



EBARA

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SPECIFICATION

60Hz

Rev. A

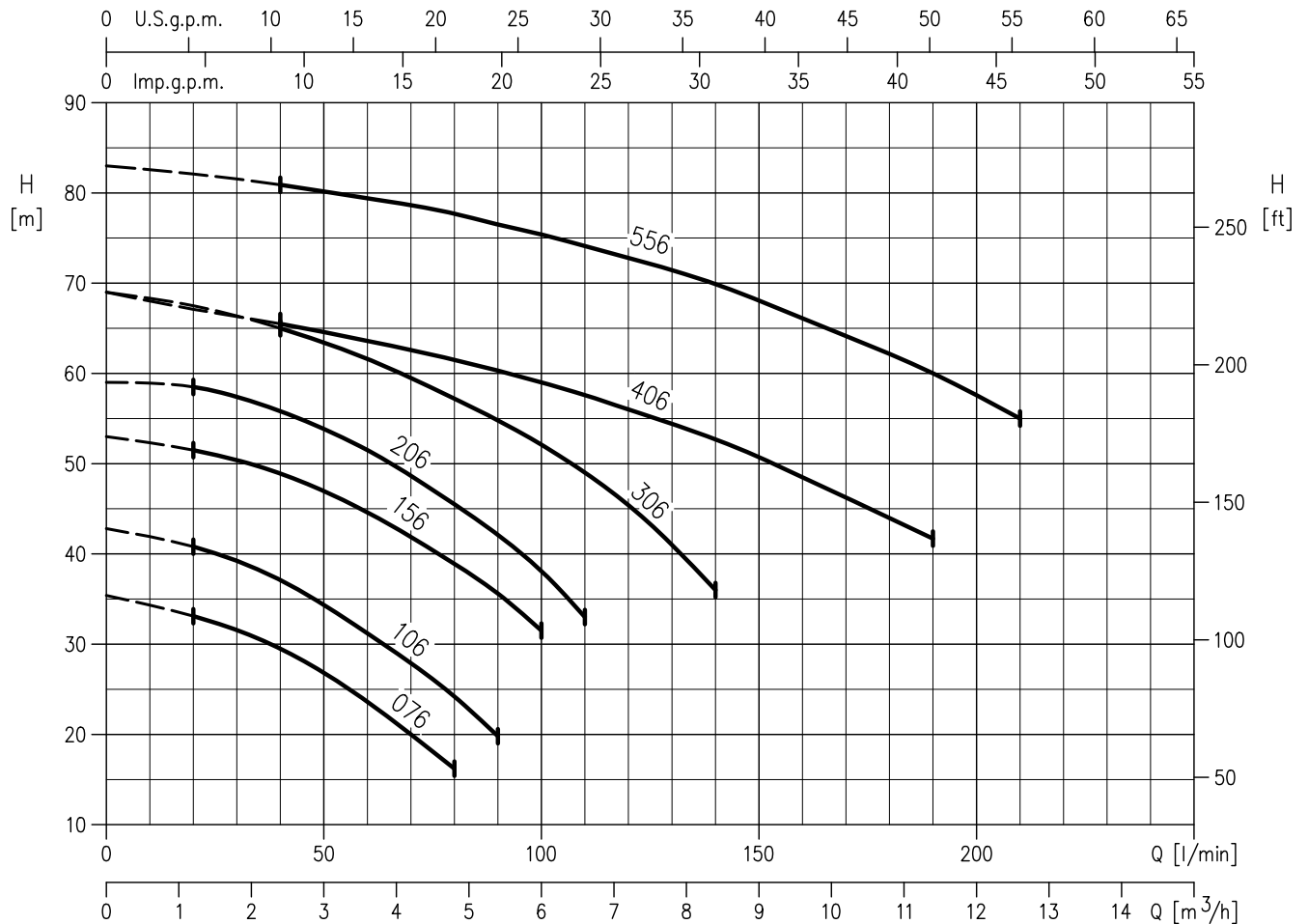
PUMP		
Liquid	Type of liquid	Clean water
Handled	Max temperature [°C]	min. +5 max. +40 (CDA 076 - 106) max. +90 (CDA 156-206-306-406-556)
	Maximum working pressure [MPa]	0.6 (CDA 076-106) 1.0 (CDA 156-206-306-406-556)
Construction	Impeller	Twin closed type
	Shaft seal type	Mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction	G1 (CDA 076-106) G1¼ (CDA 156-206-306) G1½ (CDA 406-556)
	Discharge	G1 (CDA 076-106-156-206-306) G1¼ (CDA 406-556)
Material	Casing	Cast iron
	Impeller	PPE+PS glass fibre reinforced (CDA 076-106) Brass (CDA 156 - 206-306-406-556)
	Casing cover	AISI 304 (CDA 076-106) Cast iron built-in the motor bracket (CDA 156-206-306-406-556)
	Shaft seal	Ceramic/Carbon/NBR
	Shaft	AISI 303 (CDA 076-106-156-206-306) AISI 304 (CDA 406-556)
	Bracket	Aluminium (CDA 076-106) Cast iron (CDA 156-206-306-406-556)
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 44	
Power rating	[kW]	0.55 ÷ 1.5
	[HP]	0.75 ÷ 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	Cast iron / Plastic foot	
Dimensions of cable entry	PG11 - PG13.5 - G 1/2 (see dimensions page 400)	

SELECTION CHART

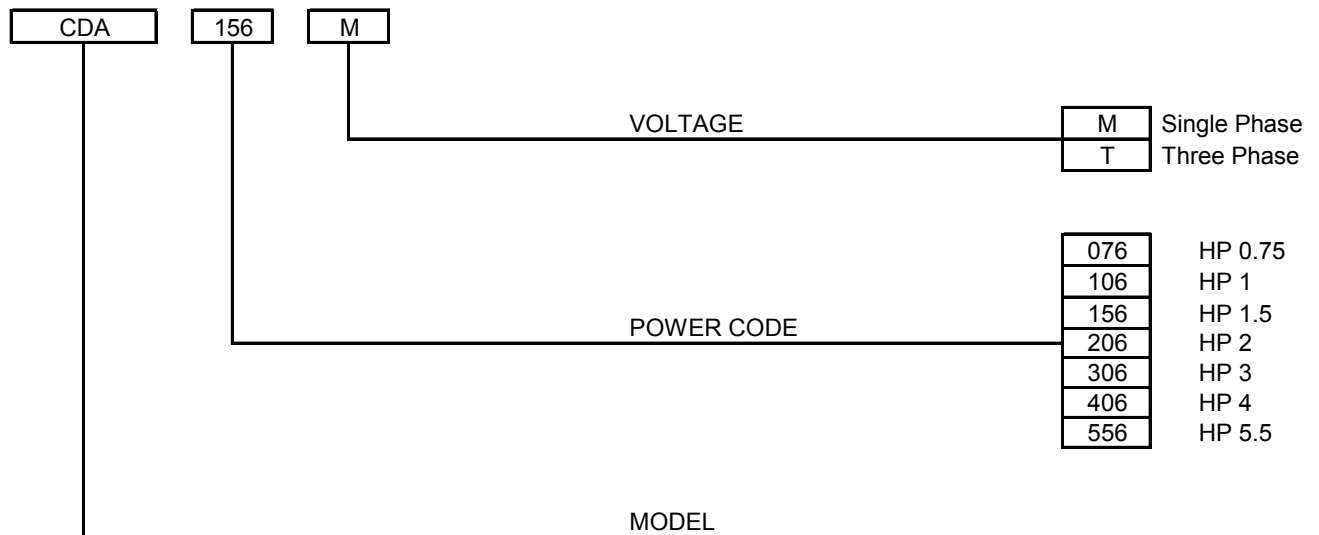
60Hz

Rev. A



Pump type		Power		Q =Capacity													
				l/min	0	20	40	60	80	90	100	110	120	140	160	190	210
Single Phase	Three Phase	[kW]	[HP]	m³/h	0	1.2	2.4	3.6	4.8	5.4	6	6.6	7.2	8.4	9.6	11.4	12.6
H=Total manometric head in meters																	
CDA 076 M	CDA 076 T	0.55	0.75	35.4	33.1	29.5	23.5	16.2	-	-	-	-	-	-	-	-	-
CDA 106 M	CDA 106 T	0.75	1.0	43	41	37	31	24	19.8	-	-	-	-	-	-	-	-
CDA 156 M	CDA 156 T	1.1	1.5	53	51.5	49	44.5	39	35.5	31.5	-	-	-	-	-	-	-
CDA 206 M	CDA 206 T	1.5	2.0	59	58.5	56	51.5	45.5	42	38	33	-	-	-	-	-	-
-	CDA 306 T	2.2	3.0	69	-	65	61.5	57	55	52	49	45.5	36	-	-	-	-
-	CDA 406 T	3.0	4.0	69	-	65.5	63.5	61.5	60.5	59	57.5	56	52.5	48.5	41.5	-	-
-	CDA 556 T	4.0	5.5	83	-	81	79.5	77.5	76.5	75.5	74	73	70	66	60	55	-

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)

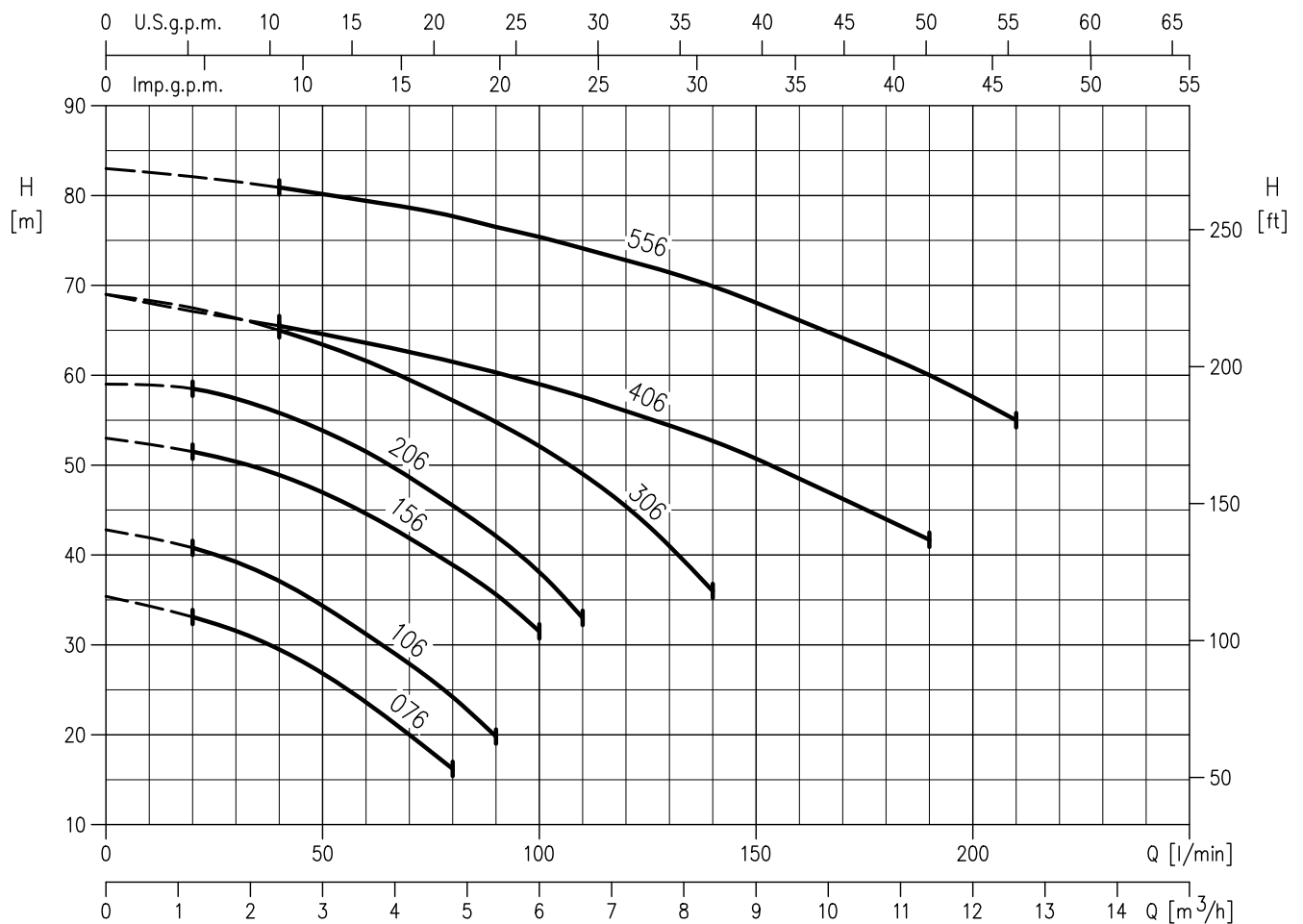
The continuous curves indicate the recommended working range. The dotted curve is only a guide.

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:

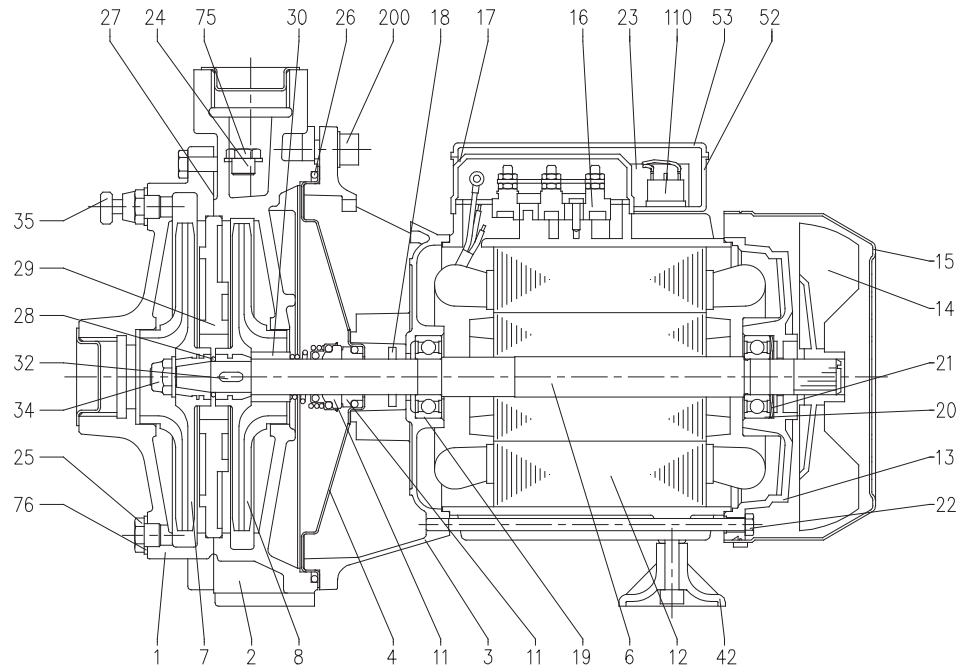
- Q = volume flow rate
- H = total head

CDA 076 (0.6 kW) - Impeller diameter = 103 mm
CDA 106 (0.8 kW) - Impeller diameter = 110 mm
CDA 156 (1.1 kW) - Impeller diameter = 123 mm
CDA 206 (1.5 kW) - Impeller diameter = 128 mm
CDA 306 (2.2-kW) - Impeller diameter = 135 mm
CDA 406 (3 kW) - Impeller diameter = 142 mm
CDA 556 (4 kW) - Impeller diameter = 155.5 mm



Rotation speed $\approx 3450 \text{ min}^{-1}$
 Test standard: ISO 9906 – Annex A

SECTIONAL VIEW



N°	PART NAME	MATERIAL	Q. TY	N°	PART NAME	MATERIAL	Q. TY
1	Casing	Cast iron	1	23	Capacitor [1]	-	1
2	Casing	Cast iron	1	24	Priming plug	Brass	1
3	Motor bracket	[8]	1	25	Drain plug	Brass	1
4	Casing cover	[9]	1	26	O-ring	NBR	1
6	Shaft with rotor	[6]	1	27	Gasket	Compression cellulose fibre	1
7	Impeller	[4]	1	28	O-ring	NBR	1
8	Impeller	[4]	1	29	Intermediate plate	Cast iron	1
11	Mechanical seal [7]	Carbon/Ceramic/NBR	1	30	Mechanical seal spacer	Brass	1
12	Motor frame with stator	-	1	32	Key	AISI 316	1
13	Motor cover	Aluminium	1	34	Impeller nut [3]	AISI 304	1
14	Fan	PP	1	35	Air breather valve	Brass	1
15	Fan cover	Fe P04 Zincate	1	42	Foot	PP	1
16	Terminal box	-	1	52	Capacitor box [1]	ABS	1
17	Terminal box cover [2]	Aluminium	1	53	Capacitor box cover [10]	ABS [10]	1
18	Splash ring	NBR	1	75	Washer	Aluminium	1
19	Pump side ball bearing	-	1	76	Washer	Aluminium	1
20	Fan side ball bearing	-	1	110	Protector [5]	-	1
21	Adjusting ring	Steel C70	1	200	Screw	Zn Steel Cl. 8.8 ISO 898-1	4
22	Tie rod	Fe 42 Zincate	4	-	-	-	-

[1] Only for single phase

[2] Only for three phase

[3] Only for version with impeller in Brass

[4] Material : PPE+PS glass fibre reinforced for version CDA 076 - CDA 106

Brass for version CDA 156 - CDA 206 - CDA 306 - CDA 406 - CDA 556

[5] Only for version single phase CDA 156 - CDA 206

[6] Material : AISI 303 (wet extension) for version CDA 076 - CDA 106 - CDA 156 - CDA 206 - CDA 306

AISI 304 (wet extension) for version CDA 406 - CDA 556

[7] See constructions mechanical seal page 301

[8] Material : Aluminium for version CDA 076 - CDA 106

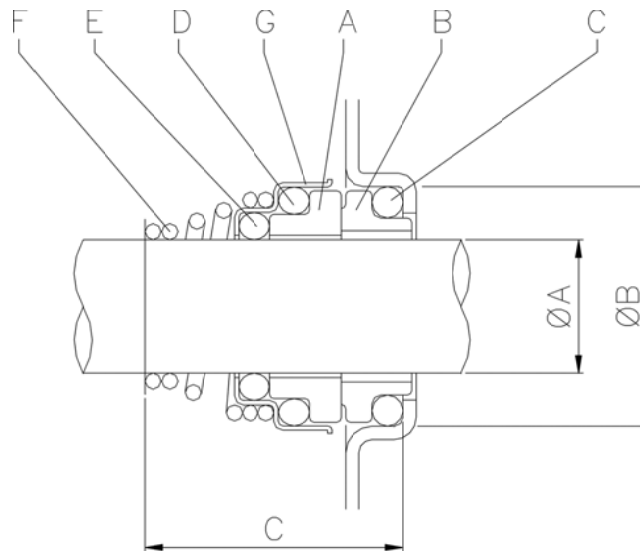
Cast iron for version CDA 156 - CDA 206 - CDA 306 - CDA 406 - CDA 556

[9] Material : AISI 304 for version CDA 076 - CDA 106

Cast iron built-in the motor bracket for version CDA 156.- CDA 206 – CDA 306 - CDA 406 - CDA 556

[10] With gasket in NBR only for version single phase CDA 076 – CDA 106

MECHANICAL SEAL



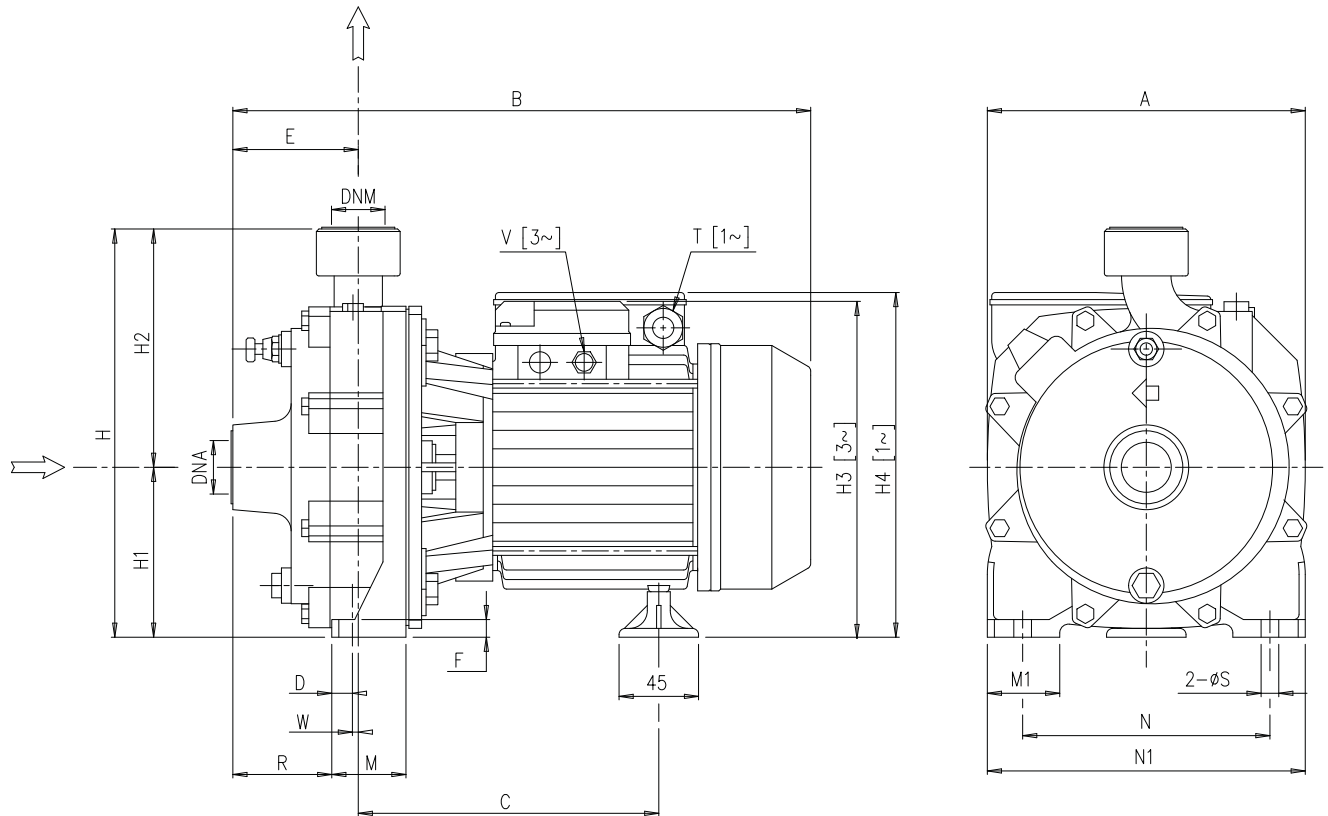
Single Phase	Three Phase	ØA	ØB	C
CDA 076 M	CDA 076 T	15	26	29
CDA 106 M	CDA 106 T	15	26	29
CDA 156 M	CDA 156 T	18	30.9	32
CDA 206 M	CDA 206 T	18	30.9	32
-	CDA 306 T	18	30.9	32
-	CDA 406 T	20	30.9	33
-	CDA 556 T	20	30.9	33

REF	PART NAME	MATERIAL Standard version CDA
A	Rotary seal ring	ceramic
B	Stationary seal ring	carbon graphite
C	O-Ring	NBR
D	O-Ring	NBR
E	O-Ring	NBR
F	Self driving spring	AISI 316
G	Frame	AISI 304

BERAINGS

Pump type		Ball Bearing	
Single phase	Three Phase	Pump side	Fan side
CDA 076 M	CDA 076 T	6202 2RSH	6202 2RSH
CDA 106 M	CDA 106 T	6202 2RSH	6202 2RSH
CDA 156 M	CDA 156 T	6204 2RSH	6203 2RSH
CDA 206 M	CDA 206 T	6204 2RSH	6203 2RSH
-	CDA 306 T	6204 2RSH	6203 2RSH
-	CDA 406 T	6306 2RSH	6205 2RSH
-	CDA 556 T	6306 2RSH	6205 2RSH

PUMP

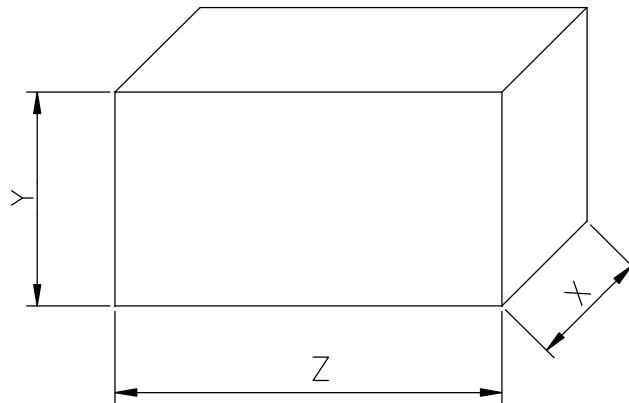


Pump type	Dimensions [mm]																				Weight [kgf]		
	A	B	C	D	E	F	H	H1	H2	H3	H4	M	M1	N	N1	R	T	V	W	S		DNA	DNM
CDA 076 M	183	336.3	179.8	8.3	73	9	227	97	130	-	198	42	40	140	180	57.5	PG11	-	6.8	9.5	G 1	G1	13.3
CDA 076 T	183	336.3	179.8	8.3	73	9	227	97	130	197.5	-	42	40	140	180	57.5	-	PG11	6.8	9.5	G 1	G1	13.8
CDA 106 M	183	336.3	179.8	8.3	73	9	227	97	130	-	198	42	40	140	180	57.5	PG11	-	6.8	9.5	G 1	G1	14.5
CDA 106 T	183	336.3	179.8	8.3	73	9	227	97	130	197.5	-	42	40	140	180	57.5	-	PG11	6.8	9.5	G 1	G1	15
CDA 156 M	209	394.8	218.3	8.3	86	9	265	110	155	-	242	48	40	155	195	65.5	PG13.5	-	12.3	9.5	G1 1/4	G1	23.6
CDA 156 T	194	394.8	218.3	8.3	86	9	265	110	155	224	-	48	40	155	195	65.5	-	PG11	12.3	9.5	G1 1/4	G1	23
CDA 206 M	209	410.8	218.3	8.3	86	9	265	110	155	-	242	48	40	155	195	65.5	PG13.5	-	12.3	9.5	G1 1/4	G1	25.5
CDA 206 T	194	408	218.3	8.3	86	9	265	110	155	224	-	48	40	155	195	65.5	-	PG11	12.3	9.5	G1 1/4	G1	27.4
CDA 306 T	194	410.8	218.3	8.3	86	9	265	110	155	224	-	48	40	155	195	65.5	-	PG11	12.3	9.5	G1 1/4	G1	25.8
CDA 406 T	228	467.3	225.3	12	95.5	12	308.5	133.5	175	264.5	-	57	50	180	230	71.5	-	G1 1/2	12.0	12	G1 1/2	G1 1/4	46.8
CDA 556 T	228	508	225.3	12	95.5	12	308.5	133.5	175	264.5	-	57	50	180	230	71.5	-	G1 1/2	12.0	12	G1 1/2	G1 1/4	52.2

[1~] Single phase

[3~] Three phase

PACKING



Pump type		Packing [mm]			Weight [kgf]	
Single phase	Three phase	X	Y	Z	[1~]	[3~]
CDA 076 M	CDA 076 T	210	290	370	14.1	14.6
CDA 106 M	CDA 106 T	210	290	370	15.3	15.8
CDA 156 M	CDA 156 T	240	320	435	24.6	24
CDA 206 M	CDA 206 T	240	320	435	26.5	28.2
-	CDA 306 T	240	320	435	-	26.6
-	CDA 406 T	280	340	490	-	48.3
-	CDA 556 T	335	400	565	-	53.7

[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	Three	Single Phase	Three Phase		Single Phase	Three Phase		
				[μF]	[V]	η %			η %			Phase	Phase	220-230 V	220 V	380 V	220-230 V	220 V	380 V	
CDA 076 M	CDA 076 T	0.55	0.75	14	450	-	-	-	-	-	-	1.10	0.90	5.3	2.8	1.6				
CDA 106 M	CDA 106 T	0.75	1	20	450	77.2	79.5	79.3	76.6	80.9	82.3	1.30	1.00	6.7	2.9	1.7			20.6	11.9
CDA 156 M	CDA 156 T	1.1	1.5	35	450	78.3	80.4	81.0	76.5	81.3	83.4	1.92	2.00	9.1	5.7	3.3	49.4	38.8	22.4	
CDA 206 M	CDA 206 T	1.5	2	35	450	82.4	83.0	82.2	79.5	82.9	83.8	2.26	2.90	10.5	8.1	4.7	69.6	54.4	31.4	
-	CDA 306 T	2.2	3	-	-	82.4	83.0	82.2	79.5	82.9	83.8	-	2.90	-	8.1	4.7	-	54.4	31.4	
-	CDA 406 T	3	4	-	-	83.1	85.2	85.9	79.9	84.0	85.7	-	3.80	-	11.1	6.4	-	81.6	47.1	
-	CDA 556 T	4	5.5	-	-	83.2	85.8	86.1	81.0	85.1	86.7	-	5.10	-	14.7	8.5	-	108.8	62.8	