



**EBARA**

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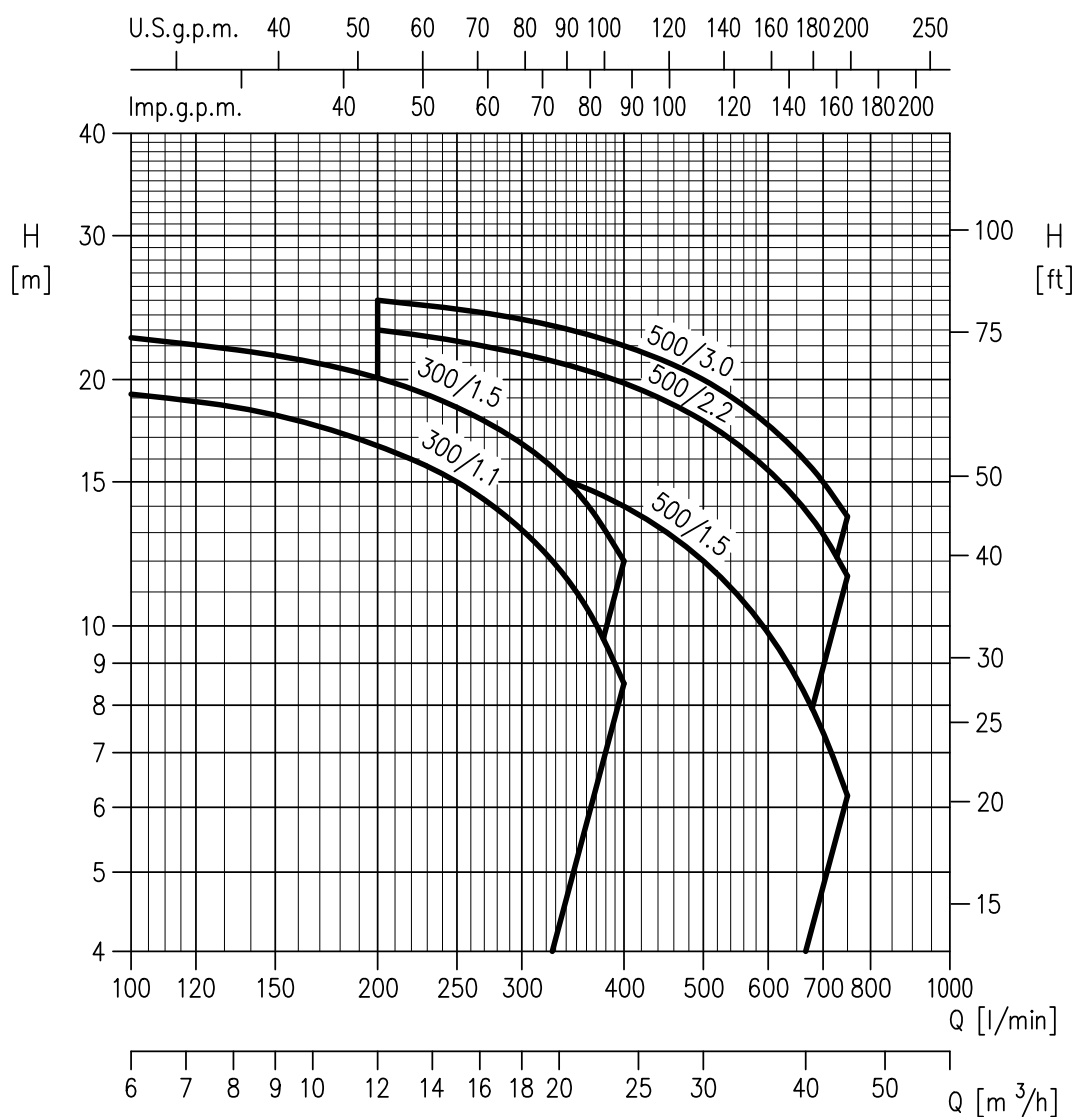
## SPECIFICATION

50Hz

Rev. E

PUMP		
Liquid Handled	Type of liquid	Moderate aggressive fluids, glycol solutions, liquids containing Impurities, liquids suitable for industrial washing equipments. Not suitable for drinking water. For other industrial fluids please contact our Technical Customer Service.
	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 version see page 301)
	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 IE3 from 1.1 kW up to 3.0 kW
No. of Poles	2
Rotation speed [min <sup>-1</sup> ]	≈ 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 – M20x1.5 (See page 400)



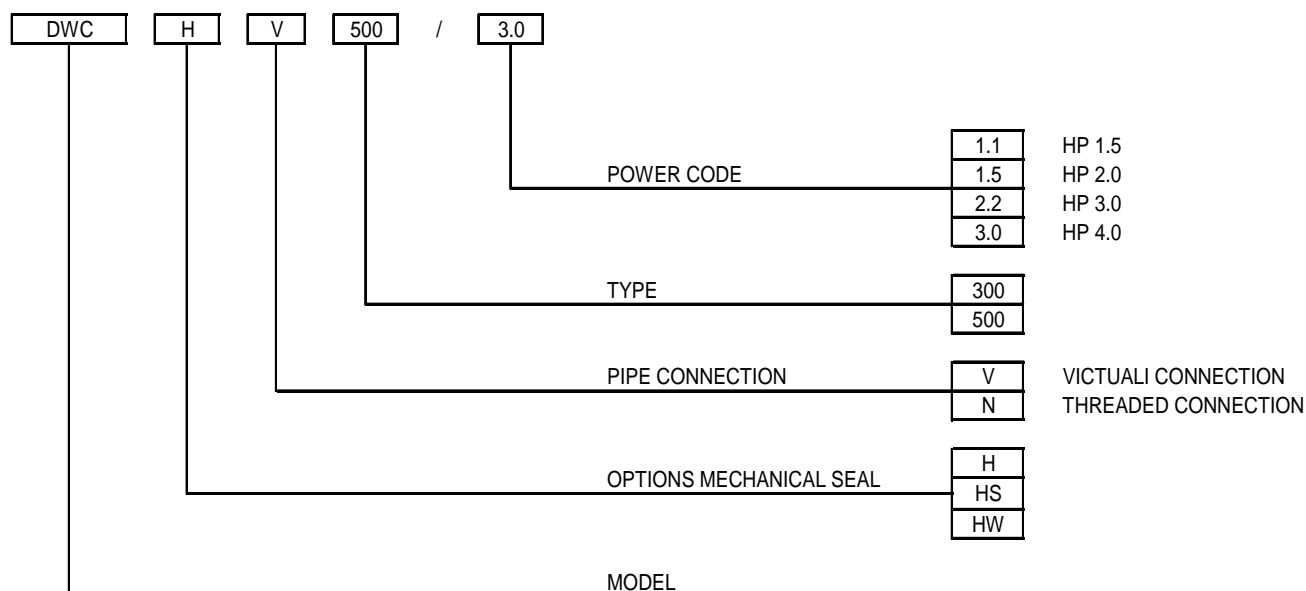
Pump type	Power		Q=Capacity													
			l/min	0	100	150	200	250	300	350	400	500	600	700	750	
	[kW]	[HP]	m³/h	0	6	9	12	15	18	21	24	30	36	42	45	
H=Total head in meters																
DWC 300/1,1	1.1	1.5	21.0	19.2	18.1	16.6	15.0	13.1	11.0	8.5	-	-	-	-		
DWC 300/1,5	1.5	2	24.5	22.5	21.4	20.1	18.5	16.7	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

Rev. E

## 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)

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.

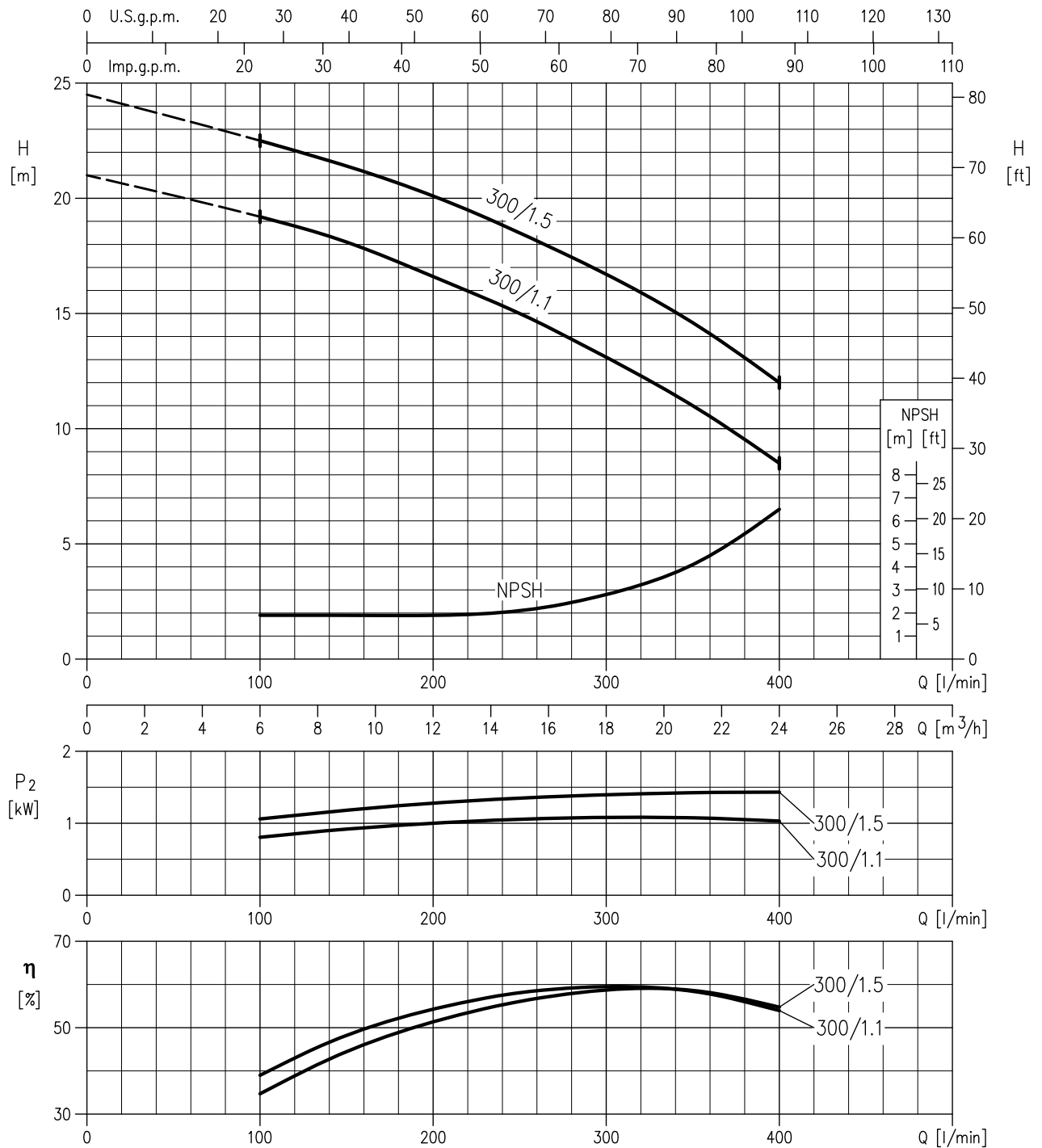
In order to avoid the risk of over-heating, the pumps should not be used at a flow rate below 10% of best efficiency point.

Symbols explanation:

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

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

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

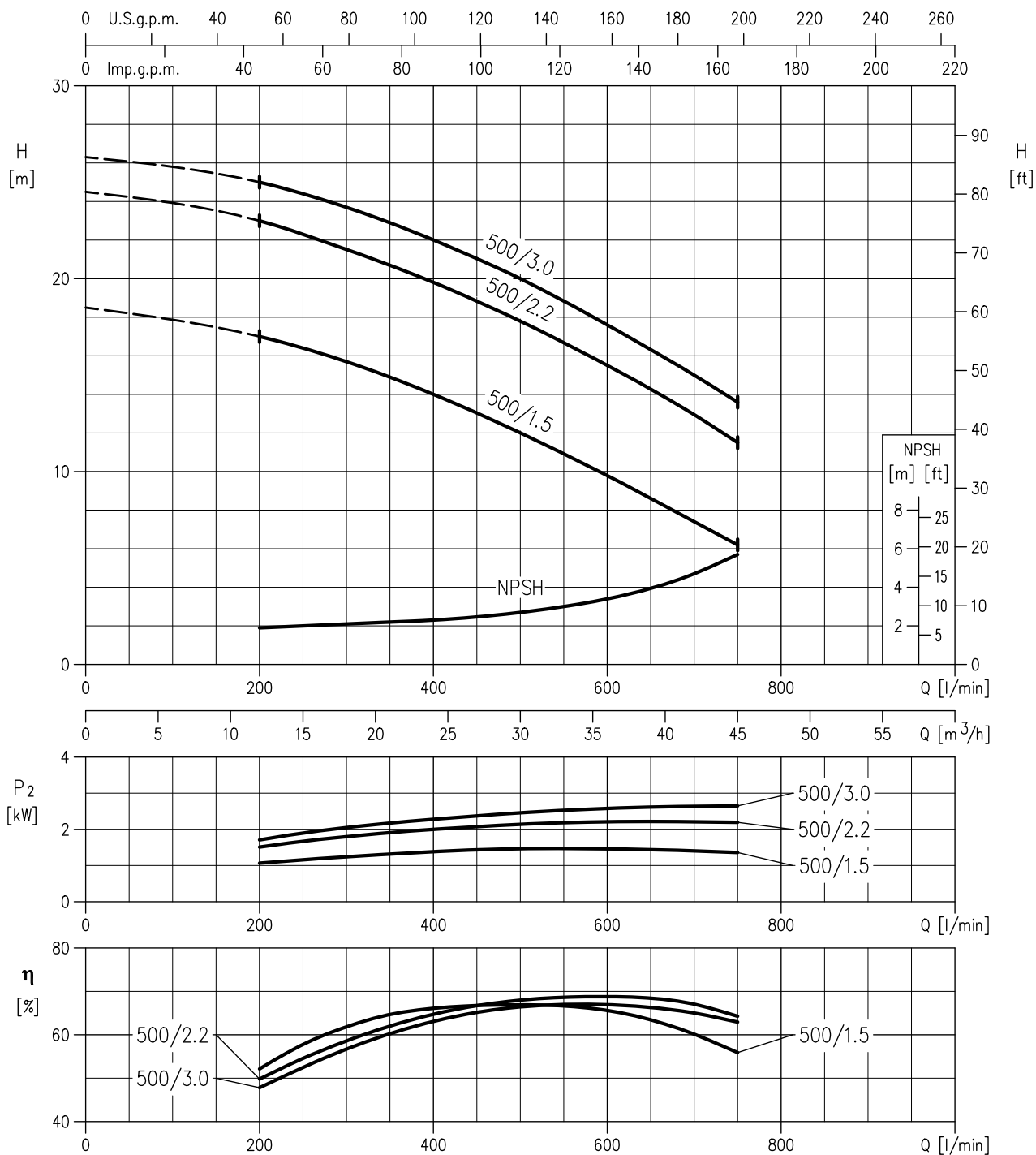


Rotation speed  $\approx 2900 \text{ min}^{-1}$   
 Test standard: ISO 9906 – Annex A

500/1.5 (1.5 kW) – Impeller diameter = 125 mm

500/2.2 (2.2 kW) – Impeller diameter = 140 mm

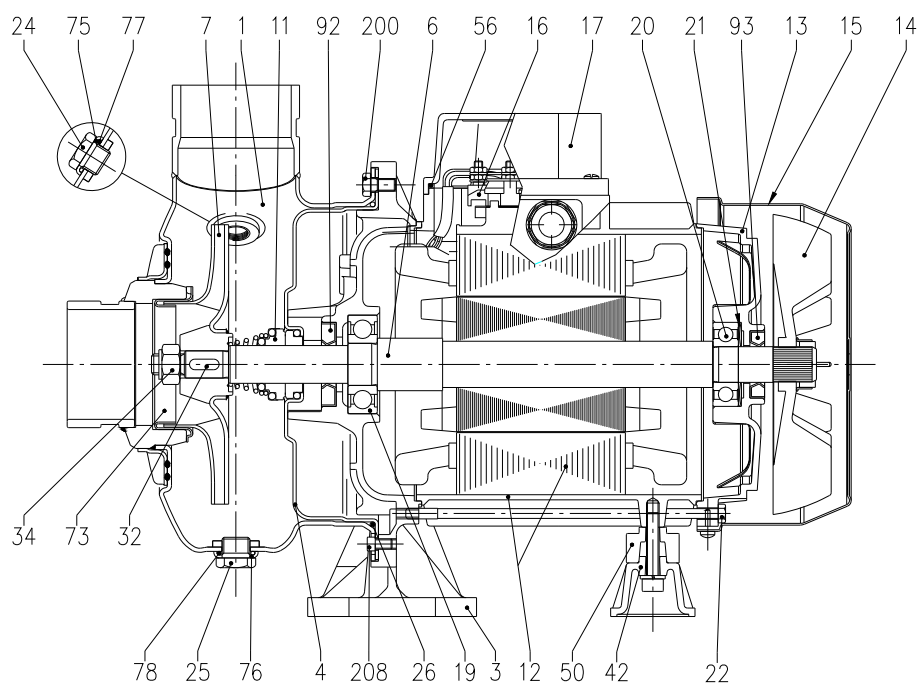
500/3.0 (3.0 kW) – Impeller diameter = 148 mm



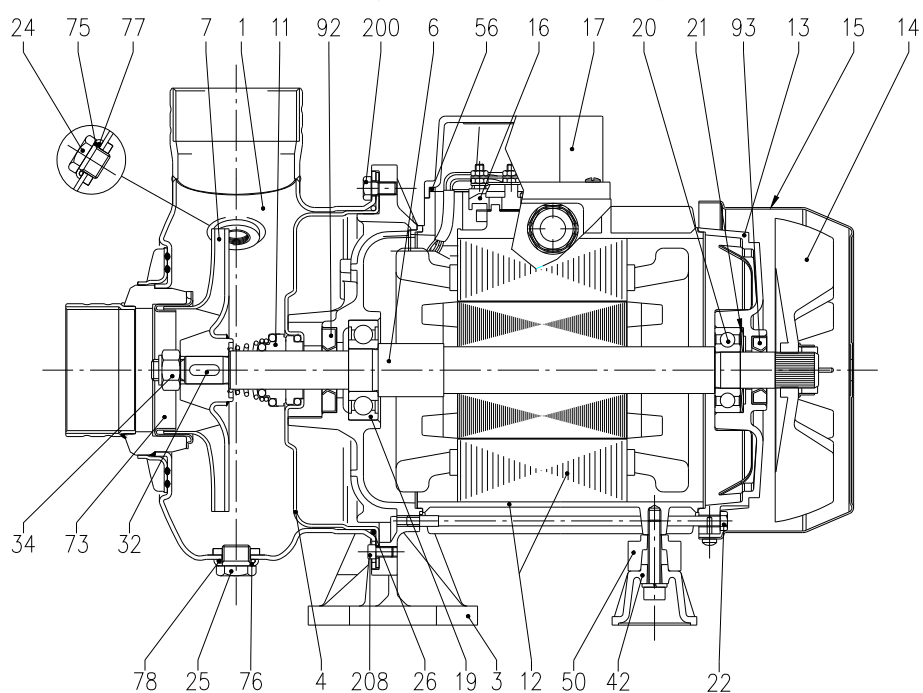
Rotation speed  $\approx 2900 \text{ min}^{-1}$   
 Test standard: ISO 9906 – Annex A

## SECTIONAL VIEW DRAWING

DWC-V (Victaulic connection)



DWC-N (Threaded connection)





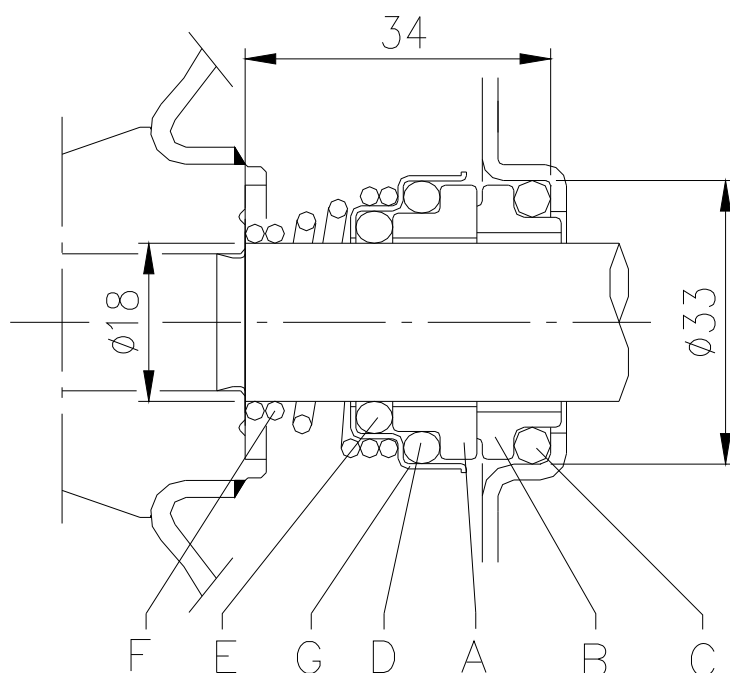
## SECTIONAL VIEW TABLE

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	Draining 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	1
		For 2,2 and 3.0 kW		25x40x7	without spring	
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

## MECHANICAL SEAL



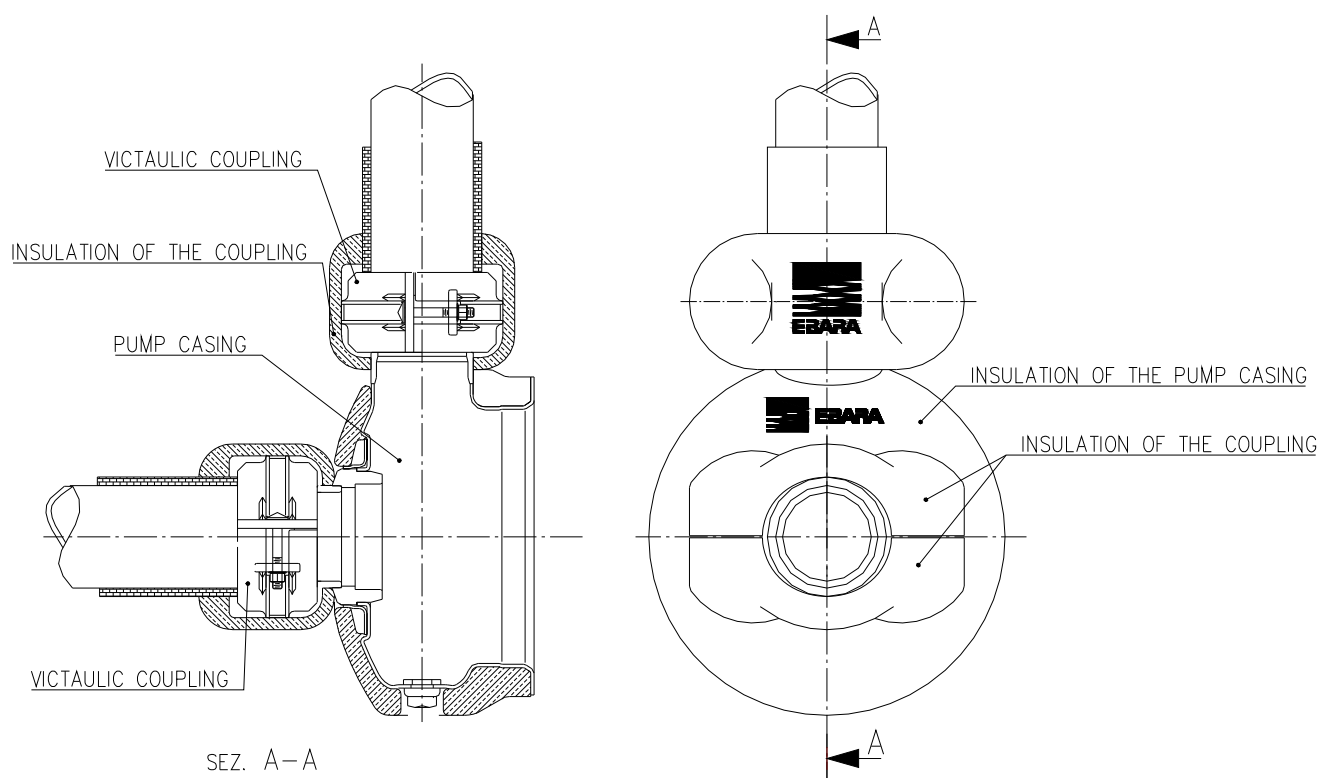
REF	PART NAME	MATERIAL				
		Product standard (DWC)	(DWCH)	(DWCHS)	Optional (DWCHW)	(Optional)
A	Rotary seal ring	ceramic	Ceramic	Silicon carbide	Tungsten carbide	Ceramic
B	Stationary seal ring	carbon graphite	Carbon graphite	Silicon carbide	Tungsten carbide	Carbon graphite
C	O Ring	EPDM	FPM	FPM	FPM	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	(*) Pump side	Pump side	(*) Pump side
DWC 300/1,1	6204 2RSH	6204-ZZ C3	6204 2RSH	6204-ZZ C3
DWC 300/1,5	6204 2RSH	6204-ZZ C3	6204 2RSH	6204-ZZ C3
DWC 500/1,5	6204 2RSH	6204-ZZ C3	6204 2RSH	6204-ZZ C3
DWC 500/2,2	6305 2RS1	6305-ZZ C3	6305 2RS1	6305-ZZ C3
DWC 500/3,0	6305 2RS1	6305-ZZ C3	6305 2RS1	6305-ZZ C3

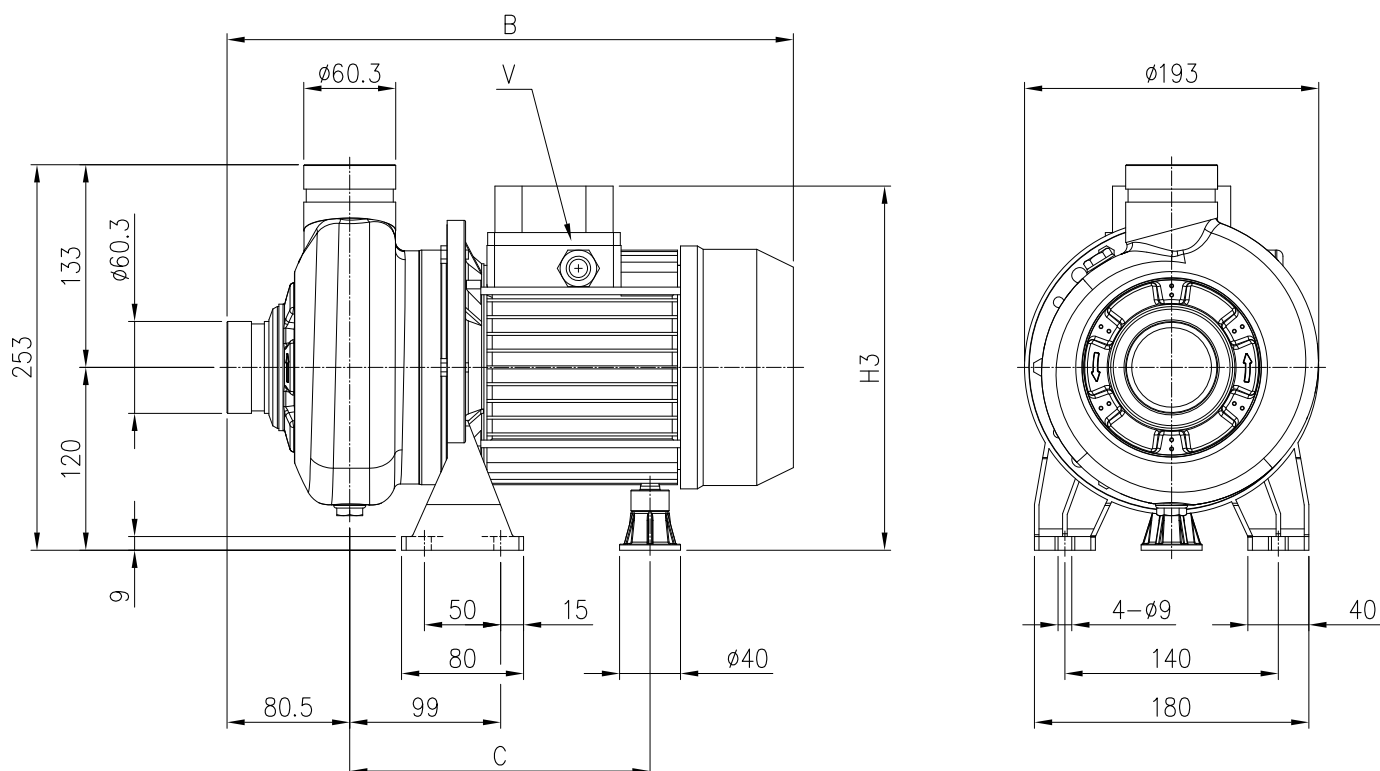
(\*) Only for IE3 Motors

## 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			

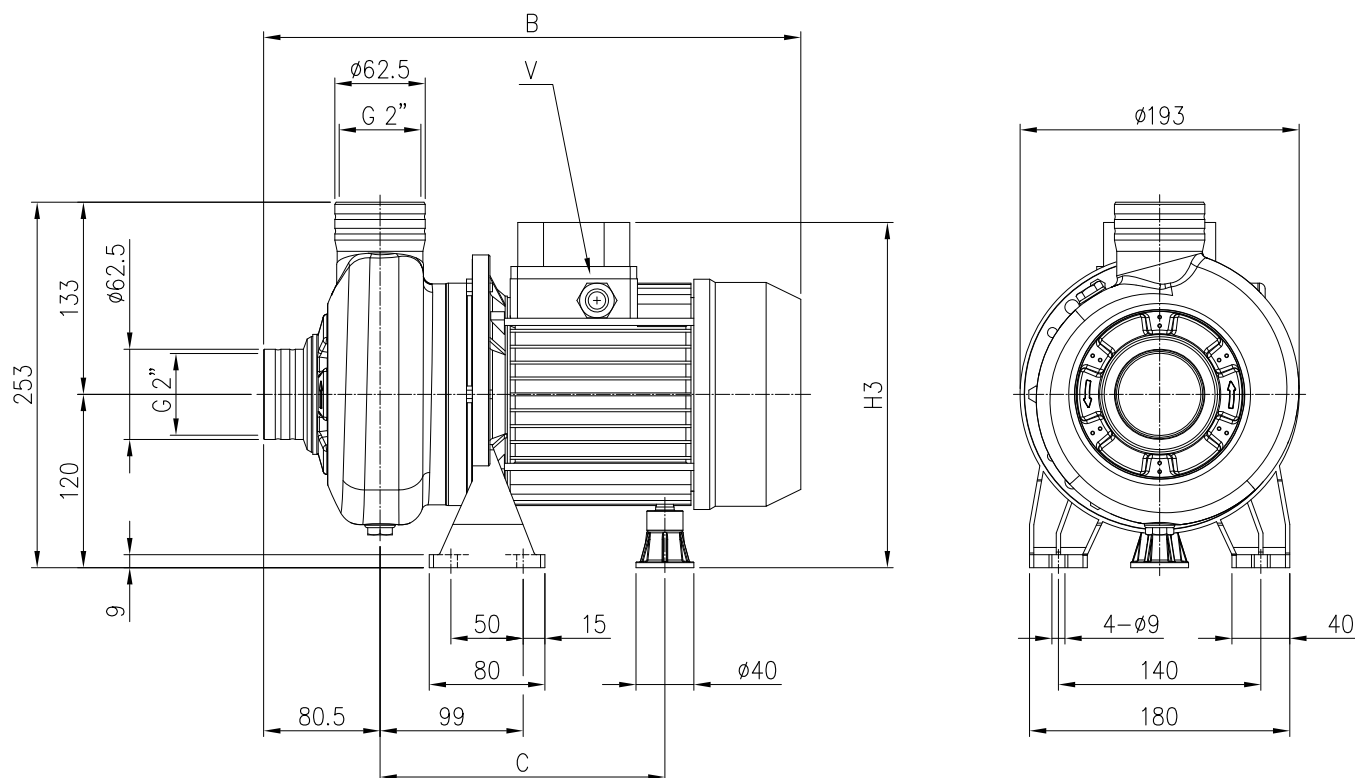
## DWC-V (VICTAULIC CONNECTION)



Pump type	Dimensions [mm]						Weight [kgf]	
	B	(*)	C	H3	V	(*)		(*)
DWC-V 300/1.1	372	397	197	239	PG11	M20x1.5	14.5	15.4
DWC-V 300/1.5	385	397.5	197	239	PG11	M20x1.5	16	16.9
DWC-V 500/1.5	385	397.5	197	239	PG11	M20x1.5	17	17.9
DWC-V 500/2.2	418	396.5	230 ÷ 241	244	PG13.5	M20x1.5	20.3	20.3
DWC-V 500/3.0	457	457	230 ÷ 241	244	PG13.5	M20x1.5	22.3	22.3

(\*) Only for IE3 Motors

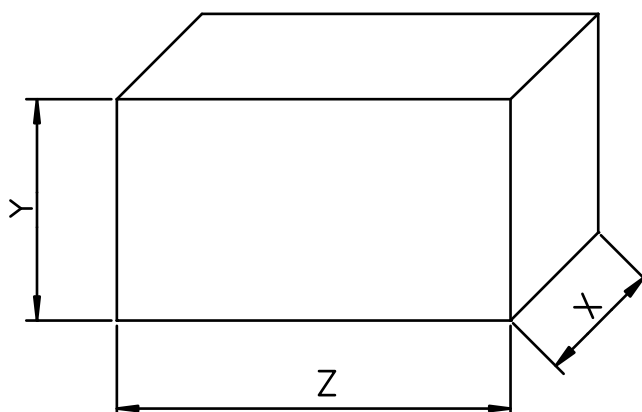
## DWC-N (THREADED CONNECTION)



Pump type	Dimensions [mm]						Weight [kgf]	
	B	(*)	C	H3	V	(*)		(*)
DWC-N 300/1.1	372	397	197	239	PG11	M20x1.5	14.5	15.4
DWC-N 300/1.5	385	397.5	197	239	PG11	M20x1.5	16	16.9
DWC-N 500/1.5	385	397.5	197	239	PG11	M20x1.5	16.5	17.4
DWC-N 500/2.2	418	396.5	230 ÷ 241	244	PG13.5	M20x1.5	20.3	20.3
DWC-N 500/3.0	457	457	230 ÷ 241	244	PG13.5	M20x1.5	22.3	22.3

(\*) Only for IE3 Motors

## PACKING



Pump type	Packing [mm]			Weight [kgf]	
	X	Y	Z		(*)
DWC 300/1.1	205	280	432	15.5	16.4
DWC 300/1.5	205	280	432	17	17.9
DWC 500/1.5	205	280	432	18	18.9
DWC 500/2.2	205	280	432	21.5	21.5
DWC 500/3.0	205	280	477	23.5	23.5

(\*) Only for IE3 Motors

## MOTOR DATA

Pump type	Power		Efficiency	Efficiency (% load)			Input [kW]	Full load current [A]		Locked rotor current [A]	
	[kW]	[HP]		η %				230 V	400 V	230 V	400 V
				50%	75%	100%					
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 300/1.1	1.1	1.5	IE3	83.0	85.8	85.6	1.77	5.8	3.3	47.4	27.4
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 300/1.5	1.5	2.0	IE3	82.7	86.1	87.0	1.72	6.6	3.8	66.6	38.4
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 500/1.5	1.5	2.0	IE3	82.7	86.1	87.0	1.72	6.6	3.8	66.6	38.4
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 500/2.2	2.2	3.0	IE3	85.8	86.2	87.1	2.56	7.8	4.5	63.3	36.6
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
DWC 500/3.0	3.0	4.0	IE3	85.9	87.5	87.1	3.44	11.1	6.4	90.0	52.0

## 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  
Tolerance  $\pm 2.5$  dB.