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SUBMERSIBLE SEWAGE PUMPS

DW-DW VOX

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 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 ⁻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	FG50K
	size	3G1 (up to 0.55 kW) 3G1.5 (from 0.75 to 1.1 kW)	4G1.5 + 2x0.5
Dimensions of cable entry	Cable Gland		

200

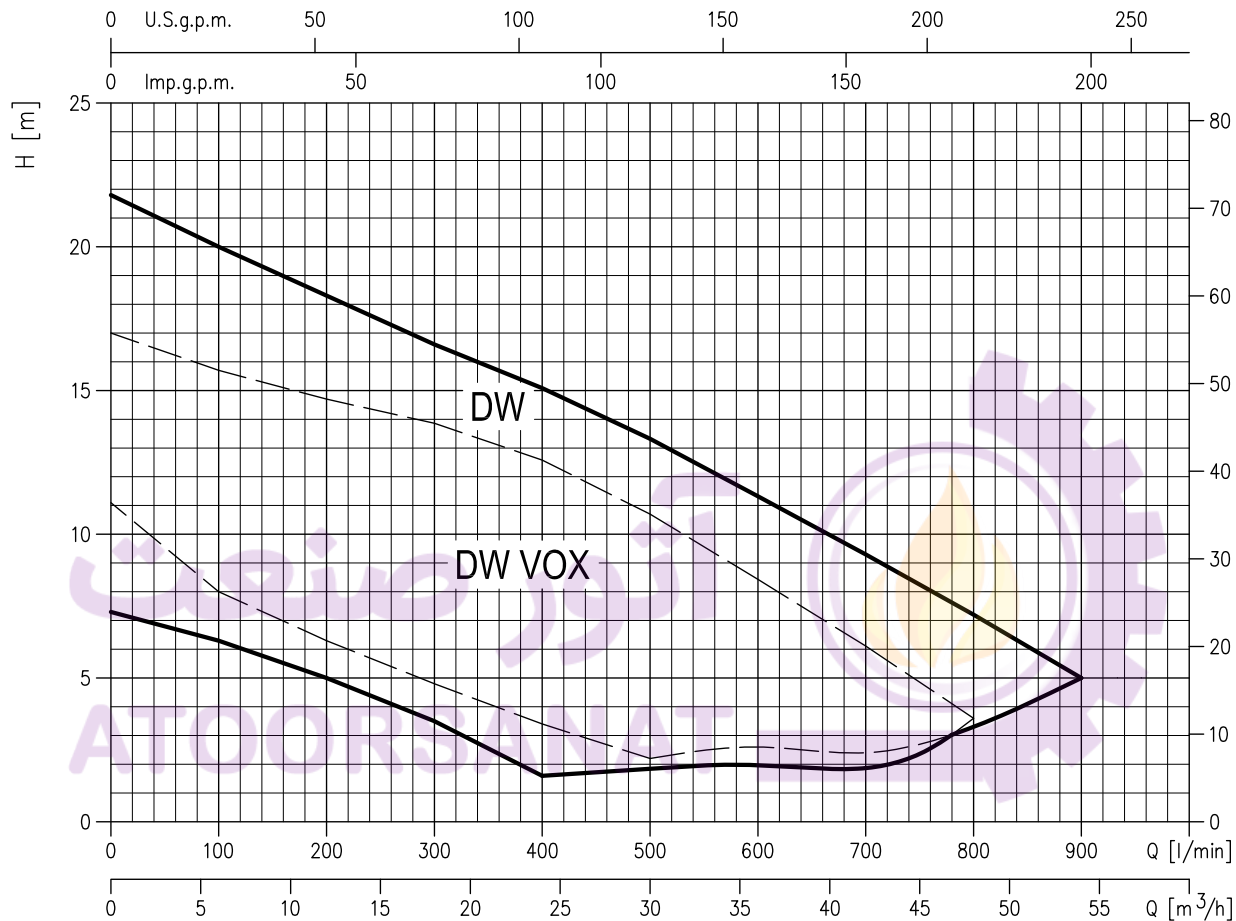
SUBMERSIBLE SEWAGE PUMPS

DW-DW VOX

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	-

SUBMERSIBLE SEWAGE PUMPS

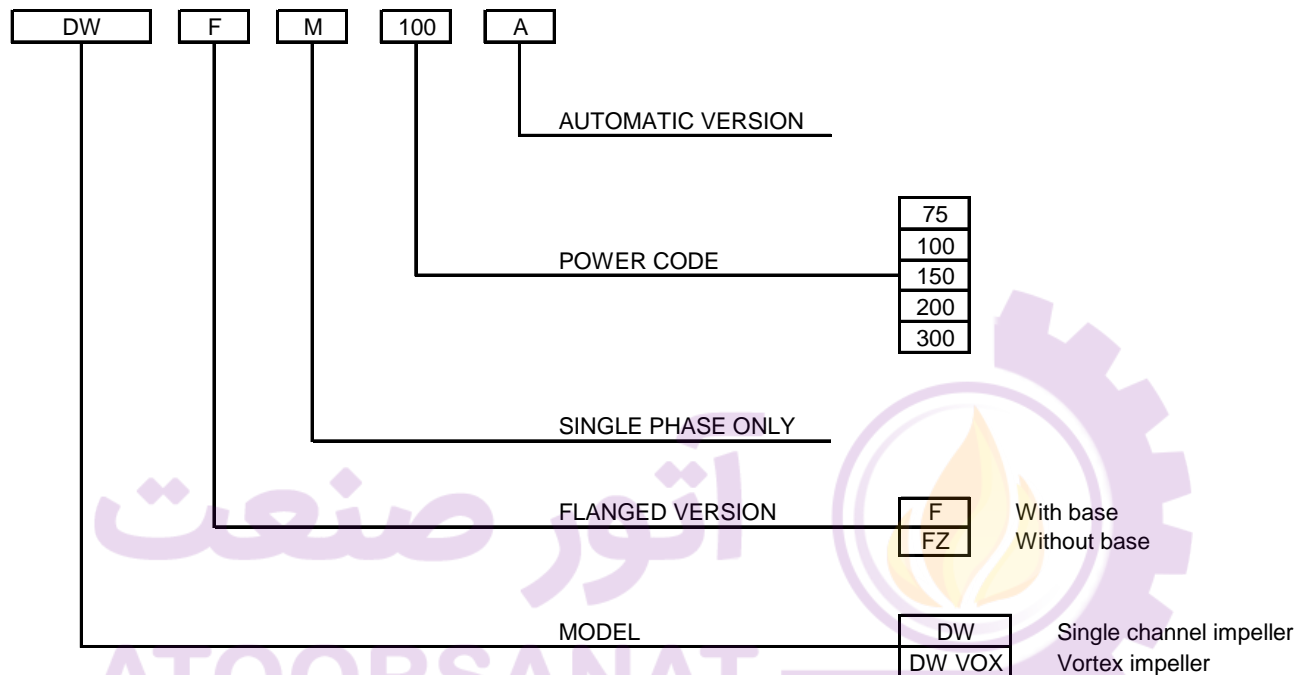
DW-DW VOX

PERFORMANCE CURVE

50Hz

Rev. 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 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

SUBMERSIBLE SEWAGE PUMPS

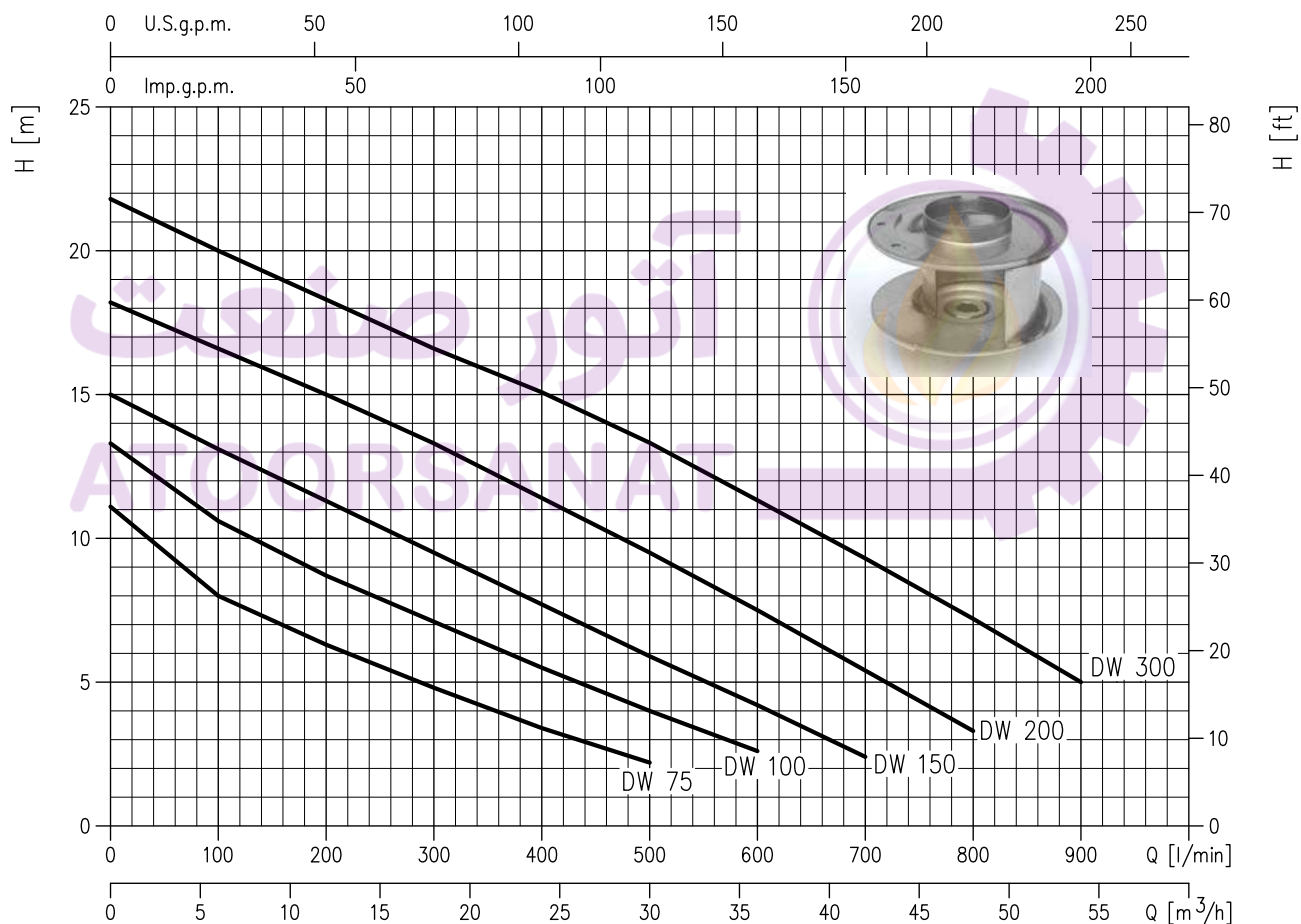
DW-DW VOX

PERFORMANCE CURVE

50Hz

Rev. 0

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

SUBMERSIBLE SEWAGE PUMPS

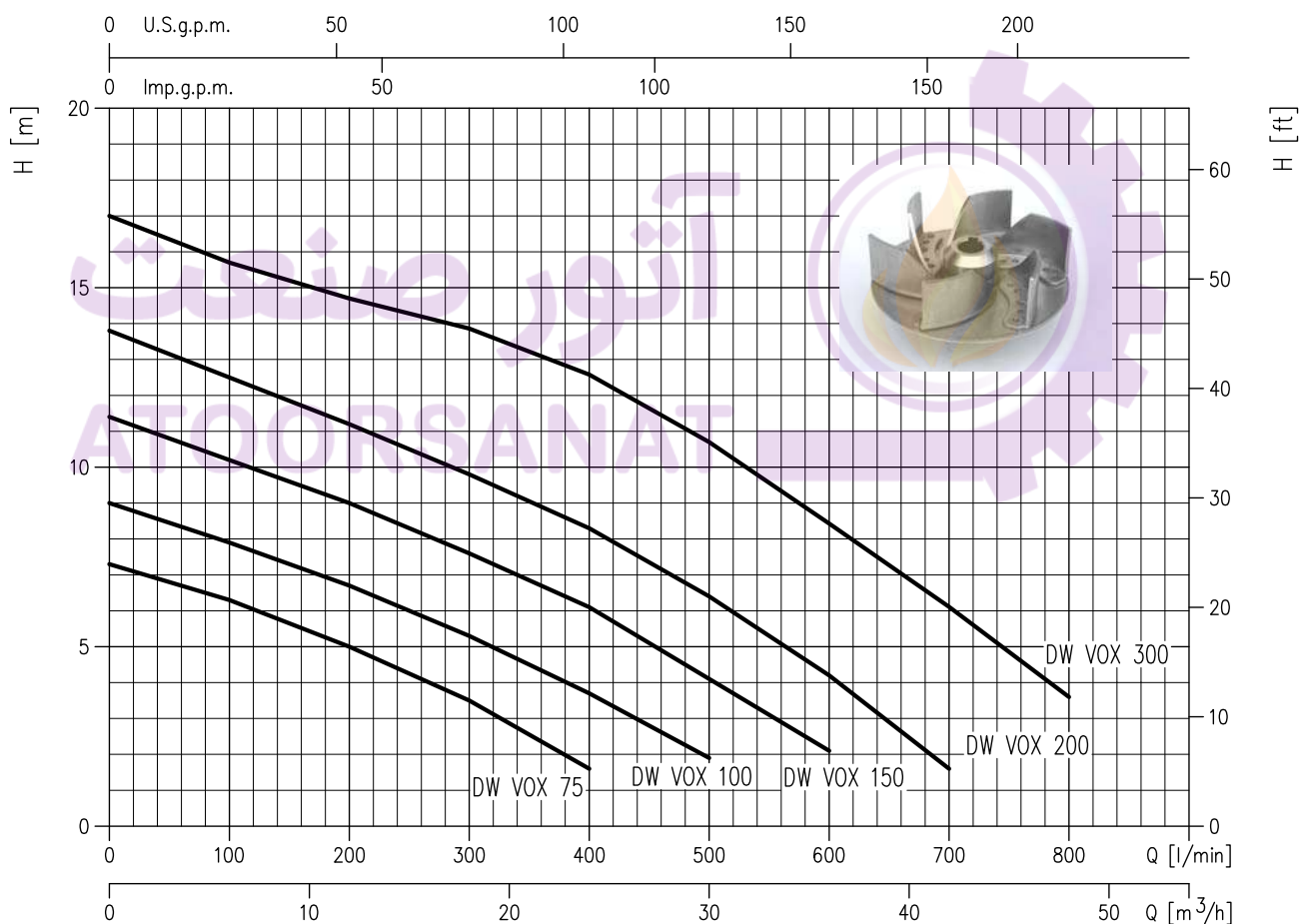
DW-DW VOX

PERFORMANCE CURVE

50Hz

Rev. O

- 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

SUBMERSIBLE SEWAGE PUMPS

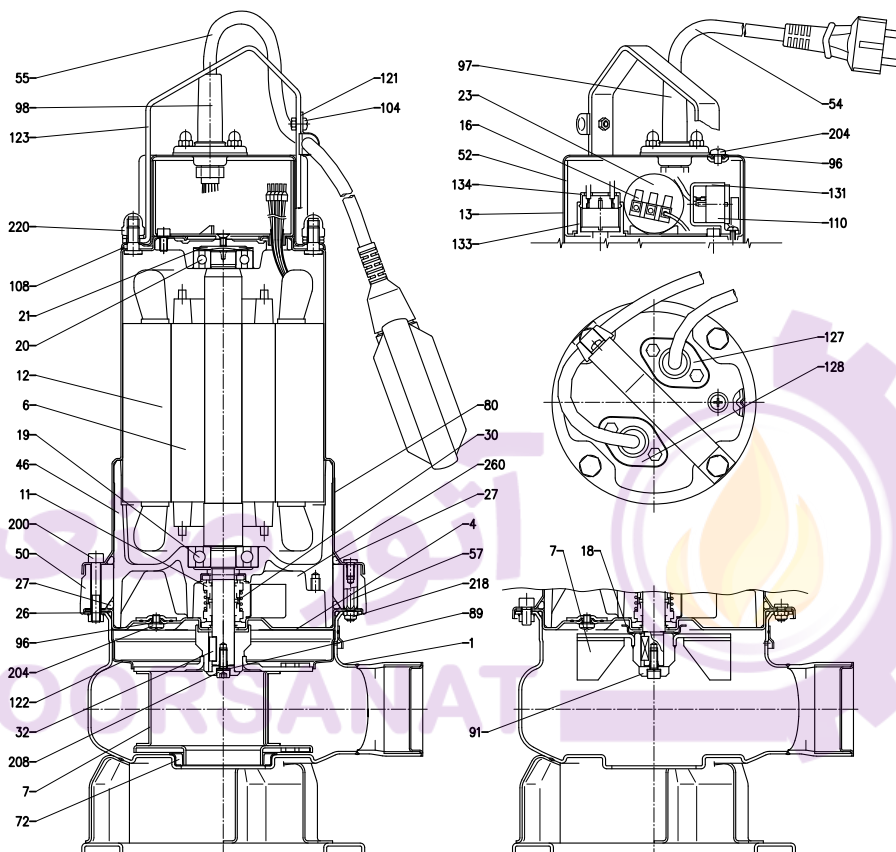
DW-DW VOX

CONSTRUCTION

50Hz

Rev. O

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 w ith 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 w ith 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	Low er side ball bearing	-	1	121	Support for float sw itch [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 sw itch [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

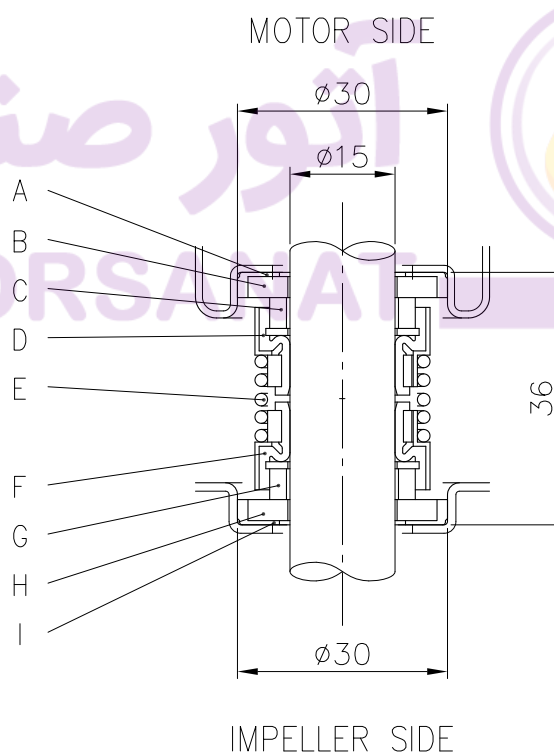
[7] Only for single phase DW 150

300

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

SUBMERSIBLE SEWAGE PUMPS

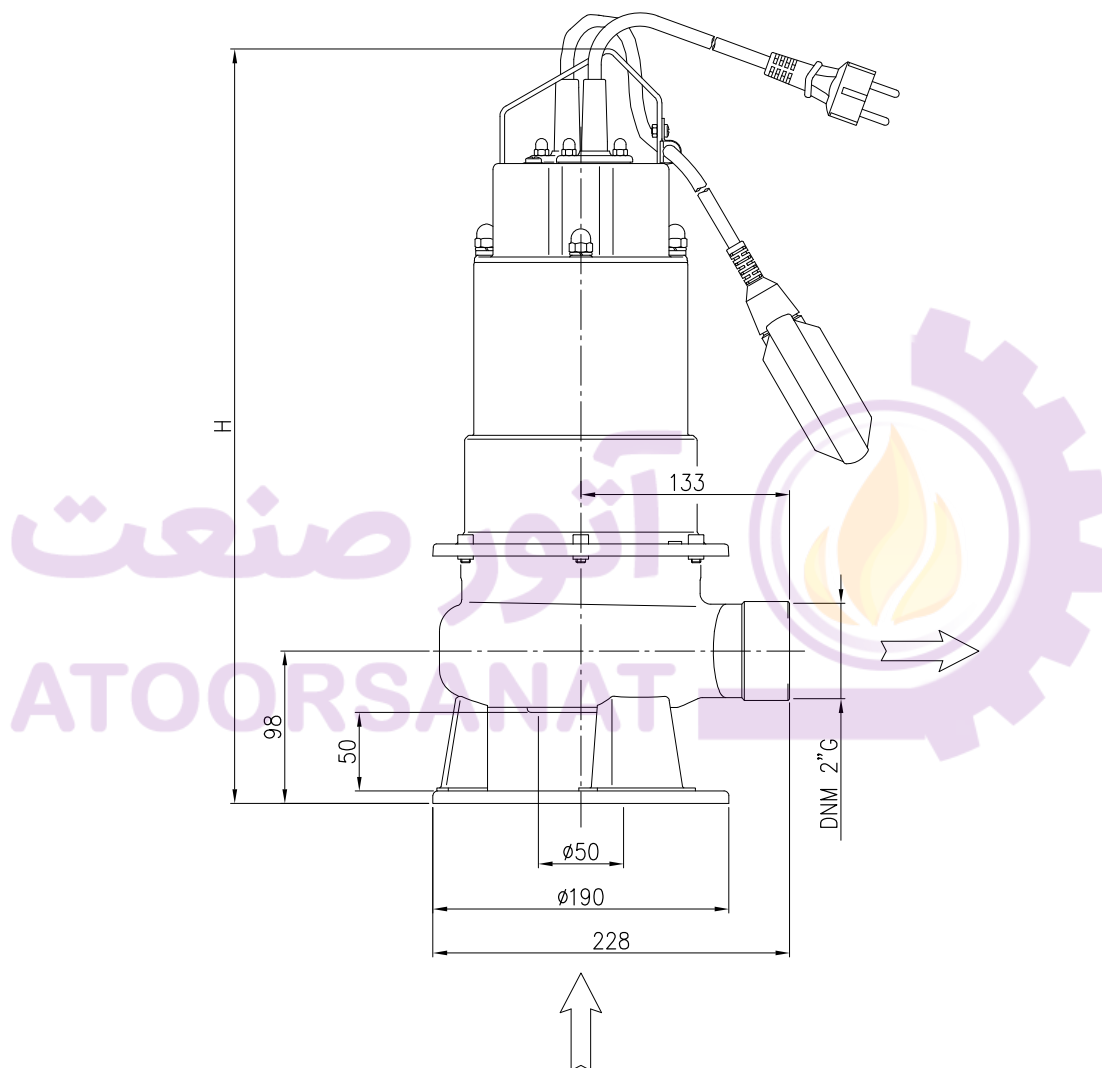
DW-DW VOX

DIMENSIONS AND WEIGHT

50Hz

Rev. 0

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

SUBMERSIBLE SEWAGE PUMPS

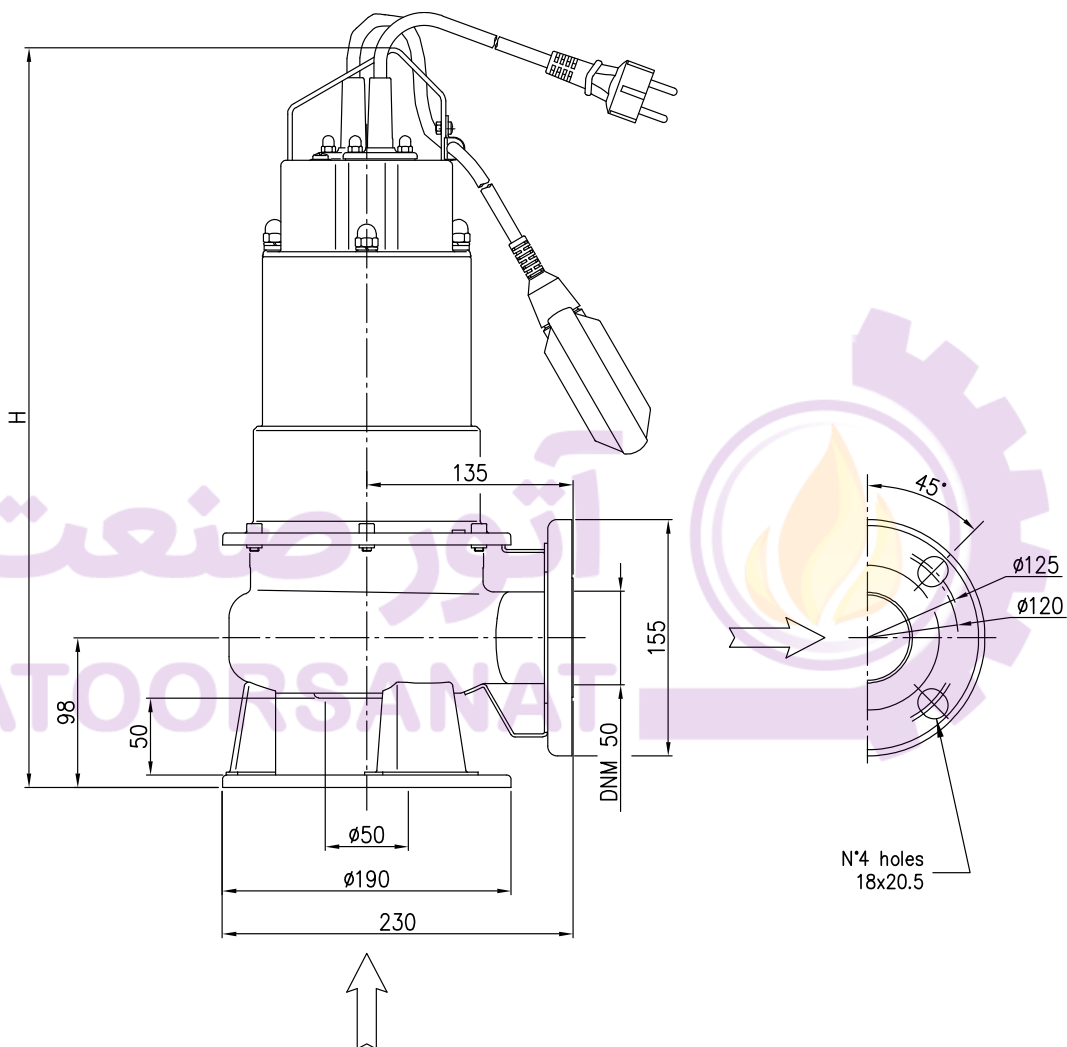
DW-DW VOX

DIMENSIONS AND WEIGHT

50Hz

Rev. 0

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

SUBMERSIBLE SEWAGE PUMPS

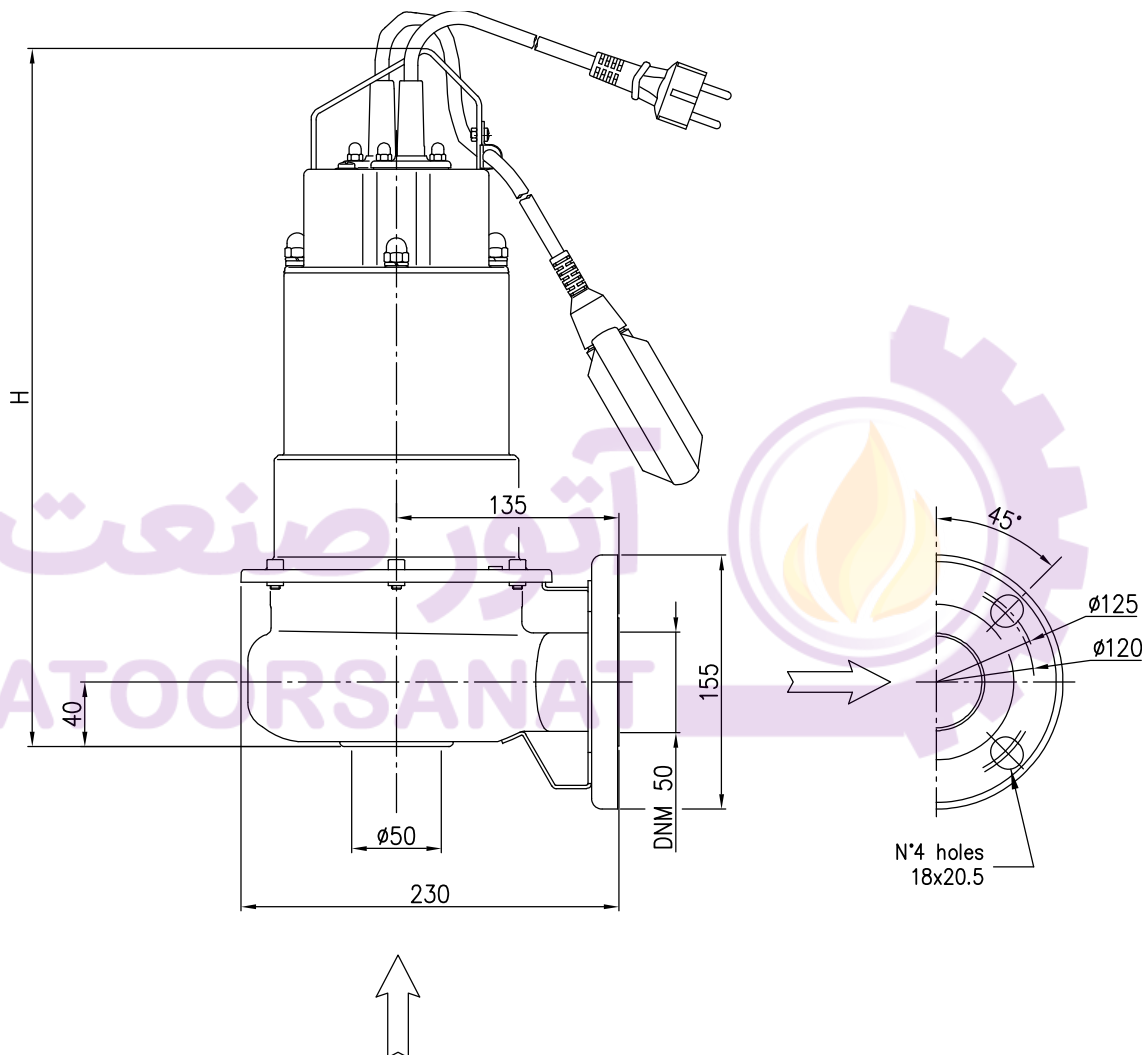
DW-DW VOX

DIMENSIONS AND WEIGHT

50Hz

Rev. 0

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

SUBMERSIBLE SEWAGE PUMPS

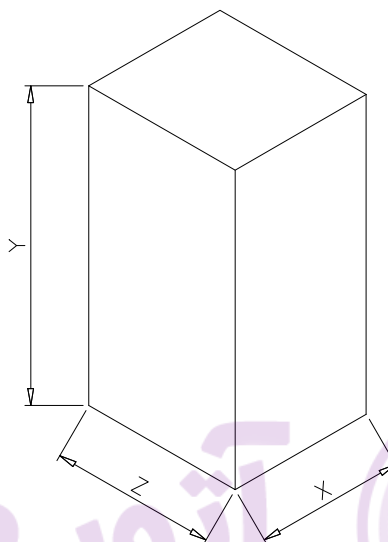
DW-DW VOX

DIMENSIONS AND WEIGHT

50Hz

Rev. O

PACKING



Pump type	Packing [mm] 1~			Weight [kgf]		Packing [mm] 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

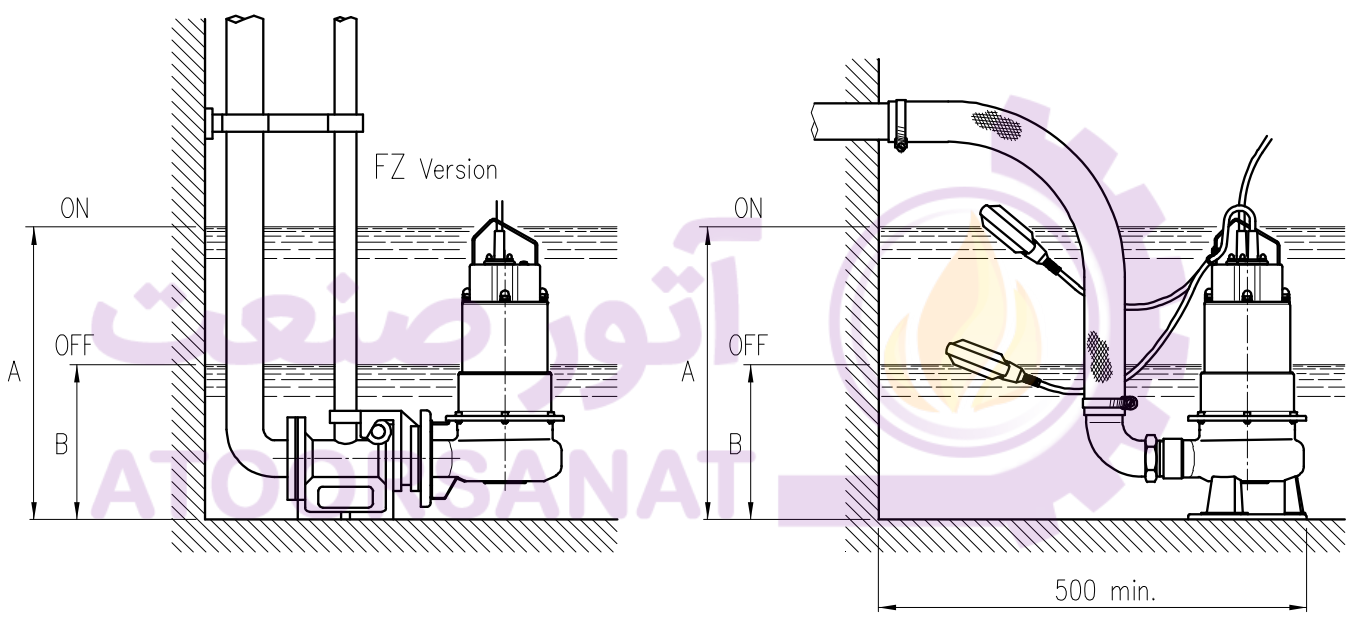
SUBMERSIBLE SEWAGE PUMPS

DW-DW VOX

INSTALLATION

50Hz
Rev. 0

INSTALLATION



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