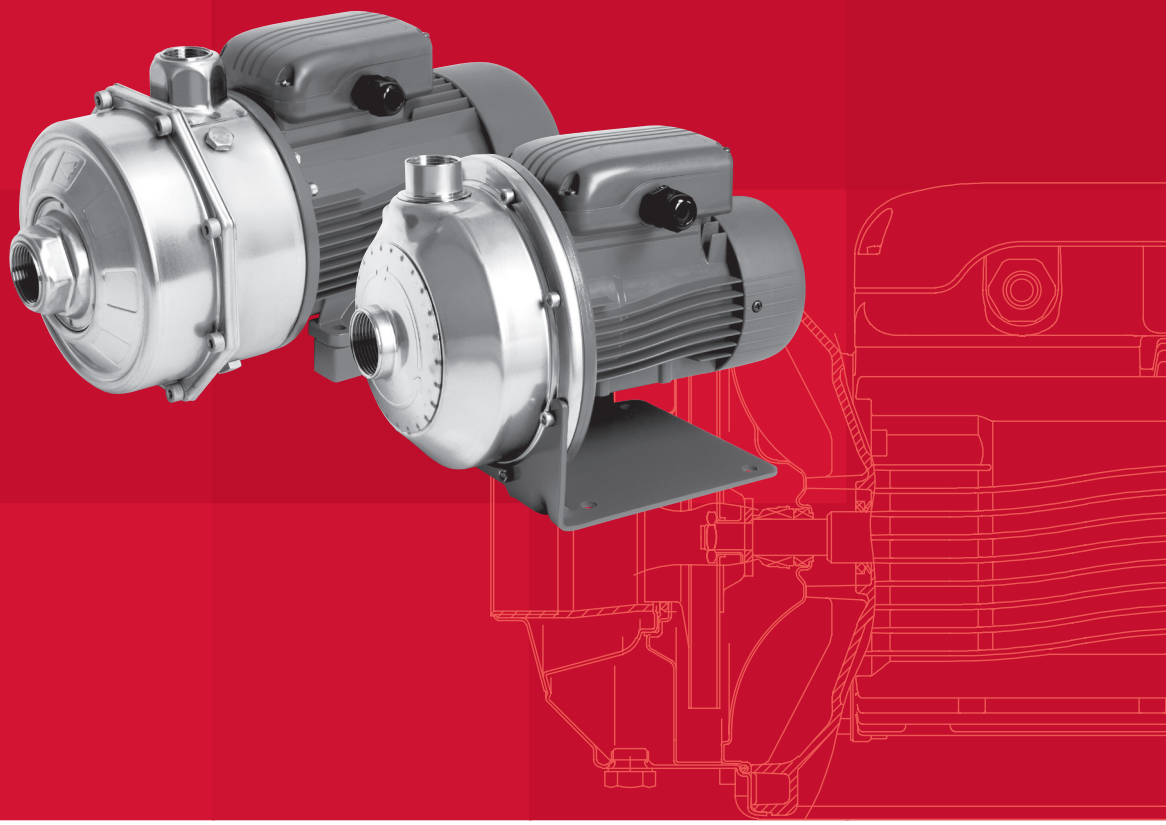
HX, H2X and HCO Series Technical Guide

Monophasic and biphasic stainless steel centrifugal electropumps

50 Hz



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Monophasic and biphasic stainless steel centrifugal electropumps

HX and H2X pumps are centrifugal pumps with one or two impellers and high-efficiency engines.

Application sectors: Civil, agricultural and industrial.

Version manufactured in AISI 304

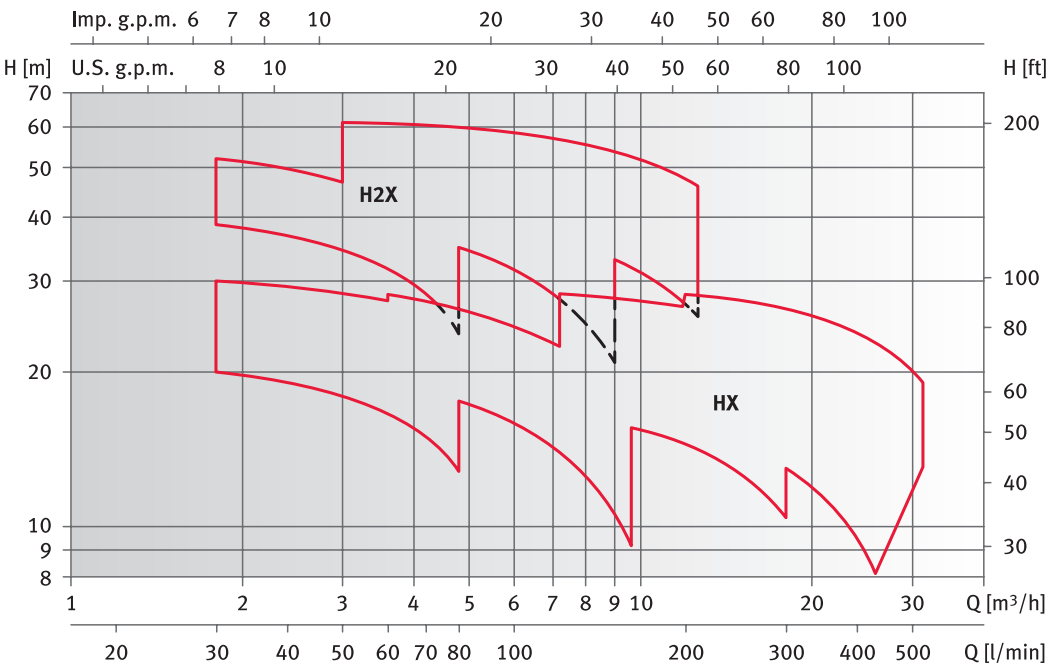
- Handling of chemically and mechanically non-aggressive water and liquids (*).
- Water supply.
- Irrigation.
- Water circulation (hot, cold, refrigerated).

* Available in a version with FPM elastomers for moderately aggressive liquids (HX../..-V, H2X../..-V). For aggressive liquids, consult our sales network.

“N” version manufactured in AISI 316 (for aggressive liquids)

- Reverse osmosis (for use with demineralised water).
- Industrial cleaning.
- Thermal water.
- Distribution of chlorine in swimming pools.
- Jewellery sector.
- Jewellery sector.
- Wine production.

Application field ⇢ HX and H2X at 2850 rpm



Curves obtained in compliance with ISO 9906 Appendix A.

Description

- **HX** are centrifugal single-impeller electropumps, manufactured entirely of AISI 304 and optionally in AISI 316L.
- The surface engines have efficiency values within the range normally designated as class-1 efficiency.

Technical data

- Flow: up to 520 l/min (31 m³/h).
- Height: up to 32 m.
- Temperature of liquid pumped:
  -10°C to + 85°C standard version (110°C **HX**...N).
- Maximum operating pressure: 8 bar (PN 8).
- Counterclockwise rotation, viewing the pump from the suction nozzle.

Electrical and engine features

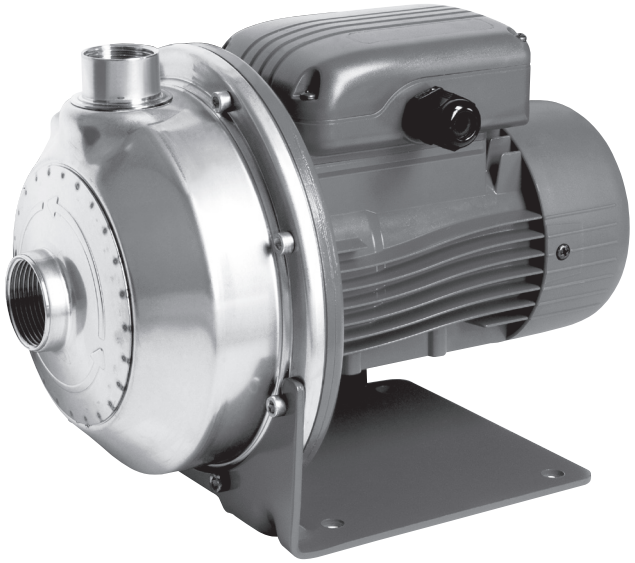
- Asynchronous squirrel-cage rotor, sealed construction, external ventilation.
- Level of protection: IP55.
- Class F insulation.
- Performance compliant with EN 60034-1.
- Standard voltage:
  Monophasic version: 220-240 V 50 Hz, 2 poles, with self-adjusting overload protection up to 1.5 kW.
  For high voltages, the user must provide and install overload protection in the control panel.
  Triphasic version: 220-240/380-415 V 50 Hz, 2 poles, the user must provide and install overload protection in the control panel.
- Drainage connectors in the standard version.

Construction features

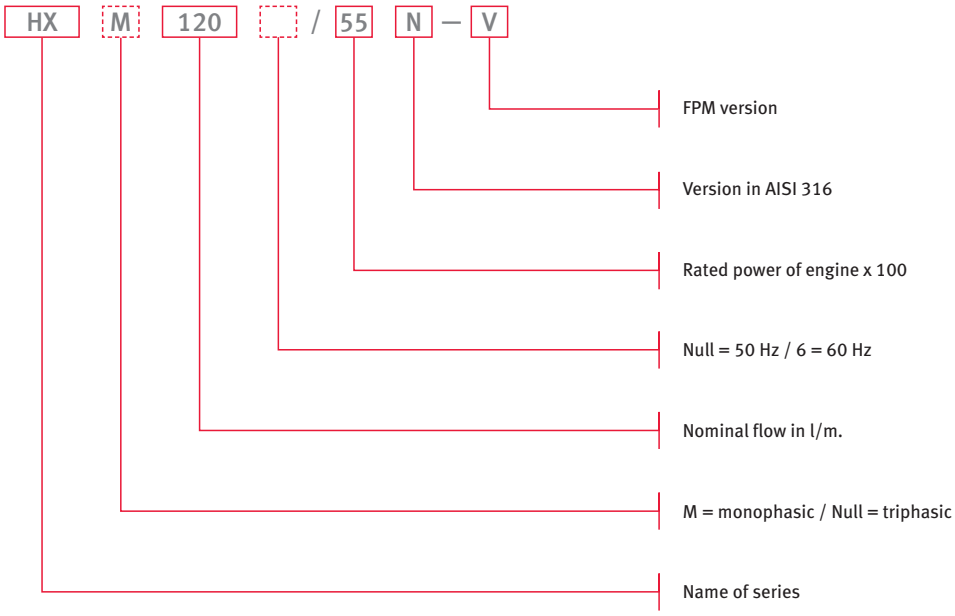
- Monobloc single-impeller centrifugal pumps, with axial suction and radial impulsion.
- Compact construction, with the pump connected directly to the engine; special extension of the engine axle shared with the pump and held by ball bushings.
- Swivel mounting with removable-rear design, doing away with the need to disconnect the pump casing from the tubing.
- Threaded suction and discharge nozzles (Rp UNI - ISO 7).
- High-performance impeller manufactured in AISI 304 stainless steel (AISI 316 for the N version).
- Mechanical seal with ceramic/carbon rings, NBR elastomers, (EPDM for the N version); all other components are manufactured in AISI 304 stainless steel (AISI 316 for the N version). Assembly dimensions in compliance with EN 12756 (formerly DIN 24960) and ISO 3069.
- O-rings manufactured in NBR (EPDM for the N version).
- Mounting bracket on the pump casing.

Manufactured upon request

- Different voltages and frequencies.
- Different material for the mechanical seal and O-rings.

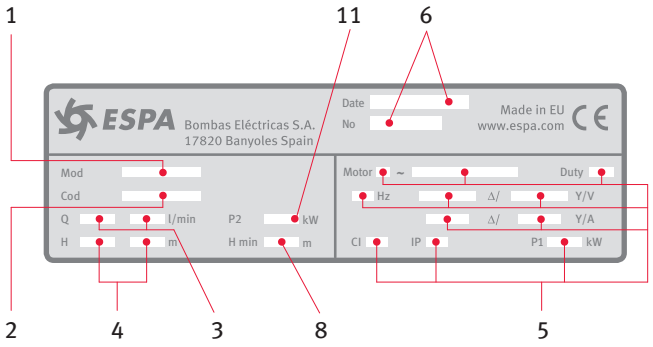


HX identification codes



EXAMPLE: HXM 120/5-V
HX series monophasic electropump, nominal flow 120 l/min, 50 Hz, engine power 0.55 kW, FPM version.

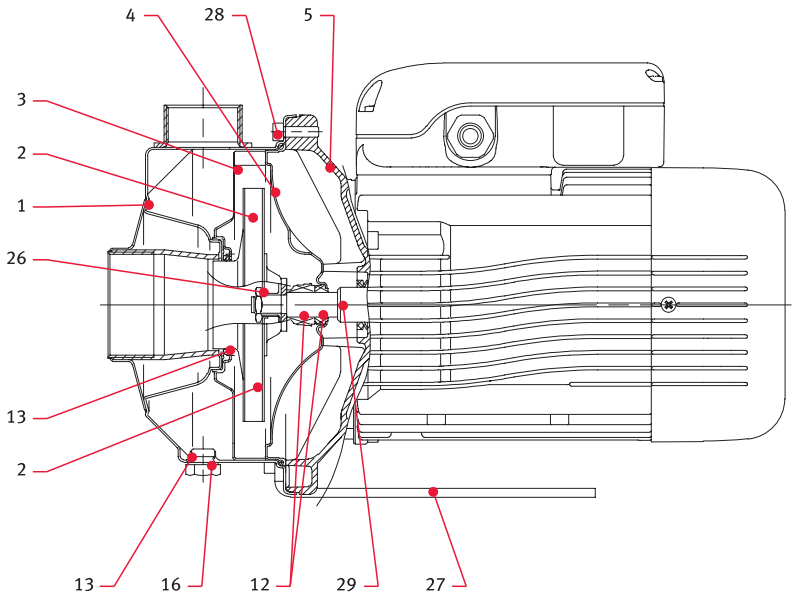
Nominal data



Legend

- 1. Electropump type
- 2. Code
- 3. Supply range
- 4. Height interval
- 5. Engine features
- 6. Year of manufacture and serial number
- 8. Minimum height
- 11. Rated power

HX and HX(N) Series



VERSION
HX 70/37 M
HX 70/55 M
HX 80/75 M
HX 120/55 M
HX 120/90 M
HX 210/75 M
HX 210/110 M
HX 210/150 M
HX 210/185 M
HX 370/110 M
HX 370/150 M
HX 370/185 M
HX 370/300

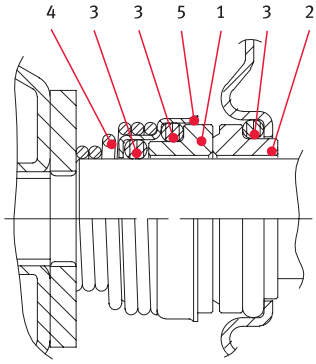
HX Series

Ref. Nº	DESCRIPTION	MATERIALS	REF. REGULATIONS EUROPE	REF. REGULATIONS USA
1	Pump casing	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
2	Impellers	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
3	Diffuser	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
4	Seal casing	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
5	Lamp	Aluminium	EN 1706-AC-AlSi11Cu2 (Fe) (AC46100)	
12	Mechanical seal	Ceramic / Carbon / NBR (standard version)		
13	Elastomers	NBR (standard version)		
16	Filling/drainage connectors	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
26	Impeller lock nut	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
27	Mounting bracket	Zinc-plated steel		
28	Pump casing attachment screws	Zinc-plated steel		
29	Axle extension	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316

HX Series(N)

Ref. Nº	DESCRIPTION	MATERIALS	REF. REGULATIONS EUROPE	REF. REGULATIONS USA
1	Pump casing	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
2	Impellers	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
3	Diffuser	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
4	Seal casing	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Lamp	Aluminium	EN 1706-AC-AlSi11Cu2 (Fe) (AC46100)	
12	Mechanical seal	Ceramic/ Carbon /EPDM		
13	Elastomers	EPDM		
16	Filling/drainage connectors	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
26	Impeller lock nut	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
27	Mounting bracket	Zinc-plated steel		
28	Pump casing attachment screws	Zinc-plated steel		
29	Axle extension	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316

Mechanical seal with assembly dimensions in compliance with EN 12756 (formerly DIN 24960) and ISO 3069



List of optional materials

POSITION 1-2	POSITION 3	POSITION 4-5
B: Resin impregnated carbon	P: NBR	F: AISI 304
C: Special resin impregnated carbon	E: EPDM	G: AISI 316
Q_1: Silicon carbide	V: FPM	
U_3: Tungsten carbide		
V: Ceramic		

HX Mechanical seal

TYPE	POSITION 1 Rotating Assembly	POSITION 2 Fixed Assembly	POSITION 3 Elastomers	POSITION 4 Springs	POSITION 5 Other Components	TEMPERATURE (° C)
STANDARD MECHANICAL SEAL						
V B P G F	V	B	P	G	F	-10 + 85
OTHER TYPES OF MECHANICAL SEAL						
V B E G G	V	B	E	G	G	-10 + 110
V C E G G	V	C	E	G	G	-10 + 110
Q_1 Q_1 E G G	Q_1	Q_1	E	G	G	-10 + 110
U_3 C E G G	U_3	C	E	G	G	-10 + 110
U_3 U_3 E G G	U_3	U_3	E	G	G	-10 + 110
V B V G G	V	B	V	G	G	-10 + 110
V C V G G	V	C	V	G	G	-10 + 110
Q_1 Q_1 V G G	Q_1	Q_1	V	G	G	-10 + 110
U_3 C V G G	U_3	C	V	G	G	-10 + 110
U_3 U_3 V G G	U_3	U_3	V	G	G	-10 + 110

HX(N) Mechanical seal

TYPE	POSITION 1 Rotating Assembly	POSITION 2 Fixed Assembly	POSITION 3 Elastomers	POSITION 4 Springs	POSITION 5 Other Components	TEMPERATURE (° C)
OTHER TYPES OF MECHANICAL SEAL						
V B E G G	V	B	E	G	G	-10 + 110
OTHER TYPES OF MECHANICAL SEAL						
V C E G G	V	C	E	G	G	-10 + 110
Q_1 Q_1 E G G	Q_1	Q_1	E	G	G	-10 + 110
V C V G G	V	C	V	G	G	-10 + 110
Q_1 Q_1 V G G	Q_1	Q_1	V	G	G	-10 + 110

Hydraulic performance table at 50 Hz

MODEL	P2		l/min	0	30	40	60	80	100	120	140	160	180	200	250	300	350	400	430	480	520
	kW	HP	m^3/h	0	1.8	2.4	3.6	4.8	6	7.2	8.4	9.6	10.8	12	15	18	21	24	26	29	31
HX70 37 M	0.37	0.5		22	20.1	19.1	16.6	12.8													
HX70 55 M	0.55	0.75		31.1	28.8	27.7	24.7	20.2													
HX80 75 M	0.75	1		32	30	29.3	27.4	24.7	21												
HX120 55 M	0.55	0.75		22.4			18.9	17.5	15.9	14	11.8	9.2									
HX120 90 M	0.9	1.2		31.8			28.2	26.5	24.6	22.4	20	17.3									
HX210 75 M	0.75	1		17.7						16.5	16.1	15.6	15	14.4	12.6	10.4					
HX210 110 M	1.1	1.5		20.8						19.7	19.3	19	18.5	18	16.5	14.4					
HX210 150 M	1.5	2		25.5						24.8	24.5	24	23.6	23	21.3	19					
HX210 185 M	1.85	2.5		29						28.2	27.9	27.5	27.1	26.6	25.1	23.1					
HX370 110 M	1.1	1.5		16.3									15.5	15.2	14.3	13	11.4	9.4	8.1		
HX370 150 M	1.5	2		20.4										19.1	18.3	17.2	15.8	14.1	13	10.8	
HX370 185 M	1.85	2.5		24.4										22.9	22.1	21.1	19.8	18.2	17.1	15	13
HX370 300	3	4		30.3										28.3	27.5	26.5	25.3	23.8	22.8	20.8	19

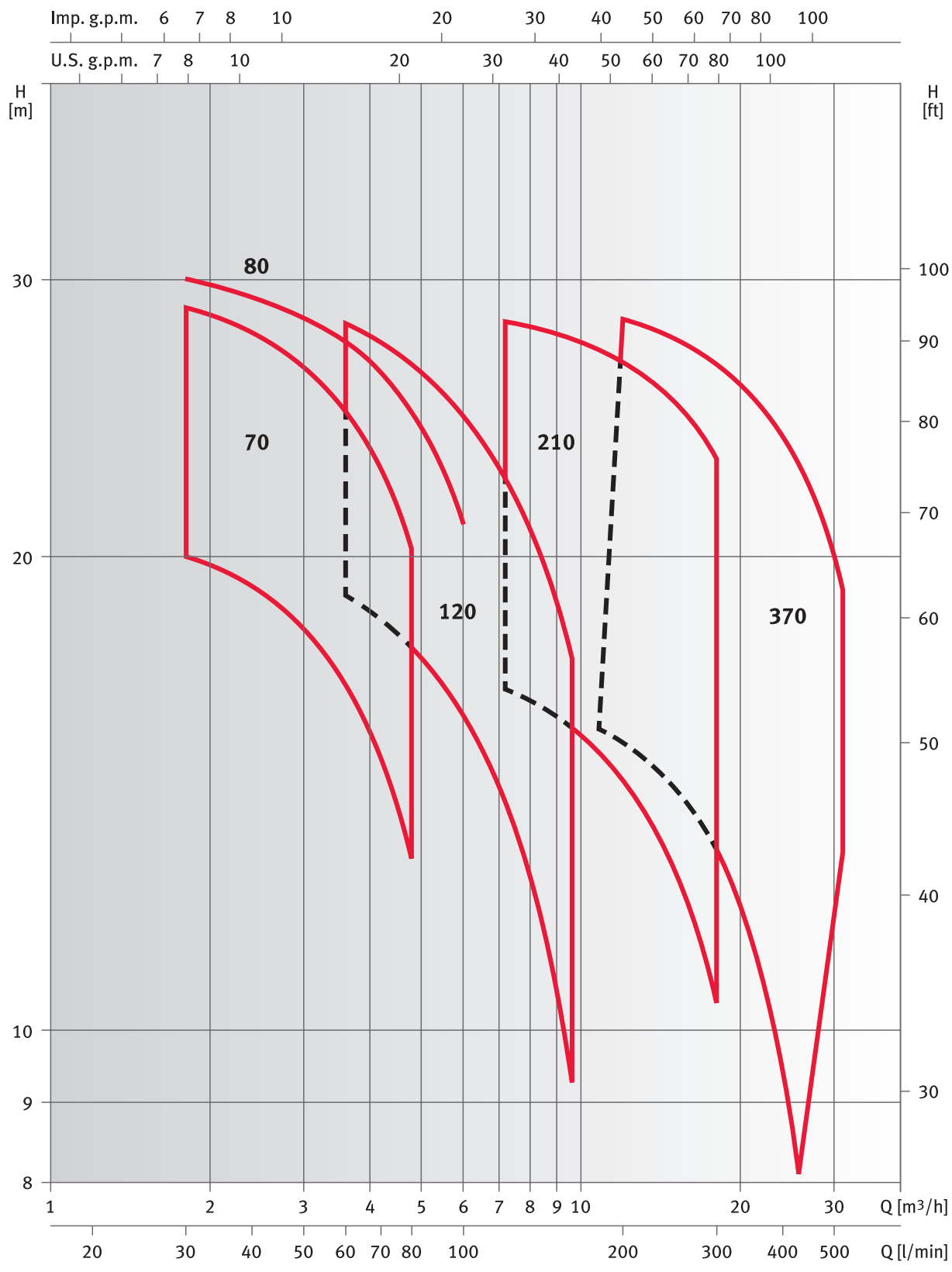
Electrical data at 50 Hz

PUMP TYPE	INPUT POWER*	INPUT CURRENT* 220 - 240 V	CAPACITOR
SINGLE-PHASE	KW	A	µF / 450 V
HX70 37 M	0.6	2.72	14
HX70 55 M	0.97	4.55	16
HX80 75 M	1.07	4.87	20
HX120 55 M	0.91	4.33	16
HX120 90 M	1.39	6.24	25
HX210 75 M	1.13	5.1	20
HX210 110 M	1.48	6.68	30
HX210 150 M	1.91	8.6	40
HX210 185 M	2.72	12.7	70
HX370 110 M	1.49	6.75	30
HX370 150 M	2.05	9.26	40
HX370 185 M	2.72	12.7	70

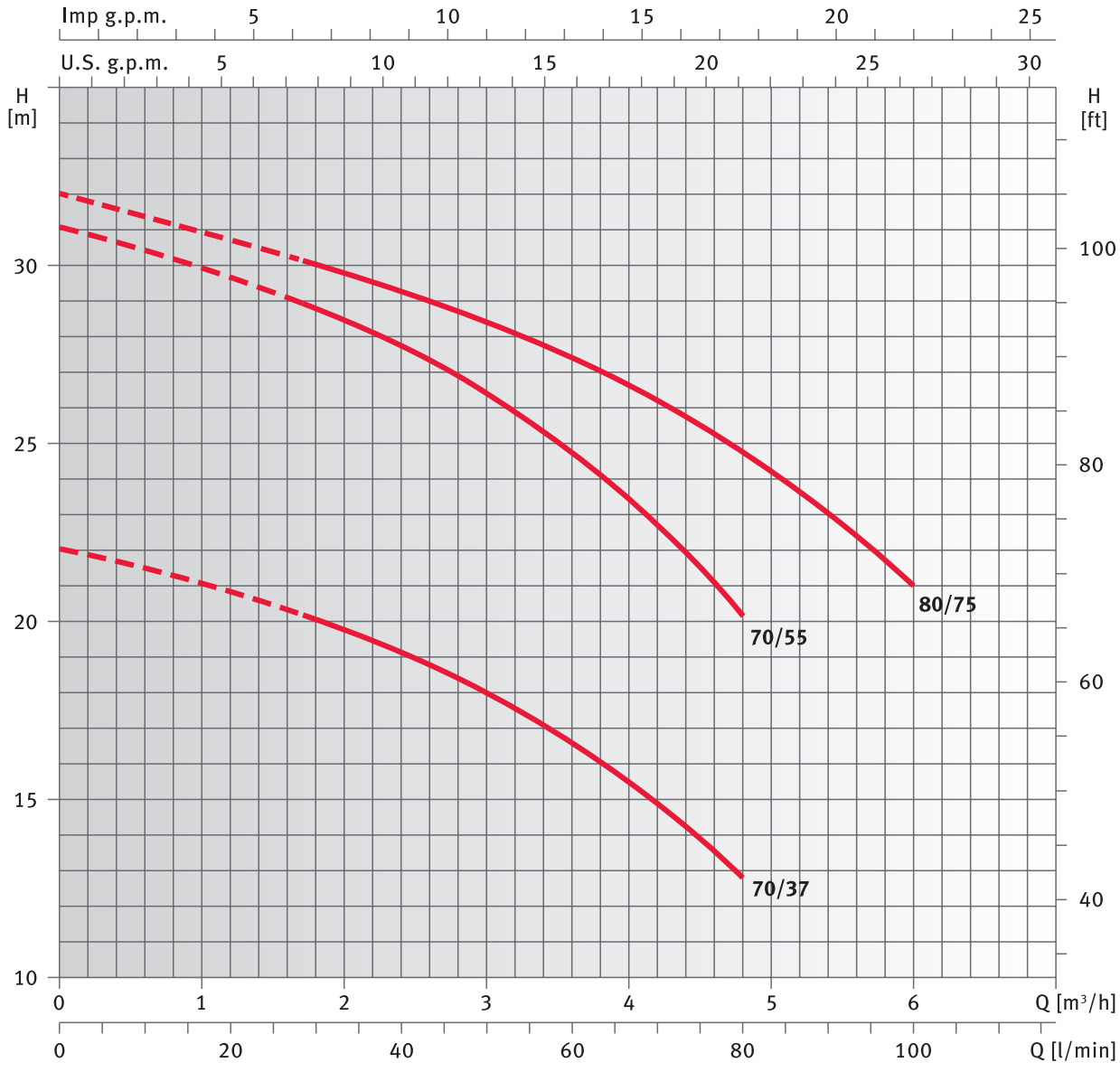
* Maximum value in specified range.

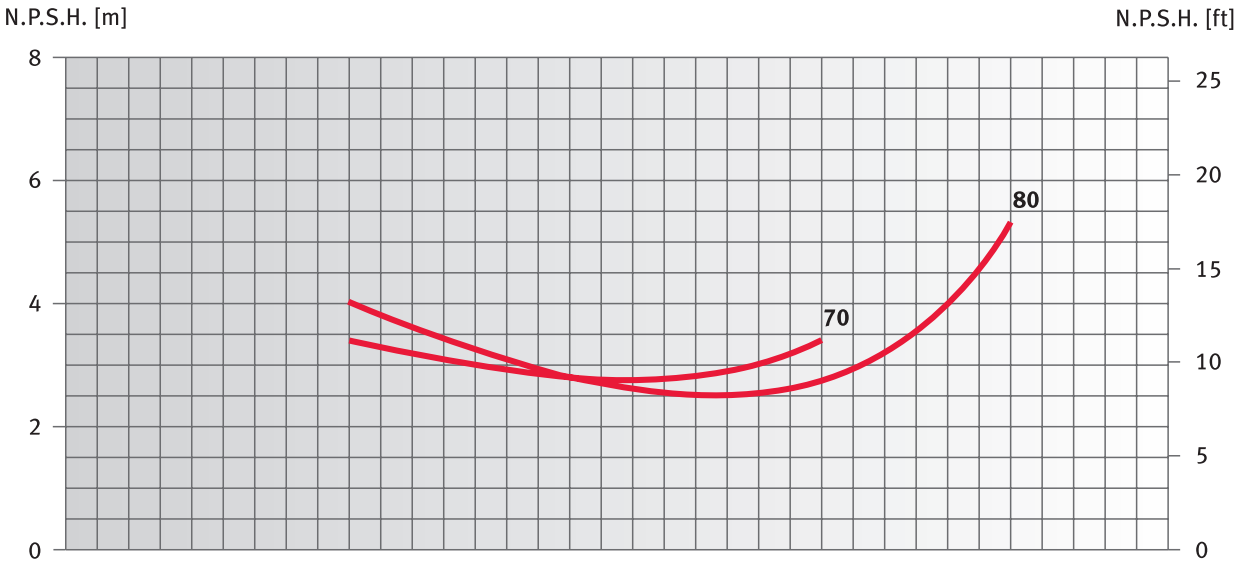
PUMP TYPE	INPUT POWER*	INPUT CURRENT* 220 - 240 V	INPUT CURRENT* 380 - 415 V
THREE-PHASE	KW	A	A
HX70 37	0.61	2.51	1.45
HX70 55	0.88	2.86	1.65
HX80 75	1.06	3.65	2.11
HX120 55	0.82	2.74	1.58
HX120 90	1.32	4.52	2.61
HX210 75	1.12	3.76	2.17
HX210 110	1.43	4.68	2.7
HX210 150	1.84	6.04	3.49
HX210 185	2.28	8.35	4.82
HX370 110	1.44	4.71	2.72
HX370 150	1.99	6.32	3.65
HX370 185	2.47	8.63	4.98
HX370 300	3.58	11	6.38

* Maximum value in specified range.


Imp. g.p.m. 6 7 8 10 20 30 40 50 60 70 80 100
U.S. g.p.m. 7 8 10 20 30 40 50 60 70 80 100
H [m]
H [ft]
80
70
210
120
370
30
20
10
9
8
100
90
80
70
60
50
40
30
1 2 3 4 5 6 7 8 9 10 20 30 Q [m³/h]
20 30 40 50 60 70 80 100 200 300 400 500 Q [l/min]

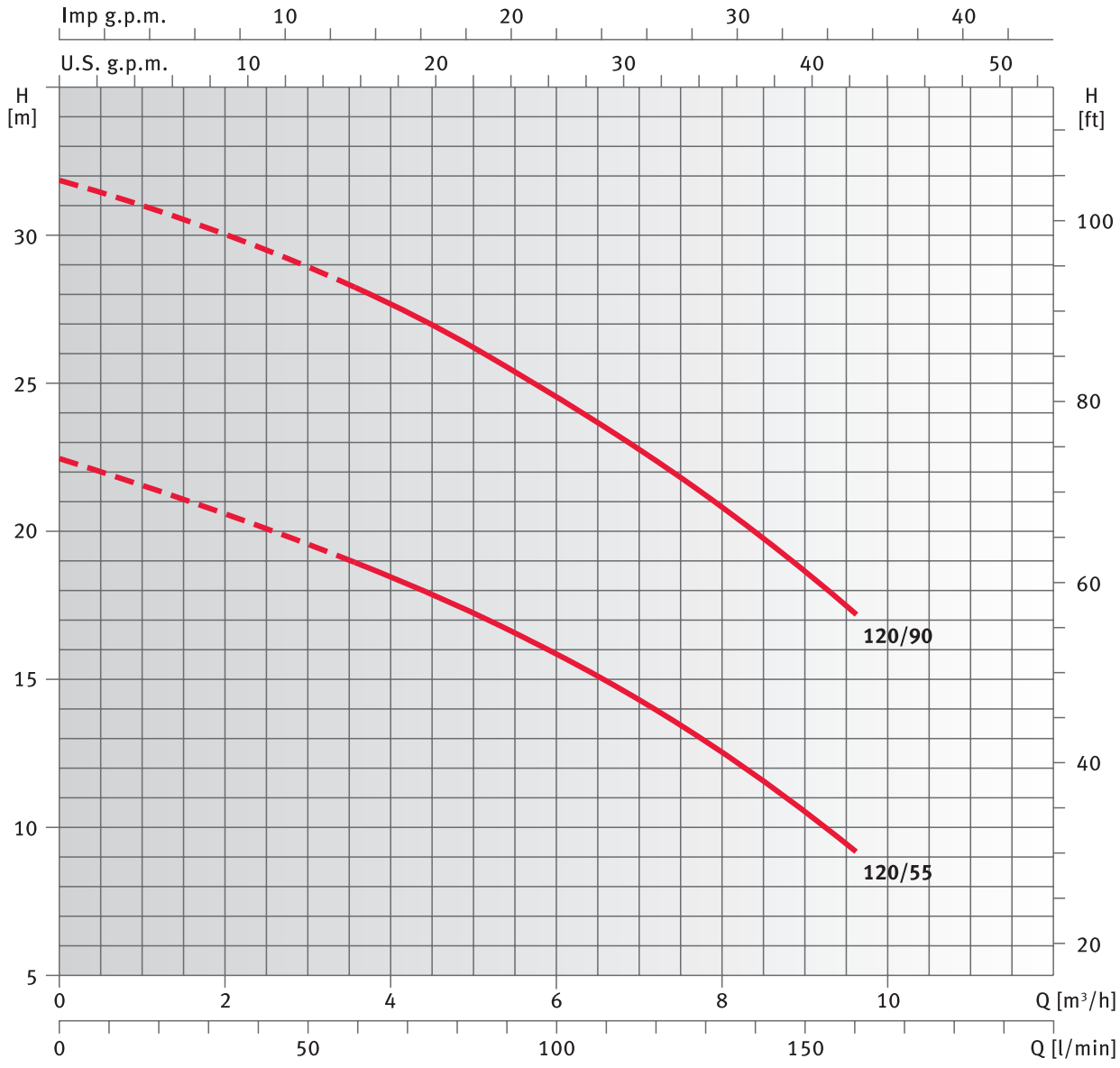
HX 70 and HX 80 Series

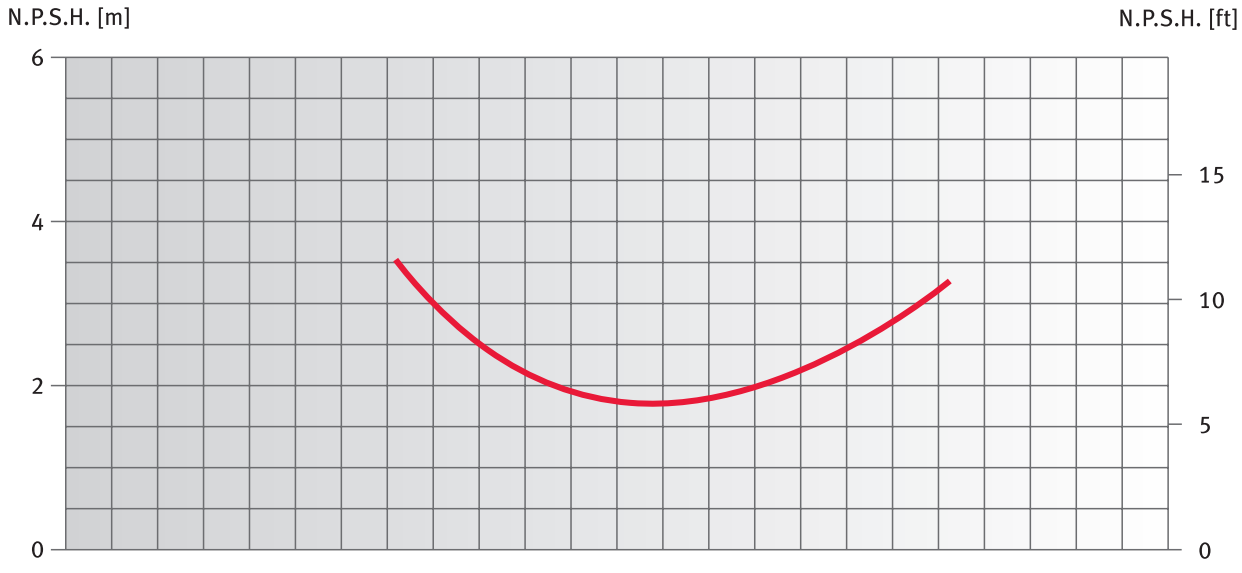




The performances are valid for liquids with density ρ = 1,0 kg/dm³ and kinematic viscosity υ = 1 mm²/sec.

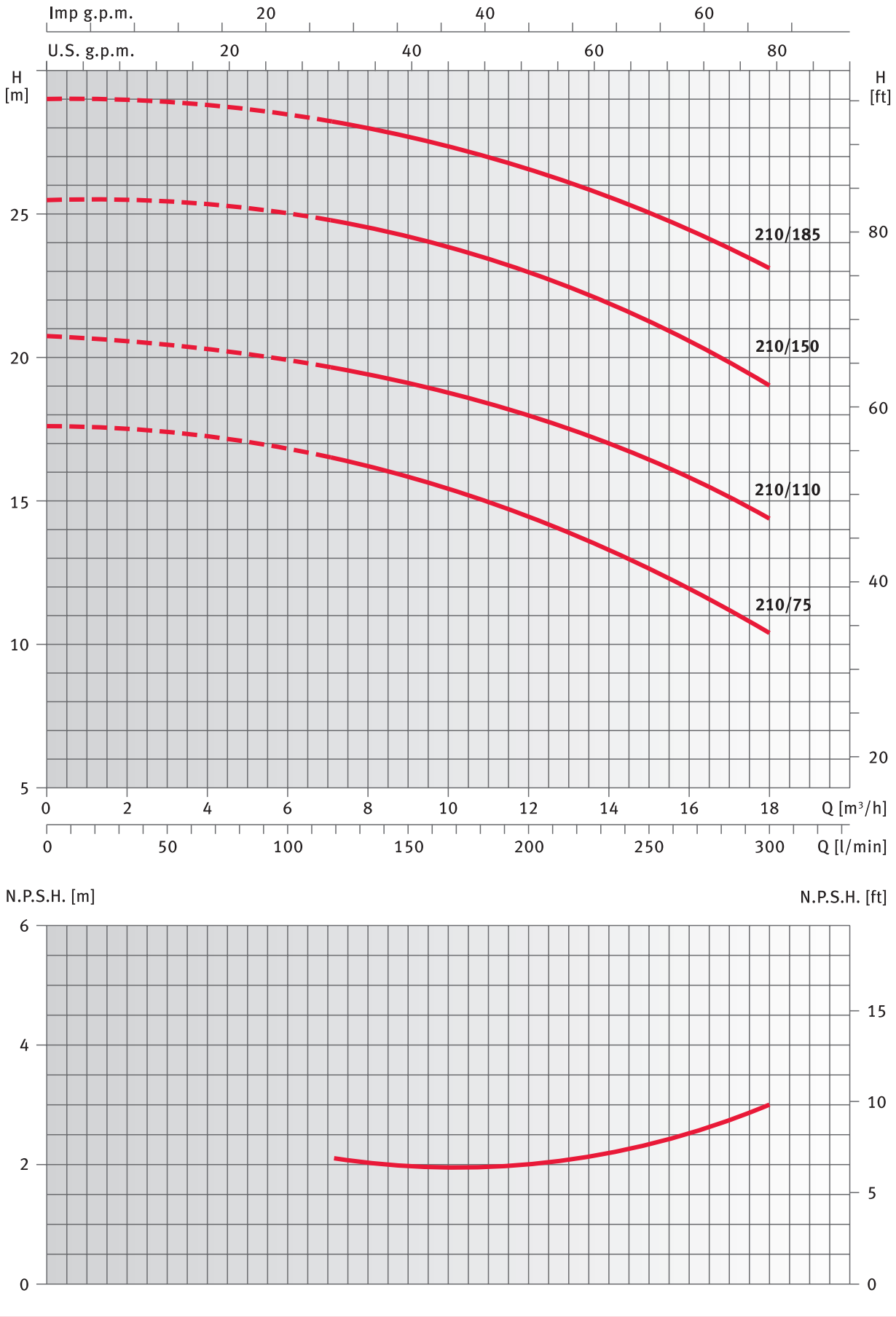
HX 120 Series





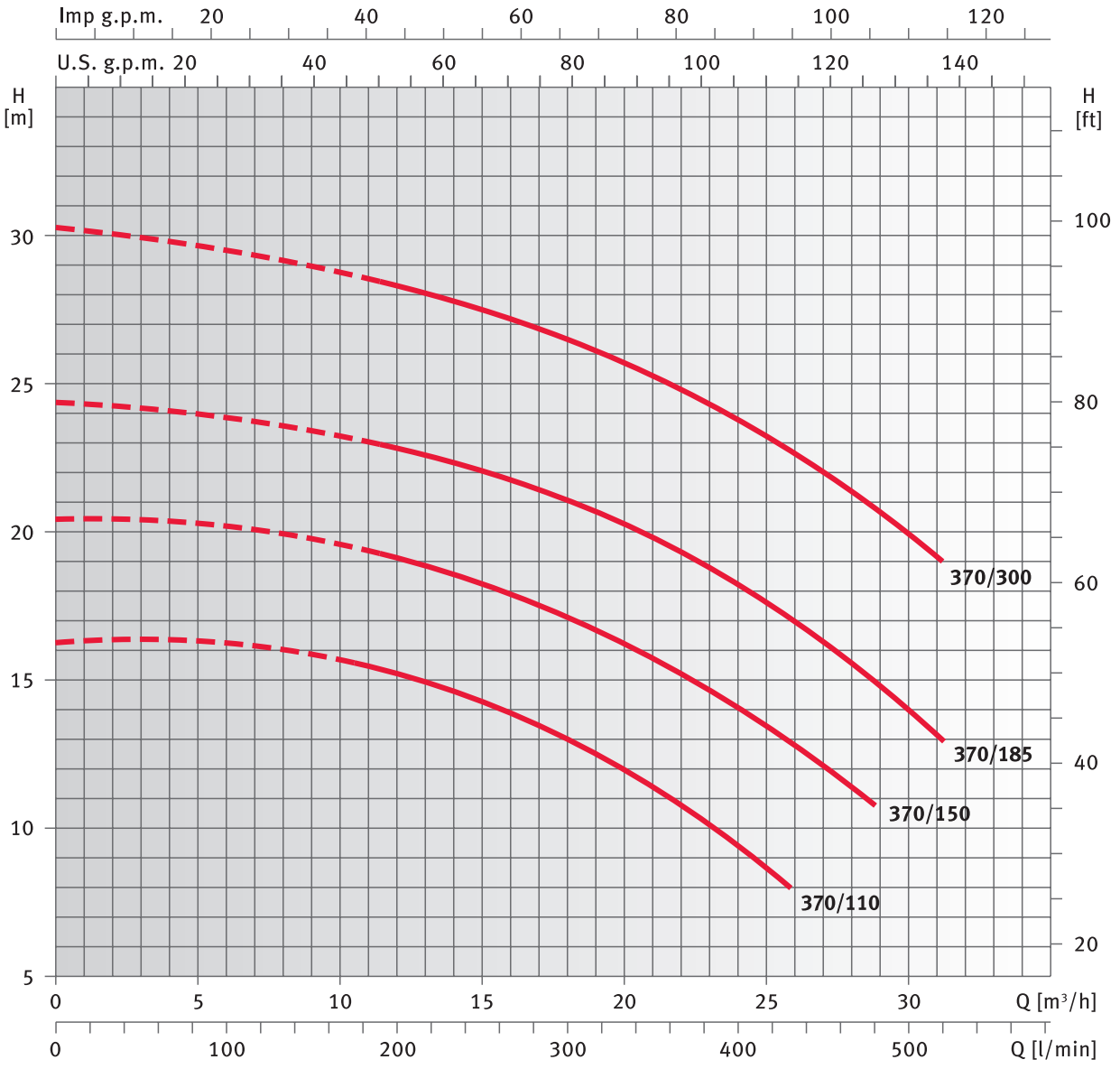
The performances are valid for liquids with density $\rho = 1{,}0$ kg/dm³ and kinematic viscosity $\upsilon = 1$ mm²/sec.

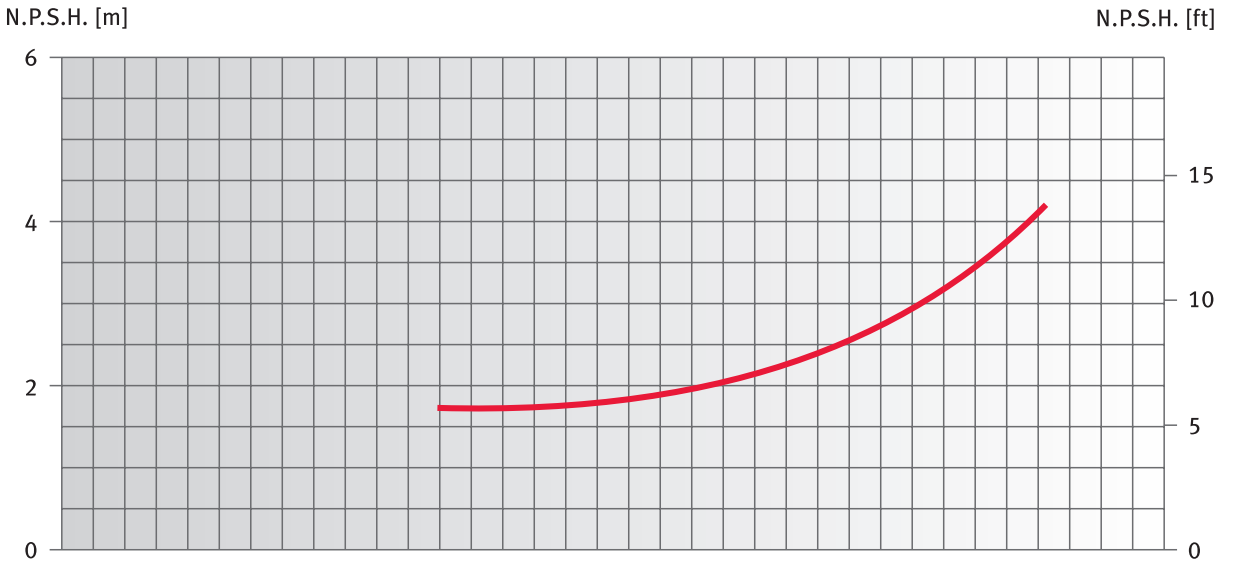
HX 210 Series



The performances are valid for liquids with density ρ = 1,0 kg/dm³ and kinematic viscosity υ = 1 mm²/sec.

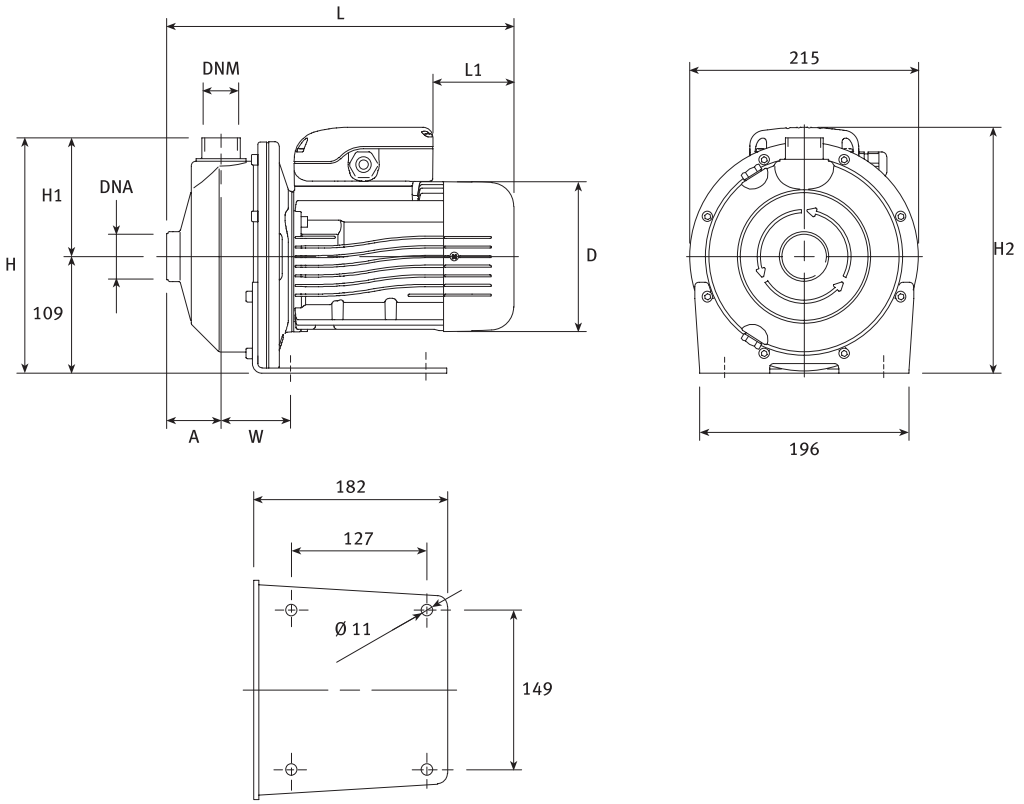
HX 370 Series





The performances are valid for liquids with density $\rho = 1{,}0$ kg/dm³ and kinematic viscosity $\upsilon = 1$ mm²/sec.

HX and HX(N) Series



PUMP TYPE	DIMENSIONS (mm) A	D	H	H1	H2	L	L1	W	DNA	DNM	WEIGHT kg
HX70 37 M	51	120	220	111	220	311	62	65	Rp 1 1/4	Rp 1	9.7
HX70 55 M	51	140	220	111	230	325	76	65	Rp 1 1/4	Rp 1	11.6
HX80 75 M	51	140	220	111	230	325	76	65	Rp 1 1/4	Rp 1	12.5
HX120 55 M	51	140	220	111	230	325	76	65	Rp 1 1/4	Rp 1	11.5
HX120 90 M	51	140	220	111	239	325	31	65	Rp 1 1/4	Rp 1	13
HX210 75 M	54	140	222	113	230	339	76	76	Rp 1 1/2	Rp 1 1/4	13
HX210 110 M	54	156	222	113	246	385	69	76	Rp 1 1/2	Rp 1 1/4	14.5
HX210 150 M	54	156	222	113	246	385	69	76	Rp 1 1/2	Rp 1 1/4	16.1
HX210 185 M	54	174	222	113	243	429	84	76	Rp 1 1/2	Rp 1 1/4	17
HX370 110 M	54	156	222	113	246	385	69	76	Rp 2	Rp 1 1/4	14
HX370 150 M	54	156	222	113	246	385	69	76	Rp 2	Rp 1 1/4	16.1
HX370 185 M	54	174	222	113	243	429	84	76	Rp 2	Rp 1 1/4	20
HX70 37	51	120	220	111	220	311	62	65	Rp 1 1/4	Rp 1	9.7
HX70 55	51	140	220	111	230	325	76	65	Rp 1 1/4	Rp 1	11.6
HX80 75	51	140	220	111	230	325	76	65	Rp 1 1/4	Rp 1	12.5
HX120 55	51	140	220	111	230	325	76	65	Rp 1 1/4	Rp 1	11.5
HX120 90	51	140	220	111	230	325	76	65	Rp 1 1/4	Rp 1	13
HX210 75	54	140	222	113	230	339	76	76	Rp 1 1/2	Rp 1 1/4	13
HX210 110	54	156	222	113	238	385	114	76	Rp 1 1/2	Rp 1 1/4	14.5
HX210 150	54	156	222	113	238	385	114	76	Rp 1 1/2	Rp 1 1/4	16.1
HX210 185	54	156	222	113	238	385	114	76	Rp 1 1/2	Rp 1 1/4	14.4
HX370 110	54	156	222	113	238	285	114	76	Rp 2	Rp 1 1/4	14
HX370 150	54	156	222	113	238	385	114	76	Rp 2	Rp 1 1/4	16.1
HX370 185	54	156	222	113	238	385	114	76	Rp 2	Rp 1 1/4	17.7
HX370 300	54	174	222	113	243	429	172	76	Rp 2	Rp 1 1/4	21

Description

- **H2X** are twin-impeller centrifugal electropumps manufactured entirely of AISI 304 and optionally in AISI 316L.
- The surface engines have efficiency values within the range normally designated as class-1 efficiency.

Technical data

- Flow: up to 210 l/min (12.5 m³/h).
- Height: up to 62 m.
- Temperature of liquid pumped: -10°C to + 85°C in standard version (110°C **H2X**../..–V and N versions).
- Maximum operating pressure: 8 bar (PN 8).
- Counterclockwise rotation, observing the pump from the suction nozzle.

Electrical and engine features

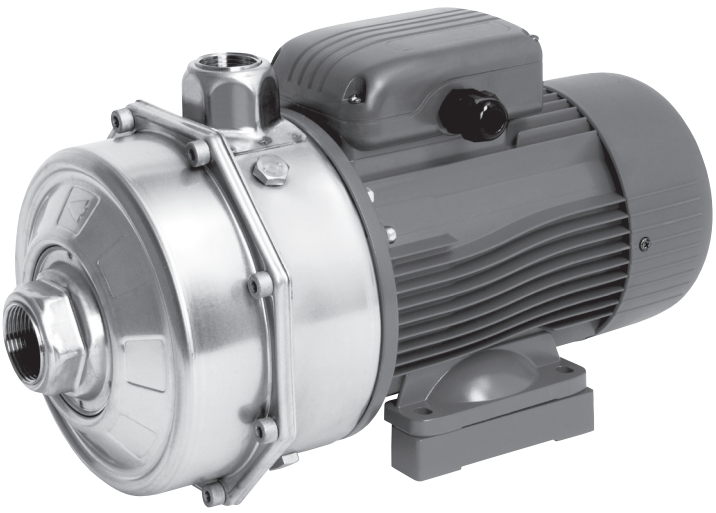
- Asynchronous squirrel-cage rotor, sealed construction, external ventilation.
- Level of protection: IP55.
- Class F insulation.
- Performance compliant with EN 60034-1.
- Standard voltage:
  Monophasic version: 220-240 V 50 Hz, 2 poles, with self-adjusting overload protection up to 1.5 kW. For high voltages, the user must provide and install overload protection in the control panel.
  Triphasic version: 220-240/380-415 V 50 Hz, 2 poles, the user must provide and install overload protection in the control panel.
- Drainage connectors in the standard version.

Construction features

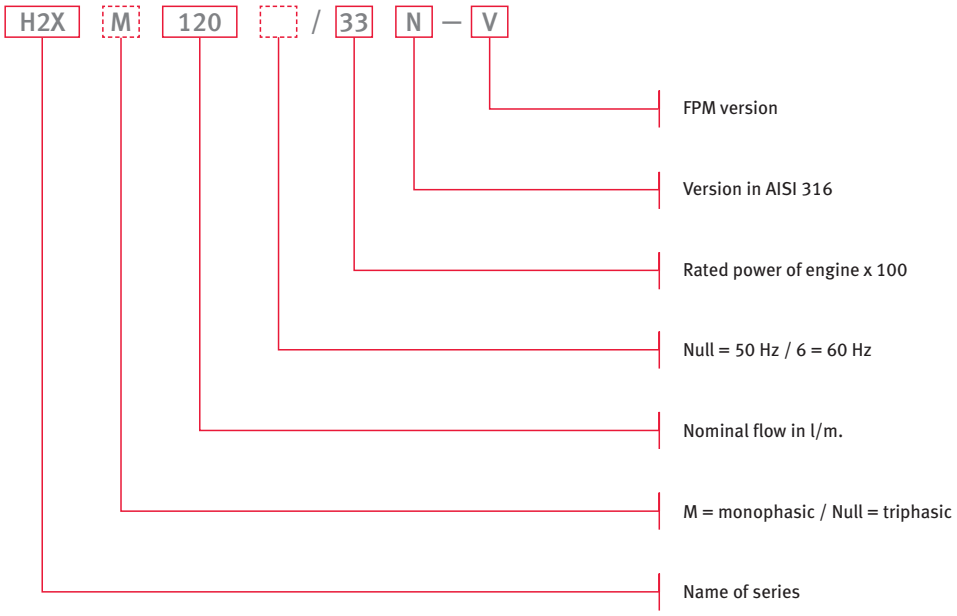
- Monobloc twin-impeller centrifugal pumps with axial suction and radial impulsion.
- Compact construction, with the pump connected directly to the engine; special extension of the engine axle shared with the pump and held by ball bearings.
- Swivel mounting with extractable rear design, doing away with the need to disconnect the pump casing from the tubing.
- Threaded suction and discharge nozzles (Rp UNI - ISO 7).
- High-performance impeller manufactured in AISI 304 stainless steel (AISI 316 for the N version).
- Mechanical seal with ceramic/carbon rings, NBR elastomers, (EPDM for the N version); all other components are manufactured in AISI 304 stainless steel (AISI 316 for the N version). Assembly dimensions in compliance with EN 12756 (formerly DIN 24960) and ISO 3069.
- O-rings manufactured in NBR (EPDM for the N version).
- Mounting bracket on the pump casing.

Manufactured upon request

- Different voltages and frequencies.
- Different material for the mechanical seal and o-rings.

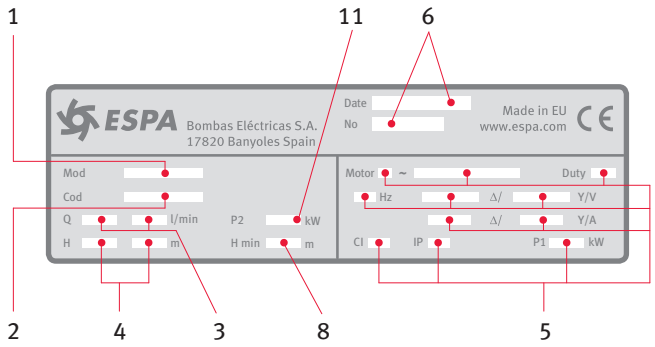


H2X identification codes



EXAMPLE: H2XM 1206/33-V
H2X series monophasic electropump, nominal flow 120 l/min, 50 Hz, engine power 0.33 kW, FPM version.

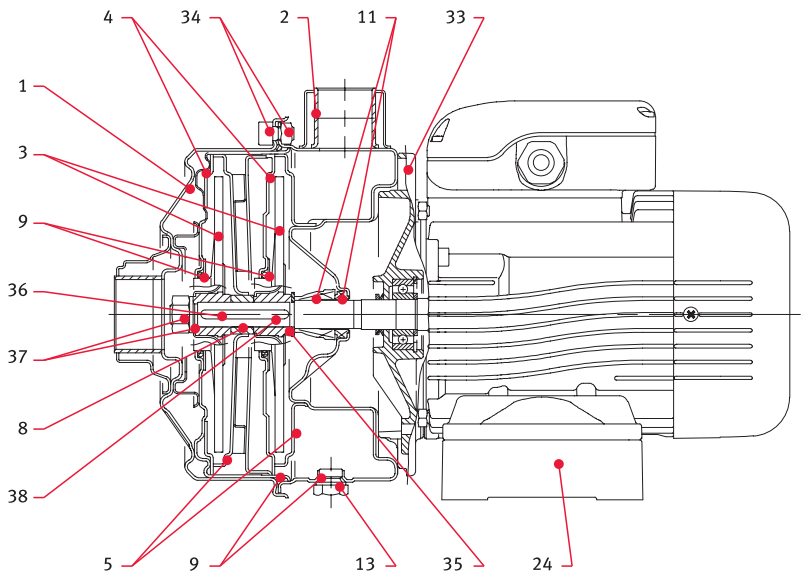
Nominal data



Legend

- 1. Electropump type
- 2. Code
- 3. Supply range
- 4. Height interval
- 5. Engine features
- 6. Year of manufacture and serial number
- 8. Minimum height
- 11. Rated power

H2X, H2X(N) Series



VERSION
H2X70 75 M
H2X70 90 M
H2X70 110 M
H2X120 110 M
H2X120 150 M
H2X120 220 M
H2X200 185 M
H2X200 220
H2X200 300

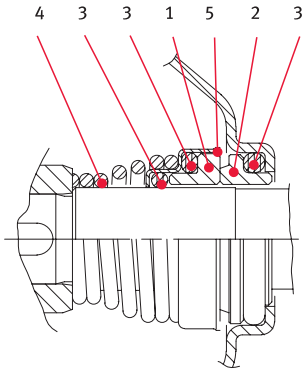
H2X Series

Ref. Nº	DESCRIPTION	MATERIALS	REF. REGULATIONS EUROPE	REF. REGULATIONS USA
1	Suction bushings	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
2	Pump casing	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
3	Impeller	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
4	Diffuser cover	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
5	Diffuser	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
8	Impeller washer	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
9	Elastomers	NBR (standard version)		
11	Mechanical seal	Ceramic / Carbon / NBR (standard version)		
13	Filling/drainage connectors	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
24	Mounting bracket	Aluminium	EN 1706-AC-AlSi11Cu2 (Fe) (AC46100)	
33	Lamp	Aluminium	EN 1706-AC-AlSi11Cu2 (Fe) (AC46100)	
34	Pump casing attachment screws	Zinc-plated steel		
35	Impeller support washer	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
36	Key	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
37	Impeller lock nut and washer	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
38	Axle extension	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316

H2X(N) Series

Ref. Nº	DESCRIPTION	MATERIALS	REF. REGULATIONS EUROPE	REF. REGULATIONS USA
1	Aspiration bushings	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
2	Pump casing	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
3	Impeller	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
4	Diffuser cover	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Diffuser	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
8	Impeller washer	Stainless steel		AISI 316
9	Elastomers	EPDM (standard version)		
11	Mechanical seal	Ceramic / Carbon / EPDM (standard version)		
13	Filling/drainage connectors	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
24	Mounting bracket	Aluminium	EN 1706-AC-AlSi11Cu2 (Fe) (AC46100)	
33	Lamp	Aluminium	EN 1706-AC-AlSi11Cu2 (Fe) (AC46100)	
34	Pump casing attachment screws	Zinc-plated steel		
35	Impeller support washer	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
36	Key	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
37	Impeller lock nut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
38	Axle extension	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316

Mechanical seal with assembly dimensions in compliance with EN 12756 (formerly DIN 24960) and ISO 3069



List of optional materials

POSITION 1-2	POSITION 3	POSITION 4-5
B: Resin impregnated carbon	P: NBR	F: AISI 304
C: Special resin impregnated carbon	E: EPDM	G: AISI 316
Q_1: Silicon carbide	V: FPM	
U_3: Tungsten carbide		
V: Ceramic		

H2X Mechanical seal

TYPE	POSITION 1 Rotating Assembly	POSITION 2 Fixed Assembly	POSITION 3 Elastomers	POSITION 4 Springs	POSITION 5 Other Components	TEMPERATURE (° C)
STANDARD MECHANICAL SEAL						
V B P G F	V	B	P	G	F	-10 + 85
OTHER TYPES OF MECHANICAL SEAL						
V B E G F	V	B	E	G	F	-10 + 110
V C E G G	V	C	E	G	G	-10 + 110
Q_1 Q_1 E G F	Q_1	Q_1	E	G	F	-10 + 110
U_3 B E G F	U_3	B	E	G	F	-10 + 110
U_3 C E G F	U_3	C	E	G	F	-10 + 110
U_3 U_3 E G F	U_3	U_3	E	G	F	-10 + 110
V B V G F	V	B	V	G	F	-10 + 110
V C V G F	V	C	V	G	F	-10 + 110
Q_1 Q_1 V G F	Q_1	Q_1	V	G	F	-10 + 110
U_3 C V G F	U_3	C	V	G	F	-10 + 110
U_3 U_3 V G F	U_3	U_3	V	G	F	-10 + 110

H2X(N) Mechanical seal

TYPE	POSITION 1 Rotating Assembly	POSITION 2 Fixed Assembly	POSITION 3 Elastomers	POSITION 4 Springs	POSITION 5 Other Components	TEMPERATURE (° C)
STANDARD MECHANICAL SEAL						
V B E G G	V	B	E	G	G	-10 + 110
OTHER TYPES OF MECHANICAL SEAL						
V C E G G	V	C	E	G	G	-10 + 110
Q_1 Q_1 E G G	Q_1	Q_1	E	G	G	-10 + 110
V C V G G	V	C	V	G	G	-10 + 110
Q_1 Q_1 V G G	Q_1	Q_1	V	G	G	-10 + 110

Hydraulic performance table at 50 Hz

MODEL	P2		l/min	0	30	40	50	60	70	80	100	120	150	180	210
	kW	HP	m^3/h	0	1.8	2.4	3	3.6	4.2	4.8	6	7.2	9	10.8	12.6
H2X70 75 M	0.75	1		42.9	38.8	36.9	34.6	31.7	28.2	23.9					
H2X70 90 M	0.9	1.2		48.8	45.1	43.2	40.7	37.7	34	29.5					
H2X70 110 M	1.1	1.5		56.2	52	49.8	47.1	43.9	39.9	35.3					
H2X120 110 M	1.1	1.5		44.3			39.1	37.8	36.4	34.8	31.4	27.6	21		
H2X120 150 M	1.5	2		54			49.4	48.1	46.6	44.9	41.2	36.8	29.3		
H2X120 220 M	2.2	3		63.8			59.6	58.2	56.6	54.8	50.6	45.7	37.1		
H2X200 185 M	1.85	2.5		43.2			41.8	41.2	40.6	39.9	38.3	36.4	33.2	29.5	25.5
H2X200 220	2.2	3		53.5			52.4	51.9	51.4	50.7	49.2	47.5	44.3	40.6	36.5
H2X200 300	3	4		62.6			61	60.6	60.1	59.5	58.2	56.6	53.8	50.4	46.2

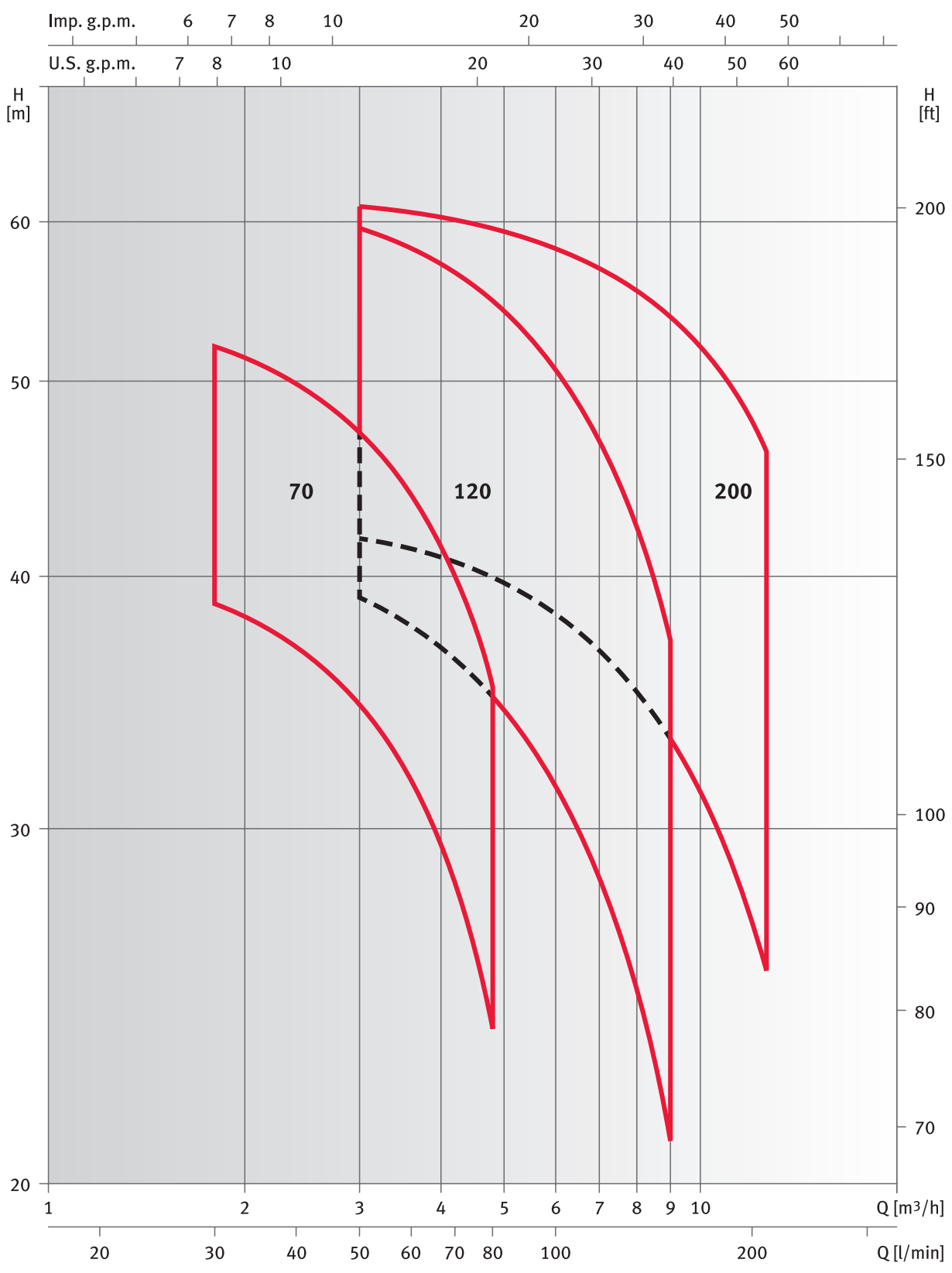
Electrical data at 50 Hz

PUMP TYPE	INPUT POWER*	INPUT CURRENT* 220 - 240 V	CAPACITOR
SINGLE-PHASE	KW	A	µF / 450 V
H2X70 75 M	1.15	5.16	20
H2X70 90 M	1.39	6.22	25
H2X70 110 M	1.76	7.92	30
H2X120 110 M	1.67	7.53	30
H2X120 150 M	2.18	9.87	40
H2X120 220 M	2.72	12.7	70
H2X200 185 M	2.72	12.7	70

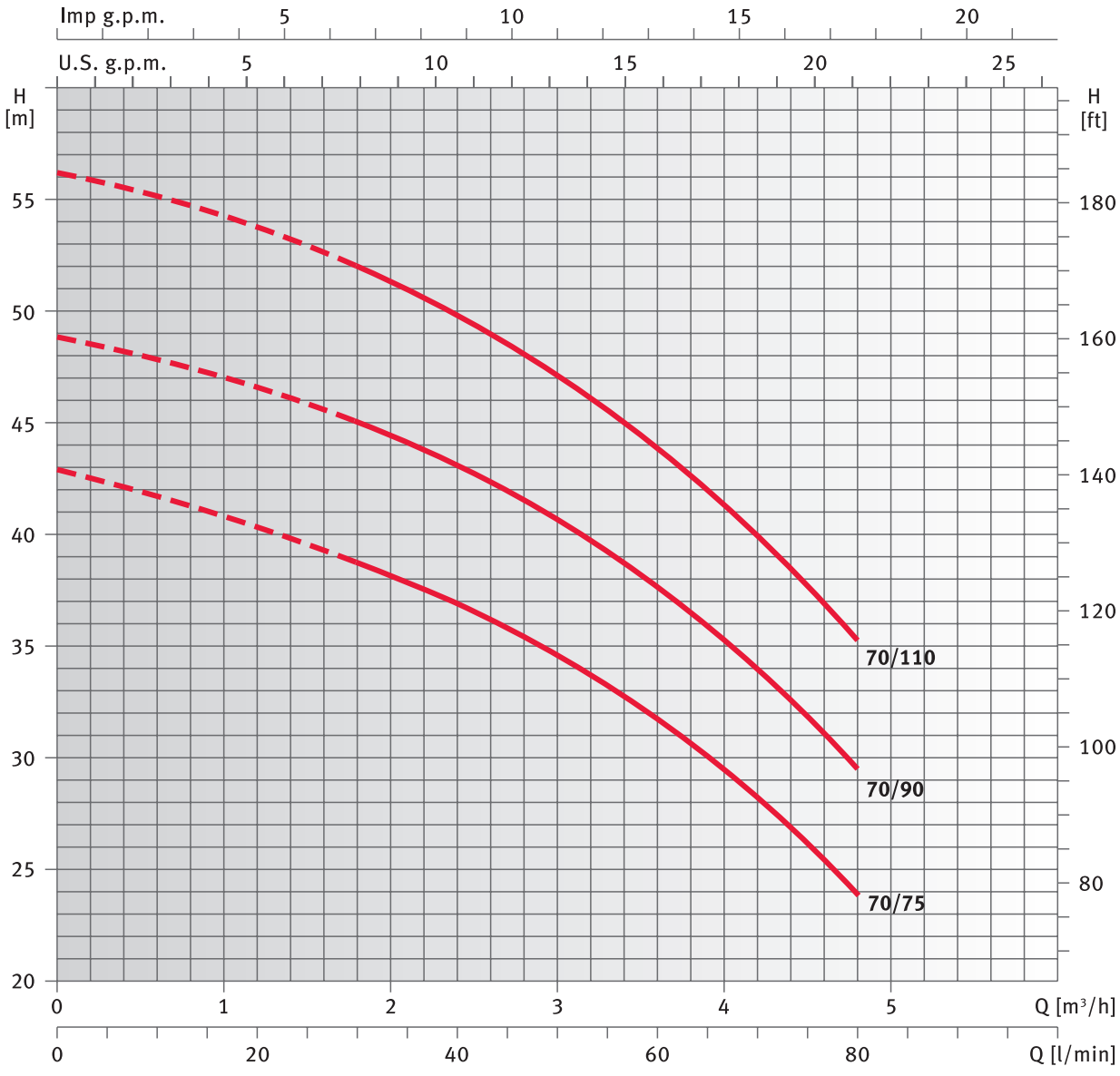
* Maximum value in specified range.

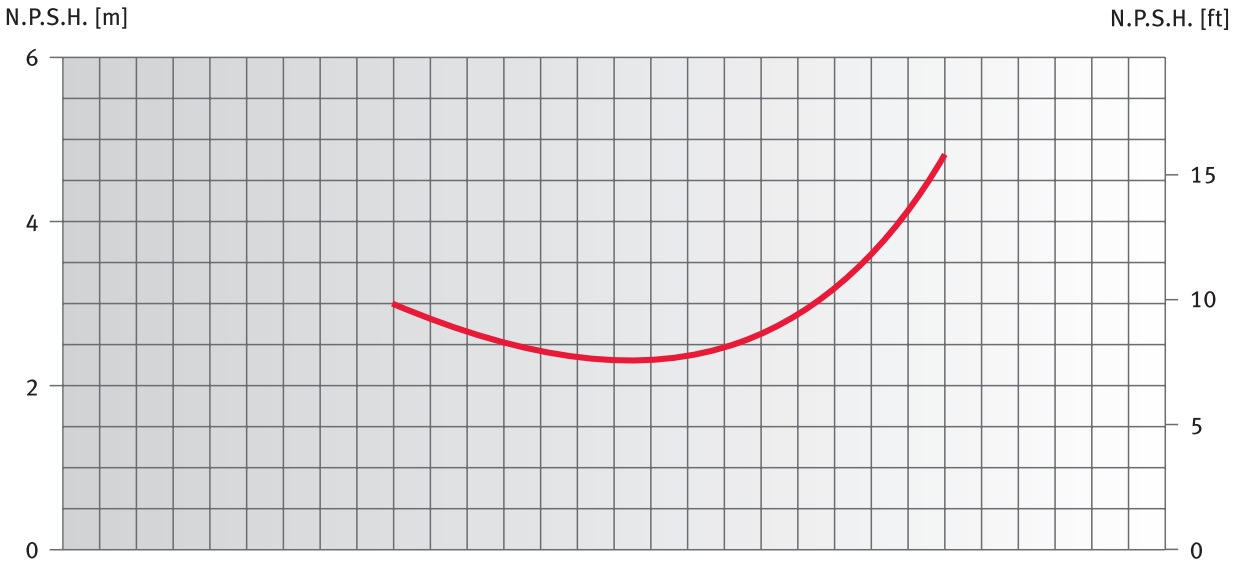
PUMP TYPE	INPUT POWER*	INPUT CURRENT* 220 - 240 V	INPUT CURRENT* 380 - 415 V
THREE-PHASE	KW	A	A
H2X70 75	1.14	3.78	2.18
H2X70 90	1.32	4.52	2.61
H2X70 110	1.71	5.33	3.02
H2X120 110	1.62	5.06	2.92
H2X120 150	2.13	6.58	3.8
H2X120 220	2.62	8.89	5.13
H2X200 185	2.34	8.44	4.87
H2X200 220	2.63	8.20	4.74
H2X200 300	3.58	11	6.38

* Maximum value in specified range.


Imp. g.p.m.
6
7
8
10
20
30
40
50
U.S. g.p.m.
7
8
10
20
30
40
50
60
H [m]
H [ft]
60
50
40
30
20
200
150
100
90
80
70
70
120
200
1
2
3
4
5
6
7
8
9
10
Q [m³/h]
20
30
40
50
60
70
80
100
200
Q [l/min]

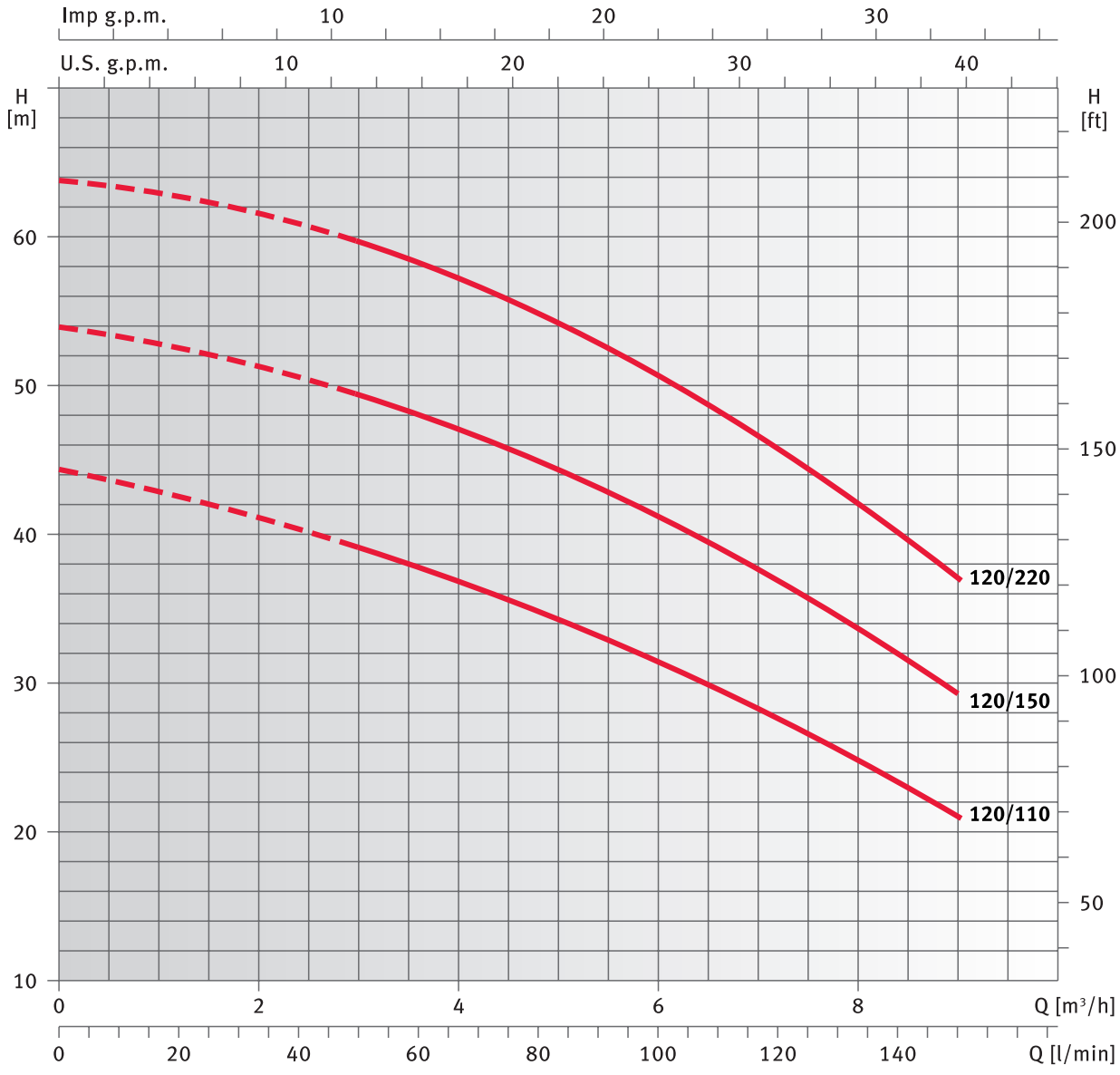
H2X 70 Series

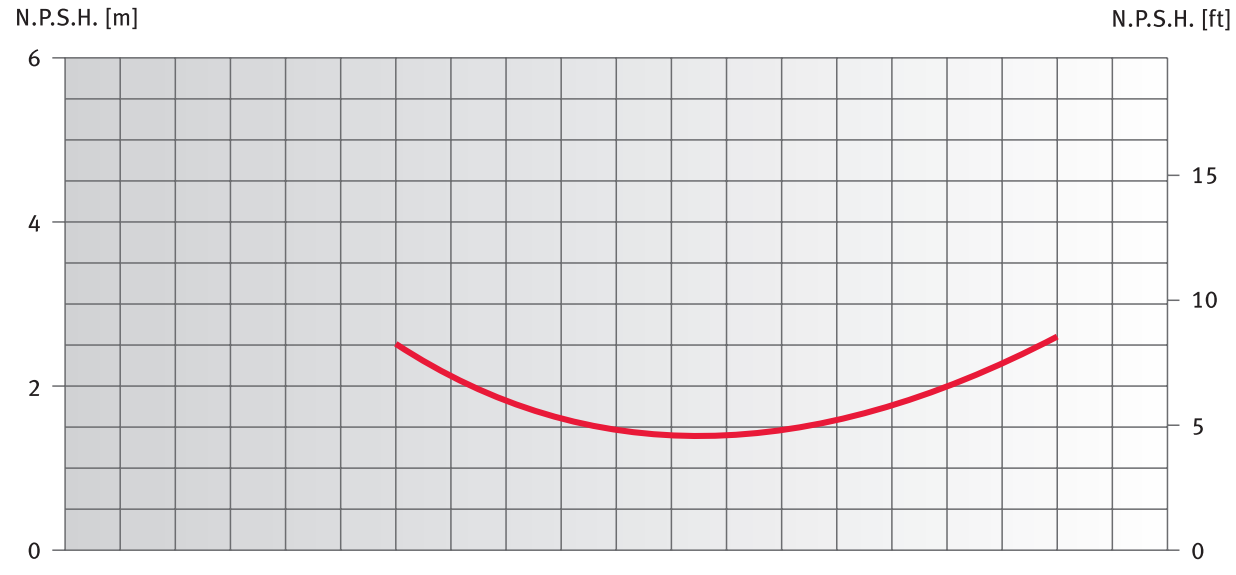




The performances are valid for liquids with density $\rho = 1{,}0$ kg/dm³ and kinematic viscosity $\upsilon = 1$ mm²/sec.

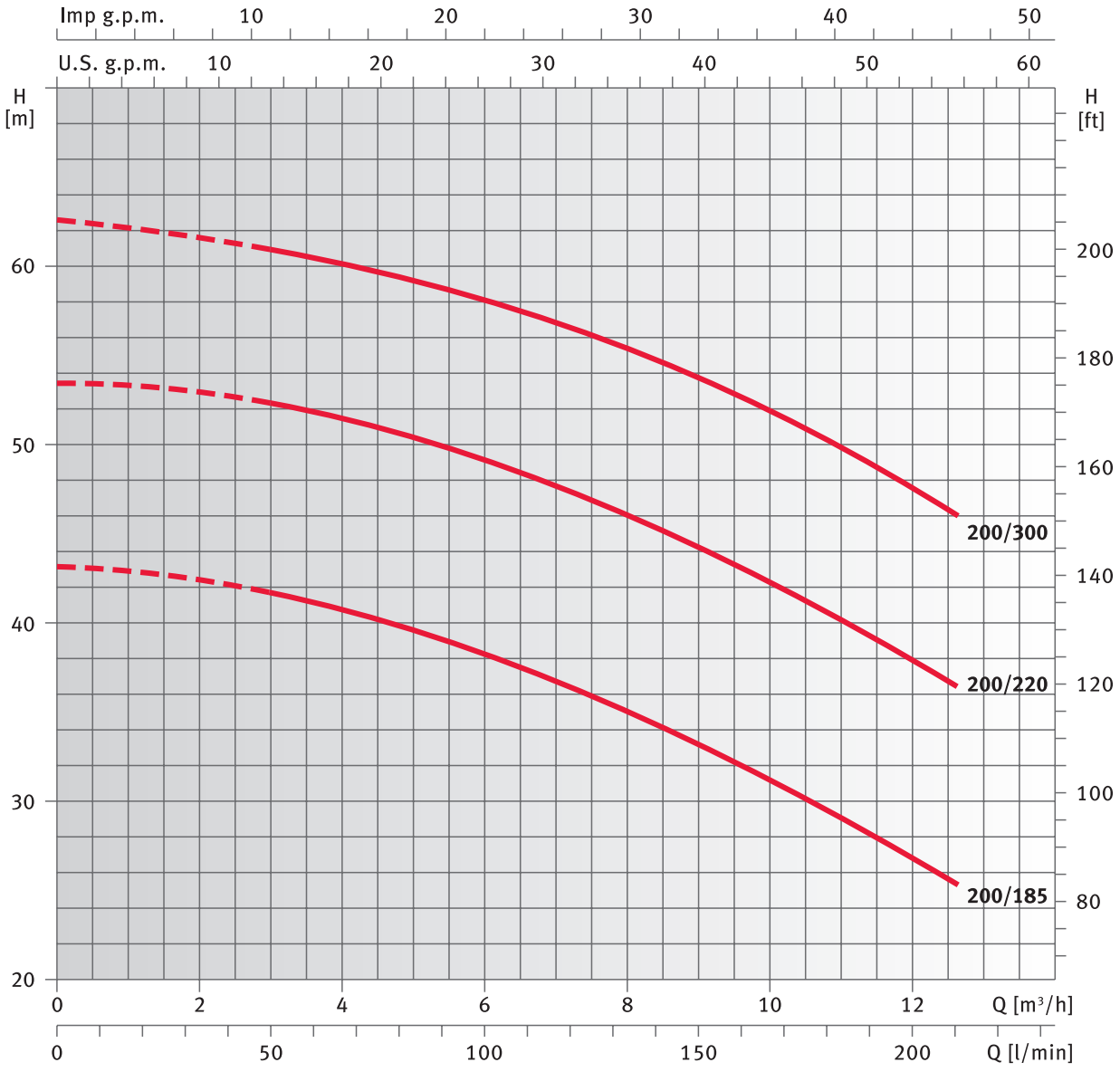
H2X 120 Series

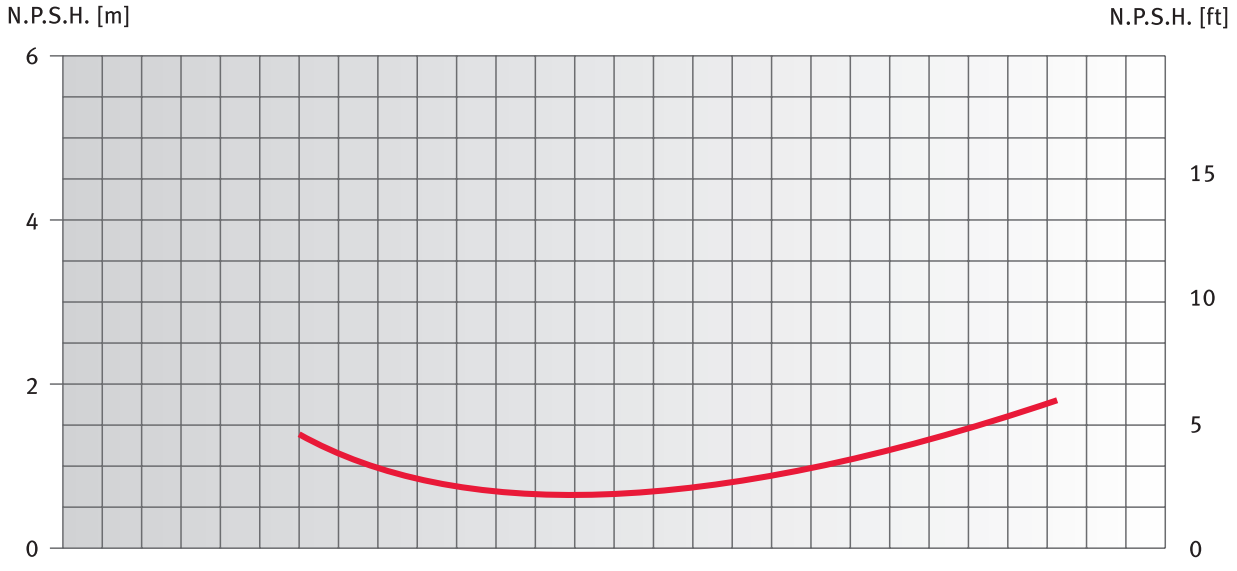




The performances are valid for liquids with density ρ = 1,0 kg/dm³ and kinematic viscosity υ = 1 mm²/sec.

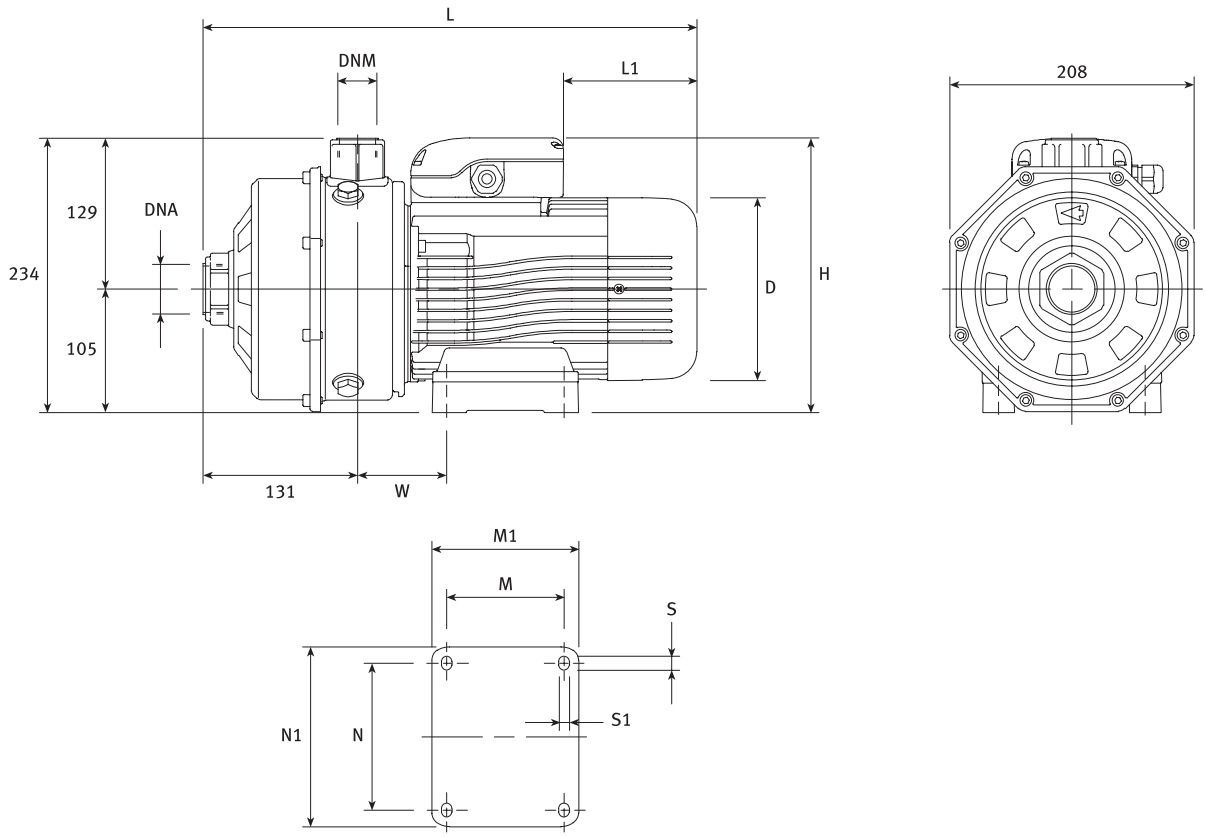
H2X 200 Series





The performances are valid for liquids with density ρ = 1,0 kg/dm³ and kinematic viscosity υ = 1 mm²/sec.

H2X and H2X(N) Series



PUMP TYPE	DIMENSIONS (mm) D	H	L	L1	M	M1	N	N1	S	S1	W	DNA	DNM	WEIGHT kg
H2X70 75 M	140	226	383	76	90	113	112	135	12	7	66	Rp $1^{1/4}$	Rp 1	15
H2X70 90 M	140	235	383	31	90	113	112	135	12	7	66	Rp $1^{1/4}$	Rp 1	15.8
H2X70 110 M	156	242	420	69	100	125	125	153	12	9	76	Rp $1^{1/4}$	Rp 1	18.5
H2X120 110 M	156	242	420	69	100	125	125	153	12	9	76	Rp $1^{1/4}$	Rp 1	18.4
H2X120 150 M	156	242	420	69	100	125	125	153	12	9	76	Rp $1^{1/4}$	Rp 1	20.2
H2X120 220 M	174	239	454	84	125	155	140	170	13	10	82	Rp $1^{1/4}$	Rp 1	27
H2X200 185 M	174	239	454	84	125	155	140	170	13	10	82	Rp $1^{1/4}$	Rp 1	27
H2X70 75	140	226	383	76	90	113	112	135	12	7	66	Rp $1^{1/4}$	Rp 1	14.9
H2X70 90	140	226	383	76	90	113	112	135	12	7	66	Rp $1^{1/4}$	Rp 1	15.7
H2X70 110	156	234	420	114	100	125	125	153	12	9	76	Rp $1^{1/4}$	Rp 1	17
H2X120 110	156	234	420	114	100	125	125	153	12	9	76	Rp $1^{1/4}$	Rp 1	16.8
H2X120 150	156	234	420	114	100	125	125	153	12	9	76	Rp $1^{1/4}$	Rp 1	18.7
H2X120 220	156	234	420	114	100	125	125	153	12	9	76	Rp $1^{1/4}$	Rp 1	20.3
H2X200 185	156	234	420	114	100	125	125	153	12	9	76	Rp $1^{1/2}$	Rp 1	20
H2X200 220	174	239	454	172	125	155	140	170	13	10	82	Rp $1^{1/2}$	Rp 1	25
H2X200 300	174	239	454	172	125	155	140	170	13	10	82	Rp $1^{1/2}$	Rp 1	27

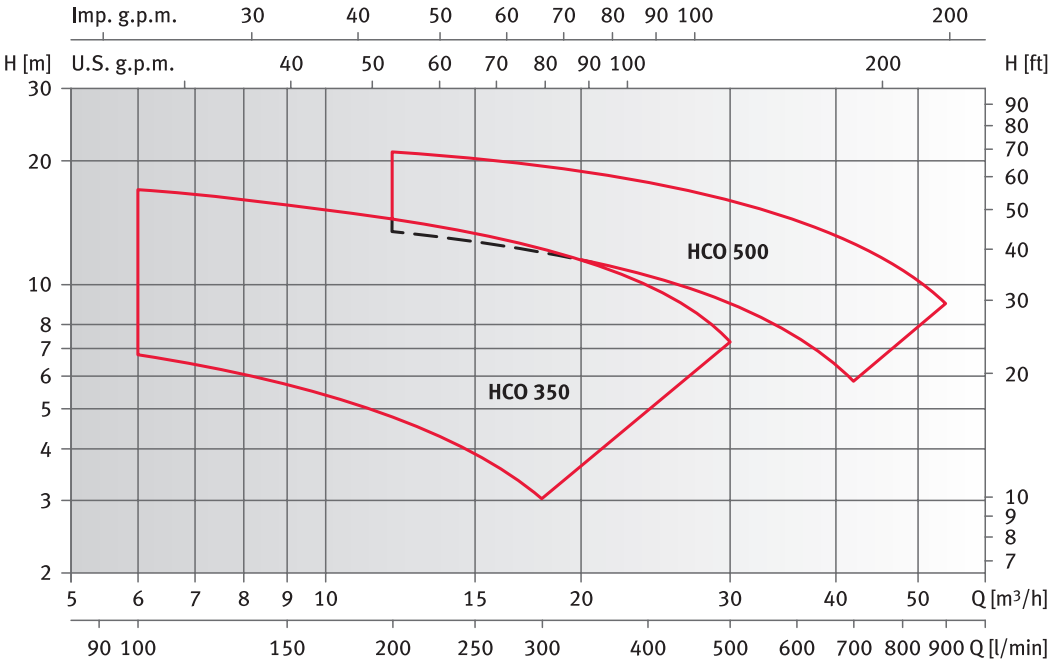
Electrical centrifugal pumps with one single impeller made entirely of stainless steel

The pump **HCO** is a centrifugal pump with an open impeller and a threaded connection.

Application sectors: civil and industrial.

- ›› Cleaning of metal components and/or treatment surface.
- ›› Cleaning of products in the packaging industry.
- ›› Cleaning of products in the food industry.
- ›› Dye factories and textile industry.
- ›› Factories with the circulation and transfer of moderate viscosity liquids with low levels of chemical aggressiveness.
- ›› Industrial washers and dishwashers for sale to the public.

Application field ⇢ HCO at 2850 rpm



Curves obtained in compliance with ISO 9906 Appendix A.

Description

- **HCO** electropumps are centrifugal pumps with an open impeller and threaded connection; all components in contact with liquid are made of AISI 316L stainless steel.
- Mechanical seal made of silicon carbide/tungsten carbide/FPM in the K version.

Technical data

- Flow: up to 900 l/min (54 m³/h).
- Height: up to 24 m.
- Temperature of liquid pumped:
  -10°C to + 120°C for the standard version.
- Maximum operating pressure: 8 bar (PN 8).
- Suspended matter worked with for:
  HCO350: 11 mm.
  HCO500: 20 mm.

Electrical and engine features

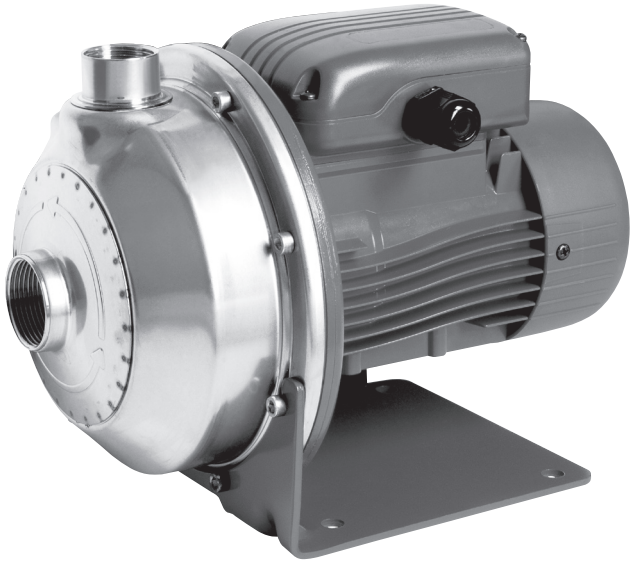
- Asynchronous squirrel-cage rotor, aluminium body, external ventilation.
- Protection: IP55.
- Class F insulation.
- Operation compliant with EN 60034-1.
- Maximum ambient temperature: 40°C.
- Standard voltage:
  Monophasic version: 220-240 V 50 Hz, 2 poles with built-in self-adjusting overload protection up to 1.5 kW. For higher voltages, the user must provide protection.
  Triphasic version: 220-240/380-415 V 50 Hz, 2 poles; the user must provide overload protection.
- Condensation drainage connectors in all engines.

Construction features

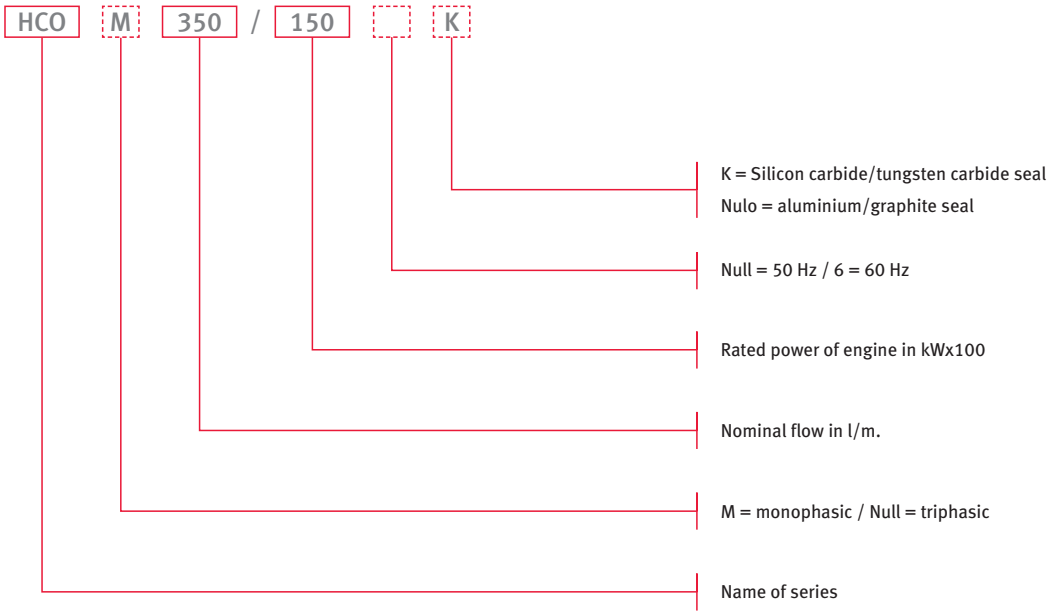
- Monobloc single-impeller centrifugal pumps, with axial aspiration and radial impulsion.
- Threaded aspiration and supply ports (Rp UNI - ISO 7).
- Compact construction; adaptor for connection to engine/pump; the impeller is coupled directly to the engine axle extension.
- Extractable rear design; There is no need to disconnect the pump casing from the system tubing.
- Open AISI 316L stainless steel impeller with four blades that are welded to the base disk.
- The leading wearing surface of the impeller is an AISI 316L stainless steel plate welded to the suction nozzle.
- The disk casing on the seal and the pump casing is made of AISI 316L stainless steel, and is free of diffusers and cavities for ease of cleaning and maintenance.
- The pump casing is held by 8 screws which allow the discharge head to revolve.
- Mechanical seal:
  Standard version: Surfaces in carbon/ceramic, FPM elastomers. All other components are manufactured in AISI 316L stainless steel. “K” VERSION: Surfaces are manufactured in silicon carbide and tungsten carbide. FPM elastomers.
  All other components are manufactured in AISI 316L stainless steel.
- FPM o-rings.

Manufactured upon request

- Different voltages and frequencies.
- Different material for the mechanical seal and o-rings.

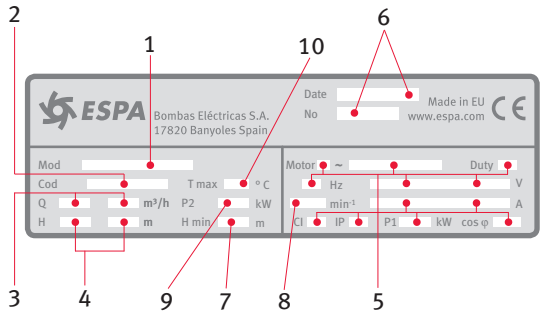


HCO identification codes



EXAMPLE: HCOM 350/1506K
HCO series monophasic electropump, nominal flow 350 l/min, rated power 1.5 kW, 50 Hz, silicon carbide/tungsten carbide seal

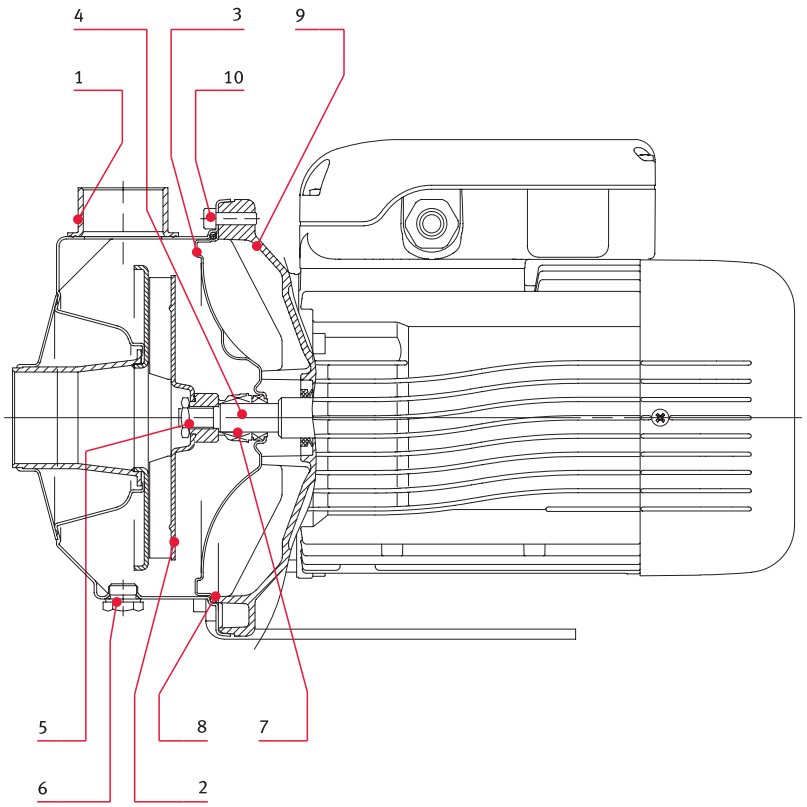
Nominal data



Legend

- 1. Electropump type
- 2. Code
- 3. Supply range
- 4. Height interval
- 5. Engine type
- 6. Date of manufacture and serial number
- 7. Minimum height
- 8. Speed
- 9. Rated power
- 10. Maximum operating temperature

HCO and HCOM Series

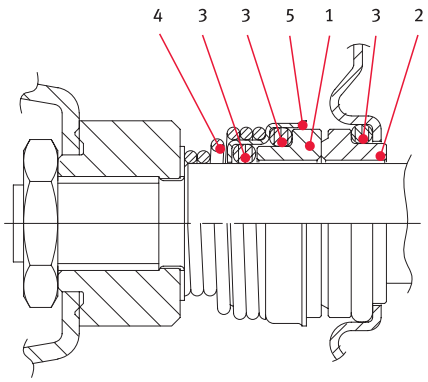


VERSION	
HCO350 37 M	HCO350 37
HCO350 55 M	HCO350 55
HCO350 75 M	HCO350 75
HCO350 90 M	HCO350 90
HCO350 110 M	HCO350 110
HCO350 150 M	HCO350 150
HCO500 150 M	HCO500 150
HCO500 220 M	HCO500 220
	HCO500 300

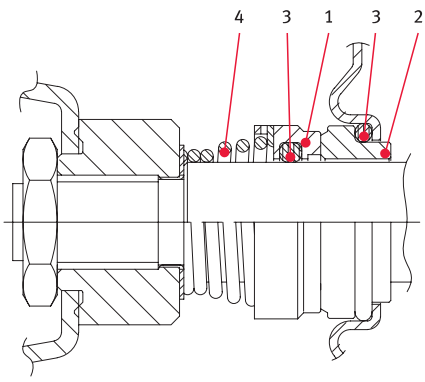
HCO and HCOM Series

Ref. Nº	DESCRIPTION	MATERIALS	REF. REGULATIONS EUROPE	REF. REGULATIONS USA
1	Pump casing	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
2	Impellers	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
3	Seal casing	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
4	Seal extension	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Impeller lock nut	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
6	Filling/drainage connectors	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
7	Mechanical seal	Ceramic / Resin-impregnated carbon / FPM (standard version)		
8	Elastomers	FPM (standard version)		
9	Adaptor	Aluminium	EN 1706-AC-AISI11Cu2(Fe)DF	ASTM Class 25
10	Pump casing attachment screws	Galvanised steel		

Type 3K



Type 2K



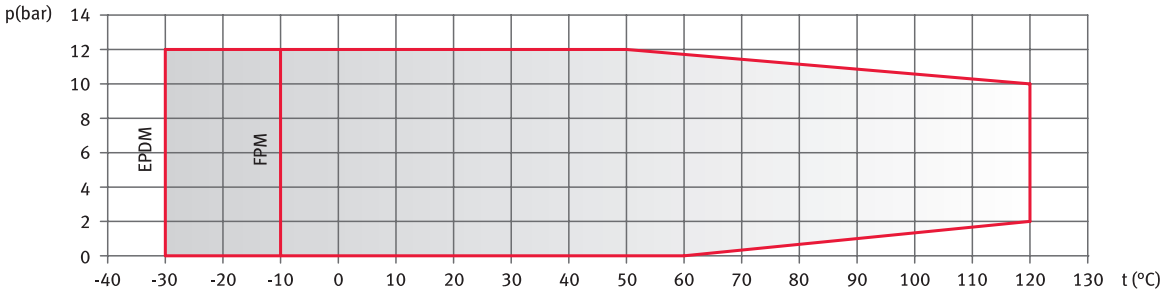
List of optional materials

POSITION 1-2	POSITION 3	POSITION 4-5
B: Resin impregnated carbon	E: EPDM	G: AISI 316
C: Special resin impregnated carbon	V: FPM	
V: Ceramic		
Q_1: Silicon carbide		
U_3: Tungsten carbide		

HCO Mechanical seal

TYPE	POSITION 1 Rotating Assembly	POSITION 2 Fixed Assembly	POSITION 3 Elastomers	POSITION 4 Springs	POSITION 5 Other Components	TEMPERATURE (° C)
STANDARD MECHANICAL SEAL						
3K - V B V G G	V	B	V	G	G	-10 + 120
OTHER TYPES OF MECHANICAL SEAL						
3K - V C V G G	V	C	V	G	G	-10 + 120
3K - Q_1 C V G G	Q_1	C	V	G	G	-10 + 120
3K - Q_1 Q_1 V G G	Q_1	Q_1	V	G	G	-10 + 120
2K - U_3 Q_1 V G G	U_3	Q_1	V	G	G	-10 + 120
2K - U_3 U_3 V G G*	U_3	U_3	V	G	G	-10 + 120
3K - V B E G G	V	B	E	G	G	-30 + 120
3K - V C E G G	V	C	E	G	G	-30 + 120
3K - Q_1 C E G G	Q_1	C	E	G	G	-30 + 120
3K - Q_1 Q_1 E G G	Q_1	Q_1	E	G	G	-30 + 120
2K - U_3 Q_1 E G G	U_3	Q_1	E	G	G	-30 + 120
2K - U_3 U_3 E G G	U_3	U_3	E	G	G	-30 + 120

Pressure/Temperature application limits for complete pump (with any of the seals listed above)



Hydraulic performance table at 50 Hz

MODEL	P2		l/min	0	100	120	160	200	240	280	300	350	375	400	450	500	600	650	700	800	900
	kW	HP	m^3/h	0	6	7.2	9.6	12	14.4	16.8	18	21	22.5	24	27	18	36	39	42	48	54
HCO350 37 M	0.37	0.5		9.5	6.8	6.3	5.5	4.8	4.1	3.4	3										
HCO350 55 M	0.55	0.75		12	9.2	8.8	7.9	7.1	6.3	5.5	5.1	4									
HCO350 75 M	0.75	1		13.7	11.2	10.8	9.9	9.1	8.2	7.4	6.9	5.8	5.3								
HCO350 90 M	0.9	1.2		15.7	12.7	12.2	11.3	10.5	9.6	8.8	8.3	7.2	6.6	5.9							
HCO350 110 M	1.1	0.5		17.3	14.3	13.8	12.9	12	11.2	10.5	10.1	9.1	8.6	8	6.8						
HCO350 150 M	1.5	2		20.3	16.9	16.4	15.3	14.4	13.5	12.7	12.2	11.2	10.6	10	8.7	7.2					
HCO500 150 M	1.5	2		16				13.4	12.8	12.3	12	11.3	10.9	10.5	9.8	9	7.4	6.6	5.8		
HCO500 220 M	2.2	3		19.6				17.3	16.7	16.2	15.9	15.2	14.9	14.5	13.7	13	11.3	10.4	9.6	7.7	
HCO500 300	3	4		24.1				20.9	20.3	19.3	19.3	18.5	18.1	17.7	16.9	16	14.3	13.5	12.6	10.8	9

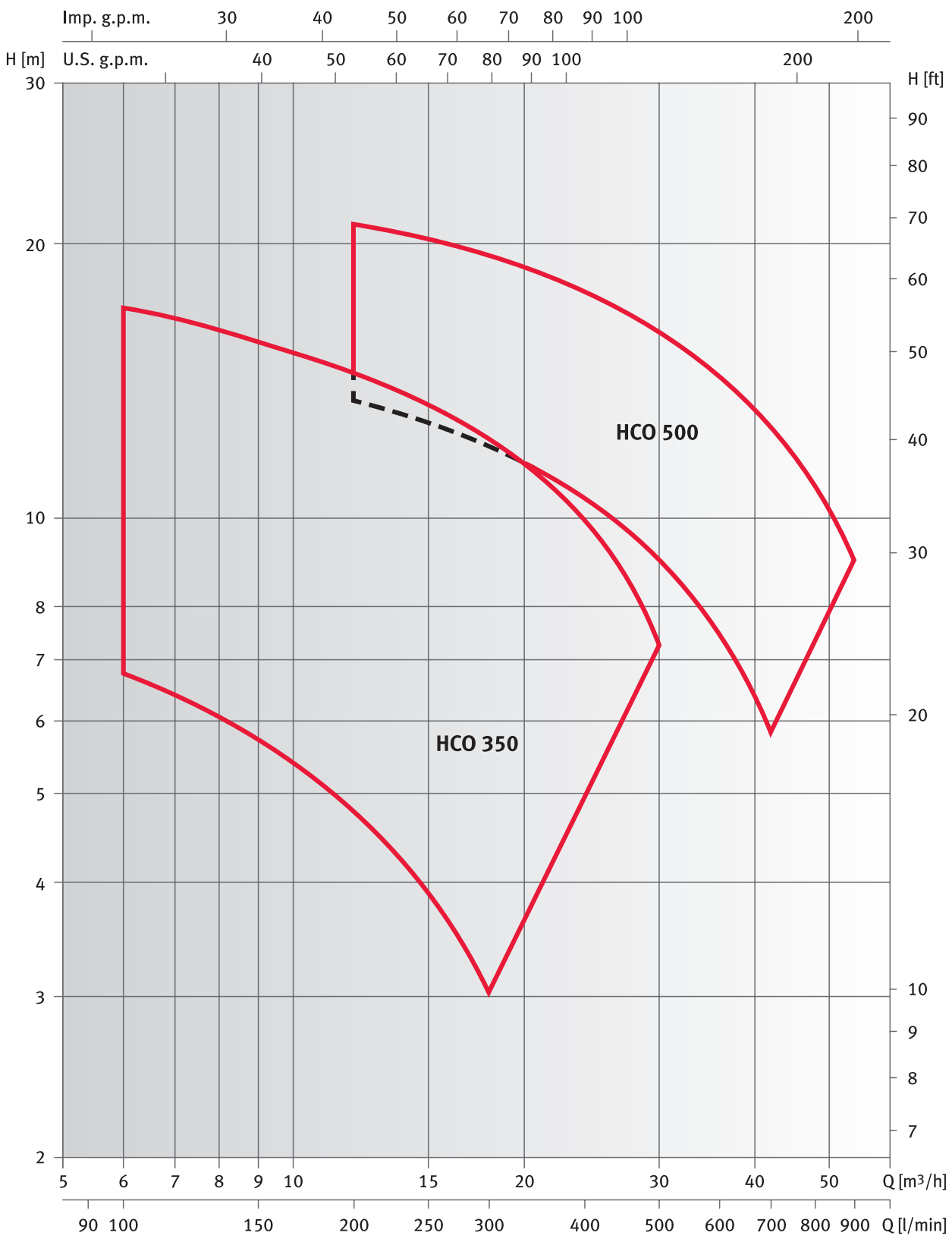
Electrical data at 50 Hz

PUMP TYPE	INPUT POWER*	INPUT CURRENT* 220 - 240 V	CAPACITOR
SINGLE-PHASE	KW	A	µF / 450 V
HCO350 37 M	0.63	2.82	14
HCO350 55 M	0.88	4.25	16
HCO350 75 M	1.02	4.67	20
HCO350 90 M	1.21	5.46	25
HCO350 110 M	1.75	7.85	30
HCO350 150 M	2.04	9.21	40
HCO500 150 M	2.02	9.12	40
HCO500 220 M	2.71	12.1	50

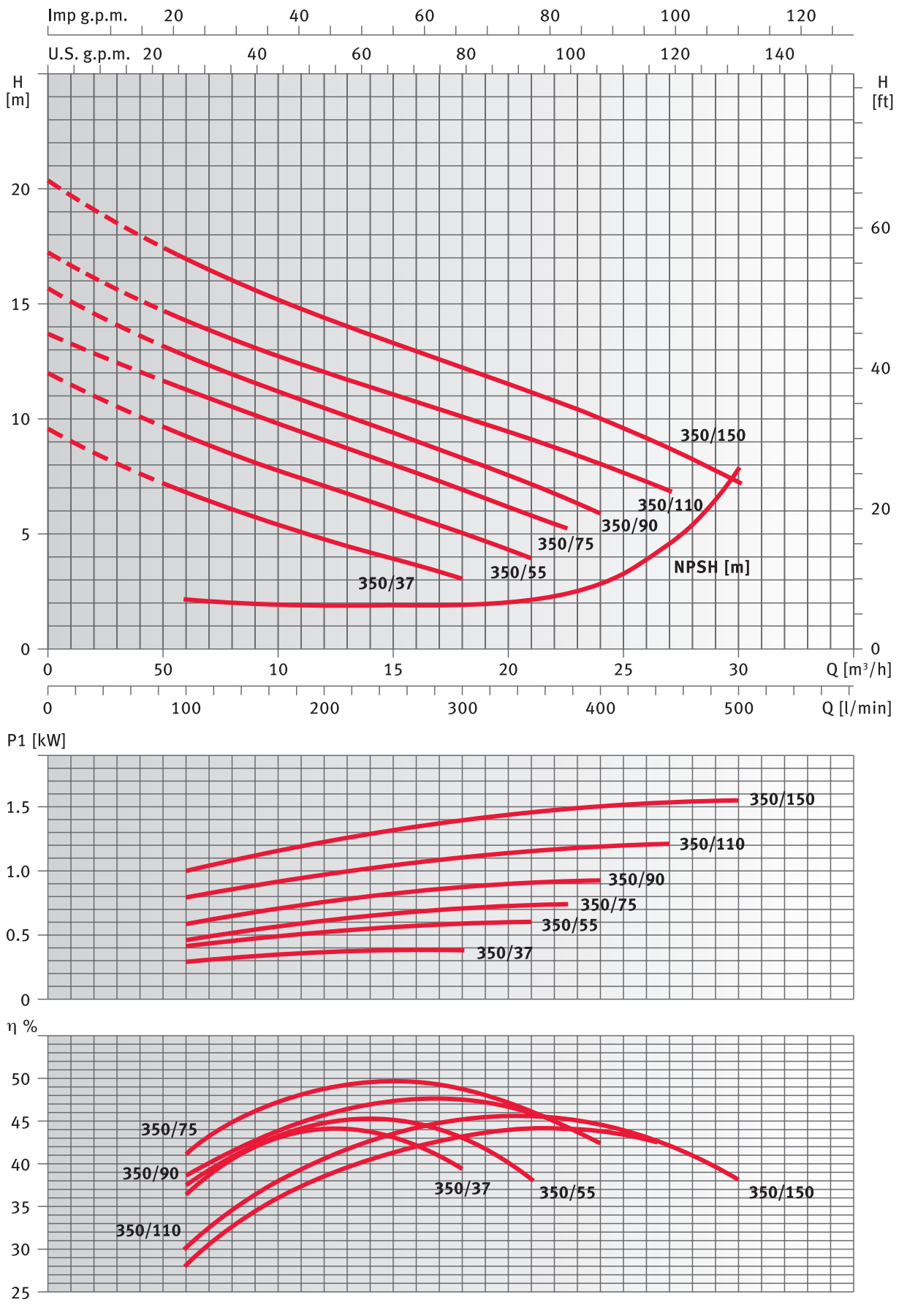
* Maximum value in specified range.

PUMP TYPE	INPUT POWER*	INPUT CURRENT* 220 - 240 V	INPUT CURRENT* 380 - 415 V
THREE-PHASE	KW	A	A
HCO350 37	0.64	2.53	1.46
HCO350 55	0.79	2.7	1.56
HCO350 75	1	3.57	2.06
HCO350 90	1.13	4.21	2.43
HCO350 110	1.69	5.2	3
HCO350 150	1.98	6.3	3.64
HCO500 150	1.96	6.27	3.62
HCO500 220	2.73	9.06	5.23
HCO500 300	3.97	11.7	6.78

* Maximum value in specified range.

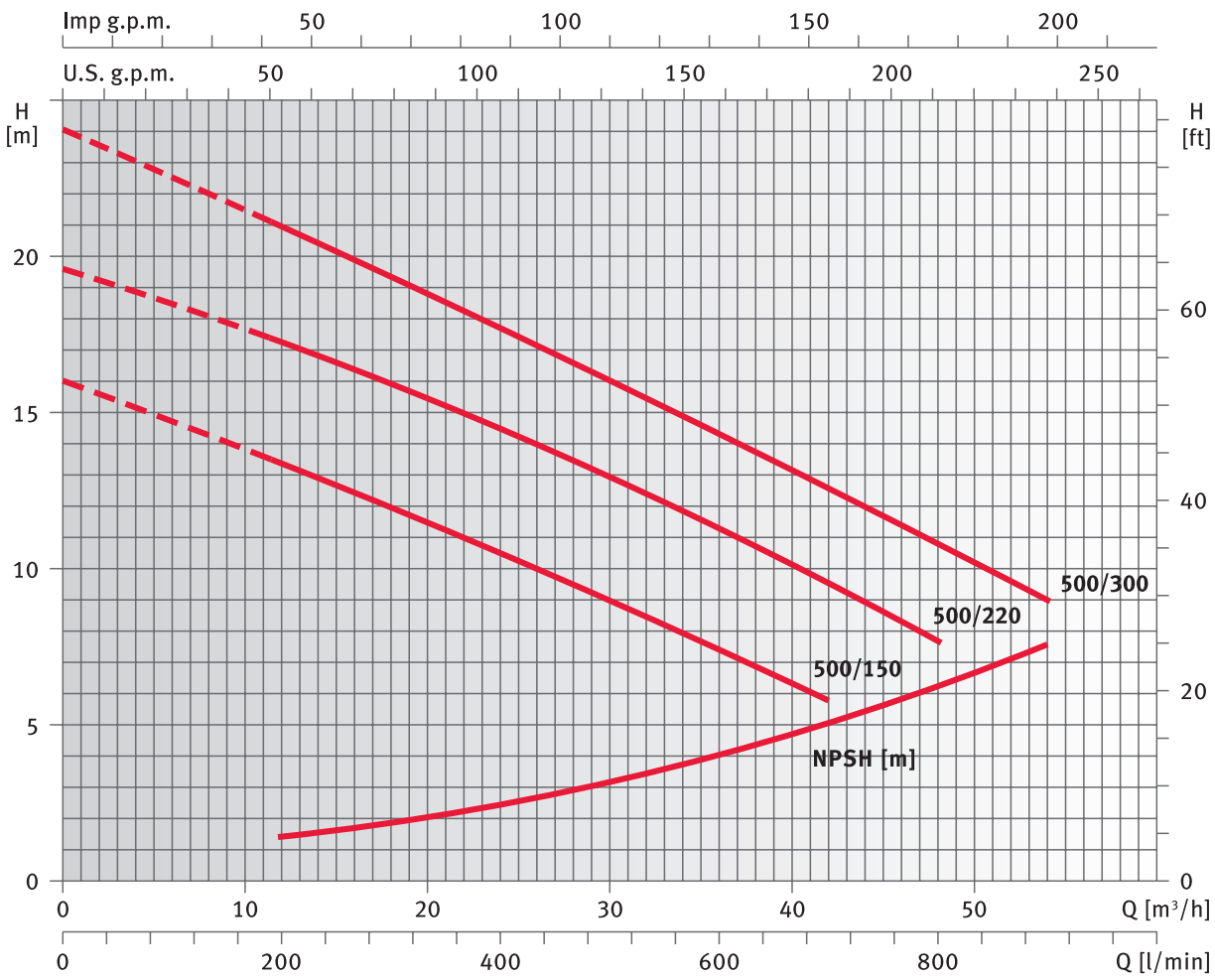

Imp. g.p.m.
30 40 50 60 70 80 90 100 200
H [m]
U.S. g.p.m.
40 50 60 70 80 90 100 200
H [ft]
30 20 10 8 7 6 5 4 3 2
90 80 70 60 50 40 30 20 10 9 8 7
HCO 500
HCO 350
5 6 7 8 9 10 15 20 30 40 50 Q [m³/h]
90 100 150 200 250 300 400 500 600 700 800 900 Q [l/min]

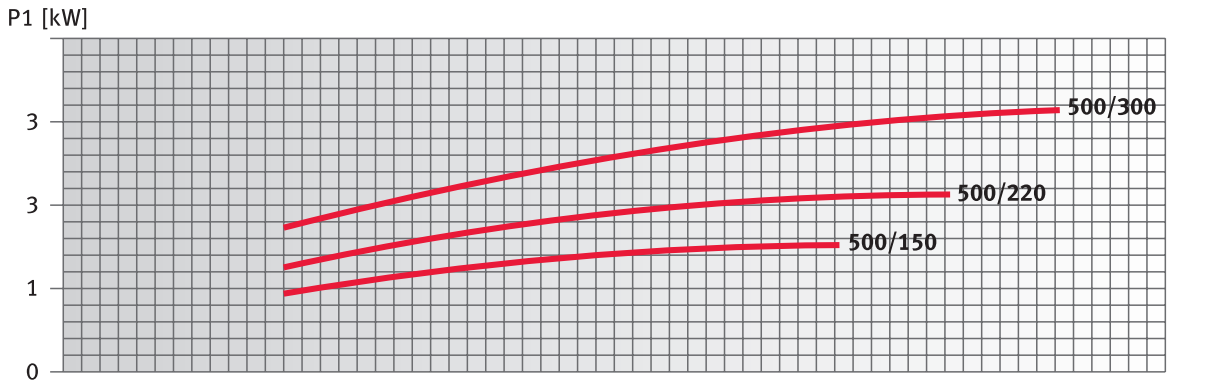
HCO 350 Series

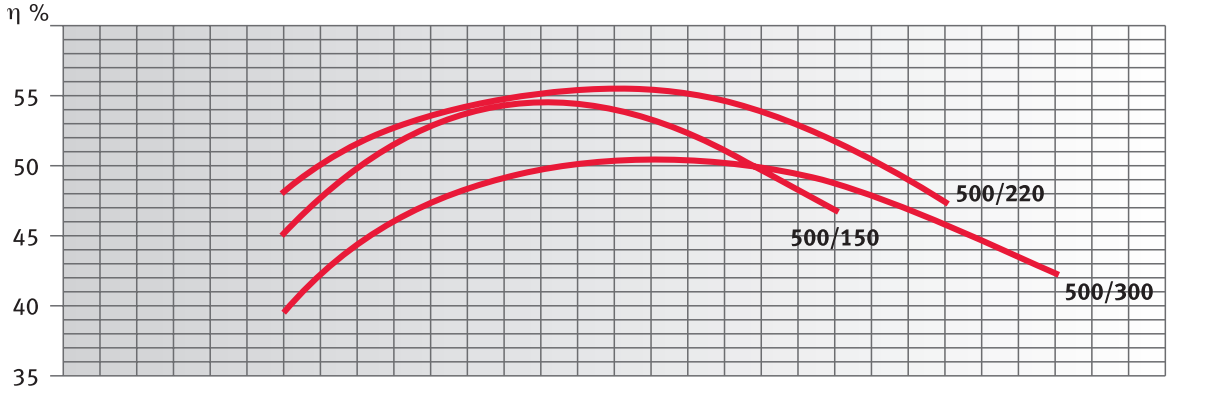


The NPSH values are laboratory values: for practical use we suggest increasing these values by 0,5 m.
The performances are valid for liquids with density ρ = 1,0 kg/dm³ and kinematic viscosity υ = 1 mm²/sec.

HCO 500 Series

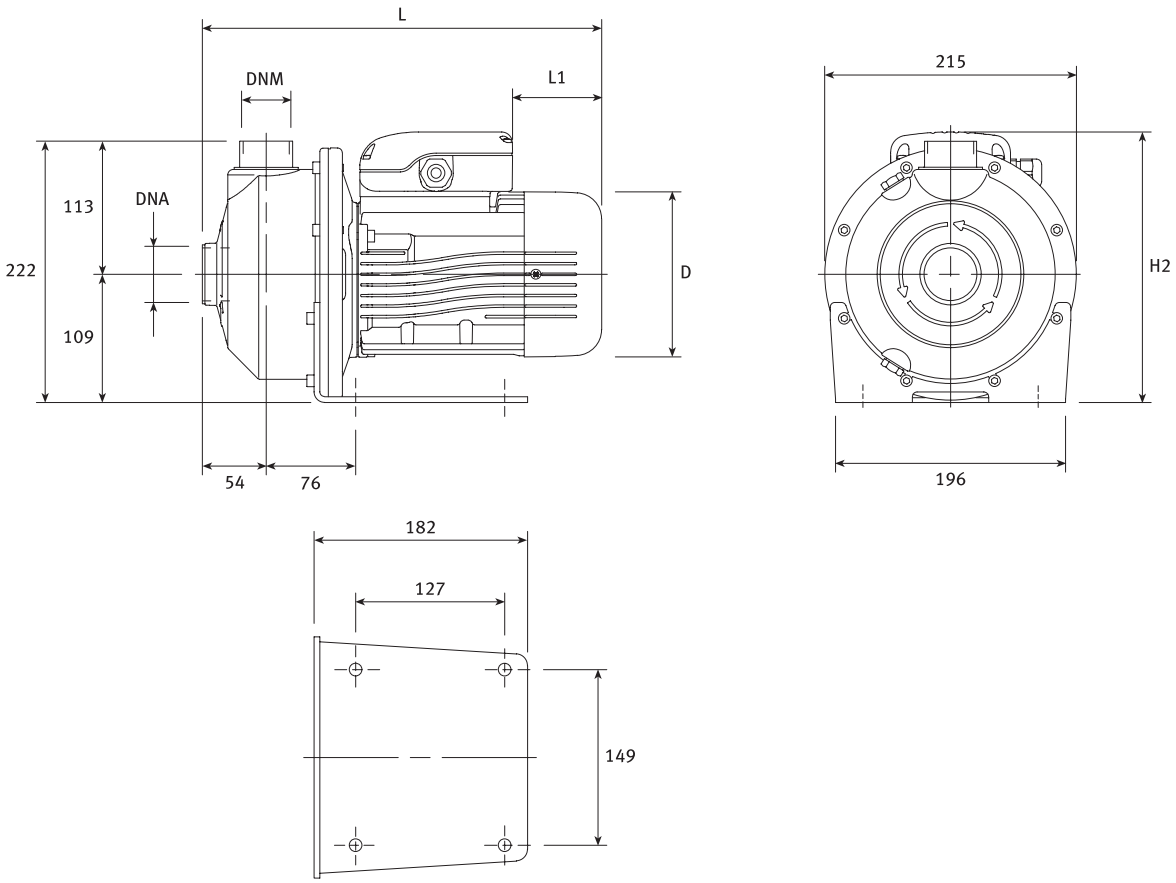






The NPSH values are laboratory values: for practical use we suggest increasing these values by 0,5 m.
The performances are valid for liquids with density $\rho = 1{,}0$ kg/dm³ and kinematic viscosity $\upsilon = 1$ mm²/sec.

HCO and HCOM Series



PUMP TYPE	DIMENSIONS (mm) D	H2	L	L1	DNA	DNM	WEIGHT kg
HCO350 37 M	120	220	325	62	Rp 1 1/2	Rp 1 1/4	10
HCO350 55 M	140	230	339	76	Rp 1 1/2	Rp 1 1/4	11.9
HCO350 75 M	140	230	339	76	Rp 1 1/2	Rp 1 1/4	12.6
HCO350 90 M	140	239	339	31	Rp 1 1/2	Rp 1 1/4	13.2
HCO350 110 M	156	246	385	69	Rp 1 1/2	Rp 1 1/4	14.5
HCO350 150 M	156	246	385	69	Rp 1 1/2	Rp 1 1/4	16.2
HCO500 150 M	156	246	385	69	Rp 2	Rp 1 1/2	16.2
HCO500 220 M	176	230	416	114	Rp 2	Rp 1 1/2	17.8
HCO350 37	120	220	325	62	Rp 1 1/2	Rp 1 1/4	10
HCO350 55	140	230	339	76	Rp 1 1/2	Rp 1 1/4	11.9
HCO350 75	140	230	339	76	Rp 1 1/2	Rp 1 1/4	12.6
HCO350 90	140	230	339	76	Rp 1 1/2	Rp 1 1/4	12.2
HCO350 110	156	238	385	114	Rp 1 1/2	Rp 1 1/4	14.5
HCO350 150	156	238	385	114	Rp 1 1/2	Rp 1 1/4	16.2
HCO500 150	156	238	385	114	Rp 2	Rp 1 1/2	16.2
HCO500 220	156	238	385	114	Rp 2	Rp 1 1/2	17.8
HCO500 300	176	230	416	149	Rp 2	Rp 1 1/2	22

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