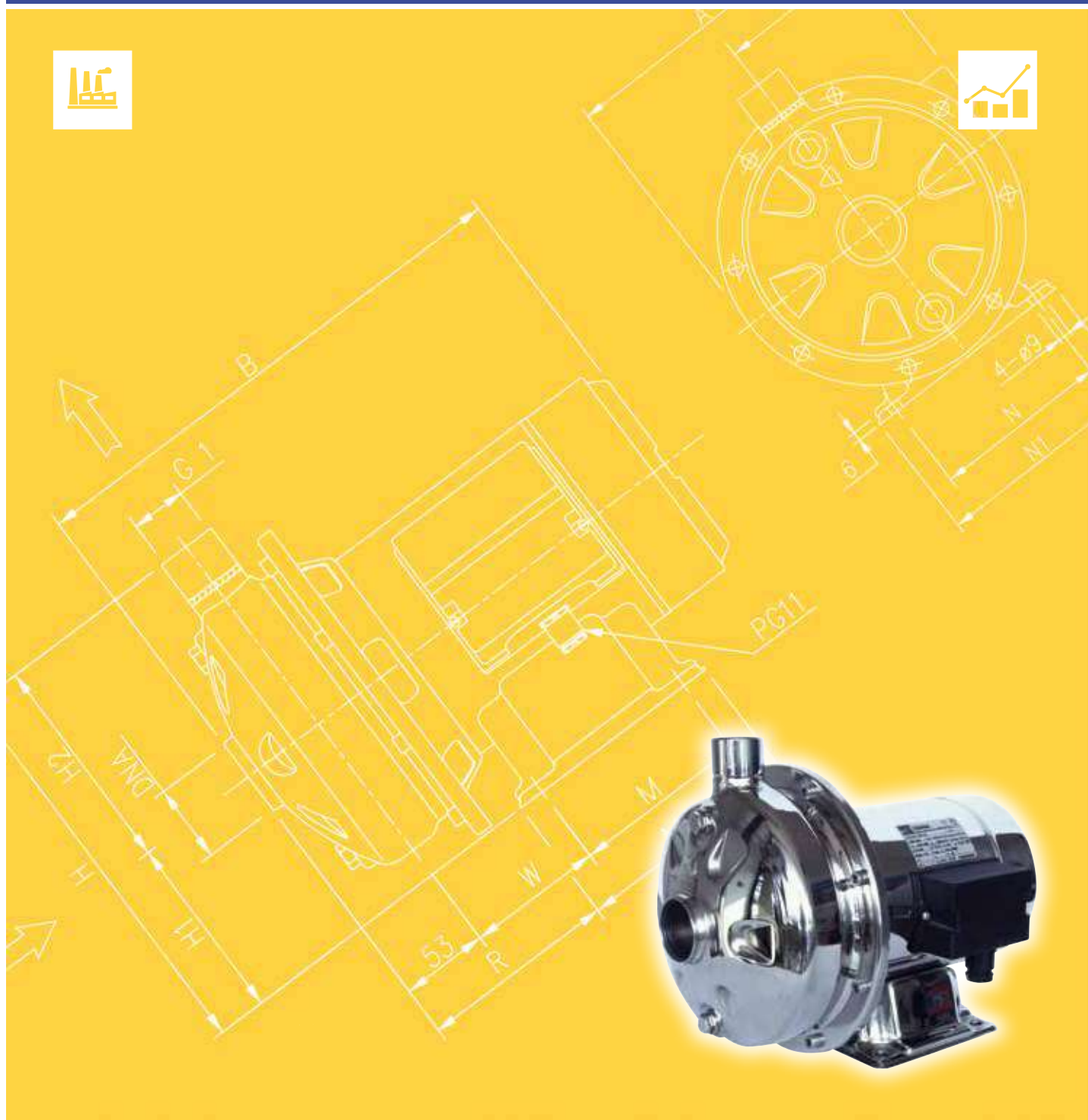




Japanese Technology since 1912

CD

Data Book 50Hz



SPECIFICATIONS

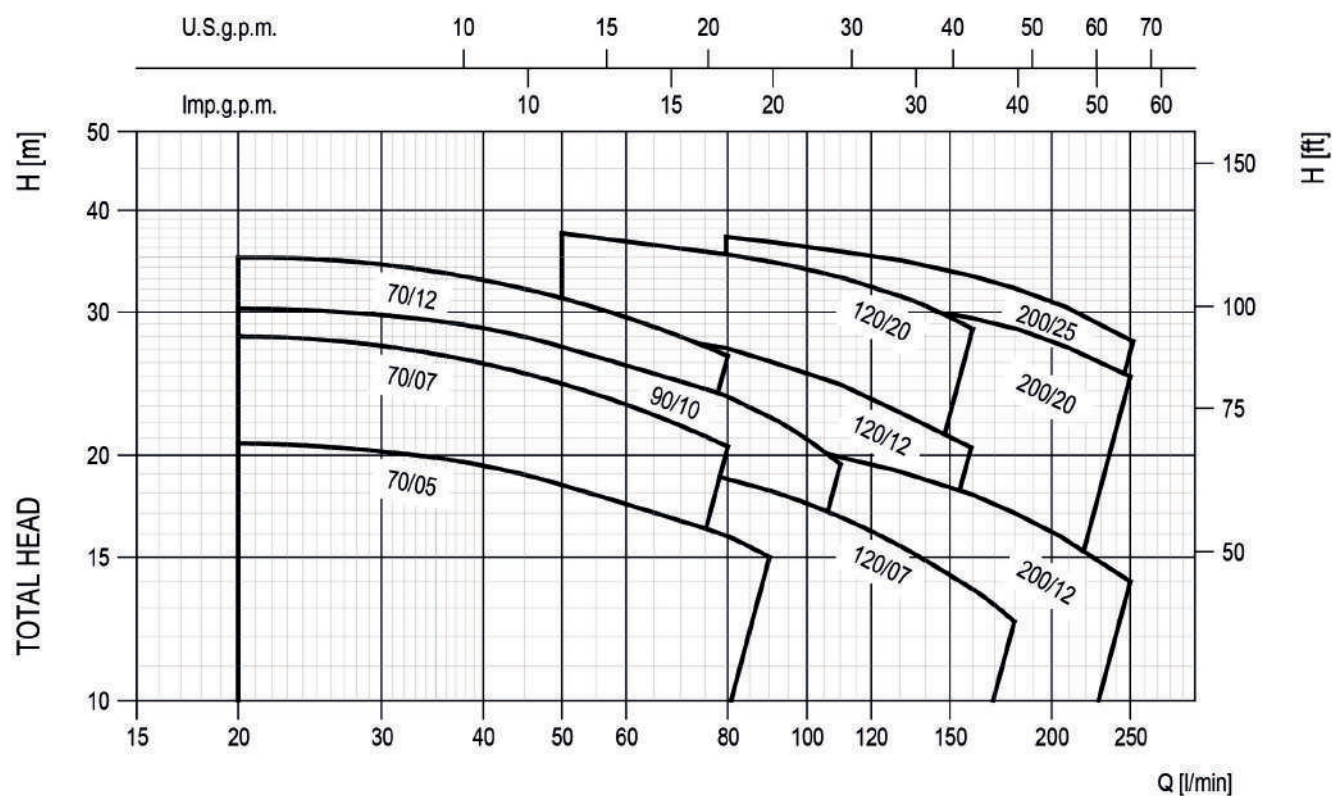
50Hz

Rev. V

PUMP		
Liquid Handled	Type of liquid	Clean water
	Temperature [°C]	min. -5 max. +120 For full details see section "FLUID TEMPERATURE RANGE"
Maximum working pressure [MPa]		0.8
Construction	Impeller	Closed centrifugal type
	Shaft seal type	Mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction	G1"¼ (G1"½ CD 200) UNI ISO 228-1
	Discharge	G1" UNI ISO 228-1
Material	Casing	EN 1.4301 (AISI 304)
	Impeller	EN 1.4301 (AISI 304)
	Casing cover	EN 1.4301 (AISI 304)
	Shaft seal	Ceramic / Carbon / NBR(for special versions see page 303)
	Shaft	AISI 303 (Wet extension)
	Bracket	EN 1.4301 (AISI 304)
Applicable standard of test		ISO 9906:2012 – Grade 3B

MOTOR		
Type	Electric - TEFC	
	Single Phase	Three Phase
Efficiency level (Reg. 1781/2019)	IE2	IE3
No. of Poles	2	
Rotation speed [min ⁻¹]	≈ 2800	
Insulation Class	F	
Protection degree (CEI EN 60034-5)	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	EN 1.4301 (AISI 304)	
Base material/motor support	EN 1.4301 (AISI 304)	
Dimensions of cable entry	PG11	

PERFORMANCE RANGE



SELECTION CHART

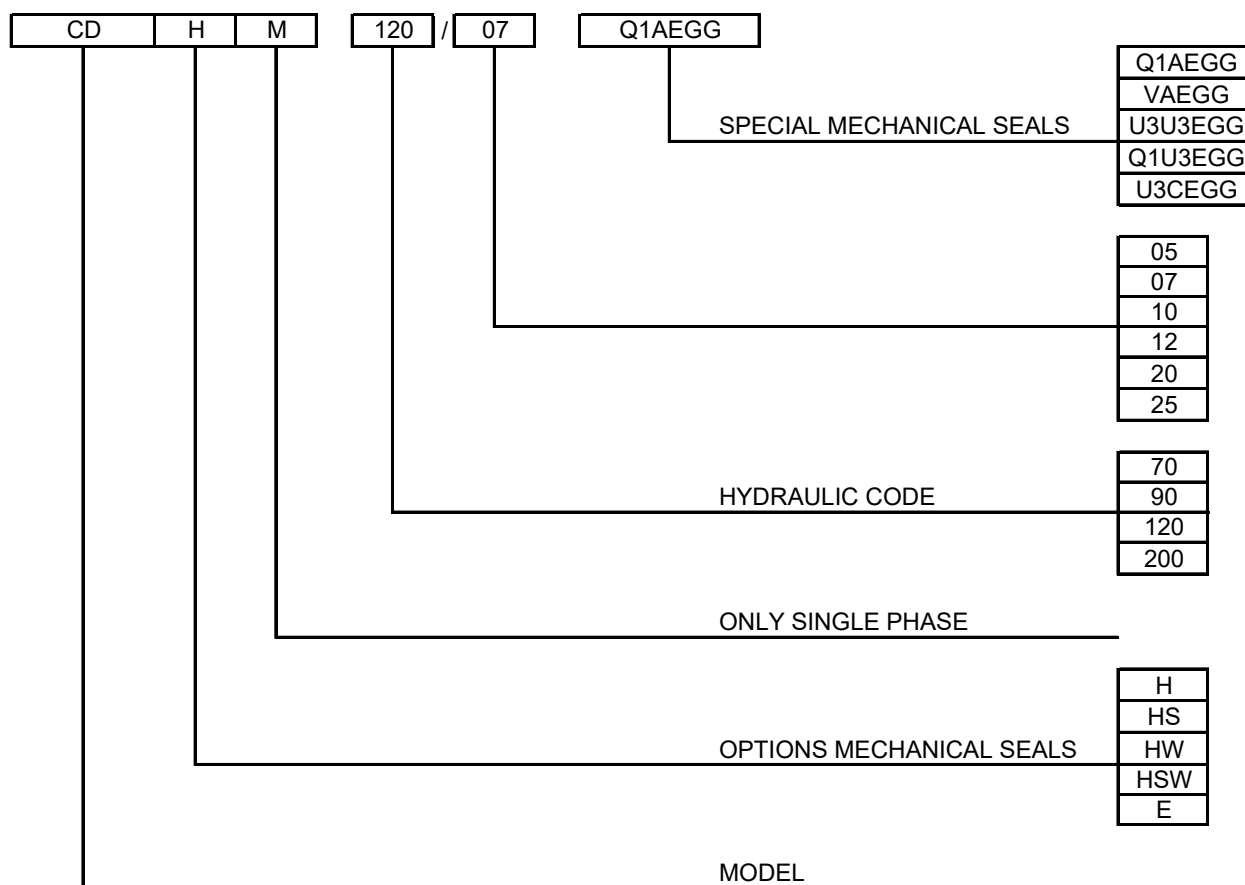
Pump Type		Q=Capacity											
		l/min	0	20	50	80	90	110	130	160	180	210	250
Single Phase	Three Phase	m³/h	0	1,2	3,0	4,8	5,4	6,6	7,8	9,6	10,8	12,6	15,0
H=Total manometric head in meters													
CDM 70/05	CD 70/05	21.1	20.3	18.3	16.0	15.2	-	-	-	-	-	-	-
CDM 70/07	CD 70/07	29.7	28.1	25.5	22.4	-	-	-	-	-	-	-	-
CDM 70/12	CD 70/12	35.5	33.7	30.7	26.5	-	-	-	-	-	-	-	-
CDM 90/10	CD 90/10	30.5	29.1	26.6	23.4	22.1	19.3	-	-	-	-	-	-
CDM 120/07	CD 120/07	23.1	-	21.1	19.7	19.2	18.2	17.1	15.2	13.8	-	-	-
CDM 120/12	CD 120/12	31.2	-	29.3	27.5	26.8	25.2	23.6	21.0	-	-	-	-
CDM 120/20	CD 120/20	40.5	-	38.5	37.2	36.8	35.8	34.7	32.7	-	-	-	-
CDM 200/12	CD 200/12	22.8	-	-	21.3	21.0	20.4	19.7	18.5	17.6	16.0	14.0	-
CDM 200/20	CD 200/20	34.5	-	-	32.6	32.3	31.7	31.0	30.0	29.2	28.0	26.2	-
-	CD 200/25	41.0	-	-	39.1	38.8	38.0	37.3	36.0	35.0	33.4	30.9	-

TYPE KEY and CURVE SPECIFICATIONS

50Hz

Rev. V

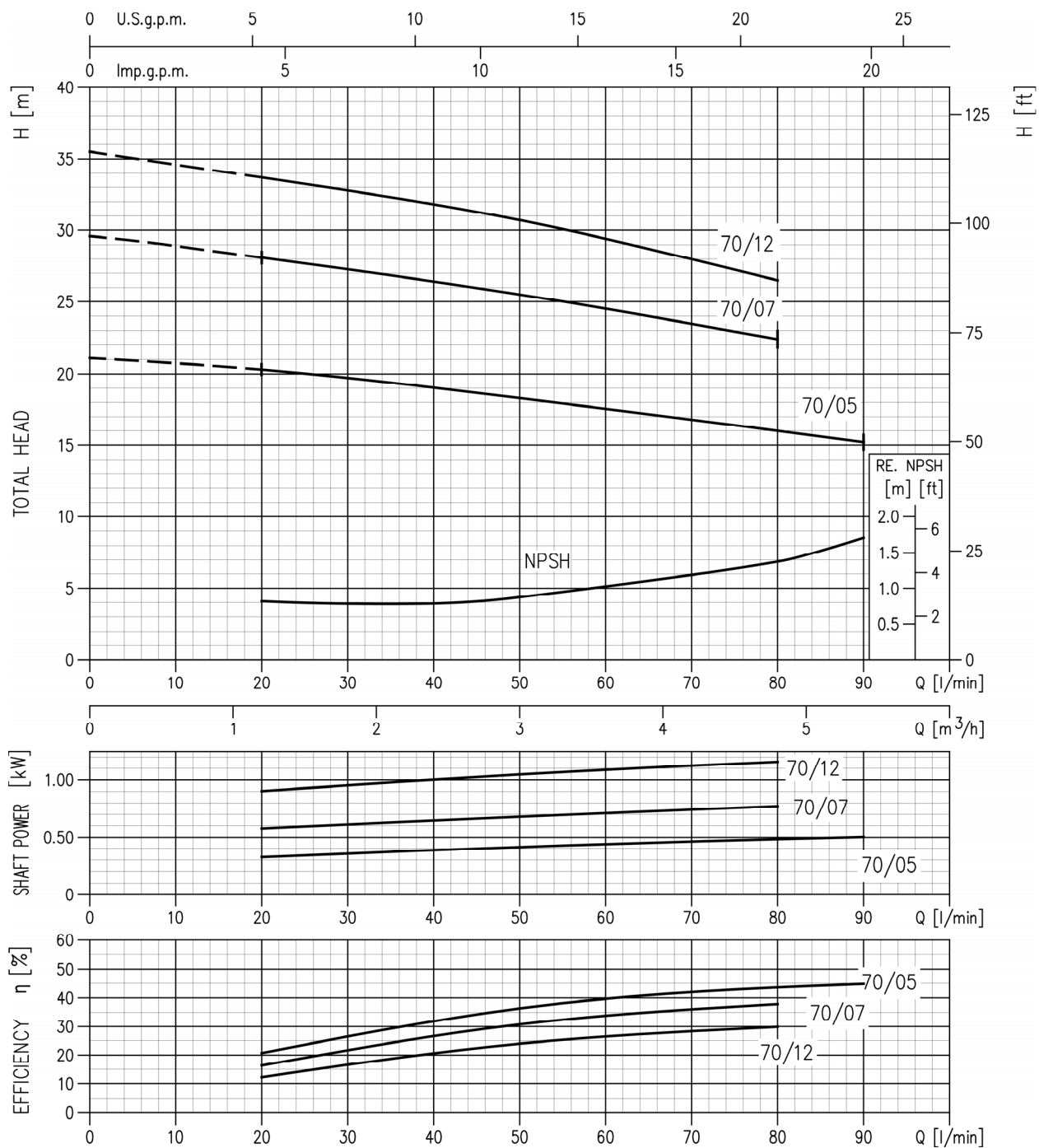
TYPE KEY



CD 70/05 - Impeller diameter = 132 mm

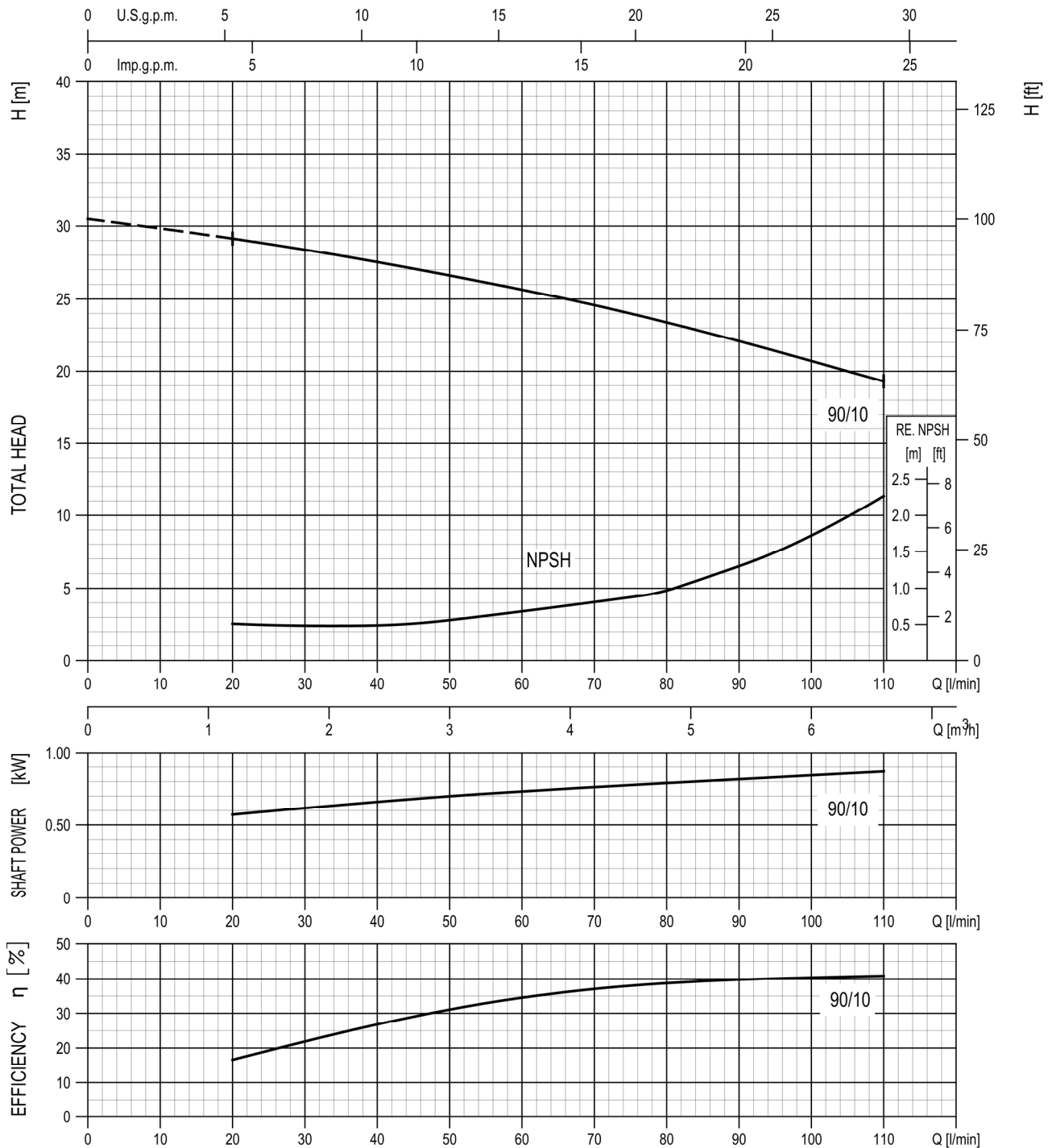
CD 70/07 - Impeller diameter = 157 mm

CD 70/12 - Impeller diameter = 176 mm

Rotation speed $\approx 2800 \text{ min}^{-1}$

Test standard: ISO 9906:2012 – Grade 3B

CD 90/10 MEI > 0.40 - Impeller diameter = 157 mm

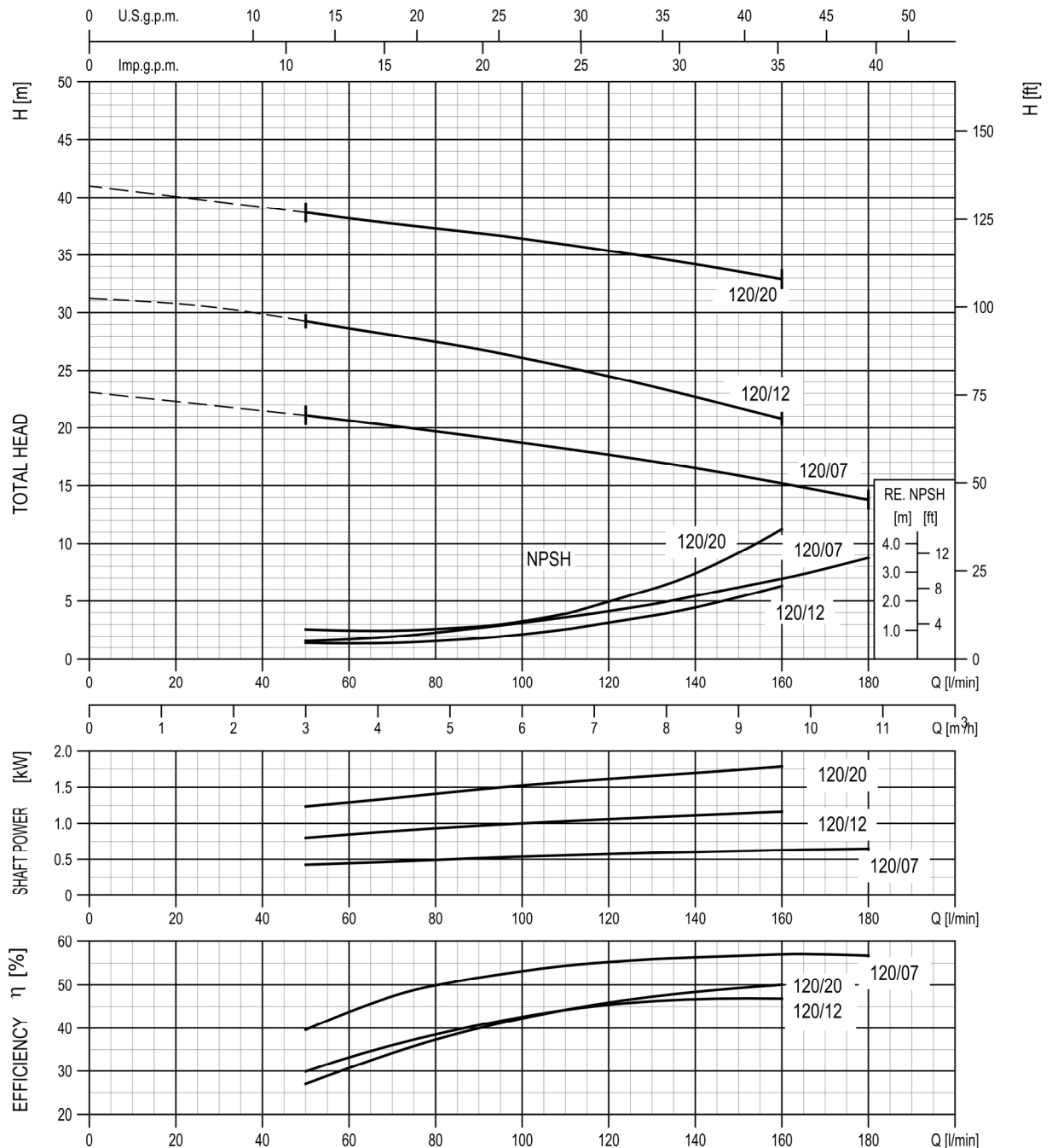


Rotation speed $\approx 2800 \text{ min}^{-1}$
 Test standard: ISO 9906:2012 – Grade 3B

CD 120/07 MEI > 0.70 - Impeller diameter = 132 mm

CD 120/12 MEI > 0.40 - Impeller diameter = 157 mm

CD 120/20 MEI > 0.70 - Impeller diameter = 176 mm

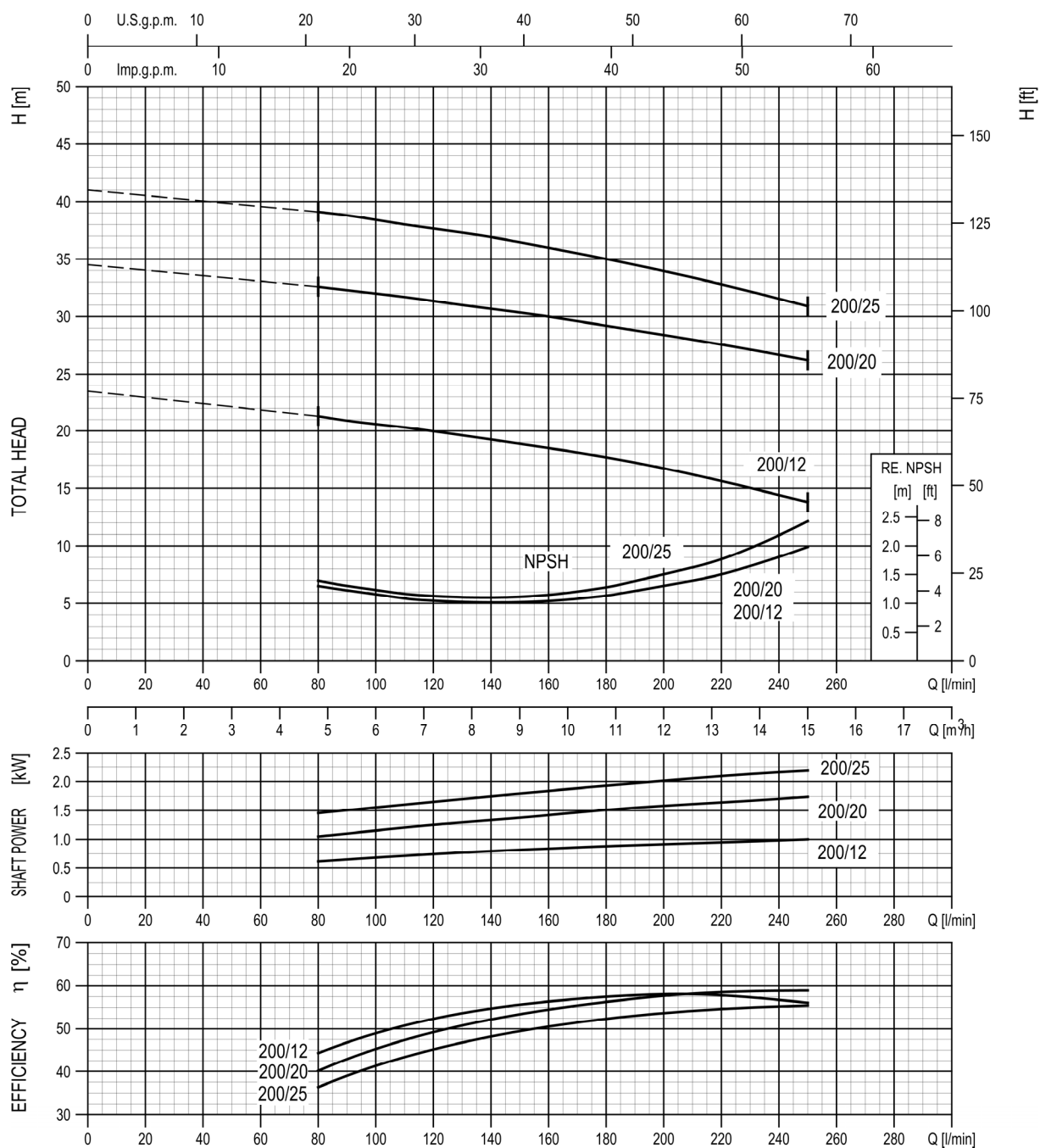


Rotation speed $\approx 2800 \text{ min}^{-1}$
 Test standard: ISO 9906:2012 – Grade 3

CD 200/12 MEI > 0.50 - Impeller diameter = 132 mm

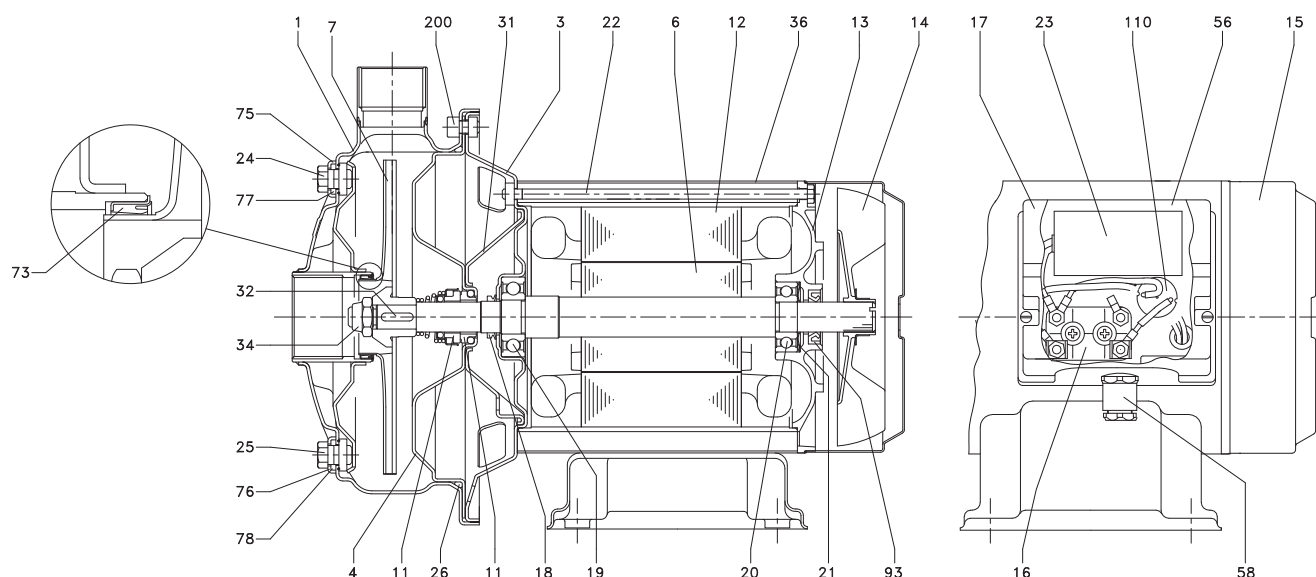
CD 200/20 MEI > 0.60 - Impeller diameter = 157 mm

CD 200/25 MEI > 0.50 - Impeller diameter = 176 mm



Rotation speed $\approx 2800 \text{ min}^{-1}$
 Test standard: ISO 9906:2012 – Grade 3B

SECTIONAL VIEW

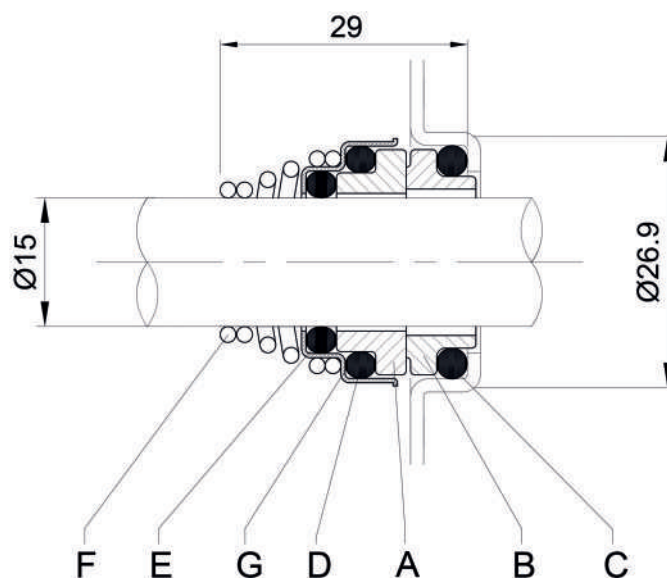


N°	PART NAME	MATERIAL	Q.TY
1	Casing	AISI 304	1
3	Motor bracket	AISI 304	1
4	Casing cover	AISI 304	1
6	Shaft w ith rotor	AISI 303 (Wet extension)	1
7	Impeller	AISI 304	1
11	Mechanical seal [4]	Ceramic/Carbon/NBR	1
12	Motor frame w ith stator	-	1
13	Motor cover	Aluminium	1
14	Fan	PA	1
15	Fan cover	AISI 304	1
16	Terminal board	-	1
17	Terminal box cover	PA66 glass fibre reinforced class V-0	1
18	Splash ring	NBR	1
19	Pump side ball bearing	-	1
20	Fan side ball bearing	-	1
21	Adjusting ring	Steel C70	1
22	Tie rod	Fe 420 Galvanized	4
23	Capacitor [1]	-	1
24	Priming plug	AISI 304	1

N°	PART NAME	MATERIAL	Q.TY
25	Drain plug	AISI 304	1
26	O-ring [2]	NBR	1
31	Thrust flange	AISI 304	1
32	Key	AISI 316	1
34	Impeller nut	Stainless steel A2-70	1
36	Motor casing	AISI 304	1
56	Box gasket	NBR	1
58	Cable entry	-	1
73	Casing ring [3]	EPDM	1
75	Washer	AISI 304	1
76	Washer	AISI 304	1
77	O-ring [2]	NBR	1
78	O-ring [2]	NBR	1
93	Lip seal	NBR	1
110	Protector [1]	-	1
200	Screw	Stainless steel A2-70	8

- [1] Only for single phase
 [2] FPM for H-HS-HW-HSW
 EPDM for E and Special Mechanical Seal
 [3] FPM for H-HS-HW-HSW
 [4] See **MECHANICAL SEAL** pages 303-304

MECHANICAL SEAL



STANDARD
+
"L" version

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

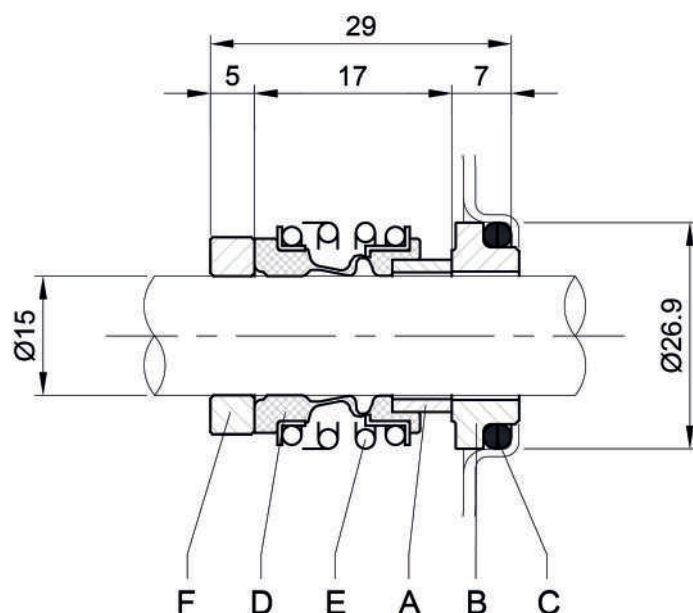
OPTIONAL

REF	PART NAME	MATERIAL			
		H	HW	HSW	E
A	Rotary seal ring	Ceramic	Tungsten carbide	Silicon carbide	Ceramic
B	Stationary seal ring	Carbon graphite	Tungsten carbide	Tungsten carbide	Carbon graphite
C	O-Ring	FPM	FPM	FPM	EPDM
D	O-Ring	FPM	FPM	FPM	EPDM
E	O-Ring	FPM	FPM	FPM	EPDM
F	Self-driving spring	AISI 316	AISI 316	AISI 316	AISI 316
G	Frame	AISI 304	AISI 316	AISI 316	AISI 316

SPECIAL

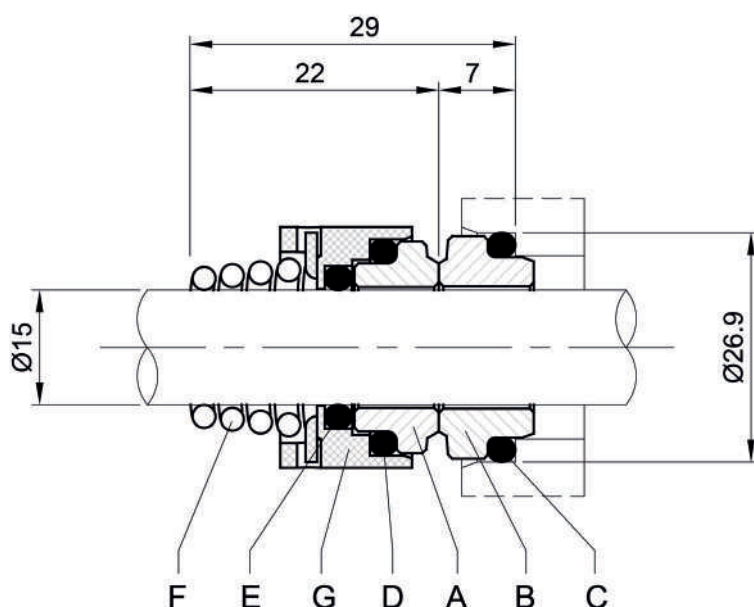
REF	PART NAME	MATERIAL			
		VAEGG	U3U3EGG	Q1U3EGG	U3CEGG
A	Rotary seal ring	Ceramic	Tungsten carbide	Silicon carbide	Tungsten carbide
B	Stationary seal ring	Metallised carbon	Tungsten carbide	Tungsten carbide	special Carbon
C	O-Ring	EPDM	EPDM	EPDM	EPDM
D	O-Ring	EPDM	EPDM	EPDM	EPDM
E	O-Ring	EPDM	EPDM	EPDM	EPDM
F	Self-driving spring	AISI 316	AISI 316	AISI 316	AISI 316
G	Frame	AISI 316	AISI 316	AISI 316	AISI 316

MECHANICAL SEAL



OPTIONAL

REF	PART NAME	MATERIAL HS
A	Rotary seal ring	Silicon carbide
B	Stationary seal ring	Silicon carbide
C	O-Ring	FPM
D	Bellows	FPM
E	Frame + Spring	AISI 316
F	Spacer ring	AISI 316



SPECIAL

REF	PART NAME	MATERIAL Q1AEGG
A	Rotary seal ring	Silicon carbide
B	Stationary seal ring	Metallised carbon
C	O-Ring	EPDM
D	O-Ring	EPDM
E	O-Ring	EPDM
F	Self-driving spring	AISI 316
G	Frame	AISI 316

FLUID TEMPERATURE RANGE

The fluid temperature range depends on:

- Material of the elastomers
- Type of fluid pumped
- Material of the sealing faces

for each combination of these parameters the fluid temperature range may be different.

		SEALING FACES MATERIAL			
		CERAMIC-CARBON		ALL (except ceramic-carbon)	
ELASTOMER	NBR	-5 °C	90°C	-5 °C	90°C
	EPDM	-5 °C	90°C	-5 °C	120°C
	FPM	-5 °C	75°C	-5 °C	75°C ¹
		MIN	MAX	MIN	MAX
FLUID TEMPERATURE RANGE					

¹In case of fluids not containing water, the temperature limit could be increased to 110°C

Therefore, the fluid temperature range is related to the choice of the mechanical seal and its materials.

STANDARD mechanical seal	TEMPERATURE	
	MIN	MAX
STANDARD	-5 °C	90 °C

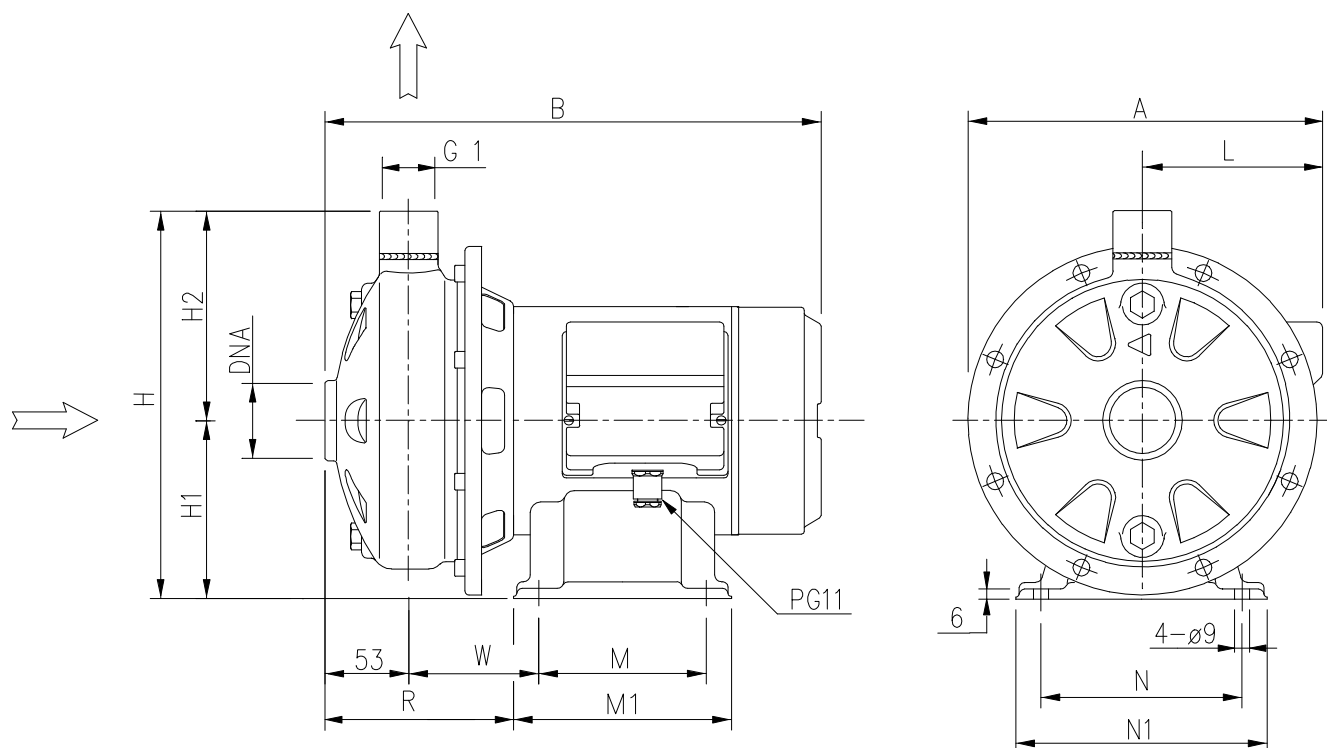
OPTIONAL mechanical seal	TEMPERATURE	
	MIN	MAX
H	-5 °C	75 °C
HS	-5 °C	75 °C
HW	-5 °C	75 °C
HSW	-5 °C	75 °C
E	-5 °C	90 °C

SPECIAL mechanical seal	TEMPERATURE	
	MIN	MAX
Q1AEGG	-5 °C	120 °C
VAEGG	-5 °C	90 °C
U3U3EGG	-5 °C	120 °C
Q1U3EGG	-5 °C	120 °C
U3CEGG	-5 °C	120 °C

BEARINGS

Pump type		Ball Bearing			
Single Phase	Three Phase	Pump side		Fan side	
		[1~]	[3~]	[1~]	[3~]
CDM 70/05	CD 70/05	6203	6203	6202	6202
CDM 70/07	CD 70/07	6203	6203	6202	6202
CDM 70/12	CD 70/12	6203	6203	6202	6202
CDM 90/10	CD 90/10	6203	6203	6202	6202
CDM 120/07	CD 120/07	6203	6203	6202	6202
CDM 120/12	CD 120/12	6203	6203	6202	6202
CDM 120/20	CD 120/20	6204	6204	6203	6203
CDM 200/12	CD 200/12	6203	6203	6202	6202
CDM 200/20	CD 200/20	6204	6204	6203	6203
-	CD 200/25	-	6204	-	6203

PUMP

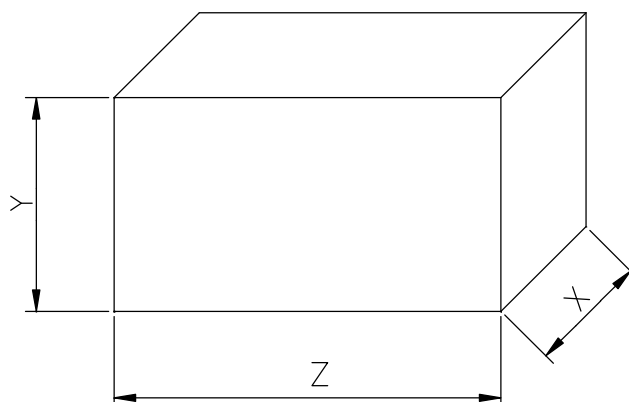


Pump type		Dimensions [mm]																		Weight	
		A		B		H	H1	H2	L		M		M1		N	N1	R	W	DNA		
Single Phase	Three Phase	[1~]	[3~]	[1~]	[3~]				[1~]	[3~]	[1~]	[3~]	[1~]	[3~]						[1~]	[3~]
CDM 70/05	CD 70/05	209	208	298	298	229.5	106	123.5	105	104	100	100	130	130	120	150	115.5	77.5	G1"1/4	9.5	9.5
CDM 70/07	CD 70/07	209	208	328	328	229.5	106	123.5	105	104	100	100	130	130	120	150	115.5	92.5	G1"1/4	11.5	11.5
CDM 70/12	CD 70/12	208	208	338	338	229.5	106	123.5	104	104	100	100	130	130	120	150	135.5	97.5	G1"1/4	12	13.7
CDM 90/10	CD 90/10	209	208	338	328	229.5	106	123.5	105	104	100	100	130	130	120	150	130.5	92.5	G1"1/4	13	11.6
CDM 120/07	CD 120/07	209	208	328	328	229.5	106	123.5	105	104	100	100	130	130	120	150	115.5	92.5	G1"1/4	11.5	12
CDM 120/12	CD 120/12	208	208	338	338	229.5	106	123.5	104	104	100	100	130	130	120	150	135.5	97.5	G1"1/4	13	12.9
CDM 120/20	CD 120/20	232	232	376	376	250	118	132	116	116	120	120	150	150	140	170	133	105	G1"1/4	18.5	18.3
CDM 200/12	CD 200/12	208	208	338	338	229.5	106	123.5	104	104	100	100	130	130	120	150	135.5	97.5	G1"1/2	13	12.6
CDM 200/20	CD 200/20	213	213	376	376	229.5	106	123.5	109	109	120	120	150	150	140	170	133	105	G1"1/2	17.5	17.5
-	CD 200/25	-	232	-	376	250	118	132	-	116	-	120	-	150	140	170	138	100	G1"1/2	-	18.3

[1~] Single phase

[3~] Three phase

PACKING



Pump type		Packing [mm]				Weight [kgf]	
Single Phase	Three Phase	X	Y	Z			
				[1~]	[3~]	[1~]	[3~]
CDM 70/05	CD 70/05	245	310	450	450	10.5	10.4
CDM 70/07	CD 70/07	245	315	510	510	13	12.3
CDM 70/12	CD 70/12	245	315	510	510	15	14.6
CDM 90/10	CD 90/10	245	315	510	510	14	12.4
CDM 120/07	CD 120/07	245	315	510	510	12.5	12.8
CDM 120/12	CD 120/12	245	315	510	510	15.5	13.7
CDM 120/20	CD 120/20	245	315	510	510	20	19.2
CDM 200/12	CD 200/12	245	315	510	510	14.5	13.4
CDM 200/20	CD 200/20	245	315	510	510	19	18.5
-	CD 200/25	245	315	-	510	-	19.3

[1~] Single phase

[3~] Three phase

MOTOR DATA

Pump type	Power		Efficiency	Capacitor		Efficiency (% load)				Input	Full load current	Locked rotor current
Single Phase	[kW]	[HP]		[μF]	[V]	η %			cos-φ		[A]	[A]
						50%	75%	100%			230 V	230 V
CDM 70/05	0.45	0.6	IE2	14	450	55.7	65.6	72.5	0.94	0.65	3.0	13.4
CDM 70/07	0.75	1.0	IE2	25	450	61.0	70.8	79.2	0.93	0.95	4.4	24.0
CDM 70/12	1.1	1.5	IE2	25	450	72.6	77.7	79.6	0.93	1.41	6.6	32.1
CDM 90/10	0.9	1.2	IE2	25	450	67.2	75.4	79.4	0.89	1.14	5.6	32.1
CDM 120/07	0.75	1.0	IE2	25	450	61.0	70.8	79.2	0.93	0.95	4.4	24.0
CDM 120/12	1.1	1.5	IE2	25	450	72.6	77.7	79.6	0.93	1.41	6.6	32.1
CDM 120/20	1.5	2.0	IE2	40	450	70.2	77.5	81.8	0.93	1.93	8.9	64.8
CDM 200/12	1.1	1.5	IE2	25	450	72.6	77.7	79.6	0.93	1.41	6.6	32.1
CDM 200/20	1.5	2.0	IE2	40	450	70.2	77.5	81.8	0.93	1.93	8.9	64.8

Pump type	Power		Efficiency	Efficiency (% load)			Input	Full load current		Locked rotor current		
Three Phase	[kW]	[HP]		η %				[kW]	[A]		[A]	
				50%	75%	100%			230 V	400 V	230 V	400 V
CD 70/05	0.37	0.5	IE3	75.1	78.5	78.0	0.71	2.4	1.4	12.7	7.3	
CD 70/07	0.55	0.75	IE3	80.2	82.8	82.9	0.91	3.0	1.7	20.5	11.8	
CD 70/12	0.9	1.2	IE3	81.7	83.1	82.4	1.34	4.3	2.5	28.8	16.6	
CD 90/10	0.75	1.0	IE3	80.9	82.3	82.1	1.05	3.3	1.9	19.7	11.4	
CD 120/07	0.55	0.75	IE3	80.2	82.8	82.9	0.91	3.0	1.7	20.5	11.8	
CD 120/12	0.9	1.2	IE3	81.7	83.1	82.4	1.34	4.3	2.5	28.8	16.6	
CD 120/20	1.5	2.0	IE3	84.2	86.8	86.9	2.01	7.1	4.1	66.6	38.4	
CD 200/12	0.9	1.2	IE3	81.7	83.1	82.4	1.34	4.3	2.5	28.8	16.6	
CD 200/20	1.5	2.0	IE3	84.2	86.8	86.9	2.01	7.1	4.1	66.6	38.4	
CD 200/25	1.85	2.5	IE3	86.2	87.0	86.0	2.55	8.2	4.7	66.6	38.43	

NOISE DATA

Pump type		L _{pA} - dB(A) *
Single Phase	Three Phase	
CDM 70/05	CD 70/05	<70
CDM 70/07	CD 70/07	
CDM 70/12	CD 70/12	
CDM 90/10	CD 90/10	
CDM 120/07	CD 120/07	
CDM 120/12	CD 120/12	
CDM 120/20	CD 120/20	
CDM 200/12	CD 200/12	
CDM 200/20	CD 200/20	
-	CD 200/25	

* Mean value of several measures at 1m distance around