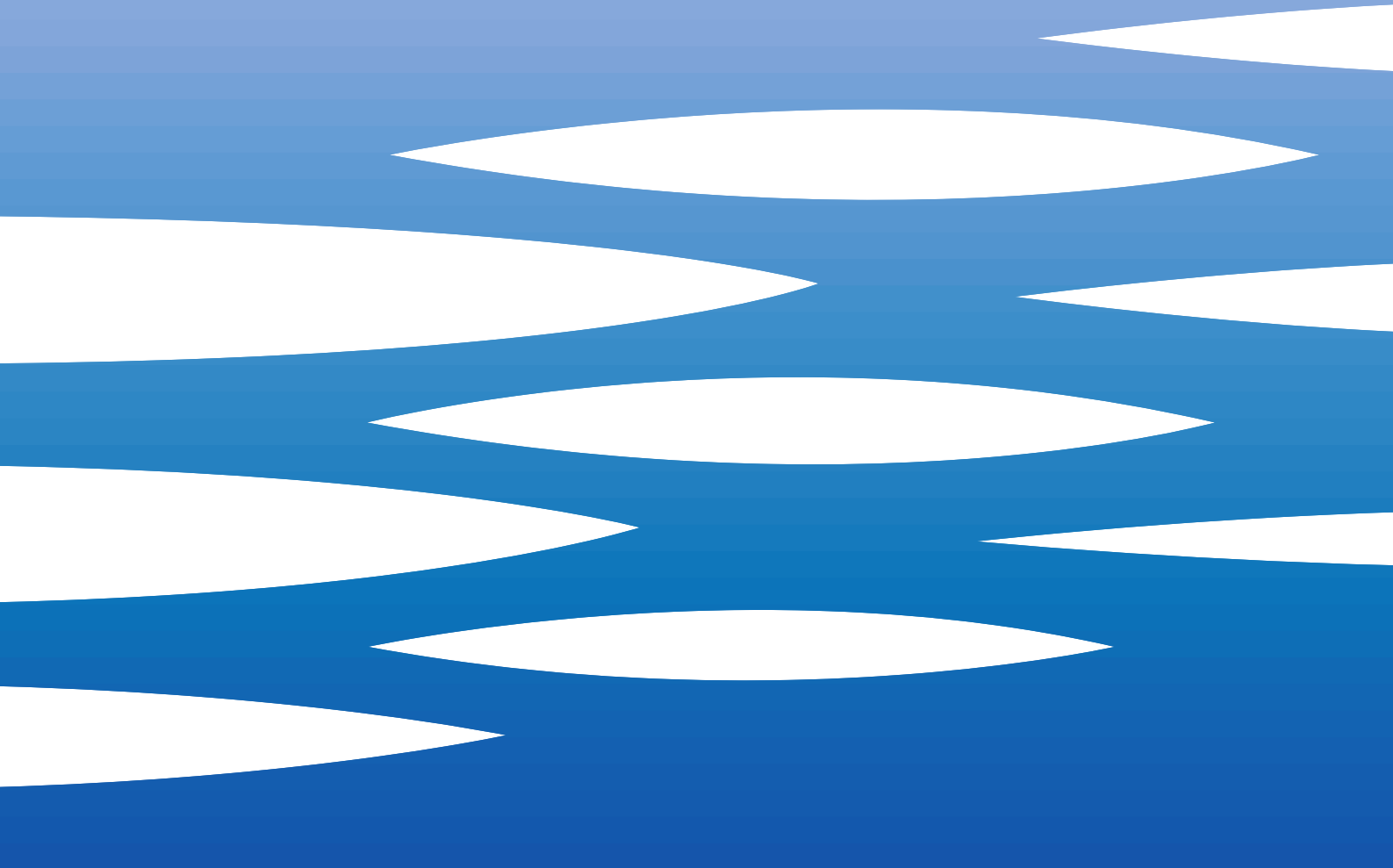


EBARA



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SPECIFICATIONS

60Hz

Rev. E

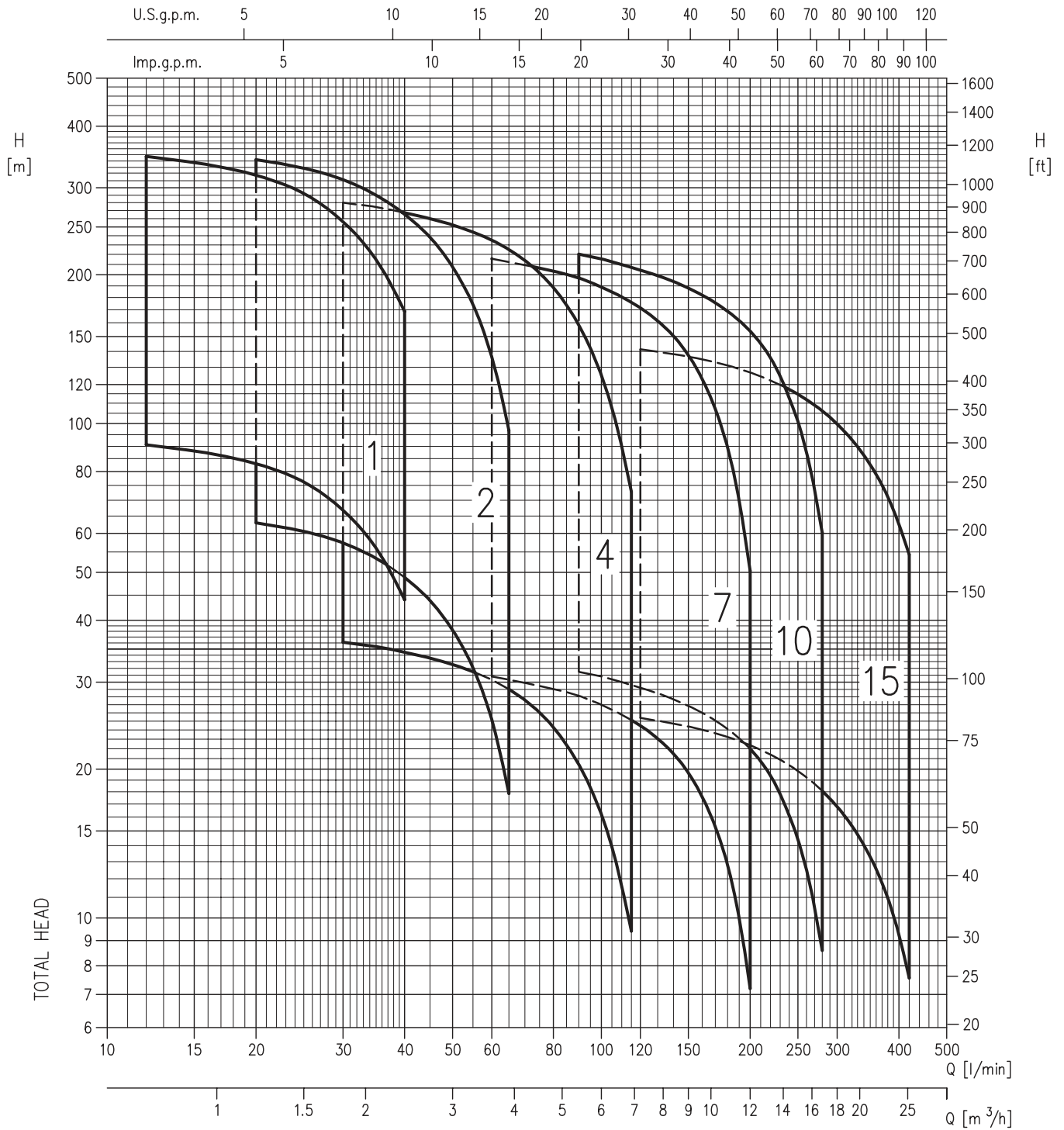
PUMP		
Liquid Handled	Type of liquid	Clean water
	Temperature [°C]	Maximum 40 (depends on maximum temperature motor)
	Sand content	Maximum : 50 parts per million
	Chlorine ion density	Maximum : 500 parts per million
Construction	Impeller	Closed centrifugal - Face clearance type
	Bearing	Sleeve type - Alumina (Ceramic) / EPDM rubber
Pipe connection	Suction	N/A
	Discharge	G1 1/4 (models 4N1, 4N2, 4N4) UNI ISO 228 G2 (models 4N7, 4N10, 4N15) UNI ISO 228
Material	Impeller	Ixef® (models 4N1, 4N2, 4N4, 4N7) Glass Fibre Reinforced PC (models 4N10, 4N15)
	Intermediate casing	EN 1.4301 (AISI 304)
	Diffuser	PPE+PS Glass fibre reinforced
	Shaft	EN 1.4301 (AISI 304)
	Discharge casing	EN 1.4308 (ASTM CF8)
	Valve	EN 1.4301 (AISI 304)
	Bracket	EN 1.4308 (ASTM CF8)
Applicable standard of test		ISO 9906 - Annex A

MOTOR					
Type	Submersible oil filled (type OY)		Submersible water filled (type WY)		
Manufacturer	Sumoto		Franklin		
	Single phase	Three phase	Single phase	Three phase	
Power rating	[kW]	0.55÷2.2	0.55÷7.5	0.55÷2.2	0.55÷7.5
	[HP]	0.75÷3.0	0.75÷10	0.75÷3.0	0.75÷10
No. of Poles	2				
Rated speed	Refer to each characteristic performance				
Insulation class	F		B		
Protection degree	IP 68		IP 68		
Maximum temperature [°C]	35		30		
Maximum immersion [m]	150		350		
Starts / hours	30		20		
Start type	Direct on line				
Frequency [Hz]	60 Hz				
Voltage [V]	220-230 ±10%	380 ±10% 460 ±10%	230 +6-10%	380 -10% 460 +6%	
Capacitor for start and run	Fitted in starter box	-	Fitted in starter box	-	
Over load protection	Fitted in starter box	Provided by the user	Fitted in starter box	Provided by the user	
Sealing liquid	Oil type: Marcol 82 (Esso)		Propylene Glycol 50% water solution		
Motor bracket	Cast iron nickel plated		EN 1.4301 (AISI 304)		
Casing material	EN 1.4301 (AISI 304)				
Power cable	material	EPDM/Cross Seald Polyethylene			
	size [mm ²]	4x1.5			
	length [m]	L=1.75 (up to 2.2 kW) / L=2.5 (for 3 and 4 kW) / L=4 (for 5.5 and 7.5 kW)			
Flange mount	NEMA standard				

SELECTION CHART

60Hz

Rev. E



SELECTION CHART

60Hz

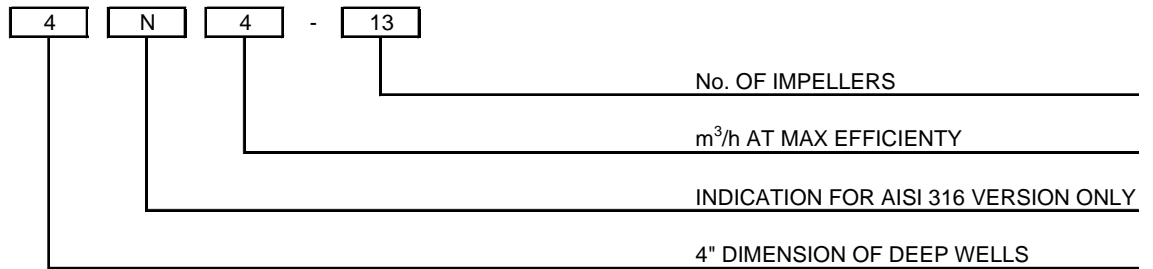
Rev. E

Pump type	Motor		Q=Capacity										
			l/min	0	12	20	25	30	35	40	50	65	90
	kW	HP	m ³ /h	0.0	0.7	1.2	1.5	1.8	2.1	2.4	3.0	3.9	5.4
			H=Total Head										
4N1 12	0.55	0.75	94.5	90.5	83	76	67	56	44	-	-	-	-
4N1 18	0.75	1.0	142	136	124	114	100	84	66	-	-	-	-
4N1 24	1.10	1.5	189	181	166	152	134	112	88	-	-	-	-
4N1 33	1.50	2.0	260	249	228	210	184	154	121	-	-	-	-
4N1 46	2.20	3.0	362	347	318	292	256	215	169	-	-	-	-
4N2 7	0.55	0.75	68	-	63	60.5	57.5	53.5	49	38.2	17.8	-	-
4N2 10	0.75	1.0	97	-	90	86.5	82	76.5	70	54.5	25.5	-	-
4N2 14	1.10	1.5	136	-	126	121	115	107	97.5	76.5	35.7	-	-
4N2 20	1.50	2.0	194	-	180	173	164	153	140	109	51	-	-
4N2 28	2.20	3.0	272	-	252	242	230	214	195	153	71.5	-	-
4N2 38	3.00	4.0	369	-	342	329	312	290	365	207	97	-	-
4N4 4	0.55	0.75	38.8	-	-	-	-	35.4	34.5	32.5	29	20.44	9.4
4N4 7	0.75	1.0	68	-	-	-	-	62	60.5	57	51	35.8	16.4
4N4 9	1.10	1.5	87.5	-	-	-	-	79.5	77.5	73.5	65.5	46	21.1
4N4 13	1.50	2.0	126	-	-	-	-	115	112	106	94.5	66.5	30.5
4N4 17	2.20	3.0	165	-	-	-	-	150	146	138	123	87	39.9
4N4 23	3.00	4.0	223	-	-	-	-	204	198	187	167	117	54
4N4 31	4.00	5.5	301	-	-	-	-	274	267	252	225	158	73

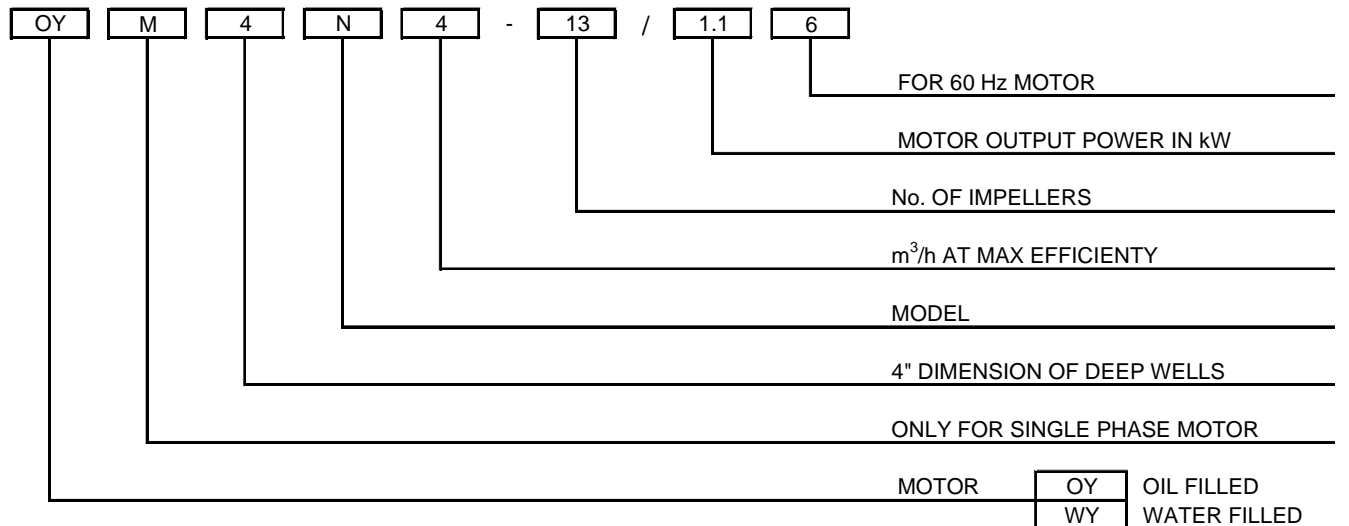
Pump type	Motor		Q=Capacity										
			l/min	0	60	90	120	160	200	240	280	320	360
	kW	HP	m ³ /h	0.0	3.6	5.4	7.2	9.6	12.0	14.4	16.8	19.2	21.6
			H=Total Head										
4N7 4	0.75	1.0	35	30.8	28.2	24.5	17.6	7.2	-	-	-	-	-
4N7 6	1.10	1.5	52.5	46	42	37.7	26.4	10.8	-	-	-	-	-
4N7 8	1.50	2.0	70	61.5	56.5	49	35.2	14.4	-	-	-	-	-
4N7 11	2.20	3.0	96	84.5	77.5	67.5	48.5	19.8	-	-	-	-	-
4N7 15	3.00	4.0	131	115	106	92	66	27	-	-	-	-	-
4N7 20	4.00	5.5	175	154	141	122	88	36	-	-	-	-	-
4N7 28	5.50	7.5	245	216	197	171	123	50.5	-	-	-	-	-
4N10 4	1.10	1.5	36.5	-	31.5	29.2	26	22	16.1	8.6	-	-	-
4N10 6	1.50	2.0	54.5	-	47	44	39	33	24.2	12.9	-	-	-
4N10 8	2.20	3.0	73	-	63	58.5	52	44	32.2	17.2	-	-	-
4N10 10	3.00	4.0	91	-	78.5	73	65	55	40.5	21.5	-	-	-
4N10 14	4.00	5.5	127	-	110	102	91	77	56.5	30.1	-	-	-
4N10 20	5.50	7.5	182	-	157	146	130	110	80.5	43	-	-	-
4N10 28	7.50	10.0	255	-	220	204	182	154	113	60	-	-	-
4N15 3	1.50	2.0	27.6	-	-	25.4	24	22.4	20.4	18.1	15.5	12.5	7.6
4N15 4	2.20	3.0	36.8	-	-	33.9	32	29.8	27.2	24.1	20.6	16.7	10.1
4N15 6	3.00	4.0	55	-	-	51	48	44.5	41	36.2	30.9	25.1	15.1
4N15 8	4.00	5.5	74	-	-	67.5	64	59.5	54.5	48	41	33.4	20.2
4N15 11	5.50	7.5	104	-	-	97	93	87.5	80.5	73	64	54	37.3
4N15 16	7.50	10.0	151	-	-	141	135	127	117	106	93	79	54.5

TYPE KEY

EXAMPLE (pump without motor) :



EXAMPLE (pump with motor) :



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 60 Hz

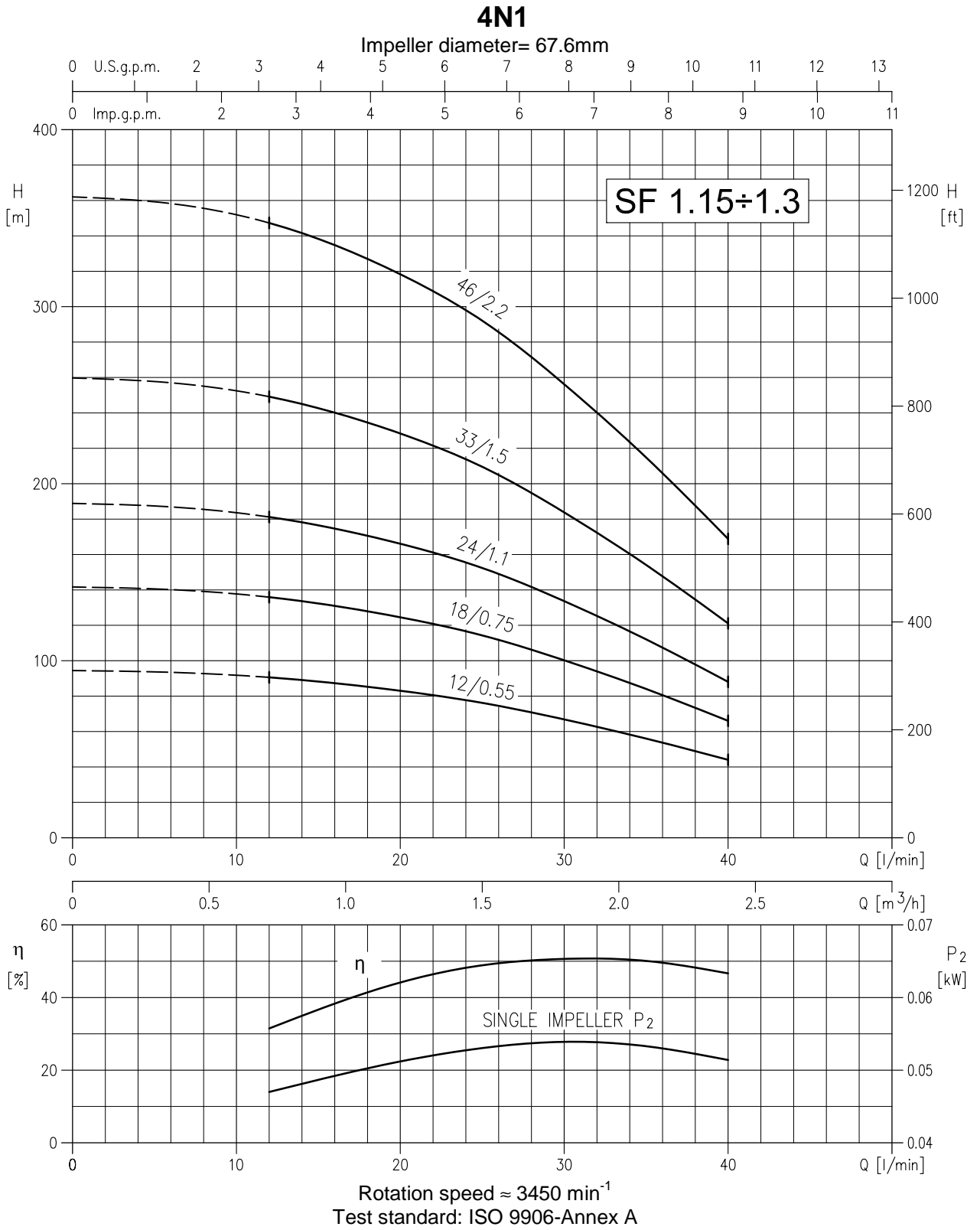
Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of $\nu = 1 \text{ mm}^2/\text{s}$ (1 cSt)

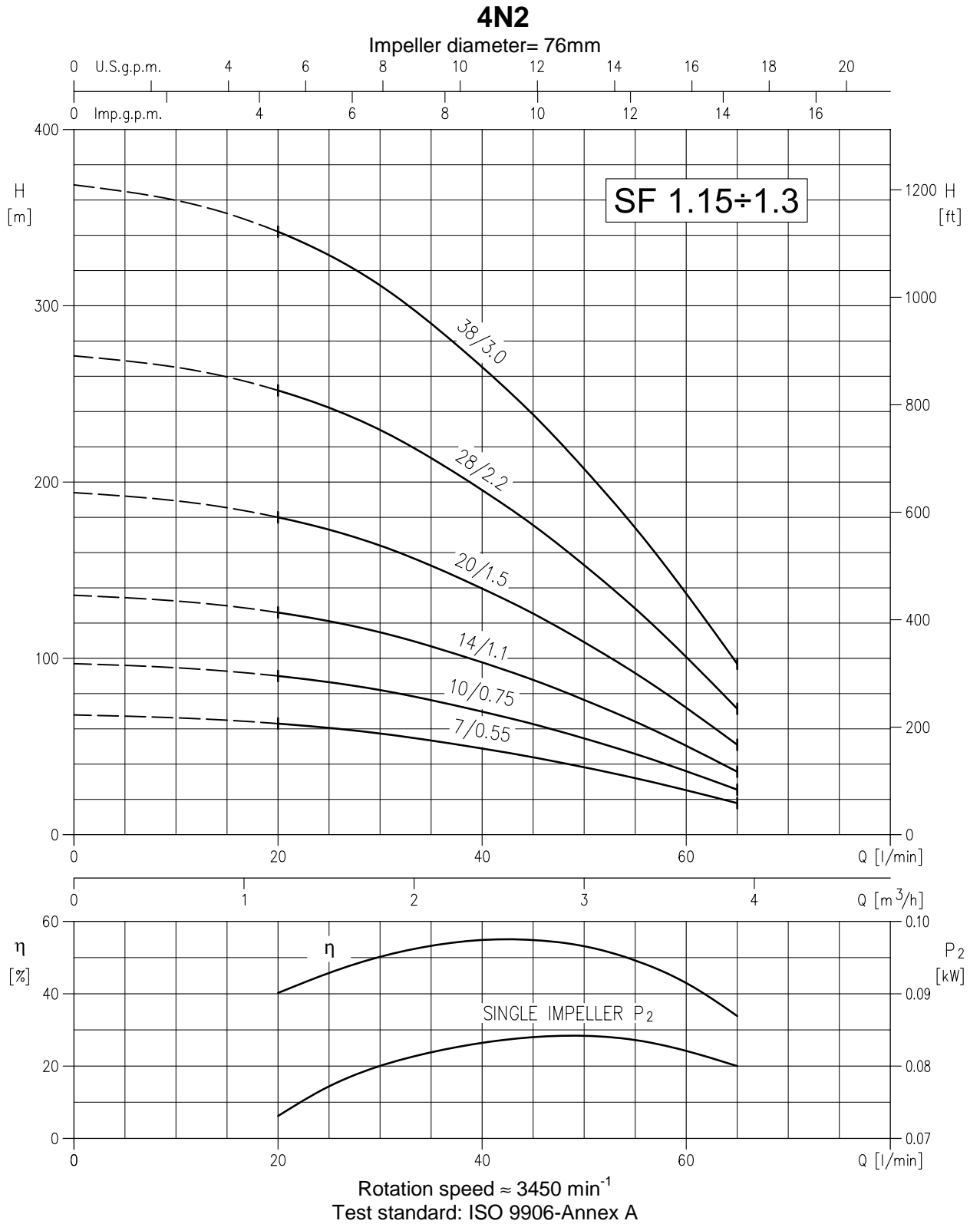
The continuous curves indicate the recommended working range. The dotted curve is only a guide.

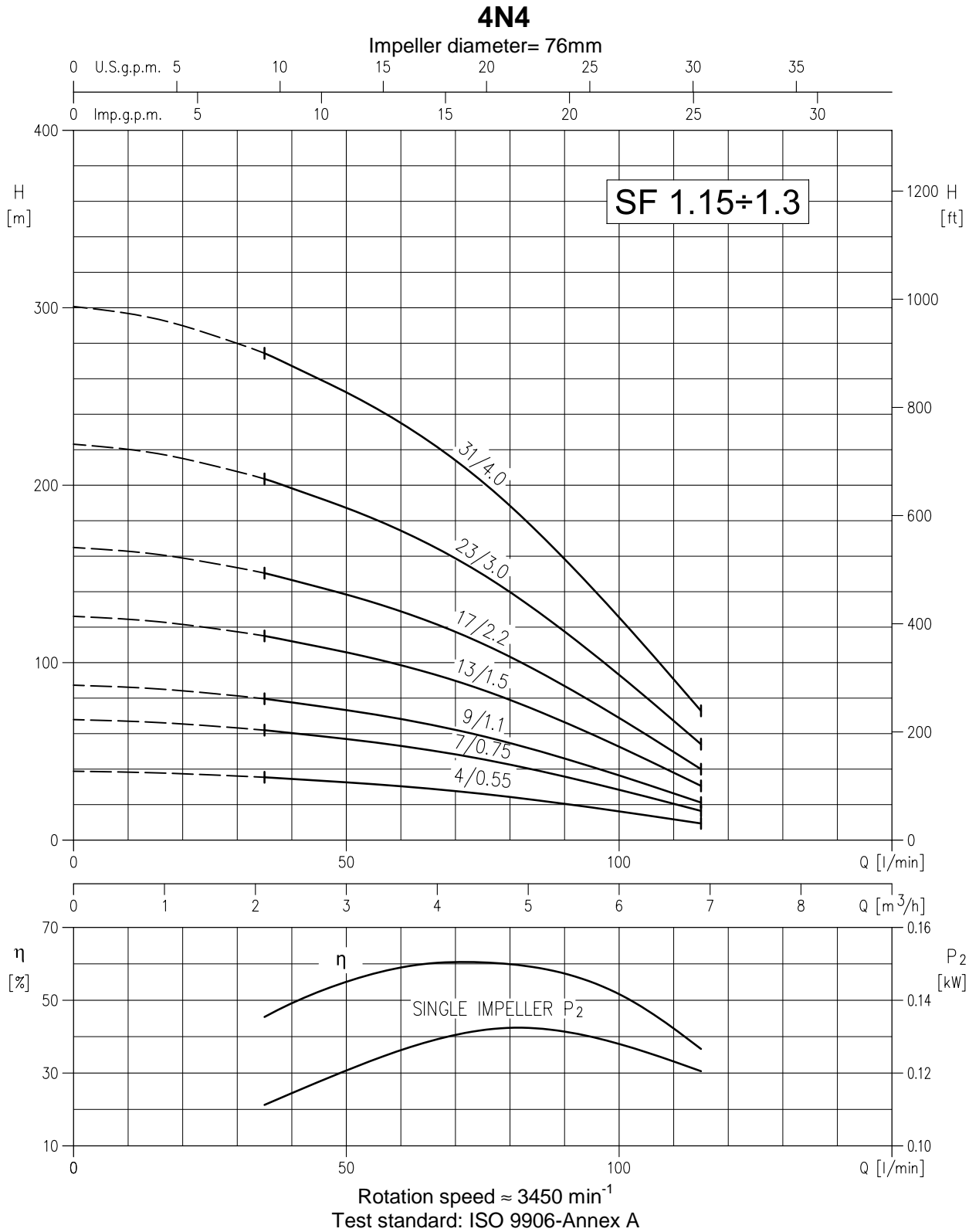
In order to avoid the risk of over-heating, the pumps should not be used at a flow rate below 10% of best efficiency point.

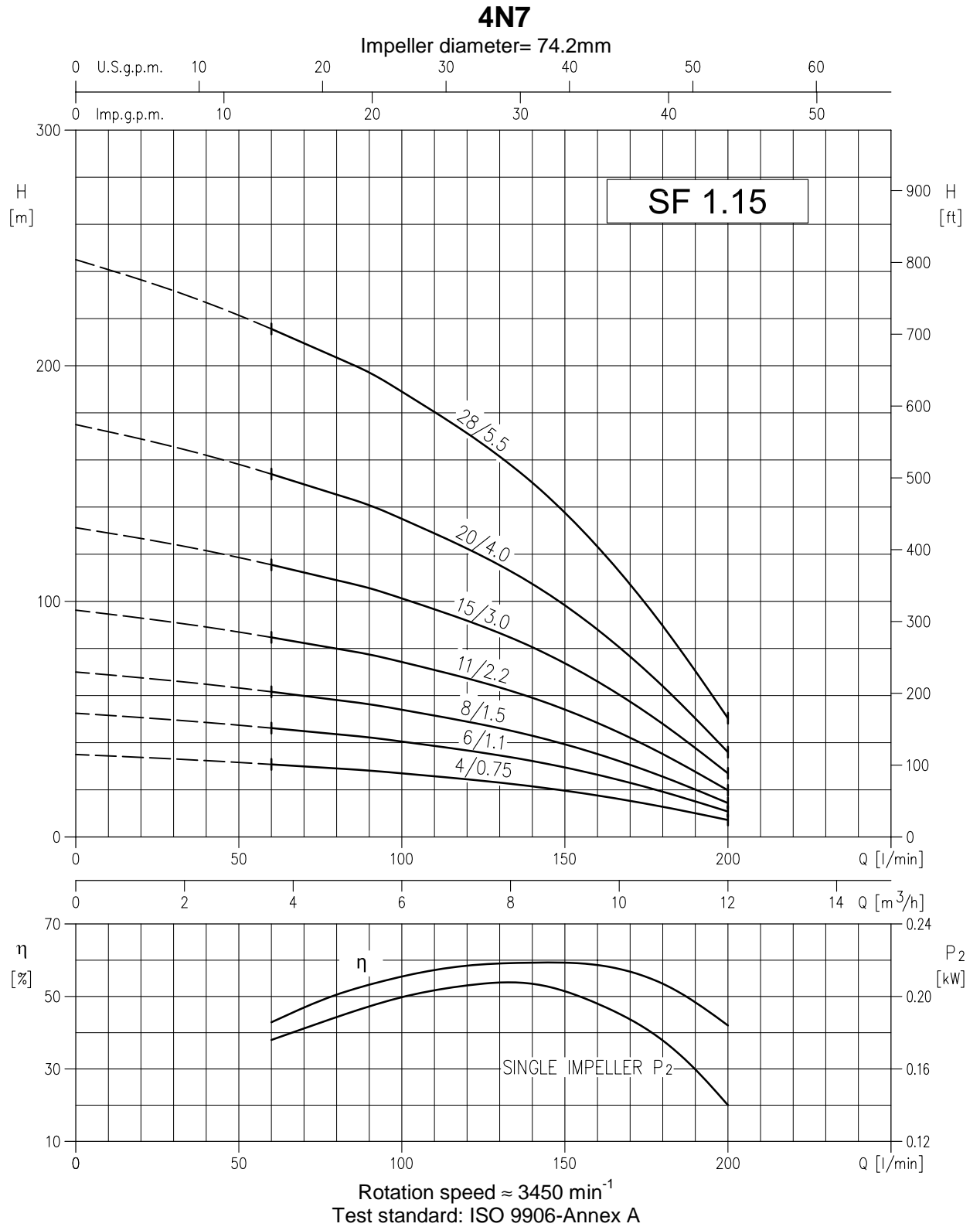
Symbols explanation:

- Q = volume flow rate
- H = total head
- P₂ = pump power input (shaft power)
- η = pump efficiency



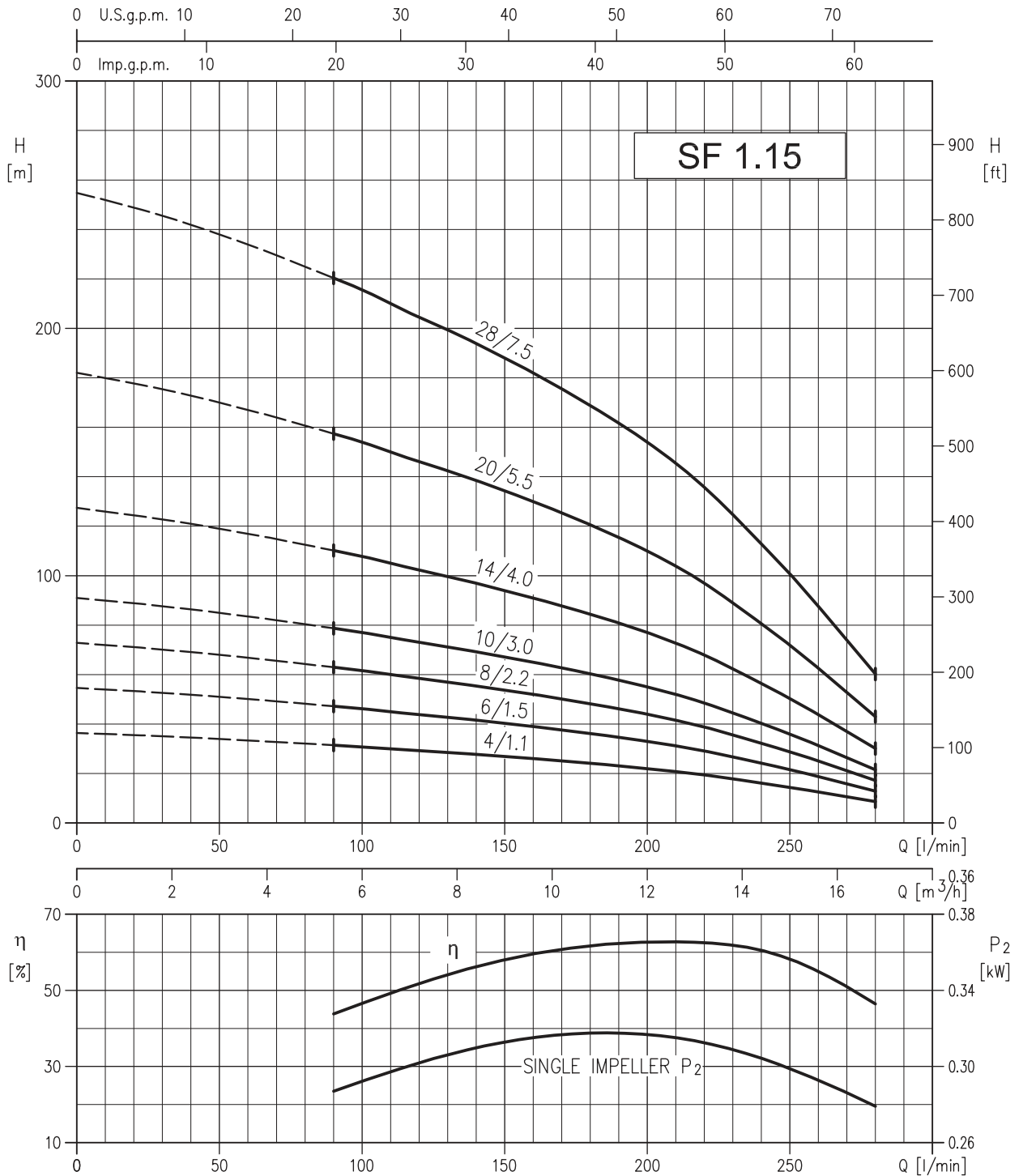






4N10

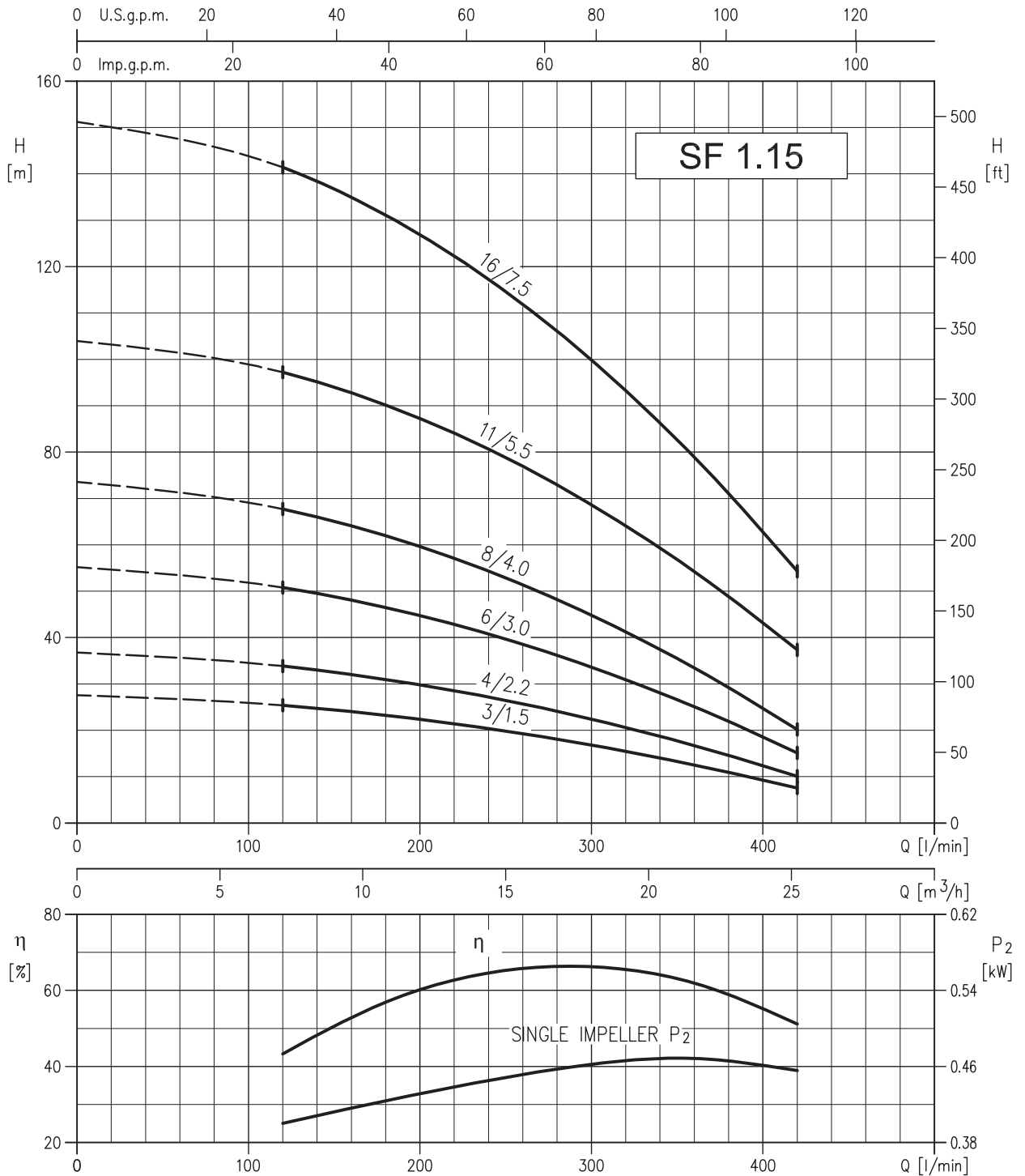
Impeller diameter= 76.4 mm



Rotation speed ≈ 3450 min⁻¹
 Test standard: ISO 9906-Annex A

4N15

Impeller diameter= 78 mm

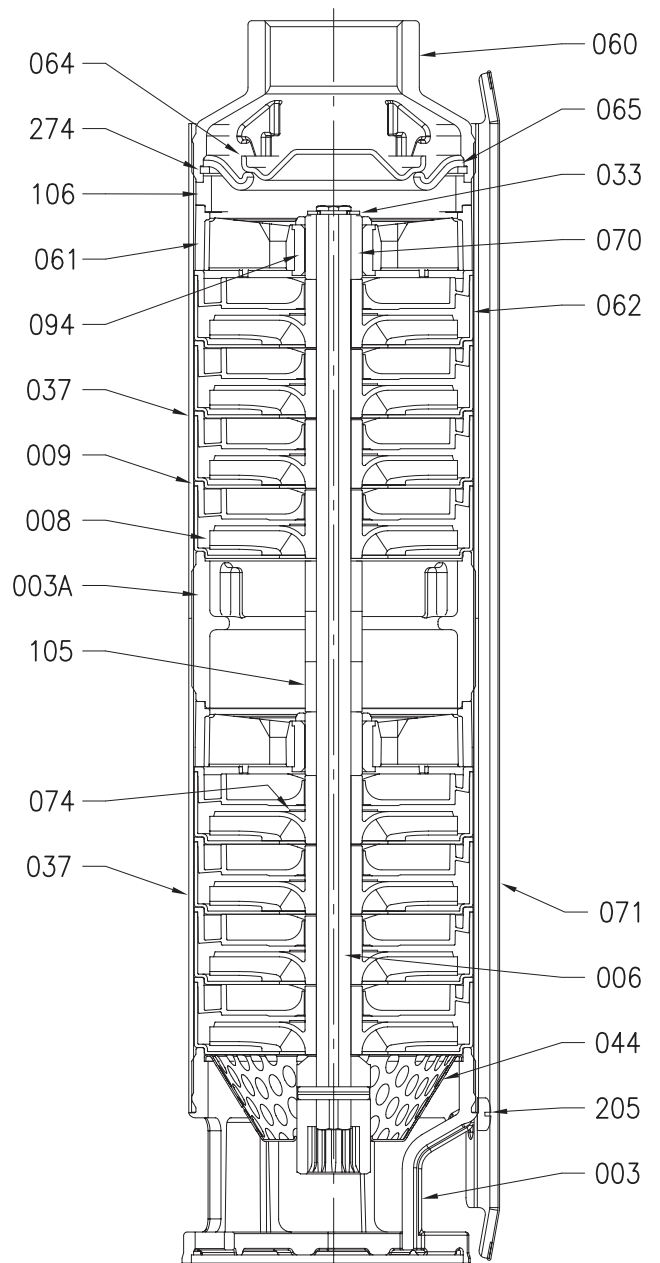
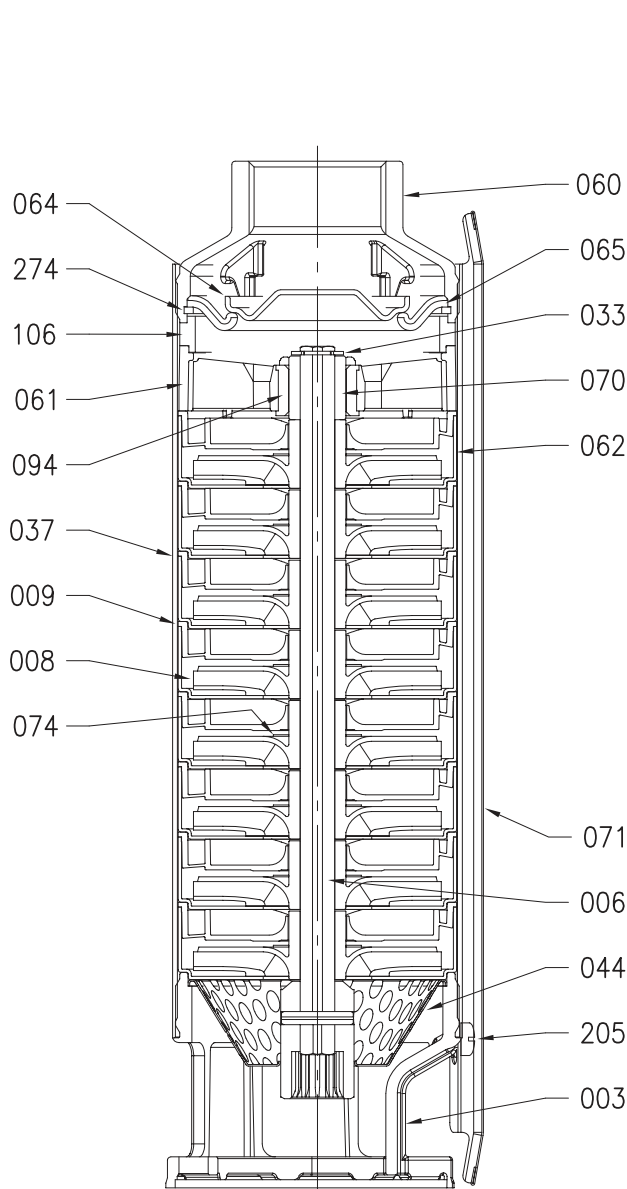


Rotation speed ≈ 3450 min⁻¹
 Test standard: ISO 9906-Annex A

SECTIONAL VIEW
4N1 - 4N2 - 4N4

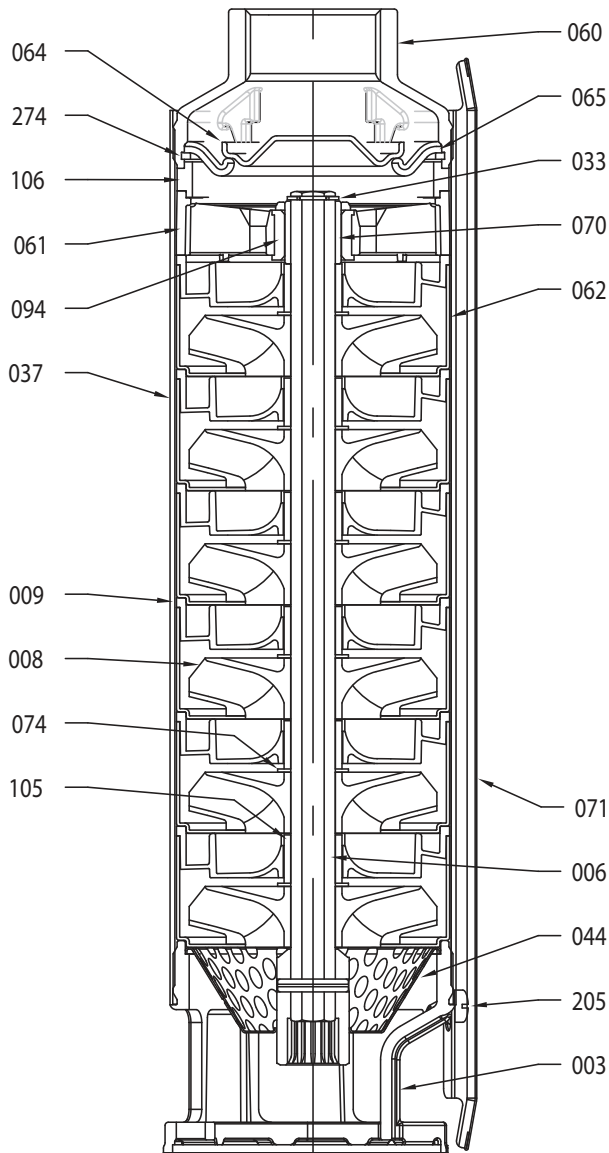
SINGLE PUMP CASING

DOUBLE PUMP CASING

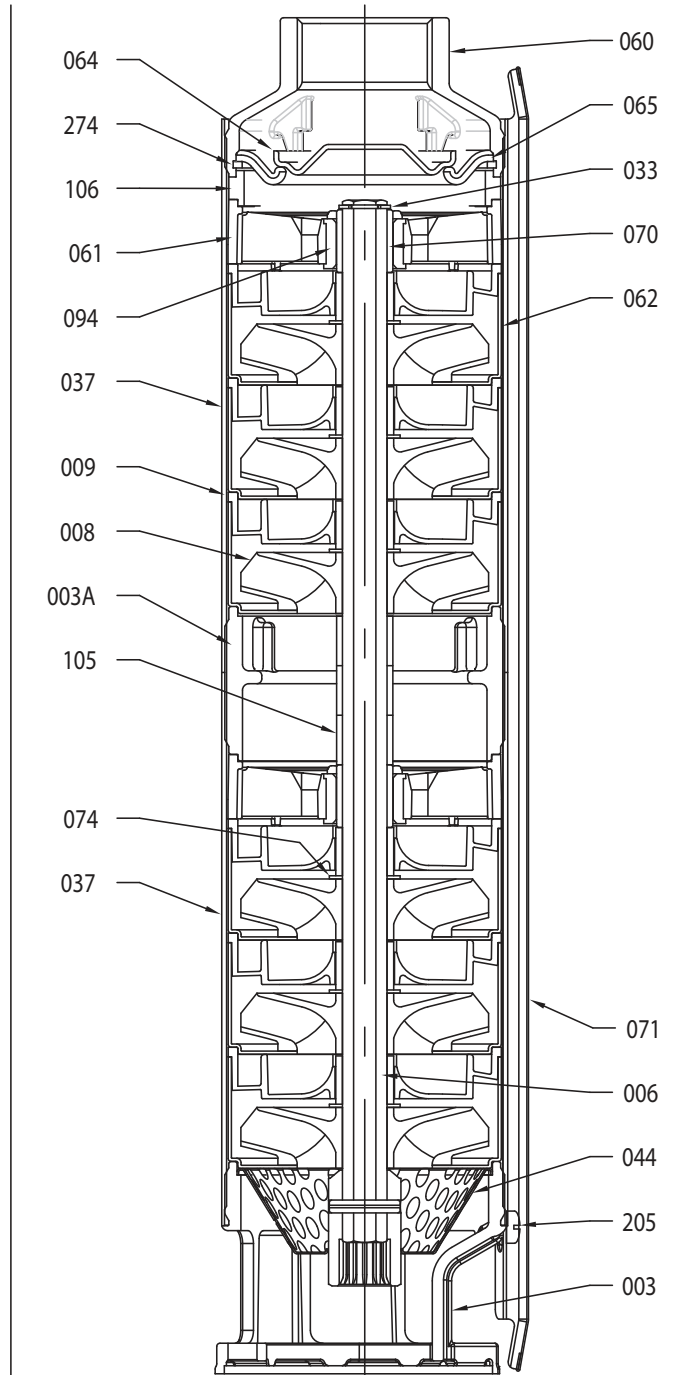


SECTIONAL VIEW
4N7

SINGLE PUMP CASING

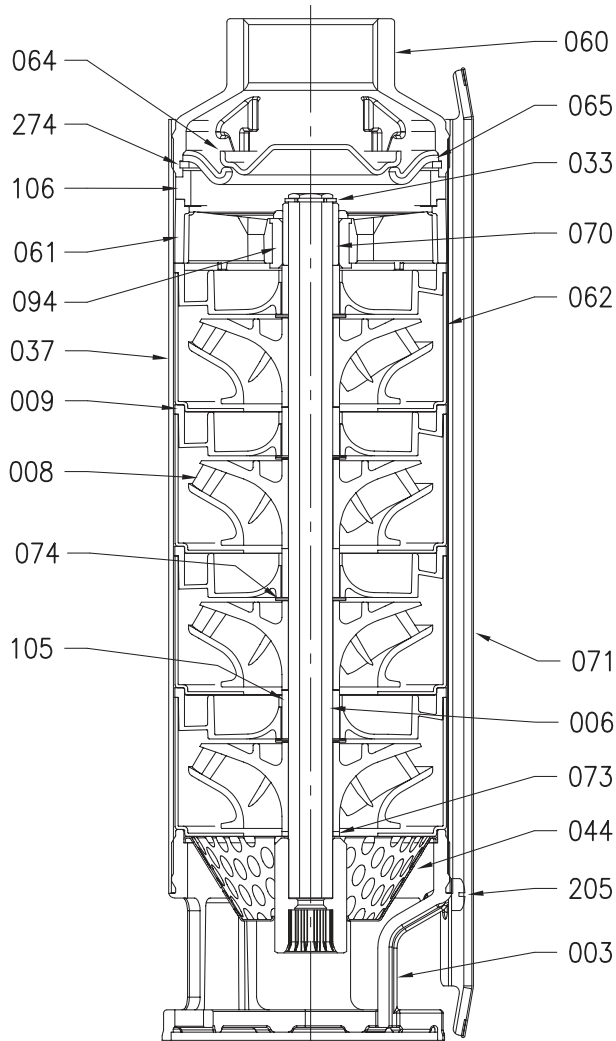


DOUBLE PUMP CASING

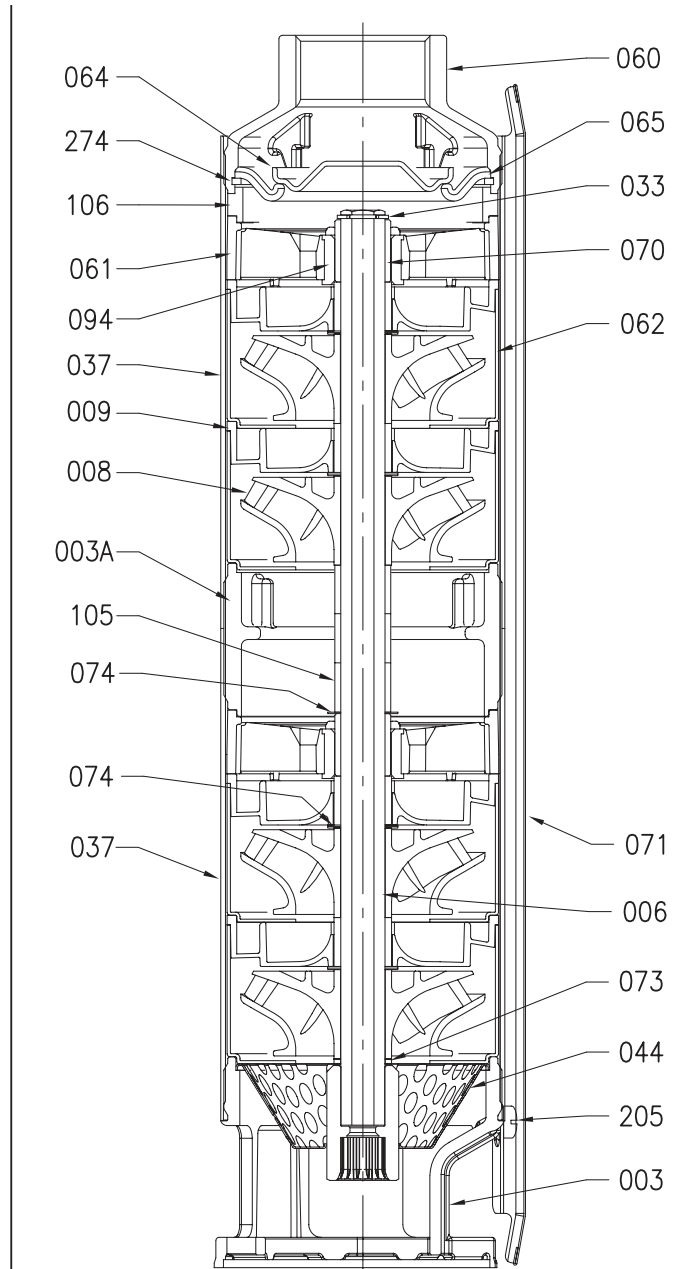


**SECTIONAL VIEW
4N10**

SINGLE PUMP CASING



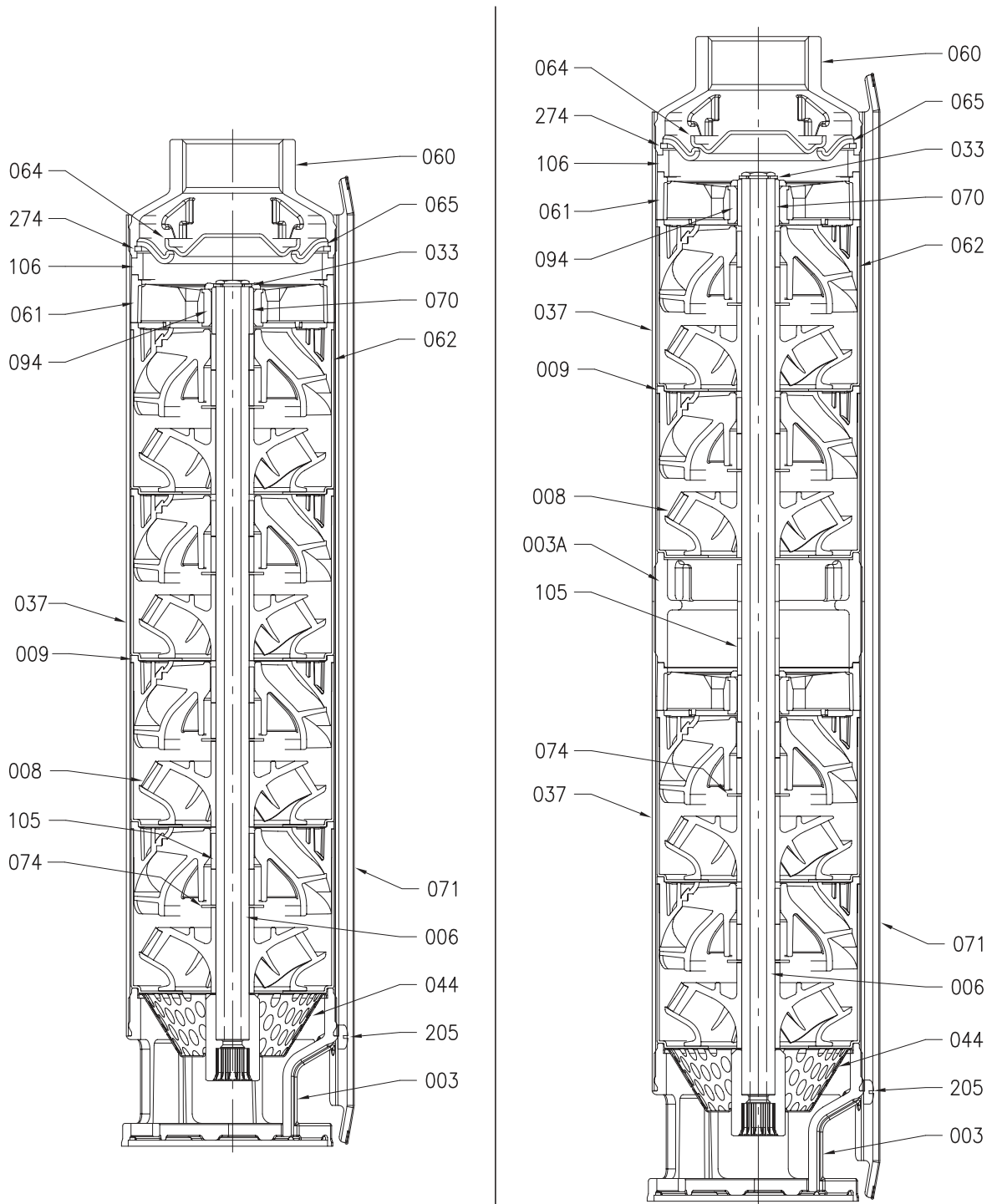
DOUBLE PUMP CASING



**SECTIONAL VIEW
4N15**

SINGLE PUMP CASING

DOUBLE PUMP CASING



SECTIONAL VIEW TABLE

Pos.	PART.NAME	MATERIAL	Q.TY
003	Bracket	EN 1.4308 (ASTM CF8)	1
003A	Join ring	EN 1.4308 (ASTM CF8)	[*]
006	Pump shaft with coupling	EN 1.4301 (AISI 304)	1
008	Impeller	Ixef [®] (model 4N1, 4N2, 4N4, 4N7)	[*]
		Glass fibre reinforced PC (model 4N10, 4N15)	[*]
009	Diffuser	PPE+PS Glass fibre reinforced	[*]
033	Elastic Ring	EN 1.4301 (AISI 304)	1
037	Outer casing	EN 1.4301 (AISI 304)	[*]
044	Strainer	EN 1.4301 (AISI 304)	1
060	Discharge casing	EN 1.4308 (ASTM CF8)	1
061	Upper / Intermediate bracket	PPE+PS Glass fibre reinforced	[*]
062	Stage housing	EN 1.4301 (AISI 304)	[*]
064	Valve	EN 1.4301 (AISI 304)	1
065	Valve seat	EN 1.4301 (AISI 304) + EPDM Rubber	1
070	Shaft sleeve bearing	Alumina (Ceramic)	[*]
071	Cable guard	EN 1.4301 (AISI 304)	1
073	Thrust washer first impeller	EN 1.4301 (AISI 304)	[*]
074	Thrust washer	EN 1.4301 (AISI 304)	[*]
094	Bearing	EPDM Rubber	[*]
105	Spacer	PPE+PS Glass fibre reinforced	[*]
106	Spacer	NORYL+GF20%	1
205	Screw (M4 x 6 UNI 7687)	EN 1.4301 (AISI 304)	2
274	Elastic Ring	EN 1.4310 (AISI 302)	1

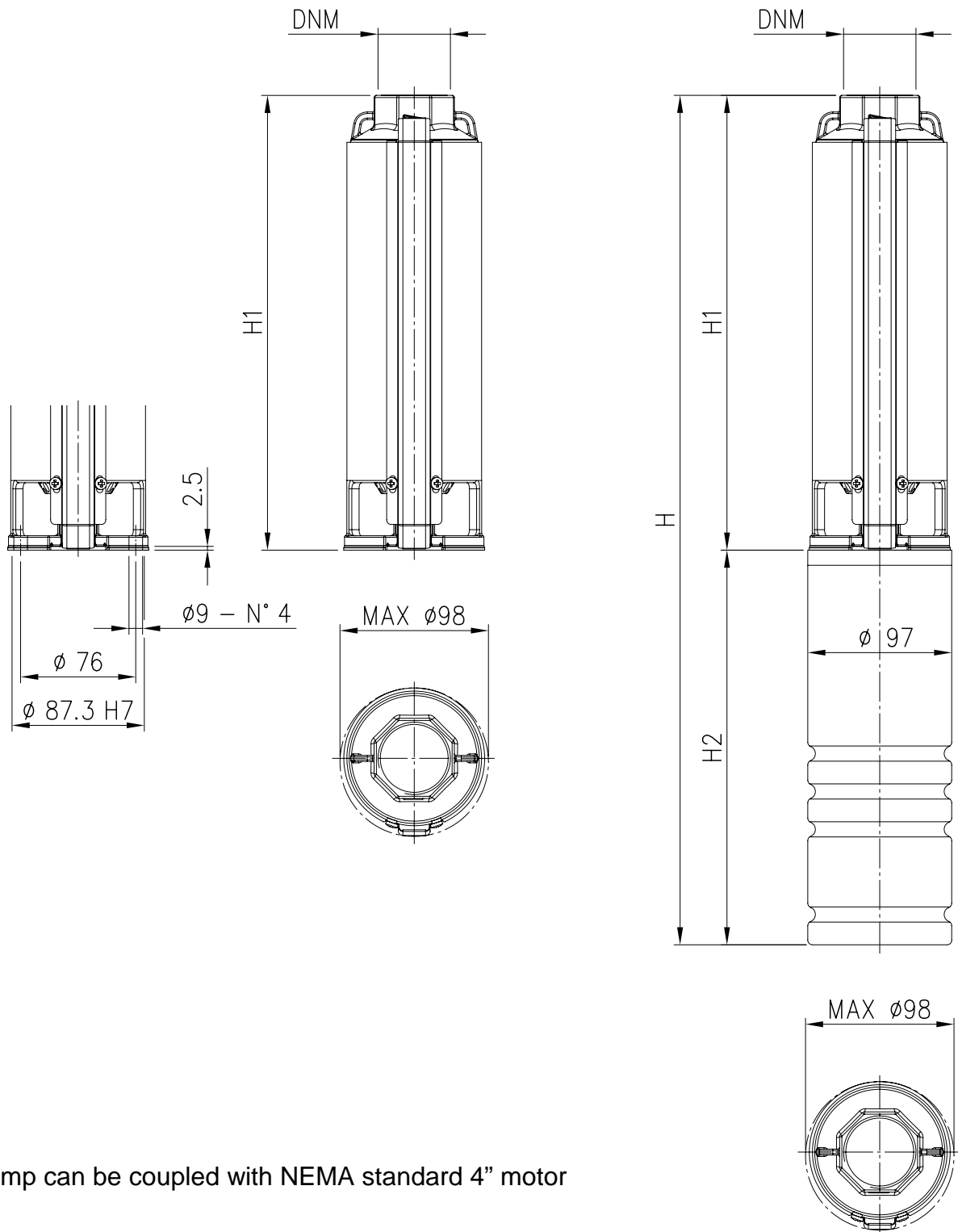
[*] See table pag. 305

QUANTITY FOR MODEL

Pump type	N°003A	N°008	N°009	N°037	N°061	N°062	N°070	N°073	N°074	N°094	N°105
4N1- 12 [*]	-	12	12	1	1	12	1	-	12	1	-
4N1- 18 [*]	-	18	18	1	1	18	1	-	18	1	-
4N1- 24 [*]	-	24	24	1	1	24	1	-	24	1	-
4N1- 33 [*]	-	33	34	1	1	34	1	-	33	1	1+1
4N1- 46 [**]	1	46	48	2	2	48	2	-	46	2	5+2
4N2- 7 [*]	-	7	7	1	1	7	1	-	7	1	-
4N2- 10 [*]	-	10	10	1	1	10	1	-	10	1	-
4N2- 14 [*]	-	14	14	1	1	14	1	-	14	1	-
4N2- 20 [*]	-	20	20	1	1	20	1	-	20	1	-
4N2- 28 [*]	-	28	28	1	1	28	1	-	28	1	-
4N2- 38 [**]	1	38	40	2	2	40	2	-	38	2	5+2
4N4- 4 [*]	-	4	4	1	1	4	1	-	4	1	-
4N4- 7 [*]	-	7	7	1	1	7	1	-	7	1	-
4N4- 9 [*]	-	9	9	1	1	9	1	-	9	1	-
4N4- 13 [*]	-	13	13	1	1	13	1	-	13	1	-
4N4- 17 [*]	-	17	18	1	1	18	1	-	17	1	1+3
4N4- 23 [*]	-	23	23	1	1	23	1	-	23	1	-
4N4- 31 [**]	1	31	31	2	2	31	2	-	31	2	3
4N7- 4 [*]	-	4	4	1	1	4	1	-	4	1	4
4N7- 6 [*]	-	6	6	1	1	6	1	-	6	1	6
4N7- 8 [*]	-	8	8	1	1	8	1	-	8	1	8
4N7- 11 [*]	-	11	12	1	1	12	1	-	11	1	13+1
4N7- 15 [*]	-	15	15	1	1	15	1	-	15	1	15
4N7- 20 [*]	-	20	20	1	1	20	1	-	20	1	20
4N7- 28 [**]	1	28	30	2	2	30	2	-	28	2	35+2
4N10- 4 [*]	-	4	4	1	1	4	1	1	8	1	4
4N10- 6 [*]	-	6	6	1	1	6	1	1	12	1	6
4N10- 8 [*]	-	8	8	1	1	8	1	1	16	1	8
4N10- 10 [*]	-	10	10	1	1	10	1	1	20	1	10
4N10- 14 [*]	-	14	14	1	1	14	1	1	28	1	14
4N10- 20 [*]	-	20	20	1	1	20	1	1	40	1	20
4N10- 28 [**]	1	28	28	2	2	28	2	1	57	2	31
4N15- 3 [*]	-	3	3	1	1	3	1	-	3	1	6
4N15- 4 [*]	-	4	4	1	1	4	1	-	4	1	8
4N15- 6 [*]	-	6	6	1	1	6	1	-	6	1	12
4N15- 8 [*]	-	8	8	1	1	8	1	-	8	1	16
4N15- 11 [*]	-	11	11	1	1	11	1	-	11	1	22
4N15- 16 [*]	1	16	16	2	2	16	2	-	16	2	32

[*] See drawing pag. 300 - 303 Single pump casing
 [**] See drawing pag. 300 - 303 Double pump casing

PUMP DRAWING

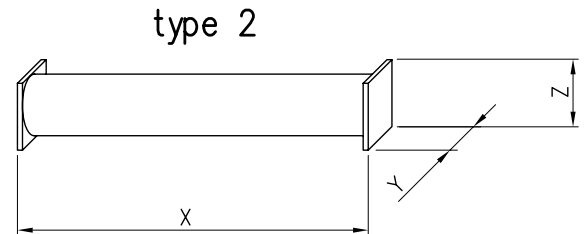
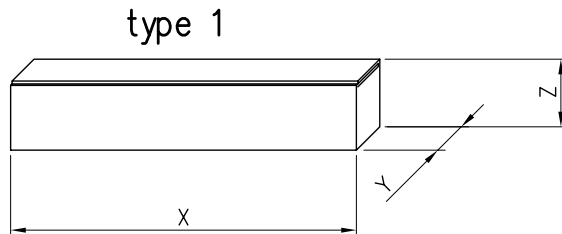


Pump can be coupled with NEMA standard 4" motor

DIMENSIONS PUMP TABLE

Pump type	Power		Pump without motor		Pump with oil filled motor				Pump with water filled motor			
	kW	HP	H1 [mm]	DNM	single phase		three phase		single phase		three phase	
					H2 [mm]	H [mm]	H2 [mm]	H [mm]	H2 [mm]	H [mm]	H2 [mm]	H [mm]
4N1- 12	0.55	0.75	353	G 1 1/4	325	678	325	678	253	606	228	581
4N1- 18	0.75	1	458	G 1 1/4	350	808	325	783	283	741	248	706
4N1- 24	1.1	1.5	563	G 1 1/4	385	948	350	913	307	870	283	846
4N1- 33	1.5	2	738	G 1 1/4	420	1158	385	1123	339	1077	307	1045
4N1- 46	2.2	3	1049	G 1 1/4	470	1519	420	1469	437	1486	339	1388
4N2- 7	0.55	0.75	265	G 1 1/4	325	590	325	590	253	518	228	493
4N2- 10	0.75	1	318	G 1 1/4	350	668	325	643	283	601	248	566
4N2- 14	1.1	1.5	388	G 1 1/4	385	773	350	738	307	695	283	671
4N2- 20	1.5	2	493	G 1 1/4	420	913	385	878	339	832	307	800
4N2- 28	2.2	3	633	G 1 1/4	470	1103	420	1053	437	1070	339	972
4N2- 38	3	4	909	G 1 1/4	-	-	544	1453	-	-	477	1386
4N4- 4	0.55	0.75	229	G 1 1/4	325	554	325	554	253	482	228	457
4N4- 7	0.75	1	293	G 1 1/4	350	643	325	618	283	576	248	541
4N4- 9	1.1	1.5	336	G 1 1/4	385	721	350	686	307	643	283	619
4N4- 13	1.5	2	422	G 1 1/4	420	842	385	807	339	761	307	729
4N4- 17	2.2	3	530	G 1 1/4	470	1000	420	950	437	967	339	869
4N4- 23	3	4	637	G 1 1/4	-	-	544	1181	-	-	477	1114
4N4- 31	4	5.5	875	G 1 1/4	-	-	574	1449	-	-	543	1418
4N7- 4	0.75	1	285	G 2	350	635	325	610	283	568	248	533
4N7- 6	1.1	1.5	356	G 2	385	741	350	706	307	663	283	639
4N7- 8	1.5	2	427	G 2	420	847	385	812	339	766	307	734
4N7- 11	2.2	3	569	G 2	470	1039	420	989	437	1006	339	908
4N7- 15	3	4	675	G 2	-	-	544	1219	-	-	477	1152
4N7- 20	4	5.5	853	G 2	-	-	574	1427	-	-	543	1396
4N7- 28	5.5	7.5	1274	G 2	-	-	644	1918	-	-	653	1927
4N10- 4	1.1	1.5	325	G 2	385	710	350	675	307	632	283	608
4N10- 6	1.5	2	412	G 2	420	832	385	797	339	751	307	719
4N10- 8	2.2	3	500	G 2	470	970	420	920	437	937	339	839
4N10- 10	3	4	588	G 2	-	-	544	1132	-	-	477	1065
4N10- 14	4	5.5	765	G 2	-	-	574	1339	-	-	543	1308
4N10- 20	5.5	7.5	1030	G 2	-	-	644	1674	-	-	653	1683
4N10- 28	7.5	10	1452	G 2	-	-	805	2257	-	-	731	2183
4N15- 3	1.5	2	425	G 2	420	845	385	810	339	764	307	732
4N15- 4	2.2	3	425	G 2	470	895	420	845	437	862	339	764
4N15- 6	3	4	562	G 2	-	-	544	1106	-	-	477	1039
4N15- 8	4	5.5	702	G 2	-	-	574	1276	-	-	543	1245
4N15- 11	5.5	7.5	908	G 2	-	-	644	1552	-	-	653	1561
4N15- 16	7.5	10	1260	G 2	-	-	805	2065	-	-	731	1991

PACKING



Pump type	Pump with oil filled motor										Pump with water filled motor														
	single phase					three phase					single phase					three phase									
	X [mm]	Y [mm]	Z [mm]	Weight [Kgf]	type	X [mm]	Y [mm]	Z [mm]	Weight [Kgf]	type	X [mm]	Y [mm]	Z [mm]	Weight [Kgf]	type	X [mm]	Y [mm]	Z [mm]	Weight [Kgf]	type					
4N1- 12	350	100	100	3.7	1	800	100	100	11.3	1	800	100	100	10.7	1	640	100	100	13.3	1	640	100	100	12.0	1
4N1- 18	495	100	100	4.8	1	800	100	100	13.5	1	800	100	100	12.4	1	800	100	100	15.6	1	800	100	100	14.4	1
4N1- 24	640	100	100	5.9	1	1035	100	100	16.2	1	1035	100	100	14.6	1	1035	100	100	19.4	1	1035	100	100	16.7	1
4N1- 33	800	100	100	8.0	1	1300	100	100	20.0	1	1300	100	100	18.4	1	1300	100	100	22.4	1	1300	100	100	20.1	1
4N1- 46	1035	100	100	11.8	1	1530	100	100	26.0	1	1530	100	100	23.8	1	1530	100	100	29.8	1	1530	100	100	25.3	1
4N2- 7	350	100	100	3.8	1	640	100	100	11.4	1	640	100	100	10.8	1	640	100	100	13.4	1	495	100	100	12.1	1
4N2- 10	350	100	100	4.1	1	800	100	100	12.8	1	800	100	100	11.7	1	640	100	100	14.9	1	640	100	100	13.7	1
4N2- 14	495	100	100	4.4	1	800	100	100	14.7	1	800	100	100	13.1	1	800	100	100	17.9	1	800	100	100	15.2	1
4N2- 20	495	100	100	5.3	1	1035	100	100	17.3	1	1035	100	100	15.7	1	1035	100	100	19.7	1	1035	100	100	17.4	1
4N2- 28	640	100	100	6.7	1	1300	100	100	20.9	1	1300	100	100	18.7	1	1300	100	100	24.7	1	1300	100	100	20.2	1
4N2- 38	1035	100	100	10.0	1	-	-	-	-	-	1530	100	100	22.8	1	-	-	-	-	-	1530	100	100	26.0	1
4N4- 4	350	100	100	2.4	1	640	100	100	10.0	1	640	100	100	10.0	1	495	100	100	12.0	1	495	100	100	12.0	1
4N4- 7	350	100	100	3.0	1	640	100	100	11.7	1	640	100	100	11.7	1	640	100	100	13.8	1	640	100	100	13.8	1
4N4- 9	350	100	100	3.4	1	800	100	100	13.7	1	800	100	100	13.8	1	800	100	100	16.9	1	640	100	100	15.5	1
4N4- 13	495	100	100	4.3	1	1035	100	100	16.3	1	800	100	100	16.3	1	800	100	100	18.7	1	800	100	100	17.8	1
4N4- 17	640	100	100	5.4	1	1035	100	100	19.6	1	1035	100	100	18.2	1	1035	100	100	23.4	1	1035	100	100	21.4	1
4N4- 23	800	100	100	7.3	1	-	-	-	-	-	1300	100	100	25.8	1	-	-	-	-	-	1300	100	100	31.4	1
4N4- 31	1035	100	100	11.0	1	-	-	-	-	-	1810	110	110	31.0	2	-	-	-	-	-	1530	110	110	40.4	1
4N7- 4	350	100	100	2.9	1	640	100	100	11.6	1	640	100	100	11.6	1	640	100	100	13.7	1	640	100	100	12.5	1
4N7- 6	350	100	100	3.6	1	800	100	100	13.9	1	800	100	100	14.0	1	800	100	100	17.1	1	800	100	100	14.4	1
4N7- 8	495	100	100	4.3	1	1035	100	100	16.3	1	800	100	100	16.3	1	800	100	100	18.7	1	800	100	100	16.4	1
4N7- 11	640	100	100	5.5	1	1035	100	100	19.7	1	1035	100	100	18.3	1	1035	100	100	23.5	1	1035	100	100	19.0	1
4N7- 15	800	100	100	7.1	1	-	-	-	-	-	1300	100	100	25.6	1	-	-	-	-	-	1300	100	100	23.1	1
4N7- 20	1035	100	100	9.0	1	-	-	-	-	-	1530	100	100	29.0	1	-	-	-	-	-	1530	110	110	33.1	2
4N7- 28	1300	100	100	12.8	1	-	-	-	-	-	2430	110	110	35.2	2	-	-	-	-	-	1950	110	110	42.2	2
4N10- 4	350	100	100	3.3	1	800	100	100	13.6	1	800	100	100	12.0	1	640	100	100	15.1	1	640	100	100	13.5	1
4N10- 6	495	100	100	4.1	1	1035	100	100	16.1	1	800	100	100	14.5	1	800	100	100	17.0	1	800	100	100	15.3	1
4N10- 8	640	100	100	5.0	1	1035	100	100	19.2	1	1035	100	100	17.0	1	1035	100	100	22.3	1	1035	100	100	17.6	1
4N10- 10	640	100	100	6.0	1	-	-	-	-	-	1300	100	100	18.8	1	-	-	-	-	-	1300	100	100	21.0	1
4N10- 14	800	100	100	7.7	1	-	-	-	-	-	1530	100	100	23.0	1	-	-	-	-	-	1530	100	100	27.7	1
4N10- 20	1035	100	100	10.4	1	-	-	-	-	-	1846	110	110	29.0	2	-	-	-	-	-	1846	110	110	37.0	2
4N10- 28	1530	100	100	14.7	1	-	-	-	-	-	2466	110	110	41.7	2	-	-	-	-	-	2466	110	110	45.3	2
4N15- 3	495	100	100	3.5	1	1035	100	100	15.5	1	1035	100	100	13.9	1	800	100	100	16.4	1	800	100	100	14.7	1
4N15- 4	495	100	100	3.8	1	1035	100	100	18.0	1	1035	100	100	15.8	1	1035	100	100	21.1	1	800	100	100	16.4	1
4N15- 6	640	100	100	5.0	1	-	-	-	-	-	1300	100	100	17.8	1	-	-	-	-	-	1300	100	100	20.0	1
4N15- 8	800	100	100	6.0	1	-	-	-	-	-	1300	100	100	21.3	1	-	-	-	-	-	1300	100	100	26.0	1
4N15- 11	1035	100	100	8.2	1	-	-	-	-	-	1846	110	110	26.8	2	-	-	-	-	-	1846	110	110	34.8	2
4N15- 16	1300	100	100	11.5	1	-	-	-	-	-	2146	110	110	38.5	2	-	-	-	-	-	2146	110	110	42.1	2

OIL FILLED MOTORS

Output power		S.F.	Single phase 220 V					Single phase 230 V				
[kW]	[HP]		Input [kW]	IN [A]	IA [A]	Imax [A]	Power factor	Input [kW]	IN [A]	IA [A]	Imax [A]	Power factor
0.55	0.75	1.5	0.97	4.6	13.6	6.6	0.96	1.06	4.8	13.6	6.6	0.96
0.75	1	1.4	1.20	5.8	18.5	7.6	0.94	1.34	6.2	18.5	7.6	0.94
1.1	1.5	1.3	1.49	7.2	26	9.6	0.94	1.66	7.7	26	9.6	0.94
1.5	2	1.25	2.29	10.6	34	12.4	0.98	2.43	10.8	34	12.4	0.98
2.2	3	1.15	3.26	15.6	48	16.8	0.95	3.54	16.2	48	16.8	0.95

Output power		S.F.	Three phase 380 V					Three phase 460 V				
[kW]	[HP]		Input [kW]	IN [A]	IA [A]	Imax [A]	Power factor	Input [kW]	IN [A]	IA [A]	Imax [A]	Power factor
0.55	0.75	1.5	0.90	1.9	7	2.4	0.72	1.03	1.8	8	2.1	0.72
0.75	1	1.4	1.28	2.7	10	3.1	0.72	1.32	2.3	10	2.6	0.72
1.1	1.5	1.3	1.68	3.6	14	4.0	0.71	1.89	3.3	15	3.4	0.72
1.5	2	1.25	2.14	4.4	17	5.1	0.74	2.41	4.2	22	4.6	0.72
2.2	3	1.15	3.02	6.2	24	6.8	0.74	3.42	5.8	25	6.5	0.74
3	4	1.15	4.20	8.5	34	9.4	0.75	4.30	7.2	39	8.2	0.75
4	5.5	1.15	5.13	10.4	47	11.6	0.75	6.10	10.2	48	11.4	0.75
5.5	7.5	1.15	6.95	13.9	58	15.4	0.76	7.64	13.5	64	14.6	0.71
7.5	10	1.15	10	19.5	72	20.5	0.78	11.35	18.5	76	20.6	0.77

WATER FILLED MOTORS

Output power		S.F.	Single phase 230 V			
[kW]	[HP]		Input [kW]	IN [A]	IA [A]	Power factor
0.55	0.75	1.5	1.36	8	34.2	0.74
0.75	1	1.4	1.67	9.8	41.8	0.74
1.1	1.5	1.3	2.17	11.5	52	0.82
1.5	2	1.25	2.88	13.2	51	0.95
2.2	3	1.15	3.79	17	82	0.97

Output power		S.F.	Three phase 380 V				Three phase 460 V			
[kW]	[HP]		Input [kW]	IN [A]	IA [A]	Power factor	Input [kW]	IN [A]	IA [A]	Power factor
0.55	0.75	1.5	1.20	2.3	11.9	0.79	1.20	1.9	9.8	0.79
0.75	1	1.4	1.46	2.7	13.3	0.82	1.50	2.3	11	0.82
1.1	1.5	1.3	1.94	3.6	19.5	0.82	1.96	3	16.1	0.82
1.5	2	1.25	2.47	4.7	24.7	0.80	2.49	3.9	20.4	0.80
2.2	3	1.15	3.34	6.5	34.7	0.78	3.36	5.4	28.7	0.78
3	4	1.15	4.58	8.8	48.1	0.79	4.53	7.2	39.7	0.79
4	5.5	1.15	6.08	11.7	68.8	0.79	6.11	9.7	56.8	0.79
5.5	7.5	1.15	8.19	15	85.9	0.83	8.20	12.4	71	0.83
7.5	10	1.15	11	20.3	121	0.83	11.1	16.8	100	0.83

OIL FILLED MOTORS CABLE SELECTION

EXAMPLE : MOTOR 0.75 kW 220-230 V CABLE LENGTH 75 m - 4x2,5 mm²

Single phase (220-230V)

POWER		CABLE TYPE AND MAXIMUM LENGTH (*)							
kW	HP	4x1	4x1,5	4x2	4x2,5	4x4	4x6	4x10	4x16
0.55	0.75	38	57	76	95	152	-	-	-
0.75	1	30	45	60	75	120	174	-	-
1.1	1.5	22	33	43	53	85	127	210	-
1.5	2	-	23	31	38	63	92	154	246
2.2	3	-	-	22	28	45	67	112	180

Three phase (380-460V)

POWER		CABLE TYPE AND MAXIMUM LENGTH (*)							
kW	HP	4x1	4x1,5	4x2	4x2,5	4x4	4x6	4x10	4x16
0.55	0.75	164	246	328	-	-	-	-	-
0.75	1	133	200	266	333	-	-	-	-
1.1	1.5	97	146	195	244	390	-	-	-
1.5	2	72	109	145	180	290	435	-	-
2.2	3	51	78	103	130	207	310	516	-
3	4	41	62	83	104	167	250	416	-
4	5.5	31	46	62	77	124	186	310	496
5.5	7.5	-	33	45	56	90	135	225	360
7.5	10	-	-	-	-	66	100	165	270

(*) Maximum cable length with a voltage drop of 3% at 30°C ambient temperature.

If the operating voltage U_i in the installation is different from the nominal voltage U_n , it is possible to calculate the permissible maximum length L_{max} , with the given table length L_{tab} , with the following formula:

$$L_{max} = L_{tab} (U_i / U_n)^2$$

WATER FILLED MOTORS CABLE SELECTION

EXAMPLE : MOTOR 0.75 kW 220-230 V CABLE LENGTH 73 m - 4x2,5 mm²

Single phase (220-230V)

POWER		CABLE TYPE AND MAXIMUM LENGTH (*)							
kW	HP	4x1	4x1,5	4x2	4x2,5	4x4	4x6	4x10	4x16
0.55	0.75	39	58	77	97	155	-	-	-
0.75	1	29	44	58	73	117	175	-	-
1.1	1.5	20	30	40	50	79	119	198	-
1.5	2	-	23	31	39	62	93	156	249
2.2	3	-	-	23	28	45	68	113	181

Three phase (380-460V)

POWER		CABLE TYPE AND MAXIMUM LENGTH (*)							
kW	HP	4x1	4x1,5	4x2	4x2,5	4x4	4x6	4x10	4x16
0.55	0.75	223	335	446	-	-	-	-	-
0.75	1	167	251	335	418	-	-	-	-
1.1	1.5	120	179	239	299	478	-	-	-
1.5	2	86	129	172	215	343	515	-	-
2.2	3	61	91	122	152	243	365	609	-
3	4	45	67	89	112	179	268	446	-
4	5.5	34	51	68	85	135	203	338	541
5.5	7.5	-	40	53	66	106	159	266	425
7.5	10	-	-	-	-	78	117	196	313

(*) Maximum cable length with a voltage drop of 3% at 30°C ambient temperature.

If the operating voltage U_i in the installation is different from the nominal voltage U_n , it is possible to calculate the permissible maximum length L_{max} , with the given table length L_{tab} , with the following formula:

$$L_{max} = L_{tab} (U_i / U_n)^2$$