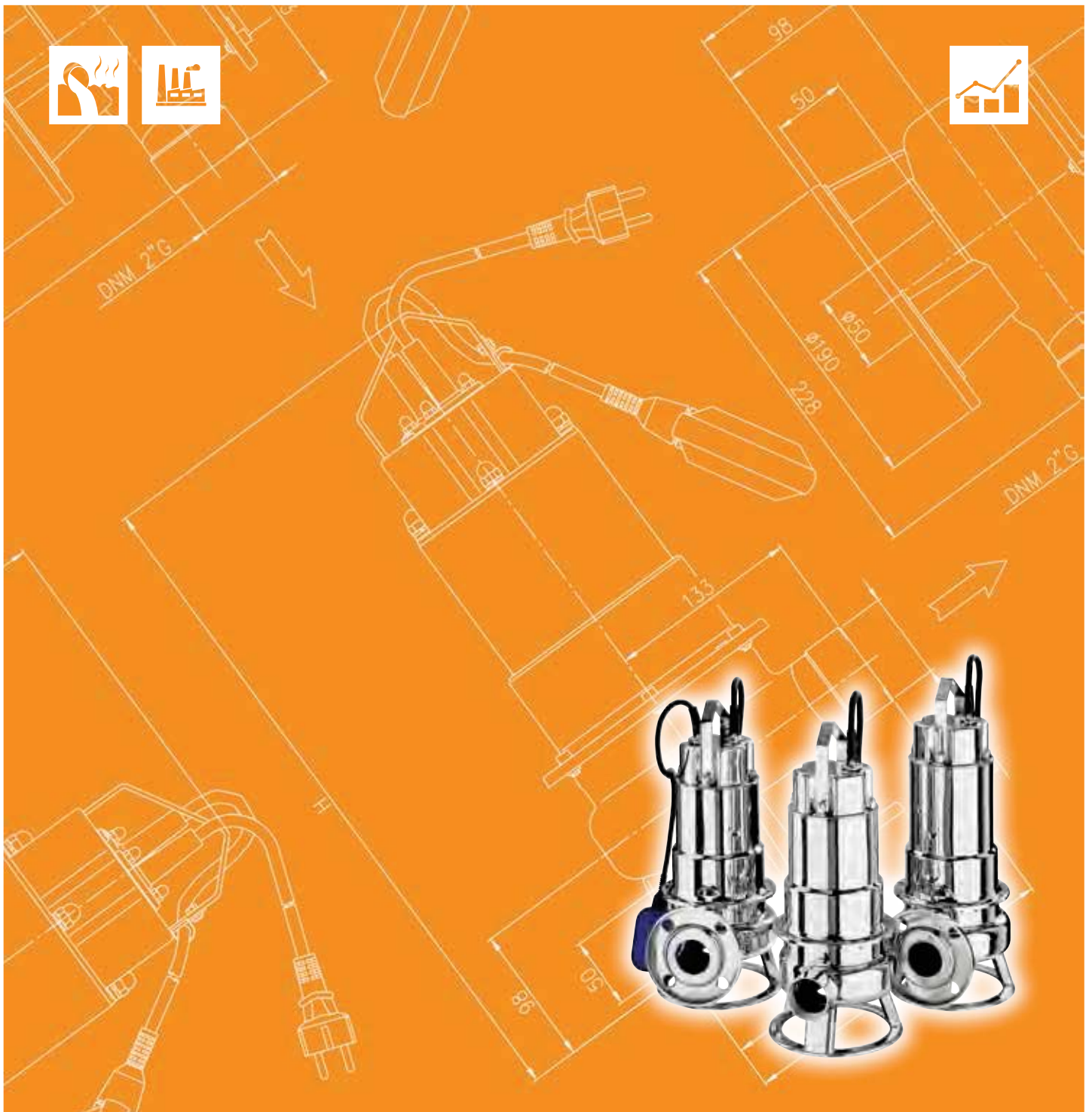




Japanese Technology since 1912

## DW - DW VOX

Data Book 50Hz



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**SPECIFICATION**

50Hz

Rev. 0

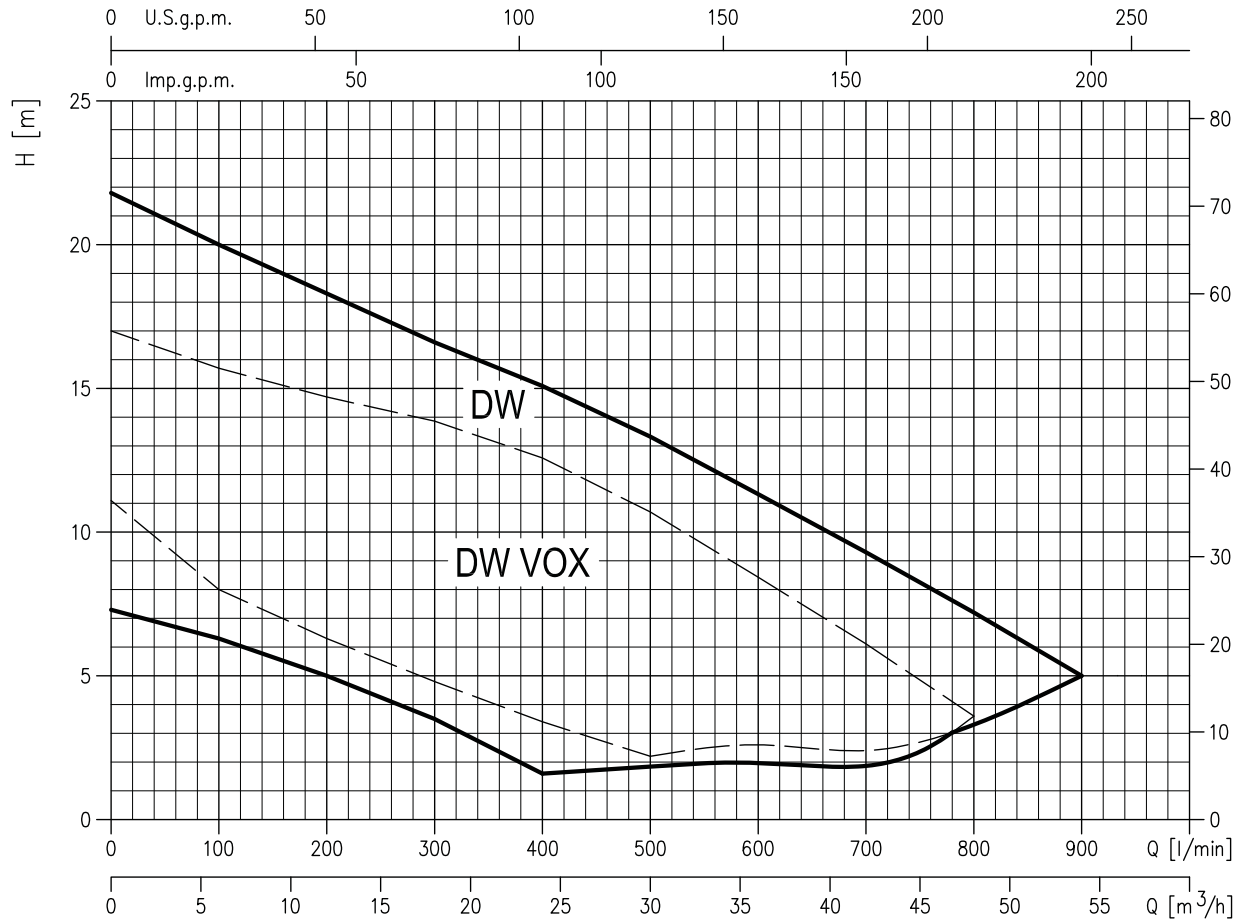
PUMP		
Liquid Handled	Type of liquid	Dirty water, sewage water
	Max temperature [°C]	40
	Max solids size [mm]	50 spherical
Maximum immersion	[m]	7
Construction	Impeller	Single channel (DW) Vortex (DW VOX)
	Shaft seal type	Double mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction-Flange [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 304 (wet extension)
	Lubricating liquid	White mineral oil: Esso Marcol 152 (385 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	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

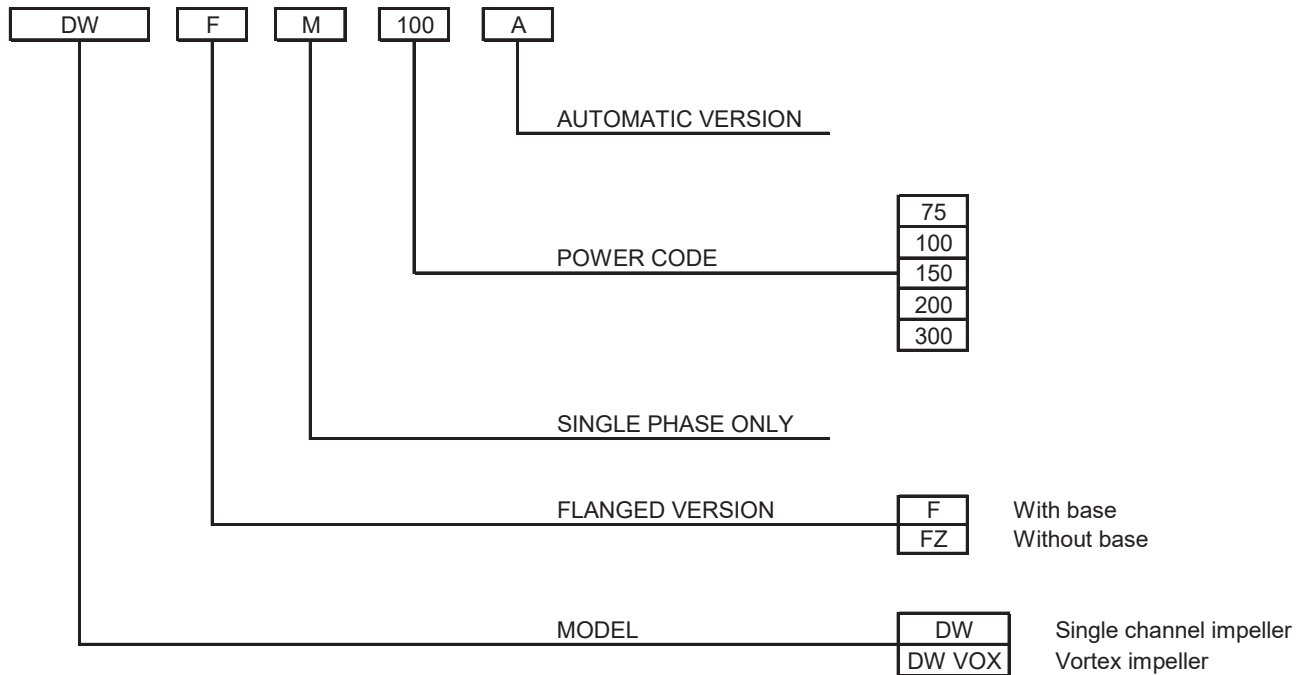
50Hz

Rev. O



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	-	-

**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

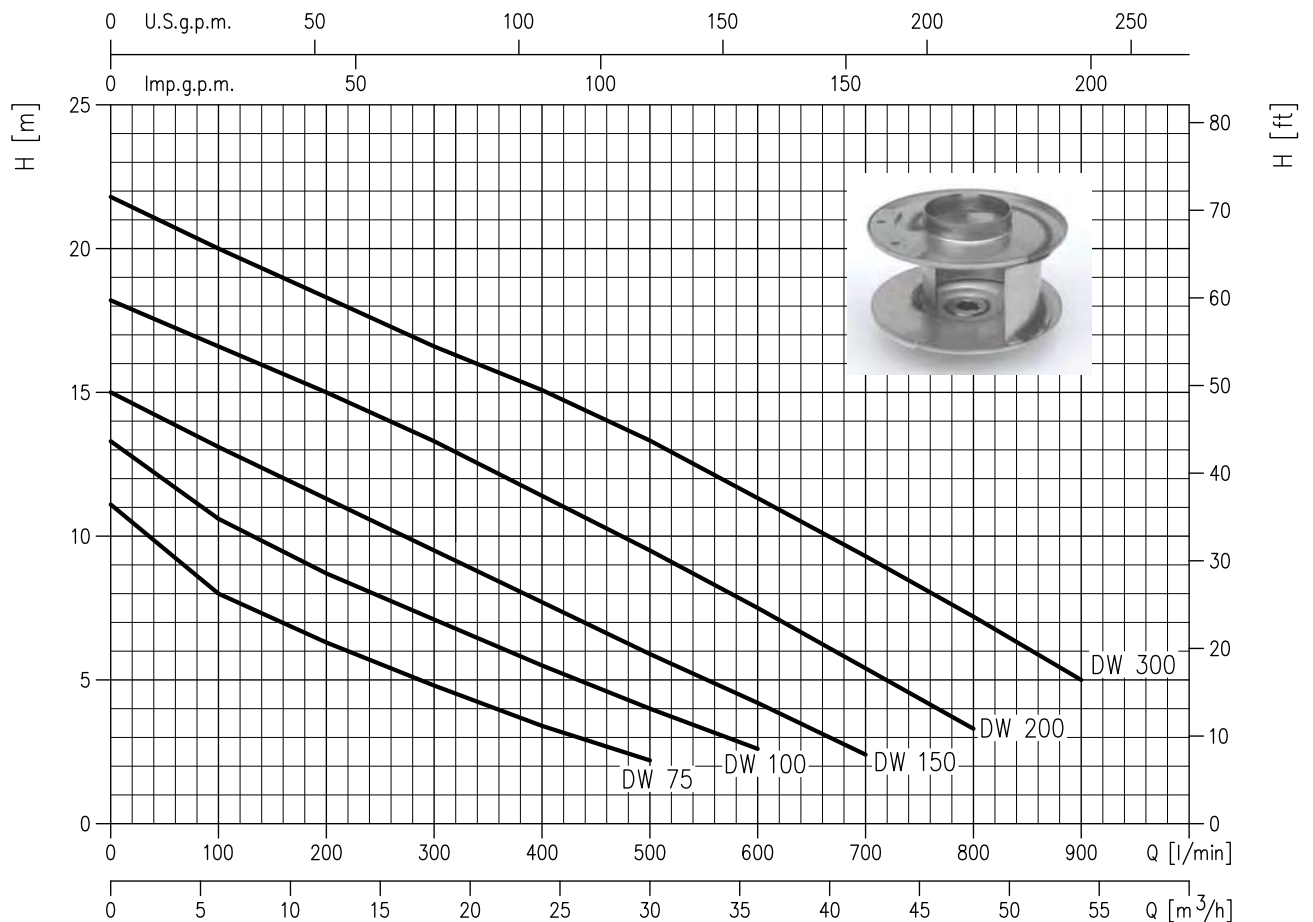
Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of  $\nu = 1 \text{ mm}^2/\text{s}$  (1 cSt)

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:

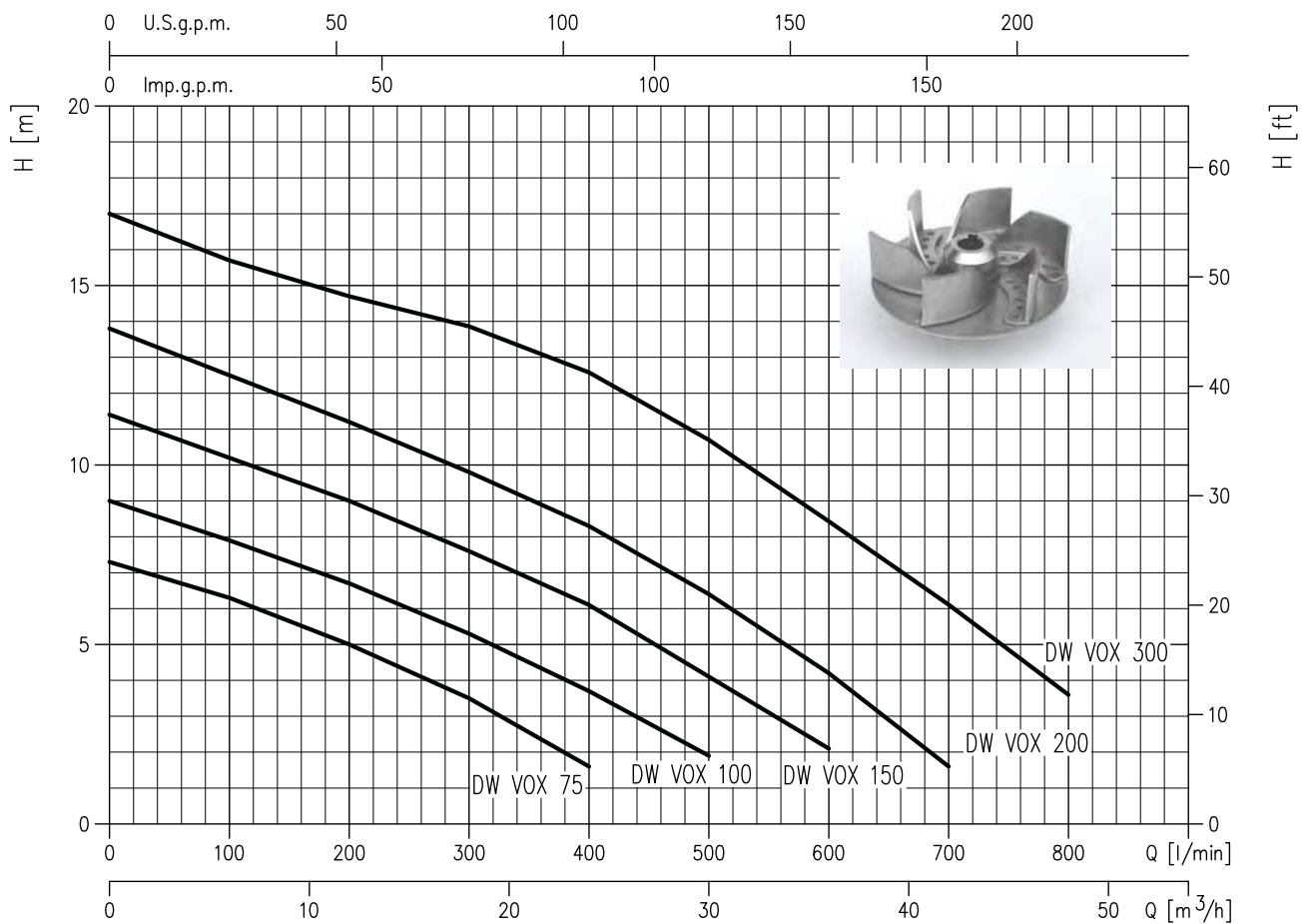
- Q = volume flow rate
- H = total head

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



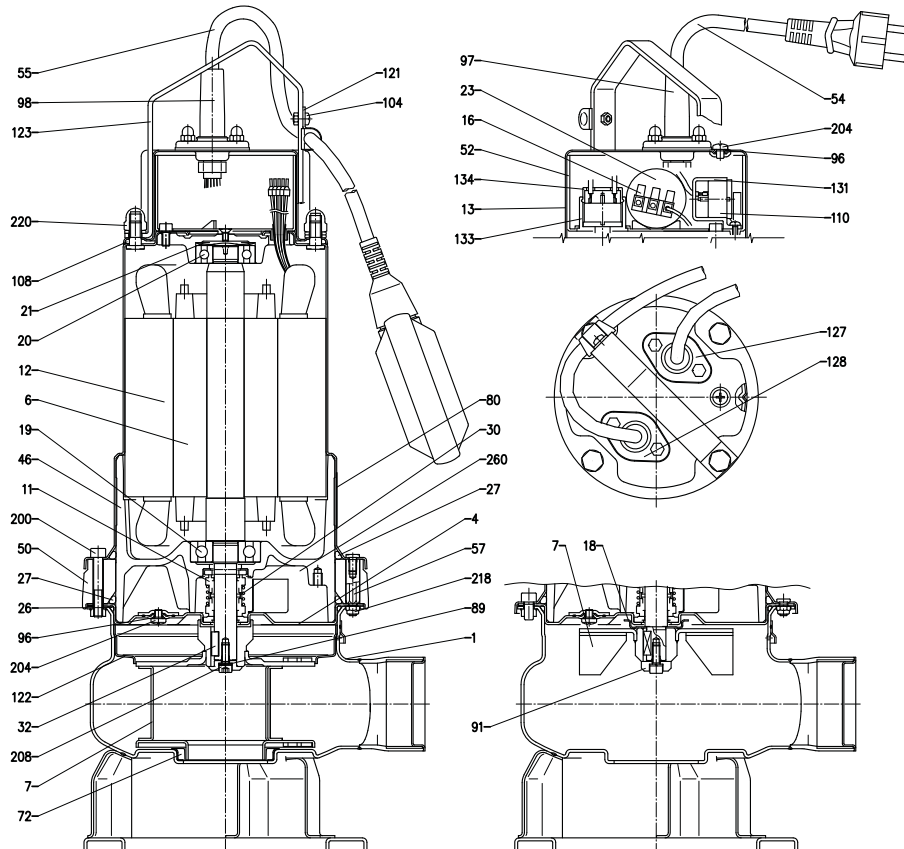
Rotation speed  $\approx 2800 \text{ min}^{-1}$   
 Test standard: ISO 9906 – Annex A

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 – Annex A

SECTIONAL VIEW



N°	PART NAME	MATERIAL	Q.TY	N°	PART NAME	MATERIAL	Q.TY
1	Casing	AISI 304	1	57	Spacer [3]	AISI 304	4
4	Casing cover	AISI 304	1	72	Casing ring [5]	NBR	1
6	Shaft with rotor	AISI 304	1	89	Washer	AISI 304	1
7	Impeller	AISI 304	1	91	Washer [1]	AISI 304	1
11	Mechanical seal	SiC/SiC/NBR	1	96	O ring	NBR	3
11	Mechanical seal	Carbon/Ceramic/NBR	1	97	Power cable entry	NBR	1
12	Motor frame with stator	-	1	98	Floating sw cable entry [4]	NBR	1
13	Motor cover	AISI 304	1	104	Cable guard [4]	NBR	1
16	Terminal	-	1	108	Cover gasket	NBR	1
18	Mechanical seal protection [1]	AISI 304	1	110	Protector [2]	-	2
19	Lower side ball bearing	-	1	121	Support for float switch [4]	AISI 304	1
20	Upper side ball bearing	-	1	122	Impeller protection ring [6]	AISI 304	1
21	Adjusting ring	Steel C70	1	123	Handle	AISI 304	1
23	Capacitor [2]	-	1	127	Power cable connector	AISI 304	1
26	O ring	NBR	1	128	Floating sw . cable connector [4]	AISI 304	1
27	O ring	NBR	1	131	Support for protector [7]	PA66 glass fibre reinforced	1
27	O ring [3]	NBR	1	133	Support for probe [7]	Aluminium	1
30	Mechanical seal spacer	Brass	1	134	Cover for support probe [7]	PA6	1
32	Key	AISI 304	1	200	Screw	Stainless steel A2 UNI 7323	6
46	Bearing housing	G20	1	204	Screw	Stainless steel A2 UNI 7323	3
50	Spacer [3]	G20	1	208	Screw	Stainless steel A2 UNI 7323	1
52	Terminal insulating box	PA66 glass fibre reinforced class V-0	1	218	Nut	Stainless steel A2 UNI 7323	4
54	Power cable	-	1	220	Nut	Stainless steel A2 UNI 7323	4
55	Float switch [4]	-	1	260	Lubricating liquid	White mineral oil	385 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

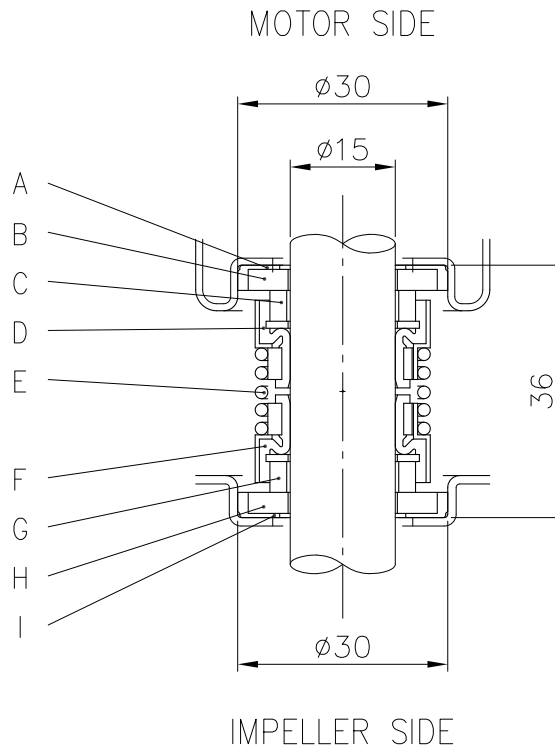
[5] Only for DW  
 [6] Except for DW VOX 150, 200 and 300  
 [7] Only for single phase DW 150



**BEARINGS**

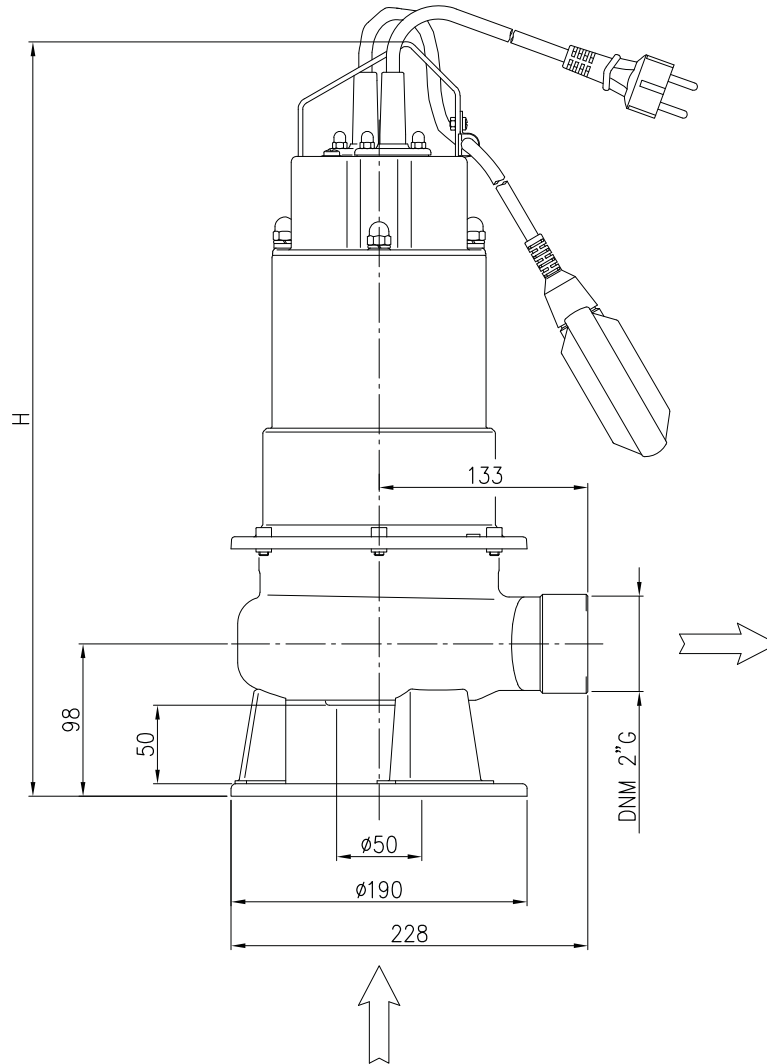
Pump Type		Ball Bearing	
Single Phase	Three Phase	Pump side	Cover side
75 M	75	6303 ZZ	6203 ZZ
100 M	100	6303 ZZ	6203 ZZ
150 M	150	6303 ZZ	6203 ZZ
-	200	6303 ZZ	6203 ZZ
-	300	6303 ZZ	6203 ZZ

**MECHANICAL SEAL**



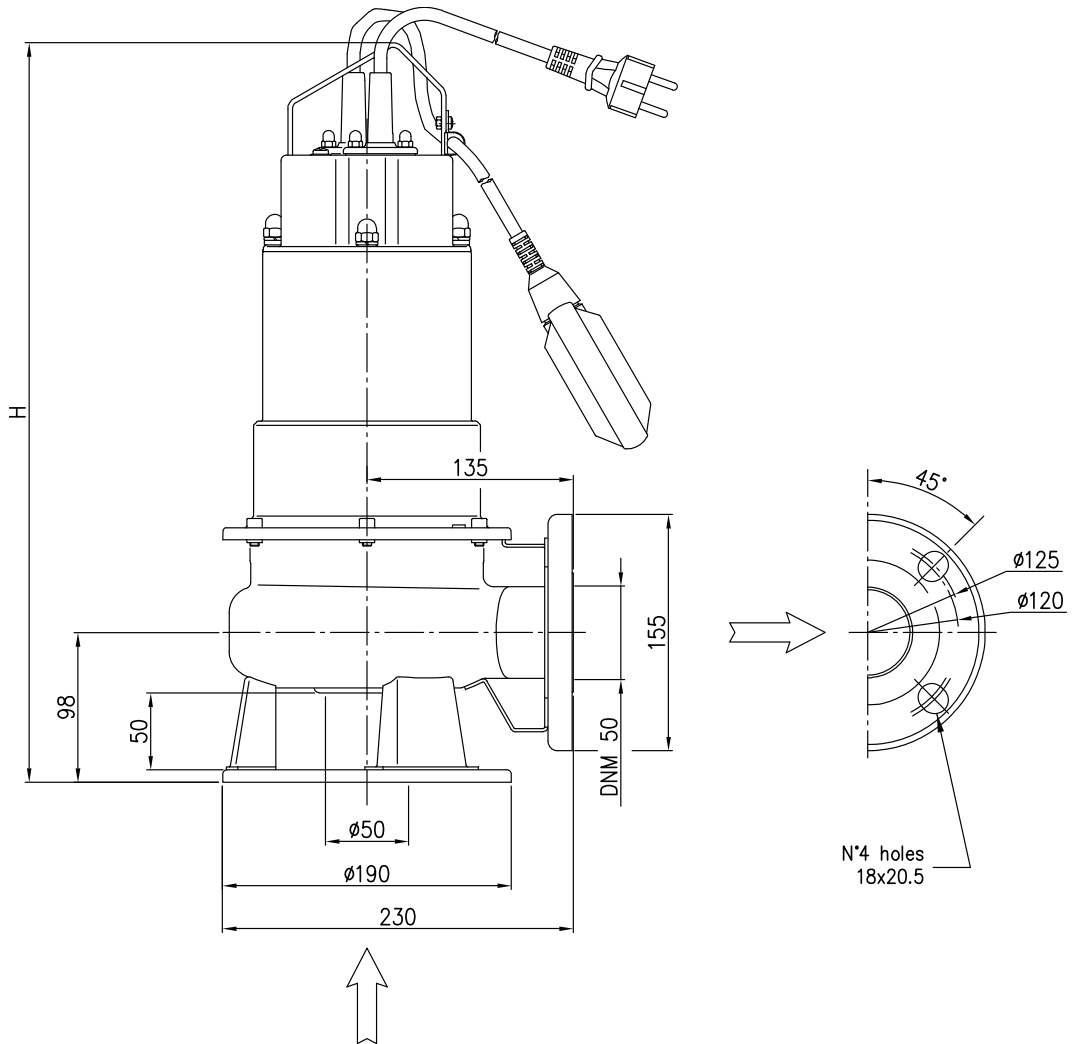
REF	PART NAME	MATERIAL
A	Rubber cup	NBR
B	Seat	Ceramic
C	Seal face	Carbon
D	Bellow	NBR
E	Spring	AISI 304
F	Bellow	NBR
G	Seal face	Silicon carbide
H	Seat	Silicon carbide
I	Rubber cup	NBR

DW-DW VOX



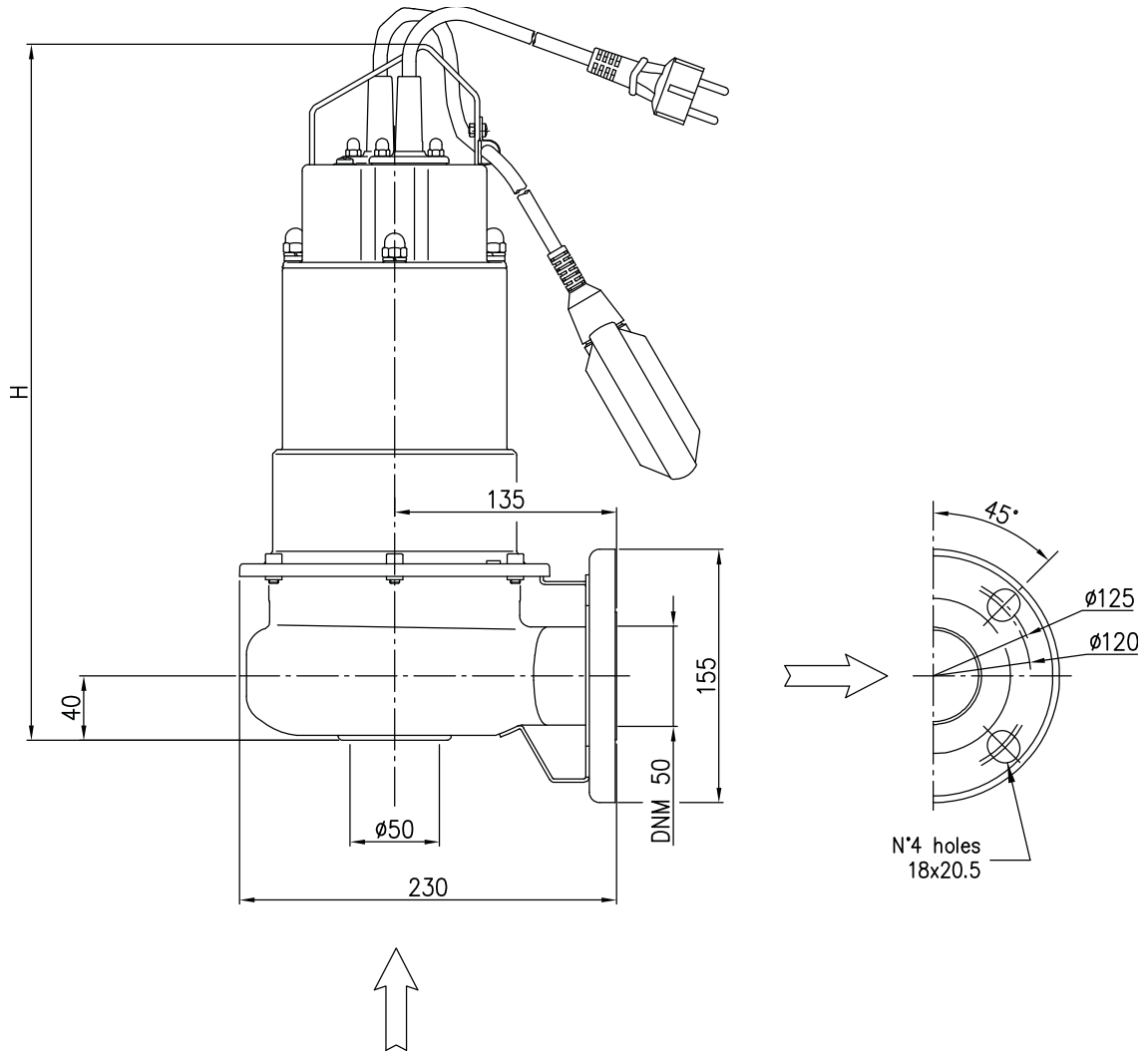
Pump type	H [mm]		Weight [kgf]		
	1~	3~	1~ Automatic (With float switch)	Manual	3~
DW 75	486	486	16	15.8	15.4
DW 100	516	486	18	17.8	16.8
DW 150	516	516	19.4	19.2	18.6
DW 200	-	516	-	-	20
DW 300	-	546	-	-	25.8
DW VOX 75	486	486	15.6	15.4	15.2
DW VOX 100	516	486	17.6	17.4	16.4
DW VOX 150	516	516	19	18.8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

DW F - DW VOX F



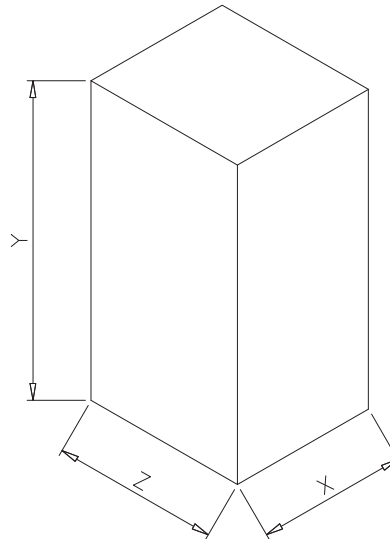
Pump type	H [mm]		Weight [kgf]		
	1~	3~	1~		3~
			Automatic (With float switch)	Manual	
DWF 75	486	486	16.8	16.6	16.2
DWF 100	516	486	18.8	18.6	17.6
DWF 150	516	516	20.2	20	19.4
DWF 200	-	516	-	-	20.8
DWF 300	-	546	-	-	26.6
DW VOXF 75	486	486	16.4	16.2	16
DW VOXF 100	516	486	18.4	18.2	17.2
DW VOXF150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

**MOTOR DATA**

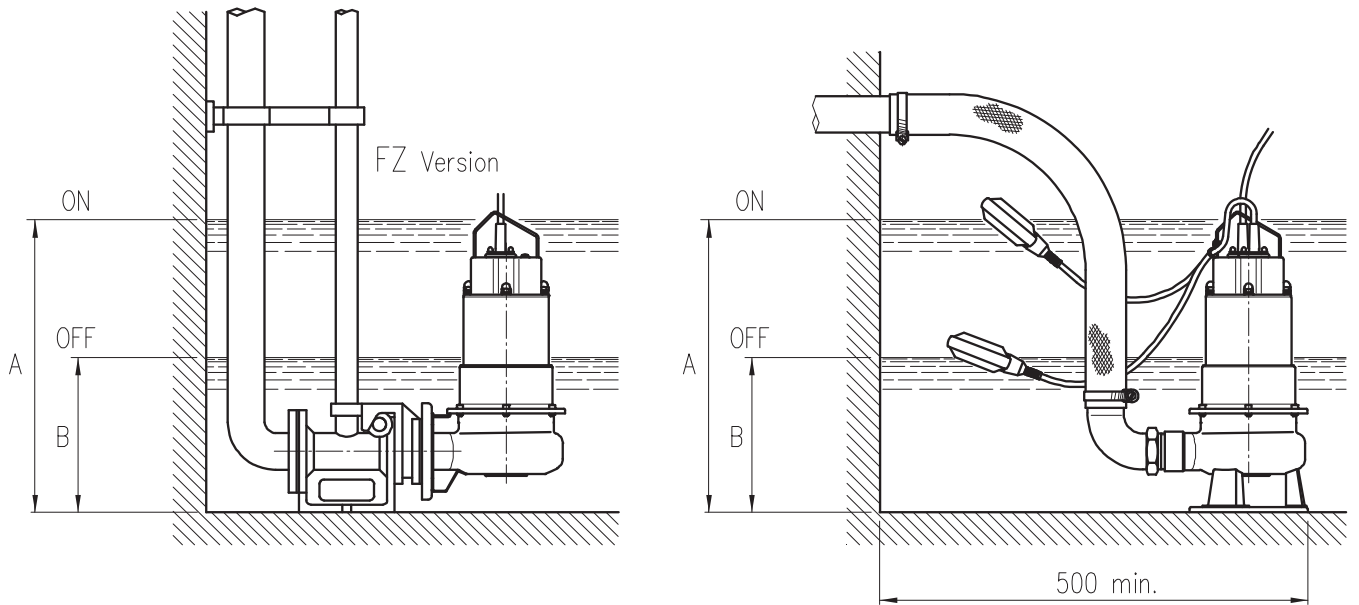
**DW**

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		