MH, MHI & MHN SERIES

DATA BOOKLET

FIPL

Horizontal Multistage End-Suction Pumps

50 Hz

Lubi

Passion for Pumps

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FIPL

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Declaration of Conformity

We, **Lubi** hereby declare under our sole responsibility that the products **MH, MHI** and **MHN** to which this declaration relates, are in conformity with these Council Directives on the approximation of the laws of the EC Member States:

– Machinery Directive (98/37/EC).
  Standard used: EN ISO 12100.

– Electromagnetic compatibility (89/336/EEC).
  Standards used: EN 61000-6-2 and EN 61000-6-3.

– Electrical equipment designed for use within certain voltage limits (73/23/EEC) [95].
  Standards used: EN 60335-1: 1994 and EN 60335-2-51: 1997.

Nosotros, **Lubi** declaramos bajo nuestra entera responsabilidad que los productos **MH, MHI** y **MHN** a los cuales se refiere esta declaración, están conformes con las Directivas del Consejo en la aproximación de las leyes de las Estados Miembros del EM:

– Directiva de Maquinaria (98/37/CE).
  Norma aplicada: EN ISO 12100.

– Compatibilidad electromagnética (89/336/CEE).
  Normas aplicadas: EN 61000-6-2 y EN 61000-6-3.

– Material eléctrico destinado a utilizarse con determinadas límites de tensión (73/23/CEE) [95].
  Normas aplicadas: EN 60335-1: 1994 y EN 60335-2-51: 1997.

Nous, **Lubi** déclarons sous notre seule responsabilité, que les produits **MH, MHI** et **MHN**, auxquels se réfère cette déclaration, sont conformes aux Directives du Conseil concernant le rapprochement des législations des Etats membres CE relatives aux normes énoncées cidessous:

– Directive Machines (98/37/CE).
  Standard utilisé: EN ISO 12100.

– Compatibilité électromagnétique (89/336/CEE).
  Standards utilisés: EN 61000-6-2 et EN 61000-6-3.

– Matêriel électrique destiné à employer dans certaines limites de tension (73/23/CEE) [95].
  Standards utilisés: EN 60335-1: 1994 et EN 60335-2-51: 1997.

T.F. Amin

Technical Director

CE

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Introduction

The Lubi MH, MHI and MHN pumps are non-self priming, horizontal, multistage, centrifugal pumps.

Motor and pump are close coupled in a convenient and compact design for quick installation in limited space.

The pump is fitted with a maintenance-free, mechanical shaft seal.

The pumps have axial suction port and radial discharge port and are mounted on a base plate.

These pumps are available in three basic versions.

- **MH:** Pump stages as well as all moving parts in contact with the pumped liquid are made of stainless steel AISI 304. Discharge casing and suction casing are Grey Iron. Base plate is made of steel. All Grey Iron parts and base plate are CED coated for rust & corrosion prevention.
- **MHI:** Discharge casing, suction casing as well as all parts in contact with the pumped liquid are made of stainless steel AISI 304.
- **MHN:** Discharge casing, suction casing as well as all parts in contact with the pumped liquid are made of stainless steel AISI 316.

The pump is CE marked.

Applications

The MH, MHI and MHN pumps are designed for small domestic and industrial water supply systems.

Applications include

- Liquid transfer and circulation of liquids within light industry and farming.
- Pressure boosting in single-pump and multi-pump booster systems.
- Domestic water supply.
- Cooling systems.
- Air-conditioning systems.
- Washing and cleaning systems.
- Water treatment.

Features and benefits

Following are the main features and benefits offered by the MH, MHI and MHN pumps.

- Compact design
- Reliable and robust construction
- Energy-optimised pumps
- Easy and simple installation
- User-friendly operation
- Low noise level
- Reliable water supply.

Pumped liquids

MH:
Thin, clean, non-aggressive and non-explosive liquids without solid particles or fibers.

MHI:
Thin, clean, slightly aggressive and non-explosive liquids without solid particles or fibers.

MHN:
Thin, clean, aggressive and non-explosive liquids without solid particles or fibers.

Operating conditions

Flow range : 0.5 - 28 m³/h
Head range : Up to 77 metres
Ambient temperature : Max. +55°C
Liquid temperature range: 0°C to +90°C

The maximum operating pressure depends on the temperature of the pumped liquid, see the table below:

Pump type	Maximum operating pressure	
	1 Mpa (10 bar)	0.6 Mpa (6 bar)
	Temperature of the pumped liquid	
MH 2, MHI 2, MHN 2	0°C to +40°C	+41°C to +90°C
MH 4, MHI 4, MHN 4	0°C to +40°C	+41°C to +90°C
MH 10, MHI 10, MHN 10	0°C to +40°C	+41°C to +90°C
MH 15, MHI 15, MHN 15	0°C to +40°C	+41°C to +90°C
MH 25, MHI 25, MHN 25	0°C to +40°C	+41°C to +90°C

Min. inlet pressure : According to the NPSH curve + a safety margin of 1.0 metres.
Max. inlet pressure : Limited by the maximum operating pressure.

Pump

The MH, MHI, MHN pumps are non-self priming, horizontal, multistage, centrifugal pumps fitted with a mechanical shaft seal. The pumps have axial suction port and radial discharge port and are mounted on a base plate.

For pipe connections, see the table below:

Connections	MH 2, MHI 2, MHN 2	MH 4, MHI 4, MHN 4	MH 10, MHI 10, MHN 10	MH 15 MHI 15, MHN 15	MH 25, MHI 25, MHN 25
Axial suction port	Rp 1	Rp 1¼	Rp 1½	Rp 2	Rp 2
Radial discharge port	Rp 1	Rp 1	Rp 1½	Rp 2	Rp 2
Drain hole, priming hole	Rp 3/8	Rp 3/8	Rp 3/8	Rp 1/2	Rp 1/2

MH 2 & 4 MH 10,15 & 25

Fig. 1 MH pump

Motor

The pump is fitted with a totally enclosed, fan-cooled, squirrel-cage induction motor.

Rated speed : 2900 rpm
Enclosure class : IP 54
Insulation class : F
Standard voltages: 0.37 - 1.1 kW: 1 x 220-240 V
0.37 - 3.7 kW: 3 x 220-240/380-415 V
Supply frequency : 50 Hz

Single-phase motors have built-in thermal overload protection.

Three-phase motors must be connected to a motor starter according to local regulations.

Type keys

MH, MHI, MHN

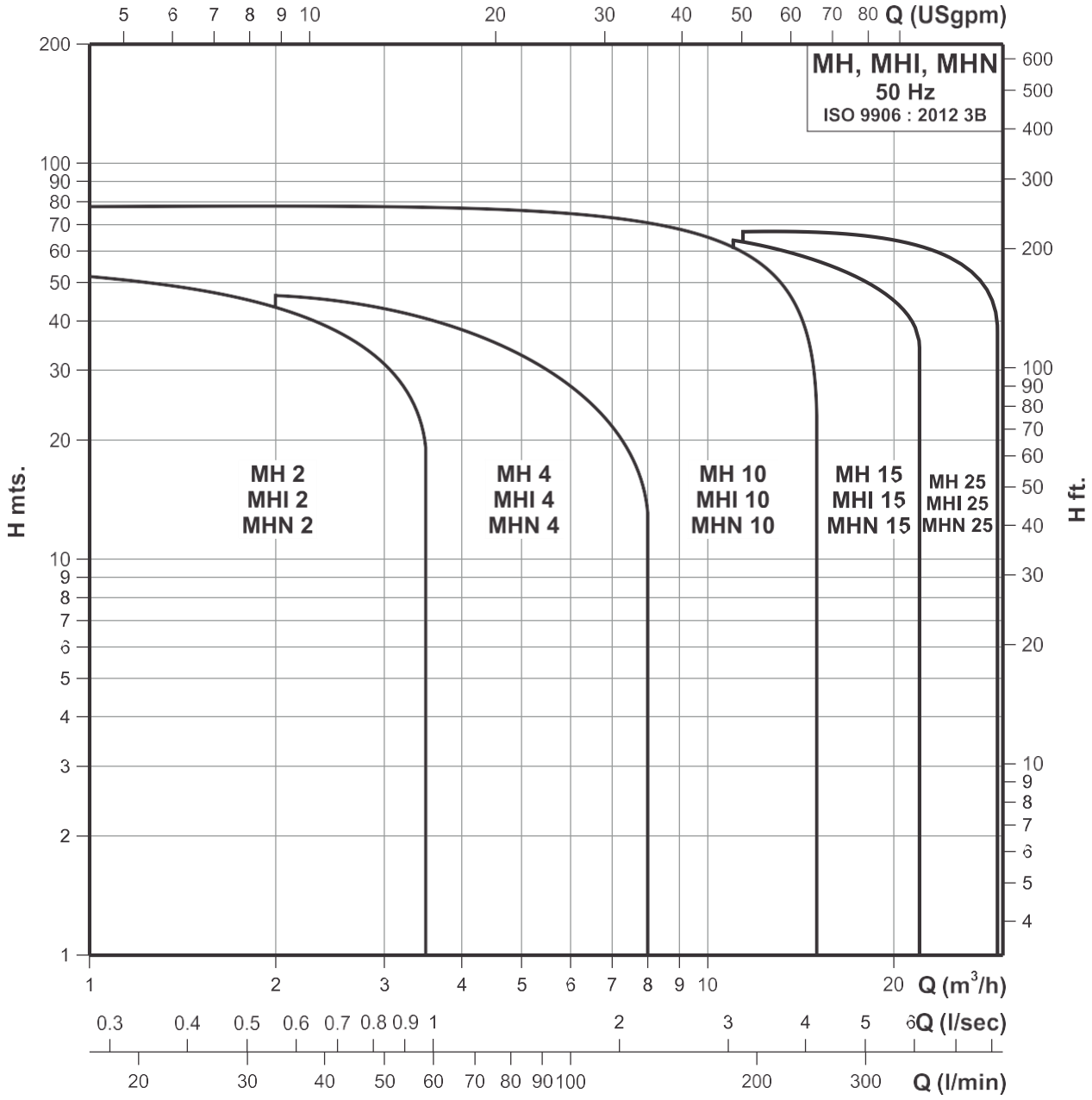
Example	**MH**	**2**	**-20**

Type range: MH, MHI, MHN

Rated flow rate [m³/h]

Code for nos. of stages
10 = 1 stage
20 = 2 stage
30 = 3 stage
40 = 4 stage
50 = 5 stage
60 = 6 stgae

Performance range



Sectional drawing

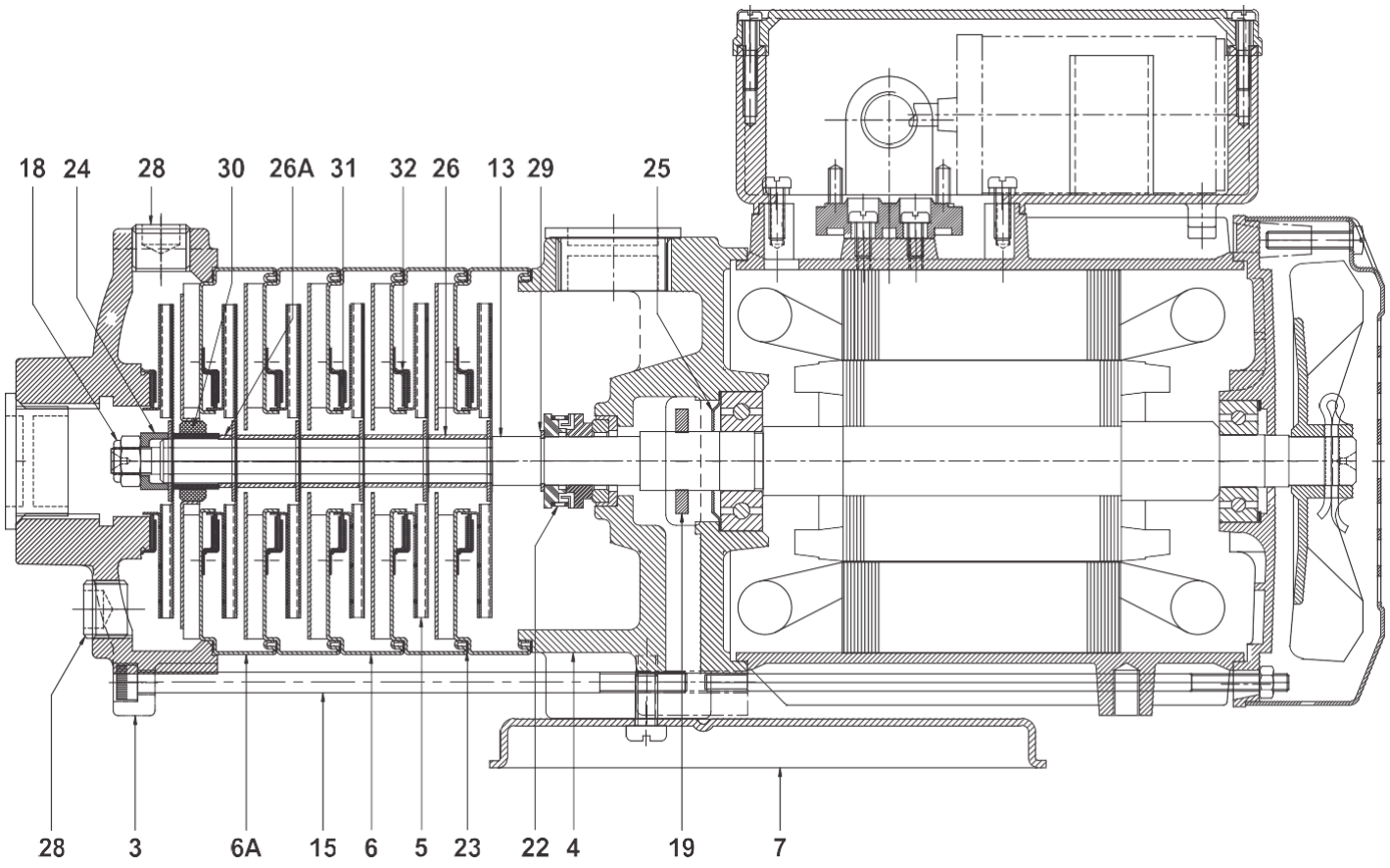


Fig. 2 MH, MHI, MHN 2 and 4 pump

Materials

Pos.	Component	Material		
		MH	MHI	MHN
3	Suction casing	Cast iron ASTM 30B	Stainless steel CF 8	Stainless steel CF 8M
4	Discharge casing	Cast iron ASTM 30B	Stainless steel CF 8	Stainless steel CF 8M
5	Impeller	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 316
6	Stage casing	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 316
6A	Stage casing with bearing	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 316
7	Base plate	Steel	Steel	Steel
13	Pump shaft	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 316
15	Pump fitting stud	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 304
18	Impeller lock nut	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 316
19	Water thrower	NBR	NBR	NBR
22	Mechanical shaft seal	Carbon/Ceramic/NBR	Carbon/Ceramic/NBR	Carbon/Ceramic/NBR
23	Stage casing packing	C.A.F	C.A.F	C.A.F
24	Impeller lock bush	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 316
25	Bearing washer	Steel	Steel	Steel
26	Impeller support bush	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 316
26A	Impeller support bush	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 316
28	Water filling plug	Steel	Stainless steel AISI 304	Stainless steel AISI 316
29	Circlip	Stainless steel AISI 316	Stainless steel AISI 316	Stainless steel AISI 316
30	Bearing	-	-	-
31	Neck ring	PTFE	PTFE	PTFE
32	Neck ring retainer	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 316

Sectional drawing

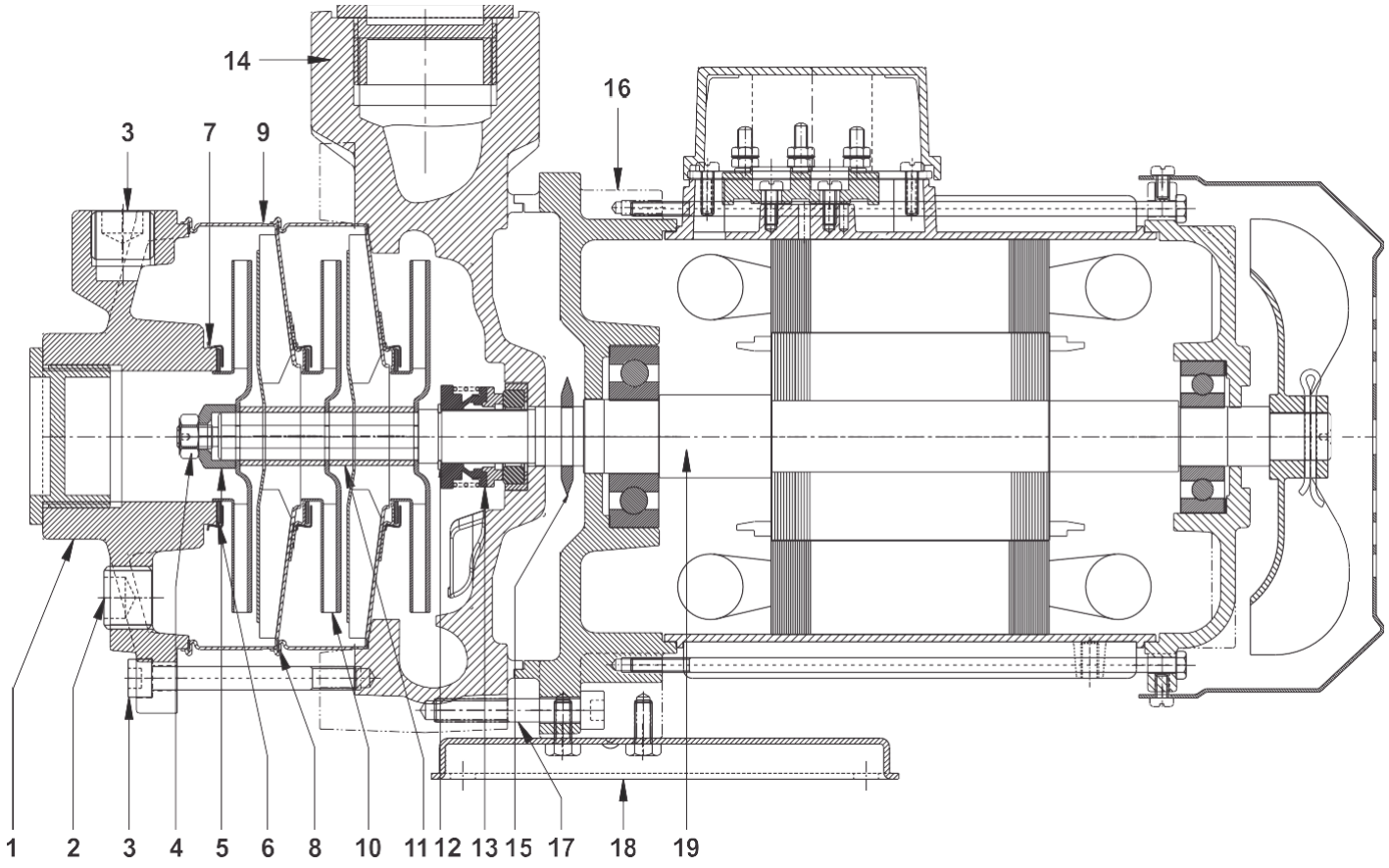


Fig. 3 MH, MHI, MHN 10,15 & 25 pump

Materials

Pos.	Component	Material		
		MH	MHI	MHN
1	Suction chamber	Cast iron ASTM 30B	Stainless steel CF 8	Stainless steel CF 8M
2	Water filling & drain plug	Steel	Steel	Steel
3	Pump fitting stud	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 304
4	Impeller lock nut	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 316
5	Impeller lock bush	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 316
6	Neck ring	PTFE	PTFE	PTFE
7	Neck ring retainer	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 316
8	Stage casing packing	C.A.F	C.A.F	C.A.F
9	Stage casing	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 316
10	Impeller	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 316
11	Impeller support bush	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 316
12	Circlip	Stainless steel AISI 316	Stainless steel AISI 316	Stainless steel AISI 316
13	Mechanical shaft seal	Carbon/Ceramic/NBR	Carbon/Ceramic/NBR	Carbon/Ceramic/NBR
14	Volute	Cast iron ASTM 30B	Stainless steel CF 8	Stainless steel CF 8M
15	Water thrower	NBR	NBR	NBR
16	Adaptor	Cast iron ASTM 30B	Stainless steel CF 8	Stainless steel CF 8M
17	Adaptor joint stud	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 304
18	Base plate	Steel	Steel	Steel
19	Pump shaft	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 316

Technical data

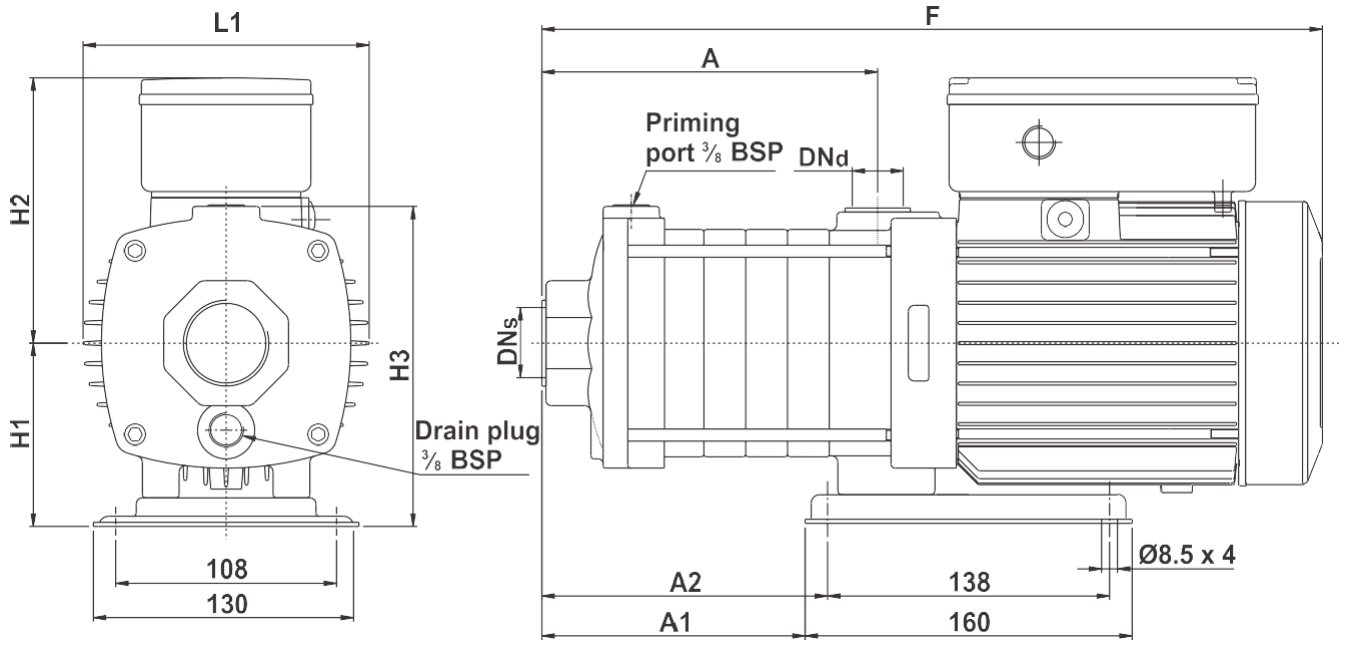
Horizontal multistage end-suction pumps

MH, MHI, MHN 2

Performance chart

Pump type	kW	HP	Voltage [V]		Q	n = 2900 rpm					
					l/min	26.7	33.3	40.0	46.7	53.3	58.3
			Single phase	Three phase	m^3/h	1.6	2.0	2.4	2.8	3.2	3.5
MH, MHI, MHN 2-20	0.37	0.50	230	400	H mts.	16	15	14	12	10	9
MH, MHI, MHN 2-30	0.55	0.75	230	400		24	22	21	18	16	14
MH, MHI, MHN 2-40	0.55	0.75	230	400		32	29	27	24	20	18
MH, MHI, MHN 2-50	0.75	1.00	230	400		39	36	33	29	24	20
MH, MHI, MHN 2-60	0.75	1.00	230	400		47	43	39	34	29	25

Dimensional sketches



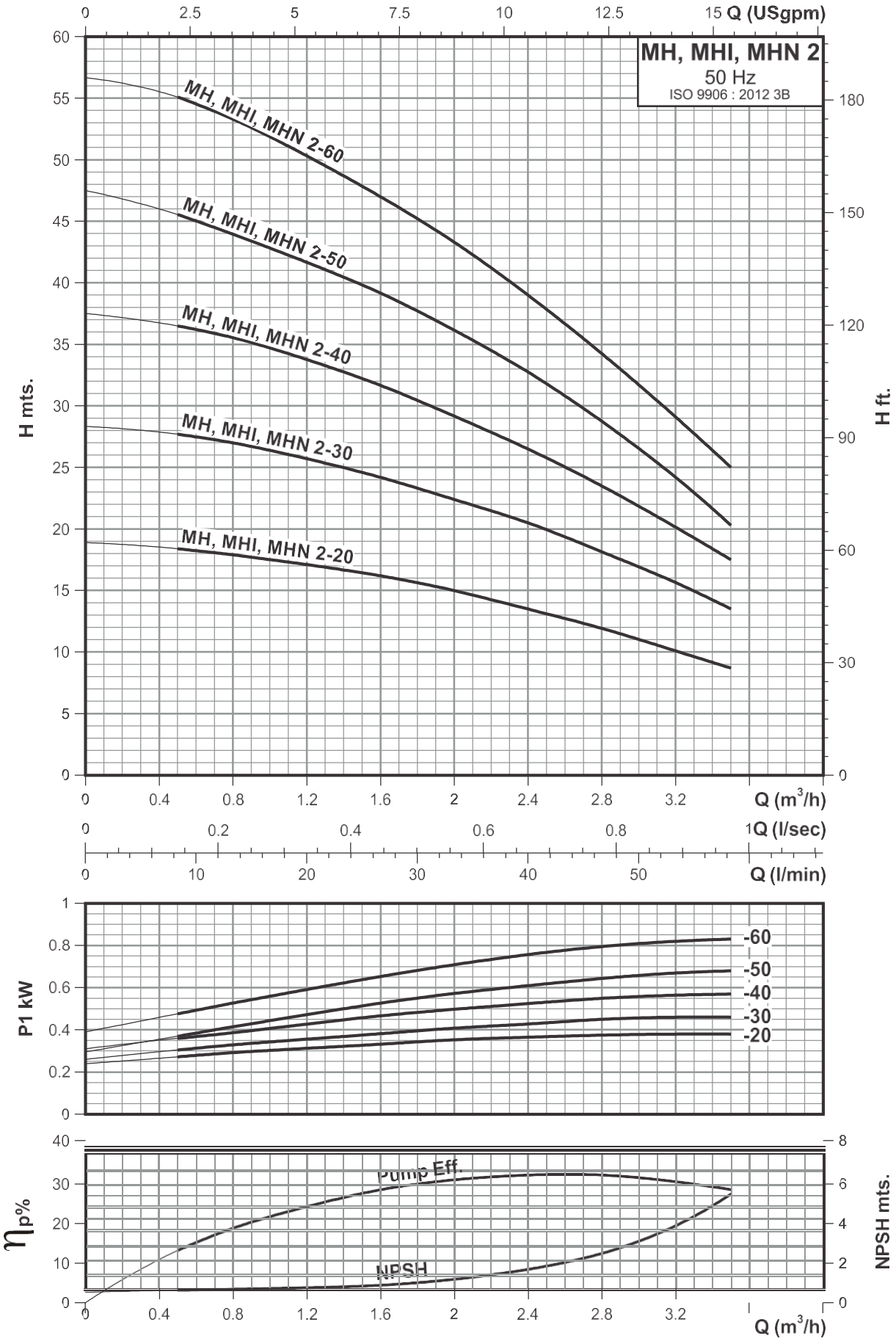
Dimensions & weights of MH, MHI, MHN pump

Pump type	Frame size	DNs BSP	DNd BSP	Dimensions [mm]								Net weight [kg]	Gross weight [kg]	Gross volume [m^3]
				F	H1	H2	H3	A	A1	A2	L1			
MH, MHI, MHN 2-20	71	1"	1"	324	88	130	155	102	66	77	140	10.5	11.5	0.0140
MH, MHI, MHN 2-30	71	1"	1"	342	88	130	155	120	85	96	140	10.9	11.8	0.0140
MH, MHI, MHN 2-40	71	1"	1"	361	88	130	155	139	103	114	140	10.8	12.0	0.0140
MH, MHI, MHN 2-50	71	1"	1"	379	88	130	155	157	121	132	140	11.0	12.5	0.0150
MH, MHI, MHN 2-60	71	1"	1"	397	88	130	155	175	140	151	140	11.3	13.0	0.0150

Performance curves

Horizontal multistage end-suction pumps

MH, MHI, MHN 2



Technical data

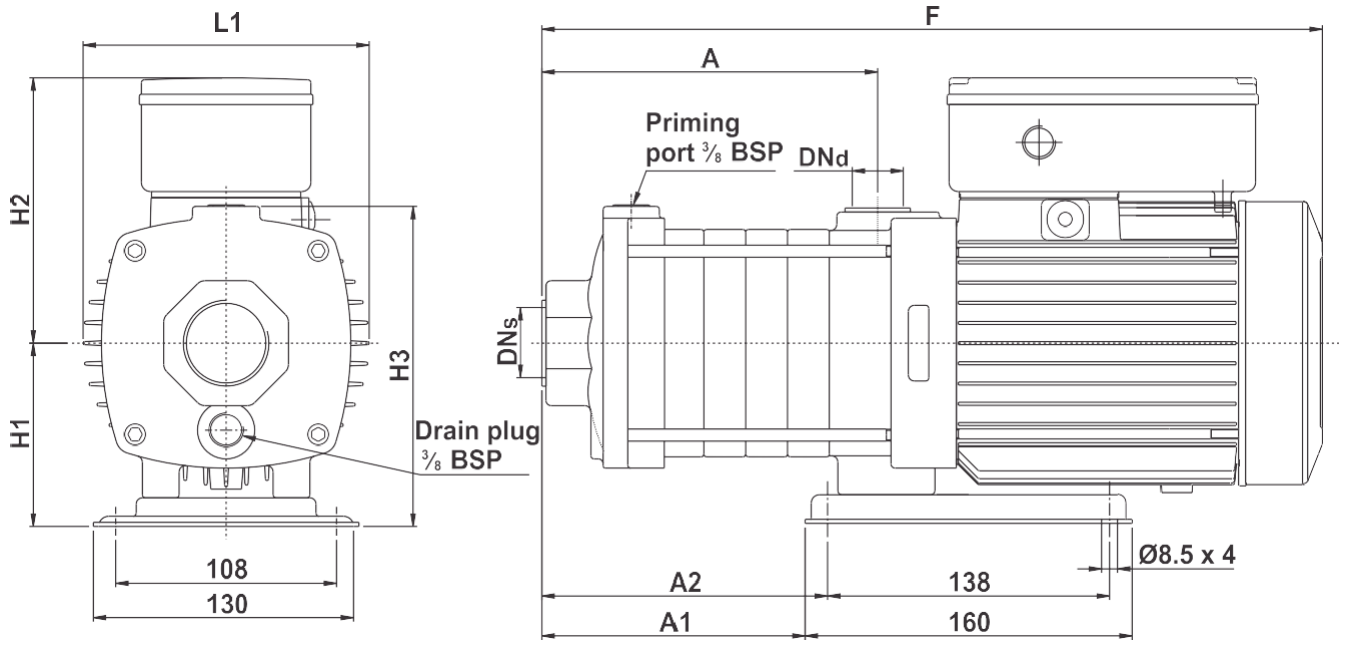
Horizontal multistage end-suction pumps

MH, MHI, MHN 4

Performance chart

Pump type	kW	HP	Voltage [V]		Q	n = 2900 rpm					
					l/min	33.3	66.7	83.3	100.0	116.7	133.3
			Single phase	Three phase	m^3/h	2.0	4.0	5.0	6.0	7.0	8.0
MH, MHI, MHN 4-20	0.37	0.50	230	400	H mts.	15	12	11	9	7	5
MH, MHI, MHN 4-30	0.55	0.75	230	400		23	19	17	14	11	8
MH, MHI, MHN 4-40	0.75	1.00	230	400		30	24	21	17	13	9
MH, MHI, MHN 4-50	0.93	1.25	230	400		39	33	29	24	19	14
MH, MHI, MHN 4-60	1.10	1.50	230	400		46	38	33	28	22	16

Dimensional sketches



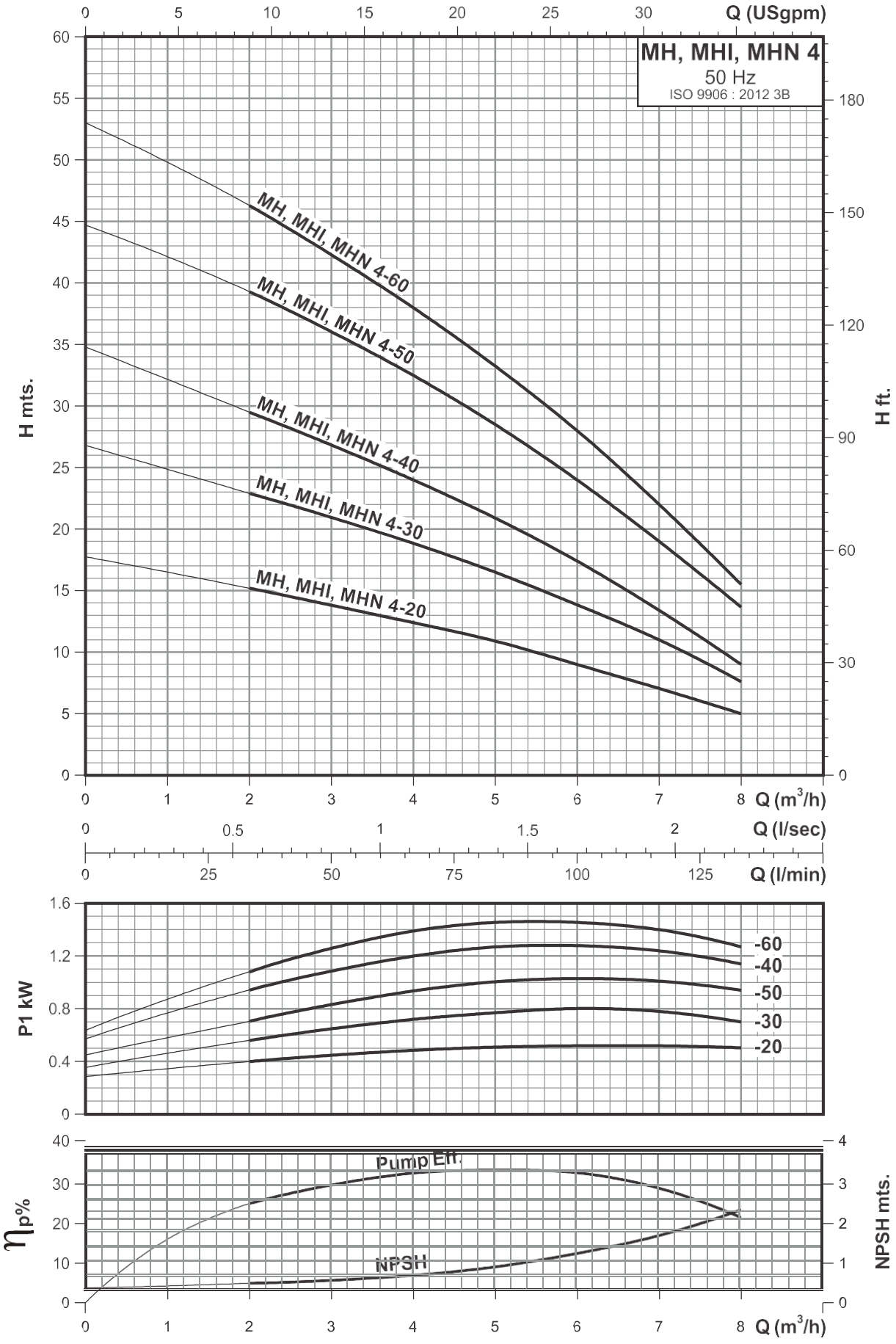
Dimensions & weights of MH, MHI, MHN pump

Pump type	Frame size	DNs BSP	DNd BSP	Dimensions [mm]								Net weight [kg]	Gross weight [kg]	Gross volume [m^3]
				F	H1	H2	H3	A	A1	A2	L1			
MH, MHI, MHN 4-20	71	1¼"	1"	333	88	130	155	111	75	86	140	11.0	12.5	0.0150
MH, MHI, MHN 4-30	71	1¼"	1"	356	88	130	155	138	103	114	140	11.5	12.8	0.0150
MH, MHI, MHN 4-40	71	1¼"	1"	388	88	130	155	166	130	141	140	12.5	13.5	0.0150
MH, MHI, MHN 4-50	80	1¼"	1"	452	98	146	174	193	154	165	159	16.0	17.5	0.0180
MH, MHI, MHN 4-60	80	1¼"	1"	479	98	146	174	220	182	193	159	18.0	19.5	0.0180

Performance curves

Horizontal multistage end-suction pumps

MH, MHI, MHN 4



Technical data

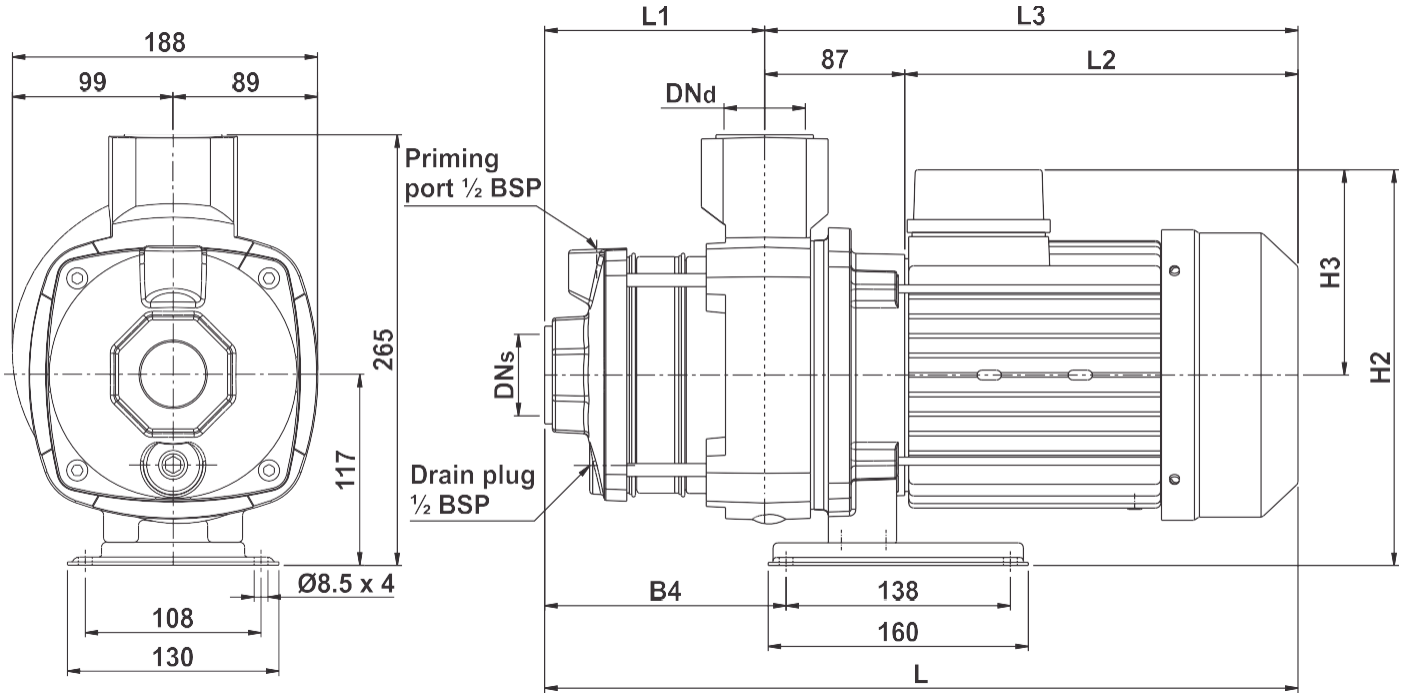
Horizontal multistage end-suction pumps

MH, MHI, MHN 10

Performance chart

Pump type	kW	HP	Voltage [V]		Q	n = 2900 rpm					
					l/min	116.7	150.0	166.7	183.3	200.0	250.0
			Single phase	Three phase	m^3/h	7.0	9.0	10.0	11.0	12.0	15.0
MH, MHI, MHN 10-10	0.55	0.75	230	400	H mts.	13	12	11	10	9	6
MH, MHI, MHN 10-20	1.10	1.50	230	400		28	26	25	23	21	15
MH, MHI, MHN 10-30	2.20	3.00	230	400		44	40	38	36	33	24
MH, MHI, MHN 10-40	3.70	5.00	230	400		58	54	52	49	45	33
MH, MHI, MHN 10-50	3.70	5.00	230	400		74	69	66	62	57	41

Dimensional sketches



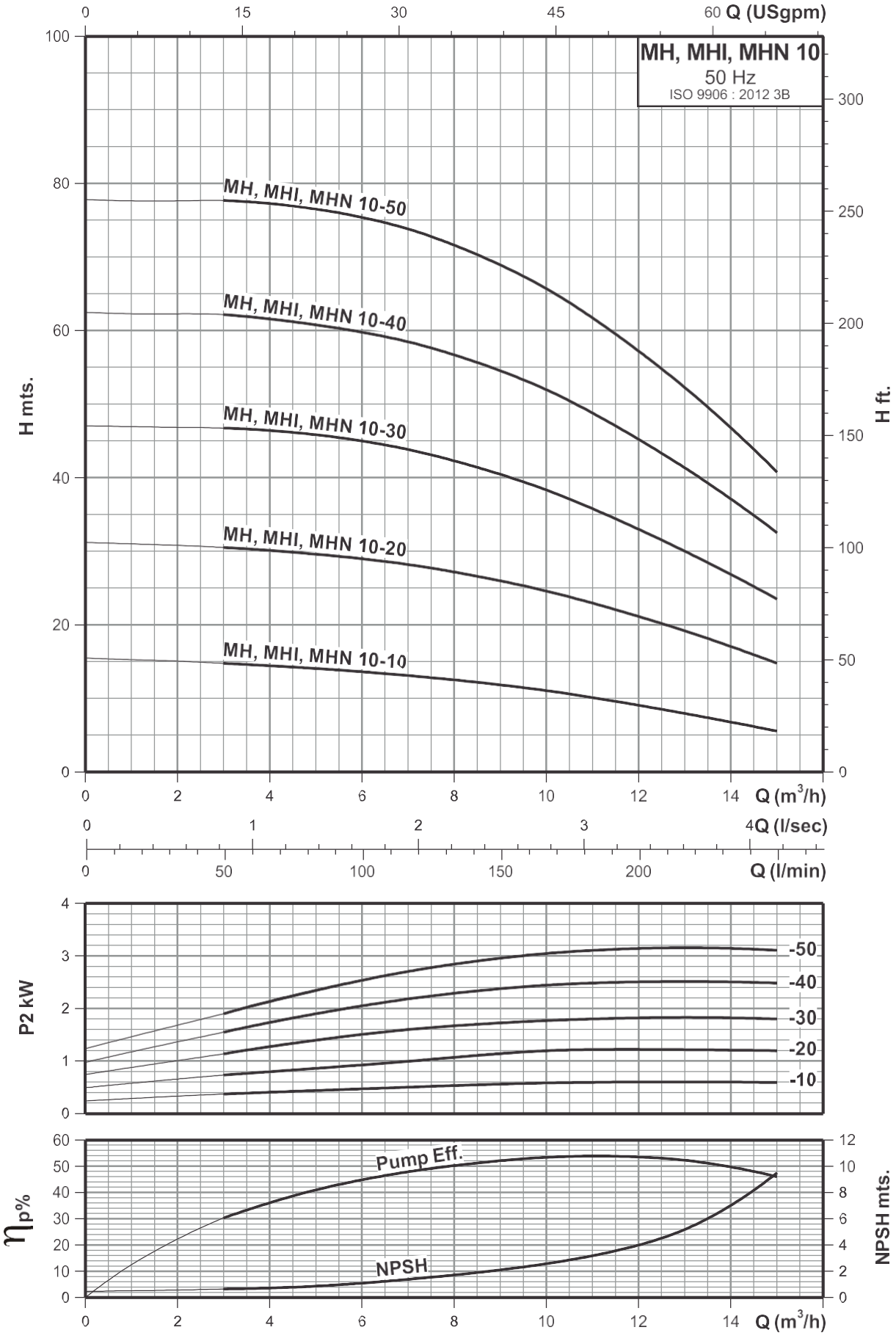
Dimensions & weights of MH, MHI, MHN pump

Pump type	Frame size	DNs BSP	DNd BSP	Dimensions [mm]							Net weight [kg]	Gross weight [kg]	Gross volume [m³]
				H2	H3	B4	L	L1	L2	L3			
MH, MHI, MHN 10-10	71	1½"	1½"	222	105	88	382	75	184	270	22.0	24.5	0.0210
MH, MHI, MHN 10-20	90	1½"	1½"	253	136	118	412	105	221	307	26.0	28.5	0.0220
MH, MHI, MHN 10-30	90	1½"	1½"	243	126	149	464	136	242	329	37.0	39.5	0.0250
MH, MHI, MHN 10-40	100	1½"	1½"	256	139	179	538	166	258	372	40.0	42.5	0.0290
MH, MHI, MHN 10-50	100	1½"	1½"	256	139	210	568	197	258	372	41.0	43.5	0.0310

Performance curves

Horizontal multistage end-suction pumps

MH, MHI, MHN 10



Technical data

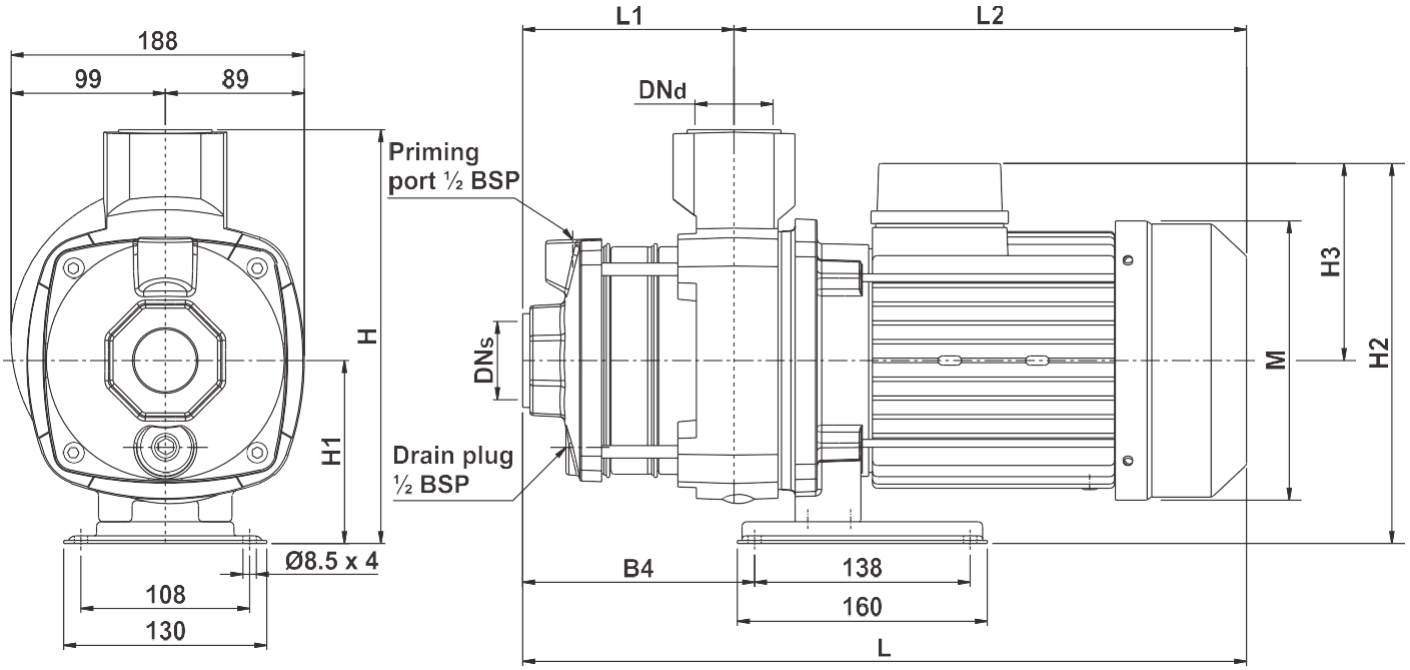
Horizontal multistage end-suction pumps

MH, MHI, MHN 10

Performance chart

Pump type	kW	HP	Voltage [V]		Q l/min	n = 2900 rpm					
			Single phase	Three phase		113.3	166.7	216.7	250.0	300.0	333.3
					m^3/h	8.0	10.0	13.0	15.0	18.0	20.0
MH, MHI, MHN 15-10	1.10	2.00	230	400	H mts.	16.0	15.5	15.0	14.0	12.0	10.0
MH, MHI, MHN 15-20	2.20	3.00	230	400		33.0	32.0	30.0	28.5	26.0	23.5
MH, MHI, MHN 15-30	4.00	5.50	-	400		49.0	47.5	45.5	43.0	39.0	36.0
MH, MHI, MHN 15-40	5.50	7.50	-	400		65.0	64.0	61.0	57.5	52.0	47.5

Dimensional sketches



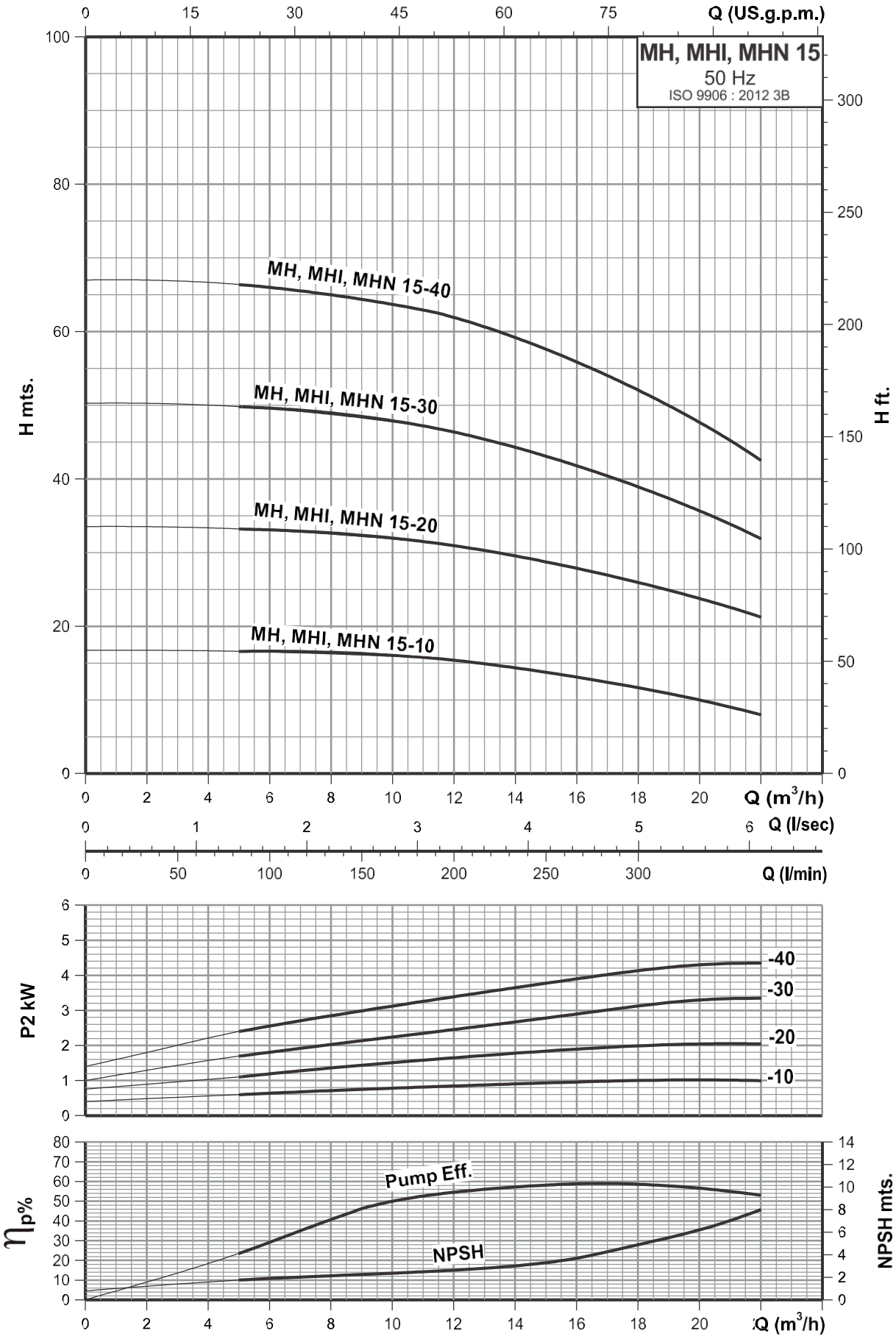
Dimensions & weights of MH, MHI, MHN pump

Pump type	Frame size	DNs BSP	DNd BSP	Dimensions [mm]									Net weight [kg]	Gross weight [kg]	Gross volume [m^3]
				H	H1	H2	H3	B4	L	L1	L2	M			
MH, MHI, MHN 15-10	90	2"	2"	261	116	242	126	84	399	71	328	179	26.6	29.0	0.101
MH, MHI, MHN 15-20	90	2"	2"	261	116	242	126	114	429	101	328	179	29.6	35.5	0.108
MH, MHI, MHN 15-30	112	2"	2"	271	125	274	195	145	539	128	412	219	46.1	56.0	0.160
MH, MHI, MHN 15-40	132	2"	2"	291	145	325	180	175	654	158	496	262	63.2	95.0	0.232

Performance curves

Horizontal multistage end-suction pumps

MH, MHI, MHN 15



Technical data

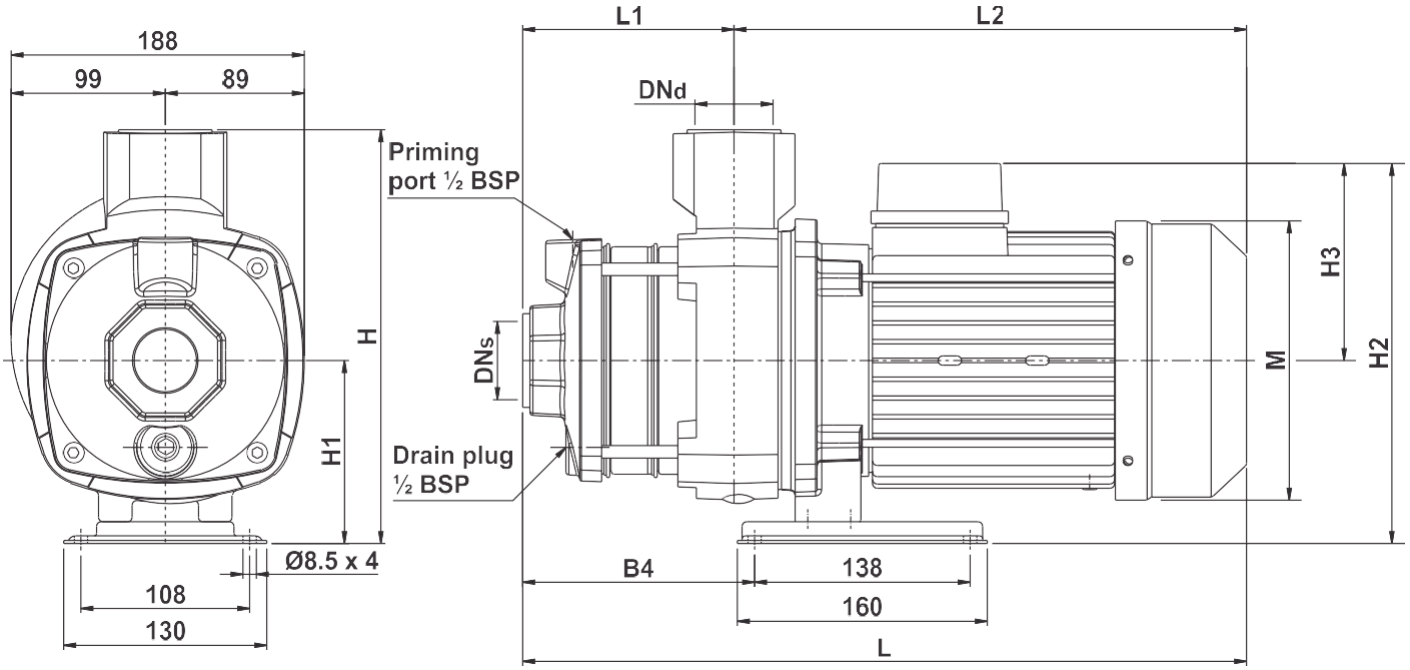
Horizontal multistage end-suction pumps

MH, MHI, MHN 25

Performance chart

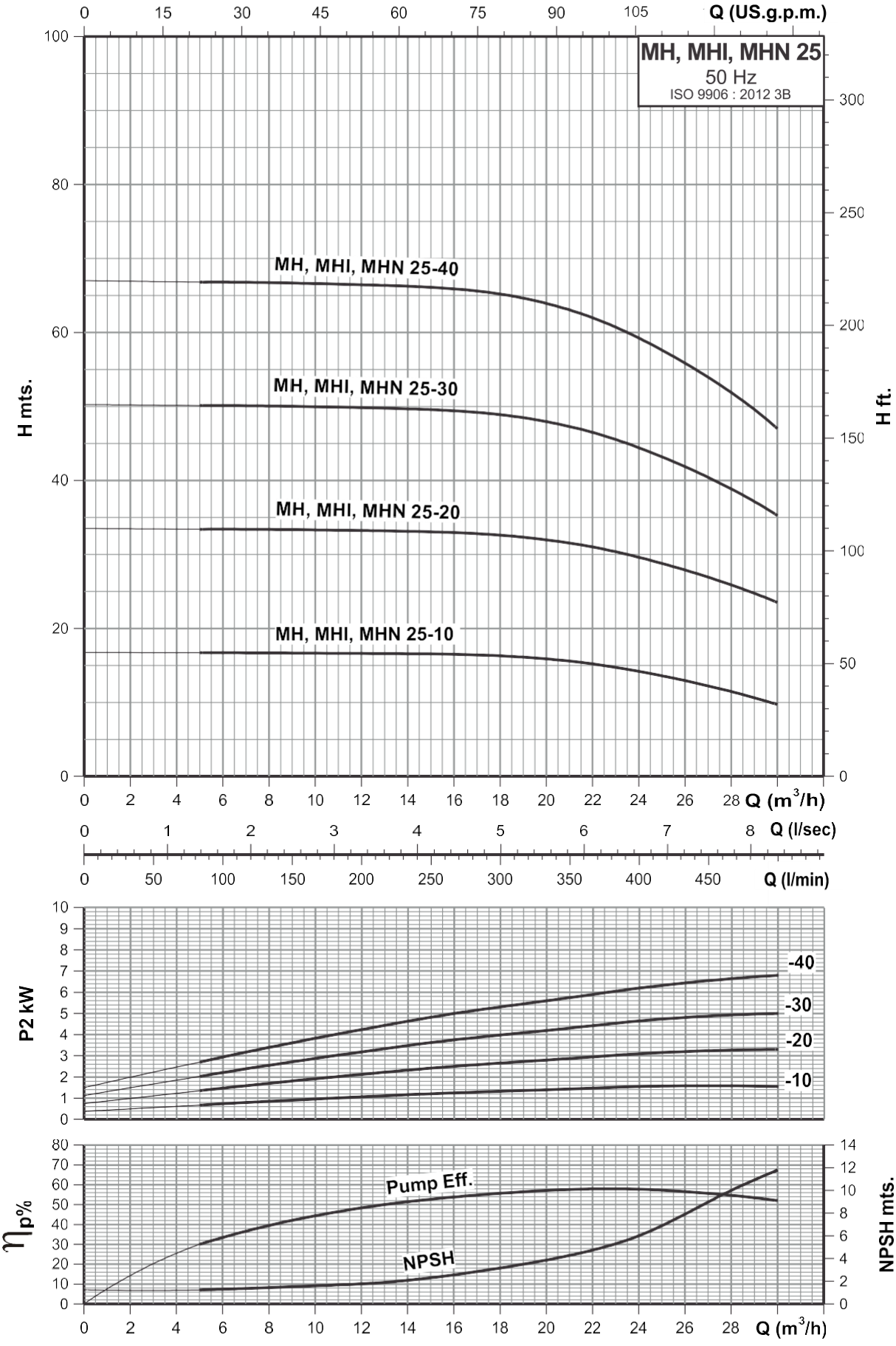
Pump type	kW	HP	Voltage [V]		Q l/min	n = 2900 rpm					
			Single phase	Three phase		166.7	233.3	300.0	366.7	416.7	466.7
					m^3/h	10	14	18	22	25	28
MH, MHI, MHN 25-10	2.20	3.00	230	400	H mts.	16.5	16.0	15.5	15.0	13.0	11.5
MH, MHI, MHN 25-20	4.00	5.50	-	400		33.5	33.0	32.5	31.0	28.5	26.0
MH, MHI, MHN 25-30	5.50	7.50	-	400		49.5	49.0	48.5	46.5	43.0	38.0
MH, MHI, MHN 25-40	7.50	10.00	-	400		66.5	66.0	65.0	62.0	57.5	52.0

Dimensional sketches



Dimensions & weights of MH, MHI, MHN pump

Pump type	Frame size	DNs BSP	DNd BSP	Dimensions [mm]									Net weight [kg]	Gross weight [kg]	Gross volume [m^3]
				H	H1	H2	H3	B4	L	L1	L2	M			
MH, MHI, MHN 25-10	90	2"	2"	261	116	242	126	84	399	71	328	179	29.50	32.5	0.101
MH, MHI, MHN 25-20	112	2"	2"	271	125	274	195	114	509	97	412	219	45.00	55.0	0.151
MH, MHI, MHN 25-30	132	2"	2"	291	145	325	180	144	623	128	496	262	62.60	103.0	0.236
MH, MHI, MHN 25-40	132	2"	2"	291	145	325	180	175	654	158	496	262	67.19	106.0	0.247


MH, MHI, MHN 25
50 Hz
ISO 9906 : 2012 3B
MH, MHI, MHN 25-40
MH, MHI, MHN 25-30
MH, MHI, MHN 25-20
MH, MHI, MHN 25-10
H mts.
H ft.
Q (US.g.p.m.)
Q (m³/h)
Q (l/sec)
Q (l/min)
P2 kW
-40
-30
-20
-10
ηp%
Pump Eff.
NPSH
NPSH mts.

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