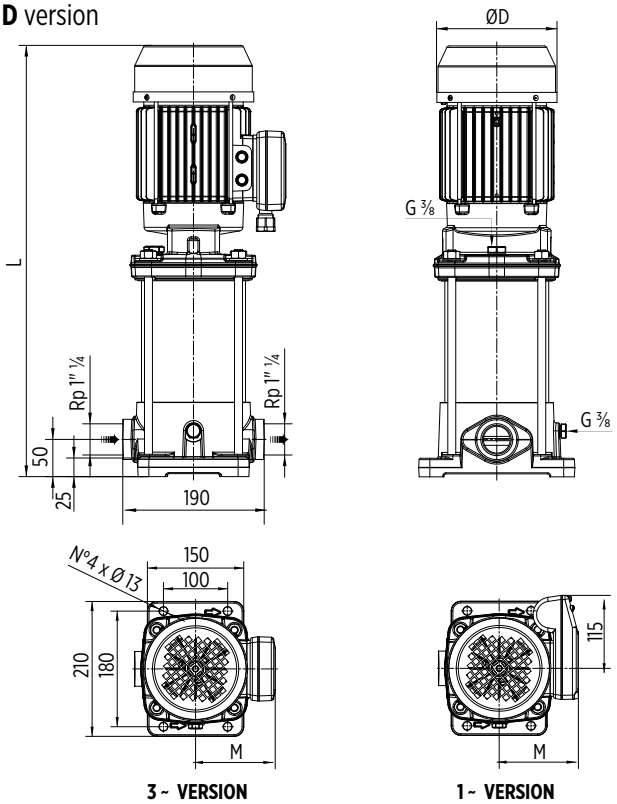
Pump model	Motor Size	MOTOR NOMINAL POWER		INPUT POWER	Capacitor 450V	INPUT CURRENT [A]	Dimensions [mm]				Weight [Kg]
		[kW]	[HP]	[kW]	[µF]	220-230 V	L	L2	ØD	M	
EM 3/26	71	0.55	0.75	0.8	16	3.6	441.5	87	144	117	19.4
EM 3/36	71	0.75	1	1	16	4.8	465.5	111	144	117	20
EM 3/46	71	0.9	1.2	1.3	30	6.0	489.5	135	144	117	22.5
EM 3/56	71	1.1	1.5	1.6	30	7.2	513.5	159	144	117	23.1
EM 3/66	80	1.5	2	2	30	9.9	579.5	183	162	124	27.4
EM 3/76	80	1.5	2	2.3	30	11.0	603.5	207	162	124	28

3 ~ IE3 ELECTRIC PUMP TECHNICAL DATA

Pump model	Motor Size	MOTOR NOMINAL POWER		INPUT POWER	INPUT CURRENT [A]		Dimensions [mm]				Weight [Kg]
		[kW]	[HP]	[kW]	220-230 V	380-400 V	L	L2	ØD	M	
EM 3/2T6	71	0.75	1	0.7	2.2	1.3	441.5	87	144	117	19.3
EM 3/3T6	71	0.75	1	1	2.9	1.7	465.5	111	144	117	19.9
EM 3/4T6	71	1.1	1.5	1.3	3.9	2.2	489.5	135	144	117	21.1
EM 3/5T6	80	1.5	2	1.6	5.0	2.9	555.5	159	162	124	25.1
EM 3/6T6	80	1.5	2	1.9	5.8	3.3	579.5	183	162	124	25.8
EM 3/7T6	90	2.2	2.7	2.3	6.6	3.8	642.5	207	179	131	31.8

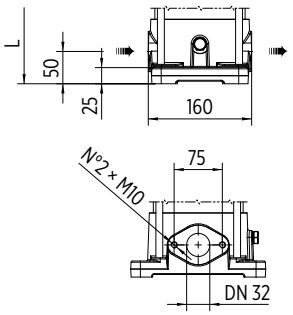
DIMENSIONAL DRAWINGS

D version

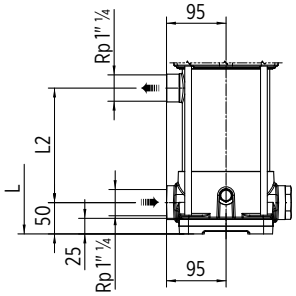


3 ~ VERSION **1 ~ VERSION**

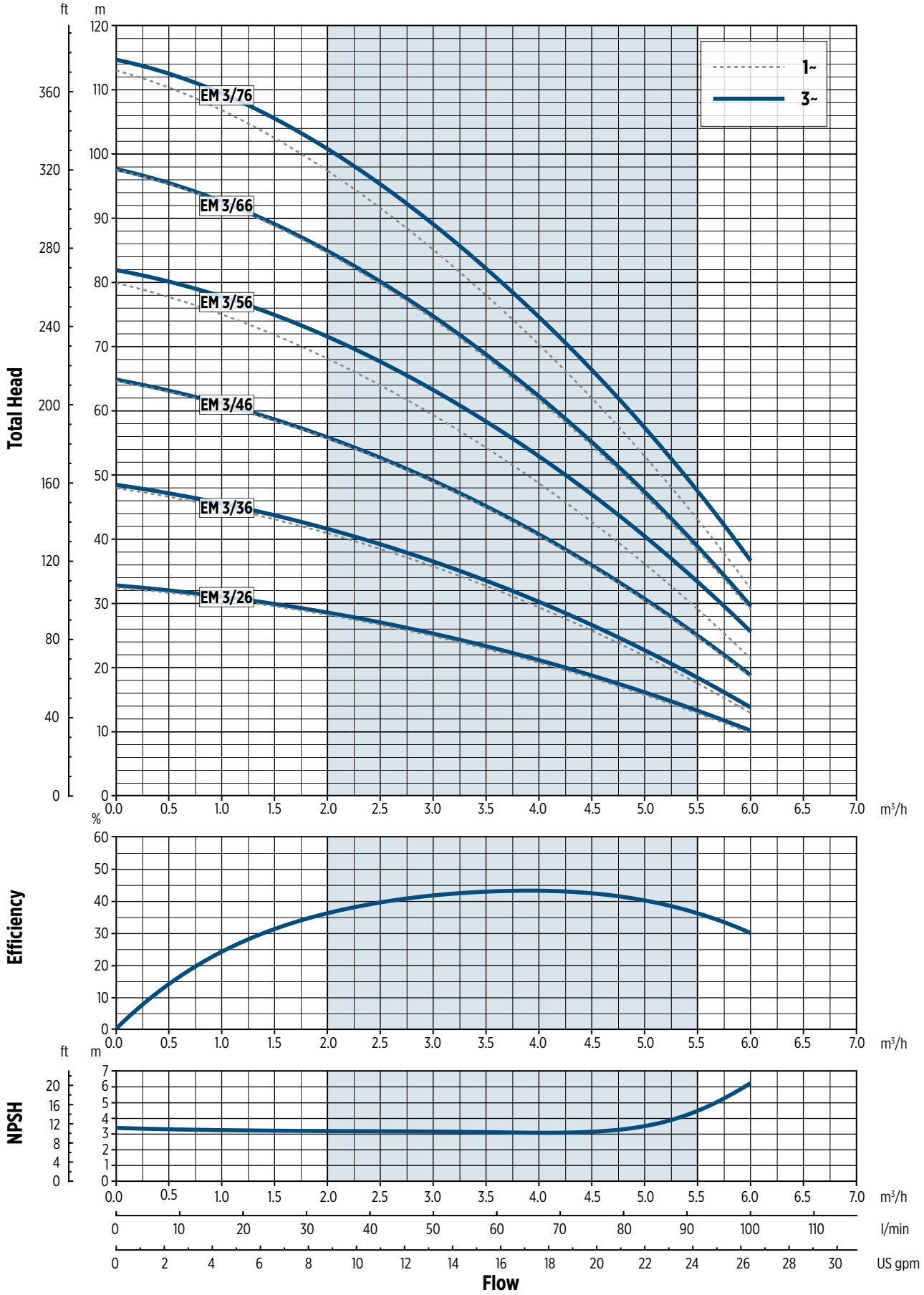
T version



R version



EM 3 - PERFORMANCE CURVES 60 HZ (3 ~ IE3)



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

EM 5 - TECHNICAL DATA

1 ~ ELECTRIC PUMP TECHNICAL DATA

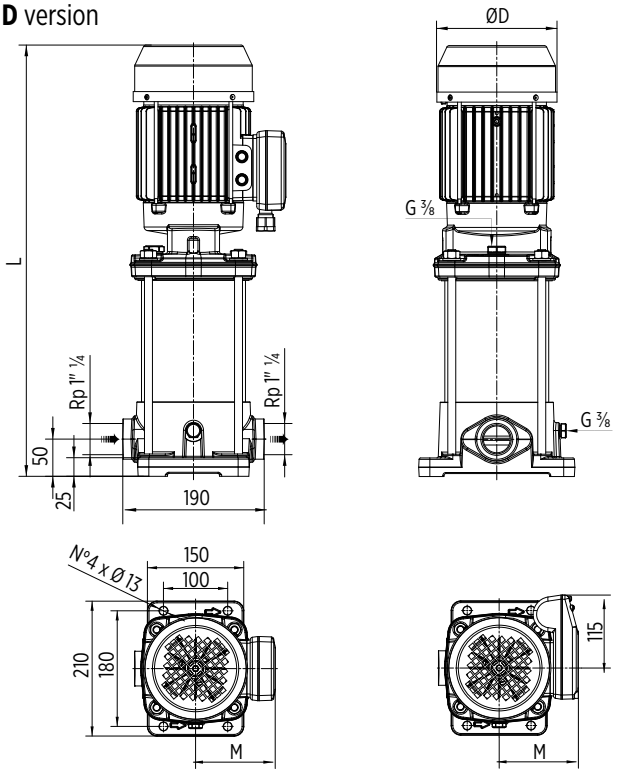
Pump model	Motor Size	MOTOR NOMINAL POWER		INPUT POWER	Capacitor 450V	INPUT CURRENT [A]	Dimensions [mm]				Weight [Kg]
		[kW]	[HP]	[kW]	[µF]	220-230 V	L	L2	ØD	M	
EM 5/26	71	0.75	1	1	16	4.6	441.5	87	144	117	19.4
EM 5/36	71	0.9	1.2	1.4	30	6.3	465.5	111	144	117	21.8
EM 5/46	80	1.3	1.8	1.9	30	9.4	531.5	135	162	124	26.1
EM 5/56	80	1.5	2	2.3	30	11.0	555.5	159	162	124	26.8

3 ~ IE3 ELECTRIC PUMP TECHNICAL DATA

Pump model	Motor Size	MOTOR NOMINAL POWER		INPUT POWER	INPUT CURRENT [A]		Dimensions [mm]				Weight [Kg]
		[kW]	[HP]	[kW]	220-230 V	380-400 V	L	L2	ØD	M	
EM 5/2T6	71	0.75	1	0.9	2.8	1.6	441.5	87	144	117	19.3
EM 5/3T6	71	1.1	1.5	1.3	4.0	2.3	465.5	111	144	117	20.4
EM 5/4T6	80	1.5	2	1.8	5.5	3.2	531.5	135	162	124	24.5
EM 5/5T6	90	2.2	2.7	2.3	6.6	3.8	594.5	159	179	131	30.5
EM 5/6T6	90	2.2	2.7	2.6	7.7	4.5	618.5	183	179	131	31.2
EM 5/7T6	90	3	4	3	8.8	5.1	680.5	207	179	131	35

DIMENSIONAL DRAWINGS

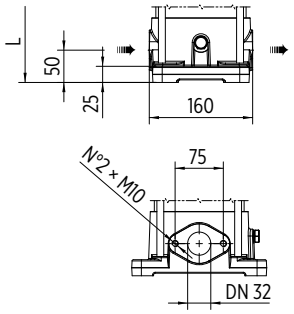
D version



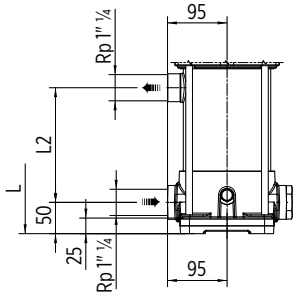
3 ~ VERSION

1 ~ VERSION

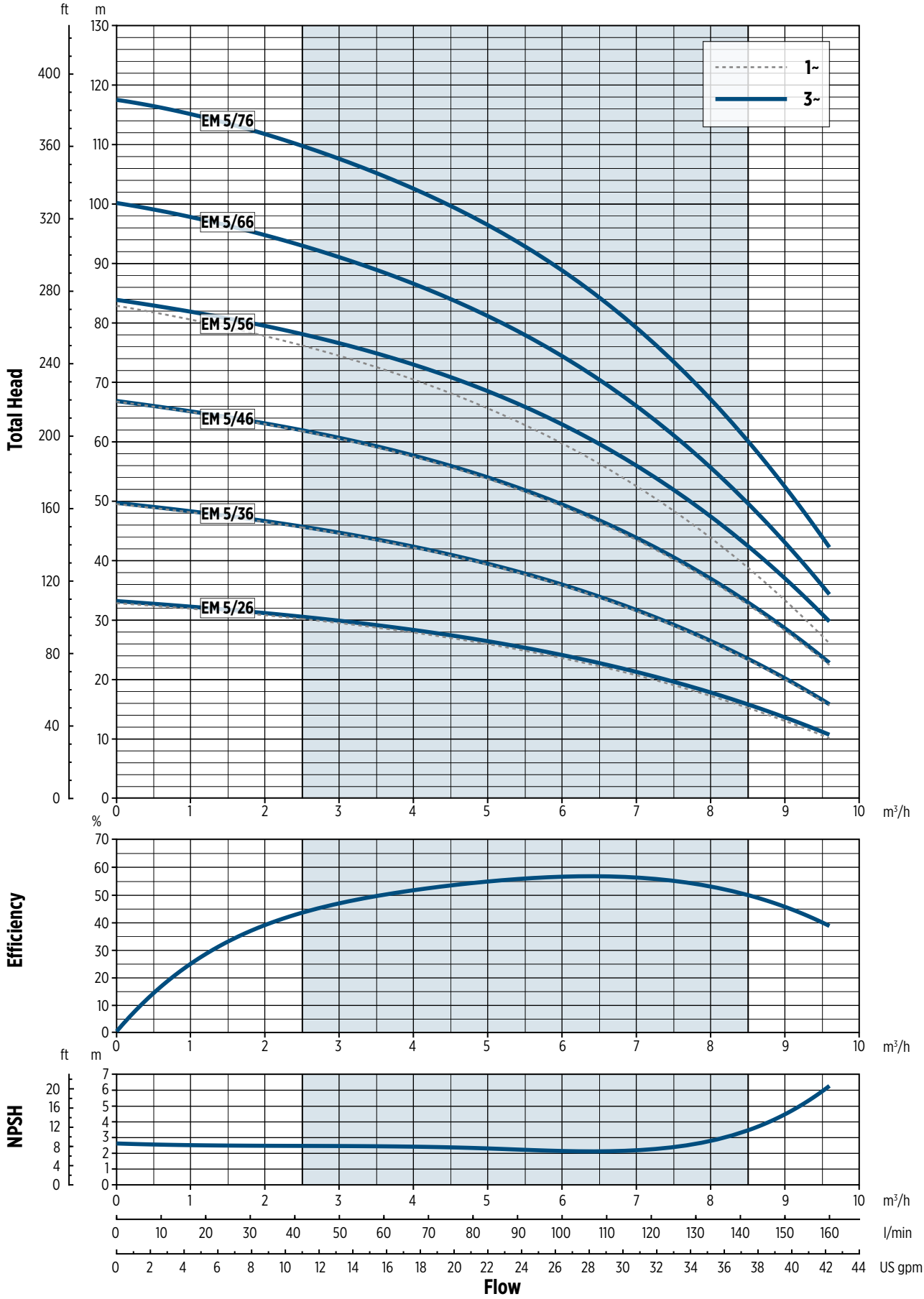
T version



R version



EM 5 - PERFORMANCE CURVES 60 HZ (3 ~ IE3)



0012059EN 07/2017

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

EM 9 - TECHNICAL DATA

1 ~ ELECTRIC PUMP TECHNICAL DATA

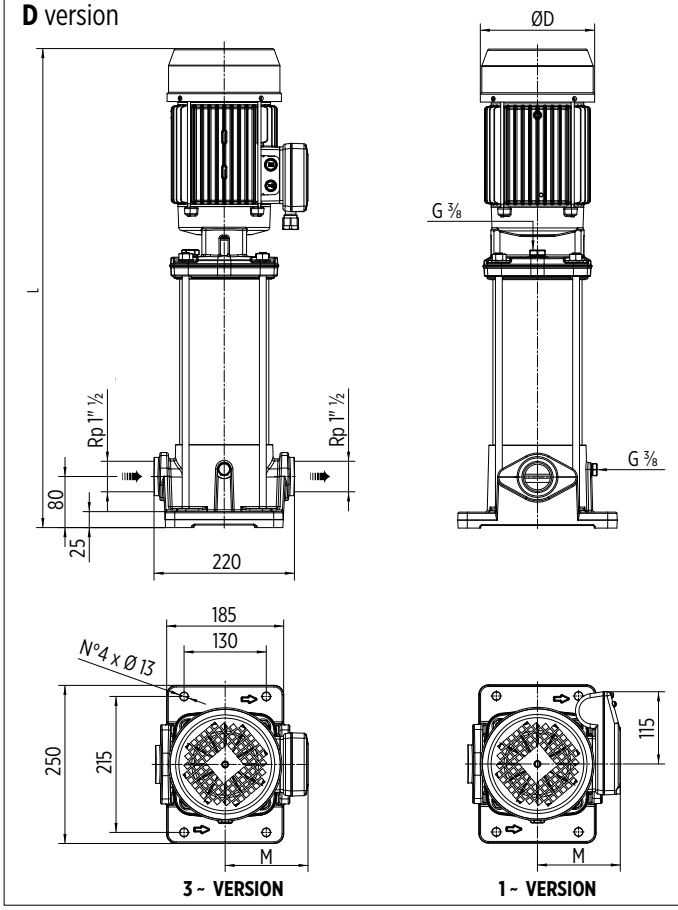
Pump model	Motor Size	MOTOR NOMINAL POWER		INPUT POWER	Capacitor 450V	INPUT CURRENT [A]	Dimensions [mm]				Weight [Kg]
		[kW]	[HP]	[kW]	[µF]	220-230 V	L	L2	ØD	M	
EM 9/26	71	1.1	1.5	1.5	30	7.2	483.5	99	144	117	24.7
EM 9/36	80	1.5	2	2.4	30	11.5	555.5	129	162	124	29.2

3 ~ IE3 ELECTRIC PUMP TECHNICAL DATA

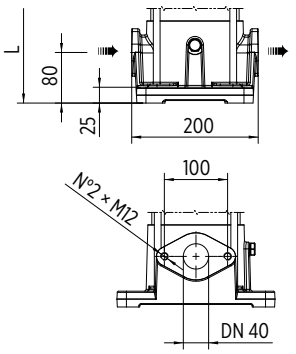
Pump model	Motor Size	MOTOR NOMINAL POWER		INPUT POWER	INPUT CURRENT [A]		Dimensions [mm]				Weight [Kg]
		[kW]	[HP]	[kW]	220-230 V	380-400 V	L	L2	ØD	M	
EM 9/2T6	80	1.5	2	1.6	5.0	2.9	525.5	99	162	124	26.8
EM 9/3T6	90	2.2	2.7	2.3	6.9	4.0	594	129	179	131	32.9
EM 9/4T6	90	3	4	3	8.9	5.1	662.5	159	179	131	36.9
EM 9/5T6	90	3	4	3.8	11.1	6.4	692.5	189	179	131	37.7

DIMENSIONAL DRAWINGS

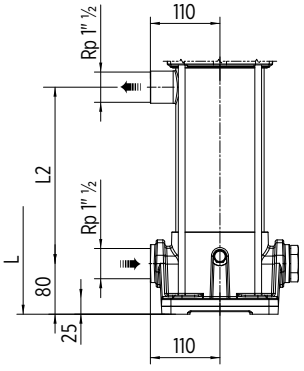
D version



T version



R version



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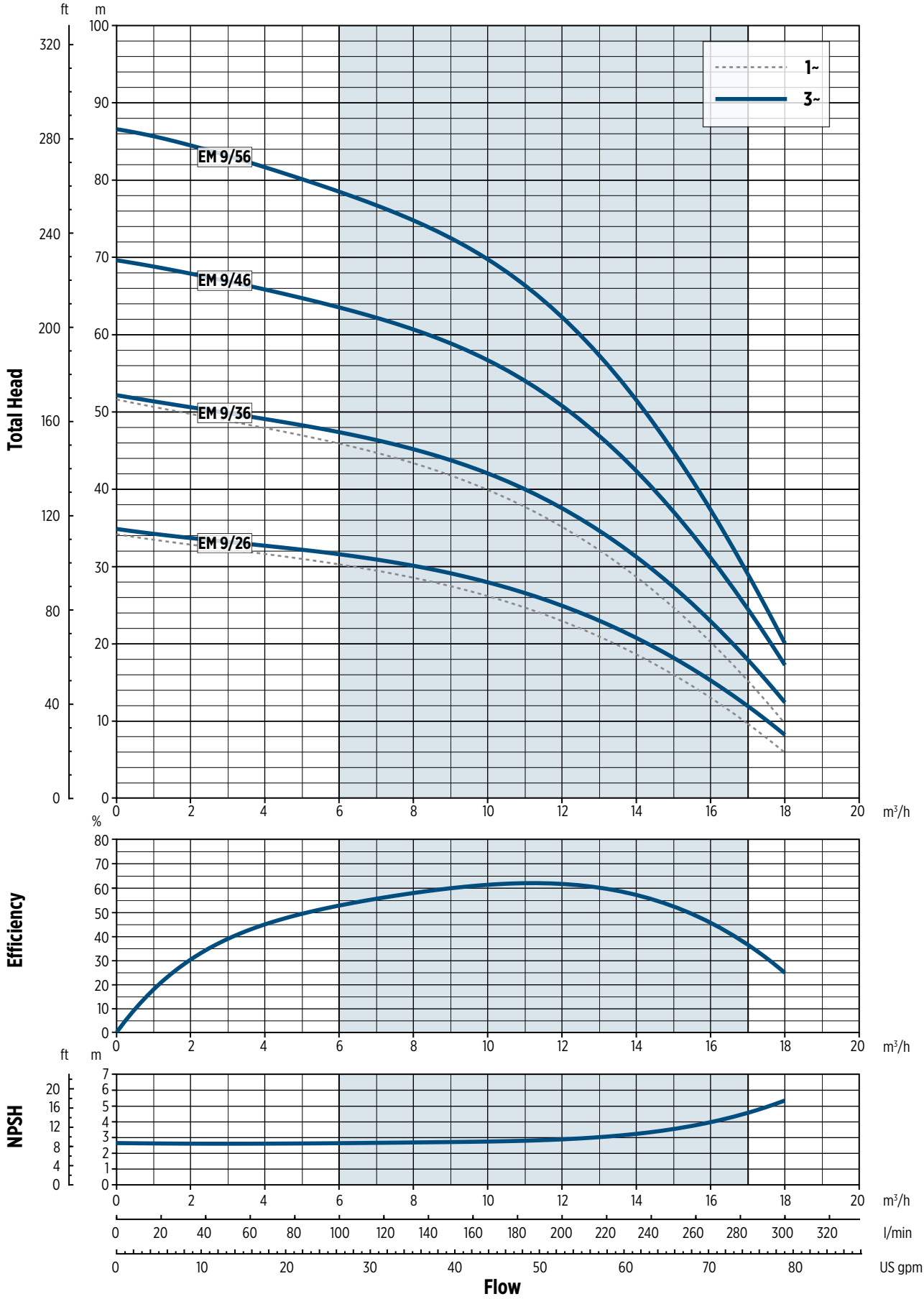
EM 9 - PERFORMANCE CURVES 60 HZ (3 ~ IE3)



0012066EN 07/2017

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

CATALOG REVISION CHANGES NOTICE

Rev. No.	Changes	Page
01	Modification of “List of main components” and “Parts in contact with fluids”	4, 32 (REV.00)
	Added section “Spare parts and material”	4
	Added section “Motor spare parts”	22
	Updating “Hydraulic performance at 60 Hz”	8, 20
	Updating of “Motor specification”	9, 10, 21, 22

NOTE

NOTE

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00105012 EN_REV01_10/2019

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