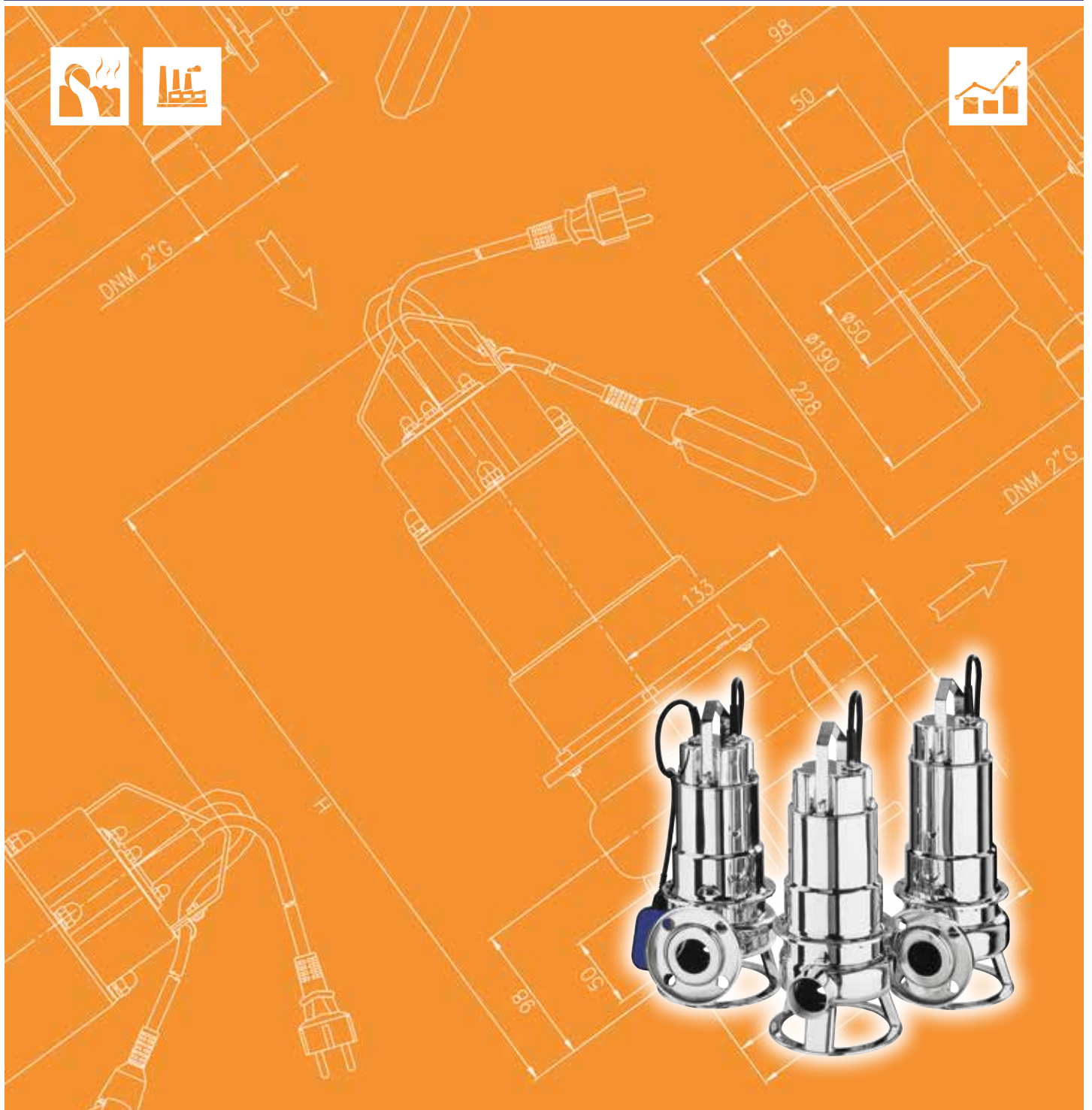




Japanese Technology since 1912

## DW - DW VOX

Data Book 60Hz



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**SPECIFICATIONS**

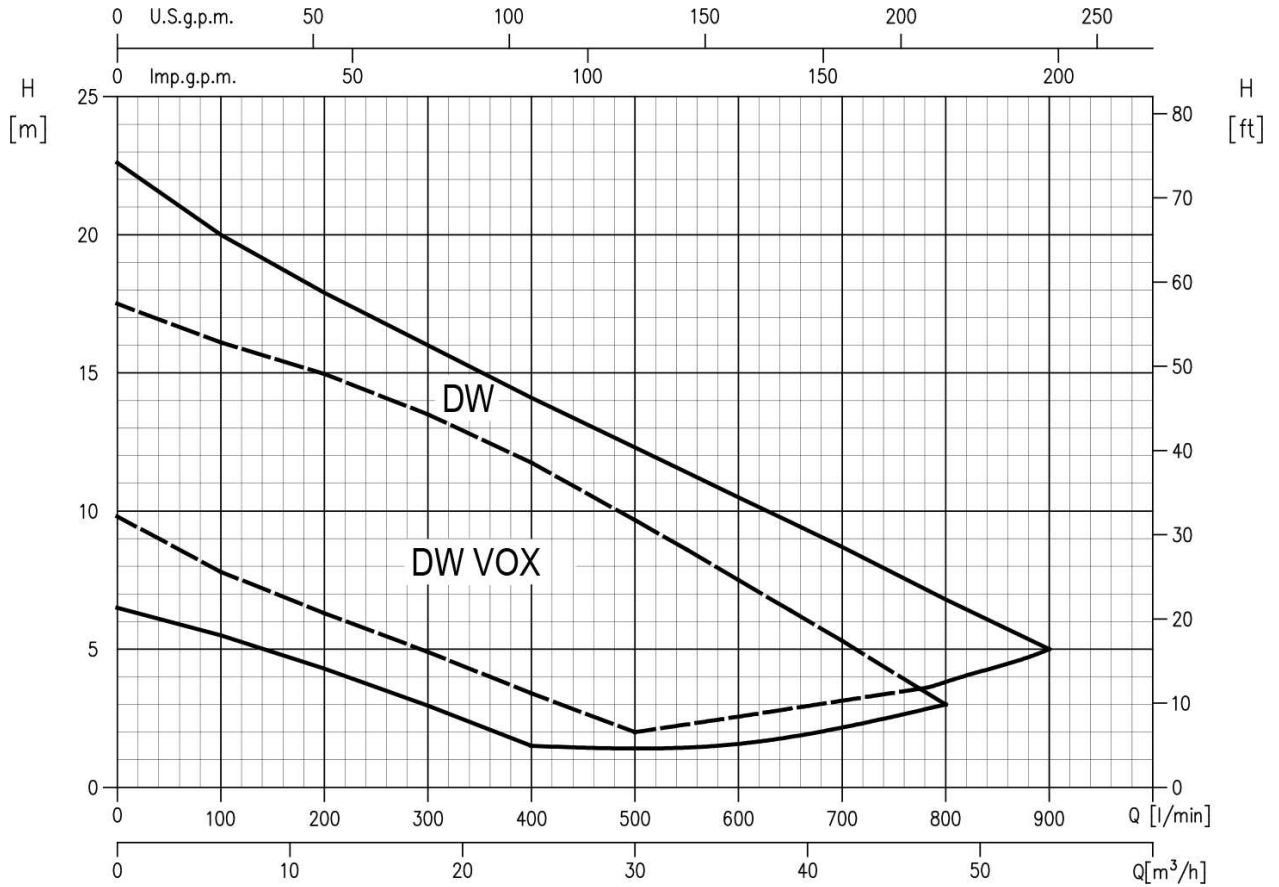
60Hz

Rev. E

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 - DW VOX: G 2 UNI ISO 228
		DWF - DW VOXF: 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 9906:2012 - Grade 3B

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		

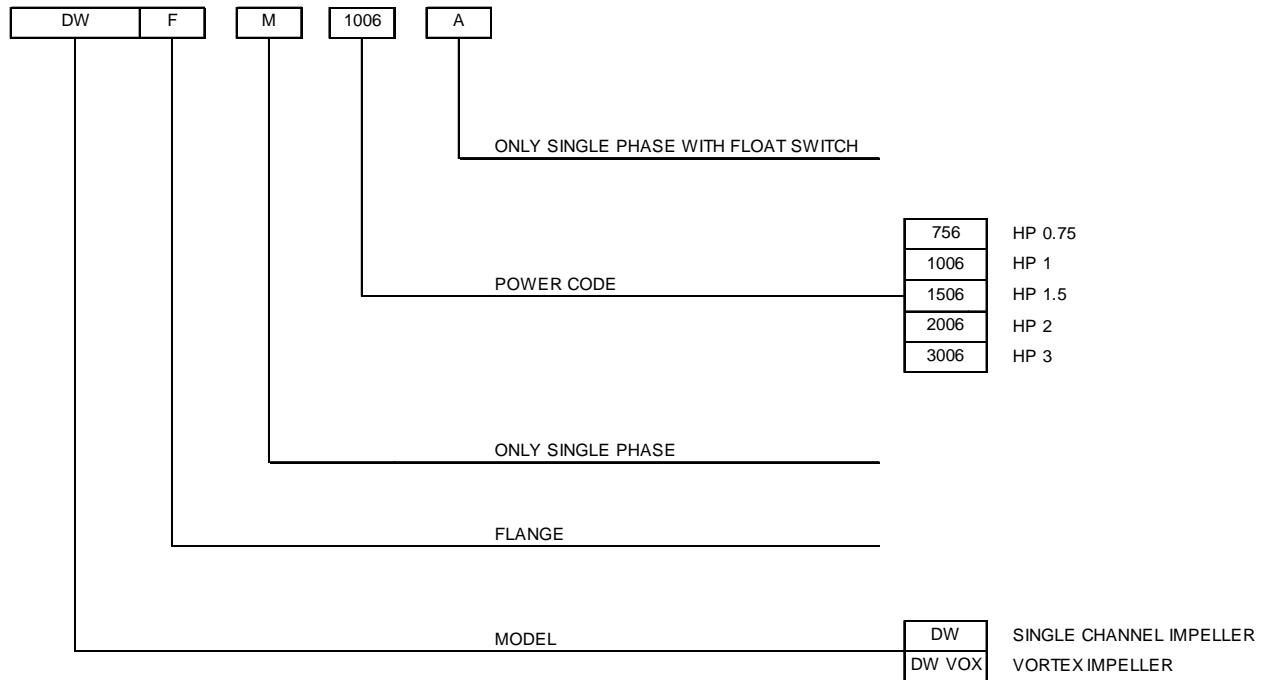
PERFORMANCE RANGE



SELECTION CHART

Pump type	Power		Q=Capacity													
	[kW]	[HP]	[l/min]	0	100	200	300	400	500	550	600	650	700	800	900	
			[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



CURVES 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 60 Hz, 2 poles.

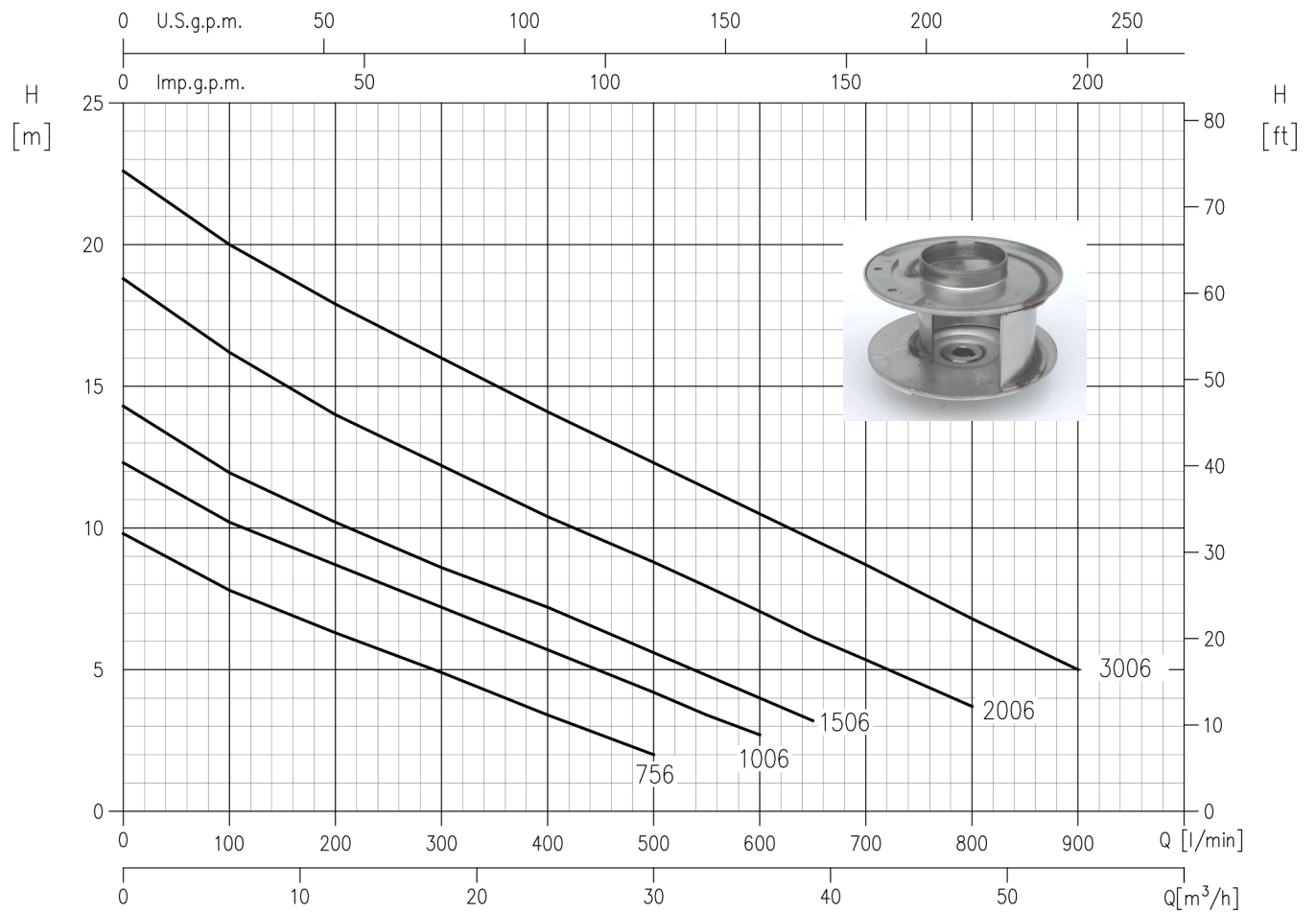
Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of  $\nu = 1 \text{ mm}^2/\text{s}$  (1 cSt)

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:

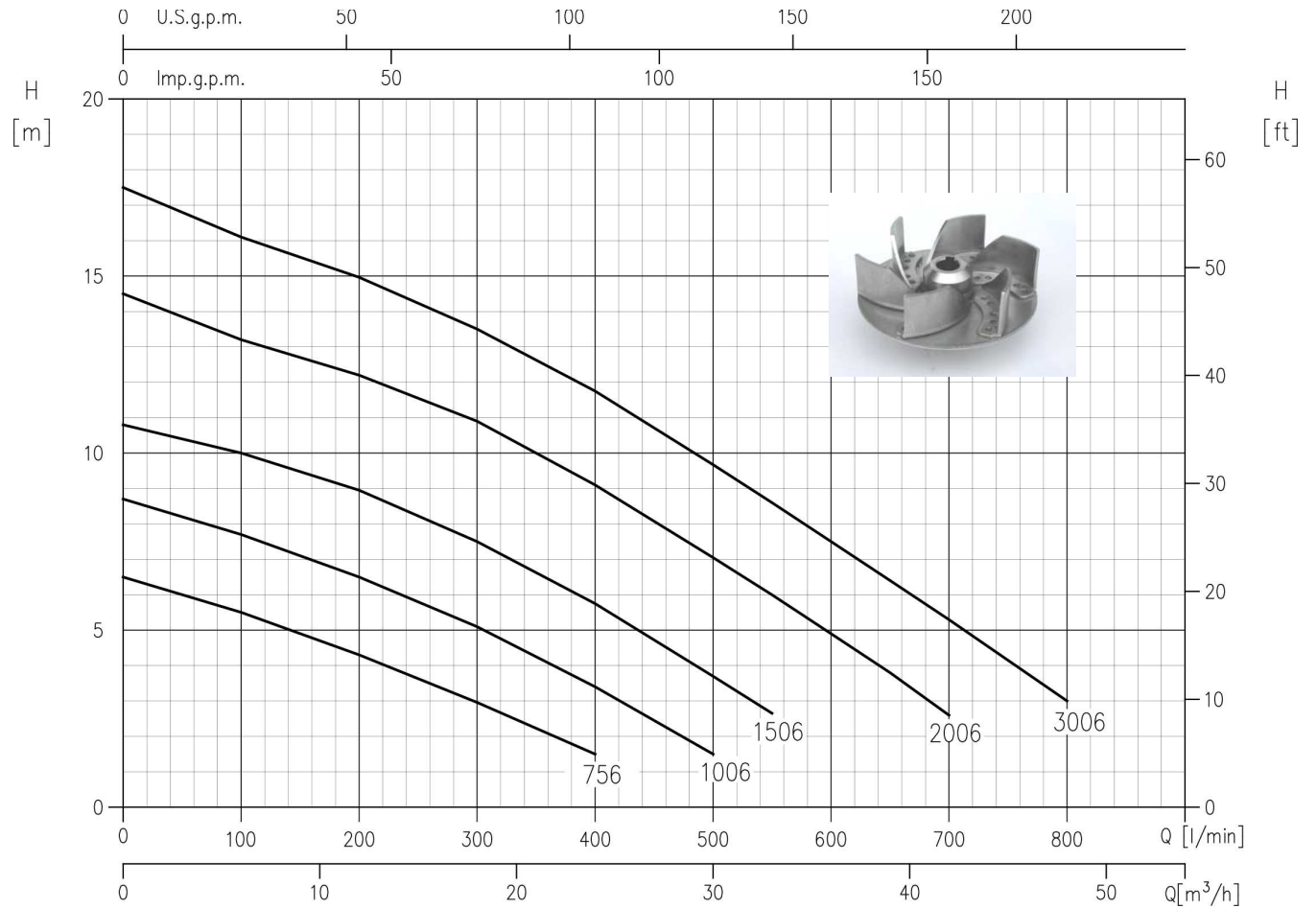
- Q = volume flow rate
- H = total head

**DW 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**



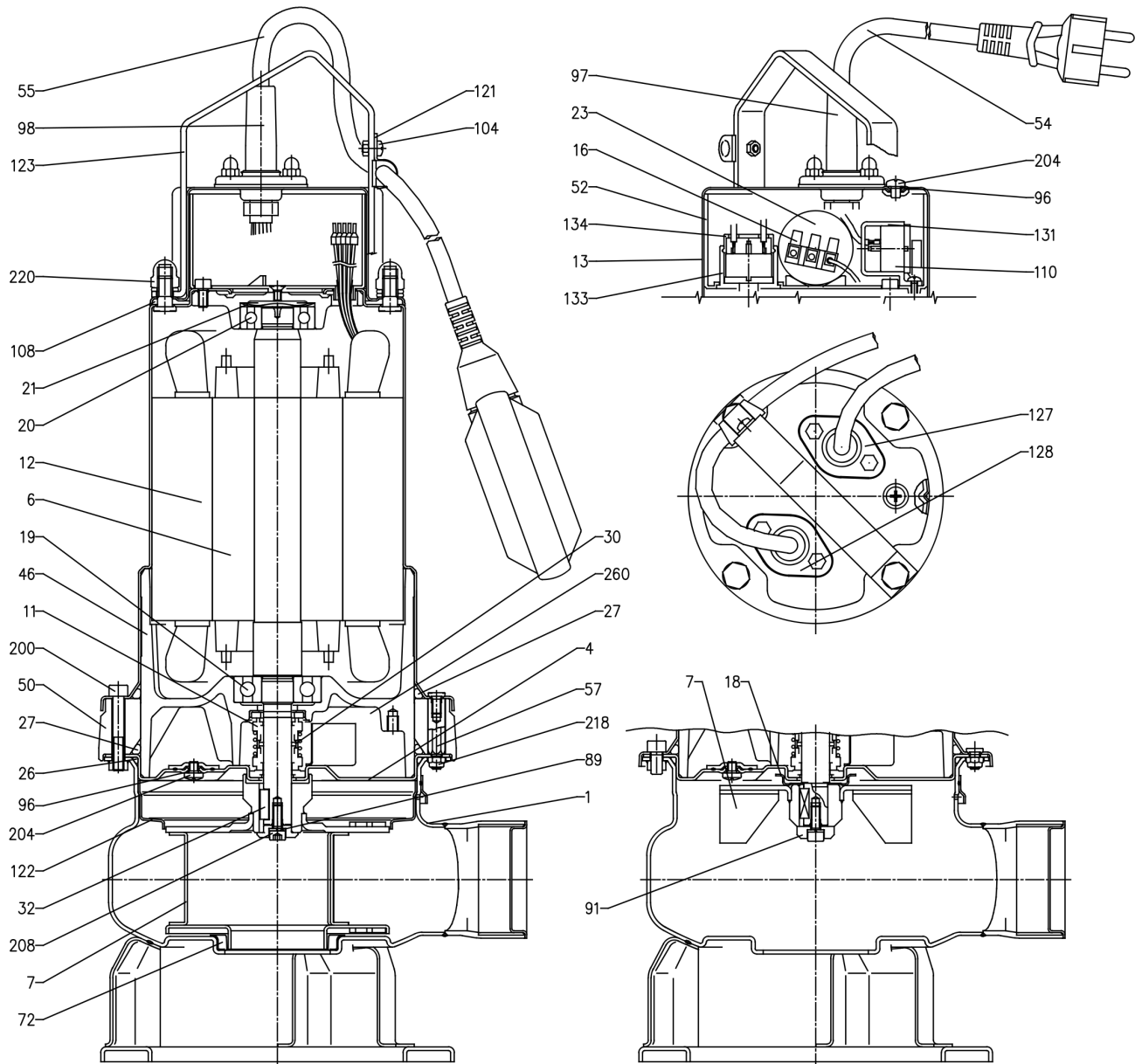
Rotation speed  $\approx 3400 \text{ min}^{-1}$   
 Test standard: ISO 9906:2012 - Grade 3B

**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 9906:2012 - Grade 3B

### SECTIONAL VIEW DRAWING



DW

DW VOX



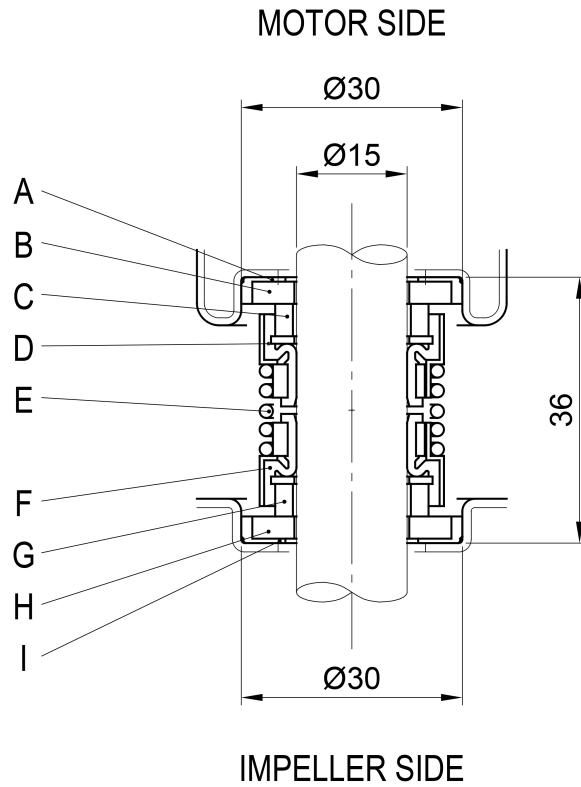
### SECTIONAL VIEW TABLE

N°	PART NAME	MATERIAL	Q.TY
1	Casing	AISI 304	1
4	Casing cover	AISI 304	1
6	Shaft with rotor	AISI 304	1
7	Impeller	AISI 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	AISI 304	1
16	Terminal	-	1
18	Mechanical seal protection [1]	AISI 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	AISI 316	1
46	Bearing housing	G20	1
50	Spacer [3]	G20	1
52	Terminal insulating box	PA66 glass fibre reinforced class V-0	1
54	Power cable	-	1
55	Float switch [4]	-	1

N°	PART NAME	MATERIAL	Q.TY
57	Spacer [3]	AISI 304	4
72	Casing ring [5]	NBR	1
89	Washer	AISI 304	1
91	Washer [1]	AISI 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]	AISI 304	1
122	Impeller protection ring [6]	AISI 304	1
123	Handle	AISI 304	1
127	Power cable connector	AISI 304	1
128	Floating sw. cable connector [4]	AISI 304	1
131	Support for protector [7]	PA66	1
133	Support for probe [7]	Aluminium	1
134	Cover for support probe [7]	PA66	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	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
- [8] See **MECHANICAL SEAL** page 302

**MECHANICAL SEAL**

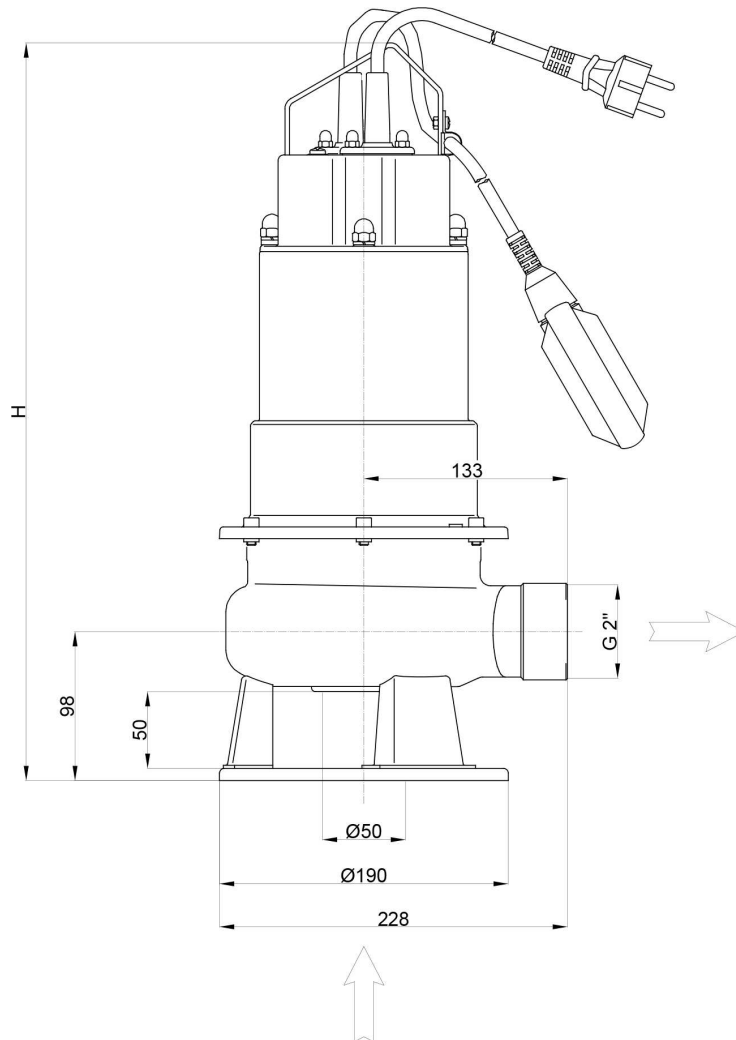


REF	PART NAME	MATERIAL
A	Rubber cup	NBR
B	Seat	Ceramic
C	Seal face	Carbon
D	Bellow	NBR
E	Spring	AISI 304
F	Bellow	NBR
G	Seal face	Silicon carbide
H	Seat	Silicon carbide
I	Rubber cup	NBR

**BEARINGS**

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

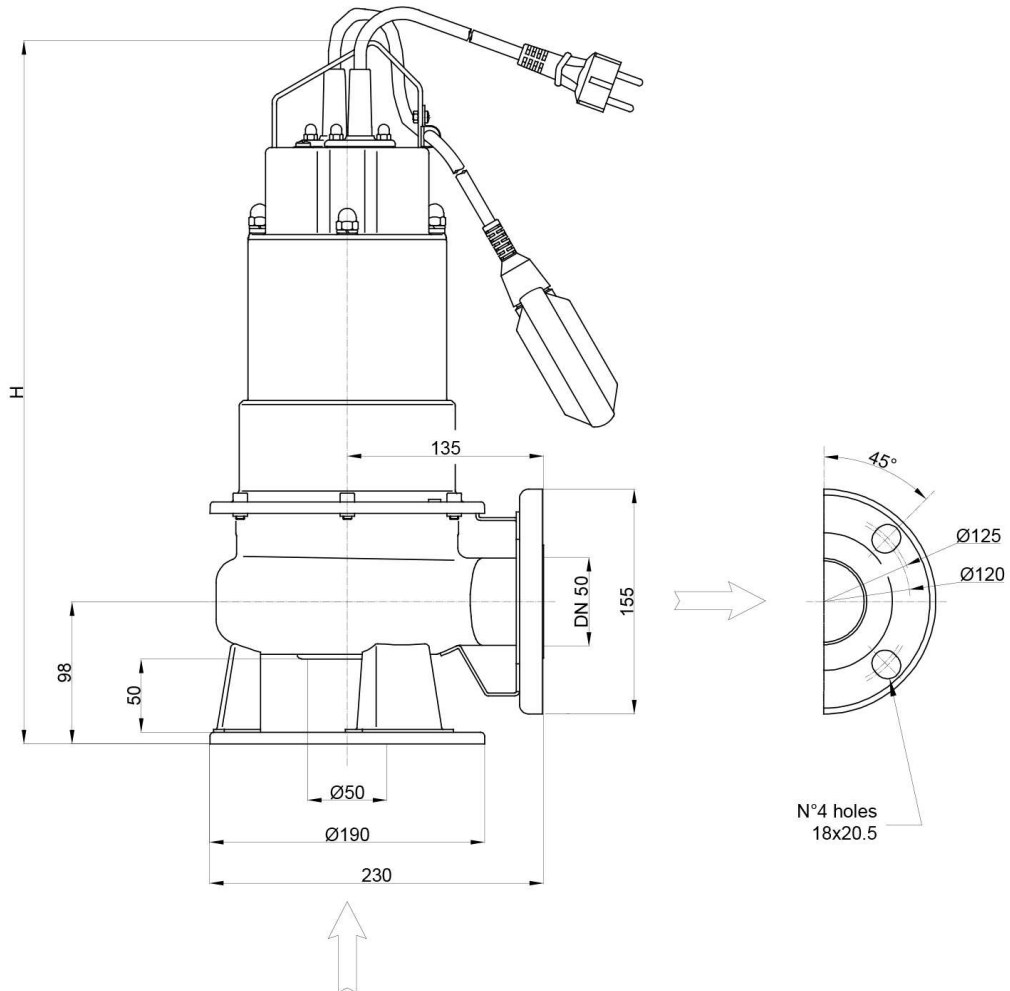
PUMP DW – DW VOX



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

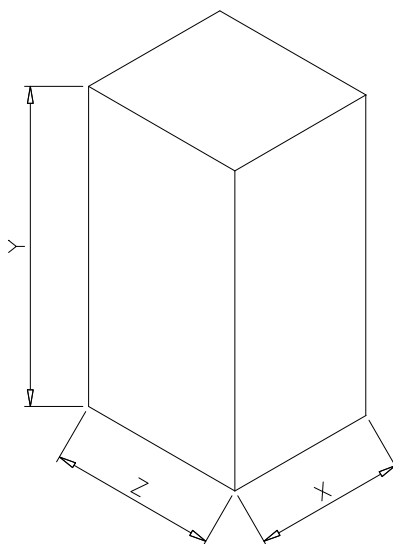
PUMP DWF – DW VOXF



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

### PACKING



Pumptype	SINGLE PHASE					THREE PHASE				
	X	Y	Z	Weight [kgf]		X	Y	Z	Weight [kgf]	
				Automatic (With float switch)	Manual					
DW	756	245	550	280	17.2 (*17.5)	17 (*17.3)	245	550	280	16.6
	1006				19.2 (*19.5)	19 (*19.3)				18
	1506				20.6	20.4				19.8
	2006	-	26.5	21.2						
	3006	-	680	-	-	27.1				
DWVOX	756	245	550	280	16.8 (*17.1)	16.6 (*16.9)	245	550	280	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	-	680	-	-	26.7				
DWF	756	245	550	280	18 (*18.3)	17.8	245	550	280	17.4
	1006				20 (*20.3)	19.8				18.8
	1506				21.4	21.2				20.6
	2006	-	27.3	22						
	3006	-	680	-	-	27.9				
DWVOXF	756	245	550	280	17.6 (*17.9)	17.4	245	550	280	17.2
	1006				19.6 (*19.9)	19.4				18.4
	1506				21	20.8				20.1
	2006	-	26.9	21.6						
	3006	-	680	-	-	27.5				

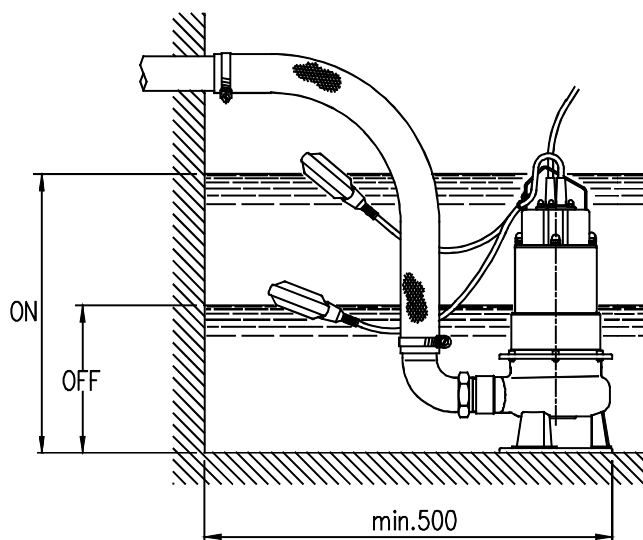
(\*) for 110-115 V

MOTOR DATA

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 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

Three Phase	Power		Input			Full load current			Locked rotor current		
	[kW]	[HP]	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 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		