
EBARA

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PUMP SPECIFICATIONS

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			Pump sizes	3M	3LM	3LS
Version			32-125	■	■	-
			32-160	■	■	-
			32-200	■	■	-
			40-125	■	■	-
			40-160	■	■	-
			40-200	■	■	-
			50-125	■	■	-
			50-160	■	■	-
			65-125	■	■	-
			65-160	■	■	-
			65-200	■	■	-
			65-250	-	-	■
			80-160	-	■	■
			80-200	-	-	■
			80-250	-	-	■
Liquid Handled	Type of liquid			Water with moderately aggressive fluids		
	Temperature	min.	[°C]	-10	-10	-10
		max.		+90	+110	+110
Maximum working pressure			[MPa]	1		

■ **Available**
- **Not available**

PUMP SPECIFICATIONS

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Rev C

Version				3M	3LM	3LS
Construction	Impeller			Closed centrifugal type [for 32, 40, 50 version] Reinforced laser welding [for types 40-200/11, 50-200/15] Closed centrifugal three dimensional blades [for 65 version and above]		
	Shaft seal type			Mechanical seal	Mechanical seal with stationary ring secured against rotation	
	Bearing			Sealed ball bearing		
Pipe Connection	Suction	32-125/160/200		Flange DN50 according DIN 2532 standard		
		40-125/160/200		Flange DN65 according DIN 2532 standard		
		50-125/160		Flange DN65 according DIN 2532 standard		
		65-125/160/200/250		Flange DN80 according DIN 2532 standard		
		80-160/200/250		Flange DN100 according DIN 2532 standard		
	Discharge	32-125/160/200		Flange DN32 according DIN 2532 standard		
		40-125/160/200		Flange DN40 according DIN 2532 standard		
		50-125/160		Flange DN50 according DIN 2532 standard		
		65-125/160/200/250		Flange DN65 according DIN 2532 standard		
		80-160/200/250		Flange DN80 according DIN 2532 standard		
Material	Casing	32-125/160/200 40-125/160/200 50-125/160 65-125/160/200		EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)	/
		65-250 80-160/200/250		/	EN 1.4401 (AISI 316) Made by precision casting	
	Impeller	32-125/160/200 40-125/160/200 50-125/160		EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)	/
		Only for 65-125/160/200		EN 1.4401 (AISI 316) Made by precision casting		/
		65-250 80-160/200/250		/	EN 1.4401 (AISI 316) Made by precision casting	
	Casing cover	32-125/160/200 40-125/160/200 50-125/160 65-125/160/200 80/160		EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)	/
		65-250 80-200/250		/	EN 1.4401 (AISI 316) Made by precision casting	
	Mechanical seal	32-125/160/200 40-125/160/200 50-125/160 65-125/160/200		Ceramic/Carbon/NBR	SiC/SiC/FPM	/
		65-250 80-160/200/250		/	SiC/SiC/FPM	
	O-ring			NBR	FPM	
	Shaft	32, 40, 50 65-125 65-160/116	d=19	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)	/
		65-160/156 65-200	d=24			
		65-250	d=24	/	/	EN 1.4462 (Duplex stainless steel)
		80-160	d=24	/	EN 1.4404 (AISI 316L)	
		80-200 22kW	d=24	/	/	EN 1.4404 (AISI 316L)
		80-200 30-37kW	d=24	/	/	EN 1.4462 (Duplex stainless steel)
		80-250	d=29	/	/	EN 1.4462 (Duplex stainless steel)
	Bracket			Cast iron - aluminium		

MOTOR SPECIFICATIONS

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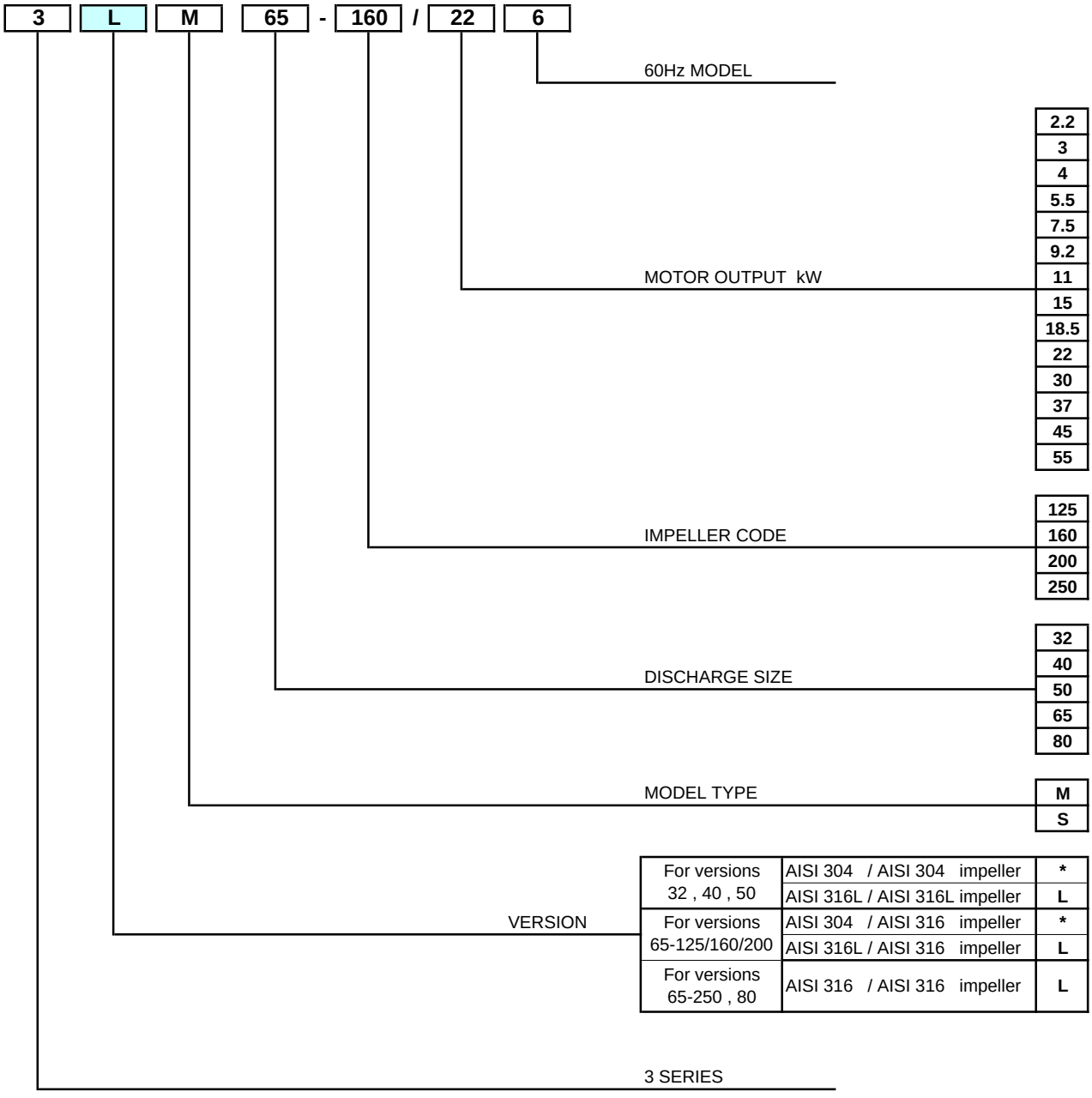
Version		3(L)M	3LS
Type		Electric-TEFC	
		Three phase	
No.of Poles		2	
Rotation speed	[min^{-1}]	~3500	
Insulation class		F	F (temperature rise class B)
Protection degree		IP 55	
Power rating	[kW]	2.2÷22	18.5÷55
	[HP]	3.0÷30	25÷75
Frequency	[HZ]	60	
Voltage	[V]	220 / 380÷460 ±6% (up to 4.0 kW) 380÷460 / 660 ±6% (5.5 kW and above)	380÷420 /660÷725 ±5% 440÷480 /765÷830 ±5%
Casing material		Aluminium	
Dimensions of cable entry		-PG 13.5 -PG 16 -PG 21	No.2 - M40x1.5 - M50x1.5 - M63x1.5
Flange mount (IEC motor)		/	IMB 35

SELECTION CHART

60 Hz

Rev C

TYPE KEY



*) No indication

SELECTION CHART

60 Hz

Rev C

3 *series* 32-40-50

Pump type	kW	HP	l/min	0	100	150	200	250	300	350	400	500	600	700	833	1000	1200	1433
			m³/h	0	6	9	12	15	18	21	24	30	36	42	50	60	72	86
32-125/2.26	2.2	3		32.3	31.4	30.4	28.6	26.1	23.3	20.2	17	-	-	-	-	-	-	-
32-160/3.06	3	4		42.5	41	39.6	37.8	35.4	32.5	29.4	26	-	-	-	-	-	-	-
32-160/4.06	4	5.5		53	51.5	50.5	48.5	46.5	43.5	40	36.6	-	-	-	-	-	-	-
32-200/5.56	5.5	7.5		64.5	62.5	61	59	56	53	48.5	44	-	-	-	-	-	-	-
32-200/7.56	7.5	10		78	76	74.5	72.5	69.5	66	62	57	-	-	-	-	-	-	-
40-125/3.06	3	4		29	-	-	28.2	27.7	27	26.1	24.9	22.3	19.1	15.4	10	-	-	-
40-125/4.06	4	5.5		38	-	-	37.2	36.8	36	35.1	34	31.6	28.6	25.2	20	-	-	-
40-160/5.56	5.5	7.5		45	-	-	44	43.5	42.5	41.5	40	37.2	34	30.7	26.2	-	-	-
40-160/7.56	7.5	10		57	-	-	56	55.5	54.5	53.5	52	49	46	42.5	38	-	-	-
40-200/116	11	15		67.5	-	-	66.5	66	65	63.5	62	58.5	55	51	45	-	-	-
40-200/156	15	20		83	-	-	82	81.5	80.5	79.5	78	75	71.5	67.5	62	-	-	-
50-125/5.56	5.5	7.5		31.8	-	-	-	-	-	-	-	30	29.2	28	26	22.8	18.4	12.6
50-125/7.56	7.5	10		38	-	-	-	-	-	-	-	36.5	35.7	34.6	32.7	29.7	25.3	19.5
50-160/116	11	15		48	-	-	-	-	-	-	-	46	45	43.5	41	37.4	32.4	25.8
50-160/156	15	20		57.5	-	-	-	-	-	-	-	56	55.5	54	52	49	45	39

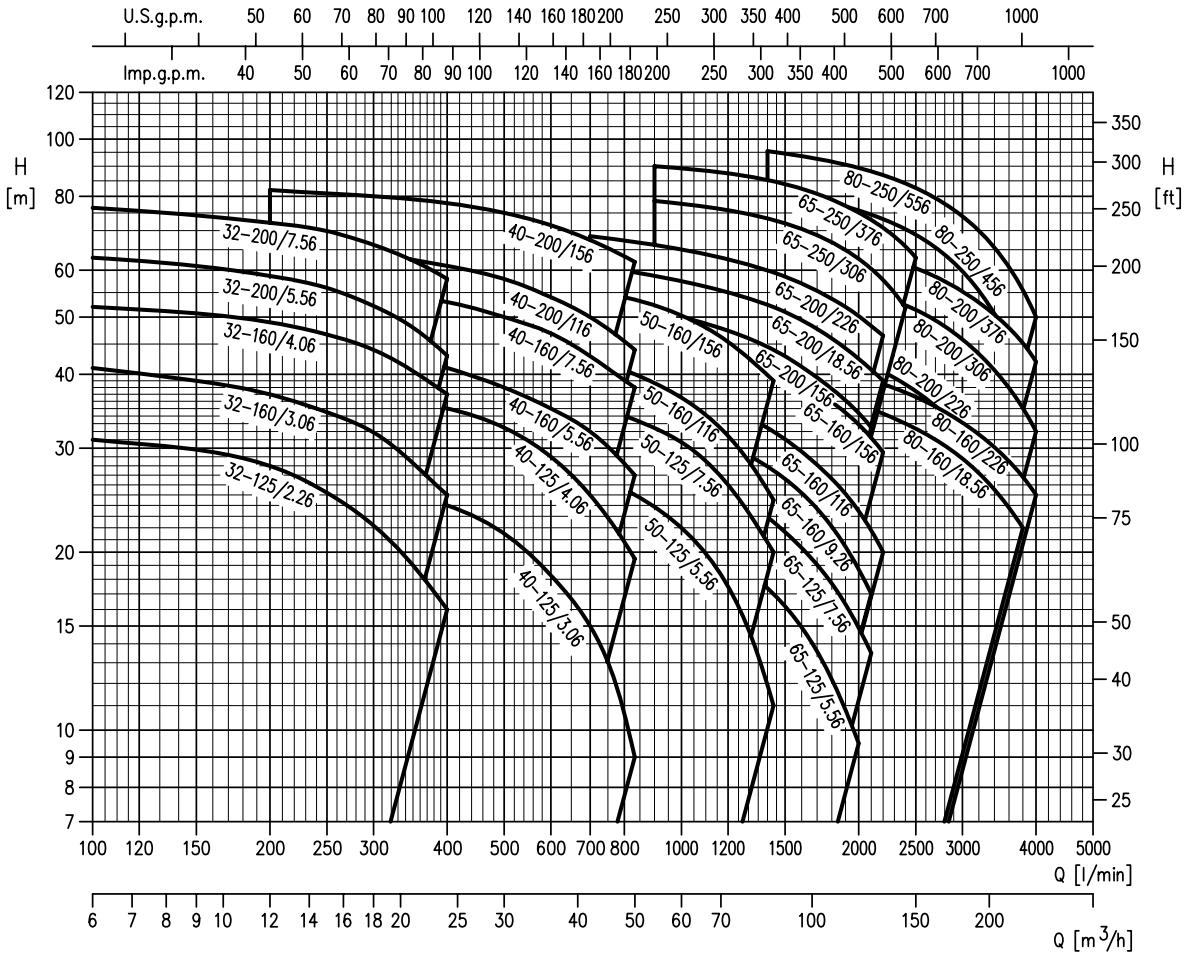
3 *series* 65-80

Pump type	kW	HP	l/min	0	600	700	900	1200	1400	1600	1800	2000	2100	2200	2400	2500	3100	3600	3800	4000
			m³/h	0	36	42	54	72	84	96	108	120	126	132	144	150	186	216	228	240
65-125/5.56	5.5	7.5		27.5	25.7	24.9	22.9	19.6	17.2	14.8	12.2	9.5	-	-	-	-	-	-	-	-
65-125/7.56	7.5	10		33.5	31.5	30.7	28.8	25.5	23	20.4	17.7	14.9	13.5	-	-	-	-	-	-	-
65-160/9.26	9.2	12.5		38	-	35.5	33.6	30.3	27.9	25.2	22.1	18.7	17	-	-	-	-	-	-	-
65-160/116	11	15		43	-	40.5	38.5	35	32.4	29.6	26.6	23.5	21.8	20	-	-	-	-	-	-
65-160/156	15	20		51	-	48.5	47	43.5	41.5	38.7	35.9	32.9	31.3	29.5	-	-	-	-	-	-
65-200/156	15	20		56.5	-	53.5	51.5	47.5	44.5	41	37.8	34.4	32.5	-	-	-	-	-	-	-
65-200/18.56	18.5	25		63.5	-	61	59	55	52.5	49.5	46	42.5	40.5	39	-	-	-	-	-	-
65-200/226	22	30		71	-	68.5	66.5	62.5	60	57	53.5	50	48.5	46.5	-	-	-	-	-	-
65-250/306	30	40		80	-	-	78.5	76	73.5	70.5	67	62.5	60.5	58	52	-	-	-	-	-
65-250/376	37	50		91.5	-	-	90	87.5	85	72.5	79	75	73	71	66	63	-	-	-	-
80-160/18.56	18.5	25		40.5	-	-	-	-	38.8	37.9	36.8	35.6	35	34.3	33	32.4	28.1	23.8	22	-
80-160/226	22	30		44.5	-	-	-	-	42.5	42	41	39.7	39	38.5	37.3	36.6	32.4	28.5	26.9	25
80-200/226	22	30		50.5	-	-	-	-	47	45.5	44	42.5	41.5	40.5	38.5	37.5	30.5	24	-	-
80-200/306	30	40		63	-	-	-	-	60	59	57.5	56	55	54	52.5	51.5	44.5	37.9	35.1	32
80-200/376	37	50		71	-	-	-	-	68.5	67.5	66	64.5	64	63	61.5	60.5	54	48	45	42
80-250/456	45	60		85	-	-	-	-	82	80	78	75.5	74.5	73	70.5	69	57.5	45.5	40	-
80-250/556	55	75		97.5	-	-	-	-	95.5	93.5	91.5	89.5	88	87	84	82.5	72	61	55.5	50

SELECTION CHART

60 Hz

Rev C



PERFORMANCE CURVES

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 $\nu = 1\ mm^2/s$ (1 cSt)
- The NPSH curve is an average curve obtained in the same conditions of performance curves. During the pump selection, consider to get a safety margin of at least 1 m.
- The continuos 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:

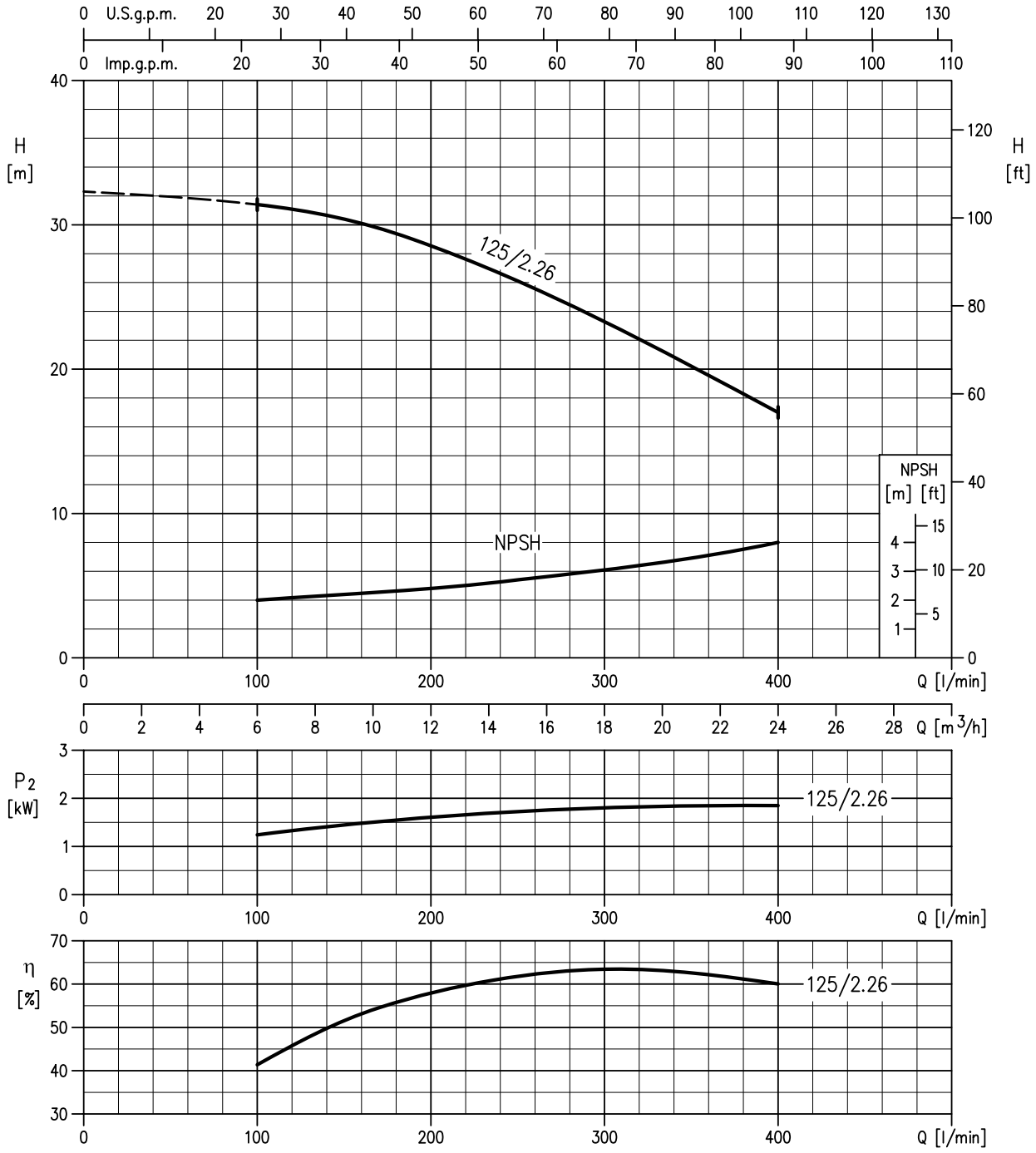
Q = volume flow rate
H = total head
P_2 = pump power input (shaft power)
η = pump efficiency
NPSH = net positive suction head required by the pump

PERFORMANCE CURVE

60 Hz

Rev C

3(L)M 32-125/2.26 (2.2kW) – impeller diameter = 133 mm



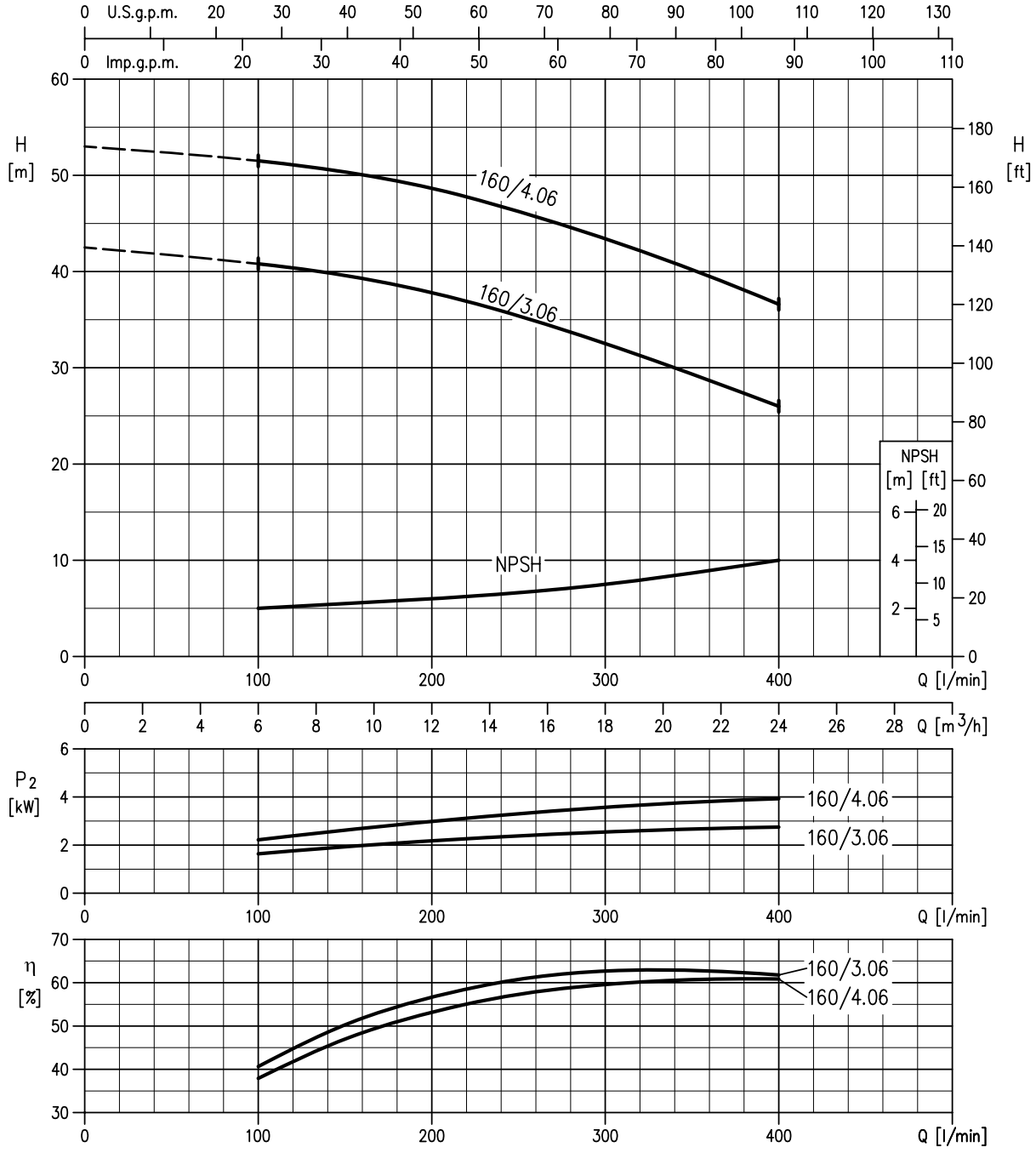
Rotation speed ≈3480 min-1
Test standard : ISO 9906 Annex A

PERFORMANCE CURVE

60 Hz

Rev C

3(L)M 32-160/3.06 (3.0kW) – impeller diameter = 151 mm
3(L)M 32-160/4.06 (4.0kW) – impeller diameter = 166 mm



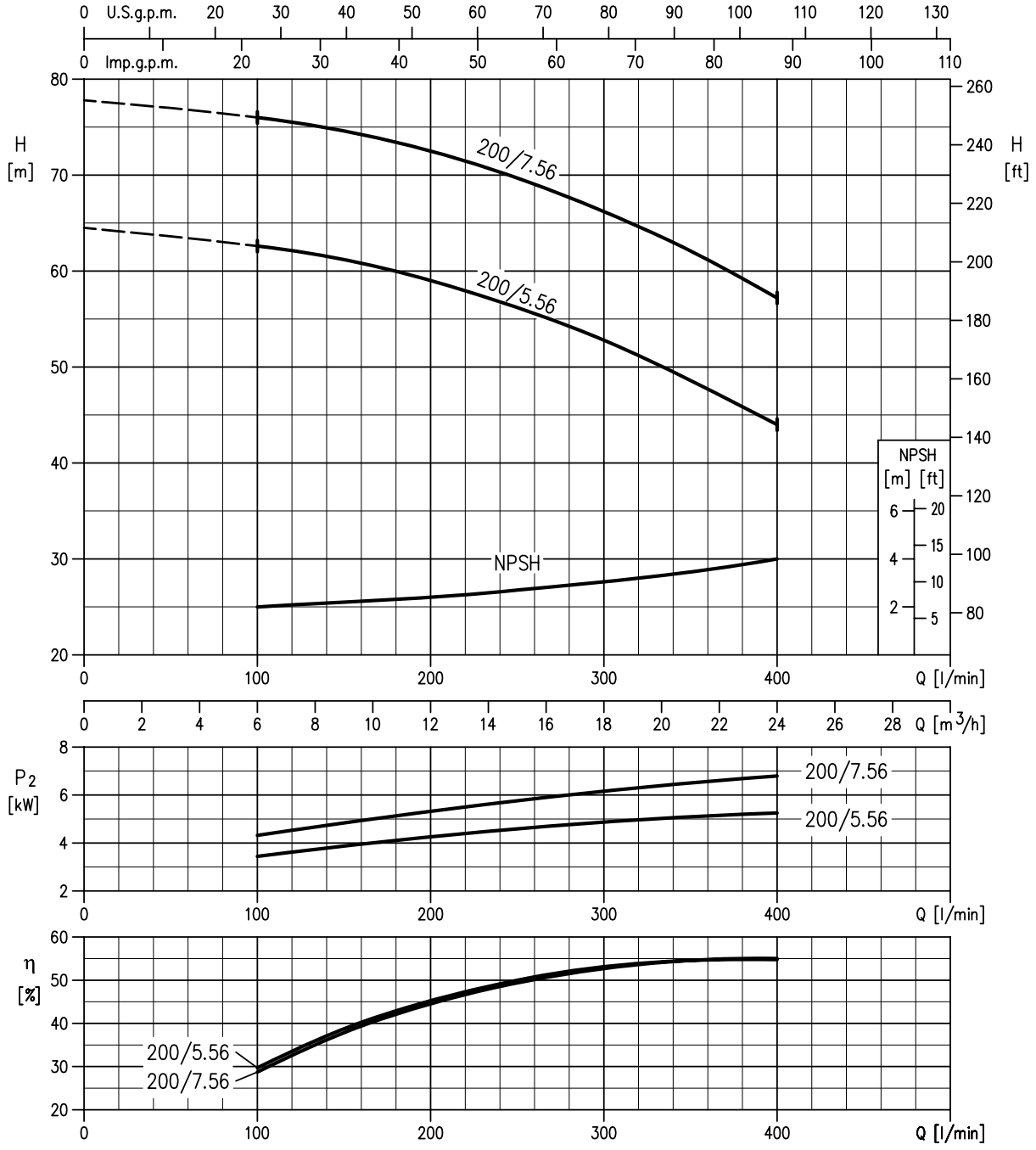
Rotation speed ≈3480 min-1
Test standard : ISO 9906 Annex A

PERFORMANCE CURVE

60 Hz

Rev C

3(L)M 32-200/5.56 (5.0kW) – impeller diameter = 186 mm
3(L)M 32-200/7.56 (7.5kW) – impeller diameter = 200 mm



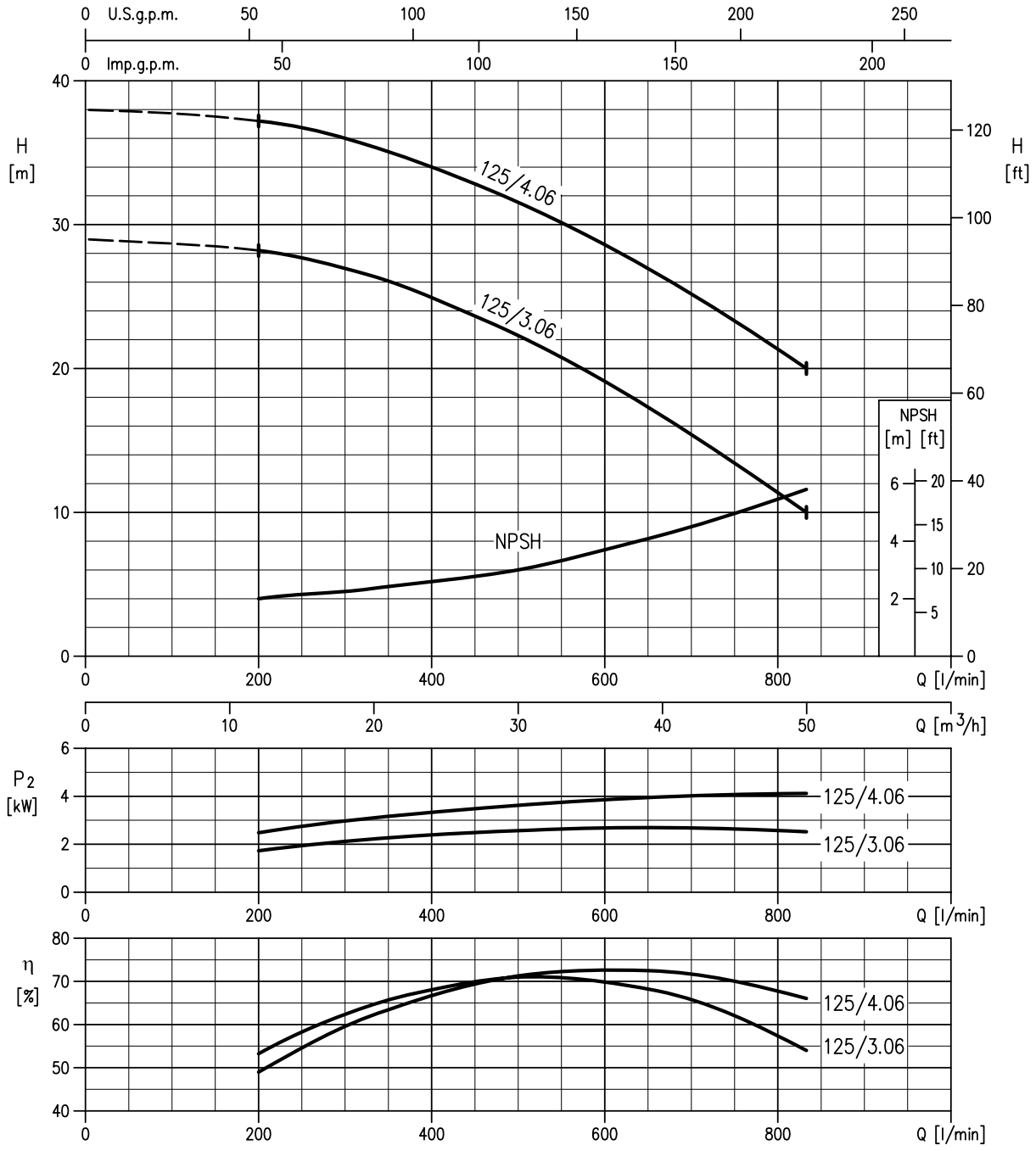
Rotation speed ≈3480 min-1
Test standard : ISO 9906 Annex A

PERFORMANCE CURVE

60 Hz

Rev C

3(L)M 40-125/3.06 (3.0kW) – impeller diameter = 125 mm
3(L)M 40-125/4.06 (4.0kW) – impeller diameter = 140 mm



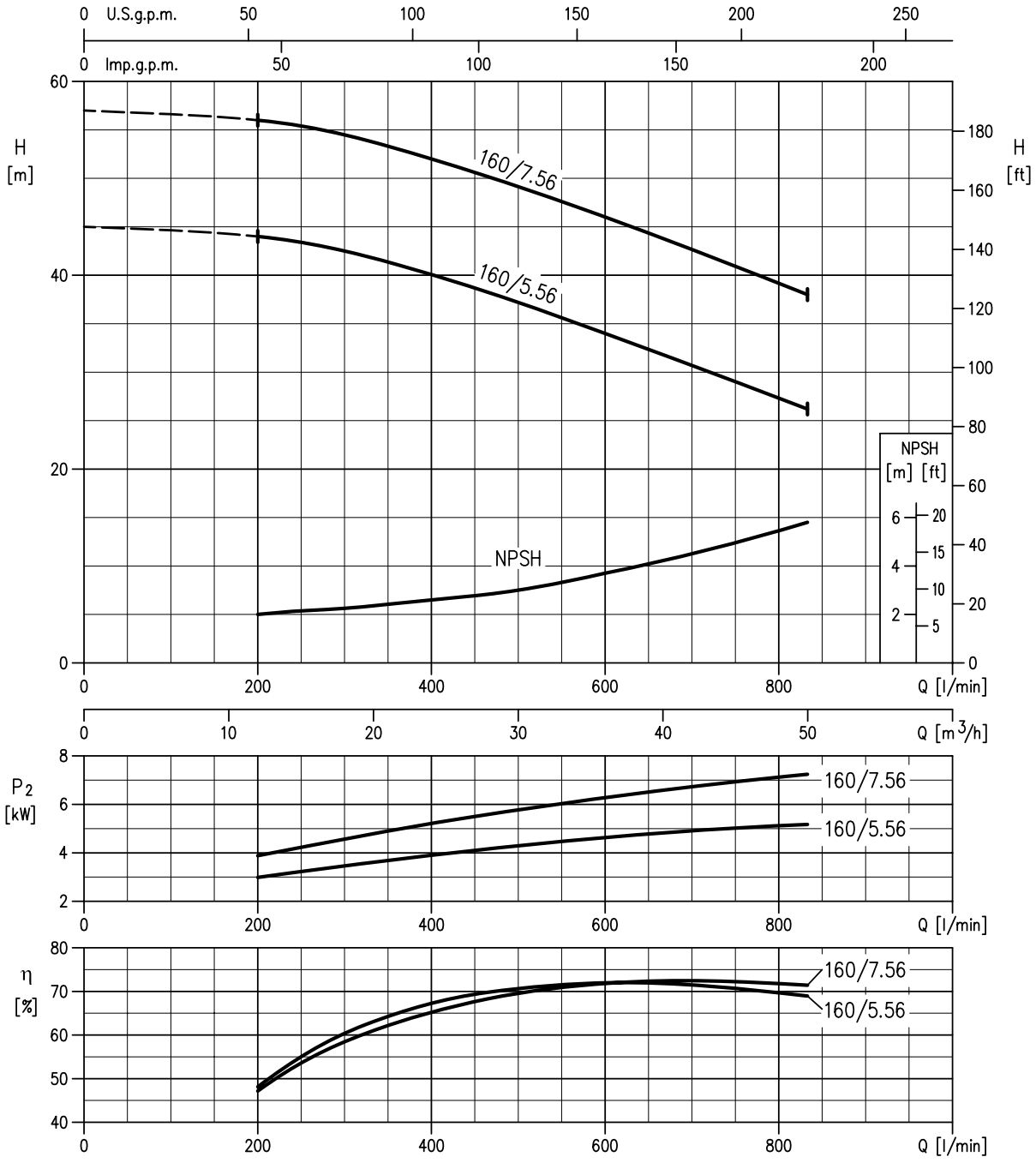
Rotation speed ≈3480 min-1
Test standard : ISO 9906 Annex A

PERFORMANCE CURVE

60 Hz

Rev C

3(L)M 40-160/5.56 (5.5kW) – impeller diameter = 151 mm
3(L)M 40-160/7.56 (7.5kW) – impeller diameter = 166 mm



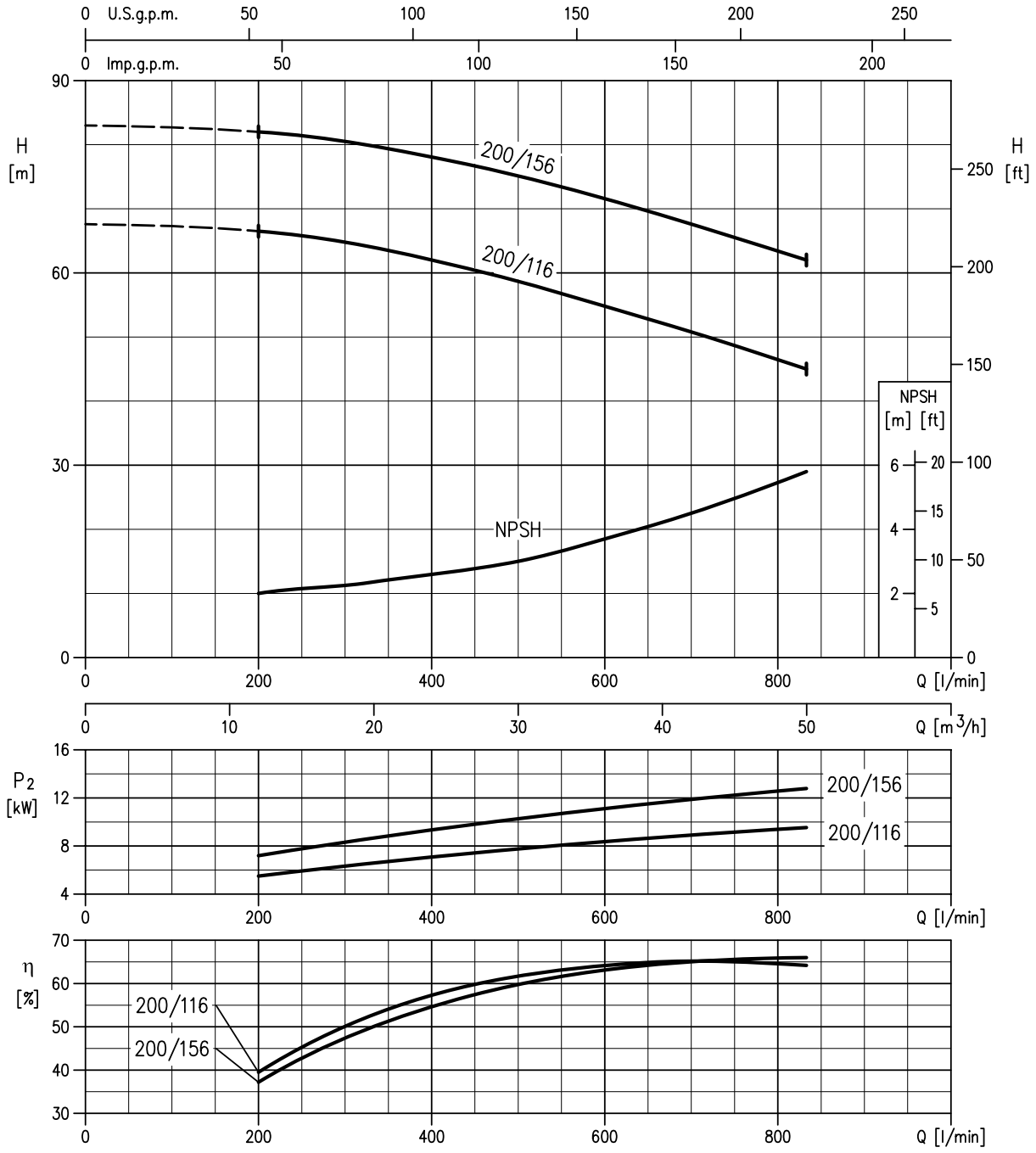
Rotation speed ≈3480 min-1
Test standard : ISO 9906 Annex A

PERFORMANCE CURVE

60 Hz

Rev C

3(L)M 40-200/116 (11kW) – impeller diameter = 183 mm
3(L)M 40-200/156 (15kW) – impeller diameter = 200 mm



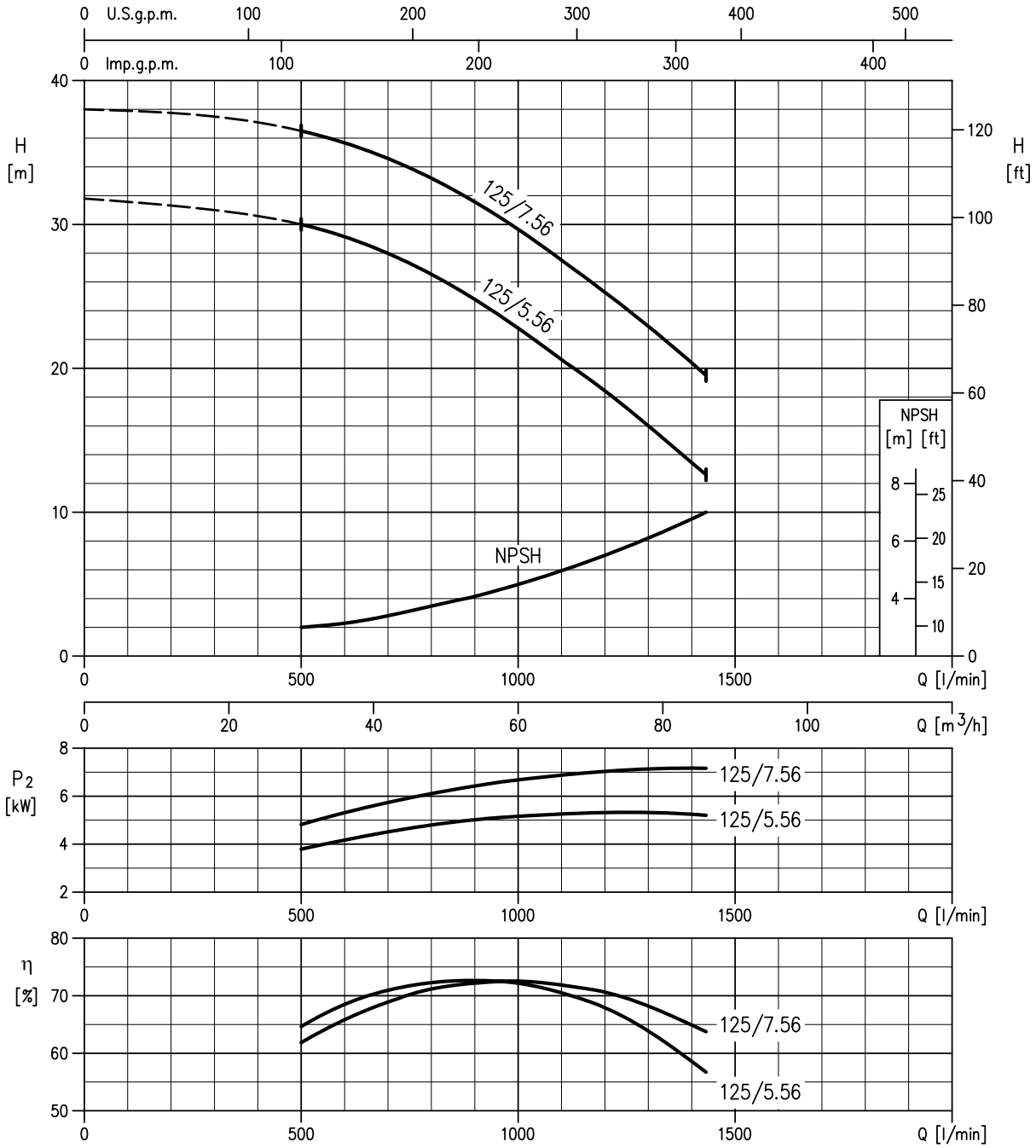
Rotation speed ≈3480 min-1
Test standard : ISO 9906 Annex A

PERFORMANCE CURVE

60 Hz

Rev C

3(L)M 50-125/5.56 (5.5kW) – impeller diameter = 131 mm
3(L)M 50-125/7.56 (7.5kW) – impeller diameter = 140 mm



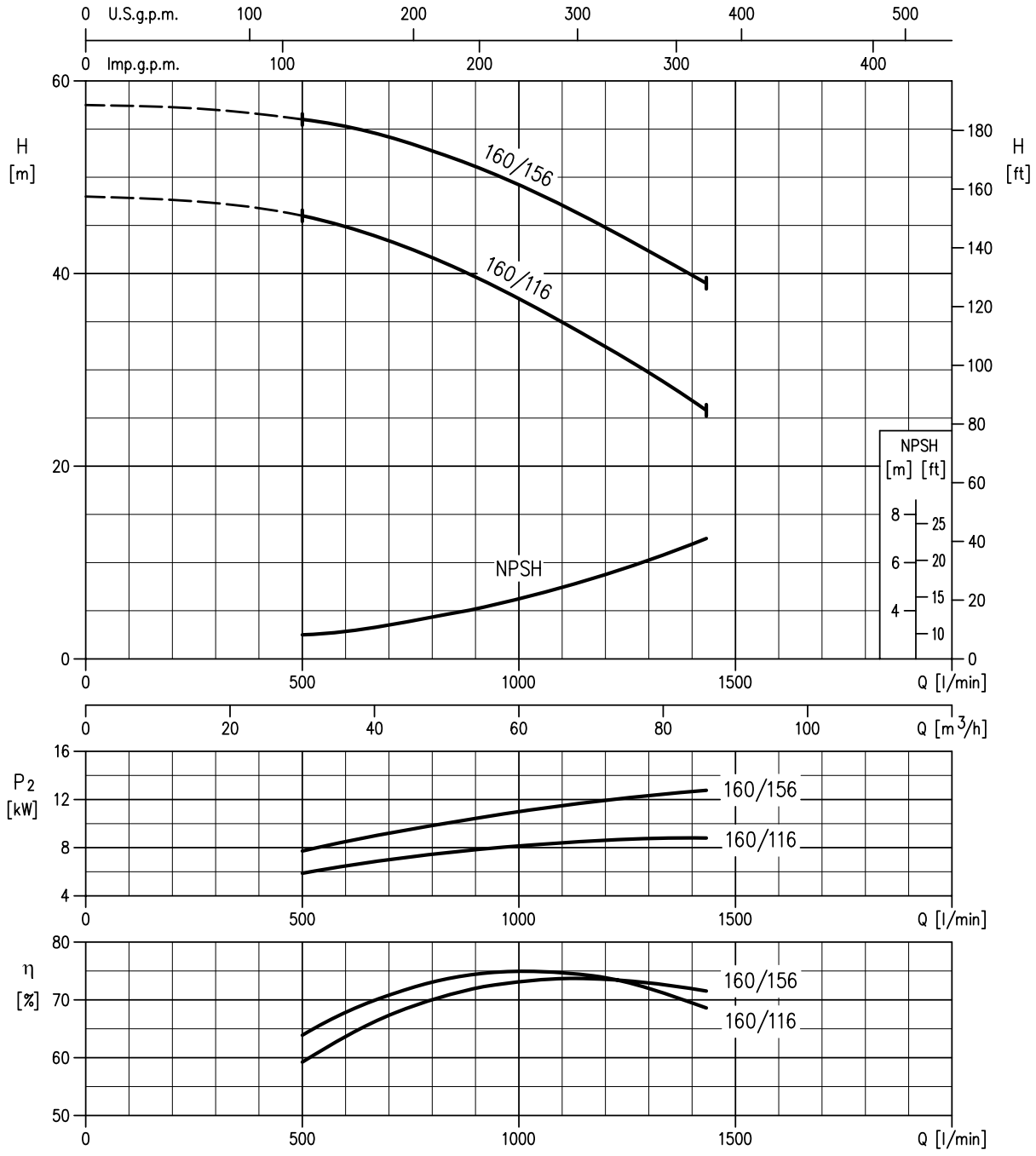
Rotation speed ≈3480 min-1
Test standard : ISO 9906 Annex A

PERFORMANCE CURVE

60 Hz

Rev C

3(L)M 50-160/116 (11kW) – impeller diameter = 154 mm
3(L)M 50-160/156 (15kW) – impeller diameter = 166 mm



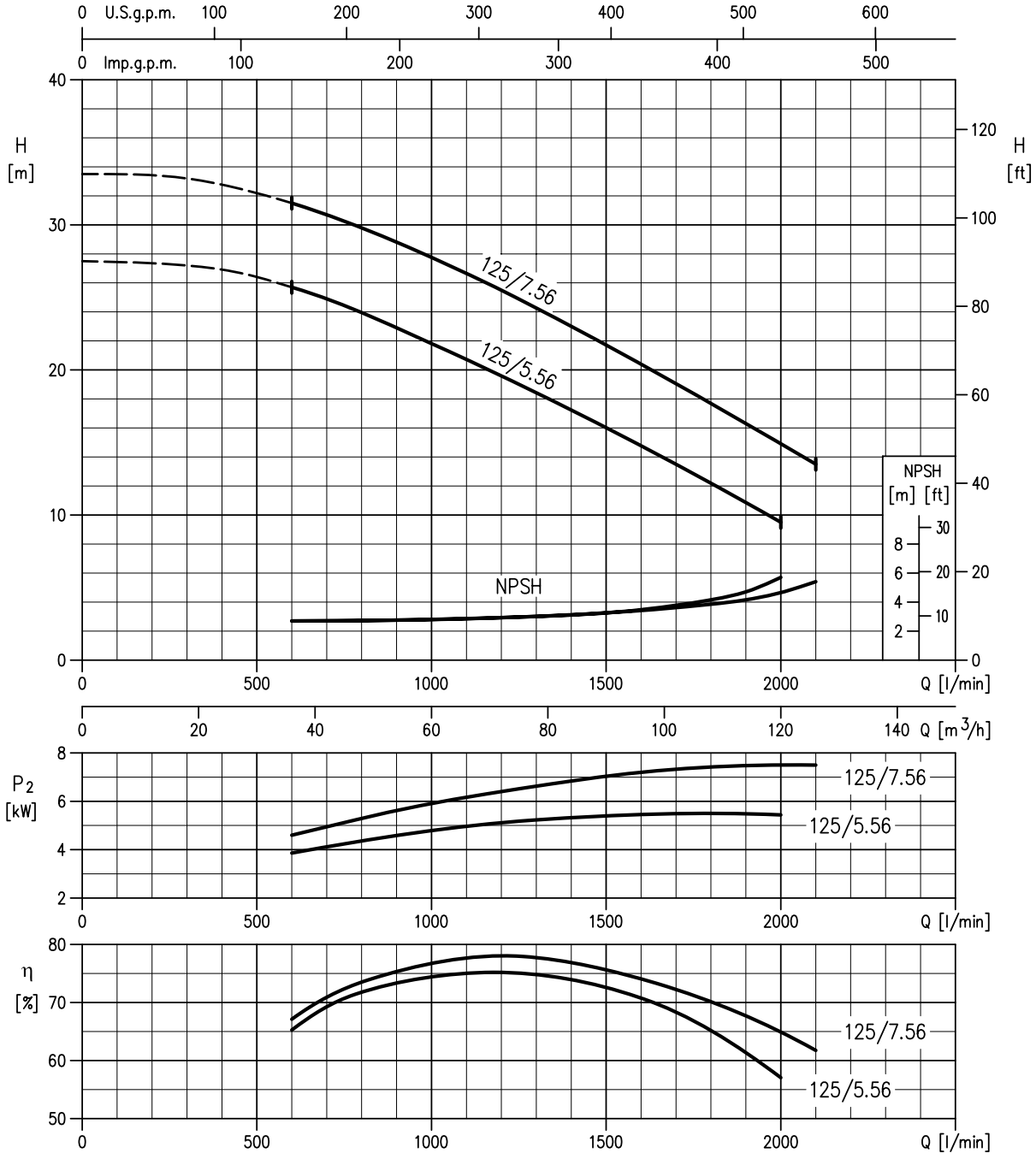
Rotation speed ≈3480 min-1
Test standard : ISO 9906 Annex A

PERFORMANCE CURVE

60 Hz

Rev C

3(L)M 65-125/5.56 (5.5kW) – impeller diameter = 121 mm
3(L)M 65-125/7.56 (7.5kW) – impeller diameter = 132 mm



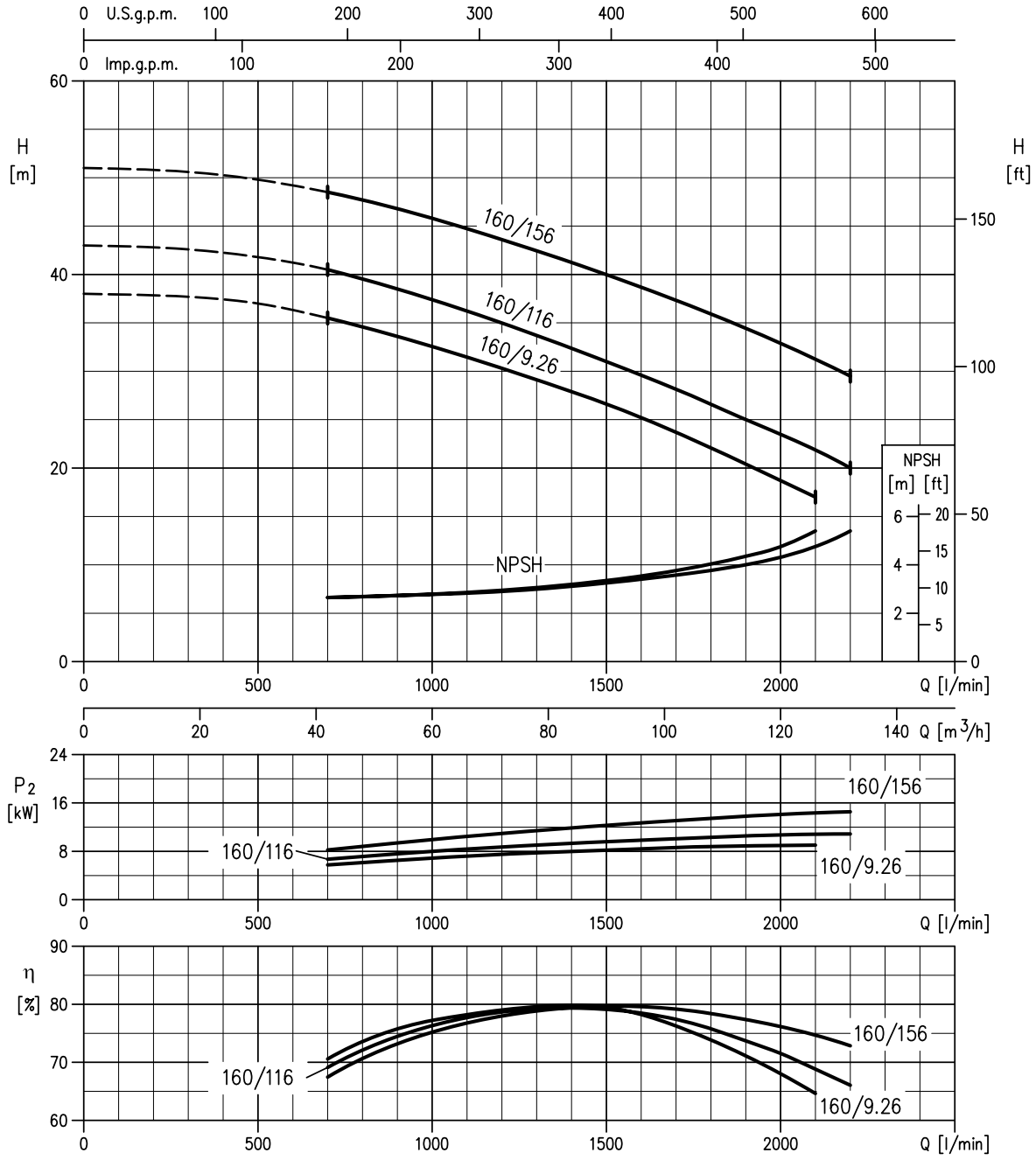
Rotation speed ≈3520 min-1
Test standard : ISO 9906 Annex A

PERFORMANCE CURVE

60 Hz

Rev C

3(L)M 65-160/9.26 (9.2kW) – impeller diameter = 139 mm
3(L)M 65-160/116 (11kW) – impeller diameter = 146 mm
3(L)M 65-160/156 (15kW) – impeller diameter = 157 mm



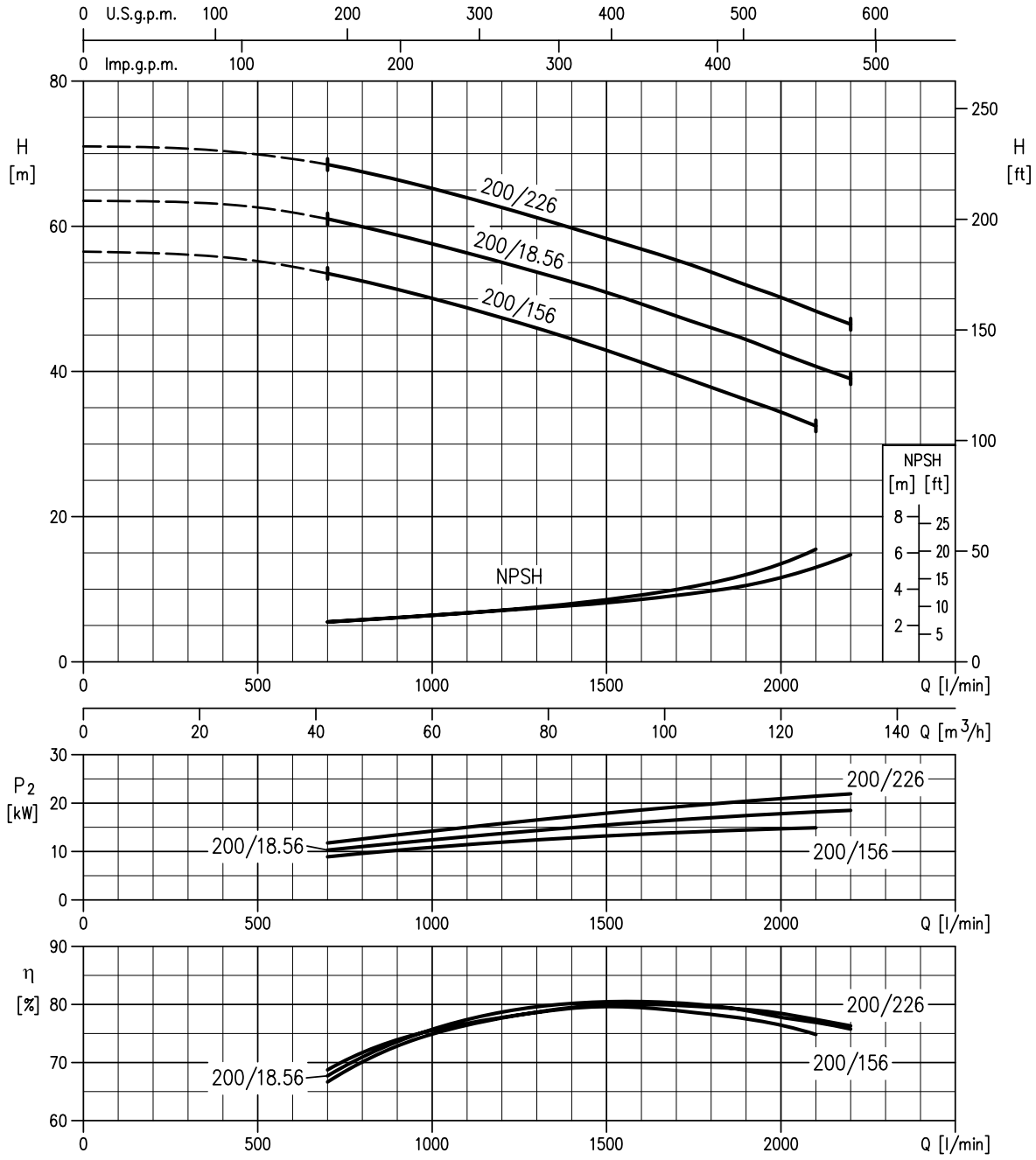
Rotation speed ≈3520 min-1
Test standard : ISO 9906 Annex A

PERFORMANCE CURVE

60 Hz

Rev C

3(L)M 65-200/156 (15kW) – impeller diameter = 165 mm
3(L)M 65-200/18.56 (18.5kW) – impeller diameter = 175 mm
3(L)M 65-200/226 (22kW) – impeller diameter = 184 mm



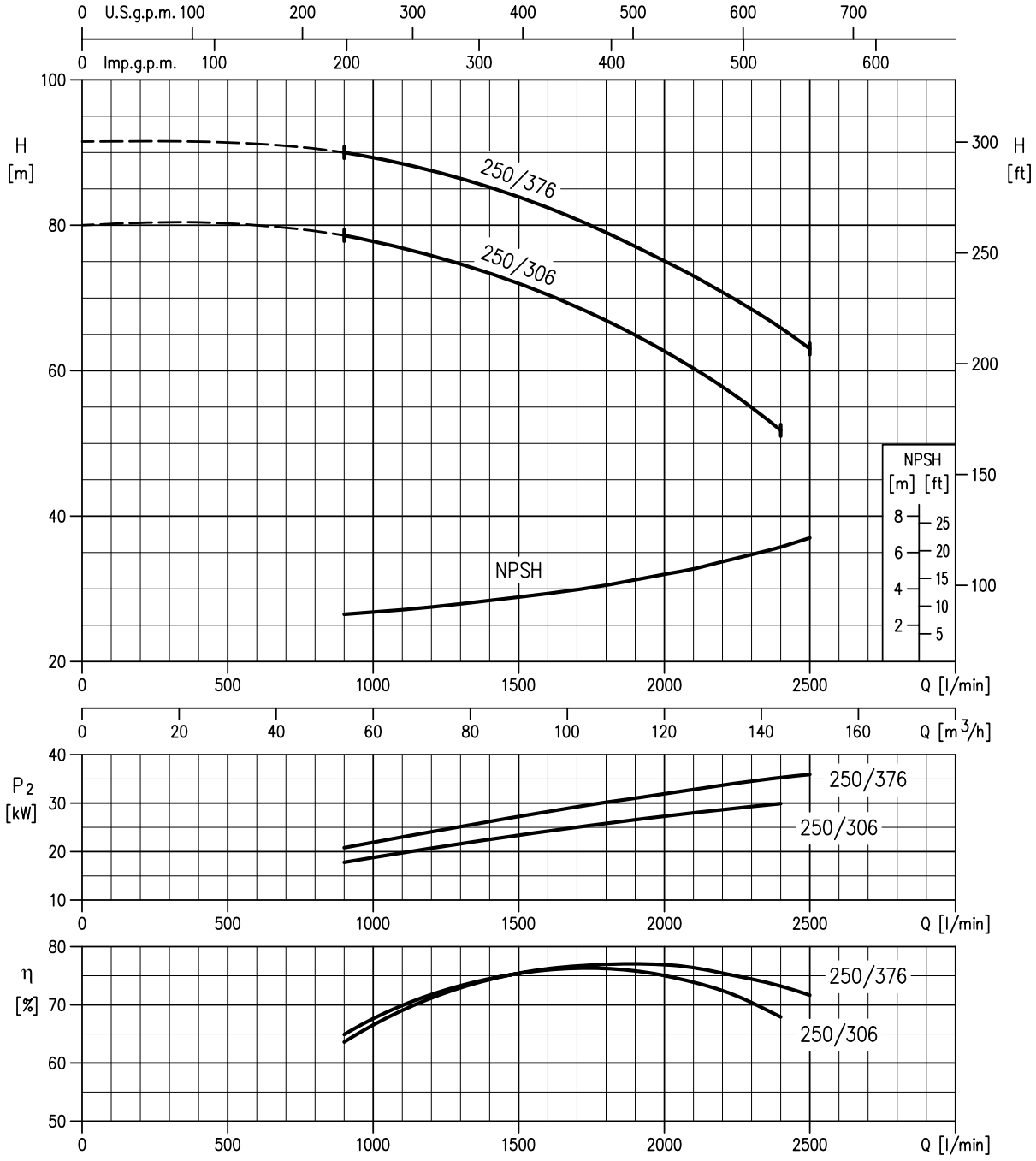
Rotation speed ≈3520 min-1
Test standard : ISO 9906 Annex A

PERFORMANCE CURVE

60 Hz

Rev C

3LS 65-250/306 (30kW) – impeller diameter = 203 mm
3LS 65-250/376 (37kW) – impeller diameter = 216 mm



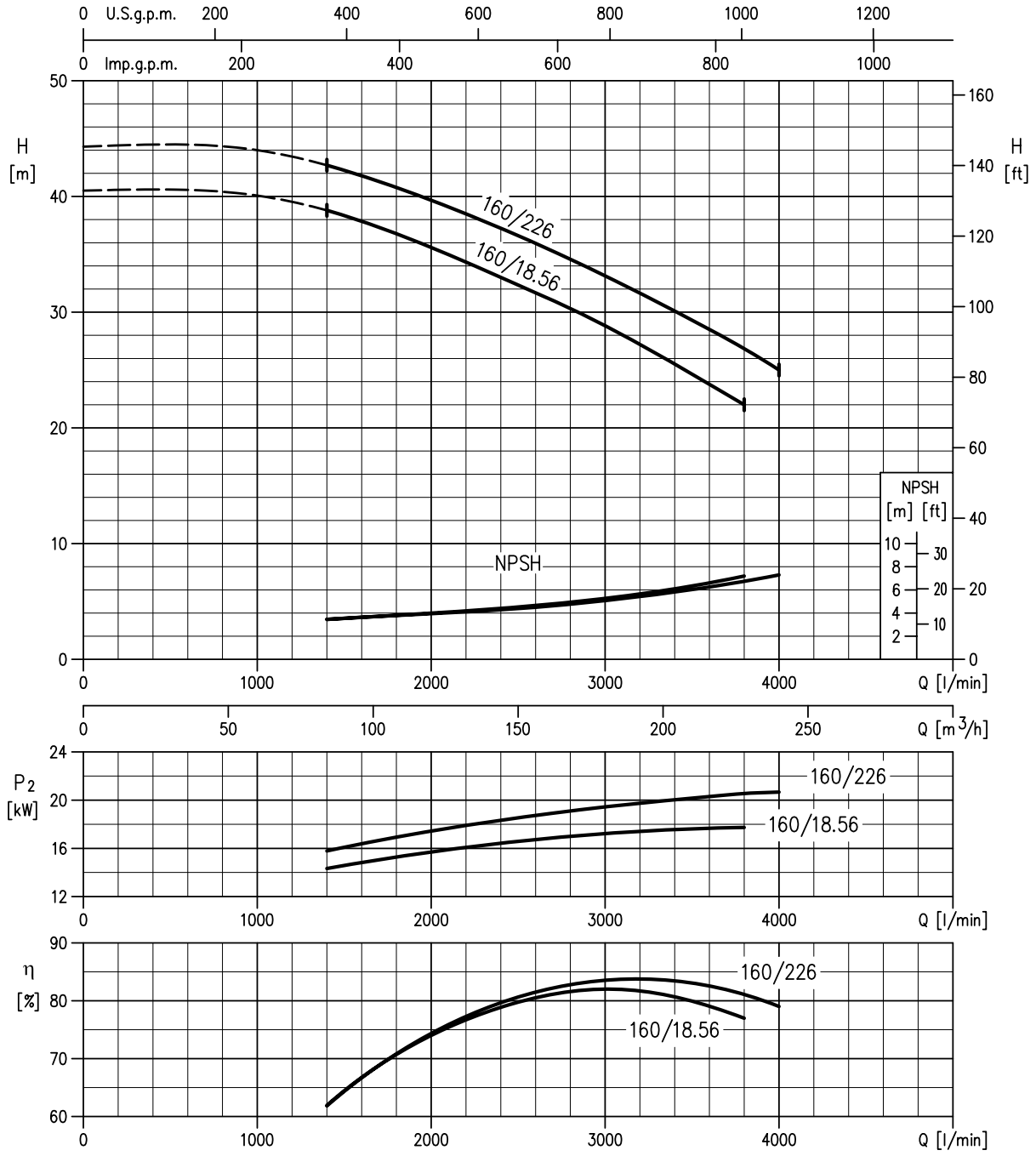
Rotation speed ≈3520 min-1
Test standard : ISO 9906 Annex A

PERFORMANCE CURVE

60 Hz

Rev C

80-160/18.56 (18.5kW) – impeller diameter = 151 mm
80-160/226 (22kW) – impeller diameter = 157 mm



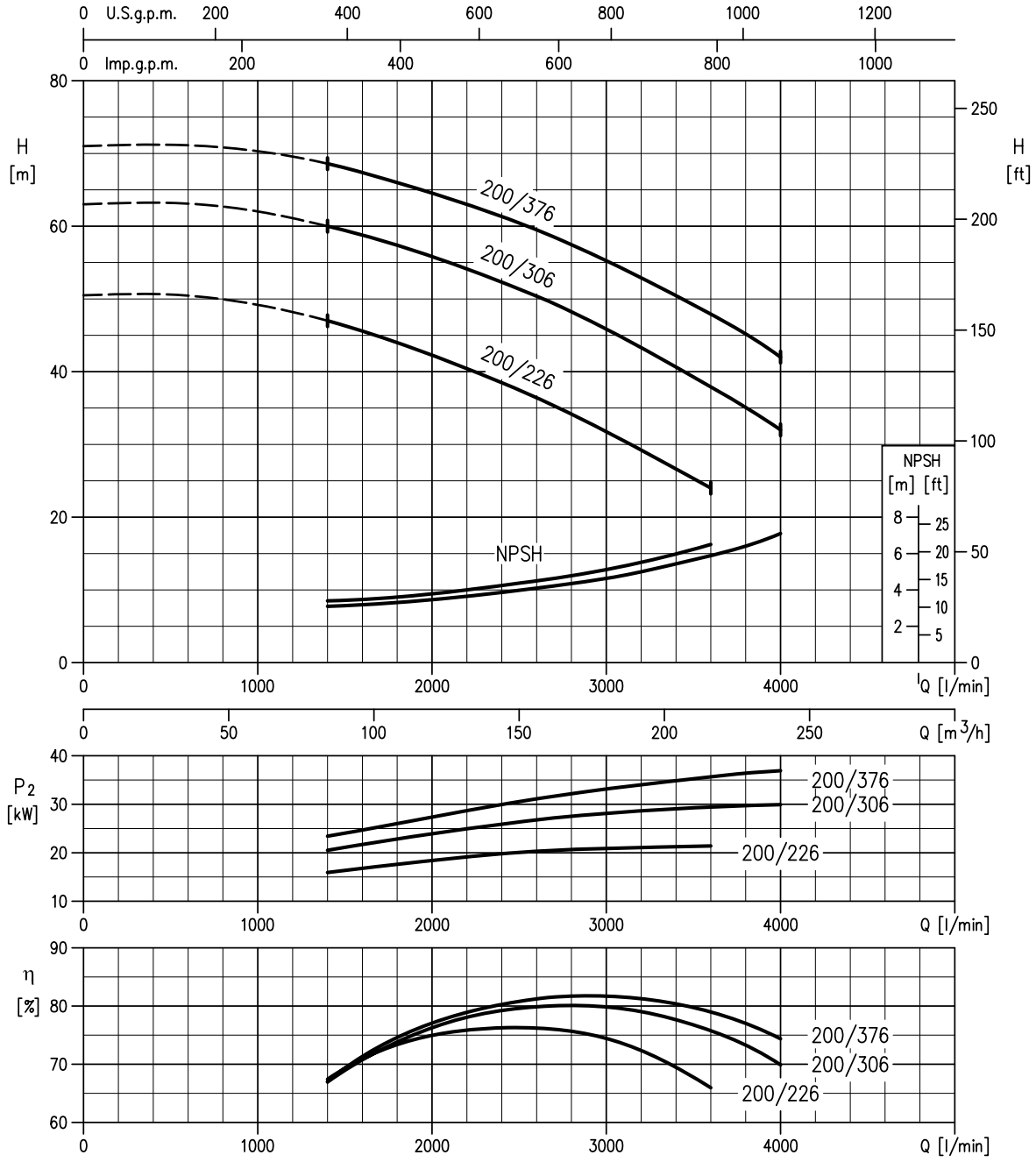
Rotation speed ≈3520 min-1
Test standard : ISO 9906 Annex A

PERFORMANCE CURVE

60 Hz

Rev C

3LS 80-200/226 (22kW) – impeller diameter = 168 mm
3LS 80-200/306 (30kW) – impeller diameter = 185 mm
3LS 80-200/376 (37kW) – impeller diameter = 194 mm



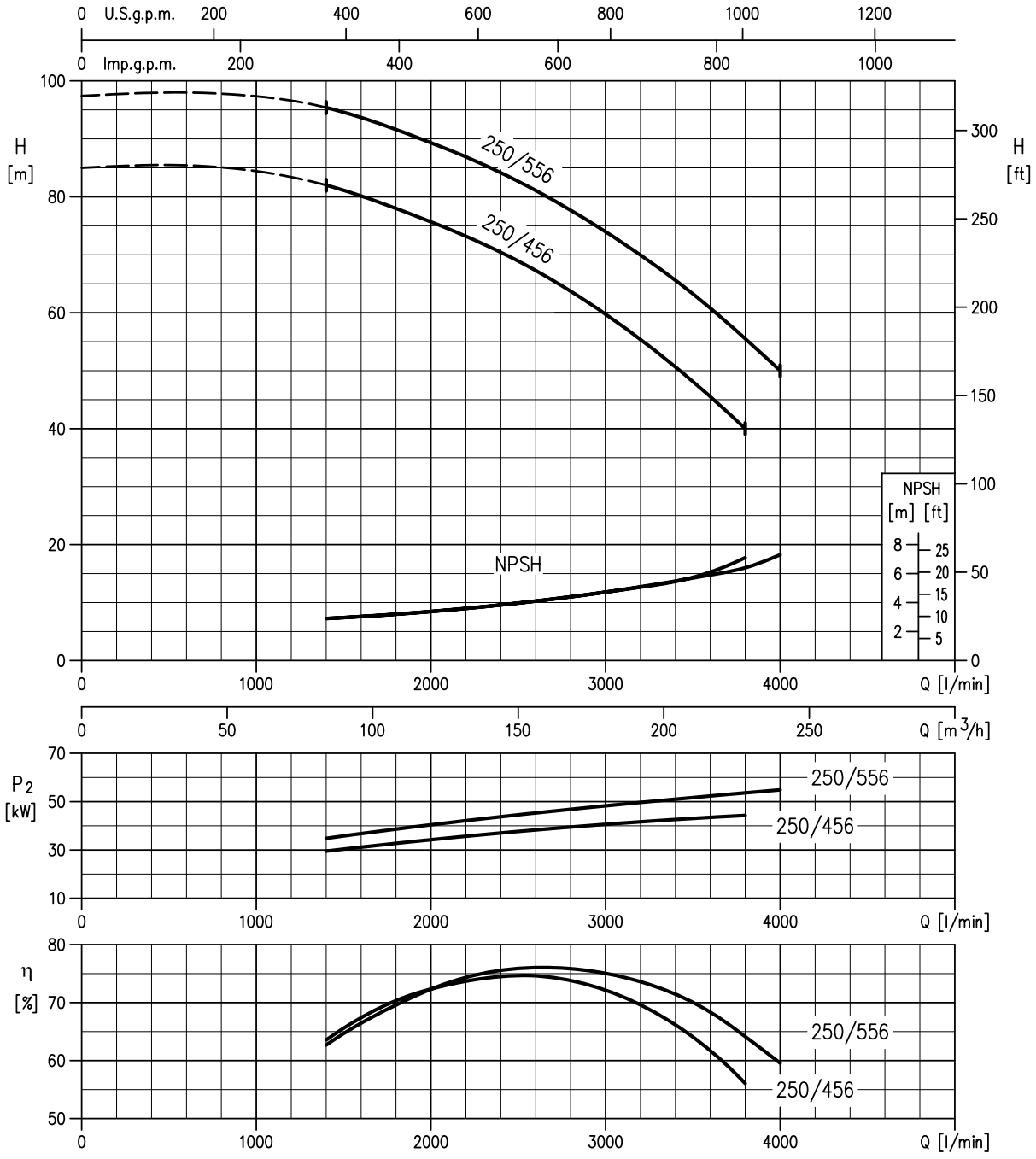
Rotation speed ≈3520 min-1
Test standard : ISO 9906 Annex A

PERFORMANCE CURVE

60 Hz

Rev C

3LS 80-250/456 (45kW) – impeller diameter = 206 mm
3LS 80-250/556 (55kW) – impeller diameter = 218 mm

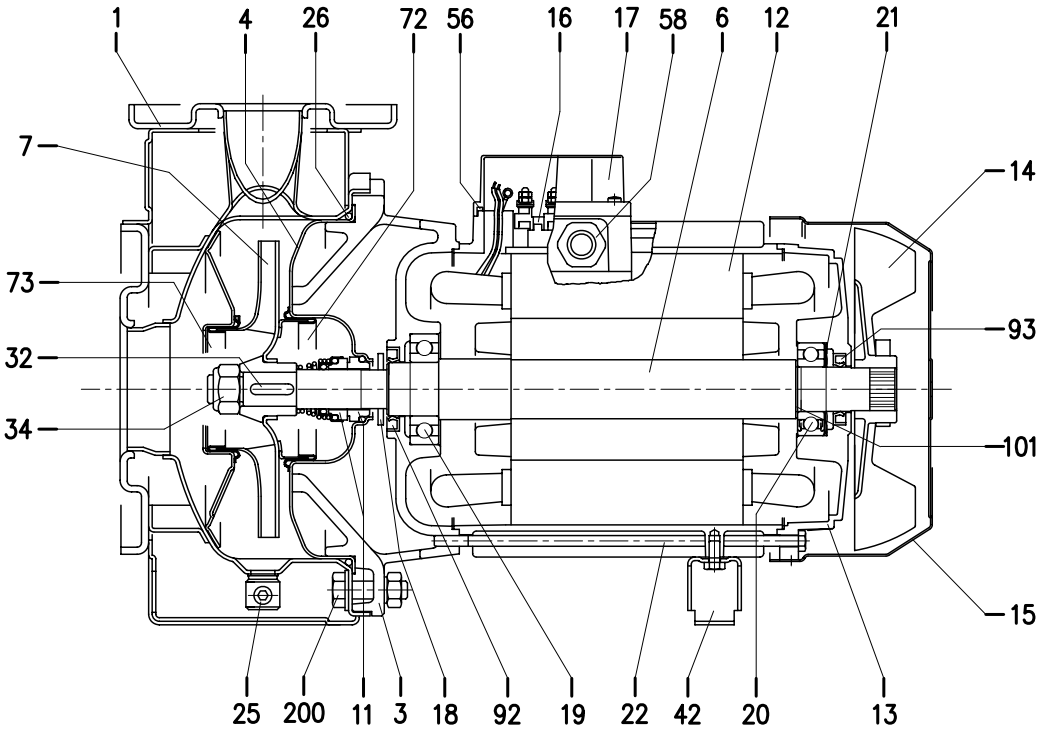


Rotation speed ≈3520 min-1
Test standard : ISO 9906 Annex A

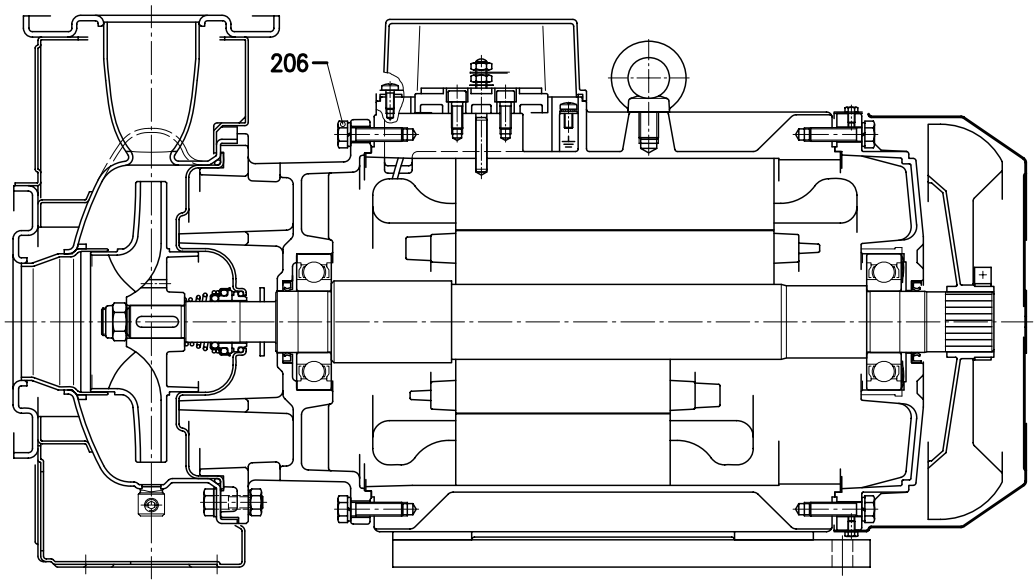
CONSTRUCTIONS 3(L)M 32-40-50-65

60 Hz

Rev C



UP TO 11 kW
AND 40-200/156 , 50-200/156



65-160/156 , 65-200

CONSTRUCTIONS 3(L)M 32-40-50

60 Hz

Rev C

N°	PART NAME		MATERIAL 3M	MATERIAL 3LM	DIMENSIONS	STANDARD	N. FOR 1 UNIT
001	Casing		EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)			1
003	Motor bracket		Cast iron EN-GJL-200-EN 1561				1
004	Casing cover		EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)			1
006	Shaft with rotor-Part in contact with liquid		EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)			1
007	Impeller		EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)			1
011	Mechanical seal		Carbon / Ceramic / NBR	SiC/SiC/FPM	see p.310-311		1
012	Motor frame with stator		-				1
013	Motor cover		Aluminium				1
014	Fan		Poliammide				1
015	Fan cover		Fe P04 Zinc-coated				1
016	Terminal		-				1
017	Terminal box cover		Aluminium (three phase version)				1
018	Splash ring		NBR	-	40x21.5x3	EBARA DRAWING	1
019	Bearing		-		See table p. 309		1
020	Bearing		-		See table p. 309		1
021	Adjusting ring		Steel C70				1
022	Tie rod	For 2.2 - 3 kW	Fe 42 Zinc-coated		M5	EBARA DRAWING	4
		For 4 - 5.5 - 7.5 kW			M6		
		For 9.2 - 11 - 15 kW			M8		
25	Draing plug		EN 1.4401 (AISI 316) / PTFE		R 1/8" L=8	DIN 906	1
026	"O" ring	32-125, 40-125	NBR	FPM	158.11x5.34	OR 6625	1
		40-160, 50-125			183.52x5.34	OR 6720	
		32-160, 32-200, 50-160, 50-200			227.96x5.34	OR 6895	
032	Key		EN 1.4401 (AISI 316)		6x6x25	UNI 6604	1
034	Impeller nut		A.270 EN ISO 35062		M16x1.5	UNI 7474	1
042	Foot		Aluminium / Zinc coated steel			EBARA DRAWING	1
056	Box gasket		NBR				1
058	Fasting nut		-				1
072	Casing ring [1]		EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)			1
073	Casing ring		EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)			1
092	Lip seal	For 2.2 - 3 kW	-	-	25x40x7	DIN 3760 without spring	1
		For 4 - 5.5 - 7.5 kW			30x47X7		
		For 9.2 - 11 - 15 kW			40x55x7		
093	Lip seal	For 2.2 - 3 kW	-	-	25x40x7	DIN 3760 without spring	1
		For 4 - 5.5 - 7.5 kW			30x47X7		
		For 9.2 - 11 - 15 kW			40x55x7		
101	Snap ring (only for 9.2 - 11 - 15 kW)		Carbon tool steels TC 80		Ø 40	UNI 7435	1
200	Screw	32-125, 40-125	Stainless steel A2 70 class ISO 3506/1		M 8x30	UNI 5739	8
		32-160, 32-200 40-160, 40-200, 50-125, 50-160			M 10x35	UNI 5739	[2]

[1] For version 32-200/5.56 – 32-200/7.56 – 40-200/5.5 – 40-200/116 – 40-200/156
50-160/116 – 50-160/156

[2] N° for 1 unit=10 for 32-160, 40-160, 50-125
N° for 1 unit=12 for 32-200, 40-200, 50-160, 50-200

Counterflange kit on request, see table p. 314-315

CONSTRUCTIONS 3(L)M 65-125/160/200 60 Hz

Rev C

N°	PART NAME		3M	3LM	DIMENSIONS	STANDARD	N. FOR 1 UNIT
001	Casing		EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)			1
003	Motor bracket		Cast iron EN-GJL-200-EN 1561				1
004	Casing cover		EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)			1
006	Shaft with rotor		EN 1.4301(AISI 304) Part in contact with liquid	EN 1.4404(AISI 316L) Part in contact with liquid			1
007	Impeller		EN 1.4401 (AISI 316)				1
011	Mechanical seal		Carbon / Ceramic / NBR	SiC / SiC / FPM	See table p.310 - 311		1
012	Motor frame with stator		-				1
013	Motor cover		Aluminium				1
014	Fan		Poliammide				1
015	Fan cover		Fe P04 Zinc-coated				1
016	Terminal		-				1
017	Terminal box cover		Aluminium				1
018	Splash ring	Up to 11 kW	NBR	/	40x21.5x3	EPE DRAWING	[1]
		15 kW and above			50x29.5x3		
019	Bearing		-		See table p.309		1
020	Bearing		-		See table p.309		1
021	Adjusting ring		Steel C70				1
022	Tie rod	Up to 11 kW	Fe 42 Zinc-coated			EPE DRAWING	4
	Screw	15 kW and above	Zn. Steel 8.8 strenght class ISO 898/1			UNI 5739	
025	Draing plug		EN 1.4401 (AISI 316) / PTFE		R 1/8" L=8	DIN 906	1
026	"O" ring	65-125	NBR	FPM	183.52x5.34	OR 6720	1
		65-160, 65-200			227.96x5.34	OR 6895	
032	Key	Up to 11 kW	EN 1.4401 (AISI 316)		6x6x25	UNI 6604	1
		15 kW and above			8x7x30		
034	Impeller nut	Up to 11 kW	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)	M16x1.5	UNI 7474	1
		15 kW and above			M20x1.5		
042	Foot		Aluminium / Zinc-coated steel			EPE DRAWING	[2]
056	Box gasket		NBR				1
058	Fasting nut		-				[3]
092	Lip seal	Up to 7.5 kW	-		30x47X7	DIN 3760 without spring	1
		From 9.2 kW to 11 kW			40x55x7		
		From 15 kW to 22 kW			45x60x7		
093	Lip seal	For 4 kW	-		25x40x7	DIN 3760 without spring	1
		From 5.5 kW to 7.5 kW			30x47X7		
		From 9.2 kW to 11 kW			40x55x7		
		From 15 kW to 22 kW			45x60x7		
101	Snap ring (only 9.2 and 11kW)		Carbon tool steels TC 80		Ø 40	UNI 7435	1
200	Screw		Stainless steel A2-70 class ISO 3506/1		M 10x35	UNI 5739	[4]
206	Screw for bracket [5]		Zincked steel 8.8 strenght class ISO 898/1		M 10x40	UNI 5739	4

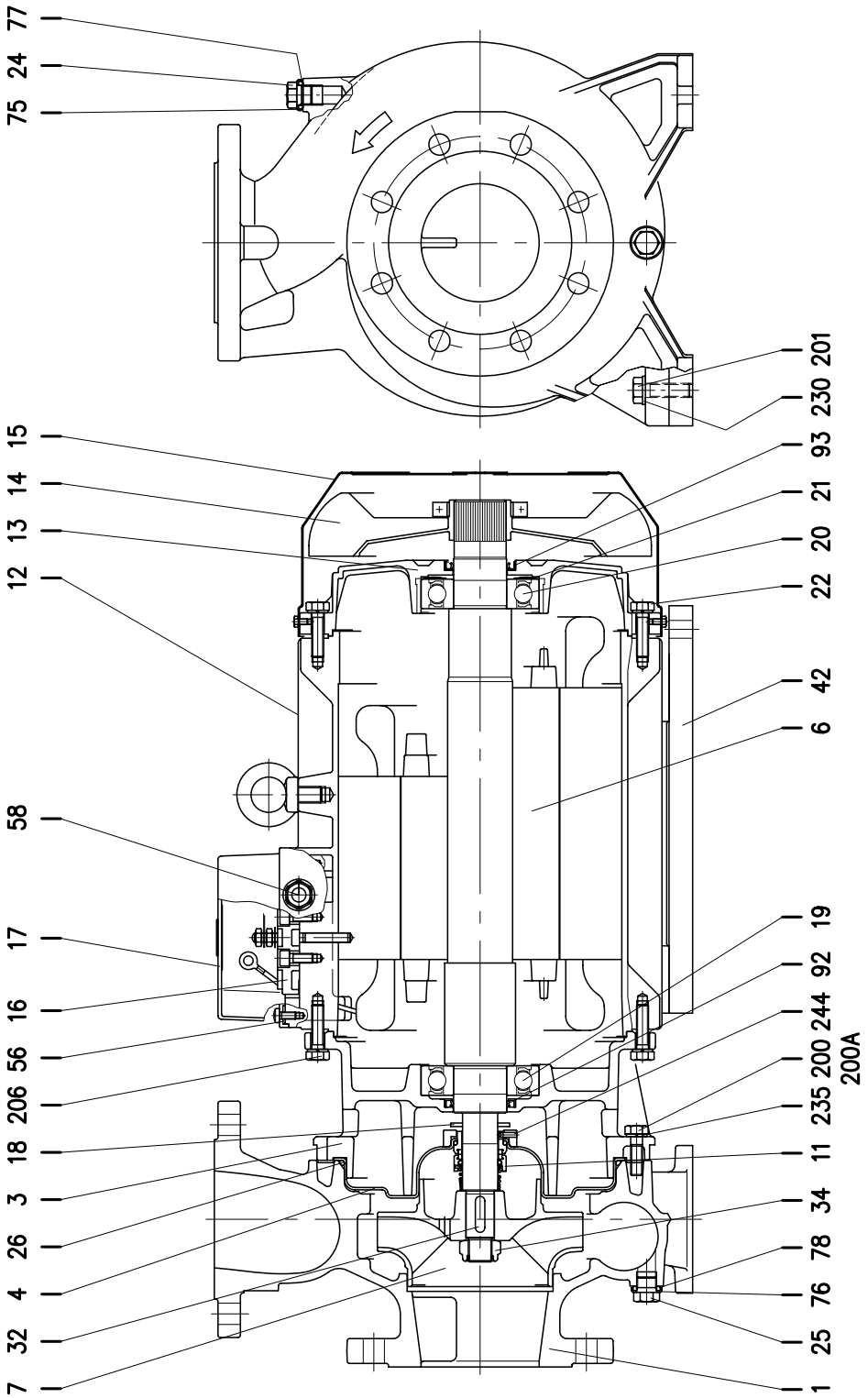
[1] Not for 3LM version
[2] N° for 1 unit =0 for version 65-160/156
N° for 1 unit =1 for version 65-125/5.56, 65-125/7.56, 65-160/9.26, 65-160/116,
N° for 1 unit =2 for version 65-200/156, 65-200/18.56, 65-200/226
[3] N° for 1 unit =1 Up to 11 kW
N° for 1 unit =2 from 15 kW to 22 kW
[4] N° for 1 unit =10 for 65-125
N° for 1 unit =12 for 65-160 and 65-200
[5] For 15kW and above

Counterflange kit on request see p.314-315

CONSTRUCTIONS 3LM 80-160

60 Hz

Rev C



CONSTRUCTIONS 3LM 80-160

60 Hz

Rev C

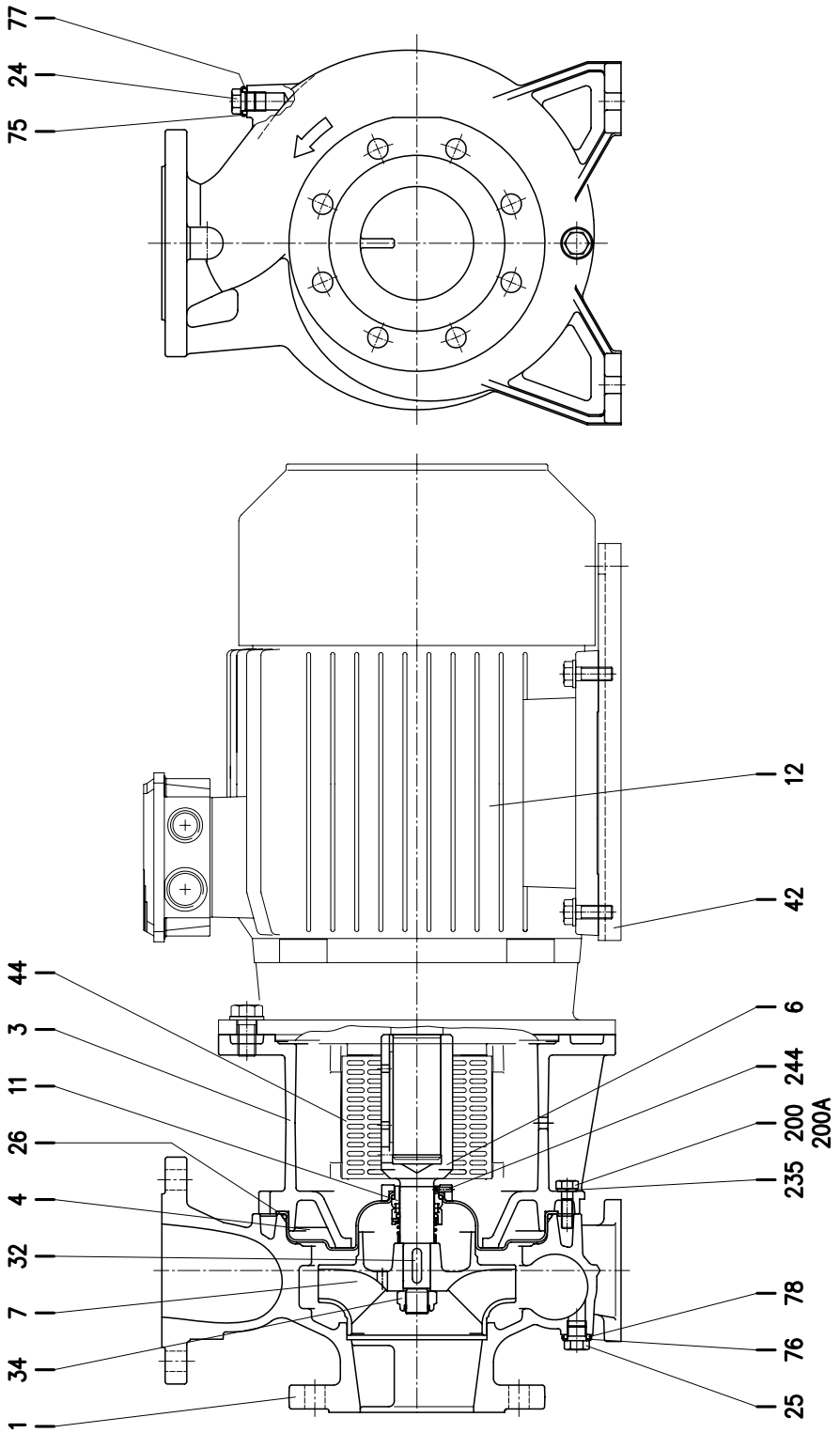
N°	PART NAME	MATERIAL 3LM	DIMENSIONS	STANDARD	N. FOR 1 UNIT
001	Casing	EN 1.4401 (AISI 316)			1
003	Motor bracket	Cast iron EN-GJL-200-EN 1561			1
004	Casing cover	EN 1.4404 (AISI 316L)			1
006	Shaft with rotor	EN 1.4404(AISI 316L) -Part in contact with liquid			1
007	Impeller	EN 1.4401 (AISI 316)			1
011	Mechanical seal	SiC/SiC/FPM	See table p. 312		1
012	Motor frame with stator	-			1
013	Motor cover	Aluminium			1
014	Fan	Poliammide			1
015	Fan cover	Fe P04 Zinc-coated			1
016	Terminal	-			1
017	Terminal box cover	Aluminium			1
018	Splash ring	NBR	50x29.5x3	EPE DRAWING	1
019	Bearing	-	See table p. 309		1
020	Bearing	-	See table p. 309		1
021	Adjusting ring	Steel C70			1
022	Screw	Zn. Steel 8.8 strenght class ISO 898/1		UNI 5739	4
024	Plug	EN 1.4404 (AISI 316L)	G 3/8	EPE DRAWING	1
025	Plug	EN 1.4404 (AISI 316L)	G 3/8	EPE DRAWING	1
026	"O" ring	FPM	227.96x5.34	OR 6895	1
032	Key	EN 1.4401 (AISI 316)	8x7x30	UNI 6604	1
034	Impeller nut	EN 1.4404 (AISI 316L)	M20x1.5	UNI 7474	1
042	Foot	Aluminium		EPE DRAWING	2
056	Box gasket	NBR			1
058	Fasting nut	-			2
075	Washer (plug)	EN 1.4404 (AISI 316L)			1
076	Washer (plug)				1
077	O-ring (plug)	FPM			1
078	O-ring (plug)				1
092	Lip seal	-	45x60x7	DIN 3760 without spring	1
093	Lip seal	-	45x60x7	DIN 3760 without spring	1
200	Screw	Stainless steel A2-70 class ISO 3506/1	M 10x35	UNI 5739	10
200A	Screw		M 10x30		2
201	Screw	Zincked steel 8.8 strenght class ISO 898/1	M 12x40	UNI 5739	4
206	Screw for bracket	Zincked steel 8.8 strenght class ISO 898/1	M 10x40	UNI 5739	4
230	Washer	Zincked steel	13x24x2.5	UNI 6592	4
235	Washer	EN 1.4301(AISI 304)	10.5	UNI 8842	12
244	Pin	EN 1.4301(AISI 304)	4x15		1

Counterflange kit on request, see table p. 314-315

CONSTRUCTIONS 3LS 80-160

60 Hz

Rev C



CONSTRUCTIONS 3LS 80-160

60 Hz

Rev C

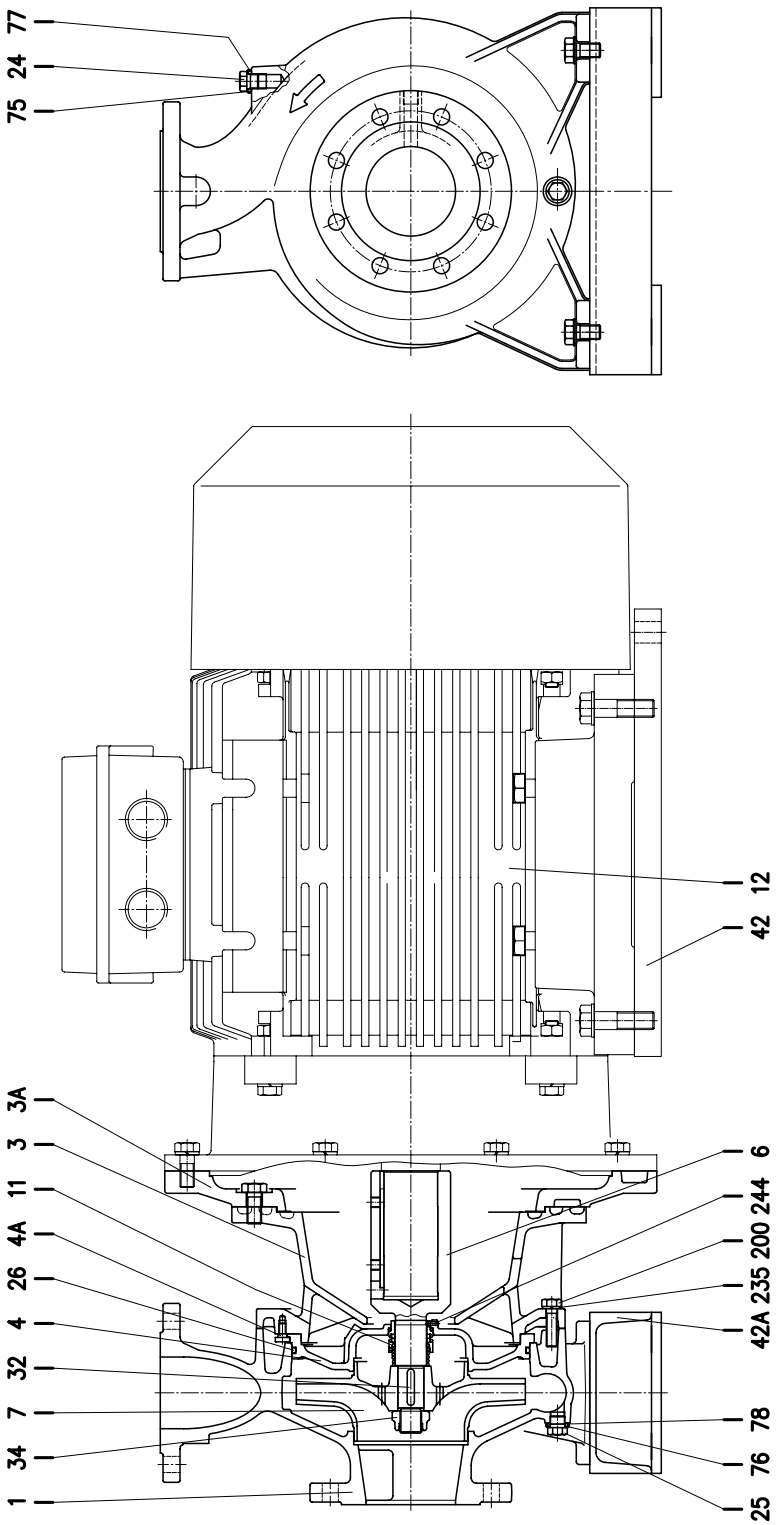
N°	PART NAME	MATERIAL	DIMENSIONS	STANDARD	N. FOR 1 UNIT
001	Casing	EN 1.4401 (AISI 316)			1
003	Motor bracket	Cast iron EN-GJL-200-EN 1561			1
004	Casing cover	EN 1.4404 (AISI 316L)			1
006	Coupling	EN 1.4404 (AISI 316L)	See table p. 313		1
007	Impeller	EN 1.4401 (AISI 316)			1
011	Mechanical seal	SiC/SiC/FPM	See p. 312		1
012	Motor	-			1
024	Plug	EN 1.4404 (AISI 316L)	G3/8	EPE DRAWING	1
025	Plug	EN 1.4404 (AISI 316L)	G3/8	EPE DRAWING	1
026	"O" ring	FPM	227.96x5.34	OR 6895	1
032	Key	EN 1.4401 (AISI 316)	8x7x30	UNI 6604	1
034	Impeller nut	EN 1.4404 (AISI 316L)	M20x1.5	UNI 7474	1
042	Foot (only for 18.5kW)	Aluminium		EPE DRAWING	2
044	Protection	EN 1.4301 (AISI 304)		EPE DRAWING	2
075	Washer (plug)	EN 1.4404 (AISI 316L)			1
076	Washer (plug)				1
077	O-ring (plug)	FPM			1
078	O-ring (plug)				1
200	Screw	Stainless steel A2-70 class ISO 3506/1	M 10x35		10
200A	Screw		M 10x30	UNI 5739	2
235	Washer	EN 1.4301(AISI 304)	10.5	UNI 8842	12
244	Pin	EN 1.4301(AISI 304)	4x15		1

Counterflange kit on request, see table p. 314-315

CONSTRUCTIONS 3LS 65-250,80

60 Hz

Rev C



CONSTRUCTIONS 3LS 65-250,80

60 Hz

Rev C

N°	PART NAME			MATERIAL	DIMENSIONS	STANDARD	N. FOR 1 UNIT
001	Casing			EN 1.4401 (AISI 316)			1
003	Motor bracket			Cast iron EN-GJL-200-EN 1561			1
003A	Adapter ring			Cast iron EN-GJL-200-EN 1561			[1]
004	Casing cover			EN 1.4401 (AISI 316)			1
004A	Screw for casing cover			EN 1.4301 (AISI 304)			2
006	Coupling	65-250	d=24 mm	EN 1.4462 (Duplex stainless steel)	See table p. 313		1
		80-200	d=24 mm	EN 1.4404 (AISI 316L) for 22 kW			1
				EN 1.4462 (Duplex stainless steel) for 30-37 kW			1
		80-250	d=29 mm	EN 1.4462 (Duplex stainless steel)			1
007	Impeller			EN 1.4401 (AISI 316)			1
011	Mechanical seal			SiC/SiC/FPM	See table p. 312		1
012	Motor			-			1
024	Plug			EN 1.4404 (AISI 316L)	G3/8	EPE DRAWING	1
025	Plug			EN 1.4404 (AISI 316L)	G3/8	EPE DRAWING	1
026	"O" ring			FPM	253.36x5.34	OR 6995	1
032	Key	65-250	d=24 mm	EN 1.4401 (AISI 316)	8x7x30	UNI 6604	1
		80-200					1
		80-250	d=29 mm		8x7x40		1
034	impeller nut	65-250	d=24 mm	EN 1.4404 (AISI 316L)	M20x1.5	UNI 7474	1
		80-200					1
		80-250	d=29 mm		M24x2		1
042	Foot for motor (only for 80-250/556)			Aluminium		EPE DRAWING	2
042A	Foot for pump			Aluminium/zincked steel			[2]
075	Washer (plug)			EN 1.4404 (AISI 316L)			1
076	Washer (plug)						1
077	O-ring (plug)			FPM			1
078	O-ring (plug)						1
200	Screw			Stainless steel A2-70 class ISO 3506/1	M 12x45	UNI 5739	10
235	Washer			EN 1.4301 (AISI 304)	13	UNI 8842	10
244	Pin			EN 1.4301 (AISI 304)	4x12		1

[1] Only for 65-250/376, 80-200/376, 80-250/456 and 80-250/556
[2] N° for 1 unit=2 for 80-200/306, 80-200/376, 80-250/456
for 1 unit=1 for 80-250/556

Counterflange kit on request, see table p.314-315

COSTRUCTIONS : BALL BEARING

60 Hz

Rev C

Pump type	Ball Bearing	
	Pump side	Fan side
3(L)M 32-125/2.26	6205-2RSH C3	6205-2RSH C3
3(L)M 32-160/3.06		
3(L)M 32-160/4.06	6206-2RS1 C3	
3(L)M 32-200/5.56	6306-2RS1 C3	6206-2RS1 C3
3(L)M 32-200/7.56		
3(L)M 40-125/3.06	6205-2RSH C3	6205-2RSH C3
3(L)M 40-125/4.06	6206-2RS1 C3	
3(L)M 40-160/5.56	6306-2RS1 C3	6206-2RS1 C3
3(L)M 40-160/7.56		
3(L)M 40-200/116	6308-2RS1 C3	6208-2RS1 C3
3(L)M 40-200/156		
3(L)M 50-125/5.56	6306-2RS1 C3	6206-2RS1 C3
3(L)M 50-125/7.56		
3(L)M 50-160/116	6308-2RS1 C3	6208-2RS1 C3
3(L)M 50-160/156		
3(L)M 65-125/5.56	6306-2RS1 C3	6206-2RS1 C3
3(L)M 65-125/7.56		
3(L)M 65-160/9.26	6308-2RS1 C3	6208-2RS1 C3
3(L)M 65-160/116		
3(L)M 65-160/156	6309-2RS1 C3	6309-2RS1 C3
3(L)M 65-200/156		
3(L)M 65-200/18.56		
3(L)M 65-200/226		
3LM 80-160/18.5	6309 2RS1-C3	6309 2RS1-C3
3LM 80-160/226		
3LS 65-250/306	6312 ZZ	6312 ZZ
3LS 65-250/376		
3LS 80-160/18.56	6209 ZZ-C3	6209 ZZ-C3
3LS 80-200/226	6310 ZZ-C3	6210 ZZ-C3
3LS 80-200/306	6312 ZZ	6312 ZZ
3LS 80-200/376		
3LS 80-250/456	6313 ZZ	6313 ZZ
3LS 80-250/556	6314	6314 1)

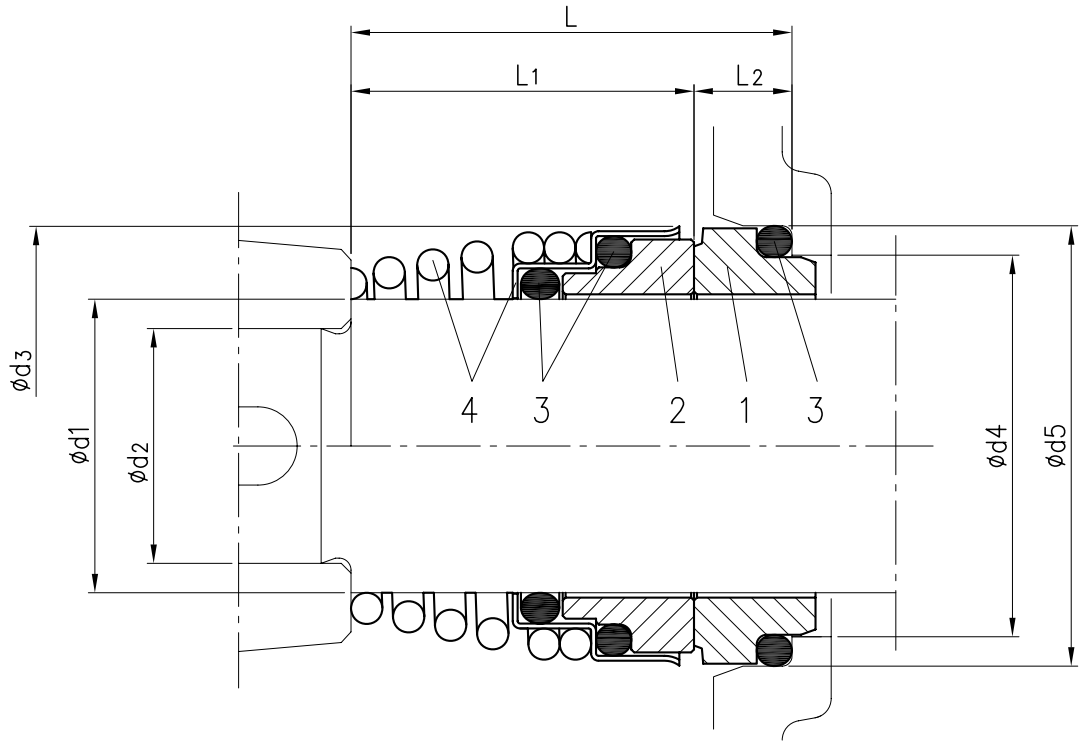
1) Motor available with lubrificator for regular re-greasing of bearing.

CONSTRUCTIONS

60 Hz

Rev C

MECHANICAL SEAL STANDARD VERSION



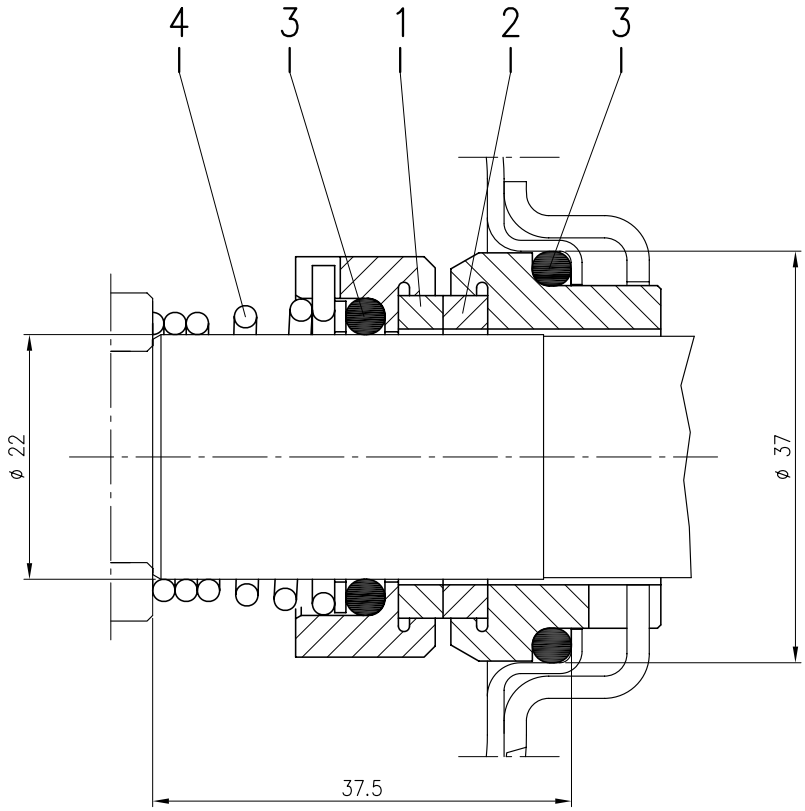
Manufacturer Reference			Pump type	Dimensions								Material			
												1	**2**	**3**	**4**
Manuf.	Description	Material Description		d1	d2	d3	d4	d5	L	L1	L2	Stationary seal ring	Rotary seal ring	rubber	Frame + spring
Roten	UNITEN 3K	X6X62V6	32-125/160/200 40-125/160/200 50-125/160 65-125 65-160/9.26 65-160/116	22	19	38	31	37	37.5	27.5	10	Carbon	Ceramic	NBR	EN 1.4401 (AISI 316)
		X6X62V6	65-160/156 65-200	30	24	46	39	45	42.5	32.5	10				

CONSTRUCTIONS

60 Hz

Rev C

MECHANICAL SEAL L VERSION



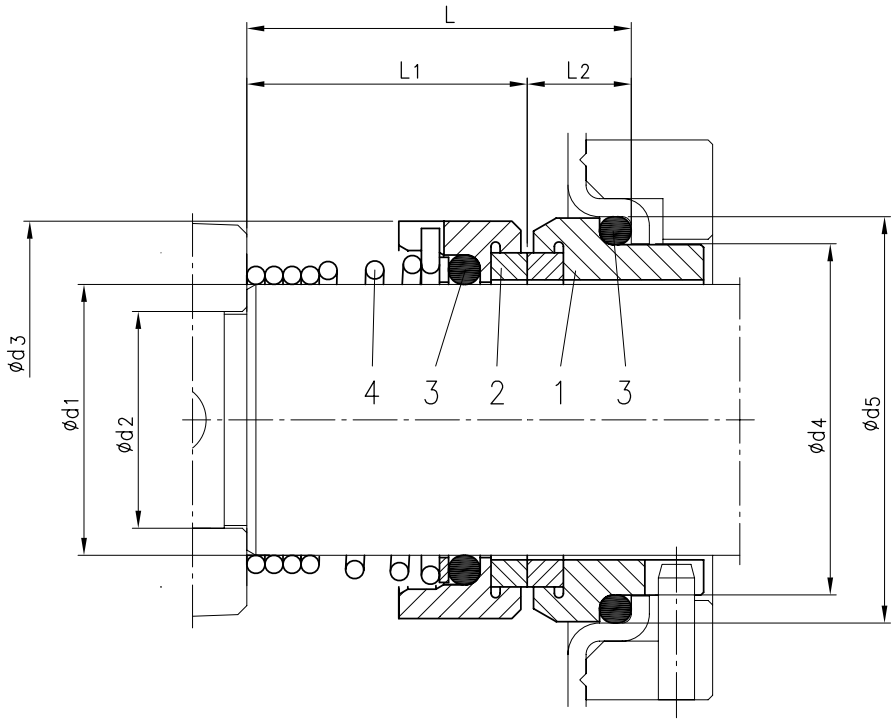
Manufacturer Reference			Pump type	Material			
				1	**2**	**3**	**4**
Manuf.	Description	Material Description		Stationary seal ring	Rotary seal ring	rubber	Frame + spring
Burgmann	M377GN85/22-00-R	Q1Q1VGG	32-125/160/200 40-125/160/200 50-125/160 65-125 65-160/9.26 65-160/116	SiC	SiC	FPM	EN 1.4571 (AISI 316Ti)

CONSTRUCTIONS

60 Hz

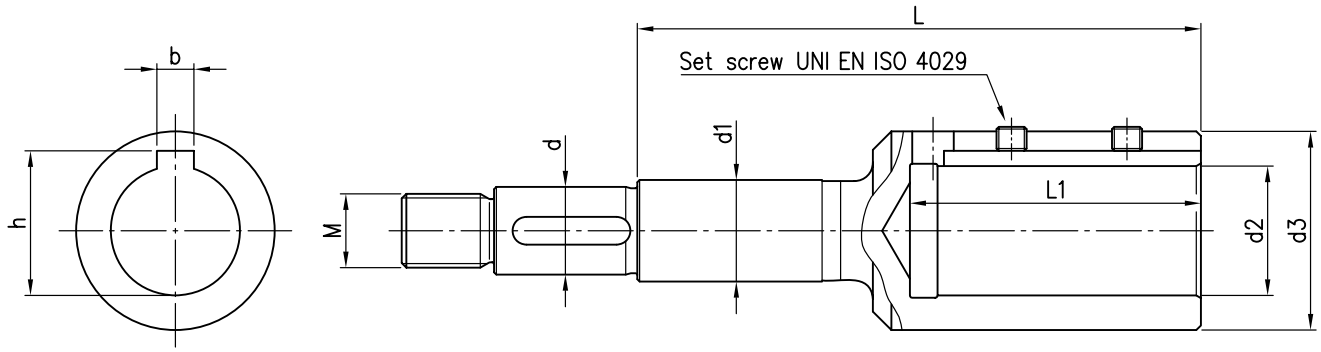
Rev C

MECHANICAL SEAL L VERSION



Manufacturer Reference			Pump type	Dimensions								Material			
												1	**2**	**3**	**4**
Manuf.	Description	Material Description		d1	d2	d3	d4	d5	L	L1	L2	Stationary seal ring	Rotary seal ring	rubber	Frame + spring
Burgmann	M377GN85-R	Q1Q1VGG	65-160/156 65-200 65-250 80-160/200/250	30	24	44	39	45	42.5	31	11.5	SiC	SiC	FPM	EN 1.4571 (AISI 316Ti)
				35	29	49	44	50	42.5	31	11.5				

COUPLING



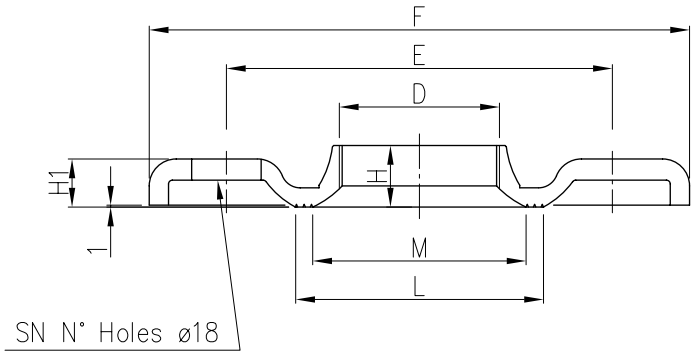
Type pumps	kW	HP	Motor Size	Dimensions mm									
				d	d1	d2	d3	M	L	L1	b	h	Set screw
65-250/306	30	40	200	24	30	55	85	M20x1.5	184	114	16	59.3	M12x12
65-250/376	37	50	200	24	30	55	85	M20x1.5	184	114	16	59.3	M12x12
80-160/18.56	18.5	25	160	24	30	42	63	M20x1.5	184	114	12	45.3	M8x8
80-160/226	22	30	180	24	30	48	72	M20x1.6	184	114	14	51.8	M10x10
80-200/226	22	30	180	24	30	48	72	M20x1.5	184	114	14	51.8	M10x10
80-200/306	30	40	200	24	30	55	85	M20x1.5	184	114	16	59.3	M12x12
80-200/376	37	50	200	24	30	55	85	M20x1.5	184	114	16	59.3	M12x12
80-250/456	45	60	225	29	35	55	85	M24x2	206	114	16	59.3	M12x12
80-250/556	55	75	250	29	35	60	89	M24x2	218	144	18	64.4	M12x12

CONSTRUCTIONS

60 Hz

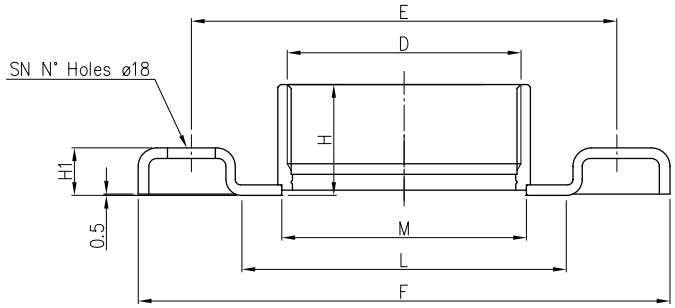
Rev C

COUNTERFLANGE ZINCKED STEEL



Counterflange									Screw	
DN	D	E	F	H	H1	L	M	SN	DIMENSIONS	MATERIAL
32	G 1 1/4	100	100	15	11.5	67	50	4	M16x55	Zn. Steel 8.8 strenght class ISO 898-1
40	G 1 1/2	110	110	17.5	11.5	72	58	4		
50	G2	125	125	19	15	89	70	4		
65	G 2 1/2	145	185	23	14	104	88	4		
80	G3	160	200	24	16	117.5	100	8	M16x60	
100	G4	180	220	29	16	144	125	8		

COUNTERFLANGE EN 1.4404 (AISI 316L)



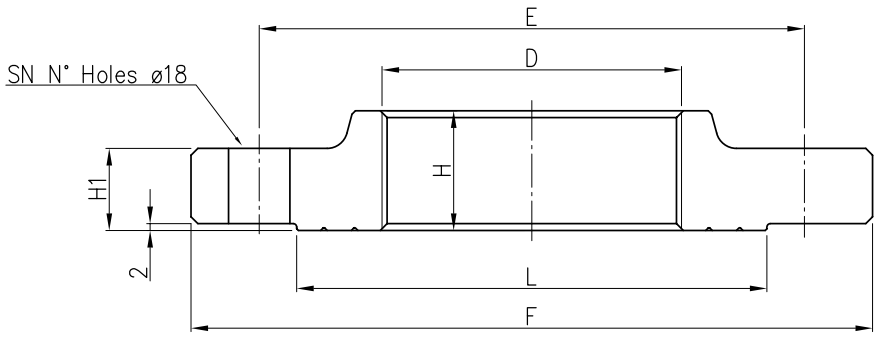
Counterflange									Screw	
DN	D	E	F	H	H1	L	M	SN	DIMENSIONS	MATERIAL
32	G 1 1/4	100	140	29.5	14	66	44	4	M16x55	A2-70 class ISO 3506-1
40	G 1 1/2	110	150	29.5	14	71	50.5			
50	G 2	125	165	34	16	83	63			
65	G 2 1/2	145	185	40	16	103	80			
80	G3	160	200	42	18	122	92	8	M16x60	

CONSTRUCTIONS

60 Hz

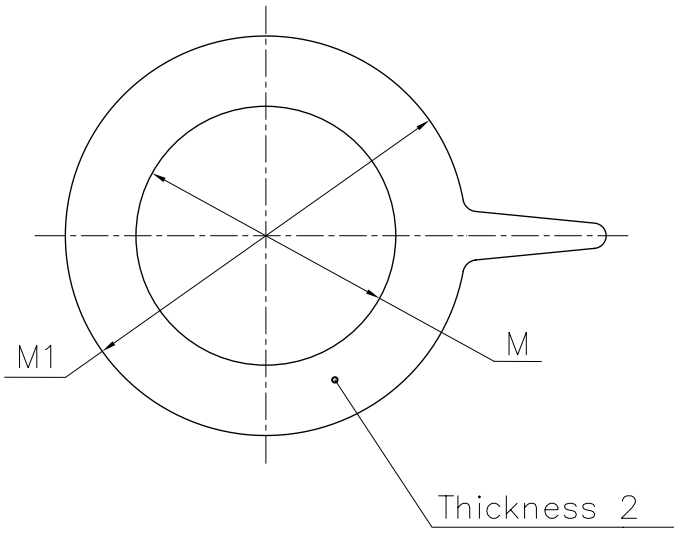
Rev C

COUNTERFLANGE EN 1.4404 (AISI 316L) DN100



Counterflange								Screw	
DN	D	E	F	H	H1	L	SN	DIMENSIONS	MATERIAL
100	G4	180	220	35	20	150	8	M16x70	A2-70 class ISO 3506-1

GASKET



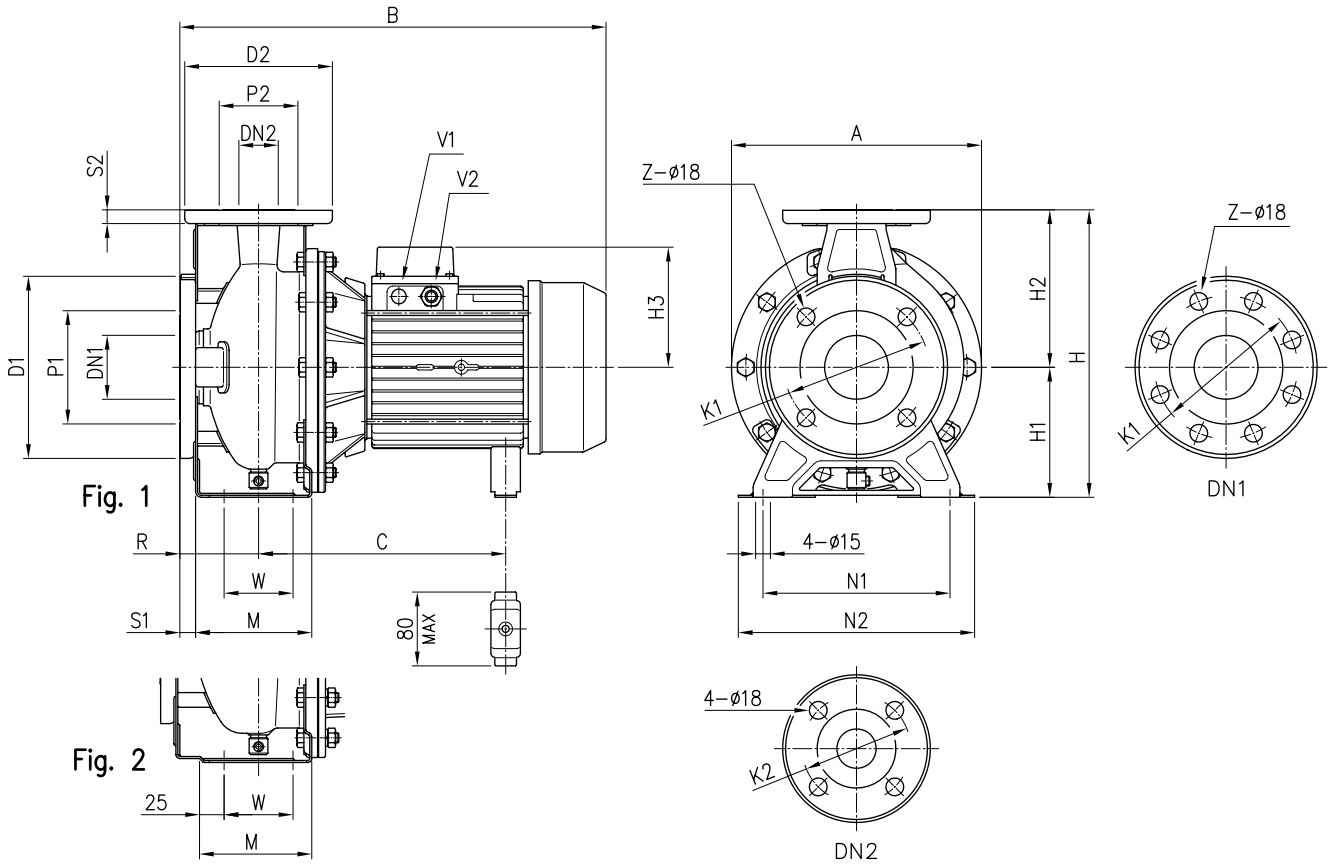
DN	M	M1
32	38	82
40	50	93
50	60	107
65	80	125
80	90	140
100	115	160

Material : EPDM for standard version
FPM for L version

DIMENSIONS 3(L)M

60 Hz

Rev C



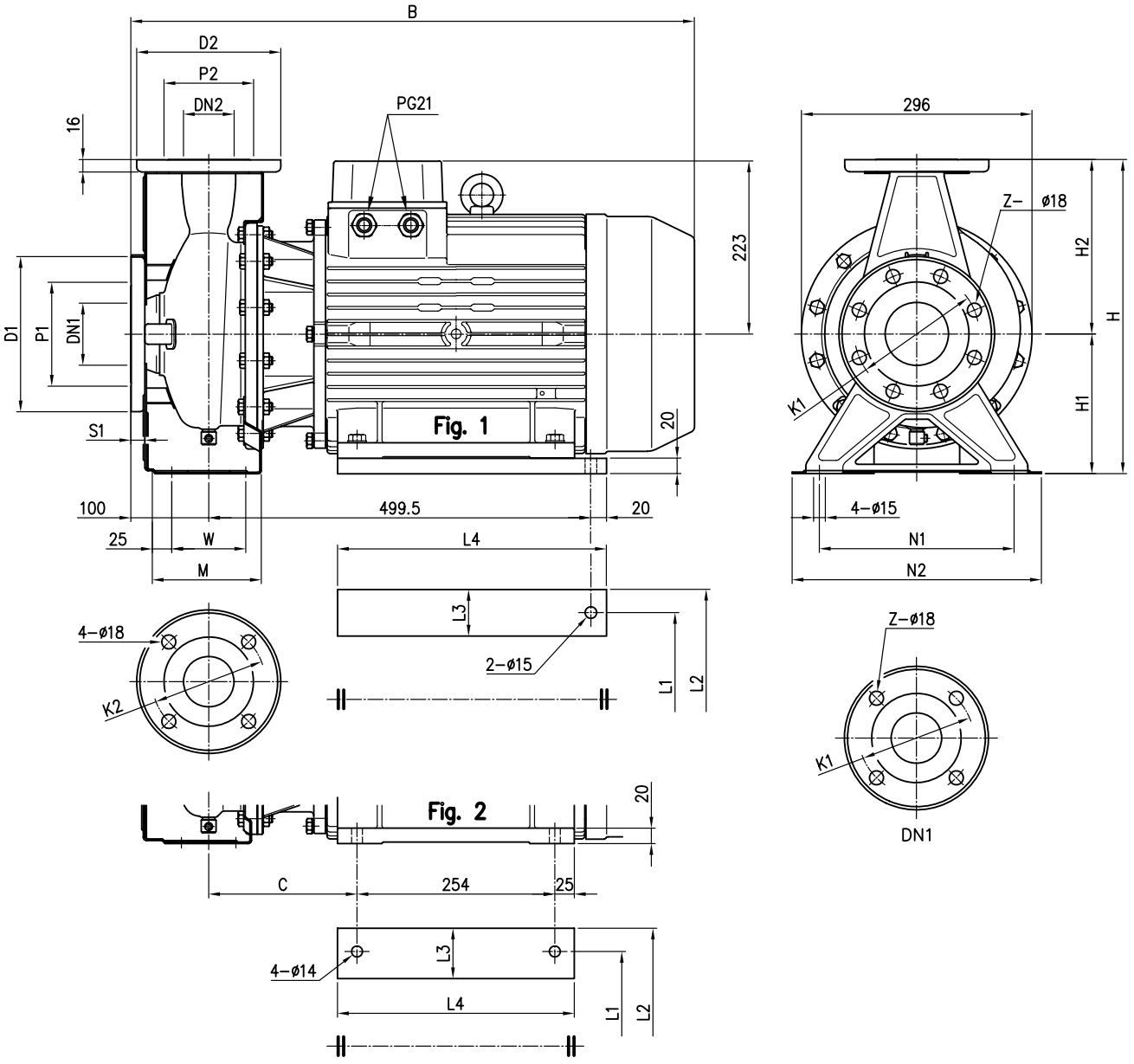
Model	Dimensions (mm)																											Weight
	Ø DN1	Ø P1	Ø K1	Ø D1	S1	Z [1]	Z [2]	Ø DN2	Ø P2	Ø K2	Ø D2	S2	Fig.	H	H1	H2	H3	R	W	M	N1	N2	A	B	C	V1	V2	[kgf]
32-125/2.26	50	95	125	165	16	4	-	32	75	100	140	14	1	252	112	140	124	80	70	114	140	190	213	408	219÷230	-	PG 13.5	23
32-160/3.06	50	95	125	165	16	4	-	32	75	100	140	14	1	292	132	160	124	80	70	118	190	240	254	433	244÷255	-	PG 13.5	28.3
32-160/4.06	50	95	125	165	16	4	-	32	75	100	140	14	1	292	132	160	141	80	70	118	190	240	254	454	253	-	PG 16	35
32-200/5.56	50	95	125	165	16	4	-	32	75	100	140	14	1	340	160	180	150	80	70	119	190	240	296	475	275	PG13.5	PG 16	48.3
32-200/7.56	50	95	125	165	16	4	-	32	75	100	140	14	1	340	160	180	150	80	70	119	190	240	296	517	275	PG13.5	PG 16	58
40-125/3.06	65	115	145	185	16	4	-	40	80	110	150	14	1	252	112	140	124	80	70	114	160	210	213	433	244÷255	-	PG 13.5	25.6
40-125/4.06	65	115	145	185	16	4	-	40	80	110	150	14	1	252	112	140	141	80	70	114	160	210	213	454	253	-	PG 16	31.6
40-160/5.56	65	115	145	185	16	4	-	40	80	110	150	14	1	292	132	160	150	80	70	118	190	240	254	475	275	PG13.5	PG 16	42.3
40-160/7.56	65	115	145	185	16	4	-	40	80	110	150	14	1	292	132	160	150	80	70	118	190	240	254	517	275	PG13.5	PG 16	50.3
40-200/116	65	115	145	185	16	4	-	40	80	110	150	14	2	340	160	180	178	100	70	115	212	265	296	594	359	PG13.5	PG 21	61.3
40-200/156	65	115	145	185	16	4	-	40	80	110	150	14	2	340	160	180	178	100	70	115	212	265	296	594	359	PG13.5	PG 21	73.5
50-125/5.56	65	115	145	185	16	4	-	50	95	125	165	16	2	292	132	160	150	100	70	114	190	240	254	495	275	PG13.5	PG 16	43.8
50-125/7.56	65	115	145	185	16	4	-	50	95	125	165	16	2	292	132	160	150	100	70	114	190	240	254	537	275	PG13.5	PG 16	50.5
50-160/116	65	115	145	185	16	4	-	50	95	125	165	16	2	340	160	180	178	100	70	115	212	265	296	594	359	PG13.5	PG 21	62
50-160/156	65	115	145	185	16	4	-	50	95	125	165	16	2	340	160	180	178	100	70	115	212	265	296	594	359	PG13.5	PG 21	73
65-125/5.56	80	134	160	200	18	8	4	65	115	145	185	16	2	340	160	180	150	100	95	140	212	280	254	495	275	PG13.5	PG 16	50
65-125/7.56	80	134	160	200	18	8	4	65	115	145	185	16	2	340	160	180	150	100	95	140	212	280	254	537	275	PG13.5	PG 16	52.6
65-160/9.26	80	134	160	200	18	8	4	65	115	145	185	16	2	360	160	200	178	100	95	140	212	280	296	594	359	PG13.5	PG 21	63.6
65-160/116	80	134	160	200	18	8	4	65	115	145	185	16	2	360	160	200	178	100	95	140	212	280	296	594	359	PG13.5	PG 21	70

[1] Standard [2] On request

DIMENSIONS 3(L)M

60 Hz

Rev C



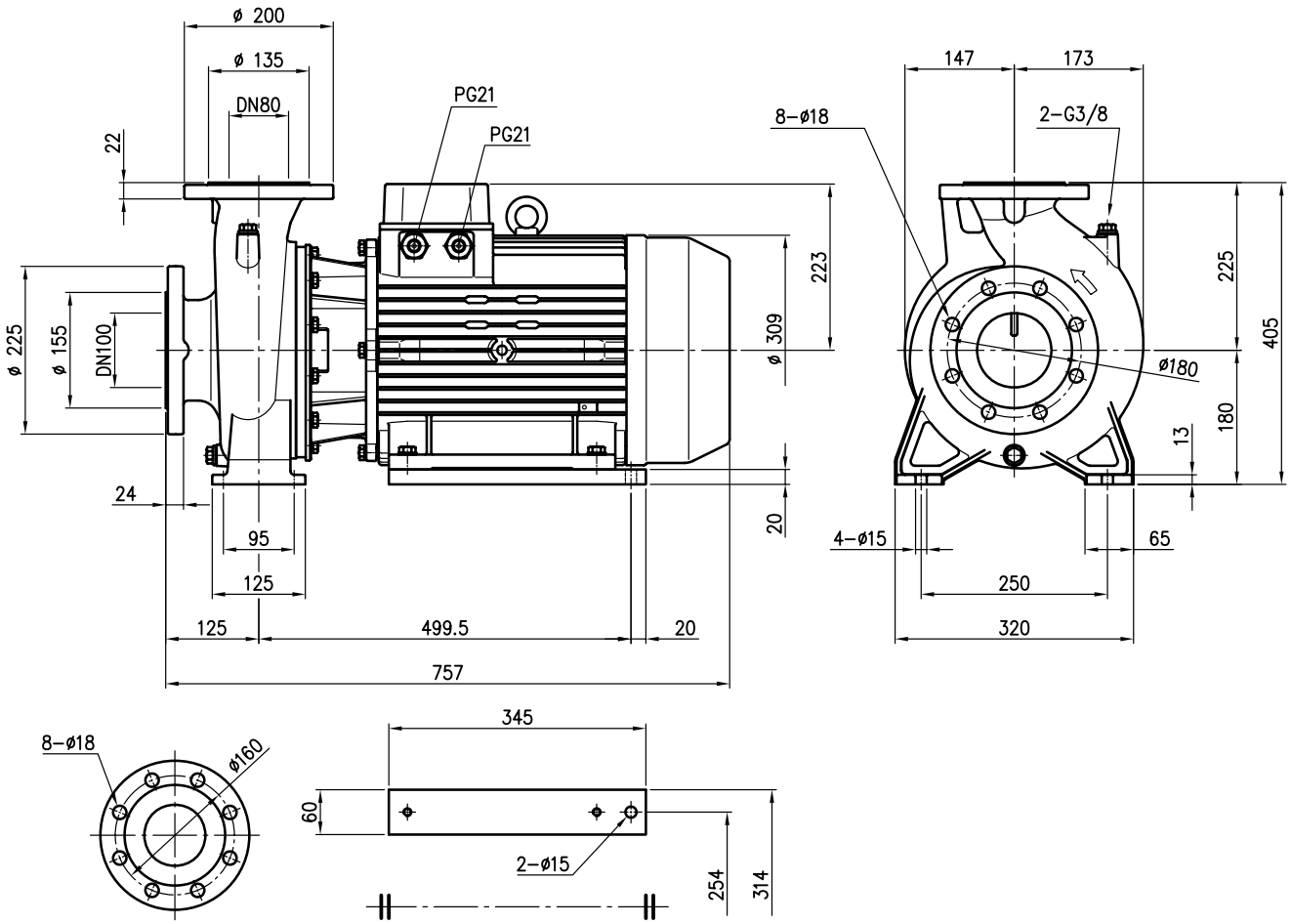
Model	Dimensions [mm]																									Weight [kgf]
	Ø DN1	Ø P1	Ø K1	Ø D1	S1	Z [1]	Z [2]	Ø DN2	Ø P2	Ø K2	Ø D2	Fig.	H	H1	H2	W	M	N1	N2	B	C	L1	L2	L3	L4	
65-160/156	80	134	160	200	18	8	4	65	115	145	185	2	360	160	200	95	140	212	280	732	199,5	254	318	65	304	93
65-200/156	80	134	160	200	18	8	4	65	115	145	185	1	405	180	225	95	140	250	320	732	-	254	314	60	345	114
65-200/18.56	80	134	160	200	18	8	4	65	115	145	185	1	405	180	225	95	140	250	320	732	-	254	314	60	345	127
65-200/226	80	134	160	200	18	8	4	65	115	145	185	1	405	180	225	95	140	250	320	732	-	254	314	60	345	136

[1] Standard [2] On request

DIMENSIONS 3LM 80-160

60 Hz

Rev C

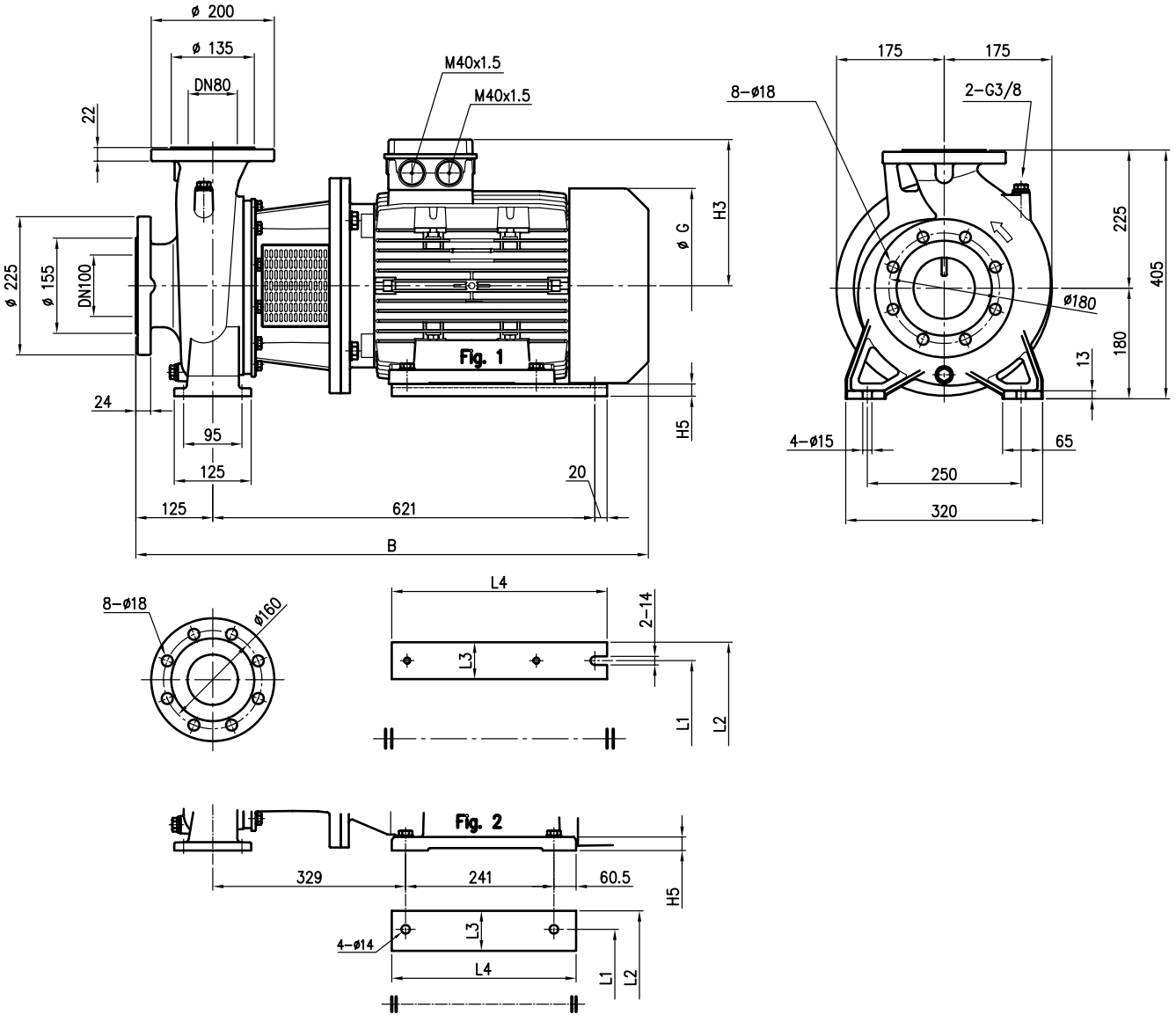


Pumps weight
80-160/18.56 : 143 kgf
80-160/226 : 152 kgf

DIMENSIONS 3LS 80-160

60 Hz

Rev C

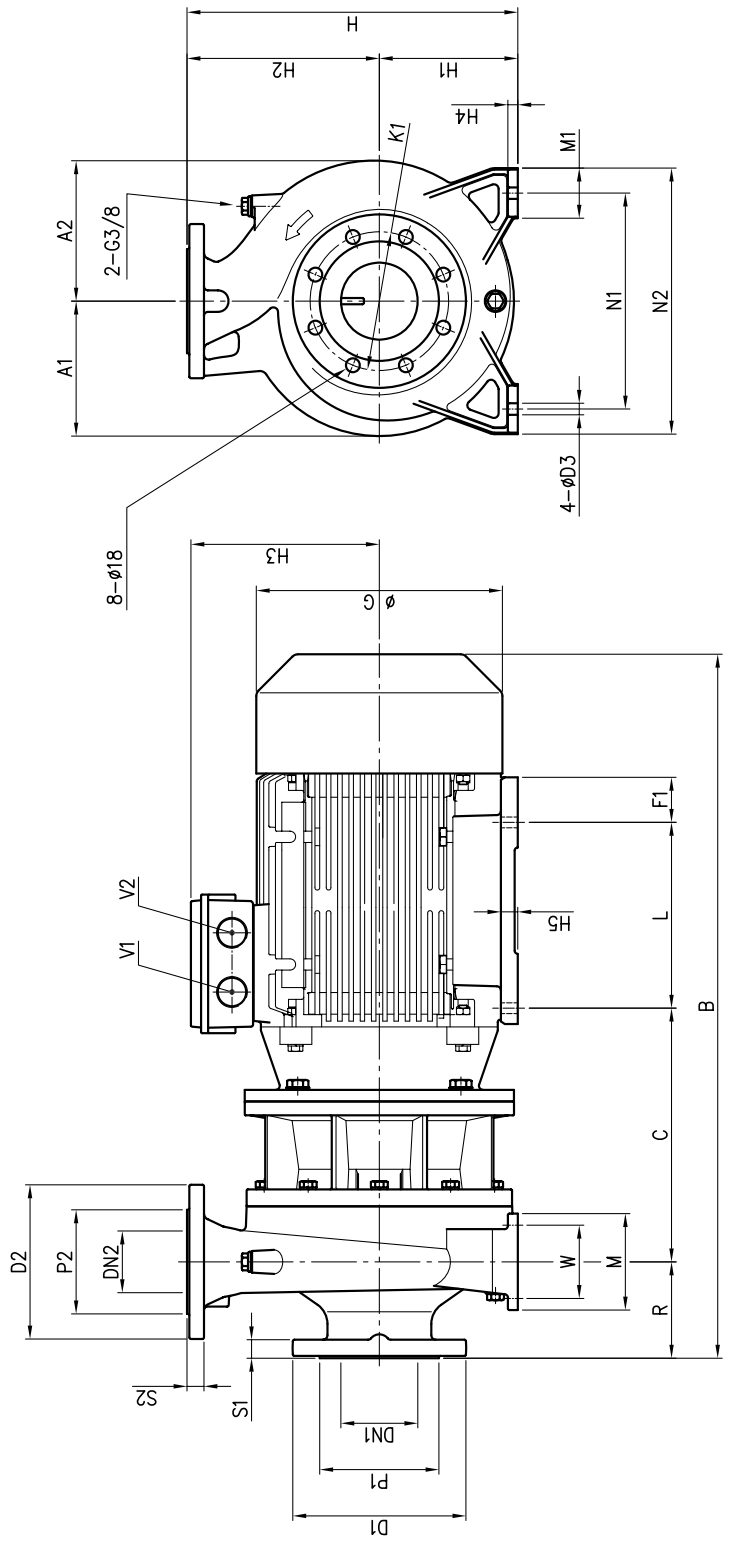


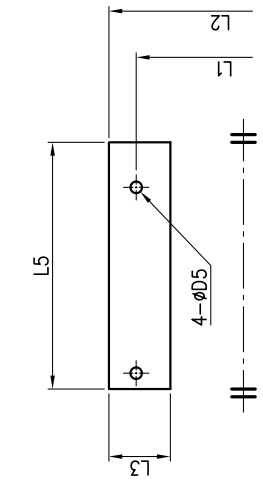
Model	Dimensions [mm]									Weight [kgf]
	Fig.	H3	H5	L1	L2	L3	L4	B	G	
80-160/18.56	1	238	20	254	314	60	350	877	314	155
80-160/226	2	245	22	279	350	80	320	913	320	184

DIMENSIONS 3LS

60 Hz

Rev C





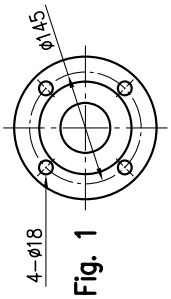


Fig. 1

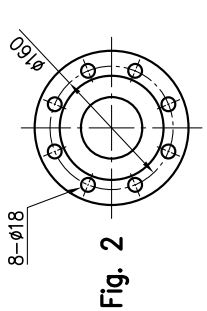


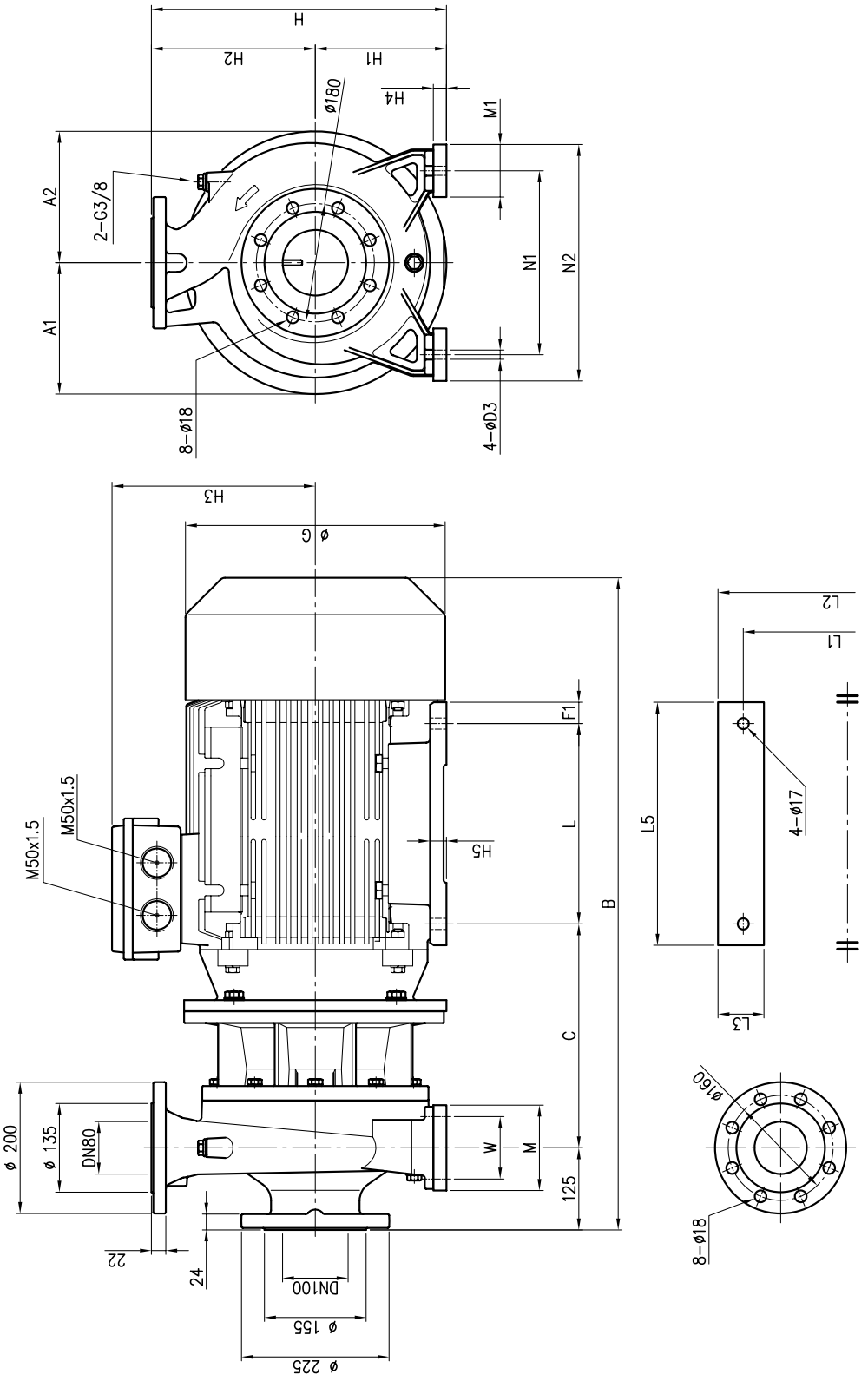
Fig. 2

Pump type	Dimensions [mm]																														Weight [kgf]
	DN1	P1	K1	D1	S1	DN2	P2	D2	S2	H	H1	H2	H3	H4	H5	R	W	N1	N2	M	M1	L	L1	L2	L3	L5	A1	A2	B	C	F1	G	D3	D5	V1	V2	
65-250/306	80	135	160	200	22	65 Fig. 1	120	185	20	450	200	250	310	15	25	100	120	280	360	160	80	305	318	395	70	370	200	200	968	341	32.5	396	19	17	M50x1.5	M50x1.5	303
65-250/376	80	135	160	200	22	65 Fig. 1	120	185	20	450	200	250	310	15	25	100	120	280	360	160	80	305	318	395	70	370	200	200	968	341	32.5	396	19	17	M50x1.5	M50x1.5	320
80-200/226	100	155	180	225	24	80 Fig. 2	135	200	22	430	180	250	245	13	22	125	95	280	345	125	65	241	279	350	80	320	175	182	913	329	58.5	320	15	14	M40x1.5	M40x1.5	200

DIMENSIONS 3LS

60 Hz

Rev C

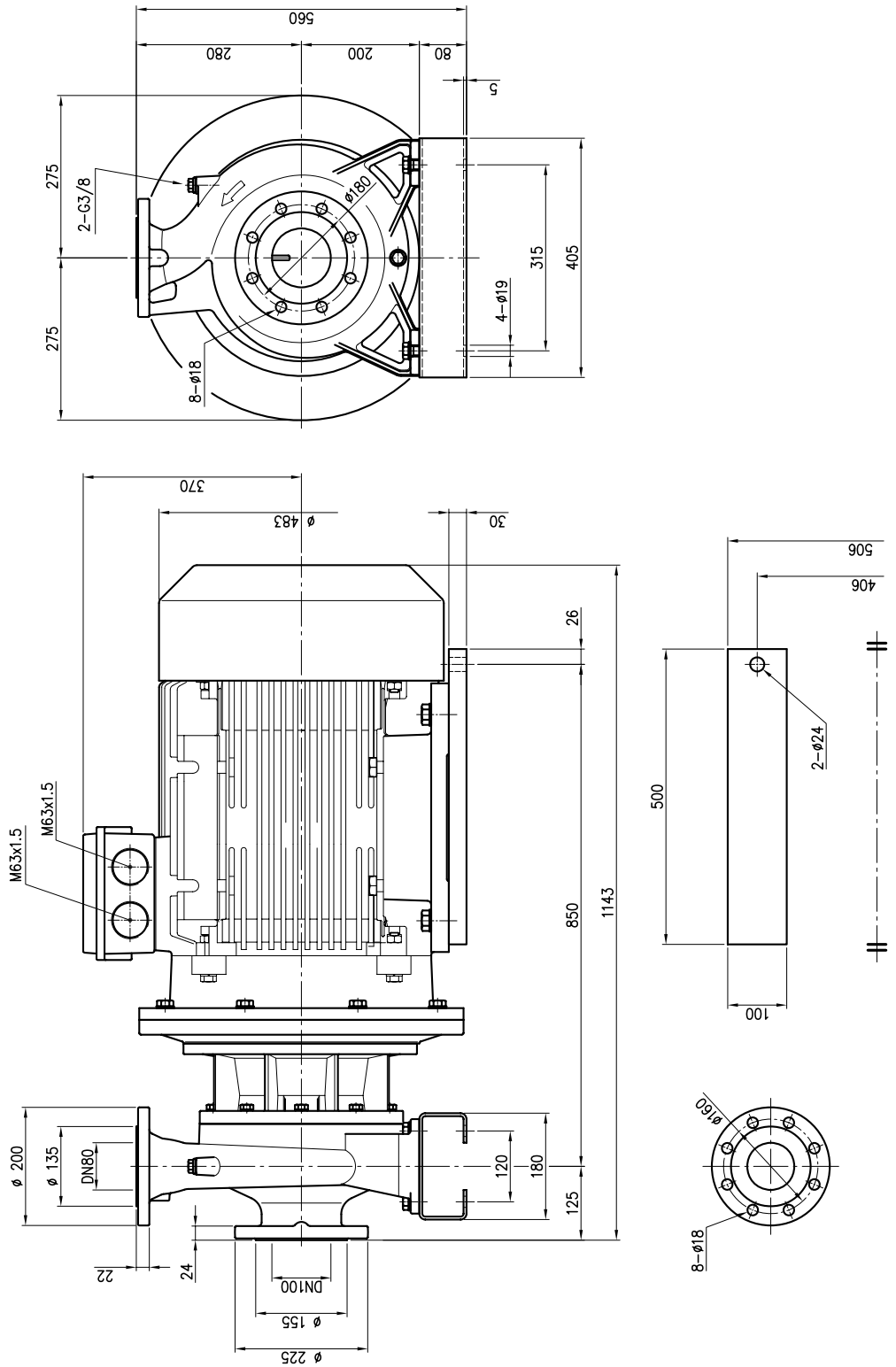


Pump type	Dimensions [mm]																					Weight [kgf]
	H	H1	H2	H3	H4	H5	W	N1	N2	M	M1	L	L1	L2	L3	L5	A1	A2	B	C	F1	G	D3	
80-200/306	450	200	250	310	20	25	95	280	360	130	80	305	318	395	70	370	200	200	993	341	32,5	396	14	306
80-200/376	450	200	250	310	20	25	95	280	360	130	80	305	318	395	70	370	200	200	993	341	32,5	396	14	325
80-250/456	505	225	280	335	25	28	120	315	415	165	100	311	356	435	75	393	225	225	1051	385	41	435	18	401

DIMENSIONS 3LS

60 Hz

Rev C



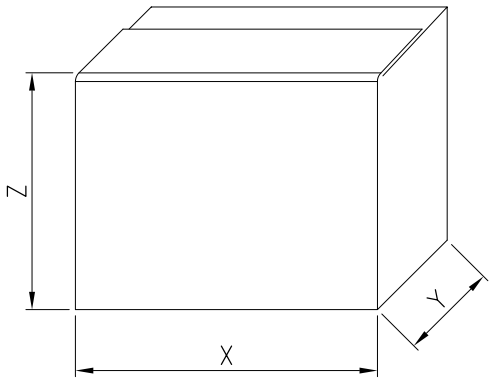
80-250/556
Pump weight: 489 kgf

PACKING AND WEIGHT

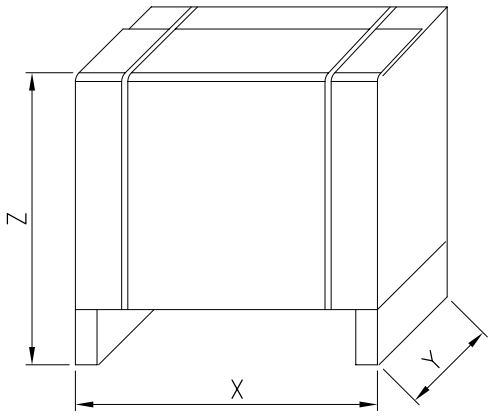
60 Hz

Rev C

TYPE 1



TYPE 2



Pump type	PUMPS WITH MOTOR				
	PACKING [mm]			WEIGHT [kg]	PACK TYPE
	X	Y	Z		
3(L)M 32-125/2.26	440	240	280	27.6	1
3(L)M 32-160/3.06	480	270	320	33.4	
3(L)M 32-160/4.06				40.8	
3(L)M 32-200/5.56	490	320	370	54	
3(L)M 32-200/7.56	550		380	64	2
3(L)M 40-125/3.06	480	270	320	31	1
3(L)M 40-125/4.06				37	
3(L)M 40-160/5.56	490	320	370	48.5	
3(L)M 40-160/7.56	550		380	55.5	2
3(L)M 40-200/116	670		480	70.5	
3(L)M 40-200/156				82.5	
3(L)M 50-125/5.56	550		470	49.2	1
3(L)M 50-125/7.56	670	320	480	55.8	2
3(L)M 50-160/116				70	
3(L)M 50-160/156				82.5	
3(L)M 65-125/5.56	550	320	460	52	
3(L)M 65-125/7.56	670		470	58.5	
3(L)M 65-160/9.26				70	
3(L)M 65-160/116				75.6	
3(L)M 65-160/156	850	360	500	111	
3(L)M 65-200/156				114	
3(L)M 65-200/18.56				127	
3(L)M 65-200/226				136	
3LM 80-160/18.56	880	390	518	151	
3LM 80-160/226				160	
3LS 65-250/306	1100	500	717	322	
3LS 65-250/376				339	
3LS 80-160/18.56	970	390	588	162	
3LS 80-160/226				191	
3LS 80-200/226	1100	500	717	219	
3LS 80-200/306				325	
3LS 80-200/376				344	
3LS 80-250/456	1400	600	817	429	
3LS 80-250/556				517	

MOTOR DATA

60 Hz

Rev C

Pump type	Power		Motor		Input [kW]	Full load current [A]		Locked rotor current [A]	
	kW	HP	Size	Type	Three phase	380 V	460 V	380 V	460 V
3(L)M 32-125/2.26	2.2	3	90	-	2.9	4.8	4.3	20.6	24.9
3(L)M 32-160/3.06	3	4			3.7	6.1	5.5	27.7	33.6
3(L)M 32-160/4.06	4	5.5	100		5.2	8.7	7.7	42.6	51.6
3(L)M 32-200/5.56	5.5	7.5	112		6,55	10,7	8,9	77	94
3(L)M 32-200/7.76	7.5	10			8,75	14,2	12,1	121	147
3(L)M 40-125/3.06	3	4	90		3.7	6.1	5.5	27.7	33.6
3(L)M 40-125/4.06	4	5.5	100		5.2	8.7	7.7	42.6	51.6
3(L)M 40-160/5.56	5.5	7.5	112		6,55	10,7	8,9	77	94
3(L)M 40-160/7.56	7.5	10			8,75	14,2	12,1	121	147
3(L)M 40-200/116	11	15	132		11.2	18.5	16.6	84	101
3(L)M 40-200/156	15	20			15.5	25.6	22.5	152	185
3(L)M 50-125/5.56	5.5	7.5	112		6,55	10,7	8,9	77	94
3(L)M 50-125/7.56	7.5	10			8,75	14,2	12,1	121	147
3(L)M 50-160/116	11	15	132		11.2	18.5	16.6	84	101
3(L)M 50-160/156	15	20			15.5	25.6	22.5	152	185
3(L)M 65-125/5.56	5.5	7.5	112		6,55	10,7	8,9	77	94
3(L)M 65-125/7.56	7.5	10			8,75	14,2	12,1	121	147
3(L)M 65-160/9.26	9.2	13	132		11.2	18.5	16.6	84	101
3(L)M 65-160/116	11	15			13.1	21.3	18.7	100	122
3(L)M 65-160/156	15	20	160		18.6	30.8	26.7	157	190
3(L)M 65-200/156	15	20			18.6	30.8	26.7	157	190
3(L)M 65-200/18.56	18.5	25			21.5	35	32.7	254	307
3(L)M 65-200/226	22	30			25.6	41.6	36.7	315	382
3(L)M 80-160/18.56	18.5	25			21.5	35	32.7	254	307
3(L)M 80-160/226	22	30			25.6	41.6	36.7	315	382
3LS 65-250/306	30	40	200	B35	33	56.8	48.6	312	403
3LS 65-250/376	37	50			40.7	70.3	59.4	394	487
3LS 80-160/18.56	18.5	25	160		21.2	35.6	31	199	254
3LS 80-160/226	22	30	180		25.3	42.5	36.2	234	300
3LS 80-200/226	22	30			25.3	42.5	36.2	234	300
3LS 80-200/306	30	40	200		33	56.8	48.6	312	403
3LS 80-200/376	37	50			40.7	70.3	59.4	394	487
3LS 80-250/456	45	60	225		49.8	84.4	69.7	557	593
3LS 80-250/556	55	75	250		60.8	104	84.4	603	693