



EBARA

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SPECIFICATION

60Hz

Rev. D

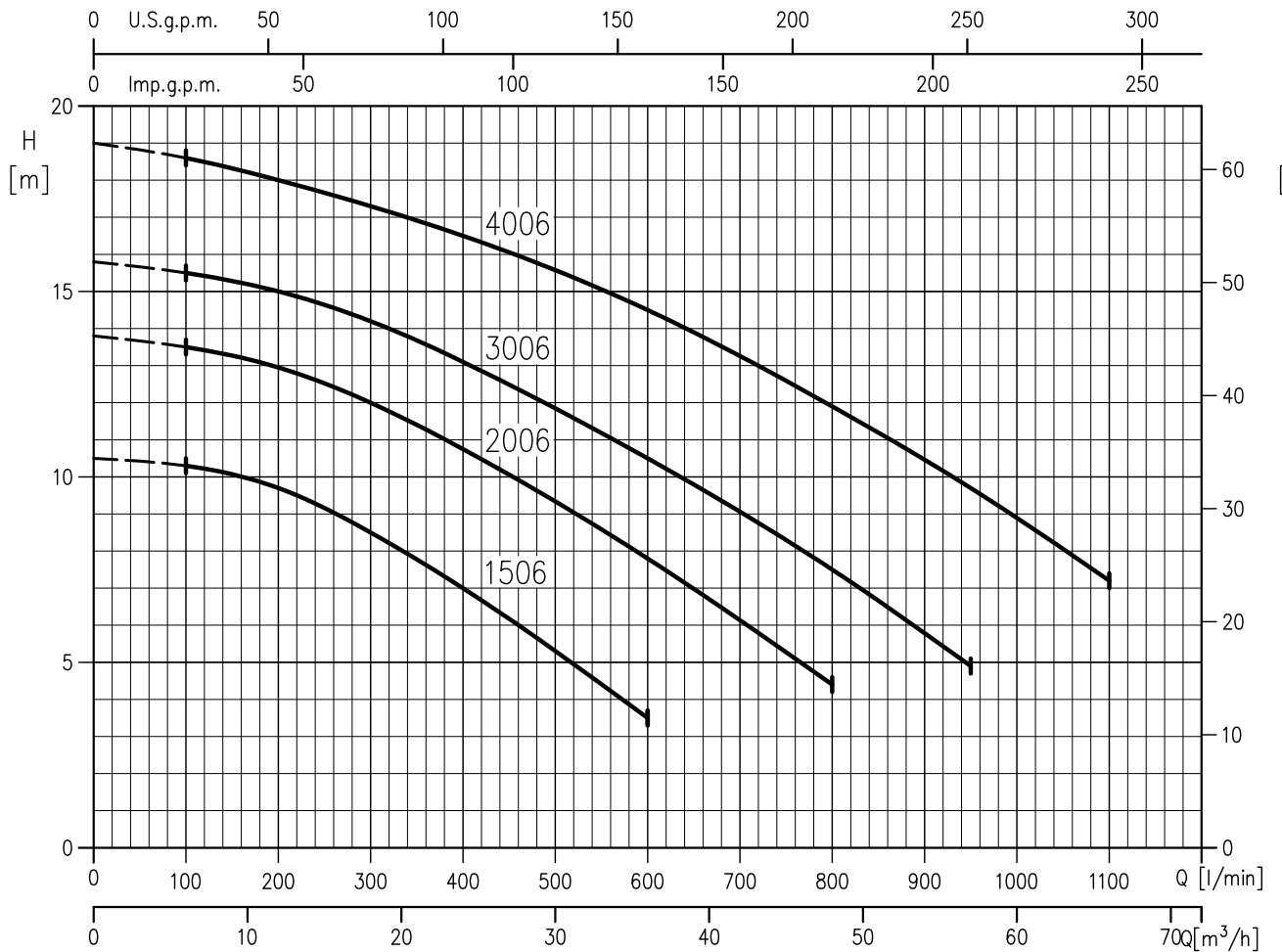
PUMP		
Liquid Handled	Type of liquid	Clean water
	Temperature [°C]	min. -5 max. +90 max. +110 (H-HS-HW)
Maximum working pressure	[MPa]	0.8
Construction	Impeller	Open centrifugal type
	Shaft seal type	Mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction [inch]	G 2 (G2½ for DWO 3006-4006) UNI ISO 228
	Discharge [inch]	G 2 UNI ISO 228
Material	Casing	EN 1.4301 (AISI 304)
	Impeller	EN 1.4301 (AISI 304)
	Casing cover	EN 1.4301 (AISI 304)
	Shaft seal	Ceramic/Carbon/NBR (for DWO) Ceramic/Carbon/FPM (for DWOH) SiC/SiC/FPM (for DWOHS) Tungsten Carbide/Tungsten Carbide/FPM (for DWOHW)
	Shaft	EN 1.4301 (AISI 304) (wet extension)
	Bracket	Aluminium
Applicable standard of test		ISO 9906 – Annex A

MOTOR		
Type	Electric - TEFC	
	Single Phase	Three Phase
No. of Poles	2	
Rotation speed [min ⁻¹]	≈ 3450	
Insulation Class	F	
Protection degree (CEI EN 60034-5)	IP 55	
Power rating	[kW]	1.1 ÷ 1.5
	[HP]	1.5 ÷ 2
Frequency [Hz]	60	
Voltage [V]	220-230 ±6%	220/380 -6 +10%
Capacitor	Built in	-
Over load protection	Built in	Provided by the user
Casing material	Aluminium	
Base material / Motor support	Aluminium	
Dimensions of cable entry	PG 11 – PG 13.5 – G 3/8 (see dimensions page 400)	

SELECTION CHART

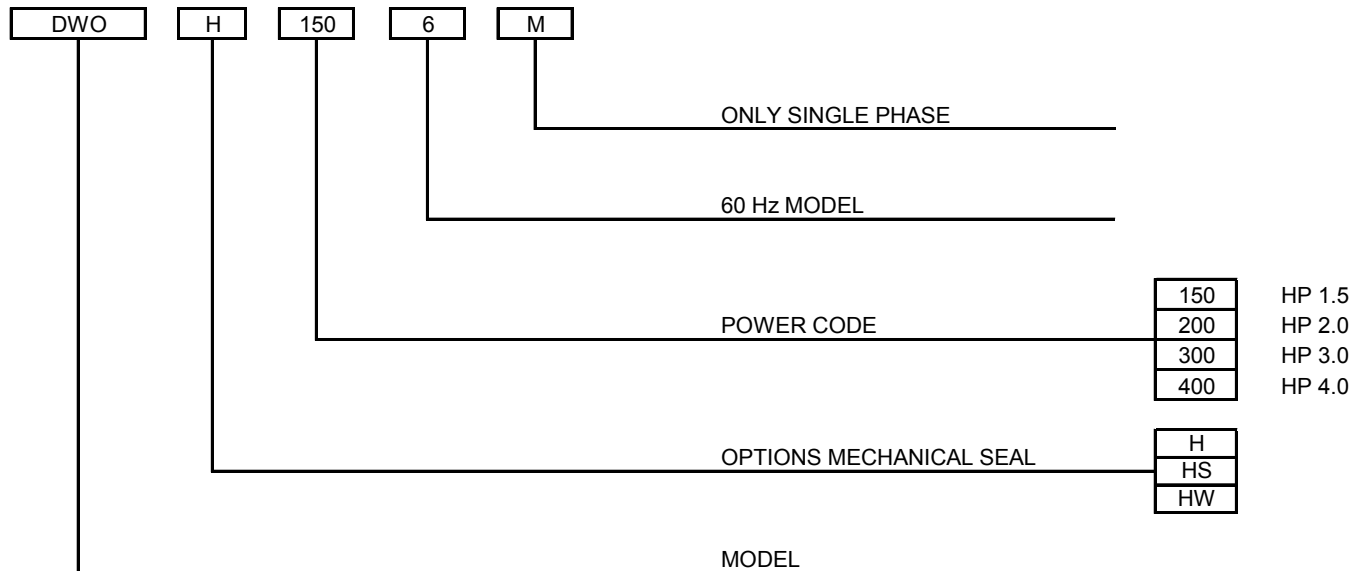
60Hz

Rev. D



Pump type		Power		Q=Capacity									
Single Phase	Three Phase	[kW]	[HP]	l/min	0	100	200	300	400	600	800	950	1100
				m³/h	0	6	12	18	24	33	42	57	66
H=Total manometric head in meters													
DWO 1506 M	DWO 1506	1.1	1.5	10.5	10.3	9.7	8.5	7.0	3.5	-	-	-	-
DWO 2006 M	DWO 2006	1.5	2	13.8	13.5	12.9	12	10.7	7.8	4.4	-	-	-
-	DWO 3006	2.2	3	15.8	15.5	15	14.2	13.1	10.5	7.5	4.9	-	-
-	DWO 4006	3	4	19	18.6	18	17.3	16.5	14.5	11.9	9.7	7.2	-

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)

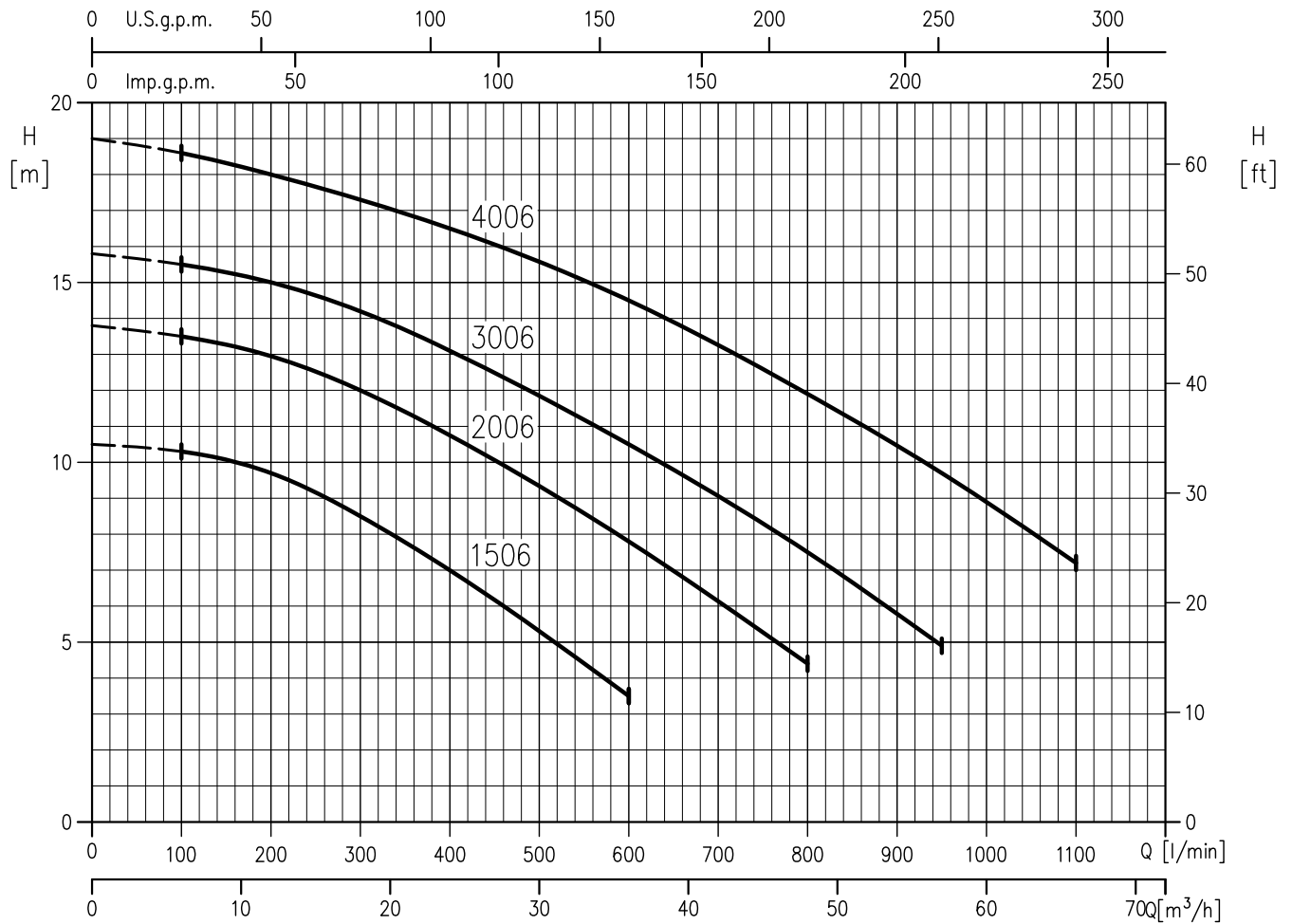
The continuous curves indicate the recommended working range. The dotted curve is only a guide.

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:

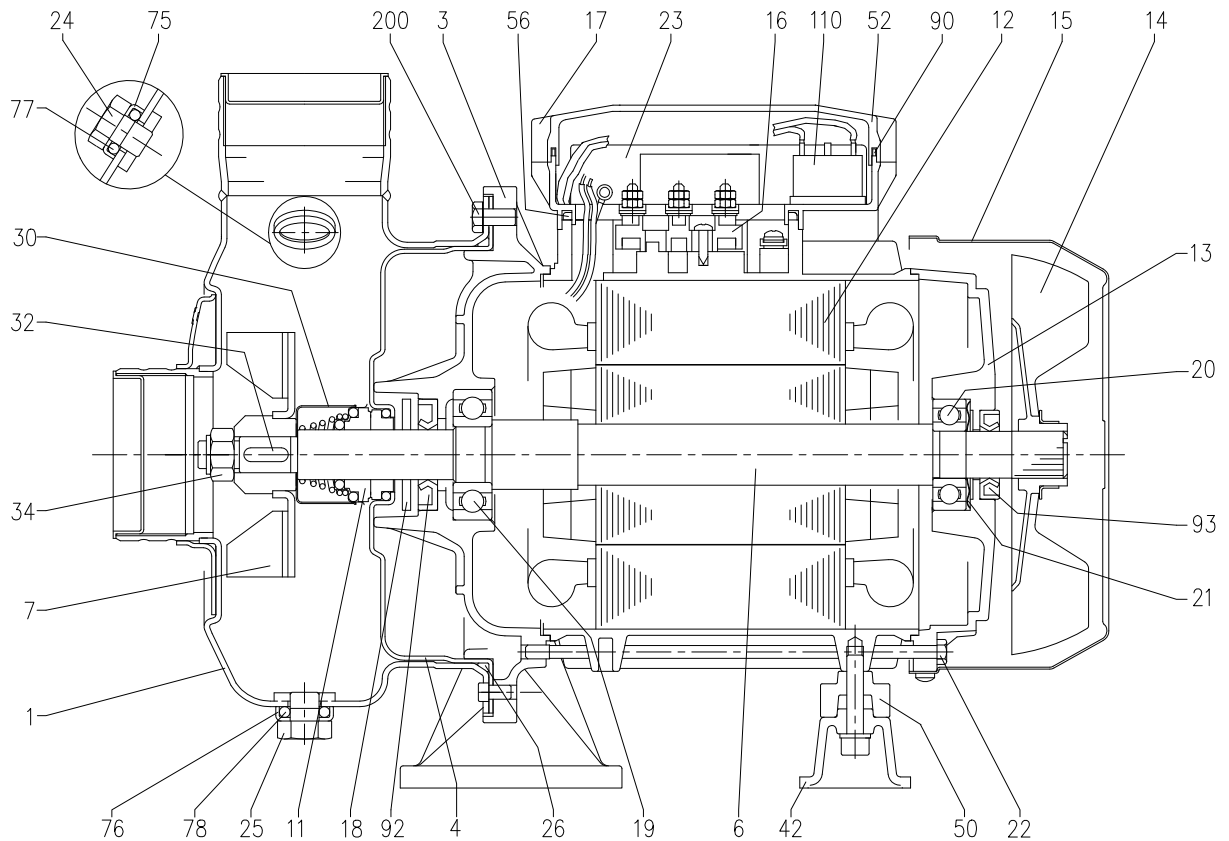
- Q = volume flow rate
- H = total head

DWO 1506 (1.1 kW) - Impeller diameter = 88 mm
 DWO 2006 (1.5 kW) - Impeller diameter = 88 mm
 DWO 3006 (2.2 kW) - Impeller diameter = 118 mm
 DWO 4006 (3 kW) - Impeller diameter = 118 mm



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

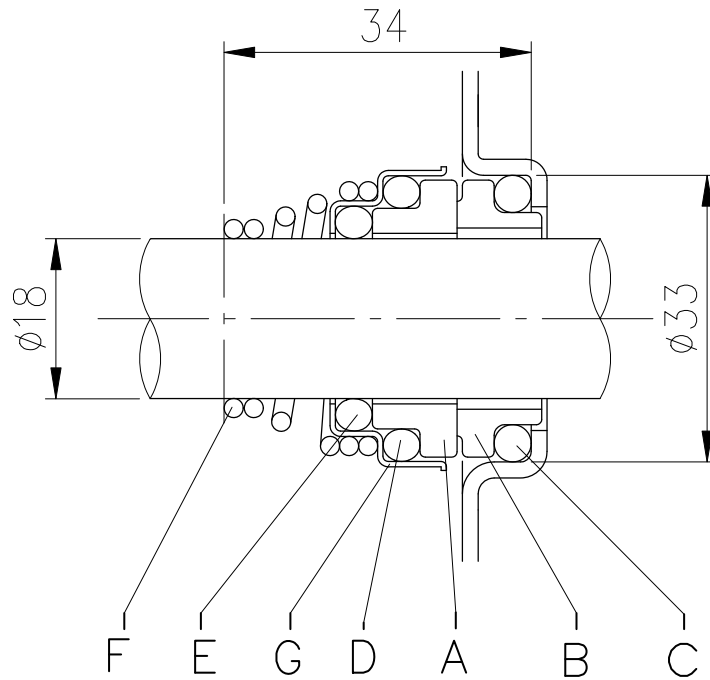
SECTIONAL VIEW



N°	PART NAME	MATERIAL	DIMENSIONS	STANDARD	Q.TY	N°	PART NAME	MATERIAL	DIMENSIONS	STANDARD	Q.TY
1	Casing	EN 1.4301 (AISI 304)			1	25	Drain plug	EN 1.4305 (AISI 303)			1
3	Motor bracket	Aluminium			1	26	O-ring [3]	NBR	148.8x3.53		1
4	Casing cover	EN 1.4301 (AISI 304)			1	30	Mechanical seal protection	EN 1.4301 (AISI 304)			1
6	Shaft with rotor	EN 1.4301 (AISI 304) wet extension			1	32	Key	EN 1.4401 (AISI 316)	5x5x15	UNI 6604	1
7	Impeller	EN 1.4301 (AISI 304)			1	34	Impeller nut	EN 1.4301 (AISI 304)	M10x1.25	UNI 7474	1
11	Mechanical seal	Carbon/Ceramic/NBR	See pag. 301		1	42	Motor support	Aluminium			1
12	Motor frame with stator	-			1	50	Spacer	-			1
13	Motor cover	Aluminium			1	52	Terminal box [1]	PP			1
14	Fan	PP			1	56	Box gasket	NBR			1
15	Fan cover	Fe P04 Zincate			1	75	Washer	EN 1.4301 (AISI 304)			1
16	Terminal box	-			1	76	Washer	EN 1.4301 (AISI 304)			1
17	Terminal box cover [2]	Aluminium			1	77	O-ring	NBR	13.1x2.62	OR 117	1
18	Splash ring	NBR	40x17.5x3		1	78	O-ring	NBR	13.1x2.62	OR 117	1
19	Pump side ball bearing	-	See pag. 301		1	90	Terminal box cover gasket [1]	NBR	171.12X2.62		1
20	Fan side ball bearing	-	See pag. 301		1	92	Lip seal	-	18x40x7		1
21	Adjusting ring	Steel C70			1	93	Lip seal	-			1
22	Tie rod	Fe 420 Zincate		EBARA drawing	4	110	Protector [1]	-			1
23	Capacitor [1]	-			1	200	Screw	Stainless steel A2		UNI7323	6
24	Priming plug	EN 1.4305 (AISI 303)			1						

- [1] Only for single phase
 [2] Only for three phase
 [3] FPM for DWOH, DWOHS and DWOHW

MECHANICAL SEAL



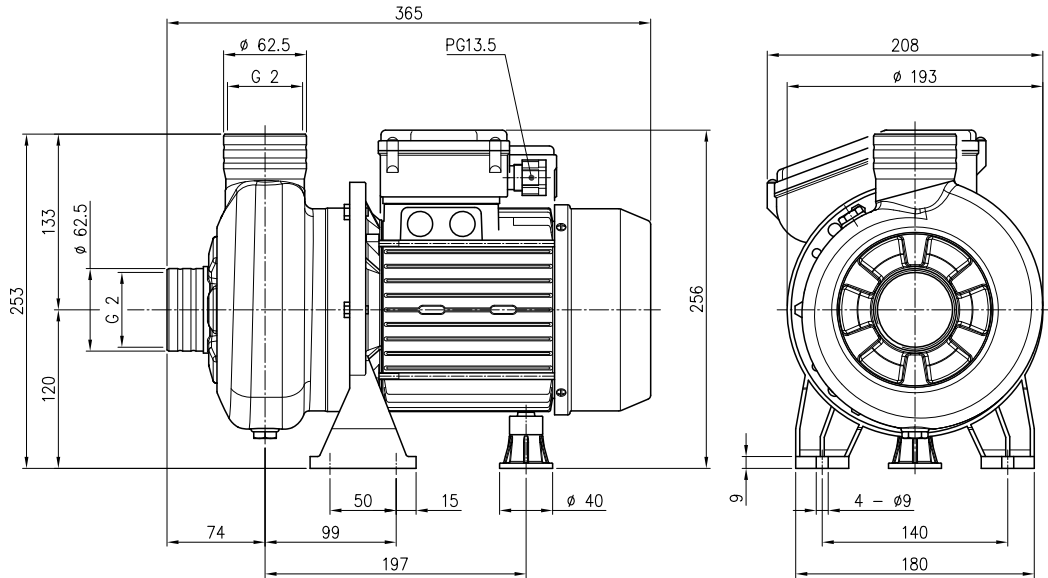
REF	PART NAME	Product standard (DWO)	MATERIAL		
			(DWOH)	Optional (DWOHS)	(DWOHW)
A	Rotary seal ring	ceramic	Ceramic	Silicon carbide	Tungsten carbide
B	Stationary seal ring	carbon graphite	Carbon graphite	Silicon carbide	Tungsten carbide
C	O Ring	NBR	FPM	FPM	FPM
D	O Ring	NBR	FPM	FPM	FPM
E	O Ring	NBR	FPM	FPM	FPM
F	Self driving spring	AISI 316	AISI 316	AISI 316	AISI 316
G	Frame	AISI 304	AISI 304	AISI 316	AISI 316

BEARINGS

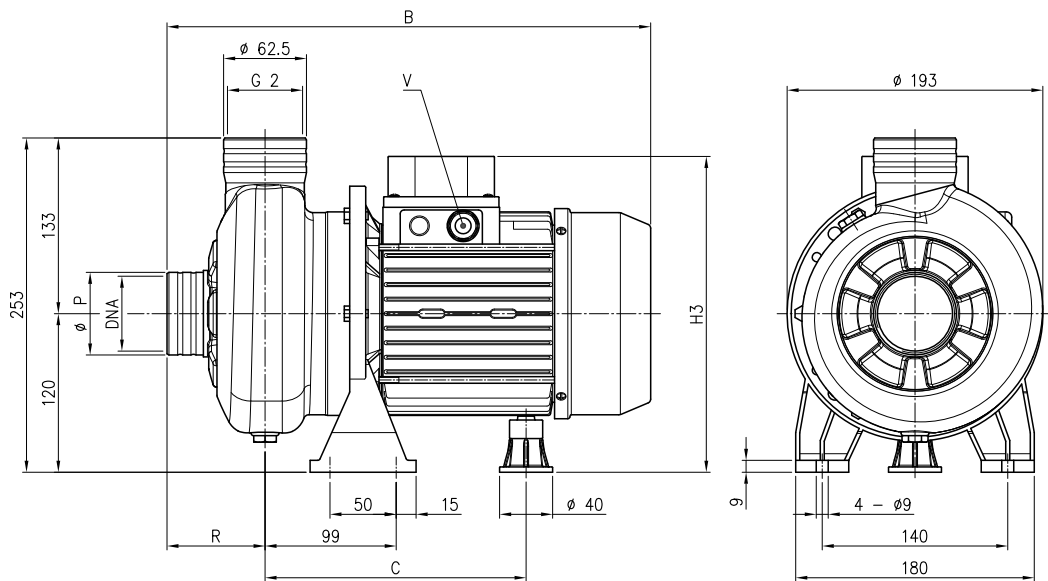
Pump type		Ball Bearing	
Single Phase	Three Phase	Pump side	Fan side
DWO 1506 M	DWO 1506	6204 2RSH	6203 2RSH
DWO 2006 M	DWO 2006	6204 2RSH	6203 2RSH
-	DWO 3006	6305 2RS1	6205 2RSH
-	DWO 4006	6305 2RS1	6205 2RSH

PUMP

[1~] Single phase
DWO 1506
DWO 2006



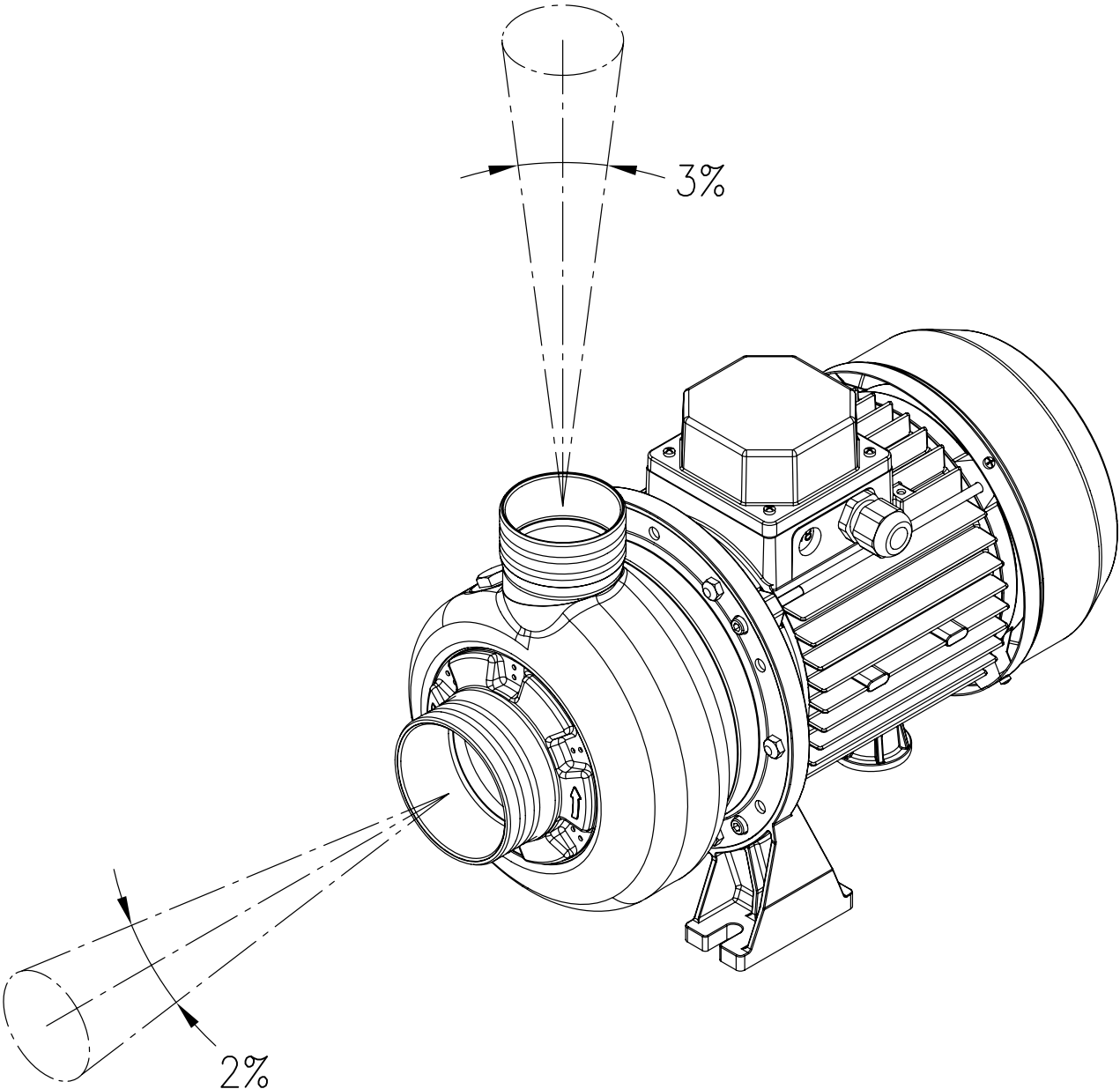
[3~] Three phase
DWO 1506
DWO 2006
DWO 3006
DWO 4006



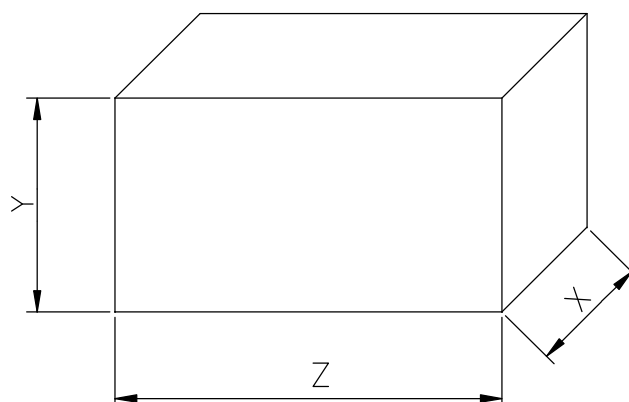
Pump type	B [3~]	C [3~]	H3 [3~]	R [3~]	P [3~]	V [3~]	DNA [3~]	Weight [kgf]	
								[1~]	[3~]
DWO 1506	365	197	239	74	62.5	PG11	G 2	13.6	14.6
DWO 2006	378	197	239	74	62.5	PG11	G 2	15.7	16.4
DWO 3006	416	230 ÷ 241	244	78	80	PG13.5	G 2½	-	19.2
DWO 4006	455	230 ÷ 241	244	78	80	PG13.5	G 2½	-	22.3

[1~] Single phase
[3~] Three phase

GEOMETRIC TOLERANCES



PACKING



Pump type		Packing [mm]			Weight [kgf]	
Single Phase	Three Phase	X	Y	Z	[1~]	[3~]
DWO 1506 M	DWO 1506	205	288	477	14.5	15.4
DWO 2006 M	DWO 2006	205	288	477	16.3	17.3
-	DWO 3006	205	288	477	-	21.2
-	DWO 4006	205	288	477	-	23.1

[1~] Single phase

[3~] Three phase

MOTOR DATA

Pump type		Power		Capacitor		Efficiency (% load)			Efficiency (% load)			Input		Full load current			Locked rotor current		
Single Phase	Three Phase	[kW]	[HP]	Single Phase		Three phase (380 V)			Three phase (460 V)			Single Phase	Three Phase	[A]			[A]		
				[μF]	[V]	50%	75%	100%	50%	75%	100%			220-230 V	220 V	380 V	220-230 V	220 V	380 V
DWO 1506 M	DWO 1506	1.1	1.5	35	450	78.3	80.4	81.0	76.5	81.3	83.4	1.5	2.00	7.2	5.7	3.3	55.0	38.8	22.4
DWO 2006 M	DWO 2006	1.5	2.0	35	450	82.4	83.0	82.2	79.5	82.9	83.8	2.06	2.90	9.8	8.1	4.7	69.0	54.4	31.4
-	DWO 3006	2.2	3.0	-	-	80.5	83.3	83.5	77.3	82.4	84.1	-	2.90	-	7.0	4.1	-	61.5	35.5
-	DWO 4006	3.0	4.0	-	-	84.0	85.9	85.2	80.2	83.5	84.6	-	3.90	-	10.5	6.1	-	92.1	53.2