
EBARA

CONTENTS

50Hz

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SPECIFICATION 50Hz

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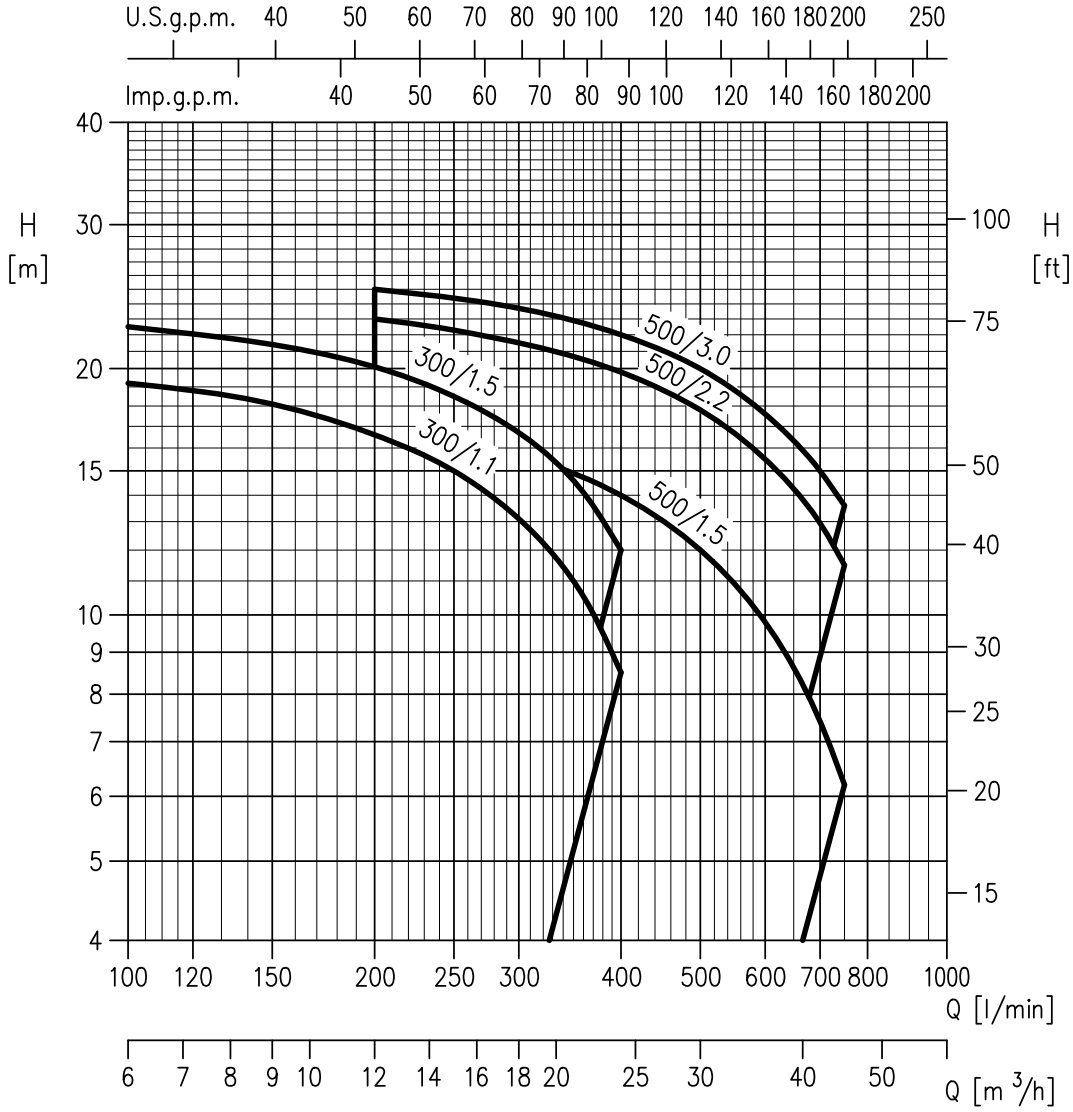
PUMP			
Liquid Handled	Type of liquid		Clean water, moderate aggressive fluids, glycol solutions, other industrial fluids after a check by our sales network
	Temperature	[°C]	min. -15 max. +90 max. +110 (H–HS-HW)
Maximum working pressure		[MPa]	0,8
Construction	Impeller		Closed centrifugal type
	Shaft seal type		Mechanical seal
	Bearing		Sealed ball bearing
Pipe Connection	Suction		DWC-V Victaulic connection Ø 2” (60.3mm) DWC-N G 2
	Discharge		DWC-V Victaulic connection Ø 2” (60.3mm) DWC-N G 2
Material	Casing		EN 1.4301 (AISI 304)
	Impeller		EN 1.4301 (AISI 304)
	Casing cover		EN 1.4301 (AISI 304)
	Shaft seal		Ceramic/Carbon/EPDM (for DWC) Ceramic/Carbon/FPM (for DWCH) SiC/SiC/FPM (for DWCHS) Tungsten Carbide/Tungsten Carbide/FPM (for DWCHW)
	Casing cover		EN 1.4301 (AISI 304)
	Shaft		EN 1.4301 (AISI 304) (Wet extension)
	Bracket		Aluminium
Applicable standard of test			ISO 9906 – Annex A

MOTOR		
Type		Electric - TEFC
		Three Phase
Efficiency level (Reg. 640/2009)		IE2 from 1.1 kW up to 3.0 kW
No. of Poles		2
Rotation speed	[min^{-1}]	≈ 2800
Insulation Class		F
Protection degree (CEI EN 60034-5)		IP 55
Power rating	[kW]	1.1 ÷ 3
	[HP]	1.5 ÷ 4
Frequency	[Hz]	50
Voltage	[V]	230/400 ±10%
Over load protection		User provide
Casing material		Aluminium
Base material/motor support		Aluminium
Dimensions of cable entry		PG11 - PG13.5 (See page 400)

SELECTION CHART

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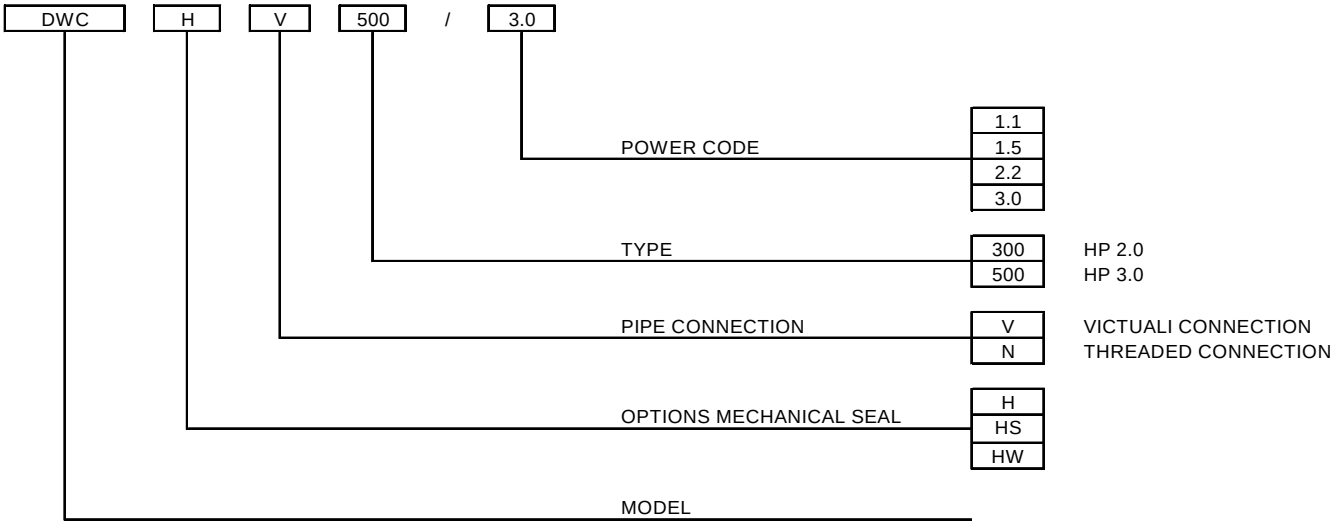


Pump type	Power		Q=Capacity											
			l/min	0	100	150	200	250	300	350	400	500	600	700	750
	[kW]	[HP]	m³/h	0	6	9	12	15	18	21	24	30	36	42	45
			H=Total head in meters												
DWC 300/1,1	1.1	1.5		21.0	19.2	18.1	16.6	15.0	13.1	11.0	8.5	-	-	-	-
DWC 300/1,5	1.5	2		24.5	22.5	21.4	20.1	18.5	16.7	14.6	12.0	-	-	-	-
DWC 500/1,5	1.5	2		18.5	-	-	17.0	16.4	15.7	14.9	14.0	12.0	9.8	7.4	6.2
DWC 500/2,2	2.2	3		24.5	-	-	23.0	22.3	21.5	20.7	19.8	17.8	15.5	13.0	11.5
DWC 500/3,0	3	4		26.3	-	-	25.0	24.4	23.7	22.9	22.0	20.0	17.6	15.0	13.6

TYPE KEY AND CURVE SPECIFICATIONS 50Hz

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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 ν = 1 mm^2/s (1 cSt)
The NPSH curve is an average curve obtained in the same conditions of performance curves.
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:

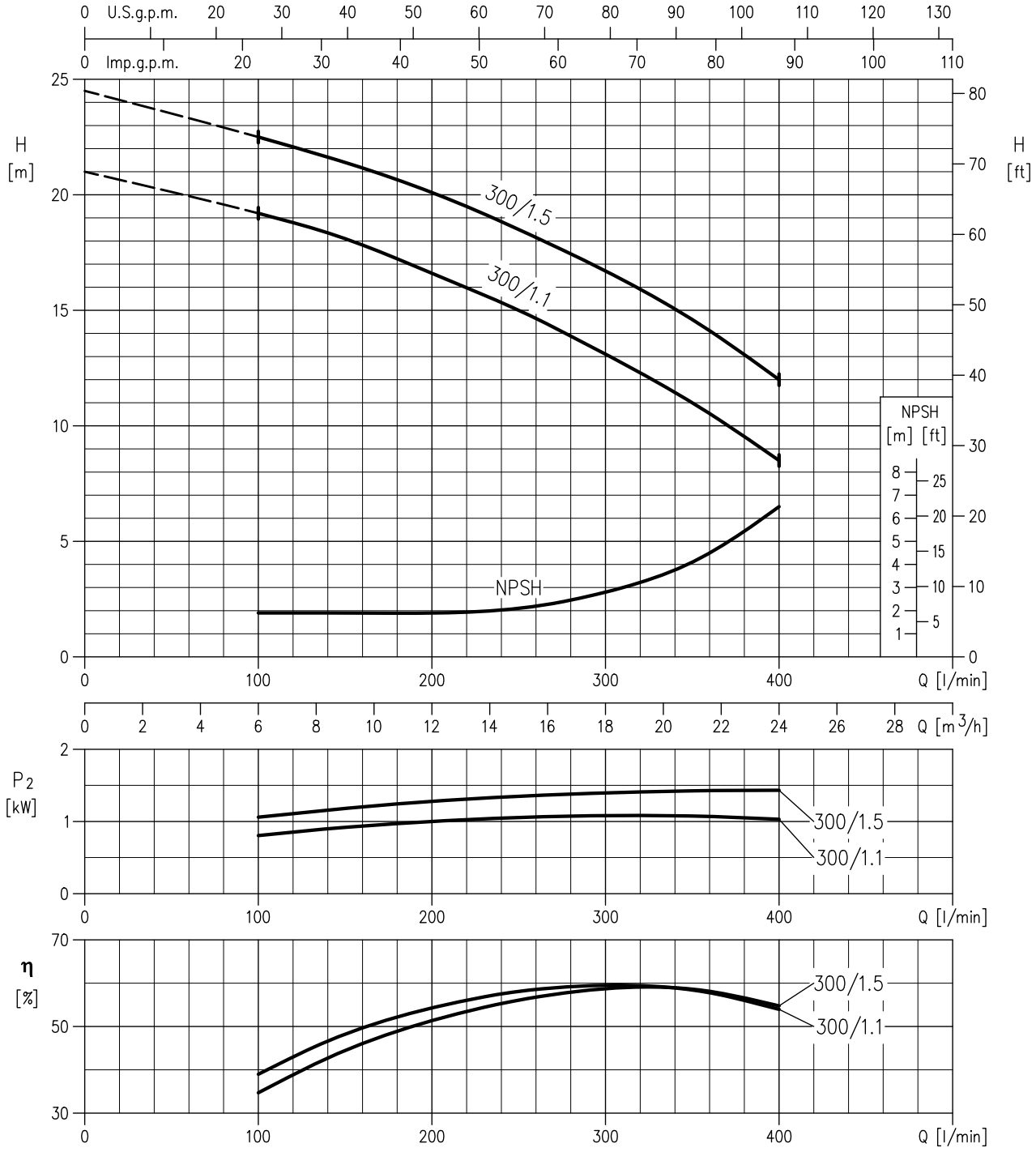
Q	=	volume flow rate
H	=	total head
P_2	=	pump power input (shaft power)
η	=	pump efficiency
NPSH	=	net positive suction head required by the pump

PERFORMANCE CURVE

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300/1.1 (1.1 kW) – Impeller diameter = 133 mm
300/1.5 (1.5 kW) – Impeller diameter = 148 mm



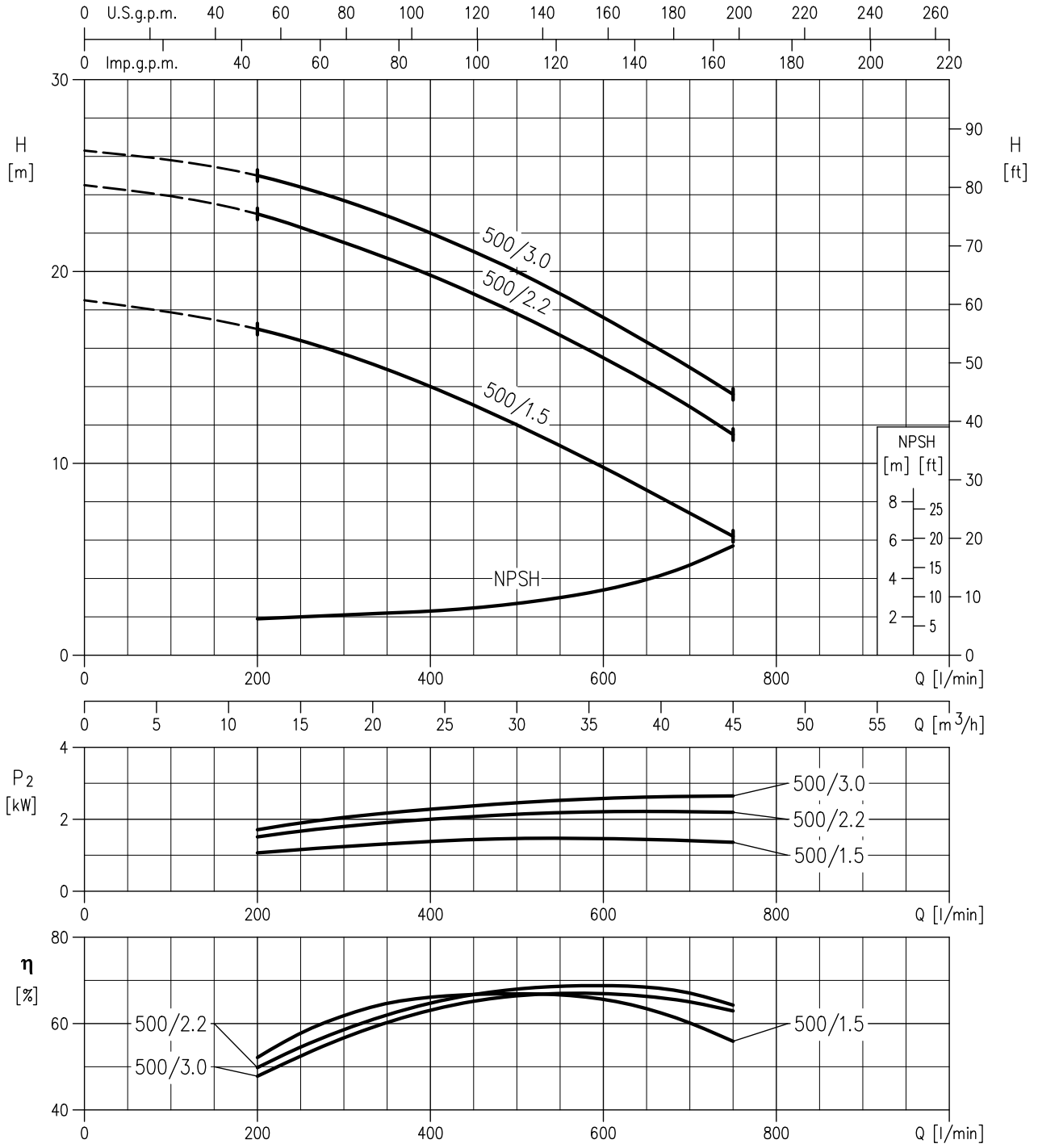
Rotation speed ≈ 2900 min^{-1}
Test standard: ISO 9906 – Annex A

PERFORMANCE CURVE

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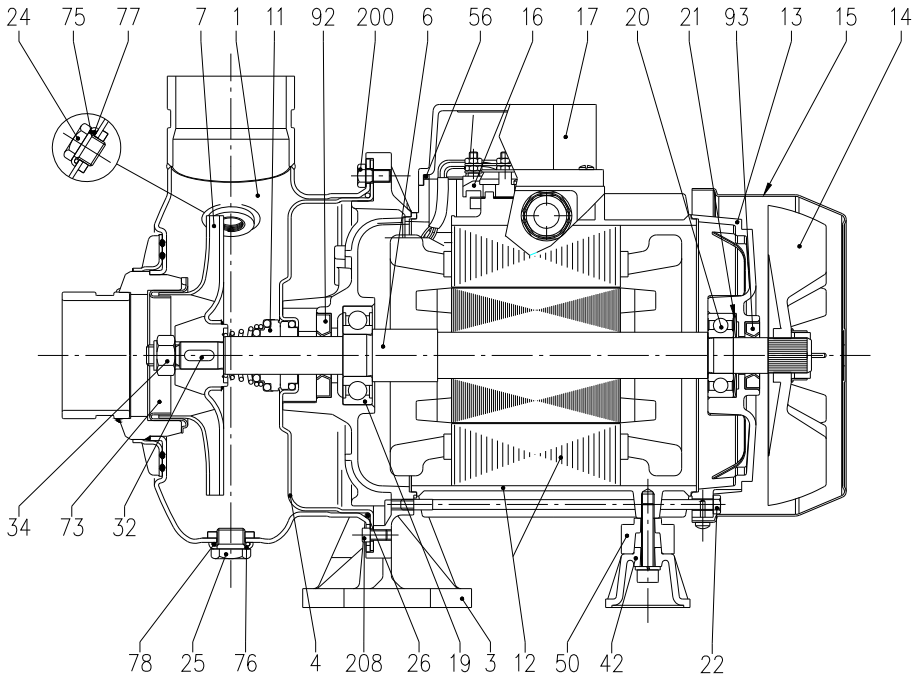
500/1.5 (1.5 kW) – Impeller diameter = 125 mm
500/2.2 (2.2 kW) – Impeller diameter = 140 mm
500/3.0 (3.0 kW) – Impeller diameter = 148 mm



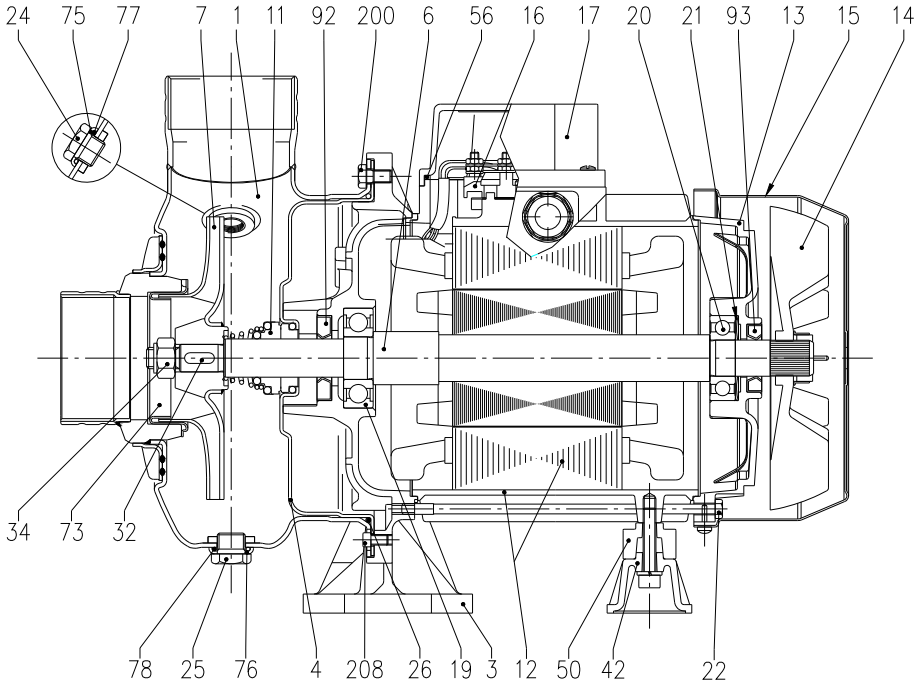
Rotation speed ≈ 2900 min^{-1}
Test standard: ISO 9906 – Annex A

SECTIONAL VIEW DRAWING

DWC-V (Victaulic connection)



DWC-N (Threaded connection)



CONSTRUCTION 50Hz

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SECTIONAL VIEW TABLE

N°	PART NAME		MATERIAL	DIMENSIONS	STANDARD	N. FOR 1 UNIT
001	Casing		EN 1.4301 (AISI 304)			1
003	Motor bracket		Aluminium			1
004	Casing cover		EN 1.4301 (AISI 304)			1
006	Shaft with rotor		EN 1.4301(AISI 304)-Wet extension			1
007	Impeller		EN 1.4301 (AISI 304)			1
011	Mechanical seal		Ceramic / Carbon / EPDM	See pag.302		1
012	Motor frame with stator		-			1
013	Motor cover		Aluminium			1
014	Fan		PA			1
015	Fan cover		Fe P04 Zincate			1
016	Terminal board		-			1
017	Terminal board cover		Aluminium			1
019	Bearing		-	See table pag.302		1
020	Bearing		-	See table pag.302		1
021	Adjusting ring		Steel C70			1
022	Tie rod		Fe 42 Zincate		EBARA drawing	4
024	Priming plug		EN 1.4301 (AISI 304)	G 1/4"	EBARA drawing	1
025	Draing plug		EN 1.4301 (AISI 304)	G 1/4"	EBARA drawing	1
026	"O" ring		EPDM / FPM (version H and W)	148,8x3,53	OR 4587	1
032	Key		EN 1.4401 (AISI 316)	5x5x16	UNI 6604	1
034	Impeller nut		EN 1.4301 (AISI 304)	M10x1.25	UNI 7474	1
042	Foot		Aluminium / Zincate steel		EBARA drawing	1
050	Spacer		-			[1]
056	Box gasket		NBR			1
073	Casing ring		EN 1.4301 (AISI 304)			1
075	Washer		EN 1.4301 (AISI 304)		EBARA drawing	1
076	Washer		EN 1.4301 (AISI 304)		EBARA drawing	1
077	O-ring [2]		EPDM	13,1x2,62	OR 117	1
078	O-ring [2]		EPDM	13,1x2,62	OR 117	1
092	Lip seal		-	18x40x7	DIN 3760 without spring	1
093	Lip seal	Up to 1,5 kW	-	17x32x7	DIN 3760 without spring	1
		For 2,2 and 3.0 kW		25x40x7		
200	Screw		Stainless steel A2-70 class ISO 3506/1	M 6x12	UNI 5739	6
208	Screw		Stainless steel A2-70 class ISO 3506/1	M 5x12	UNI 5931	4

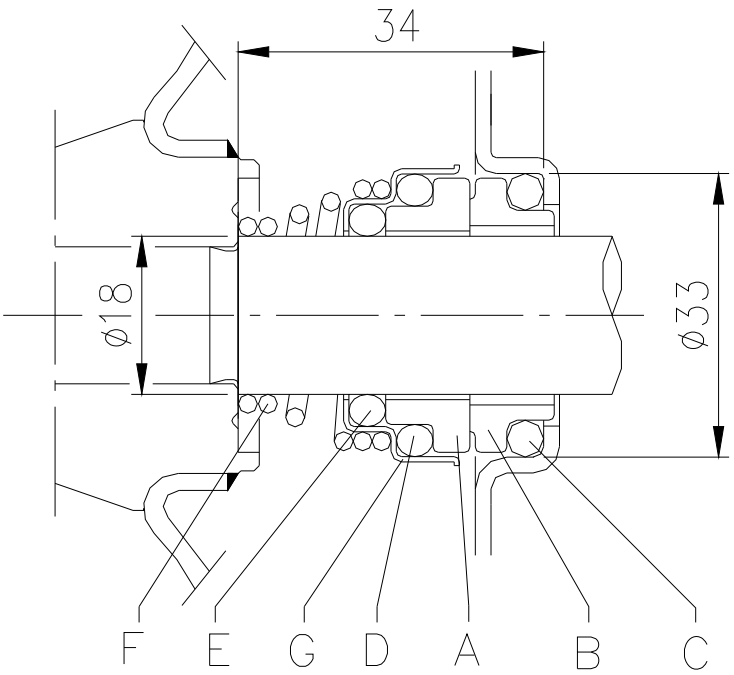
[1] N°1 only for 1,1kW and 1,5kW
[2] FPM for DWCH, DWCHS and DWCHW

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MECHANICAL SEAL



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

BEARINGS

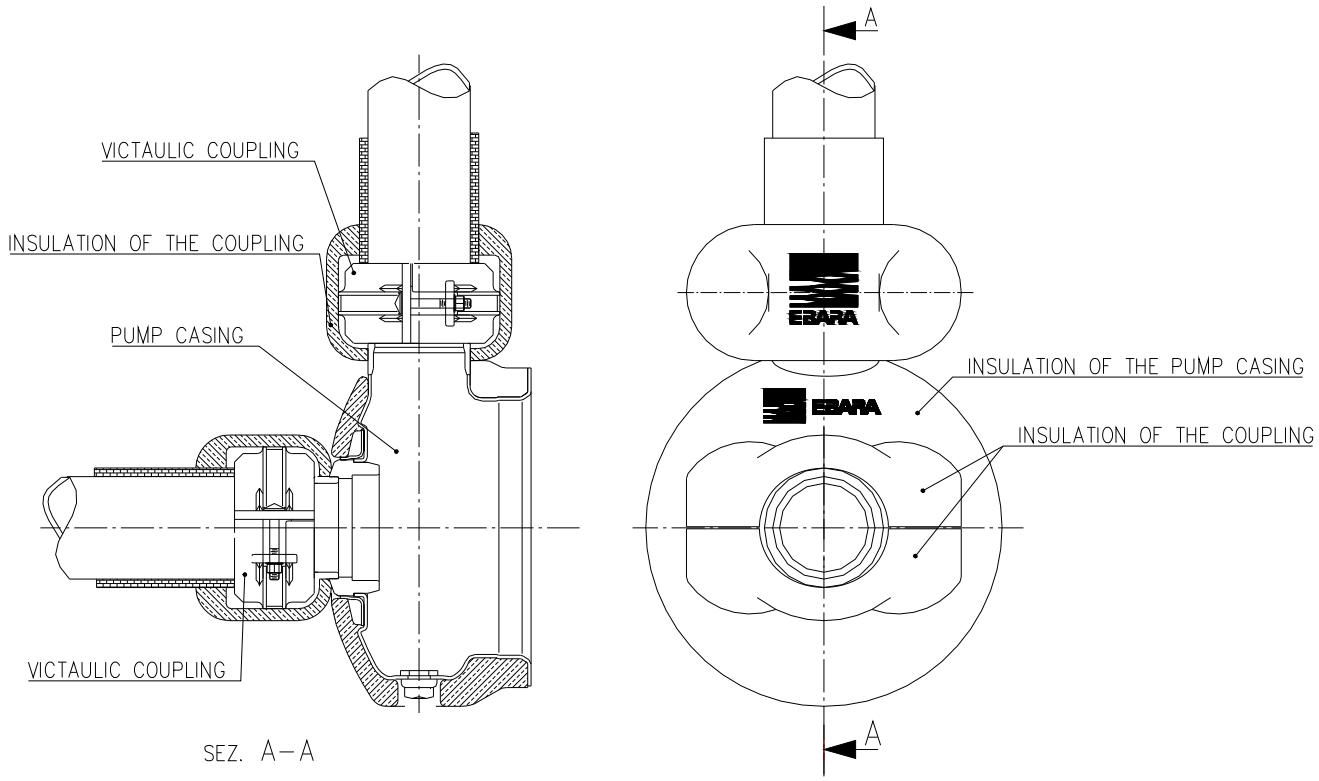
Type pumps	Ball Bearing	
	Pump side	Fan side
DWC 300/1,1	6204 2RSH	6203 2RSH
DWC 300/1,5	6204 2RSH	6203 2RSH
DWC 500/1,5	6204 2RSH	6203 2RSH
DWC 500/2,2	6305 2RS1	6205 2RSH
DWC 500/3,0	6305 2RS1	6205 2RSH

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THERMAL INSULATION



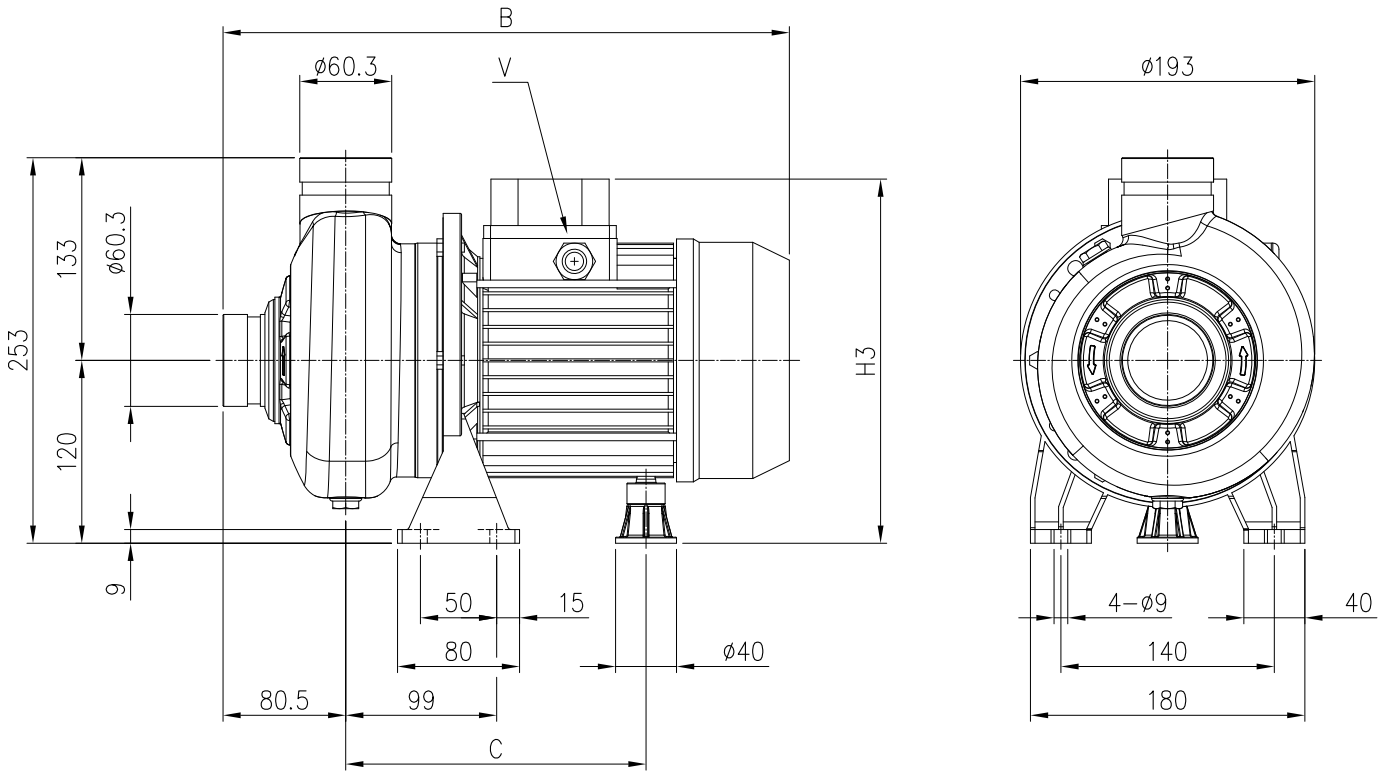
Pump type		INSULATION OF THE PUMP CASING	INSULATION OF THE COUPLING	VICTAULIC COUPLING
VICTAULIC CONNECTION	DWC-V 300/1.1	STANDARD	ON REQUEST	ON REQUEST
	DWC-V 300/1.5			
	DWC-V 500/1.5			
	DWC-V 500/2.2			
	DWC-V 500/3.0			
THREADED CONNECTION	DWC-N 300/1.1	ON REQUEST	NO NECESSARY	NO NECESSARY
	DWC-N 300/1.5			
	DWC-N 500/1.5			
	DWC-N 500/2.2			
	DWC-N 500/3.0			

DIMENSIONS AND WEIGHT

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DWC-V (VICTAULIC CONNECTION)



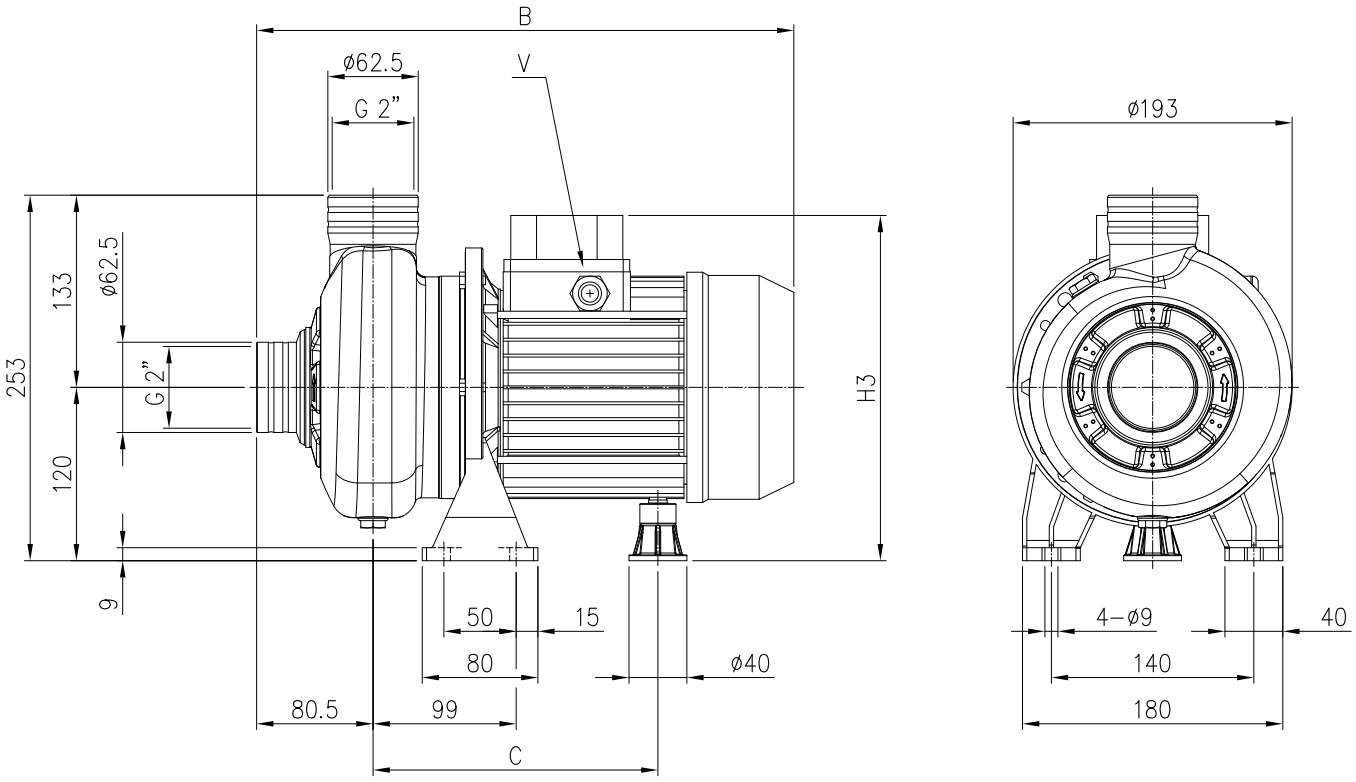
Pump type	Dimensions [mm]				Weight [kgf]
	B	C	H3	V	
DWC-V 300/1.1	372	197	239	PG11	14.5
DWC-V 300/1.5	385	197	239	PG11	16
DWC-V 500/1.5	385	197	239	PG11	17
DWC-V 500/2.2	418	230 ÷ 241	244	PG13.5	20.3
DWC-V 500/3.0	457	230 ÷ 241	244	PG13.5	22.3

DIMENSIONS AND WEIGHT

50Hz

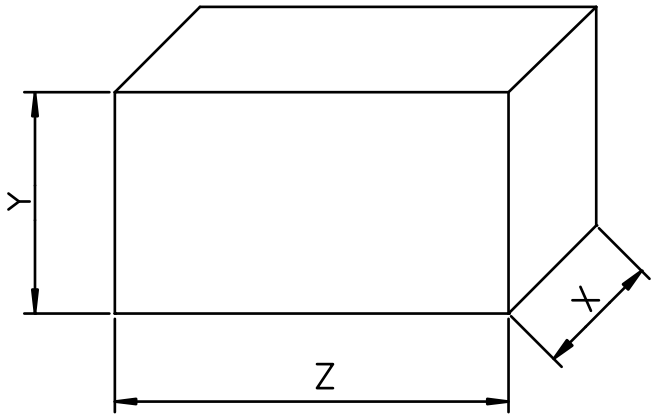
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DWC-N (THREADED CONNECTION)



Pump type	Dimensions [mm]				Weight
	B	C	H3	V	[kgf]
DWC-N 300/1.1	372	197	239	PG11	14.5
DWC-N 300/1.5	385	197	239	PG11	16
DWC-N 500/1.5	385	197	239	PG11	16.5
DWC-N 500/2.2	418	230 ÷ 241	244	PG13.5	20.3
DWC-N 500/3.0	457	230 ÷ 241	244	PG13.5	22.3

PACKING



Pump type	Packing [mm]			Weight [kgf]
	X	Y	Z	
DWC 300/1.1	205	280	432	15.5
DWC 300/1.5	205	280	432	17
DWC 500/1.5	205	280	432	18
DWC 500/2.2	205	280	432	21.5
DWC 500/3.0	205	280	477	23.5

MOTOR DATA

Pump type	Power		Efficiency	Efficiency (% load) η %			Input [kW]	Full load current [A]		Locked rotor current [A]	
	[kW]	[HP]		50%	75%	100%		230 V	400 V	230 V	400 V
DWC 300/1.1	1.1	1.5	IE2	79.7	82.5	83.0	1.80	5.5	3.2	45.0	25.7
DWC 300/1.5	1.5	2.0	IE2	78.6	83.0	84.2	1.78	6.3	3.7	59.0	34.3
DWC 500/1.5	1.5	2.0	IE2	78.6	83.0	84.2	1.78	6.3	3.7	59.0	34.3
DWC 500/2.2	2.2	3.0	IE2	83.1	85.7	86.2	2.55	7.8	4.5	75.0	43.5
DWC 500/3.0	3.0	4.0	IE2	85.0	86.7	86.3	3.48	10.6	6.1	100.0	57.7

NOISE DATA

Pump type	Power		L_{pA} - dB(A) *
	[kW]	[HP]	
DWC 300/1.1	1.1	1.5	<70
DWC 300/1.5	1.5	2.0	
DWC 500/1.5	1.5	2.0	
DWC 500/2.2	2.2	3.0	
DWC 500/3.0	3.0	4.0	

* Mean value of several measures at 1m distance around the
Tollerance ± 2.5 dB.