

# **FPS**

## **50HZ MH SERIES** HORIZONTAL MULTISTAGE PUMPS

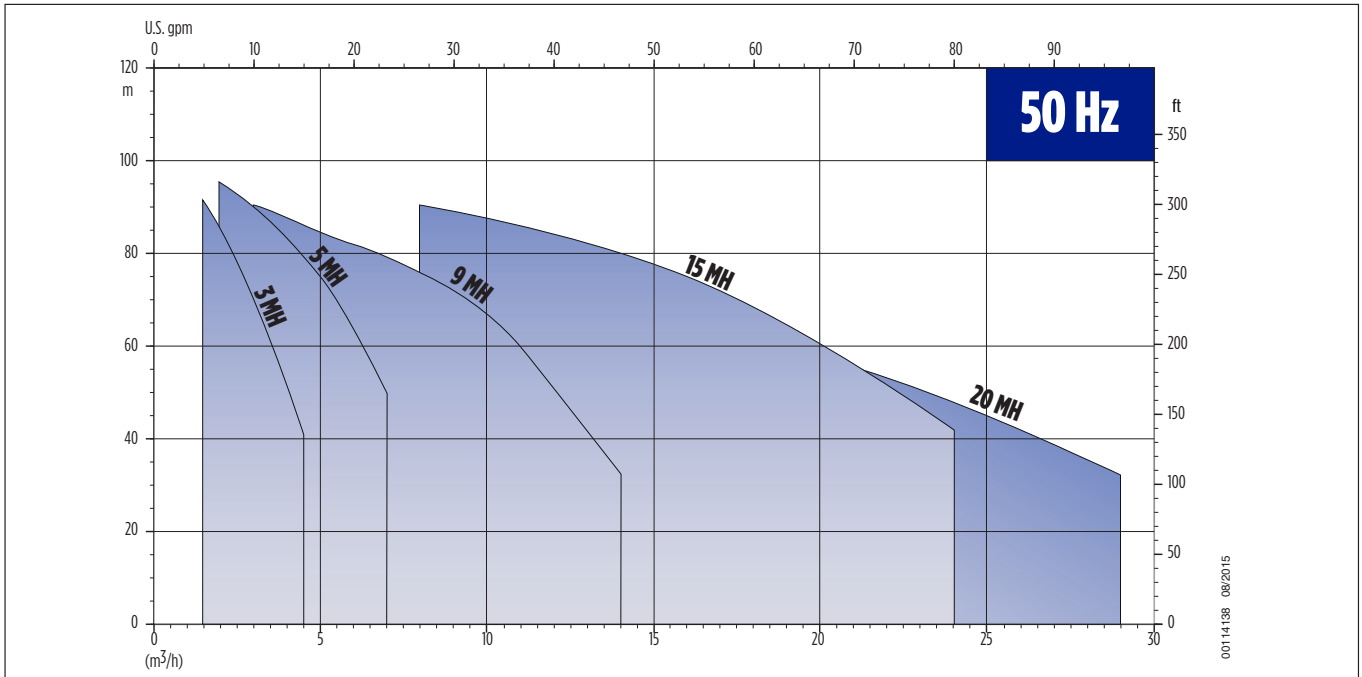




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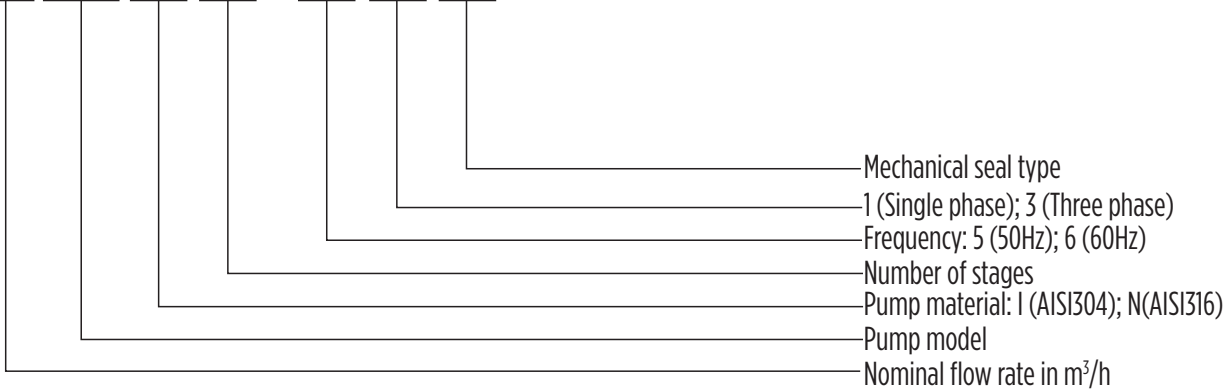




00114138 06/2015

### PUMP IDENTIFICATION CODE

15 MH 1 3 - 5 3 E0



### MATERIALS/FLUIDS COMPATIBILITY

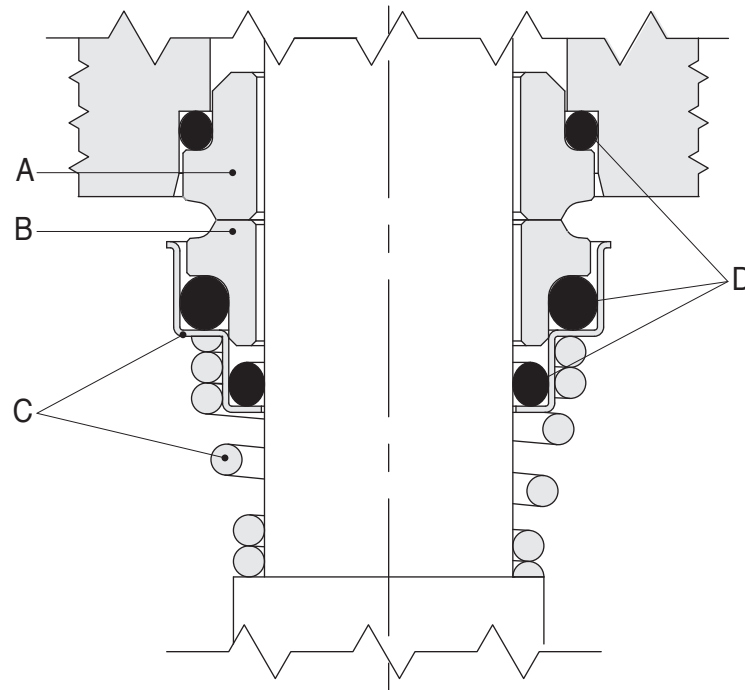
Pos.	PARTS DESCRIPTION	Type	I version		N version	
			ASTM/AISI	DIN/EN	ASTM/AISI	DIN/EN
20.00	Pump casing	Stainless steel	AISI 304	1.4301	AISI 316	1.4401
20.02	Seal housing	Stainless steel	AISI 304	1.4301	AISI 316	1.4401
20.05	Filing and drain plug	Stainless steel	AISI 304	1.4301	AISI 316	1.4401
20.07	Inlet cover	Stainless steel	AISI 304	1.4301	AISI 316	1.4401
30.05	O-Ring	EPDM	-	-	-	-
30.06	Mechanical seal	EH3-5-9	Carbon / Ceramic / EPDM			
		EH15-20	Carbon / Silicon carbide / EPDM			
30.08	Pump shaft	Stainless steel	AISI 304	1.4301	AISI 316	1.4401
30.09	Screws and washers	Stainless steel	AISI 304	1.4301	AISI 316	1.4401
40.00						
40.01	Diffuser/s	Stainless steel	AISI 304	1.4301	AISI 316	1.4401
40.03						
40.02	Floating neck ring assembly	PTFE/PPS	-	-	-	-
50.00						
50.01	Impeller/s with spacers	Stainless steel	AISI 304	1.4301	AISI 316	1.4401

# 3-5-9-15-20 MH

## TABLE OF HYDRAULIC PERFORMANCES AT 50HZ

PUMP TYPE	Q = DELIVERY																								
	l/min 0	25	33	42	50	58	67	75	83	92	100	117	133	150	167	183	233	267	300	333	367	417	467	483	
	m <sup>3</sup> /h 0	1,5	2	2,5	3	3,5	4	4,5	5	5,5	6	7	8	9	10	11	14	16	18	20	22	25	28	29	
	US GMP 0	6,6	8,8	11,0	13,2	15,4	17,6	19,8	22,01	24,2	26,4	30,8	35,2	39,6	44,02	48,4	61,6	70,4	79,2	88,05	96,8	110,07	123,2	127,6	
H=TOTAL M.HEAD OF WATER COLUMN																									
3 MH 2	23	21	19,5	18	16,5	14,5	12,5	10																	
3 MH 3	33,5	30,5	29	26,5	24	21	17,5	14																	
3 MH 4	44,5	40	37,5	34,5	31	27	23	18																	
3 MH 5	55	49	46	42	37	32,5	27	21																	
3 MH 6	67,5	61	57	53	47	41,5	35	28																	
3 MH 7	78	70,5	66	60,5	54	47,5	40	32																	
3 MH 8	90	82	77	71	64	56	47	38																	
3 MH 9	101	91,5	85,5	79	70,5	61,5	52	41																	
5 MH 2	23,5		21,5	21	20,5	19,5	19	18	17	16	15	11,5													
5 MH 3	34,5		31,5	31	29,5	28,5	27,5	26	25	23	21	16													
5 MH 4	46,5		43	42	41	39,5	38	36	34	32	29	23													
5 MH 5	58		53	51,5	50	48,5	46,5	44	41,5	38,5	35,5	27,5													
5 MH 6	70		64,5	63	61	59	56,5	54	51	47,5	43,5	34													
5 MH 7	81,5		74,5	72,5	70	68	65	61,5	58	54	49,5	38,5													
5 MH 8	92,5		84	82	79	76,5	73	69	65	60	54,5	42													
5 MH 9	104		95,5	93	90,5	87,5	83,5	79,5	75	70	64	50													
9 MH 2	23,5				22	21,5	21	20,5	20	20	19,5	18,5	18	17	15,5	13,5	6,5								
9 MH 3	35,5				33	32,5	32	31,5	31	30,5	30	28,5	27,5	26	24	21	11								
9 MH 4	48				45	44,5	43,5	43	42	41,5	41	39,5	38	36	33	29,5	16								
9 MH 5	59,5				55,5	55	54	53	52	51	50	48,5	46,5	44	40,5	36	18,5								
9 MH 6	71				66	65	64	62,5	61,5	60	59	57	54,5	51	47	41,5	21								
9 MH 7	84				79,5	78,5	77,5	76	74,5	73,5	72	70	67	64	59,5	53,5	29,5								
9 MH 8	96				90,5	89,5	88	86	84,5	83	82	79,5	76	72,5	67	60	32,5								
15 MH 2	29												26	25,5	25,5	25	23	21,5	19,5	17,5	14,5	9,5			
15 MH 3	44												39,5	39	38	37,5	34,5	32,5	29,5	26	22	14,5			
15 MH 4	58,5												53	52	51,5	50,5	47	44	40	35,5	30	20			
15 MH 5	73												65,5	64,5	63,5	62,5	57,5	54	49	43,5	36,5	24			
15 MH 6	87,5												79,5	78	77	75,5	71	67	61,5	54	46	31,5			
15 MH 7	102												92	90,5	89	87,5	82	77,5	70,5	62	52,5	36			
20 MH 2	31												28,5	28	27,5	27	26	25	24	22,5	20,5	16,5	12	10	
20 MH 3	46,5												43	42,5	41,5	41	39,5	38	36,5	34,5	31,5	25,5	19	16	
20 MH 4	62,5												58	57	56	55,5	53,5	51,5	49,5	46,5	42,5	34,5	26	22	
20 MH 5	78,5												72,5	71,5	70,5	69,5	67	64,5	62	58,5	53,5	43,5	32,5	28	

# MECHANICAL SEAL SPECIFICATIONS



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## STANDARD VERSION

Model	Type				Position				Temperature (°C)
					A Stationary part	B Rotating part	C Other components	D Elastomers	
EH 3 - 5 - 9									
E0	V	B	G	E	Ceramic	Graphite	AISI 316	EPDM	-15°C +100°C
EH 15 - 20									
E1	B	Q	G	E	Graphite	Silicon Carbide	AISI 316	EPDM	-15°C +100°C

## AVAILABLE ON REQUEST

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°C +100°C
V3*	Q	Q	G	V	Silicon Carbide	Silicon Carbide	AISI 316	FKM	-10°C +100°C
V8*	Q	U	G	V	Silicon Carbide	Tungsten Carbide	AISI 316	FKM	-10°C +100°C

\*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



# **MH Series with IE2 motors**

## **Technical data and Performance curves**

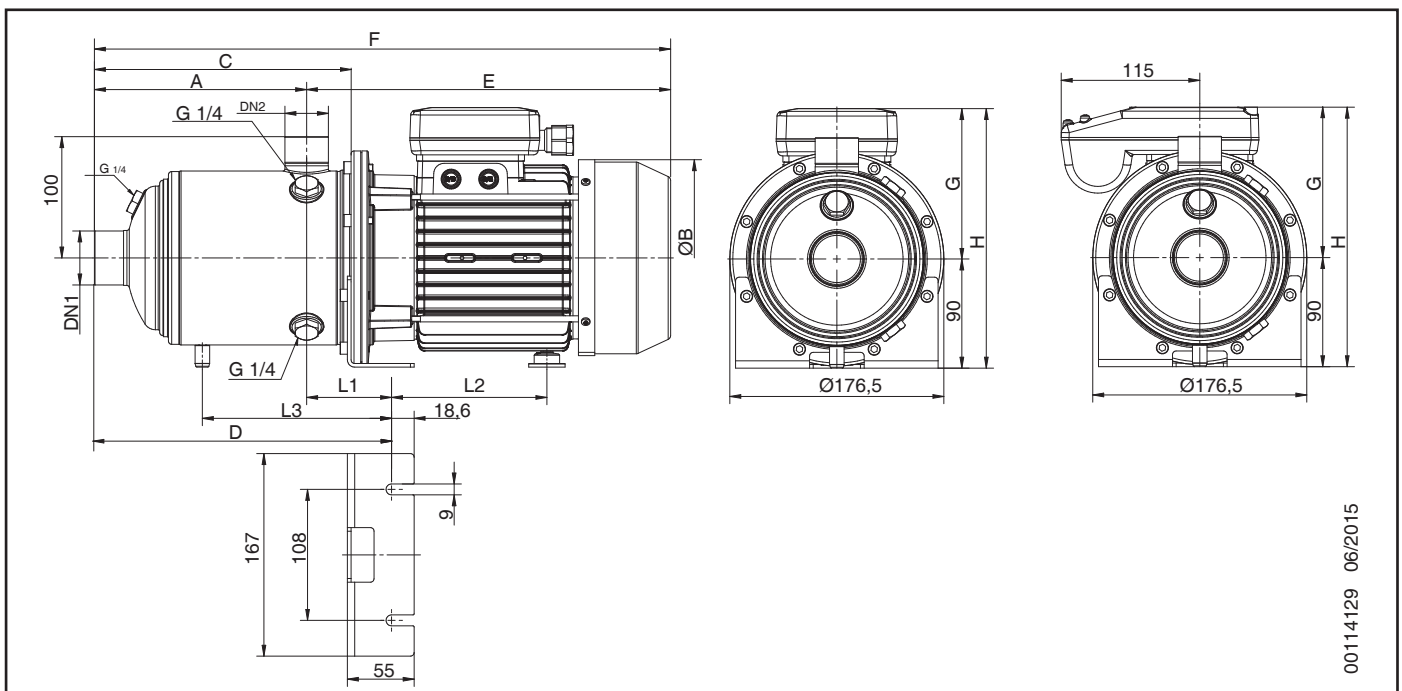
# 3 MH - IE2

## TECHNICAL DATA

5IPumps model		NUMBER OF SAGES	POWER		INPU POWER	INERNAL CAPACIOR		RAED CURREN			
Single-phase	Three-phase IE2		kW	HP		kW	µF	V	Single-phase	Three-phase	
										220-240V	380-415V
<b>3 MH 2-51</b>	<b>3 MH 2-53</b>	2	0,33	0,45	0,44	16	450	2,5	2,4	1,4	
<b>3 MH 3-51</b>	<b>3 MH 3-53</b>	3	0,45	0,6	0,59	16	450	3,0	2,6	1,5	
<b>3 MH 4-51</b>	<b>3 MH 4-53</b>	4	0,55	0,75	0,75	16	450	3,7	2,9	2,2	
<b>3 MH 5-51</b>	<b>3 MH 5-53</b>	5	0,75	1	0,90	16	450	4,3	3,8	2,4	
<b>3 MH 6-51</b>	<b>3 MH 6-53</b>	6	0,9	1,2	1,14	30	450	5,4	4,1	2,5	
<b>3 MH 7-51</b>	<b>3 MH 7-53</b>	7	1,1	1,5	1,29	30	450	6,0	4,6	2,7	
<b>3 MH 8-51</b>	<b>3 MH 8-53</b>	8	1,3	1,8	1,46	30	450	6,9	5,5	3,2	
<b>3 MH 9-51</b>	<b>3 MH 9-53</b>	9	1,5	2	1,61	30	450	7,5	5,8	3,3	

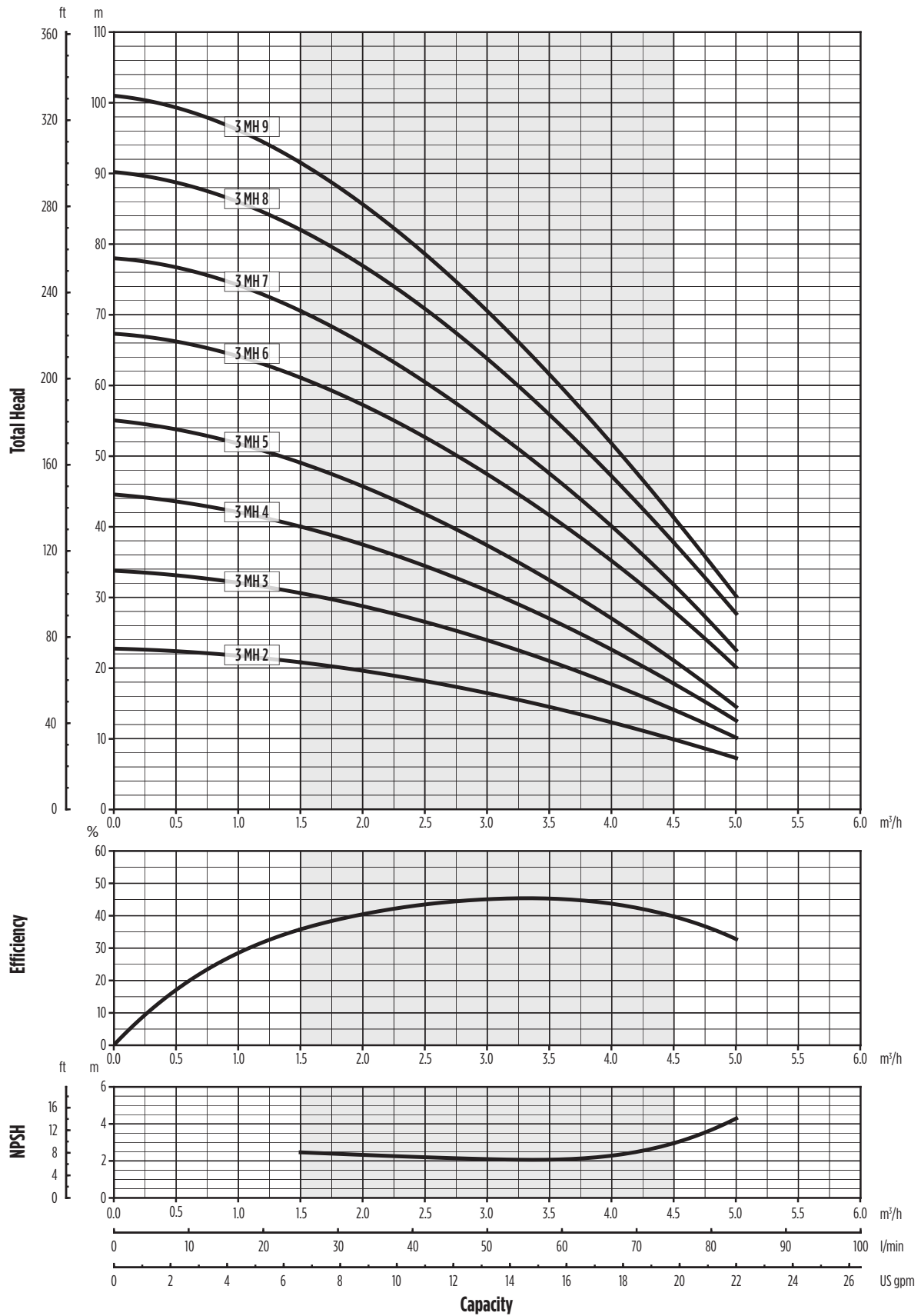
## DIMENSIONS AND WEIGHTS

Pump model		Dimensions														Weight (kg)	
Single-phase	Three-phase IE2	Size	A mm	E mm	C mm	D mm	F mm	G mm	DN1	DN2	ØB mm	H mm	L1 mm	L2 mm	L3 mm	1- Single-phase	3- Three-phase
<b>3 MH 2-51</b>	<b>3 MH 2-53</b>	71	103	258	139,6	173	361	117	Rp 1" ¼	Rp 1"	144	207	70	100,6	-	11,2	11
<b>3 MH 3-51</b>	<b>3 MH 3-53</b>	71	103	258	139,6	173	361	117			144	207	70	100,6	-	11,4	11
<b>3 MH 4-51</b>	<b>3 MH 4-53</b>	71	127	258	163,6	197	385	117			144	207	70	100,6	-	11,8	13
<b>3 MH 5-51</b>	<b>3 MH 5-53</b>	71	151	258	187,6	221	409	117			144	207	70	100,6	-	12,4	13,6
<b>3 MH 6-51</b>	<b>3 MH 6-53</b>	71	175	258	211,6	245	433	117			144	207	70	100,6	-	14,4	14,2
<b>3 MH 7-51</b>	<b>3 MH 7-53</b>	71	199	258	235,6	269	457	117			144	207	70	100,6	180	15	14,8
<b>3 MH 8-51</b>	<b>3 MH 8-53</b>	80	223	300	259,6	293	523	124			162	214	70	128,1	204	18,8	18,6
<b>3 MH 9-51</b>	<b>3 MH 9-53</b>	80	247	300	283,6	317	547	124			162	214	70	128,1	228	19,4	19,2



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### PERFORMANCE CURVES 50HZ



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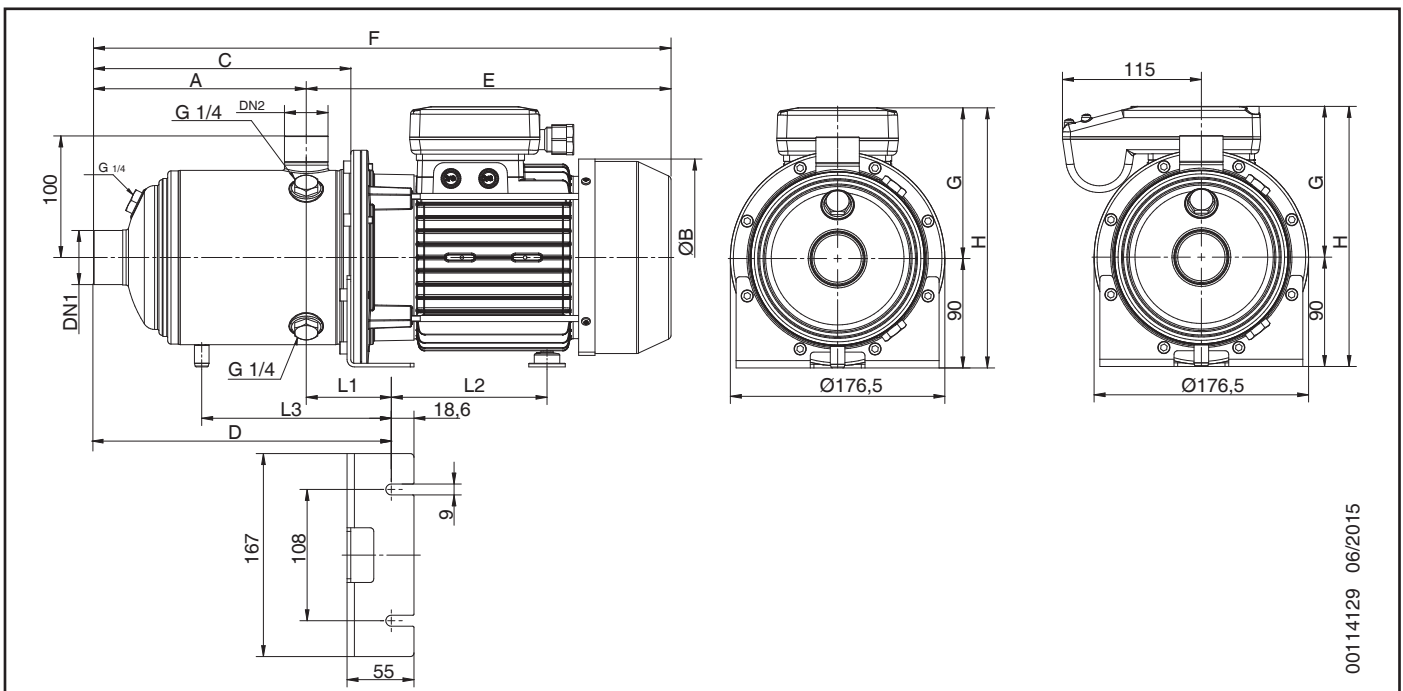
# 5 MH - IE2

## TECHNICAL DATA

Pumps model		NUMBER OF STAGES	POWER		INPUT POWER	INTERNAL CAPACITOR		RATED CURRENT		
Single-phase	Three-phase IE2		kW	HP		kW	µF	V	Single-phase	Three-phase
					220-240V					380-415V
5 MH 2-51	5 MH 2-53	2	0,45	0,6	0,58	16	450	3,0	2,6	1,5
5 MH 3-51	5 MH 3-53	3	0,55	0,75	0,80	16	450	3,9	4,0	2,3
5 MH 4-51	5 MH 4-53	4	0,9	1,2	1,11	16	450	5,3	4,3	2,5
5 MH 5-51	5 MH 5-53	5	1,1	1,5	1,33	16	450	6,2	4,7	2,7
5 MH 6-51	5 MH 6-53	6	1,3	1,8	1,53	30	450	7,3	5,7	3,3
5 MH 7-51	5 MH 7-53	7	1,5	2	1,79	30	450	8,2	6,2	3,6
5 MH 8-51	5 MH 8-53	8	1,85	2,5	2,16	30	450	8,9	7,5	4,4
5 MH 9-51	5 MH 9-53	9	2	2,7	2,40	60	450	11,4	8,0	4,6

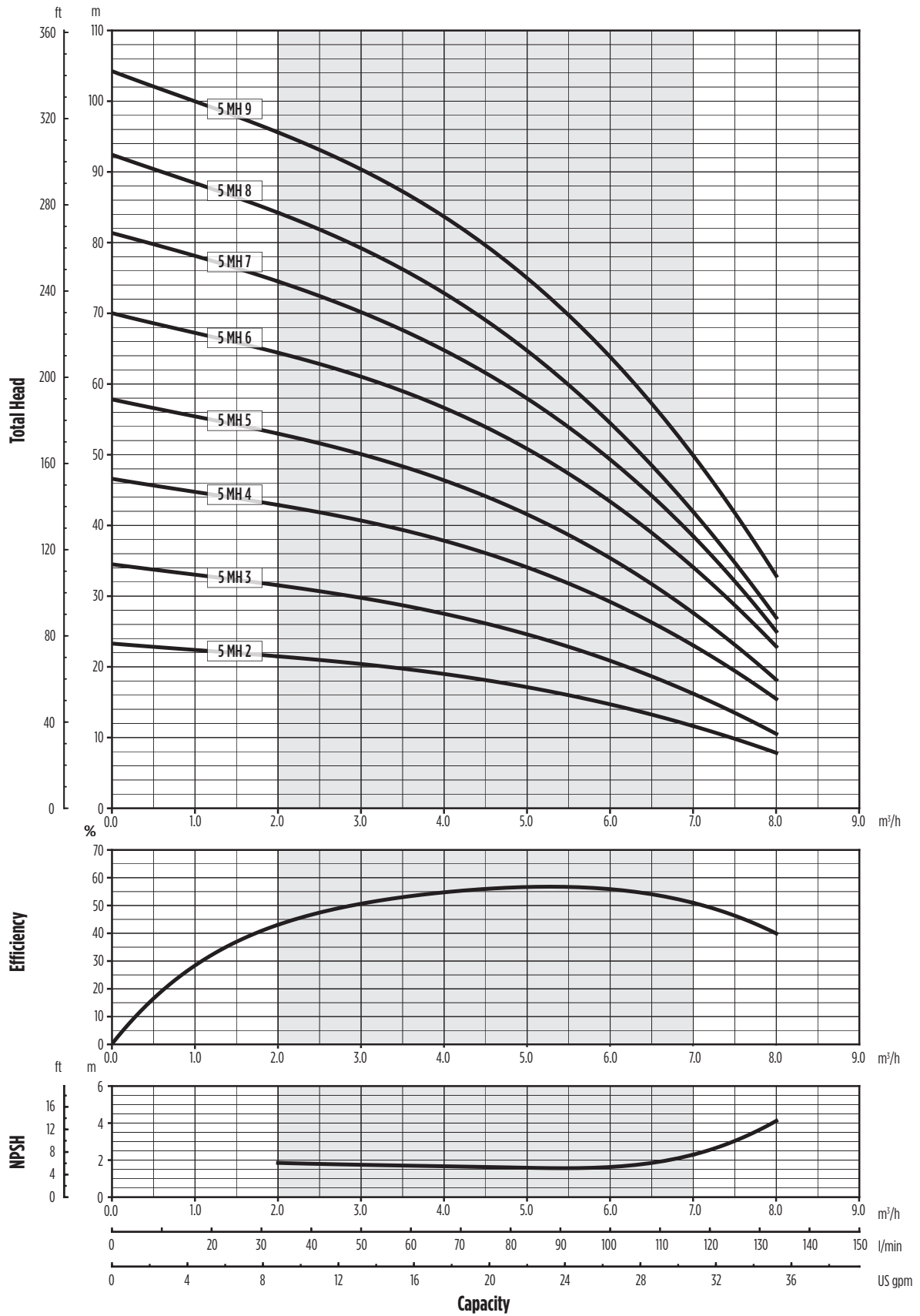
## DIMENSIONS AND WEIGHTS

Pump model		Size	Dimensions													Weight (kg)	
Single-phase	Three-phase IE2		A mm	E mm	C mm	D mm	F mm	G mm	DN1	DN2	ØB mm	H mm	L1 mm	L2 mm	L3 mm	1- Single-phase	3- Three-phase
5 MH 2-51	5 MH 2-53	71	103	258	139,6	173	361	117	Rp 1" ¼	Rp 1"	144	207	70	100,6	-	11,2	11
5 MH 3-51	5 MH 3-53	71	103	258	139,6	173	361	117			144	207	70	100,6	-	11,4	12,6
5 MH 4-51	5 MH 4-53	71	127	258	163,6	197	385	117			144	207	70	100,6	-	13,4	13,2
5 MH 5-51	5 MH 5-53	71	151	258	187,6	221	409	117			144	207	70	100,6	-	14	13,6
5 MH 6-51	5 MH 6-53	80	175	300	211,6	245	475	124			162	214	70	128,1	-	17,8	17,4
5 MH 7-51	5 MH 7-53	80	199	300	235,6	269	499	124			162	214	70	128,1	180	18,2	18
5 MH 8-51	-	80	223	300	259,6	293	523	124			162	214	70	128,1	204	18,8	-
-	5 MH 8-53	90	223	345	259,6	293	568	131			179	221	70	171,6	204	-	22,6
5 MH 9-51	5 MH 9-53	90	247	345	283,6	317	592	131			179	221	70	171,6	228	24,8	23



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## PERFORMANCE CURVES 50HZ



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

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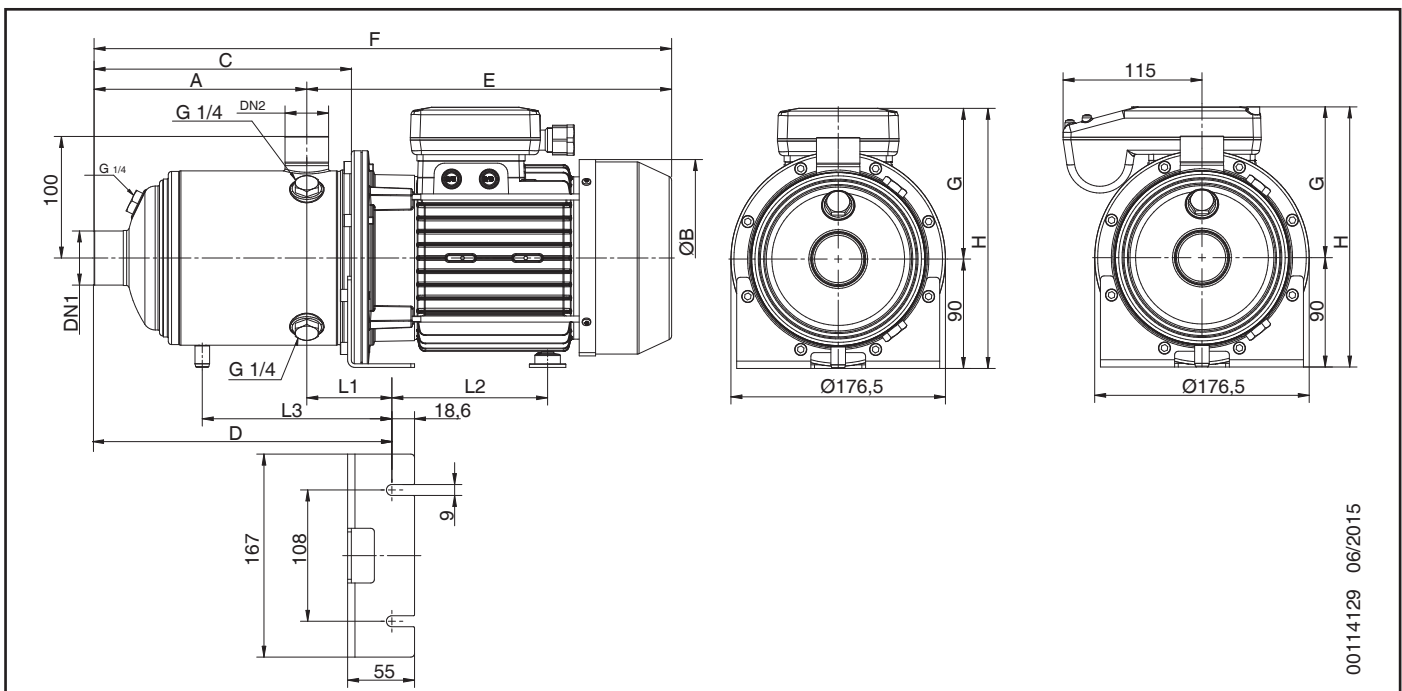
# 9 MH - IE2

## TECHNICAL DATA

Pumps model		NUMBER OF SAGES	POWER		INPUT POWER kW	INTERNAL CAPACITOR		RAED CURREN		
Single-phase	hree-phase IE2		kW	HP		µF	V	Single-phase	hree-phase	
									220-240V	380-415V
9 MH 2-51	9 MH 2-53	2	0,75	1	0,90	16	450	4,3	3,1	1,8
9 MH 3-51	9 MH 3-53	3	1,1	1,5	1,37	30	450	6,3	4,7	2,7
9 MH 4-51	9 MH 4-53	4	1,5	2	1,77	30	450	8,2	6,1	3,5
9 MH 5-51	9 MH 5-53	5	1,85	2,5	2,21	60	450	11,1	7,8	4,5
9 MH 6-51	9 MH 6-53	6	2	2,7	2,61	60	450	12,7	8,7	5,0
9 MH 7-51	-	7	2,2	3	2,86	60	450	14,5	-	-
-	9 MH 7-53	7	2,5	3,4	3,24	-	-	-	11,1	6,4
-	9 MH 8-53	8	3	4	3,59	-	-	-	11,9	6,9

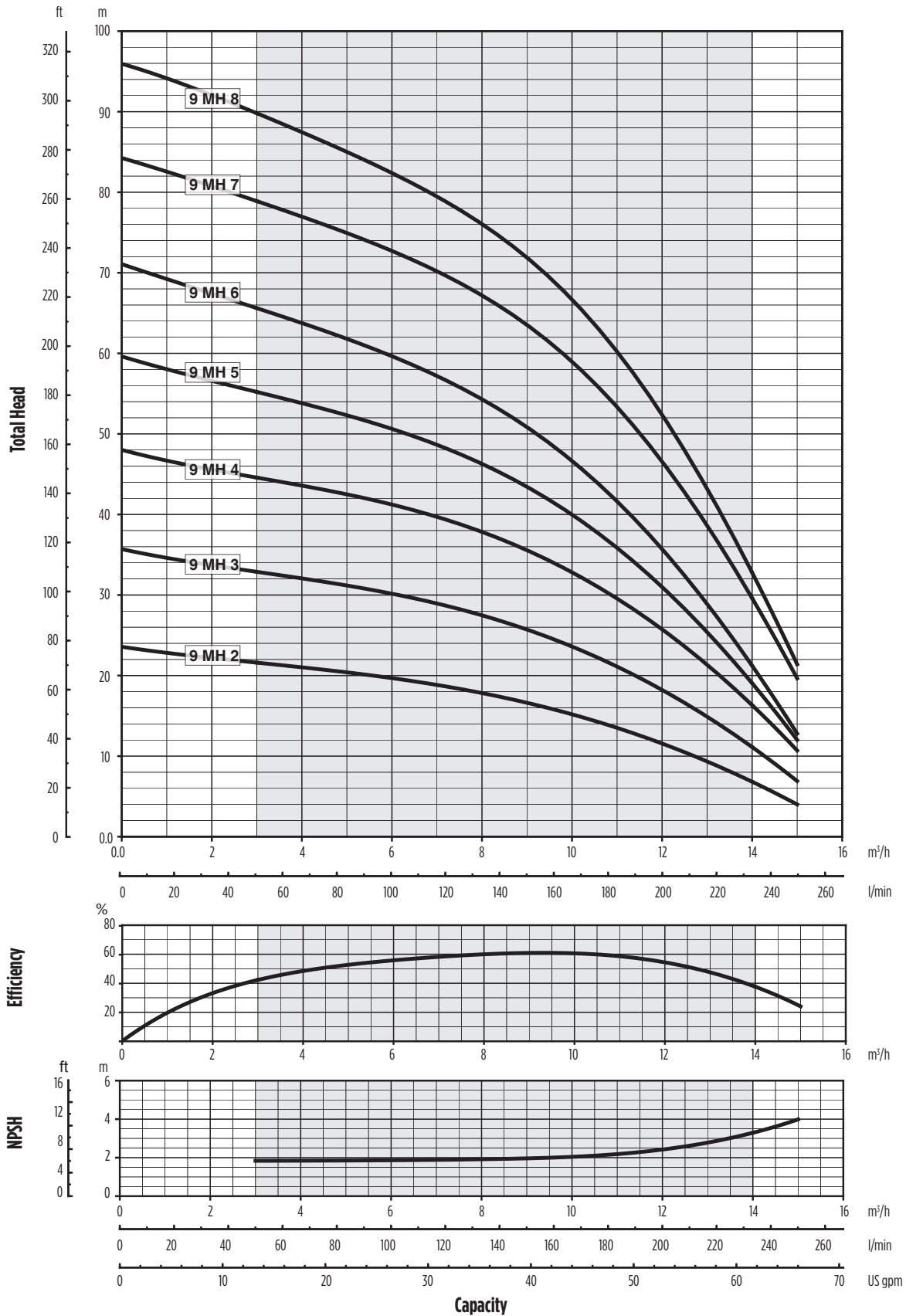
## DIMENSIONS AND WEIGHTS

Pumps model		Dimensions														Weight (kg)	
Single-phase	Three-phase IE2	Size	A mm	E mm	C mm	D mm	F mm	G mm	DN1	DN2	ØB mm	H mm	L1 mm	L2 mm	L3 mm	1- Single-phase	3- Three-phase
9 MH 2-51	9 MH 2-53	71	118	262	158,6	192	380	117	Rp 1" ½	Rp 1" ¼	144	207	74	100,6	-	11,6	12,8
9 MH 3-51	9 MH 3-53	71	118	262	158,6	192	380	117			144	207	74	100,6	-	13,2	12,8
9 MH 4-51	9 MH 4-53	80	148	304	188,6	222	452	124			162	214	74	128,1	-	17	16,8
9 MH 5-51	9 MH 5-53	90	178	349	218,6	252	527	131			179	221	74	171,6	-	23	21,4
9 MH 6-51	9 MH 6-53	90	208	349	248,6	282	557	131			179	221	74	171,6	192,1	23,8	22
9 MH 7-51	9 MH 7-53	90	238	349	278,6	312	587	131			179	221	74	171,6	222,1	24,4	25,4
-	9 MH 8-53	90	268	349	308,6	342	617	131			179	221	74	171,6	252,1	-	26,2



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### PERFORMANCE CURVES 50HZ



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

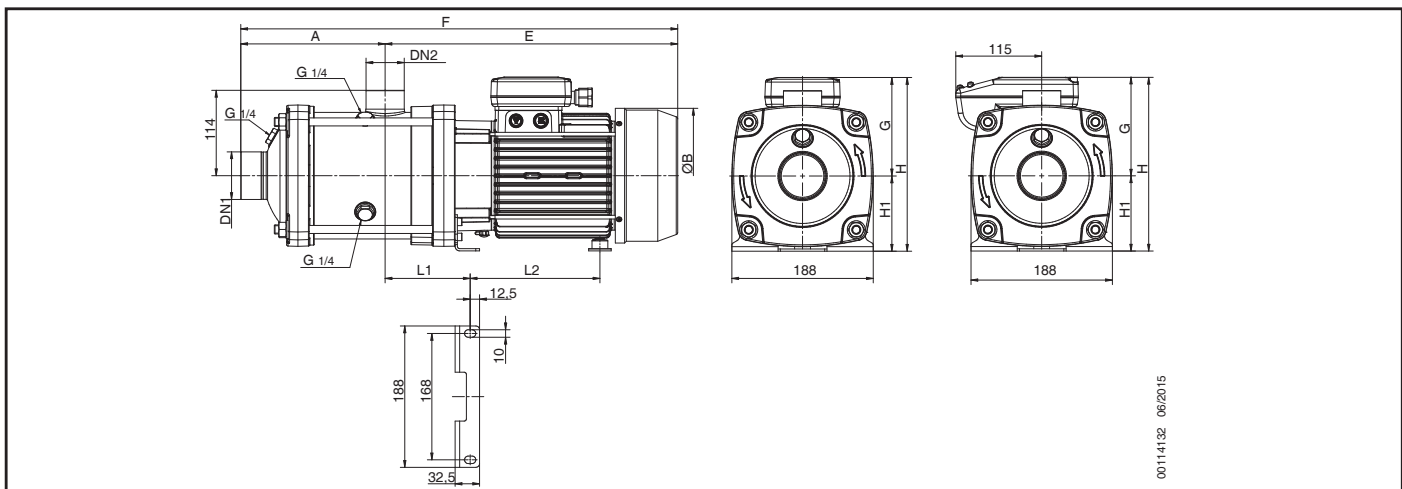
# 15 MH - IE2

## TECHNICAL DATA

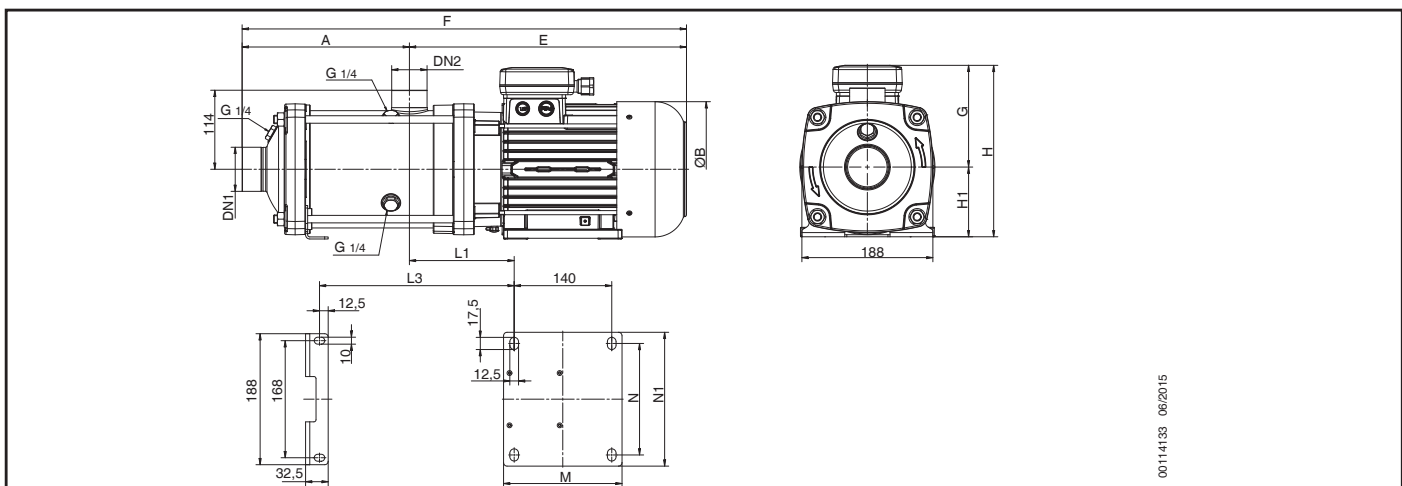
Pumps model		NUMBER OF STAGES	POWER		INPUT POWER	INTERNAL CAPACITOR		RATED CURRENT			
Single-phase	Three-phase IE2		kW	HP		kW	μF	V	Single-phase	Three-phase	
					220-240V					380-415V	660-690V
15 MH 2-51	15 MH 2-53	2	1,5	2	1,67	30	450	7,7	5,9	3,4	-
15 MH 3-51	15 MH 3-53	3	2,2	2,7	2,6	60	450	12,1	7,5	4,3	-
-	15 MH 4-53	4	3	4	3,38	-	-	-	11,5	6,6	-
-	15 MH 5-53	5	4	5,5	4,22	-	-	-	-	7,6	4,3
-	15 MH 6-53	6	5,5	7,5	5,13	-	-	-	-	8,8	5,1
-	15 MH 7-53	7	5,5	7,5	5,91	-	-	-	-	9,8	5,6

## DIMENSIONS AND WEIGHTS

Pumps model		Dimensions																Weight (kg)		
Single-phase	Three-phase IE2	Size	A mm	E mm	F mm	G mm	DN1	DN2	ØB mm	H mm	H1 mm	L1 mm	L2 mm	L3 mm	M mm	N mm	N1 mm	1- Single-phase	3- Three-phase	
																				15 MH 2-51
15 MH 3-51	15 MH 3-53	90	144	388,5	532,5	131	179	231	100	113,1	172,6	-	-	-	-	-	25,4	24,6		
-	15 MH 4-53	90	192	388,5	580,5	131	179	231	100	113,1	172,6	-	-	-	-	-	-	28,6		
-	15 MH 5-53	100	240	397	637	146	194	246	100	150,2	-	279,2	170	160	192	-	-	35,6		
-	15 MH 6-53	112	288	412	700	151	218	263	112	151,7	-	328,7	180	190	220	-	-	47,4		
-	15 MH 7-53	112	336	412	748	151	218	263	112	151,7	-	376,7	180	190	220	-	-	48,8		

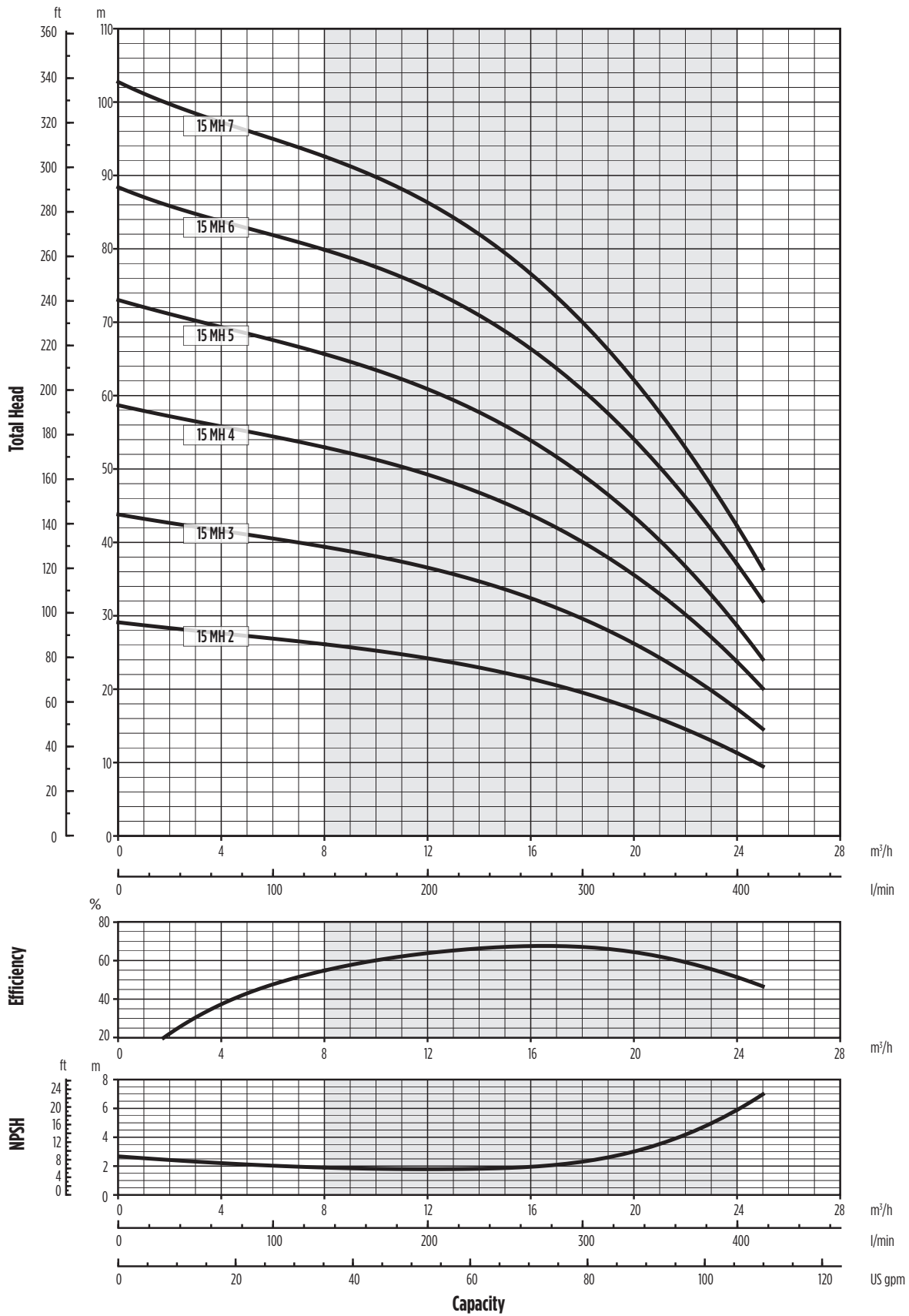


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## PERFORMANCE CURVES 50HZ



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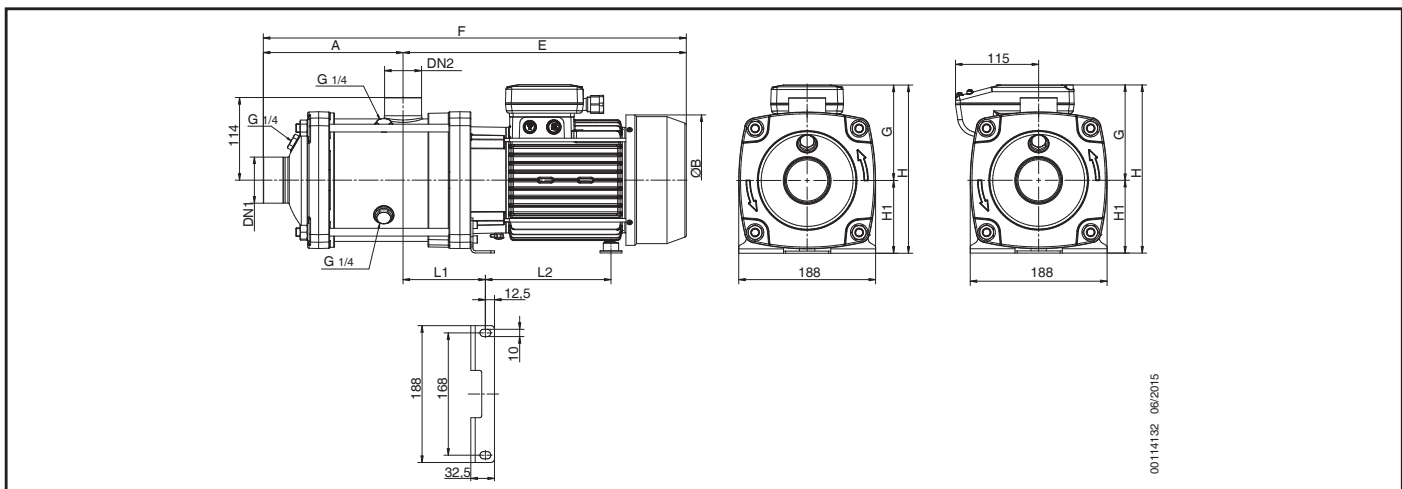
# 20 MH - IE2

## TECHNICAL DATA

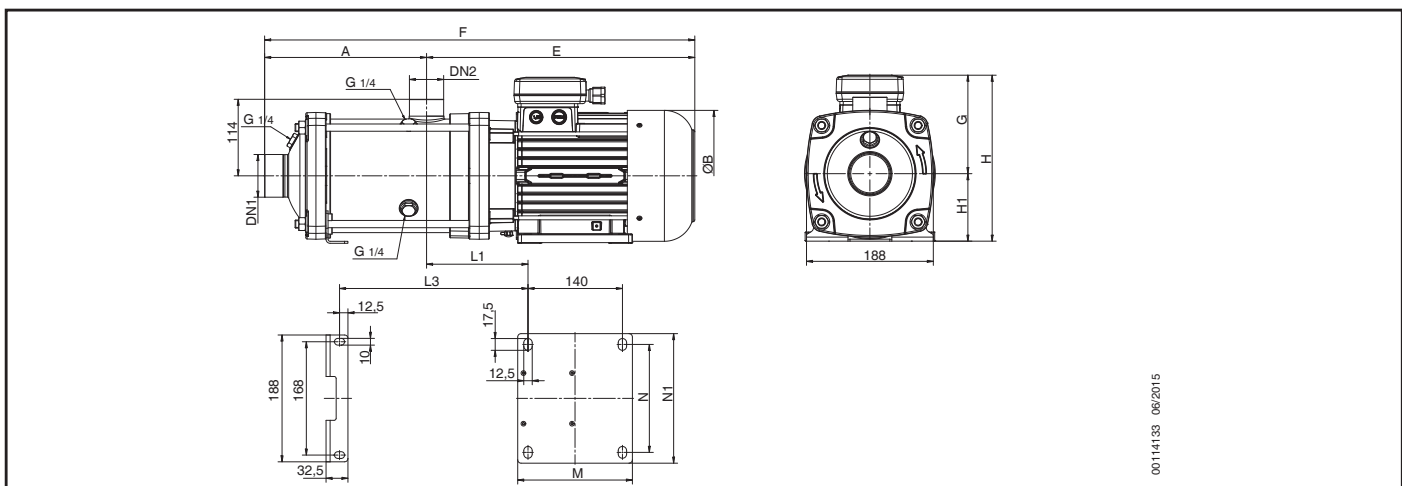
Pumps model		NUMBER OF STAGES	POWER		INPUT POWER	INTERNAL CAPACITOR		RATED CURRENT			
Single-phase	Three-phase IE2		kW	HP		kW	µF	V	Single-phase	Three-phase	
					220-240V					380-415V	660-690V
<b>20 MH 2-51</b>	<b>20 MH 2-53</b>	2	2,2	3	2,45	60	450	11,4	7,1	4,1	-
-	<b>20 MH 3-53</b>	3	3	4	3,53	-	-	-	11,8	6,8	-
-	<b>20 MH 4-53</b>	4	4	5,5	4,66	-	-	-	-	8,2	4,7
-	<b>20 MH 5-53</b>	5	5,5	7,5	5,89	-	-	-	-	9,7	5,6

## DIMENSIONS AND WEIGHTS

Pumps model		Size	Dimensions														Weight (kg)			
Single-phase	Three-phase IE2		A mm	E mm	F mm	G mm	DN1	DN2	ØB mm	H mm	H1 mm	L1 mm	L2 mm	L3 mm	M mm	N mm	N1 mm	1- Single-phase	3- Three-phase	
<b>20 MH 2-51</b>	<b>20 MH 2-53</b>	90	144	388,5	532,5	131	Rp 2"	Rp 1" ½	179	231	100	113,1	172,6	-	-	-	-	25,2	24,4	
-	<b>20 MH 3-53</b>	90	144	388,5	532,5	131			179	231	100	113,1	172,6	-	-	-	-	-	-	27,4
-	<b>20 MH 4-53</b>	100	192	397	589	146			194	246	100	150,2	-	231,2	170	160	192	-	-	34,4
-	<b>20 MH 5-53</b>	112	240	412	652	151			218	263	112	151,7	-	280,7	180	190	220	-	-	46

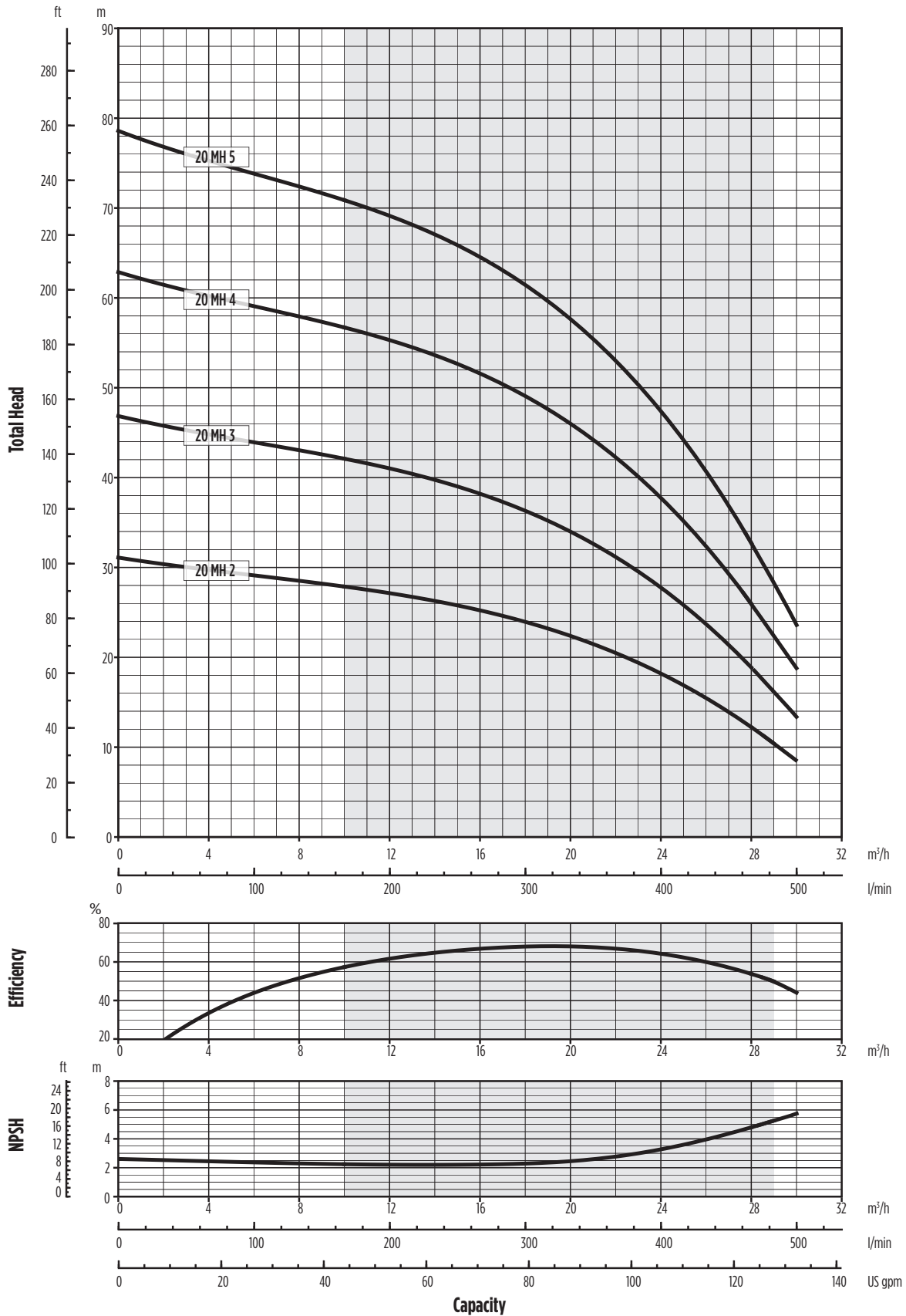


00114132 06/2015



00114133 06/2015

### PERFORMANCE CURVES 50HZ



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

0014313K 04/2016



# **MH Series with IE3 motors**

## **Technical data and Performance curves**

# MOTOR SPECIFICATIONS

Asynchronous, TEFC (Totally Enclosed, Fan-Cooled)

2 pole

IP55

Insulation class F

Starts per hour

- for motor power up to 3kW the allowed starts are 60. Waiting time between two consecutive starts 1 minute
- for motor power from 4kW the allowed starts are 30. Waiting time between two consecutive starts 2 minutes

## SINGLE-PHASE VERSION

Standard voltage 220-240V ± 5%

Thermal protection built into the motor

## THREE-PHASE VERSION

### IE3 Premium Efficiency Motors

IE efficiency according to IEC 60034-30-1:2014

Electrical performances according to IEC 60034-2-1:2007

Standard voltage:

- 220-240 / 380-415V ± 5 % up to 3kW.
- 380-415 / 660-690V ± 5 % from 4kW.

Thermal protection to be provide into the starter panel by the installer.

# SINGLE-PHASE MOTORS AT 50HZ

P <sub>N</sub>	IEC SIZE	INPUT CURRENT IN [A]	CAPACITOR		DATA FOR 230 V 50 Hz VOLTAGE						
					nN	I <sub>s</sub> / I <sub>N</sub>	η %	cosφ	T <sub>N</sub>	T <sub>s</sub> / T <sub>N</sub>	T <sub>M</sub> / T <sub>N</sub>
kW		230V	μF	V	min <sup>-1</sup>				Nm		
0,33	71	2,50	16	450	2920	6,5	64,8	0,88	1,08	1,00	1,60
0,45	71	3,00	16	450	2890	5,4	69,7	0,92	1,5	0,72	1,60
0,55	71	3,50	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	6,60	30	450	2820	3,9	77,0	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	0,50	1,92
1,85	80	10,90	30	450	2760	2,8	76,6	0,96	6,4	0,39	2,40
2,2	90	12,60	60	450	2870	2,2	76,7	0,99	7,3	0,51	1,99

## THREE-PHASE MOTORS AT 50HZ

P <sub>N</sub>	Rendimento / Efficiency ηN %						IE
	Δ 230 V Y 400 V			Δ 400 V Y 690 V			
[kW]	4/4	3/4	2/4	4/4	3/4	2/4	
0,75	80,9	81,5	79,6	-	-	-	3
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	87,1	87,5	86,1	-	-	-	
4	-	-	-	88,1	88,7	87,7	
5,5	-	-	-	89,2	89,4	88,1	

P <sub>N</sub>	IEC SIZE	N. of Poles	f <sub>N</sub>	DATA FOR 400 V 50 Hz VOLTAGE				
				cosφ	I <sub>s</sub> / I <sub>N</sub>	T <sub>N</sub>	T <sub>s</sub> / T <sub>N</sub>	T <sub>M</sub> / T <sub>N</sub>
kW			Hz			[Nm]		
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 <sub>N</sub>	Voltage U <sub>N</sub>				n <sub>N</sub>	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
[kW]	I <sub>N</sub> [A]				[min <sup>-1</sup> ]			
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	8,0	4,6	-	-	2880			
3	10,4	6,0	-	-	2900			
4	-	-	7,7	4,4	2900			
5,5	-	-	11,0	6,4	2900			

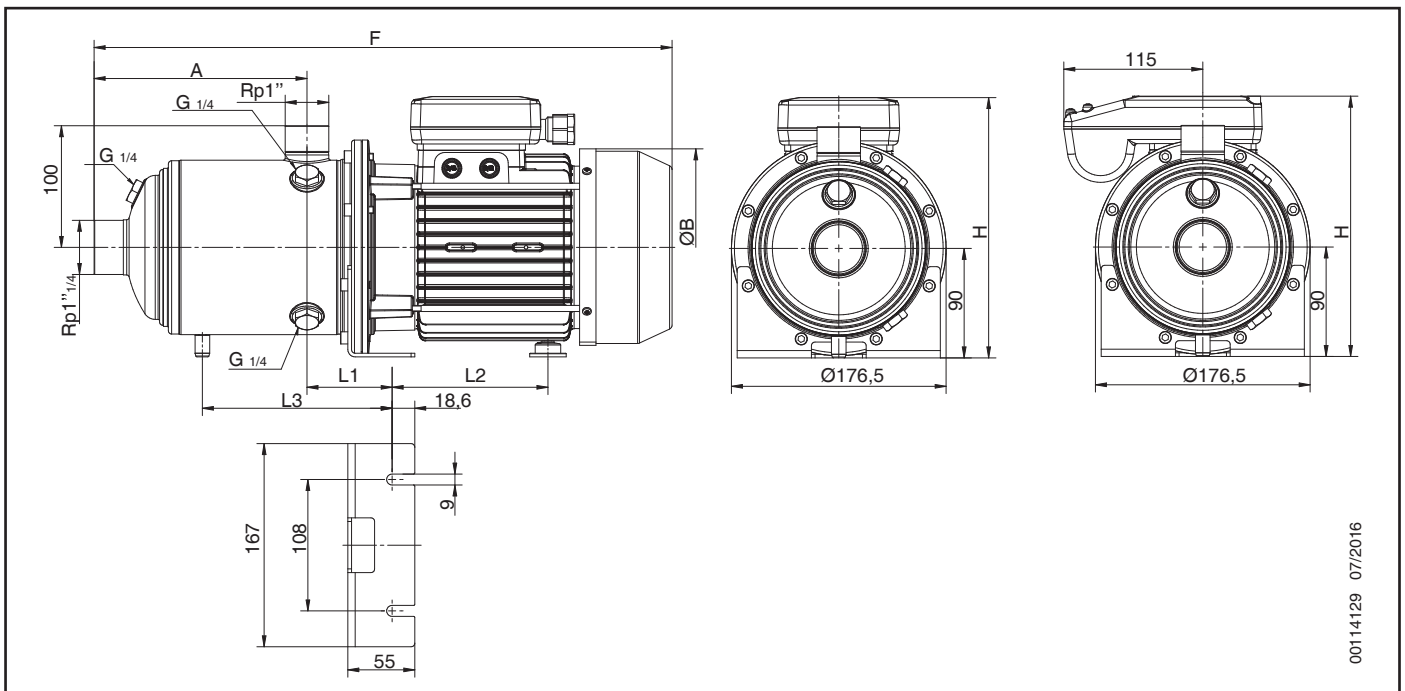
# 3 MH - IE3

## SINGLE-PHASE ELECTRIC PUMP CHARACTERISTICS

Pumps model	MOTOR SIZE	MOTOR NOMINAL POWER		INPUT POWER kW	CAPACITOR 450V µF	INPUT CURRENT [A] 220-240 V	DIMENSIONS [mm]						Weight (kg)	
		kW	HP				A	F	ØB	H	L1	L2		L3
3 MH 2-51	71	0,33	0,45	0,46	16	2,5	103	361	144	207	70	100,6	-	11,2
3 MH 3-51	71	0,45	0,6	0,60	16	3,0	103	361	144	207	70	100,6	-	11,4
3 MH 4-51	71	0,55	0,75	0,76	16	3,7	127	385	144	207	70	100,6	-	11,8
3 MH 5-51	71	0,75	1	0,91	16	4,3	151	409	144	207	70	100,6	-	12,4
3 MH 6-51	71	0,9	1,2	1,13	30	5,4	175	433	144	207	70	100,6	-	14,4
3 MH 7-51	71	1,1	1,5	1,28	30	6,0	199	457	144	207	70	100,6	180	15
3 MH 8-51	80	1,3	1,8	1,43	30	6,9	223	523	162	214	70	128,1	204	18,8
3 MH 9-51	80	1,5	2	1,58	30	7,5	247	547	162	214	70	128,1	228	19,4

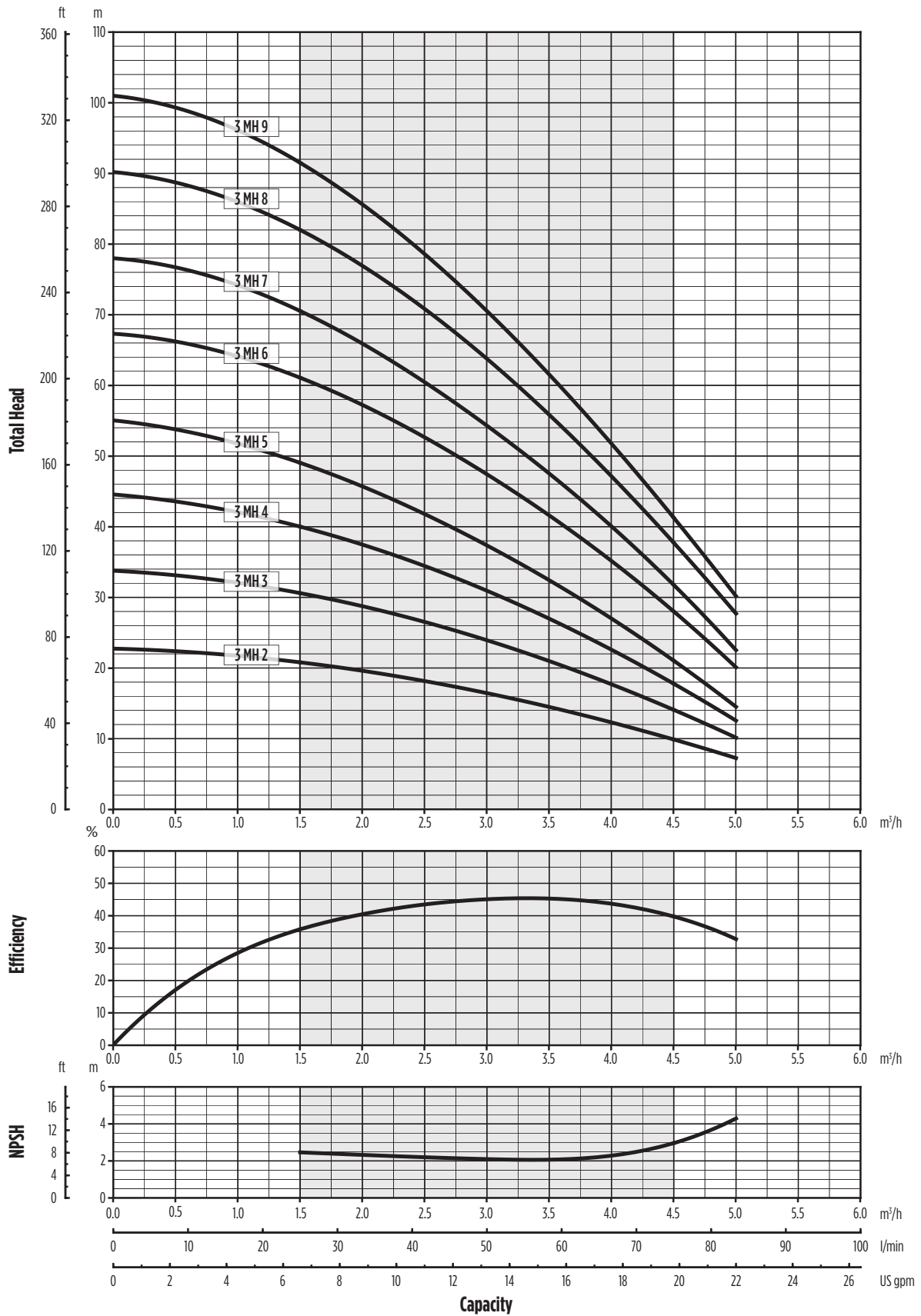
## THREE-PHASE IE3 ELECTRIC PUMP CHARACTERISTICS

Pumps model	MOTOR SIZE	MOTOR NOMINAL POWER		INPUT POWER kW	INPUT CURRENT [A]		DIMENSIONS [mm]						Weight (kg)	
		kW	HP		220-240 V	380-415 V	A	F	ØB	H	L1	L2		L3
3 MH 2-53	71	0,75	1	0,55	2,1	1,2	103	361	144	207	70	100,6	-	11
3 MH 3-53	71	0,75	1	0,77	2,5	1,4	103	361	144	207	70	100,6	-	12,6
3 MH 4-53	71	1,1	1,5	0,99	3,2	1,9	127	385	144	207	70	100,6	-	13,2
3 MH 5-53	71	1,1	1,5	1,21	3,7	2,2	151	409	144	207	70	100,6	-	13,6
3 MH 6-53	80	1,5	2	1,50	5,0	2,9	175	475	162	214	70	128,1	-	17,4
3 MH 7-53	80	1,5	2	1,72	5,5	3,2	199	499	162	214	70	128,1	180	18
3 MH 8-53	90	2,2	3	2,16	7,5	4,4	223	568	179	221	70	171,6	204	22,6
3 MH 9-53	90	2,2	3	2,40	8	4,6	247	592	179	221	70	171,6	228	23



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### PERFORMANCE CURVES 50HZ



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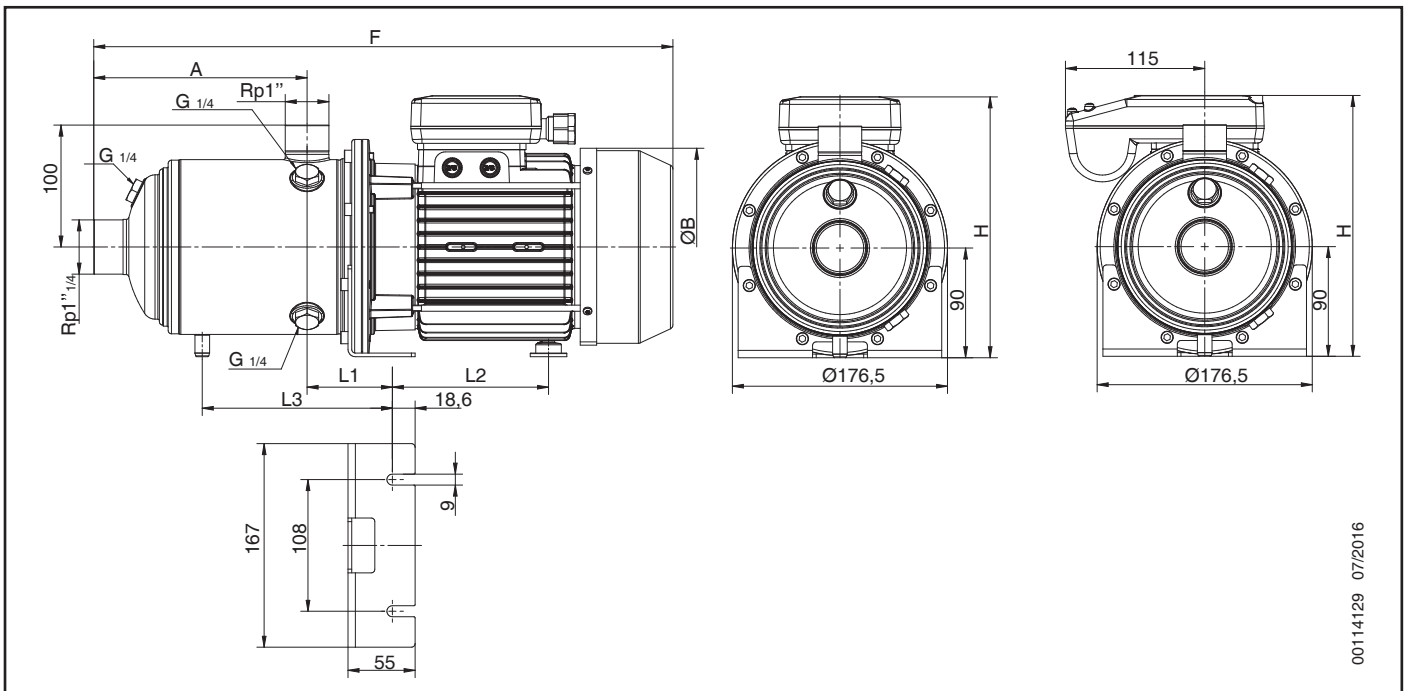
# 5 MH - IE3

## SINGLE-PHASE ELECTRIC PUMP CHARACTERISTICS

Pumps model	MOTOR SIZE	MOTOR NOMINAL POWER		INPUT POWER	CAPACITOR 450V	INPUT CURRENT [A]	DIMENSIONS [mm]						Weight (kg)	
		kW	HP	kW	µF	220-240 V	A	F	ØB	H	L1	L2		L3
5 MH 2-51	71	0,45	0,6	0,59	16	3,0	103	361	144	207	70	100,6	-	11,2
5 MH 3-51	71	0,55	0,75	0,81	16	3,9	103	361	144	207	70	100,6	-	11,4
5 MH 4-51	71	0,9	1,2	1,10	30	5,3	127	385	144	207	70	100,6	-	13,4
5 MH 5-51	71	1,1	1,5	1,32	30	6,2	151	409	144	207	70	100,6	-	14
5 MH 6-51	80	1,3	1,8	1,53	30	7,3	175	475	162	214	70	128,1	-	17,8
5 MH 7-51	80	1,5	2	1,74	30	8,2	199	499	162	214	70	128,1	180	18,2
5 MH 8-51	80	1,85	2,5	1,94	30	8,9	223	523	162	214	70	128,1	204	18,8
5 MH 9-51	90	2,2	3	2,59	60	11,4	247	592	179	221	70	171,6	228	24,8

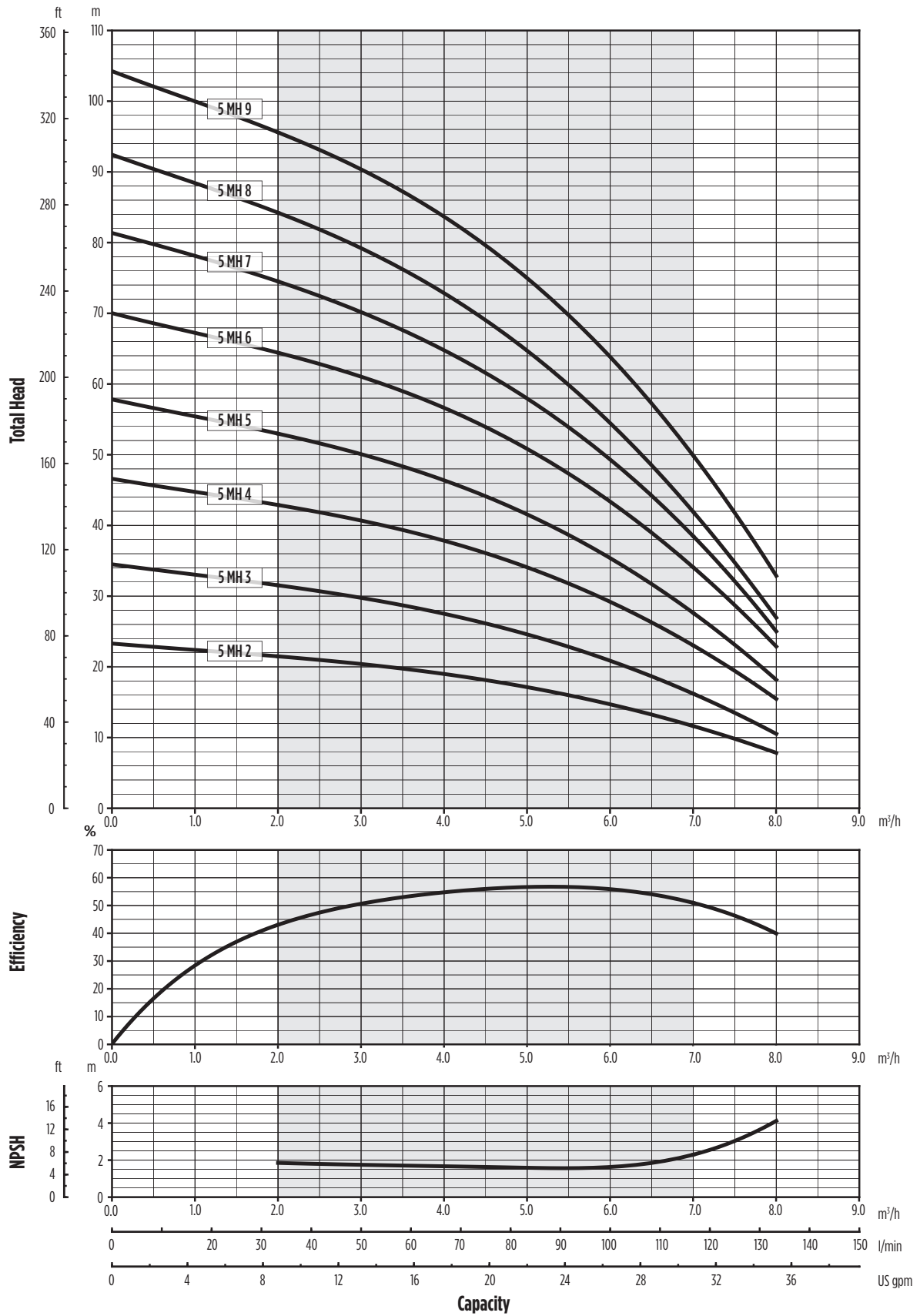
## THREE-PHASE IE3 ELECTRIC PUMP CHARACTERISTICS

Pumps model	MOTOR SIZE	MOTOR NOMINAL POWER		INPUT POWER	INPUT CURRENT [A]		DIMENSIONS [mm]						Weight (kg)	
		kW	HP	kW	220-240 V	380-415 V	A	F	ØB	H	L1	L2		L3
5 MH 2-53	71	0,75	1	0,55	2,1	1,2	103	361	144	207	70	100,6	-	11
5 MH 3-53	71	0,75	1	0,77	2,5	1,4	103	361	144	207	70	100,6	-	12,6
5 MH 4-53	71	1,1	1,5	0,99	3,2	1,9	127	385	144	207	70	100,6	-	13,2
5 MH 5-53	71	1,1	1,5	1,21	3,7	2,2	151	409	144	207	70	100,6	-	13,6
5 MH 6-53	80	1,5	2	1,50	5,0	2,9	175	475	162	214	70	128,1	-	17,4
5 MH 7-53	80	1,5	2	1,72	5,5	3,2	199	499	162	214	70	128,1	180	18
5 MH 8-53	90	2,2	3	2,06	6,8	3,9	223	568	179	221	70	171,6	204	22,6
5 MH 9-53	90	2,2	3	2,29	7,4	4,3	247	592	179	221	70	171,6	228	23



00114129 07/2016

### PERFORMANCE CURVES 50HZ



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

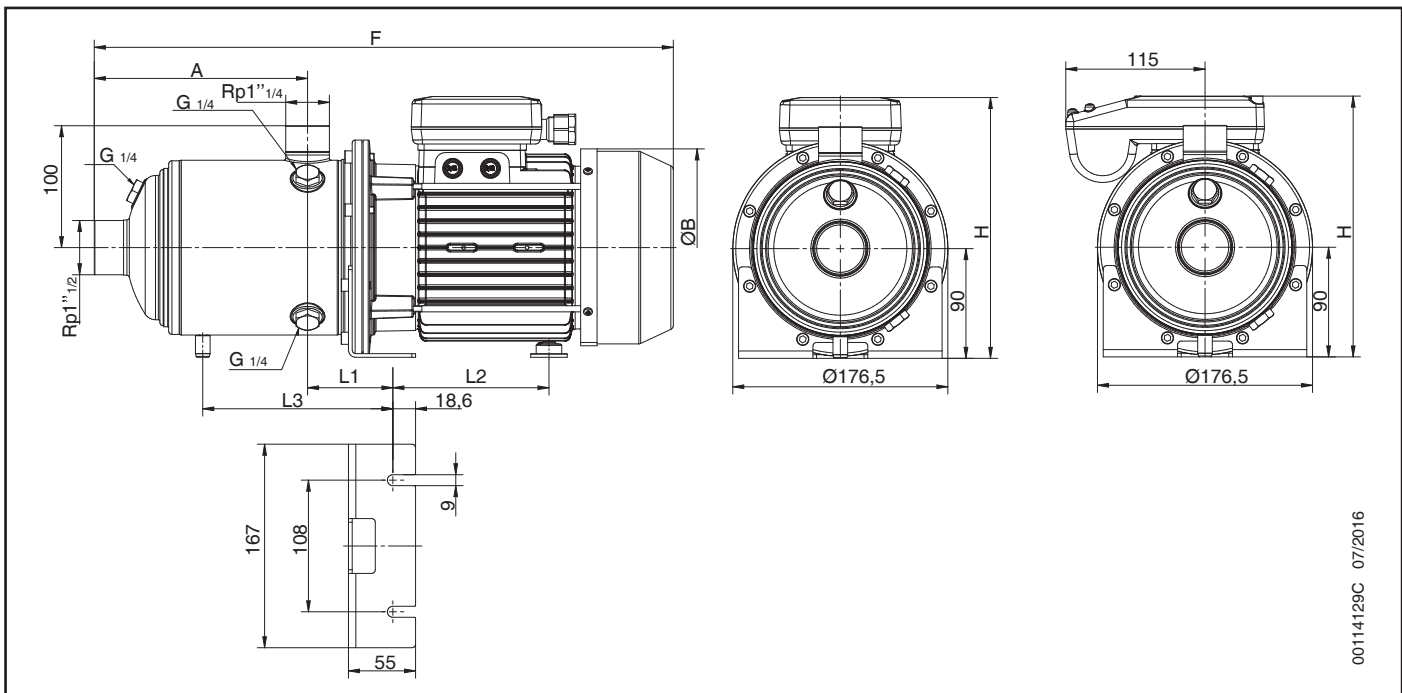
# 9 MH - IE3

## SINGLE-PHASE ELECTRIC PUMP CHARACTERISTICS

Pumps model	MOTOR SIZE	MOTOR NOMINAL POWER		INPUT POWER kW	CAPACITOR 450V µF	INPUT CURRENT [A]		DIMENSIONS [mm]						Weight (kg)
		kW	HP			220-240 V	A	F	ØB	H	L1	L2	L3	
9 MH 2-51	71	0,75	1	0,91	16	4,3	118	380	144	207	74	100,6	-	11,6
9 MH 3-51	71	1,1	1,5	1,35	30	6,3	118	380	144	207	74	100,6	-	13,2
9 MH 4-51	80	1,5	2	1,74	30	8,2	148	452	162	214	74	128,1	-	17
9 MH 5-51	90	2,2	3	2,51	60	11,1	178	527	179	221	74	171,6	-	23
9 MH 6-51	90	2,2	3	2,89	60	12,7	208	557	179	221	74	171,6	192,1	23,8
9 MH 7-51	90	2,2	3	3,30	60	14,5	238	587	179	221	74	171,6	222,1	24,4

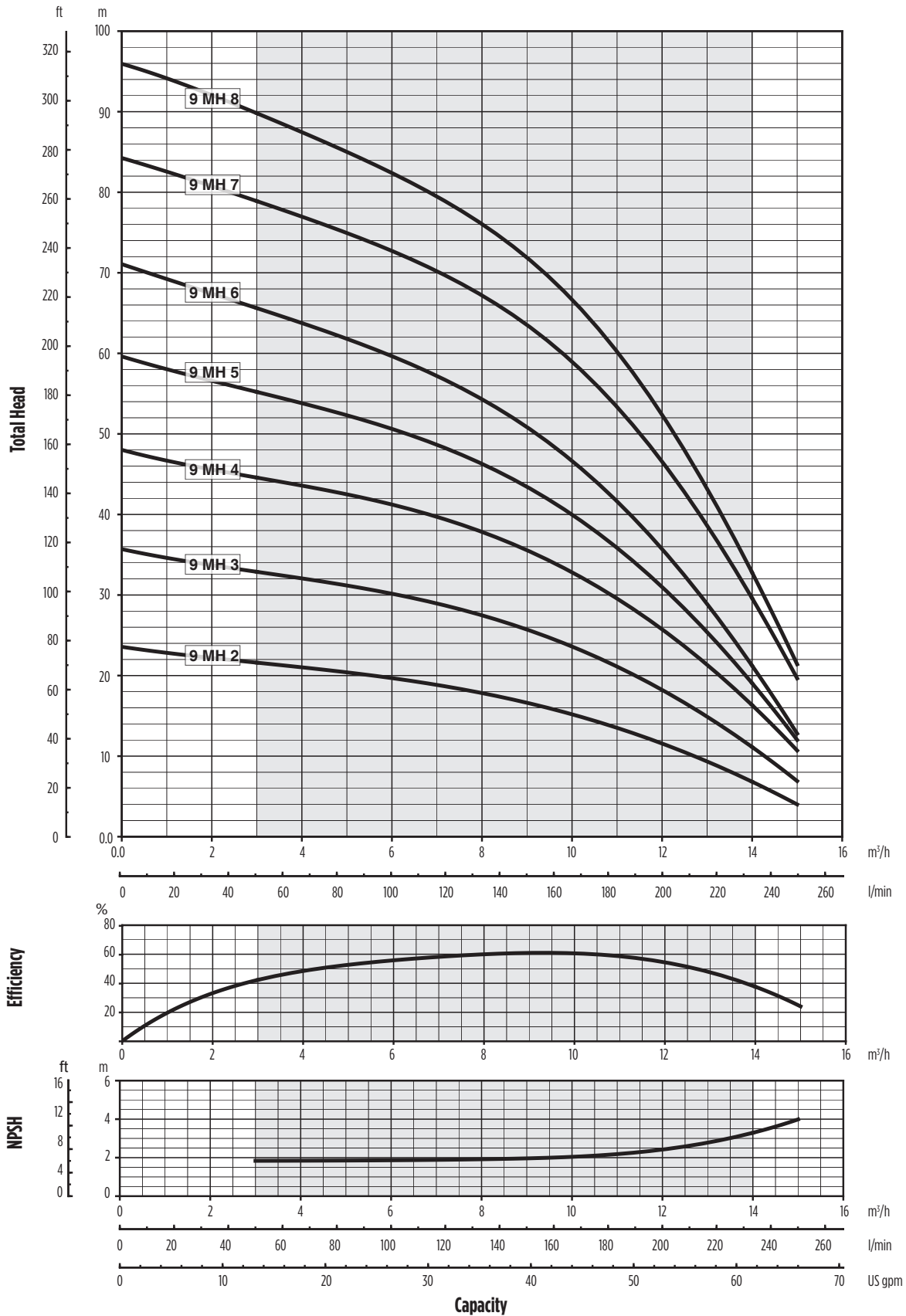
## THREE-PHASE IE3 ELECTRIC PUMP CHARACTERISTICS

Pumps model	MOTOR SIZE	MOTOR NOMINAL POWER		INPUT POWER kW	INPUT CURRENT [A]		DIMENSIONS [mm]						Weight (kg)	
		kW	HP		220-240 V	380-415 V	A	F	ØB	H	L1	L2		L3
9 MH 2-53	71	0,75	1	0,87	2,7	1,6	118	380	144	207	74	100,6	-	12,8
9 MH 3-53	71	1,1	1,5	1,24	3,8	2,2	118	380	144	207	74	100,6	-	12,8
9 MH 4-53	80	1,5	2	1,70	5,5	3,2	148	452	162	214	74	128,1	-	16,8
9 MH 5-53	90	2,2	3	2,20	7,8	4,5	178	527	179	221	74	171,6	-	21,4
9 MH 6-53	90	2,2	3	2,61	8,7	5,0	208	557	179	221	74	171,6	192,1	22
9 MH 7-53	90	3	4	3,24	11,1	6,4	238	587	179	221	74	171,6	222,1	25,4
9 MH 8-53	90	3	4	3,59	11,9	6,9	268	617	179	221	74	171,6	252,1	26,2



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### PERFORMANCE CURVES 50HZ



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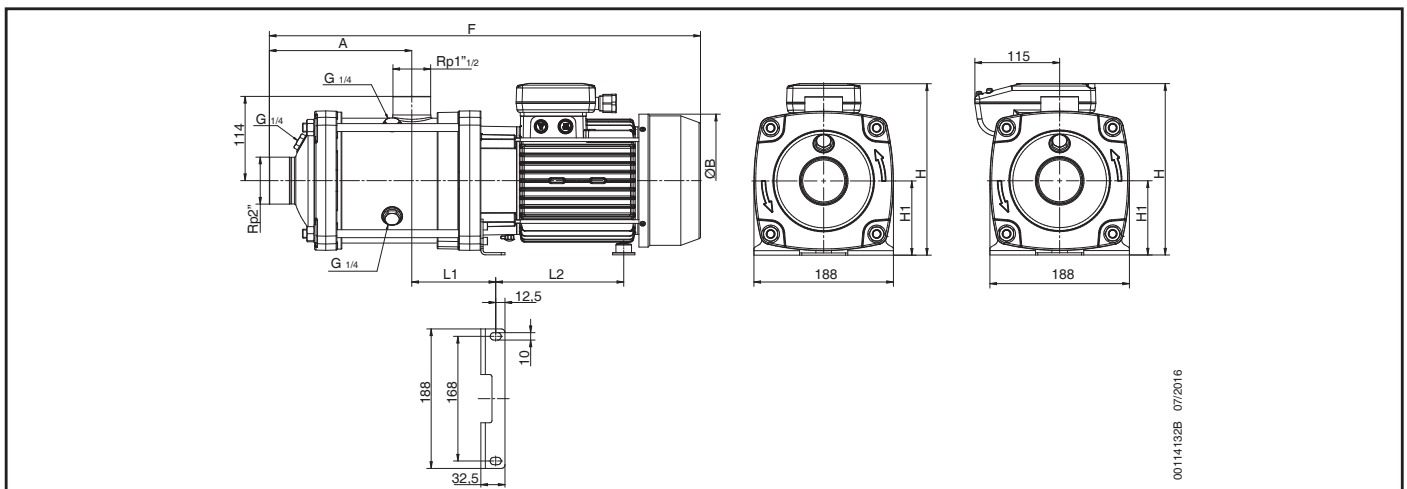
# 15 MH - IE3

## SINGLE-PHASE ELECTRIC PUMP CHARACTERISTICS

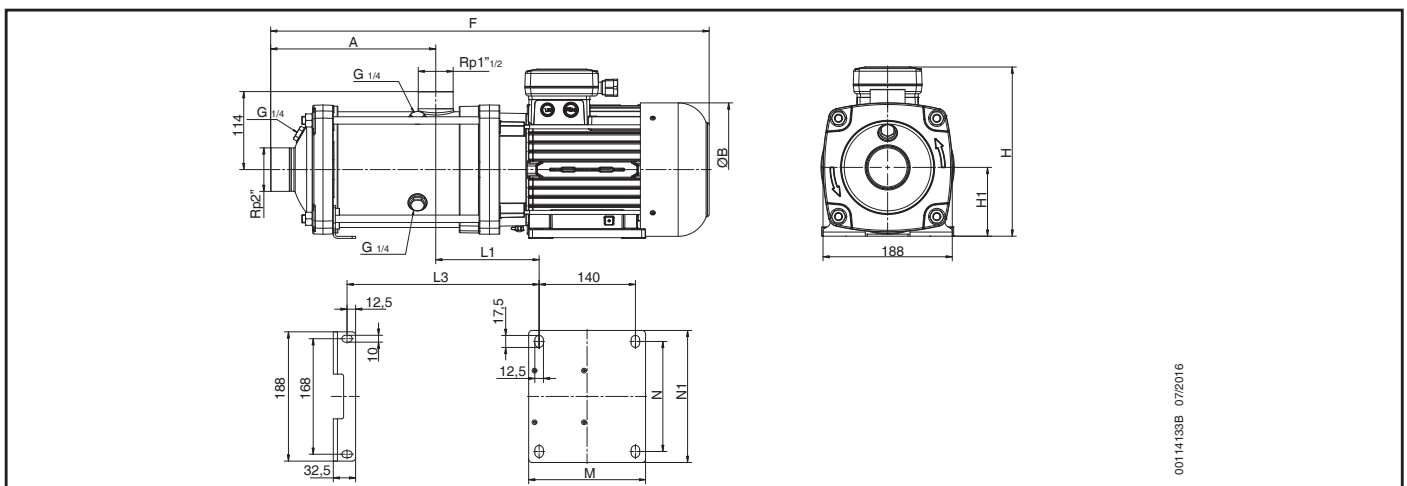
Pumps model	MOTOR SIZE	MOTOR NOMINAL POWER		INPUT POWER kW	CAPACITOR 450V µF	INPUT CURRENT [A] 220-240 V	DIMENSIONS [mm]									Weight (kg)		
		kW	HP				A	F	ØB	H	HI	L1	L2	L3	M		N	NI
15 MH 2-51	80	1,5	2	1,63	30	7,7	144	488	162	224	100	129,1	129,1	-	-	-	-	20,2
15 MH 3-51	90	2,2	3	2,74	60	12,1	144	532,5	179	231	100	113,1	172,6	-	-	-	-	25,4

## THREE-PHASE IE3 ELECTRIC PUMP CHARACTERISTICS

Pumps model	MOTOR SIZE	MOTOR NOMINAL POWER		INPUT POWER kW	INPUT CURRENT [A]			DIMENSIONS [mm]									Weight (kg)		
		kW	HP		220-240 V	380-415 V	660-690 V	A	F	ØB	H	HI	L1	L2	L3	M		N	NI
15 MH 2-53	80	1,5	2	1,60	5,3	3,0	-	144	488	162	224	100	113,1	129,1	-	-	-	-	20,2
15 MH 3-53	90	2,2	3	2,6	7,5	4,3	-	144	532,5	179	231	100	113,1	172,6	-	-	-	-	24,6
15 MH 4-53	90	3	4	3,38	11,5	6,6	-	192	580,5	179	231	100	113,1	172,6	-	-	-	-	28,6
15 MH 5-53	100	4	5,5	4,09	-	7,0	4,1	240	637	194	246	100	150,2	-	279,2	170	160	192	35,6
15 MH 6-53	112	5,5	7,5	4,95	-	9,3	5,4	288	700	218	263	112	151,7	-	328,7	180	190	220	47,4
15 MH 7-53	112	5,5	7,5	5,71	-	10,3	6,0	336	748	218	263	112	151,7	-	376,7	180	190	220	48,8

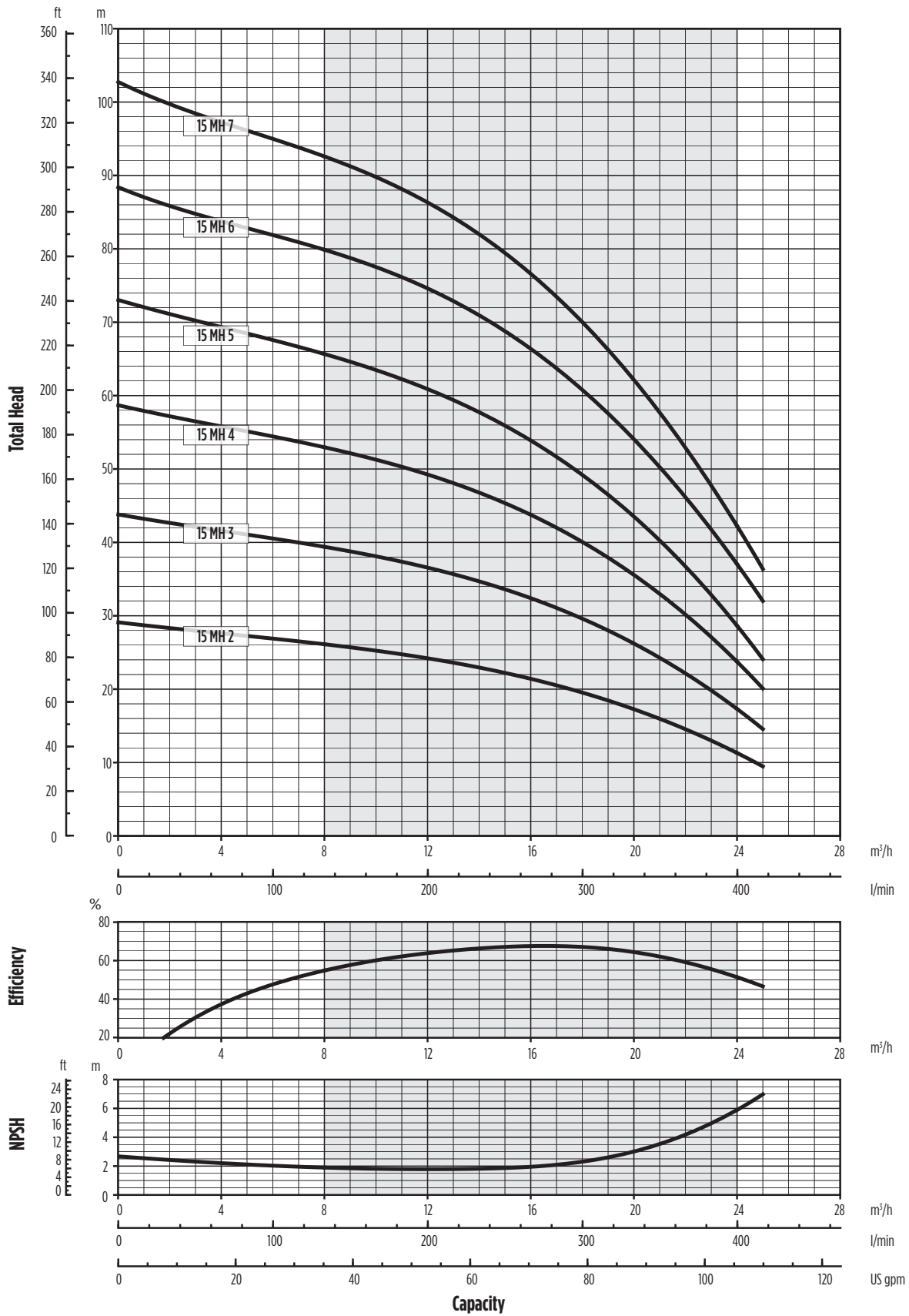


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## PERFORMANCE CURVES 50HZ



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

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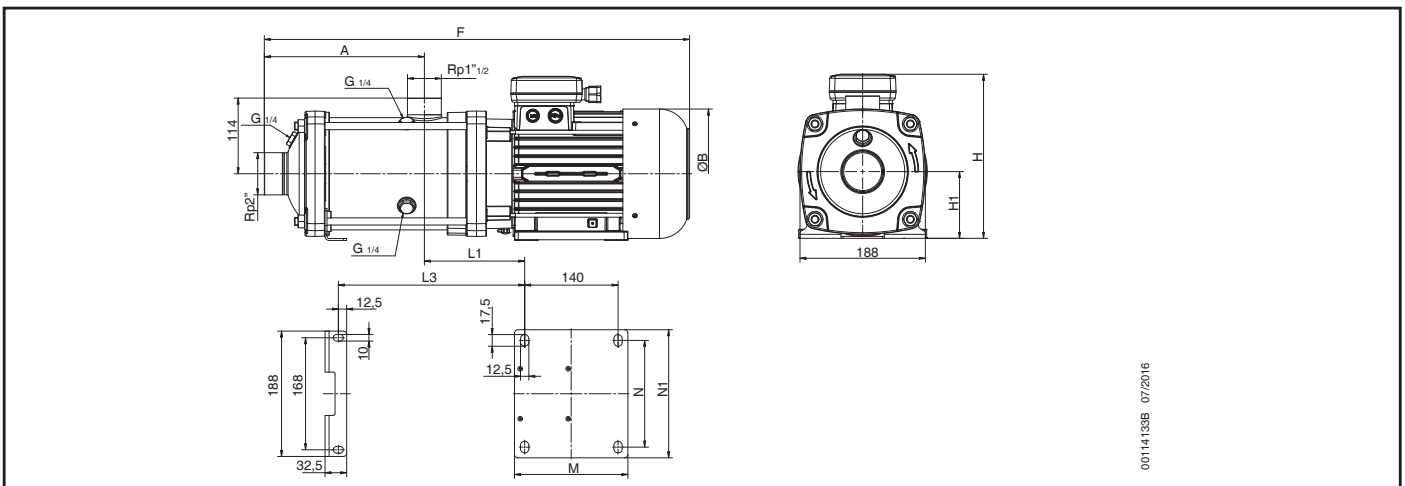
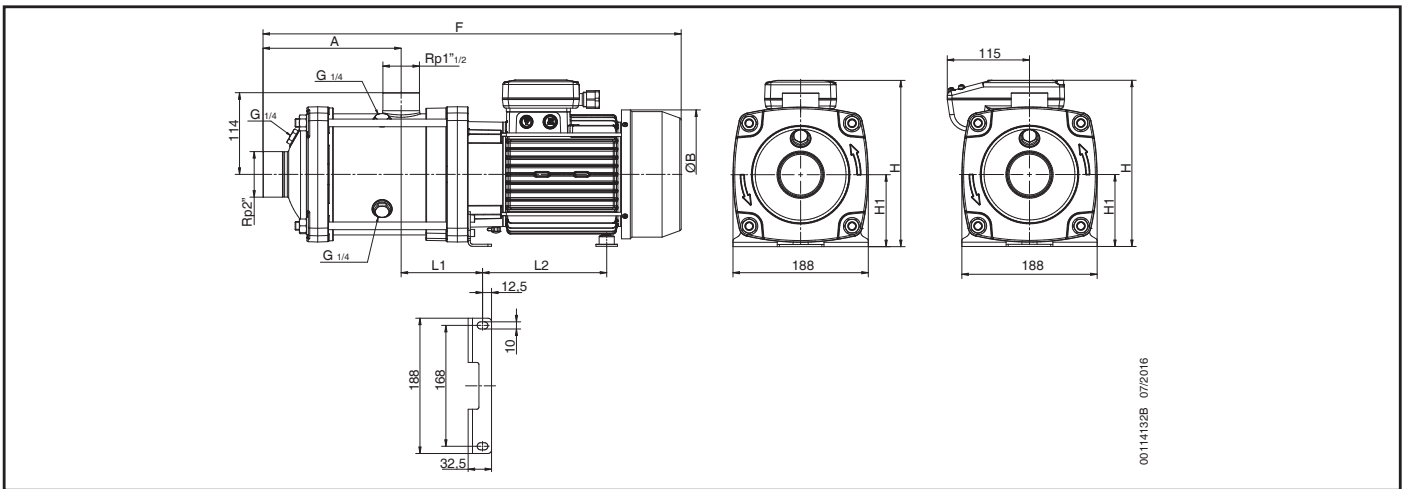
# 20 MH - IE3

## SINGLE-PHASE ELECTRIC PUMP CHARACTERISTICS

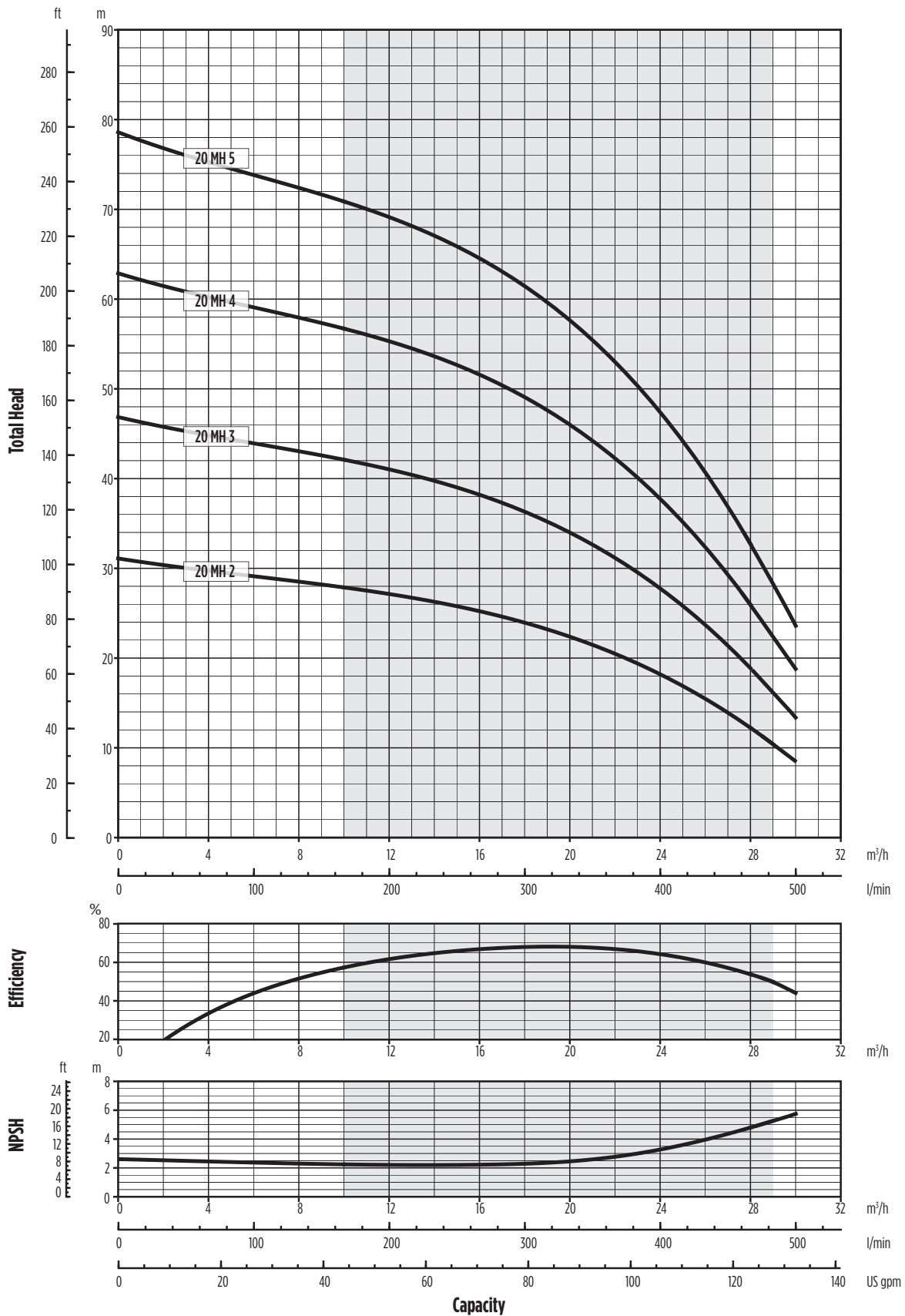
Pumps model	MOTOR SIZE	MOTOR NOMINAL POWER		INPUT POWER	CAPACITOR 450V	INPUT CURRENT [A]	DIMENSIONS [mm]									Weight (kg)		
		kW	HP	kW	µF	220-240 V	A	F	ØB	H	H1	L1	L2	L3	M		N	N1
<b>20 MH 2-51</b>	90	2,2	3	2,59	60	11,4	144	532,5	179	231	100	113,1	172,6	-	-	-	-	25,2

## THREE-PHASE IE3 ELECTRIC PUMP CHARACTERISTICS

Pumps 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
<b>20 MH 2-53</b>	90	2,2	3	2,45	7,1	4,1	-	144	532,5	179	231	100	113,1	172,6	-	-	-	24,4	
<b>20 MH 3-53</b>	90	3	4	3,51	11,8	6,8	-	144	532,5	179	231	100	113,1	172,6	-	-	-	27,4	
<b>20 MH 4-53</b>	100	4	5,5	4,53	-	7,7	4,4	192	589	194	246	100	150,2	-	231,2	170	160	192	34,4
<b>20 MH 5-53</b>	112	5,5	7,5	5,69	-	10,3	6,0	240	652	218	263	112	151,7	-	280,7	180	190	220	46



## PERFORMANCE CURVES 50HZ



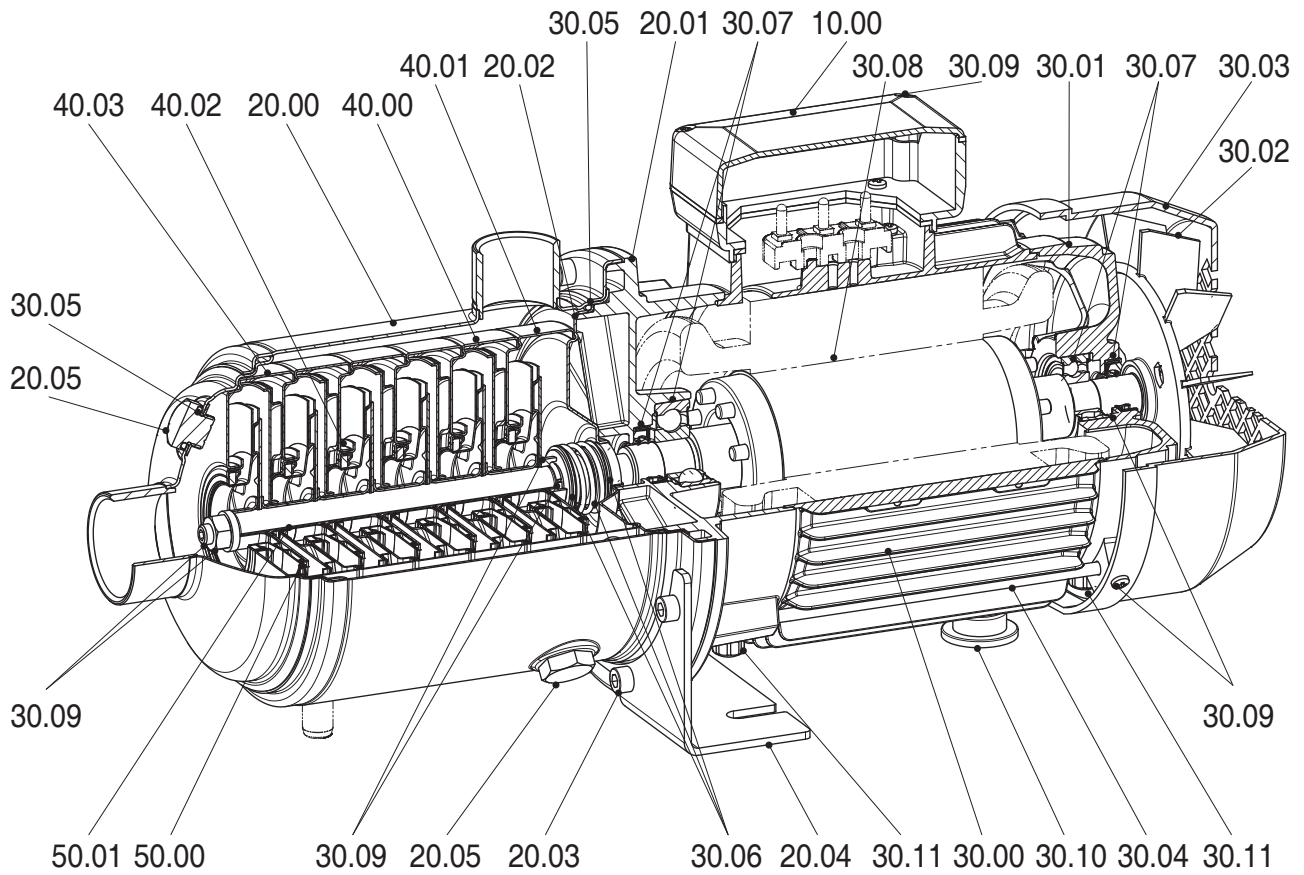
The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B



# **MH Series Pump Section and List of Main Components**

# MH Series pump section and List of Main components

## 3 - 5 - 9 MH



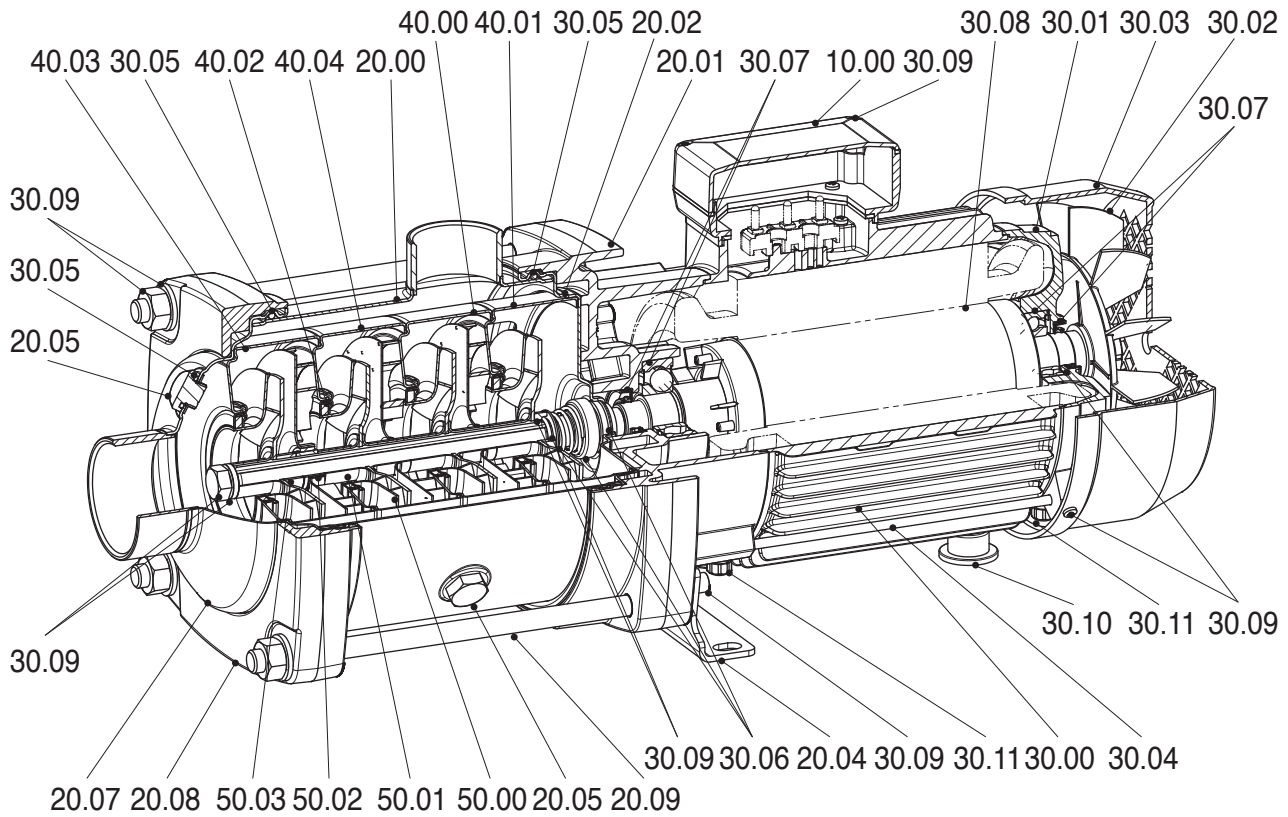
00114134 06/2015

Ref. N.	Description
10.00	Terminal box cover
20.00	Pump casing
20.01	Motor bracket
20.02	Seal housing
20.03	Screws for pump casing
20.04	Support foot
20.05	Filling and draining plugs
30.00	Motor housing and stator
30.01	Bearing housing
30.02	Fan
30.03	Fan cover
30.04	Motor tie rod
30.05	O-Rings

Ref. N.	Description
30.06	Mechanical seals
30.07	Ball bearings and lip seal
30.08	Rotor and pump shaft
30.09	Screws, nuts and washers
30.10	Motor foot
30.11	Valve plug
40.00	Stage housing and diffuser
40.01	Last stage with holes
40.02	Floating neck ring assembly
40.03	Initial stage housing
50.00	Impeller
50.01	Impeller spacers

# MH Series pump section and List of Main components

## 15 - 20 MH



(Configuration up to 3kW)

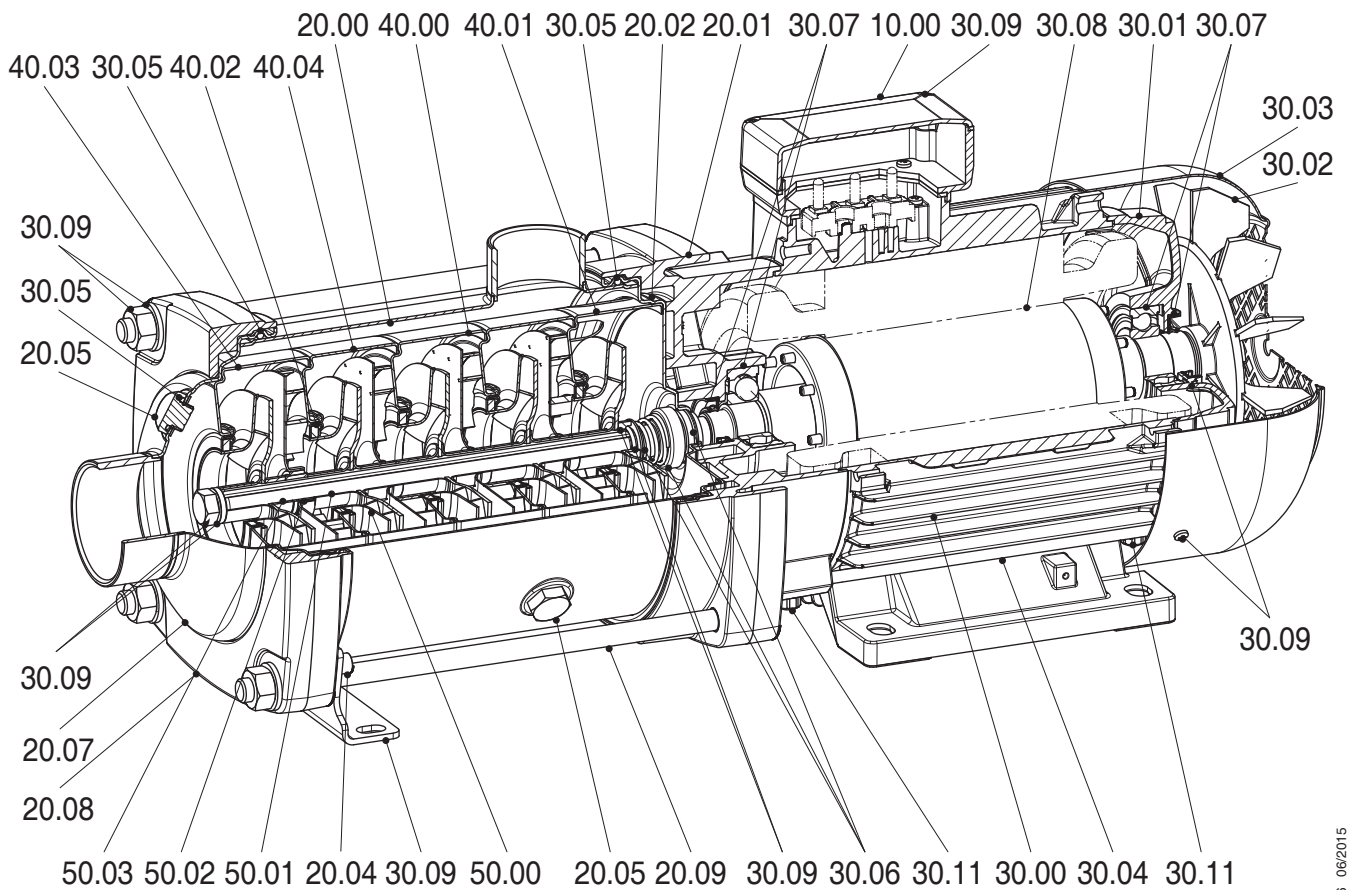
00114135FK 06/2016

Ref. N.	Description
10.00	Terminal box cover
20.00	Pump casing
20.01	Motor bracket
20.02	Seal housing
20.04	Support foot
20.05	Filling and draining plugs
20.07	Inlet cover
20.08	Flange
20.09	Pump casing tie rods
30.00	Motor housing and stator
30.01	Bearing housing
30.02	Fan
30.03	Fan cover
30.04	Motor tie rod
30.05	O-Rings

Ref. N.	Description
30.06	Mechanical seals
30.07	Ball bearings and lip seal
30.08	Rotor and pump shaft
30.09	Screws, nuts and washers
30.10	Motor foot
30.11	Valve plug
40.00	Stage housing and diffuser
40.01	Last stage with holes
40.02	Floating neck ring assembly
40.03	Initial stage housing
40.04	Stage housing and diffuser with bearing
50.00	Impeller
50.01	Impeller spacers
50.02	Intermediary sleeve
50.03	Intermediary sleeve spacer

# MH Series pump section and List of Main components

## 15 - 20 MH



(Configuration from 4kW)

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Ref. N.	Description
10.00	Terminal box cover
20.00	Pump casing
20.01	Motor bracket
20.02	Seal housing
20.04	Support foot
20.05	Filling and draining plugs
20.07	Inlet cover
20.08	Flange
20.09	Pump casing tie rods
30.00	Motor housing and stator
30.01	Bearing housing
30.02	Fan
30.03	Fan cover
30.04	Motor tie rod
30.05	O-Rings

Ref. N.	Description
30.06	Mechanical seals
30.07	Ball bearings and lip seal
30.08	Rotor and pump shaft
30.09	Screws, nuts and washers
30.10	Motor foot
30.11	Valve plug
40.00	Stage housing and diffuser
40.01	Last stage with holes
40.02	Floating neck ring assembly
40.03	Initial stage housing
40.04	Stage housing and diffuser with bearing
50.00	Impeller
50.01	Impeller spacers
50.02	Intermediary sleeve
50.03	Intermediary sleeve spacer



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NOTE: Franklin Electric s.r.l. reserves the right to amend specification without prior notice

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