



CDX

Single Impeller Stainless Steel Centrifugal Pumps



CONTENTS50 Hz
V10

- SPECIFICATIONS	Page
Features & Applications	100
Typical Exploded View	101
Pump & Motor Specifications	102
Selection Chart / Type key	103
- PERFORMANCE CURVES	
Performance Curve - CDX 70/05, CDX 70/07	200
Performance Curve - CDX 90/10	201
Performance Curve - CDX 120/07, CDX 120/12, CDX 120/20	202
Performance Curve - CDX 200/12 CDX 200/20, CDX 200/25	203
- CONSTRUCTIONS	
Constructions – Sectional View	300
Constructions – Exploded View	301
Constructions – Mechanical Seal	302
Constructions – Diagram and Electrical Connections – Single Phase	303
Constructions – Diagram and Electrical Connections – Three Phase	304
- DIMENSIONS	
Dimensions	400
Packing and Weight	401
- TECHNICAL DATA	
Technical Data – Motor and Bearings	500



Stainless steel single impeller centrifugal pumps. Featuring the one piece volute manufactured using Ebara's unique plasma stamping process.

Specifications

Maximum working pressure : 8 bar
Maximum liquid temperature: 60°C (for models 70/05-70/07-90/10)
90°C (for other models)

Materials

Pump casing: 304 Stainless Steel
Impeller: 304 Stainless Steel
Casing Cover: 304 Stainless Steel
Shaft : 303 Stainless Steel (part in contact with liquid)
Bracket & Motor Frame: Aluminium
Mechanical seal: Carbon/Ceramic/NBR

Motor Data

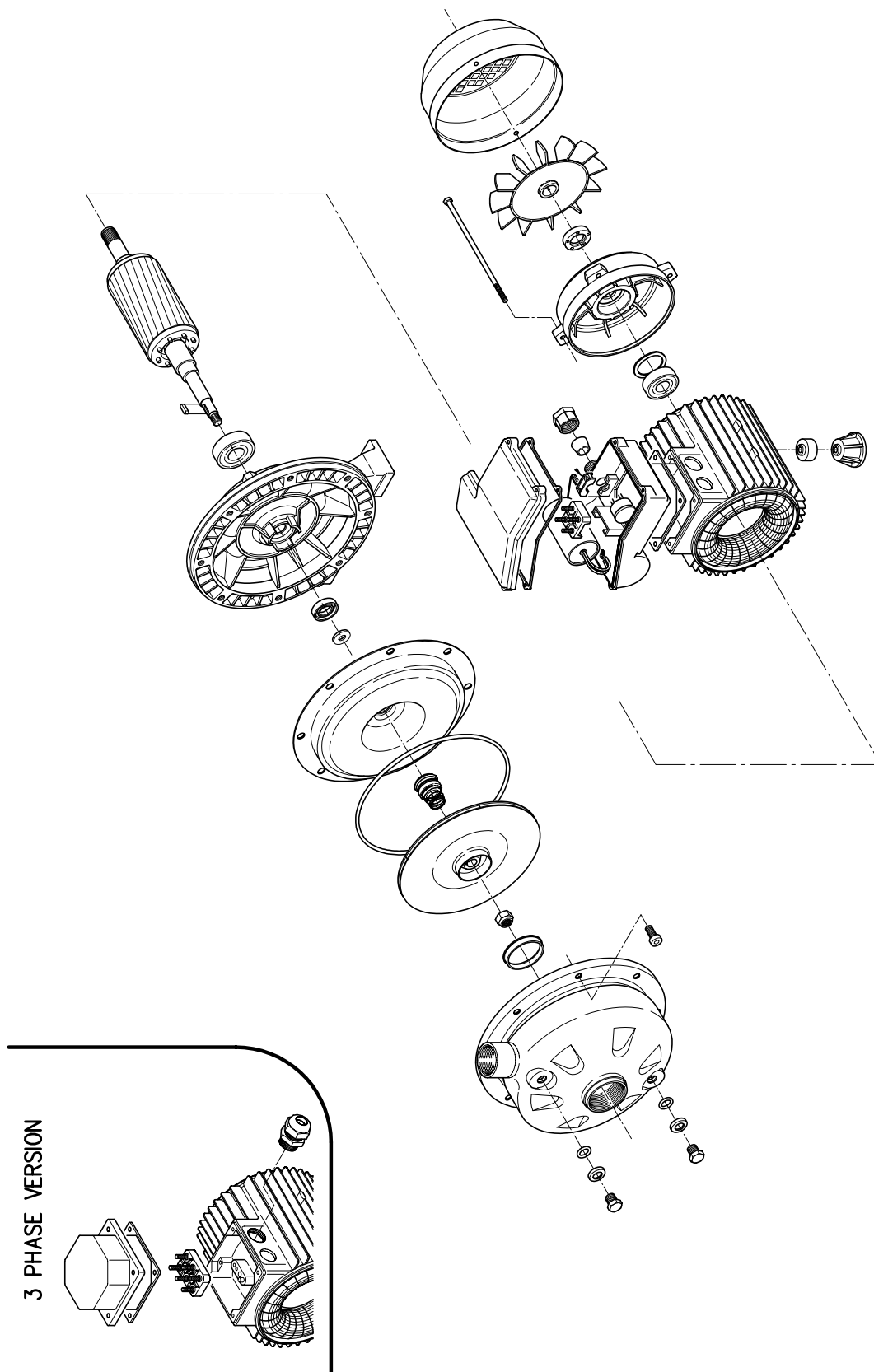
TEFC, 2 pole motor
Insulation class F
IP55 protection
50 Hz, 3 phase - 415 Volt, 1 phase - 240 Volt
In built overload protection for 1 phase

Range

0.37 to 1.5 kW - 1 phase
0.37 to 1.8 kW - 3 phase

Supply

1.8 m cable & plug with 1 phase models
Optional high temperature seal available (110°C)
(Carbon/Ceramic/Viton seal, Viton O' Rings)
Optional hard faced seal available
(SiC/SiC/Viton seal, Viton O' Rings)



3 PHASE VERSION

PUMP AND MOTOR SPECIFICATIONS

50 Hz

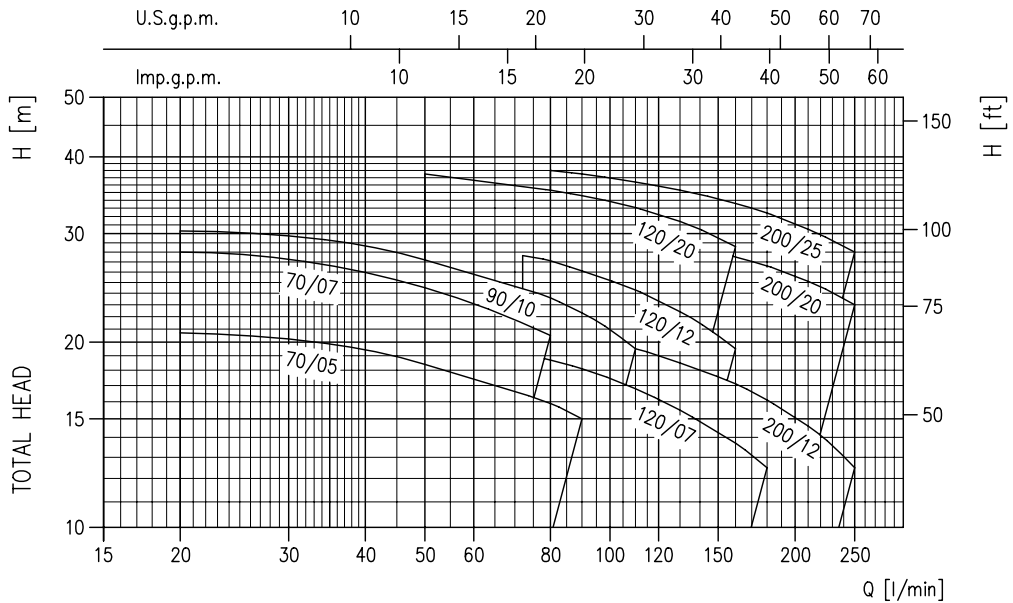
V10

PUMP		
Liquid Handled	Type of liquid	Clean water
	Max temperature [°C]	60 (CDX 70/05-70/07-90/10) 90
	Min temperature [°C]	-10
Maximum working pressure [MPa]		0.8
Construction	Impeller	Closed centrifugal type
	Shaft seal type	Mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction	G 1¼ (G 1½ CDX200)
	Discharge	G 1
Material	Casing	AISI 304
	Impeller	AISI 304
	Casing cover	AISI 304
	Shaft seal	Ceramic/Carbon/NBR (Standard) Ceramic/Carbon/FPM (High temp seal - optional) SiC/SiC/FPM (Hard face seal - optional)
	Shaft	AISI 303 (Wet extension)
	Bracket	Aluminium
Applicable standard of test		ISO 9906 – Annex A

MOTOR		
Type	Electric - TEFC	
	Single Phase	Three Phase
No. of Poles	2	
Rotation speed [min ⁻¹]	≈ 2800	
Insulation Class	F	
Protection degree	IP 55	
Power rating	[kW]	0.37 ÷ 1.5
	[HP]	0.5 ÷ 2
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	Aluminium	
Dimensions of cable entry	PG11 - PG13.5 (See dimension page 400)	

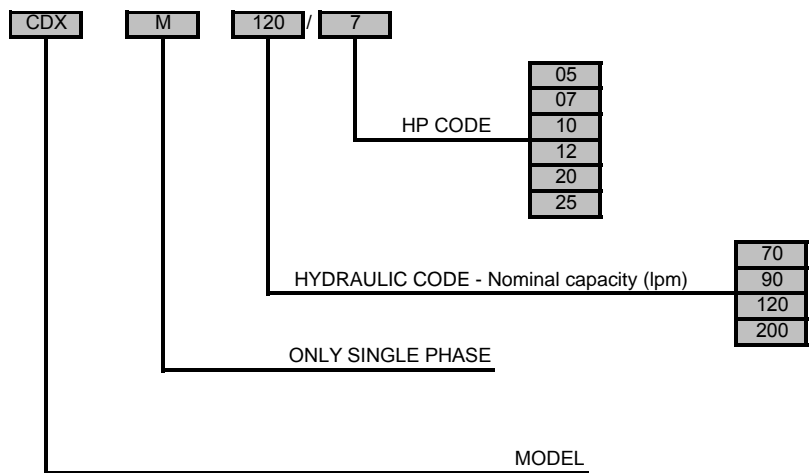
SELECTION CHART / TYPE KEY

50 Hz
V10



Type pumps		Power		Q=Capacity										
Single Phase	Three Phase	[kW]	[HP]	l/min	20	50	80	90	110	130	160	180	210	250
				m³/h	1.2	3	4.8	5.4	6.6	7.8	9.6	10.8	12.6	15
H=Total manometric head in meters														
CDXM 70/05	CDX 70/05	0.37	0.5	20.7	18.4	15.9	15	-	-	-	-	-	-	-
CDXM 70/07	CDX 70/07	0.55	0.8	28	24.5	20.5	-	-	-	-	-	-	-	-
CDXM 90/10	CDX 90/10	0.75	1	30.3	27.2	23.6	22.3	19.5	-	-	-	-	-	-
CDXM 120/07	CDX 120/07	0.55	0.8	-	20.5	18.7	18.1	16.8	15.5	13.7	12.5	-	-	-
CDXM 120/12	CDX 120/12	0.9	1.2	-	29.5	27.1	26.1	24.3	22.4	19.5	-	-	-	-
CDXM 120/20	CDX 120/20	1.5	2	-	37.5	35.3	34.6	33.1	31.4	28.6	-	-	-	-
CDXM 200/12	CDX 200/12	0.9	1.2	-	-	20.6	20.2	19.5	18.5	17.1	16.1	14.6	12.5	-
CDXM 200/20	CDX 200/20	1.5	2	-	-	31	30.6	29.7	28.9	27.5	26.6	25.1	23	-
-	CDX 200/25	1.8	2.5	-	-	38	37.5	36.4	35.3	33.6	32.4	30.5	28	-

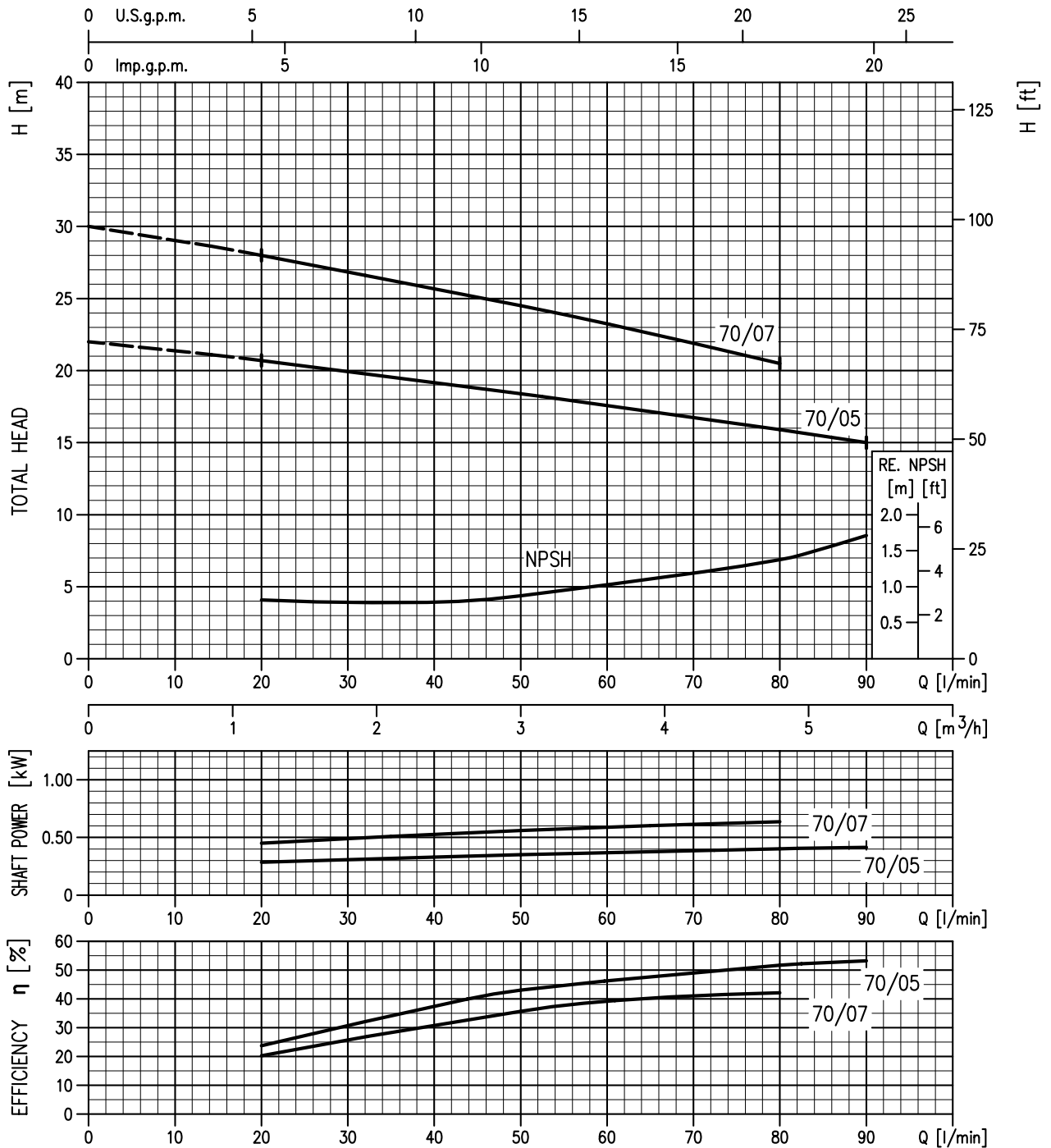
TYPE KEY:



PERFORMANCE CURVE

50 Hz
V10

CDX 70/05 (0.37 kW) Impeller diameter = 132
CDX 70/07 (0.55 kW) Impeller diameter = 157

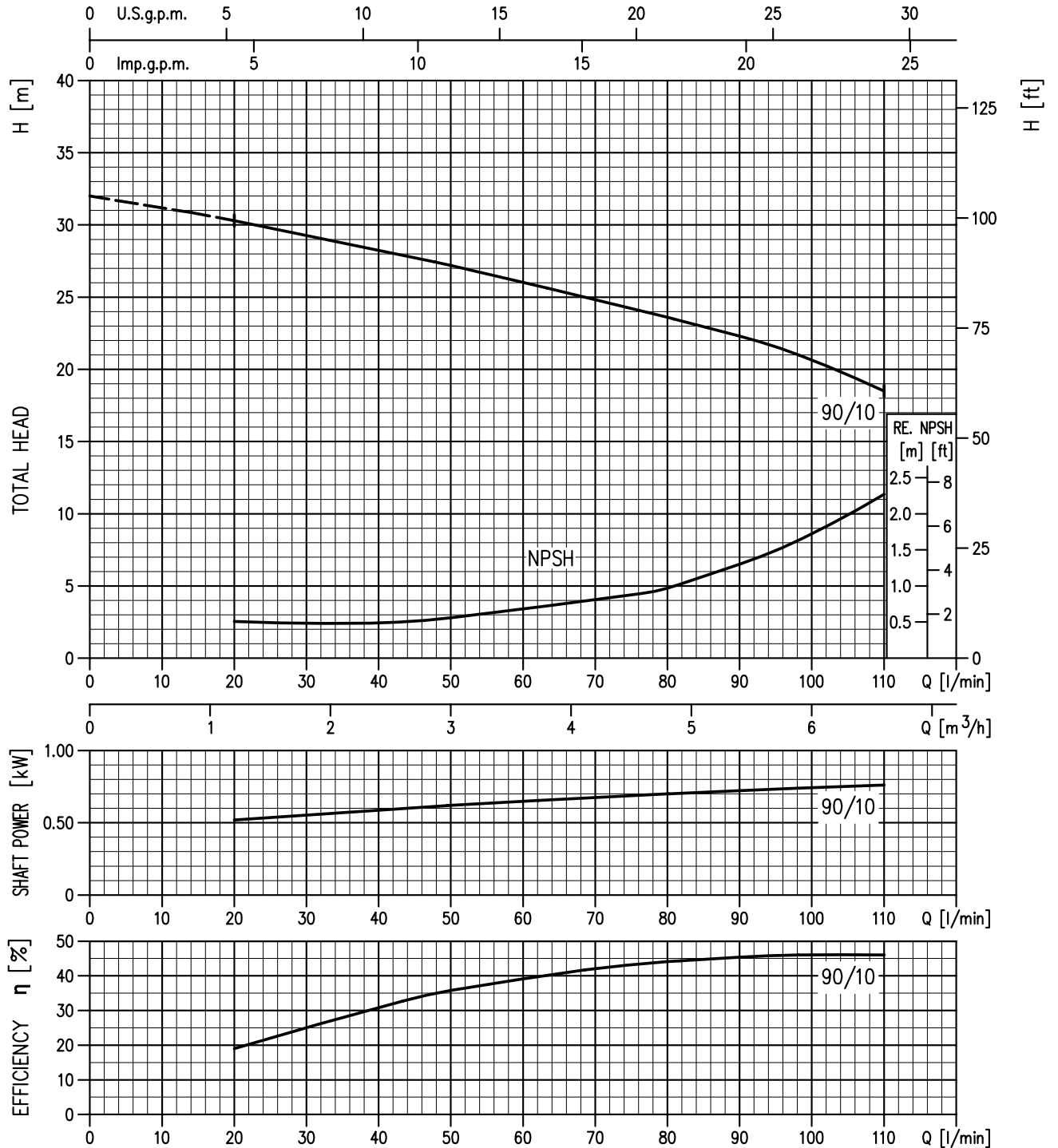


Rotation speed: $\approx 2800 \text{ min}^{-1}$
Test fluid: clean water at 20°C
Applicable standard of test: ISO 9906 – Annex A

PERFORMANCE CURVE

50 Hz
V10

CDX 90/10 (0.75 kW) Impeller diameter = 157

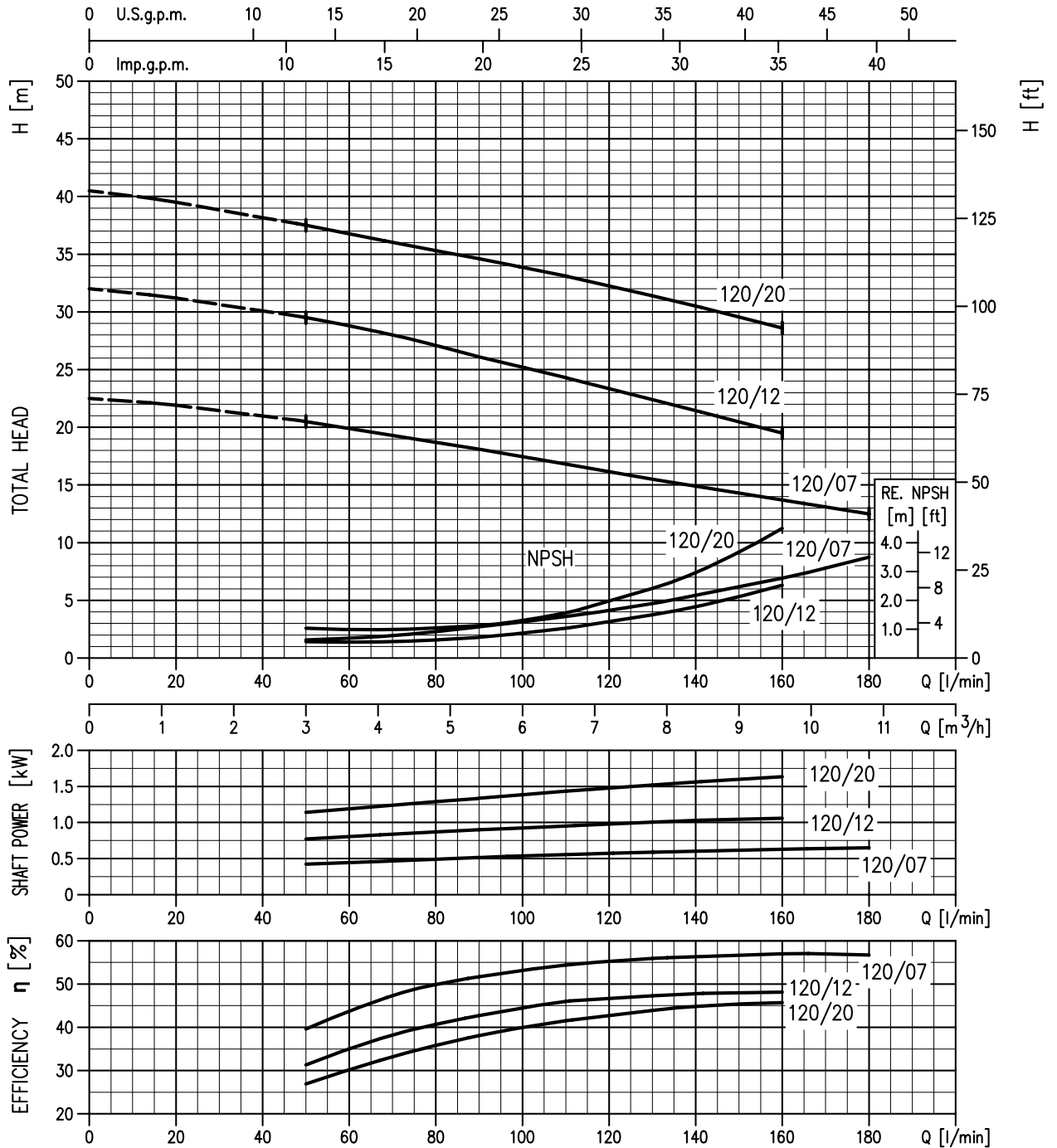


Rotation speed: $\approx 2800 \text{ min}^{-1}$
 Test fluid: clean water at 20°C
 Applicable standard of test: ISO 9906 – Annex A

PERFORMANCE CURVE

50 Hz
V10

CDX 120/07 (0.55 kW) Impeller diameter = 132
 CDX 120/12 (0.90 kW) Impeller diameter = 157
 CDX 120/20 (1.50 kW) Impeller diameter = 176

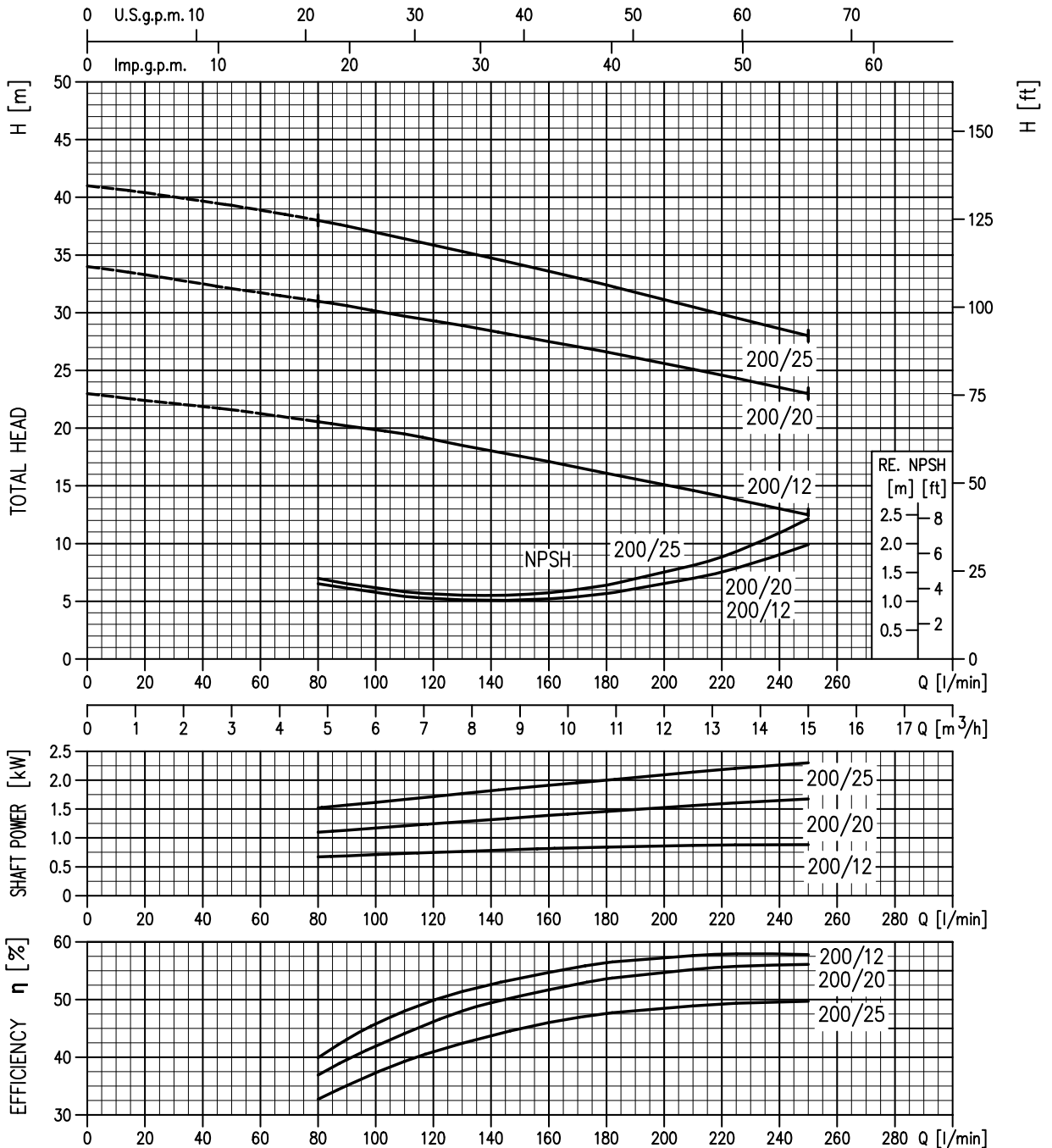


Rotation speed: $\approx 2800 \text{ min}^{-1}$
 Test fluid: clean water at 20°C
 Applicable standard of test: ISO 9906 – Annex A

PERFORMANCE CURVE

50 Hz
V10

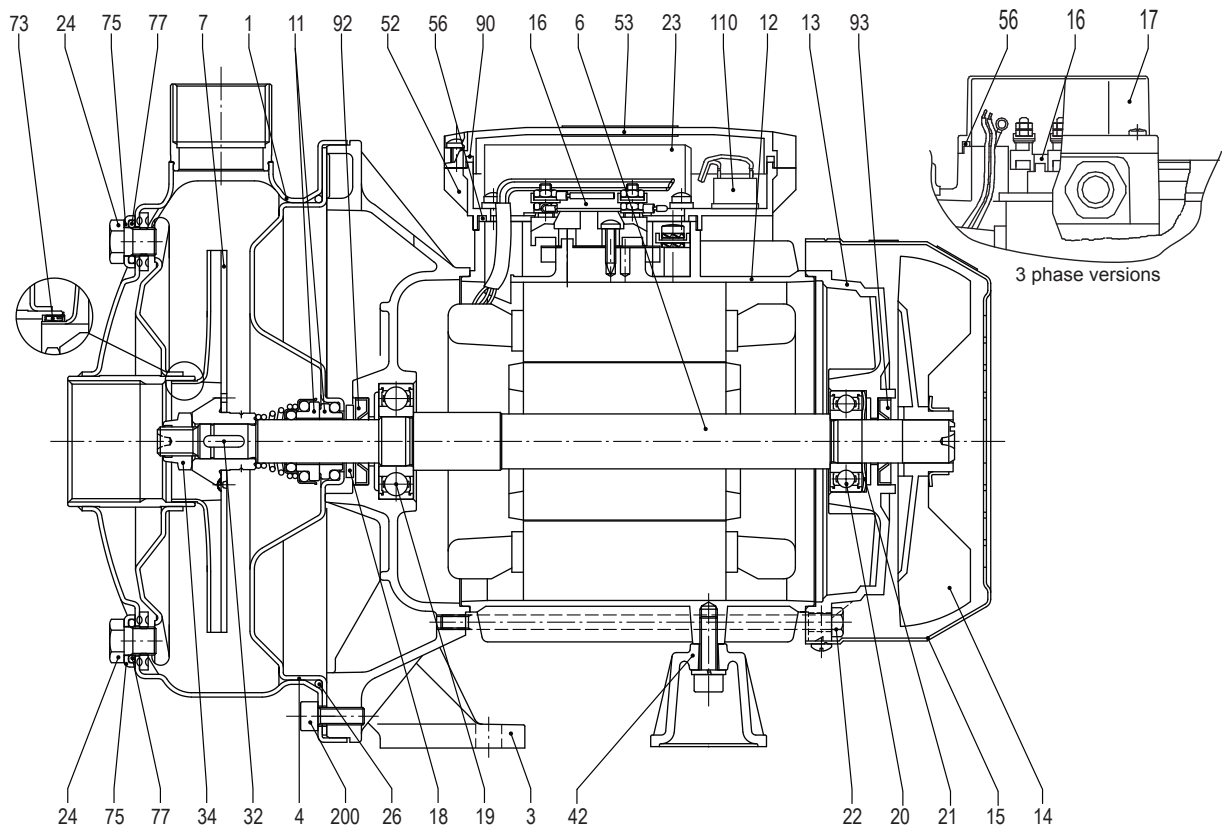
CDX 200/12 (0.9 kW) Impeller diameter = 132
 CDX 200/20 (1.5 kW) Impeller diameter = 157
 CDX 200/25 (1.8 kW) Impeller diameter = 176



Rotation speed: $\approx 2800 \text{ min}^{-1}$
 Test fluid: clean water at 20°C
 Applicable standard of test: ISO 9906 – Annex A

CONSTRUCTIONS - SECTIONAL VIEW

50 Hz
V10



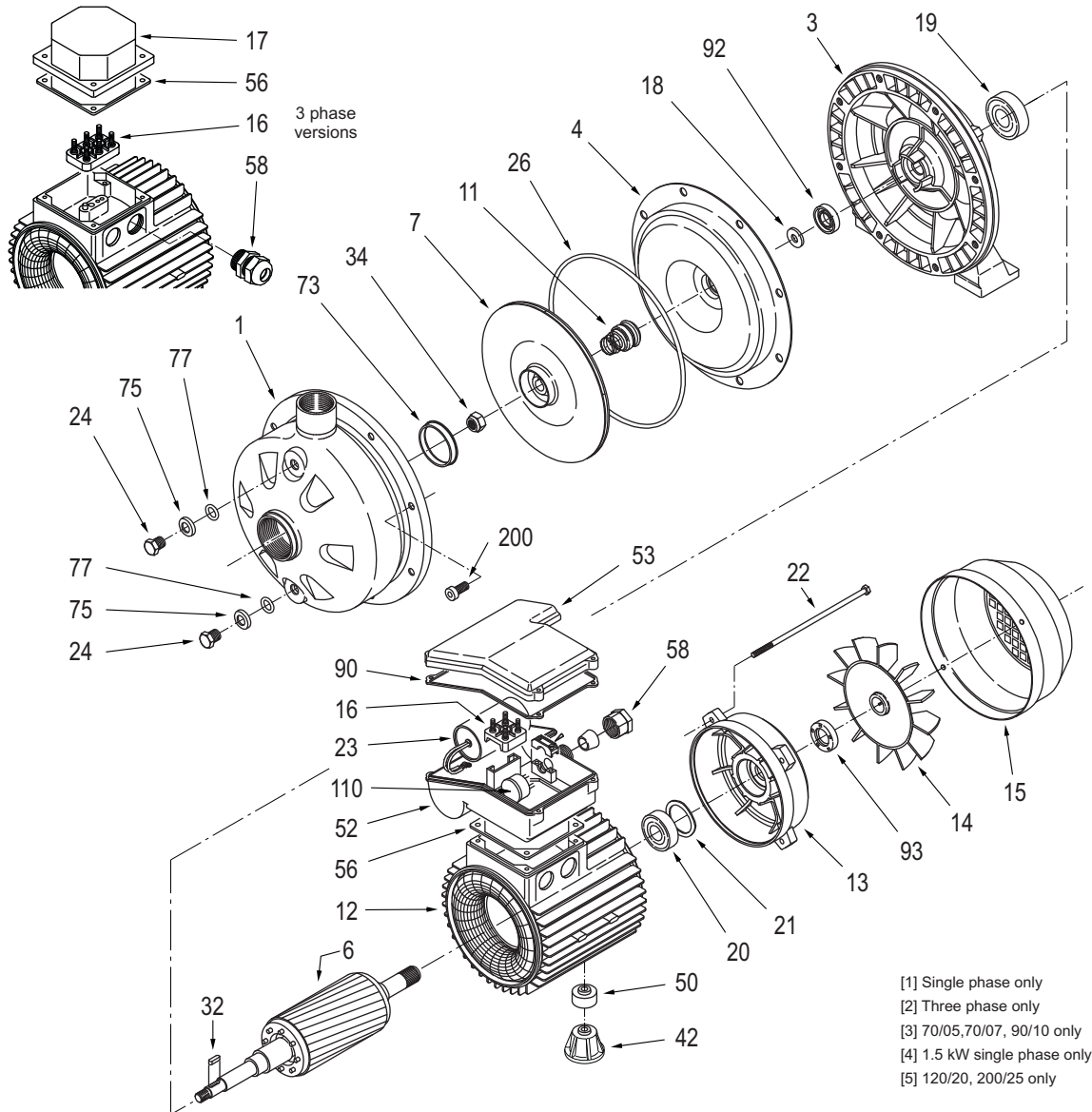
No.	PART NAME	MATERIAL	QTY	No.	PART NAME	MATERIAL	QTY	No.	PART NAME	MATERIAL	QTY
1	Casing	AISI 304	1	18	Splash ring	NBR	1	53	Terminal box cover [1]	Polypropylene	1
3	Motor bracket	Aluminium	1	19	Pump side ball bearing	–	1	56	Box gasket	NBR	1
4	Casing cover	AISI 304	1	20	Fan side ball bearing	–	1	73 [#]	Casing ring [3]	NBR/AISI 304	1
6	Shaft with rotor	AISI 303 <small>(In contact with liquid)</small>	1	21	Adjusting ring	Steel C70	1	75	Washer	AISI 304	2
7	Impeller	AISI 304	1	22	Tie rod	Fe 42 Zinc	4	77 [#]	O-ring	NBR	2
11 [#]	Mechanical seal	Ceramic/Carbon/NBR	1	23	Capacitor [1]	–	1	90	Cover gasket [1]	NBR	1
12	Motor frame with stator	–	1	24	Priming/Drain plug	AISI 303	2	92	Lip seal	NBR	1
13	Motor cover	Aluminium	1	26 [#]	O-ring	NBR	1	93	Lip seal	NBR	1
14	Fan	Polypropylene	1	32	Key	AISI 304	1	110	Protector [4]	–	1
15	Fan cover	Steel C70	1	34	Impeller nut	AISI 304	1	200	Screw	Stainless steel A2 UNI7323	8
16	Terminal block	–	1	42	Motor support	Aluminium	1	–	–	–	–
17	Terminal box cover	Aluminium [2]	1	52	Terminal box [1]	Polypropylene	1	–	–	–	–

Optional materials see table below [1] Single phase only [2] Three phase only [3] 70/05,70/07, 90/10 only [4] 1.5 kW single phase only

No.	PART NAME	QTY	MATERIAL	
			High temp. version	Hard face seal version
11	Mechanical seal	1	Ceramic/Carbon/Viton	Silicon Carbide/Silicon Carbide/Viton
26	O-ring	1	Viton	Viton
73	Casing ring [3]	1	Viton/AISI 304	Viton/AISI 304
77	O-ring	2	Viton	Viton

CONSTRUCTIONS - EXPLODED VIEW

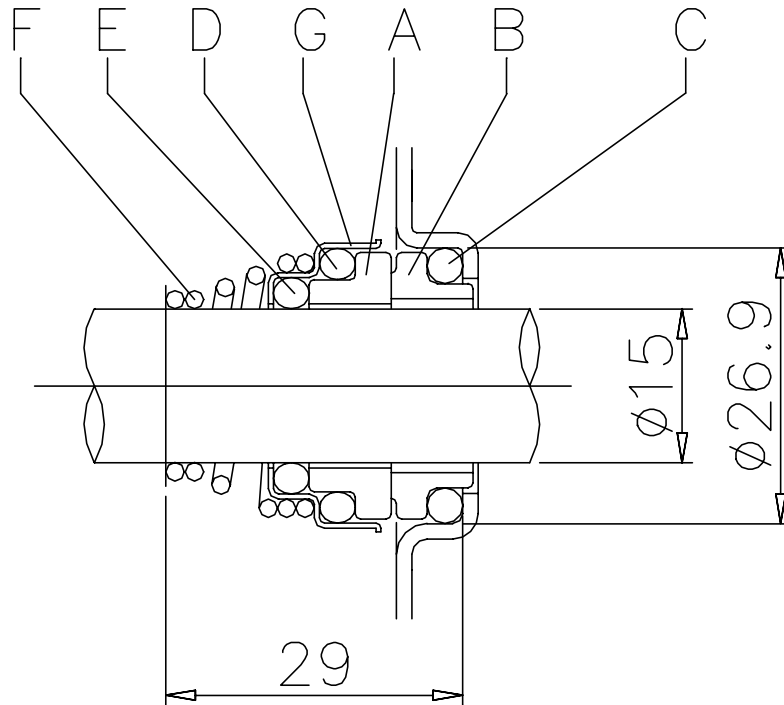
50 Hz
V10



No.	PART NAME	MATERIAL	QTY	No.	PART NAME	MATERIAL	QTY	No.	PART NAME	MATERIAL	QTY
1	Casing	AISI 304	1	18	Splash ring	NBR	1	52	Terminal box [1]	Polypropylene	1
3	Motor bracket	Aluminium	1	19	Pump side ball bearing	-	1	53	Terminal box cover [1]	Polypropylene	1
4	Casing cover	AISI 304	1	20	Fan side ball bearing	-	1	58	Cable Entry	Polypropylene	1
6	Shaft with rotor	AISI 303 (in contact with liquid)	1	21	Adjusting ring	Steel C70	1	56	Box gasket	NBR	1
7	Impeller	AISI 304	1	22	Tie rod	Fe 42 Zinc	4	73#	Casing ring [3]	NBR/AISI 304	1
11#	Mechanical seal	Ceramic/Carbon/NBR	1	23	Capacitor [1]	-	1	75	Washer	AISI 304	2
12	Motor frame with stator	-	1	24	Priming/Drain plug	AISI 303	2	77#	O-ring	NBR	2
13	Motor cover	Aluminium	1	26#	O-ring	NBR	1	90	Cover gasket [1]	NBR	1
14	Fan	Polypropylene	1	32	Key	AISI 304	1	92	Lip seal	NBR	1
15	Fan cover	Steel C70	1	34	Impeller nut	AISI 304	1	93	Lip seal	NBR	1
16	Terminal block	-	1	42	Motor support	Aluminium	1	110	Protector [4]	-	1
17	Terminal box cover	Aluminium [2]	1	50	Spacer [5]	Aluminium	1	200	Screw	Stainless steel A2 UN17323	8

Optional materials see table below

No.	PART NAME	QTY	MATERIAL	
			High temp. version	Hard face seal version
11	Mechanical seal	1	Ceramic/Carbon/Viton	Silicon Carbide/Silicon Carbide/Viton
26	O-ring	1	Viton	Viton
73	Casing ring [3]	1	Viton/AISI 304	Viton/AISI 304
77	O-ring	2	Viton	Viton

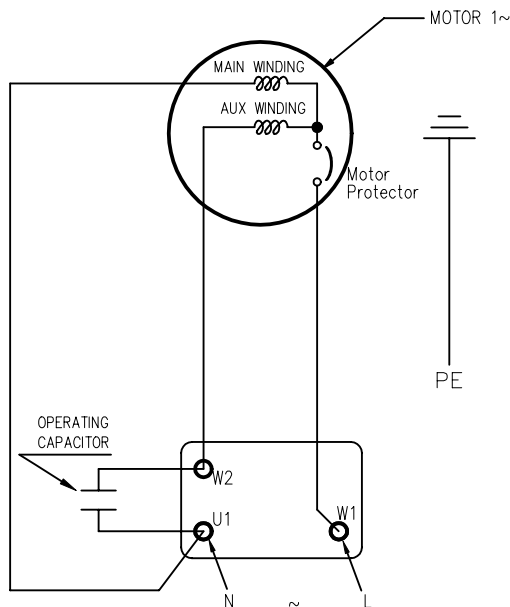


REF	PART NAME	MATERIAL		
		Standard version	Optional High Temp	Optional Hard Face
A	Rotary seal ring	Ceramic	Ceramic	Silicon carbide
B	Stationary seal ring	Carbon graphite	Carbon graphite	Silicon carbide
C	O Ring	NBR	FPM	FPM
D	O Ring	NBR	FPM	FPM
E	O Ring	NBR	FPM	FPM
F	Self driving spring	AISI 316	AISI 316	AISI 316
G	Frame	AISI 304	AISI 304	AISI 316

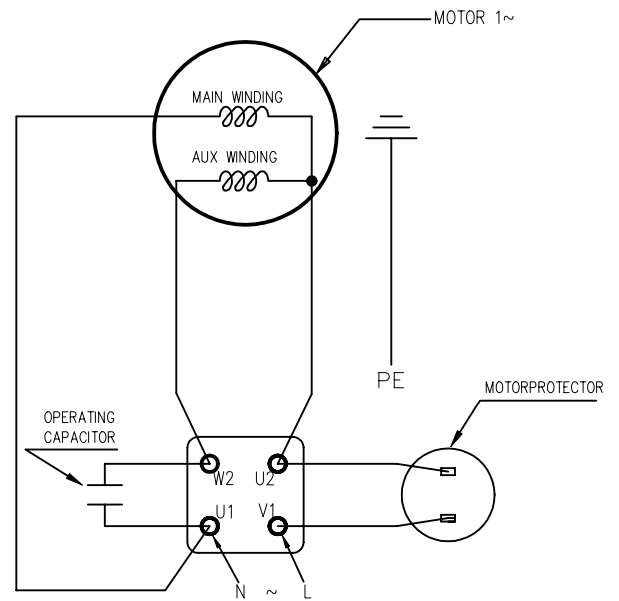
SINGLE PHASE DIAGRAM AND ELECTRIC CONNECTIONS

50 Hz
V10

FOR MOTORS WITH LOCKED ROTOR CURRENT
UP TO 25 (A)
INTERNAL MOTOR PROTECTOR

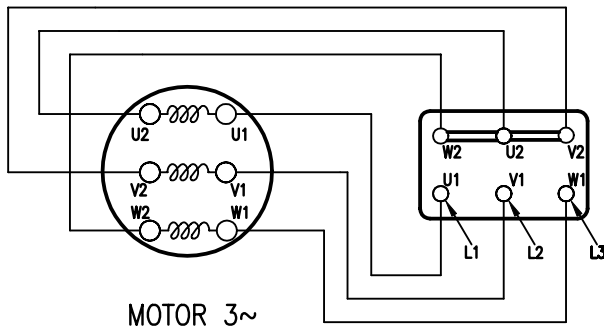


FOR MOTORS WITH LOCKED ROTOR CURRENT
UP TO 25 (A)
EXTERNAL MOTOR PROTECTOR

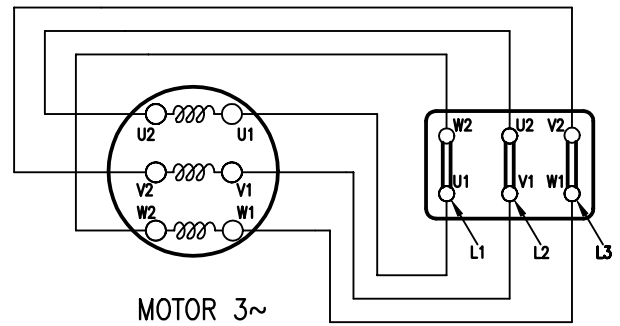


PUMP	MOTORPROTECTOR	
	INTERNAL	EXTERNAL
CDXM 70/05	X	
CDXM 70/07	X	
CDXM 90/10	X	
CDXM 120/07	X	
CDXM 120/12	X	
CDXM 120/20		X
CDXM 200/12	X	
CDXM 200/20		X

STAR CONNECTION (400 V)

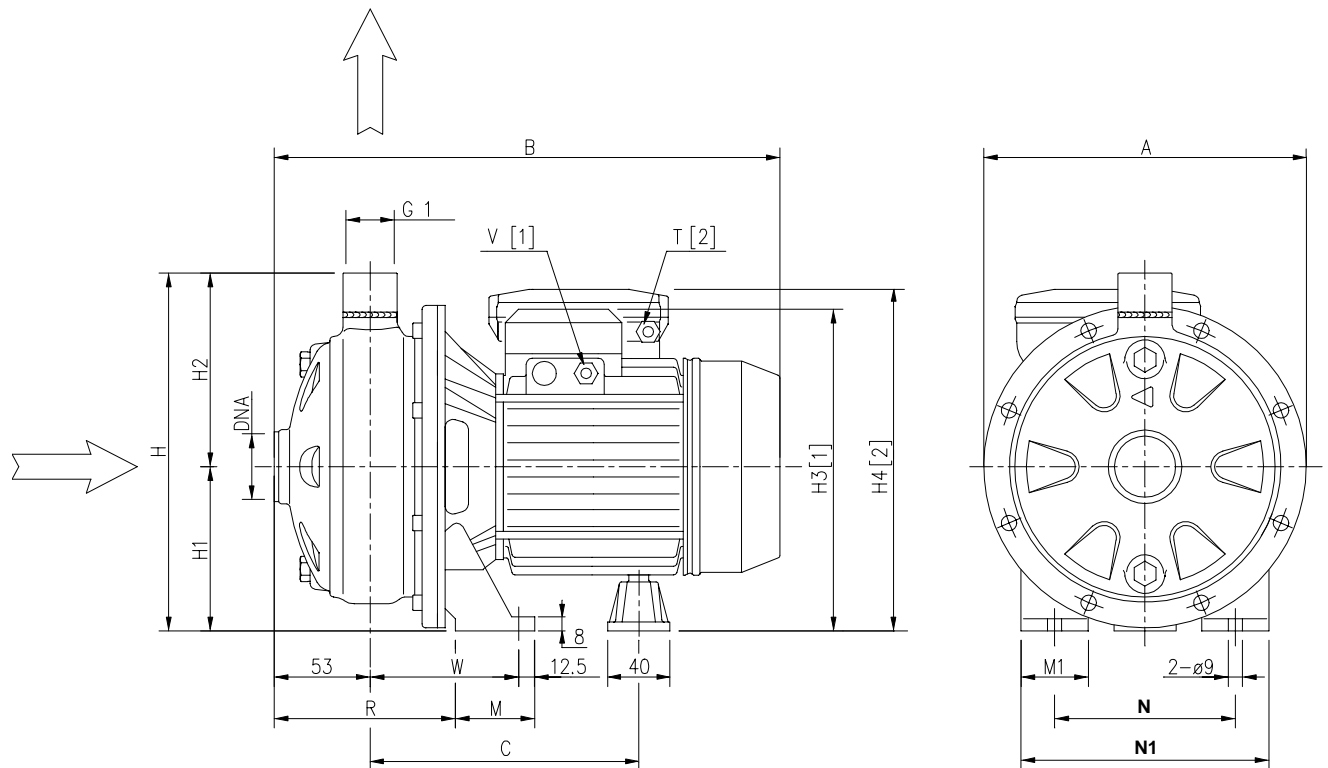


DELTA CONNECTION (230 V)



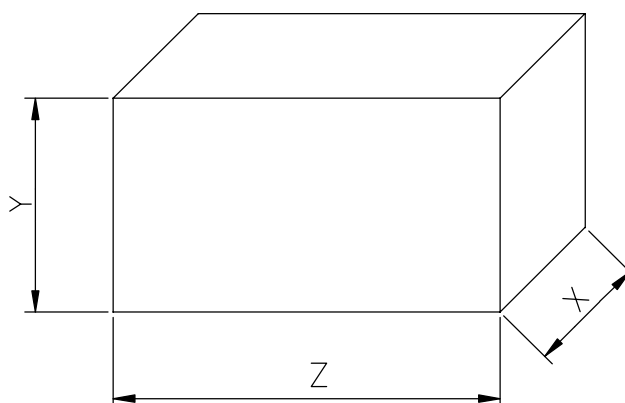
DIMENSIONS

50 Hz
V10



[1] Three phase
[2] Single phase

Pump type CDXM-CDX	Dimensions [mm]																
	A	B	C	H	H1	H2	H3	H4	M	M1	N	N1	R	T	V	W	DNA
70/05	208	321	182	229.5	106	123.5	208	216	50	38	120	160	108	PG11	PG11	93	G1 1/4
70/07	208	321	182	229.5	106	123.5	208	216	50	38	120	160	108	PG11	PG11	93	G1 1/4
90/10	208	321	182	229.5	106	123.5	208	216	50	38	120	160	108	PG11	PG11	93	G1 1/4
120/07	208	321	182	229.5	106	123.5	208	216	50	38	120	160	108	PG11	PG11	93	G1 1/4
120/12	208	321	182	229.5	106	123.5	208	216	50	38	120	160	108	PG11	PG11	93	G1 1/4
120/20	232	347	204	250	118	132	237	249	55	40	140	180	105.5	PG13.5	PG11	95	G1 1/4
200/12	208	321	182	229.5	106	123.5	208	216	50	38	120	160	108	PG13.5	PG11	93	G1 1/2
200/20	208	347	204	229.5	106	123.5	225	237	55	40	140	180	105.5	PG13.5	PG11	95	G1 1/2
200/25 3ph only	232	347	204	250	118	132	237	-	55	40	140	180	105.5	-	PG11	95	G1 1/2



Type pumps		PACKING [mm]			WEIGHT [kg]	
Single Phase	Three Phase	X	Y	Z	Single Phase	Three Phase
CDXM 70/05	CDX 70/05	227	280	335	9.1	9.1
CDXM 70/07	CDX 70/07	227	280	335	10.4	10.4
CDXM 90/10	CDX 90/10	227	280	335	11.9	11.9
CDXM 120/07	CDX 120/07	227	280	335	10.4	10.4
CDXM 120/12	CDX 120/12	227	280	335	12.5	12.5
CDXM 120/20	CDX 120/20	245	315	360	17.2	16.2
CDXM 200/12	CDX 200/12	218	280	332	12.1	12.1
CDXM 200/20	CDX 200/20	250	315	375	15.3	14.2
-	CDX 200/25	245	305	380	-	17

TECHNICAL DATA - MOTOR AND BEARINGS

50 Hz
V10

Type pumps		Power		Locked rotor current			Capacitor		Power input [kW]		Full load current [A]		
Single Phase 230 V 50 Hz	Three Phase 230/400 V 50 Hz	[kW]	[HP]	Single Phase 230 V 50 Hz	Three Phase 230 V 50 Hz	Phase 400 V 50 Hz	Single Phase [μF]	Vc [V]	Single Phase	Three Phase	Single Phase	Three Phase 230 V	400 V
CDXM 70/05	CDX 70/05	0.37	0.5	10.1	10.7	6.15	12.5	450	0.7	0.7	3.1	2.4	1.4
CDXM 70/07	CDX 70/07	0.55	0.75	16.1	16.8	9.7	16	450	1	1	4.6	3.5	2
CDXM 90/10	CDX 90/10	0.75	1	22.7	24.1	13.9	20	450	1.2	1.1	5.6	4	2.3
CDXM 120/07	CDX 120/07	0.55	0.75	16.1	16.8	9.7	16	450	1	1	4.6	3.2	1.9
CDXM 120/12	CDX 120/12	0.9	1.2	25	28.2	16.3	31.5	450	1.6	1.6	6.9	5.2	3
CDXM 120/20	CDX 120/20	1.5	2	43	41.6	24	40	450	2.1	2.1	9.3	7	4
CDXM 200/12	CDX 200/12	0.9	1.2	25	28.2	16.3	31.5	450	1.4	1.3	6.3	4.7	2.7
CDXM 200/20	CDX 200/20	1.5	2	43	41.6	24	40	450	2.3	2.1	10.7	7	4
-	CDX 200/25	1.8	2.5	-	46.8	27	-	-	-	2.8	-	8.2	4.8

Type pumps		Ball Bearing	
Single Phase 230 V 50 Hz	Three Phase 230/400 V 50 Hz	Pump side	Fan side
CDXM 70/05	CDX 70/05	6203 ZZ	6202 ZZ
CDXM 70/07	CDX 70/07	6203 ZZ	6202 ZZ
CDXM 90/10	CDX 90/10	6203 ZZ	6202 ZZ
CDXM 120/07	CDX 120/07	6203 ZZ	6202 ZZ
CDXM 120/12	CDX 120/12	6203 ZZ	6202 ZZ
CDXM 120/20	CDX 120/20	6204 ZZ	6203 ZZ
CDXM 200/12	CDX 200/12	6203 ZZ	6202 ZZ
CDXM 200/20	CDX 200/20	6204 ZZ	6203 ZZ
-	CDX 200/25	6204 ZZ	6203 ZZ