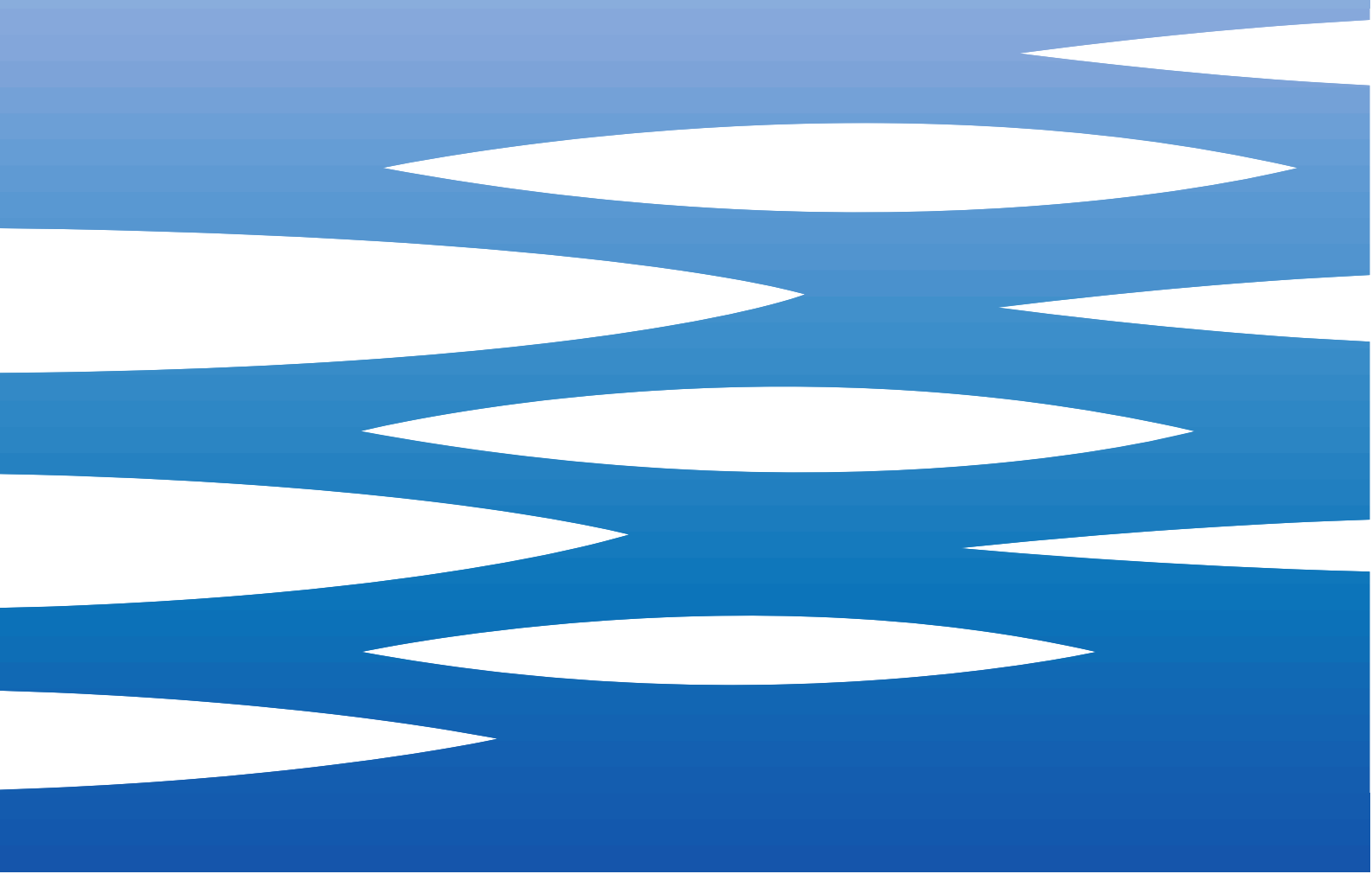




EBARA



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SPECIFICATION

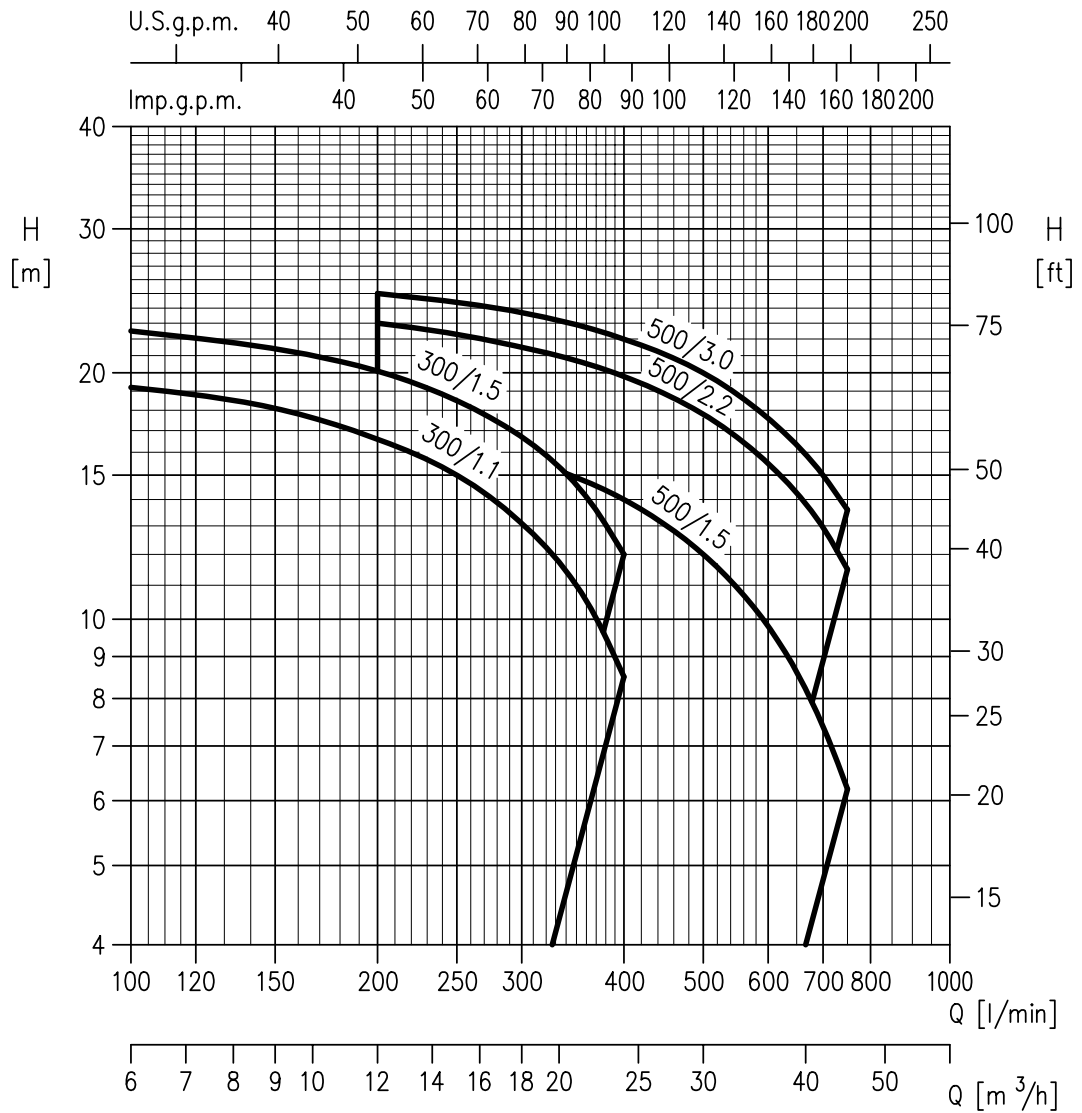
50Hz

Rev. G

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 (Special mechanical seal for all models) max. +90 max. +110 (H-HS-HW-HSW)
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 9906:2012 Grade 3B

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 ⁻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 – M20x1.5 (See page 400)	

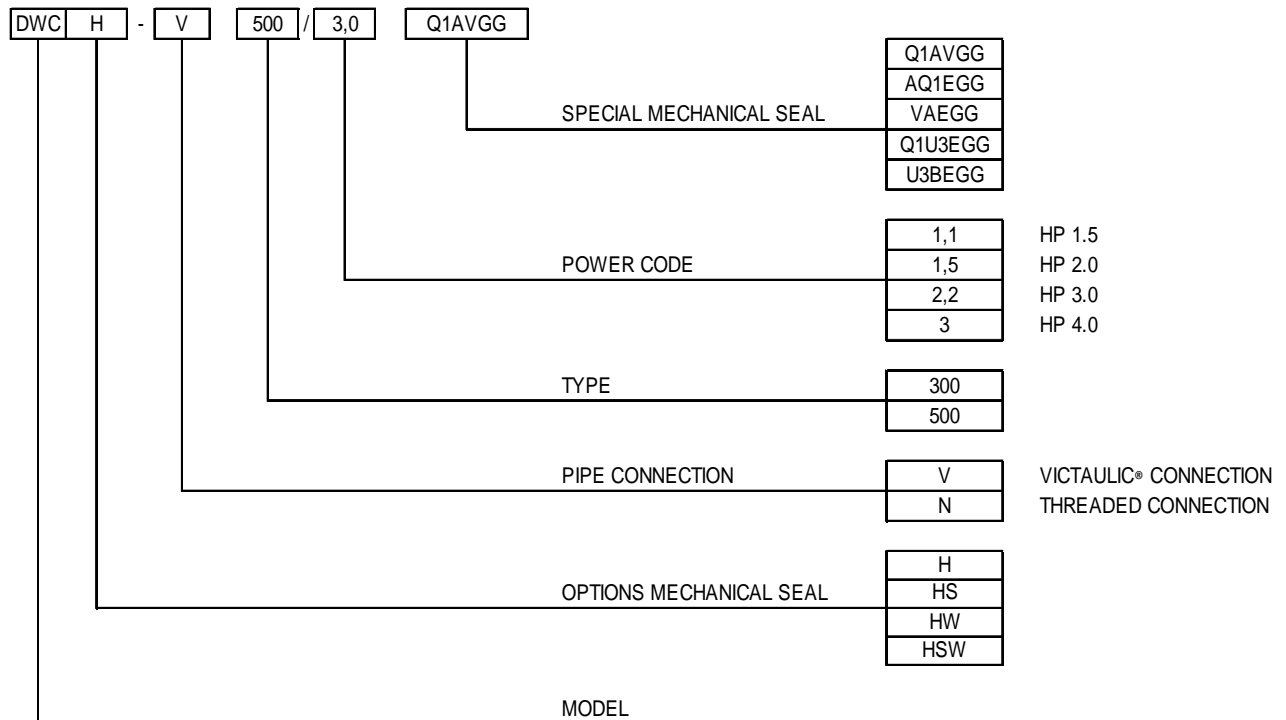
PERFORMANCE RANGE



SELECTION CHART

Pump type	Power		Q=Capacity												
			l/min		m³/h										
	[kW]	[HP]	0	100	150	200	250	300	350	400	500	600	700	750	
			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



PERFORMANCE CURVE SPECIFICATIONS

The specifications below qualify the curves shown on the following pages.

Tolerances according to ISO 9906:2016 - Grade 3B

The curves refer to effective speed of asynchronous motors at 50 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)

The NPSH curve is an average curve obtained in the same conditions of performance curves.

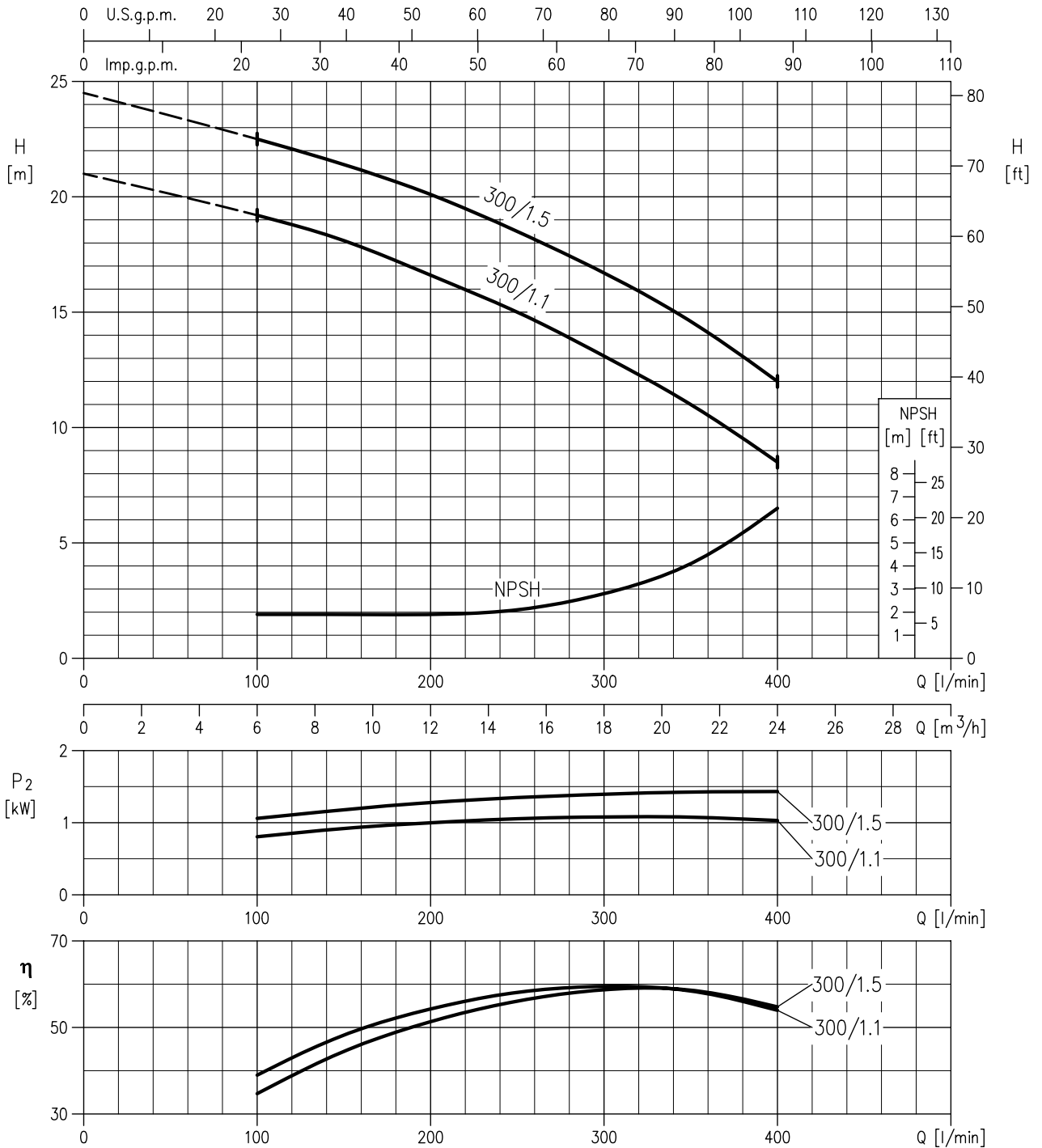
The continuous curves indicate the recommended working range. The dotted curve is only a guide.

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:

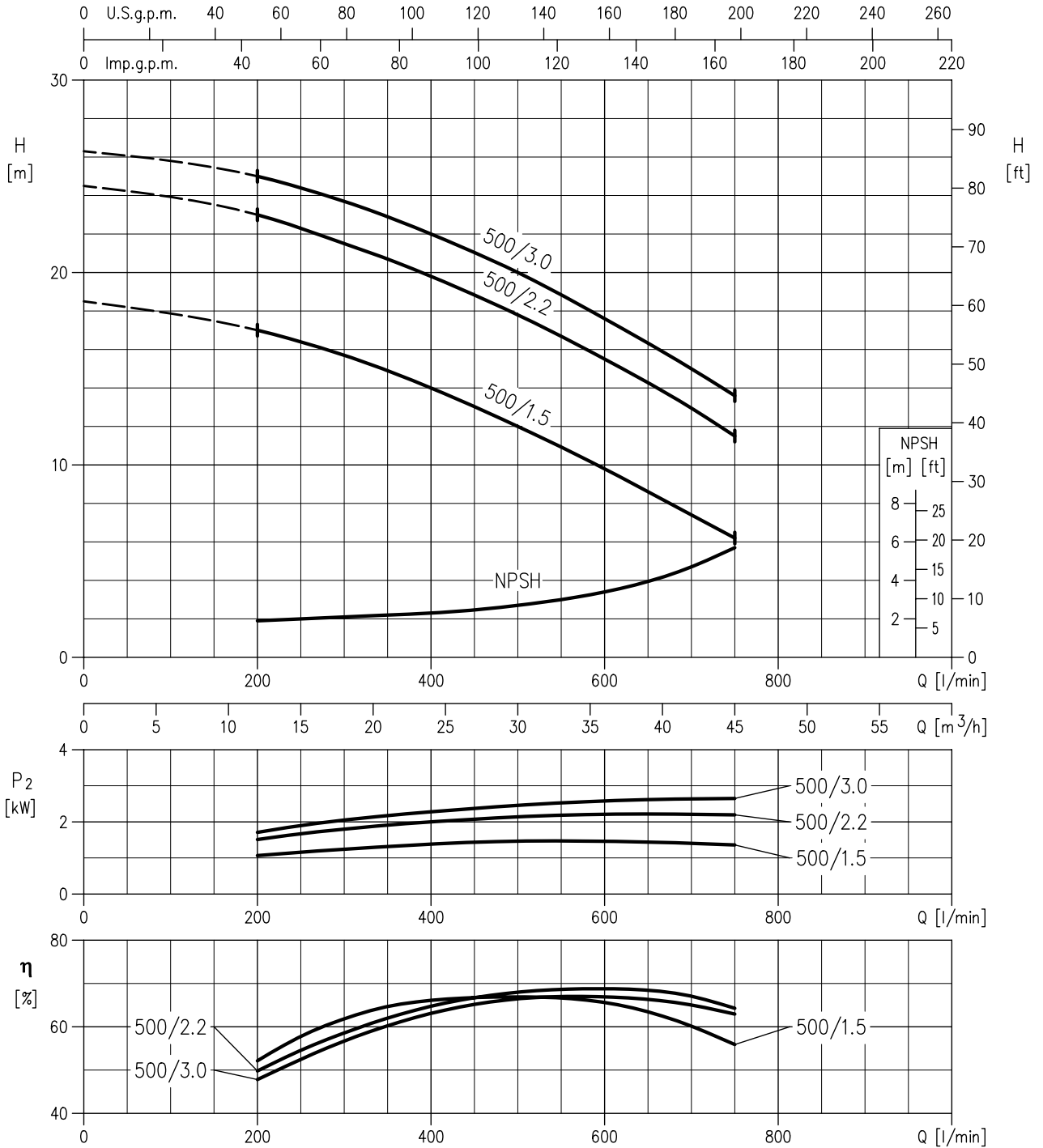
- Q = volume flow rate
- H = total head
- P_2 = pump power input (shaft power)
- η = pump efficiency
- NPSH = net positive suction head required by the pump

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



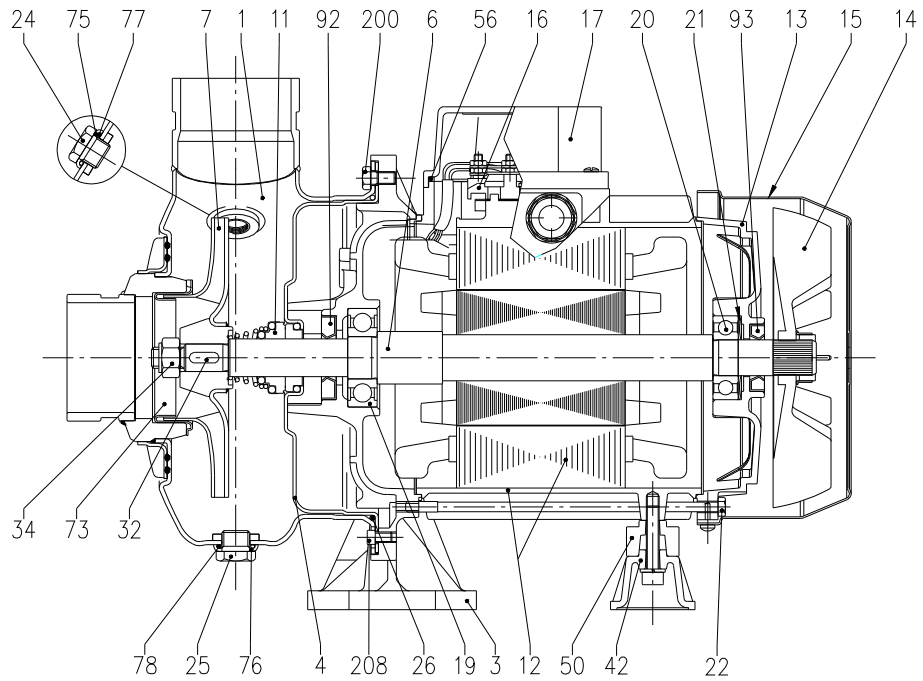
Rotation speed $\approx 2900 \text{ min}^{-1}$
 Test standard: ISO 9906:2012 - Grade 3B

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

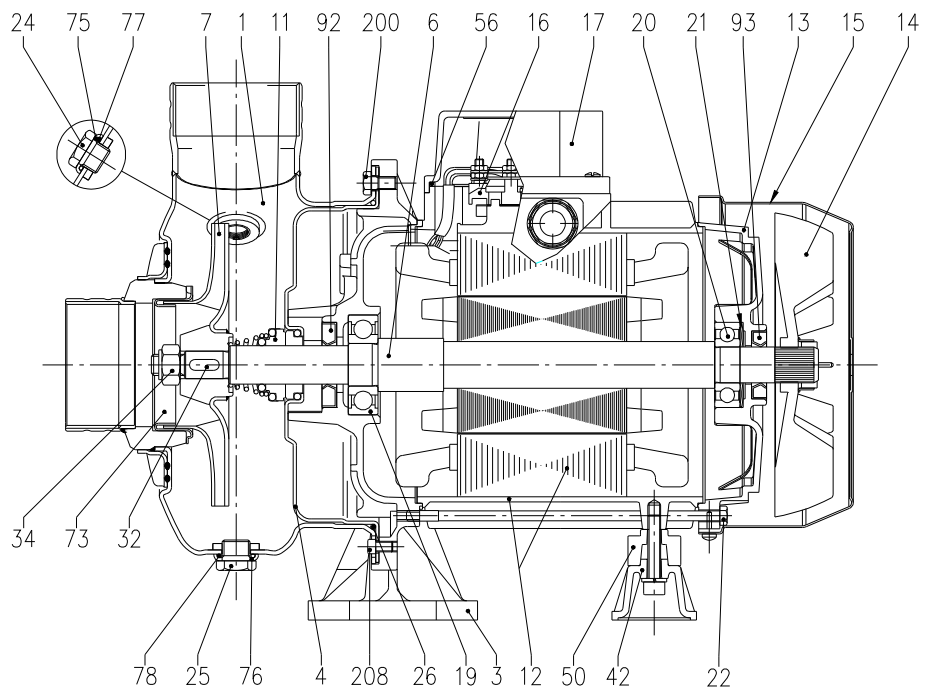


Rotation speed ≈ 2900 min⁻¹
 Test standard: ISO 9906:2012 - Grade 3B

SECTIONAL VIEW DRAWING
DWC-V (Victaulic connection)



DWC-N (Threaded connection)



SECTIONAL VIEW TABLE

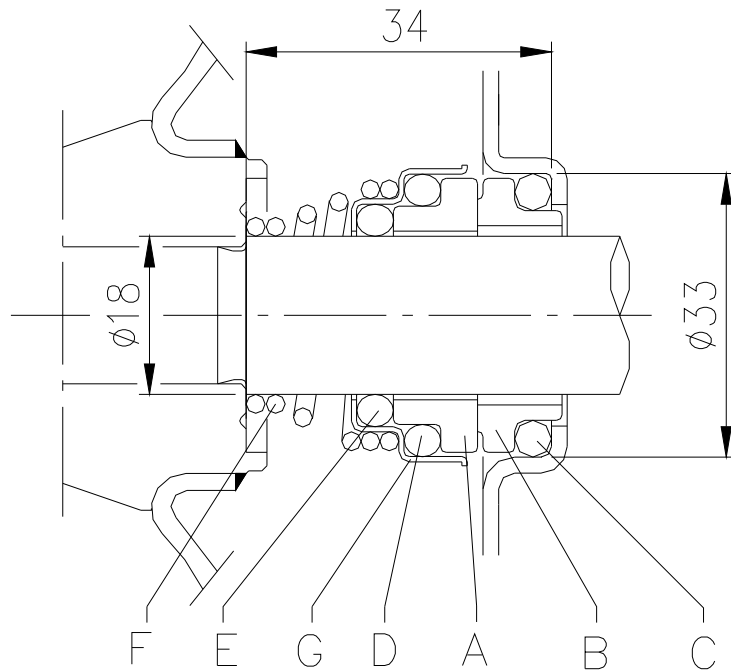
N°	PART NAME	MATERIAL	DIMENSIONS	STANDARD	Q.TY
001	Casing	EN 1.4301 (AISI 304)			1
003	Motor bracket	Aluminium			1
004	Casing cover	EN 1.4301 (AISI 304)			1
006	Shaft with rotor	EN 1.4301(AISI 304)-Wet extension			1
007	Impeller	EN 1.4301 (AISI 304)			1
011	Mechanical seal	Ceramic / Carbon / EPDM	See table 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. 303		1
020	Bearing	-	See table pag. 303		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 [2]	EPDM / FPM	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	DIN 3760	1
			For 2.2 and 3.0 kW	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 H-HS-HW-HSW-Q1AEGG

EPDM for DWC-AQ1EGG-VAEGG-Q1U3EGG-U3BEGG

MECHANICAL SEAL



REF	PART NAME	MATERIAL				
		Standard	Optional			
			(H)	(HS)	(HW)	(HSW)
A	Rotary seal ring	Ceramic	Ceramic	Silicon carbide	Tungsten carbide	Silicon carbide
B	Stationary seal ring	Carbon graphite	Carbon graphite	Silicon carbide	Tungsten carbide	Tungsten carbide
C	O Ring	EPDM	FPM	FPM	FPM	FPM
D	O Ring	EPDM	FPM	FPM	FPM	FPM
E	O Ring	EPDM	FPM	FPM	FPM	FPM
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

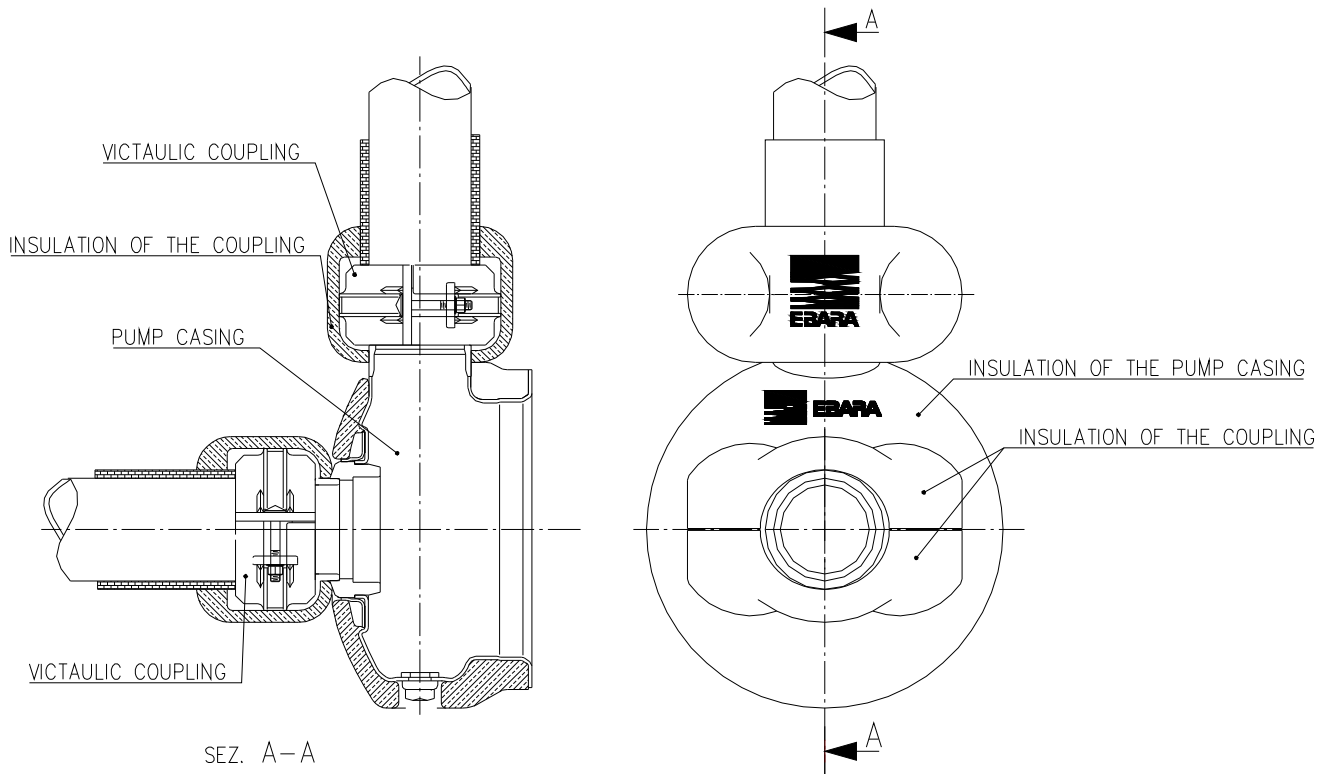
REF	PART NAME	MATERIAL				
		Special				
		(Q1AVGG)	(AQ1EGG)	(VAEGG)	(Q1U3EGG)	(U3BEGG)
A	Rotary seal ring	Silicon carbide	Metallised carbon	Ceramic	Silicon carbide	Tungsten carbide
B	Stationary seal ring	Metallised carbon	Silicon carbide	Metallised carbon	Tungsten carbide	Graphite
C	O Ring	FPM	EPDM	EPDM	EPDM	EPDM
D	O Ring	FPM	EPDM	EPDM	EPDM	EPDM
E	O Ring	FPM	EPDM	EPDM	EPDM	EPDM
F	Self driving spring	AISI 316	AISI 316	AISI 316	AISI 316	AISI 316
G	Frame	AISI 316	AISI 316	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

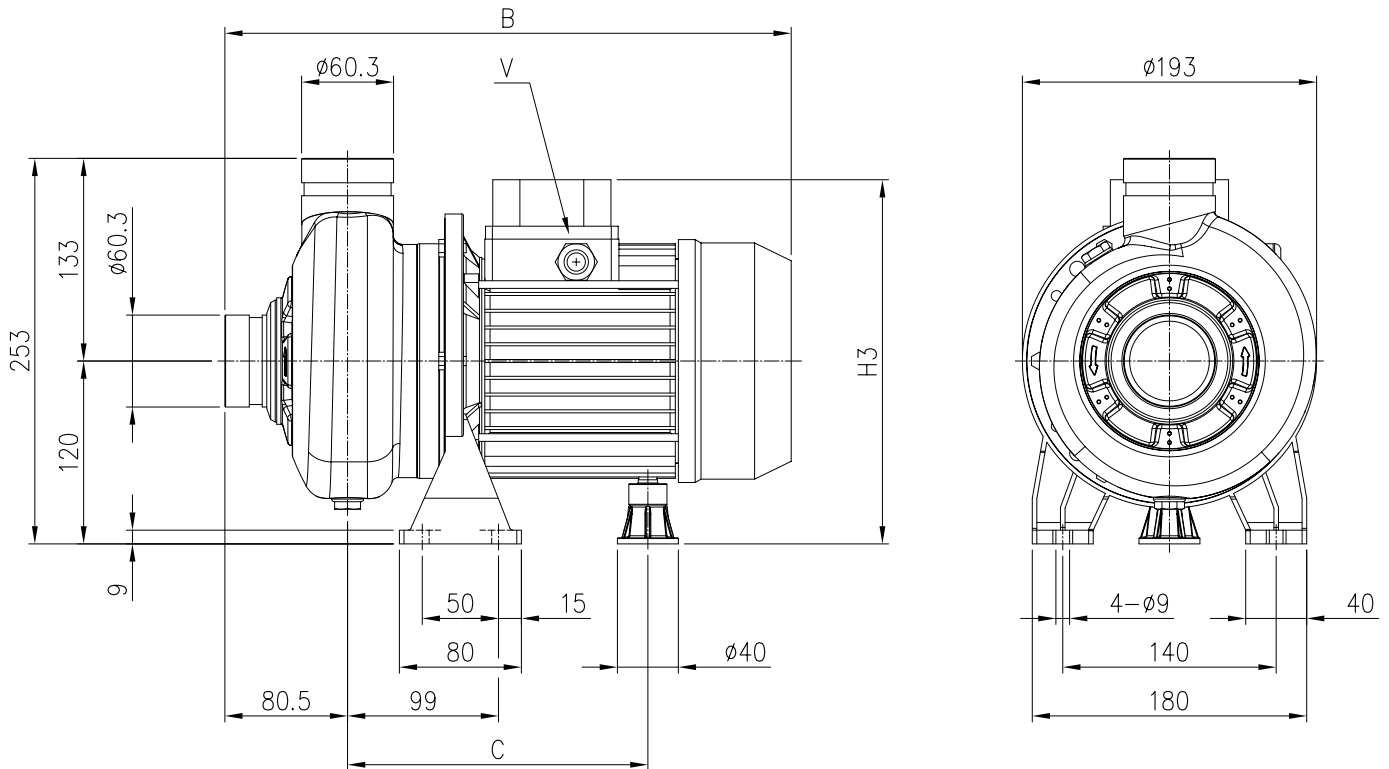
(*) Only for IE3 Motors

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	NOT NECESSARY	NOT NECESSARY
	DWC-N 300/1.5			
	DWC-N 500/1.5			
	DWC-N 500/2.2			
	DWC-N 500/3.0			

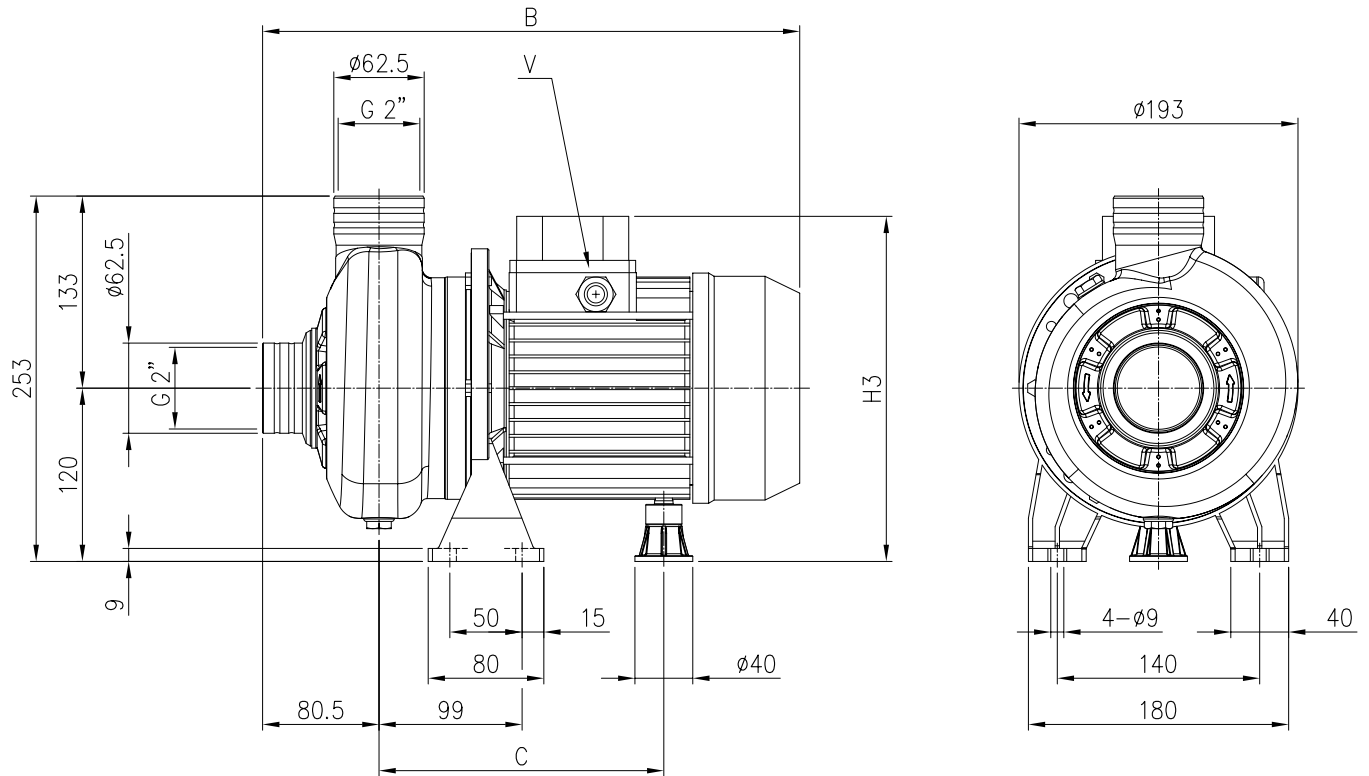
DWC-V (VICTAULIC CONNECTION)



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

(*) Only for IE3 Motors

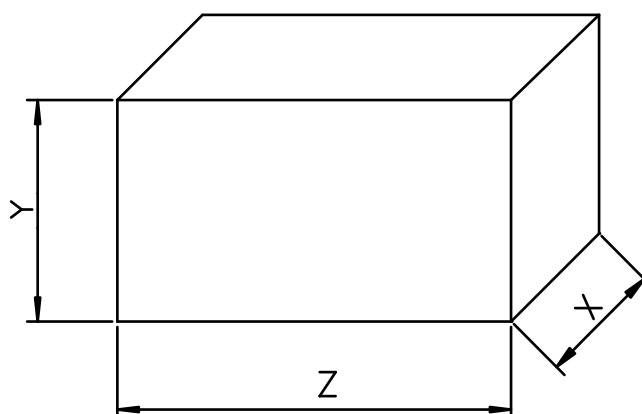
DWC-N (THREADED CONNECTION)



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

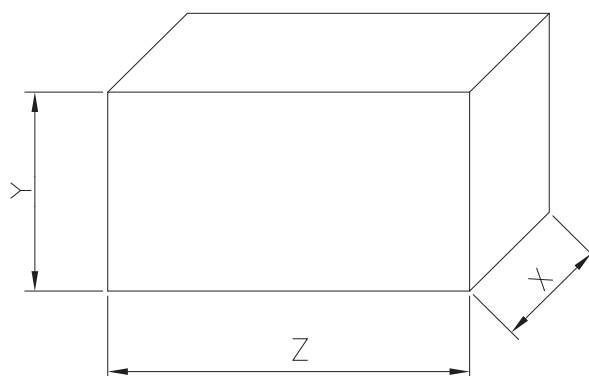
Pump type	Power		Efficiency	Efficiency (% load)			Input [kW]	Full load current [A]		Locked rotor current [A]	
	[kW]	[HP]		η %				230 V	400 V	230 V	400 V
				50%	75%	100%					
DWC 300/1.1	1.1	1.5	IE2	79.7	82.5	83.0	1.80	5.5	3.2	45.0	25.7
DWC 300/1.1	1.1	1.5	IE3	83.5	84.3	84.6	1.77	5.8	3.3	47.4	27.4
DWC 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	86.2	87.0	86.0	2.55	8.2	4.7	66.6	38.4
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
Tolerance ± 2.5 dB.

PACKING



Type pumps	Packing [mm]				Weight [kgf]		
	X	Y	Z	(*)	[1~]	[3~]	(*) [3~]
CVM A/4	212	208	427	-	11.9	11.9	-
CVM A/6					12.6	12.5	-
CVM A/8					13.6	13.5	-
CVM A/10					17.6	17.7	17.7
CVM A/12	252	208	590	617	18.6	19.5	19.5
CVM A/15					19.6	19.7	19.7
CVM A/18					22.3	23.6	24.5
CVM B/10					16.8	16.8	16.8
CVM B/12	212	208	537	537	17.9	18.6	18.6
CVM B/15					19.1	19.0	19.0
CVM B/20	252	208	590	617	22.4	23.6	24.5
CVM B/23					23.7	24.5	25.4
CVM B/25					-	24.8	25.7

[1~] Single phase
 [3~] Three phase
 (*) Only for IE3 Motors

MOTOR DATA

Pump type		Power		Efficiency		Capacitor		Efficiency (% load)			Input [kW]		Full load current [A]			Locked rotor current [A]		
Single Phase	Three Phase	[kW]	[HP]	Single Phase	Three Phase	Single Phase [μF]	[V]	Three phase η %			Single Phase	Three Phase	Single Phase 230 V	Three Phase 230 V	Three Phase 400 V	Single Phase 230 V	Three Phase 230 V	Three Phase 400 V
CVM AM/4	CVM A/4	0.3	0.4	-	-	10	450	-	-	-	0.54	0.49	2.6	1.9	1.1	8.5	7.0	3.9
CVM AM/6	CVM A/6	0.44	0.6	-	-	12.5	450	-	-	-	0.69	0.69	3.2	2.3	1.3	9.7	10.0	5.6
CVM AM/8	CVM A/8	0.6	0.8	-	-	14	450	-	-	-	0.89	0.83	4.0	2.8	1.6	11.9	10.0	6.0
CVM AM/10	CVM A/10	0.75	1	-	IE2	20	450	77.2	80.9	81.3	1.27	0.92	6.0	2.9	1.7	25.1	22.0	12.9
-	CVM A/10	0.75	1	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7	-	19.7	11.4
CVM AM/12	CVM A/12	0.9	1.2	-	IE2	31.5	450	79.0	81.7	81.6	1.45	1.35	6.5	4.3	2.5	24.8	31.0	17.8
-	CVM A/12	0.9	1.2	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5	-	28.8	16.6
CVM AM/15	CVM A/15	1.1	1.5	-	IE2	31.5	450	79.0	81.7	81.6	1.60	1.35	7.2	4.3	2.5	29.3	31.0	17.8
-	CVM A/15	1.1	1.5	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5	-	28.8	16.6
CVM AM/18	CVM A/18	1.3	1.8	-	IE2	35	450	79.7	82.5	83.0	1.76	1.80	7.8	5.6	3.2	41.0	45.0	25.7
-	CVM A/18	1.3	1.8	-	IE3	-	-	83.5	84.3	84.6	-	1.77	-	5.8	3.3	-	47.4	27.4
CVM BM/10	CVM B/10	0.75	1	-	IE2	20	450	77.2	80.9	81.3	1.14	0.92	5.6	2.9	1.7	23.5	22.0	12.9
-	CVM B/10	0.75	1	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7	-	19.7	11.4
CVM BM/12	CVM B/12	0.9	1.2	-	IE2	31.5	450	79.0	81.7	81.6	1.38	1.35	6.2	4.3	2.5	23.6	31.0	17.8
-	CVM B/12	0.9	1.2	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5	-	28.8	16.6
CVM BM/15	CVM B/15	1.1	1.5	-	IE2	31.5	450	79.0	81.7	81.6	1.63	1.35	7.4	4.3	2.5	30.1	31.0	17.8
-	CVM B/15	1.1	1.5	-	IE3	-	-	81.7	83.1	82.4	-	1.34	-	4.3	2.5	-	28.8	16.6
CVM BM/20	CVM B/20	1.5	2	-	IE2	40	450	78.6	83.0	84.2	1.91	1.78	8.3	6.3	3.7	43.0	34.3	20.0
-	CVM B/20	1.5	2	-	IE3	-	-	82.7	86.1	87.0	-	1.72	-	6.6	3.8	-	66.6	38.4
CVM BM/23	CVM B/23	1.7	2.3	-	IE2	40	450	80.3	83.4	83.8	2.14	2.09	9.6	6.9	4.0	43.0	34.3	20.0
-	CVM B/23	1.7	2.3	-	IE3	-	-	84.2	86.8	86.9	-	2.01	-	7.1	4.1	-	66.6	38.4
-	CVM B/25	1.85	2.5	-	IE2	-	-	83.0	84.4	83.8	-	2.63	-	8.1	4.7	-	59.0	34.3
-	CVM B/25	1.85	2.5	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7	-	66.6	38.4

NOISE DATA

Pump type		Power		L _{pA} - dB(A) *
Single Phase	Three Phase	[kW]	[HP]	
CVM AM/4	CVM A/4	0.3	0.4	53
CVM AM/6	CVM A/6	0.44	0.6	
CVM AM/8	CVM A/8	0.6	0.8	
CVM AM/10	CVM A/10	0.75	1	62
CVM AM/12	CVM A/12	0.9	1.2	
CVM AM/15	CVM A/15	1.1	1.5	
CVM AM/18	CVM A/18	1.3	1.8	67
CVM BM/10	CVM B/10	0.75	1	62
CVM BM/12	CVM B/12	0.9	1.2	
CVM BM/15	CVM B/15	1.1	1.5	
CVM BM/20	CVM B/20	1.5	2	67
CVM BM/23	CVM B/23	1.7	2.3	
-	CVM B/25	1.85	2.5	

* Mean value of several measures at 1m distance around the pump.

Tolerance ± 2.5 dB.