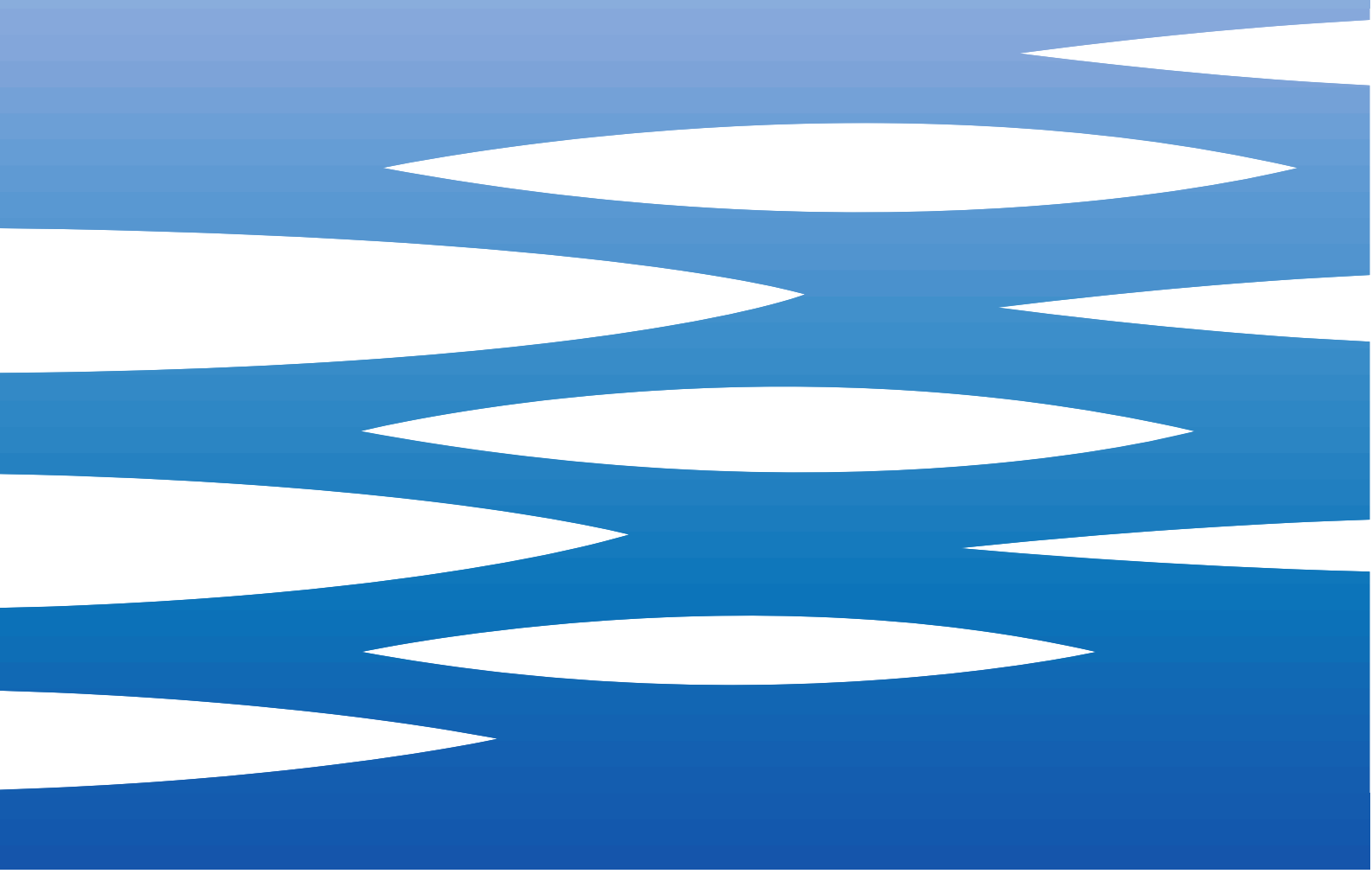




EBARA



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SELECTION CHART

50Hz

Rev. P

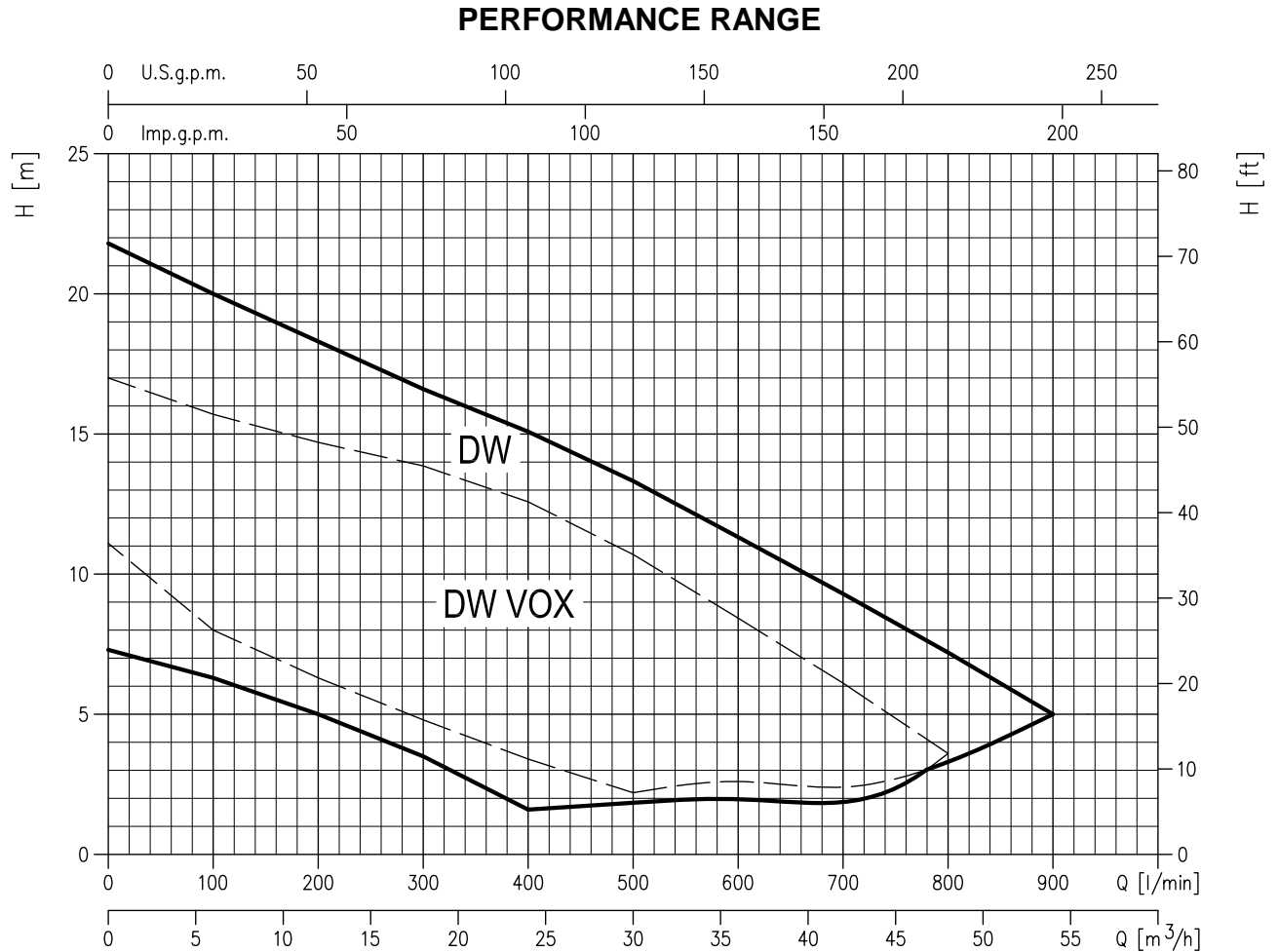
PUMP		
Liquid Handled	Type of liquid	Dirty water, sewage water
	Max temperature [°C]	40
	Max solids size [mm]	50 spherical
Maximum immersion	[m]	7
Construction	Impeller	Single channel (DW) Vortex (DW VOX)
	Shaft seal type	Double mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction-Flange [mm]	50 Open
	Discharge-Flange	DW - G 2 UNI ISO 228 DWF - Flange DN 50
Material	Casing	AISI 304
	Impeller	AISI 304
	Casing cover	AISI 304
	Shaft seal	Pump side : SiC/SiC/NBR Motor side : Carbon/Ceramic/NBR
	Seal cover	AISI 304
	Shaft	AISI 303 (wet extension)
	Lubricating liquid	White mineral oil: Esso Marcol 152 (385 cc)
Applicable standard of test		ISO 9906:2012 - Grade 3B

MOTOR		
Type	Submersible dry type	
	Single Phase	Three Phase
No. of Poles	2	
Rotation speed [min ⁻¹]	≈ 2800	
Insulation Class	F	
Protection degree	IP X8	
Power rating	[kW]	0.55 ÷ 1.1
	[HP]	0.75 ÷ 1.5
Frequency [Hz]	50	
Voltage [V]	230 ±10%	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
Power cable	length [m]	10
	material	H07RN-F
	size	3G1 (up to 0.55 kW) 3G1.5 (from 0.75 to 1.1 kW)
Dimensions of cable entry	Cable Gland	

SELECTION CHART

50Hz

Rev. P



SELECTION CHART

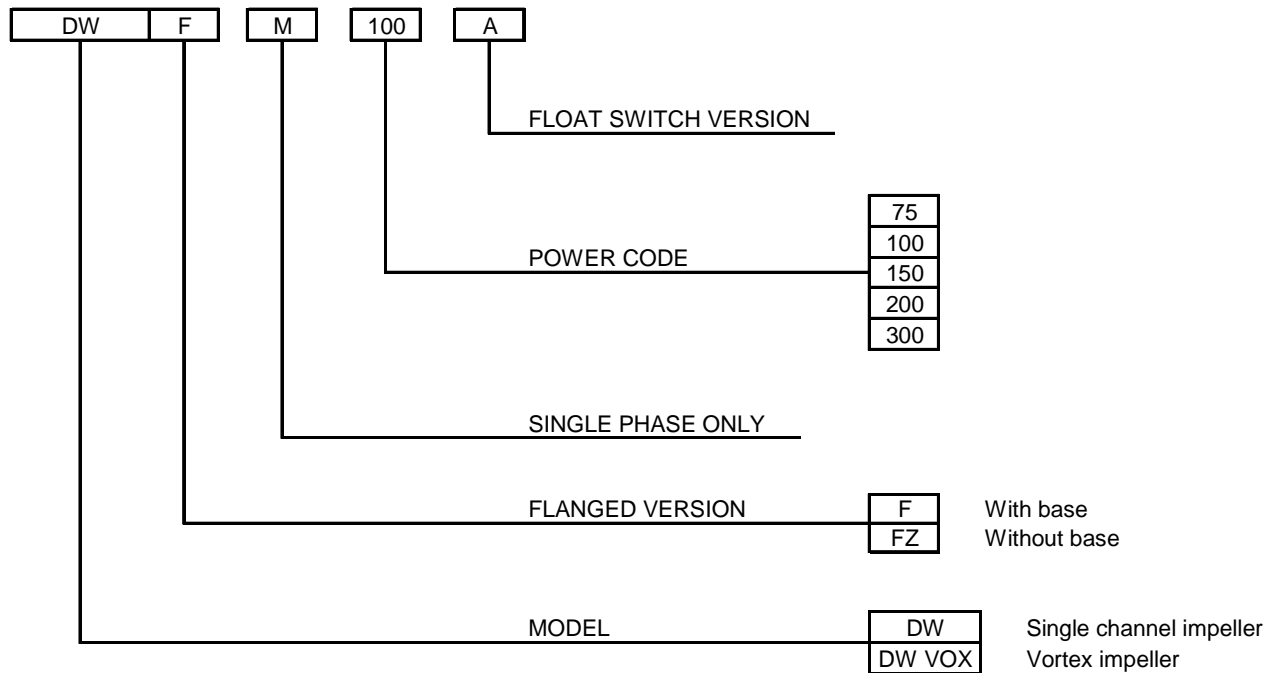
Pump Type	Power		Q=Capacity										
	[kW]	[HP]	[l/min]	0	100	200	300	400	500	600	700	800	900
			[m³/h]	0	6	12	18	24	30	36	42	48	54
H=Total manometric head in meters													
DW 75	0,55	0,75	11,1	8,0	6,3	4,8	3,4	2,2	-	-	-	-	
DW 100	0,75	1	13,3	10,6	8,7	7,1	5,5	4,0	2,6	-	-	-	
DW 150	1,1	1,5	15,0	13,1	11,3	9,5	7,7	5,9	4,2	2,4	-	-	
DW 200	1,5	2	18,2	16,6	15,0	13,3	11,4	9,5	7,5	5,4	3,3	-	
DW 300	2,2	3	21,8	20,0	18,3	16,6	15,1	13,3	11,3	9,3	7,2	5,0	
DW VOX 75	0,55	0,75	7,3	6,3	5,0	3,5	1,6	-	-	-	-	-	
DW VOX 100	0,75	1	9,0	7,9	6,7	5,3	3,7	1,9	-	-	-	-	
DW VOX 150	1,1	1,5	11,4	10,2	9,0	7,6	6,1	4,1	2,1	-	-	-	
DW VOX 200	1,5	2	13,8	12,5	11,2	9,8	8,3	6,4	4,2	1,6	-	-	
DW VOX 300	2,2	3	17,0	15,7	14,7	13,9	12,6	10,7	8,4	6,1	3,6	-	

PERFORMANCE CURVE

50Hz

Rev. P

TYPE KEY



PERFORMANCE CURVE SPECIFICATIONS

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

Tolerances according to ISO 9906:2012 - Grade 3B

The curves refer to effective speed of asynchronous motors at 50 Hz, 2 poles.

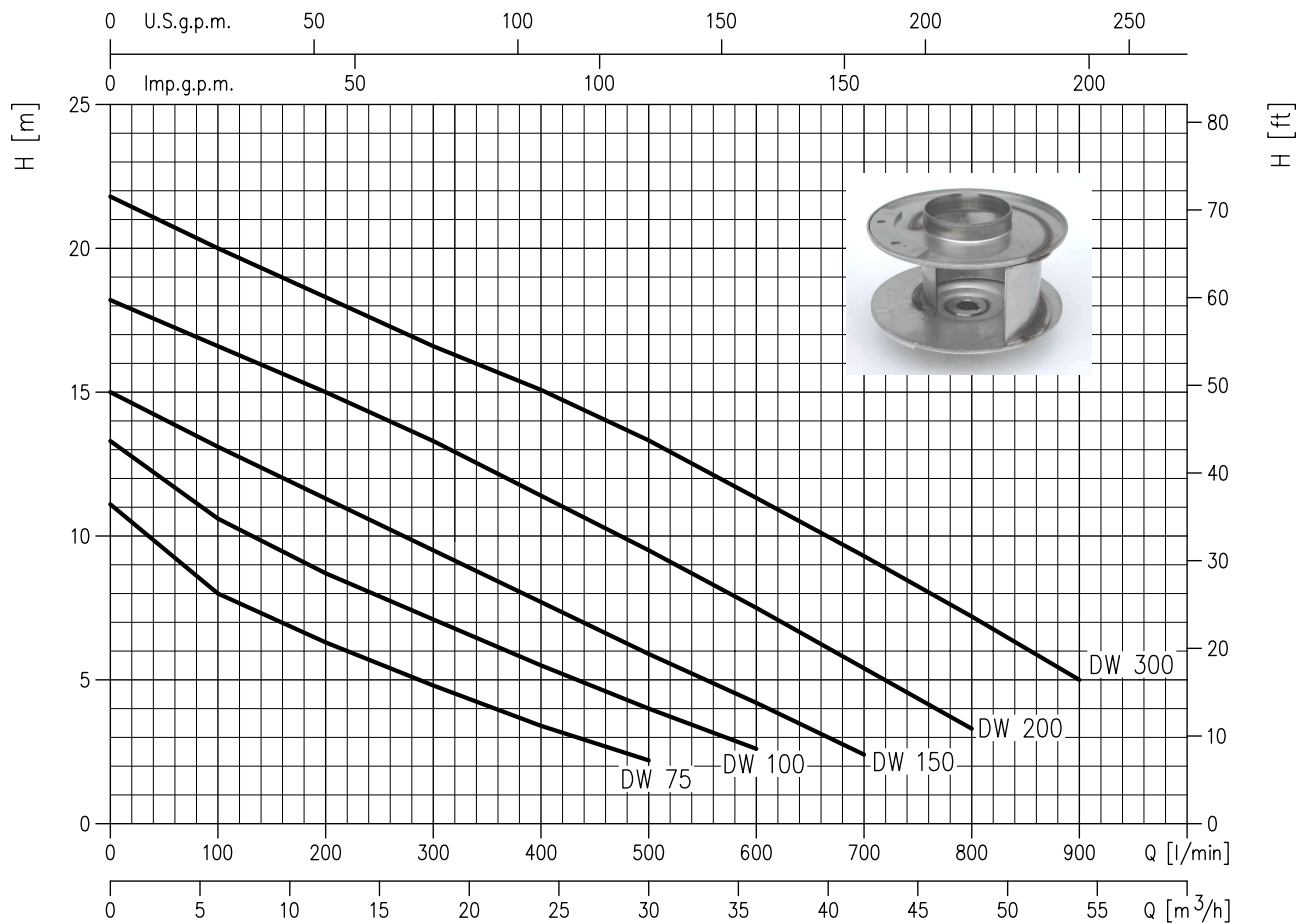
Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of $\nu = 1 \text{ mm}^2/\text{s}$ (1 cSt)

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:

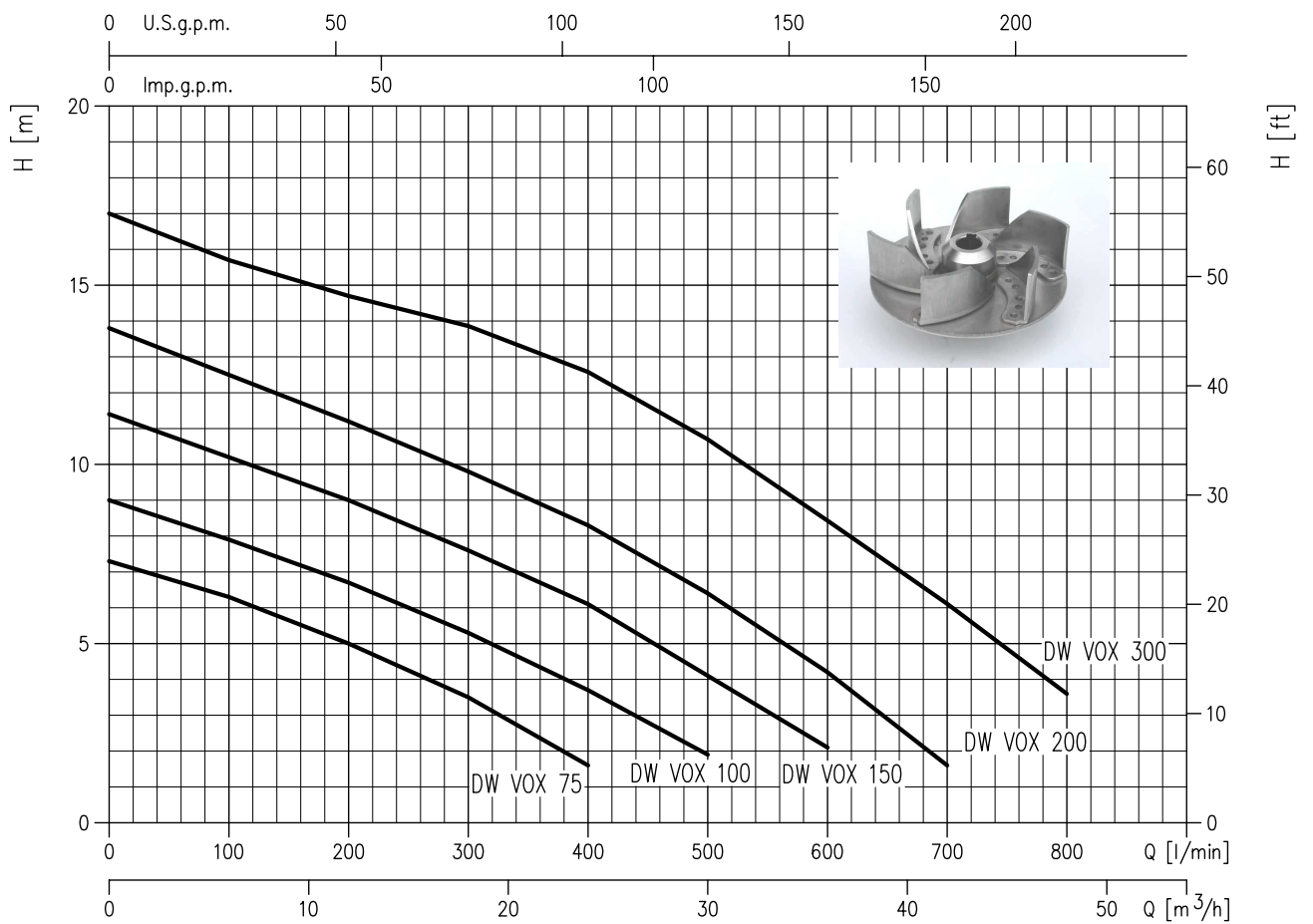
- Q = volume flow rate
- H = total head

DW 75 (0.55 kW) - Impeller diameter = 92
DW 100 (0.75 kW) - Impeller diameter = 99
DW 150 (1.1 kW) - Impeller diameter = 106
DW 200 (1.5 kW) - Impeller diameter = 114
DW 300 (2.2 kW) - Impeller diameter = 125



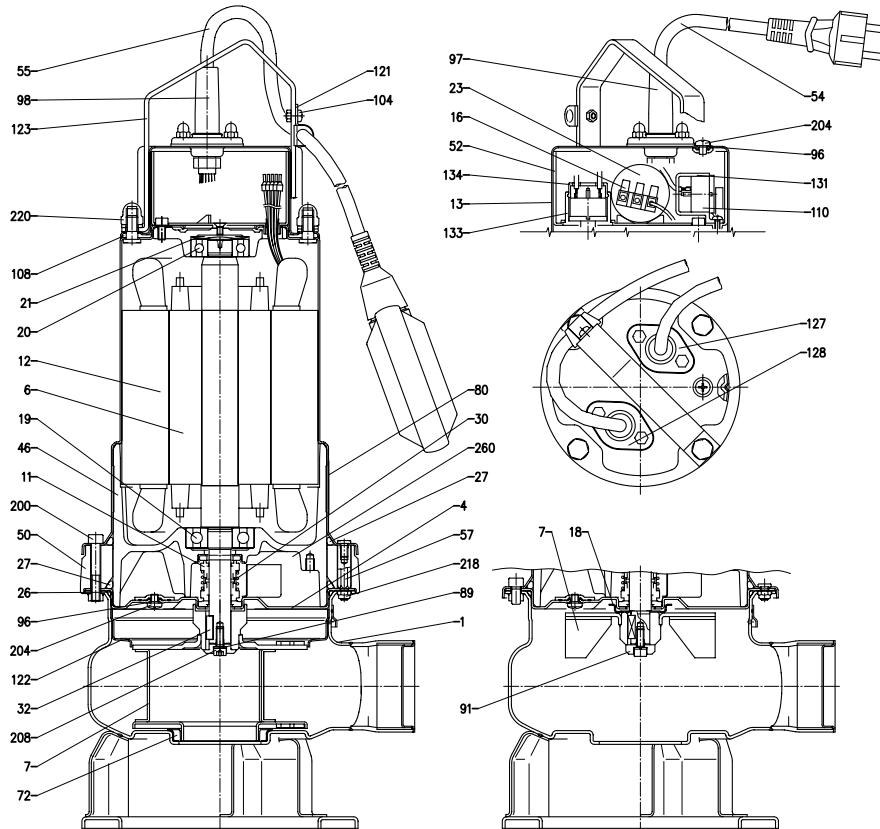
Rotation speed $\approx 2800 \text{ min}^{-1}$
 Test standard: ISO 9906:2012 - Grade 3B

DW VOX 75 (0.55 kW) - Impeller diameter = 88
DW VOX 100 (0.75 kW) - Impeller diameter = 88
DW VOX 150 (1.1 kW) - Impeller diameter = 95
DW VOX 200 (1.5 kW) - Impeller diameter = 103
DW VOX 300 (2.2 kW) - Impeller diameter = 116.5



Rotation speed $\approx 2800 \text{ min}^{-1}$
 Test standard: ISO 9906:2012 - Grade 3B

SECTIONAL VIEW



N°	PARTNAME	MATERIAL	QTY
1	Casing	ASI 304	1
4	Casing cover	ASI 304	1
6	Shaft with rotor	ASI 303	1
7	Impeller	ASI 304	1
11	Mechanical seal [8]	SiC/SiC/NBR	1
11	Mechanical seal [8]	Carbon/Ceramic/NBR	1
12	Motor frame with stator	-	1
13	Motor cover	ASI 304	1
16	Terminal	-	1
18	Mechanical seal protection [1]	ASI 304	1
19	Lower side ball bearing	-	1
20	Upper side ball bearing	-	1
21	Adjusting ring	Steel C70	1
23	Capacitor [2]	-	1
26	O-ring	NBR	1
27	O-ring	NBR	1
27	O-ring [3]	NBR	1
30	Mechanical seal spacer	Brass	1
32	Key	ASI 304	1
46	Bearing housing	G20	1
50	Spacer [3]	G20	1
52	Terminal insulating box	PA66 glass fibre reinforced class V0	1
54	Power cable	-	1
55	Float switch [4]	-	1
57	Spacer [3]	ASI 304	4

N°	PARTNAME	MATERIAL	QTY
72	Casing ring [5]	NBR	1
80	Nameplate	-	1
89	Washer	ASI 304	1
91	Washer [1]	ASI 304	1
96	O-ring	NBR	3
97	Power cable entry	NBR	1
98	Floating sw cable entry [4]	NBR	1
104	Cable guard [4]	NBR	1
108	Cover gasket	NBR	1
110	Protector [2]	-	2
121	Support for float switch [4]	ASI 304	1
122	Impeller protection ring [6]	ASI 304	1
123	Handle	ASI 304	1
127	Power cable connector	ASI 304	1
128	Floating sw. cable connector	ASI 304	1
131	Support for protector [7]	PA66 glass fibre reinforced	1
133	Support for probe [7]	Aluminium	1
134	Cover for support probe [7]	PA6	1
200	Screw	Stainless steel A2 UNI 7323	6
204	Screw	Stainless steel A2 UNI 7323	3
208	Screw	Stainless steel A2 UNI 7323	1
218	Nut	Stainless steel A2 UNI 7323	4
220	Nut	Stainless steel A2 UNI 7323	4
260	Lubricating liquid	White mineral oil	348 cc

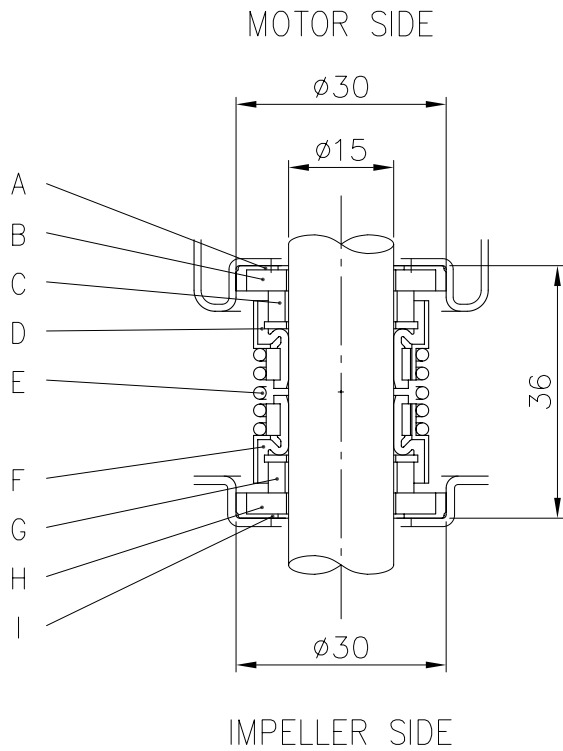
[1] Except for DW-DW VOX 300
 [2] Only for single phase
 [3] Only for DW-DW VOX 300
 [4] Only for single phase with float switch

[5] Only for DW
 [6] Except for DW VOX 150, 200 and 300
 [7] Only for single phase DW 150
 [8] For dimensions and materials see page 301

BEARINGS

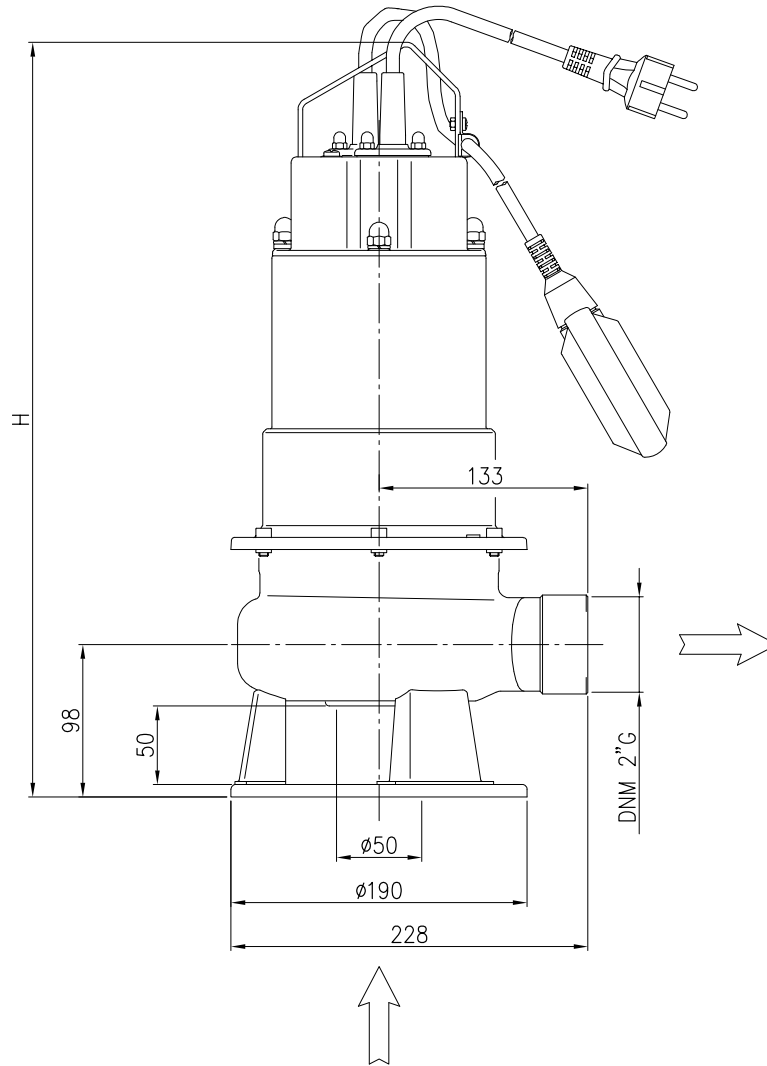
Pump Type		Ball Bearing	
Single Phase	Three Phase	Pump side	Coverside
75 M	75	6303 ZZ	6203 ZZ
100 M	100	6303 ZZ	6203 ZZ
150 M	150	6303 ZZ	6203 ZZ
-	200	6303 ZZ	6203 ZZ
-	300	6303 ZZ	6203 ZZ

MECHANICAL SEAL



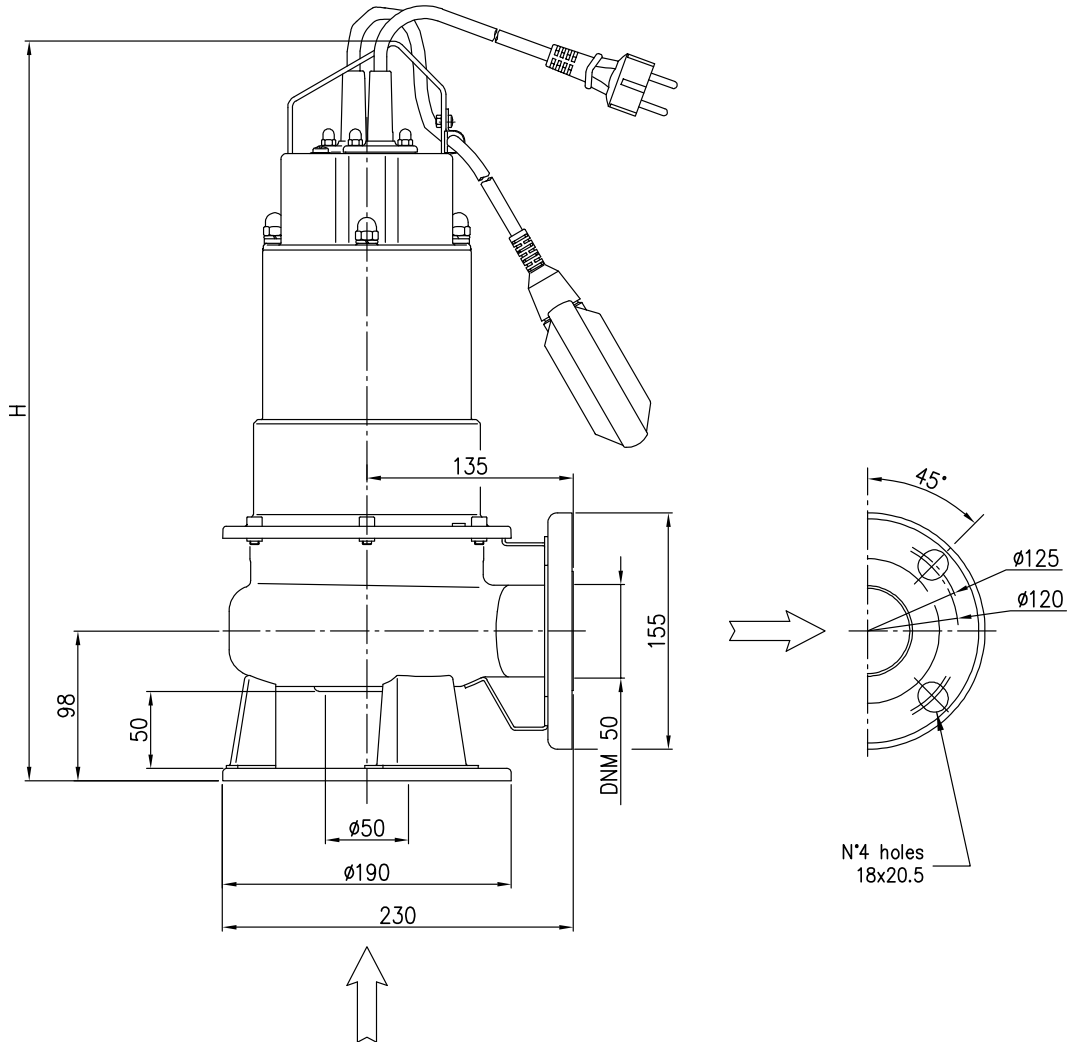
REF	PART NAME	MATERIAL
A	Rubber cup	NBR
B	Seat	Ceramic
C	Seal face	Carbon
D	Bellow	NBR
E	Spring	AISI 304
F	Bellow	NBR
G	Seal face	Silicon carbide
H	Seat	Silicon carbide
I	Rubber cup	NBR

DW-DW VOX



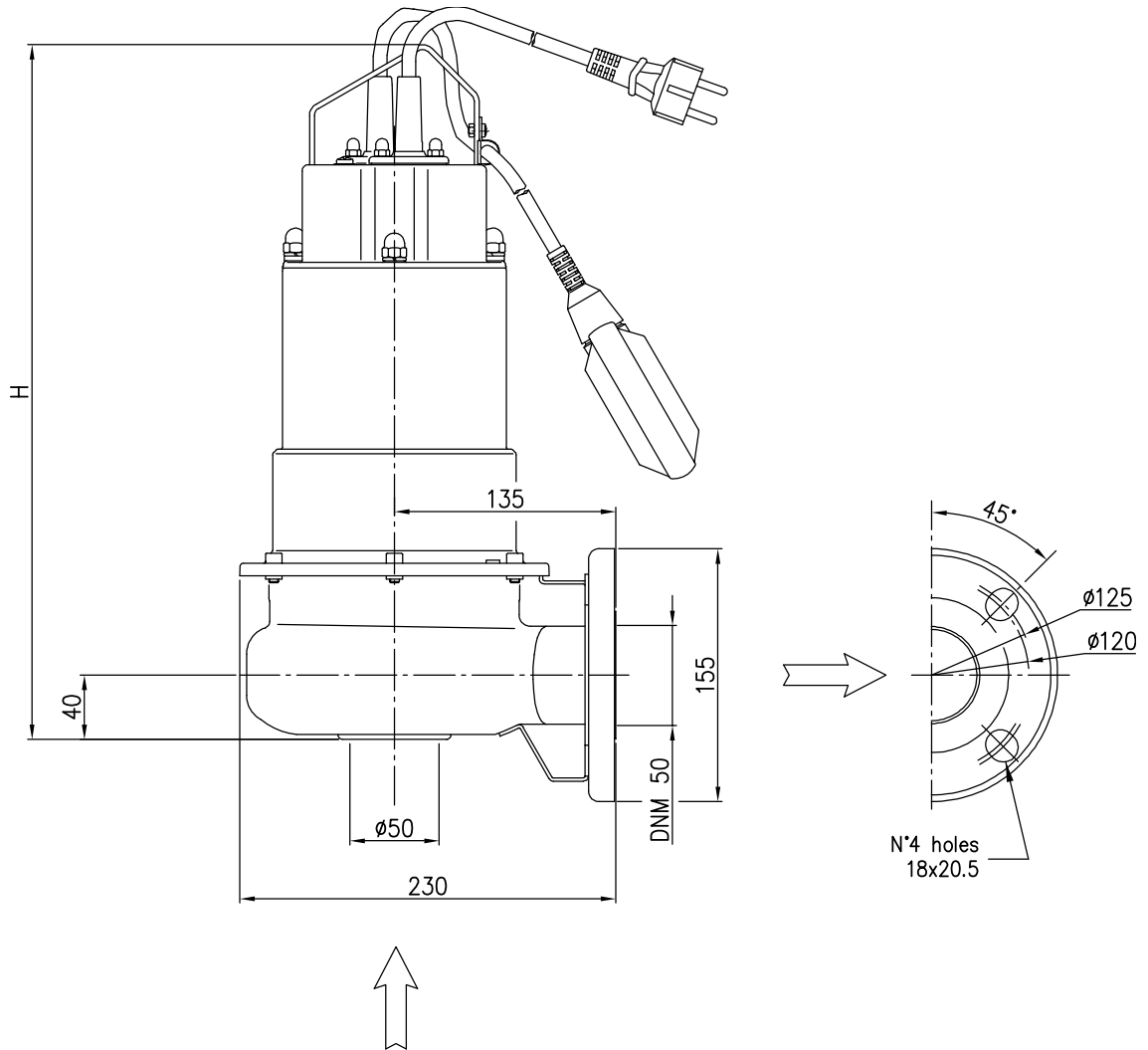
Pump type	H [mm]		Weight [kgf]		
	1~	3~	1~ Automatic (With float switch)	Manual	3~
DW 75	486	486	16	15.8	15.4
DW 100	516	486	18	17.8	16.8
DW 150	516	516	19.4	19.2	18.6
DW 200	-	516	-	-	20
DW 300	-	546	-	-	25.8
DW VOX 75	486	486	15.6	15.4	15.2
DW VOX 100	516	486	17.6	17.4	16.4
DW VOX 150	516	516	19	18.8	18.1
DW VOX 200	-	516	-	-	19.6
DW VOX 300	-	546	-	-	25.4

DW F - DW VOX F



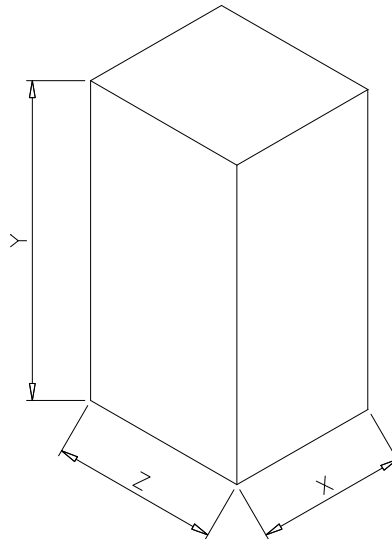
Pump type	H [mm]		Weight [kgf]		
	1~	3~	1~ Automatic (With float switch)	Manual	3~
DWF 75	486	486	16.8	16.6	16.2
DWF 100	516	486	18.8	18.6	17.6
DWF 150	516	516	20.2	20	19.4
DWF 200	-	516	-	-	20.8
DWF 300	-	546	-	-	26.6
DW VOXF 75	486	486	16.4	16.2	16
DW VOXF 100	516	486	18.4	18.2	17.2
DW VOXF150	516	516	19.8	19.6	18.9
DW VOXF 200	-	516	-	-	20.4
DW VOXF 300	-	546	-	-	26.2

DW FZ - DW VOX FZ



Pump type	H [mm]		Weight [kgf]		
	1~	3~	1~		3~
			Automatic (With float switch)	Manual	
DW FZ 75	428	428	16.2	16	15.6
DW FZ 100	458	428	18.2	18	17
DW FZ 150	458	458	19.6	19.4	18.8
DW FZ 200	-	458	-	-	20.2
DW FZ 300	-	488	-	-	26
DW VOX FZ 75	428	428	15.8	15.8	15.4
DW VOX FZ 100	458	428	17.8	17.6	16.6
DW VOX FZ 150	458	458	19.2	19	18.3
DW VOX FZ 200	-	458	-	-	19.8
DW VOX FZ 300	-	488	-	-	25.6

PACKING



Pump type	1~			Weight [kgf]		3~			Weight [kgf]	
	Z	X	Y	Automatic (With float switch)	Manual	Z	X	Y		
DW	75	280	245	550	17.2	17	280	245	550	16.6
	100				19.2	19				18
	150				20.6	20.4				19.8
	200				-	-				21.2
	300				-	-				27.1
DW VOX	75	280	245	550	16.8	16.6	280	245	550	16.4
	100				18.8	18.6				17.6
	150				20.2	20				19.3
	200				-	-				20.8
	300				-	-				26.7
DW F	75	280	245	550	18	17.8	280	245	550	17.4
	100				20	19.8				18.8
	150				21.4	21.2				20.6
	200				-	-				22
	300				-	-				27.9
DW VOX F	75	280	245	550	17.6	17.4	280	245	550	17.2
	100				19.6	19.4				18.4
	150				21	20.8				20.1
	200				-	-				21.6
	300				-	-				27.5
DW FZ	75	280	245	550	17.4	17.2	280	245	550	16.8
	100				19.4	19.2				18.2
	150				20.8	20.6				20
	200				-	-				21.4
	300				-	-				27.2
DW VOX FZ	75	280	245	550	17	16.8	280	245	550	16.6
	100				19	18.8				17.8
	150				20.4	20.2				19.5
	200				-	-				21
	300				-	-				26.8

MOTOR DATA

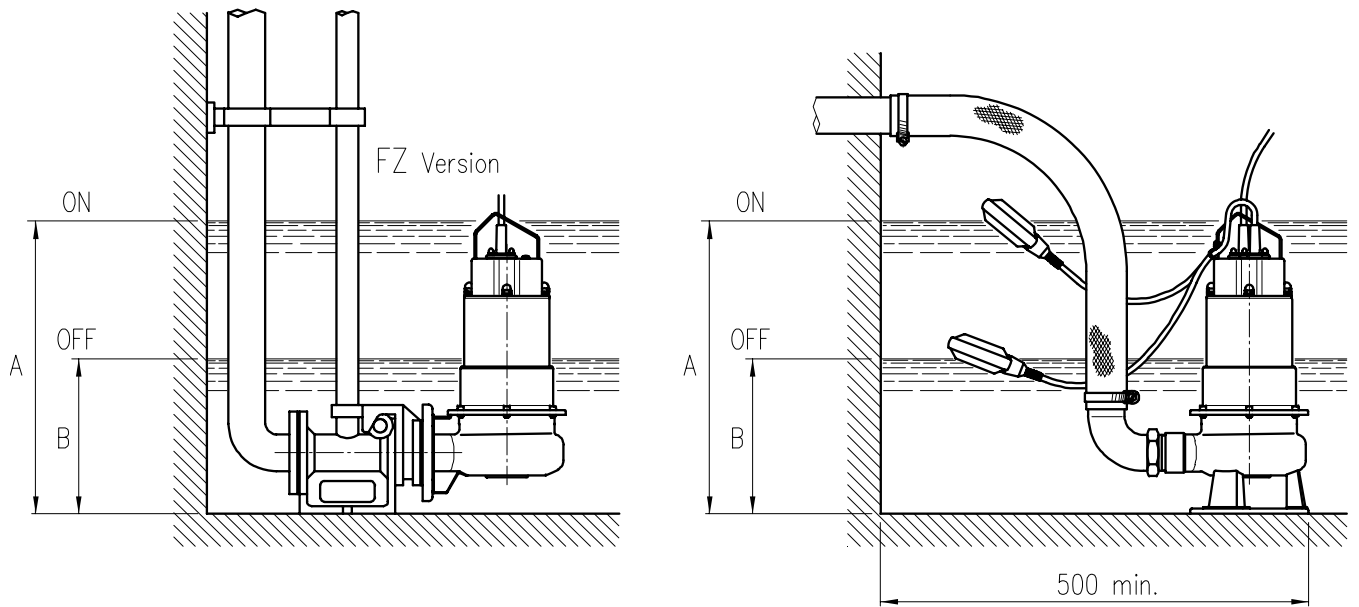
DW

Pump Type		Power		Capacitor Single Phase		Input Power [kW]		Full load current [A]		Locked rotor current [A]	
Single Phase	Three Phase	[kW]	[HP]	[μF]	Vc [V]	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase
75 M	75	0,55	0,75	20	450	0,9	0,85	3,9	1,5	17	8,5
100 M	100	0,75	1	25	450	1,28	1,19	5,9	2,1	26	14,2
150 M	150	1,1	1,5	31,5	450	1,57	1,55	7,3	2,8	35	24,2
-	200	1,5	2	-	-	-	2,08	-	3,6	-	30
-	300	2,2	3	-	-	-	2,9	-	5,0	-	45

DW VOX

Pump Type		Power		Capacitor Single Phase		Input Power [kW]		Full load current [A]		Locked rotor current [A]	
Single Phase	Three Phase	[kW]	[HP]	[μF]	Vc [V]	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase
75 M	75	0,55	0,75	20	450	0,88	0,80	3,9	1,4	17	8,5
100 M	100	0,75	1	25	450	1,25	1,18	5,8	2,1	26	14,2
150 M	150	1,1	1,5	31,5	450	1,58	1,57	7,3	2,8	35	24,2
-	200	1,5	2	-	-	-	1,92	-	3,3	-	30
-	300	2,2	3	-	-	-	2,4	-	4,4	-	45

INSTALLATION



Pump	A (ON)	B (OFF)
	[mm]	
75 MA	460	250
100 MA	470	260
150 MA		