



**EBARA**

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**SPECIFICATION**

60Hz

Rev. D

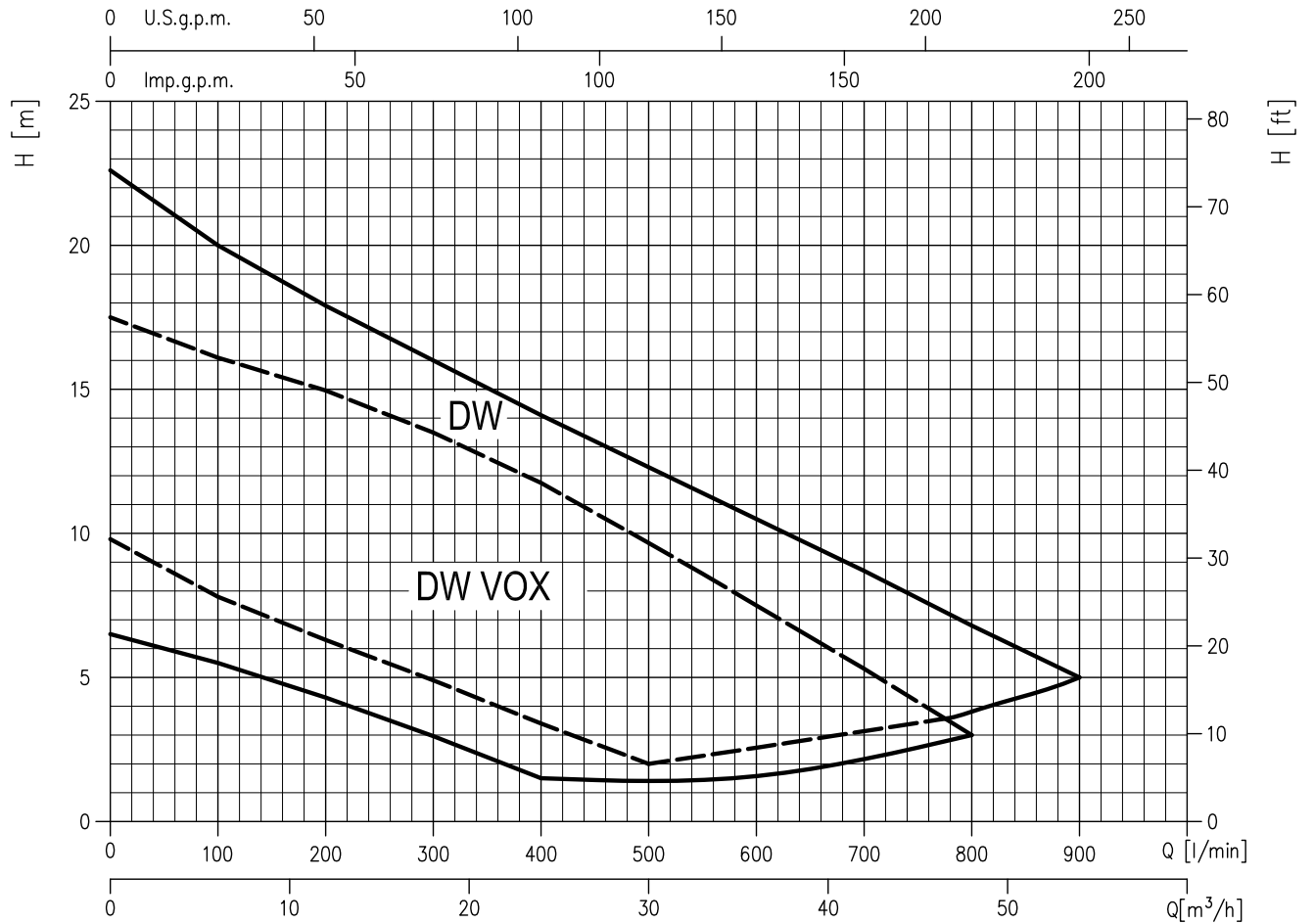
PUMP		
Liquid Handled	Type of liquid	Dirty water, sewage water
	Max temperature [°C]	40
	Max solids size [mm]	50 spherical
Maximum immersion [m]		7
Construction	Impeller	Single channel (DW) Vortex (DW VOX)
	Shaft seal type	Double mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction-Flange [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 – Annex A

MOTOR			
Type	Submersible dry type		
	Single Phase	Three Phase	
No. of Poles	2		
Rotation speed [min <sup>-1</sup> ]	≈ 3400		
Insulation Class	F		
Protection degree	IP X8		
Power rating	[kW]	0.55 ÷ 1.5	
	[HP]	0.75 ÷ 2	
Frequency [Hz]	60		
Voltage [V]	110 - 115 ±6%		
	220 - 230 ±6%		
	220 -6 +10% 380 -6 +10% 440 - 460 ±6%		
Capacitor	Built in	-	
Over load protection	Built in	Provided by the user	
Float switch	Optional	-	
Float switch cable	material	H07RN-F	
	size	3G1	
Casing material	AISI 304		
Power cable	length [m]	10	
	material	H07RN-F	FG50K
	size	3G1 (up to 0.55 kW) 3G1.5 (from to 0.75 to 1.5 kW)	4G1.5 + 2x0.5
Dimensions of cable entry	Cable Gland		

SELECTION CHART

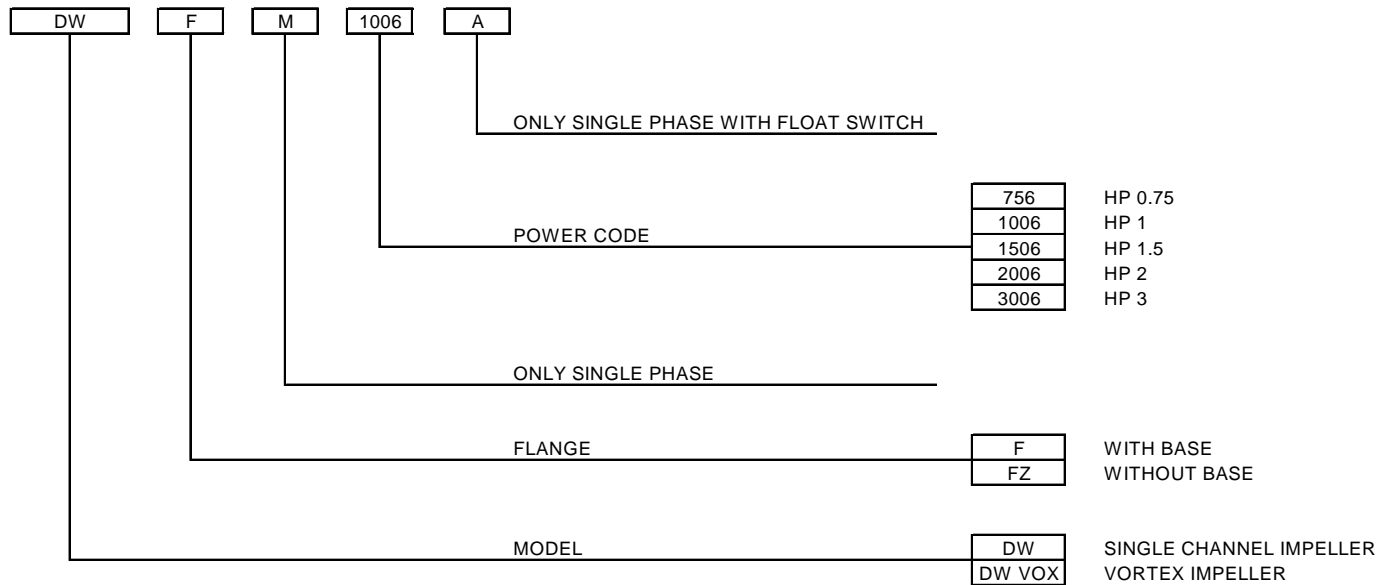
60Hz

Rev. D



Pump type	Power		Q=Capacity												
			[l/min]	0	100	200	300	400	500	550	600	650	700	800	900
	[kW]	[HP]	[m³/h]	0	6	12	18	24	30	33	36	39	42	48	54
H=Total manometric head in meters															
DW 756	0,55	0,75	9,8	7,8	6,3	4,9	3,4	2,0	-	-	-	-	-	-	-
DW 1006	0,75	1	12,3	10,2	8,7	7,2	5,7	4,2	3,4	2,7	-	-	-	-	-
DW 1506	1,1	1,5	14,3	12,0	10,2	8,6	7,2	5,6	4,8	4,0	3,2	-	-	-	-
DW 2006	1,5	2	18,8	16,2	14,0	12,2	10,4	8,8	7,9	7,1	6,2	5,4	3,7	-	-
DW 3006	2,2	3	22,6	20,0	17,9	16,0	14,1	12,3	11,4	10,5	9,6	8,7	6,8	5,0	-
DW VOX 756	0,55	0,75	6,5	5,5	4,3	3,0	1,5	-	-	-	-	-	-	-	-
DW VOX 1006	0,75	1	8,7	7,7	6,5	5,1	3,4	1,5	-	-	-	-	-	-	-
DW VOX 1506	1,1	1,5	10,8	10,0	9,0	7,5	5,8	3,7	2,7	-	-	-	-	-	-
DW VOX 2006	1,5	2	14,5	13,2	12,2	10,9	9,1	7,1	6,0	4,9	3,8	2,6	-	-	-
DW VOX 3006	2,2	3	17,5	16,1	15,0	13,5	11,8	9,7	8,6	7,5	6,4	5,3	3,0	-	-

**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 60 Hz

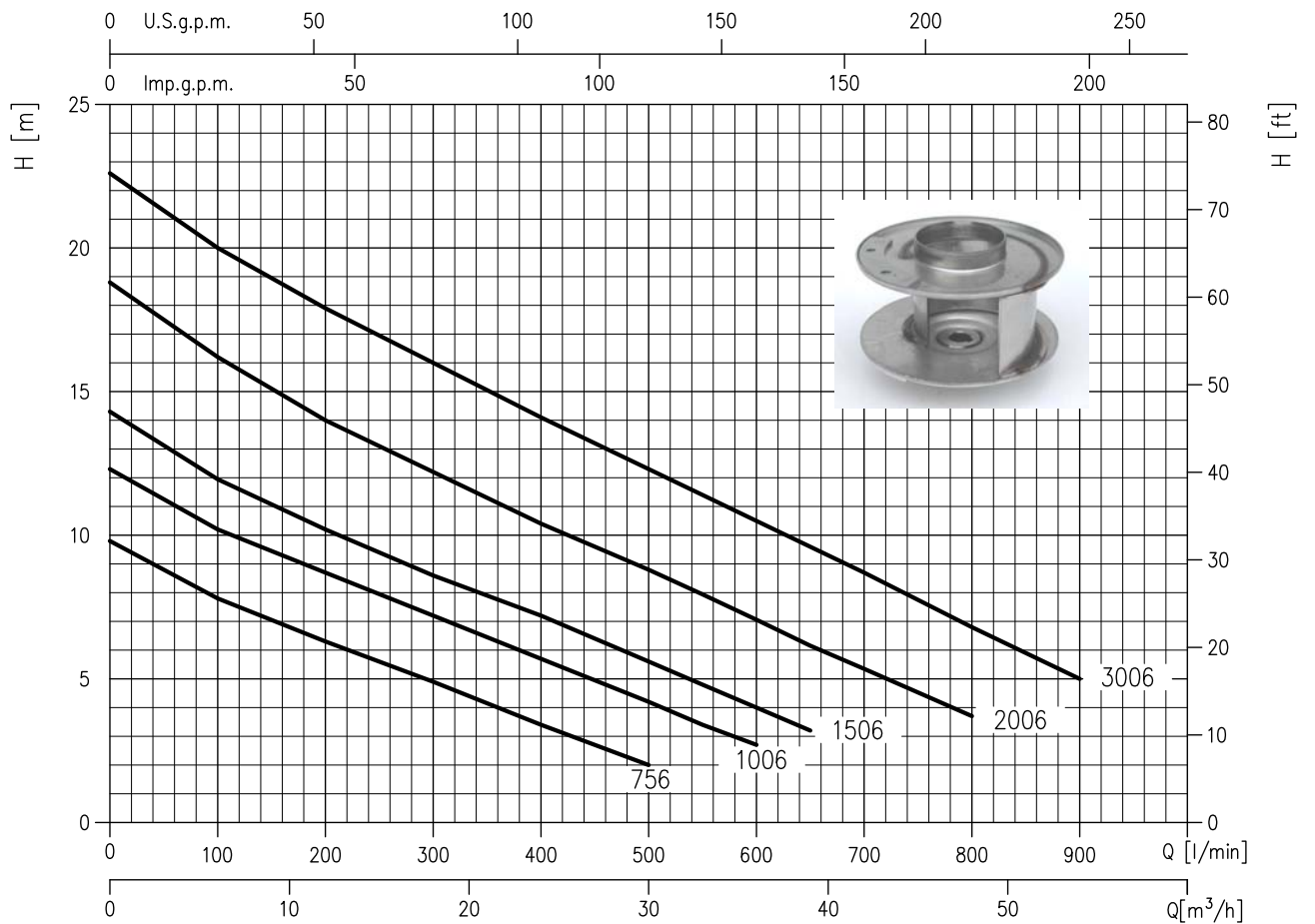
Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of  $\nu = 1 \text{ mm}^2/\text{s}$  (1 cSt)

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:

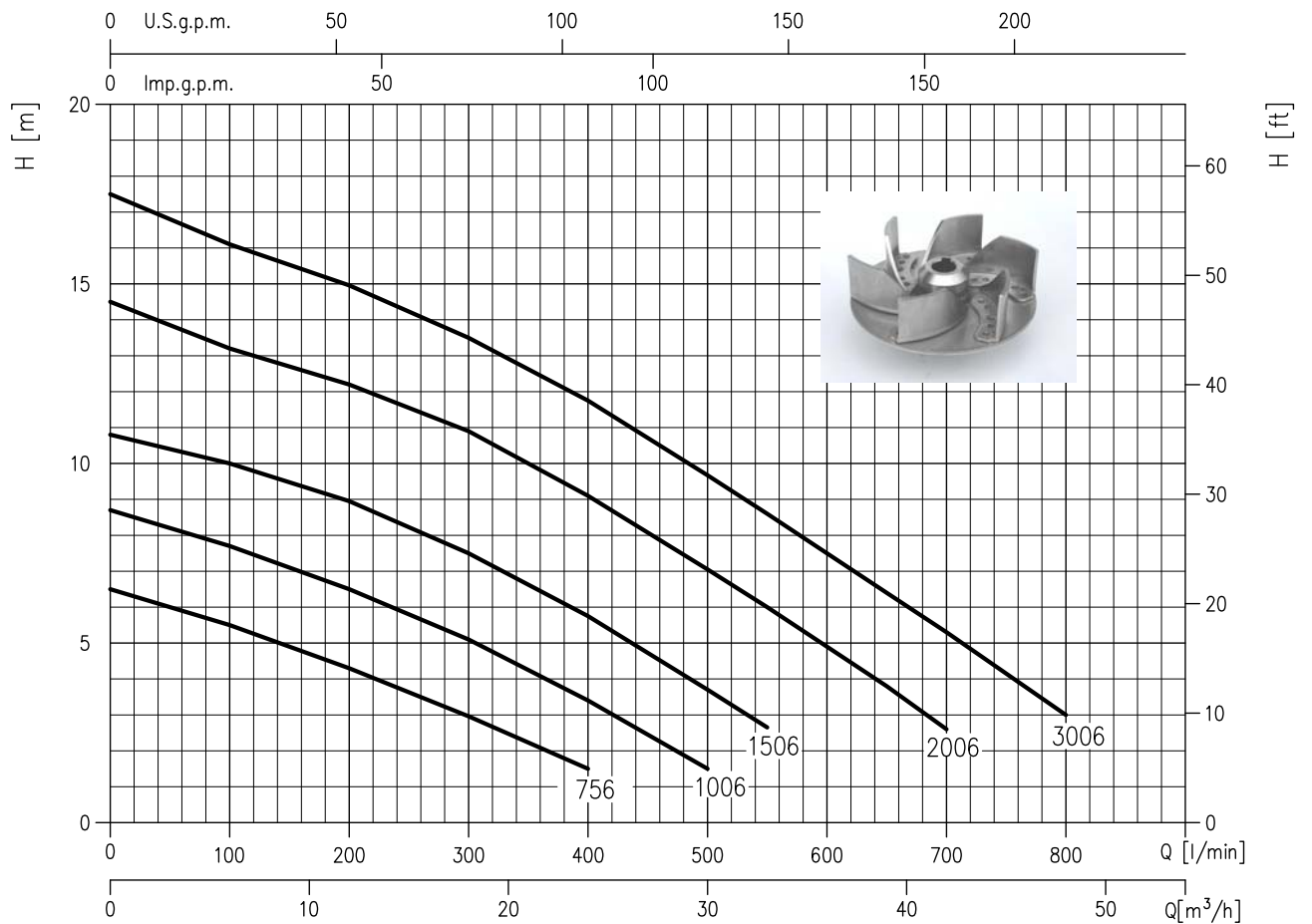
- Q = volume flow rate
- H = total head

**DW 756 (0.55 kW) - Impeller diameter = 80**  
**DW 1006 (0.75 kW) - Impeller diameter = 86.5**  
**DW 1506 (1.1 kW) - Impeller diameter = 92**  
**DW 2006 (1.5 kW) - Impeller diameter = 99**  
**DW 3006 (2.2 kW) - Impeller diameter = 106**



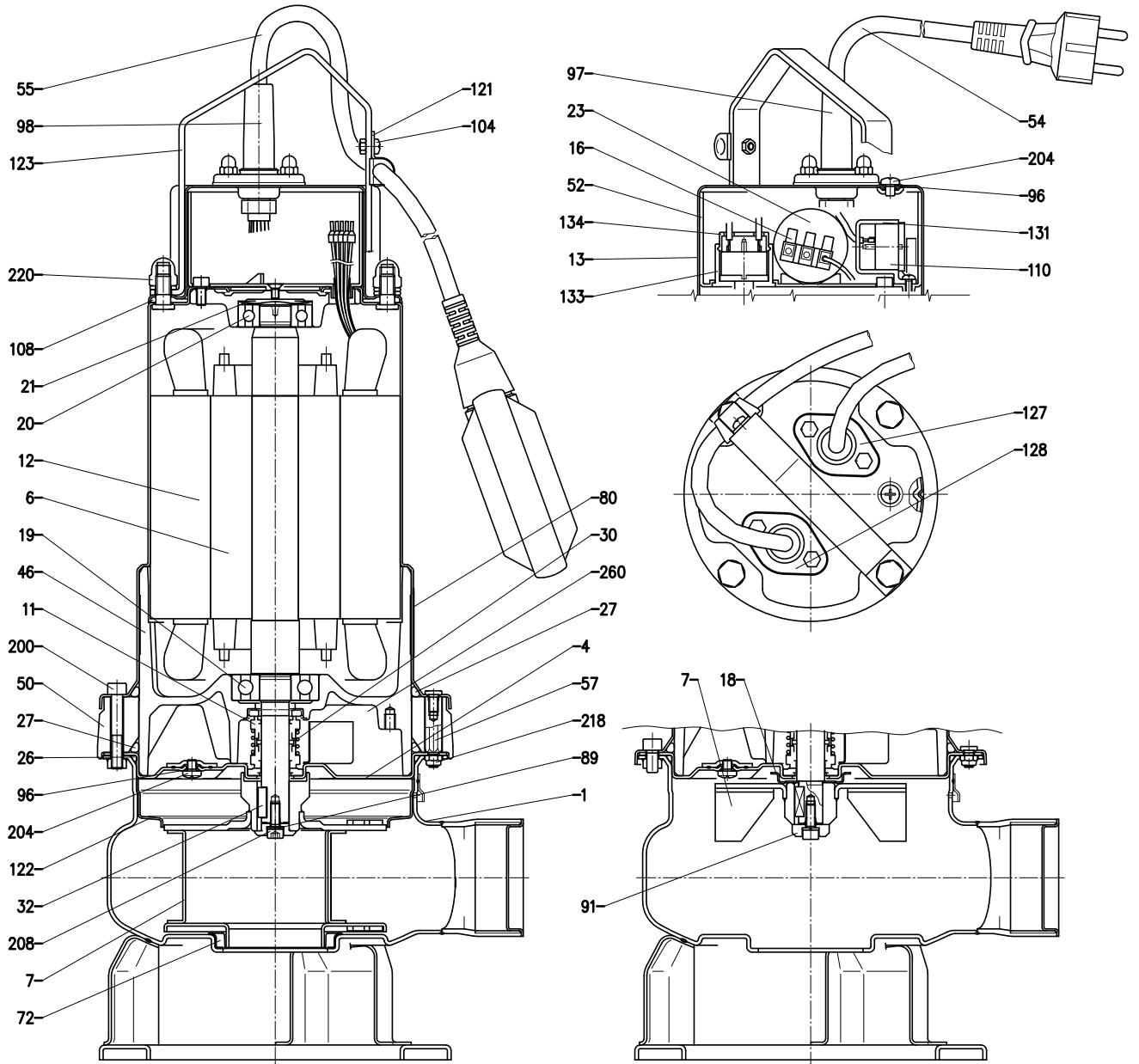
Rotation speed  $\approx 3400 \text{ min}^{-1}$   
 Test standard: ISO 9906 – Annex A

**DW VOX 756 (0.55 kW) - Impeller diameter = 75**  
**DW VOX 1006 (0.75 kW) - Impeller diameter = 78**  
**DW VOX 1506 (1.1 kW) - Impeller diameter = 88**  
**DW VOX 2006 (1.5 kW) - Impeller diameter = 90**  
**DW VOX 3006 (2.2 kW) - Impeller diameter = 95**



Rotation speed  $\approx 3400 \text{ min}^{-1}$   
 Test standard: ISO 9906 – Annex A

SECTIONAL VIEW DRAWING



DW

DW VOX



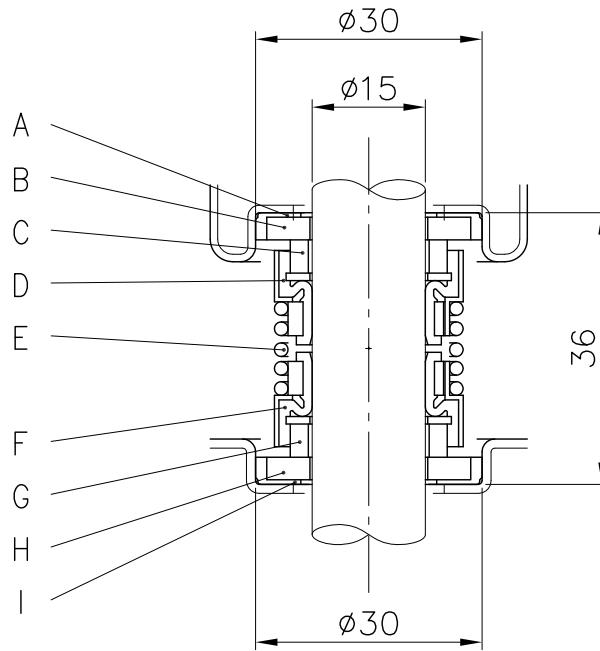
**SECTIONAL VIEW TABLE**

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 303	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	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]	PA66	1
32	Key	AISI 316	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 3006
- [2] Only for single phase
- [3] Only for DW-DW VOX 3006
- [4] Only for single phase with float switch
- [5] Only for DW
- [6] Except for DW VOX 1506, 2006 and 3006
- [7] Only for single phase with external motor protector

**MECHANICAL SEAL**

MOTOR SIDE



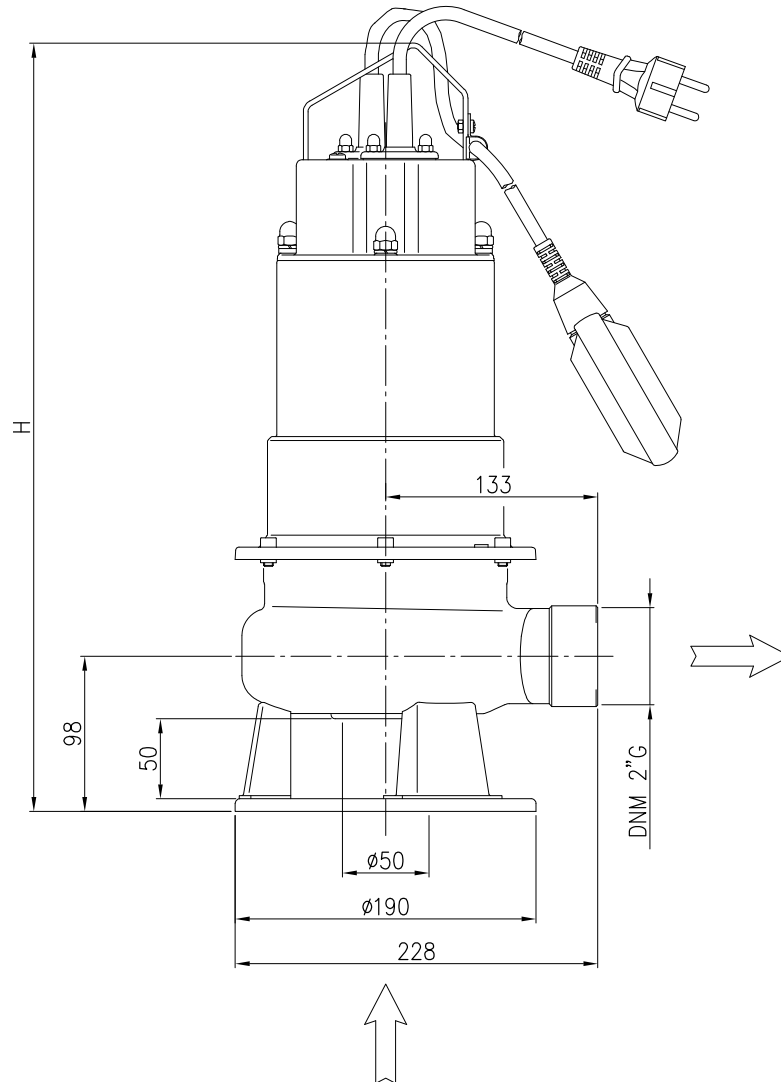
IMPELLER SIDE

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

**BEARINGS**

Pump type		Ball Bearing	
Single Phase	Three Phase	Pump side	Cover side
756 M	756	6303 ZZ	6203 ZZ
1006 M	1006	6303 ZZ	6203 ZZ
1506 M	1506	6303 ZZ	6203 ZZ
2006 M	2006	6303 ZZ	6203 ZZ
-	3006	6303 ZZ	6203 ZZ

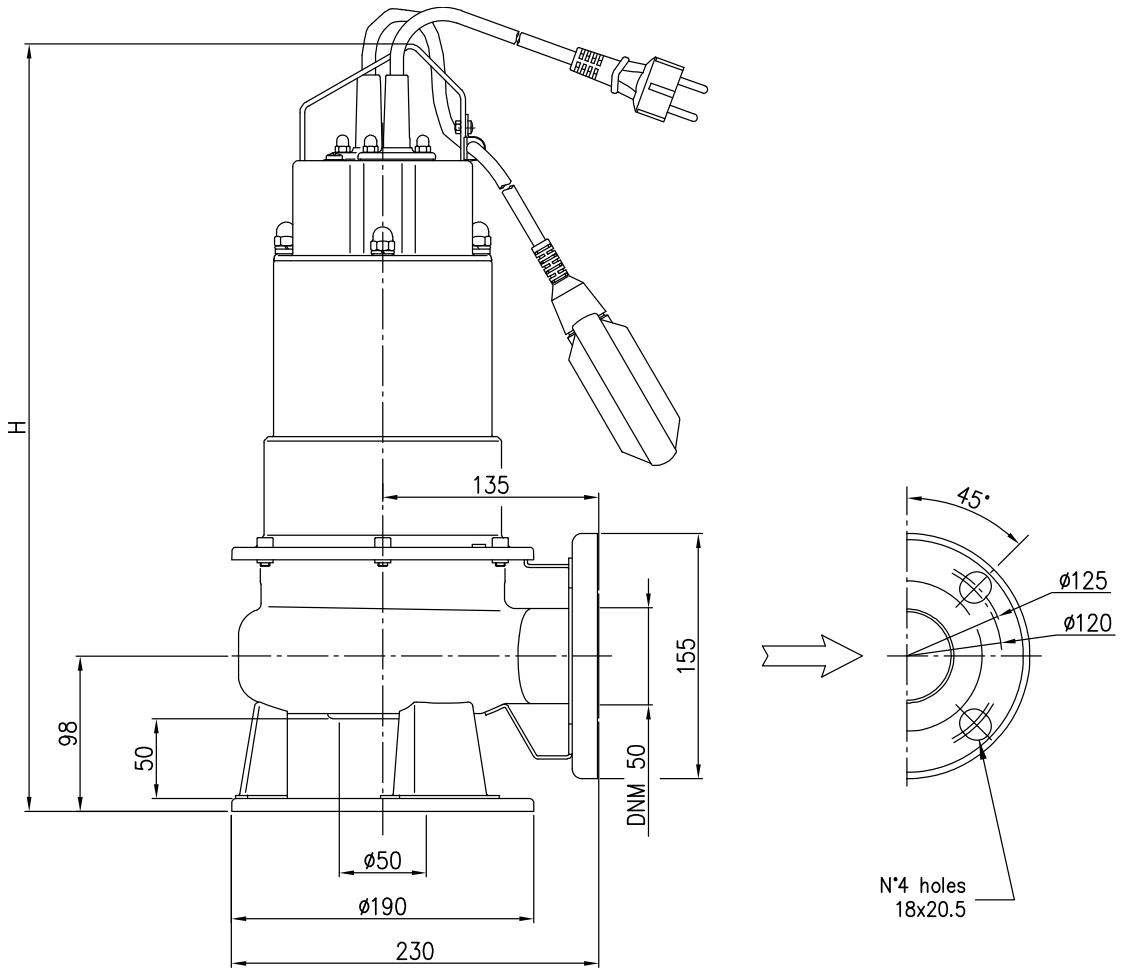
PUMP DW – DW VOX



Pump type	H [mm]		Weight [kgf]		
	1~	3~	1~ Automatic (With float switch)	Manual	3~
DW 756	486 (*551)	486	16 (*16.2)	15.8 (*16)	15.4
DW 1006	516 (*581)	486	18 (*18.2)	17.8 (*18)	16.8
DW 1506	516	516	19.4	19.2	18.6
DW 2006	611	516	-	25.2	20
DW 3006	-	546	-	-	25.8
DW VOX 756	486 (*551)	486	15.6 (*15.8)	15.4 (*15.6)	15.2
DW VOX 1006	516 (*581)	486	17.6 (*17.8)	17.4 (*17.6)	16.4
DW VOX 1506	516	516	19	18.8	18.1
DW VOX 2006	611	516	-	24.8	19.6
DW VOX 3006	-	546	-	-	25.4

(\* ) for 110-115 V

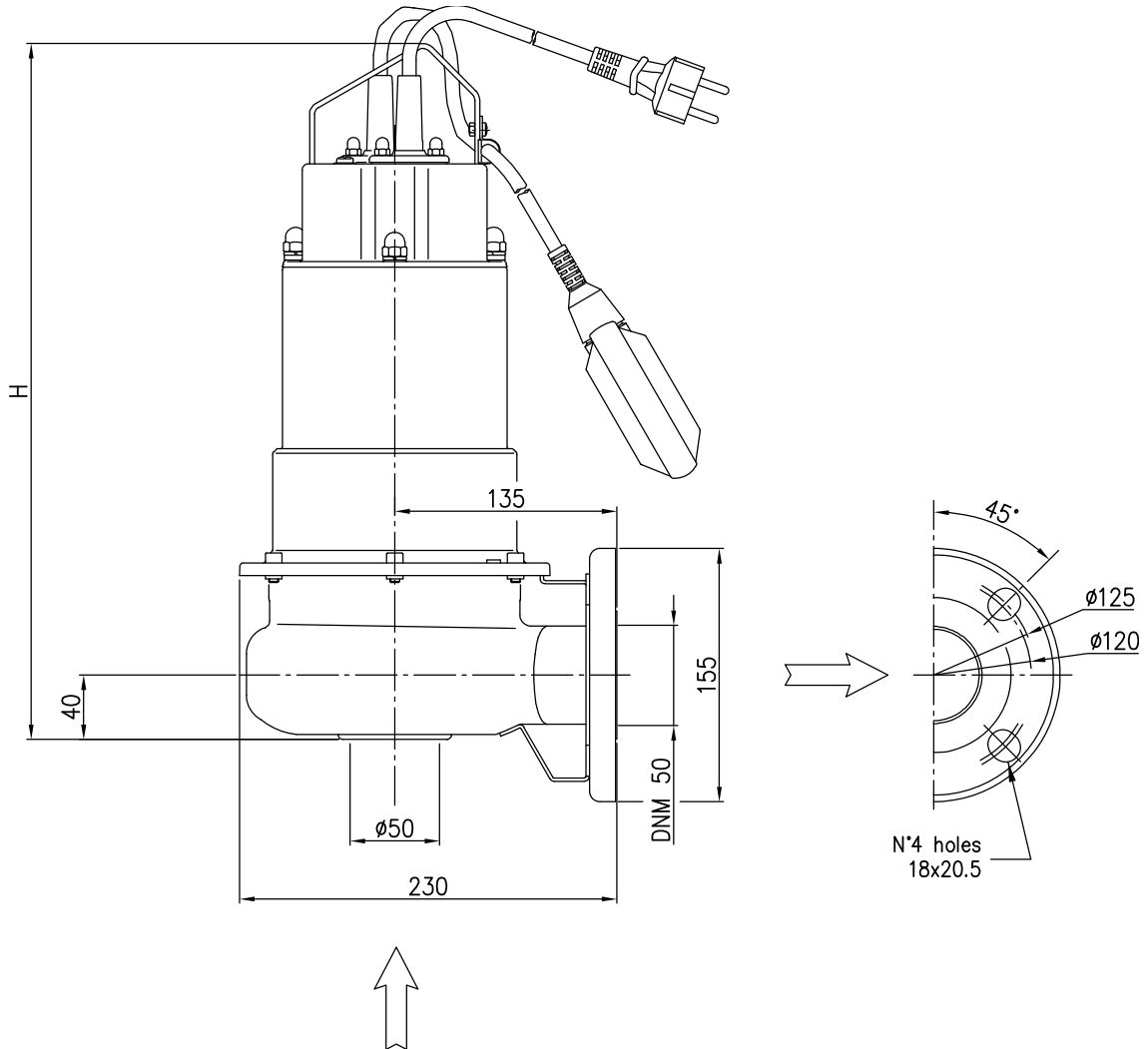
PUMP DWF – DW VOXF



Pump type	H [mm]		Weight [kgf]		
	1~	3~	1~ Automatic (With float switch)	Manual	3~
DWF 756	486 (*551)	486	16.8 (*17)	16.6	16.2
DWF 1006	516 (*581)	486	18.8 (*19)	18.6	17.6
DWF 1506	516	516	20.2	20	19.4
DWF 2006	611	516	-	26	20.8
DWF 3006	-	546	-	-	26.6
DW VOXF 756	486 (*551)	486	16.4 (*16.6)	16.2	16
DW VOXF 1006	516 (*581)	486	18.4 (*18.6)	18.2	17.2
DW VOXF1506	516	516	19.8	19.6	18.9
DW VOXF 2006	611	516	-	25.6	20.4
DW VOXF 3006	-	546	-	-	26.2

(\* ) for 110-115 V

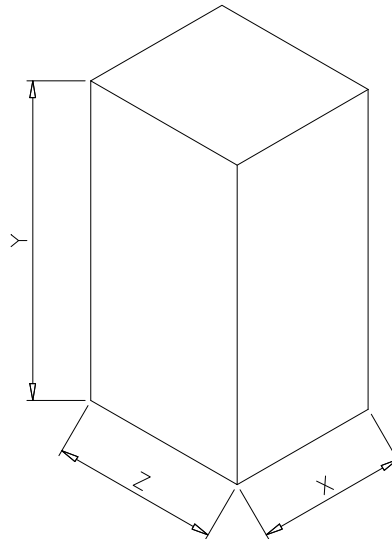
PUMP DWFZ – DW VOXFZ



Pump type	H [mm]		Weight [kgf]		
	1~	3~	1~ Automatic (With float switch)	Manual	3~
DW FZ 756	428 (*493)	428	16.2 (*16.4)	16	15.6
DW FZ 1006	458 (*523)	428	18.2 (*18.4)	18	17
DW FZ 1506	458	458	19.6	19.4	18.8
DW FZ 2006	553	458	-	25.4	20.2
DW FZ 3006	-	488	-	-	26
DW VOX FZ 756	428 (*493)	428	15.8 (*16)	15.8	15.4
DW VOX FZ 1006	458 (*523)	428	17.8 (*18)	17.6	16.6
DW VOX FZ 1506	458	458	19.2	19	18.3
DW VOX FZ 2006	553	458	-	25	19.8
DW VOX FZ 3006	-	488	-	-	25.6

(\* ) for 110-115 V

PACKING



Pump type	1~			Weight [kgf]		3~			Weight [kgf]	
	Z	X	Y	Automatic (With float switch)	Manual	Z	X	Y		
DW	756	280	245	550	17.2 (*17.5)	17 (*17.3)	280	245	550	16.6
	1006				19.2 (*19.5)	19 (*19.3)				18
	1506				20.6	20.4				19.8
	2006				-	26.5				21.2
	3006				-	-				-
DW VOX	756	280	245	550	16.8 (*17.1)	16.6 (*16.9)	280	245	550	16.4
	1006				18.8 (*19.1)	18.6 (*18.9)				17.6
	1506				20.2	20				19.3
	2006				-	26.1				20.8
	3006				-	-				-
DW F	756	280	245	550	18 (*18.3)	17.8	280	245	550	17.4
	1006				20 (*20.3)	19.8				18.8
	1506				21.4	21.2				20.6
	2006				-	27.3				22
	3006				-	-				-
DW VOX F	756	280	245	550	17.6 (*17.9)	17.4	280	245	550	17.2
	1006				19.6 (*19.9)	19.4				18.4
	1506				21	20.8				20.1
	2006				-	26.9				21.6
	3006				-	-				-
DW FZ	756	280	245	550	17.4 (*17.7)	17.2	280	245	550	16.8
	1006				19.4 (*19.7)	19.2				18.2
	1506				20.8	20.6				20
	2006				-	26.7				21.4
	3006				-	-				-
DW VOX FZ	756	280	245	550	17 (*17.3)	16.8	280	245	550	16.6
	1006				19 (*19.3)	18.8				17.8
	1506				20.4	20.2				19.5
	2006				-	26.3				21
	3006				-	-				-

(\* ) for 110-115 V

**MOTOR DATA**

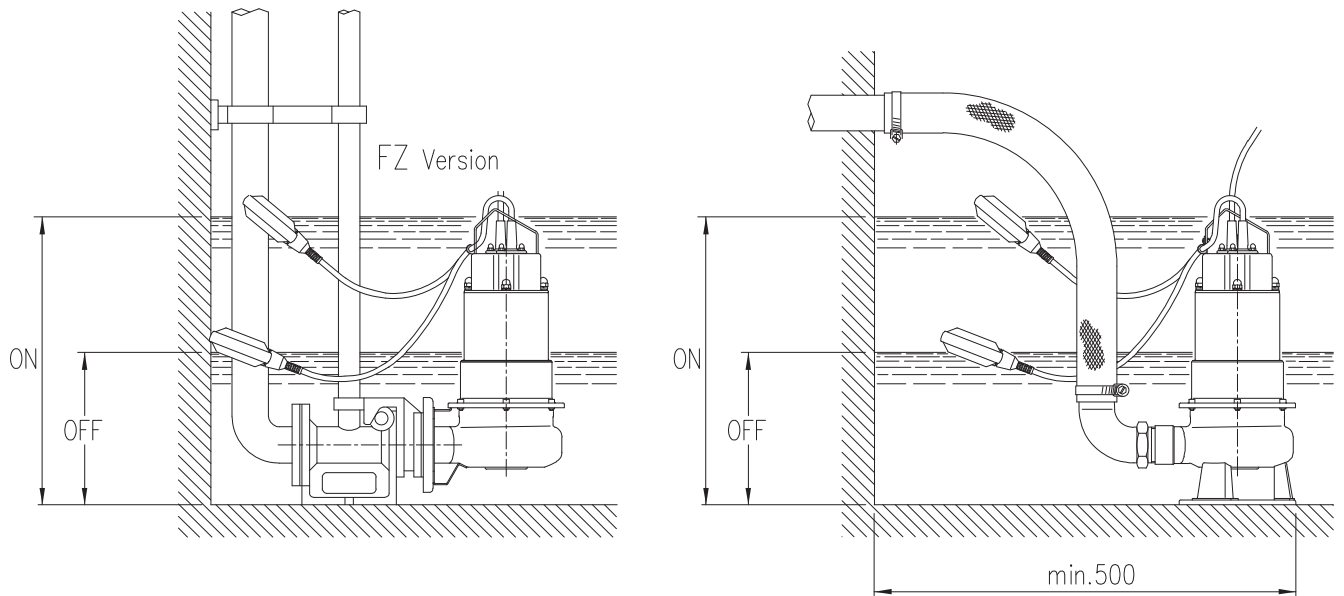
DW												
Single Phase	Power		Capacitor				Input		Full load current		Locked rotor current	
	[kW]	[HP]	110-115 V		220-230 V		[kW]		[A]		[A]	
			[μF]	[V]	[μF]	[V]	110-115 V	220-230 V	110-115 V	220-230 V	110-115 V	220-230 V
DW 756	0,55	0,75	55	250	20	450	0,94	0,94	8,3	4,3	33,7	17,2
DW 1006	0,75	1	80	250	25	450	1,25	1,25	10,8	6,0	46,8	27,3
DW 1506	1,1	1,5	-	-	31,5	450	-	1,40	-	6,5	-	35,2
DW 2006	1,5	2	-	-	50	450	-	1,93	-	9,1	-	56,0

DW VOX												
Single Phase	Power		Capacitor				Input		Full load current		Locked rotor current	
	[kW]	[HP]	110-115 V		220-230 V		[kW]		[A]		[A]	
			[μF]	[V]	[μF]	[V]	110-115 V	220-230 V	110-115 V	220-230 V	110-115 V	220-230 V
DW VOX 756	0,55	0,75	55	250	20	450	0,95	0,95	8,3	4,4	33,7	17,2
DW VOX 1006	0,75	1	80	250	25	450	1,32	1,32	11,0	6,5	46,8	27,3
DW VOX 1506	1,1	1,5	-	-	31,5	450	-	1,60	-	7,5	-	35,2
DW VOX 2006	1,5	2	-	-	50	450	-	2,30	-	11,1	-	56

DW											
Three Phase	Power		Input			Full load current			Locked rotor current		
	[kW]	[HP]	[kW]			[A]			[A]		
			220 V	380 V	440-460 V	220 V	380 V	440-460 V	220 V	380 V	440-460 V
DW 756	0,55	0,75	0,86	0,86	0,86	3,0	1,7	1,4	22,0	12,7	9,8
DW 1006	0,75	1	1,20	1,20	1,20	3,7	2,3	1,9	29,8	17,2	18,7
DW 1506	1,1	1,5	1,40	1,40	1,40	4,8	2,8	2,3	45,0	26,0	24,4
DW 2006	1,5	2	2,20	2,20	2,20	7,0	3,9	3,2	65,9	38,0	32,5
DW 3006	2,2	3	2,71	2,71	2,71	7,9	4,6	4,2	92,5	53,4	48,2

DW VOX											
Three Phase	Power		Input			Full load current			Locked rotor current		
	[kW]	[HP]	[kW]			[A]			[A]		
			220 V	380 V	440-460 V	220 V	380 V	440-460 V	220 V	380 V	440-460 V
DW VOX 756	0,55	0,75	0,90	0,90	0,90	3,0	1,6	1,3	22,0	12,7	9,8
DW VOX 1006	0,75	1	1,30	1,30	1,30	4,2	2,4	2,0	29,8	17,2	18,7
DW VOX 1506	1,1	1,5	1,50	1,50	1,50	5,1	3,0	2,5	45,0	26,0	24,4
DW VOX 2006	1,5	2	2,35	2,35	2,35	7,3	4,4	3,6	65,9	38,0	32,5
DW VOX 3006	2,2	3	2,77	2,77	2,77	8,0	4,6	4,2	92,5	53,4	48,2

INSTALLATION



Pump type	ON	OFF
	[mm]	
75MA	460	250
100MA	470	260
150MA		