FPS

50HZ EV SERIES

VERTICAL MULTISTAGE PUMPS

franklinwater.eu

Franklin Electric

INDEX

NOTE: Franklin Electric s.r.l. reserves the right to amend specification without prior notice

VR Series 1 - 3 - 6 - 10 - 15 - 20 - 30 - 45 - 65 - 95
Vertical Multistage Centrifugal Pumps

APPLICATIONS

- Boiler feed
- Circulation of hot and cold water for heating, cooling and conditioning systems
- Handling of water, free of suspended solids, in the civil, industrial and agricultural sector
- Irrigation systems
- Pressure boosting and water supply systems
- Wash down unit
- Water treatment plants

FEATURES

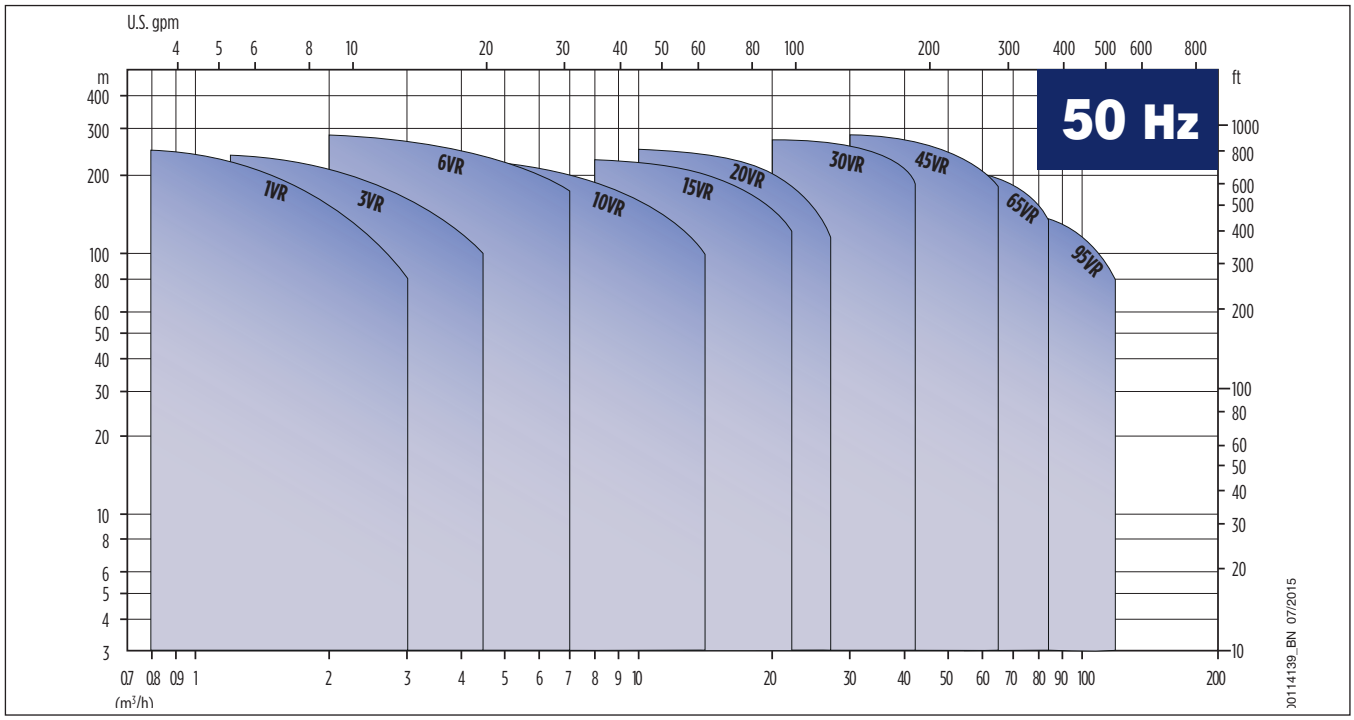
- Full stainless steel in contact with water (inox version), compact and solid structure
- Diffuser bushing made of graphite for durability against dry running (VR 30-45-65-95)
- Easy disassembly without any special tool
- Easy installation in-line ports
- Fabricated stainless steel impeller and diffuser for corrosion resistance and superior efficiency
- Oversize ball bearing (bearing bracket) ensures motor-bearing long life and eliminates axial and other adjustments of moving parts
- WRAS certified PPS (VR 1-3-6-10) / PTFE (VR 15-20-30-45-65-95) replacement floating neck ring for cost effective maintenance and long-lasting performance
- Removal of the mechanical seal without dismounting the pump; for models higher than 4 KW no need to dismantle the motor
- Replaceable stainless steel wear ring in the neck of the impeller (VR 30-45-65-95)
- Shaft bearing and journal sleeve made of tungsten carbide
- Standard mechanical seal (EN 12756 ex DIN 24960) WRAS certified; balanced version for VR 30-45-65-95
- Standard IE3 motor without oversize bearing, size B14 up to 4kW / size B5 from 5.5kW and above
- Tungsten carbide intermediate bearing to control and eliminate vibration and stabilize the rotor with a large number of stages

SPECIFICATIONS

- Capacities up to 120 m^3/h at 50Hz
- Head up to 320 m at 50Hz
- Direction of rotation: clockwise looking at the pump from the top down
- Discharge and Suction port: Oval, Round flanges, Victaulic and Clamp connections
- Hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B
- Liquid temperature range: from -15°C to +120°C
- Materials: suitable for handling potable water (materials approved WRAS, ACS, KTW)
- Maximum working pressure: Oval flange 16 Bar; Round Flange, Victaulic and Clamp connections 25 Bar
- Motor powers from 0,37 to 45 kW at 50Hz

AVAILABLE ON REQUEST

- AISI 304 version for models 30-45-65-95
- Special materials for the mechanical seal, gaskets and elastomers
- Balanced mechanical seal EN 12756 for VR 1-3-6-10-15-20
- Oval counter flanges (VR 1-3-6-10-15-20)
- Round counter flanges



PUMP IDENTIFICATION CODE

30	VR	03	-	2A		G	F	015					E1				

- If empty pump without motor "IE.." motor efficiency class
- If empty std. version, "T" High temperature
- If empty std. version, "P" Passivated
- If empty std. version, "H" High pressure, "S" low NPSH
- Type of mechanical seal and O-ring
- Mechanical seal : if empty std., "B" for balanced
- Type of motor : if empty "pump without motor", "T" three-phase, "M" single-phase
- No. poles in motor: if empty "2 poles", "4" 4 poles
- Frequency : if empty 50Hz; "62 60Hz
- Motor power (kW x 10)
- Material : "G" fonte/inox; "H" AISI304 (EN 1.4301); "N" AISI316 (EN 1.4401); "R" AISI904L (EN 1.4539)
- Flanges : F (round); T (oval); V (Victaulic); C (clamp)
- Number of trimmed impellers if empty "none"
- Reduce Impeller Trim Type: "00" No Trim; "1A/2A" Trim (30,45,65 and 95 only)
- Number of stage/impellers
- Pump model
- Nominal flow in m^3/h

Version	Pump body/Hydraulics	1VR	3VR	6VR	10VR	15VR	20VR	30VR	45VR	65VR	95VR
I	AISI 304 / AISI 304	●	●	●	●	●	●	○	○	○	○
G	CAST IRON / AISI 304							●	●	●	●
N	AISI 316/ AISI 316	●	●	●	●	●	●	●	●	●	●

●= Std version ○= Available on request

Models	Maximum working pressure									
	1VR	3VR	6VR	10VR	15VR	20VR	30VR	45VR	65VR	95VR
	bar	bar	bar	bar	bar	bar	bar	bar	bar	bar
T version	16	16	16	16	16	16				
F,V and C version	26	26	26	26	26	26				
F version (PN16)							16	16	16	16
F version (PN25/40)							32	32	25	25
Maximum inlet pressure (H1)	refer to the tables of hydraulic performances									

The Inlet pressure of the pump plus the pressure inside the pump cannot exceed the maximun working pressure.

1VR - 3VR
TABLE OF HYDRAULIC PERFORMANCES AT 50Hz

PUMP TYPE	RATED POWER		H1	Stages	Q = DELIVERY																		
					l/min 0	8,3	16,7	25,0	33,3	42	50,0	58,3	67	75,0	83,3	90	100,0	116,7	133	150,0	166,7	183	233,3
					m³/h 0	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5	5,4	6	7	8	9	10	11	14
	kW	HP	Bar		H = TOTAL HEAD METERS COLUMN OF WATER																		
1VR02	0,37	0,5	20	2	14,5	13,5	12,5	11,5	9,5	7,5													
1VR03	0,37	0,5	20	3	21,5	20	19	17	14	11													
1VR04	0,37	0,5	20	4	28	26,5	24,5	22	18,5	14													
1VR05	0,37	0,5	20	5	35	33	30,5	27	22,5	17													
1VR06	0,37	0,5	20	6	41,5	39	36	32	26,5	19,5													
1VR07	0,37	0,5	20	7	48	45	41,5	36,5	30	22													
1VR08	0,55	0,75	20	8	55	52	48	42,5	35	26													
1VR09	0,55	0,75	20	9	61,5	58	53	47	39	28,5													
1VR10	0,55	0,75	20	10	68	64	58,5	51,5	43	31,5													
1VR11	0,55	0,75	20	11	74,5	69,5	64	56,5	46,5	34													
1VR12	0,75	1	20	12	83	78,5	72	64	53	39,5													
1VR13	0,75	1	20	13	89,5	84,5	77,5	68,5	57	42													
1VR14	0,75	1	20	14	96	90,5	83	73	60,5	44,5													
1VR15	0,75	1	20	15	102,5	96	88	78	64	47													
1VR17	1,1	1,5	20	17	118	111,5	103	91,5	76	56,5													
1VR19	1,1	1,5	20	19	131	123,5	114	101	84	62													
1VR22	1,1	1,5	20	22	150,5	141,5	130	115	95	69,5													
1VR23	1,5	2	20	23	160,5	152	140	124,5	104	77,5													
1VR25	1,5	2	20	25	174	164	151,5	134,5	112	83,5													
1VR27	1,5	2	20	27	187	176,5	162,5	144	120	88,5													
1VR30	1,5	2	20	30	206,5	194,5	179	158	131	96,5													
1VR32	2,2	3	20	32	224,5	213	197	175,5	147,5	110,5													
1VR34	2,2	3	20	34	238	225,5	208,5	185,5	155,5	116,5													
1VR37	2,2	3	20	37	258	244	225,5	200,5	167,5	125													
3VR02	0,37	0,5	20	2	15	15	14,5	13,5	12,5	11,5	10	8	6	6									
3VR03	0,37	0,5	20	3	22,5	22	21	20	18,5	17	14,5	12	8,5	8,5									
3VR04	0,37	0,5	20	4	30	28,5	27,5	26	24	21,5	18,5	15	10,5	10,5									
3VR05	0,55	0,75	20	5	37,5	36	34,5	32,5	30	27	23,5	18,5	13	13									
3VR06	0,55	0,75	20	6	44,5	42,5	40,5	38,5	35,5	32	27	21,5	15	15									
3VR07	0,75	1	20	7	52,5	50,5	48,5	46	43	38,5	33	26,5	19	19									
3VR08	0,75	1	20	8	59,5	57,5	55	52	48	43,5	37	29,5	21	21									
3VR09	0,75	1	20	9	67	64	61,5	58	53,5	48	41	32,5	22,5	22,5									
3VR10	1,1	1,5	20	10	75	72,5	70	66,5	61,5	55,5	48	38,5	27,5	27,5									
3VR11	1,1	1,5	20	11	82,5	79,5	76,5	72,5	67	60,5	52	42	29,5	29,5									
3VR12	1,1	1,5	20	12	89,5	86	83	78,5	72,5	65	56	45	31,5	31,5									
3VR13	1,1	1,5	20	13	96,5	93	89	84,5	78	70	60	47,5	33,5	33,5									
3VR14	1,5	2	20	14	105,5	102	98,5	93,5	86,5	78	67,5	54,5	39,5	39,5									
3VR15	1,5	2	20	15	112,5	109	105	99,5	92,5	83	71,5	58	41,5	41,5									
3VR16	1,5	2	20	16	120	115,5	111,5	105,5	98	88	76	61	43,5	43,5									
3VR17	1,5	2	20	17	127	122,5	118	111,5	103,5	93	80	64	45,5	45,5									
3VR18	2,2	3	20	18	136,5	132,5	128	121,5	113,5	102,5	89	72,5	53	53									
3VR19	2,2	3	20	19	144	139,5	134,5	128	119	107,5	93,5	76	55,5	55,5									
3VR21	2,2	3	20	21	158,5	153,5	148	140,5	130,5	118	102	83	60	60									
3VR23	2,2	3	20	23	173	167,5	161,5	153	142	128	110,5	89,5	64,5	64,5									
3VR25	2,2	3	20	25	187,5	181	174,5	165,5	153,5	138	119	96	68,5	68,5									
3VR27	3	4	20	27	205,5	199,5	193	184	171,5	155	135	110,5	81	81									
3VR29	3	4	20	29	220	213,5	206,5	196,5	183,5	166	144	117,5	86	86									
3VR31	3	4	20	31	235	228	220,5	209,5	195	176,5	153	124,5	91	91									
3VR33	3	4	20	33	249,5	242	234	222	206,5	187	162	131,5	95,5	95,5									

MATERIALS/FLUIDS COMPATIBILITY

Pos.	PARTS DESCRIPTIONS	Type	MATERIAL			
			I version		N version	
			ASTM/AISI	DIN / EN	ASTM/AISI	DIN / EN
10.00	**Pump casing**	Stainless Steel	CF 8 / AISI 304	1.4308	CF 8M / AISI 316	1.4408
10.02	**Filling and draining plug**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
10.06	**Upper flange**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
20.00	**Outer Case**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
20.01	**Mechanical seal housing**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
20.05	**Filling plugs**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
30.00	**Pump shaft**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
30.01	**Kit Mechanical seal**	Silicon Carbide SiC, Graphite, EPDM, Stainless Steel	-	-	-	-
30.02	**Mechanical seal fastening kit**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
30.03	**Kit O-rings**	EPDM	-	-	-	-
40.00	**Stage housing and diffuser**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.01	**Stage Centering outlet**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.02	**Floating neck ring**	PPS	-	-	-	-
40.03	**Initial stage housing**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.04	**Last Stage with diffuser**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.05	**Stage Centering inlet**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.06	**Stage housing and diffuser with bearing**	Stainless Steel / Tungsten Carbide	AISI 304	1.4301	AISI 316	1.4401
50.00	**Impeller**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
50.01	**Impeller spacer**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
50.02	**Intermediary sleeve**	Tungsten Carbide	-	-	-	-
50.03	**Intermediary sleeve spacer**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401

6VR - 10VR
TABLE OF HYDRAULIC PERFORMANCES AT 50Hz

PUMP TYPE	RATED POWER		H1	Stages	Q = DELIVERY																	
					l/min 0	8,3	16,7	25,0	33,3	42	50,0	58,3	67	75,0	83,3	90	100,0	116,7	133	150,0	166,7	183	233,3
					m^3/h 0	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5	5,4	6	7	8	9	10	11	14
	kW	HP	Bar		H = TOTAL HEAD METERS COLUMN OF WATER																	
6VR02	0,37	0,5	20	2	15	15	14,5	14,5	14	13,5	13	12,5	12	11,5	11	10	8	8					
6VR03	0,37	0,5	20	3	22,5	22	21,5	21	20,5	19,5	19	18	17	16	15,5	14	11	11					
6VR04	0,55	0,75	20	4	29,5	29	28,5	28	27	26	25	24	22,5	21,5	20,5	18,5	14,5	14,5					
6VR05	0,75	1	20	5	37,5	37	36,5	35,5	34,5	33,5	32	30,5	29	27,5	26	24	19	19					
6VR06	0,75	1	20	6	44,5	43,5	43	42	41	39,5	37,5	36	34	32,5	30,5	28	22	22					
6VR07	1,1	1,5	20	7	52,5	51,5	51,5	50,5	49	47	45	43	41	39	37	34	27	27					
6VR08	1,1	1,5	20	8	59,5	58,5	58	57	55	53,5	51	48,5	46,5	44	42	38,5	30,5	30,5					
6VR09	1,1	1,5	20	9	67	65,5	65	63,5	61,5	59	56,5	54	51,5	48,5	46	42,5	33,5	33,5					
6VR10	1,5	2	20	10	75	74	73,5	72	70	67,5	65	62	59	56	53,5	49	39	39					
6VR11	1,5	2	20	11	82,5	81	80,5	79	76,5	73,5	71	67,5	64,5	61	58	53,5	42,5	42,5					
6VR12	1,5	2	20	12	89,5	88	87	85,5	83	80	76,5	73	69,5	65,5	62,5	57,5	45,5	45,5					
6VR13	1,5	2	20	13	97	95	94	92	89	86	82	78,5	74,5	70,5	67	61,5	48,5	48,5					
6VR14	2,2	3	20	14	105,5	104,5	103,5	101,5	99	95,5	92	88	83,5	79,5	76	70	56	56					
6VR15	2,2	3	20	15	113	111,5	110,5	108,5	105,5	102	98	93,5	89	84,5	80,5	74	59,5	59,5					
6VR16	2,2	3	20	16	120,5	118,5	117,5	115,5	112	108	104	99	94,5	89,5	85,5	78,5	62,5	62,5					
6VR17	2,2	3	20	17	127,5	125,5	124,5	122	118,5	114,5	109,5	105	99,5	94,5	90	83	66	66					
6VR18	2,2	3	20	18	135	132,5	131,5	128,5	125	120,5	115,5	110,5	105	99,5	94,5	87	69	69					
6VR19	2,2	3	20	19	142	139,5	138	135,5	131,5	126,5	121,5	115,5	110	104	99	91	72	72					
6VR20	3	4	20	20	152	150	149	146,5	142,5	138	133	127	121	115	110	101,5	82	82					
6VR21	3	4	20	21	159	157,5	156	153,5	149,5	144,5	139	133	127	120,5	115	106	85,5	85,5					
6VR23	3	4	20	23	174	172	170,5	167,5	163	157,5	151,5	144,5	138	131	125	115	92,5	92,5					
6VR25	3	4	20	25	189	188	184,5	180,5	175,5	170	164	157,5	150,5	142,5	135,5	123,5	98,5	98,5					
6VR28	4	5,5	20	28	214	213,5	210	205,5	200,5	194,5	188	181	173,5	164,5	156,5	143	115,5	115,5					
6VR30	4	5,5	20	30	229	228	224,5	220	214	207,5	200,5	193	184,5	175,5	167	152,5	122,5	122,5					
6VR33	4	5,5	20	33	251,5	250,5	246,5	241	234,5	227	219,5	211	201,5	191	182	166	133,5	133,5					
6VR36	5,5	7,5	20	36	275	274	270	264	257,5	249,5	241,5	232,5	222,5	211,5	201,5	184	148,5	148,5					
10VR02	0,75	1	20	2	20						20	19,5	19,5	19	19	18,5	18,5	17,5	17	16	15	13,5	9
10VR03	1,1	1,5	20	3	30						30	29,5	29,5	29	28,5	28	27,5	26,5	25,5	24	22,5	20,5	13,5
10VR04	1,5	2	20	4	40,5						40	39,5	39,5	39	38,5	38	37	35,5	34	32,5	30,5	28	18
10VR05	1,5	2	20	5	50,5						49,5	49	48,5	48	47	46,5	45,5	43,5	41,5	39,5	37	33,5	21,5
10VR06	2,2	3	20	6	61						60,5	60	59	58,5	57,5	57	56	54	51,5	49	46	42	27,5
10VR07	2,2	3	20	7	70,5						70	69	68,5	67,5	66,5	66	64,5	62	59,5	56	52,5	48	31
10VR08	3	4	20	8	81,5						81	80,5	80	79	78	77	75,5	73	70	66,5	62,5	57,5	38
10VR09	3	4	20	9	91,5						91	90,5	89,5	88,5	87,5	86	84,5	81,5	78	74	69,5	64	42
10VR10	4	5,5	20	10	102,5						102,5	102	101	100	99	97,5	96	93	89	84,5	79,5	73,5	49
10VR11	4	5,5	20	11	113						112,5	111,5	111	109,5	108	107	105	101,5	97,5	92,5	87	80,5	53,5
10VR12	4	5,5	20	12	123						122,5	121,5	120,5	119	117,5	116,5	114	110	105,5	100,5	94	87	57,5
10VR13	4	5,5	20	13	133						132	131	130	128,5	127	125,5	123	118,5	113,5	108	101	93,5	61,5
10VR15	5,5	7,5	20	15	153,5						153	152	150,5	149	147	145,5	142,5	138	132	125,5	118	109	72
10VR17	5,5	7,5	20	17	173,5						172,5	171,5	169,5	168	165,5	163,5	160,5	155	148,5	141	132,5	122	80,5
10VR19	7,5	10	20	19	195						194,5	193,5	191,5	189,5	187,5	185,5	182	176	169	160,5	151	139,5	93
10VR21	7,5	10	20	21	215,5						214,5	213	211	209	206	204	200	193,5	185,5	176,5	166	153	101,5
10VR23	7,5	10	20	23	235,5						234	232,5	230,5	228	225	222,5	218,5	211	202	192	180,5	166,5	110
10VR24	11	15	20	24	248						248,5	247	245,5	243	240,5	238	234	227	218	208	196	182	122,5

MATERIALS/FLUIDS COMPATIBILITY

Pos.	PARTS DESCRIPTIONS	Type	MATERIAL			
			I version		N version	
			ASTM/AISI	DIN / EN	ASTM/AISI	DIN / EN
10.00	**Pump casing**	Stainless Steel	CF 8 / AISI 304	1.4308	CF 8M / AISI 316	1.4408
10.02	**Filling and draining plug**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
10.06	**Upper flange**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
20.00	**Outer Case**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
20.01	**Mechanical seal housing**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
20.05	**Filling plugs**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
30.00	**Pump shaft**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
30.01	**Kit Mechanical seal**	Silicon Carbide SiC, Graphite, EPDM, Stainless Steel	-	-	-	-
30.02	**Mechanical seal fastening kit**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
30.03	**Kit O-rings**	EPDM	-	-	-	-
40.00	**Stage housing and diffuser**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.01	**Stage Centering outlet**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.02	**Floating neck ring**	PPS	-	-	-	-
40.03	**Initial stage housing**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.04	**Last Stage with diffuser**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.05	**Stage Centering inlet**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.06	**Stage housing and diffuser with bearing**	Stainless Steel / Tungsten Carbide	AISI 304	1.4301	AISI 316	1.4401
50.00	**Impeller**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
50.01	**Impeller spacer**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
50.02	**Intermediary sleeve**	Tungsten Carbide	-	-	-	-
50.03	**Intermediary sleeve spacer**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401

15VR - 20VR
TABLE OF HYDRAULIC PERFORMANCES AT 50Hz

PUMP TYPE	RATED POWER		H1	Stages	Q = DELIVERY																						
					l/min 0	25	33	42	50	58	67	75	83	90	100	117	133	167	200	233	266	300	333	367	400	433,5	466,5
					m³/h 0	1.5	2	2.5	3	3.5	4	4.5	5	5.4	6	7	8	10	12	14	16	18	20	22	24	26	28
	kW	HP	Bar		H = TOTAL HEAD METERS COLUMN OF WATER																						
15VR01	1,1	1,5	20	1	14,5												13	12,5	12	11,5	10,5	9,5	8,5	7	5,5		
15VR02	2,2	3	20	2	29												26	25	24	23	21,5	19,5	17	14	11		
15VR03	3	4	20	3	43,5												39	38	36,5	34,5	32,5	29,5	26	21,5	17		
15VR04	4	5,5	20	4	58												52,5	51	49	46,5	44	40,5	35,5	29,5	23,5		
15VR05	4	5,5	20	5	72,5												65,5	63,5	60,5	57,5	54,5	49,5	43	36	28,5		
15VR06	5,5	7,5	20	6	87,5												79,5	77	74	71	67	61,5	54	46	36,5		
15VR07	5,5	7,5	20	7	102												92	89	86	82	77,5	70,5	62	52,5	41,5		
15VR08	7,5	10	20	8	117												106,5	103	99,5	95	90	82,5	72,5	62	49		
15VR09	7,5	10	20	9	131,5												119	115,5	111	106	100,5	92	81	69	54,5		
15VR10	11	15	20	10	147,5												134,5	131	126,5	121	115	106	94	80,5	65		
15VR11	11	15	20	11	162												148	143,5	139	133	126,5	116,5	103	88,5	71		
15VR12	11	15	20	12	176,5												161	156,5	151	144,5	137,5	126,5	112	96	77		
15VR13	11	15	20	13	191												174,5	169	163,5	156,5	148,5	136,5	120,5	103	82,5		
15VR14	11	15	20	14	205,5												187,5	182	175,5	168	159	146	129	110,5	88		
15VR15	15	20	20	15	221												201	195,5	188,5	180,5	171,5	157,5	139,5	119,5	95,5		
15VR16	15	20	20	16	235,5												214	208	200,5	192	182,5	167,5	148	126,5	101,5		
15VR17	15	20	20	17	249,5												227,5	220,5	213	203,5	193	177,5	156,5	134	107		
20VR01	1,1	1,5	20	1	15,5													13,5	13	13	12,5	12	11	10	8,5	7,5	6
20VR02	2,2	3	20	2	31													27,5	27	26	25	24	22,5	20,5	18	15	12
20VR03	4	5,5	20	3	46,5													41,5	40,5	39,5	38	36,5	34,5	31	27,5	23	18,5
20VR04	5,5	7,5	20	4	62,5													56	55	53,5	51,5	49,5	46,5	42,5	37	31,5	25,5
20VR05	5,5	7,5	20	5	78													70	68,5	66,5	64,5	62	58	53	47	40	32,5
20VR06	7,5	10	20	6	94,5													86,5	84,5	82,5	80	77,5	73,5	67,5	60	52	42,5
20VR07	7,5	10	20	7	110													100,5	98	95,5	93	90	85	77,5	69	59,5	48,5
20VR08	11	15	20	8	126,5													117	114	112	109	106	100,5	92,5	82,5	72	59,5
20VR09	11	15	20	9	142,5													131	128	125,5	122	118,5	112,5	103,5	92,5	80,5	66,5
20VR10	11	15	20	10	158													145,5	142	139	135	131,5	124,5	114	102	88,5	73
20VR11	15	20	20	11	174													160	156,5	153	149	144,5	137	126	113	98	81
20VR12	15	20	20	12	189,5													174,5	170,5	167	162	157,5	149	137	122,5	106,5	87,5
20VR13	15	20	20	13	205													188,5	184	180	175	170	161	147,5	132	114,5	94
20VR14	15	20	20	14	220,5													202,5	198	193,5	188	182,5	172,5	158	141	122	100,5
20VR15	18,5	25	20	15	237													217,5	212,5	208	202	196	185,5	170,5	152	132	108,5
20VR16	18,5	25	20	16	252,5													231,5	226	221	215	208,5	197	181	161,5	140	115
20VR17	18,5	25	20	17	268													245,5	240	234,5	227,5	221	209	191,5	171	148	121,5

MATERIALS/FLUIDS COMPATIBILITY

Pos.	PARTS DESCRIPTIONS	Type	MATERIAL			
			I version		N version	
			ASTM/AISI	DIN / EN	ASTM/AISI	DIN / EN
10.00	**Pump casing**	Stainless Steel	CF 8M / AISI 304	1.4308	CF 8M / AISI 316	1.4408
10.02	**Filling and draining plug**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
10.06	**Upper Flange**	Stainless Steel	AISI 304	1.4301	CF 8M / AISI 316	1.4408
20.00	**Outer Case**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
20.01	**Mechanical seal housing**	Stainless Steel	AISI 304	1.4301	CF 8M / AISI 316	1.4408 / 1.4401
20.05	**Filling plugs**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
30.00	**Pump shaft**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
30.01	**Kit Mechanical seal**	Silicon Carbide SiC, Graphite, EPDM, Stainless Steel	-	-	-	-
30.02	**Mechanical seal fastening kit**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
30.03	**Kit O-rings**	EPDM	-	-	-	-
40.00	**Stage housing and diffuser**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.01	**Stage Centering outlet**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.02	**Floating neck ring**	PTFE	-	-	-	-
40.03	**Initial stage housing**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.04	**Last Stage with diffuser**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.06	**Stage housing and diffuser with bearing**	Stainless Steel / Tungsten carbide	AISI 304	1.4301	AISI 316	1.4401
50.00	**Impeller**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
50.01	**Impeller spacer**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
50.02	**Intermediary sleeve**	Tungsten Carbide	-	-	-	-
50.03	**Intermediary sleeve spacer**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401

30VR - 45VR
TABLE OF HYDRAULIC PERFORMANCES AT 50Hz

PUMP TYPE	RATED POWER		H1	Stages	Trim	Q = DELIVERY											
						l/min 0	250	300	367	417	500	583	667	750	900	1000	1083
						m³/h 0	15	18	22	25	30	35	40	45	54	60	65
	kW	HP	Bar			H = TOTAL HEAD METERS COLUMN OF WATER											
30VR01-00	2,2	3	20	1		24		20,5	19,5	19	17,5	16	13,5	11			
30VR02-2A	4	5,5	20	2	2A	36		32,5	30,5	29,5	26,5	22,5	18	12,5			
30VR02-1A	4	5,5	20	2	1A	42		37	35,5	34	31,5	27,5	23	18			
30VR02-00	5,5	7,5	20	2		48,5		42,5	41	39,5	36,5	33,5	29	23,5			
30VR03-2A	5,5	7,5	20	3	2A	60		53	50,5	48	44	38	31,5	23,5			
30VR03-1A	7,5	10	20	3	1A	66,5		58,5	56	54	50	45	38	30			
30VR03-00	7,5	10	20	3		73		63,5	61	59	55	50	43,5	35,5			
30VR04-2A	7,5	10	20	4	2A	84,5		74	70,5	68	62	55	46	35			
30VR04-1A	11	15	20	4	1A	91,5		81	78	75,5	70	63	54,5	43,5			
30VR04-00	11	15	20	4		98		86	83	80,5	75	69	60	49,5			
30VR05-2A	11	15	20	5	2A	109,5		97	93	89,5	83	74	63	49,5			
30VR05-1A	11	15	10	5	1A	115,5		102	98	94,5	88	79,5	68,5	55			
30VR05-00	15	20	11	5		122,5		107	103,5	100	93,5	85,5	75	61,5			
30VR06-2A	15	20	11	6	2A	134		118,5	113,5	109,5	101,5	91	78	61,5			
30VR06-1A	15	20	12	6	1A	140		123	118,5	114,5	106,5	96,5	83,5	67			
30VR06-00	15	20	13	6		146,5		128	123,5	119,5	111,5	102	89	73			
30VR07-2A	15	20	13	7	2A	158		139	133,5	128,5	119	107	91,5	72,5			
30VR07-1A	15	20	14	7	1A	164		144	138,5	133,5	124	112,5	97	78			
30VR07-00	18,5	25	15	7		171		149	144	139,5	130	119	103,5	85			
30VR08-2A	18,5	25	15	8	2A	182,5		160	154	148,5	137,5	124	106	84,5			
30VR08-1A	18,5	25	15	8	1A	188,5		165	159	153,5	142,5	129,5	111,5	90			
30VR08-00	18,5	25	15	8		194,5		169,5	164	158,5	147,5	134,5	117	95,5			
30VR09-2A	22	30	17	9	2A	208,5		184	177	171	159	144	124,5	100,5			
30VR09-1A	22	30	17	9	1A	214,5		189	182,5	176,5	164,5	150	130	106			
30VR09-00	22	30	20	9		221		194	187,5	181,5	169,5	155,5	136	112			
30VR10-2A	22	30	20	10	2A	233		205	197,5	191	177,5	161	139	112			
30VR10-1A	22	30	20	10	1A	239		210	202,5	196	182,5	166,5	144,5	117,5			
30VR10-00	30	40	20	10		246,5		217	210	203,5	190,5	175	153,5	126,5			
30VR11-2A	30	40	20	11	2A	258		228,5	220,5	213	198,5	180,5	156,5	127			
30VR11-1A	30	40	20	11	1A	264,5		233,5	225,5	218	204	186	162	133			
30VR11-00	30	40	20	11		271		238	230,5	223,5	209	192	168	138,5			
30VR12-2A	30	40	20	12	2A	282,5		249,5	241	233	217	197,5	171	139			
30VR12-1A	30	40	20	12	1A	289		254,5	246	238	222,5	203	177	145			
30VR12-00	30	40	20	12		295		259,5	251	243	227,5	208,5	182,5	150,5			
30VR13-2A	30	40	20	13	2A	307		271	261,5	252,5	235,5	214	185,5	151			
30VR13-1A	30	40	20	13	1A	313		276	266,5	258	240,5	220	191,5	156,5			
30VR13-00	30	40	20	13		319,5		280,5	271,5	263	246	225,5	197	162,5			
45VR01-1A	3	4	20	1	1A	19						16,5	15,5	14,5	11,5	9,5	7,5
45VR01-00	4	5,5	20	1		24,5						21,5	21	19,5	17	15,5	13,5
45VR02-2A	5,5	7,5	20	2	2A	38,5						33	31	28,5	23	18,5	14,5
45VR02-00	7,5	10	20	2		48,5						43	41,5	39	34	30,5	26,5
45VR03-2A	11	15	20	3	2A	63						56	53,5	50	42	36	30
45VR03-00	11	15	20	3		73,5						65,5	63	60	52,5	47	41
45VR04-2A	15	20	8	4	2A	87,5						77,5	74	69,5	59,5	51	43
45VR04-00	15	20	11	4		97,5						86,5	84	79,5	69,5	62	54,5
45VR05-2A	18,5	25	11	5	2A	112						99	94,5	89	76,5	66	56
45VR05-00	18,5	25	14	5		122						108	104,5	99	86,5	77	67,5
45VR06-2A	22	30	14	6	2A	137,5						122	117,5	110,5	95,5	83,5	72
45VR06-00	22	30	17	6		147,5						131,5	127	121	106	95	83,5
45VR07-2A	30	40	17	7	2A	162,5						145	139,5	132	115	101	87,5
45VR07-00	30	40	20	7		172,5						154,5	149,5	142,5	125,5	112	99
45VR08-2A	30	40	20	8	2A	187						167	160,5	152	132	116,5	101
45VR08-00	30	40	20	8		197						176,5	170,5	162,5	142,5	127,5	112,5
45VR09-2A	37	50	20	9	2A	211,5						188,5	181,5	172	149,5	132	114,5
45VR09-00	37	50	20	9		221,5						198	191,5	182	160	143	126
45VR10-2A	37	50	20	910	2A	235,5						210	202	191,5	166,5	147	127,5
45VR10-00	37	50	20	10		246						219	212	201,5	177	158	139
45VR11-2A	45	60	20	11	2A	261						233	224,5	213	186	164,5	143,5
45VR11-00	45	60	20	11		271						242,5	234,5	223,5	196,5	175,5	155
45VR12-2A	45	60	20	12	2A	285,5						254,5	245,5	232,5	203	179,5	156,5
45VR12-00	45	60	20	12		295,5						264	255,5	243	213,5	191	168,5
45VR13-2A	45	60	20	13	2A	309,5						276	266	252,5	220,5	195	170

MATERIALS/FLUIDS COMPATIBILITY

Pos.	PARTS DESCRIPTIONS	Type	MATERIAL			
			G version		N version	
			ASTM/AISI	DIN / EN	ASTM/AISI	DIN / EN
10.00	**Pump casing**	Cast Iron / Stainless Steel	A48 Class 35	GJL-250	CF 8M / AISI 316	1.4408
10.02	**Draining plug**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
10.06	**Upper Flange**	Stainless Steel	CF 8 / AISI 304	1.4308	CF 8M / AISI 316	1.4408
20.00	**Outer Case**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
20.01	**Mechanical seal housing**	Stainless Steel	CF 8 / AISI 304	1.4308	CF 8M / AISI 316	1.4408
20.05	**Filling plugs**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
30.00	**Pump shaft**	Stainless Steel	AISI 431	1.4057	AISI 329	1.4460
30.01	**Kit Mechanical seal**	Silicon Carbide SiC, Graphite, EPDM, Stainless Steel	-	-	-	-
30.02	**Mechanical seal fastening kit**	Stainless Steel	AISI 316	1.4401	AISI 316	1.4401
30.03	**Kit O-rings**	EPDM	-	-	-	-
40.00	**Stage housing and diffuser**	Stainless Steel / Graphite	AISI 304	1.4301	AISI 316	1.4401
40.02	**Floating neck ring**	PTFE	-	-	-	-
40.05	**Stage Centering inlet**	Stainless Steel	AISI 316	1.4401	AISI 316	1.4401
40.06	**Stage housing and diffuser with bearing**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.07	**Flange clamping neck ring**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.08	**Spring ring**	Stainless Steel	AISI 316	1.4401	AISI 316	1.4401
50.00	**Impeller**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
51.01	**Split cone**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
51.02	**Intermediary sleeve nut**	Stainless Steel / Tungsten Carbide	AISI 316	1.4401	AISI 316	1.4401
51.03	**Journal sleeve**	Stainless Steel / Tungsten Carbide	AISI 316	1.4401	AISI 316	1.4401
51.04	**Split cone nut**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
51.05	**Intermediate impeller with screw**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401

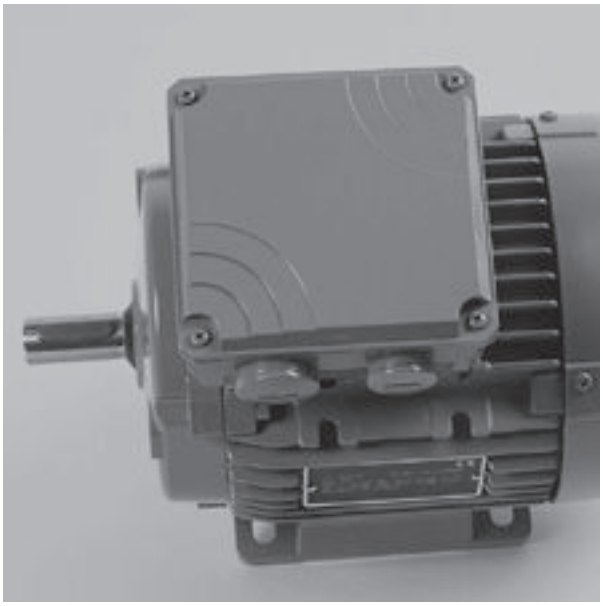
65VR - 95VR
TABLE OF HYDRAULIC PERFORMANCES AT 50Hz

PUMP TYPE	RATED POWER		H1	Stages	Trim	Q = DELIVERY												
						l/min 0	500	600	700	750	900	1000	1200	1300	1417	1600	1800	1967
						m³/h 0	30	36	42	45	54	60	72	78	85	96	108	118
	kW	HP	Bar			H = TOTAL HEAD METERS COLUMN OF WATER												
65VR01-1A	4	5,5	20	1	1A	19,5	19	18,5	18	17,5	16,5	15,5	12,5	11	9			
65VR01-00	5,5	7,5	20	1		28	25	24,5	24	23,5	22,5	22	20	18,5	16,5			
65VR02-2A	7,5	10	20	2	2A	39	37,5	36,5	35,5	35	33	31	25	22	17,5			
65VR02-1A	11	15	20	2	1A	48	44,5	43,5	42,5	42	40	38,5	34	31	26,5			
65VR02-00	11	15	20	2		56,5	51	49,5	48,5	48	46	45	41	38,5	34,5			
65VR03-2A	15	20	20	3	2A	67,5	63,5	62	60,5	59,5	56,5	54	46,5	42	35,5			
65VR03-1A	15	20	20	3	1A	76	69,5	68	66,5	65,5	62,5	60,5	53,5	49,5	43			
65VR03-00	18,5	25	20	3		84,5	76	74	72,5	71,5	69	67	61,5	57,5	51,5			
65VR04-2A	18,5	25	20	4	2A	95,5	88,5	86	84	83	79	75,5	66	60,5	52			
65VR04-1A	22	30	20	4	1A	105	96	93,5	91,5	90,5	87	84	75,5	70	62			
65VR04-00	22	30	20	4		113,5	102,5	100	97,5	96,5	92,5	90,5	83	78	70			
65VR05-2A	30	40	20	5	2A	125	116	113	110,5	109	104,5	101	90	83	72,5			
65VR05-1A	30	40	20	5	1A	133,5	122,5	119	116,5	115	110,5	107,5	97,5	90,5	80,5			
65VR05-00	30	40	20	5		142	129	125,5	122,5	121	116,5	114	105	98,5	88,5			
65VR06-2A	30	40	20	6	2A	153	141,5	137,5	134,5	133	127,5	123	110	102	89,5			
65VR06-1A	37	50	20	6	1A	162	148	144	141	139	133,5	129,5	117,5	109,5	97,5			
65VR06-00	37	50	20	6		170	154	150	147	145	139,5	136	125	117,5	105,5			
65VR07-2A	37	50	20	7	2A	181,5	166,5	162,5	158,5	156,5	150	145	130,5	120,5	106,5			
65VR07-1A	37	50	20	7	1A	189,5	173	168,5	164,5	162,5	156	151,5	138	128,5	114,5			
65VR07-00	45	60	20	7		199	180,5	175,5	172	169,5	163,5	159,5	147	138	124			
65VR08-2A	45	60	20	8	2A	210	193	188	184	181,5	174	168,5	152	141,5	125			
65VR08-1A	45	60	20	8	1A	218,5	199,5	194	190	187,5	180	175	159,5	149	133			
65VR08-00	45	60	20	8		227	206	200	196	193,5	186	181,5	167	157	141			
95VR01-1A	5,5	7,5	20	1	1A	22				21	20,5	20	19	17,5	16,5	13,5	10	6,5
95VR01-00	7,5	10	20	1		30,5				27,5	26	25,5	24	23,5	22	20	17	13,5
95VR02-2A	11	15	20	2	2A	44,5				43	42	41	38,5	36,5	34	28,5	21,5	15
95VR02-00	15	20	20	2		62				55,5	53	51,5	49	47,5	45	41	35	28,5
95VR03-2A	18,5	25	20	3	2A	75,5				70,5	68	66,5	62,5	59,5	56	48,5	38,5	28,5
95VR03-00	22	30	20	3		93,5				84	80,5	78	74	72	69	62,5	53,5	44
95VR04-2A	30	40	20	4	2A	108				100	97	94,5	89	85,5	81	71,5	59	46
95VR04-00	30	40	20	4		125,5				112,5	108	105	99,5	96,5	92,5	84	72	60
95VR05-2A	37	50	20	5	2A	139				127,5	123,5	120	113,5	109	103,5	92	76	60
95VR05-00	37	50	20	5		156				140	134,5	130,5	123,5	120	114,5	104,5	89	74
95VR06-2A	45	60	20	6	2A	170,5				156	150,5	146,5	138,5	134	127	113,5	94,5	75,5
95VR06-00	45	60	20	6		188				169	161,5	157	149	144,5	138,5	126	108	89,5

MATERIALS/FLUIDS COMPATIBILITY

Pos.	PARTS DESCRIPTIONS	Type	MATERIAL			
			G version		N version	
			ASTM/AISI	DIN / EN	ASTM/AISI	DIN / EN
10.00	**Pump casing**	Cast Iron / Stainless Steel	A48 Class 35	GJL-250	CF 8M / AISI 316	1.4408
10.02	**Draining plug**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
10.06	**Upper Flange**	Stainless Steel	CF 8 / AISI 304	1.4308	CF 8M / AISI 316	1.4408
20.00	**Outer Case**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
20.01	**Mechanical seal housing**	Stainless Steel	CF 8 / AISI 304	1.4308	CF 8M / AISI 316	1.4408
20.05	**Filling plugs**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
30.00	**Pump shaft**	Stainless Steel	AISI 431	1.4057	AISI 329	1.4460
30.01	**Kit Mechanical seal**	Silicon Carbide SiC, Graphite, EPDM, Stainless Steel	-	-	-	-
30.02	**Mechanical seal fastening kit**	Stainless Steel	AISI 316	1.4401	AISI 316	1.4401
30.03	**Kit O-rings**	EPDM	-	-	-	-
40.00	**Stage housing and diffuser**	Stainless Steel / Graphite	AISI 304	1.4301	AISI 316	1.4401
40.01	**Stage Centering outlet**	Stainless Steel	CF 8 / AISI 304	1.4308	CF 8M / AISI 316	1.4408
40.02	**Floating neck ring**	PTFE	-	-	-	-
40.05	**Stage Centering inlet**	Stainless Steel	AISI 316	1.4401	AISI 316	1.4401
40.06	**Stage housing and diffuser with bearing**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.07	**Flange clamping neck ring**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
40.08	**Spring ring**	Stainless Steel	AISI 316	1.4401	AISI 316	1.4401
50.00	**Impeller**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
51.01	**Split cone**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
51.02	**Intermediary sleeve nut**	Stainless Steel / Tungsten Carbide	AISI 316	1.4401	AISI 316	1.4401
51.03	**Journal sleeve**	Stainless Steel / Tungsten Carbide	AISI 316	1.4401	AISI 316	1.4401
51.04	**Split cone nut**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401
51.05	**Intermediate impeller with screw**	Stainless Steel	AISI 304	1.4301	AISI 316	1.4401

Motors – AEG



FEATURES

Protection degree: IP55

Max ambient temperature: 40°C

Insulation class: F

Size B14 up to 4kW, size B5 from 5.5kW and above

SINGLE-PHASE MOTORS

The range available is especially designed for superior performance and low vibration and noise. The AMM range is ideal for low-inertia applications and the application industry.

Standard Voltage 230V

Capacitor inside terminal box

THREE-PHASE MOTORS – ENERGY EFFICIENT

High Efficiency Three-phase Motors IE3 code.
The standard design includes the following basic features to give a high level of exibility:

Multi Mount Construction for an easy change of terminal box position

Terminal box rotates by 90° to allow cable entry from any direction

Easy-to-change flanges with over-sized and smaller-sized dimensions

Provision for oil seal at Drive End

Motors conforming to the higher efficiency standards for Europe, North America and Australia

Standard Voltage up to 3kW 230/400V, 400/690V from 4kW and above

SINGLE-PHASE MOTORS DESIGNED FOR RANGE OF RATED VOLTAGE 230V 50HZ

Power kW	Power HP	IEC Size	Construction Design	I_N [A] 230V		min^{-1}	M_N Nm	η %	cos φ	I_A/I_N	M_A/M_N	Weight Kg
0,37	0,5	71	B14	3,1		2780	1,3	57,6	0,89	3,1	0,8	7,1
0,55	0,75	71	B14	3,9		2740	1,9	69,0	0,89	3,5	0,7	8,5
0,75	1	80	B14	5,3		2800	2,6	65,0	0,95	4,1	0,6	11,4
1,1	1,5	80	B14	6,5		2730	3,8	74,0	0,97	3,6	0,5	11,8
1,5	2	90	B14	9,3		2835	5,1	73,0	0,90	3,9	0,5	17,3
2,2	3	90	B14	14,6		2770	7,6	73,0	0,90	4,3	0,2	19,3

THREE-PHASE MOTORS DESIGNED FOR RANGE OF RATED VOLTAGE 400V 50HZ

	Power kW	Power HP	IEC Size	Construction Design	I_N [A] Δ 230V	I_N [A] Y 400V	I_N [A] Δ 400V	I_N [A] Y 690V	min^{-1}	M_N Nm	η %	cos φ	I_A/I_N	M_A/M_N	Weight Kg
IE2	0,37	0,5	71	B14	1,7	1,0	-	-	2820	1,3	70,0	0,78	4,7	3,6	5,8
	0,55	0,75	71	B14	2,6	1,5	-	-	2830	1,9	71,0	0,77	4,8	3,2	6,2
IE3	0,75	1	80	B14	2,9	1,7	-	-	2910	2,5	82,0	0,78	8,9	4,7	9,5
	1,1	1,5	80	B14	4,2	2,4	-	-	2870	3,7	82,7	0,76	9,3	5	11,1
	1,5	2	90	B14	5,2	3,0	-	-	2875	5,0	84,2	0,85	8,4	3,6	14,0
	2,2	3	90	B14	8,0	4,6	-	-	2880	7,3	86,5	0,82	9,2	4	16,0
	3	4	100	B14	9,7	5,6	-	-	2900	9,9	87,1	0,89	8,8	5,5	22,8
	4	5,5	112	B14	-	-	8	4,6	2900	13	88,1	0,83	10,7	5,1	26,5
	5,5	7,5	132	B5	-	-	10,2	5,9	2935	17,9	89,2	0,87	11,2	4,2	33,6
	7,5	10	132	B5	-	-	14,4	8,3	2930	24,5	90,1	0,84	10,4	4,5	36,0
	11	15	160	B5	-	-	19,9	11,5	2935	35,8	91,2	0,89	9,7	4,4	62,0
	15	20	160	B5	-	-	26,8	15,5	2915	49,2	91,9	0,88	9,6	3,7	68,0
	18,5	25	160	B5	-	-	33,0	19,1	2950	59,9	92,4	0,88	10,7	4,6	104,0
	22	30	180	B5	-	-	39,4	22,8	2950	71,3	92,7	0,87	10,4	4,5	106,0
	30	40	200	B5	-	-	52,7	30,5	2925	97,9	93,3	0,88	6,7	2,4	276,0
	37	50	200	B5	-	-	63,3	36,6	2930	120,6	93,7	0,90	6,3	2,3	283,0
	45	60	225	B5	-	-	78,5	45,4	2930	146,7	94,0	0,88	6,9	2,3	370,0

New International Efficiency classes of motors – IE code

The new IEC 60034-30:2008 defines worldwide the efficiency classes of motors.
IE1 = Standard Efficiency (comparable to EFF2)
IE2 = High Efficiency (comparable to EFF1)
IE3 = Premium Efficiency
The efficiency levels according to IEC 60034-30 are measured based on the test methods defined in IEC 60034-2-1:2007. The IEC 60034-30 only defines requirements of efficiency classes and aims to create provisions for International consistency. It does not define which motors must be supplied with which efficiency level. This is left to respective regional legislation.

Output kW	IE1 code Standard Efficiency			IE2 code Standard Efficiency			IE3 code Standard Efficiency		
	2 poles	4 poles	6 poles	2 poles	4 poles	6 poles	2 poles	4 poles	6 poles
0,75	72,1	72,1	70,0	77,4	79,6	75,9	80,7	82,5	78,9
1,1	75,0	75,0	72,9	79,6	81,4	78,1	82,7	84,1	81,0
1,5	77,2	77,2	75,2	81,3	82,8	79,8	84,2	85,3	82,5
2,2	79,7	79,7	77,7	83,2	84,3	81,8	85,9	86,7	84,3
3	81,5	81,5	79,7	84,6	85,5	83,3	87,1	87,7	85,6
4	83,1	83,1	81,4	85,8	86,6	84,6	88,1	88,6	86,8
5,5	84,7	84,7	83,1	87,0	87,7	86,0	89,2	89,6	88,0
7,5	86,0	86,0	84,7	88,1	88,7	87,2	90,1	90,4	89,1
11	87,6	87,6	86,4	89,4	89,8	88,7	91,2	91,4	90,3
15	88,7	88,7	87,7	90,3	90,6	89,7	91,9	92,1	91,2
18,5	89,3	89,3	88,6	90,9	91,2	90,4	92,4	92,6	91,7
22	89,9	89,9	89,2	91,3	91,6	90,9	92,7	93,0	92,2
30	90,7	90,7	90,2	92,0	92,3	91,7	93,3	93,6	92,9
37	91,2	91,2	90,8	92,5	92,7	92,2	93,7	93,9	93,3
45	91,7	91,7	91,4	92,9	93,1	92,7	94,0	94,2	93,7

Efficiency values according to IEC 60034-30;2008.
Efficiency standard calculation: IEC 60034-2-1;200

Noise

The noise level of an electrical machine is determined by measuring the sound pressure level in accordance with curve A of the sound level meter to EN 60651 and is indicated in dB (A). The permitted noise levels of electrical machines are fixed in EN 60034-9 (IEC 34-9). The noise level of our motors is well below these limit values. Air-borne sound measurements are carried out in an anechoic testing chamber to EN 21680-ISO 1680. Speed corresponding to a mains frequency of 50Hz and the number of poles.

Noise levels

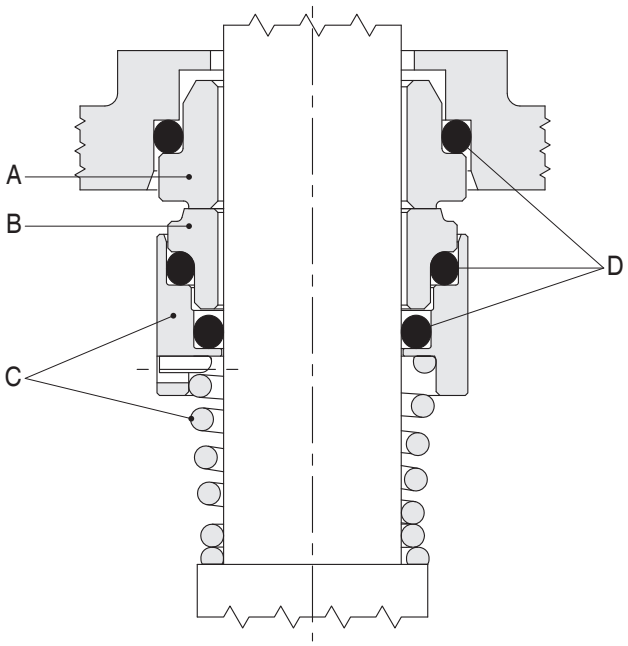
The noise values listed below refer to 50Hz at rated voltage with a tolerance of up to + 3 dB(A). Values for pole-changing motors on request. For 60Hz supply values are 3-5 dB(A) higher. Sound pressure level LpA and sound power level LWA for three-phase single-speed motors with dimensions and output ratings to IEC 60072

Frame size	2 pole		4 pole	
	L_{WA}	L_{pA}	L_{WA}	L_{pA}
56	57	48	47	38
63	58	49	47	38
71	61	52	51	42
80	72	60	60	48
90	74	62	61	49
100	78	66	62	50
112	80	68	65	53
132	81	72	71	59
160	87	74	75	62
180	90	77	78	66
200	91	78	80	68
225	92	80	88	76

Mechanical seal specifications

(in accordance with EN 12756)

Type U



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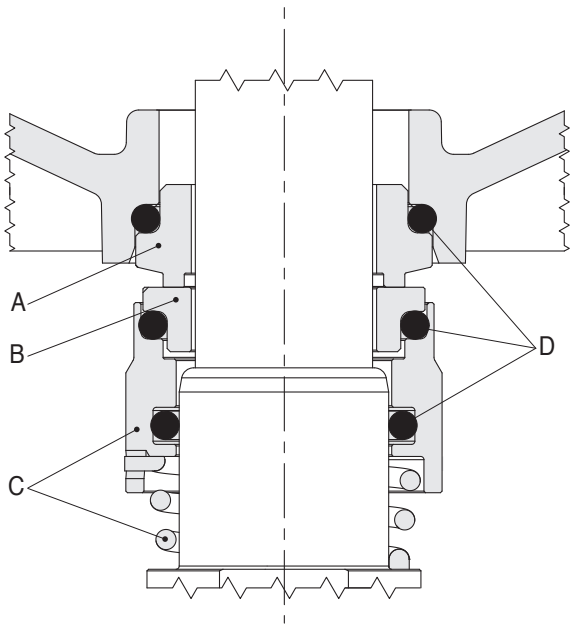
Type B



00114115 02/2015

STANDARD VERSION

Model	Type				Position A Stationary part	Position B Rotating part	Position C Other components	Position D Elastomers	Temperature
E1	B	Q	G	E	Graphite	Silicon carbide	AISI 316	EPDM	-30°C +120°C

AVAILABLE ON REQUEST

Model	Type				Position A Stationary part	Position B Rotating part	Position C Other components	Position D Elastomers	Temperature
E2	Q	Q	G	E	Silicon carbide	Silicon carbide	AISI 316	EPDM	-10°C +120°C
V3	Q	Q	G	V	Silicon carbide	Silicon carbide	AISI 316	FKM	-10°C +120°C
V4	B	Q	G	V	Graphite	Silicon carbide	AISI 316	FKM	-10°C +120°C
E5	U	U	G	E	Tungsten carbide	Tungsten carbide	AISI 316	EPDM	-10°C +120°C

Type	Material
B	Graphite
E	EPDM
G	AISI 316
Q	Silicon carbide
V	FKM
U	Tungsten carbide

COMPATIBILITY OF FLUIDS AND MATERIALS

Liquids (aqueous solutions)	Concentration (%)	Temperature Min/Max (°C)	VR models		
			G	I	N
Acetic acid	10 ÷ 40	+18 +70		E1	E1
Aluminium sulfate	4	+20 +80		V4	V4
Ammonia in water	5	+5 +70		E1	E1
Ammonium sulfate	2 max	+5 +25			V3
Benzoic acid	5	+5 +25		E1	E1
Caustic soda	5	+5 +30			E1
Chloroform	40	+5 +30		V3	V3
Citric acid	2	+5 +25			V4
Copper sulfate	20	+5 +50			E1
Deionised, demineralised water	50	+5 +25		V3	V3
Diathermic oil	100	+5 +120	E1	E1	E1
Emulsion oil and water any	100	+5 +110		E1	E1
Ethylene glycol	max 35000 ppm	+2 +60			E1
Ferrous sulfate and ferric sulfate	25	-20 +50		E1	E1
Formic acid	6	+5 +60			E1
Glycerine	100	-10 +30		V4	V4
Hydrochloric acid	10	+5 +90			E1
Mineral oil	100	+90 +120	E1	E1	E1
Nitric acid	10 ÷ 30	-18 +120		E1	E1
Perchloroethylene	30	-10 +100	V3	V3	V3
Phosphates-polyphosphates	1	+5 +25			V3
Phosphoric acid	10	+5 +60	E1		E1
Propylene glycol	10 ÷ 50	+15 +90	V4	V4	V4
Sea water	100	+90 +120	V4	V4	V4
Sodium bicarbonate (Baking soda)	100	+90 +120	V4	V4	V4
Sodium hypochlorite	100	+70 +110	E1	E1	E1
Sodium nitrate	100	-10 +30	V4	V4	V4
Sodium sulfate	25	+5 +70		E2	E2
Sulphuric acid	10 ÷ 25	+5 +50			E2
Tannic acid	10	+5 +60			E2
Tartaric acid	10	+5 +30			E1
Trichloroethylene	1 ÷ 20	+5 +30			V3
Vegetable oil	15	+5 +40	E2	E2	E2
Water	100	-10 +40	V4	V4	V4

The table is to be considered as a general guide. It is important to consider the specific working conditions; in particular to consider the concentration of the pumped liquid, the specific weight of the liquid and/or the viscosity, the liquid temperature and pressure. All these conditions are relevant for the motor and pump performance. When pumping dangerous liquids, it is recommended to take safety precautions. For further details, please contact us.

VR Series
Performance Curves
and Technical Data

VR 1 - 3 - 6 - 10 - 15 - 20 - 30 - 45 - 65 - 95 50Hz

According to COMMISSION REGULATION (EU) No 547/2012

MEI - Minimum Effi ciency Index

In order to achieve a comparable effi ciency threshold-value across all legally covered water pumps, an index of pump size, specifi c speed and rotational speed has been created: the MEI (Minimum Effi ciency Index).
MEI covers best point (BEP), part load (PL) and overload (OL) effi ciencies as water pumps may be chosen with safety margins and hence do not run at best effi ciency point.
This ensures high and fl at effi ciency curves and consequently an effi cient operation in real life.
MEI means the dimensionless scale unit for hydraulic pump effi ciency at BEP, PL and OL.
MEI is a measure for the quality of a pump size in respect to the efficiency.
The higher the value of the MEI is, the better is the pump size in respect to effi ciency and the lower is the yearly energy consumption if pumps of this size are installed.

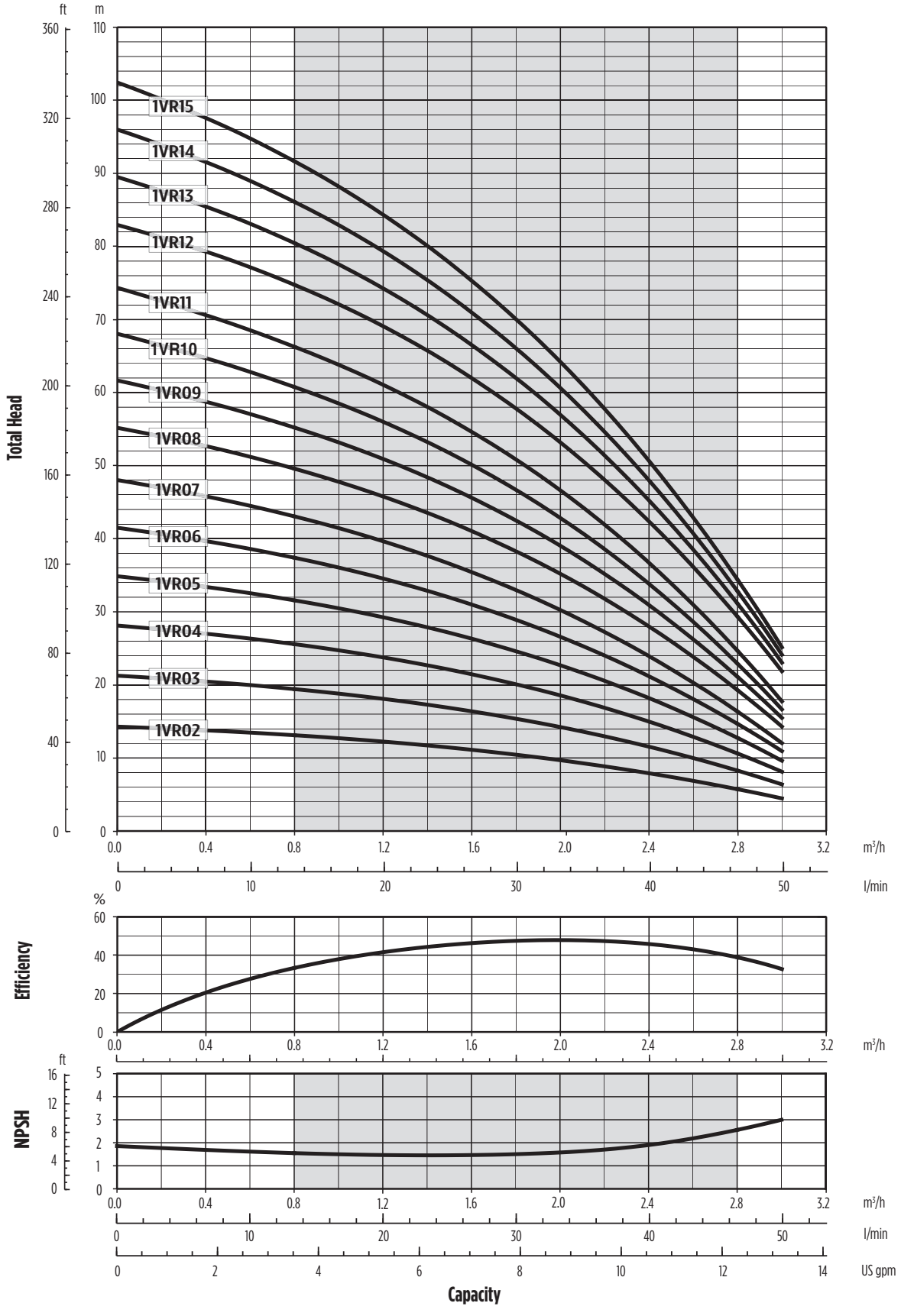
The upper limit of values of the MEI is principally open and depends only on physical and technological constraints. MEI is based on the full impeller diameter. The operation of this water pump with variable duty points may be more effi cient and economic when controlled, for example, by the use of a variable speed drive that matches the pump duty to the system.
The effi ciency of a pump with a trimmed impeller is usually lower than that of a pump with the full impeller diameter. The trimming of the impeller will adapt the pump to a fi xed duty point, leading to reduced energy consumption. The minimum effi ciency index (MEI) is based on the full impeller diameter.
For benchmark effi ciency graphs, go to www.europump.org/effi ciencycharts.
Information on benchmark effi ciency is available at www.etechpumps.com.

1VR

1VR

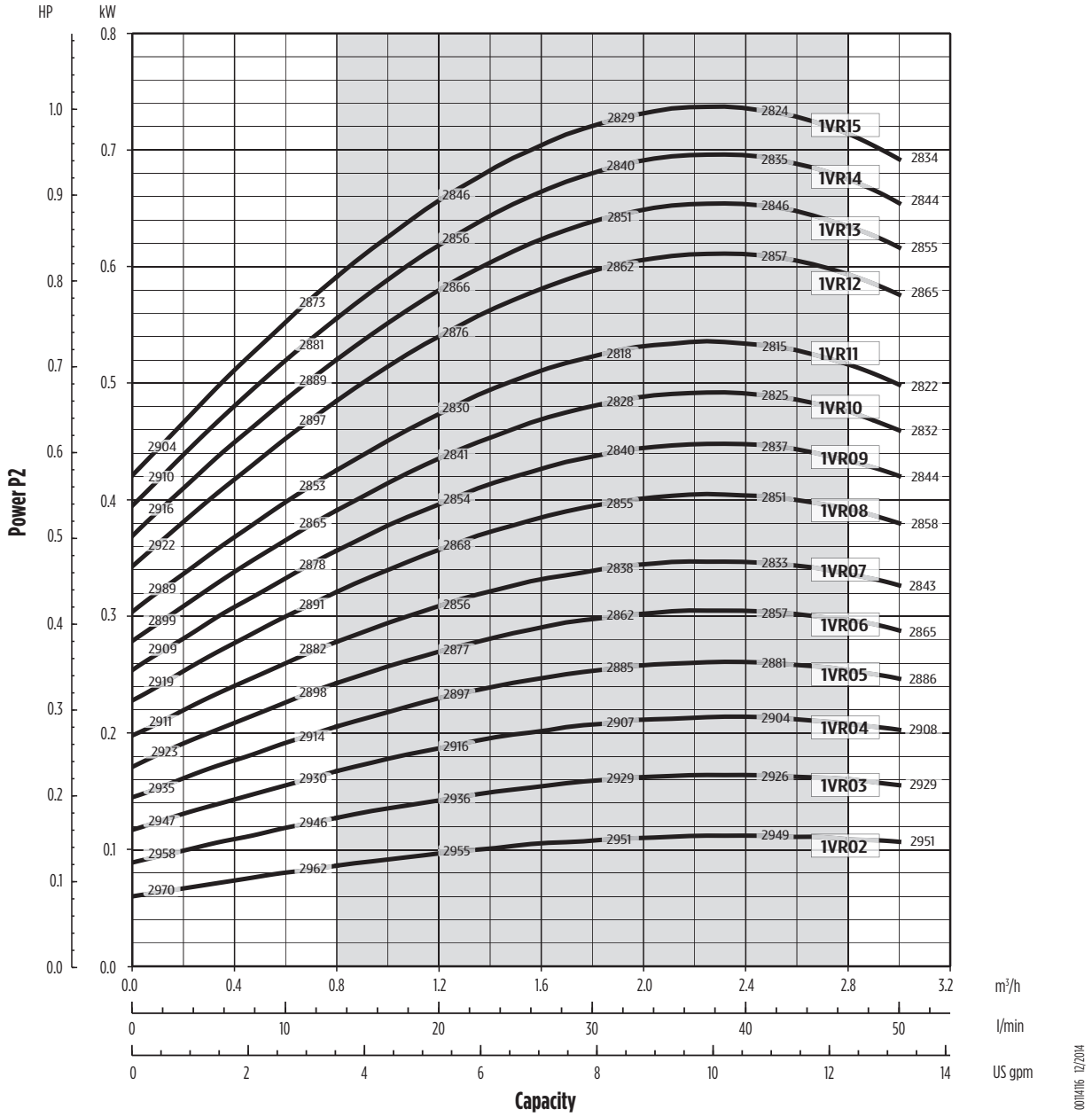
PERFORMANCE CURVES 50HZ

MEI ≥ 0,70



The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B

00114116 12/2014



Performance curves of Q, H and P depend on the rpm number according to the following formulae:

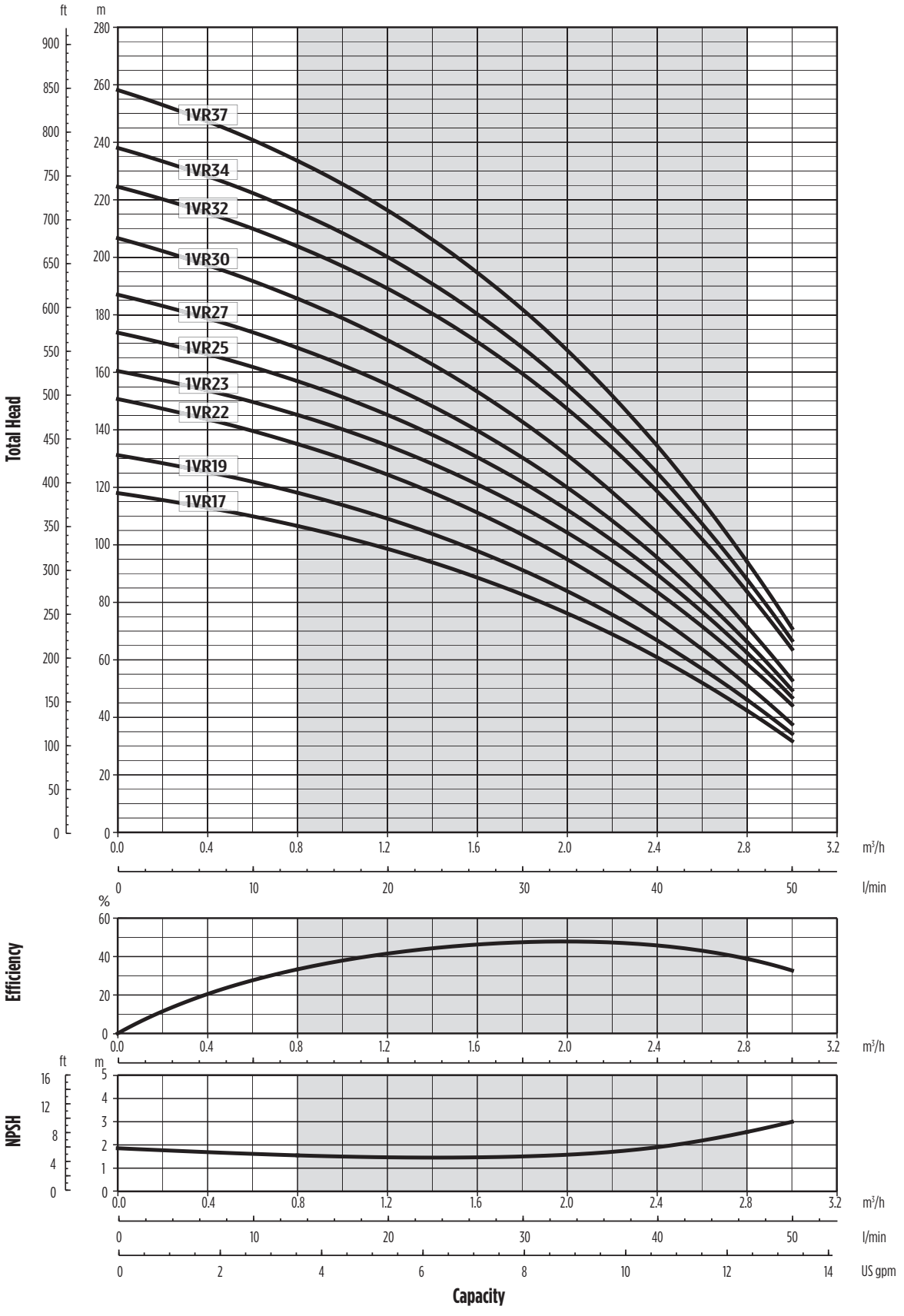
$$Q_2 = Q_1 \cdot \left(\frac{n_2}{n_1}\right) \quad , \quad H_2 = H_1 \cdot \left(\frac{n_2}{n_1}\right)^2 \quad , \quad P_2 = P_1 \cdot \left(\frac{n_2}{n_1}\right)^3 \quad , \quad \eta$$ *remains approximately the same.*

The rpm number related to the performance curves (Q-H-P) is indicated in the power chart.
Performance curves (Q-H-P) will change in case a motor with rpm number different from indicated values is used.
Q=Capacity, H=Head, P=Power, h=Efficiency

1VR

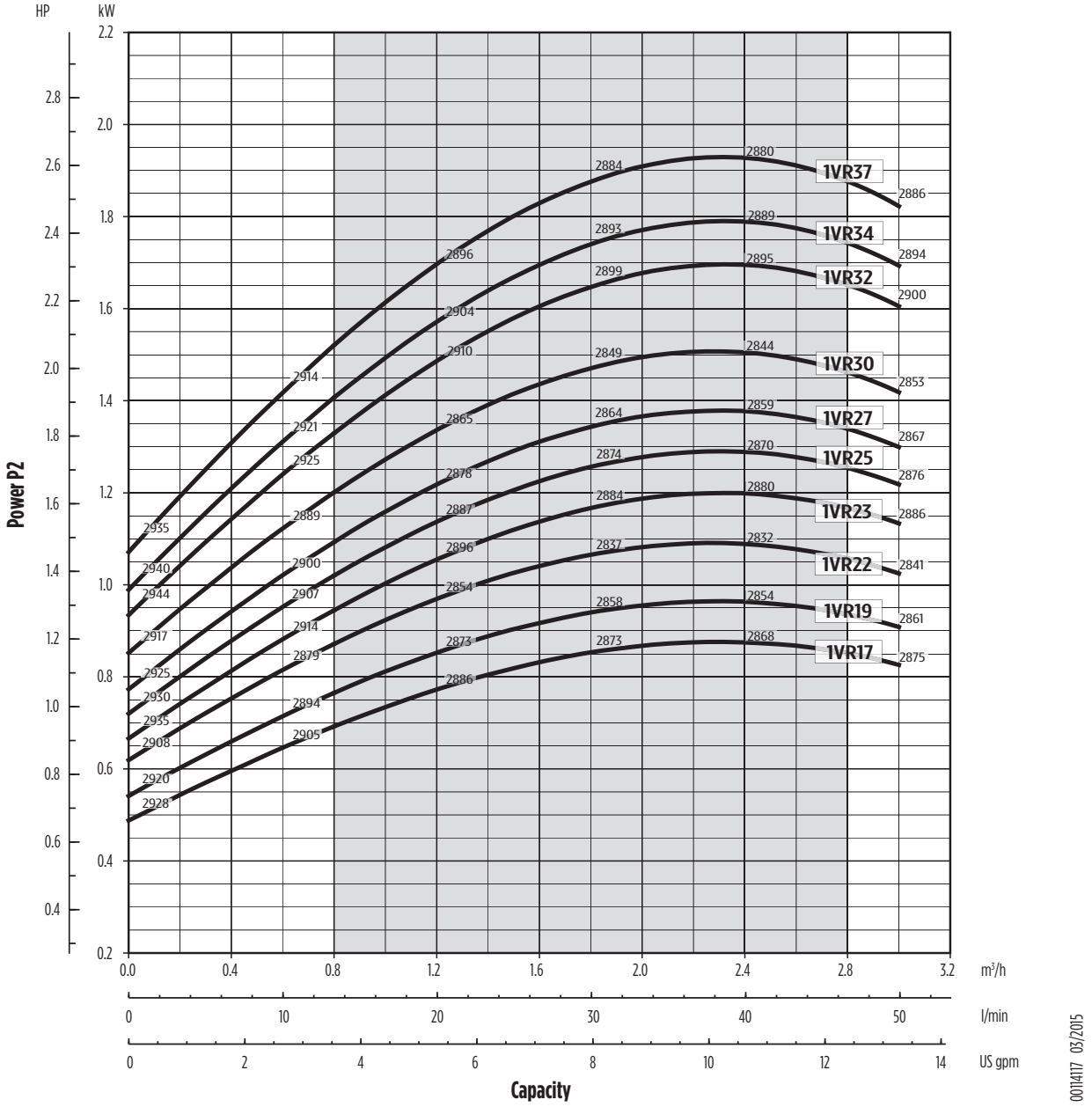
PERFORMANCE CURVES 50HZ

MEI ≥ 0,70



0011417 03/2015

The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B



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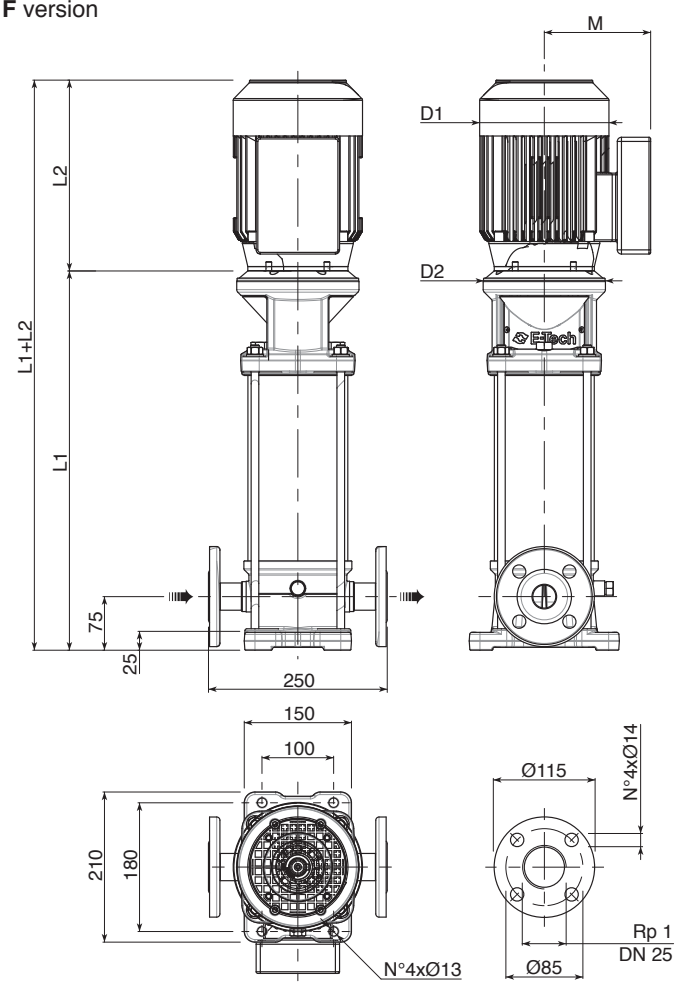
$$Q_2 = Q_1 \cdot \left(\frac{n_2}{n_1}\right) \quad , \quad H_2 = H_1 \cdot \left(\frac{n_2}{n_1}\right)^2 \quad , \quad P_2 = P_1 \cdot \left(\frac{n_2}{n_1}\right)^3 \quad , \quad \eta$$ *remains approximately the same.*

The rpm number related to the performance curves (Q-H-P) is indicated in the power chart.
Performance curves (Q-H-P) will change in case a motor with rpm number different from indicated values is used.
Q=Capacity, H=Head, P=Power, h=Efficiency

1VR

TECHNICAL DATA 50HZ

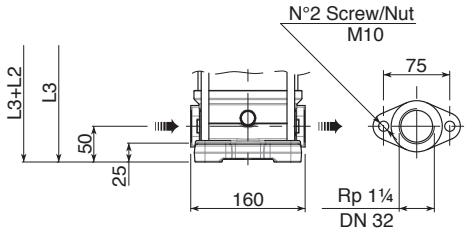
F version



F version — Round flanges on body type PN25: the pump is supplied without counterflanges (Optional accessories, including bolts and joints).

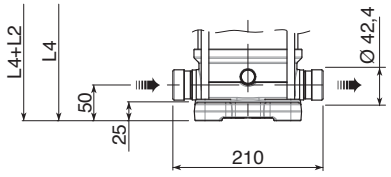
T version

Available from EV1/2 to EV1/23



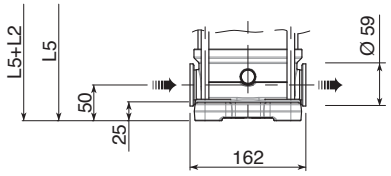
T version — Oval flanges on body type PN16: the pump is supplied without threaded oval counter flanges (Optional accessories, including bolts and joints).

V version



V version — Connections with rapid fittings type "Victaulic": the pump is supplied without the collars (Optional accessories).

C version



C version — Connections with round fittings type Clamp-FlexiClamp: the pump is supplied without collars (Optional accessories).

0011401411 02/2015

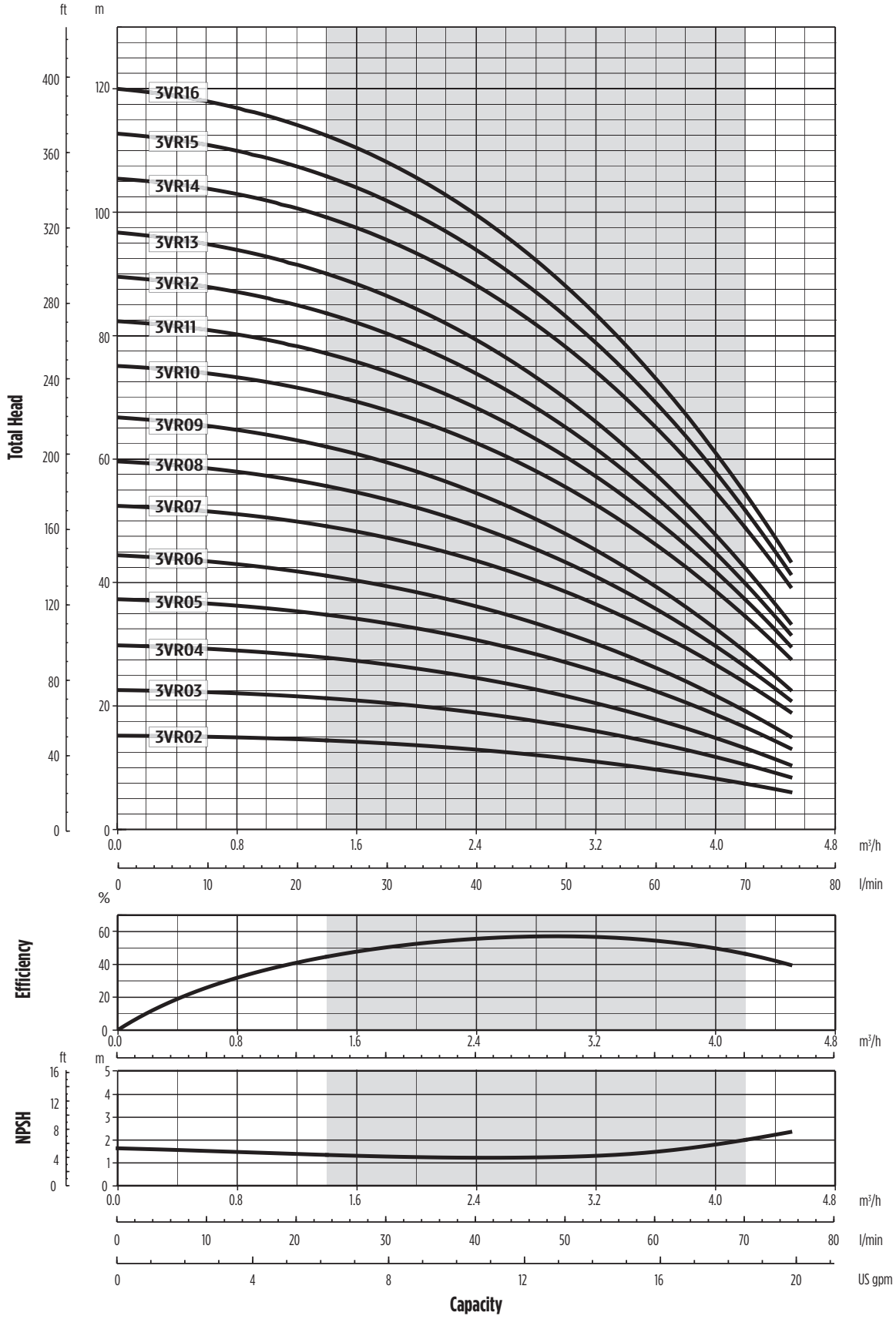
Pump Model	Motor			Dimensions (mm) L1	L2		L3	L4	L5	M		D1		D2	Weight (kg)	
	kW	Dim	Flange	F	1-PHASE	3-PHASE	T	V	C	1-PHASE	3-PHASE	1-PHASE	3-PHASE		Pump	Electric Pump
1VR02	0,37	71	B14	312,5	215	215	287,5	287,5	287,5	129	112	142	142	170	15	20,8
1VR03	0,37	71	B14	335	215	215	310	310	310	129	112	142	142	170	15	20,8
1VR04	0,37	71	B14	357,5	215	215	332,5	332,5	332,5	129	112	142	142	170	15,5	21,3
1VR05	0,37	71	B14	380	215	215	355	355	355	129	112	142	142	170	16	21,8
1VR06	0,37	71	B14	402,5	215	215	377,5	377,5	377,5	129	112	142	142	170	16,5	22,3
1VR07	0,37	71	B14	425	215	215	400	400	400	129	112	142	142	170	17	22,8
1VR08	0,55	71	B14	447,5	215	215	422,5	422,5	422,5	129	112	142	142	170	17,5	23,7
1VR09	0,55	71	B14	470	215	215	445	445	445	129	112	142	142	170	18	24,2
1VR10	0,55	71	B14	492,5	215	215	467,5	467,5	467,5	129	112	142	142	170	18,5	24,7
1VR11	0,55	71	B14	515	215	215	490	490	490	129	112	142	142	170	19	25,2
1VR12	0,75	80	B14	537,5	232	232	512,5	512,5	512,5	150	129	160	160	170	19,5	29
1VR13	0,75	80	B14	560	232	232	535	535	535	150	129	160	160	170	20	29,5
1VR14	0,75	80	B14	582,5	232	232	557,5	557,5	557,5	150	129	160	160	170	20,5	30
1VR15	0,75	80	B14	605	232	232	580	580	580	150	129	160	160	170	21	30,5
1VR17	1,1	80	B14	650	232	232	625	625	625	150	129	160	160	170	22	33,1
1VR19	1,1	80	B14	695	232	232	670	670	670	150	129	160	160	170	22,5	33,6
1VR22	1,1	80	B14	762,5	232	232	737,5	737,5	737,5	150	129	160	160	170	24	35,1
1VR23	1,5	90	B14	795	267	267	770	770	770	160	138	180	180	170	25	39
1VR25	1,5	90	B14	840	267	267	-	815	815	160	138	180	180	170	26	40
1VR27	1,5	90	B14	885	267	267	-	860	860	160	138	180	180	170	27	41
1VR30	1,5	90	B14	952,5	267	267	-	927,5	927,5	160	138	180	180	170	28,5	42,5
1VR32	2,2	90	B14	997,5	267	267	-	972,5	972,5	160	138	180	180	170	29	45
1VR34	2,2	90	B14	1042,5	267	267	-	1017,5	1017,5	160	138	180	180	170	30	46
1VR37	2,2	90	B14	1110	267	267	-	1085	1085	160	138	180	180	170	31,5	47,5

3VR

3VR

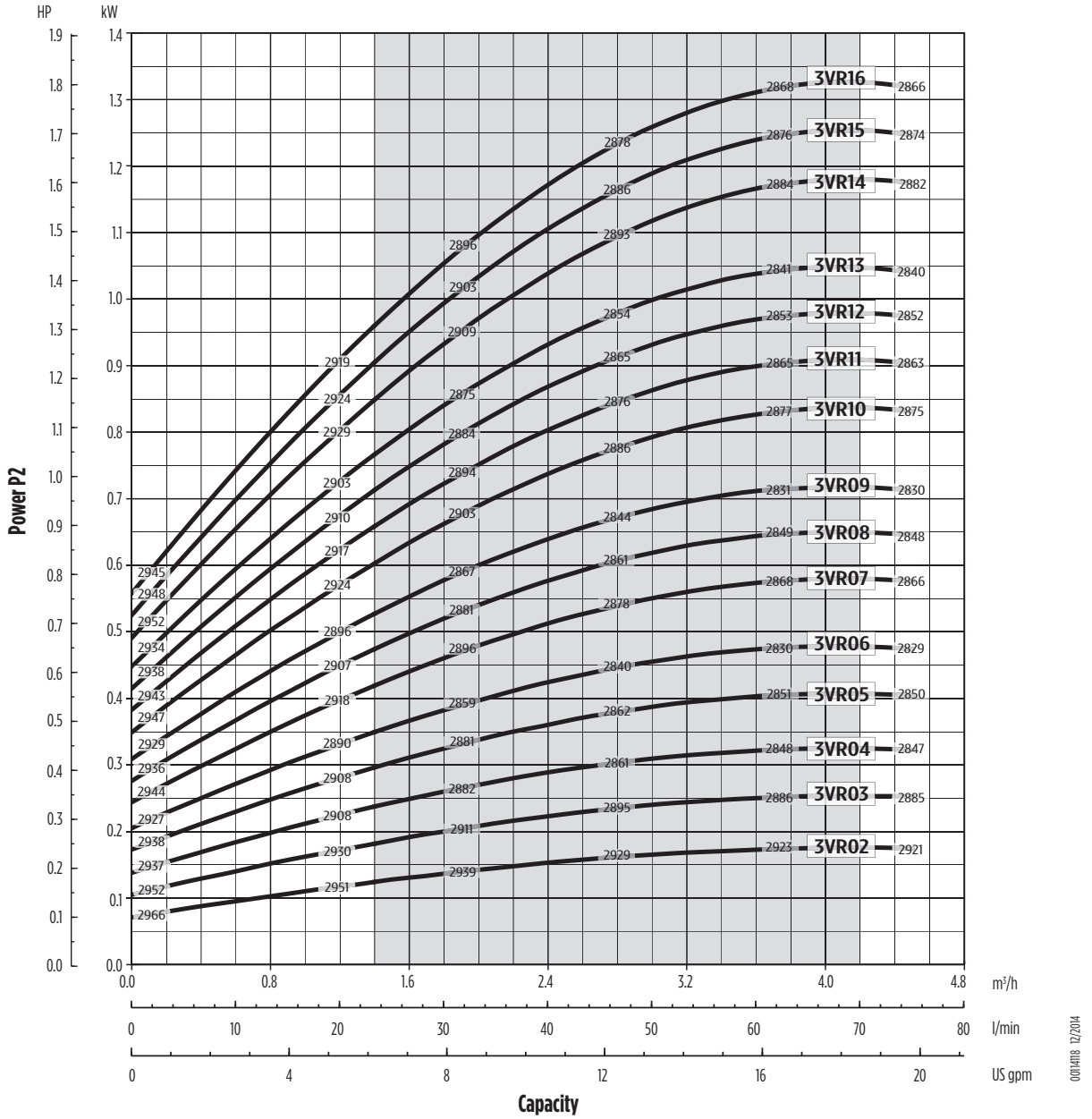
PERFORMANCE CURVES 50HZ

MEI ≥ 0,70



0011411B 12/2014

The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B



Performance curves of Q, H and P depend on the rpm number according to the following formulae:

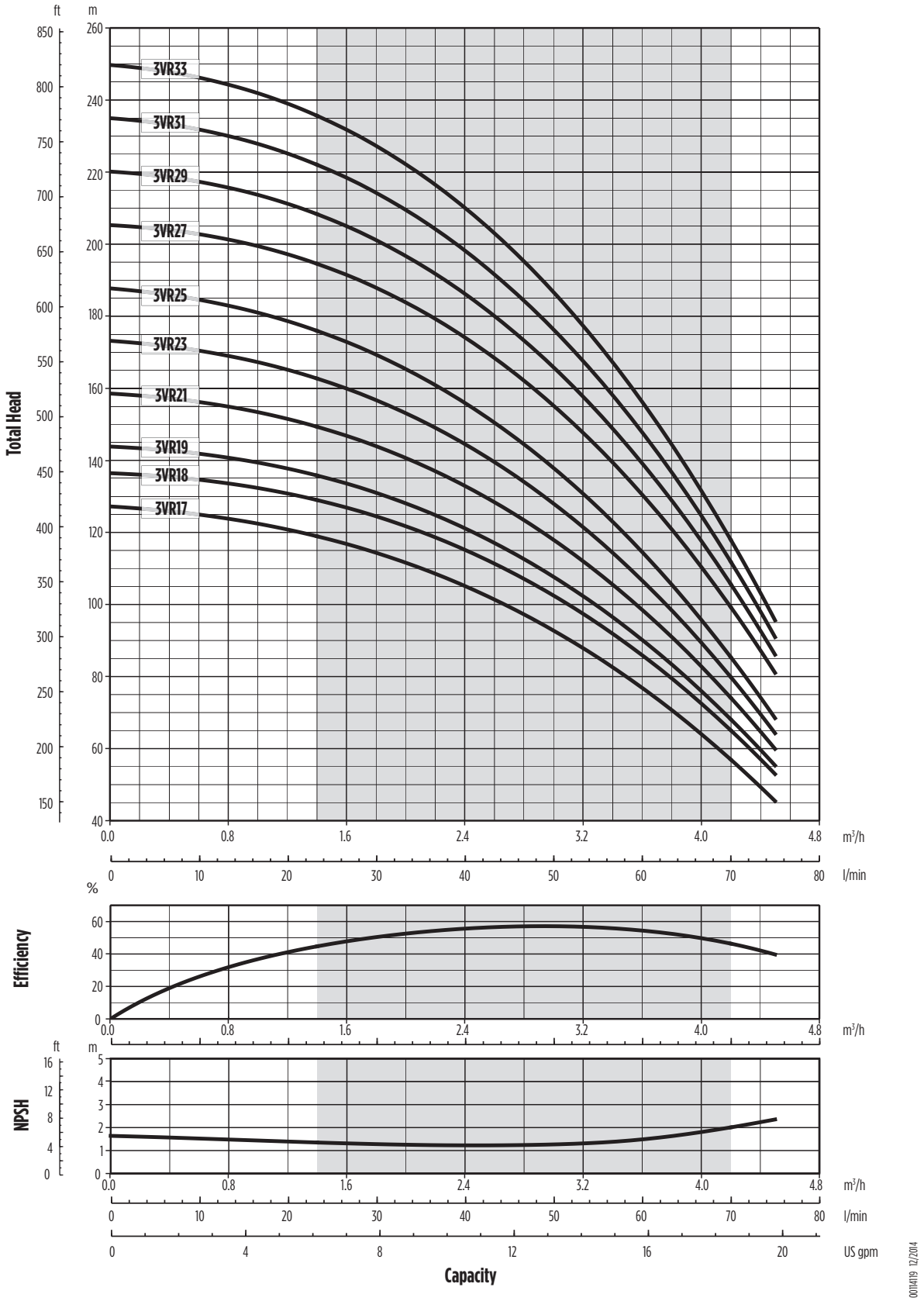
$$Q_2 = Q_1 \cdot \left(\frac{n_2}{n_1}\right) \quad , \quad H_2 = H_1 \cdot \left(\frac{n_2}{n_1}\right)^2 \quad , \quad P_2 = P_1 \cdot \left(\frac{n_2}{n_1}\right)^3 \quad , \quad \eta \text{ remains approximately the same.}$$

The rpm number related to the performance curves (Q-H-P) is indicated in the power chart.
Performance curves (Q-H-P) will change in case a motor with rpm number different from indicated values is used.
Q=Capacity, H=Head, P=Power, h=Efficiency

3VR

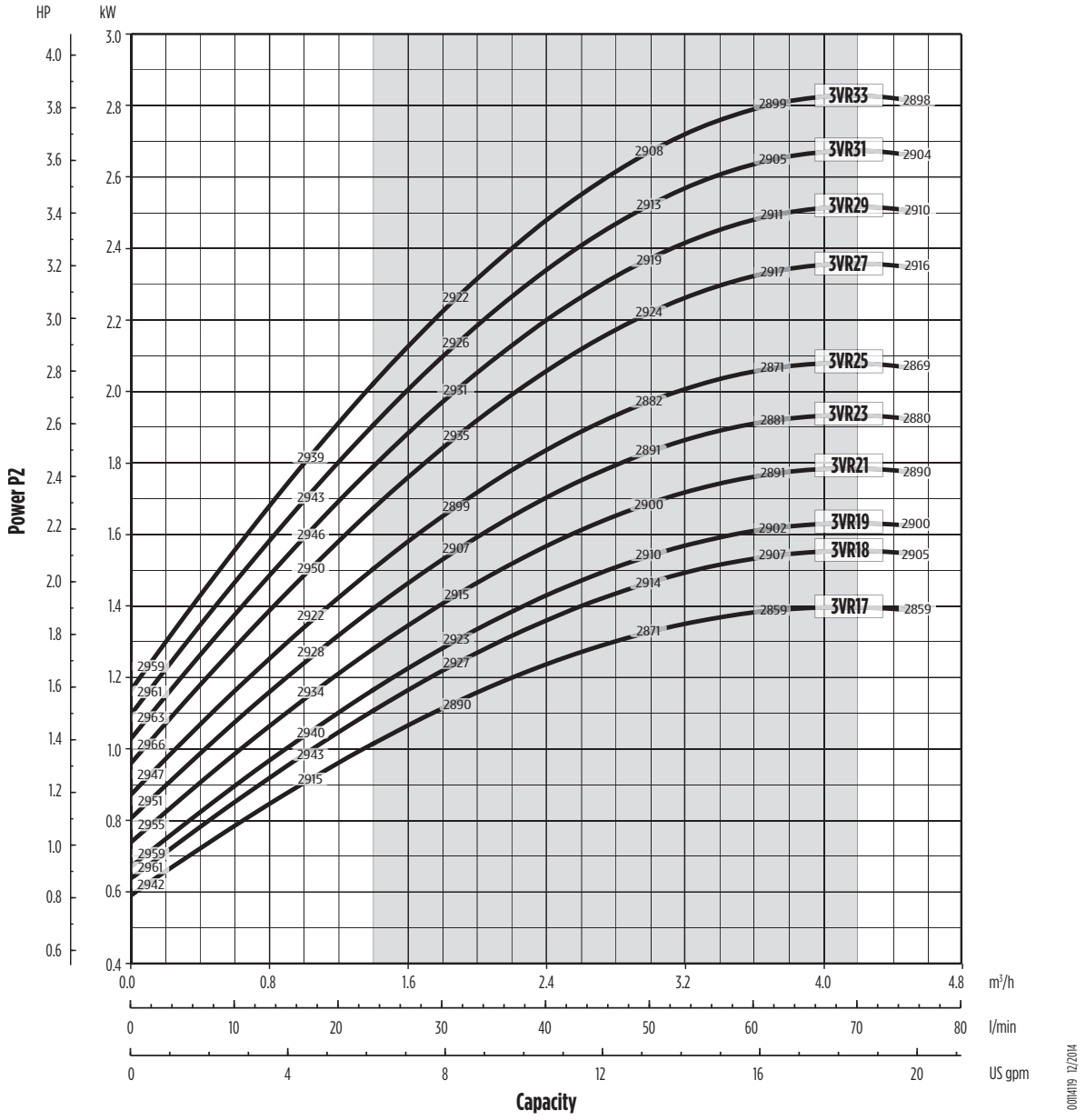
PERFORMANCE CURVES 50HZ

MEI ≥ 0,70



0011419 12/2014

The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B



Performance curves of Q, H and P depend on the rpm number according to the following formulae:

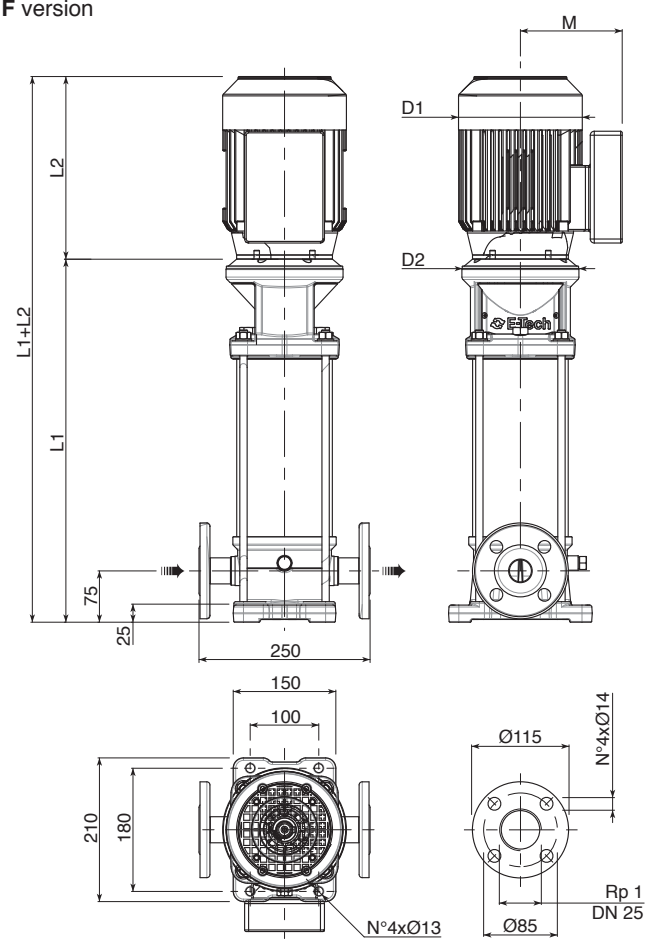
$$Q_2 = Q_1 \cdot \left(\frac{n_2}{n_1}\right) \quad , \quad H_2 = H_1 \cdot \left(\frac{n_2}{n_1}\right)^2 \quad , \quad P_2 = P_1 \cdot \left(\frac{n_2}{n_1}\right)^3 \quad , \quad \eta \text{ remains approximately the same.}$$

The rpm number related to the performance curves (Q-H-P) is indicated in the power chart.
Performance curves (Q-H-P) will change in case a motor with rpm number different from indicated values is used.
Q=Capacity, H=Head, P=Power, h=Efficiency

3VR

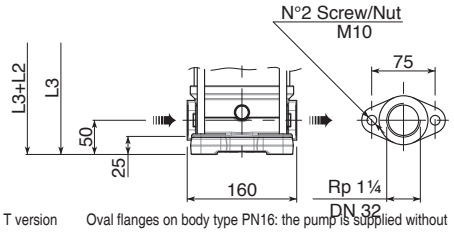
TECHNICAL DATA 50HZ

F version



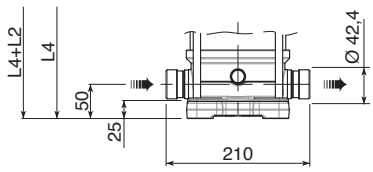
F version Round flanges on body type PN25: the pump is supplied without counterflanges (Optional accessories, including bolts and joints).

T version Available from EV3/2 to EV3/21



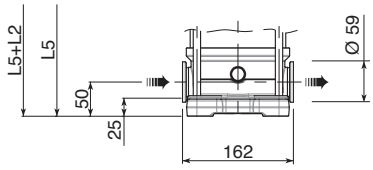
T version Oval flanges on body type PN16: the pump is supplied without threaded oval counter flanges (Optional accessories, including bolts and joints).

V version



V version Connections with rapid fittings type "Victaulic": the pump is supplied without the collars (Optional accessories).

C version



C version Connections with round fittings type Clamp-FlexiClamp: the pump is supplied without collars (Optional

0011401411 02/2015

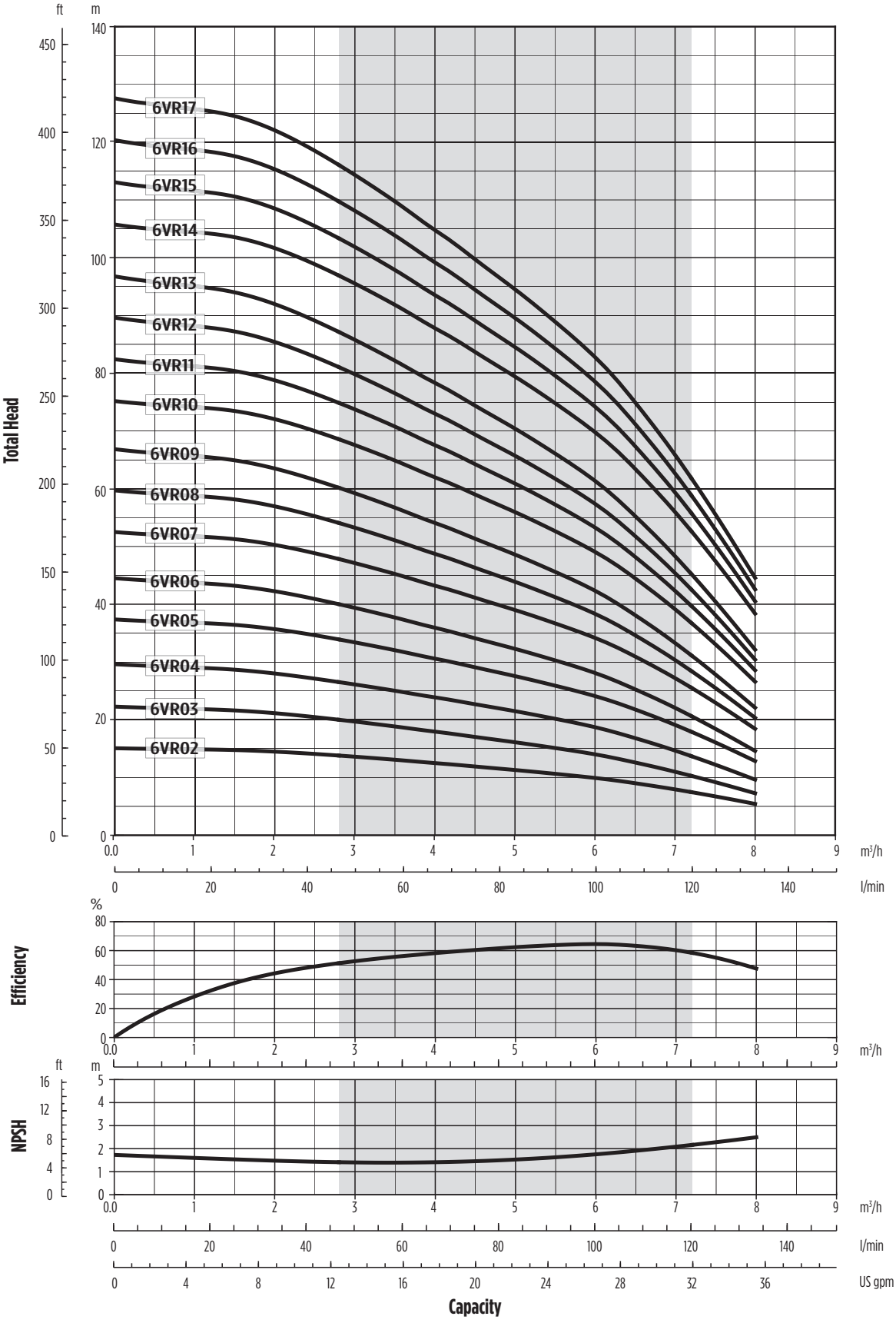
Pump Model	Motor			Dimensions (mm)												Weight (kg)	
				L1	L2		L3	L4	L5	M		D1		D2			
	kW	Dim	Flange	F	1-PHASE	3-PHASE	T	V	C	1-PHASE	3-PHASE	1-PHASE	3-PHASE			Pump	Electric Pump
3VR02	0,37	71	B14	312,5	215	215	287,5	287,5	287,5	129	112	142	142	170		15	20,8
3VR03	0,37	71	B14	335	215	215	310	310	310	129	112	142	142	170		15	20,8
3VR04	0,37	71	B14	357,5	215	215	332,5	332,5	332,5	129	112	142	142	170		15,5	21,3
3VR05	0,55	71	B14	380	215	215	355	355	355	129	112	142	142	170		16	22,2
3VR06	0,55	71	B14	402,5	215	215	377,5	377,5	377,5	129	112	142	142	170		16,5	22,7
3VR07	0,75	80	B14	425	232	232	400	400	400	150	129	160	160	170		17	26,5
3VR08	0,75	80	B14	447,5	232	232	422,5	422,5	422,5	150	129	160	160	170		17,5	27
3VR09	0,75	80	B14	470	232	232	445	445	445	150	129	160	160	170		18	27,5
3VR10	1,1	80	B14	492,5	232	232	467,5	467,5	467,5	150	129	160	160	170		18,5	29,6
3VR11	1,1	80	B14	515	232	232	490	490	490	150	129	160	160	170		19	30,1
3VR12	1,1	80	B14	537,5	232	232	512,5	512,5	512,5	150	129	160	160	170		19,5	30,6
3VR13	1,1	80	B14	560	232	232	535	535	535	150	129	160	160	170		20	31,1
3VR14	1,5	90	B14	592,5	267	267	567,5	567,5	567,5	160	138	180	180	170		21	35
3VR15	1,5	90	B14	615	267	267	590	590	590	160	138	180	180	170		21,5	35,5
3VR16	1,5	90	B14	637,5	267	267	612,5	612,5	612,5	160	138	180	180	170		22	36
3VR17	1,5	90	B14	660	267	267	635	635	635	160	138	180	180	170		22,5	36,5
3VR18	2,2	90	B14	682,5	267	267	657,5	657,5	657,5	160	138	180	180	170		23	39
3VR19	2,2	90	B14	705	267	267	680	680	680	160	138	180	180	170		23,5	39,5
3VR21	2,2	90	B14	750	267	267	725	725	725	160	138	180	180	170		24	40
3VR23	2,2	90	B14	795	267	267	-	770	770	160	138	180	180	170		25	41
3VR25	2,2	90	B14	840	267	267	-	815	815	160	138	180	180	170		26	42
3VR27	3	100	B14	895	-	290	-	870	870	-	138	-	180	170		27,5	45,5
3VR29	3	100	B14	940	-	290	-	915	915	-	138	-	180	170		28,5	46,5
3VR31	3	100	B14	985	-	290	-	960	960	-	138	-	180	170		29,5	47,5
3VR33	3	100	B14	1030	-	290	-	1005	1005	-	138	-	180	170		30,5	48,5

6VR

6VR

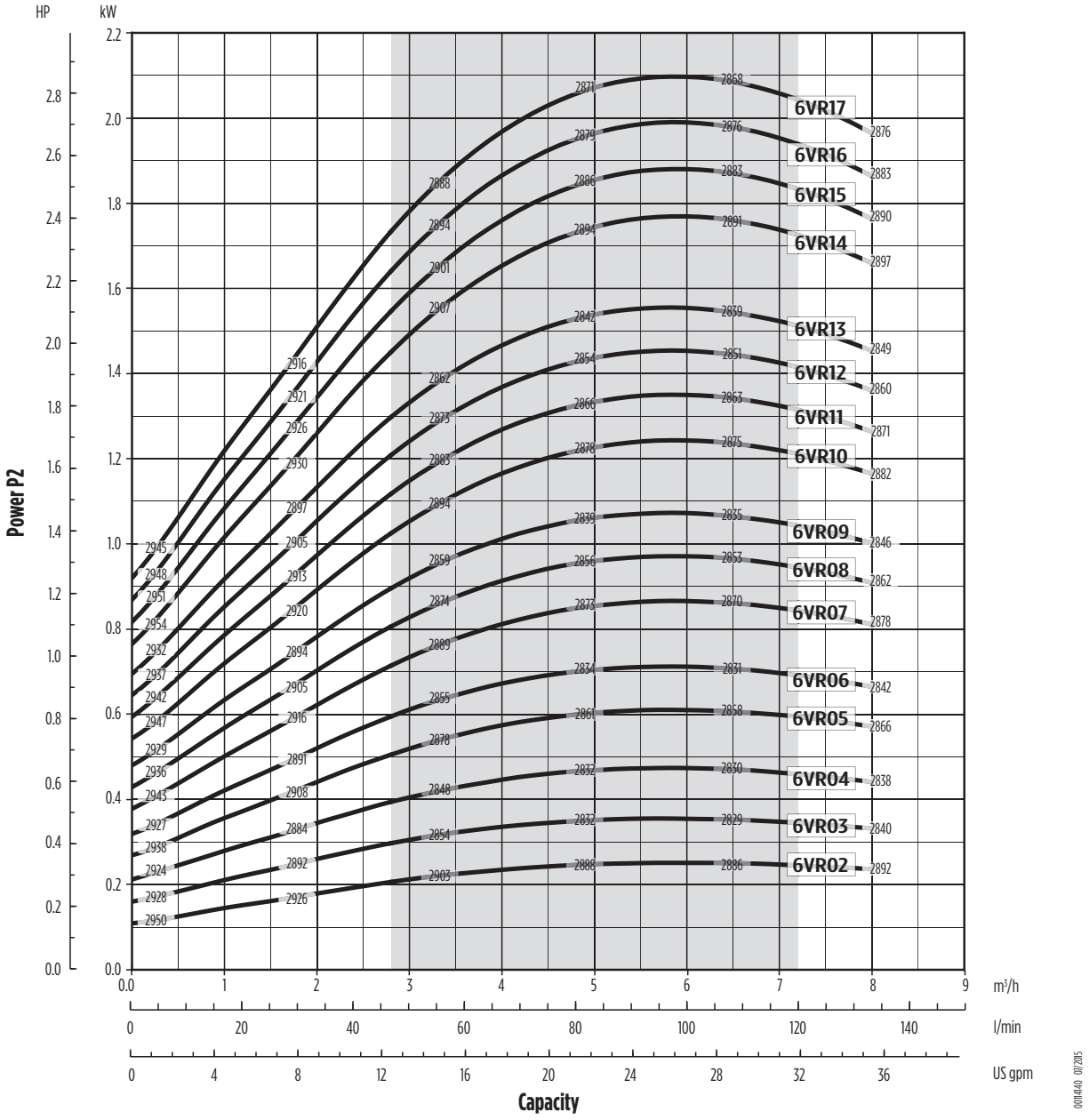
PERFORMANCE CURVES 50HZ

MEI ≥ 0,70



0014140 07/2015

The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B



Performance curves of Q, H and P depend on the rpm number according to the following formulae:

$$Q_2 = Q_1 \cdot \left(\frac{n_2}{n_1}\right) \quad , \quad H_2 = H_1 \cdot \left(\frac{n_2}{n_1}\right)^2 \quad , \quad P_2 = P_1 \cdot \left(\frac{n_2}{n_1}\right)^3 \quad , \quad \eta$$ *remains approximately the same.*

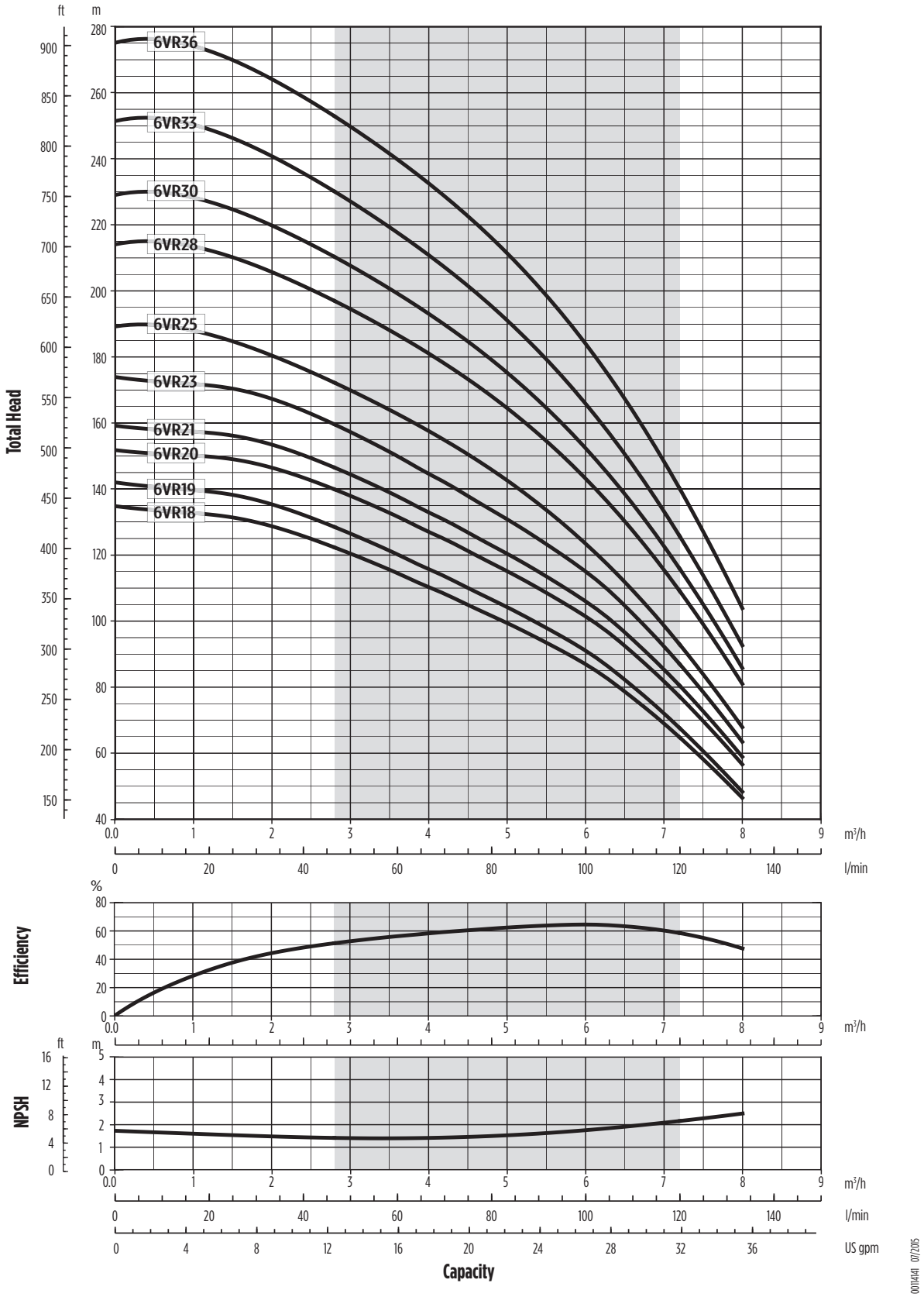
The rpm number related to the performance curves (Q-H-P) is indicated in the power chart.
Performance curves (Q-H-P) will change in case a motor with rpm number different from indicated values is used.
Q=Capacity, H=Head, P=Power, h=Efficiency

The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B

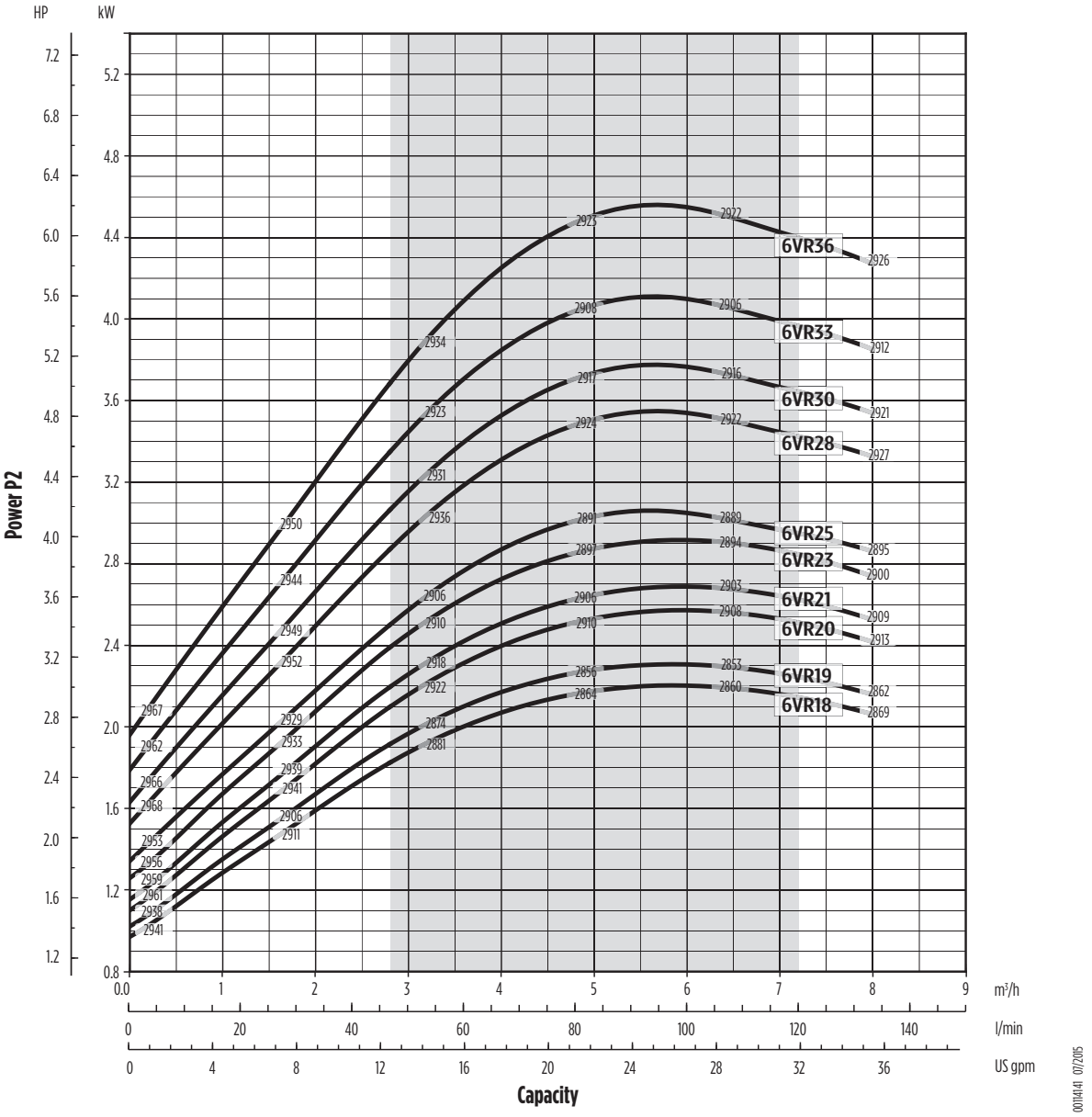
6VR

PERFORMANCE CURVES 50HZ

MEI ≥ 0,70



The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B



Performance curves of Q, H and P depend on the rpm number according to the following formulae:

$$Q_2 = Q_1 \cdot \left(\frac{n_2}{n_1}\right) \quad , \quad H_2 = H_1 \cdot \left(\frac{n_2}{n_1}\right)^2 \quad , \quad P_2 = P_1 \cdot \left(\frac{n_2}{n_1}\right)^3 \quad , \quad \eta$$ *remains approximately the same.*

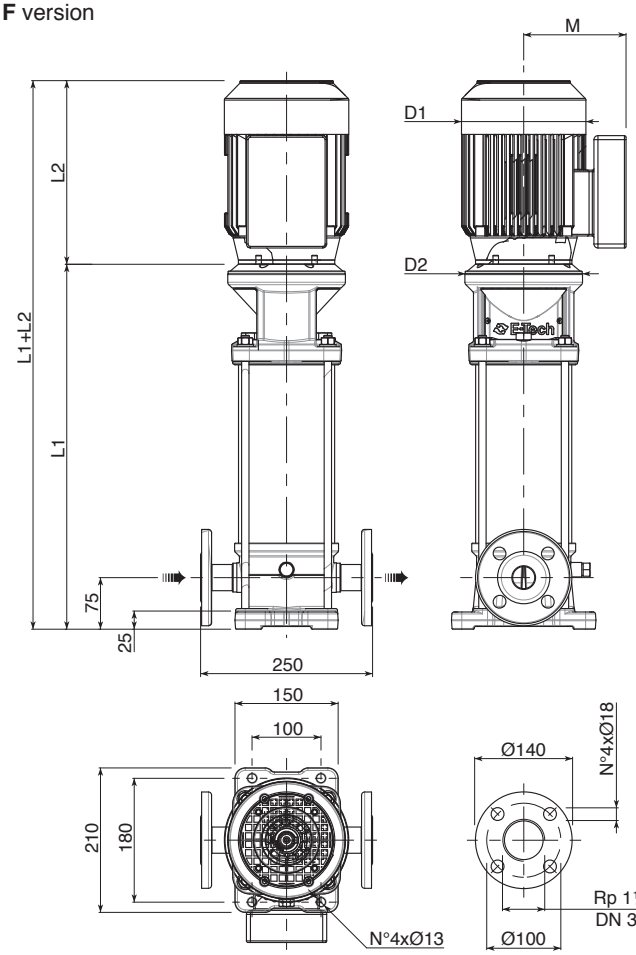
The rpm number related to the performance curves (Q-H-P) is indicated in the power chart.
Performance curves (Q-H-P) will change in case a motor with rpm number different from indicated values is used.
Q=Capacity, H=Head, P=Power, h=Efficiency

The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B

6VR

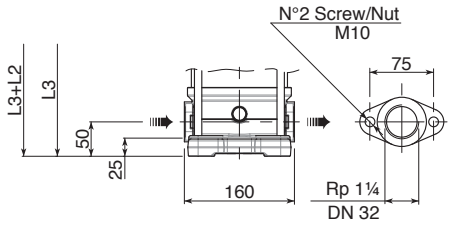
TECHNICAL DATA 50HZ

F version



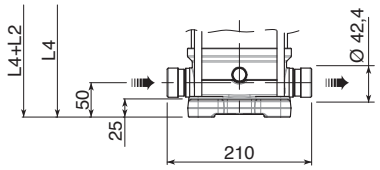
F version — Round flanges on body type PN25: the pump is supplied without counterflanges (Optional accessories, including bolts and joints).

T version — Available from EV6/2 to EV6/21



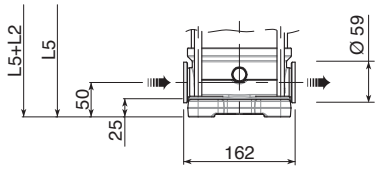
T version — Oval flanges on body type PN16: the pump is supplied without threaded oval counter flanges (Optional accessories, including bolts and joints).

V version



V version — Connections with rapid fittings type "Victaulic": the pump is supplied without the collars (Optional accessories).

C version



C version — Connections with round fittings type Clamp-FlexiClamp: the pump is supplied without collars (Optional accessories).

00114014111 02/2015

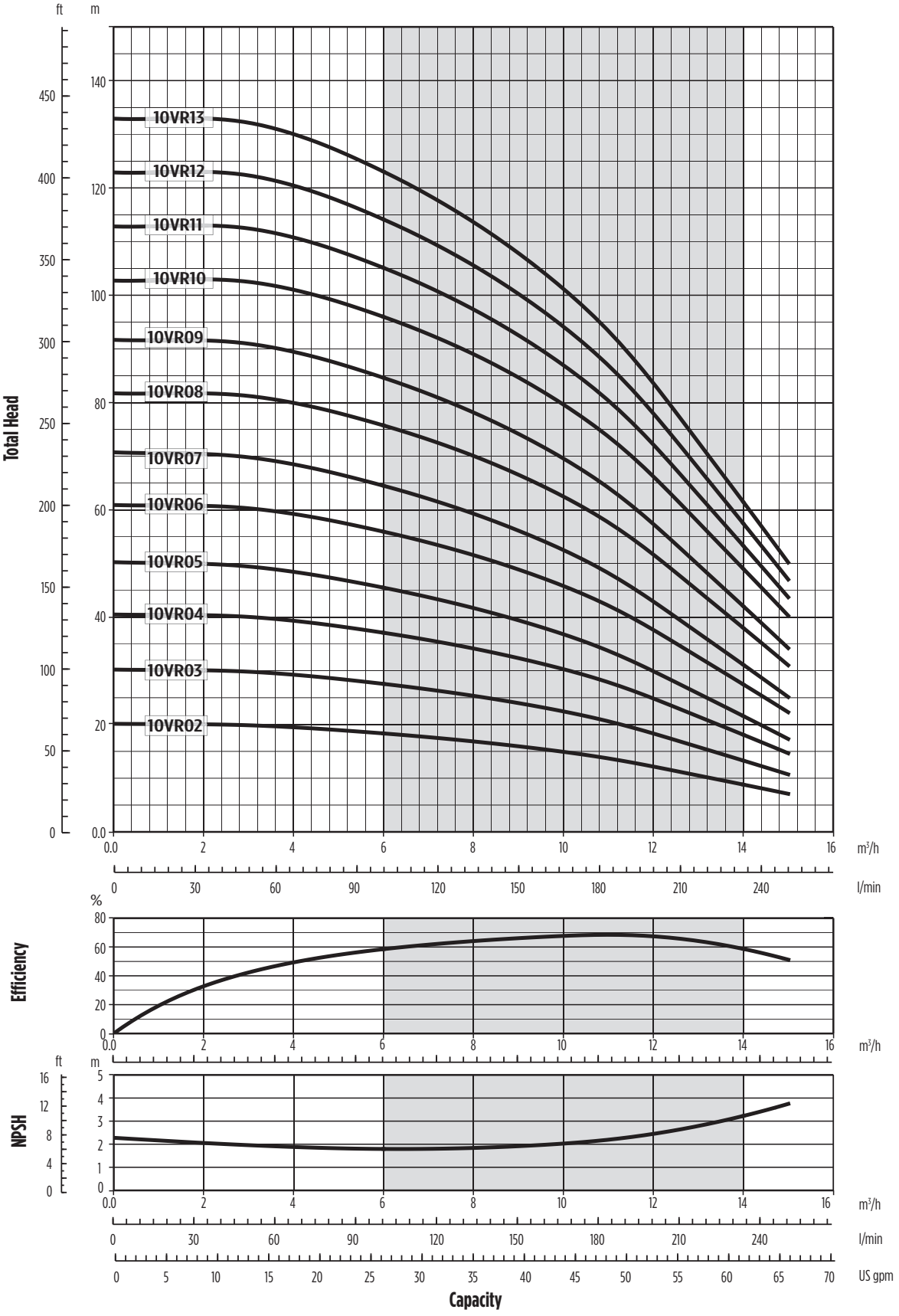
Pump Model	Motor			L1	L2		L3	L4	L5	M		D1		D2	Weight (kg)	
	kW	Dim	Flange	F	1-PHASE	3-PHASE	T	V	C	1-PHASE	3-PHASE	1-PHASE	3-PHASE		Pump	Electric Pump
6VR02	0,37	71	B14	319,5	215	215	294,5	294,5	294,5	129	112	142	142	170	15	20,8
6VR03	0,37	71	B14	345,5	215	215	320,5	320,5	320,5	129	112	142	142	170	15,5	21,3
6VR04	0,55	71	B14	371,5	215	215	346,5	346,5	346,5	129	112	142	142	170	16	22,2
6VR05	0,75	80	B14	397,5	232	232	372,5	372,5	372,5	150	129	160	160	170	16,5	26
6VR06	0,75	80	B14	423,5	232	232	398,5	398,5	398,5	150	129	160	160	170	17,5	27
6VR07	1,1	80	B14	449,5	232	232	424,5	424,5	424,5	150	129	160	160	170	18	29,1
6VR08	1,1	80	B14	475,5	232	232	450,5	450,5	450,5	150	129	160	160	170	18,5	29,6
6VR09	1,1	80	B14	501,5	232	232	476,5	476,5	476,5	150	129	160	160	170	19	30,1
6VR10	1,5	90	B14	537,5	267	267	512,5	512,5	512,5	160	138	180	180	170	20	34
6VR11	1,5	90	B14	563,5	267	267	538,5	538,5	538,5	160	138	180	180	170	20,5	34,5
6VR12	1,5	90	B14	589,5	267	267	564,5	564,5	564,5	160	138	180	180	170	21	35
6VR13	1,5	90	B14	615,5	267	267	590,5	590,5	590,5	160	138	180	180	170	21,5	35,5
6VR14	2,2	90	B14	641,5	267	267	616,5	616,5	616,5	160	138	180	180	170	22	38
6VR15	2,2	90	B14	667,5	267	267	642,5	642,5	642,5	160	138	180	180	170	22,5	38,5
6VR16	2,2	90	B14	693,5	267	267	668,5	668,5	668,5	160	138	180	180	170	23	39
6VR17	2,2	90	B14	719,5	267	267	694,5	694,5	694,5	160	138	180	180	170	23,5	39,5
6VR18	2,2	90	B14	745,5	267	267	720,5	720,5	720,5	160	138	180	180	170	24	40
6VR19	2,2	90	B14	771,5	267	267	746,5	746,5	746,5	160	138	180	180	170	24,5	40,5
6VR20	3	100	B14	807,5	-	290	782,5	782,5	782,5	-	138	-	180	170	25,5	43,5
6VR21	3	100	B14	833,5	-	290	808,5	808,5	808,5	-	138	-	180	170	26	44
6VR23	3	100	B14	885,5	-	290	-	860,5	860,5	-	138	-	180	170	27	45
6VR25	3	100	B14	937,5	-	290	-	912,5	912,5	-	138	-	180	170	28,5	46,5
6VR28	4	112	B14	1015,5	-	306	-	990,5	990,5	-	145	-	196	170	30	56,5
6VR30	4	112	B14	1067,5	-	306	-	1042,5	1042,5	-	145	-	196	170	31	57,5
6VR33	4	112	B14	1145,5	-	306	-	1120,5	1120,5	-	145	-	196	170	32,5	59
6VR36	5,5	132	B5	-	-	328	-	1374	-	-	160	-	225	300	53,5	87,1

10VR

10VR

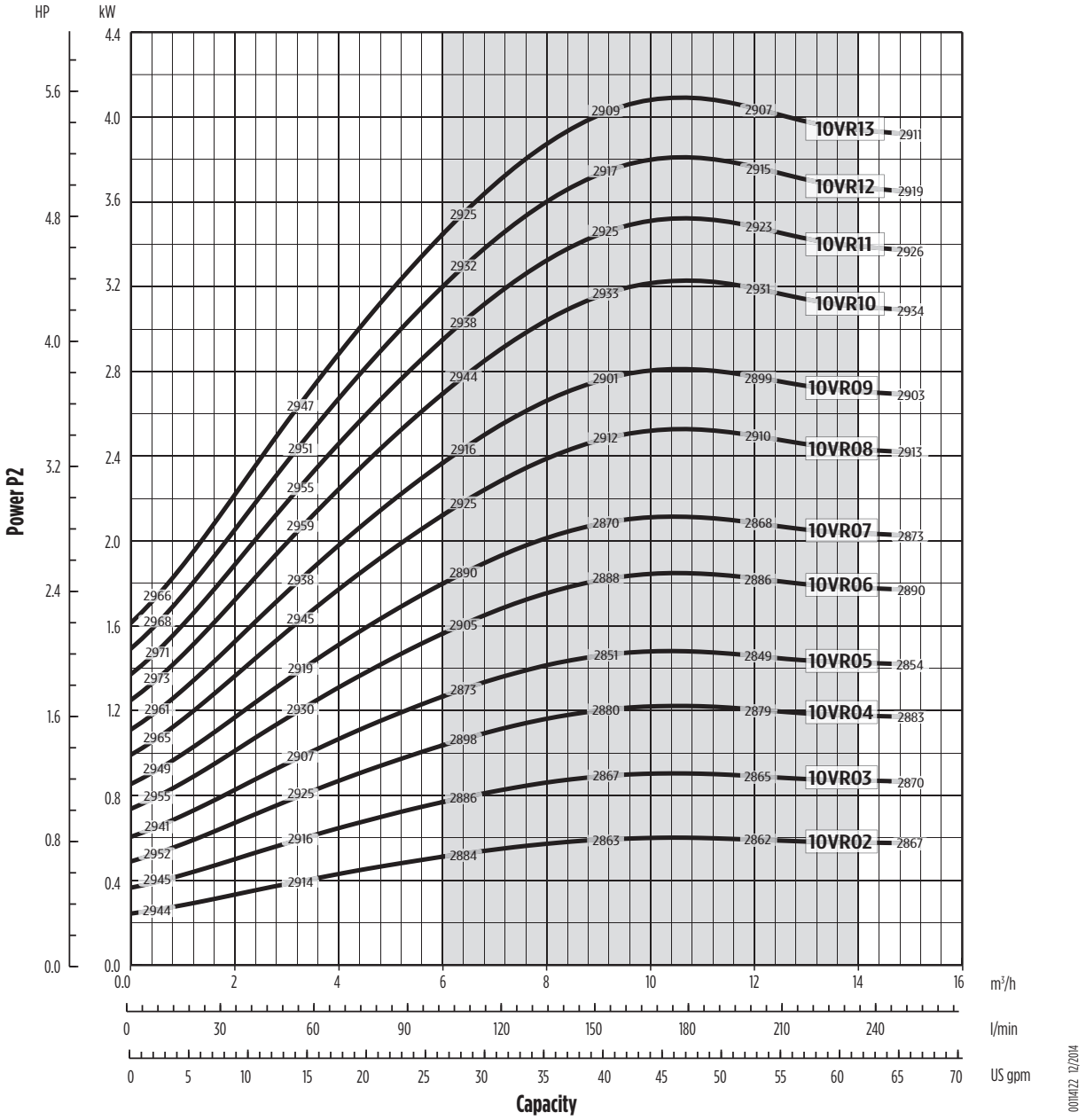
PERFORMANCE CURVES 50HZ

MEI ≥ 0,70



0014122 12/2014

The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B



Performance curves of Q, H and P depend on the rpm number according to the following formulae:

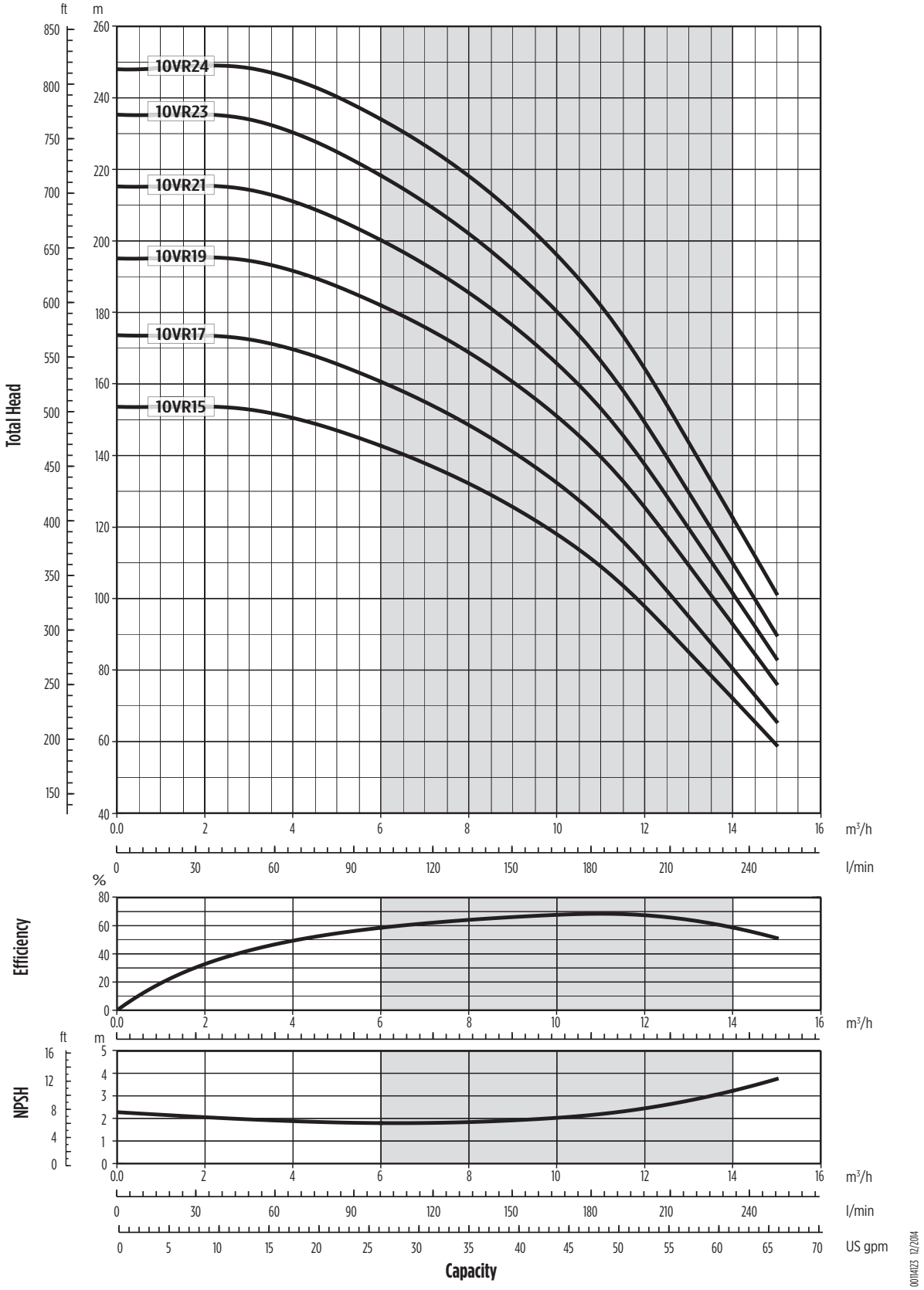
$$Q_2 = Q_1 \cdot \left(\frac{n_2}{n_1}\right) \quad , \quad H_2 = H_1 \cdot \left(\frac{n_2}{n_1}\right)^2 \quad , \quad P_2 = P_1 \cdot \left(\frac{n_2}{n_1}\right)^3 \quad , \quad \eta$$ *remains approximately the same.*

The rpm number related to the performance curves (Q-H-P) is indicated in the power chart.
Performance curves (Q-H-P) will change in case a motor with rpm number different from indicated values is used.
Q=Capacity, H=Head, P=Power, h=Efficiency

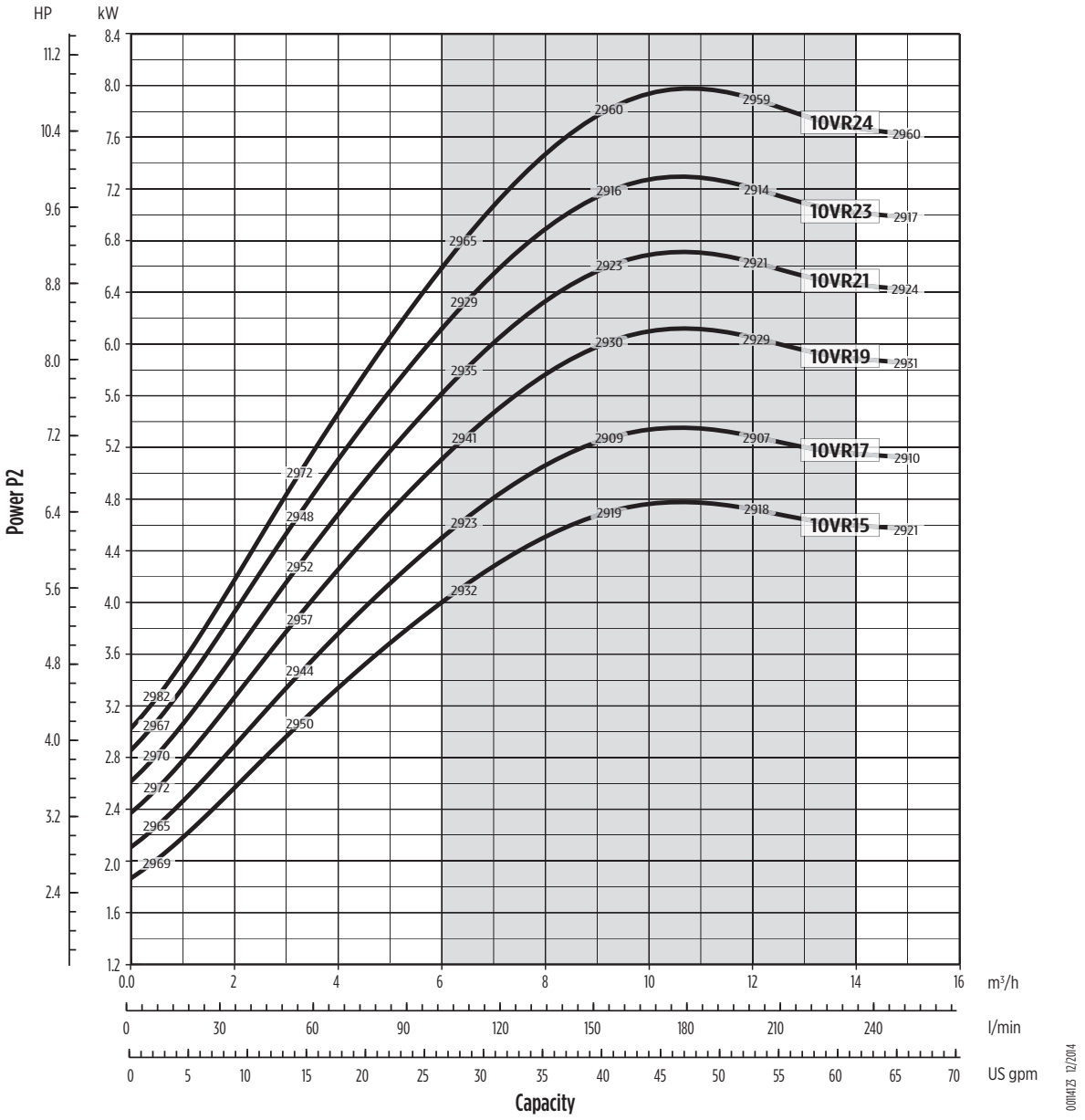
10VR

PERFORMANCE CURVES 50HZ

MEI ≥ 0,70



The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B



Performance curves of Q, H and P depend on the rpm number according to the following formulae:

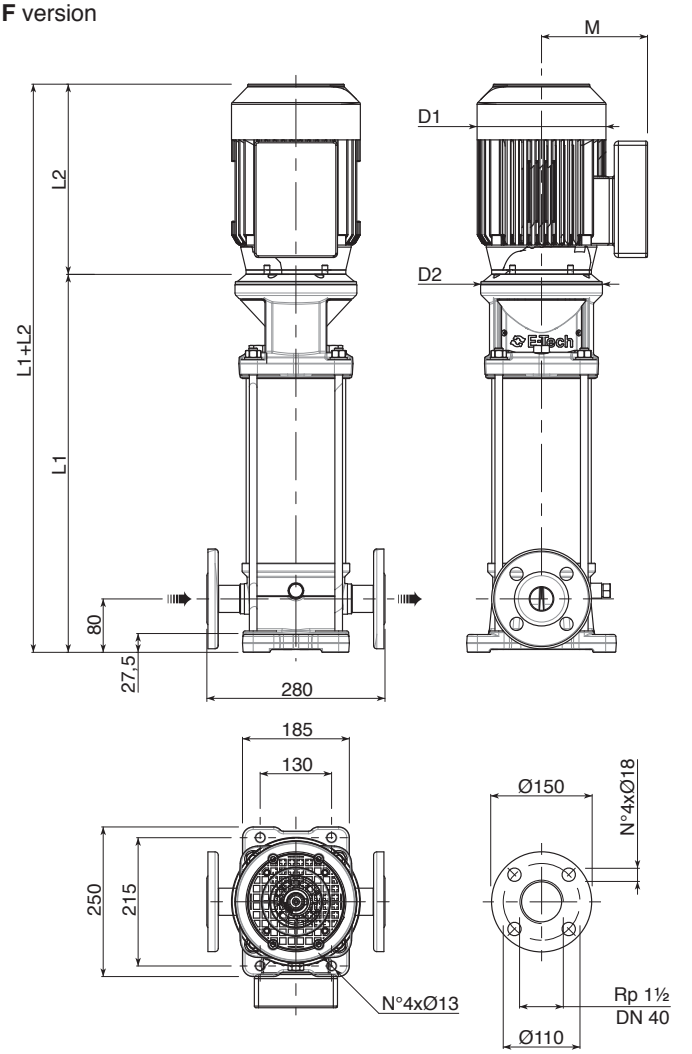
$$Q_2 = Q_1 \cdot \left(\frac{n_2}{n_1}\right) \quad , \quad H_2 = H_1 \cdot \left(\frac{n_2}{n_1}\right)^2 \quad , \quad P_2 = P_1 \cdot \left(\frac{n_2}{n_1}\right)^3 \quad , \quad \eta$$ *remains approximately the same.*

The rpm number related to the performance curves (Q-H-P) is indicated in the power chart.
Performance curves (Q-H-P) will change in case a motor with rpm number different from indicated values is used.
Q=Capacity, H=Head, P=Power, h=Efficiency

10VR

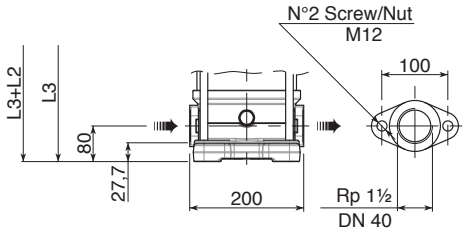
TECHNICAL DATA 50HZ

F version



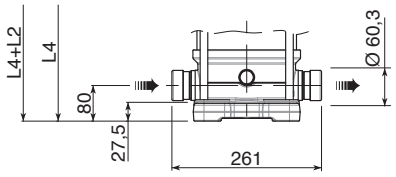
F version Round flanges on body type PN25: the pump is supplied without counterflanges (Optional accessories, including bolts and joints).

T version Available from EV10/2 to EV10/15



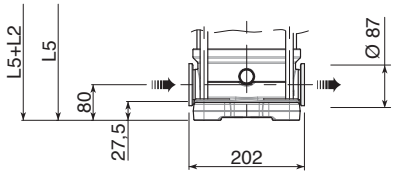
T version Oval flanges on body type PN16: the pump is supplied without threaded oval counter flanges (Optional accessories, including bolts and joints).

V version



V version Connections with rapid fittings type "Victaulic": the pump is supplied without the collars (Optional accessories).

C version



C version Connections with round fittings type Clamp-FlexiClamp: the pump is supplied without collars (Optional accessories).

0011401411 022015

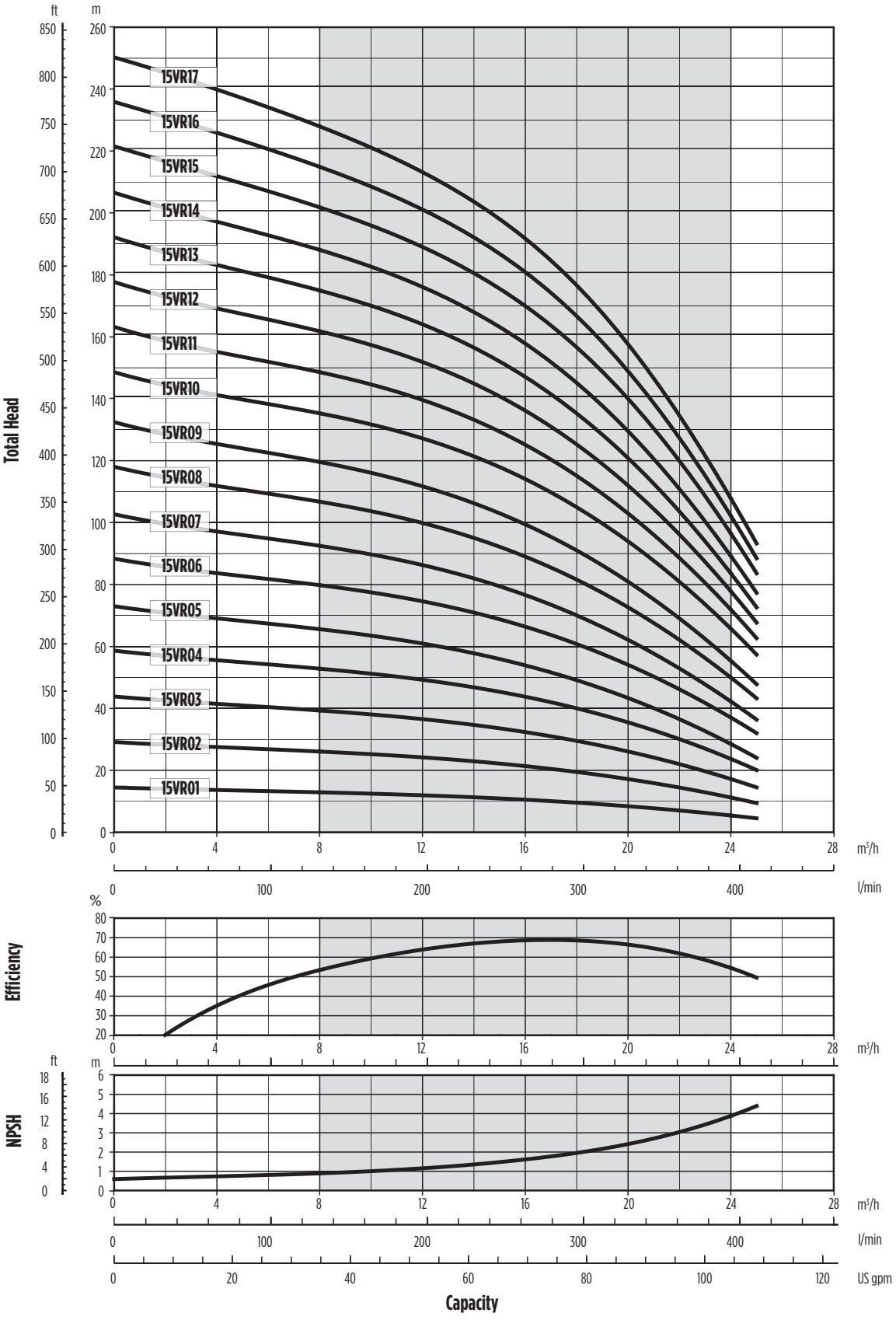
Pump Model	Motor			L1	L2		L3	L4	L5	M		D1		D2	Weight (kg)	
	kW	Dim	Flange	F	1-PHASE	3-PHASE	T	V	C	1-PHASE	3-PHASE	1-PHASE	3-PHASE		Pump	Electric Pump
10VR02	0,75	80	B14	347,5	232	232	347,5	347,5	347,5	150	129	160	160	170	17,5	27
10VR03	1,1	80	B14	377,5	232	232	377,5	377,5	377,5	150	129	160	160	170	18	29,1
10VR04	1,5	90	B14	417,5	267	267	417,5	417,5	417,5	160	138	180	180	170	19,5	33,5
10VR05	1,5	90	B14	447,5	267	267	447,5	447,5	447,5	160	138	180	180	170	20	34
10VR06	2,2	90	B14	477,5	267	267	477,5	477,5	477,5	160	138	180	180	170	20,5	36,5
10VR07	2,2	90	B14	507,5	267	267	507,5	507,5	507,5	160	138	180	180	170	21	37
10VR08	3	100	B14	547,5	-	290	547,5	547,5	547,5	-	138	-	180	170	22,5	40,5
10VR09	3	100	B14	577,5	-	290	577,5	577,5	577,5	-	138	-	180	170	23	41
10VR10	4	112	B14	607,5	-	306	607,5	607,5	607,5	-	145	-	196	170	24	50,5
10VR11	4	112	B14	637,5	-	306	637,5	637,5	637,5	-	145	-	196	170	24,5	51
10VR12	4	112	B14	667,5	-	306	667,5	667,5	667,5	-	145	-	196	170	25	51,5
10VR13	4	112	B14	697,5	-	306	697,5	697,5	697,5	-	145	-	196	170	26	52,5
10VR15	5,5	132	B5	933	-	328	933	933	933	-	161	-	225	300	46,5	80,1
10VR17	5,5	132	B5	993	-	328	-	993	993	-	161	-	225	300	48	81,6
10VR19	7,5	132	B5	1053	-	350	-	1053	1053	-	161	-	225	300	49	85
10VR21	7,5	132	B5	1113	-	350	-	1113	1113	-	161	-	225	300	50,5	86,5
10VR23	7,5	132	B5	1173	-	350	-	1173	1173	-	161	-	225	300	52	88
10VR24	11	160	B5	1223	-	425	-	1223	1223	-	198	-	248	350	55	114

15VR

15VR

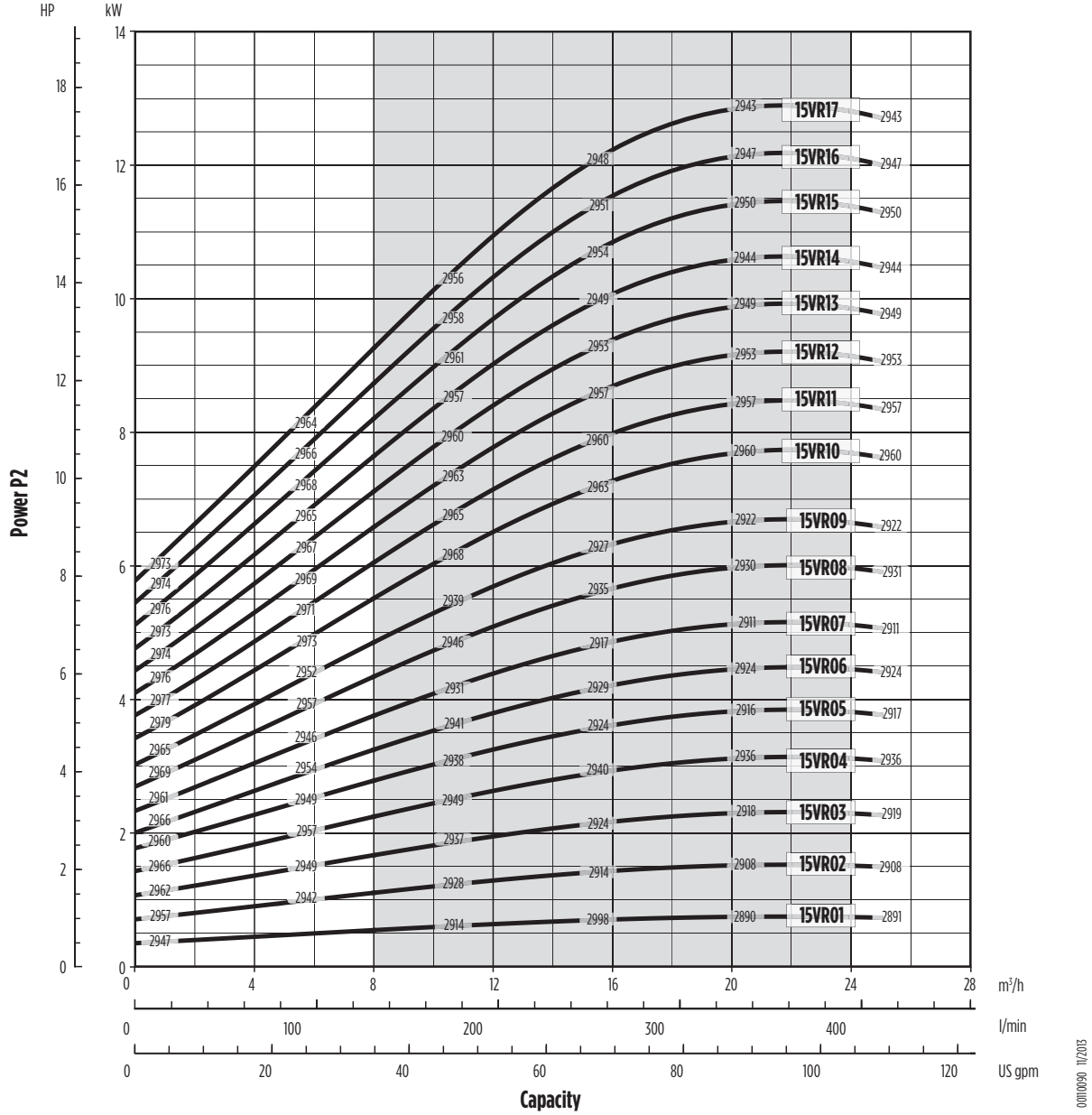
PERFORMANCE CURVES 50HZ

MEI ≥ 0,70



00110090 11/2013

The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B



Performance curves of Q, H and P depend on the rpm number according to the following formulae:

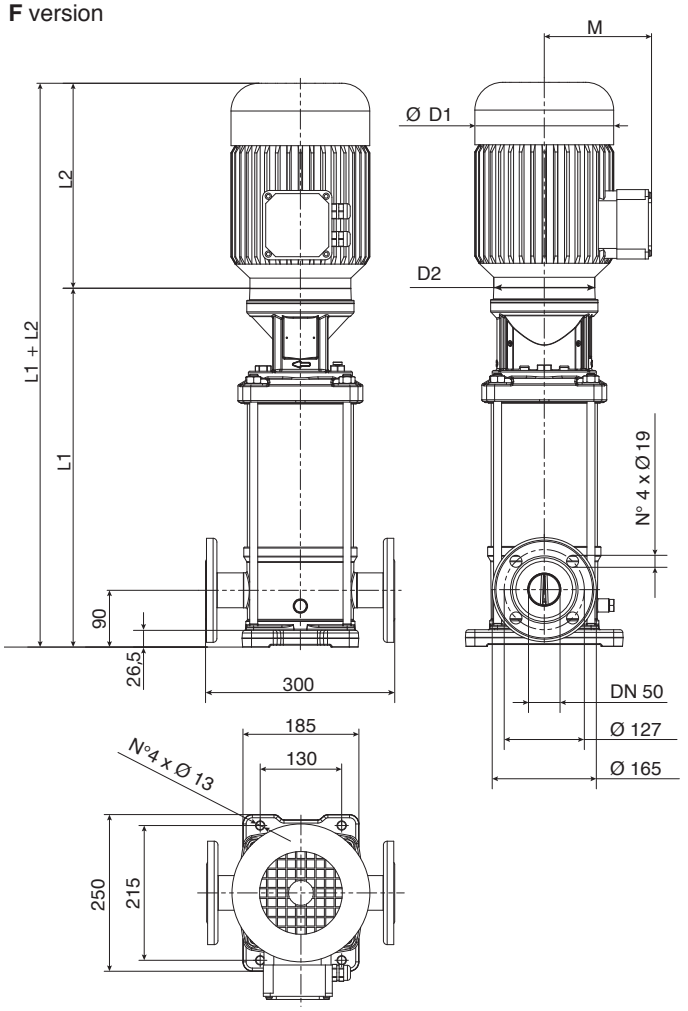
$$Q_2 = Q_1 \cdot \left(\frac{n_2}{n_1}\right) \quad , \quad H_2 = H_1 \cdot \left(\frac{n_2}{n_1}\right)^2 \quad , \quad P_2 = P_1 \cdot \left(\frac{n_2}{n_1}\right)^3 \quad , \quad \eta$$ *remains approximately the same.*

The rpm number related to the performance curves (Q-H-P) is indicated in the power chart.
Performance curves (Q-H-P) will change in case a motor with rpm number different from indicated values is used.
Q=Capacity, H=Head, P=Power, h=Efficiency

15VR

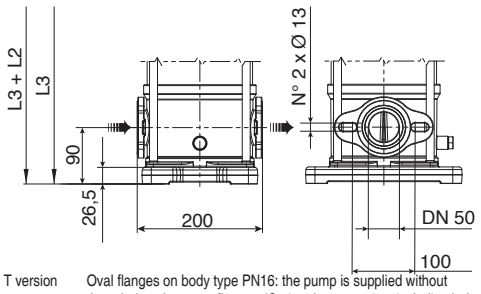
TECHNICAL DATA 50HZ

F version



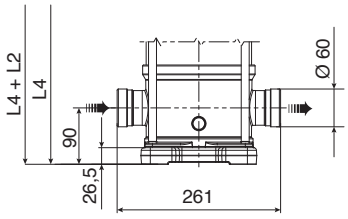
F version Round flanges on body type PN25: the pump is supplied without counterflanges (Optional accessories, including bolts and joints).

T version Available from EV15/1 to EV15/10



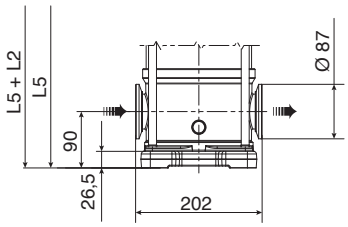
T version Oval flanges on body type PN16: the pump is supplied without threaded oval counter flanges (Optional accessories, including bolts and joints).

V version



V version Connections with rapid fittings type "Victaulic": the pump is supplied without the collars (Optional accessories).

C version



C version Connections with round fittings type Clamp-FlexiClamp: the pump is supplied without collars (Optional accessories).

00114095 05/2014

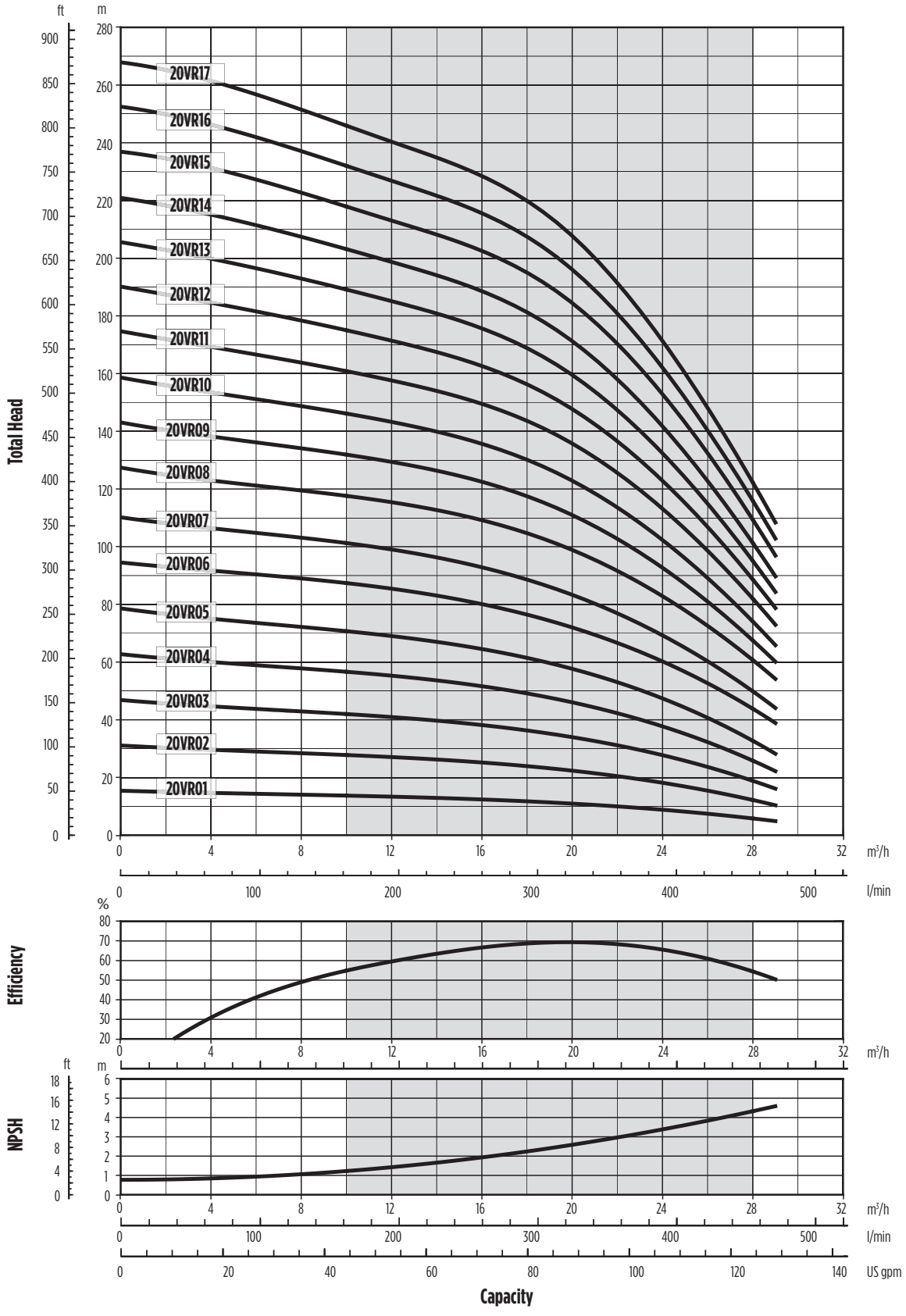
Pump Model	Motor			Dimensions (mm)												Weight (kg)	
				L1	L2		L3	L4	L5	M		D1		D2		Pump	Electric Pump
	kW	Dim	Flange	F	1-PHASE	3-PHASE	T	V	C	1-PHASE	3-PHASE	1-PHASE	3-PHASE				
15VR01	1,1	80	B14	405	232	232	405	405	405	150	129	160	160	170		23,5	35,5
15VR02	2,2	90	B14	415	267	267	415	415	415	160	138	180	180	170		25	41
15VR03	3	100	B14	473	-	267	473	473	473	-	138	-	180	170		27	45,7
15VR04	4	112	B14	521	-	306	521	521	521	-	145	-	196	170		28,5	51,3
15VR05	4	112	B14	569	-	306	569	569	569	-	145	-	196	170		30	52,8
15VR06	5,5	132	B5	804	-	328	804	804	804	-	161	-	225	300		52	86
15VR07	5,5	132	B5	852	-	328	852	852	852	-	161	-	225	300		53	87
15VR08	7,5	132	B5	900	-	350	900	900	900	-	161	-	225	300		54,5	90,5
15VR09	7,5	132	B5	948	-	350	948	948	948	-	161	-	225	300		56	92
15VR10	11	160	B5	1016	-	425	1016	1016	1016	-	198	-	248	350		60	118
15VR11	11	160	B5	1064	-	425	-	1064	1064	-	198	-	248	350		61,5	119,5
15VR12	11	160	B5	1112	-	425	-	1112	1112	-	198	-	248	350		63	121
15VR13	11	160	B5	1160	-	425	-	1160	1160	-	198	-	248	350		64,5	122,5
15VR14	11	160	B5	1208	-	425	-	1208	1208	-	198	-	248	350		66	124
15VR15	15	160	B5	1256	-	476	-	1256	1256	-	198	-	248	350		67	131
15VR16	15	160	B5	1304	-	476	-	1304	1304	-	198	-	248	350		68,5	132,5
15VR17	15	160	B5	1352	-	476	-	1352	1352	-	198	-	248	350		70	134

20VR

20VR

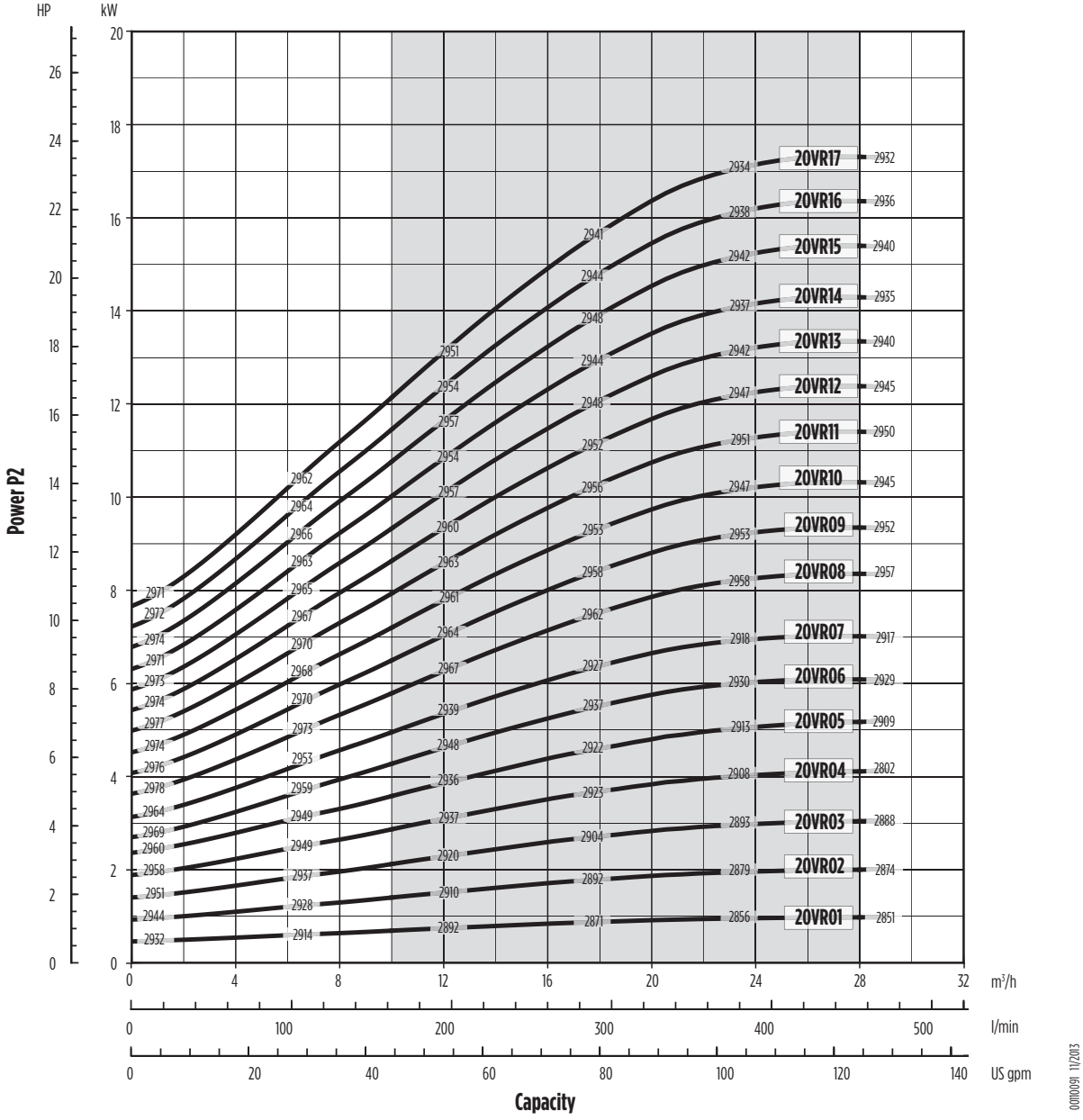
PERFORMANCE CURVES 50HZ

MEI ≥ 0,70



00010091 11/2013

The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B



Performance curves of Q, H and P depend on the rpm number according to the following formulae:

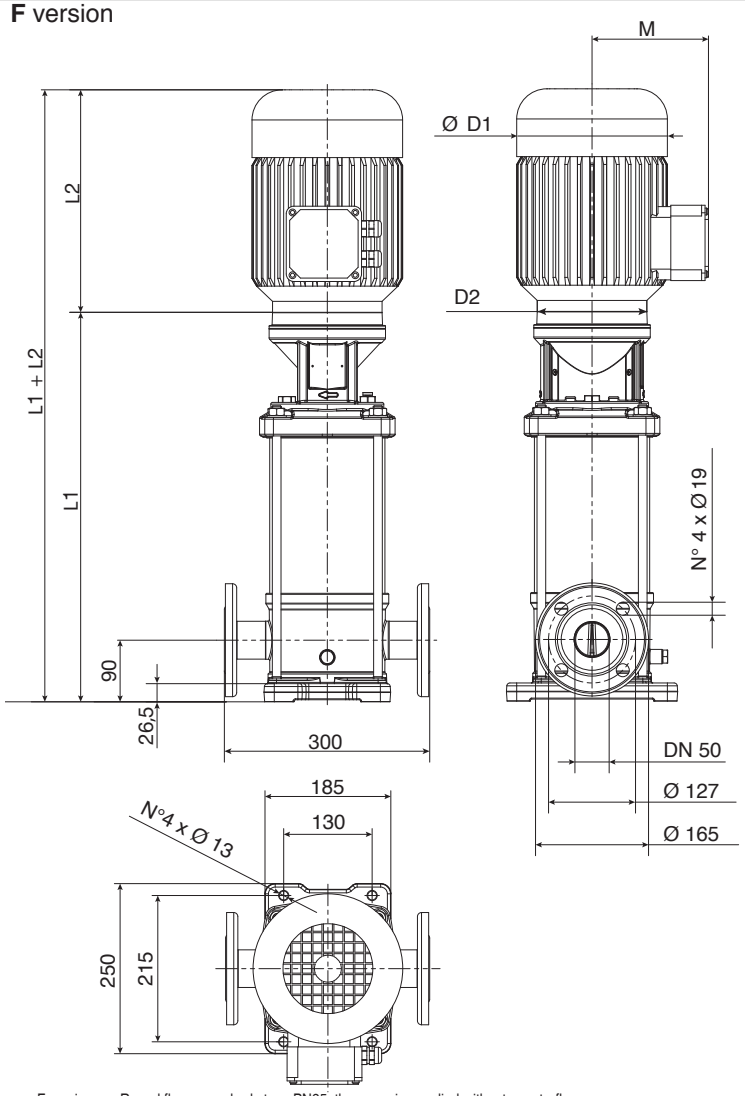
$$Q_2 = Q_1 \cdot \left(\frac{n_2}{n_1}\right) \quad , \quad H_2 = H_1 \cdot \left(\frac{n_2}{n_1}\right)^2 \quad , \quad P_2 = P_1 \cdot \left(\frac{n_2}{n_1}\right)^3 \quad , \quad \eta$$ *remains approximately the same.*

The rpm number related to the performance curves (Q-H-P) is indicated in the power chart.
Performance curves (Q-H-P) will change in case a motor with rpm number different from indicated values is used.
Q=Capacity, H=Head, P=Power, h=Efficiency

20VR

TECHNICAL DATA 50HZ

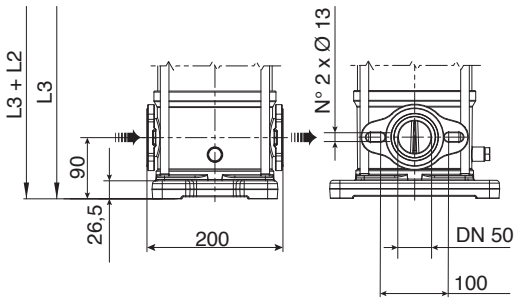
F version



F version — Round flanges on body type PN25: the pump is supplied without counterflanges (Optional accessories, including bolts and joints).

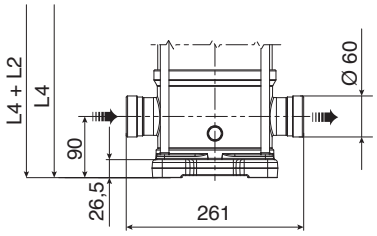
T version

Available from EV20/1 to EV20/10



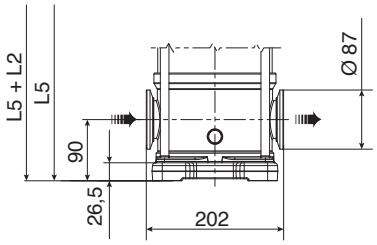
T version — Oval flanges on body type PN16: the pump is supplied without threaded oval counter flanges (Optional accessories, including bolts and joints).

V version



V version — Connections with rapid fittings type "Victaulic": the pump is supplied without the collars (Optional accessories).

C version



C version — Connections with round fittings type Clamp-FlexiClamp: the pump is supplied without collars (Optional accessories).

00114095 05/2014

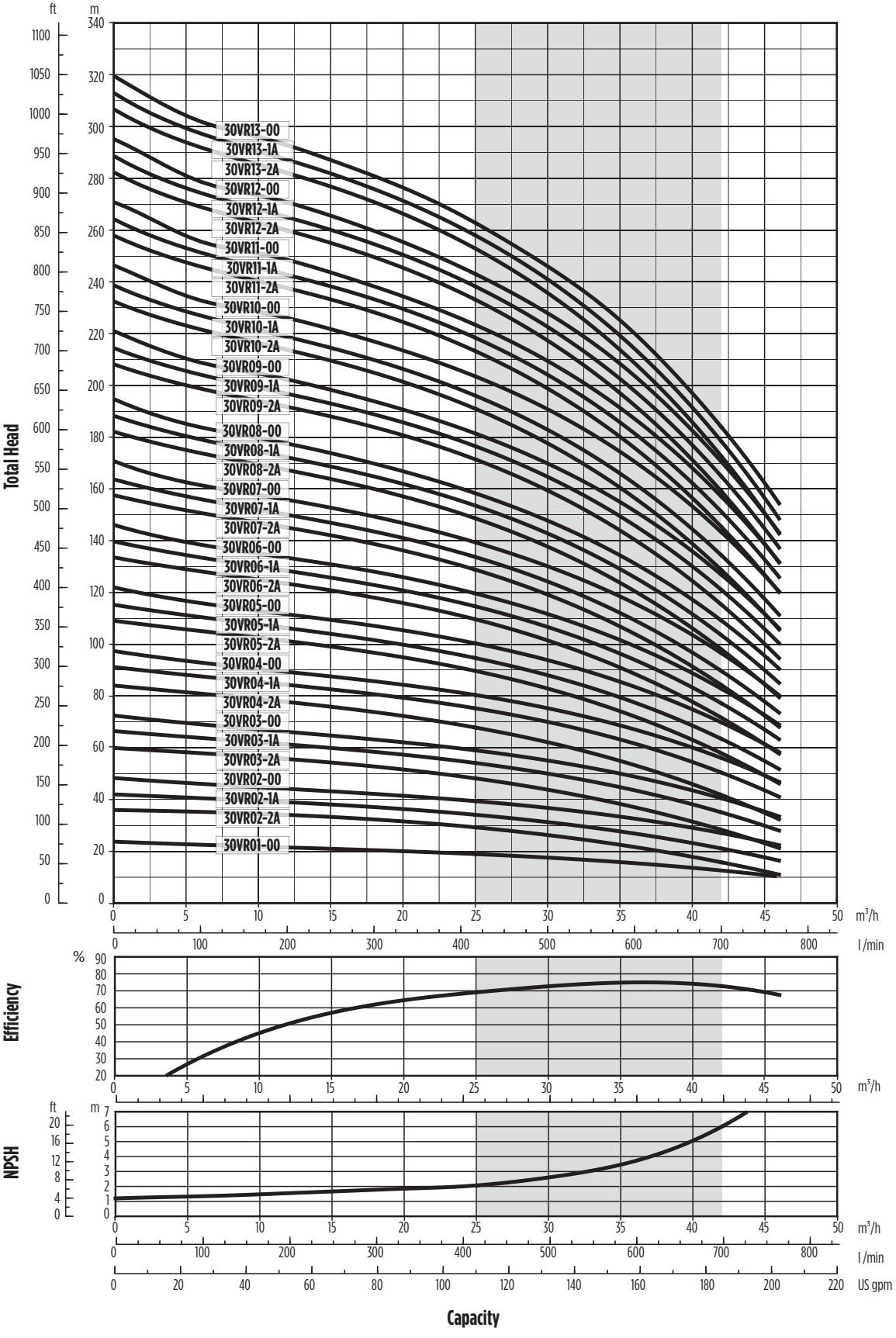
Pump Model	Motor			Dimensions (mm) L1	L2		L3	L4	L5	M		D1		D2	Weight (kg) Pump	Electric Pump
	kW	Dim	Flange	F	1-PHASE	3-PHASE	T	V	C	1-PHASE	3-PHASE	1-PHASE	3-PHASE			
20VR01	1,1	80	B14	405	232	232	405	405	405	150	129	160	160	170	23,5	35,5
20VR02	2,2	90	B14	415	267	267	415	415	415	160	138	180	180	170	25,5	41,5
20VR03	4	112	B14	473	-	306	473	473	473	-	145	-	196	170	27	49,8
20VR04	5,5	132	B5	708	-	328	708	708	708	-	161	-	225	300	49	83
20VR05	5,5	132	B5	756	-	328	756	756	756	-	161	-	225	300	50,5	84,5
20VR06	7,5	132	B5	804	-	350	804	804	804	-	161	-	225	300	52	88
20VR07	7,5	132	B5	852	-	350	852	852	852	-	161	-	225	300	53	89
20VR08	11	160	B5	920	-	425	920	920	920	-	198	-	248	350	57,5	115,5
20VR09	11	160	B5	968	-	425	968	968	968	-	198	-	248	350	59	117
20VR10	11	160	B5	1016	-	425	1016	1016	1016	-	198	-	248	350	60,5	118,5
20VR11	15	160	B5	1064	-	476	-	1064	1064	-	198	-	248	350	61,5	125,5
20VR12	15	160	B5	1112	-	476	-	1112	1112	-	198	-	248	350	63	127
20VR13	15	160	B5	1160	-	476	-	1160	1160	-	198	-	248	350	64,5	128,5
20VR14	15	160	B5	1208	-	476	-	1208	1208	-	198	-	248	350	66	130
20VR15	18,5	160	B5	1256	-	542	-	1256	1256	-	235	-	317	350	67,5	156,4
20VR16	18,5	160	B5	1304	-	542	-	1304	1304	-	235	-	317	350	68,5	157,4
20VR17	18,5	160	B5	1352	-	542	-	1352	1352	-	235	-	317	350	70	158,9

30VR

30VR

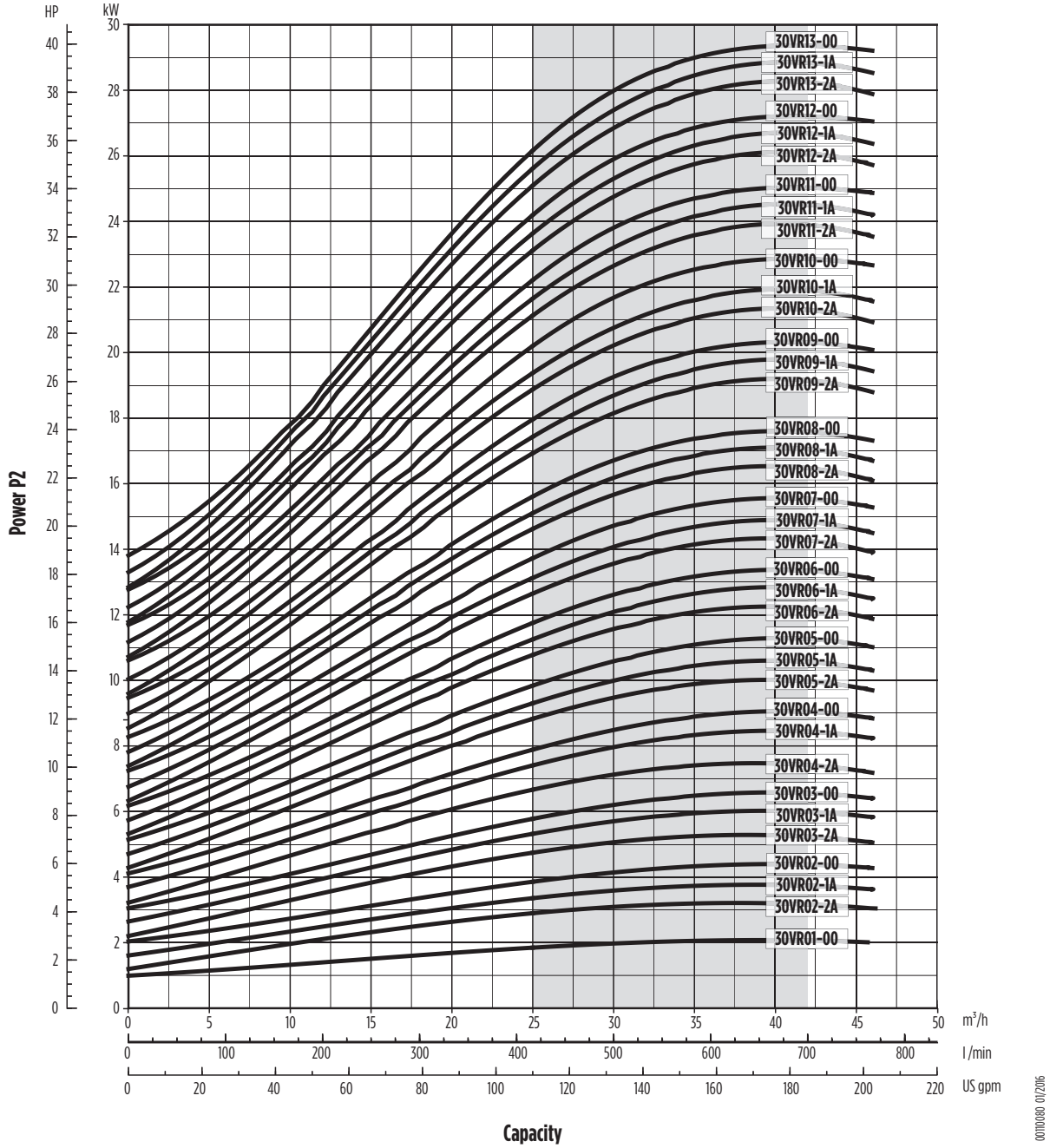
PERFORMANCE CURVES 50HZ

MEI ≥ 0,70



0010080 01/2016

The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B



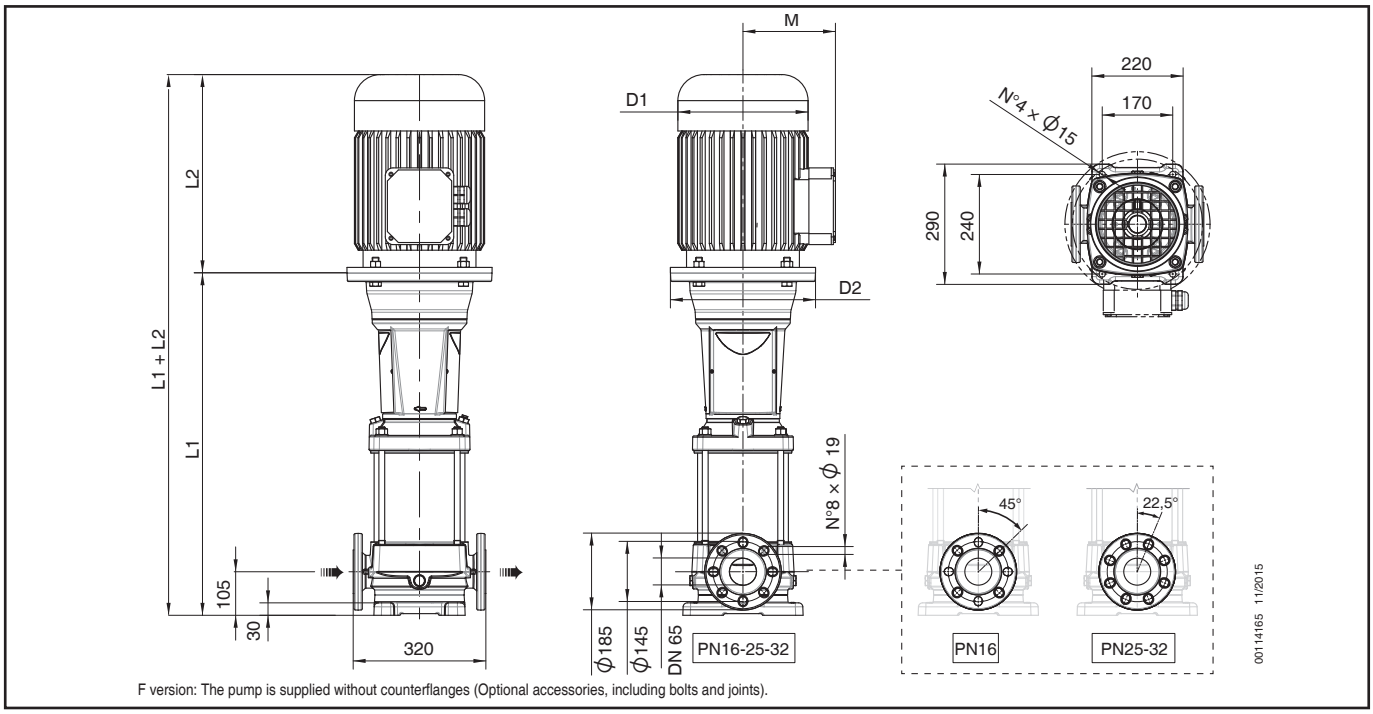
Performance curves of Q, H and P depend on the rpm number according to the following formulae:

$$Q_2 = Q_1 \cdot \left(\frac{n_2}{n_1}\right) \quad , \quad H_2 = H_1 \cdot \left(\frac{n_2}{n_1}\right)^2 \quad , \quad P_2 = P_1 \cdot \left(\frac{n_2}{n_1}\right)^3 \quad , \quad \eta$$ *remains approximately the same.*

The rpm number related to the performance curves (Q-H-P) is indicated in the power chart.
Performance curves (Q-H-P) will change in case a motor with rpm number different from indicated values is used.
Q=Capacity, H=Head, P=Power, h=Efficiency

30VR

TECHNICAL DATA 50HZ



F version: The pump is supplied without counterflanges (Optional accessories, including bolts and joints).

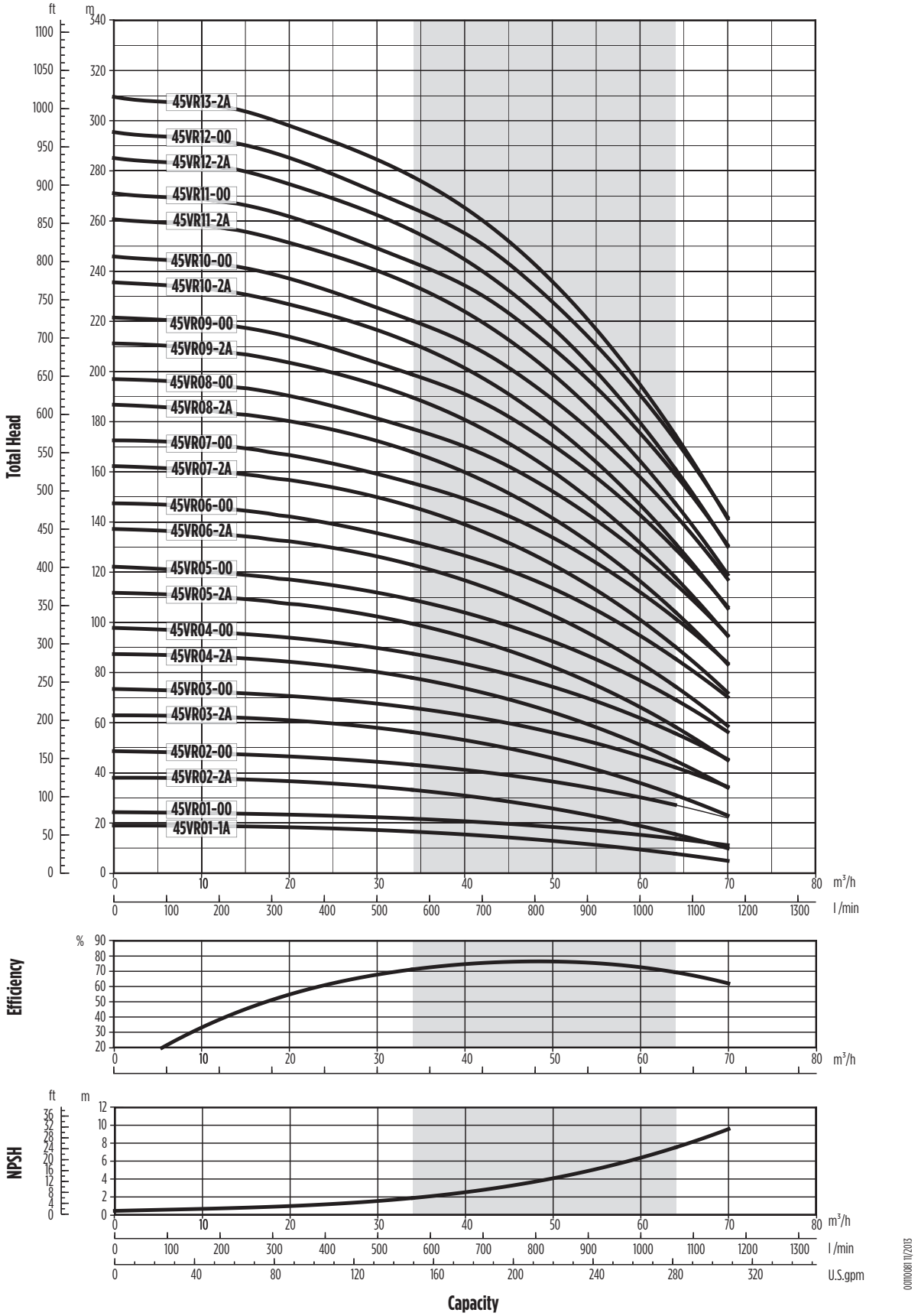
Pump Model	Motor			Dimensions (mm)						Weight (kg)		
	kW	Dim.		L1	L2	M	D1	D2	L1 + L2	Pump	Motor	Electric Pump
30VR01-00	2,2	90	B14	445	267	138	180	170	712	53	16	69
30VR02-2A	4	112	B14	537	306	145	196	170	843	57	22,8	80
30VR02-1A	4	112	B14	724	306	145	196	170	1030	74,5	22,8	97,5
30VR02-00	5,5	132	B5	724	328	161	225	300	1052	74,5	34	108.5
30VR03-2A	5,5	132	B5	806	328	161	225	300	1134	78,5	34	112,5
30VR03-1A	7,5	132	B5	806	350	161	225	300	1156	78,5	36	114,5
30VR03-00	7,5	132	B5	806	350	161	225	300	1238	78,5	36	114,5
30VR04-2A	7,5	132	B5	888	350	161	225	300	1333	85,5	36	121,5
30VR04-1A	11	160	B5	908	425	198	248	350	1333	85,5	58	143,5
30VR04-00	11	160	B5	908	425	198	248	350	1415	85,5	58	143,5
30VR05-2A	11	160	B5	990	425	198	248	350	1415	89,5	58	147,5
30VR05-1A	11	160	B5	990	425	198	248	350	1415	89,5	58	147,5
30VR05-00	15	160	B5	990	476	198	248	350	1548	89,5	64	153,5
30VR06-2A	15	160	B5	1072	476	198	248	350	1548	93,5	64	157,5
30VR06-1A	15	160	B5	1072	476	198	248	350	1548	93,5	64	157,5
30VR06-00	15	160	B5	1072	476	198	248	350	1630	93,5	64	157,5
30VR07-2A	15	160	B5	1154	476	198	248	350	1652	97,5	64	161,5
30VR07-1A	15	160	B5	1154	476	198	248	350	1630	97,5	64	161,5
30VR07-00	18,5	160	B5	1154	542	238	317	350	1696	97,5	89	186,5
30VR08-2A	18,5	160	B5	1236	542	238	317	350	1778	101,5	89	190,5
30VR08-1A	18,5	160	B5	1236	542	238	317	350	1778	101,5	89	190,5
30VR08-00	18,5	160	B5	1236	542	238	317	350	1778	101,5	89	190,5
30VR09-2A	22	180	B5	1318	542	238	360	350	1860	105,5	108.7	214
30VR09-1A	22	180	B5	1318	542	238	360	350	1860	105,5	108.7	214
30VR09-00	22	180	B5	1318	542	238	360	350	1860	105,5	108.7	214
30VR10-2A	22	180	B5	1400	542	238	360	350	1942	112,5	108.7	221
30VR10-1A	22	180	B5	1400	542	238	360	350	1942	112,5	108.7	221
30VR10-00	30	200	B5	1405	658	297	399	400	2063	112,5	228	340,5
30VR11-2A	30	200	B5	1487	658	297	399	400	2145	116,5	228	344,5
30VR11-1A	30	200	B5	1487	658	297	399	400	2145	116,5	228	344,5
30VR11-00	30	200	B5	1487	658	297	399	400	2145	116,5	228	344,5
30VR12-2A	30	200	B5	1569	658	297	399	400	2227	120,5	228	348,5
30VR12-1A	30	200	B5	1569	658	297	399	400	2227	120,5	228	348,5
30VR12-00	30	200	B5	1569	658	297	399	400	2227	120,5	228	348,5
30VR13-2A	30	200	B5	1651	658	297	399	400	2309	124,5	228	352,5
30VR13-1A	30	200	B5	1651	658	297	399	400	2309	124,5	228	352,5
30VR13-00	30	200	B5	1651	658	297	399	400	2309	124,5	228	352,5

45VR

45VR

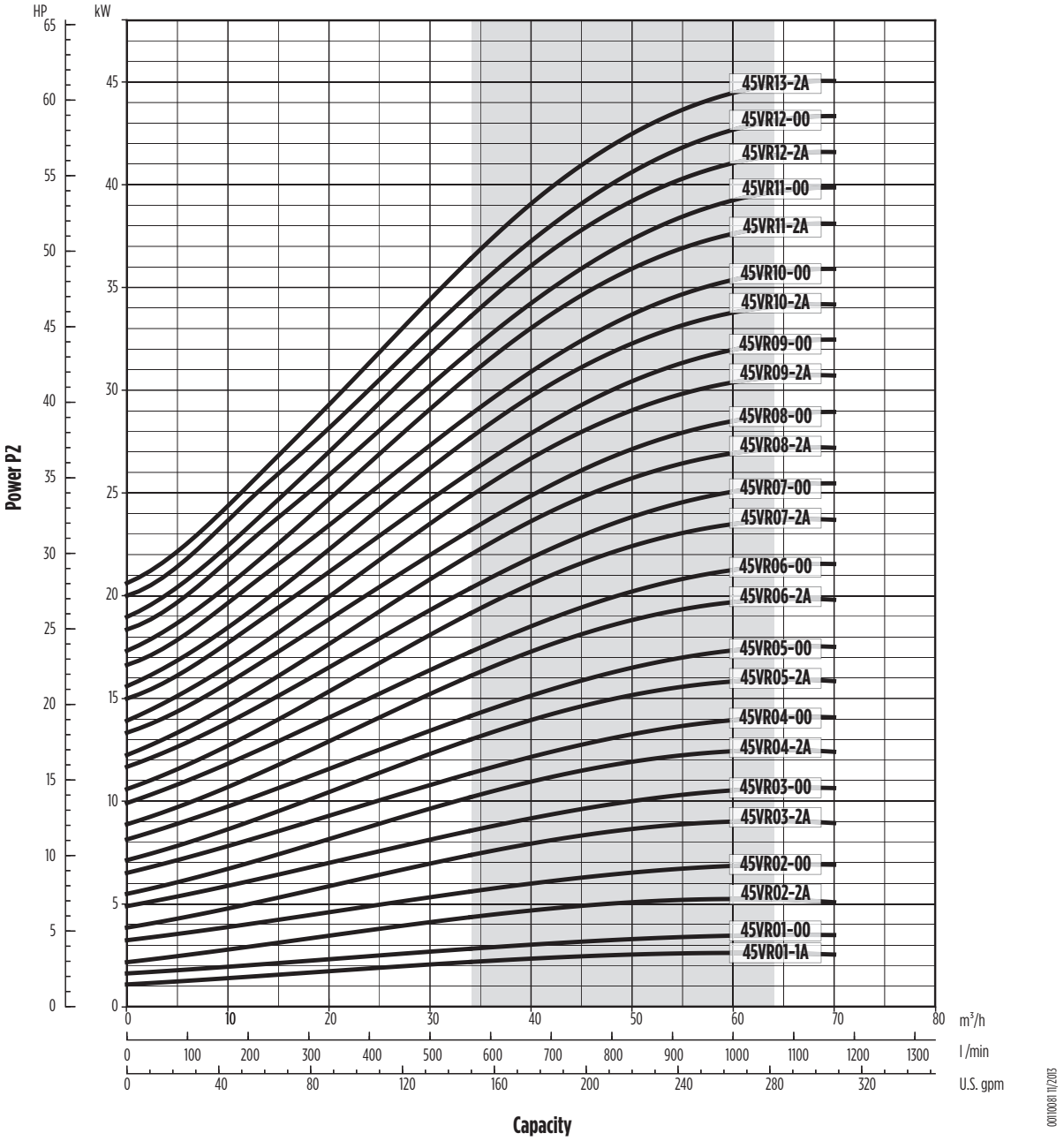
PERFORMANCE CURVES 50HZ

MEI ≥ 0,70



0011100081 11/2013

The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B



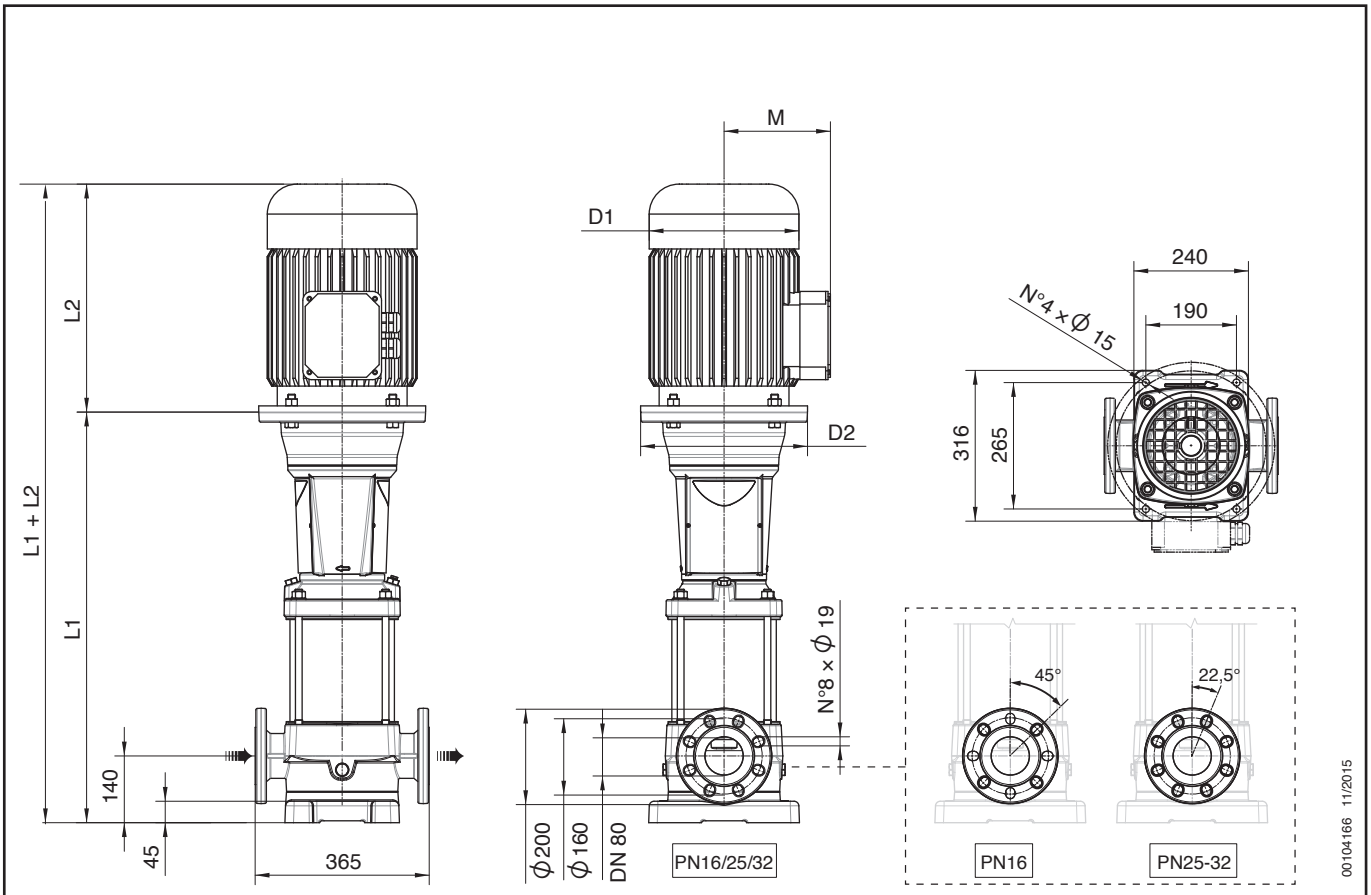
Performance curves of Q, H and P depend on the rpm number according to the following formulae:

$$Q_2 = Q_1 \cdot \left(\frac{n_2}{n_1}\right) \quad , \quad H_2 = H_1 \cdot \left(\frac{n_2}{n_1}\right)^2 \quad , \quad P_2 = P_1 \cdot \left(\frac{n_2}{n_1}\right)^3 \quad , \quad \eta$$ *remains approximately the same.*

The rpm number related to the performance curves (Q-H-P) is indicated in the power chart.
Performance curves (Q-H-P) will change in case a motor with rpm number different from indicated values is used.
Q=Capacity, H=Head, P=Power, h=Efficiency

45VR

TECHNICAL DATA 50HZ



F version: The pump is supplied without counterflanges (Optional accessories, including bolts and joints).

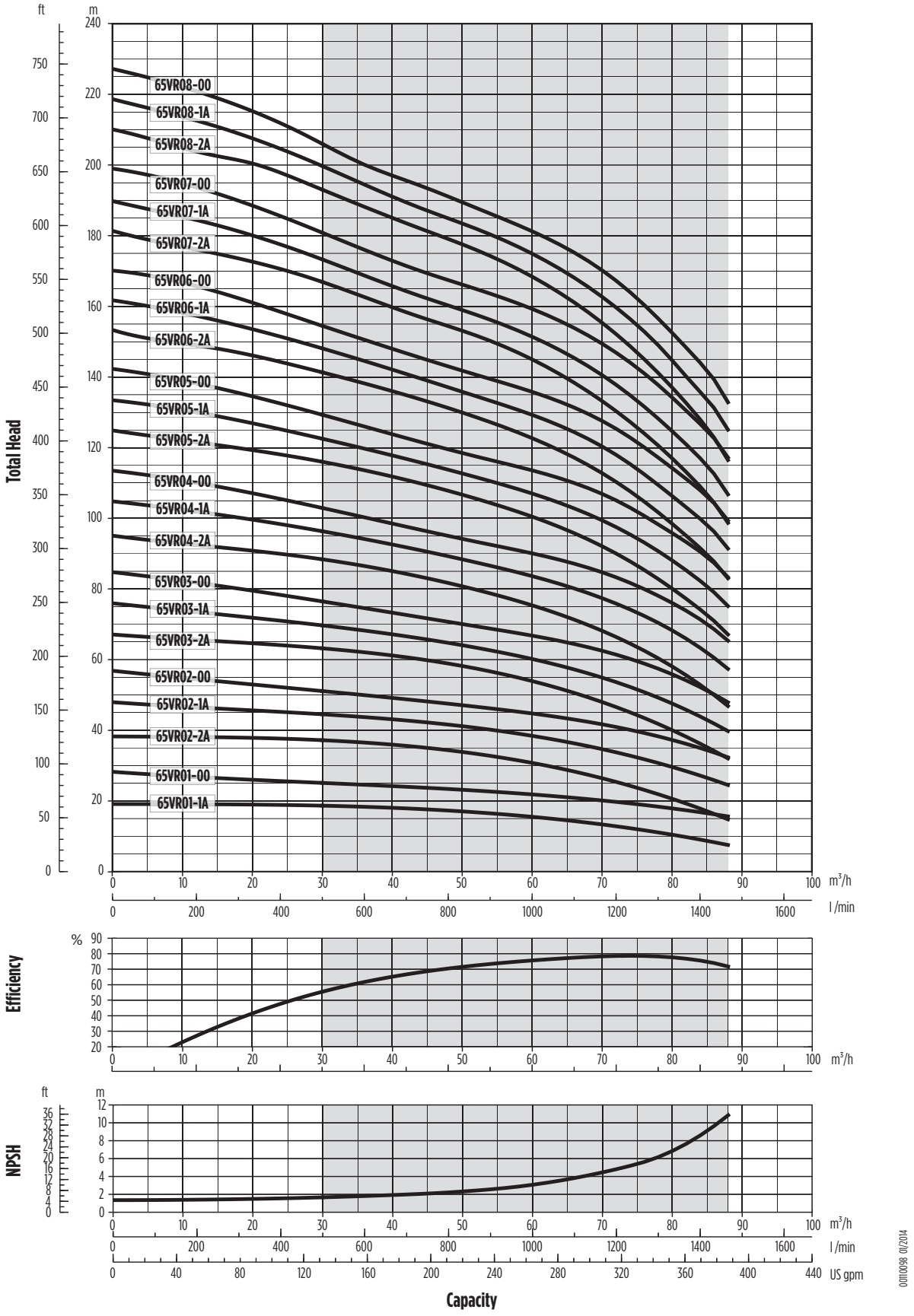
Pump Model	Motor			Dimensions (mm)						Weight (kg)		
	kW	Dim.	Flange	L1	L2	M	D1	D2	L1 + L2	Pump	Motor	Electric Pump
45VR01-1A	3	100	B14	490	267	138	180	170	757	59	18,7	78
45VR01-00	4	112	B14	490	306	145	196	170	796	59	22,8	82
45VR02-2A	5,5	132	B5	759	328	161	225	300	1087	80,5	34	114,5
45VR02-00	7,5	132	B5	759	350	161	225	300	1109	80,5	36	116,5
45VR03-2A	11	160	B5	861	425	198	248	350	1286	87,5	58	145,5
45VR03-00	11	160	B5	861	425	198	248	350	1286	87,5	58	145,5
45VR04-2A	15	160	B5	943	476	198	248	350	1419	91,5	64	155,5
45VR04-00	15	160	B5	943	476	198	248	350	1419	91,5	64	155,5
45VR05-2A	18,5	160	B5	1025	542	238	317	350	1567	95,5	89	184,5
45VR05-00	18,5	160	B5	1025	542	238	317	350	1567	95,5	89	184,5
45VR06-2A	22	180	B5	1107	542	238	317	350	1649	99	108,5	208
45VR06-00	22	180	B5	1107	542	238	317	350	1649	99	108,5	208
45VR07-2A	30	200	B5	1194	658	297	399	400	1852	106	228	334
45VR07-00	30	200	B5	1194	658	297	399	400	1852	106	228	334
45VR08-2A	30	200	B5	1276	658	297	399	400	1934	110	228	338
45VR08-00	30	200	B5	1276	658	297	399	400	1934	110	228	338
45VR09-2A	37	200	B5	1358	658	297	399	400	2016	114	242	356
45VR09-00	37	200	B5	1358	658	297	399	400	2016	114	242	356
45VR10-2A	37	200	B5	1440	658	297	399	400	2098	118	242	360
45VR10-00	37	200	B5	1440	658	297	399	400	2098	118	242	360
45VR11-2A	45	225	B5	1522	699	333	465	450	2221	125	308	433
45VR11-00	45	225	B5	1522	699	333	465	450	2221	125	308	433
45VR12-2A	45	225	B5	1604	699	333	465	450	2303	129	308	437
45VR12-00	45	225	B5	1604	699	333	465	450	2303	129	308	437
45VR13-2A	45	225	B5	1686	699	333	465	450	2385	133	308	441

65VR

65VR

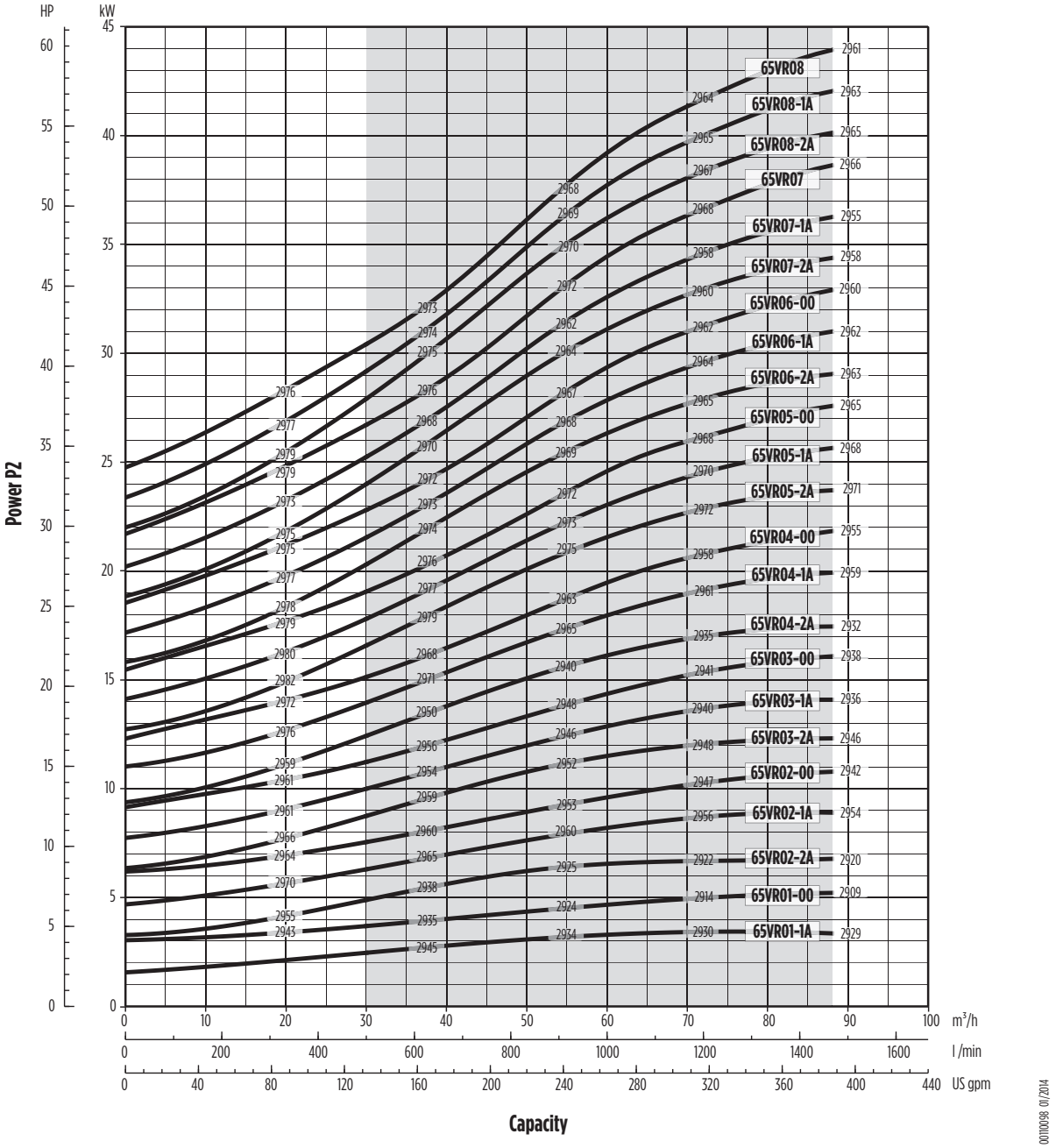
PERFORMANCE CURVES 50HZ

MEI ≥ 0,70



The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B

00110098 01/2014



Performance curves of Q, H and P depend on the rpm number according to the following formulae:

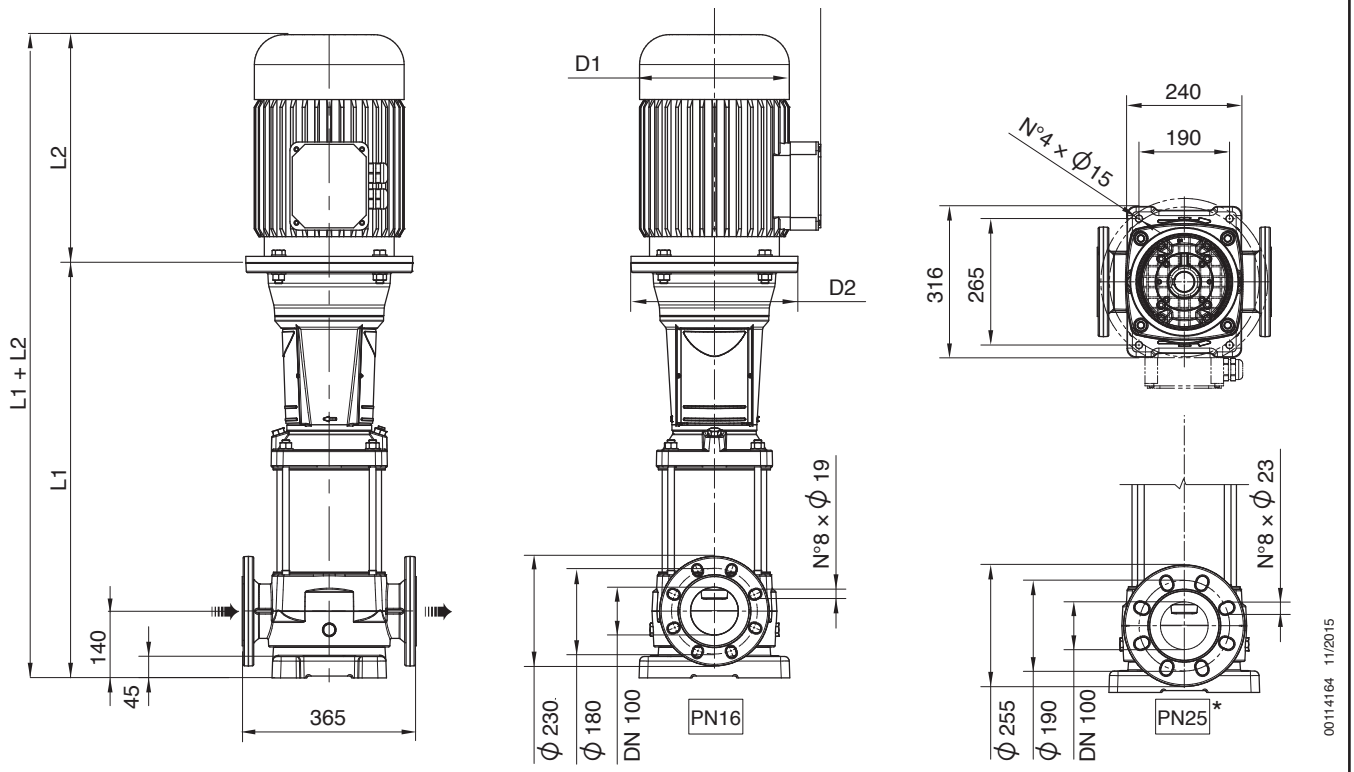
$$Q_2 = Q_1 \cdot \left(\frac{n_2}{n_1}\right) \quad , \quad H_2 = H_1 \cdot \left(\frac{n_2}{n_1}\right)^2 \quad , \quad P_2 = P_1 \cdot \left(\frac{n_2}{n_1}\right)^3 \quad , \quad \eta$$ *remains approximately the same.*

The rpm number related to the performance curves (Q-H-P) is indicated in the power chart.
Performance curves (Q-H-P) will change in case a motor with rpm number different from indicated values is used.
Q=Capacity, H=Head, P=Power, h=Efficiency

The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B

65VR

TECHNICAL DATA 50HZ



F version: The pump is supplied without counterflanges (Optional accessories, including bolts and joints). *Available from EV65/1-1A to EV65/6-1A

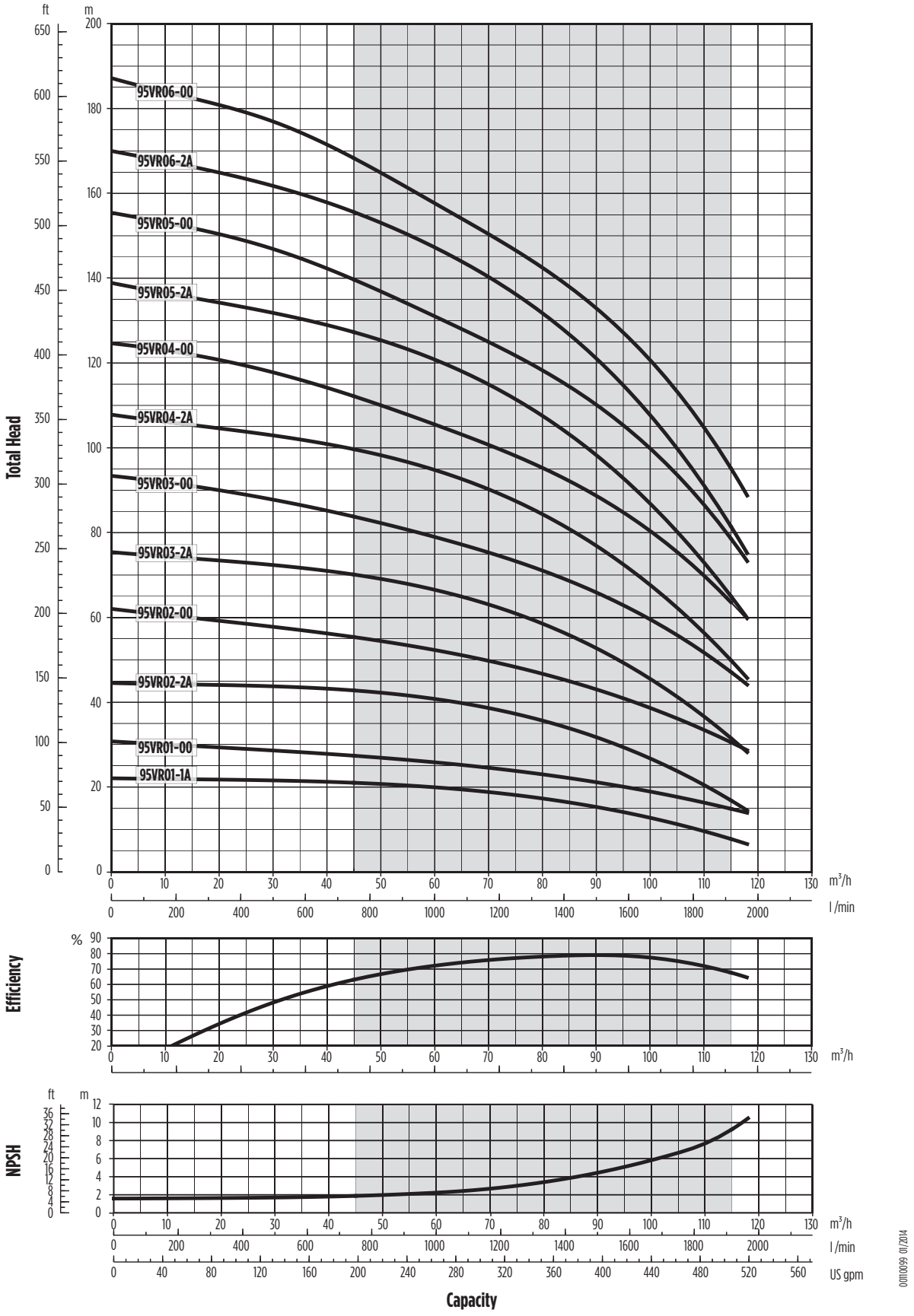
Pump Model	Motor			Dimensions (mm)						Weight (kg)		
	kW	Dim	Flange	L1	L2	M	D1	D2	L1 + L2	Pump	Motor	Electric Pump
65VR01-1A	4	112	B14	550,1	306	145	196	170	856,1	61	22,8	83,8
65VR01-00	5,5	132	B5	737,1	328	161	225	300	1065,1	81	34	115
65VR02-2A	7,5	132	B5	829,2	350	161	225	300	1179,2	85,5	36	121,5
65VR02-1A	11	160	B5	849,2	425	198	248	350	1274,2	88,5	58	146,5
65VR02-00	11	160	B5	849,2	425	198	248	350	1274,2	88,5	58	146,5
65VR03-2A	15	160	B5	941,3	476	198	248	350	1417,3	93	64	157
65VR03-1A	15	160	B5	941,3	476	198	248	350	1417,3	93	64	157
65VR03-00	18,5	160	B5	941,3	542	235	317	350	1483,3	93	88,9	181,9
65VR04-2A	18,5	160	B5	1033,4	542	235	317	350	1575,4	97,5	88,9	186,4
65VR04-1A	22	180	B5	1033,4	542	238	317	350	1575,4	98	108,7	206,7
65VR04-00	22	180	B5	1033,4	542	238	317	350	1575,4	98	108,7	206,7
65VR05-2A	30	200	B5	1130,5	658	300	399	400	1788,5	105,5	228	333,5
65VR05-1A	30	200	B5	1130,5	658	300	399	400	1788,5	105,5	228	333,5
65VR05-00	30	200	B5	1130,5	658	300	399	400	1788,5	105,5	228	333,5
65VR06-2A	30	200	B5	1222,6	658	300	399	400	1880,6	110	228	338
65VR06-1A	37	200	B5	1222,6	658	300	399	400	1880,6	110	242	352
65VR06-00	37	200	B5	1222,6	658	300	399	400	1880,6	110	242	352
65VR07-2A	37	200	B5	1314,7	658	300	399	400	1972,7	114,5	242	356,5
65VR07-1A	37	200	B5	1314,7	658	300	399	400	1972,7	114,5	242	356,5
65VR07-00	45	225	B5	1314,7	699	335	465	450	2013,7	117,5	308	425,5
65VR08-2A	45	225	B5	1406,8	699	335	465	450	2105,8	122	308	430
65VR08-1A	45	225	B5	1406,8	699	335	465	450	2105,8	122	308	430
65VR08-00	45	225	B5	1406,8	699	335	465	450	2105,8	122	308	430

95VR

95VR

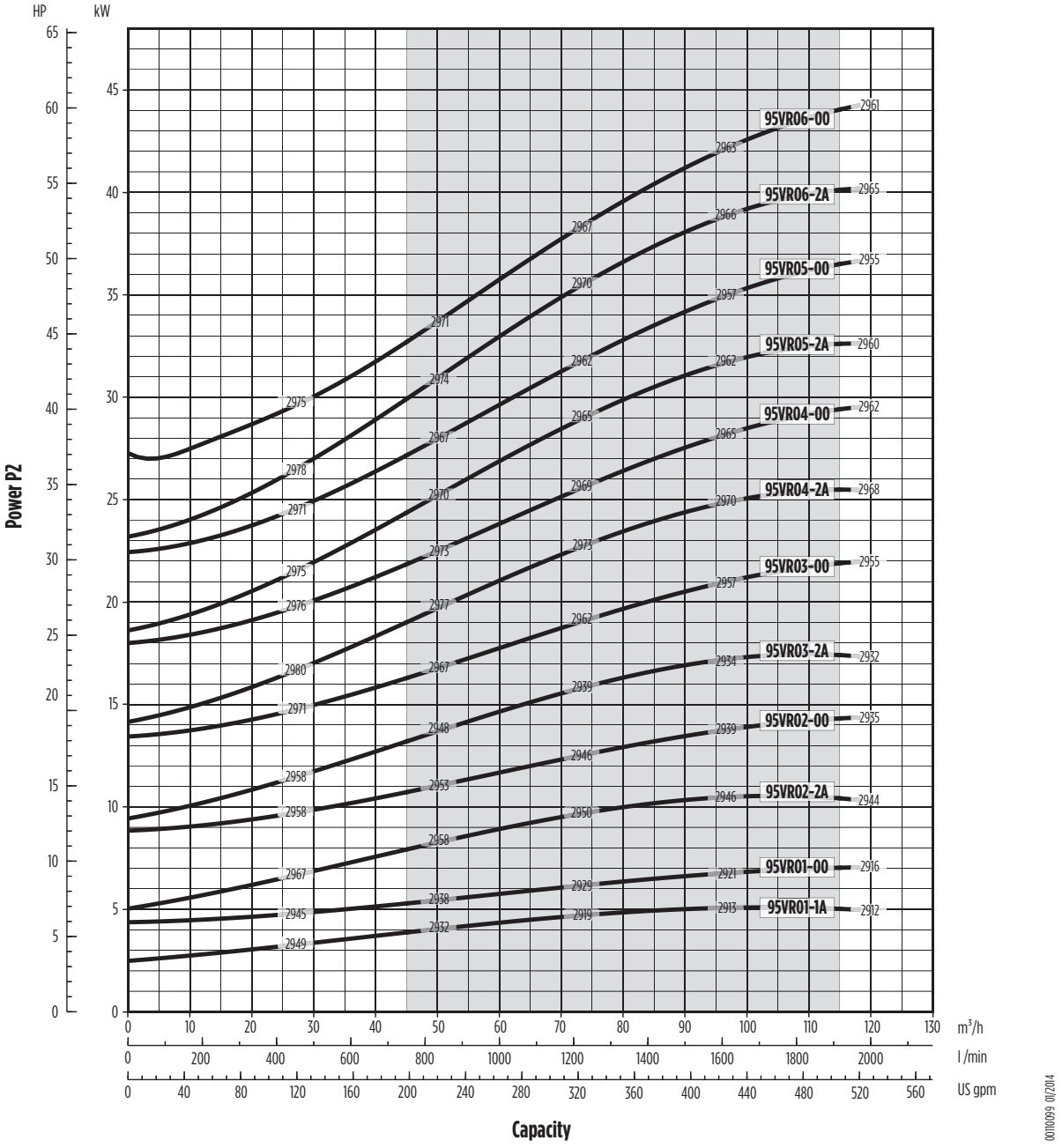
PERFORMANCE CURVES 50HZ

MEI ≥ 0,70



00110099 01/2014

The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B



Performance curves of Q, H and P depend on the rpm number according to the following formulae:

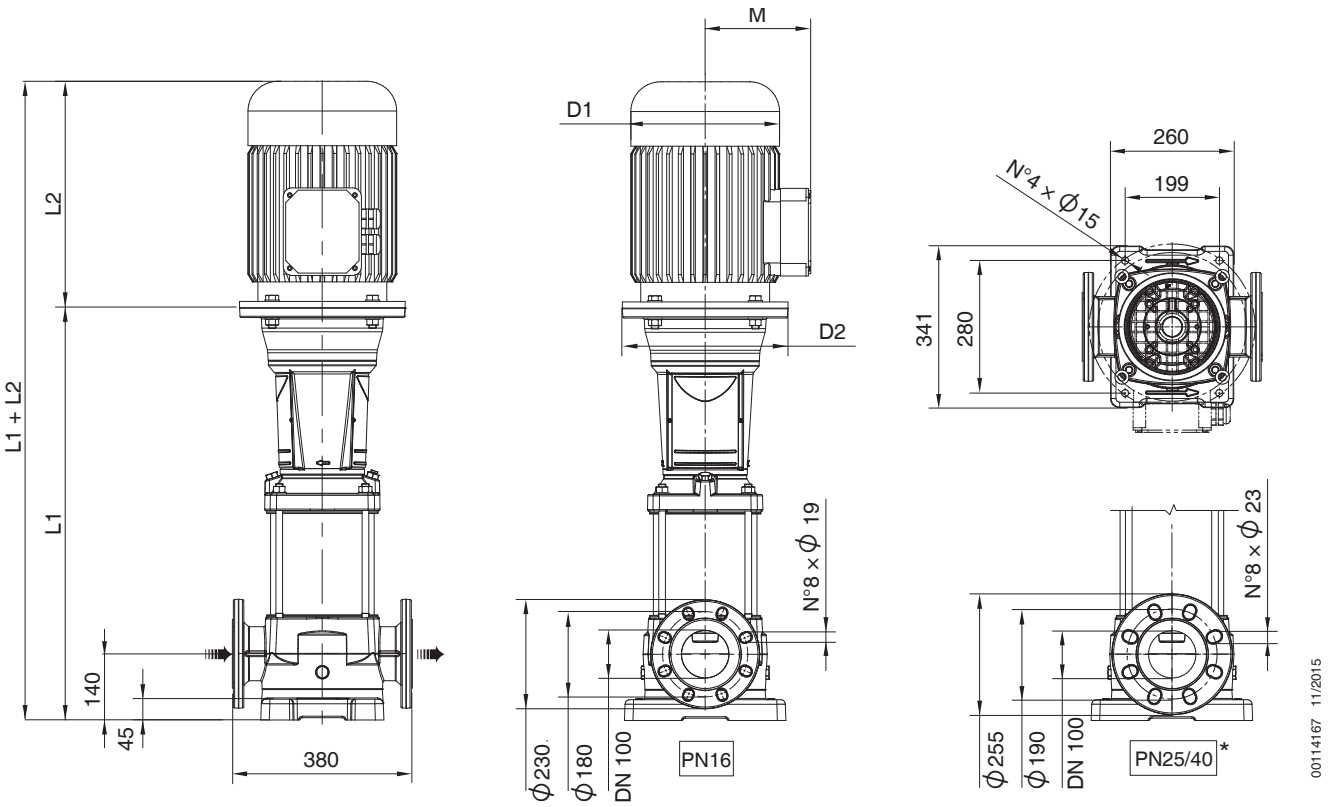
$$Q_2 = Q_1 \cdot \left(\frac{n_2}{n_1}\right) \quad , \quad H_2 = H_1 \cdot \left(\frac{n_2}{n_1}\right)^2 \quad , \quad P_2 = P_1 \cdot \left(\frac{n_2}{n_1}\right)^3 \quad , \quad \eta$$ *remains approximately the same.*

The rpm number related to the performance curves (Q-H-P) is indicated in the power chart.
Performance curves (Q-H-P) will change in case a motor with rpm number different from indicated values is used.
Q=Capacity, H=Head, P=Power, h=Efficiency

The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B

95VR

TECHNICAL DATA 50HZ



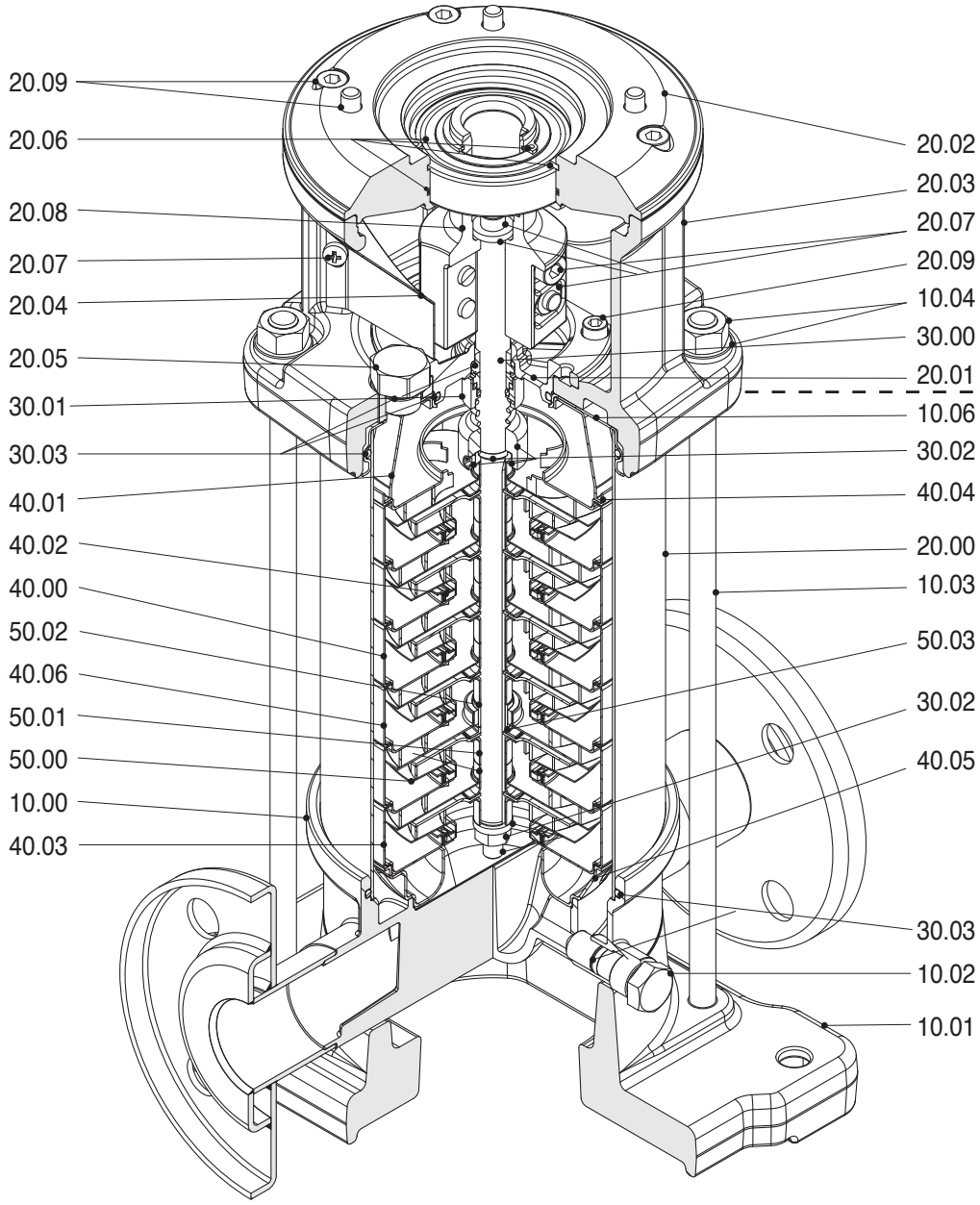
F version: The pump is supplied without counterflanges (Optional accessories, including bolts and joints).

*Available from EV95/1-1A to EV95/5

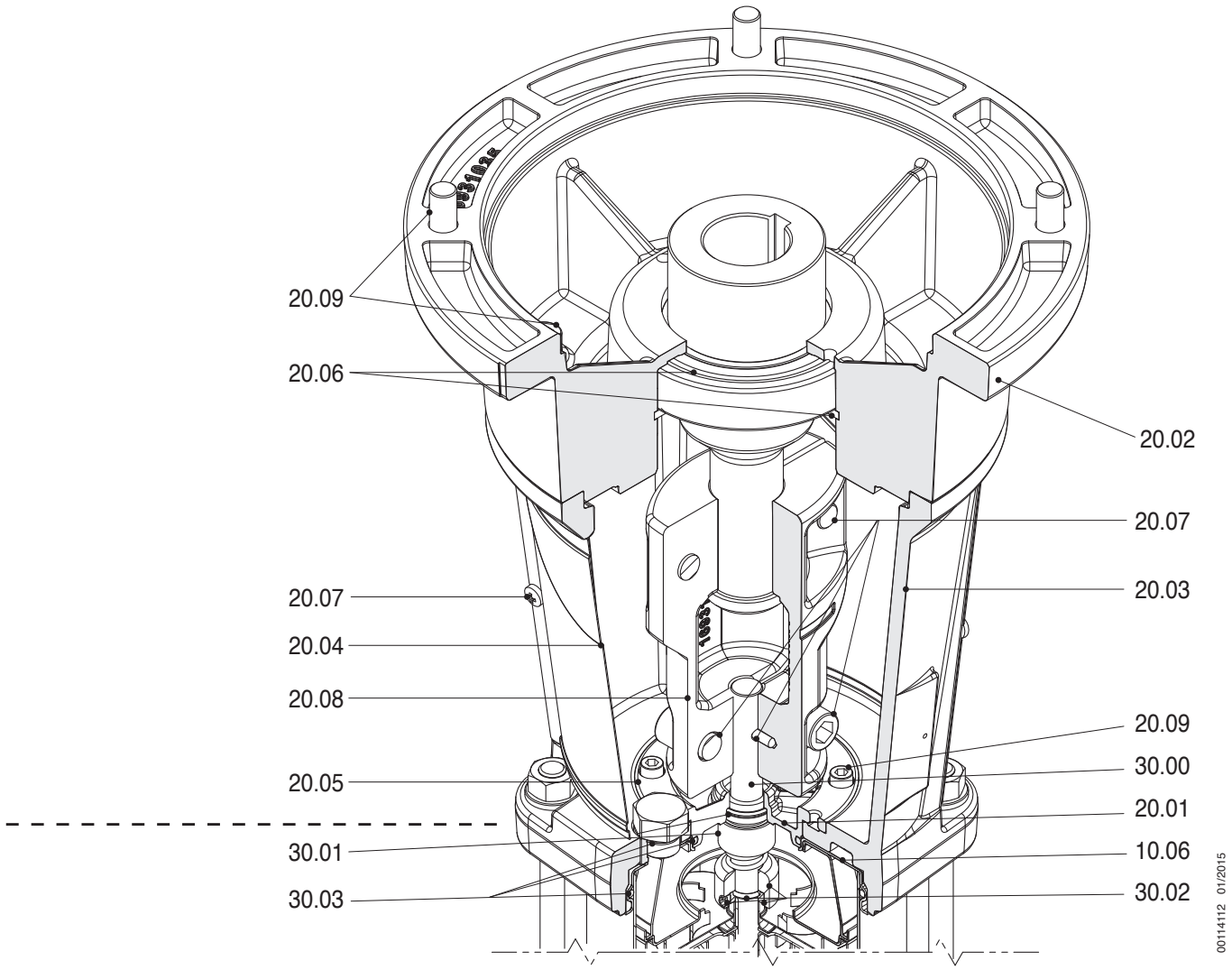
Pump Model	Motor			Dimensions (mm)						Weight (kg)		
	kW	Dim	Flange	L1	L2	M	D1	D2	L1 + L2	Pump	Motor	Electric Pump
95VR01-1A	5,5	132	B5	737,1	328	161	225	300	1065,1	82,5	34	116,5
95VR01-00	7,5	132	B5	737,1	350	161	225	300	1087,1	82,5	36	118,5
95VR02-2A	11	160	B5	849,2	425	198	248	350	1274,2	89	58	147
95VR02-00	15	160	B5	849,2	476	198	248	350	1325,2	89	64	153
95VR03-2A	18,5	160	B5	941,3	542	235	317	350	1483,3	93	88,9	181,9
95VR03-00	22	180	B5	941,3	542	238	317	350	1483,3	93	108,7	201,7
95VR04-2A	30	200	B5	1038,4	658	300	399	400	1696,4	100	228	328
95VR04-00	30	200	B5	1038,4	658	300	399	400	1696,4	100	228	328
95VR05-2A	37	200	B5	1130,5	658	300	399	400	1788,5	104	242	346
95VR05-00	37	200	B5	1130,5	658	300	399	400	1788,5	104	242	346
95VR06-2A	45	225	B5	1222,6	699	335	465	450	1921,6	110,5	308	418,5
95VR06-00	45	225	B5	1222,6	699	335	465	450	1921,6	110,5	308	418,5

VR Series
Pump Section and
List of Main Components

VR Series Pump Section and List of Main Components
1VR - 3VR - 6VR - 10VR



(Configuration up to 4kW)

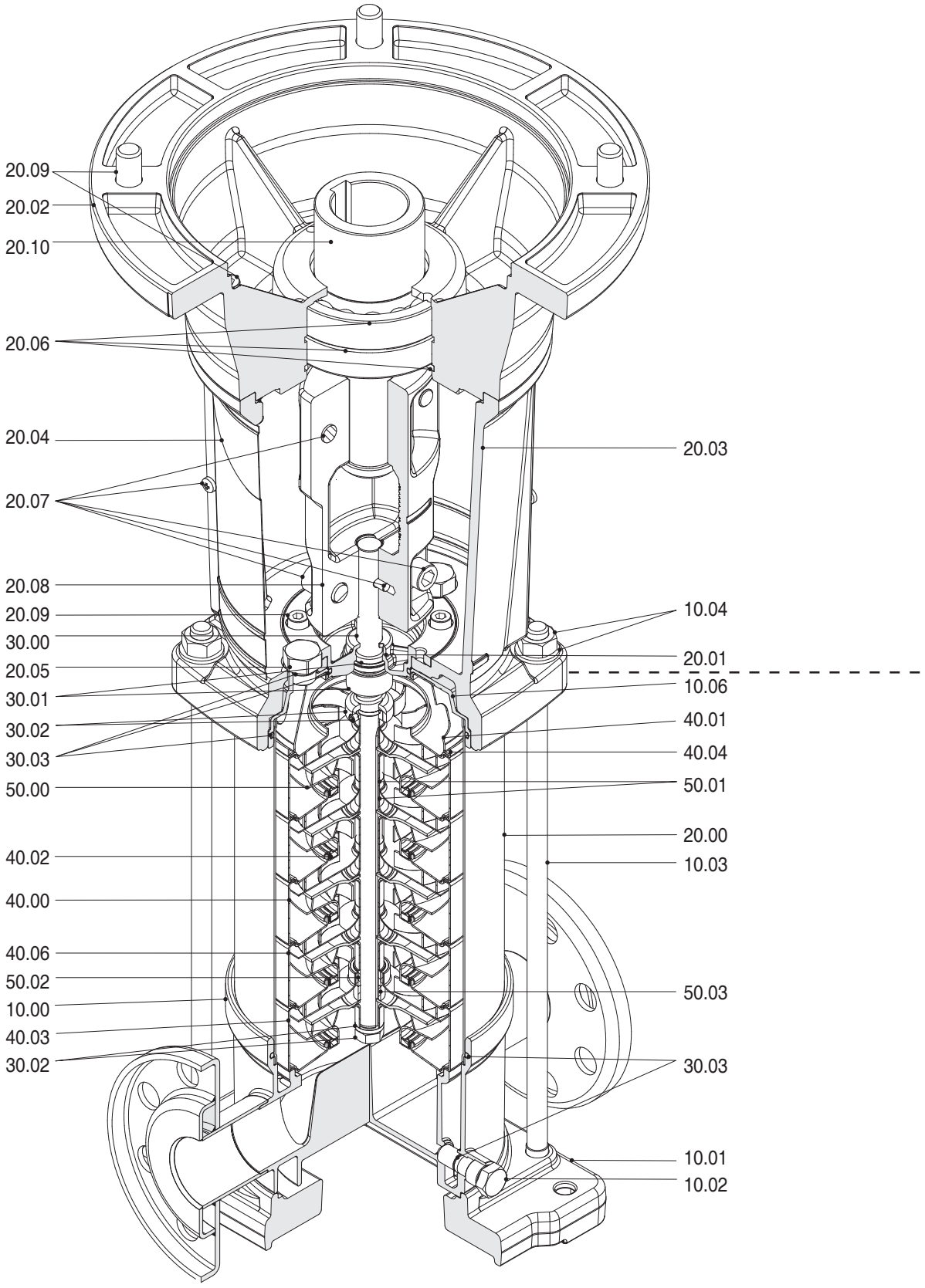


(Configuration from 5,5kW)

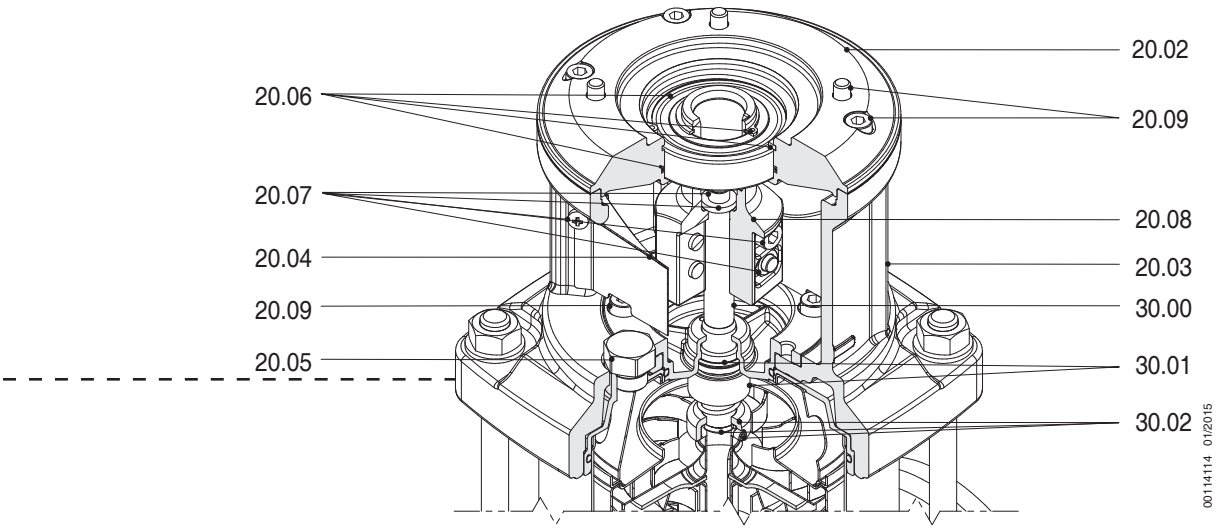
N. rif.	Description
10.00	Pump casing
10.01	Pump fixing plate
10.02	Filling and draining plug
10.03	Tie bolt
10.04	Kit nuts and washers
10.06	Upper flange
20.00	Outer Case
20.01	Mechanical seal housing
20.02	Motor flange
20.03	Motor bracket
20.04	Coupling guard
20.05	Filling plugs
20.06	Circlips and bearings, and O-ring
20.07	Coupling fasteners
20.08	Coupling
20.09	Kit motor screws

N. rif.	Description
30.00	Pump shaft
30.01	Kit Mechanical seal
30.02	Mechanical seal fastening kit
30.03	Kit O-rings
40.00	Stage housing and diffuser
40.01	Stage Centering outlet
40.02	Floating neck ring
40.03	Initial stage housing
40.04	Last Stage with diffuser
40.05	Stage Centering inlet
40.06	Stage housing and diffuser with bearing
50.00	Impeller
50.01	Impeller spacer
50.02	Intermediary sleeve
50.03	Intermediary sleeve spacer

VR Series Pump Section and List of Main Components
15VR - 20VR



(Configuration from 5,5kW)

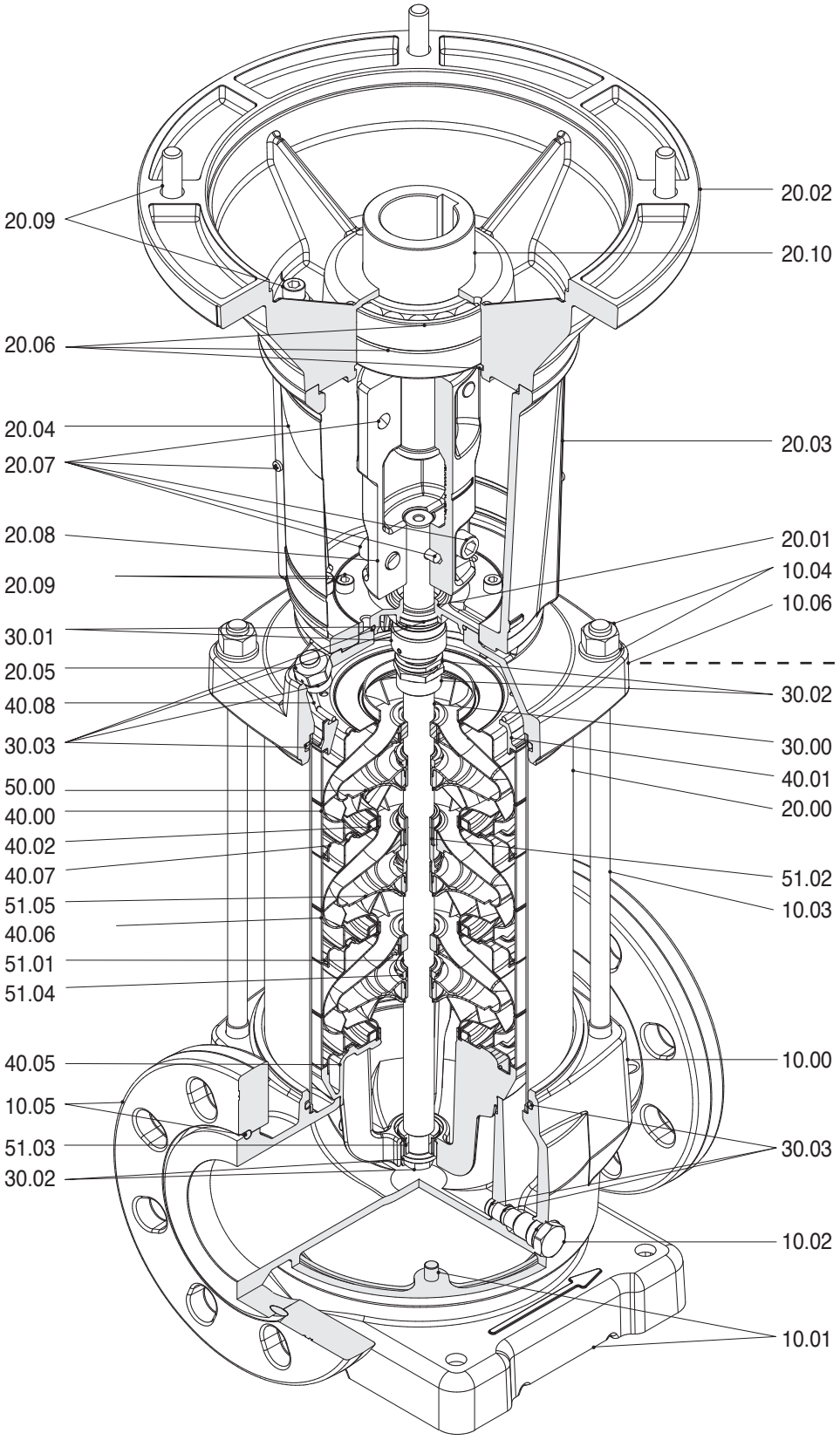


(Configuration up to 4kW)

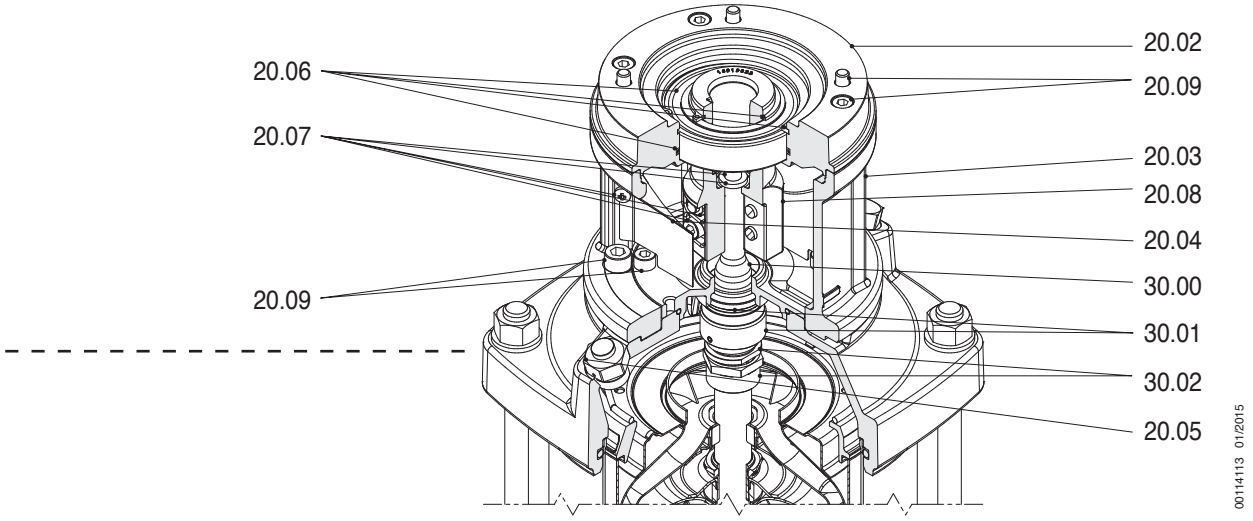
N.rif.	Description
10.00	Pump casing
10.01	Pump fixing plate
10.02	Filling and draining plug
10.03	Tie bolt
10.04	Kit nuts and washers
10.06	Upper Flange
20.00	Outer Case
20.01	Mechanical seal housing
20.02	Motor flange
20.03	Motor bracket
20.04	Coupling guard
20.05	Filling plugs
20.06	Circlips and bearings, and O-ring
20.07	Coupling fasteners
20.08	Coupling
20.09	Kit motor screws

N.rif.	Description
20.10	Motor shaft adapter
30.00	Pump shaft
30.01	Kit Mechanical seal
30.02	Mechanical seal fastening kit
30.03	Kit O-rings
40.00	Stage housing and diffuser
40.01	Stage Centering outlet
40.02	Floating neck ring
40.03	Initial stage housing
40.04	Last Stage with diffuser
40.06	Stage housing and diffuser with bearing
50.00	Impeller
50.01	Impeller spacer
50.02	Intermediary sleeve
50.03	Intermediary sleeve spacer

VR Series Pump Section and List of Main Components
30VR - 45VR - 65VR - 95VR



(Configuration from 5,5kW)



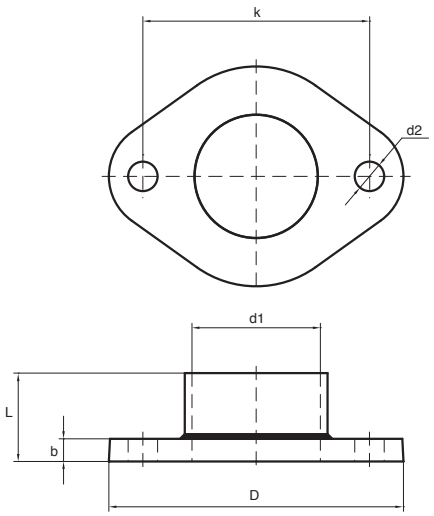
(Configuration up to 4kW)

N.rif.	Description
10.00	Pump casing
10.01	Pump fixing plate
10.02	Draining plug
10.03	Tie bolt
10.04	Kit nuts and washers
10.05	Kit flanges ring
10.06	Upper Flange
20.00	Outer Case
20.01	Mechanical seal housing
20.02	Motor flange
20.03	Motor bracket
20.04	Coupling guard
20.05	Filling plugs
20.06	Circlips and bearings, and O-ring
20.07	Coupling fasteners
20.08	Coupling
20.09	Kit motor screws
20.10	Motor shaft adapter

N.rif.	Description
30.00	Pump shaft
30.01	Kit Mechanical seal
30.02	Mechanical seal fastening kit
30.03	Kit O-rings
40.00	Stage housing and diffuser
40.01	Stage Centering outlet (only on 65VR and 95VR)
40.02	Floating neck ring
40.05	Stage Centering inlet
40.06	Stage housing and diffuser with bearing
40.07	Flange clamping neck ring
40.08	Spring ring
50.00	Impeller
51.01	Split cone
51.02	Intermediary sleeve nut
51.03	Journal sleeve
51.04	Split cone nut
51.05	Intermediate impeller with screw

VR Series
Dimensions of counterflanges

DIMENSIONS OF OVAL COUNTERFLANGES

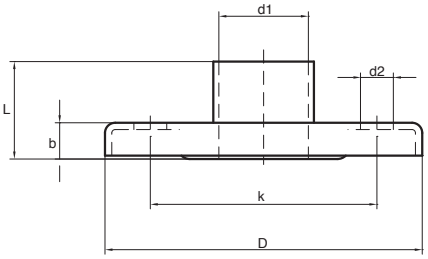


00114101 11/2013

OVAL COUNTERFLANGES								
DN	DIMENSIONS [mm]					HOLES		PN
	D	d1	k	L	b	d2	N°	
32	99	Rp 1" ¼ / NPT1" ¼	75	33	8	11	2	16
40	130	Rp 1" ½ / NPT1" ½	100	35	10	13	2	16
50	130	Rp 2" / NPT 2"	100	39	10	13	2	16

Kit round counterflanges available on request; AISI 304

DIMENSIONS OF ROUND THREADED COUNTERFLANGES ACCORDING TO EN 1092-1

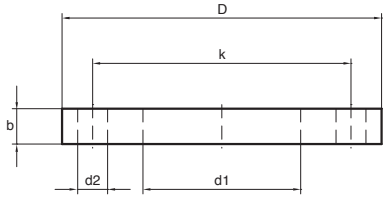


00114101 11/2013

ROUND THREADED COUNTERFLANGES								
DN	DIMENSIONS [mm]					HOLES		PN
	D	d1	k	L	b	d2	N°	
25	115	Rp 1" / NPT 1"	85	43	16	14	4	25
32	140	Rp 1" ¼ / NPT 1" ¼	100	43	16	18	4	25
40	150	Rp 1" ½ / NPT 1" ½	110	43	16	18	4	25
50	165	Rp 2" / NPT 2"	127	43	18	19	8	25
65	185	Rp 2" ½ / NPT 2" ½	145	32	18	18	8	16
80	200	Rp 3" / NPT 3"	160	34	20	18	8	16
100	220	Rp 4" / NPT 4"	180	40	20	18	8	16

Kit round counterflanges available on request:
DN 25-32-40-50: galvanized steel, AISI 304, AISI 316L
DN 65-80-100: galvanized steel, AISI 316

DIMENSIONS OF WELDING ROUND COUNTERFLANGES ACCORDING TO EN 1092-1



00114101 11/2013

WELDING ROUND COUNTERFLANGES								
DN	DIMENSIONS [mm]					HOLES		PN
	D	d1	k	L	b	d2	N°	
65	185	77,5	145	-	22	18	8	25/40
80	200	90,5	160	-	24	18	8	25/40
100	235	116	190	-	26	22	8	25/40

Kit round counterflanges available on request; AISI 316

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