



EBARA

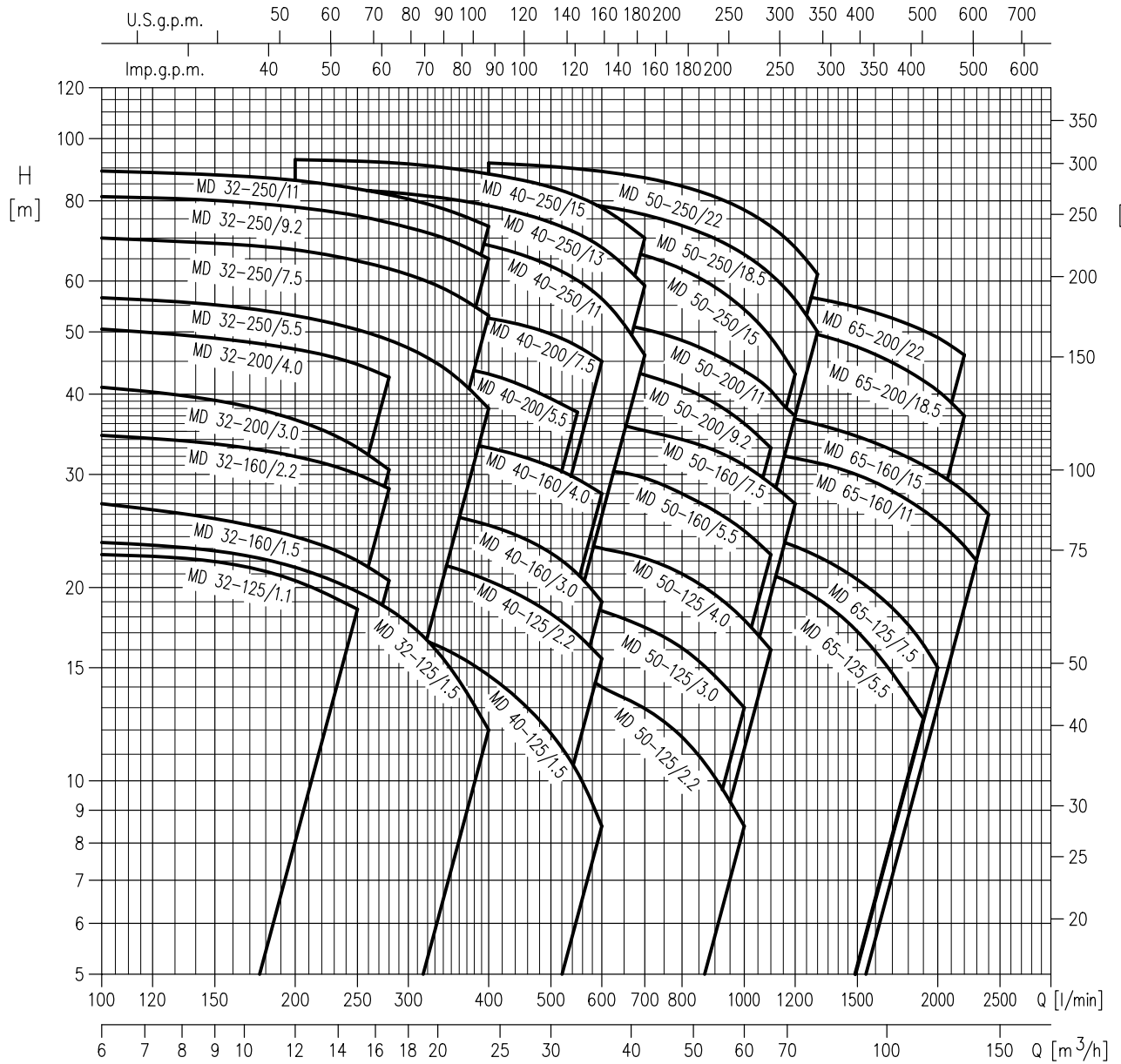


SPECIFICATIONS

50Hz
Rev. J

PUMP		
Liquid Handled	Type of liquid	Clean water
	Max temperature [°C]	90
Maximum working pressure	[MPa]	1
Flange		UNI 2236
Counterflange (On request)		UNI 2247
Construction	Impeller	Closed centrifugal type
	Shaft seal type	Mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction	Flange to DIN 2532 (50 mm - 65 mm - 80 mm)
	Discharge	Flange to DIN 2532 (32 mm - 40 mm - 50 mm - 65 mm)
Material	Casing	Cast iron
	Impeller	Cast iron/AISI 304 (see application page 301)
	Shaft seal	Ceramic/Carbon/NBR
	Shaft	AISI 304 (part in contact with liquid)
	Bracket	Cast iron
Applicable standard of test		ISO 9906 - Annex A

MOTOR		
Type	Electric - TEFC	
	Single Phase	Three Phase
No. of Poles	2	
Synchronous speed [min ⁻¹]	3000	
Insulation Class	F	
Protection degree	IP 55	
Power rating [kW]	1.1 ÷ 2.2	1.1 ÷ 22
	[HP]	1.5 ÷ 3
Frequency [Hz]	50	
Voltage [V]	230 ±10%	230/400 ±10% (up to 4 kW)
		400/690 ±10% (5.5 kW and above)
Capacitor	Built in	-
Over load protection	Built in	Provided by the user
Casing material	Aluminium	
Base material/motor support	Aluminium / Steel	
Dimensions of cable entry	PG 13.5 - PG 16 – PG 21 (see dimensions pages 400-401)	



SELECTION CHART

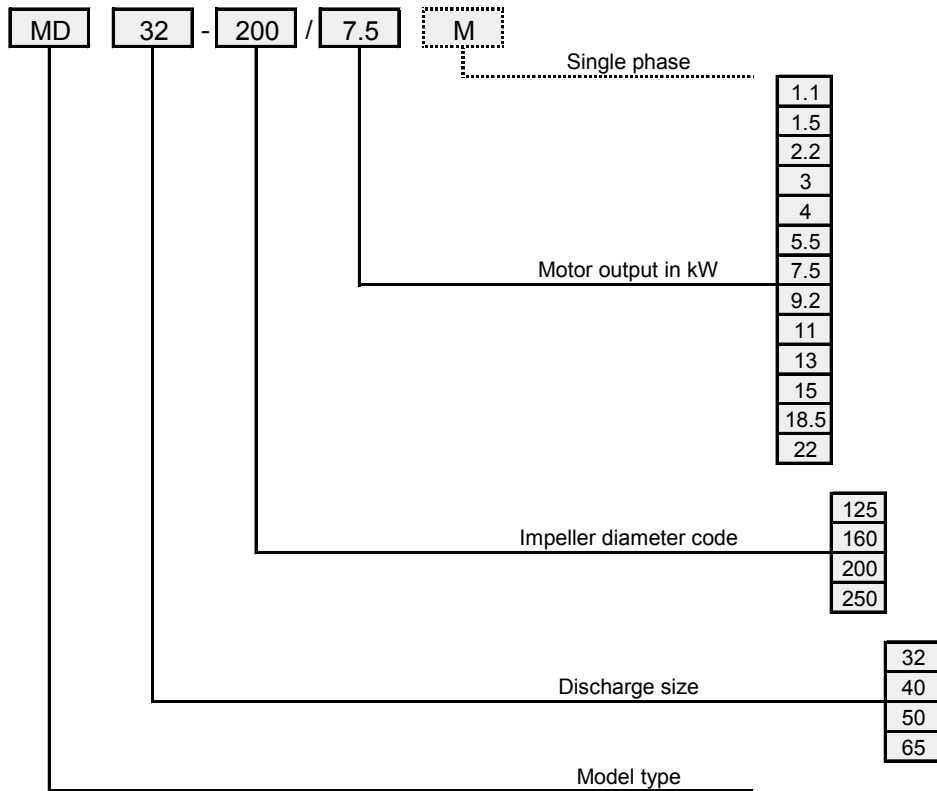
50Hz

Rev. J

Pump Type	Power		Q=Capacity																							
	kW	HP	l/min	0	100	200	250	280	320	400	550	600	667	700	800	1000	1100	1150	1200	1300	1400	1900	2000	2200	2300	2400
			m ³ /h	0	6	12	15	17	19	24	33	36	40	42	48	60	66	69	72	78	84	114	120	132	138	144
H=Total manometric head in meters																										
MD 32-125/1.1 (M)	1,1	1,5	23	22,5	20,5	18,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 32-125/1.5 (M)	1,5	2	24	23,5	21,5	19,7	18,5	16,6	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 32-160/1.5 (M)	1,5	2	28	27	24	22	20,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 32-160/2.2 (M)	2,2	3	35,5	34,5	32	30	28,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 32-200/3.0	3	4	43	41	36,5	33	30,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 32-200/4.0	4	5,5	52	50,5	47	44,5	42,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 32-250/5.5	5,5	7,5	58	56,5	53	50,4	48,6	45,7	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 32-250/7.5	7,5	10	71,5	70	67,1	64,5	62,7	60	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 32-250/9.2	9,2	12,5	82,5	81,2	78,2	75,8	74	71,4	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 32-250/11	11	15	91	89	86	84	82	79	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 40-125/1.5 (M)	1,5	2	20	19,5	18,4	17,7	17,2	16,5	14,6	10,3	8,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 40-125/2.2 (M)	2,2	3	25,5	25	23,5	23	22,5	22	20,5	16,9	15,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 40-160/3.0	3	4	31,5	30,5	29	28	27,5	26,5	25	21	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 40-160/4.0	4	5,5	39	38	36,5	36	35,5	35	33	29,5	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 40-200/5.5	5,5	7,5	48,5	48	47	46	45,5	44,5	42,5	37,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 40-200/7.5	7,5	10	58	57,5	56,5	55,5	55	54,5	52,5	47,5	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 40-250/11	11	15	75	-	74	73	72,2	71	68,2	60,1	56,3	49,8	46	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 40-250/13	13	17,5	85,1	-	84	83,2	82,5	81,4	78,6	71,1	67,7	62,1	59	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 40-250/15	15	20	93,8	-	92,7	92,1	91,7	90,8	88,1	81,2	78	72,9	70	-	-	-	-	-	-	-	-	-	-	-	-	-
MD 50-125/2.2 (M)	2,2	3	17,5	-	-	-	-	-	16	14,8	14,3	13,5	13,1	11,7	8,5	-	-	-	-	-	-	-	-	-	-	-
MD 50-125/3.0	3	4	21	-	-	-	-	-	19,5	18,6	18,2	17,6	17,3	16,1	13	-	-	-	-	-	-	-	-	-	-	-
MD 50-125/4.0	4	5,5	25,5	-	-	-	-	-	24	23	23	22	21,7	21	17,8	16	-	-	-	-	-	-	-	-	-	-
MD 50-160/5.5	5,5	7,5	33,5	-	-	-	-	-	32,5	31	30,5	30	29,6	28	24,5	22,5	-	-	-	-	-	-	-	-	-	-
MD 50-160/7.5	7,5	10	39	38	37	36,5	35,5	35,1	34	31	29	28	27	-	-	-	-	-	-	-	-	-	-	-	-	
MD 50-200/9.2	9,2	12,5	50	-	-	-	-	-	48	46	45	44	43,4	41	36	33	-	-	-	-	-	-	-	-	-	-
MD 50-200/11	11	15	56	-	-	-	-	-	54,5	53	52	51	50,4	48,5	43,5	40,5	39	37	-	-	-	-	-	-	-	-
MD 50-250/15	15	20	72,8	-	-	-	-	-	71,2	69,2	68,2	66,6	65,7	62,6	54,2	49	46,1	43	-	-	-	-	-	-	-	-
MD 50-250/18.5	18,5	25	82,8	-	-	-	-	-	81,5	79,5	78,5	77	76,1	73,2	66	61,4	58,9	56,1	50	-	-	-	-	-	-	-
MD 50-250/22	22	30	93	-	-	-	-	-	91,6	89,7	88,9	87,6	86,9	84,3	77,4	73	70,4	67,7	61,5	-	-	-	-	-	-	-
MD 65-125/5.5	5,5	7,5	24	-	-	-	-	-	-	-	23,2	23	22,9	22,5	21,5	20,50	20,50	20	19,1	18,2	12,5	-	-	-	-	-
MD 65-125/7.5	7,5	10	27,5	-	-	-	-	-	-	-	26,5	26	25,8	25,5	24,5	24	23,5	23	22,2	21,5	16,3	15	-	-	-	-
MD 65-160/11	11	15	34,5	-	-	-	-	-	-	-	-	-	34	33,9	33,5	33	32,5	32	32	31,4	30,5	26,5	25,5	23	22	-
MD 65-160/15	15	20	39	-	-	-	-	-	-	-	-	-	-	-	38	37,5	37	36,5	36,5	35,9	35	31	30,5	28,5	27	26
MD 65-200/18.5	18,5	25	55	-	-	-	-	-	-	-	-	-	-	-	53,5	52,5	51,5	51	50,5	49,5	48,5	42	40,5	37	-	-
MD 65-200/22	22	30	61	-	-	-	-	-	-	-	-	-	-	-	59,5	58,5	58	57,5	57	56,2	55,5	50	49	46	-	-

The performances of single-phase and three-phase are the same

TYPE KEY:



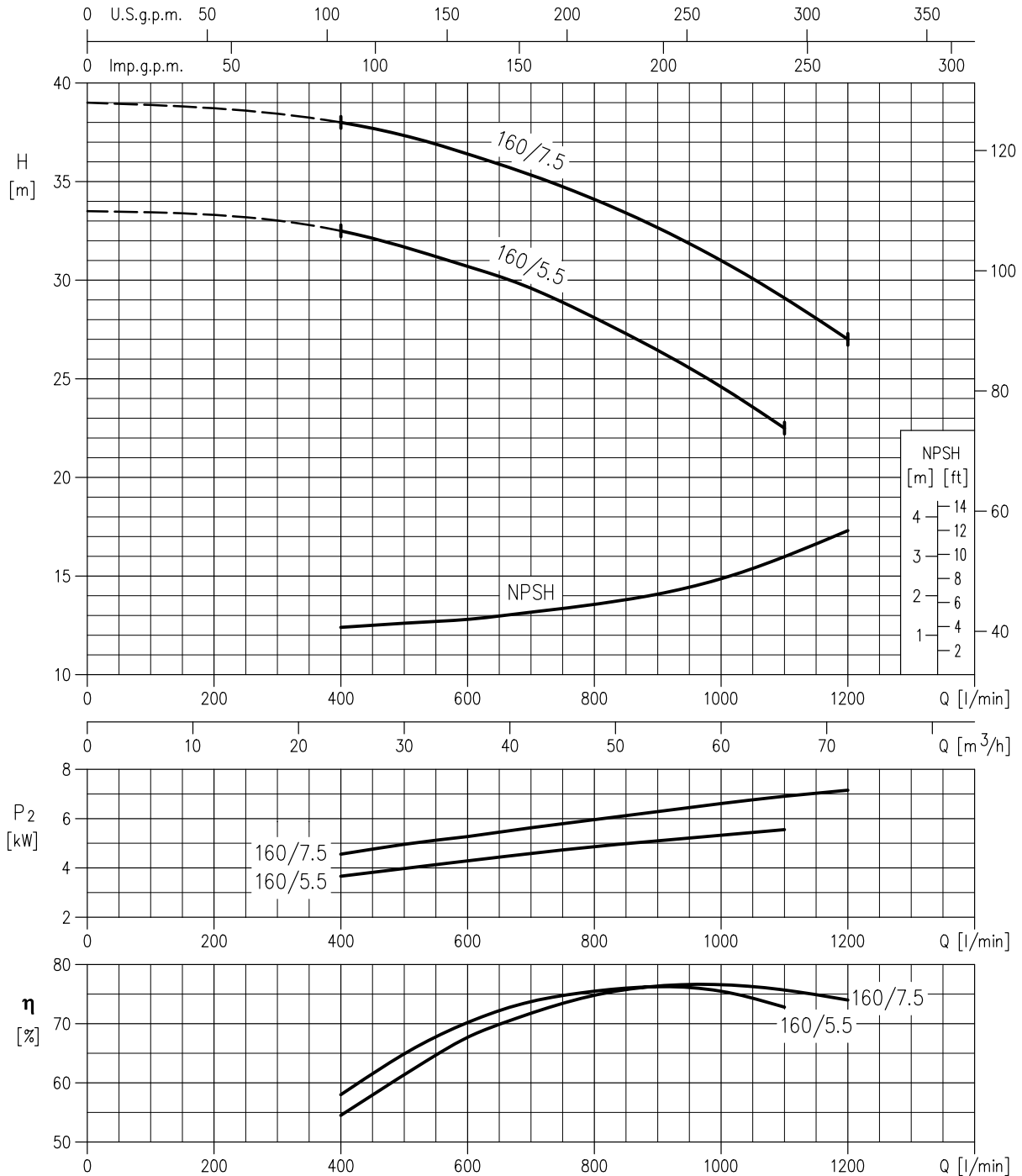
PERFORMANCE CURVE

50Hz

Rev. J

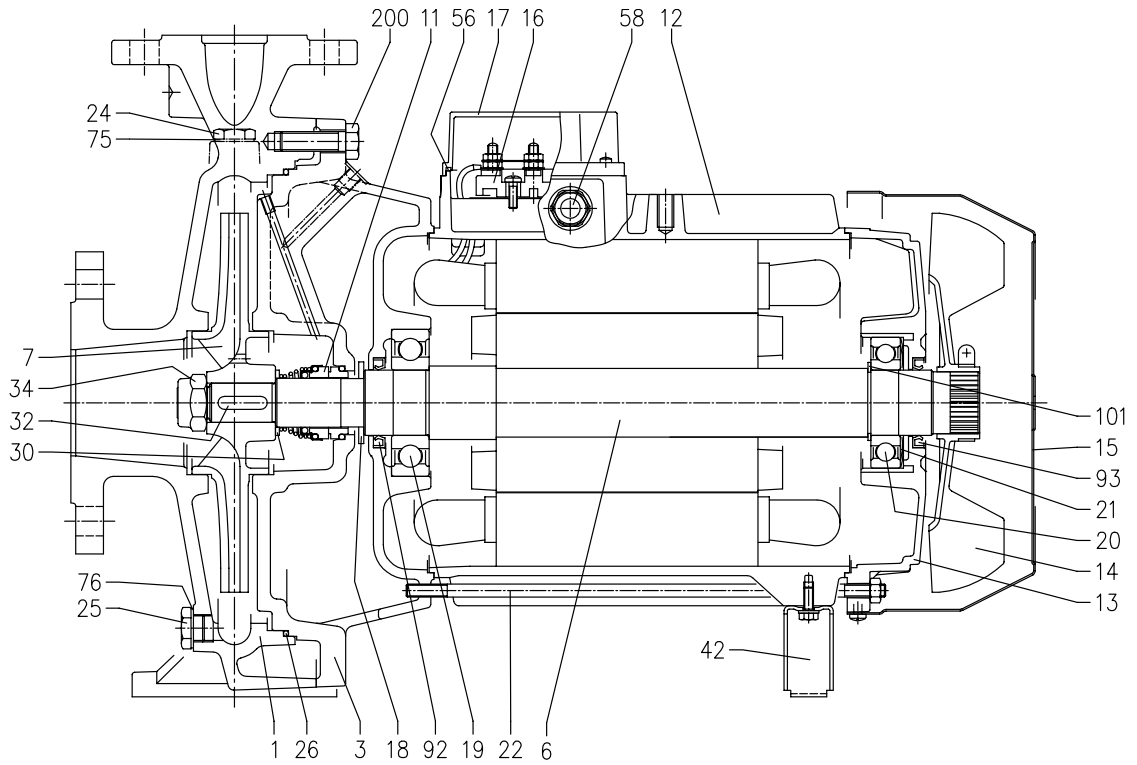
MD 50-160/5.5 (5.5 kW) – Impeller diameter = 155 mm

MD 50-160/7.5 (7.5 kW) – Impeller diameter = 166 mm

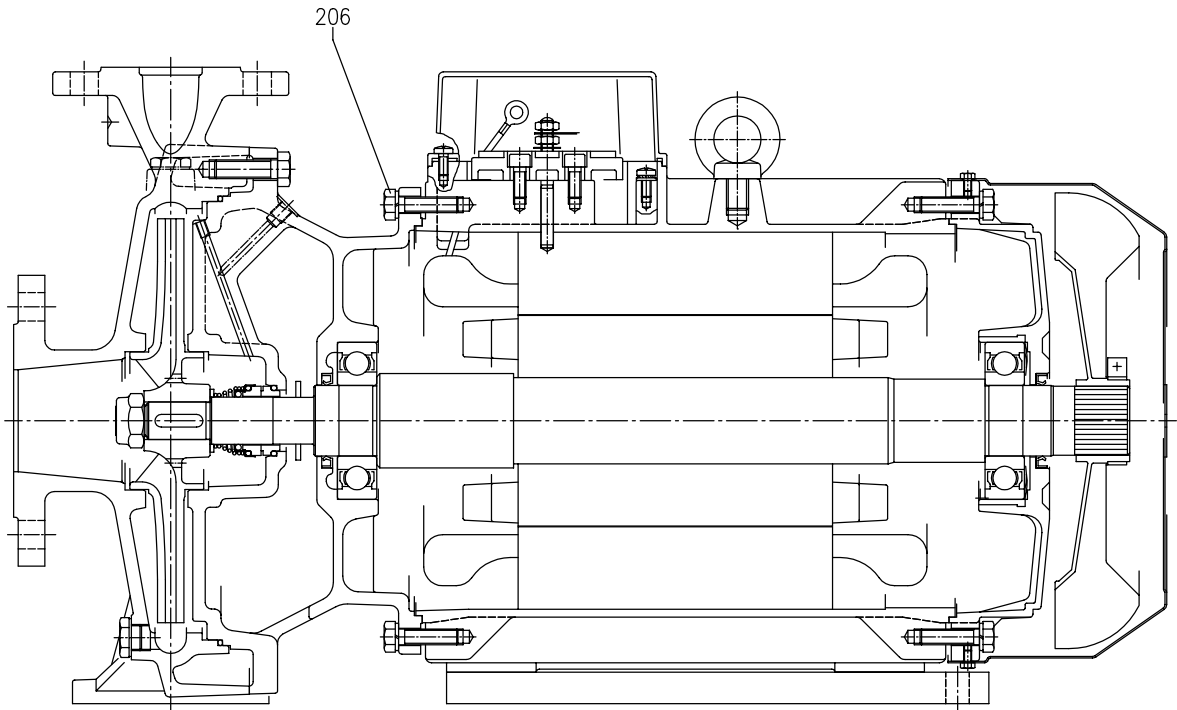


Rotation speed: $\approx 2900 \text{ min}^{-1}$
 Test fluid: clean water at 20°C
 Applicable standard of test: ISO 9906 - Annex A

SECTIONAL VIEW

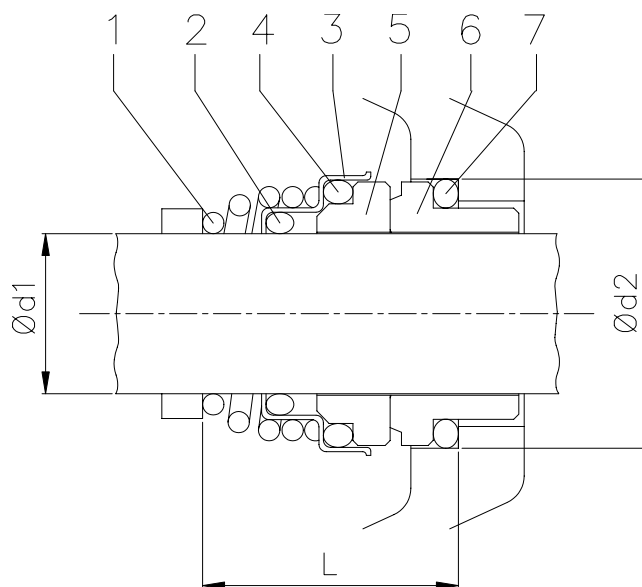


UP TO 13 kW



15 kW AND ABOVE (NO 65-160/15)

MECHANICAL SEAL



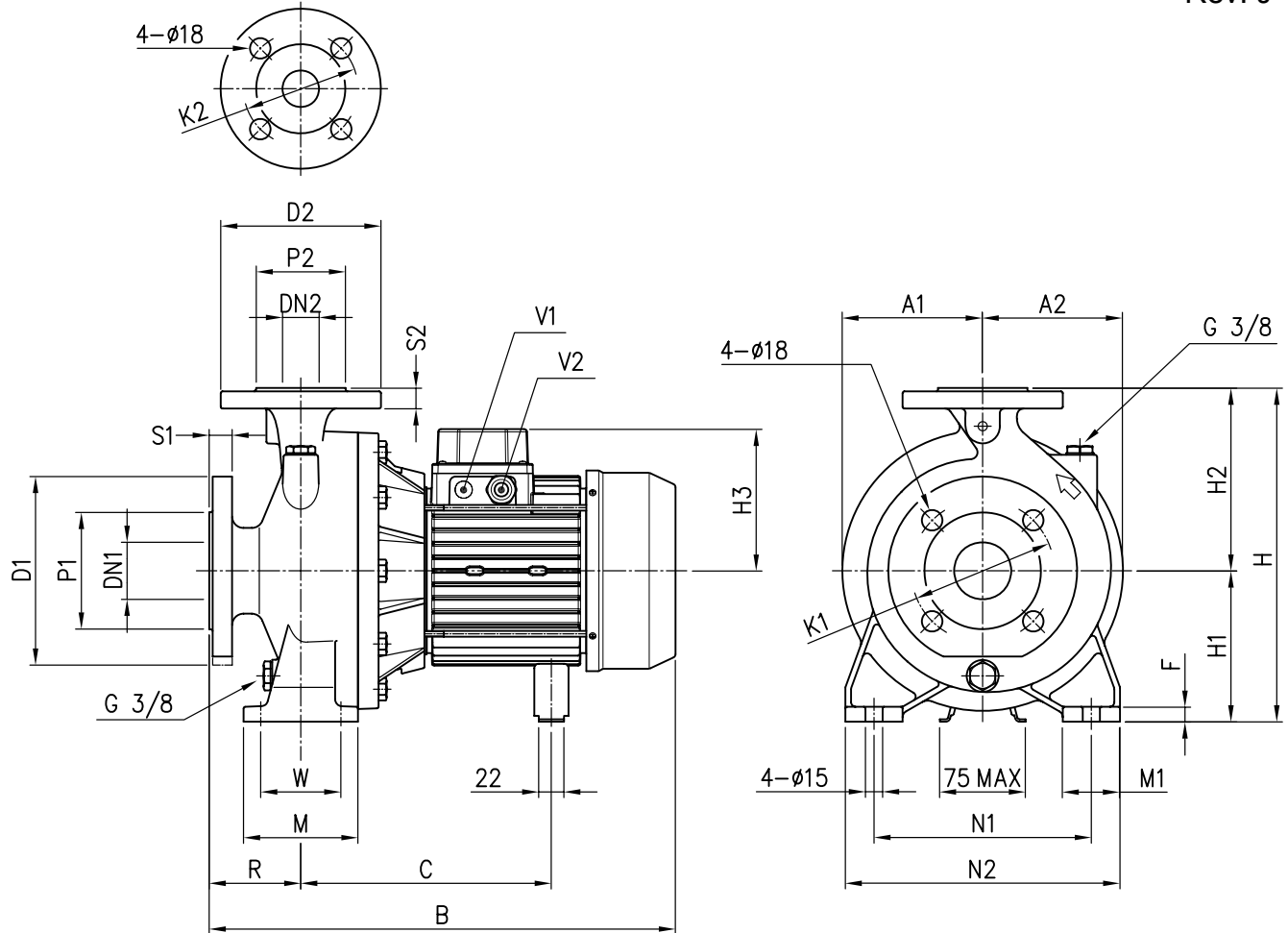
Pump type	Dimensions mm			Pump type	Dimensions mm		
	Ø d1	Ø d2	L		Ø d1	Ø d2	L
MD 32-125/1.1 (M)	22	37	37.5	MD 40-250/15	30	45	42.5
MD 32-125/1.5 (M)				MD 50-125/2.2 (M)	22	37	37.5
MD 32-160/1.5 (M)				MD 50-125/3.0	22	37	37.5
MD 32-160/2.2 (M)				MD 50-125/4.0			
MD 32-200/3.0				MD 50-160/5.5			
MD 32-200/4.0				MD 50-160/7.5			
MD 32-250/5.5				MD 50-200/9.2	30	45	42.5
MD 32-250/7.5				MD 50-200/11			
MD 32-250/9.2				MD 50-250/15			
MD 32-250/11				MD 50-250/18,5			
MD 40-125/1.5 (M)	MD 50-250/22						
MD 40-125/2.2 (M)	MD 65-125/5.5	22	37	37.5			
MD 40-160/3.0	MD 65-125/7.5						
MD 40-160/4.0	MD 65-160/11						
MD 40-200/5.5	MD 65-160/15						
MD 40-200/7.5	MD 65-200/18.5						
MD 40-250/11	MD 65-200/22	30	45	42.5			
MD 40-250/13							

REF	PART NAME	MATERIAL STANDARD (ROTEN UNITEN 3 X6H62V6)	MATERIAL hot water maximum 110°C (ROTEN UNITEN 3 XYHY2VY)	MATERIAL OPTION (ROTEN UNITEN 3 XYXY33Y)	MATERIAL OPTION (ROTEN UNITEN 5 XYXYKKY)
1	Self driving spring	AISI 316	AISI 316	AISI 316	AISI 316
2	O Ring	NBR	FPM	FPM	FPM
3	Frame	AISI 304	AISI 304/AISI 316*	AISI 316	AISI 316
4	O Ring	NBR	FPM	FPM	FPM
5	Rotary seal ring	ceramic	ceramic	Tung. carbide	SiC
6	Stationary seal ring	carbon graphite	carbon graphite	Tung. carbide	SiC
7	O Ring	NBR	FPM	FPM	FPM

*Only for Ø 30

DIMENSIONS

50 Hz
Rev. J



Model	Dimensions (mm)																												Weight [kgf]	
	∅ DN1	∅ P1	∅ K1	∅ D1	S1	∅ DN2	∅ P2	∅ K2	∅ D2	S2	H	H1	H2	H3 [1] [2]	R	W	M	M1	N1	N2	A1	A2	B	C	F	V1 [1]	V2 [1] [2]			
MD 32-125/1.1 (M)	50	102	125	165	20	32	78	100	140	18	252	112	140	124	141	80	70	100	50	140	190	104	104	408	219-230	13	-	PG 13.5	M20x1.5	27.6
MD 32-125/1.5 (M)	50	102	125	165	20	32	78	100	140	18	252	112	140	124	141	80	70	100	50	140	190	104	104	408	219-230	13	-	PG 13.5	M20x1.5	28.3
MD 32-160/1.5 (M)	50	102	125	165	20	32	78	100	140	18	292	132	160	124	141	80	70	100	50	190	240	123	123	408	219-230	13	-	PG 13.5	M20x1.5	31.5
MD 32-160/2.2 (M)	50	102	125	165	20	32	78	100	140	18	292	132	160	124	141	80	70	100	50	190	240	123	123	408	219-230	13	-	PG 13.5	M20x1.5	35.4
MD 32-200/3.0	50	102	125	165	20	32	78	100	140	18	340	160	180	124	-	80	70	100	50	190	240	144	144	433	244-255	13	-	PG 13.5	-	44.1
MD 32-200/4.0	50	102	125	165	20	32	78	100	140	18	340	160	180	141	-	80	70	100	50	190	240	144	144	454	253	13	-	PG 16	-	50.5
MD 32-250/5.5	50	102	125	165	20	32	78	100	140	18	405	180	225	150	-	100	95	125	65	250	320	176	176	495	275	15	PG 13.5	PG 16	-	70.5
MD 32-250/7.5	50	102	125	165	20	32	78	100	140	18	405	180	225	150	-	100	95	125	65	250	320	176	176	537	275	15	PG 13.5	PG 16	-	74.6
MD 32-250/9.2	50	102	125	165	20	32	78	100	140	18	405	180	225	178	-	100	95	125	65	250	320	176	176	589	354	15	PG 13.5	PG 21	-	84.3
MD 32-250/11	50	102	125	165	20	32	78	100	140	18	405	180	225	178	-	100	95	125	65	250	320	176	176	589	354	15	PG 13.5	PG 21	-	87.3
MD 40-125/1.5 (M)	65	122	145	185	20	40	88	110	150	18	252	112	140	124	141	80	70	100	50	160	210	104	111	408	219-230	13	-	PG 13.5	M20x1.5	28.9
MD 40-125/2.2 (M)	65	122	145	185	20	40	88	110	150	18	252	112	140	124	141	80	70	100	50	160	210	104	111	408	219-230	13	-	PG 13.5	M20x1.5	31.9
MD 40-160/3.0	65	122	145	185	20	40	88	110	150	18	292	132	160	124	-	80	70	100	50	190	240	123	123	433	244-255	13	-	PG 13.5	-	39
MD 40-160/4.0	65	122	145	185	20	40	88	110	150	18	292	132	160	141	-	80	70	100	50	190	240	123	123	454	253	13	-	PG 16	-	45.7
MD 40-200/5.5	65	122	145	185	20	40	88	110	150	18	340	160	180	150	-	100	70	100	50	212	265	144	144	495	275	13	PG 13.5	PG 16	-	60.1
MD 40-200/7.5	65	122	145	185	20	40	88	110	150	18	340	160	180	150	-	100	70	100	50	212	265	144	144	537	275	13	PG 13.5	PG 16	-	68.5
MD 40-250/11	65	122	145	185	20	40	88	110	150	18	405	180	225	178	-	100	95	125	65	250	320	176	176	589	354	15	PG 13.5	PG 21	-	90.7
MD 40-250/13	65	122	145	185	20	40	88	110	150	18	405	180	225	178	-	100	95	125	65	250	320	176	176	589	354	15	PG 13.5	PG 21	-	93
MD 50-125/2.2 (M)	65	122	145	185	20	50	102	125	165	20	292	132	160	124	141	100	70	100	50	190	240	104	124	428	219-230	13	-	PG 13.5	M20x1.5	34
MD 50-125/3.0	65	122	145	185	20	50	102	125	165	20	292	132	160	124	-	100	70	100	50	190	240	104	124	453	244-255	13	-	PG 13.5	-	36
MD 50-125/4.0	65	122	145	185	20	50	102	125	165	20	292	132	160	141	-	100	70	100	50	190	240	104	124	474	253	13	-	PG 16	-	42.3
MD 50-160/5.5	65	122	145	185	20	50	102	125	165	20	340	160	180	150	-	100	70	100	50	212	265	123	136	495	275	13	PG 13.5	PG 16	-	57.2
MD 50-160/7.5	65	122	145	185	20	50	102	125	165	20	340	160	180	150	-	100	70	100	50	212	265	123	136	537	275	13	PG 13.5	PG 16	-	68.7
MD 50-200/9.2	65	122	145	185	20	50	102	125	165	20	360	160	200	178	-	100	70	100	50	212	265	144	154	589	354	13	PG 13.5	PG 21	-	74
MD 50-200/11	65	122	145	185	20	50	102	125	165	20	360	160	200	178	-	100	70	100	50	212	265	144	154	589	354	13	PG 13.5	PG 21	-	80.9
MD 65-125/5.5	80	138	160	200	22	65	122	145	185	20	340	160	180	150	-	100	95	125	65	212	280	123	139	495	275	13	PG 13.5	PG 16	-	58.3
MD 65-125/7.5	80	138	160	200	22	65	122	145	185	20	340	160	180	150	-	100	95	125	65	212	280	123	139	537	275	13	PG 13.5	PG 16	-	67
MD 65-160/11	80	138	160	200	22	65	122	145	185	20	360	160	200	178	-	100	95	125	65	212	280	144	154	589	354	13	PG 13.5	PG 21	-	86.4
MD 65-160/15	80	138	160	200	22	65	122	145	185	20	360	160	200	178	-	100	95	125	65	212	280	144	154	589	354	13	PG 13.5	PG 21	-	91.9

[1] Only for three phase [2] Only for single phase

MOTOR DATA

50 Hz
Rev. J

Pump type	Power		Capacitor		Input [kW]		Full load current [A]				Locked rotor current			
	kW	HP	Single phase		Single phase	Three phase	Three phase				Single phase		Three phase	
			μF	Vc			230 V	230 V	400 V	690 V	230 V	230 V	400 V	690 V
MD 32-125/1.1 (M)	1.1	1.5	31.5	450	1.60	1.55	7.1	5.2	3	-	24	35	20	-
MD 32-125/1.5 (M)	1.5	2	40	450	2.05	2.2	9.3	5.9	3.4	-	44	35	20	-
MD 32-160/1.5 (M)	1.5	2	40	450	2.28	2.2	10.3	5.9	3.4	-	44	35	20	-
MD 32-160/2.2 (M)	2.2	3	50	450	2.91	2.9	13.3	8.7	5	-	70	66	38	-
MD 32-200/3.0	3	4	-	-	-	4	-	12	6.9	-	-	97	56	-
MD 32-200/4.0	4	5.5	-	-	-	5.2	-	16	9.2	-	-	123	71	-
MD 32-250/5.5	5.5	7.5	-	-	-	6.5	-	-	10.4	6	-	-	90	155
MD 32-250/7.5	7.5	10	-	-	-	8.5	-	-	15	8.7	-	-	140	240
MD 32-250/9.2	9.2	12.5	-	-	-	11	-	-	18.3	10.6	-	-	128	74
MD 32-250/11	11	15	-	-	-	12	-	-	20.7	12	-	-	169	95.6
MD 40-125/1.5 (M)	1.5	2	40	450	2.08	2.3	9.5	6	3.5	-	44	35	20	-
MD 40-125/2.2 (M)	2.2	3	50	450	2.77	2.9	12.9	8.7	5	-	70	66	38	-
MD 40-160/3.0	3	4	-	-	-	3.8	-	11.4	6.6	-	-	97	56	-
MD 40-160/4.0	4	5.5	-	-	-	5.3	-	17	9.8	-	-	123	71	-
MD 40-200/5.5	5.5	7.5	-	-	-	6.5	-	-	10.4	6	-	-	90	155
MD 40-200/7.5	7.5	10	-	-	-	8.5	-	-	15	8.7	-	-	140	240
MD 40-250/11	11	15	-	-	-	12.3	-	-	20.6	11.9	-	-	169	95.6
MD 40-250/13	13	17.5	-	-	-	15.2	-	-	25.3	14.6	-	-	175	101
MD 40-250/15	15	20	-	-	-	17.2	-	-	29.1	16.8	-	-	180	104
MD 50-125/2.2 (M)	2.2	3	50	450	2.80	2.9	12.9	8.7	5	-	70	66	38	-
MD 50-125/3.0	3	4	-	-	-	3.6	-	10.7	6.2	-	-	97	56	-
MD 50-125/4.0	4	5.5	-	-	-	4.9	-	15.4	8.9	-	-	123	71	-
MD 50-160/5.5	5.5	7.5	-	-	-	6.5	-	-	10.4	6	-	-	90	155
MD 50-160/7.5	7.5	10	-	-	-	8.5	-	-	15	8.7	-	-	140	240
MD 50-200/9.2	9.2	12.5	-	-	-	11.2	-	-	19	11	-	-	128	74
MD 50-200/11	11	15	-	-	-	13.5	-	-	22	12.7	-	-	169	95.6
MD 50-250/15	15	20	-	-	-	17.5	-	-	29.7	17.2	-	-	180	104
MD 50-250/18,5	18.5	25	-	-	-	21	-	-	37.7	21.8	-	-	272	157
MD 50-250/22	22	30	-	-	-	24	-	-	41	23.7	-	-	320	185
MD 65-125/5.5	5.5	7.5	-	-	-	6.5	-	-	10.4	6	-	-	90	155
MD 65-125/7.5	7.5	10	-	-	-	8.5	-	-	15	8.7	-	-	140	240
MD 65-160/11	11	15	-	-	-	13	-	-	20.8	12	-	-	169	95.6
MD 65-160/15	15	20	-	-	-	16	-	-	27	15.6	-	-	180	104
MD 65-200/18.5	18.5	25	-	-	-	21	-	-	39	22.5	-	-	272	157
MD 65-200/22	22	30	-	-	-	24	-	-	43	24.8	-	-	320	185