



**EBARA**



	Page
<b>- SPECIFICATIONS</b>	<b>200</b>
SELECTION CHART	201
TYPE KEY AND CURVE SPECIFICATIONS	202
PERFORMANCE CURVE CDA 0.75	203
PERFORMANCE CURVE CDA 1.00	204
PERFORMANCE CURVE CDA 1.50	205
PERFORMANCE CURVE CDA 2.00	206
PERFORMANCE CURVE CDA 3.00	207
PERFORMANCE CURVE CDA 4.00	208
PERFORMANCE CURVE CDA 5.50	209
<b>- CONSTRUCTIONS</b>	<b>300</b>
SECTIONAL VIEW	300
MECHANICAL SEAL	301
BEARINGS	301
<b>- DIMENSIONS AND WEIGHT</b>	<b>400</b>
PUMP	400
PACKING	401
<b>- TECHNICAL DATA</b>	<b>500</b>
MOTOR DATA	500
NOISE DATA	500

## SPECIFICATION

50Hz

Rev. K

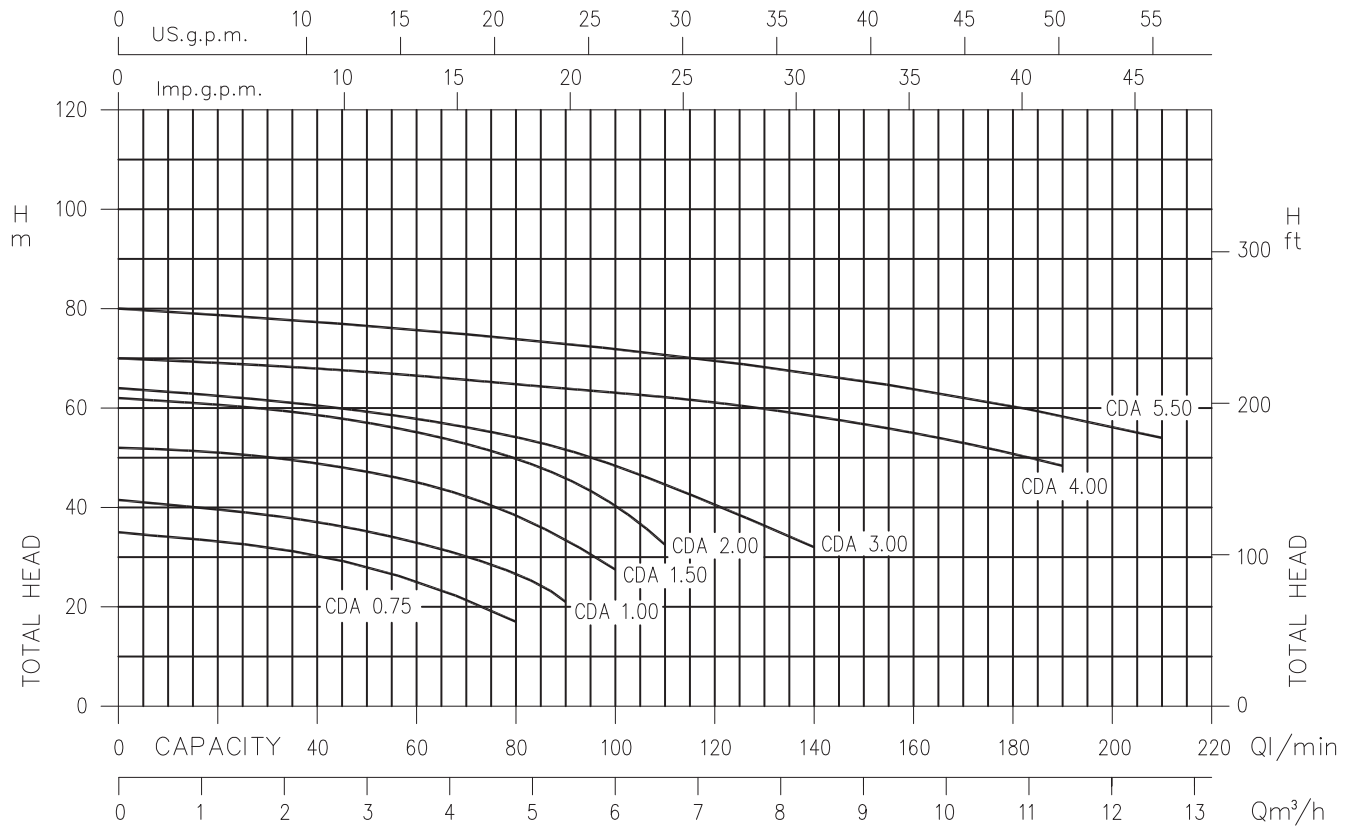
PUMP		
Liquid	Type of liquid	Clean water
Handled	Temperature [°C]	min. +5 max. +40 (CDA 0.75 - 1.00) max. +90
	Maximum working pressure [MPa]	0.6 (CDA 0.75-1.00) 1.0 (CDA 1.50-2.00-3.00-4.00-5.50)
Construction	Impeller	Twin closed type
	Shaft seal type	Mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction	G1 (CDA 0.75-1.00) UNI ISO 228 G1¼ (CDA 1.50-2.00-3.00) UNI ISO 228 G1½ (CDA 4.00-5.50) UNI ISO 228
	Discharge	G1 (CDA 0.75-1.00-1.50-2.00-3.00) UNI ISO 228 G1¼ (CDA 4.00-5.50) UNI ISO 228
Material	Casing	Cast iron
	Impeller	PPE+PS glass fibre reinforced (CDA 0.75-1.00) Brass (CDA 1.50 - 2.00-3.00-4.00-5.50)
	Casing cover	AISI 304 (CDA 0.75-1.00) Cast iron built-in the motor bracket (CDA 2.00-3.00-4.00-5.50)
	Shaft seal	Ceramic/Carbon/NBR
	Shaft	AISI 303 (CDA 0.75-1.00-1.50-2.00-3.00) AISI 304 (CDA 4.00-5.50)
	Bracket	Aluminium (CDA 0.75-1.00) Cast iron (CDA 1.50-2.00-3.00-4.00-5.50)
Applicable standard of test		ISO 9906 – Annex A

MOTOR		
Type	Electric - TEFC	
	Single Phase	Three Phase
Efficiency level (Reg. 640/2009)	-	- only for 0.55 kW IE2 from 0.75 kW up to 4.0 kW IE3 from 0.75 kW up to 4.0 kW
No. of Poles	2	
Rotation speed [min-1]	≈ 2850	
Insulation Class	F	
Protection degree (CEI EN 60034-5)	IP 44	
Power rating [kW]	0.55 ÷ 1.5	0.55 ÷ 4
[HP]	0.75 ÷ 2	0.75 ÷ 5.5
Frequency [Hz]	50	
Voltage [V]	230 ±10%	230/400 ±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 – M16x1.5 – M20x1.5 (see dimensions page 400)	

## SELECTION CHART

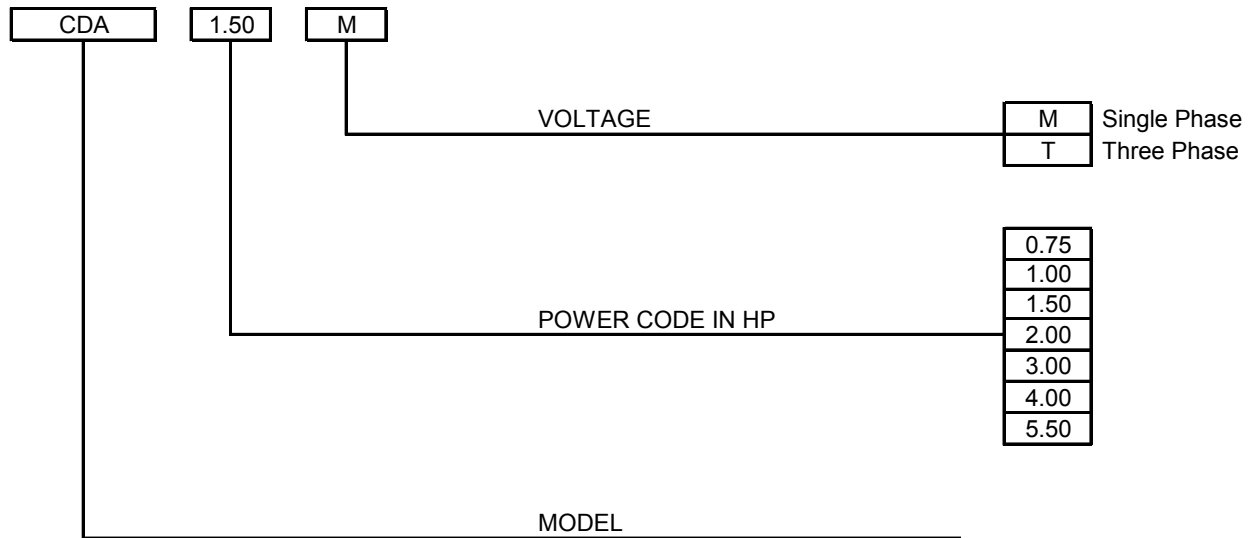
50Hz

Rev. K



Pump type		Power		Q=Capacity												
Single Phase	Three Phase	[kW]	[HP]	l/min	20	40	50	80	90	100	110	140	170	190	210	
				m³/h	1.2	2.4	3	4.8	5.4	6.6	6.6	8.4	10.2	11.4	12.6	
				H=Total manometric head in meters												
CDA 0.75 M	CDA 0.75 T	0.55	0.75	35	33	30.2	27.9	17	-	-	-	-	-	-	-	
CDA 1.00 M	CDA 1.00 T	0.75	1	41.5	39.5	37	35.2	27	21	-	-	-	-	-	-	
CDA 1.50 M	CDA 1.50 T	1.1	1.5	52	50.8	48.8	47.1	38.4	33.4	27.5	-	-	-	-	-	
CDA 2.00 M	CDA 2.00 T	1.5	2	62	60.5	58.6	56.9	49.8	46.5	40.3	32.5	-	-	-	-	
-	CDA 3.00 T	2.2	3	64	-	60.5	59.3	54.1	51.6	48.4	44.6	32	-	-	-	
-	CDA 4.00 T	3	4	70	-	-	67	64.8	63.9	62.5	62	58	53.5	48	-	
-	CDA 5.50 T	4	5.5	80	-	-	76.5	73.9	72.9	71.8	70.5	66.8	62	58.3	54	

**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

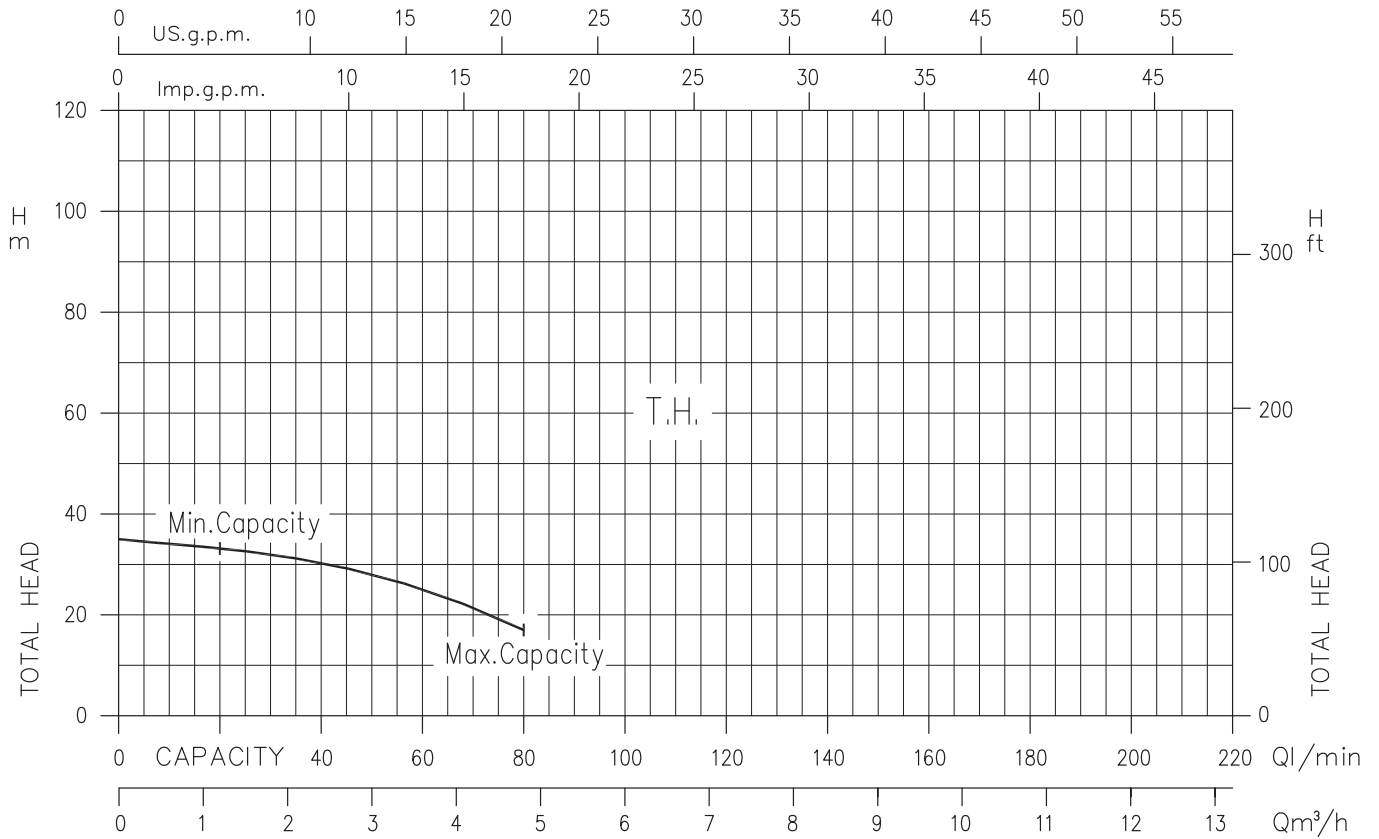
Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of  $\nu = 1 \text{ mm}^2/\text{s}$  (1 cSt)

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:

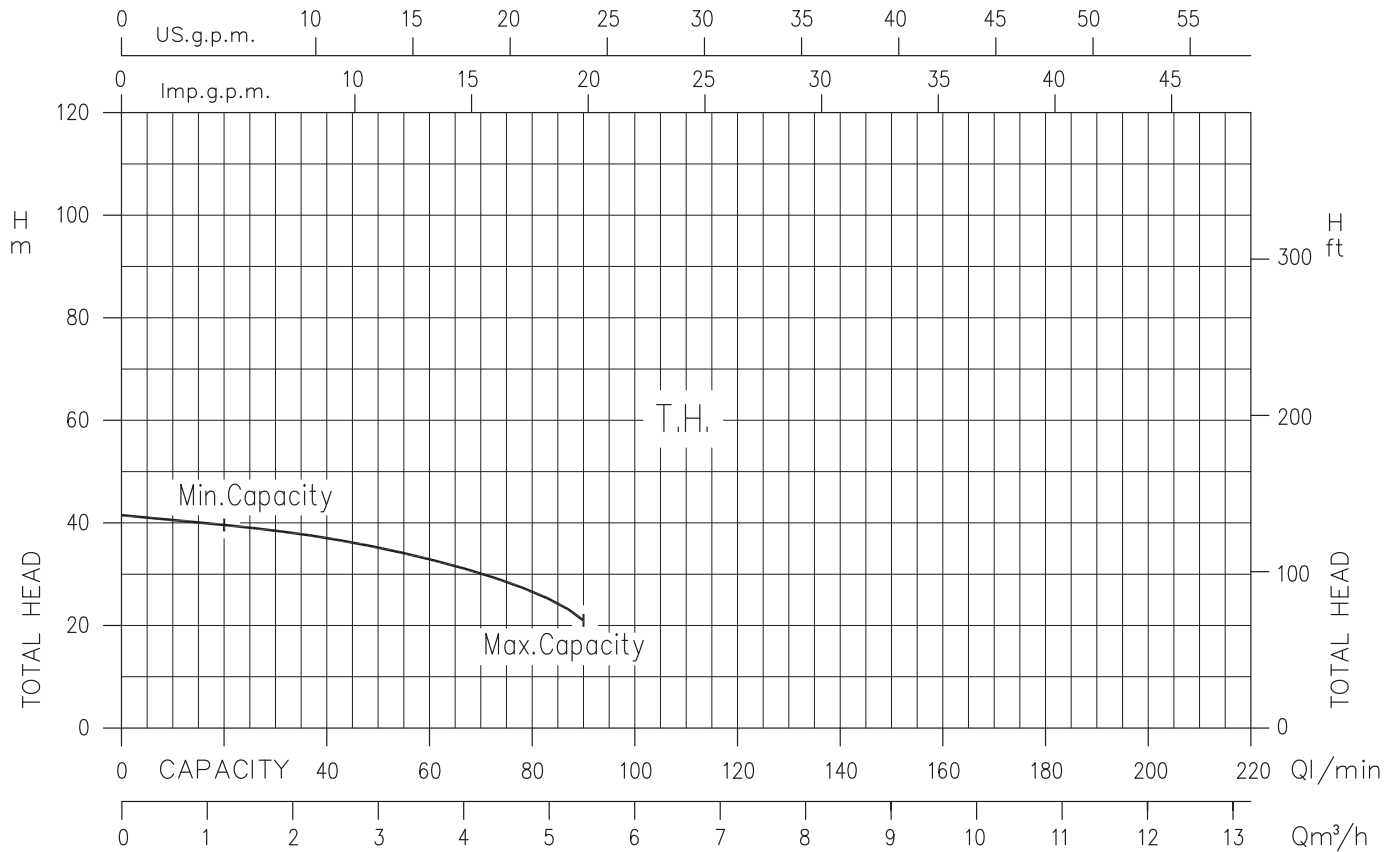
- Q = volume flow rate
- H = total head

CDA 0.75 (0.55 kW) - Impeller diameter = 122 mm



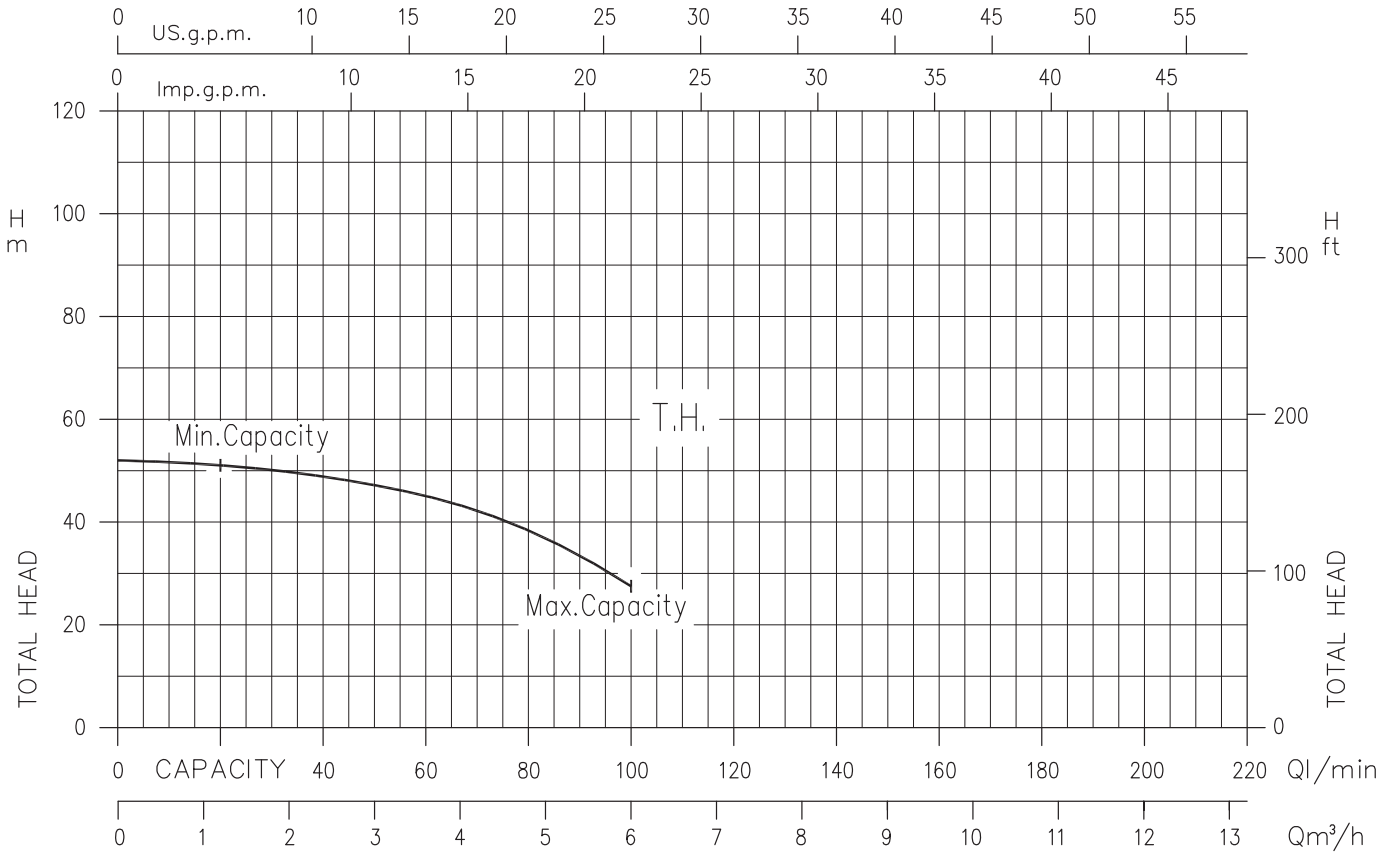
Rotation speed  $\approx 2800 \text{ min}^{-1}$   
 Test standard: ISO 9906 – Annex A

CDA 1.00 (0.75 kW) - Impeller diameter = 130 mm



Rotation speed  $\approx 2800 \text{ min}^{-1}$   
 Test standard: ISO 9906 – Annex A

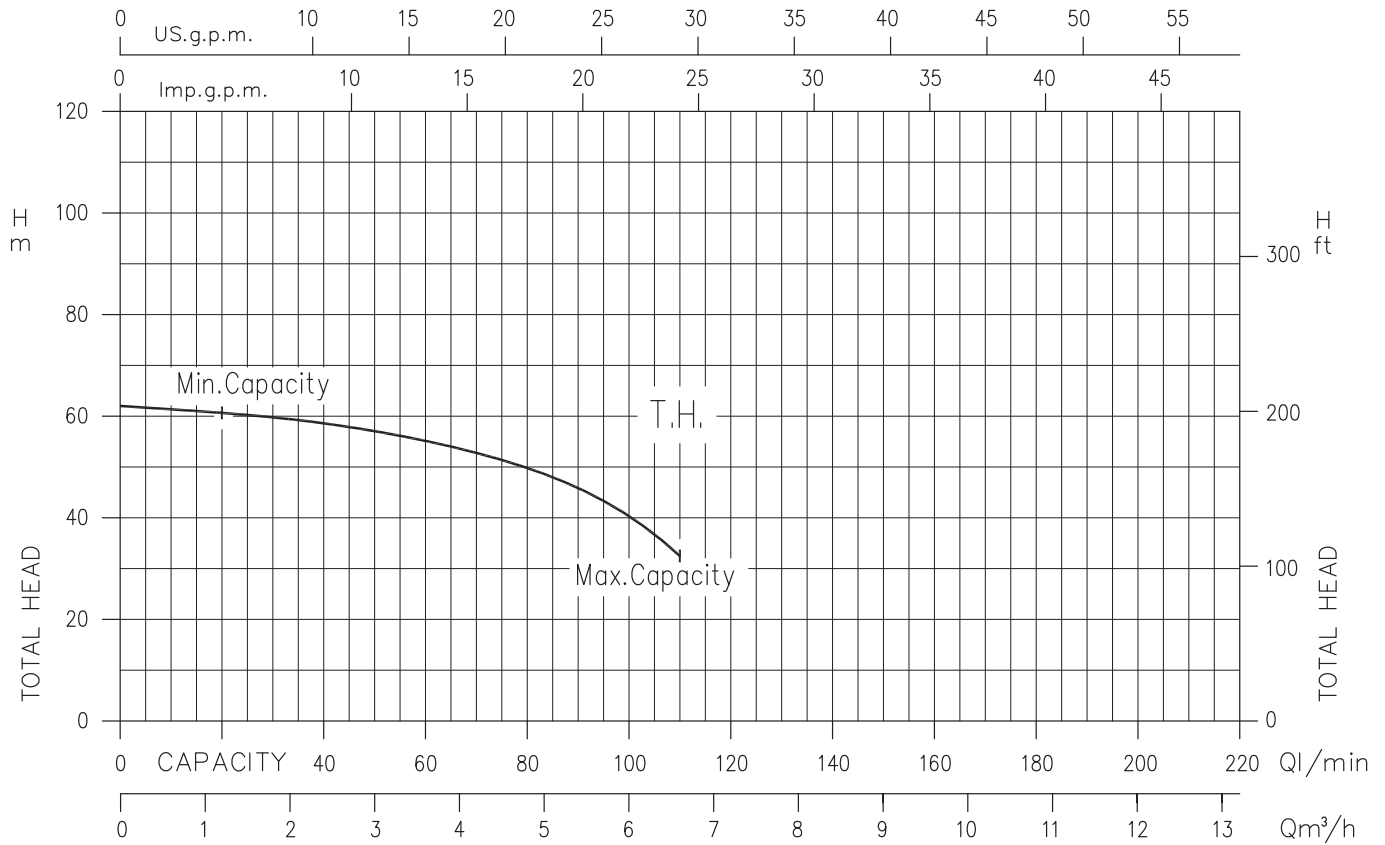
CDA 1.50 (1.1 kW) - Impeller diameter = 143 mm



Rotation speed  $\approx 2850 \text{ min}^{-1}$   
 Test standard: ISO 9906 – Annex A

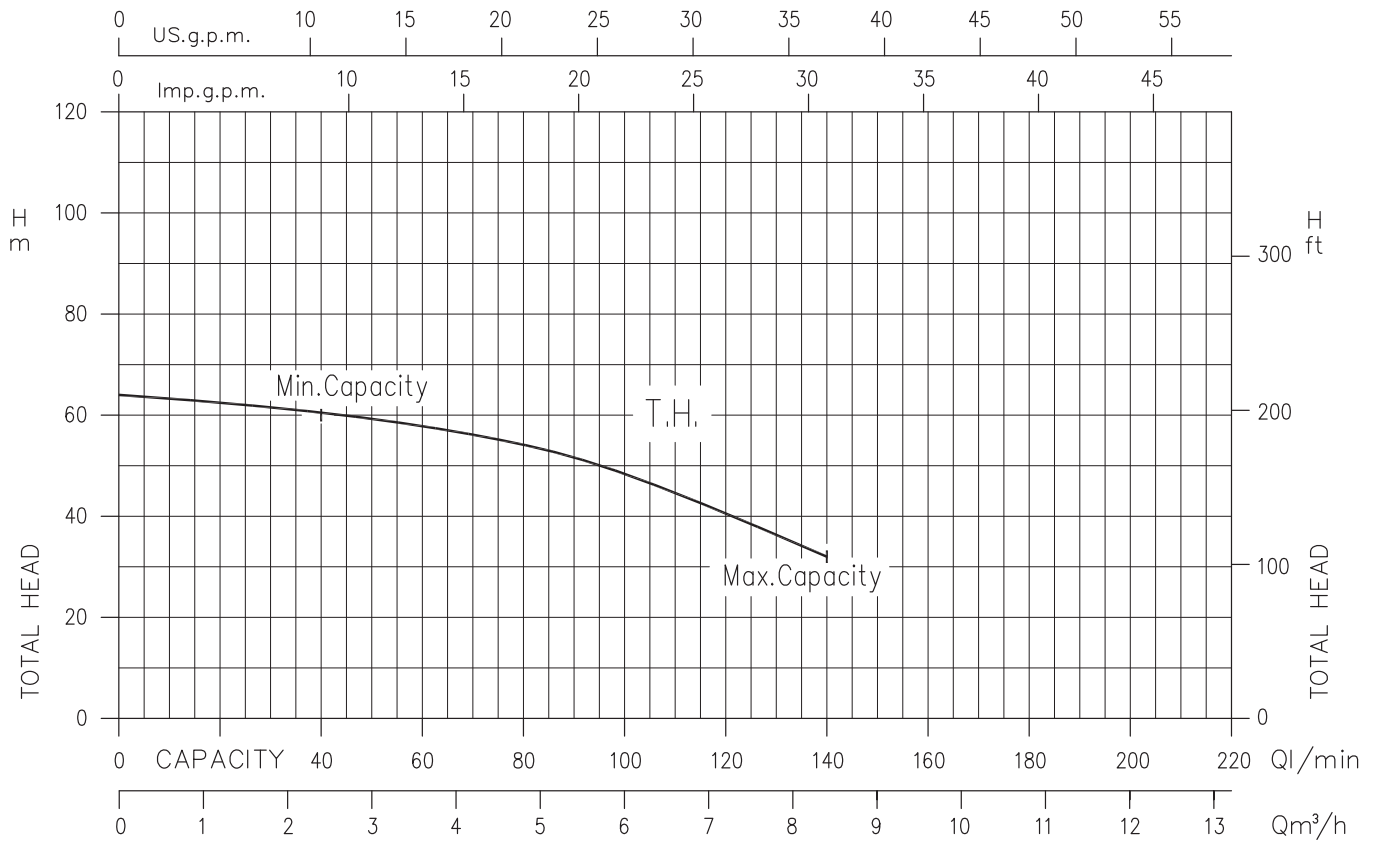


CDA 2.00 (1.5 kW) - Impeller diameter = 153 mm



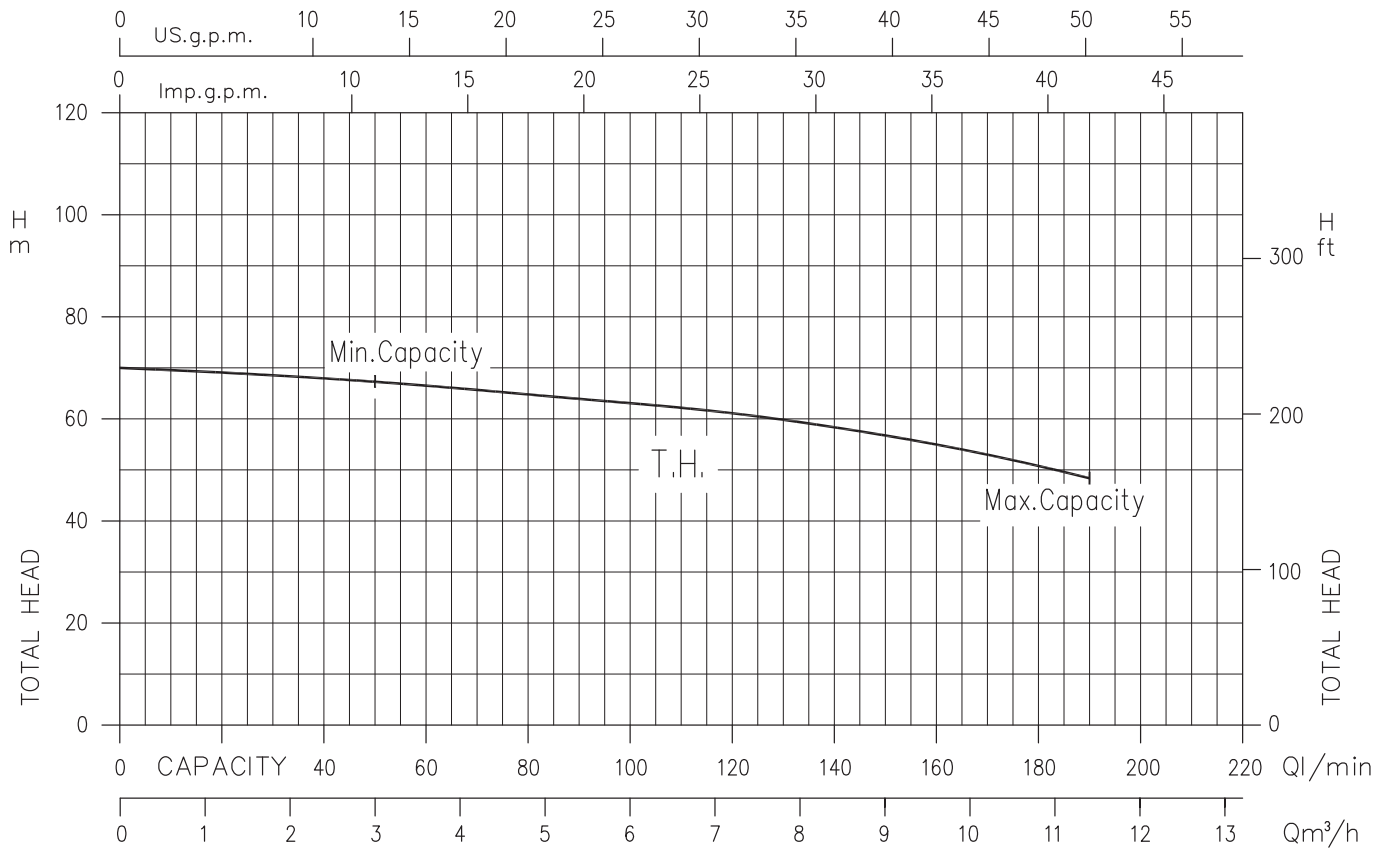
Rotation speed  $\approx 2850 \text{ min}^{-1}$   
 Test standard: ISO 9906 – Annex A

CDA 3.00 (2.2 kW) - Impeller diameter = 156 mm



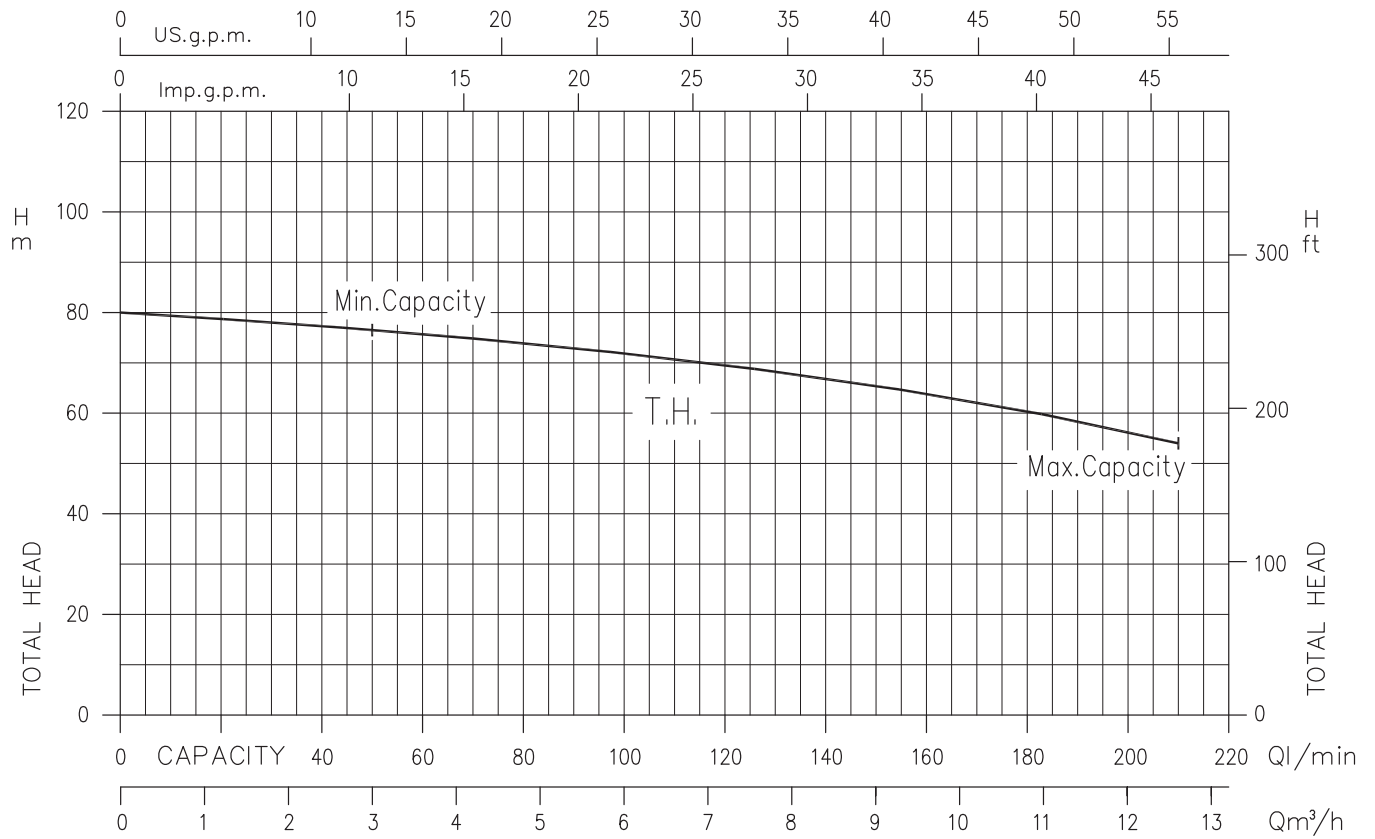
Rotation speed  $\approx 2850 \text{ min}^{-1}$   
 Test standard: ISO 9906 – Annex A

CDA 4.00 (3 kW) - Impeller diameter = 167 mm



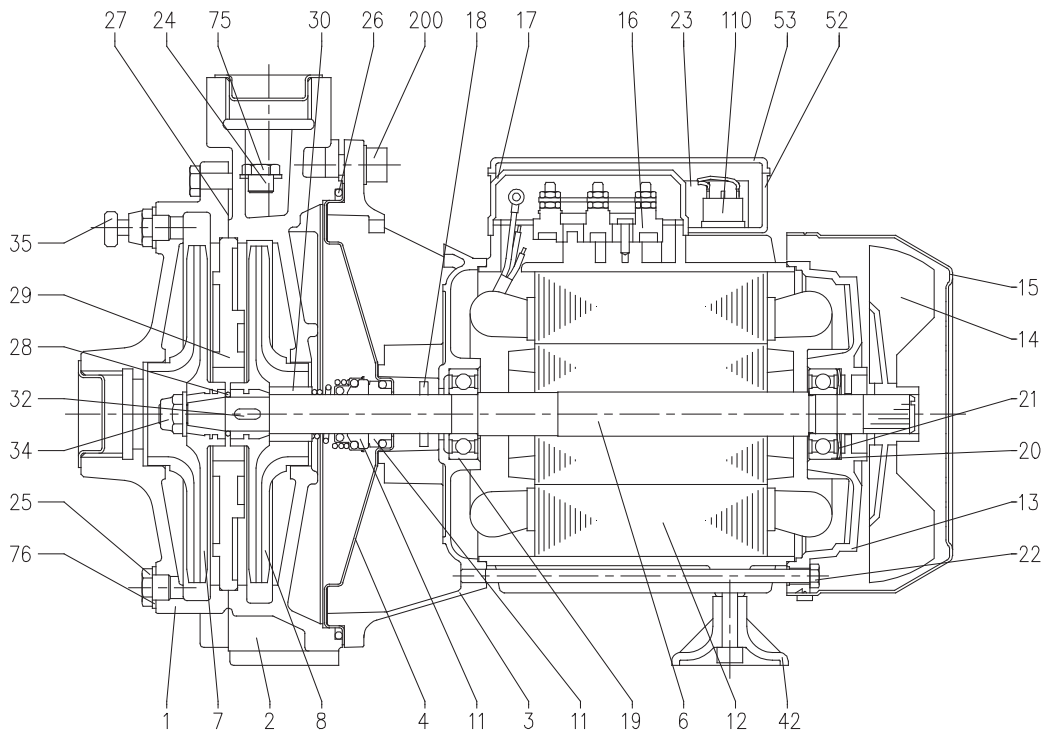
Rotation speed  $\approx 2900 \text{ min}^{-1}$   
Test standard: ISO 9906 – Annex A

CDA 5.50 (4 kW) - Impeller diameter = 179 mm



Rotation speed  $\approx 2900 \text{ min}^{-1}$   
 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	Compressed 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 0.75 - 1.00  
Brass for version CDA 1.50 - 2.00 - 3.00 - 4.00 - 5.50

[5] Only for version single phase CDA 1.50 - 2.00

[6] Material : AISI 303 (wet extension) for version CDA 0.75 - 1.00 - 1.50 - 2.00 - 3.00  
AISI 304 (wet extension) for version CDA 4.00 - 5.50

[7] See constructions mechanical seal page 301

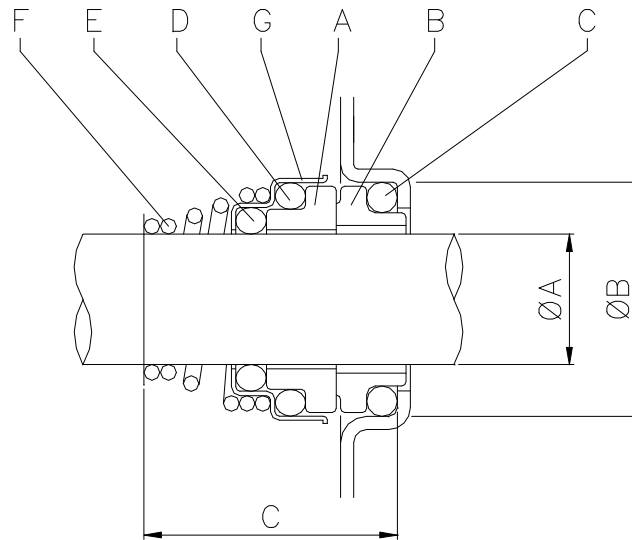
[8] Material : Aluminium for version CDA 0.75 - 1.00  
Cast iron for version CDA 1.50 - 2.00 - 3.00 - 4.00 - 5.50

[9] Material : AISI 304 for version CDA 0.75 - 1.00

Cast iron built-in the motor bracket for version CDA 1.50 - 2.00 - 3.00 - 4.00 - 5.50

[10] With gasket in NBR only for version single phase CDA 0.75 - 1.00

**MECHANICAL SEAL**



Single Phase	Three Phase	ØA	ØB	C
CDA 0.75 M	CDA 0.75 T	15	26	29
CDA 1.00 M	CDA 1.00 T	15	26	29
CDA 1.50 M	CDA 1.50 T	18	30.9	32
CDA 2.00 M	CDA 2.00 T	18	30.9	32
-	CDA 3.00 T	18	30.9	32
-	CDA 4.00 T	20	30.9	33
-	CDA 5.50 T	20	30.9	33

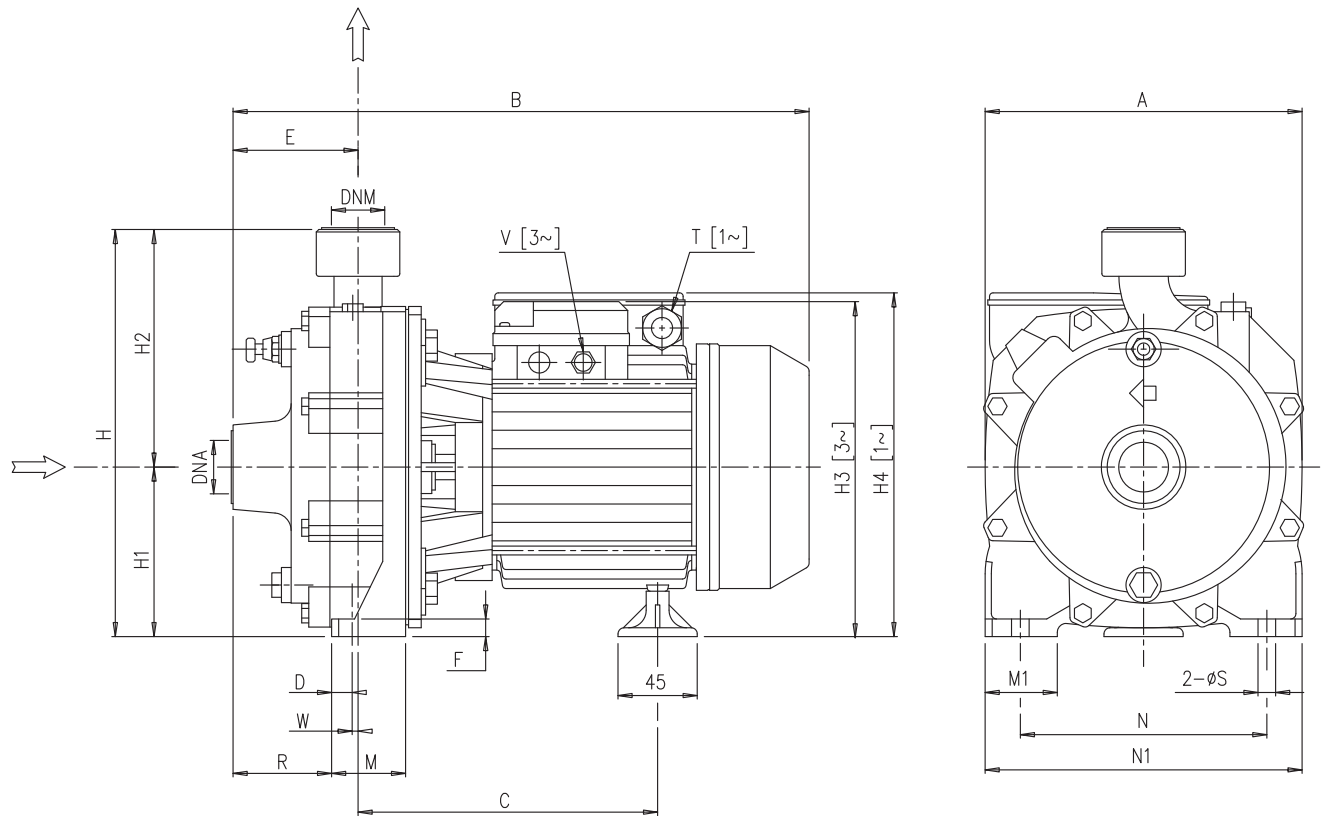
REF	PART NAME	MATERIAL
A	Rotary seal ring	Ceramic
B	Stationary seal ring	Carbon graphite
C	O Ring	NBR
D	O Ring	NBR
E	O Ring	NBR
F	Self driving spring	AISI 316
G	Frame	AISI 304

**BEARINGS**

Type pumps		Ball Bearing			
			(*)		(*)
Single phase	Three Phase	Pump side	Pump side	Fan side	Fan side
CDA 0.75 M	CDA 0.75 T	6202 2RSH	-	6202 2RSH	-
CDA 1.00 M	CDA 1.00 T	6202 2RSH	6202-ZZ C3	6202 2RSH	6202-ZZ C3
CDA 1.50 M	CDA 1.50 T	6204 2RSH	6204-ZZ C3	6203 2RSH	6203-ZZ C3
CDA 2.00 M	CDA 2.00 T	6204 2RSH	6204-ZZ C3	6203 2RSH	6203-ZZ C3
-	CDA 3.00 T	6204 2RSH	6204-ZZ C3	6203 2RSH	6203-ZZ C3
-	CDA 4.00 T	6306 2RS1	6306-ZZ C3	6205 2RSH	6205-ZZ C3

(\*) Only for IE3 Motors

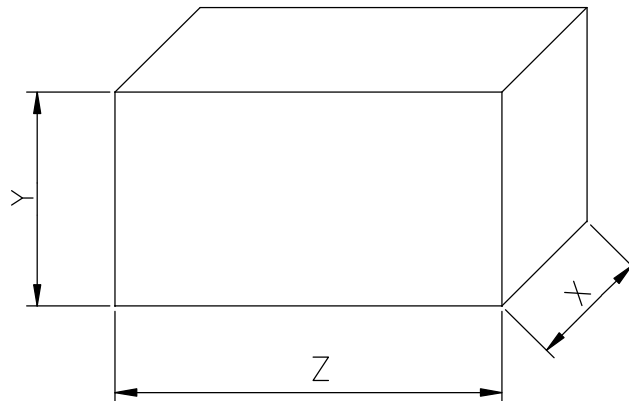
### PUMP



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 0.75M	183	336.3	-	179.8	-	8.3	73	9	227	97	130	-	-	198.0	42	40	140	180	57.5	PG11	-	-	6.8	9.5	G 1	G1	13.8	-	
CDA 0.75T	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 1.00M	183	336.3	-	179.8	-	8.3	73	9	227	97	130	-	-	198.0	42	40	140	180	57.5	PG11	-	-	6.8	9.5	G 1	G1	15	-	
CDA 1.00T	183	336.3	336.3	179.8	179.8	8.3	73	9	227	97	130	197.5	197.5	-	42	40	140	180	57.5	-	PG11	M16x1.5	6.8	9.5	G 1	G1	15	15	
CDA 1.50M	209	407.8	-	218.3	-	8.3	86	9	265	110	155	-	-	242.0	48	40	155	195	65.5	PG13.5	-	-	12.3	9.5	G1 1/4	G1	24.2	-	
CDA 1.50T	194	394.8	419.8	218.3	218.3	8.3	86	9	265	110	155	224.0	224.0	-	48	40	155	195	65.5	-	PG11	M20x1.5	12.3	9.5	G1 1/4	G1	24.9	25.8	
CDA 2.00M	209	410.8	-	218.3	-	8.3	86	9	265	110	155	-	-	242.0	48	40	155	195	65.5	PG13.5	-	-	12.3	9.5	G1 1/4	G1	26	-	
CDA 2.00T	194	408	420.5	218.3	218.3	8.3	86	9	265	110	155	224	224	-	48	40	155	195	65.5	-	PG11	M20x1.5	12.3	9.5	G1 1/4	G1	27.1	28	
CDA 3.00T	194	410.8	423.3	218.3	218.3	8.3	86	9	265	110	155	224	224	-	48	40	155	195	65.5	-	PG11	M20x1.5	12.3	9.5	G1 1/4	G1	25.8	26.7	
CDA 4.00T	228	461.5	494.5	225.3	262.5	12.0	95.5	12	308.5	133.5	175	264.5	259.5	-	57	50	180	230	71.5	-	G1 1/2	M20x1.5	12	12	G1 1/2	G1 1/4	46.8	46.8	
CDA 5.50T	228	508	508	225.3	225.3	12.0	95.5	12	308.5	133.5	175	264.5	264.5	-	57	50	180	230	71.5	-	G1 1/2	M20x1.5	12	12	G1 1/2	G1 1/4	52	52	

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

PACKING



Type pumps		Packing [mm]						Weight [kgf]		
Single phase	Three phase	X		Y		Z		[1~]	[3~]	(*) [3~]
			(*)		(*)		(*)			
CDA 0.75 M	CDA 0.75 T	210	-	290	-	370	-	14.3	14.3	-
CDA 1.00 M	CDA 1.00 T	240	240	320	320	435	435	15.7	15.7	15.7
CDA 1.50 M	CDA 1.50 T	240	240	320	320	435	435	25	25.7	26.6
CDA 2.00 M	CDA 2.00 T	240	240	320	320	435	435	26.7	27.9	28.8
-	CDA 3.00 T	240	237	320	320	435	477	-	26.6	27.5
-	CDA 4.00 T	280	280	340	350	490	520	-	48.3	48.3
-	CDA 5.50 T	335	335	400	400	565	565	-	54	54

[1~] Single phase

[3~] Three phase

(\*) Only for IE3 Motors



## MOTOR DATA

Pump type		Power		Efficiency		Capacitor		Efficiency (% load)			Input		Full load current			Locked rotor current		
Single Phase	Three Phase	[kW]	[HP]	Single Phase	Three Phase	Single Phase		Three phase			Single Phase	Three Phase	[A]			[A]		
						[μF]	[V]	50%	75%	100%			230 V	230 V	400 V	230 V	230 V	400 V
CDA 0.75 M	CDA 0.75 T	0.55	0.75	-	-	16	450	-	-	-	1.1	1.05	5.0	3.4	2.0	16.1	17.0	9.8
CDA 1.00 M	CDA 1.00 T	0.75	1	-	IE2	20	450	77.2	80.9	81.3	1.38	1.13	6.1	3.4	2.0	24	22.0	12.9
-	CDA 1.00 T	0.75	1	-	IE3	-	-	80.9	82.3	82.1	-	0.91	-	3.0	1.7	-	19.7	11.4
CDA 1.50 M	CDA 1.50 T	1.1	1.5	-	IE2	40	450	79.7	82.5	83.0	1.85	1.80	8.6	5.5	3.2	38	45.0	25.7
-	CDA 1.50 T	1.1	1.5	-	IE3	-	-	83.0	85.8	85.6	-	1.77	-	5.8	3.3	-	47.4	27.4
CDA 2.00 M	CDA 2.00 T	1.5	2	-	IE2	40	450	80.3	83.4	83.8	2.35	2.25	10.8	7.8	4.5	43	34.3	20.0
-	CDA 2.00 T	1.5	2	-	IE3	-	-	84.2	86.8	86.9	-	2.01	-	7.1	4.1	-	66.6	38.4
-	CDA 3.00 T	2.2	3	-	IE2	-	-	83.0	84.4	83.8	-	2.74	-	8.5	4.9	-	59.0	34.3
-	CDA 3.00 T	2.2	3	-	IE3	-	-	86.2	87.0	86.0	-	2.55	-	8.2	4.7	-	66.6	38.4
-	CDA 4.00 T	3	4	-	IE2	-	-	83.1	86.3	86.8	-	4.10	-	12.5	7.2	-	104.0	59.8
-	CDA 4.00 T	3	4	-	IE3	-	-	85.9	87.5	87.1	-	3.44	-	11.1	6.4	-	90.0	52.0
-	CDA 5.50 T	4	5.5	-	IE2	-	-	84.3	87.2	87.8	-	4.56	-	15.1	8.7	-	151.0	87.0
-	CDA 5.50 T	4	5.5	-	IE3	-	-	85.8	88.3	88.4	-	4.52	-	15.1	8.7	-	131.8	76.1

## NOISE DATA

Pump type		Power		L <sub>pA</sub> - dB(A) *
Single Phase	Three Phase	[kW]	[HP]	
CDA 0.75 M	CDA 0.75 T	0.55	0.75	<70
CDA 1.00 M	CDA 1.00 T	0.75	1	
CDA 1.50 M	CDA 1.50 T	1.1	1.5	
CDA 2.00 M	CDA 2.00 T	1.5	2	
-	CDA 3.00 T	2.2	3	
-	CDA 4.00 T	3	4	
-	CDA 5.50 T	4	5.5	

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

Tolerance ± 2.5 dB.

