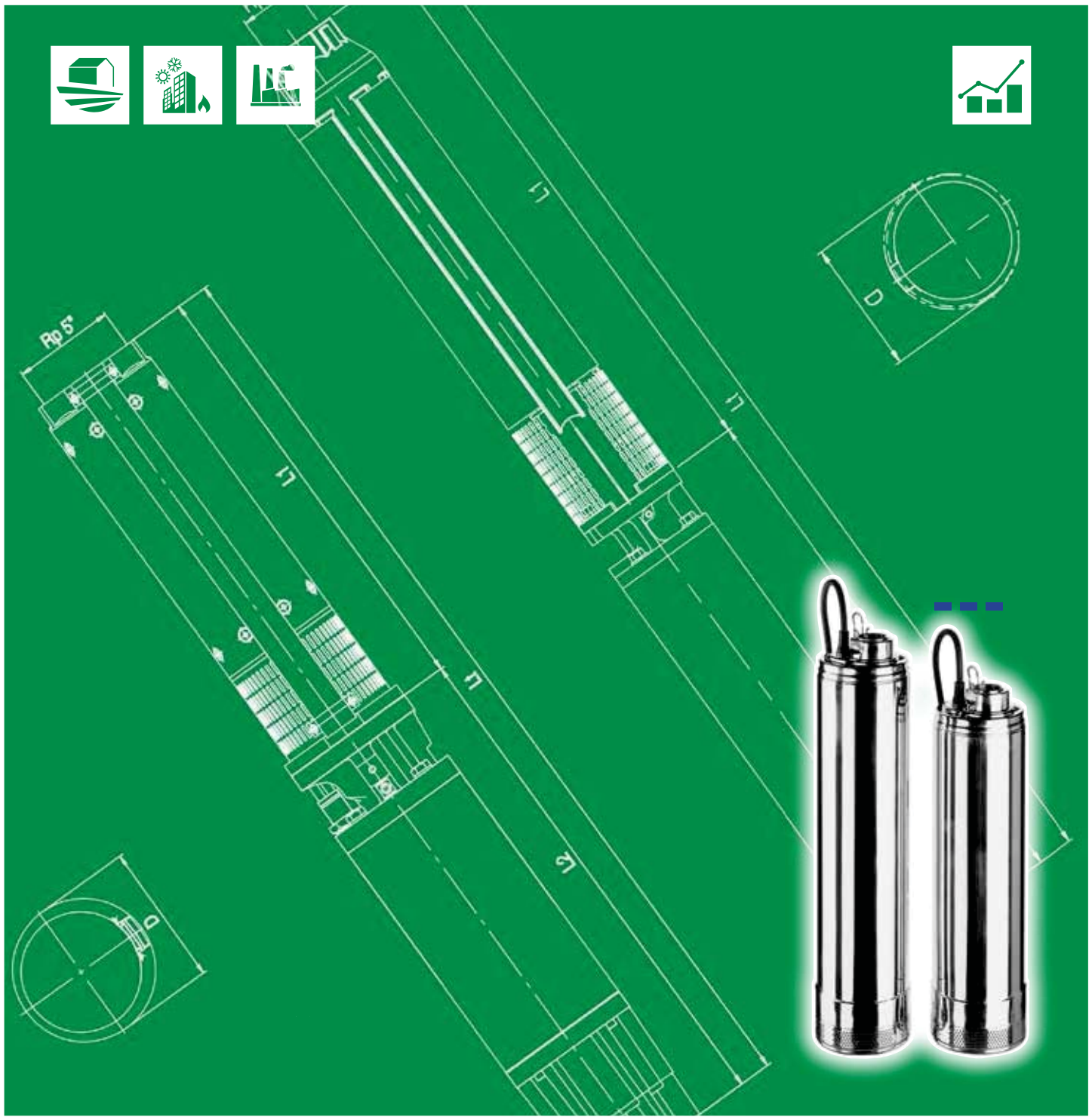




Japanese Technology since 1912

# IDROGO

Data Book 50Hz



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## SPECIFICATION

50Hz

Rev. K

PUMP		
Liquid Handled	Type of liquid	Clean water
	Temperature [°C]	max. +40
	Max solids size [mm]	2,5
Maximum working pressure	[MPa]	1
Maximum immersion	[m]	2 (with power cable length 5 m) 10 (with power cable length 20 m for version with float switch) 17 (with power cable length 20 m)
Construction	Impeller	Closed centrifugal type (multiple stages)
	Shaft seal type	Double mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction-Flange [mm]	Strainer
	Discharge-Flange [inch]	G1¼ UNI ISO 228
Material	Casing	EN 1.4301 (AISI 304)
	Casing cover	EN 1.4301 (AISI 304)
	Impeller	PPE+PS glass fiber reinforced
	Diffuser	PPE+PS glass fiber reinforced
	Shaft seal	Pump side: SiC/ Carbon /NBR
		Motor side: Carbon/Ceramic/NBR
	Shaft	EN 1.4057 (AISI 431)
Lubricating liquid	White mineral oil: Esso Marcol 152 (90 cc)	
Applicable standard of test		ISO 9906 Annex A

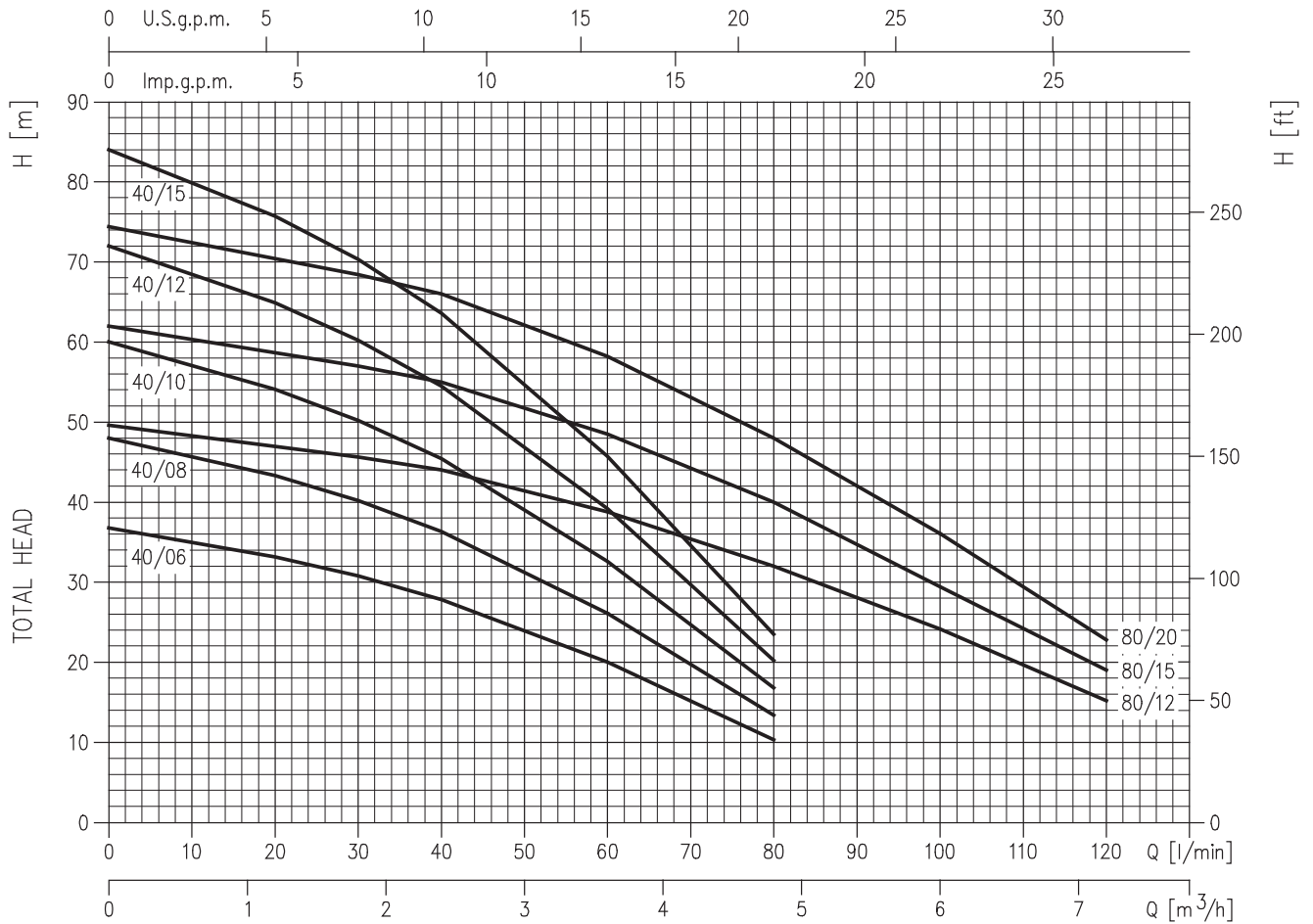
MOTOR			
Type	Submersible dry type		
	Single Phase	Three Phase	
No. of Poles	2		
Rotation speed [min <sup>-1</sup> ]	≈2800		
Insulation Class	Class F		
Protection degree (CEI EN 60034-5)	IP 68		
Power rating	[kW]	0.45 ÷ 1.1	
	[HP]	0.6 ÷ 1.5	
Frequency [Hz]	50 Hz		
Voltage [V]	230 ±10%	230/400 ±10%	
Capacitor	Built in	-	
Over load protection	Built in	Provided by the user	
Float Switch	Optional	-	
Float Switch Cable	Material	H07RN-F	
	Size	3G1	
Upper bearing bracket	Aluminium		
Lower bearing bracket	Brass		
Motor frame	AISI 304		
Power cable	material	H07RN-F	
	size	3 G 1.5	4G1
	length [m]	20 (5 for IDROGO M40/06, IDROGO M40/06 A)	
Type of cable entry	Cable Gland		

200

## SELECTION CHART

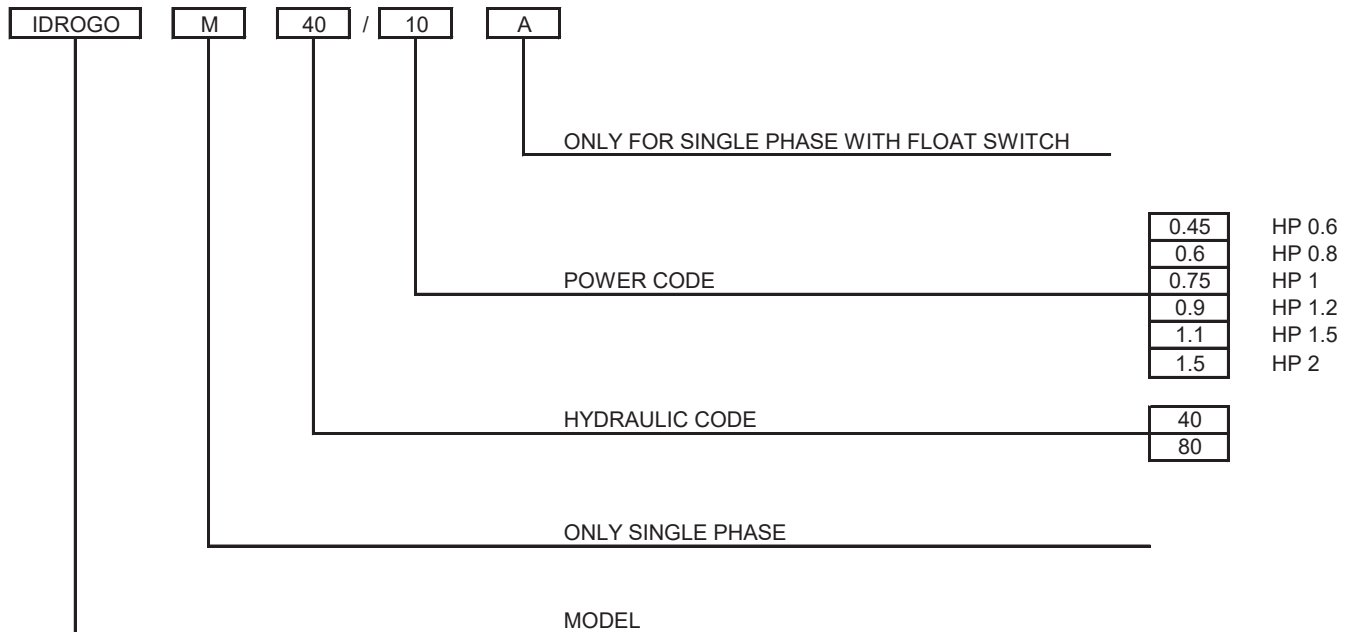
50Hz

Rev. K



Pump type		Power		Q=Capacity								
				l/min	0	20	30	40	60	80	100	120
Single Phase	Three Phase	[kW]	[HP]	m³/h	0	1.2	1.8	2.4	3.6	4.8	6	7.2
H=Total manometric head in meters												
IDROGO M40/06	-	0.45	0.6	40	33.1	30.8	27.8	20	10.3	-	-	-
IDROGO M40/08	IDROGO 40/08	0.6	0.8	48	43.3	40.2	36.3	26.1	13.4	-	-	-
IDROGO M40/10	IDROGO 40/10	0.75	1	60	54.1	50.2	45.4	32.6	16.8	-	-	-
IDROGO M40/12	IDROGO 40/12	0.9	1.2	72	64.9	60.2	54.5	39.2	20.2	-	-	-
IDROGO M40/15	IDROGO 40/15	1.1	1.5	84	75.7	70.3	63.6	45.7	23.5	-	-	-
IDROGO M80/12	IDROGO 80/12	0.9	1.2	49.6	-	45.6	44	38.8	32	23.2	15.2	-
IDROGO M80/15	IDROGO 80/15	1.1	1.5	62	-	57	55	48.5	40	28	19	-
-	IDROGO 80/20	1.5	2	74.4	-	68.4	66	58.2	48	34.8	22.8	-

**TYPE KEY**



**PERFORMANCE CURVE SPECIFICATIONS**

The specifications below qualify the curves shown on the following pages.

Tolerances according to ISO 9906 Annex A

The curves refer to effective speed of asynchronous motors at 50 Hz

Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of  $\nu = 1 \text{ mm}^2/\text{s}$  (1 cSt)

The NPSH curve is an average curve obtained in the same conditions of performance curves.

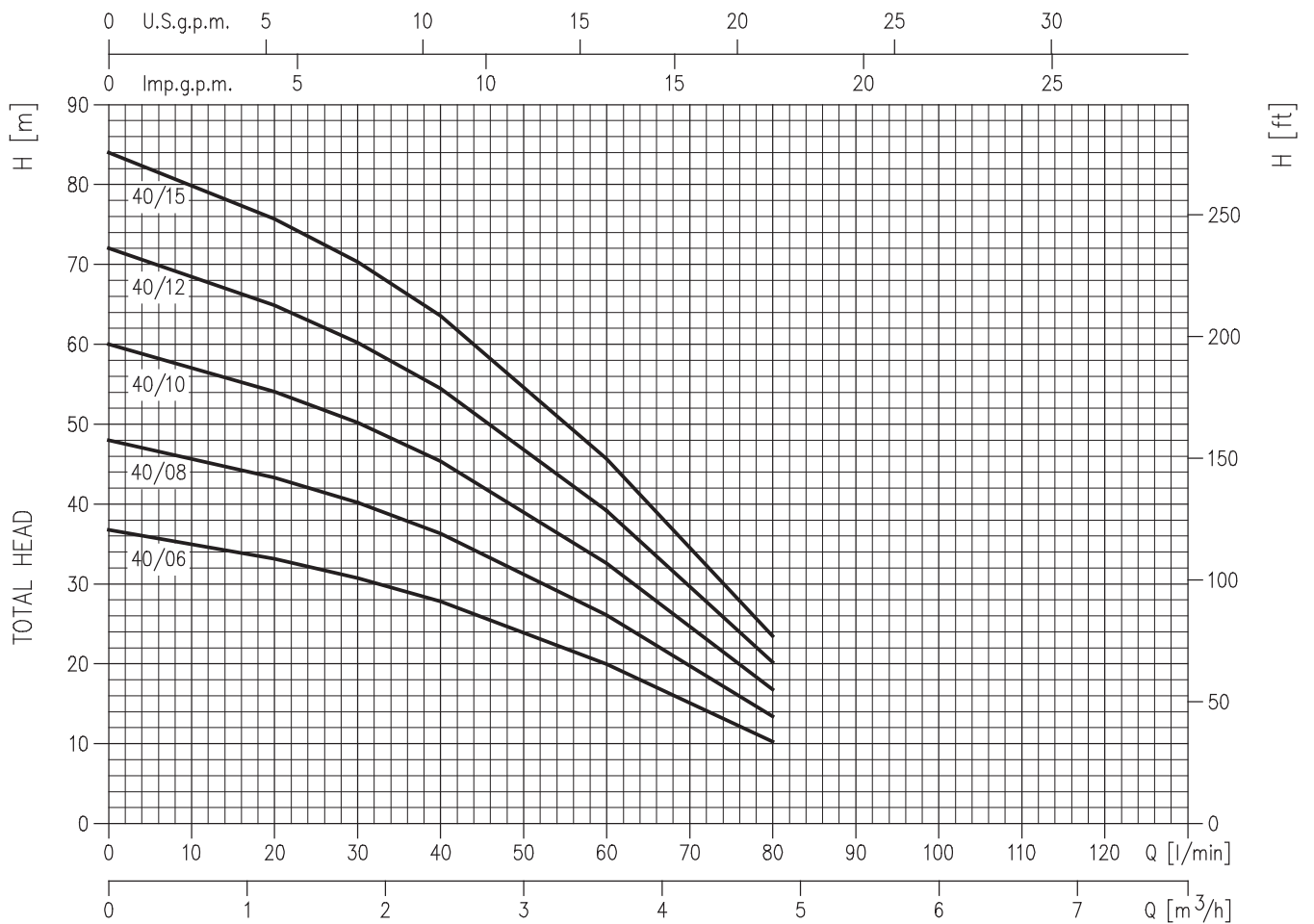
The continuous curves indicate the recommended working range. The dotted curve is only a guide.

In order to avoid the risk of over-heating, the pumps should not be used at a flow rate below 10% of best efficiency point.

Symbols explanation:

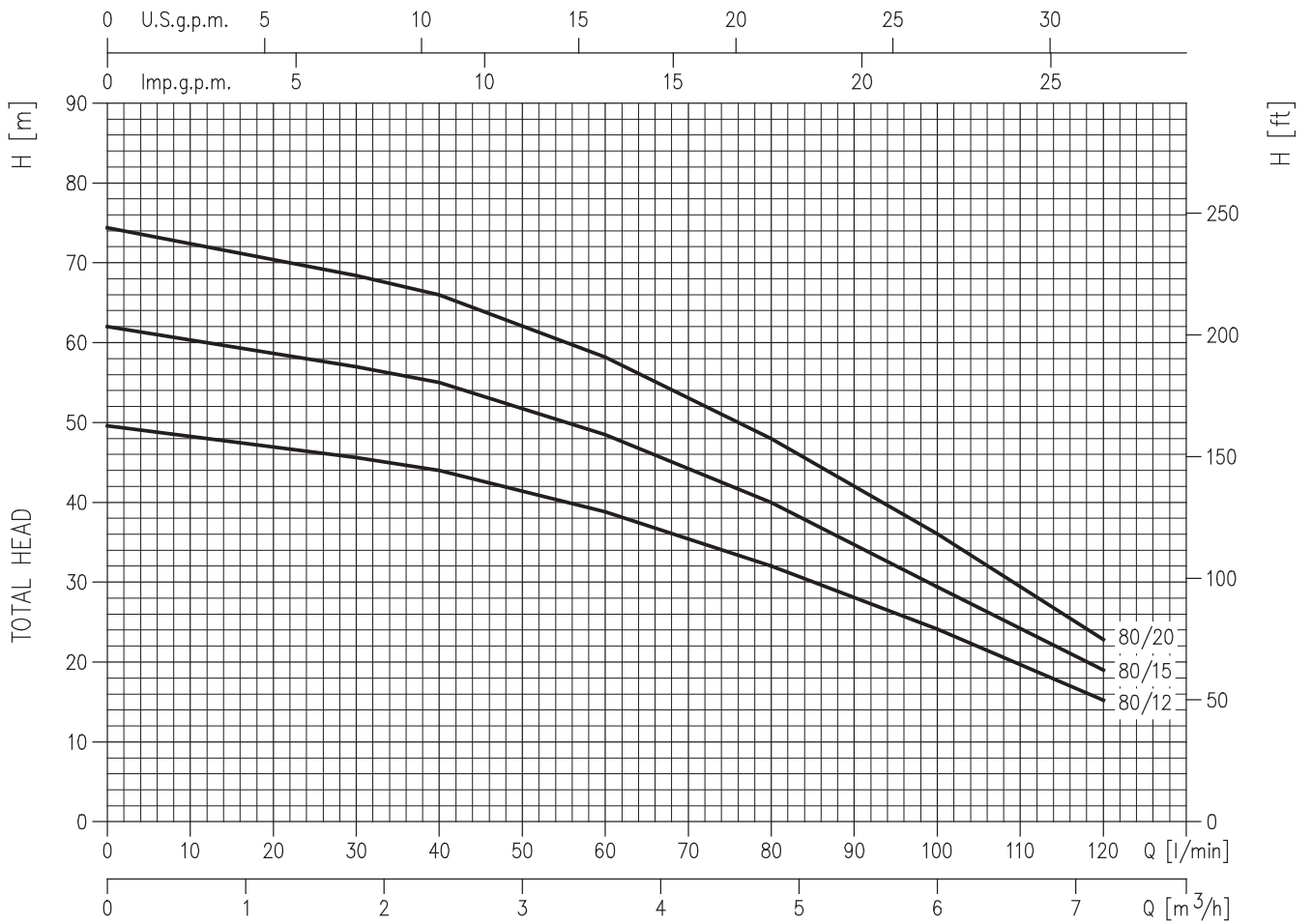
- Q = volume flow rate
- H = total head

**IDROGO 40/06 (0.45 kW) - Impeller diameter = 104**  
**IDROGO 40/08 (0.60 kW) - Impeller diameter = 104**  
**IDROGO 40/10 (0.75 kW) - Impeller diameter = 104**  
**IDROGO 40/12 (0.90 kW) - Impeller diameter = 104**  
**IDROGO 40/15 (1.10 kW) - Impeller diameter = 104**



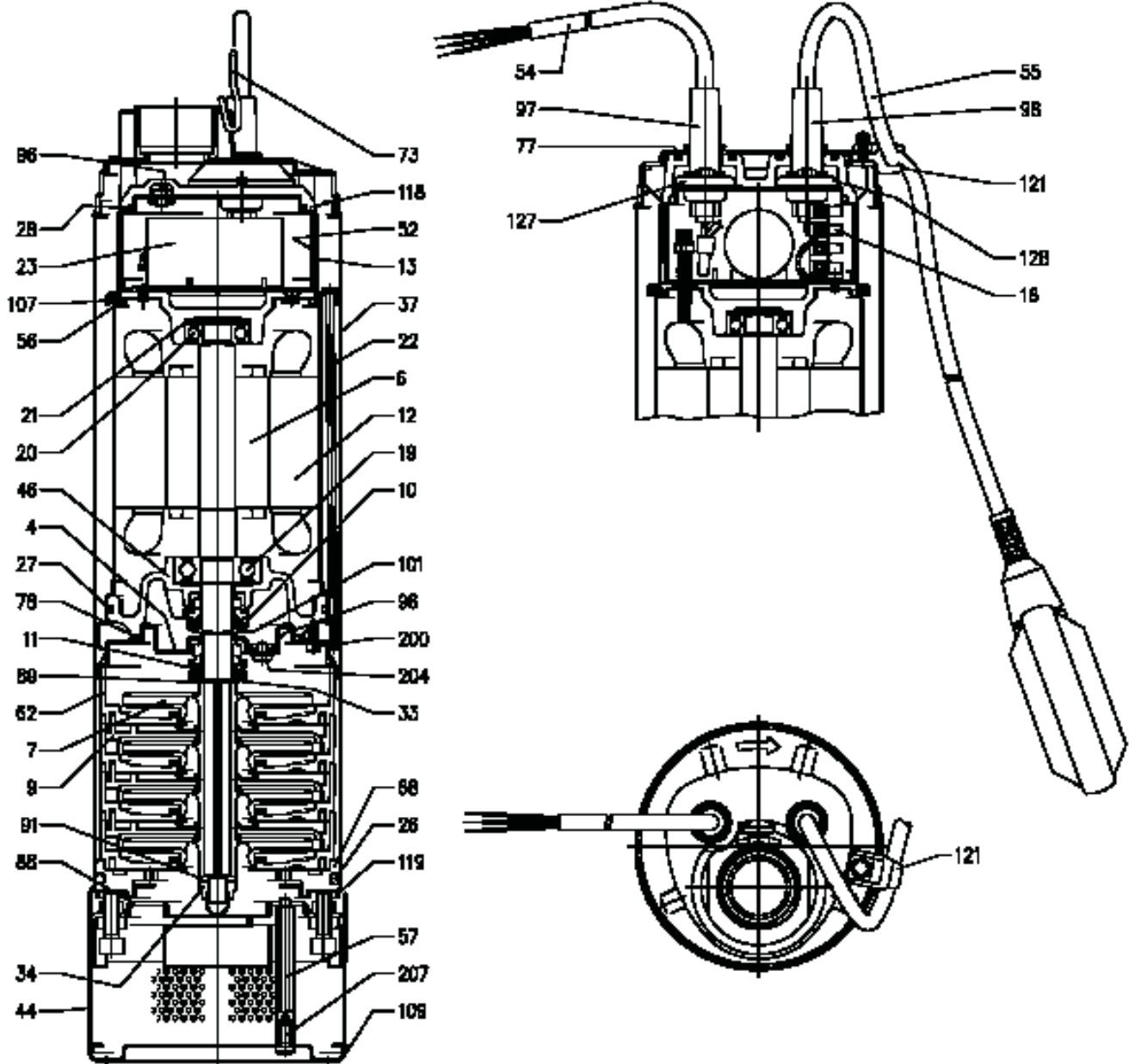
Rotation speed  $\approx 2800 \text{ min}^{-1}$   
 Test standard: ISO 9906 – Annex A

**IDROGO 80/12 (0.9 kW) - Impeller diameter = 102**  
**IDROGO 80/15 (1.1 kW) - Impeller diameter = 102**  
**IDROGO 80/20 (1.5 kW) - Impeller diameter = 102**



Rotation speed  $\approx 2800 \text{ min}^{-1}$   
 Test standard: ISO 9906 – Annex A

SECTIONAL VIEW





## CONSTRUCTION

50Hz

Rev. K

N°	PART NAME	MATERIAL	DIMENSIONS	STANDARD	Q.TY
4	Casing cover	EN 1.4301 (AISI 304)			1
6	Shaft with rotor	EN 1.4057 (AISI 431)			1
7	Impeller	PPE+PS glass fiber reinforced			[4]
9	Diffuser	PPE+PS glass fiber reinforced			[4]
10	Motor side mechanical seal [3]	Carbon/Ceramic/NBR	See page 304		1
11	Pump side mechanical seal [3]	SiC/Carbon/NBR	See page 304		1
12	Motor frame with stator	-			1
13	Motor cover	EN 1.4301 (AISI 304)			1
16	Terminal	-			1
19	Lower side ball bearing	-			1
20	Upper side ball bearing	-			1
21	Adjusting ring	Steel C70			1
22	Tie rod	EN 1.4301 (AISI 304)			3
23	Capacitor [1]	-			1
26	O ring	NBR	Ø120,7X5,34	OR 201	1
27	O ring	NBR	Ø110,7X3,53	OR 4437	1
28	O ring	NBR	Ø88,5X3,53	OR 4350	1
33	Seeger ring	EN 1.4301 (AISI 304)			1
34	Impeller nut	EN 1.4301 (AISI 304)	M10X1.5	DIN 986	1
37	External pump casing	EN 1.4301 (AISI 304)			1
44	Strainer	EN 1.4301 (AISI 304)	Ø136,5X49X0,8		1
46	Bearing housing	Brass			1
52	Terminal insulating box	PA66 glass fibre reinforced class V-0			1
54	Power cable	-			1
55	Float switch [2]	-			1
56	"O" ring	NBR	Ø98,02X3,53		1
57	Bolt	EN 1.4305 (AISI 303)			2
62	Stage housing	PPE+PS glass fiber reinforced			[4]
68	Lower spacer	PPE+PS glass fiber reinforced			1
73	Lifting holder	EN 1.4301 (AISI 304)			1
77	O ring	NBR	Ø25,8X3,53		2
78	O ring	NBR	Ø82,14X3,53		2
88	Fixing flange	EN 1.4301 (AISI 304)			1
89	Washer	EN 1.4301 (AISI 304)			1
91	Washer	EN 1.4301 (AISI 304)	Ø10,2X20X2		1
96	O ring	NBR	Ø4,48X1,78	OR 2018	3
97	Cable entry	NBR	Ø15X20		1
98	Cable entry [2]	NBR	Ø15X20		1
101	Seeger ring	EN 1.4021 (AISI 420)	Ø15	UNI 7435	1
107	Retainer ring	EN 1.4301 (AISI 304)	Ø119X1,2		1
109	Strainer cover	EN 1.4301 (AISI 304)	Ø136		1
118	Upper spacer	PPE+PS glass fiber reinforced			1
119	Flange	EN 1.4301 (AISI 304)			1
121	Support for float switch [2]	PPE+PS glass fiber reinforced			1
127	Cable connector	EN 1.4301 (AISI 304)			1
128	Cable connector	EN 1.4301 (AISI 304)			1
200	Screw	Stainless steel A2 UNI 7323	M4x8	ISO 4762	3
204	Screw	Stainless steel A2 UNI 7323	M5x6	UNI 7687	3
207	Screw	Stainless steel A2 UNI 7323	M5x12	UNI 7687	2

[1] Only for single phase

[2] Only for single phase with float switch

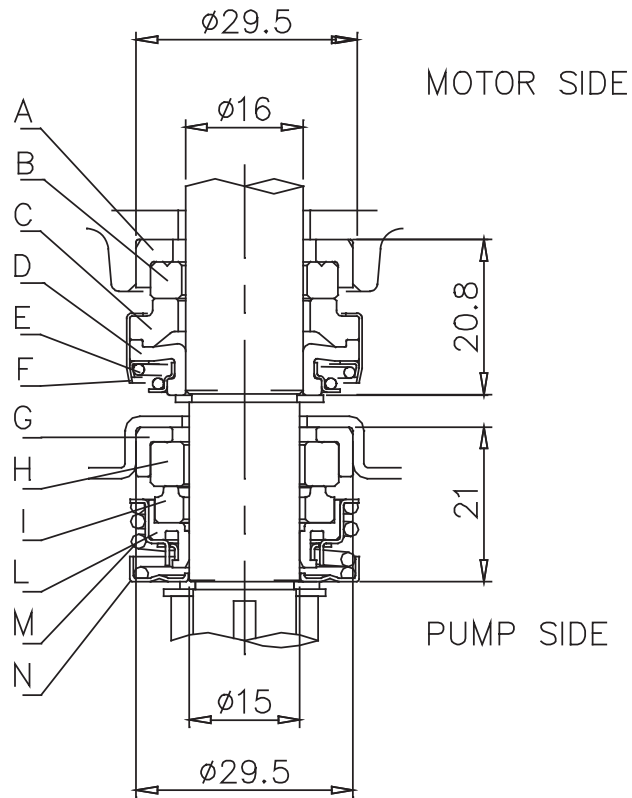
[3] See constructions mechanical seal page 302

[4] See table below

**QUANTITY FOR MODEL**

Pump type		N°7 Impeller	N°9 Diffuser	N°62 Stage housing
Single Phase	Three Phase			
IDROGO M40/06	-	3	3	4
IDROGO M40/08	IDROGO 40/08	4	3	4
IDROGO M40/10	IDROGO 40/10	5	4	5
IDROGO M40/12	IDROGO 40/12	6	5	6
IDROGO M40/15	IDROGO 40/15	7	6	7
IDROGO M80/12	IDROGO 80/12	4	3	4
IDROGO M80/15	IDROGO 80/15	5	4	5
-	IDROGO 80/20	6	5	6

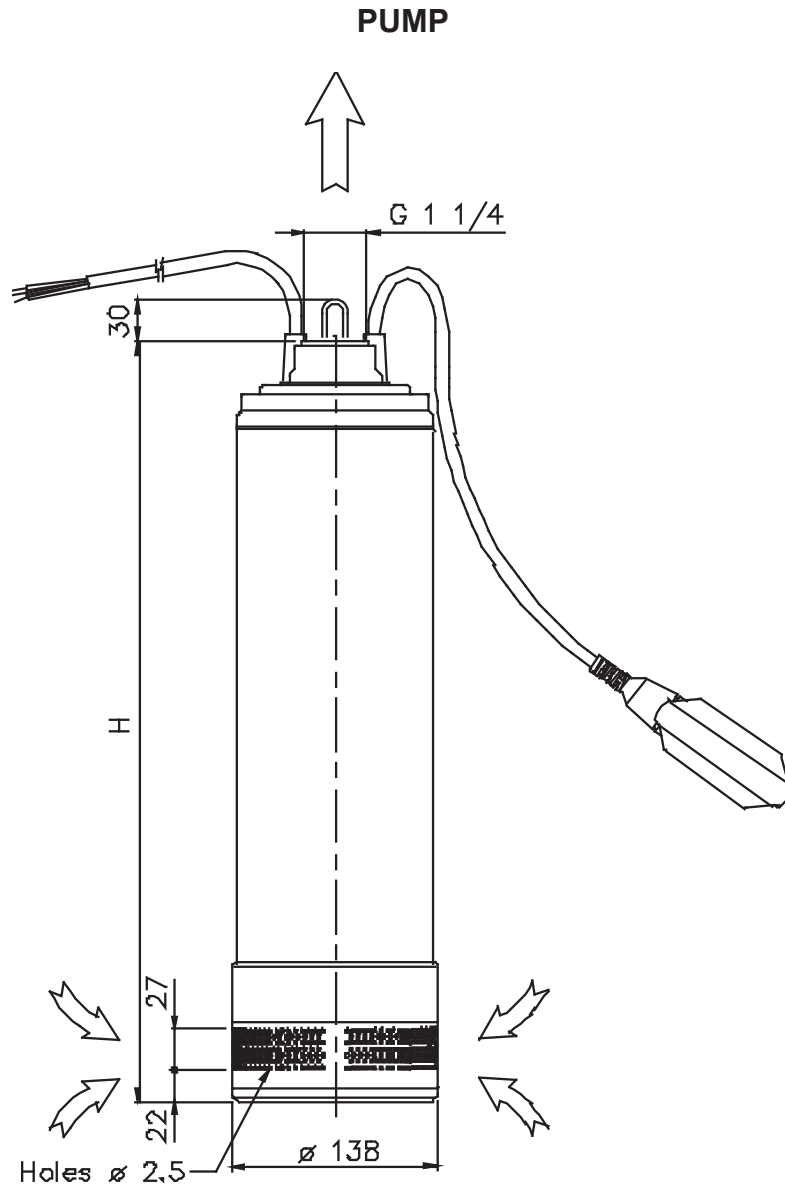
**MECHANICAL SEAL**



REF	PART NAME	MATERIAL Standard version (IDROGO)
A	Rubber seat	NBR
B	Stationary ring	Cearmic
C	Rotary ring	Carbon
D	Rotary seal	NBR
E	Coil spring	AISI 304
F	Seal cover	AISI 304
G	Rubber seat	NBR
H	Stationary ring	Silicon carbide
I	Rotary ring	Carbon
L	Rotary seal	NBR
M	Coil spring	AISI 304
N	Seal cover	AISI 304

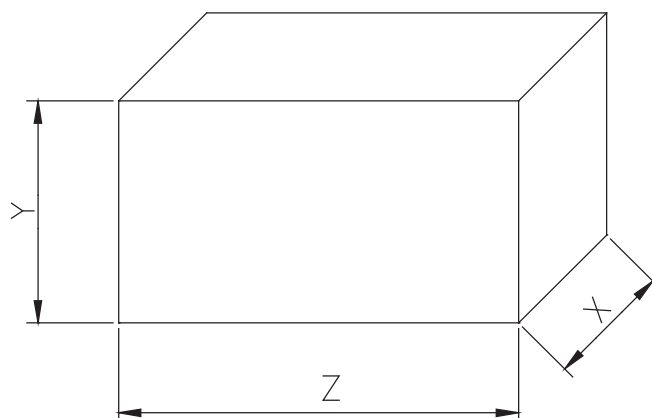
## BEARINGS

Pump type		Ball Bearing	
Single Phase	Three Phase	Pump side	Fan side
IDROGO M40/06	-	6303 ZZ	6202 ZZ
IDROGO M40/08	IDROGO 40/08	6303 ZZ	6202 ZZ
IDROGO M40/10	IDROGO 40/10	6303 ZZ	6202 ZZ
IDROGO M40/12	IDROGO 40/12	6303 ZZ	6202 ZZ
IDROGO M40/15	IDROGO 40/15	6303 ZZ	6202 ZZ
IDROGO M80/12	IDROGO 80/12	6303 ZZ	6202 ZZ
IDROGO M80/15	IDROGO 80/15	6303 ZZ	6202 ZZ
-	IDROGO 80/20	6303 ZZ	6202 ZZ



Pump type		H [mm]
Single Phase	Three Phase	
IDROGO M40/06	-	513
IDROGO M40/08	IDROGO 40/08	513
IDROGO M40/10	IDROGO 40/10	539
IDROGO M40/12	IDROGO 40/12	590
IDROGO M40/15	IDROGO 40/15	616
IDROGO M80/12	IDROGO 80/12	540
IDROGO M80/15	IDROGO 80/15	564
-	IDROGO 80/20	590

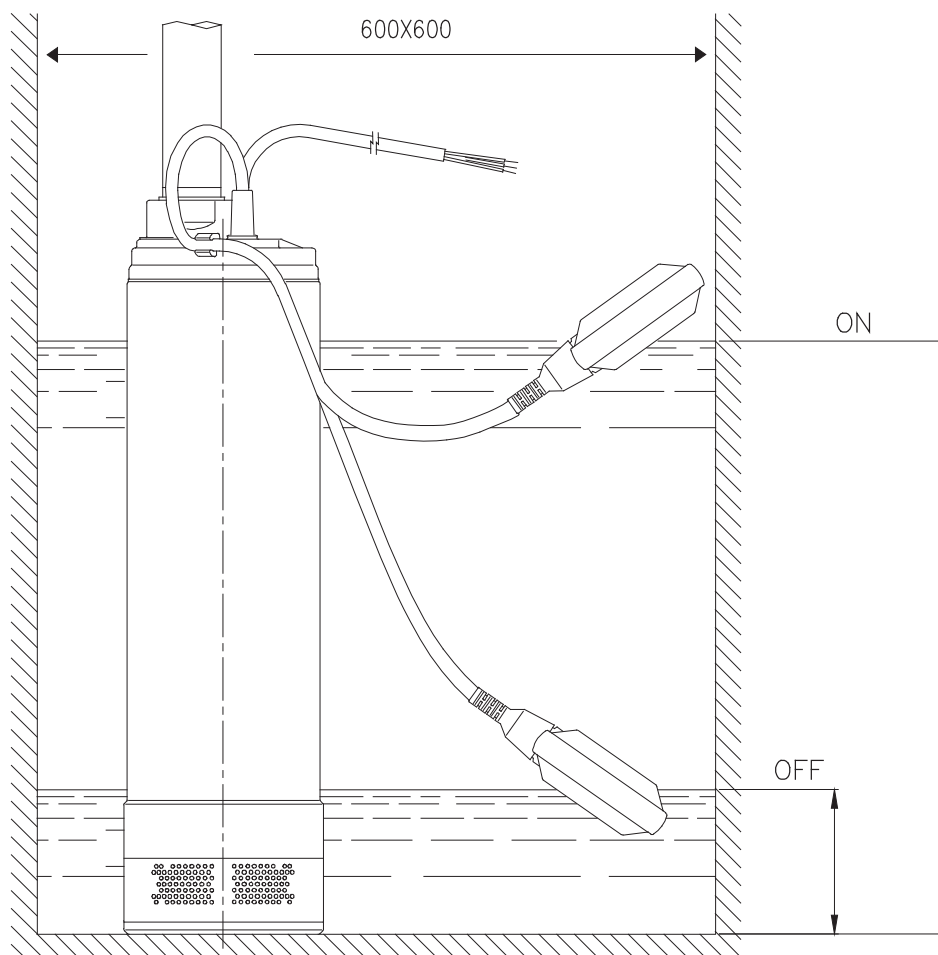
**PACKING**



Pump type		Packing [mm]			Weight [kgf]	
Single Phase	Three Phase	X	Y	Z	[1~]	[3~]
IDROGO 40/06 M	-	200	200	620	13	-
IDROGO 40/08 M	IDROGO 40/08	200	200	620	14.6	14.8
IDROGO 40/10 M	IDROGO 40/10	200	200	620	16	16.1
IDROGO 40/12 M	IDROGO 40/12	200	200	700	17.2	17.4
IDROGO 40/15 M	IDROGO 40/15	200	200	700	18.3	18.3
IDROGO 80/12 M	IDROGO 80/12	200	200	620	16.5	16.4
IDROGO 80/15 M	IDROGO 80/15	200	200	700	17.7	17.4
-	IDROGO 80/20	200	200	700	-	18

### MOTOR DATA

Pump type		Power		Capacitor Single Phase		Input [kW]		Full load current [A]			Locked rotor current [A]		
Single Phase	Three Phase	[kW]	[HP]	[μF]	[V]	Single Phase	Three Phase	Single Phase 230 V	Three Phase 230 V    400 V		Single Phase 230 V	Three Phase 230 V    400 V	
IDROGO M40/06	-	0.45	0.6	16	450	0.82	-	3.8	-	-	16	-	-
IDROGO M40/08	IDROGO 40/08	0.6	0.8	16	450	1	0.95	4.3	3.3	1.9	16	17.3	10
IDROGO M40/10	IDROGO 40/10	0.75	1	20	450	1.25	1.18	5.7	3.8	2.2	20	20.8	12
IDROGO M40/12	IDROGO 40/12	0.9	1.2	20	450	1.42	1.33	6.8	4.2	2.4	23	24.2	14
IDROGO M40/15	IDROGO 40/15	1.1	1.5	31.5	450	1.6	1.55	7.3	5.2	3	25	28.6	16.5
IDROGO M80/12	IDROGO 80/12	0.9	1.2	20	450	1.33	1.22	6.4	4.0	2.3	23	24.2	14
IDROGO M80/15	IDROGO 80/15	1.1	1.5	31.5	450	1.62	1.52	7.5	5.4	3.1	25	28.6	16.5
-	IDROGO 80/20	1.5	2	-	-	-	1.9	-	6.1	3.5	-	28.6	16.5



Pump type	ON [mm]	OFF [mm]
Single Phase		
IDROGO 40/06 M	560	180
IDROGO 40/08 M	590	190
IDROGO 40/10 M	660	220
IDROGO 40/12 M	730	240
IDROGO 80/12 M	590	190
IDROGO 80/15 M	640	210