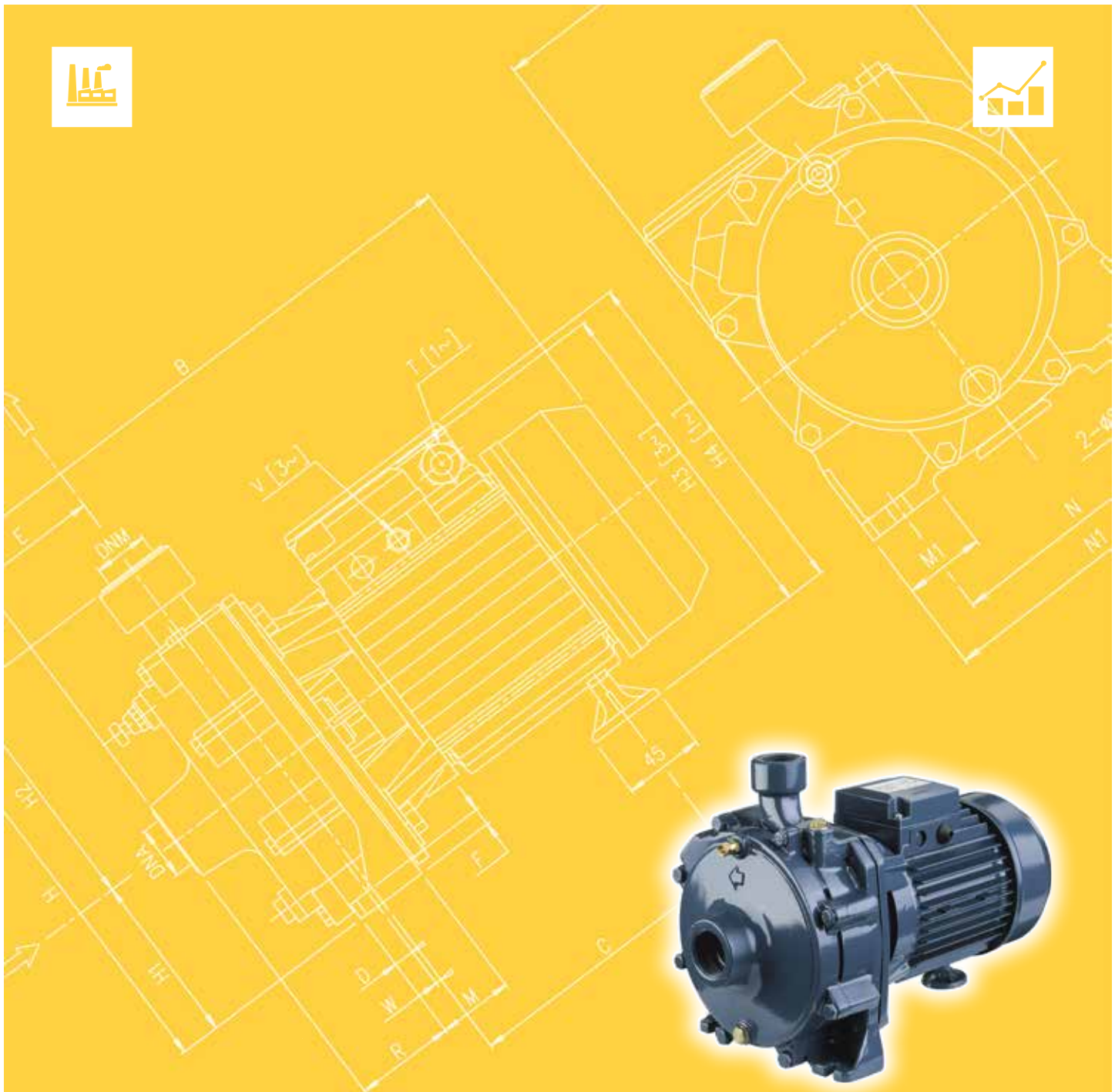




Japanese Technology since 1912

CDA

Data Book 60Hz



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SPECIFICATION

60Hz

Rev. F

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 9006:2012 - Grade 3B

MOTOR		
Type	Electric - TEFC	
	Single Phase	Three Phase
Efficiency Level (Reg.1781/2019)	-	IE3
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% (0.55 kW)
		220/380 ±10% (from 0.75 kW up to 4 kW)
		220/380-460 ±10% (IE3* from 0.75 kW up to 4 kW)
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 - M16x1.5 - M20x1.5 (see page 400)	

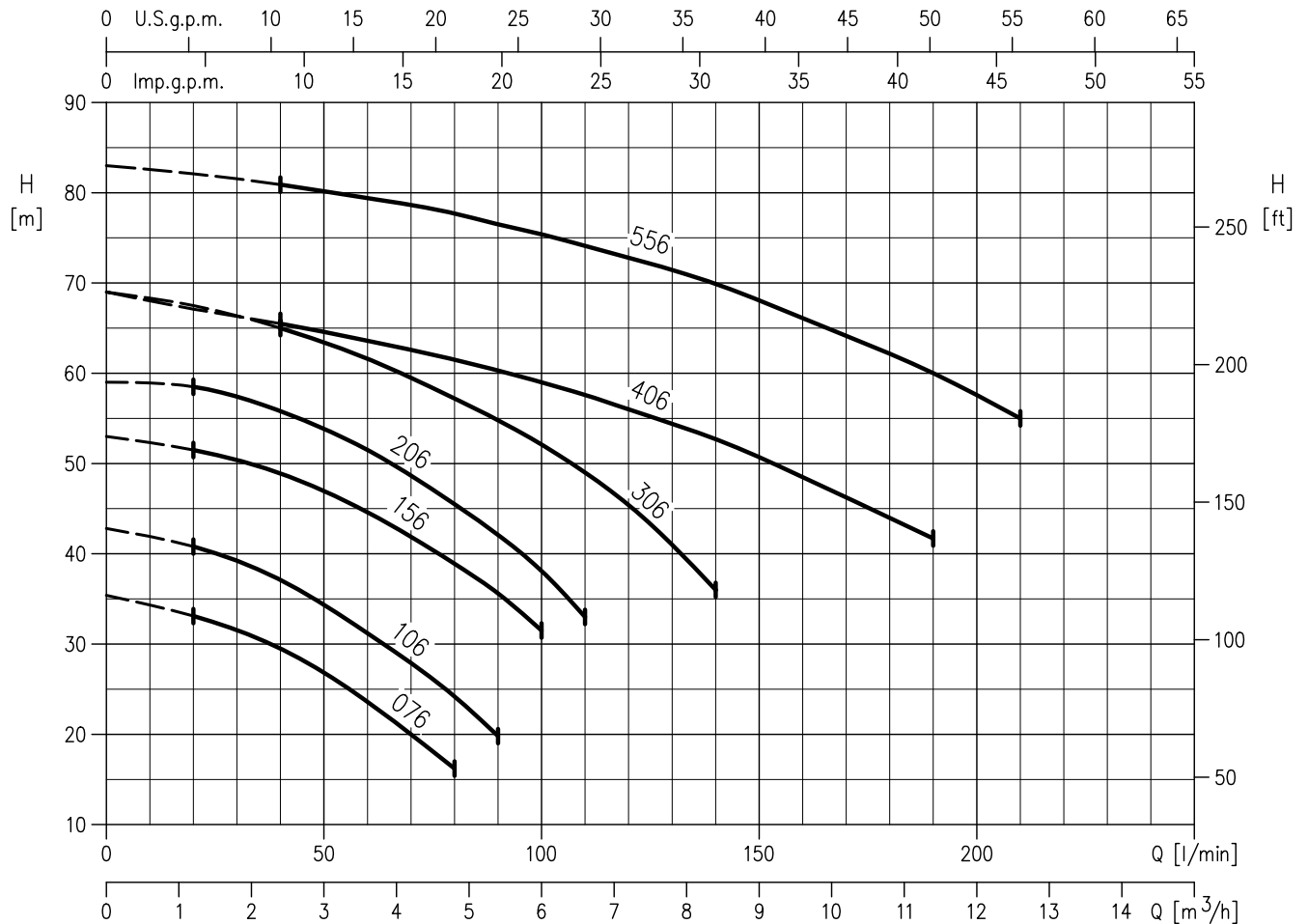
* only for 460 V

PERFORMANCE RANGE and SELECTION CHART

60Hz

Rev. F

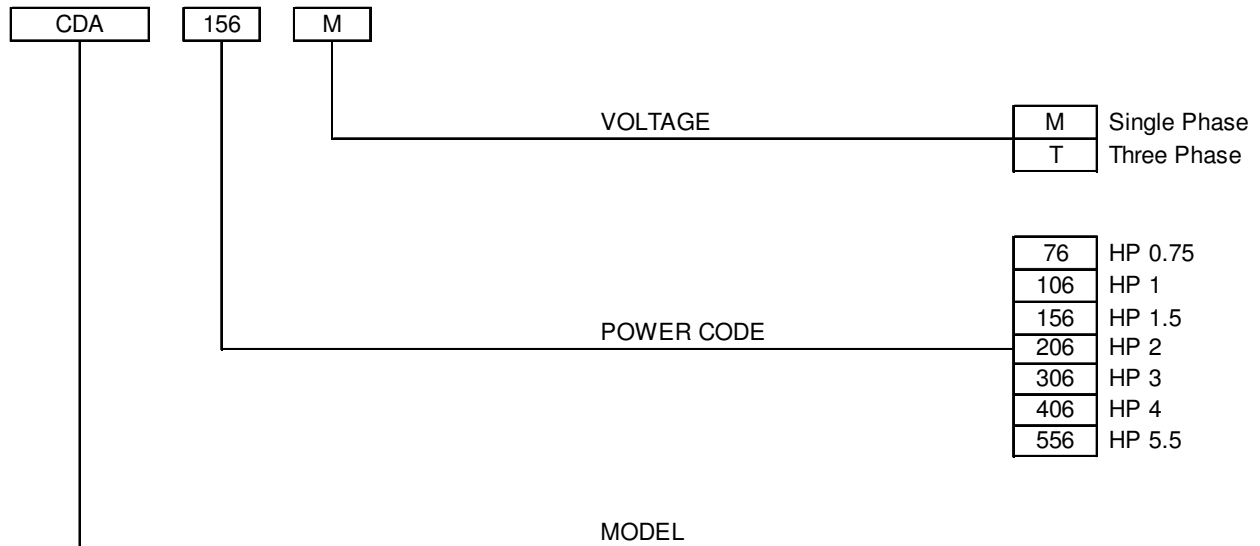
PERFORMANCE RANGE



SELECTION CHART

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 9006:2012 - Grade 3B

The curves refer to effective speed of asynchronous motors at 60 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)

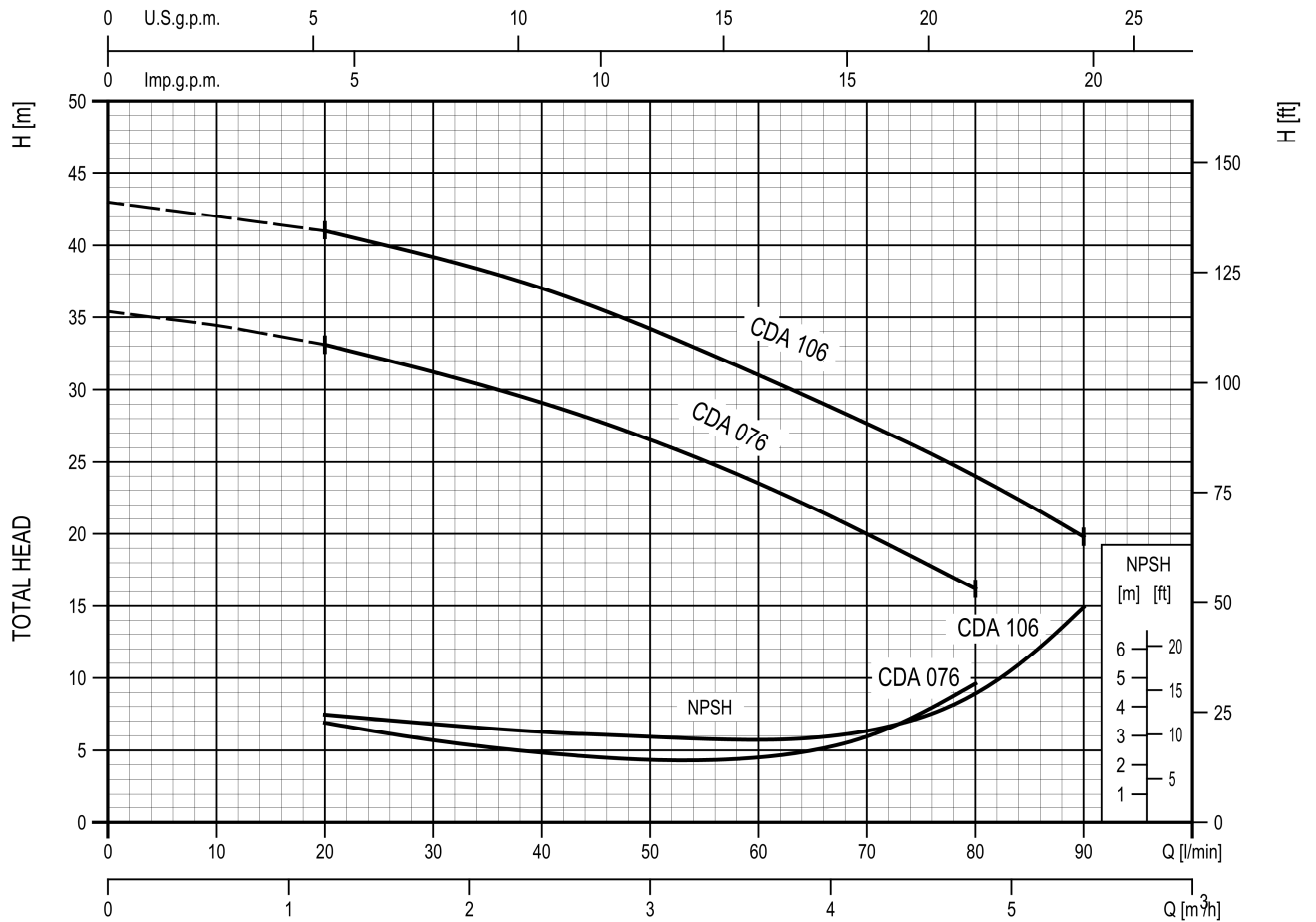
The continuous curves indicate the recommended working range. The dotted curve is only a guide.

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:

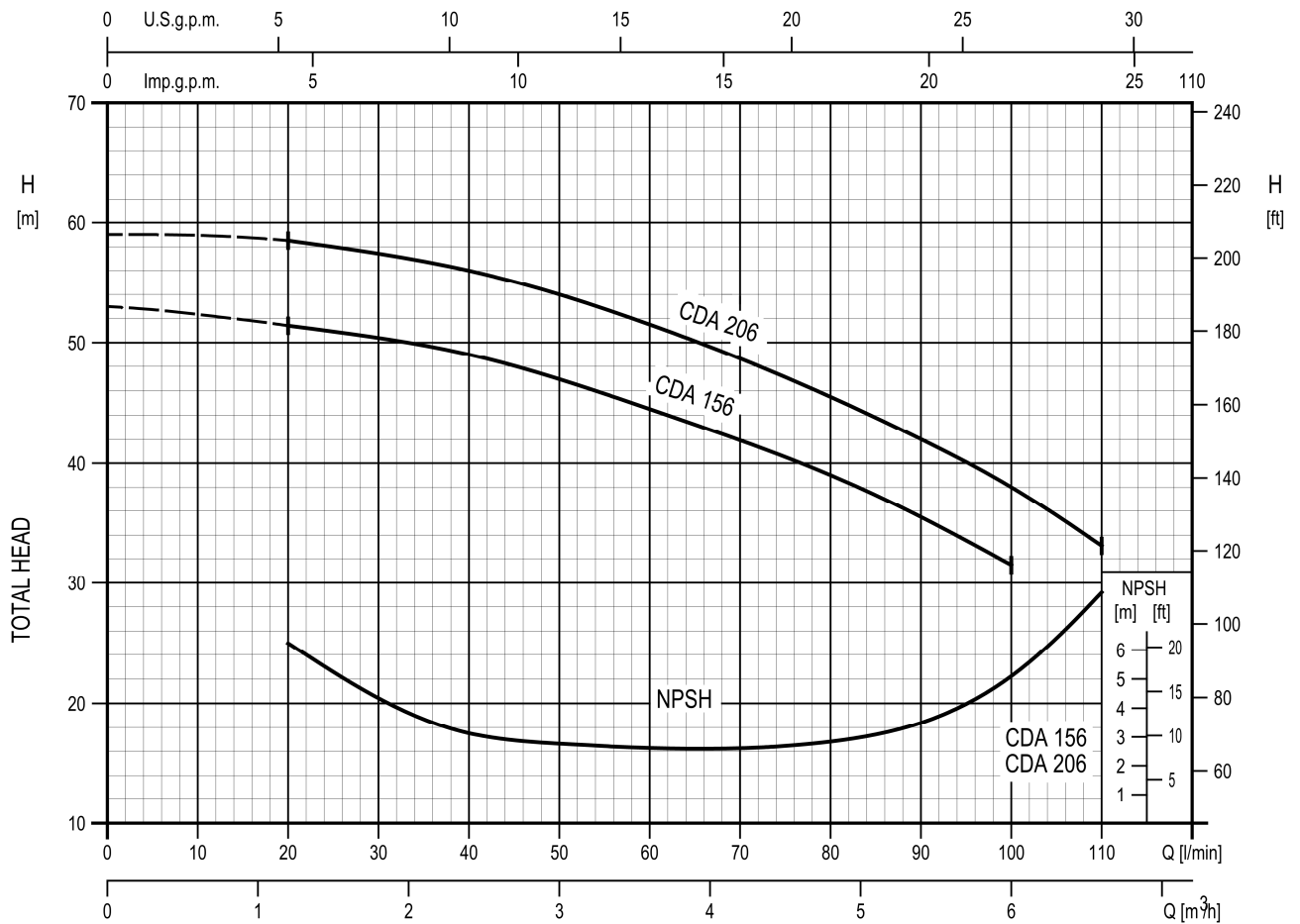
- Q = volume flow rate
- H = total head

CDA 076 (0.6 kW) - Impeller diameter = 103 mm
 CDA 106 (0.8 kW) - Impeller diameter = 110 mm



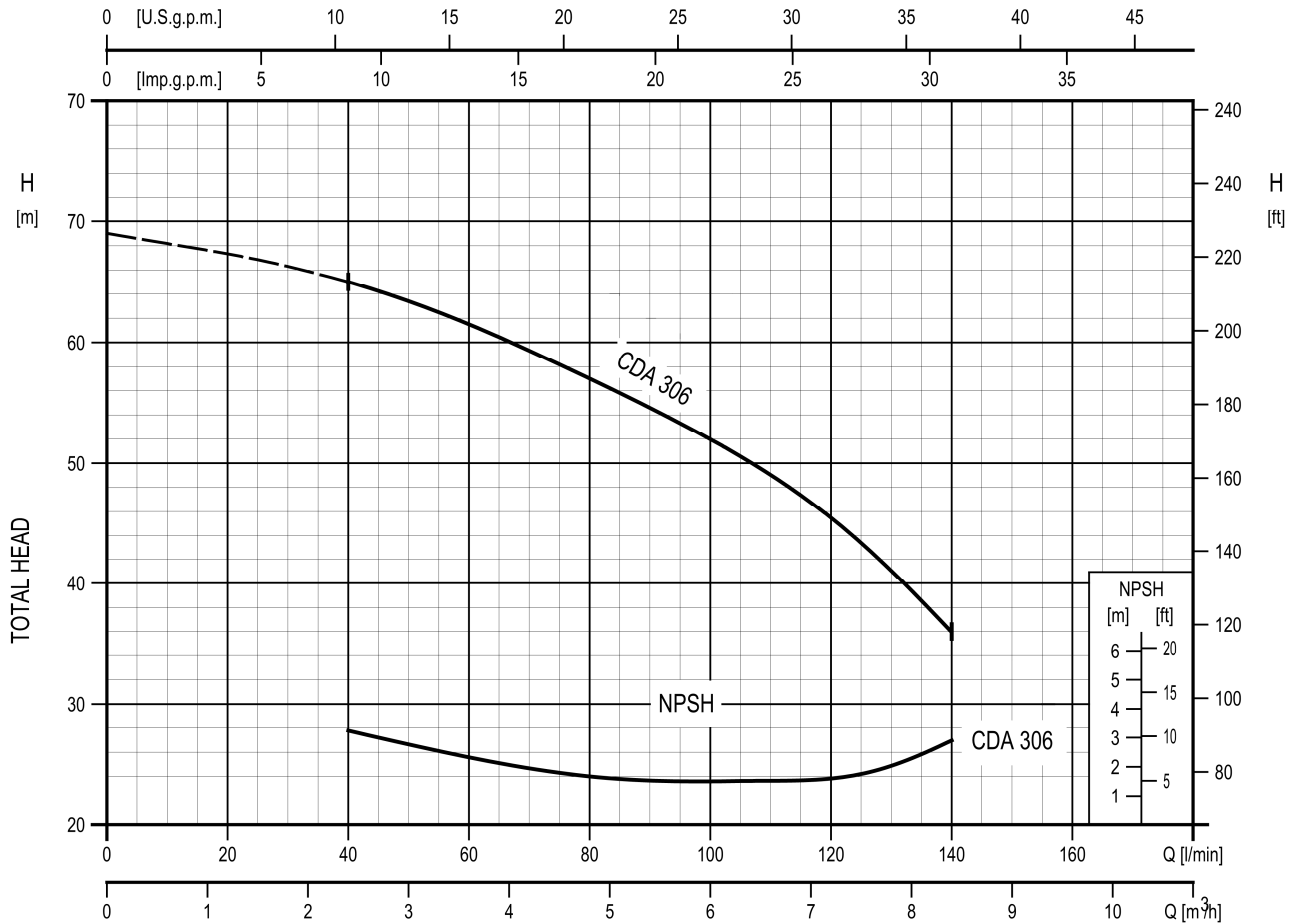
Rotation speed $\approx 3450 \text{min}^{-1}$
 Test standard: ISO 9006:2012 - Grade 3B

CDA 156 (1.1 kW) - Impeller diameter = 123 mm
 CDA 206 (1.5 kW) - Impeller diameter = 128 mm



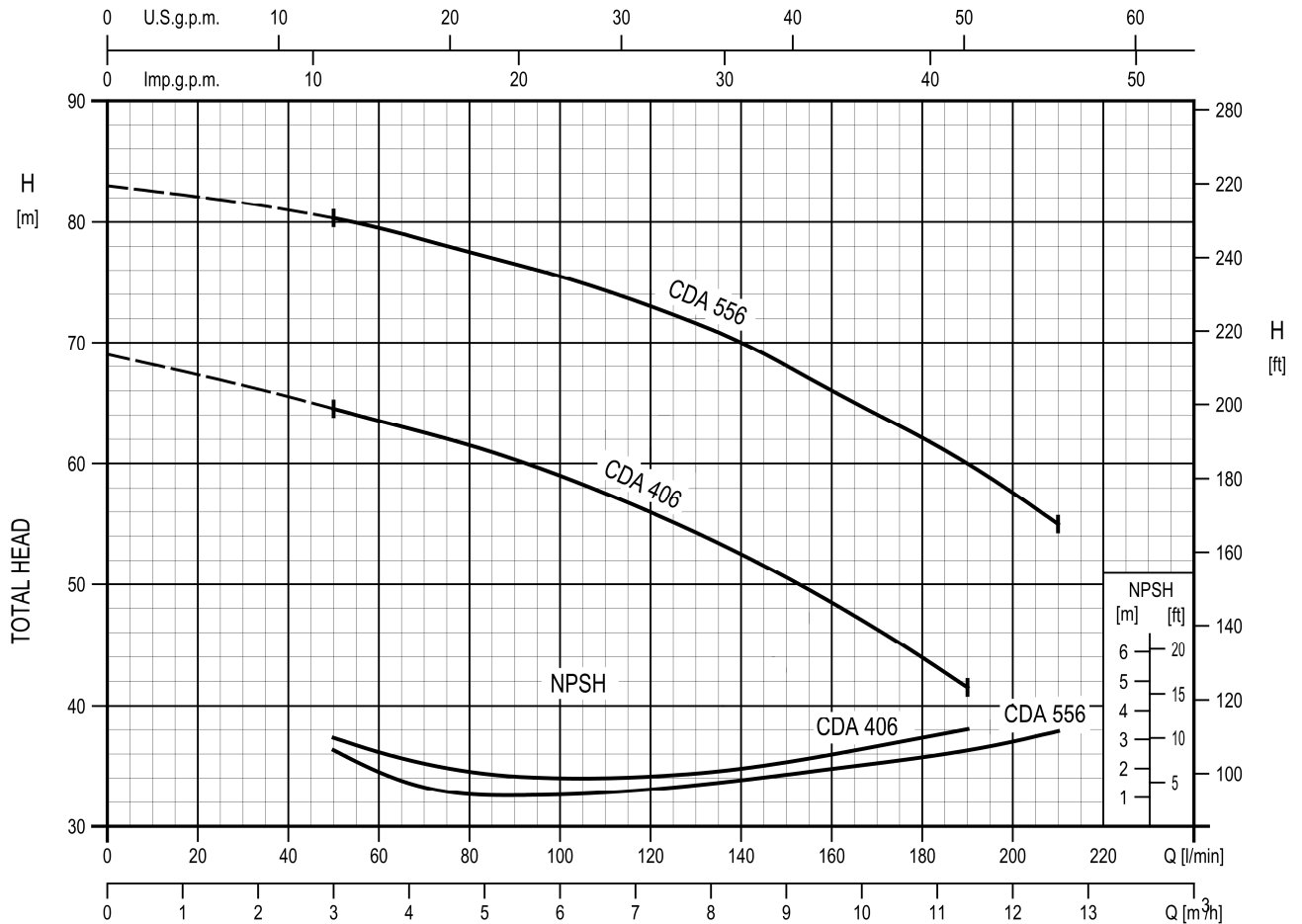
Rotation speed $\approx 3450 \text{ min}^{-1}$
 Test standard: ISO 9006:2012 - Grade 3B

CDA 306 (2.2-kW) - Impeller diameter = 135 mm



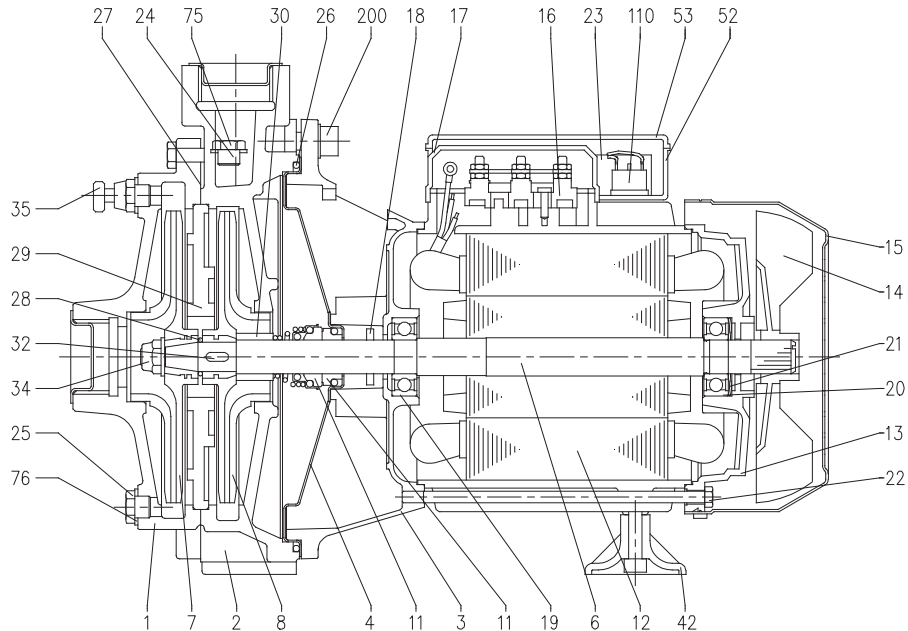
Rotation speed $\approx 3450 \text{min}^{-1}$
 Test standard: ISO 9006:2012 - Grade 3B

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 9006:2012 - Grade 3B

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 class V-0	1
17	Terminal box cover [2]	Aluminium	1	53	Capacitor box cover [10]	ABS class V-0 [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

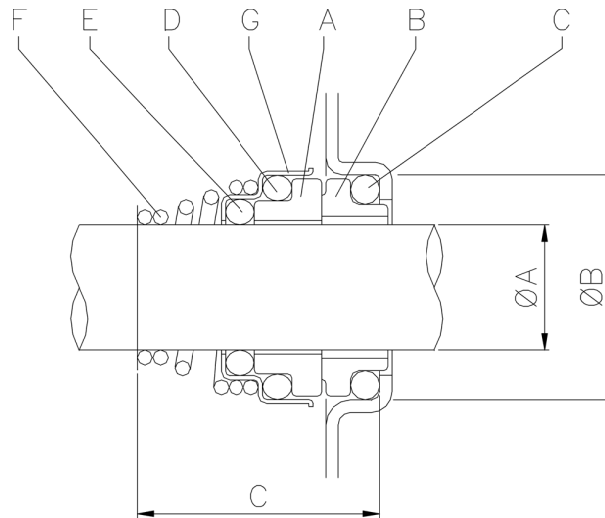
Cast iron for version CDA 156 - CDA 206 - CDA 306 - CDA 406 - CDA 556

[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



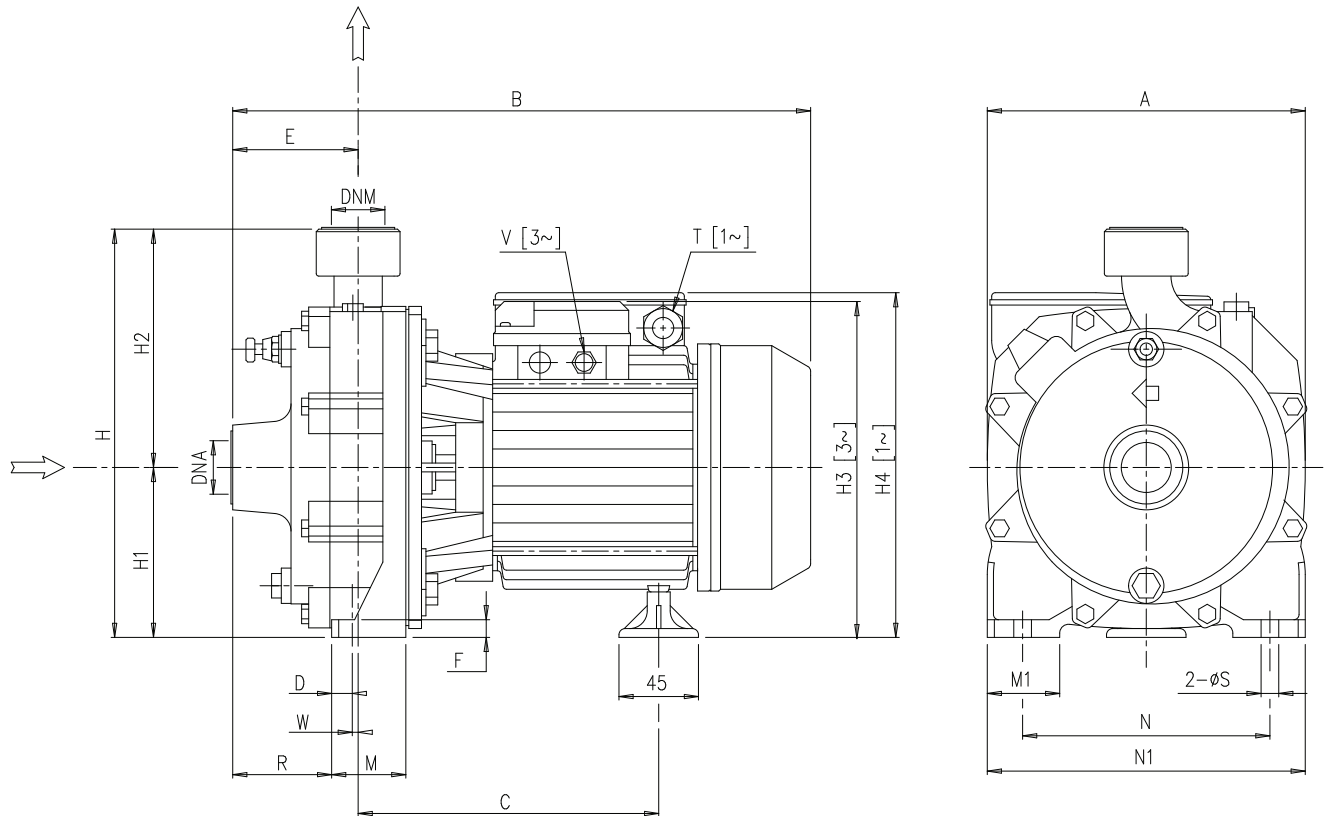
Single Phase	Three Phase	ØA	ØB	C
CDA 076 M	CDA 076 T	15	26	29
CDA 106 M	CDA 106 T	15	26	29
CDA 156 M	CDA 156 T	18	30,9	32
CDA 206 M	CDA 206 T	18	30,9	32
-	CDA 306 T	18	30,9	32
-	CDA 406 T	20	30,9	33
-	CDA 556 T	20	30,9	33

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

BEARINGS

Pump type		Ball Beraing	
Single phase	Three Phase	Pump side	Fan side
CDA 076 M	CDA 076 T	6202 2RSH C3	6202 2RSH C3
CDA 106 M	CDA 106 T	6202-ZZ C3	6202-ZZ C3
CDA 156 M	CDA 156 T	6204-ZZ C3	6203-ZZ C3
CDA 206 M	CDA 206 T	6204-ZZ C3	6203-ZZ C3
-	CDA 306 T	6204-ZZ C3	6203-ZZ C3
-	CDA 406 T	6306-ZZ C3	6205-ZZ C3

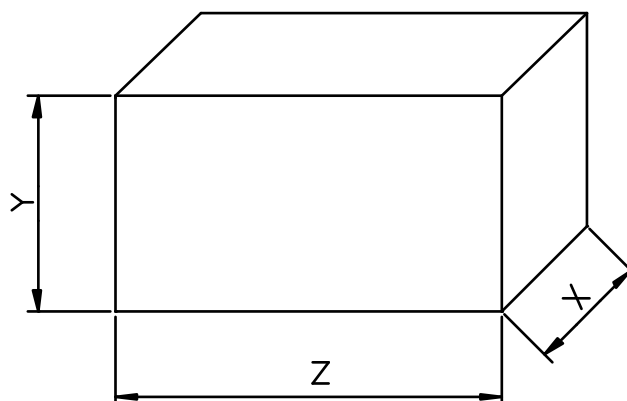
PUMP



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	180	8	73	9	227	97	130	-	198	42	40	140	180	58	PG11	-	7	10	G 1	G1	14
CDA 076 T	183	336	180	8	73	9	227	97	130	198	-	42	40	140	180	58	-	PG11	7	10	G 1	G1	14
CDA 106 M	183	336	180	8	73	9	227	97	130	-	198	42	40	140	180	58	PG11	-	7	10	G 1	G1	15
CDA 106 T	183	336	180	8	73	9	227	97	130	198	-	42	40	140	180	58	-	M16x1.5	7	10	G 1	G1	15
CDA 156 M	209	408	218	8	86	9	265	110	155	-	242	48	40	155	195	66	PG13.5	-	12	10	G1 1/4	G1	24
CDA 156 T	194	420	218	8	86	9	265	110	155	224	-	48	40	155	195	66	-	M20x1.5	12	10	G1 1/4	G1	25
CDA 206 M	209	411	218	8	86	9	265	110	155	-	242	48	40	155	195	66	PG13.5	-	12	10	G1 1/4	G1	26
CDA 206 T	194	421	218	8	86	9	265	110	155	224	-	48	40	155	195	66	-	M20x1.5	12	10	G1 1/4	G1	28
CDA 306 T	194	423	218	8	86	9	265	110	155	224	-	48	40	155	195	66	-	M20x1.5	12	10	G1 1/4	G1	27
CDA 406 T	228	495	263	12	96	12	309	134	175	260	-	57	50	180	230	72	-	M20x1.5	12	12	G1 1/2	G1 1/4	47
CDA 556 T	228	508	225	12	96	12	309	134	175	265	-	57	50	180	230	72	-	M20x1.5	12	12	G1 1/2	G1 1/4	52

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

PACKING



Pump type					Weight [kgf]	
Single phase	Three phase	X	Y	Z	[1~]	[3~]
CDA 076 M	CDA 076 T	210	290	370	14	16,5
CDA 106 M	CDA 106 T	240	320	435	16	16
CDA 156 M	CDA 156 T	240	320	435	25	25
CDA 206 M	CDA 206 T	240	320	435	27	29
-	CDA 306 T	237	320	477	-	28
-	CDA 406 T	280	350	520	-	48

[1~] Single phase

[3~] Three phase

MOTOR DATA

Pump type		Power		Efficiency		Capacitor		Efficiency (% load) Three phase (380 V)			Efficiency (% load) Three phase (460 V)			Input [kW]		Full load current [A]				Locked rotor current [A]			
Single Phase	Three Phase	[kW]	[HP]	Single Phase	Three Phase	Single Phase [µF]	Three Phase [V]	50%	75%	100%	50%	75%	100%	Single Phase	Three Phase	Single Phase 220-230 V	Three Phase 220 V	Three Phase 380 V	Three Phase 460 V	Single Phase 220-230 V	Three Phase 220 V	Three Phase 380 V	Three Phase 460 V
CDA 076 M	CDA 076 T	0,55	0,75	-	IE3	14	450	82,3	83,5	83,2	80,5	83,1	84,6	1,10	0,90	5,3	2,8	1,6	1,5	-	17,9	10,3	12,5
CDA 106 M	CDA 106 T	0,75	1	-	IE3	20	450	80,7	81,9	81,3	78,4	81,6	83,1	1,30	0,90	6,7	2,8	1,6	1,5	-	16,9	9,7	11,8
CDA 156 M	CDA 156 T	1,1	1,5	-	IE3	40	450	84,2	84,7	84,5	83,2	84,7	85,7	1,92	1,75	9,1	5,3	3,1	2,9	55	40,2	23,2	28,1
CDA 206 M	CDA 206 T	1,5	2	-	IE3	40	450	86,5	86,8	86,2	86,9	87,8	87,4	2,26	2,48	10,5	7,5	4,3	4,1	69	55,7	32,2	38,9
-	CDA 306 T	2,2	3	-	IE3	-	-	86,5	86,8	86,2	86,9	87,8	87,4	-	2,48	-	7,5	4,3	4,1	-	55,7	32,2	38,9
-	CDA 406 T	3	4	-	IE3	-	-	86,8	87,0	87,5	87,0	87,9	88,5	-	3,42	-	10,2	5,9	5,6	-	75,7	43,7	52,8
-	CDA 556 T	4	5,5	-	IE3	-	-	83,2	85,8	86,1	-	-	-	-	5,10	-	14,7	8,5	-	-	108,8	62,8	-
-	CDA 556 T	4	5,5	-	IE3	-	-	89,7	89,6	88,6	86,1	88,4	88,5	-	4,52	-	13,5	7,8	7,6	-	107,1	61,8	74,9

NOISE DATA

Pump type		Power		L _{pA} - dB(A) *
Single Phase	Three Phase	[kW]	[HP]	
CDA 076 M	CDA 076 T	0,55	0,75	<70
CDA 406 M	CDA 106 T	0,75	1	
CDA 156 M	CDA 156 T	1,1	1,5	
CDA 206 M	CDA 206 T	1,5	2	
-	CDA 306 T	2,2	3	
-	CDA 406 T	3	4	
-	CDA 556 T	4	5,5	

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