FHE SERIES

CENTRIFUGAL ELECTRIC PUMPS IN COMPLIANCE WITH EN 733 - DIN 24255

Cast iron pump body and AISI 316L stainless steel, laser-technology welded impeller [1]. Suitable for pumping hot and cold, moderately aggressive liquids.

APPLICATIONS

- Water circulation and transfer in civil, industrial and agricultural sectors.
- Pressure boosting.
- Water supply.
- Circulation of hot and cold water in heating and conditioning systems.
- Industrial washing.

AVAILABLE MODELS

- **FHE** close-coupled with special motor shaft extension.
- **FHS** with stub shaft and standard motor.
- **FHF** with flexible coupling, base and standard motor in compliance with EN 733 – DIN 24255.

SPECIFICATIONS

- **Maximum delivery** up to **220 m³/h.**
- **Maximum head** up to **95 m.**
- **AISI 316** stainless steel wear rings.
- Mechanical seal lubricated by internal recirculation of pumped liquid to seal housing.
- **Nominal diameter of ports** up to **80 mm.**
- **Nominal diameter of impeller** up to **250 mm.**
- 2-pole single-phase motors up to 2.2 kW.
- 2 and 4-pole three-phase motors.
- 50 and 60 Hz frequencies.
- Counterflanges available on request.
- IP55 protection.
- Class F insulation.
- **Maximum** operating **pressure: 12 bar (PN 12).**
- **Temperature of pumped liquid: -10°C to +85°C (-20°C to +120°C** for version with EPDM elastomers).
- **Versions with HYDROVAR frequency converter (variable speed) are available on request.**

[1] Cast iron impeller on some DN 65 and DN 80 models.

TABLE OF MATERIALS

PART	MATERIAL
Pump body, Seal housing	DIN GG20 CAST IRON
Impeller 32, 40, 50, 65-125	STAINLESS STEEL AISI 316L – DIN 1.4404
Impeller 65-160, 65-200, 65-250, 80	DIN GG20 CAST IRON
Adapter	ALUMINIUM OR DIN GG20 CAST IRON
Mechanical seal*	CERAMIC/CARBON NITRILE RUBBER
O-ring seals	NITRILE RUBBER
Wear ring, Counterwear ring	STAINLESS STEEL AISI 316L – DIN 1.4404
Shaft (FHE – FHF) Coupling (FHS)	STAINLESS STEEL AISI 316 – DIN 1.4401
Support body (FHF)	DIN GG20 CAST IRON
Fill and drain plugs	NICKEL-PLATED BRASS

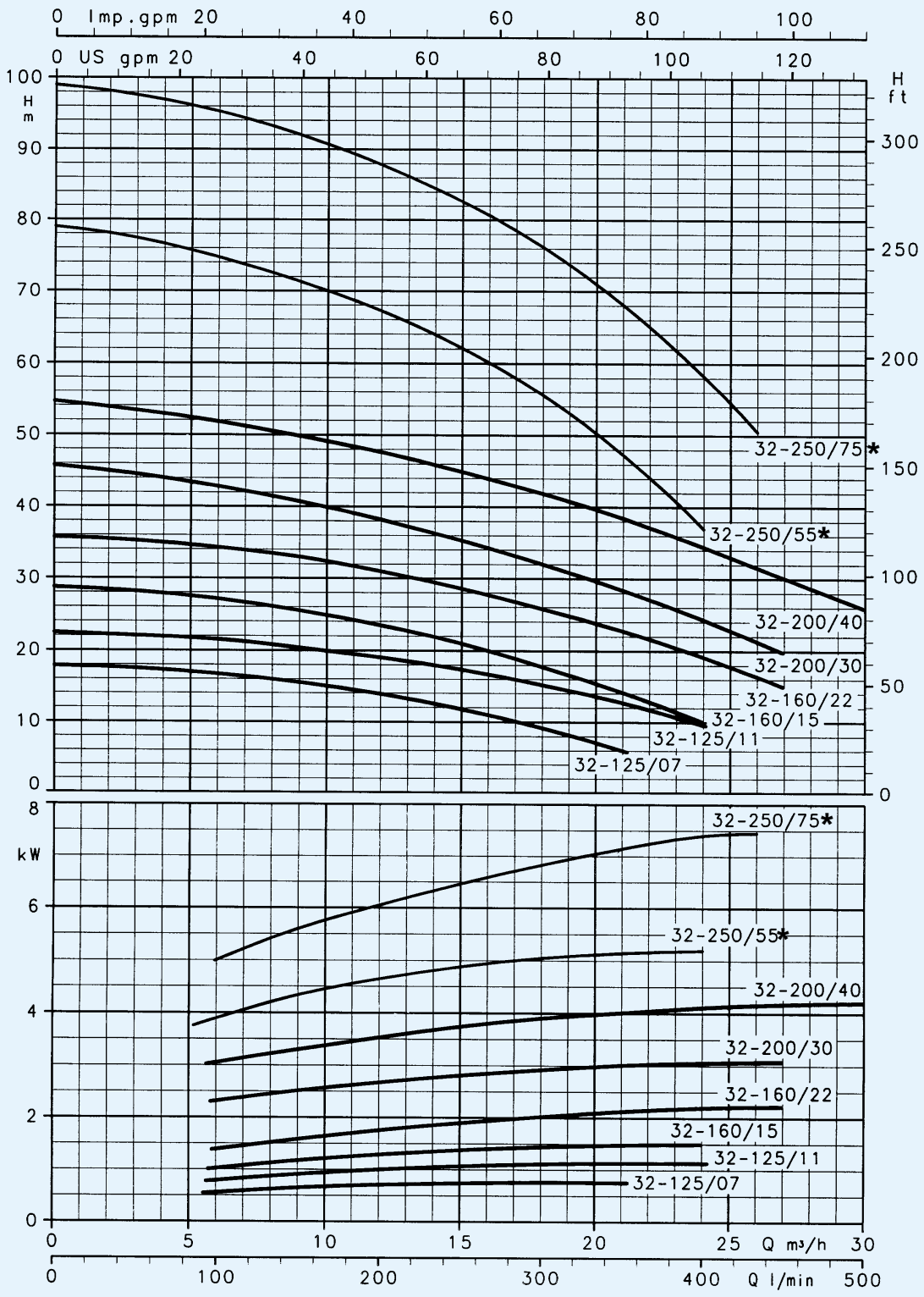
* -20°C to 120°C version: Ceramic / Carbon / EPDM

IDENTIFICATION CODE

FH | E | 4 | 32 - 200 / 40 | 6 | A

- A = Reduced impeller
- 6 = 60 Hz
- 40 = Rated motor power (kW x 10)
- 200 = Impeller nominal diameter (mm)
- 32 = Discharge port nominal diameter (mm)
- 4 = 4-pole motor
- E = close-coupled version
S = Version with rigid coupling, IEC normalised motor
F = Version with flexible coupling, support in compliance with EN 733
- FH series name

FHE - FHS - FHF 32 SERIES
OPERATING CHARACTERISTICS at 2900 rpm 50 Hz, 2 POLES

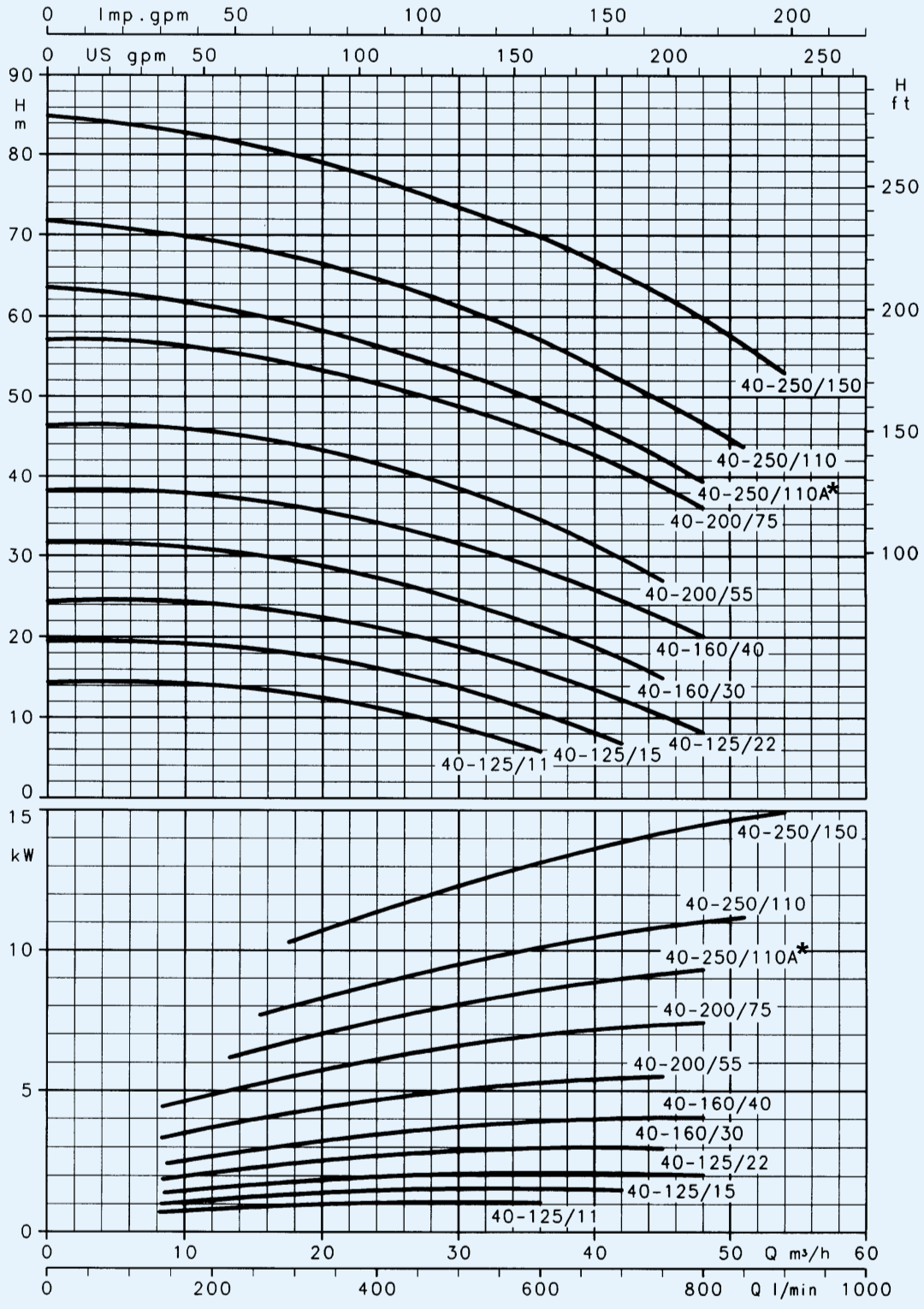


* Version 2FHE

These performances are valid for liquids with density ρ = 1.0 kg/dm³ and kinematic viscosity γ = 1 mm²/sec.

FHE

FHE - FHS - FHF 40 SERIES
OPERATING CHARACTERISTICS at 2900 rpm 50 Hz, 2 POLES

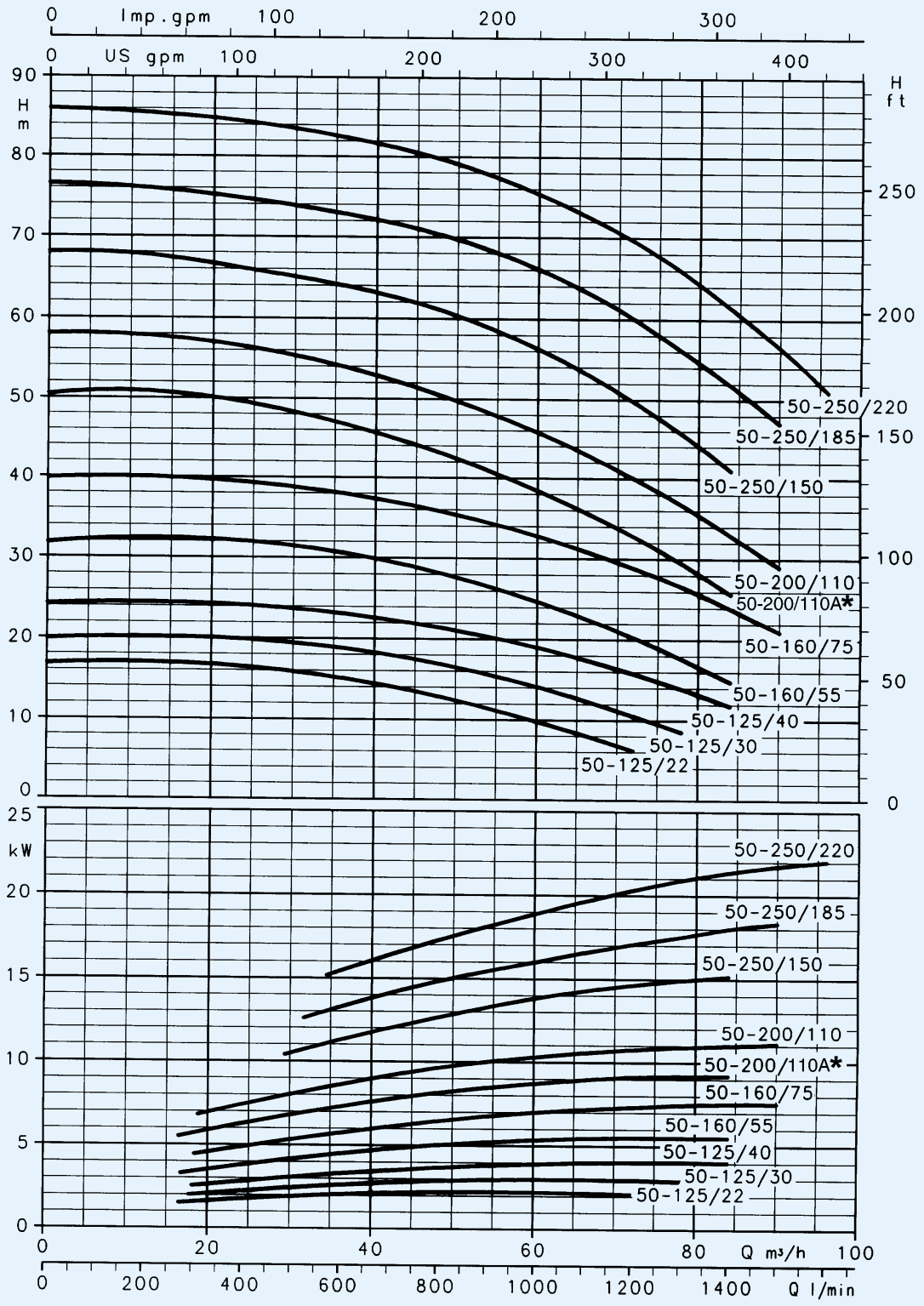


* /92 for version FHE

These performances are valid for liquids with density ρ = 1.0 kg/dm³ and kinematic viscosity γ = 1 mm²/sec.

FHE

FHE - FHS - FHF 50 SERIES
OPERATING CHARACTERISTICS at 2900 rpm 50 Hz, 2 POLES

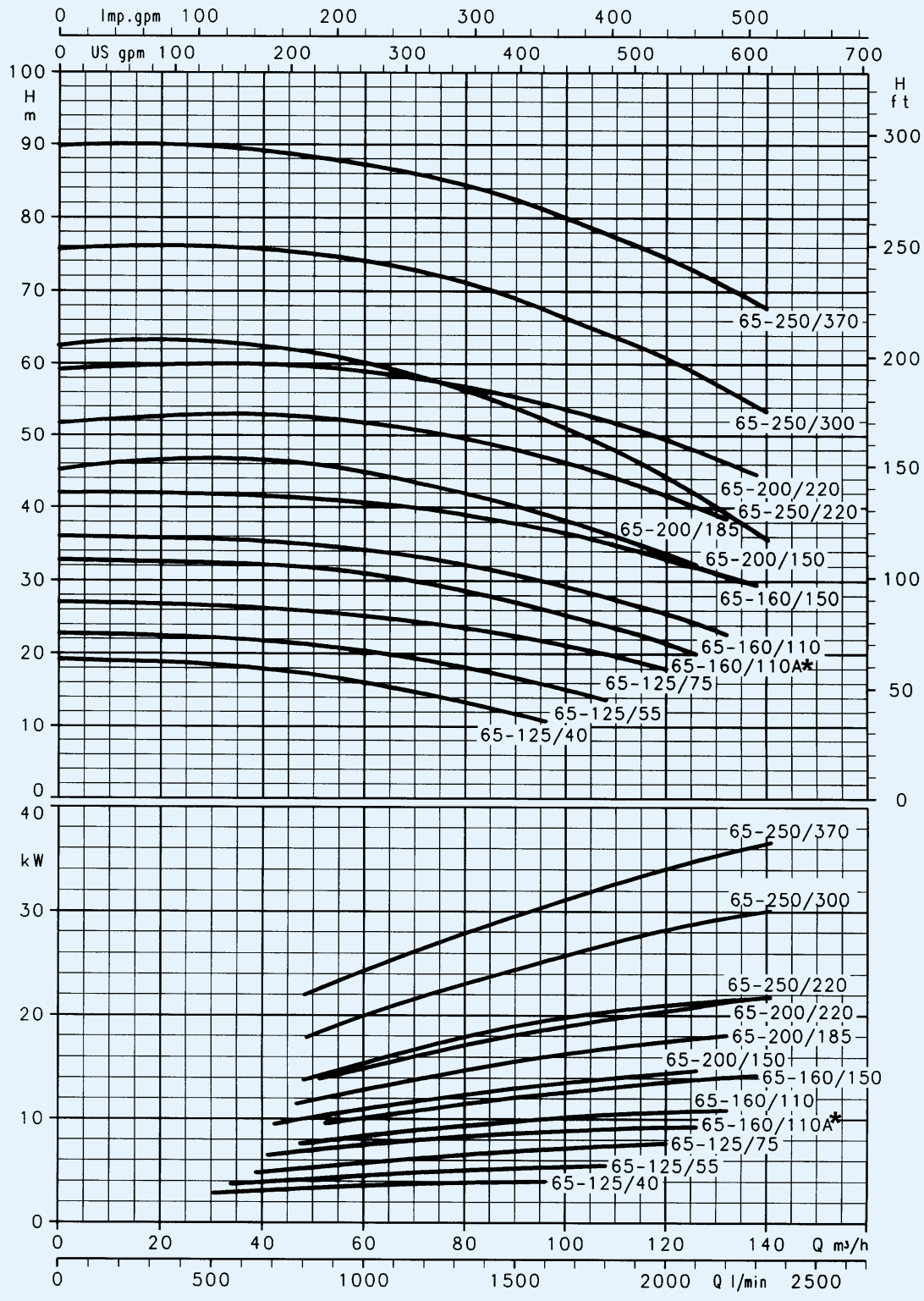


* /92 for version FHE

These performances are valid for liquids with density ρ = 1.0 kg/dm³ and kinematic viscosity γ = 1 mm²/sec.

FHE

FHE - FHS - FHF 65 SERIES
OPERATING CHARACTERISTICS at 2900 rpm 50 Hz, 2 POLES

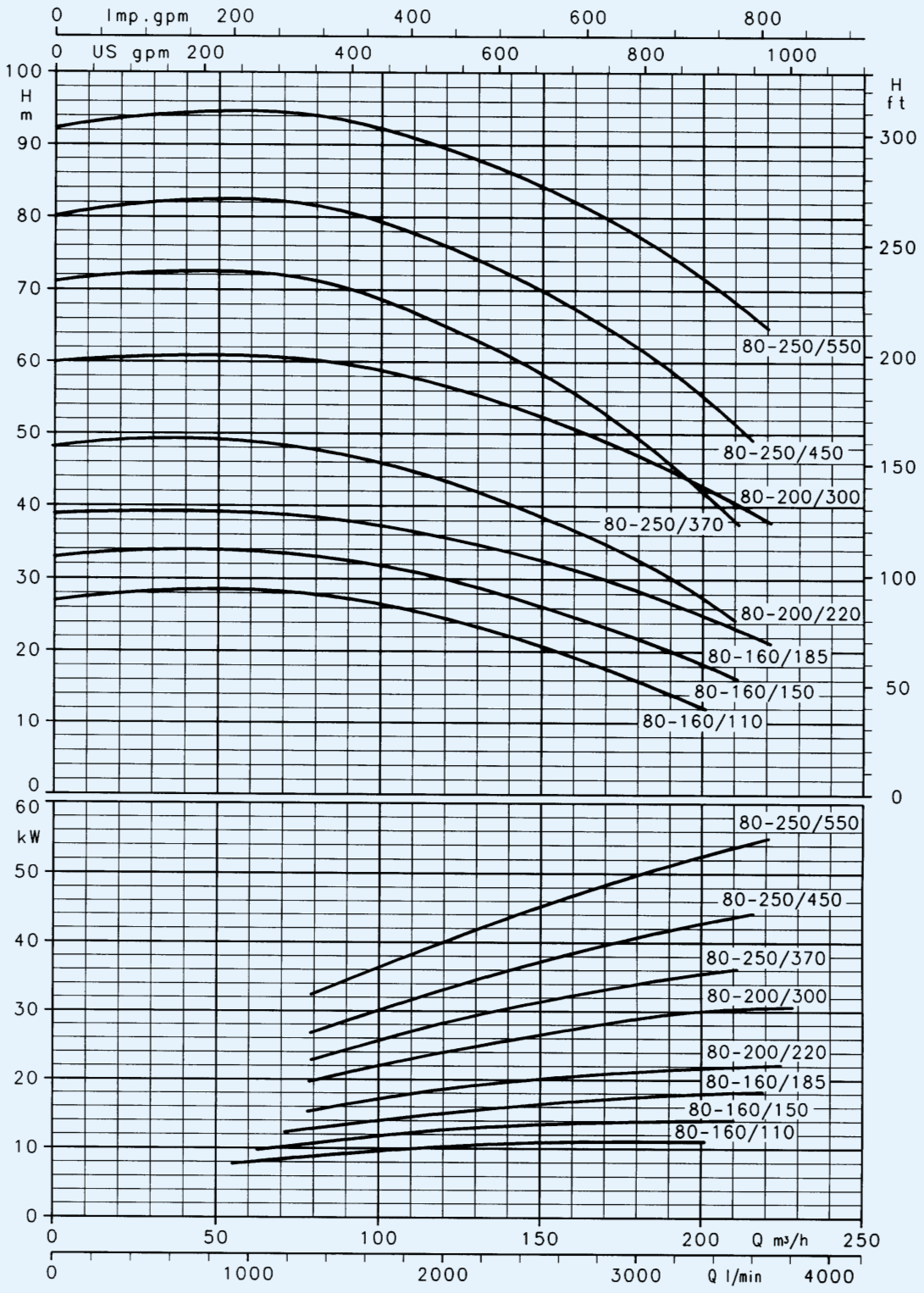


* /92 for version FHE

These performances are valid for liquids with density ρ = 1.0 kg/dm³ and kinematic viscosity γ = 1 mm²/sec.

FHE

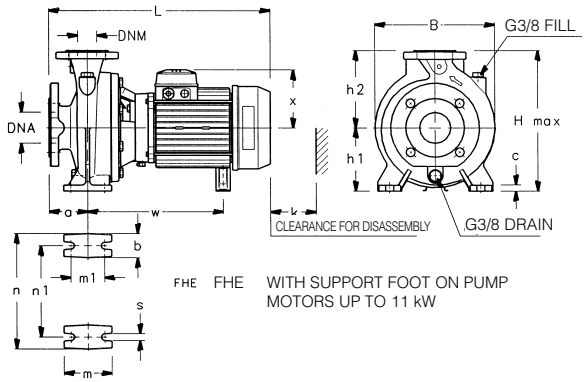
FHE - FHS - FHF 80 SERIES
OPERATING CHARACTERISTICS at 2900 rpm 50 Hz, 2 POLES



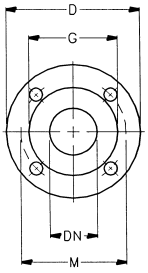
These performances are valid for liquids with density ρ = 1.0 kg/dm³ and kinematic viscosity γ = 1 mm²/sec.

FHE

DIMENSIONS AND WEIGHTS, FHE 2 POLES SERIES

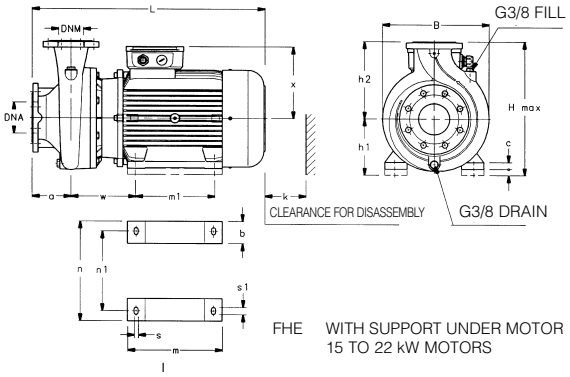


FHE FHE WITH SUPPORT FOOT ON PUMP
MOTORS UP TO 11 kW



FLANGES

DN	D	M	G	HOLES		MAX. THICKNESS
				N°	Ø	
32	140	100	78	4	18	18
40	150	110	88	4	18	18
50	165	125	102	4	18	20
65	185	145	122	4	18	20



FHE WITH SUPPORT UNDER MOTOR
15 TO 22 kW MOTORS

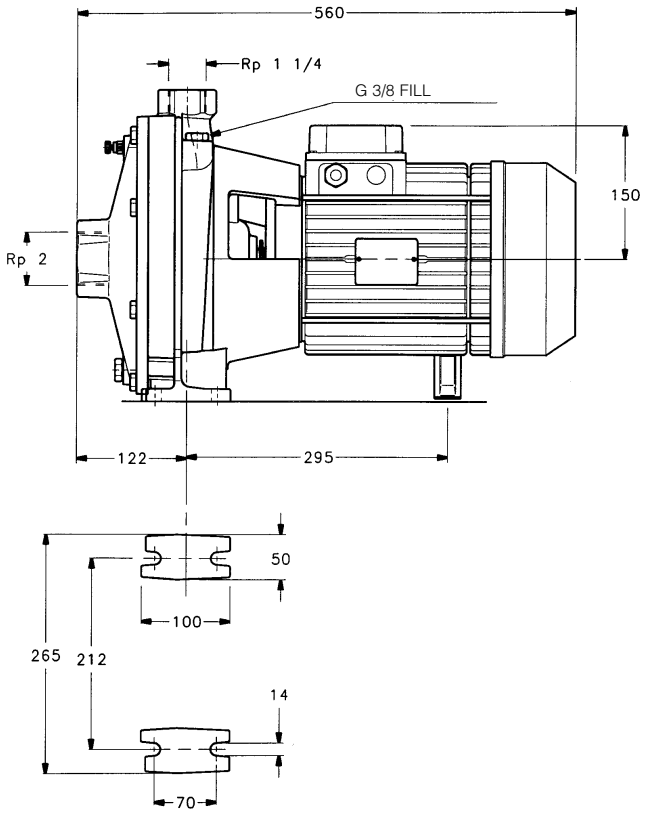
FLANGES

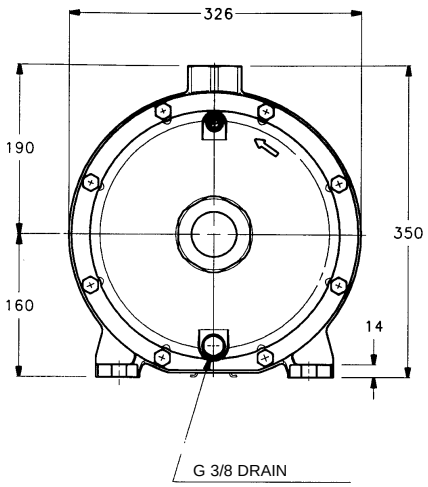
DN	D	M	G	HOLES		MAX. THICKNESS
				N°	Ø	
80	200	160	138	8	18	22
100	220	180	158	8	18	22

PUMP TYPE	PUMP						SUPPORT										B	H max.	L	k	WEIGHT kg
	DNM	DNA	a	h2	w	x	b	c	c1	h1	m	m1	n	n1	s	s1					
FHE 32-125/07	32	50	80	140	258	116	50	12	/	112	100	70	190	140	14	/	233	252	432	92	27
FHE 32-125/11				140						112			190	140			233	252			28
FHE 32-160/15				160						132			240	190			235	292			31
FHE 32-160/22				160	283	121				132							235	292	461		34
FHE 32-200/30				180	283	121				160							285	340	461		43
FHE 32-200/40				180	290	133				160							285	340	487		49
FHE 40-125/11	40	65	80	140	258	116	50	12	/	112	100	70	210	160	14	/	233	252	432	94	29,8
FHE 40-125/15					258	116													432		31
FHE 40-125/22					283	121													461		33
FHE 40-160/30				160	283	121				132			240	190			250	292	461		36,3
FHE 40-160/40				160	290	133				132			240	190			250	292	487		42,3
FHE 40-200/55			100	180	311	151				160			265	212			285	340	553		59
FHE 40-200/75				180	311	151				160			265	212			285	340	553		64
FHE 40-250/92				225	278	191	65	14		180	125	95	320	250			335	405	604	113	91
FHE 40-250/110					278	191	65	14			125	95	320	250				405	604		99
FHE 40-250/150					208	232	50	22	20		260	210	318	254	13	23		412	679		123
FHE 50-125/22	50	65	100	160	285	121	50	12	/	132	100	70	240	190	14	/	255	292	483	98	37
FHE 50-125/30					285	121													483		39
FHE 50-125/40					292	133													509		45
FHE 50-160/55				180	313	151				160			265	212			285	340	555		68
FHE 50-160/75				180	313	151											285	340	555		72
FHE 50-200/92				200	280	191											305	360	606		81
FHE 50-200/110				200	280	191											305	360	606		86
FHE 50-250/150				225	208	232	50	22	20	180	260	210	318	254	13	23	340	412	679	113	123
FHE 50-250/185											304	254							723		135
FHE 50-250/220											304	254							723		149
FHE 65-125/40	65	80	100	180	292	133	65	14	/	160	125	95	280	212	14	/	285	340	509	108	64
FHE 65-125/55					313	151													555		72
FHE 65-125/75					313	151													555		76
FHE 65-160/92				200	278	191												360	604	117	95
FHE 65-160/110					278	191											331	360	604		103
FHE 65-160/150											260	210					331	392	679		127
FHE 65-200/150				225	208	232	50	22	20	180	260	210	318	254	13	23	335	412	679		127
FHE 65-200/185											304	254							723		139
FHE 65-200/220																					153
FHE 65-250/220				250					40	200							332	450		125	159
FHE 80-160/110	80	100	125	225	278	191	65	14	/	180	125	95	320	250	14	/	332	405	629	129	109
FHE 80-160/150					208	232	50	22	20	180	260	210	318	254	13	23		412	713		133
FHE 80-160/185											304	254							757		145
FHE 80-200/220				250													332	430			159

FHE

DIMENSIONS AND WEIGHTS, 2FHE 2 POLES SERIES

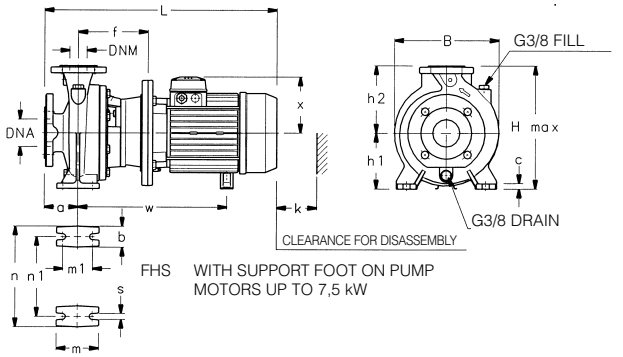




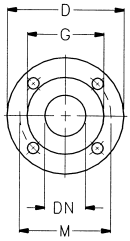
PUMP TYPE	WEIGHT kg
2FHE 32-250/55	71
2FHE 32-250/75	75

FHE

DIMENSIONS AND WEIGHTS, FHS 2 POLES SERIES

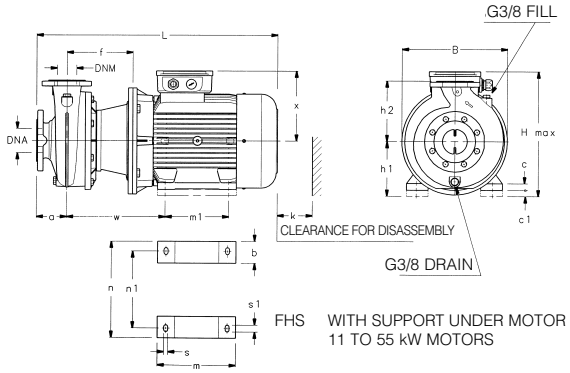


FHS WITH SUPPORT FOOT ON PUMP
MOTORS UP TO 7,5 kW



FLANGES

DN	D	M	G	HOLES		MAX. THICKNESS
				N°	Ø	
32	140	100	78	4	18	18
40	150	110	88	4	18	18
50	165	125	102	4	18	20
65	185	145	122	4	18	20



FHS WITH SUPPORT UNDER MOTOR
11 TO 55 kW MOTORS

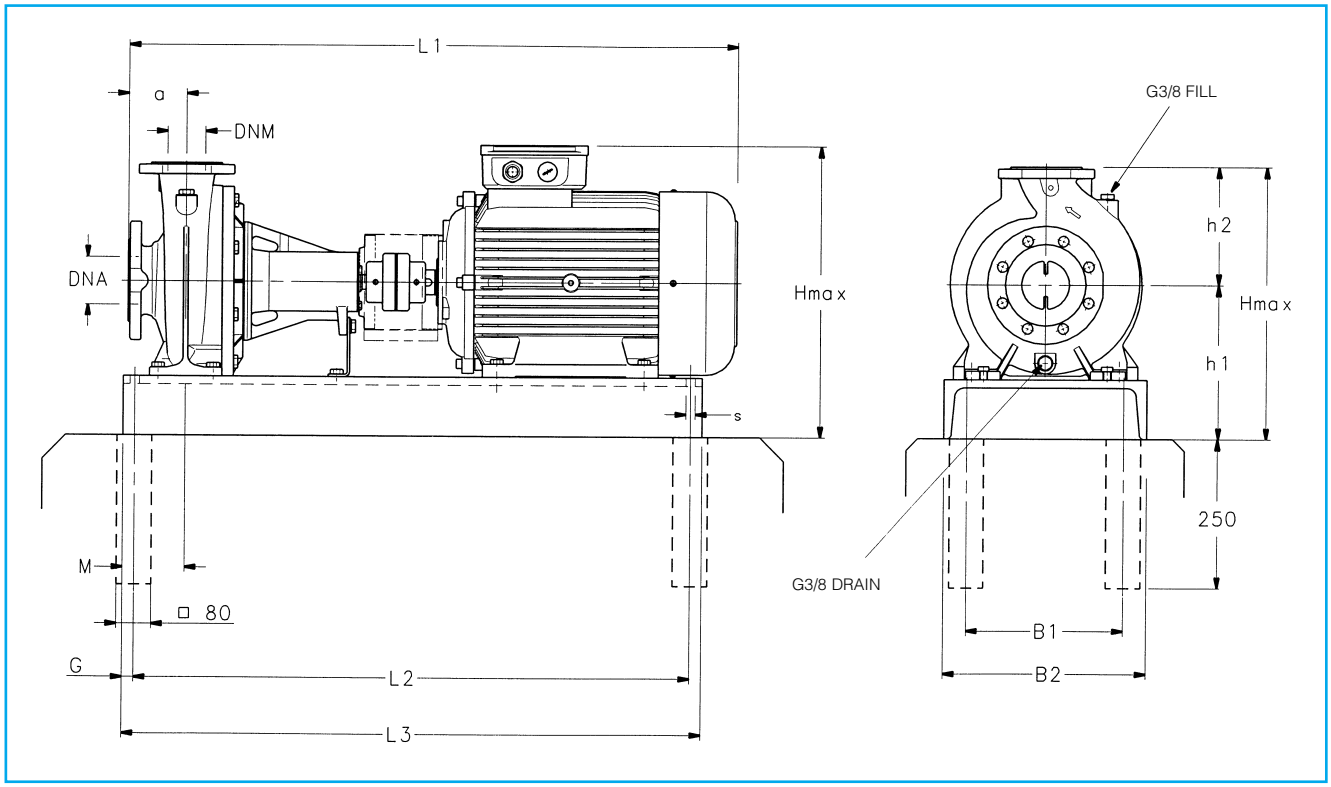
FLANGES

DN	D	M	G	HOLES		MAX. THICKNESS
				N°	Ø	
80	200	160	138	8	18	22
100	220	180	158	8	18	22

PUMP TYPE	PUMP							SUPPORT										B	H max.	L	k	WEIGHT kg
	DNM	DNA	a	f	h2	w	x	b	c	c1	h1	m	m1	n	n1	s	s1					
FHS 32-125/07	32	50	80	155	140	303	116	50	12	/	112	100	70	190	140	14	/	233	252	477	92	32
FHS 32-125/11					140	303					112			190	140			233	252	477		34
FHS 32-160/15					160	313					132			240	190			235	292	487		35
FHS 32-160/22					160	338	121				132							235	292	516		37
FHS 32-200/30				165	180	355	133				160							285	340	552		51
FHS 32-200/40				165	180	355	133				160							285	340	552		62
FHS 40-125/11	40	65	80	155	140	303	116	50	12	/	112	100	70	210	160	14	/	233	252	477	94	34
FHS 40-125/15						313	116													487		36
FHS 40-125/22						338	121													516		39
FHS 40-160/30				165	160	355	133				132			240	190			250	292	552		44
FHS 40-160/40				165	160	355	133				132			240	190			250	292	552		45
FHS 40-200/55			100	192	180	424	151				160			265	212			300	340	666		73
FHS 40-200/75				192	180	424	151				160			265	212			300	340	666		77
FHS 40-250/110A				222	225	330	232	50	22	20	180	260	210	318	254	13	23	350	412	801	113	119
FHS 40-250/110																						119
FHS 40-250/150																						133
FHS 50-125/22	50	65	100	157	160	344	121	50	12	/	132	100	70	240	190	14	/	255	292	538	98	43
FHS 50-125/30				167		357	133													574		48
FHS 50-125/40				167		357	133													574		56
FHS 50-160/55				194	180	426	151				160			265	212			300	340	668		76
FHS 50-160/75				194	180	426	151							265	212			300	340	668		80
FHS 50-200/110A				224	200	332	232	50	22	/		260	210	318	254	13	23	350	392	803		111
FHS 50-200/110				224	200	332													392	803		111
FHS 50-250/150				222	225	330				20	180	304	254						412	845	113	133
FHS 50-250/185																						145
FHS 50-250/220												304	254									159
FHS 65-125/40	65	80	100	167	180	357	133	65	14	/	160	125	95	280	212	14	/	285	340	574	108	70
FHS 65-125/55				194		426	151											300		668		80
FHS 65-125/75				194		426	151											300		668		84
FHS 65-160/110A				222	200	330	232	50	22	20	180	260	210	318	254	13	23	350	412	801	117	123
FHS 65-160/110																						123
FHS 65-160/150																						137
FHS 65-200/150					225																	137
FHS 65-200/185												304	254							845		149
FHS 65-200/220																						163
FHS 65-250/220										40									450			157
FHS 65-250/300				228	250	361	257	60	24	/	200	345	305	360	318	18	18	400	457	941	125	200
FHS 65-250/370				228		361	257	60	24	/		345	305	360	318	18	18	400	457	941		218
FHS 80-160/110	80	100	125	222	225	330	232	50	22	20	180	260	210	318	254	13	23	350	412	826	132	124
FHS 80-160/150												260	210							826		138
FHS 80-160/185												304	254							870		156
FHS 80-160/220					250							304	254						430	870		163
FHS 80-200/300				228	250	361	257	60	24	/	200	345	305	360	318	18	18	400	457	966		199
FHS 80-250/370					280	361	257	60	24		200	345	305	360	318				480	966		213
FHS 80-250/450						377	280	76	20		225	360	311	405	356			450	505	1043		278
FHS 80-250/550				258		426	280	90	20		250	406	349	465	406	22	22	550	530	1073		311

FHS

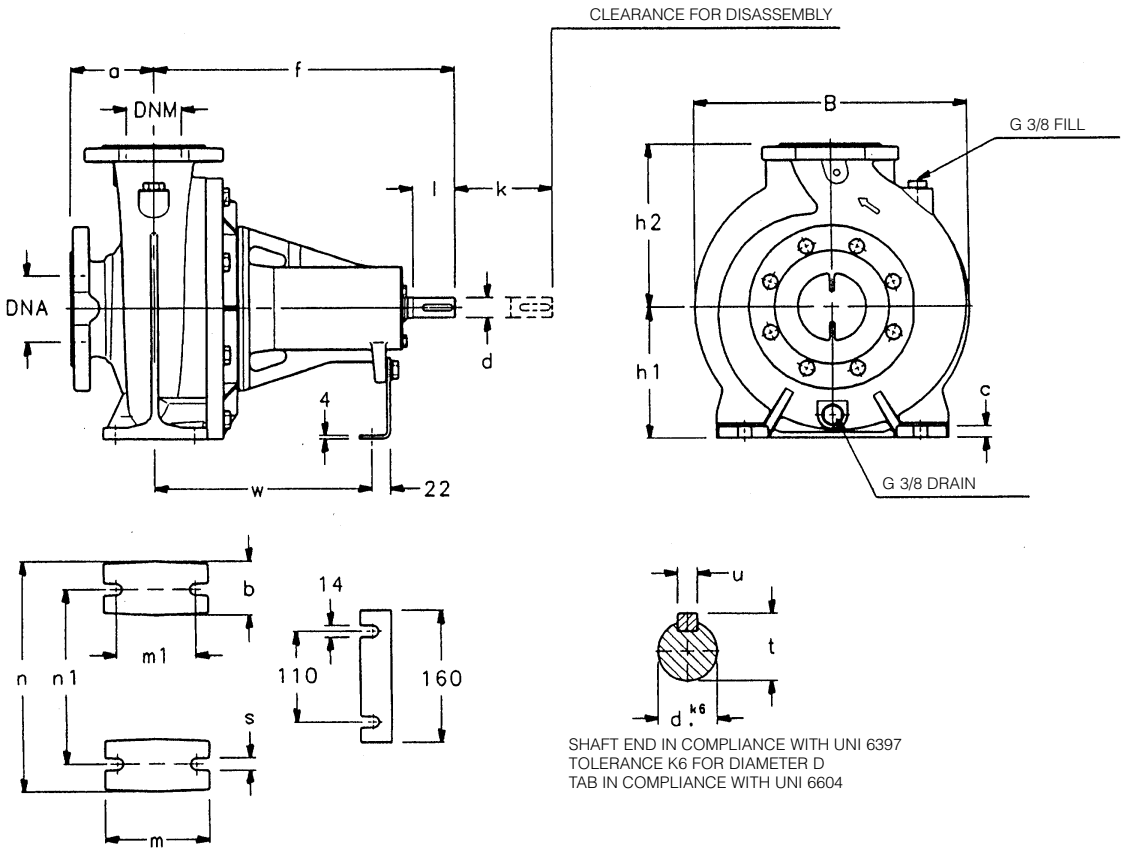
DIMENSIONS AND WEIGHTS, FHF 2 POLES SERIES



PUMP TYPE	DIMENSIONS(mm)													s	WEIGHT
	DNM	DNA	a	B1	B2	L1	L2	L3	G	M	h1	h2	H max.	FOR SCREWS	kg
FHF 32-125/07	32	50	80	220	300	723	670	710	20	95	212	140	352	M16x250	67
FHF 32-125/11						723	670	710			212	140	352		69
FHF 32-160/15						773	760	800			232	160	392		71
FHF 32-160/22						773	760	800			232	160	392		73
FHF 32-200/30						809	860	900			260	180	440		92
FHF 32-200/40						832	860	900			260	180	440		96
FHF 40-125/11	40	65	80	220	300	723	760	800	20	95	212	140	352	M16x250	72
FHF 40-125/15						773									74
FHF 40-125/22						773									77
FHF 40-160/30						809	860	900			232	160	392		91
FHF 40-160/40						832					232	160	392		97
FHF 40-200/55			100	270	350	909				115	260	180	451		112
FHF 40-200/75						909				115	260	180	451		120
FHF 40-250/110A						1052	1080	1120		108	280	225	512		178
FHF 40-250110															178
FHF 40-250/150															188
FHF 50-125/22	50	65	100	220	300	793	760	800	20	95	232	160	392	M16x250	85
FHF 50-125/30						829	860	900							92
FHF 50-125/40						852									97
FHF 50-160/55						909				115	260	180	451		111
FHF 50-160/75						909				115		180	451		115
FHF 50-200/110A				270	350	1052	1080	1120		95		200	492		173
FHF 50-200/110										95		200	492		173
FHF 50-250/150										108	280	225	512		179
FHF 50-250/185						1096				108					199
FHF 50-250/220						1111				128					219
FHF 65-125/40	65	80	100	270	350	852	860	900	20	108	260	180	440	M16x250	135
FHF 65-125/55						909							451		141
FHF 65-125/75						909							451		147
FHF 65-160/110A						1052	960	1120				200	492		164
FHF 65-160/110															164
FHF 65-160/150															180
FHF 65-200/150						1052	1080				280	225	512		187
FHF 65-200/185						1096									197
FHF 65-200/220						1111				128					215
FHF 65-250/220				320	400	1221	1310	1350		120	310	250	560		223
FHF 65-250/370						1296							567		300
FHF 65-250/370						1296							567		315
FHF 80-160/110	80	100	125	270	350	1076	1080	1120	20	108	280	225	512	M16x250	202
FHF 80-160/150						1076									212
FHF 80-160/185						1121									233
FHF 80-200/220				320	400	1246	1210	1250		128	290	250	540		245
FHF 80-200/300						1321	1310	1350		128	310	250	560		285
FHF 80-250/370						1321	1310	1350		140	310	280	645		305
FHF 80-250/450				495	454	1398	1265	1465	100	125	365		645		365
FHF 80-250/550				495	454	1428	1265	1465	100	125	390		670		400

FHE

FHF BARE SHAFT SERIES DIMENSIONS AND WEIGHTS



PUMP TYPE	DIMENSIONS (mm)							B	k	WEIGHT
	DNM	DNA	a	d	f	h1	h2			kg
FHF 32-125	32	50	80	24	360	112	140	233	86	20
FHF 32-160						132	160	235		22
FHF 32-200						160	180	285		25
FHF 40-125	40	65	80	24	360	112	140	233	88	21
FHF 40-160						132	160	250		25
FHF 40-200			100			160	180	285		26
FHF 40-250						180	225	335	100	49
FHF 50-125	50	65	100	24	360	132	160	255	92	25
FHF 50-160						160	180	285		28
FHF 50-200							200	305		29
FHF 50-250						180	225	340	100	43
FHF 65-125	65	80	100	24	360	160	180	285	100	33
FHF 65-160							200	331	100	35
FHF 65-200						180	225	335	112	37
FHF 65-250				32	470	200	250	360		44
FHF 80-160	80	100	125	24	360	180	225	332	129	38
FHF 80-200				32	470		250	345		40
FHF 80-250					470	200	280	400		47

FHF

LOWARA

ELECTRICAL SPECIFICATIONS OF MOTORS WITH SPECIAL SHAFT EXTENSION, FHE SERIES

SINGLE-PHASE 50 Hz 2-POLES MOTORS

MOTOR TYPE			INPUT CURRENT In (A)	CAPACITOR		DATA FOR 230 V 50 HZ					
kW	IEC SIZE	CONSTRUCTION DESIGN	220-240 V	µF	V	min^{-1}	Is / In	n %	cosÊ	Cn Nm	Cs/Cn
0,75	90R	B14	4,6-4,8	22	450	2825	3,9	74	0,94	2,54	0,56
1,1	90R	B14	6,5-6,8	30	450	2825	4	76	0,95	3,72	0,53
1,5	90	B14	9-8,7	40	450	2815	4,1	75	0,98	5,1	0,53
2,2	90	B14	13-12,5	50	450	2775	3,3	77	0,98	7,6	0,55

THREE-PHASE 50 Hz 2-POLES MOTORS

MOTOR TYPE			INPUT CURRENT In (A)				DATA FOR 400 V 50 Hz					
kW	IEC SIZE *	CONSTRUCTION DESIGN	¢ 220-240 V	Y 380-415 V	¢ 380-415 V	Y 660 V	min^{-1}	Is / In	n %	cosÊ	Cn Nm	Cs/Cn
0,75	90R	B14	3,2-3,3	1,85-1,9	–	–	2835	5,5	72	0,79	2,53	3,6
1,1	90R	B14	4,5-4,5	2,6-2,6	–	–	2845	6,4	75	0,81	3,69	3,85
1,5	90 R	B14	6,2-6	3,6-3,5	–	–	2845	6,6	73	0,83	5	4,2
2,2	90	B14	8,5-8,3	4,9-4,8	–	–	2860	6,9	77	0,85	7,3	2,9
3	90	B14	11,2-10,9	6,5-6,3	–	–	2870	6,8	77	0,89	10	3,5
4	112R	B14	–	–	8,5-8,3	4,9	2885	7,5	81	0,85	13,2	3,15
5,5	112	B14	–	–	11,5-11,2	6,6	2910	7,8	82	0,85	18	3
7,5	112	B14	–	–	15,5-15	8,9	2905	7	82	0,85	24,7	2,6
9,2	132	B14	–	–	18,4-17,8	10,6	2920	7,3	85	0,88	30	3,5
11	132	B14	–	–	22-21	12,7	2910	7,6	85	0,88	36,1	3,7
15	160	B34	–	–	30-28,5	17,3	2945	8,4	88	0,89	49	4,3
18,5	160	B34	–	–	36,4-34,5	21	2940	7,8	89	0,87	60	3,6
22	160	B34	–	–	43-40,5	24,5	2930	7,5	89	0,89	72	4,4

***** R = Reduced size of motor casing as compared to shaft extension and flange.

THREE-PHASE 50 HZ 4-POLES MOTORS

MOTOR TYPE			INPUT CURRENT In (A)				DATA FOR 400 V 50 Hz					
kW	IEC SIZE *	CONSTRUCTION DESIGN	¢ 220-240 V	Y 380-415 V	¢ 380-415 V	Y 660 V	min^{-1}	Is / In	n %	cosÊ	Cn Nm	Cs/Cn
0,25	71	B5	1,3-1,25	0,75-0,72	–	–	1390	4	64	0,77	1,72	2,35
0,37	71	B5	1,85-1,8	1,07-1,04	–	–	1400	4,2	65	0,78	2,52	2,4
0,55	90R	B14	2,7-2,6	1,55-1,5	–	–	1410	4,4	69	0,77	3,72	1,95
0,75	90R	B5	3,6-3,5	2,1-2	–	–	1410	4,9	69	0,77	5,1	1,9
1,1	90	B5	4,8-4,7	2,8-2,7	–	–	1410	4,5	75	0,77	7,4	2,25
1,5	90	B5	6,2-6	3,6-3,5	–	–	1410	5,1	75	0,81	10,2	2,4
2,2	100	B5	9-8,6	5,2-5	–	–	1410	5	78	0,80	14,8	2,2
3	100	B5	12-11,6	6,9-6,7	–	–	1410	5,8	81	0,81	20,2	2,5
4	112	B5	–	–	8,7-8,5	5	1440	6,7	83	0,82	26,5	2,7
5,5	132	B14	–	–	12,4-12	7,2	1440	6,8	82	0,87	36,8	2,8
7,5	132	B14	–	–	15,8-15,4	9,2	1450	7,7	82	0,81	49,5	2,8

STANDARD MOTOR ELECTRICAL SPECIFICATIONS
FHS - FHF SERIES

THREE-PHASE 50 Hz 2-POLES MOTORS

MOTOR TYPE				INPUT CURRENT In (A)				DATA FOR 400 V 50 Hz					
kW	IEC SIZE *	CONSTRUCTION DESIGN FHS	FHF	¢ 220-240 V	Y 380-415 V	¢ 380-415 V	Y 660 V	min^{-1}	Is / In	n %	cosÊ	Cn Nm	Cs/Cn
0,75	80	B5	B3	3,2-3,3	1,85-1,9	–	–	2835	5,5	72	0,79	2,53	3,6
1,1	80	B5	B3	4,5-4,5	2,6-2,6	–	–	2845	6,4	75	0,81	3,69	3,85
1,5	90R	B5	B3	6,2-6	3,6-3,5	–	–	2845	6,6	73	0,83	5	4,2
2,2	90	B5	B3	8,5-8,3	4,9-4,8	–	–	2860	6,9	77	0,85	7,3	2,9
3	100	B5	B3	11,2-10,9	6,5-6,3	–	–	2875	6,3	80	0,85	10	2,6
4	112R	B5	B3	–	–	8,5-8,3	4,9	2885	7,5	81	0,85	13,2	3,15
5,5	132R	B5	B3	–	–	11,5-11,2	6,6	2910	7,8	82	0,85	18	3
7,5	132R	B5	B3	–	–	15,5-15	8,9	2905	7	82	0,85	24,7	2,6
11	160	B35	B3	–	–	22,5-21	13	2930	7,1	86	0,88	36,2	3,4
15	160	B35	B3	–	–	30-28,5	17,3	2945	8,4	88	0,89	49	4,3
18,5	160	B35	B3	–	–	36,4-34,5	21	2940	7,8	89	0,87	60	3,6
22	180R	B35	B3	–	–	43-40,5	24,8	2930	7,5	89	0,89	72	4,4
30	200	B35	B3	–	–	59	34	2940	6,8	90	0,84	97	2,4
37	200	B35	B3	–	–	71,5	41,2	2940	7,2	91	0,84	120	2,5
45	225	B35	B3	–	–	88	50,5	2950	6,7	91	0,85	145	2,4
55	250	B35	B3	–	–	106	61	2950	6,7	92	0,85	177	2,4

***** R = Reduced size of motor casing as compared to shaft extension and flange.

THREE-PHASE 50 Hz 4-POLES MOTORS

MOTOR TYPE				INPUT CURRENT In (A)				DATA FOR 400 V 50 Hz					
kW	IEC SIZE *	CONSTRUCTION DESIGN FHS	FHF	¢ 220-240 V	Y 380-415 V	¢ 380-415 V	Y 660 V	min^{-1}	Is / In	n %	cosÊ	Cn Nm	Cs/Cn
0,25	71	–	B3	1,3-1,25	0,75-0,72	–	–	1390	4	64	0,77	1,72	2,35
0,37	71	–	B3	1,85-1,8	1,07-1,04	–	–	1400	4,2	65	0,78	2,52	2,4
0,55	80	B5	B3	2,7-2,6	1,55-1,5	–	–	1410	4,4	69	0,77	3,72	1,95
0,75	80	B5	B3	3,6-3,5	2,1-2	–	–	1410	4,9	69	0,77	5,1	1,9
1,1	90	B5	B3	4,8-4,7	2,8-2,7	–	–	1410	4,5	75	0,77	7,4	2,25
1,5	90	B5	B3	6,2-6	3,6-3,5	–	–	1410	5,1	75	0,81	10,2	2,4
2,2	100	B5	B3	9-8,6	5,2-5	–	–	1410	5	78	0,80	14,8	2,2
3	100	B5	B3	12-11,6	6,9-6,7	–	–	1410	5,8	81	0,81	20,2	2,5
4	112	B5	B3	–	–	8,7-8,5	5	1440	6,7	83	0,82	26,5	2,7
5,5	132	B5	B3	–	–	12,4-12	7,2	1440	6,8	82	0,87	36,8	2,8
7,5	132	B5	B3	–	–	15,8-15,4	9,2	1450	7,7	82	0,81	49,5	2,8