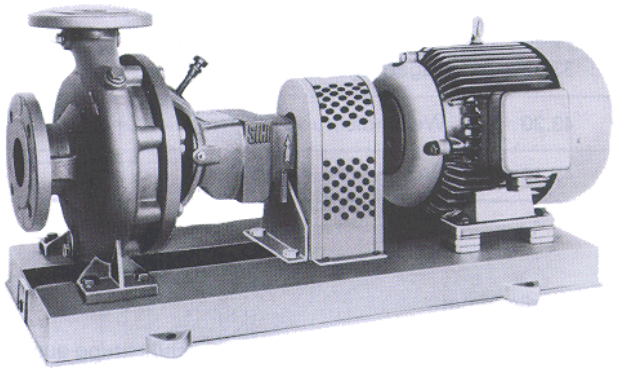
Volute Casing Pumps
self-priming

ULN 32-125 . . . 125-250

TECHNICAL DATA

Output:	max. 300 m³/h
Head:	max. 95 m
Suction head:	max. 5 m (cold water)
Speed:	max. 3000 rpm
Temperature:	max. 120 °C
Casing pressure:	PN 16/10[1)]
Shaft sealing:	standard mechanical seal
Flange connections:	DIN 2501 PN 1610[1)]
Sense of rotation:	clockwise when seen on the pump from the drive



APPLICATION

The **self-priming** volute casing pumps according to DIN 24255 of the series ULN are applied when it is necessary to suck in and to handle without problems and automatically, pure resp. turbid not aggressive liquids which do not contain any solids. So they are suitable for:

- drinking water supply for communities
- general water supply in agriculture, business and industry
- irrigation and drainage
- sprinkling
- pumping of condensate
- charge and discharge of fuels and oils

Please observe: the max. geodetical suction height amounts to 5 m, provided that the necessary pressure corresponding to NPSH is not exceeded.

DESIGN

Horizontal, self-priming single stage volume casing pumps with dimensions and nominal outputs accord. to DIN 24255/EN 733 in back pull out construction.
The back pull out construction allows the demounting of the complete bearing unit towards the drive side so that it is not necessary to detach the pump casing out of the pipings. On applying a coupling with dismounting piece it will be superfluous to detach the motor.
The programme consists of 27 sizes with 4 suction sizes and needs only 2 shaft units on applying the mechanical assembly technique.
Within a shaft unit, shaft sealing, impeller fastening and bearing cover are exchangeable.
The side channel suction stage is arranged at the drive side of the volute casing. It is connected in parallel to the liquid pumping stage and works according to the sucking through principle.

[1)] up from construction size 100-200 10 bar

CONSTRUCTION

Casing pressure:

Max. 16/10[1)] bar from -40 °C to + 120 °C
Intermediate values can be interpolated.

Please observe:
Technical rules and safety regulations.
Casing pressure = positive suction pressure + zero delivery head

Position of branches:

Suction branch directed axially, discharge branch directed radially upwards.

Flanges:

The flanges correspond to DIN 2533/2532 PN 16/10[1)] .
Flange design drilled accord. to ANSI 150 is possible.

Speed:

n = 1450 rpm; Designation of this construction type: A·
n = 2900 rpm; Designation of this construction type: B·

Bearing:

Two greased antifriction bearings. First grease filling will be made in the factory.. Designation of this construction type: ·B
As special design oil lubrification is possible.

Sense of rotation:

Clockwise when seen on the pump from the drive.

Shaft sealing:

The shaft sealing is made by a standard mechanical seal.

Designation AAE: uncooled, not balanced single standard mechanical seal, flushed from internal source, O-rings Perbunan.
Temperature range: -40 °C up to +120 °C

Designation AA1: as per AAE, but O-rings Viton.
Temperature range: -40 °C up to +140 °C

Material design

Item	COMPONENTS	MATERIAL DESIGN		
		0A	0C	3B
10.20 10.90, 11.40 16.10	volute casing stage casing casing cover	GG-25		G-CuSn 10
21.00	shaft	X 20 Cr 13		X 5 Cr Ni Mo 18 10
23.00	impeller	GG 25	G-Cu Sn 10	
23.50	vane wheel impeller	So Ms die-pressed		chrom-platet
33.00	bearing bracket	GG-25		
43.30	shaft sealing mechanical seal	X 22 Cr Ni 17 / carbon, Perbunan		X 22 Cr Ni 17 / carbon, Viton
47.10	shaft sealing casing	GG-25		G-Cu Sn 10

Casing seal:

For casing sealing a flat type seal of special paper is used. Designation of this construction type: 2

Drive / Speed and co-ordination of the suction stages:

Drive by commercial electric motors, construction type IM B3.
Drive by V-belt is admitted up to 1,5 kW drive power. On request, drive by Diesel engines or gasoline motors.

Suction stage	I	II	II	IV
Size	32-125 32-160 32-200 32-250 40-125 40-200 40-250 50-125 50160 65-125	50-200 50-250 65-160 65-200 80-160	65-250 80-200 80-250 100-200 100-250	32-250 40-250 40-315 50-250 50-315 65-250 65-315 80-200 80-250 80-315 100-200 100-250 100-315 125-250
Additional drive power kW	0,3	0,9	2,2	0,7
Speed rpm	2900			1450
Max. speed rpm	300			1800
Characteristic design	B •			A •

The suction stages have been co-ordinated to the different construction sizes in such a manner that an optimal time at an economical drive power will be attained. On selecting of the motor size for the pump unit this constant drive power is to be considered.
The max. speed of n = 3000 rpm resp. n = 1800 rpm results from the admitted peripheral speed of GG-impellers of 40 m/s resp. from the max. pumping pressure of 10 bar, as well as from the admitted stress of the suction stage.

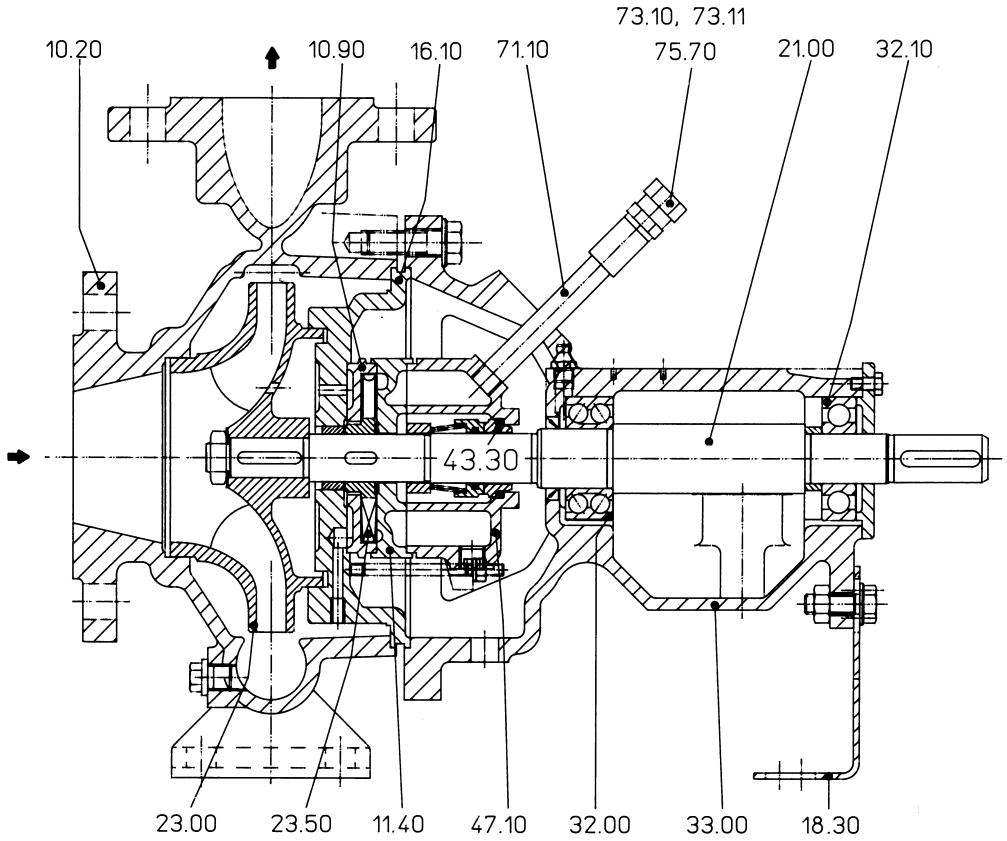
General comments:

For self-priming multistage segmental type pumps we refer to the

series **TKH** and **TLH**

Technical documentation about these programmes will be readily supplied on request.

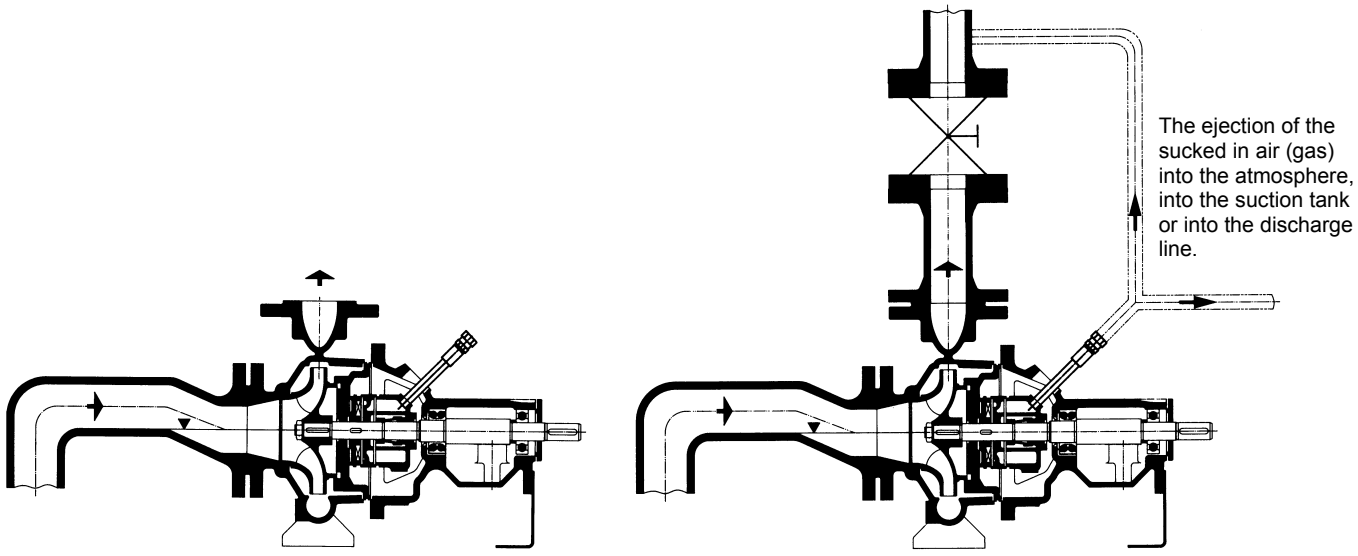
Sectional drawing and nomenclature



10.20	volute casing	23.00	impeller	43.30	mechanical seal
10.90, 11.40	stage casing	23.50	vane wheel impeller	47.10	shaft sealing casing
16.10	casing cover	32.00	inclined ball bearing	71.10	ventilation line
18.30	support foot	32.10	grooved ball bearing	73.10, 73.11	pipe union with
21.00	shaft	33.00	bearing bracket	75.70	orifice plate

Advices for the installation

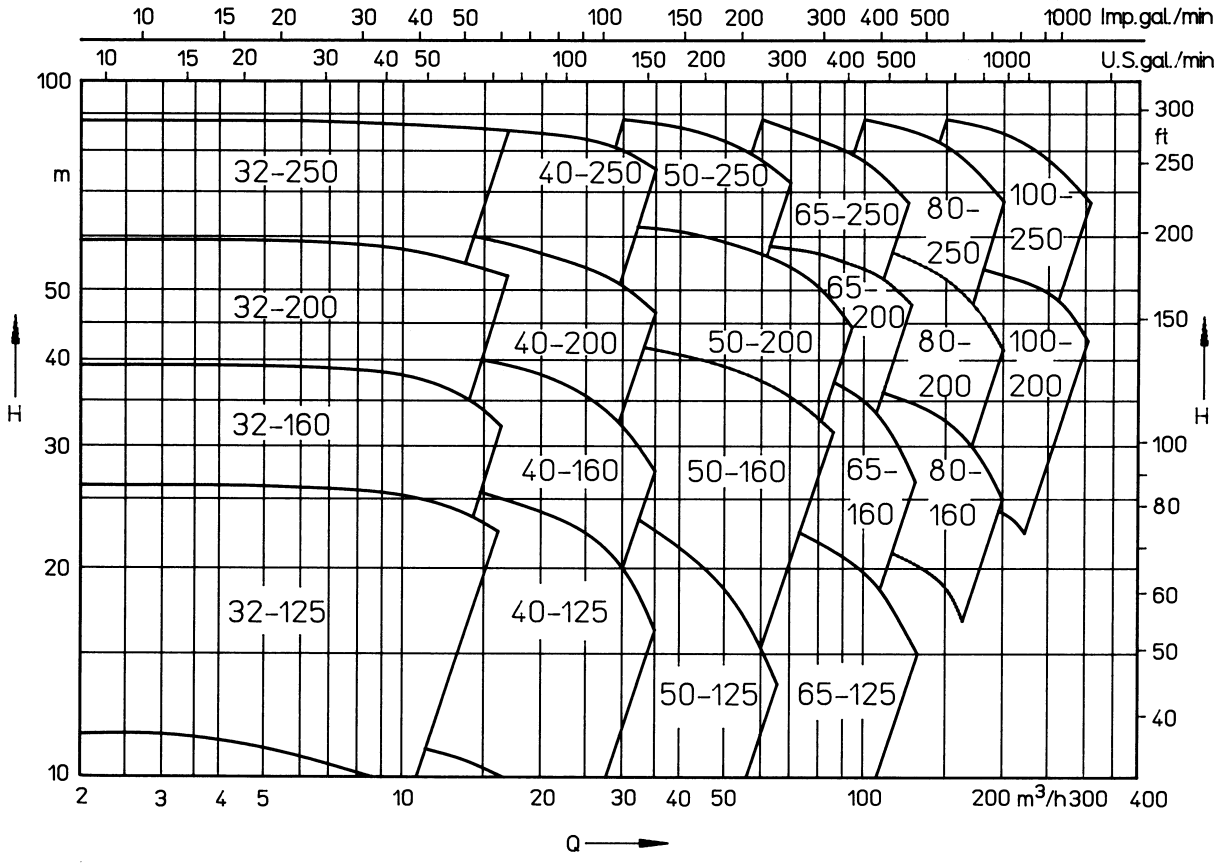
The pipeline on suction side has to be installed as shown, above pump centre, so that sufficient quantity of liquid for the self suction procedure is available.



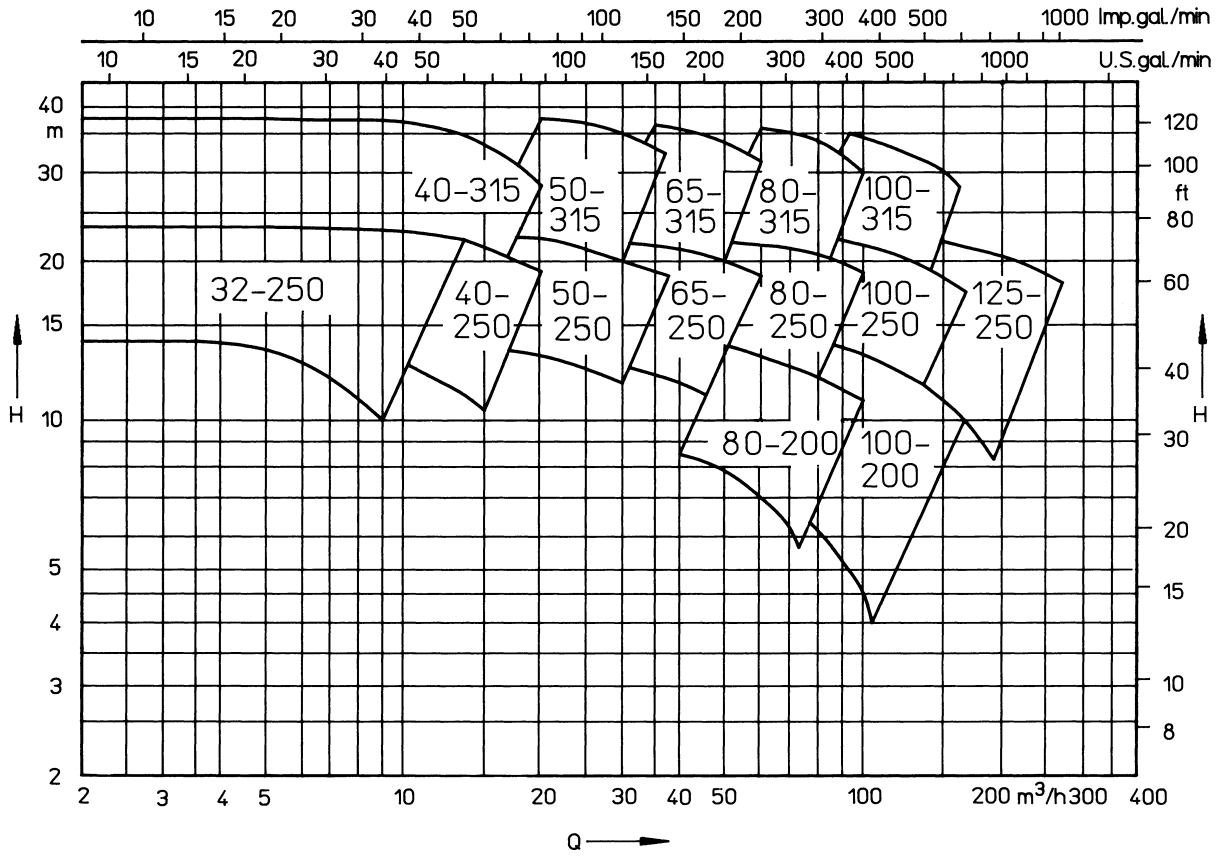
The ejection of the sucked in air (gas) into the atmosphere, into the suction tank or into the discharge line.

Performance graph

50 Hz
n = 2900 rpm



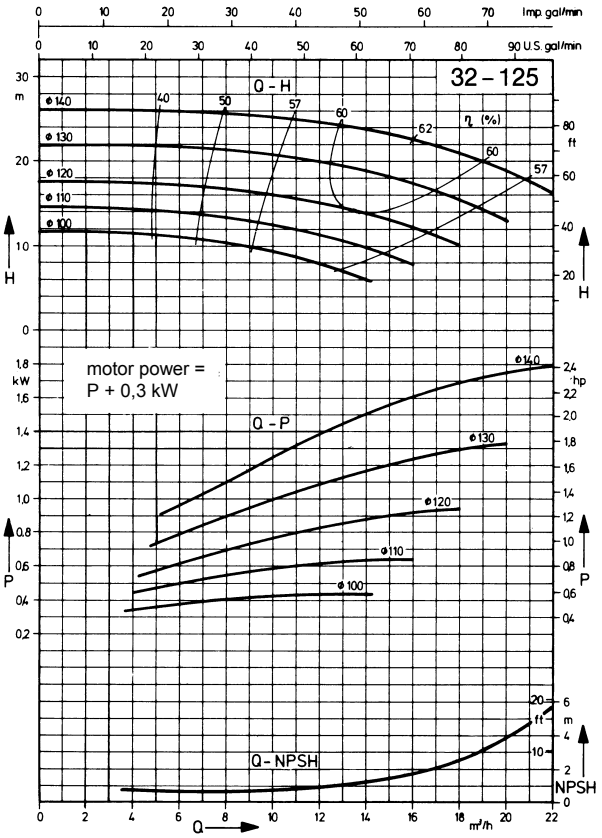
n = 1450 rpm

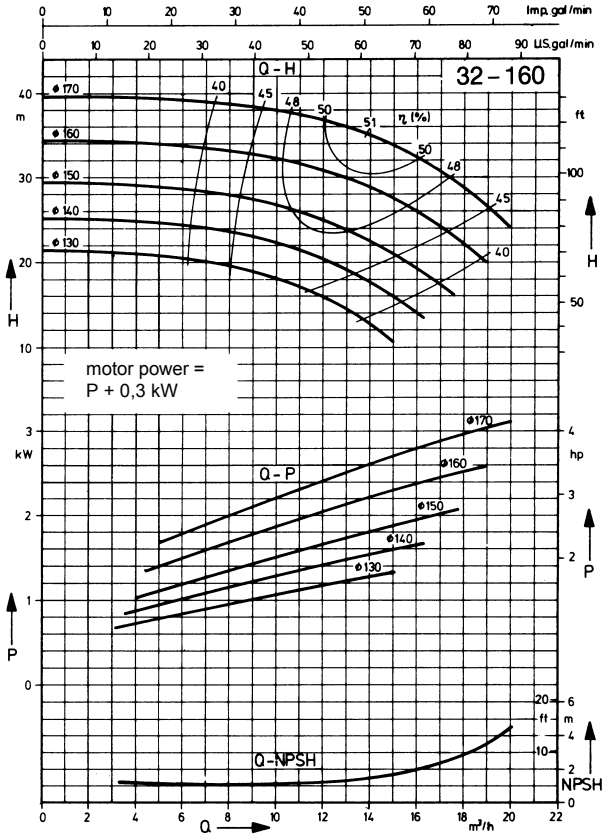


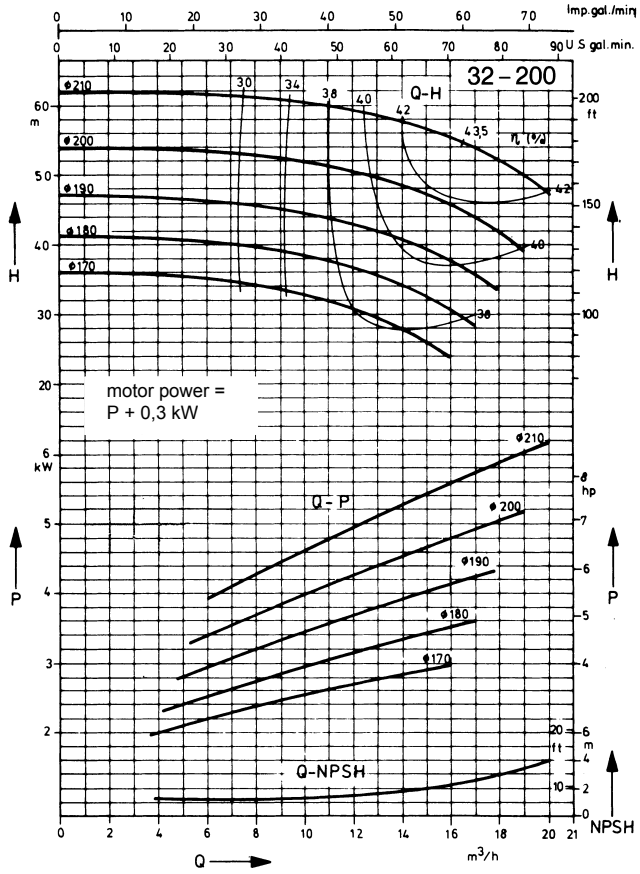
Characteristic curves

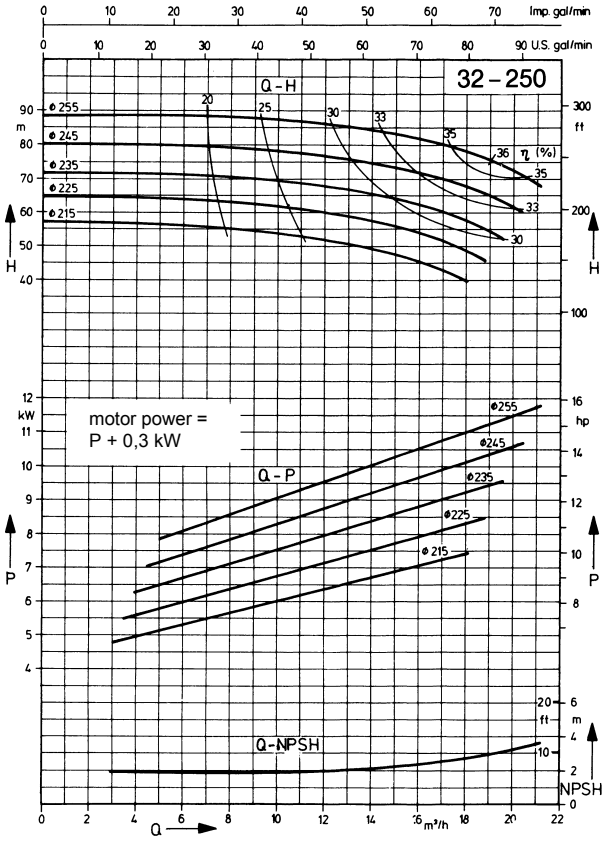
n = 2900 rpm

Attention: On selecting the motors, the constant drive power of the pertinent suction stage has to be added to the drive values determined out of the characteristic curves









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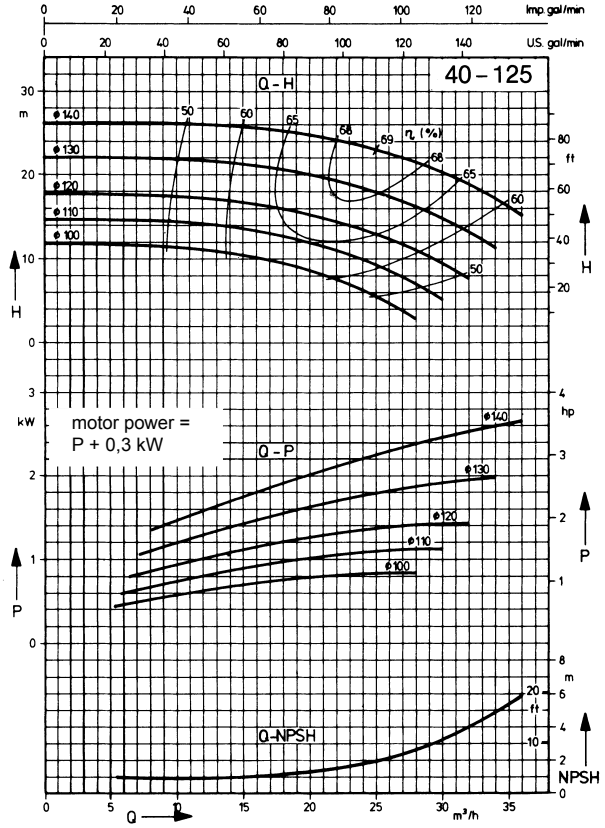

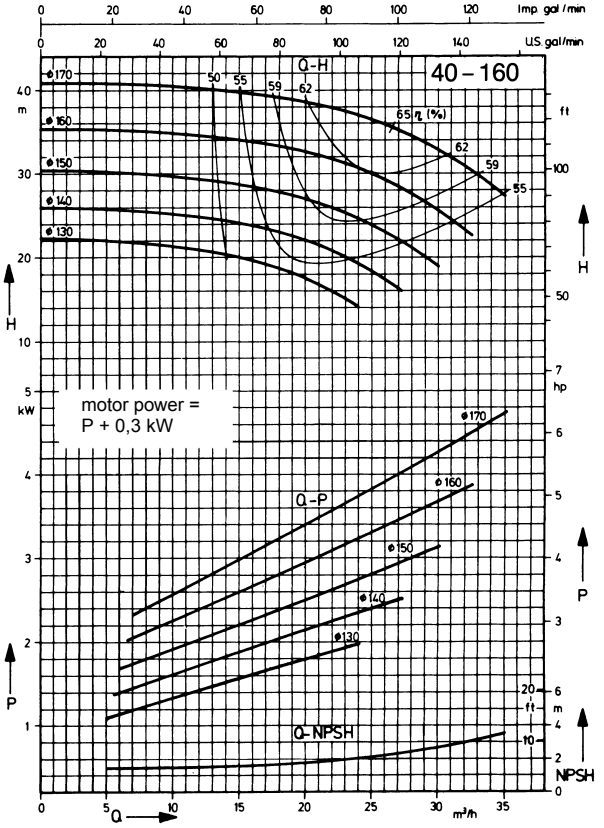

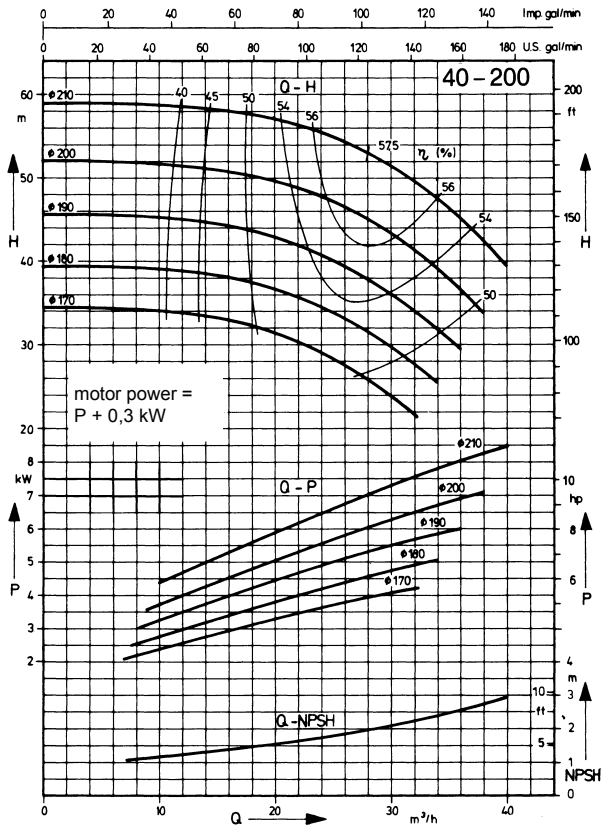

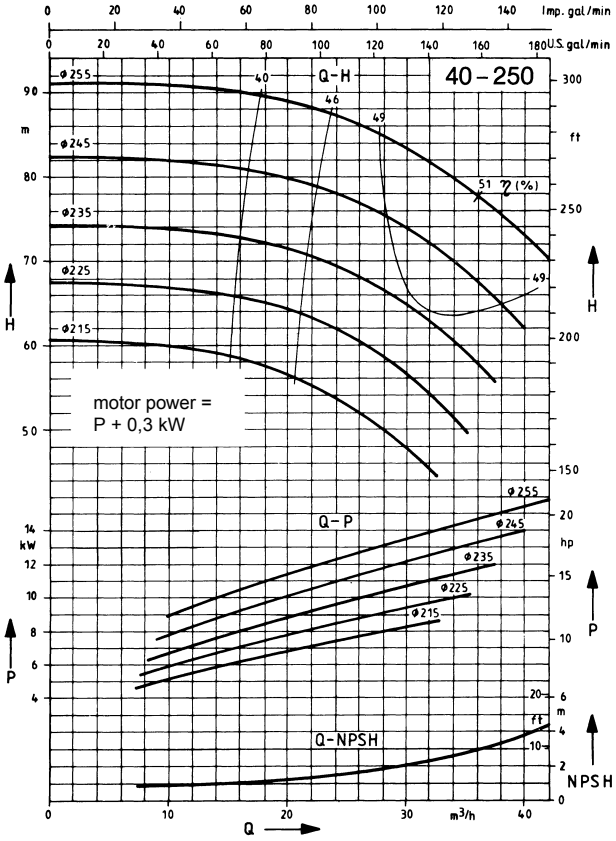

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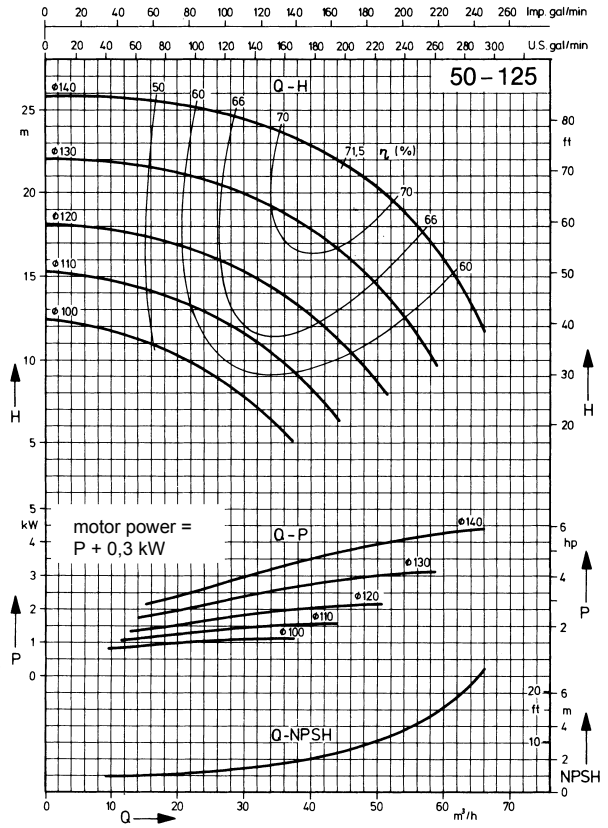

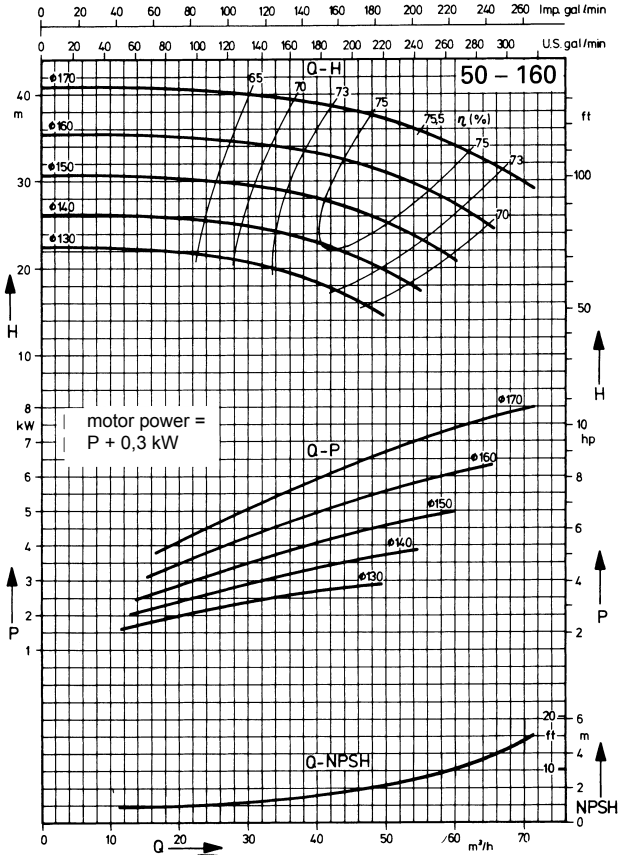

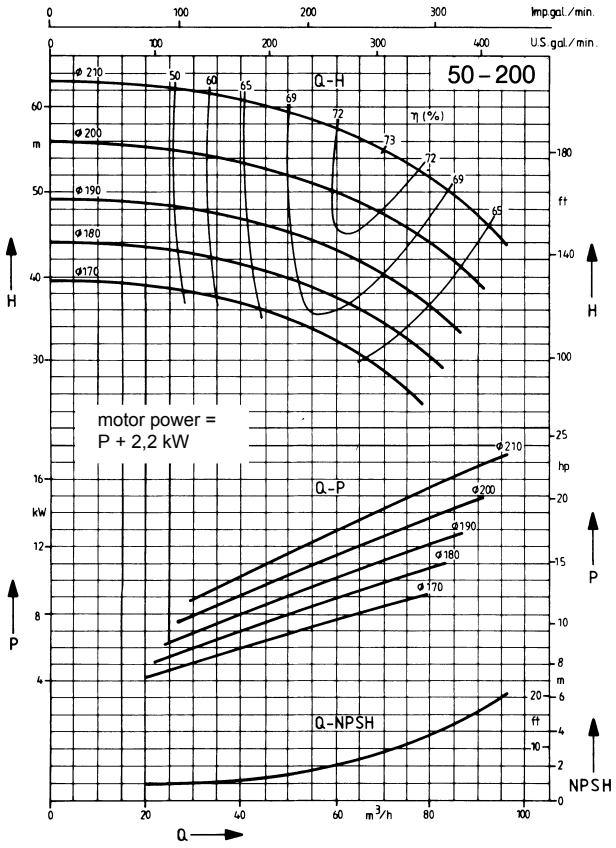

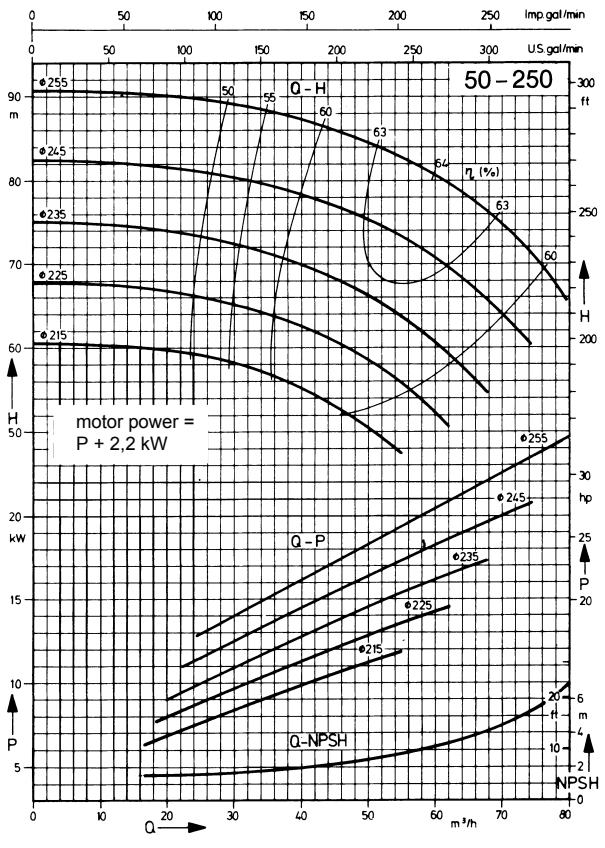

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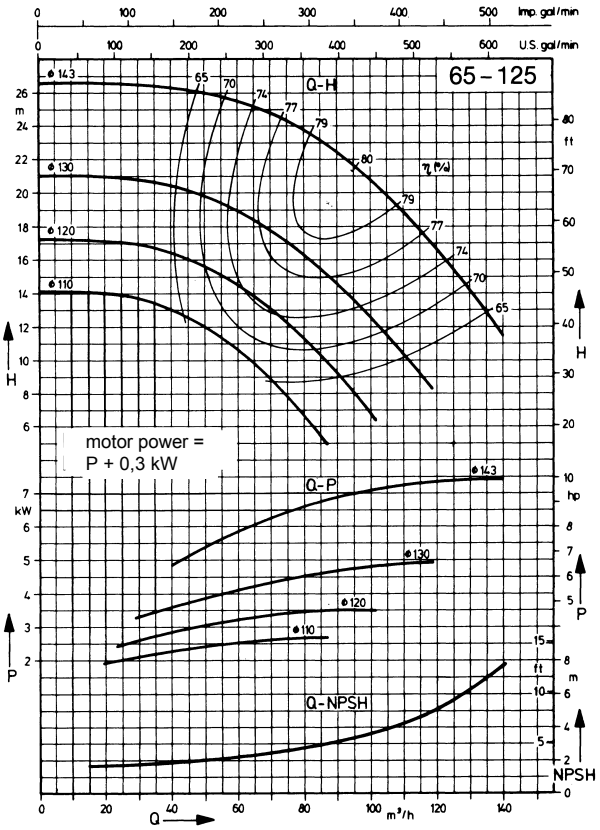

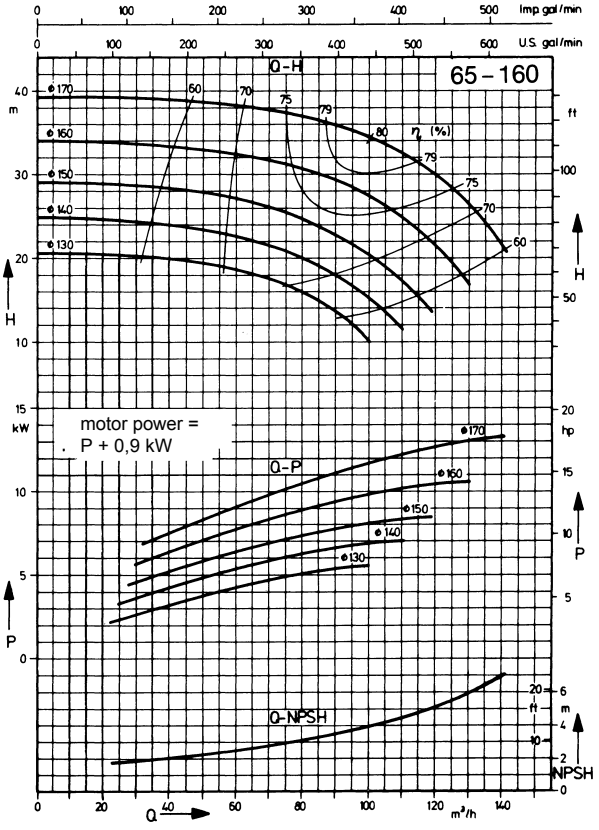

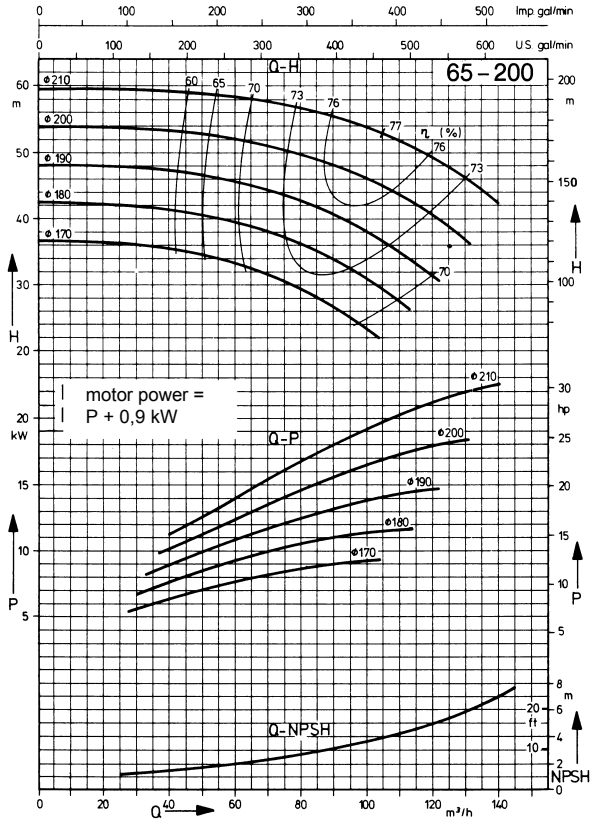

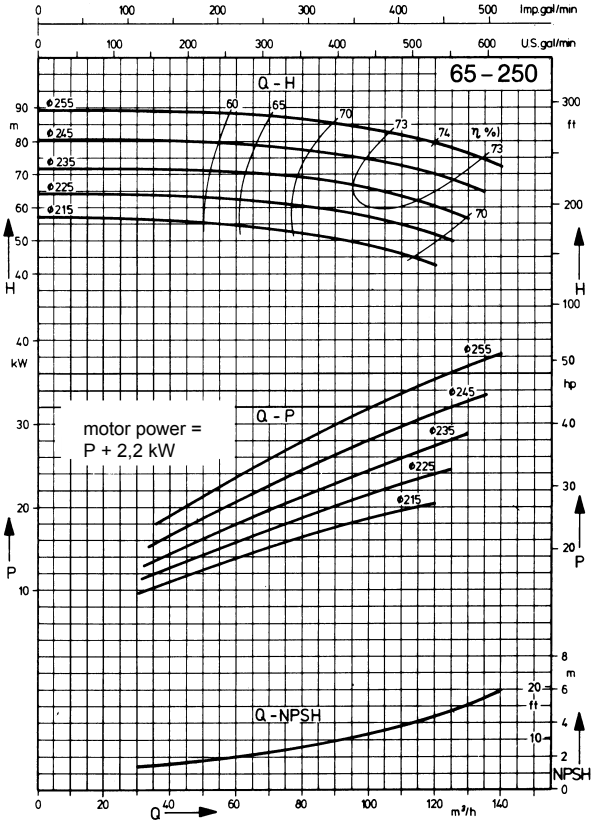

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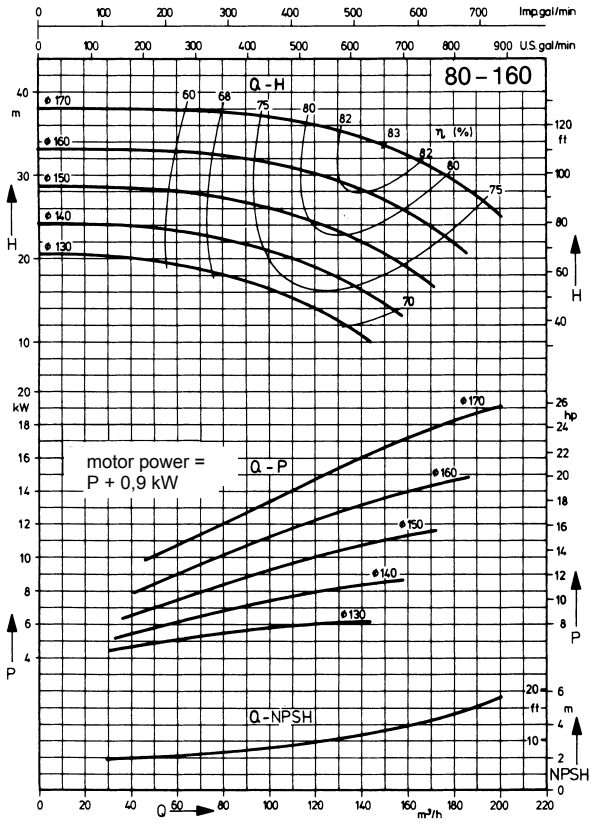

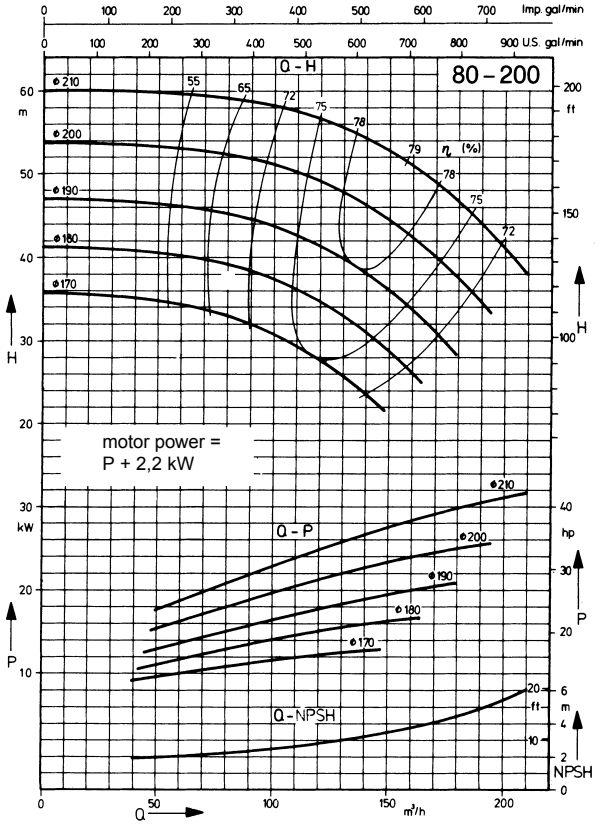

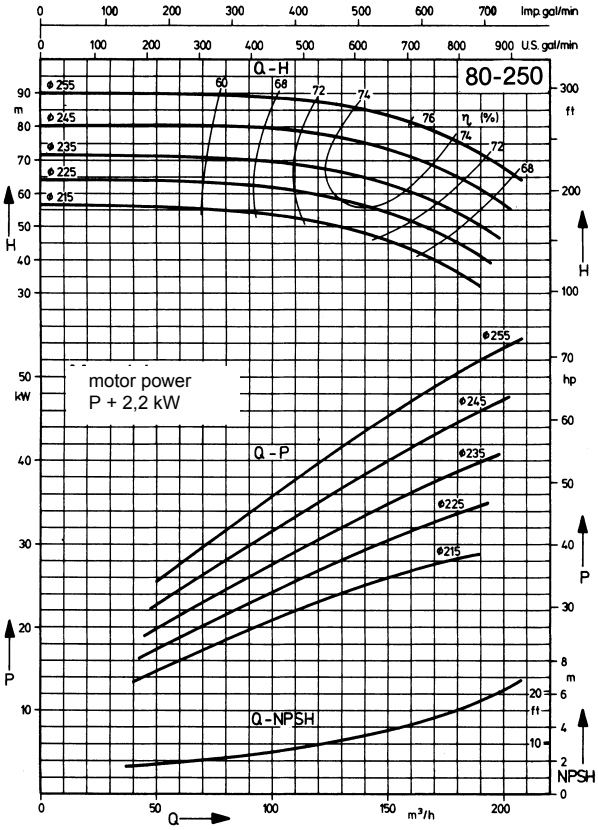

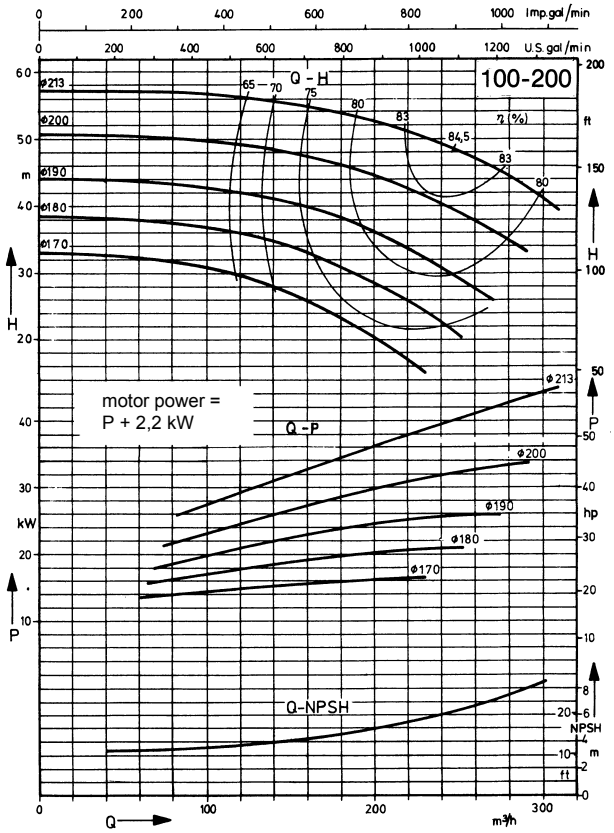

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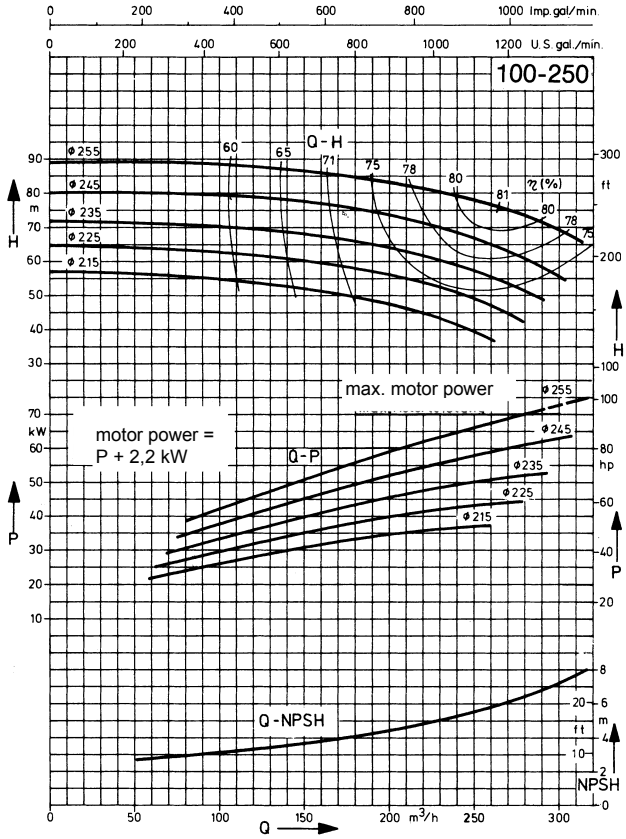
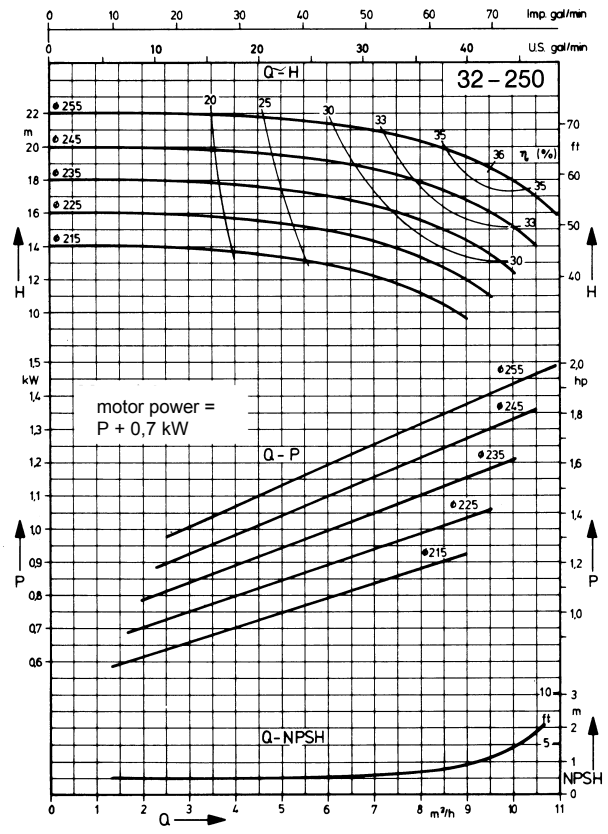
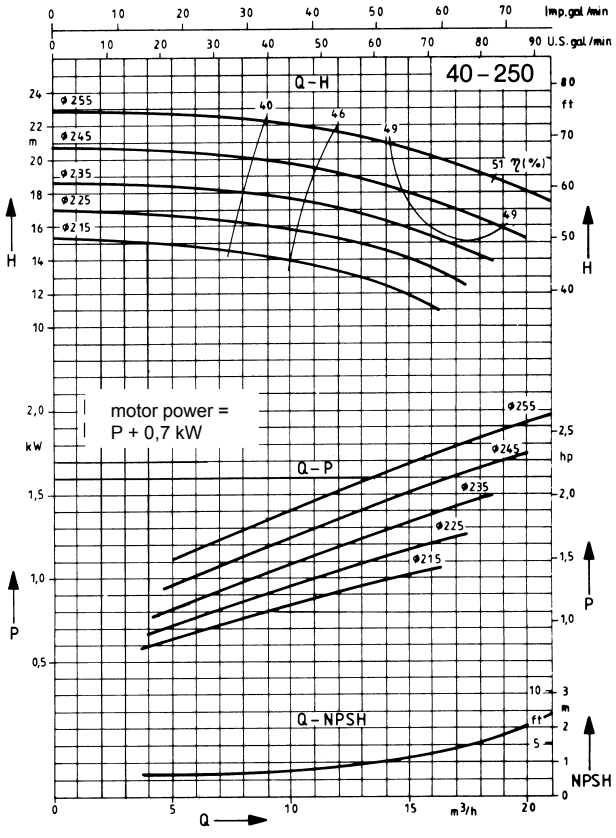


n = 1450 rpm





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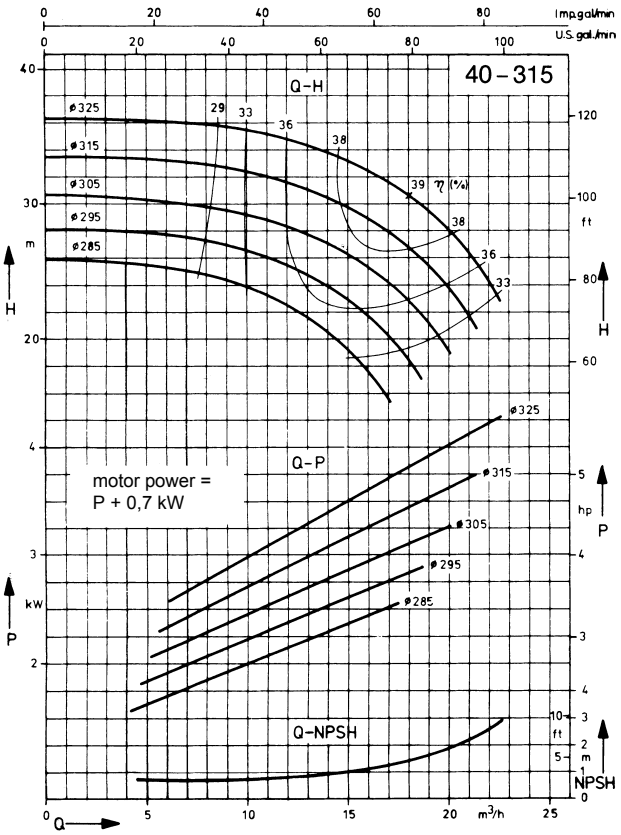

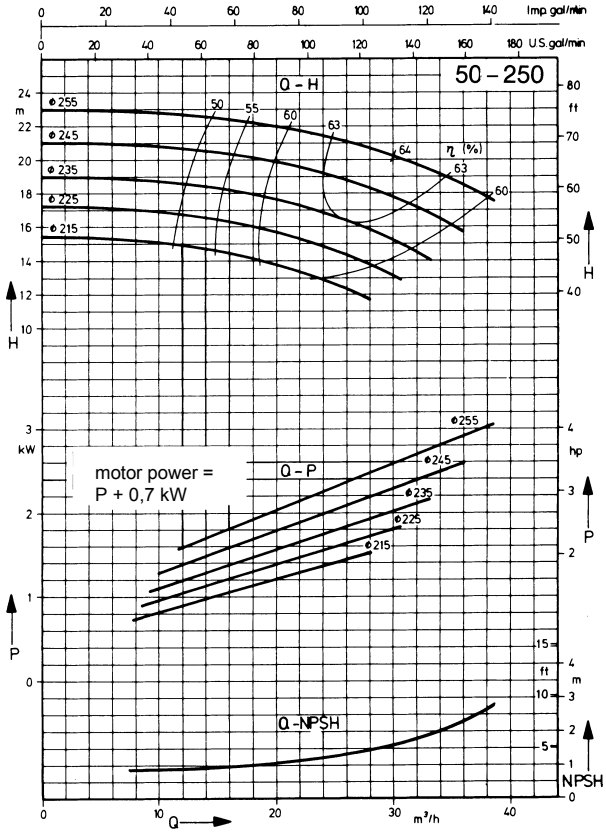

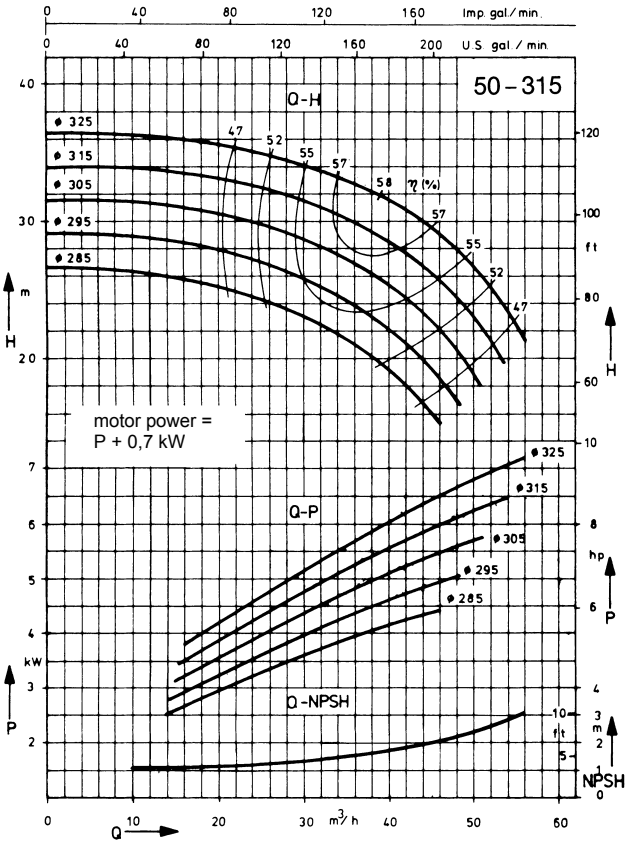

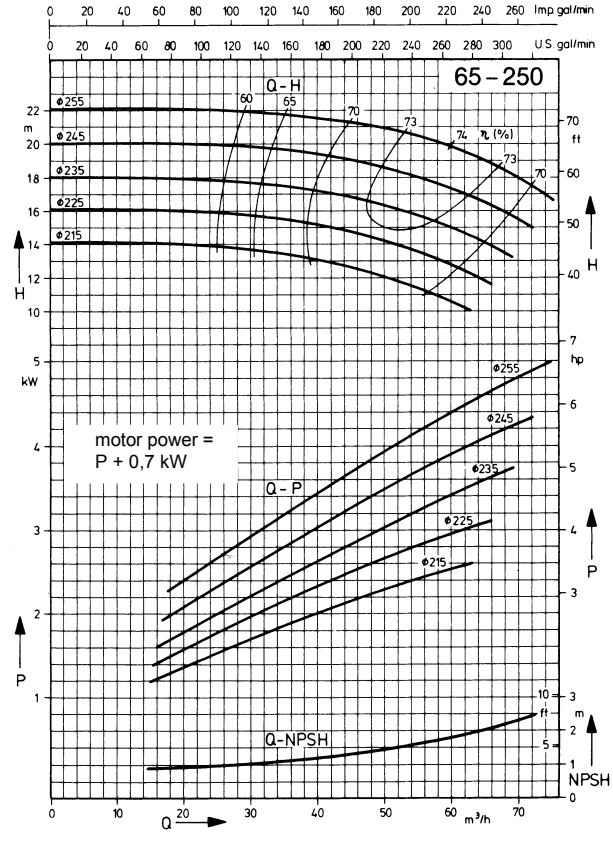

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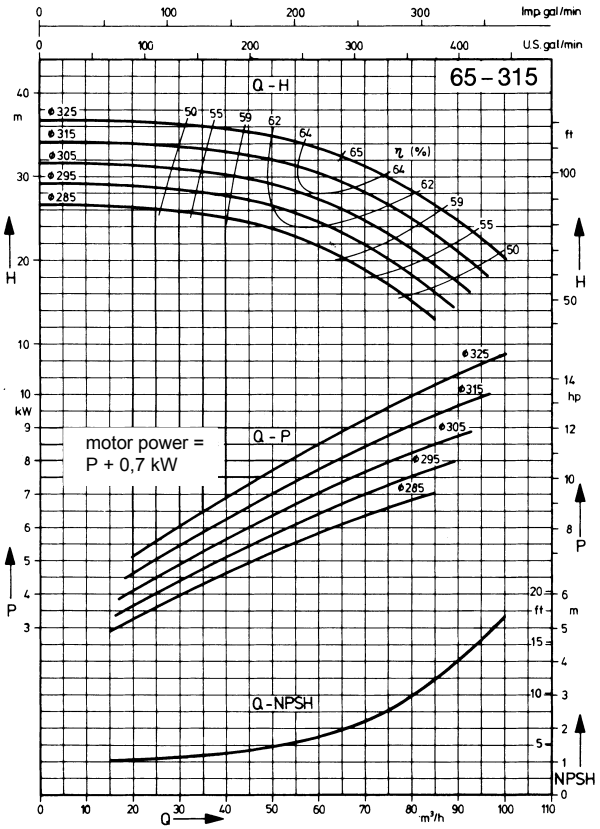

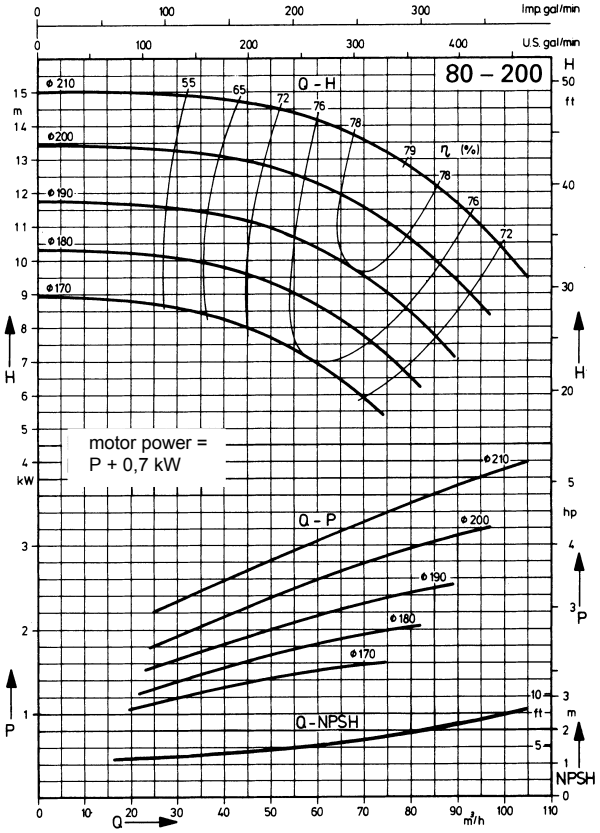

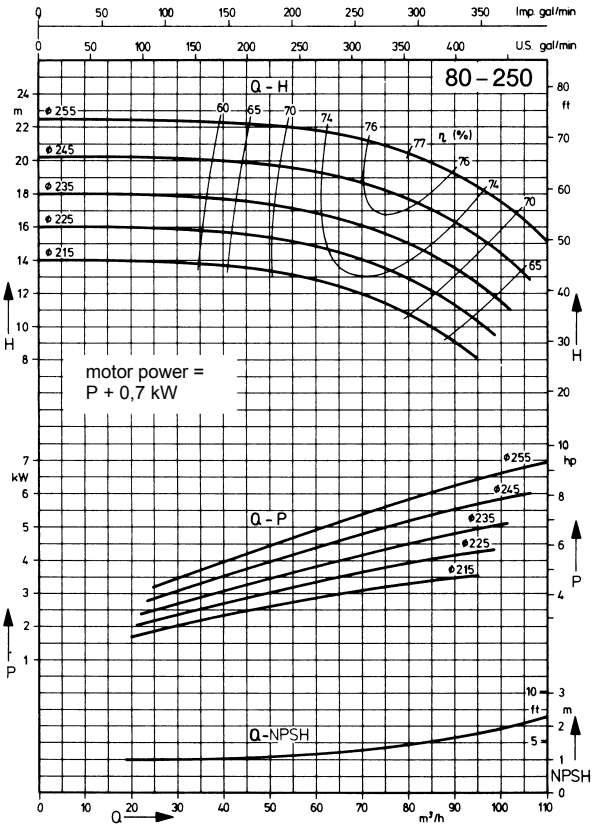

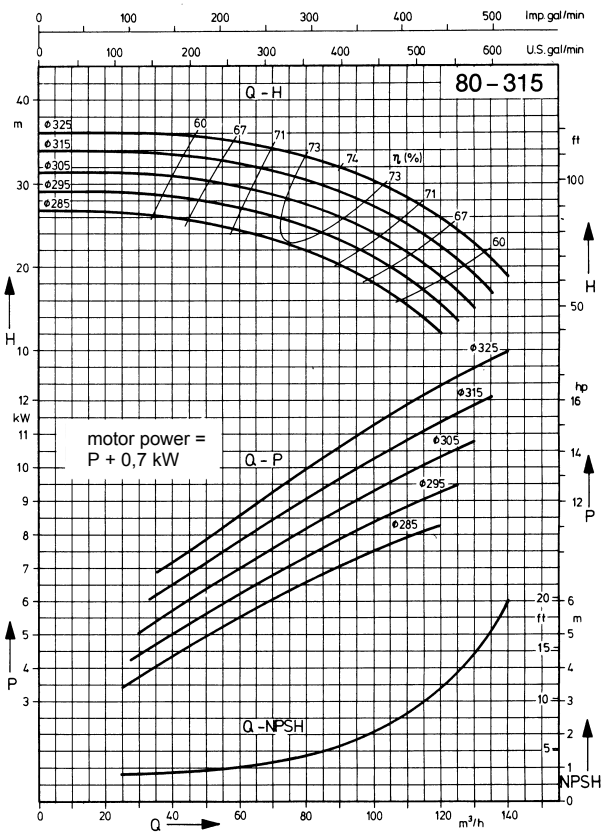

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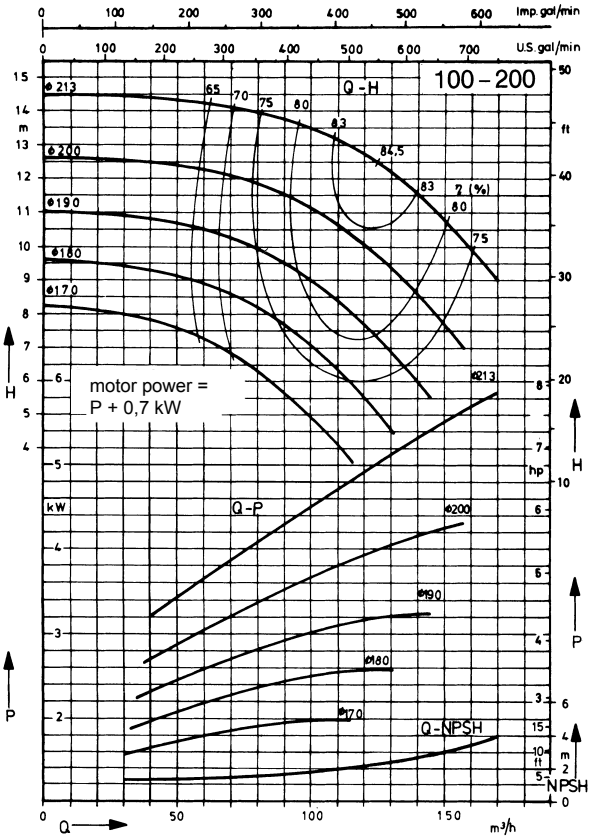
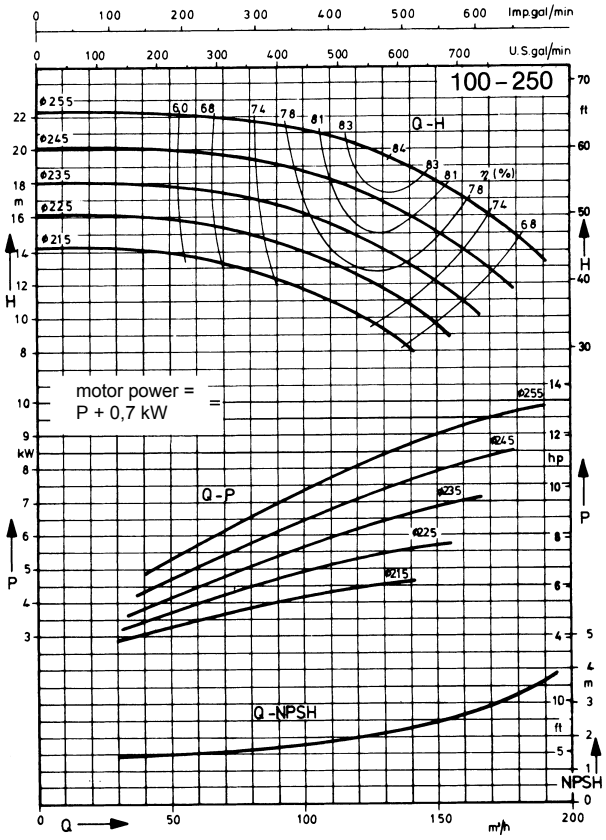
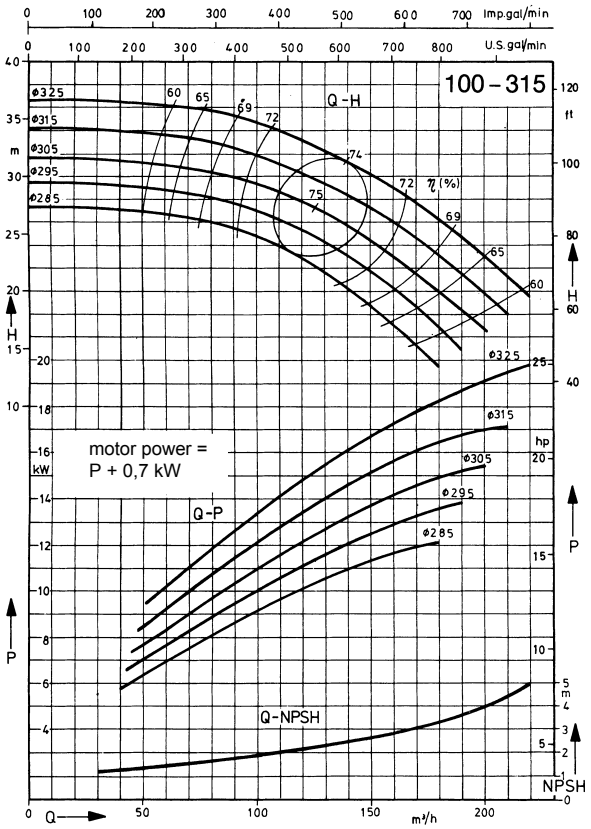
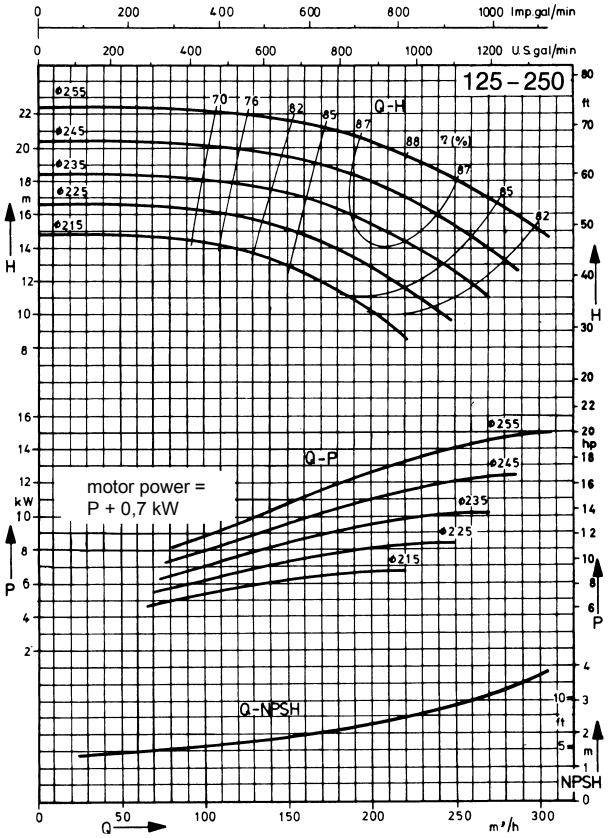








Description:

..... piece

VOLUTE CASING PUMPS
self-priming, acc. to DIN 24255

Maket: Sterling SIHI

For handling of pure respectively turbid not aggressive liquids which do not contain solids.

Volute casing , casing cover and stage casing of GG-25 respectively cast tin bronze *, impeller of GG-25 respectively cast tin bronze*, vane wheel impeller of brass, shaft of 13% chrome steel with shaft seal by not balanced single standard mechanical seal of material combina tion Cr Ni/carbon, Perbunan resp. Viton for the following operation data:

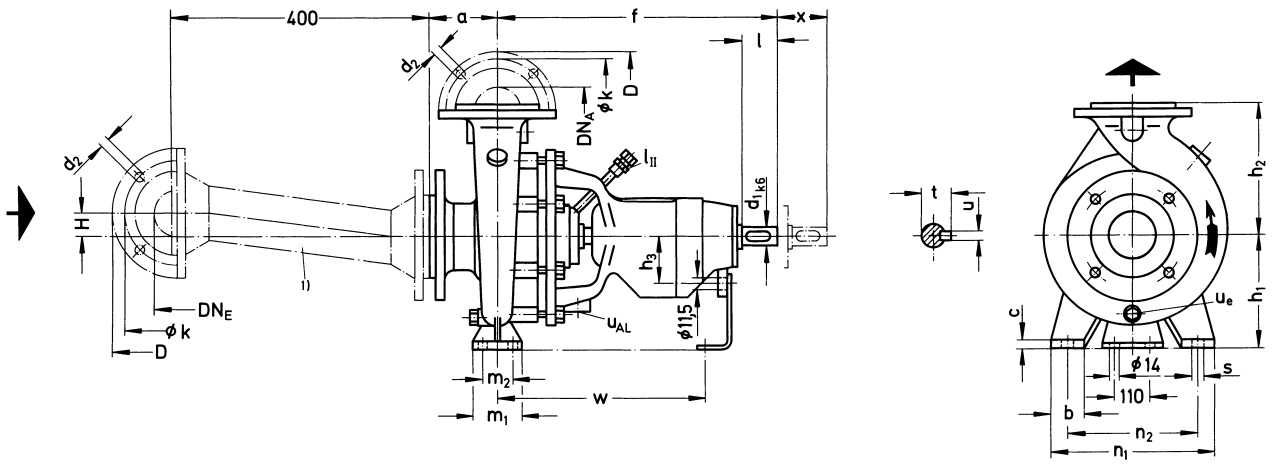
*Please delete which is inapplicable

Liquid to be handled:	.....
Temperature:	°C .....
Capacity Q	m³/h .....
Delivery head H	m .....
Power absorption of the pump	kW .....
Speed n	1/min .....
Motor pwer	kW .....

Scope of delivery: pump unit complete, i.e. pump incl. three-phase AC motor 220 VΔ resp. 380 VΔ, 50 Hz, protection type IP 54, incl. common base plate for pump and motor with flexible coupling.

Price for piece	DM .....
Weight per piece	kg .....

Dimension table



l_{II} = connection for air ventilation pipe G 3/8
u_{AL} = connection for leak liquid G ¼
u_e = connection for discharge G ¼ from DN_A 65 G 3/8

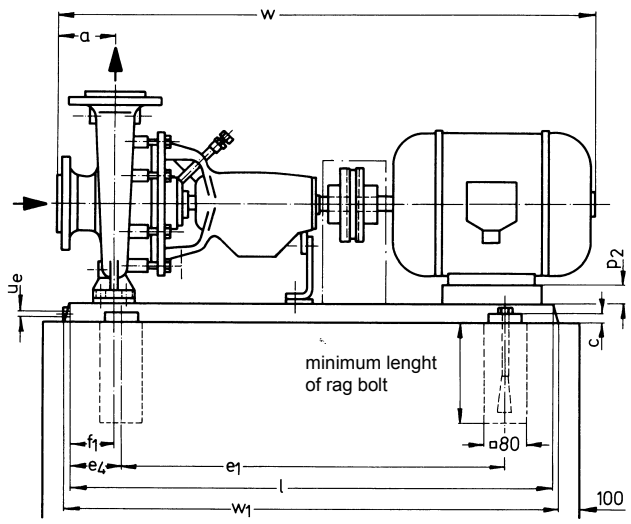
1) Pipe bend can be delivered as accessory by the factory.

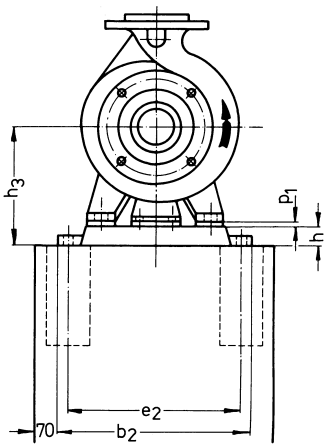
size	DN_A	DN_E	a	b	c	f	H	h_1	h_2	h_3	m_1	m_2	n_1	n_2	s	w	x	d_1	l	t	u
32-125	32	50	80	50	15	360	25	112	140	73	100	70	190	140	15	267	80	24	50	27	8
32-160								132	160				240	190							
32-200								160	180												
32-250			100	65			32,5	180	225		125	95	320	250		342	100	32	80	35	10
40-125	40	65	80	50				112	140		100	70	210	160		267	80	24	50	27	8
40-160								132	160				240	190							
40-200			100					160	180				265	212							
40-250				65				180	225		125	95	320	250							
40-315			125		18	470		225	250	87			345	280		340	100	32	80	35	10
50-125	50		100	50	15	360		132	160	73	100	70	240	190		267	80	24	50	27	8
50-160								160	180				265	212							
50-200									200		125	95									
50-200				65				180	225				320	250							
50-315			125		18	470		225	280	87			345	280		340	100	32	80	35	10
65-125	65	80	100		15	360	40	160	180	73			280	212		267	80	24	50	27	8
65-160									200												
65-200								180	225				320	250			100				
65-250				80		470		200	250	87	160	120	360	280	19	340		32	80	35	10
65-315			125		18			225	280				400	315							
80-160	80	100		65	15	360	50	180	225	73	125	95	320	250	15	267		24	50	27	8
80-200						470			250	87			345	280		340		32	80	35	10
80-250				80	18			200	280		160	120	400	315	19						
80-315								250	315												
100-200	100	125					62,5	200	280								120				
100-250			140					225					400	315							
100-315								250	315												
125-250	125	150					75		355												

Flange connections acc. to DIN 2501 PN 16 and PN 10								
DN_A/DN_E	32	40	50	65	80	100	125	150
D	140	150	165	185	200	220	250	285
k	100	110	125	145	160	180	210	240
d_2 x number	18x4	18x4	18x4	18x4	18x8	18x8	18x8	22x8

Foundation plan

n = 2900 rpm





Dimensions in mm, tolerances (base plates) for cast pieces DIN 1686/GTB 17,
for welded pieces acc. to DIN 8570 B

size	motor size	motor kW	base plate Nr.	coup-ling	weight pump **kg	weight unit kg	a	b_2	c	e_1	e_2	e_4	f_1	h	h_3	l	p_1	p_2	w*	w_1	u_e	rag bolt DIN 529
32-125	71 b	0,55	P 241	A 10	23	52	80	330	25	480	290	115	60	65	177	710	-	41	678	730	G1/2	M 16 x 200
	80 a	0,75				55												32	687			
	80 b	1,1				56													702			
	90 S	1,5				59												22	742			
	90 L	2,2				63													767			
32-160	80 b	1,1			26	59												52	702			
	90 S	1,5				63									197			42	742			
	90 L	2,2				67													767			
	100 L	3,0	P 272			77		360		540	320	130				800		32	826	820		
	112 M	4,0		A 25		95												20	826			
32-200	90 L	2,2	P 241	A 10	30	71		330		480	290	115			225	710		70	767	730		
	100 L	30,	P 272			81		360		540	320	130				800		60	826	820		
	112 M	4,0		A 25		99												48	826			
	13S	5,5		A 63		117												28	909			
	132 S	7,5				120													909			
32-250	132 S	7,5	P 342		48	148	100	450	30	540	400	130	75	80	260	800		48	929	820		
	160 M	11,0	P 344			207				660		170				1000		20	1094	1020		M 20 x 200
	160 M	15,0				209													1094			
40-125	80 b	1,1	P 241	A 10	24	57	80	330	25	480	290	115	60	65	177	710		32	702	730		M 16 x 200
	90 S	1,5				61												22	742			
	90 L	2,2				65													767			
	100 L	3,0	P 272			74		360		540	320	130				800		12	826	820		
40-160	90 S	1,5	P 241		27	64		330		480	290	115			197	710		42	742	730		
	90 L	2,2				68													767			
	100 L	30,	P 272			78		360		540	320	130				800		32	826	820		
	112 M	4,0		A 25		96												20	826			
	132 S	5,5		A 63		113												-	909			
40-200	100 L	3,0		A 10	34	85	100											60	846			
	112 M	4,0		A 25		103									225			48	846			
	132 S	5,5		A 63		121												28	929			
	132 S	7,5				124													929			
	160 M	11,0	P 344			198		450	30	660	400	170		80	240	1000		-	1094	1020		M 20 x 200
40-250	132 S	7,5			42	156							75		260			48	929			
	160 M	11,0				207												20	1094			
	160 M	15,0				209													1094			
	160 L	18,5				232													1138			
50-125	90 S	1,5	P 241	A 10	26	63	100	330	25	480	290	115	60	65	197	710		42	762	730		M 16 x 200
	90 L	2,2				67													787			
	100 L	3,0	P 272			77		360		540	320	130				800		32	846	820		
	112 M	4,0		A 25		95												20	846			
	132 S	5,5		A 63		112												-	929			
50-160	90 L	2,2	P 301	A 10	31	77		390		480	350	115				710		70	787	730		
	100 L	3,0	P 272			82		360		540	320	130			225	800		60	846	820		
	112 M	4,0		A 25		100												48	846			
	132 S	5,5		A 63		118												28	929			
	132 S	7,5				121			30	660		170		80	240	1000			929			
	160 M	11,0	P 344			195			25	540		130		65	225	800		-	1094	1020		M 20 x 200
50-200	100 L	3,0	P 272	A 10	35	87												60	846	820		
	112 M	4,0		A 25		105												48	846			
	132 S	5,5	P 342	A 63		134		450	30		400		75	80	240			28	929			
	132 S	7,5				137													929			
	160 M	11,0	P 344			199				660		170				1000		-	1094	1020		
	160 M	15,0				201													1094			
50-250	160 M	11,0			43	208												20	1094			
	160 M	15,0				210													1094			
	160 L	18,5				233													1138			
	180 M	22,0	S 385	A 100		292		490	40	740	440	190		110	290	1120		--	1165	-	-	
	200 L	30,0		A 160		388									310		20		1263			

Foundation plan

n = 2900 rpm

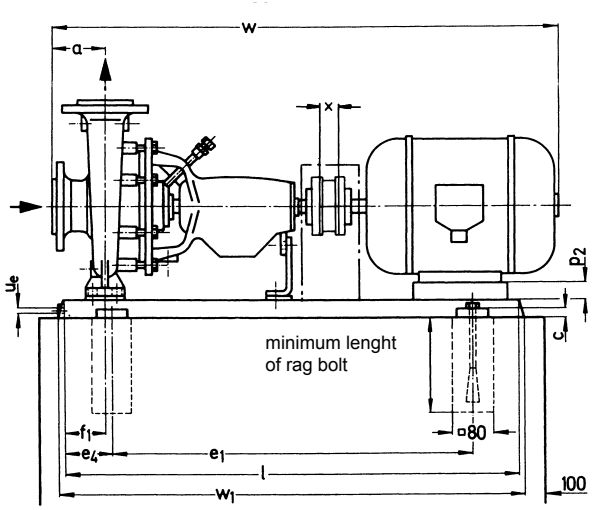
size	motor size	motor kW	base plate Nr.	coup-ling	weight pump kg	weight unit kg	a	b_2	c	e_1	e_2	e_4	f_1	h	h_3	l	p_1	p_2	w*	w_1	u_e	rag bolt DIN 529
65-125	100 L	3,0	P 342	A 10	29	95	100	450	30	540	400	130	75	80	240	800	-	60	846	820	G1/4	M 20 x 200
	112 M	4,0		A 25		113												48	846			
	132 S	5,5	P 303	A 63		127		390	25	600	350	150		65	225	900		28	929	920		M 16 x 200
	132 S	7,5				130													929			
65-160	132 S	5,5			34	132													929			
	132 S	7,5				135													929			
	160 M	11,0	P 344			198		450	30	660	400	170		80	240	1000		-	1094	1020		M 20 x200
	160 M	15,0				200													1094			
65-200	160 M	11,0			38	203									260			20	1094			
	160 M	15,0				205													1094			
	160 L	18,5				228													1138			
	180 M	22,0	S 385	A 100		287		490	40	740	440	190		110	290	1120		-	1165	-	-	
	200 L	30,0		A 160		382									310		20		1263			
65-250	160 L	18,5		A 63	62	289							90				-	40	1248			
	180 M	22,0		A 100		311												20	1275			
	200 L	30,0	S 386	A 160		417				840		205				1250		-	1373			
	200 L	37,0				427													1373			
	225 M	45,0	S 486			510		610			550			106	325		33		1432			M 24 x 250
80-160	132 S	7,5	P 342	A 63	39	144	125	450	30	540	400	130	75	80	260	800	-	48	954	820	G1/2	M 20 x 200
	160 M	11,0	P 344			203				660		170				1000		20	1119	1020		
	160 M	15,0				205													1119			
	160 L	18,5				228													1163			
	180 M	22,0	S 385	A 100		287		490	40	740	440	190		110	290	1120		-	1190	-	-	
80-200	160 M	15,0		A 63	56	260												20	1229			
	160 L	18,5				283													1273			
	180 M	22,0		A 100		305												-	1300			
	200 L	30,0	S 386	A 160		411				840		205			310	1250	20		1398			
	200 L	37,0				421													1398			
80-250	180 M	22,0	S 385	A 100	69	319				740		190	90			1120	-	20	1300			
	200 L	30,0	S 386	A 160		424				840		205				1250		-	1398			
	200 L	37,0				434													1398			
	225 M	45,0	S 486			504		610			550			106	325		33		1457			M 24 x 250
	250 M	55,0	S 487	A 250		611				940		230			350	1400	58		1577			
100-200	160 L	18,5	S 385	A 63	65	299	140	490	40	740	440	190		110	310	1120		40	1273	-	-	M 20 x 200
	180 M	22,0		A 100		314												20	1300			
	200 L	30,0	S 386	A 160		420				840		205				1250		-	1398			
	200 L	37,0				430													1398			
	225 M	45,0	S 486			503		610			550			106			33		1457			M 24 x 250
100-250	200 L	30,0	S 386		78	440		490			440			110	325		-	25	1413			M 20 x 200
	200 L	37,0				450				940									1413			
	225 M	45,0	S 486			525		610			550			106			8	-	1472			M 24 x 250
	250 M	55,0	S 487	A 250		621						230			350	1400	33		1592			
	280 S	75,0	S 607	PKZ 17 **		822		730			695			100	380		55		1676			
	280 M	90,0		PKZ 20 **		868													1727			

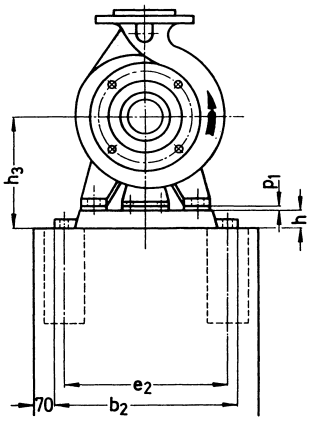
* motors-type of enclosure IP 54, dimensions dependent on motor make

** PKZ-coupling dynamically balanced

Foundation plan

n = 1450 rpm





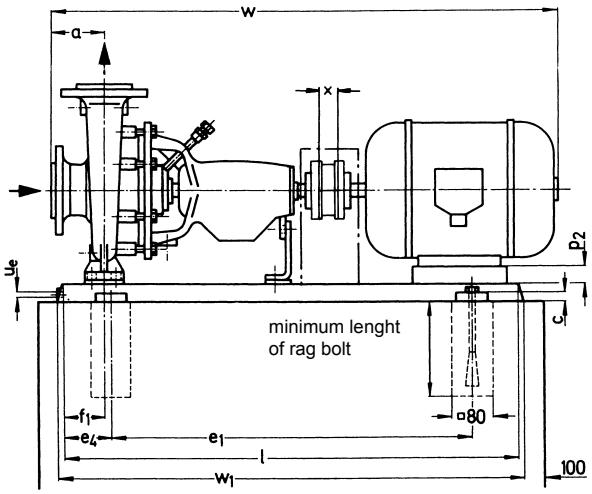
Dimensions in mm, tolerances (base plates) for cast pieces acc. to DIN 1686/GTB 17,
for welded pieces acc. to DIN 8570 B

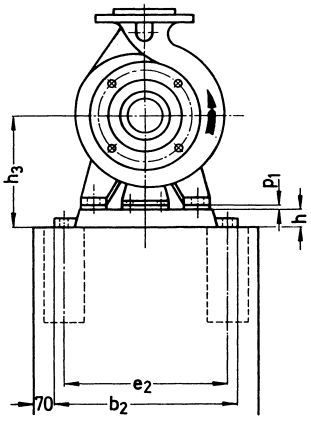
size	motor size	motor kW	base plate Nr.	coup-ling	weight pump kg	weight unit kg	a	b_2	c	e_1	e_2	e_4	f_1	h	h_3	l	p_2	w*	w_1	u_e	rag bolt DIN 529
32-250	80 b	0,75	P 342	A 10	40	92	100	450	30	540	400	130	60	80	260	800	100	722	820	G1/2	M 20 x 200
	90 S	1,1				96											90	762			
	90 L	1,5				100												787			
	100 L	2,2		A 25		108											80	846			
40-250	90 S	1,1	P 342	A 10	42	99	100	450	30	540	400	130	73	80	260	800	90	762	820	G1/2	M 20 x 200
	90 L	1,5				103												787			
	100 L	2,2		A 25		110											80	846			
	100 L	3,0				111												846			
40-315	100 L	2,2	P 383		78	153	125	490		600	440	150	75		305	900	125	981	920		
	100 L	3,0				154												981			
	112 M	4,0		A 63		172											113	981			
	132 S	5,5				194											93	1064			
50-250	90 L	1,5	P 342	A 10	43	104	100	450	30	540	400	130	75	80	260	800	90	787	820	G1/2	M 20 x 200
	100 L	2,2		A 25		111											80	846			
	100 L	3,0				112												846			
	112 M	4,0		A 63		130											68	846			
50-315	112 M	4,0	P 383		80	174	125	490		600	400	150			305	900	113	981	920		
	132 S	5,5				196											93	1064			
	132 M	7,5	S 385			246			40	470		190		110	335	1120		1102	-	-	
65-250	100 L	2,2	P 383	A 25	62	137	100	490	30	600	440	150	90	80	280	900	100	956	920	G1/2	M 20 x 200
	100 L	3,0				136												956			
	112 M	4,0		A 63		156											88	956			
	132 S	5,5	S 385			216			40	740		190		110	310	1120	68	1039	-	-	
65-315	132 S	5,5			87	242	125								335		93	1064			
	132 M	7,5				252												1102			
	160 M	11,0		A 100		297											65	1229			
	160 L	15,0				318												1273			
80-200	90 L	1,5	P 383	A 25	56	122	125	490	30	600	440	150	75	80	260	900	90	922	920	G1/2	M 20 x 200
	100 L	2,2				130											68	981			
	100 L	3,0				131												981			
	112 M	4,0		A 63		149												981			
	132 S	5,5				170											48	1064			
80-250	100 L	3,0	S 385	A 25	69	184			40	740		190	100	110	310	1120	100	981	-	-	
	112 M	4,0		A 63		203											88	981			
	132 S	5,5				224											68	1064			
	132 M	7,5				234												1102			
80-315	132 S	5,5			92	248									360		118	1064			
	132 M	7,5				258												1102			
	160 M	11,0		A 100		302											90	1229			
	160 L	15,0				323												1273			
100-200	100 L	2,2	P 383	A 25	65	137	125	490	30	600	440	150	90	80	280	900	100	981	920	G1/2	M 20 x 200
	100 L	3,0				140												981			
	112 M	4,0		A 63		159											88	981			
	132 S	5,5	S 385			220			40	740		190		110	310	1120	68	1064	-	-	
	132 M	7,5				230												1102			
100-250	112 M	4,0			78	212	140								335		113	996			
	132 S	5,5				234											93	1079			
	132 M	7,5				244												1117			
	160 M	11,0		A 100		288											65	1244			
100-315	160 M	11,0			97	307									360		90	1244			
	160 L	15,0				328												1288			
	180 M	18,5		A 160		348											70	1315			
	180 L	22,0				369												1353			
125-250	132 M	7,5	S 385	A 63	97	263	140	490	40	740	440	190	100	110	360	1120	118	1117	-	-	M 20 x 200
	160 M	11,0		A 100		307											90	1244			
	160 L	15,0				328												1288			

* motors-type of enclosure IP 54, dimensions dependent on motor make

Foundation plan for units with spacer type coupling

n = 2900 rpm





Dimensions in mm, tolerances (base plate) for cast pieces acc. to DIN 1686/GTB 17,
for welded pieces acc. to DIN 8570 B

size	motor size	motor kW	base plate Nr.	coupling PKA	weight pump kg	weight unit kg	a	b_2	c	e_1	e_2	e_4	f_1	h	h_3	l	p_1	p_2	w*	w_1	u_e	x	rag bolt DIN 529
32-125	71 b	0,55	P 241	8	23	55	80	330	25	480	290	115	50	65	177	710	-	41	794	730	G1/2	100	M 16 x 160
	80 a	0,75	P 272			62		360		540	320	160	60			800		32	820	820			
	80 b	1,1				63																	
	90 S	1,5				67												22	850				
	90 L	2,2				71													880				
32-160	80 b	1,1			26	67									197			52	820				
	90 S	1,5				70												42	850				
	90 L	2,2				74													880				
	100 L	3,0				80							50					32	930				
	112 M	4,0	P 303			108		390		600	350	150	60			900		20	940	920			
32-200	90 L	2,2	P 272		30	79		360		540	320	130			225	800		70	880	820			
	100 L	3,0				85							50					60	930				
	112 M	4,0	P 303			113		390		600	350	150	60			900		48	940	920			
	13S	5,5				128												28	1010				
	132 S	7,5		9		132																	
32-250	132 S	7,5	P 344		48	173	100	450	30	660	400	170	75	80	260	1000		48	1090	1020			
	160 M	11,0				214												20	1200				M 20 x 250
	160 M	15,0		10		218																	
40-125	80 b	1,1	P 272	8	24	64	80	360	25	540	320	130	60	65	177	800		32	820	820			M 16 x 160
	90 S	1,5				68												22	850				
	90 L	2,2				72													880				
	100 L	3,0				78							50		197			12	930				
40-160	90 S	1,5			27	71							60					42	850				
	90 L	2,2				75													880				
	100 L	3,0				84							50					32	930				
	112 M	4,0	P 303			109		390					60			900		20	940	920			
	132 S	5,5				124												-	1010				
40-200	100 L	3,0	P 272		34	89	100	360		540	320	130	50		225	800		60	950	820			
	112 M	4,0	P 303			117		390		600	350	150	60			900		48	960	920			
	132 S	5,5		9		132												28	1030				
	132 S	7,5				136																	
	160 M	11,0	P 344			200		450	30	660	400	170		80	240	1000		-	1200	1020			M 20 x 250
40-250	132 S	7,5			42	157							75		260			48	1030				
	160 M	11,0				208												20	1200				
	160 M	15,0		10		212																	
	160 L	18,5	S 385			272		490	40	740	440	190		110	290	1120			1250	-	-		
50-125	90 S	1,5	P 272	8	26	70		360	25	540	320	130	60	65	197	800		42	870	820			M 16 x 200
	90 L	2,2				74													900				
	100 L	3,0				80							50					32	950				
	112 M	4,0	P 303			108		390		600	350	150	60			900		20	960	920			
	132 S	5,5				123												-	1030				
50-160	90 L	2,2	P 272		31	80		360		540	320	130			225	800		70	900	820			
	100 L	3,0				86							50					60	950				
	112 M	4,0	P 303			114		390		600	350	150	60			900		48	960	920			
	132 S	5,5				129												28	1030				
	132 S	7,5		9		133																	
	160 M	11,0	P 344			197		450	30	660	400	170		80	240	1000		-	1200	1020			M 20 x 200
50-200	100 L	3,0	P 272	8	35	92		360		540	320	130	50	65	225	800		60	950	820			M 16 x 160
	112 M	4,0	P 303			118		390		600	350	150	60			900		48	960	920			
	132 S	5,5				133												28	1030				
	132 S	7,5		9		137																	
	160 M	11,0	P 344			201		450	30	660	400	170		80	240	1000		-	1200	1020			M 20 x 250
	160 M	15,0		10		204																	
50-250	160 M	11,0		9	43	209							75		260			20					
	160 M	15,0		10		213																	
	160 L	18,5	S 385			273		490	40	740	440	190		110	290	1120			1250	-	-		
	180 M	22,0		12		297												-	1270				
	200 L	30,0	P 436			383		540	30	840	490	205		80	280	1250	20		1370	1270	G1/2		

Foundation plan for units with spacer type coupling

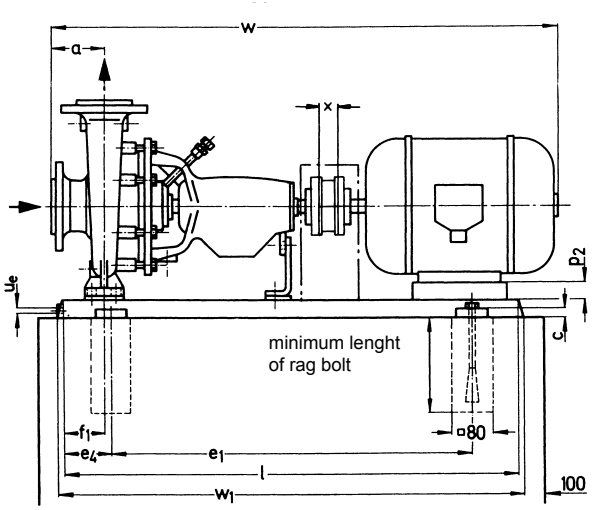
n = 2900 rpm

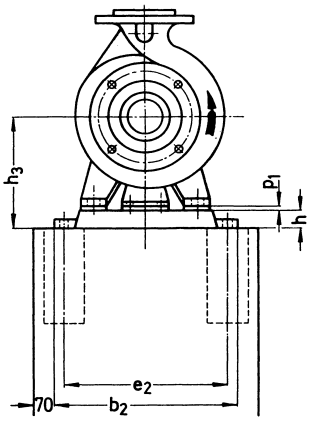
size	motor size	motor kW	base plate Nr.	coup-ling PKA	weight pump kg	weight unit kg	a	b_2	c	e_1	e_2	e_4	f_1	h	h_3	l	p_1	p_2	w*	w_1	u_e	x	rag bolt DIN 529
65-125	100 L	3,0	P 303	8	29	95	100	390	25	600	350	150	75	65	225	900	-	60	950	920	G1/2	100	M 16 x 160
	112 M	4,0				112												48	965				
	132 S	5,5				127												28	1030				
	132 S	7,5		9		131																	
65-160	132 S	5,5		8	34	132																	
	132 S	7,5		9		139																	
	160 M	11,0	P 344			200		450	30	660	400	170	65	80	240	1000		-	1200	1020			M 20 x 250
	160 M	15,0		10		204																	
65-200	160 M	11,0		9	38	204									260			20					
	160 L	18,5	S 385	10		269		490	40	740	440	190	75	110	290	1120			1250	-	-		
	180 M	22,0		12		292												-	1280				
	200 L	30,0	P 436			378		540	30	840	490	205		80	280	1250	20		1380	1270	G1/2		
65-250	160 L	18,5	S 386	10	62	402		490	40		440		90	110	310		-	40	1340	-	-		
	180 M	22,0		12		326												20	1385				
	200 L	30,0	S 487			416		610		940	550	230		100	300	1400		-	1485				M 24 x 400
	200 L	37,0		14		430																	
	225 M	45,0		15		512									325		25		1540				
80-160	132 S	7,5	P 344	9	39	154	125	450	30	660	400	170		80	260	1000	-	48	1055	1020	G1/2		M 20 x 250
	160 M	11,0				205							65					20	1225				
	160 M	15,0		10		209																	
	160 L	18,5	S 385			269		490	40	740	440	190	75	110	290	1120			1270	-	-		
	180 M	22,0		12		293												-	1305				
80-200	160 M	15,0		10	56	263												20	1335				
	160 L	18,5	S 386			296				840						1250			1380				
	180 M	22,0		12		320												-	1410				
	200 L	30,0	S 486			410		610		940	550	230		100	300	1400	20		1510				M 24 x 400
	200 L	37,0		14		424																	
80-250	180 M	22,0	S 486	12	69	324				840		205	90			1250	-	20	1410				
	200 L	30,0	S 487			424				940		230				1400		-	1510				
	200 L	37,0		14		437																	
	225 M	45,0		15		519									325		25		1565				
	250 M	55,0	S 606			650		730		1060	670	270			350	1600	50		1685				
100-200	160 L	18,5	S 386	12	65	312		490		840	440	205		110	310	1250		40	1420			140	M 20 x 250
	180 M	22,0				322												20	1450				
	200 L	30,0	S 487			422		610		940	550	230		100	300	1400		-	1550				M 24 x 400
	200 L	37,0		14		435																	
	225 M	45,0		15		518									325		25		1605				
100-250	200 L	30,0		12	78	435	140										-	25	1565				
	200 L	37,0		14		448																	
	225 M	45,0		15		531												-	1620				
	250 M	55,0	S 608			661		730		1060	670	270			350	1600	25		1740				
	280 S	75,0		17		842									380		55		1820				
	280 M	90,0		20		892													1825				

* motor-type of enclosure IP 54, dimensions dependent on motor make

Foundation plan for units with spacer type coupling

n = 1450 rpm





Dimensions in mm, tolerances (base plate) for cast pieces acc. to DIN 1686/GTB 17,
for welded pieces acc. to DIN 8570 B

size	motor size	motor kW	base plate Nr.	coup-ling PKA	weight pump kg	weight unit kg	a	b_2	c	e_1	e_2	e_4	f_1	h	h_3	l	p_2	w*	w_1	u_e	x	rag bolt DIN 529
32-250	80 b	0,75	P 342	8	40	100	100	450	30	540	400	130	75	80	260	800	100	840	820	G1/2	100	M 20 x 250
	90 S	1,1				104											90	870				
	90 L	1,5				108												895				
	100 L	2,2	P 383			118		490		600	440	150				900	80	950	920			
40-250	90 S	1,1	P 342	8	42	106	100	450	30	540	400	130	75	80	260	800	90	870	820	G1/2	100	M 20 x 250
	90 L	1,5				110												985				
	100 L	2,2	P 383			122		490		600		150				900	80	950	920			
	100 L	3,0				125																
40-315	100 L	2,2	S 385		78	174	125			740		190		110	335	1120	125	1080	-	-		
	100 L	3,0				177																
	112 M	4,0		9		196											113	1090				
	132 S	5,5				211											93	1165				
50-250	90 L	1,5	P 342	8	43	111	100	450	30	540	400	130	75	80	260	900	90	895	920	G1/2	100	M 20 x 250
	100 L	2,2	P 383			123		490		600	440	150					80	950				
	100 L	3,0				126																
	112 M	4,0		9		145											68	1000				
50-315	112 M	4,0	S 385		80	225	125		40	740		190		110	335	1120	113	1090	-	-		
	132 S	5,5				235											93	1165				
	132 M	7,5		10		253												1200				
65-250	100 L	2,2	P 343	8	62	155	100	540	30	660	490	170	90	80	280	1000	100	1060	1020	G1/2	100	M 20 x 250
	100 L	3,0				158																
	112 M	4,0		9		176											88	1070				
	132 S	5,5	S 385			221	125	490	40	740	440	190		110	310	1120	68	1140	-	-		
65-315	132 S	5,5			87	241									335		93	1165				
	132 M	7,5		10		258												1200				
	160 M	11,0	S 386	12		310				840		205				1250	65	1330				
	160 L	15,0				335												1375				
80-200	90 L	1,5	P 434	8	56	128	125	540	30	660	490	170	75	80	260	1000	90	1035	1020	G1/2	100	M 20 x 250
	100 L	2,2				146											80	1080				
	100 L	3,0				148																
	112 M	4,0		9		169											68	1090				
	132 S	5,5				184											48	1165				
80-250	100 L	3,0		8	69	164							90		280		100	1080				
	112 M	4,0		9		183											88	1090				
	132 S	5,5	S 385			219		490	40	740	440	190		110	310	1120	68	1165	-	-		
	132 M	7,5		10		235												1200				
80-315	132 S	5,5		9	92	245									360		118	1165				
	132 M	7,5		10		263												1200				
	160 M	11,0	S 386	12		311				840		205				1250	90	1330				
	160 L	15,0				335												1375				
100-200	100 L	2,2	P 434	8	65	163	125	540	30	660	490	170	90	80	280	1000	100	1125	1020	G1/2	140	M 20 x 250
	100 L	3,0				166																
	112 M	4,0	S 385	9		203		490	40	740	440	190		110	310	1120	88	1135	-	-		
	132 S	5,5				218											68	1210				
	132 M	7,5		10		238												1245				
100-250	112 M	4,0		9	78	220	140								335		113	1150				
	132 S	5,5				235											93	1220				
	132 M	7,5		10		253												1260				
	160 M	11,0	S 386	12		305				840		205				1250	65	1390				
100-315	160 M	11,0			97	321											90					
	160 L	15,0				346									360			1430				
	180 M	18,5		14		370											70	1460				
	180 L	22,0		15		395							80					1500				
125-250	132 M	7,5	S 385	10	97	273	140	490	40	740	440	190	90	110	360	1120	118	1260	-	-	140	M 20 x 250
	160 M	11,0	S 386	12		321				840		205				1250	90	1390				
	160 L	15,0				347												1430				

Data regarding size - order notes

Series + size		Hydraulic+ bearing	Shaft seal	Material design	Casing seal
		A˙ speed n = 1450 rpm B˙ speed n = 2900 rpm ˙B two greased antifriction bearing	AAE standard mechanical seal O-rings Perbunan AA1 as per AAE, but O-rings Viton	0A standard design cast iron 0C as per 0A, but impeller of G-CuSn 10 3B main parts of G-CuSn 10	2 flat seals
ULN	32-125	BB	alternatively AAE AA1	alternatively 0A 0C 3B	2
	32-160	BB			
	32-200	BB			
	32-250	AB			
	32-250	BB			
	40-125	BB			
	40-160	BB			
	40-200	BB			
	40-250	AB			
	40-250	BB			
	40-315	AB			
	50-125	BB			
	50-160	BB			
	50-200	BB			
	50-250	AB			
	50-250	BB			
	50-315	AB			
	65-125	BB			
	65-160	BB			
	65-200	BB			
	65-250	AB			
	65-250	BB			
	65-315	AB			
	80-160	BB			
	80-200	AB			
	80-200	BB			
	80-250	AB			
	80-250	BB			
	80-315	AB			
	100-200	AB			
	100-200	BB			
	100-250	AB			
	100-250	BB			
	100-315	AB			
	125-250	AB			

Design	Designation
pump with free shaft end	01
pump with coupling, ready drilled at motor side and coupling guard for the shaft coupling	41
as above, but pump and coupling guard for the shaft coupling, mounted on base plate, incl. supports for pump and motor and 1 set of rag bolts	53
as abov, but with motor e.g. 18,5 kW-three-phase AC motor (50 Hz, 380 V) at 2900 rpm	e.g. UA

Important:
In case of order please indicate always output Q [m³/h] and delivery head H [m].

Selection table motors

motor n = 2900 rpm			motor n = 1450 rpm		
kW	size	designation	kW	size	designation
0,55	71 b	EA	0,25	71 a	DB
0,75	80 a	FA	0,37	71 b	EB
1,1	80 b	GA	0,55	80 a	FB
1,5	90 S	HA	0,75	80 b	GB
2,2	90 L	JA	1,1	90 S	HB
3,0	100 L	KA	1,5	90 L	JB
4,0	112 M	MA	2,2	100 L	KB
5,5	132 S	NA	3,0	100 L	LB
7,5	132 S	OA	4,0	112 M	MB
11	160 M	SA	5,5	132 S	NB
15	160 M	TA	7,5	132 M	PB
18,5	160 L	UA	11	160 M	SB
22	180 M	VA	15	160 L	UB
30	200 L	XA	18,5	180 M	VB
37	200 L	YA	22	180 L	WB
45	225 M	AA			
55	250 M	BA			
75	280 S	CA			
90	280 M	DA			

Example for ordering:

The size ULN 65-250 BB AAE 0A 2 with coupling, pre-drilled at the motor side and coupling guard for the shaft coupling has the complete order number: **ULN · 65-250 BB AAE 0A 2 41**

The size ULN 65-250 BB AAE 0A 2 as complete unit with 18,5 kW three-phase AC motor, 2900 rpm has the complete order number: **ULN · 65-250 BB AAE 0A 2 UA**

On delivery, the period (·)at the fourth place of the type designation is replaced by a letter in the factory.

On ordering the designs 41 and 53 please indicate always the provided motor in order that the coupling can be ready drilled at motor side and choose the correct base plate and to enclose the proper documentation.
On request, the bearing bracket can be delivered in oil-lubricated design against additional costs-please indicate extra.

Any changes in the interest of the technical development are reserved.

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