



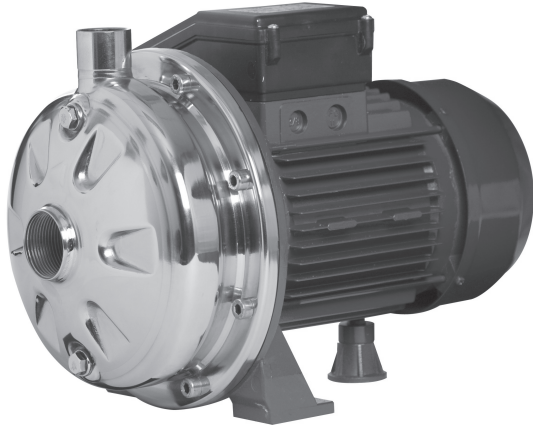
CDX

Single Impeller
Stainless Steel
Centrifugal Pumps



CONTENTS50 Hz
V10

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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

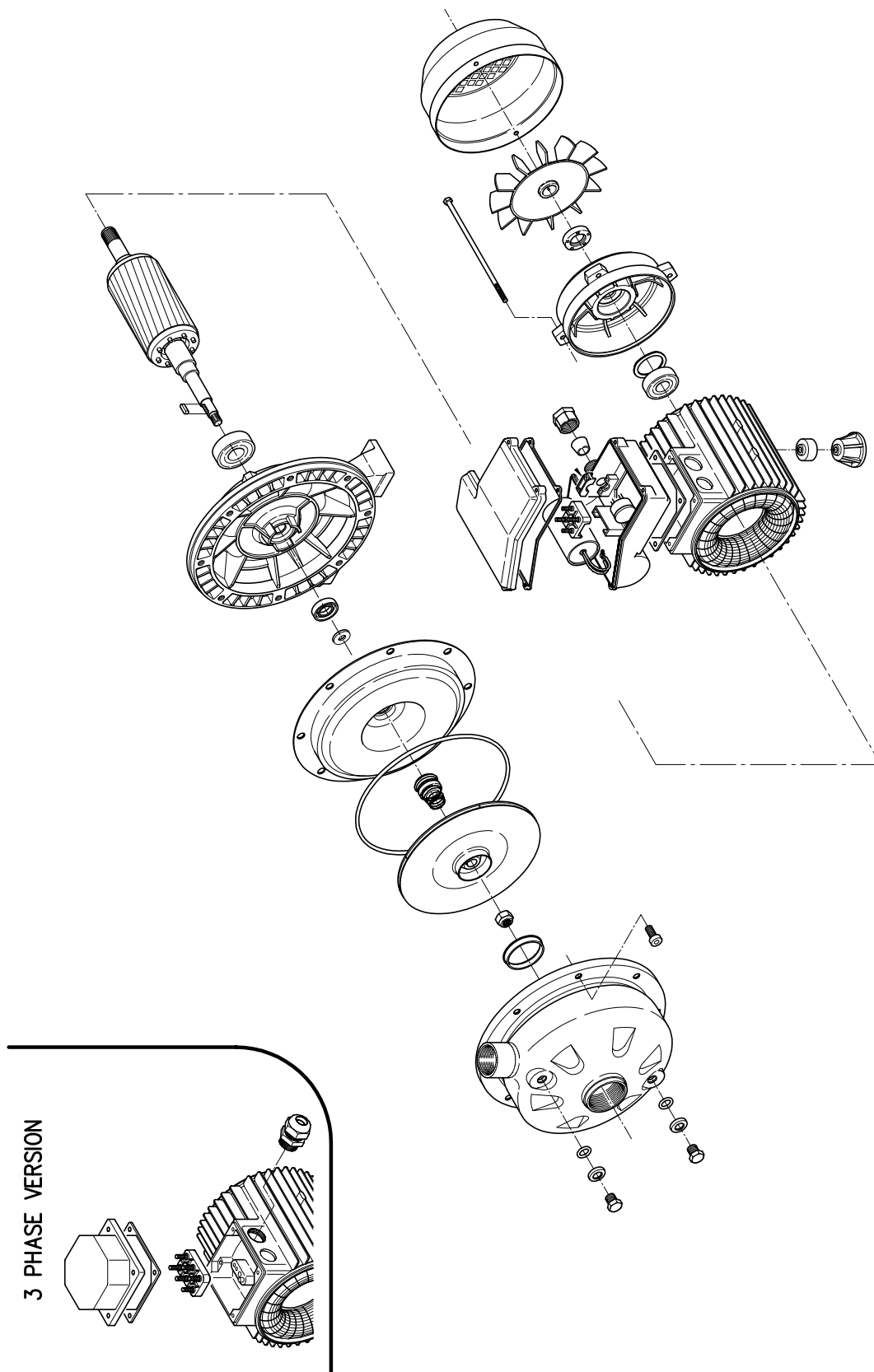
TEFC, 2 pole motor
Insulation class F
IP55 protection
50 Hz, 3 phase - 415 Volt, 1 phase - 240 Volt
In built overload protection for 1 phase

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

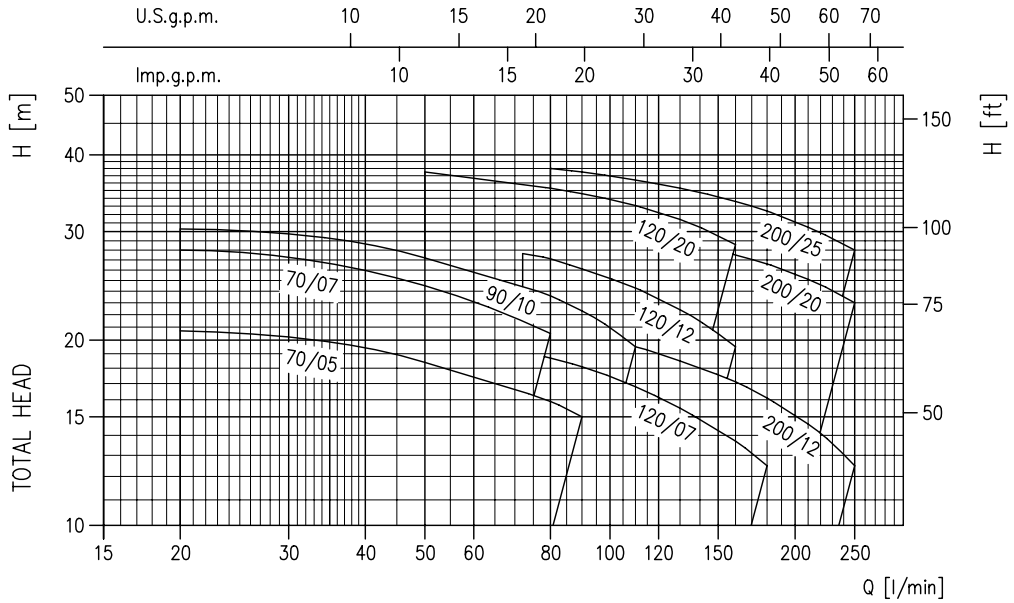
V10

| 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) | |

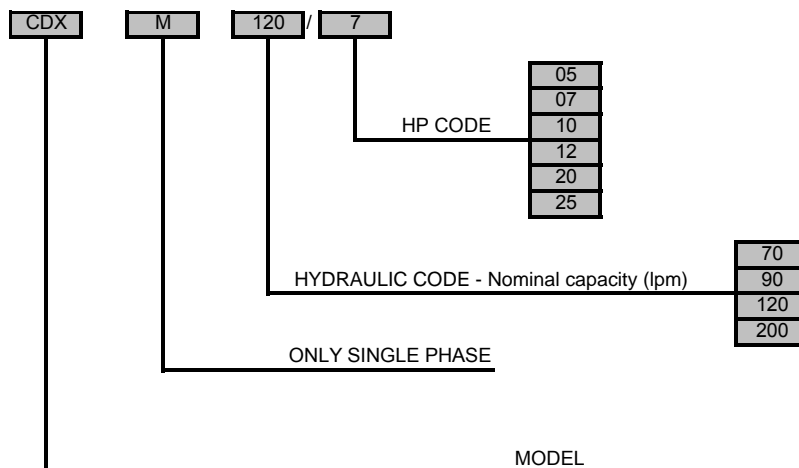
SELECTION CHART / TYPE KEY

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 | - |

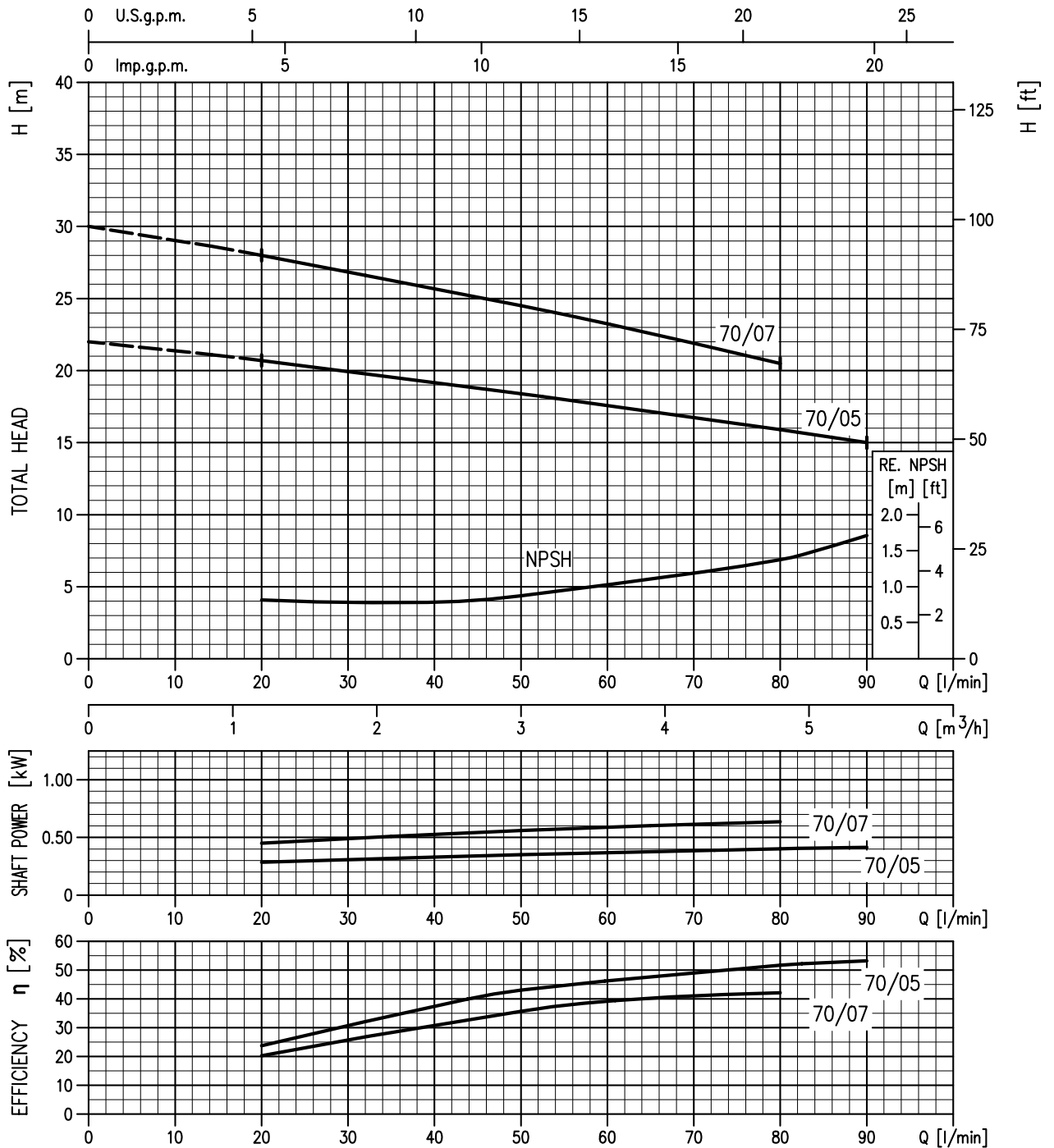
TYPE KEY:



PERFORMANCE CURVE

50 Hz
V10

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

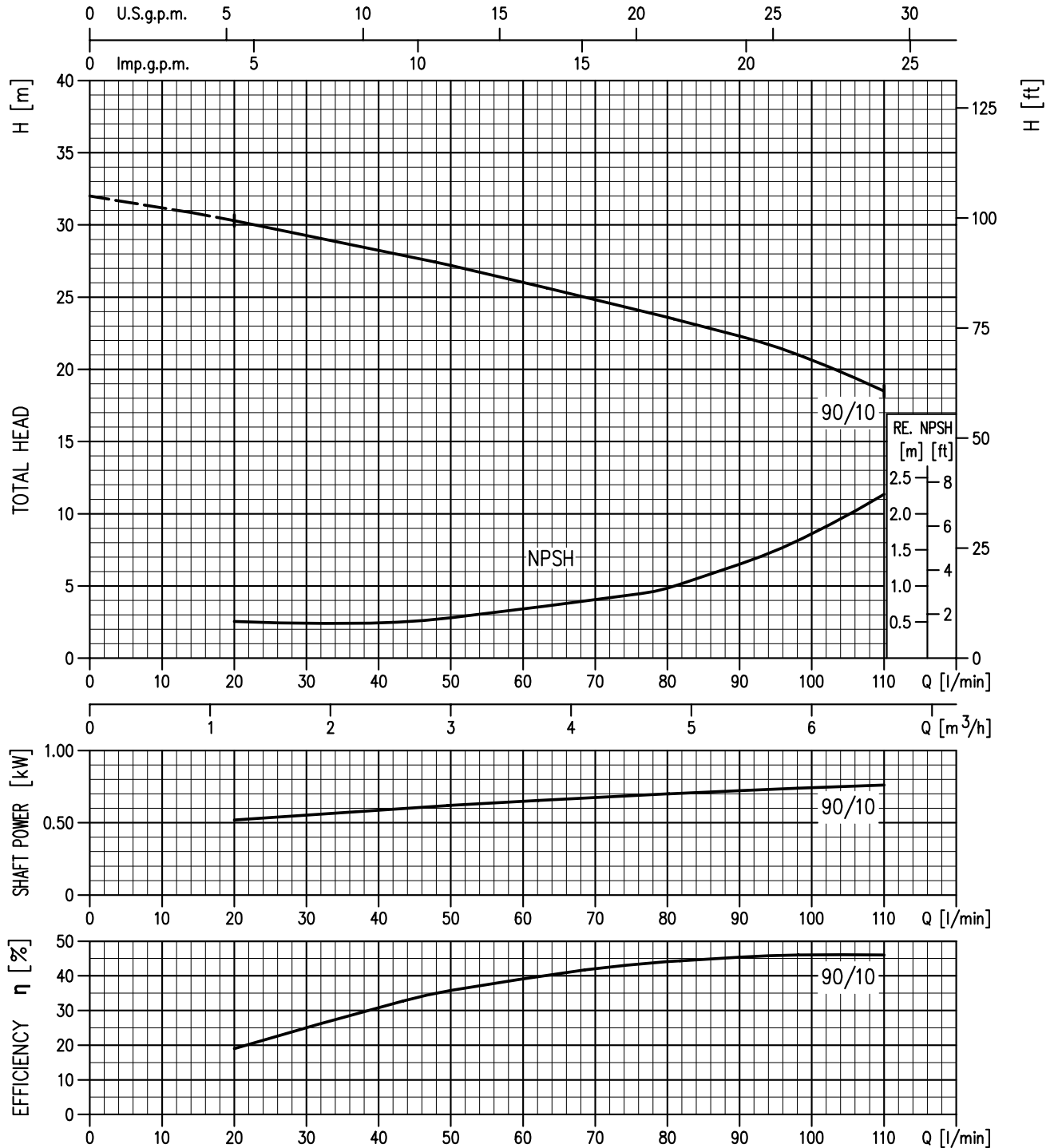


Rotation speed: $\approx 2800 \text{ min}^{-1}$
Test fluid: clean water at 20°C
Applicable standard of test: ISO 9906 – Annex A

PERFORMANCE CURVE

50 Hz
V10

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

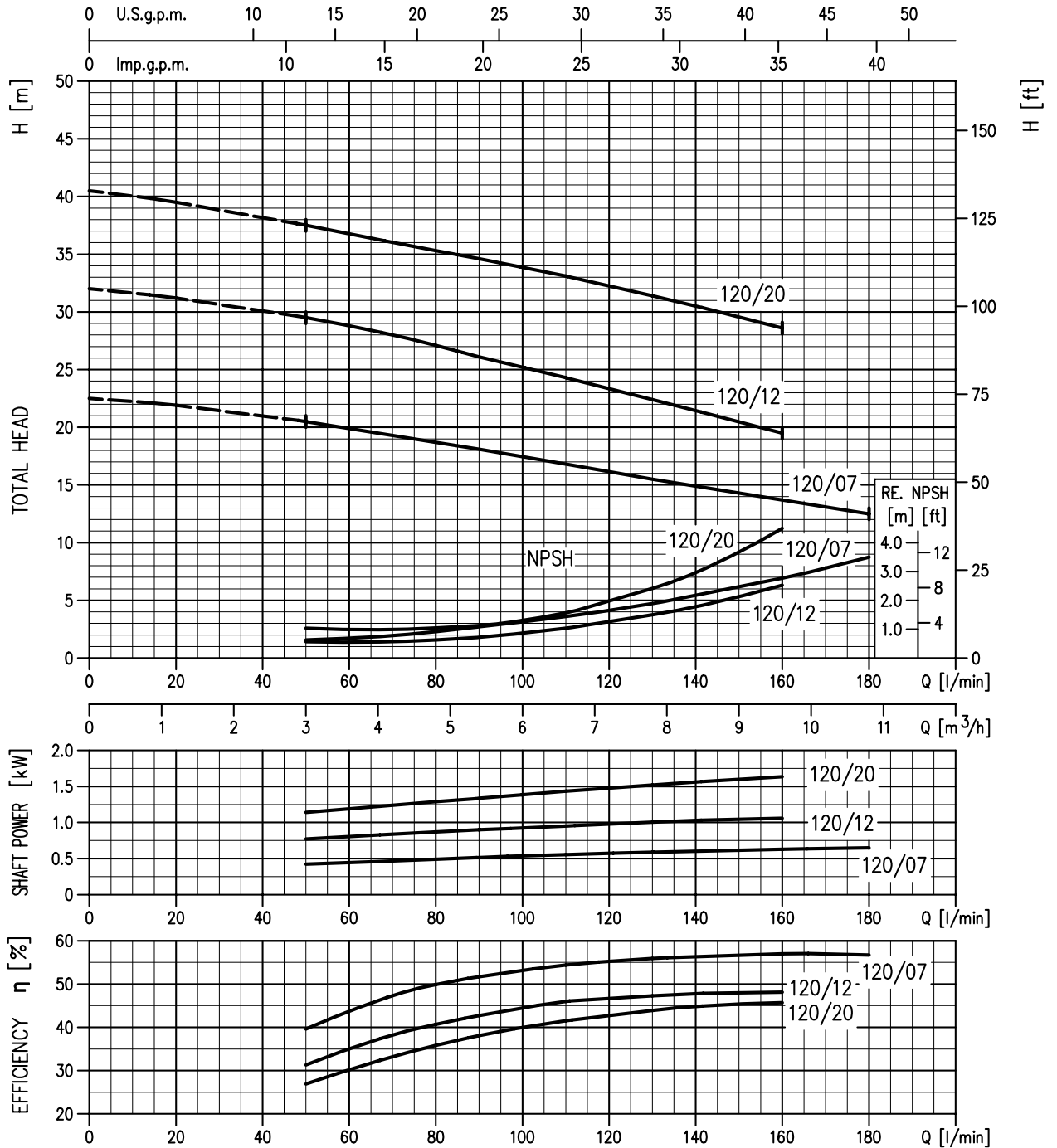


Rotation speed: $\approx 2800 \text{ min}^{-1}$
 Test fluid: clean water at 20°C
 Applicable standard of test: ISO 9906 – Annex A

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

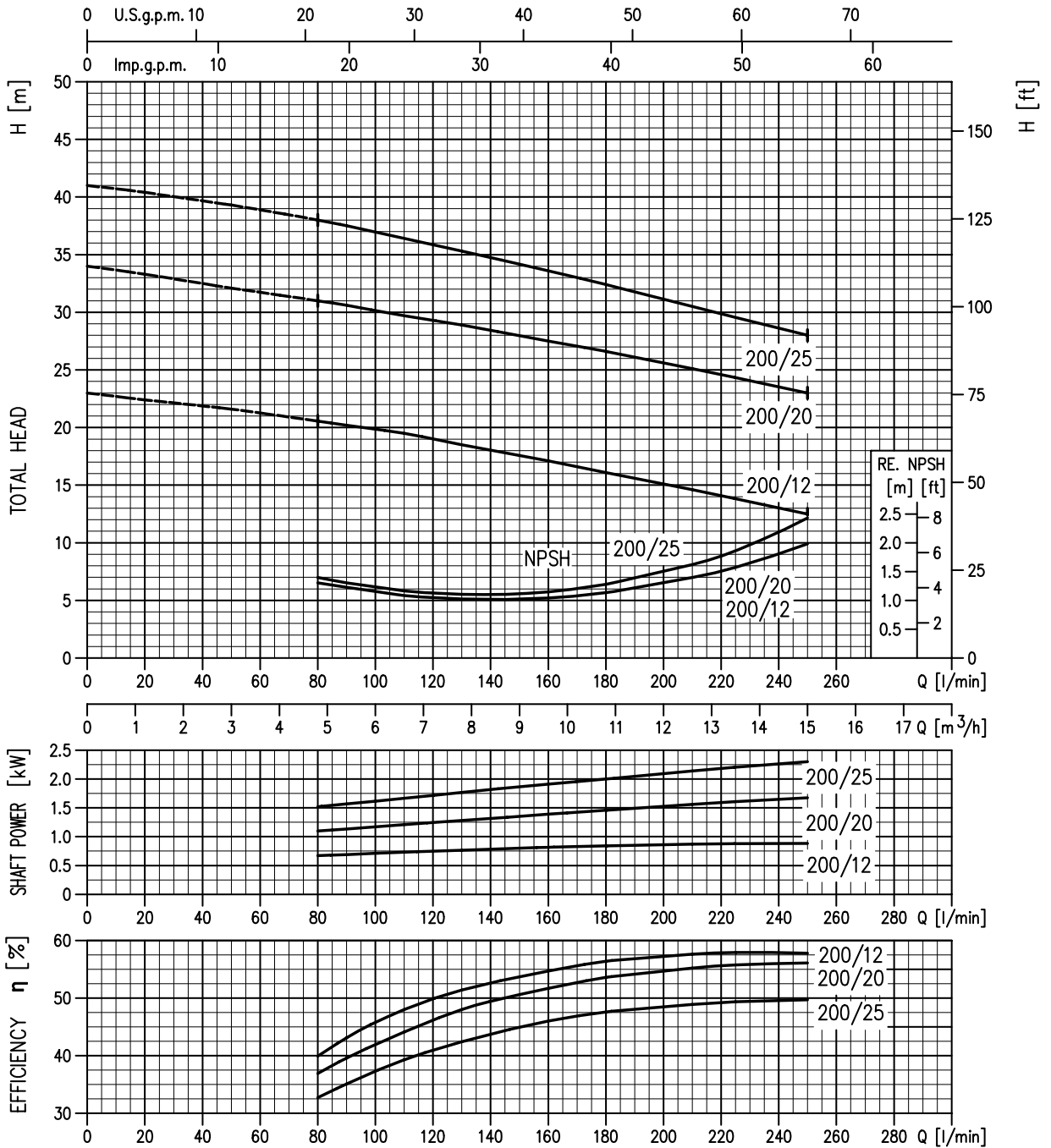


Rotation speed: $\approx 2800 \text{ min}^{-1}$
 Test fluid: clean water at 20°C
 Applicable standard of test: ISO 9906 – Annex A

PERFORMANCE CURVE

50 Hz
V10

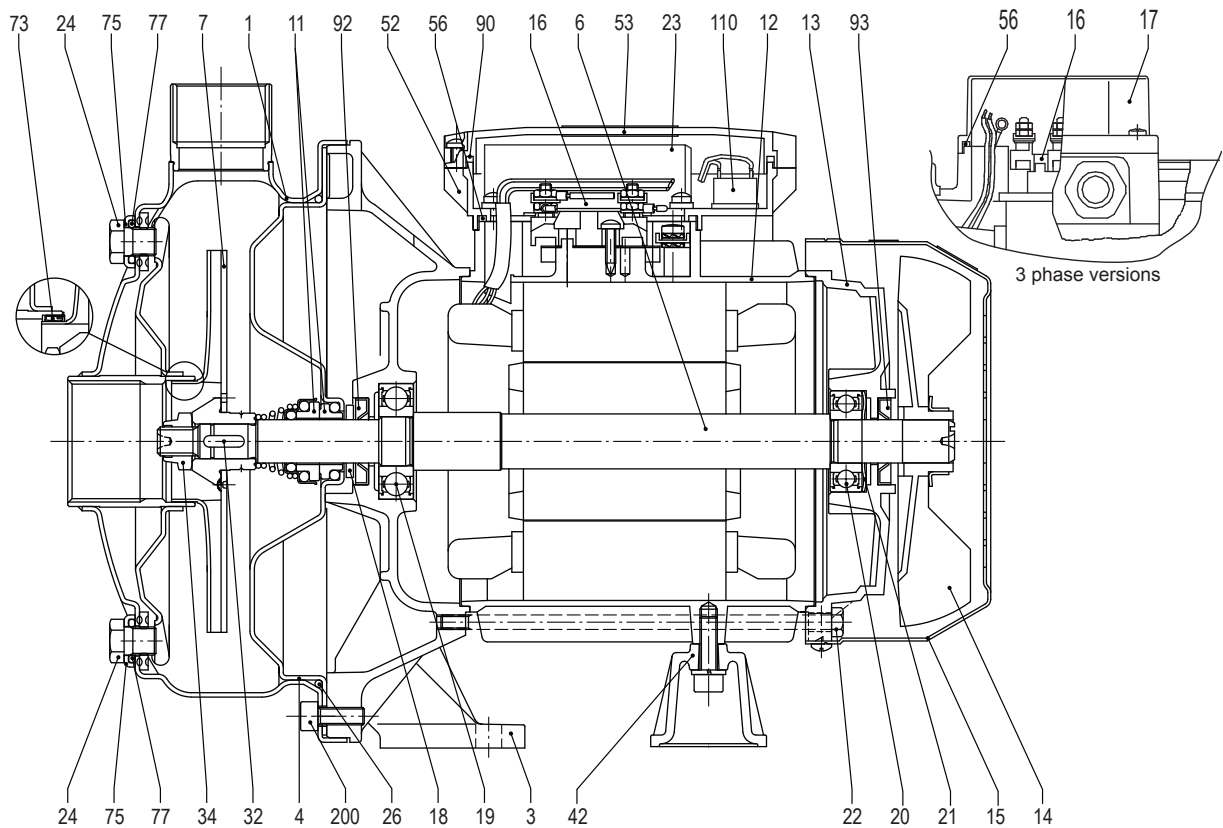
CDX 200/12 (0.9 kW) Impeller diameter = 132
 CDX 200/20 (1.5 kW) Impeller diameter = 157
 CDX 200/25 (1.8 kW) Impeller diameter = 176



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



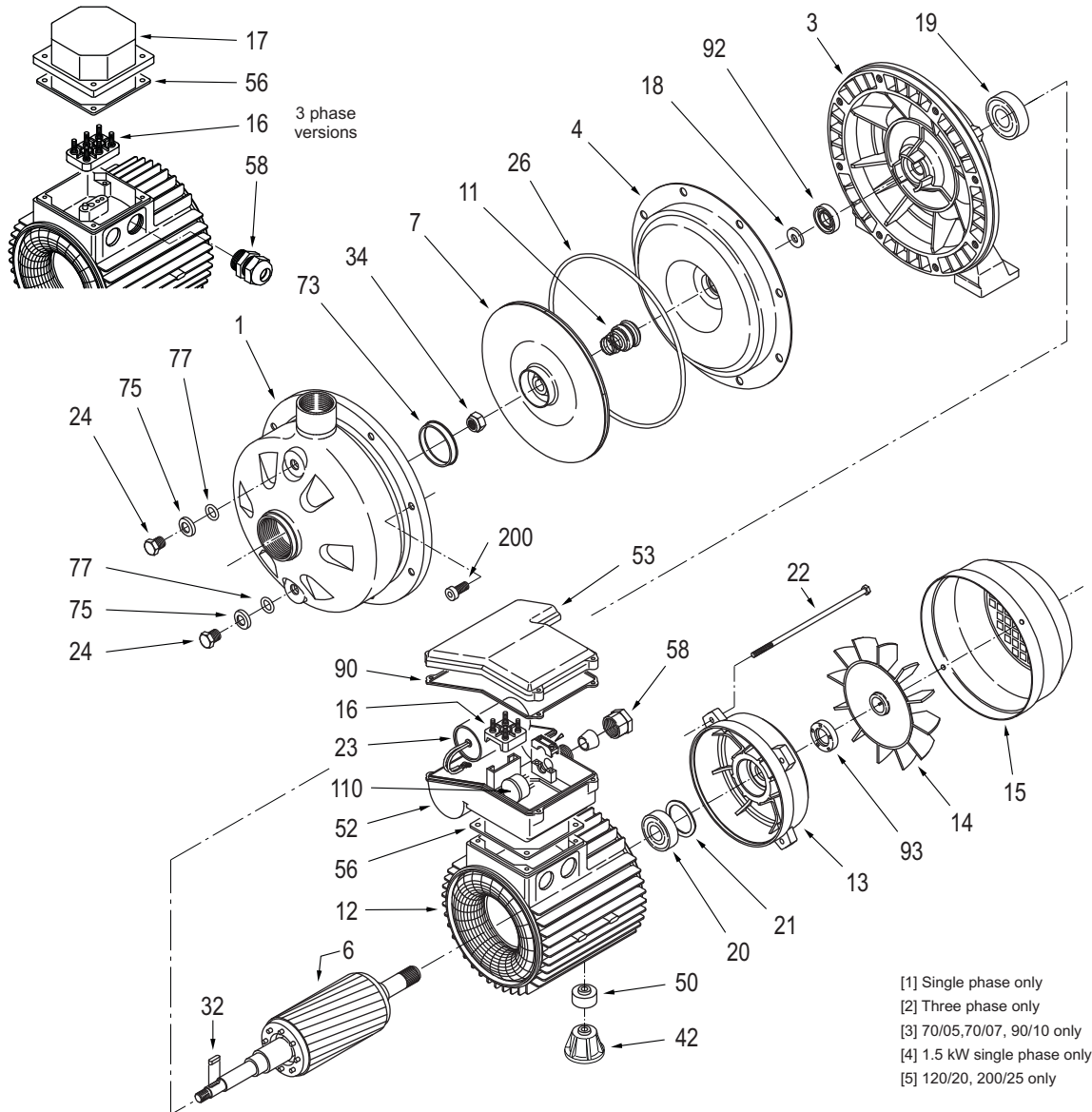
| No. | PART NAME | MATERIAL | QTY | No. | PART NAME | MATERIAL | QTY | No. | PART NAME | MATERIAL | QTY |
|-----------------|-------------------------|---|-----|-----------------|------------------------|---------------|-----|-----------------|------------------------|-------------------------------|-----|
| 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

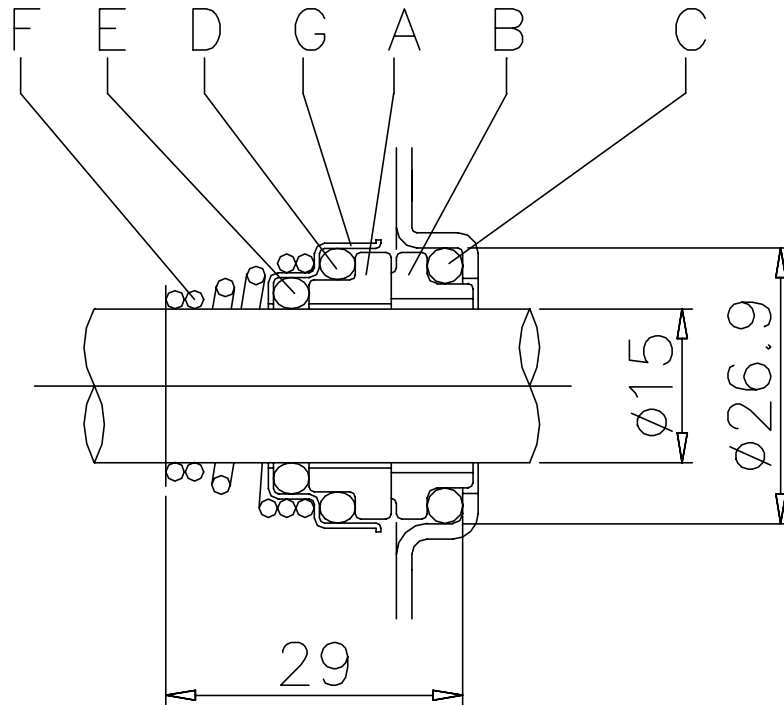
50 Hz
V10



| 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 |

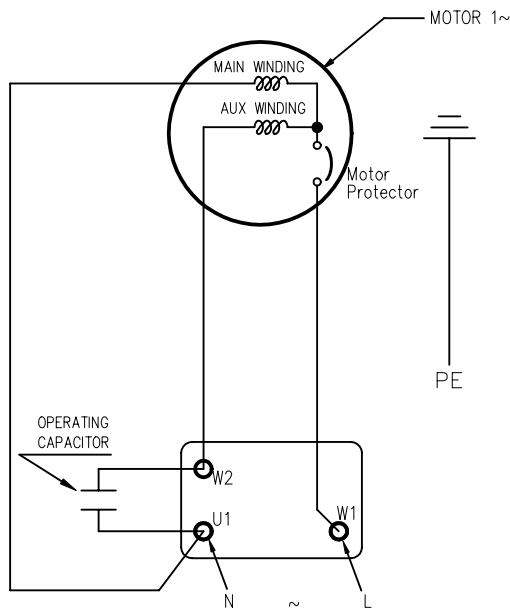
Optional materials see table below

| 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 |

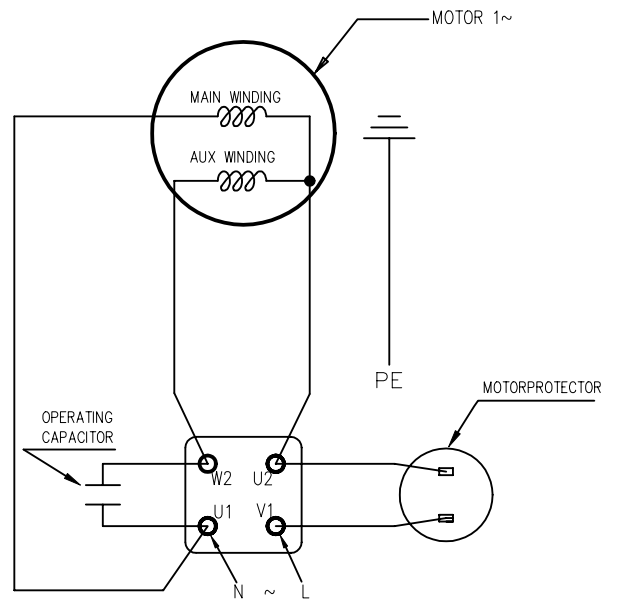


| REF | PART NAME | MATERIAL | | |
|-----|----------------------|------------------|-----------------------|-----------------------|
| | | Standard version | Optional High Temp | Optional Hard Face |
| A | Rotary seal ring | Ceramic | Ceramic | Silicon carbide |
| B | Stationary seal ring | Carbon graphite | 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 |

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

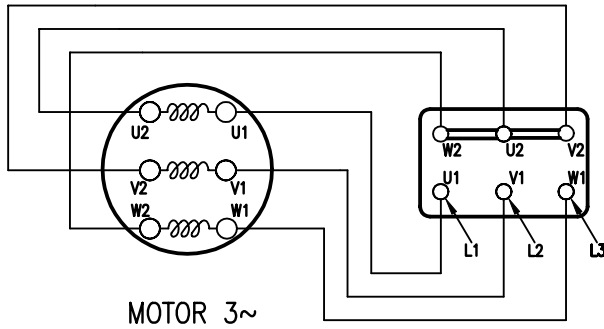


FOR MOTORS WITH LOCKED ROTOR CURRENT
UP TO 25 (A)
EXTERNAL MOTOR PROTECTOR

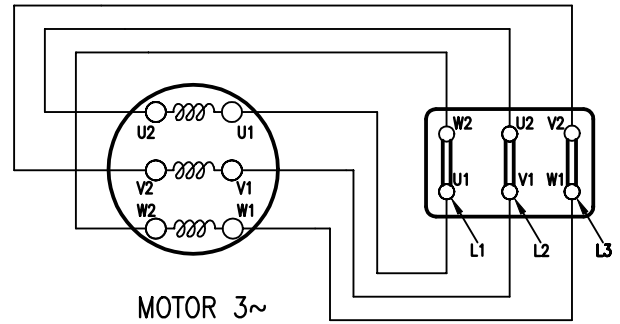


| PUMP | MOTORPROTECTOR | |
|-------------|----------------|----------|
| | INTERNAL | EXTERNAL |
| CDXM 70/05 | X | |
| CDXM 70/07 | X | |
| CDXM 90/10 | X | |
| CDXM 120/07 | X | |
| CDXM 120/12 | X | |
| CDXM 120/20 | | X |
| CDXM 200/12 | X | |
| CDXM 200/20 | | X |

STAR CONNECTION (400 V)

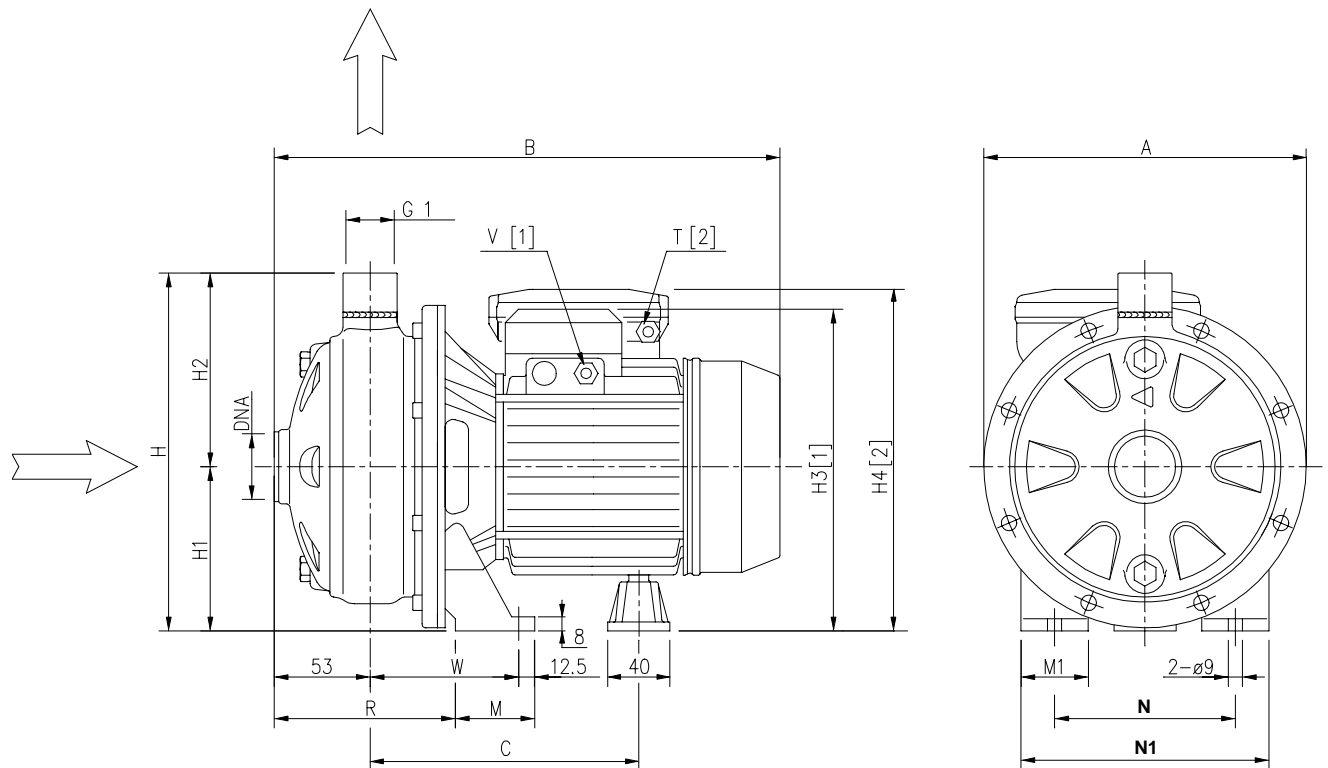


DELTA CONNECTION (230 V)



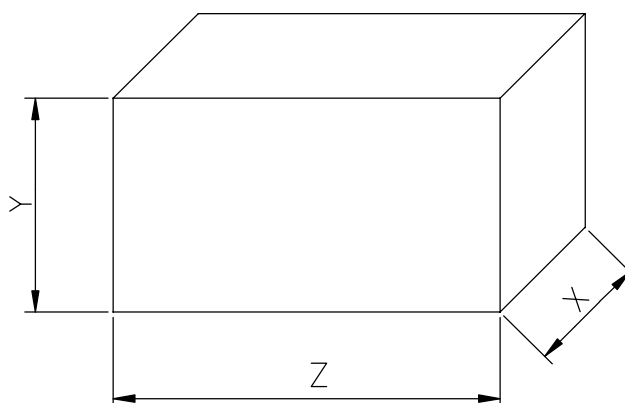
DIMENSIONS

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 |