

Norma pumpe Tipa NN



CROATIA PUMPE

PUMPE TIPA NN

STANDARD LOW-PRESSURE CENTRIFUGAL PUMPS-DIN 24255

Norma pumpe Tipa NN

Norma pumpe izvedene su u skladu sa standardom DIN 24255. Normiranih su dimenzija i mogu se međusobno zamjenjivati bez obzira na proizvođača pumpi, bez promjene priključka i postolja, a hidrauličke karakteristike su im približno iste pri istim dimenzijama. Rotor ovih pumpi demontira se u smjeru prema elektromotoru bez odvajanja pumpe sa usisnog i tlačnog cjevovoda. Ugradnjom specijalne spojke s demontažnim međukomadom rotor pumpe može se demontirati i bez pomicanja elektromotora čime se izbjegava centriranje pumpe s motorom kod ponovne montaže agregata. Velika zamjenljivost dijelova kod ovih pumpi osigurava sigurnost tijekom korištenja pri minimalnom usklađenju rezervnih dijelova.

Primjena

NN pumpe namijenjene su za crpljenje neabrazivnih tekućina bez sadržaja čvrstih čestica: čista hladna i vruća voda temperature 363 K (90°C) do 413 K (140°C), nečista voda s malim stupnjem nečistoća, te morska voda. Primjenjuje se u vodovodima, te raznim industrijskim i energetskim postrojenjima niskog tlaka.

Područje dobave

Područja dobave NN pumpi prikazana su dijagramima za brojeve okretaja 24,2 s" (1450 min") i 48,4 s" (2900 min").

Konstrukcija

NN pumpa izvedena je kao jednoulazna, s jednim stupnjem, horizontalna s aksijalnim ulazom tekućine i radijalnim izlazom usmjerenim prema gore. U spiralnom kućištu ugrađeno je kolo rotora pumpe koje je uklinjeno na vratilo. Rotor je uležišten u dva kuglična ležaja ugrađena u nosaču ležaja. Između spiralnog kućišta pumpe i nosača ležaja ugrađen je poklopac kućišta pumpe u kojem je smještena brtvenica.

Kućište

Pumpa ima jednodjelno spiralno kućište izvedeno s nogama za pričvršćenje na temeljnu ploču. Na kućištu se nalaze priključci za manometar, vakuummetar, punjenje ili evakuaciju, te drenažu. Prirubnice su izvedene po standardu

DIN 2533 za NO do 150 mm

DIN 2532 za NO od 200 mm

Type NN

Standard pumps are designed in compliance with the DIN 24255 standard. They are of standardized dimensions and interchangeable regardless of the pump manufacturer, without changes in connections and supports, while their hydraulic characteristics are approximately identical with equal dimensions. The pump impeller is disassembled in the direction of the electro motor without disconnecting the piping or moving the motor. The wide scope of interchangeability of components of these pumps provides for a safe and reliable service life with a minimum stock of spare parts.

Field Of Application

The NN pumps are suitable for handling liquids which are either non-aggressive chemical or mechanical. Furthermore they are also used for fluids with high (up to 140°C) or low (up to 90°C) temperatures, brackish waters, sea water, various industrial and power generating plants. These pumps can be used for all aggressive and abrasive fluids in process industry at usage of the adequate materials

Rating Chart

The NN pumps delivery areas are shown on diagrams for r.p.m. 1450 and 2900.

Design

The NN pumps are designed as single entry, single stage horizontal pumps with axial fluid inlet and radial fluid outlet directed upwards. The impeller is attached to the end of the shaft by a key and an impeller nut. The shaft with impeller is supported by two antifriction bearings lubricated by oil. Built between the volute casing and the bearing pedestal is the pump casing cover housing the stuffing box.

Pump Casing

The pump is housed in an integral volute casing with legs to be secured to the base plate. Located on the casing are connections for pressure gauge, vacuum gauge, filling with water or evacuating air and drainage.

Flanges are made to standards

DIN 2533 for DIN up to 150 mm

DIN 2532 for DIN up to 200 mm

Poklopac kućišta

Poklopac kućišta pumpe ujedno je i nosač brtvenice. Ovisno o dobavnom mediju ugrađujemo u pumpu različite izvedbe poklopca kućišta, te uz isti nosač ležaja i isto kućište pumpe dobivamo više različitih izvedbi što je velika prednost ovih pumpi. Kombinacijom različitih izvedbi poklopca kućišta s različitim brtvenicama, te kombinacijom različitih materijala izrade dobivamo više različitih izvedbi NN pumpe, te je primjena ove pumpe višestruka i ekonomična.

Izvedba NN pumpi

- Izvedba 01 - odgovarajući poklopac kućišta u kombinaciji s brtvenom pletenicom.
Medij: čista slatka voda temperature do 363 K.
- Izvedba 02 - jednaka izvedbi 01 uz izmjenu materijala izrade. Medij: morska voda ili sličan medij.
- Izvedba 03 - odgovarajući poklopac kućišta u kombinaciji s brtvenom pletenicom.
Medij: prljava voda
- Izvedba 04 - odgovarajući poklopac kućišta u kombinaciji s mehaničkom brtvom.
Medij: čista slatka hladna voda.
- Izvedba 05 - jednaka izvedbi 04 uz izmjenu materijala izrade. Medij: morska voda ili sličan medij.
- Izvedba 06 - odgovarajući poklopac kućišta u kombinaciji s brtvenom pletenicom.
Medij: topla voda pri čemu je radni tlak + tlak zasićenja < 1 MPa.
- Izvedba 07 - jednaka izvedbi 06 uz izmjenu materijala izrade. Medij: topla voda pri čemu je radni tlak + tlak zasićenja > 1 MPa, a ukupni tlak ne prelazi 1,6 MPa.

Kolo rotora

Kolo rotora je radijalno, jednostrujno, zatvorenog tipa s geometrijom koja osigurava povoljna usisna svojstva i dobar stupanj iskoristivosti.
Izjednačenje aksijalne sile postiže se ugradnjom raspornih prstenova.

Vratilo i ležaji

Vratilo pumpe smješteno je u dva kuglična ležaja ugrađena u nosaču ležaja. Vratilo je zaštićeno tuljkom, a ležajevi su podmazani s mašću. Brtljenje vratila vrši se brtvenom pletenicom odgovarajuće kvalitete sa i bez hlađenja ili mehaničkom brtvom ovisno o mediju koji pumpa dobavlja.

Casing Cover

The pump casing cover is in the same time the stuffing box support. Depending on the fluid handled, the pump is designed with various models of casing cover, accordingly, with an identical bearing pedestal and pump casing several models of the pump can be set up which is a great advantage of the NN pumps. By combining various models of casing cover with various stuffing boxes and various materials of components will be obtained several models of NN pumps which makes them both multiple-purpose and economical.

NN Pump Models

- Model 01 - casing cover with soft packing
Fluid: clean fresh water up to the temperature of 363 K
- Model 02 - same design as 01 but of other materials
Fluid: sea water or a similar fluid
- Model 03 - casing cover in combination with soft packing
Fluid: brackish water
- Model 04 - casing cover in combination with mechanical seal
Fluid: pure, fresh cold water
- Model 05 - same design as 04 but made of other materials
Fluid: sea water or a similar fluid
- Model 06 - casing cover in combination with soft packing
Fluid: warm water with operating pressure and saturation pressure <1MPa.
- Model 07 - same design as 06 but made of other materials
Fluid: warm water with operating pressure and saturation pressure >1MPa, with total pressure not exceeding 1.6 MPa.

Impeller

The standard impeller is of the closed radial type with several curved blades. The carefully designed suction eye assures high suction capacity; the blades are designed so as to obtain, with the given external diameter of the impeller and the chosen speed, optimum head at high efficiency which retains a good value over a wide capacity range.

Shaft And Bearings

Shaft is supported on two ball bearings which are installed in bearing support. Shaft is protected by means of shaft sleeve and the bearings are lubricated with one-shot lubrication without greaser. The shaft is with a gasket of an appropriate quality, with or without cooling, or a mechanical seal, depending on the fluid supplied by the pump.

Brtvila

Brtvila su ugrađena na mjestu prolaza vratila kroz poklopac kućišta pumpe.

Ugrađujemo	Granična temperatura
• brtvene pletenice bez hlađenja	max 363 K (90°C)
• brtvene pletenice s hlađenjem	max 413 K (140°C)
• mehaničke brtve	max 413 K (140°C)

Materijal

Naziv dijela	Kombinacija materijala		
spiralno kućište	SL 25	P.CuSn 10	ČL. 1330
poklopac kućišta	SL 25	P.CuSn 10	ČL. 1330
vratilo	Č.1531	Č.4570	Č. 1531
kolo rotora	SL 25	P.CuSn 10	NL42
nosač ležaja	SL25	SL25	SL25
poklopac ležaja	SL 25	SL25	SL25
brtvenica	SL 25	P.CuSn 10	SL25
zaštitni tuljak	P.CuSn 10	P.CuSn 10	P.CuSn 10
	Č.4570	Č.4570	Č.4570

Sealing

Sealing of the shaft is possible by means of a stuffing box or mechanical seal, depending on fluid, operating conditions and the purchaser's requirement. Mechanical seals are supplied by the well known world producers such as CRANE, FLEXIBOX, BURGMANN, PACIFIC, SEALOL.

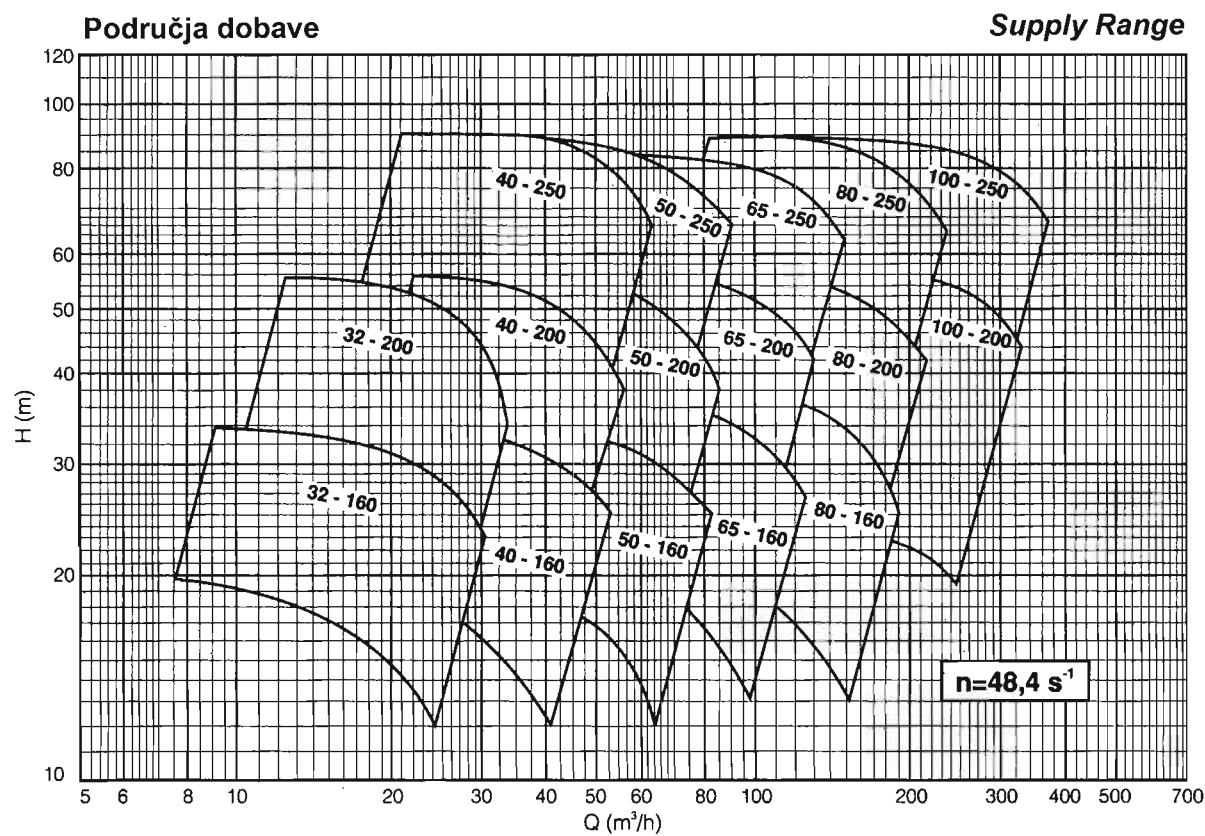
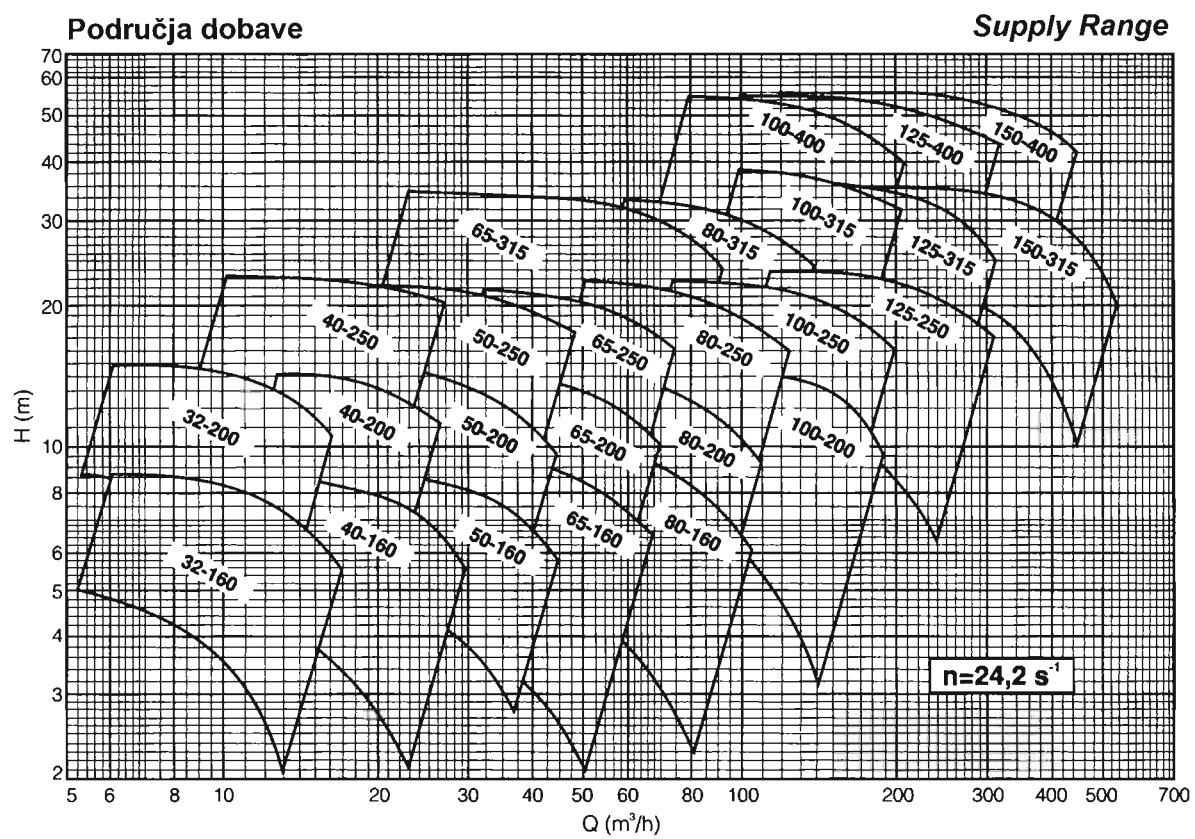
We prefer the installation of standard mechanical seals as per DIN 24 296 if the operating conditions do not require the installation of special mechanical seals. Scavenging, cooling and lubrication of seals are made as per API 610. The products of all known manufacturers are used in the shape of balanced or loaded, single acting or double acting seals. The pumps are provided with or can be equipped with all the connections necessary for the circulation of liquid handled or flushing liquid from an external source, for quenching or admission of the sealing liquid. Material is given as per DIN 610 depending on material combination and fluid.

Material

By means of a various material combination pump type NN can supply almost all abrasive and aggressive fluids.

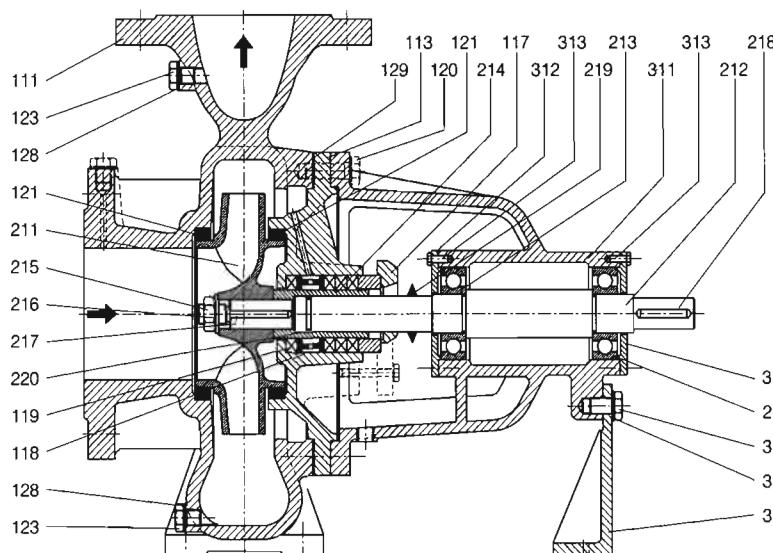
The used materials are grouped in 5 groups:

- a) Grey and steel casting (SI 25 and CL 0445)
For water and neutral fluids without abrasive matters
- b) Bronze P.CuSn 10
For sea water, in food industry and for aggressive fluids on which bronze is resistant
- c) Stainless steel casting for aggressive fluids (CL. 4574, and CL. 4580, a change for AISI 316 and AISI304)
For aggressive fluids with a very small quantity of abrasive matters.
- d) Chrome steel casting for abrasive and partial aggressive fluids (CL. 4171, CL. 4783, CL. 41702).
For sulphuric acid of very high temperature and very aggressive fluids.
- e) Special steel casting with a high percentage of nickel and chrome, 30% Ni, 20% Cr (JGT 29.21)
For sulphuric acid of very high temperature and very aggressive fluids.

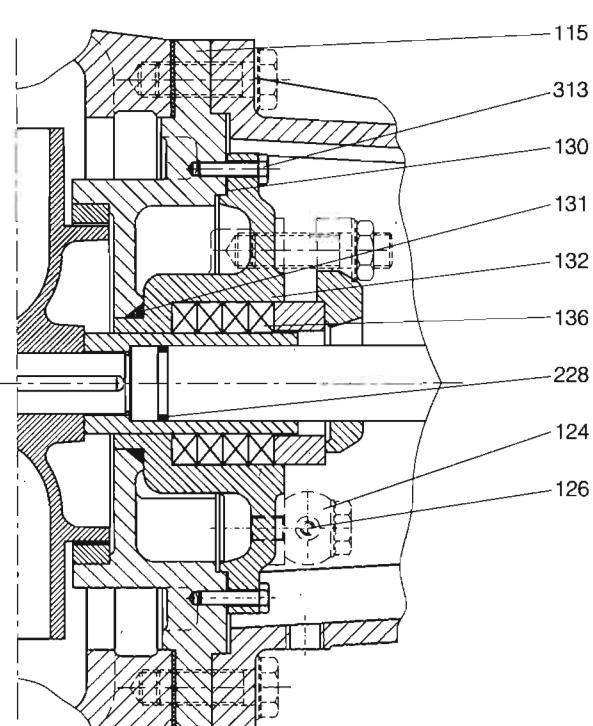
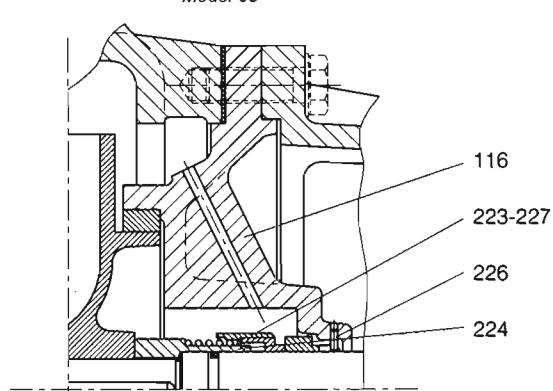
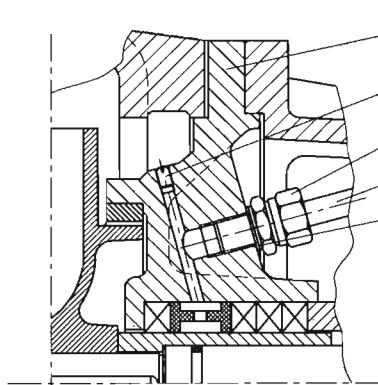


Presjek pumpe

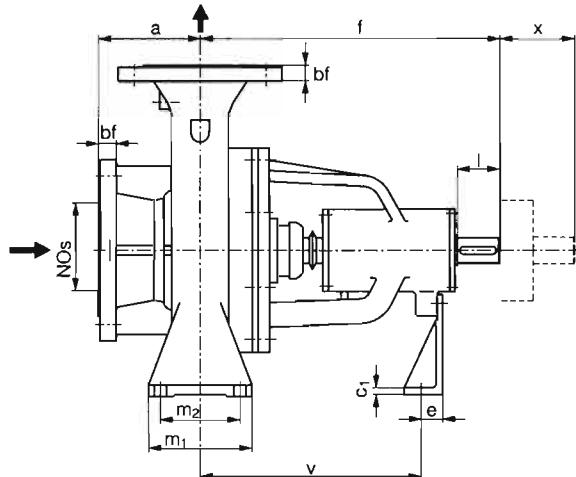
Pump Cross-Section



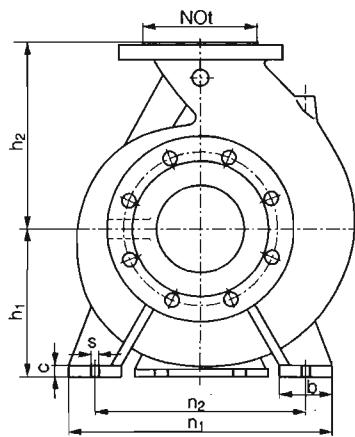
Naziv	Pozicija	Denomination	Item
Spiralno kućište	111	Volute casing	111
Poklopac kućišta	113	Casing cover	113
Poklopac kućišta	114	Casing cover	114
Poklopac kućišta	115	Casing cover	115
Poklopac kućišta	116	Casing cover	116
Brtvenica	117	Stuffing box	117
H-prsten	118	H-ring	118
Brtvičko	119	Packing	119
Vijak	120	Bolt	120
Rasporni prsten	121	Split ring	121
Čep	123	Plug	123
Priklijučak	124	Connection	124
Vijak	125	Bolt	125
Cijev	126	Pipe	126
Brtveni prsten	128	Packing ring	128
Brtva	129	Packing	129
Brtva	130	Packing	130
O-prsten	131	O-ring	131
Nosač brtvenice	132	Stuffing box pedestal	132
Brtvičko	136	Packing	136
Kolo rotora	211	Impeller blade	211
Vratilo	212	Shaft	212
Ležaj	213	Bearing	213
Zaštitni tuljak	214	Protection sleeve	214
Matica	215	Nut	215
Podloška	216	Washer	216
Uložno pero	217	Insert spring	217
Uložno pero	218	Insert spring	218
Centrifugalni odvajač	219	Centrifugal separator	219
O-prsten	220	O-ring	220
Mehanička brtva	223	Mechanical seal	223
Zaštitni tuljak	224	Protection sleeve	224
Zatik	226	Pin	226
Mehanička brtva	227	Mechanical seal	227
O-prsten	228	O-ring	228
Nosač ležaja	311	Bearing pedestal	311
Poklopac ležaja	312	Bearing cover	312
Vijak	313	Bolt	313
Vijak	314	Bolt	314
Noga nosača ležaja	315	Bearing pedestal foot	315
Podloška	316	Washer	316



Mjerna skica

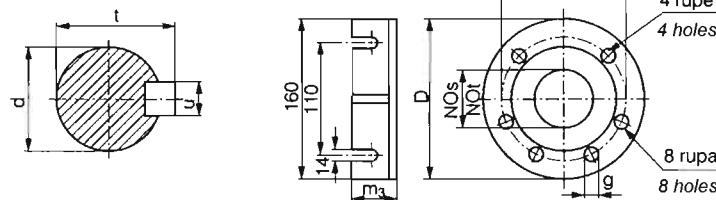


Measuring Sketch



Prirubnice do NO 150 DIN 2533 Flanges up to 150 DIN 2533
od NO 200 DIN 2532 from 200 DIN 2532

Nos NOT	D	bf	K	g	Broj rupa Number of holes
32	140	18	100	18	4
40	150	18	110	18	4
50	165	20	125	18	4
65	185	20	145	18	4
80	200	22	160	18	8
100	220	24	180	18	8
125	250	26	210	18	8
150	285	26	240	23	8
200	340	26	295	23	8



Tip i veličina
pumpe
Pump type
and size
Ustara prirubnica
Suction Flange
Tlaka prirubnica
Delivery Flange

dimenziije pumpe
pump dimensions

Nos	NOT	a	f	h1	h2	b	c	c1	e	m1	m2	m3	n1	n2	v	s	x	d	l	u	t
NN 32-160	50	32	80	360	132	160	50	15	10	30	100	70	47	240	190	260	14	80	24	50	8 26,9
NN 32-200	50	32	80	360	160	180	50	15	10	30	100	70	47	240	190	260	14	80	24	50	8 26,9
NN 40-160	65	40	80	360	132	160	50	15	10	30	100	70	47	240	190	260	14	80	24	50	8 26,9
NN 40-200	65	40	100	360	160	180	50	15	10	25	100	70	47	265	212	265	14	80	24	50	8 26,9
NN 40-250	65	40	100	360	180	225	65	15	10	25	125	95	47	320	250	265	14	80	24	50	8 26,9
NN 50-160	65	50	100	360	160	180	50	15	10	30	100	70	47	265	212	260	14	80	24	50	8 26,9
NN 50-200	65	50	100	360	160	200	50	15	10	25	100	70	47	265	212	265	14	80	24	50	8 26,9
NN 50-250	65	50	100	360	180	225	65	15	10	25	125	95	47	320	250	265	14	80	24	50	8 26,9
NN 65-160	80	65	100	360	160	200	65	15	10	25	125	95	47	280	212	265	14	80	24	50	8 26,9
NN 65-200	80	65	100	360	180	225	65	15	10	25	125	95	47	320	250	265	14	100	24	50	8 26,9
NN 65-250	80	65	100	470	200	250	80	18	10	30	160	120	47	360	280	340	18	100	32	80	10 35,3
NN 65-315	80	65	125	470	225	280	80	25	10	30	160	120	47	400	315	340	18	100	32	80	10 35,3
NN 80-160	100	80	125	360	180	225	65	15	10	25	125	95	47	320	250	265	14	100	24	50	8 26,9
NN 80-200	100	80	125	470	180	250	65	18	10	30	125	95	47	345	280	340	14	100	32	80	10 35,3
NN 80-250	100	80	125	470	200	280	80	18	10	30	160	120	47	400	315	340	18	100	32	80	10 35,3
NN 80-315	100	80	125	470	250	315	80	25	10	30	160	120	47	400	315	340	18	100	32	80	10 35,3
NN 100-200	125	100	125	470	200	280	80	18	10	30	160	120	47	360	280	340	18	120	32	80	10 35,3
NN 100-250	125	100	140	470	225	280	80	18	10	30	160	120	47	400	315	340	18	120	32	80	10 35,3
NN 100-315	125	100	140	470	250	315	80	25	10	30	160	120	47	400	315	340	18	120	32	80	10 35,3
NN 100-400	125	100	140	530	280	355	100	27	12	33	200	150	52	500	400	370	23	140	42	110	12 45,1
NN 125-250	150	125	140	470	250	355	80	18	10	30	160	120	47	400	315	340	18	120	32	80	10 35,3
NN 125-315	150	125	140	530	280	355	100	27	12	33	200	150	52	500	400	370	23	140	42	110	12 45,1
NN 125-400	150	125	140	530	315	400	100	27	12	33	200	150	52	500	400	370	23	140	42	110	12 45,1
NN 150-315	200	150	160	530	280	400	100	27	12	33	200	150	52	550	450	370	23	140	42	110	12 45,1
NN 150-400	200	150	160	530	315	450	100	27	12	33	200	150	52	550	450	370	23	140	42	110	12 45,1

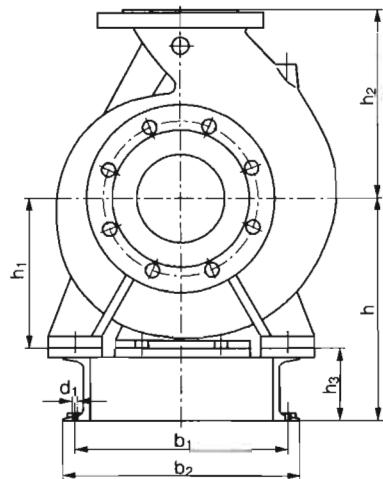
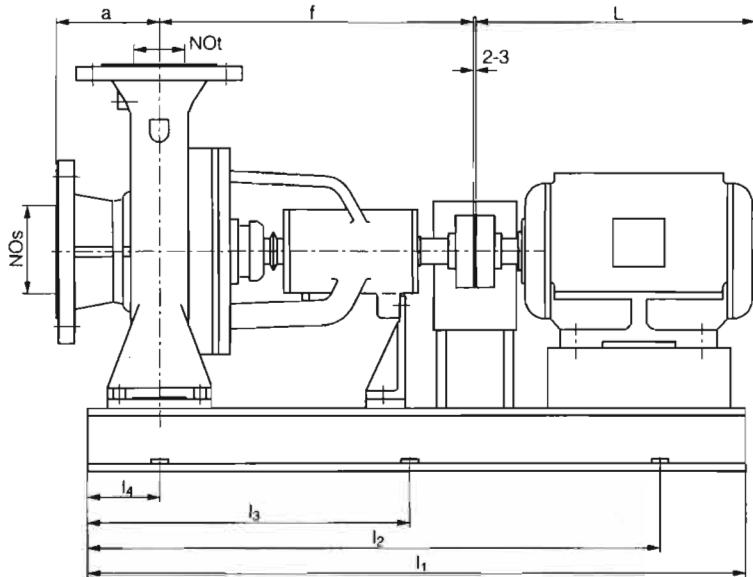
Dimenziije u mm
Dimensions in mm

Tip i veličina pumpe Pump type and size	Dimenzijsi agregata Pump Set Dimensions																	Većina elastične spike Elastic coupling size ES		
	Elektromotor			Pumpa Pump				Temeljna ploča Base Plate												
	s ⁻¹	kW	Vel.	L cca	NOs	NOt	a	f	h ₁	h ₂	b ₁	b ₂	d ₁	l ₁	l ₂	l ₃	l ₄	h ₃	h	
NN 32-160	24,2	0,37	71	237							200	240	14	640	570	—	70	80	212	2
	24,2	0,55	80	272							200	240	14	660	580	—	80	80	212	2
	24,2	0,75	80	272							200	240	14	660	580	—	80	80	212	2
	48,4	1,5	90S	300	50	32	80	360	132	160	210	250	14	670	585	—	85	80	212	2
	48,4	2,2	90L	325							210	250	14	700	600	—	100	80	212	2
	48,4	3	100L	365							200	240	14	740	620	—	120	85	217	2
	48,4	4	112M	385							200	240	14	740	620	—	120	80	212	2
	24,2	0,75	80	272							200	240	14	660	580	—	80	80	240	2
	24,2	1,1	90S	300							210	250	14	670	585	—	85	80	240	2
NN 32-200	24,2	2,2	90L	325							210	250	14	700	600	—	100	80	240	2
	48,4	3	100L	365	50	32	80	360	160	180	200	240	14	740	620	—	120	80	240	2
	48,4	4	112M	385							200	240	14	740	620	—	120	80	240	2
	48,4	5,5	132S	437							230	270	14	780	640	—	140	77	237	3
	48,4	7,5	132S	437							230	270	14	780	640	—	140	77	237	3
NN 40-160	24,2	0,37	71	237							200	240	14	640	570	—	70	80	212	2
	24,2	0,55	80	272							200	240	14	660	580	—	80	80	212	2
	24,2	0,75	90	272							200	240	14	660	580	—	80	80	212	2
	48,4	1,1	90S	300							210	250	14	670	585	—	85	80	212	2
	48,4	2,2	90L	325	65	40	80	360	132	160	210	250	14	700	600	—	100	80	212	2
	48,4	3	100L	365							200	240	14	740	620	—	120	85	217	2
	48,4	4	112M	385							200	240	14	740	620	—	120	80	212	2
NN 40-200	24,2	0,37	71	237							230	270	14	670	585	—	85	80	240	2
	24,2	0,55	80	272							230	270	14	700	600	—	100	80	240	2
	24,2	0,75	90L	325							230	270	14	700	600	—	100	80	240	2
	48,4	5,5	132S	437	65	40	100	360	160	180	230	270	14	780	640	—	140	77	237	3
NN 40-250	24,2	7,5	132S	437							230	270	14	780	640	—	140	77	237	3
	24,2	11	160M	587							230	310	14	930	730	—	200	80	260	4
	48,4	15	160M	587							230	310	14	930	730	—	200	80	260	4
	48,4	18,5	160L	631							230	330	14	950	750	—	200	80	260	4
	48,4	22	180M	660							230	330	14	970	770	—	200	85	265	4
NN 50-160	24,2	0,55	80	272							250	290	14	660	580	—	80	80	240	2
	24,2	0,75	90	272							250	290	14	660	580	—	80	80	240	2
	24,2	1,1	90S	300							230	270	14	670	585	—	85	80	240	2
	48,4	3	100L	365							230	270	14	740	620	—	120	80	240	2
NN 50-200	24,2	4	112M	385	65	50	100	360	160	200	230	270	14	740	620	—	120	80	240	2
	48,4	5,5	132S	437							230	270	14	780	640	—	140	77	237	3
	48,4	7,5	132S	437							230	270	14	780	640	—	140	77	237	3
	48,4	11	160M	587							230	310	14	900	700	—	200	80	240	4
NN 50-250	24,2	1,1	90S	300							230	310	14	900	700	—	200	80	240	4
	24,2	1,5	90L	325							230	310	14	930	730	—	200	80	260	4
	24,2	2,2	100L	365							230	320	14	940	740	—	200	80	260	4
	48,4	4	112M	385	65	50	100	360	180	225	230	320	14	970	770	—	200	85	265	4
	48,4	15	160M	587							230	330	14	950	750	—	200	80	260	4
NN 50-315	24,2	1,5	90L	325							270	310	14	710	610	—	100	80	260	2
	24,2	2,2	100L	365							280	320	14	740	620	—	120	80	260	2
	24,2	3	100L	365							280	320	14	740	620	—	120	80	260	2
	24,2	4	112M	385							230	270	14	760	635	—	125	80	240	2
	24,2	15	160M	587							230	270	14	780	650	—	150	77	237	3
NN 65-160	24,2	1,5	90L	325							230	270	14	740	620	—	120	80	240	2
	24,2	2,2	100L	365							230	270	14	740	620	—	120	80	240	2
	24,2	4	112M	385	80	65	100	360	160	200	230	270	14	760	635	—	125	80	240	2
	48,4	5,5	132S	437							230	270	14	800	650	—	150	77	237	3
NN 65-200	24,2	7,5	132S	437							230	270	14	800	650	—	150	77	237	3
	24,2	11	160M	587							260	300	14	850	725	—	125	80	240	4
	24,2	15	160M	587							260	300	14	850	725	—	125	80	240	4
	24,2	18,5	160L	631							270	310	14	710	610	—	100	80	260	2
NN 65-250	24,2	22	180M	660	80	65	100	470	200	250	300	340	14	910	710	—	200	80	280	4
	48,4	30	200L	820							300	340	14	910	710	—	200	80	280	4
	48,4	37	200L	820							360	400	14	1180	1030	590	150	85	285	5
	48,4	37	200L	820							360	400	14	1180	1030	590	150	85	285	5
NN 65-315	24,2	5,5	132S	437							330	370	14	910	710	—	200	84	309	4
	24,2	7,5	132M	475							330	370	14	950	750	—	200	80	305	4
	24,2	11	160M	587	80	65	125	470	225	280	340	380	14	1020	870	510	150	85	310	4
	24,2	15	160L	631							330	370	14	1050	900	525	150	85	310	4

Tip i veličina pumpe Pump type and size	Dimenzijske karakteristike agregata Pump Set Dimensions												Veličina elastične spojke Elastic coupling size							
	Elektromotor			Pumpa		Pump		Temeljna ploča				Base Plate								
s ⁻¹	kW	Vel.	L cca	NOs	NOt	a	f	h1	h2	b ₁	b ₂	d ₁	l ₁	l ₂	l ₃	l ₄	h ₃	h	ES	
NN 80-160	1,1	90S	300							270	310	14	680	595	—	85	80	260	2	
	24,2	1,5	90L	325						270	310	14	710	610	—	100	80	260	2	
		2,2	100L	365						280	320	14	740	620	—	120	80	260	2	
		3	100L	365						280	320	14	740	620	—	120	80	260	2	
		5,5	132S	437	100	80	125	360	180	225	270	310	14	800	650	—	150	80	260	3
		7,5	132S	437						270	310	14	800	650	—	150	80	260	3	
	48,4	11	160M	587						270	310	14	930	730	—	200	80	260	4	
		15	160M	587						270	310	14	930	730	—	200	80	260	4	
		18,5	160L	631						270	330	14	950	750	—	200	80	260	4	
		22	180M	660						330	370	14	970	770	—	200	85	265	4	
NN 80-200	3	100L	365							300	340	14	850	725	—	125	80	260	4	
	24,2	4	112M	385						300	340	14	850	725	—	125	80	260	4	
		5,5	132S	437						300	340	14	900	700	—	200	77	257	4	
		15	160M	587	100	80	125	470	180	250	300	330	14	1000	800	—	200	80	260	4
	48,4	18,5	160L	631						300	340	14	1040	890	520	150	80	260	4	
		22	180M	660						310	350	14	1050	900	525	150	85	265	4	
		30	200L	820						340	380	14	1160	1010	580	150	100	280	5	
		37	200L	820						340	380	14	1160	1010	580	150	100	280	5	
		5,5	132S	437						330	370	14	910	710	—	200	80	260	4	
	24,2	7,5	132M	475						330	370	14	950	750	—	200	80	280	4	
NN 80-250	11	160M	587							330	370	14	1040	890	520	150	85	285	4	
		30	200L	820	100	80	125	470	200	280	340	380	14	1160	1010	580	150	100	300	5
	48,4	37	200L	820						340	380	14	1160	1010	580	150	100	300	5	
		45	225M	875						370	410	14	1220	1070	610	150	120	320	6	
		55	250M	950						460	510	18	1260	1110	630	150	180	380	6	
		7,5	132M	475						330	370	14	940	740	—	200	80	330	4	
	24,2	11	160M	587	100	80	125	470	250	315	340	380	14	1020	870	510	150	85	335	4
		15	160L	631						330	370	14	1070	920	535	150	85	335	4	
		2,2	100L	365						300	340	14	880	740	—	140	80	280	4	
	24,2	3	100L	365						300	340	14	880	740	—	140	80	280	4	
NN 100-200	4	112M	385							300	340	14	870	730	—	140	80	280	4	
		5,5	132S	437						300	340	14	910	710	—	200	80	280	4	
		7,5	132M	475						300	340	14	950	750	—	200	80	280	4	
		18,5	160L	631	125	100	125	470	200	280	300	340	14	1080	980	540	100	82	282	4
		22	180M	660						300	340	14	1080	930	540	150	80	280	4	
	48,4	30	200L	820						360	400	14	1180	1030	590	150	85	285	5	
		37	200L	820						360	400	14	1180	1030	590	150	85	285	5	
		45	225M	875						370	410	14	1220	1070	610	150	120	320	6	
		55	250M	950						460	510	18	1260	1110	630	150	180	380	6	
		7,5	132M	475						330	370	14	950	750	—	200	80	305	4	
NN 100-250	11	160M	587							340	380	14	1020	870	510	150	85	310	4	
		15	160L	631						330	370	14	1050	900	525	150	85	310	4	
		37	200L	820						330	370	14	1150	1000	575	150	80	305	5	
	48,4	45	225M	875	125	100	140	470	225	280	380	420	14	1210	1060	605	150	95	320	6
		55	250M	950						460	510	18	1150	1000	575	150	154	379	6	
		75	280S	1040						510	560	18	1350	1200	675	150	185	410	7	
		90	280M	1030						510	560	18	1400	1250	700	150	185	410	7	
		110	315S	1075						590	630	18	1460	1310	630	150	220	445	7	
		15	160L	631						330	370	14	1070	920	535	150	85	335	4	
	24,2	18,5	180M	660						330	370	14	1100	950	550	150	85	335	4	
NN 100-315	22	180L	698							330	370	14	1120	970	560	150	85	335	4	
	24,2	22	180L	698	125	100	140	470	250	315	330	370	14	1170	1020	585	150	85	335	5
		30	200L	820						330	370	14	1130	980	565	150	80	360	5	
		15	160L	631						420	470	14	1180	1030	590	150	125	405	5	
		18,5	180M	660						440	480	14	1250	1100	625	150	125	405	5	
		22	180M	698						440	480	14	1260	1100	625	150	85	365	5	
		30	200L	820						440	480	14	1260	1100	625	150	85	365	5	
		37	225S	810	200	150	160	530	280	400	430	470	18	1290	1140	645	150	125	440	5
		45	225M	875	150	125	140	530	315	400	440	480	18	1300	1050	650	150	100	415	6
		55	250M	955						460	510	18	1360	1210	680	150	130	445	6	
NN 125-315	22	180L	698							440	480	14	1250	1100	625	150	85	365	5	
	24,2	30	200L	820	150	125	140	530	280	355	420	460	14	1260	1110	630	150	85	365	5
		37	225S	810	200	150	160	530	280	400	430	470	18	1290	1140	645	150	125	440	5
		45	225M	875	150	125	140	530	315	400	440	480	18	1300	1050	650	150	100	415	6
		55	250M	955						460	510	18	1360	1210	680	150	130	445	6	
		22	180L	698						440	480	14	1250	1100	625	150	85	365	5	
		30	200L	820						470	510	14	1260	1110	630	150	85	365	5	
	24,2	37	225S	810	200	150	160	530	280	400	430	470	18	1290	1140	645	150	125	440	5
		45	225M	875	150	125	140	530	315	400	440	480	14	1310	1160	655	150	82</td		

Skica agregata s normalnom spojkom

Sketch Of Pump Set With Normal Coupling



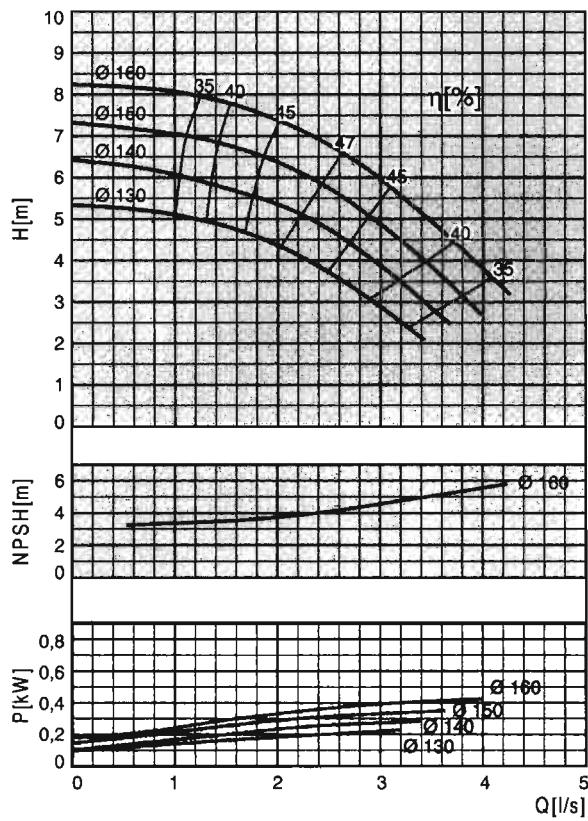
Zamjenjivost dijelova

Parts Substitution

Pojedinačni dijagrami

NN 32-160

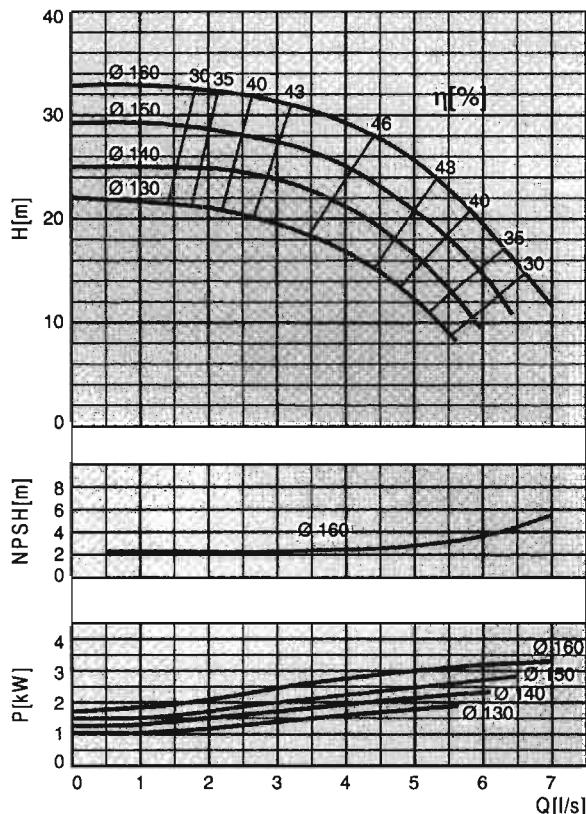
$n=24,2\text{s}^{-1}$



Sole diagrams

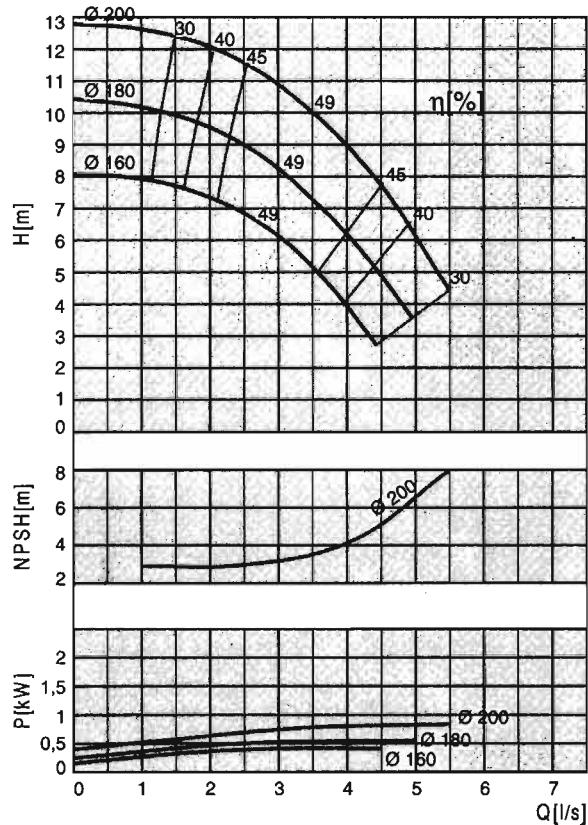
NN 32-160

$n=48,4\text{s}^{-1}$



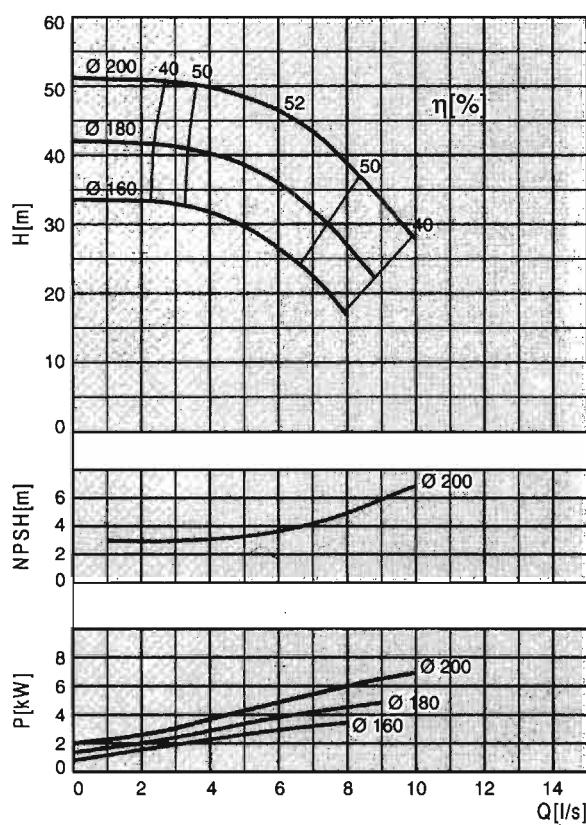
NN 32-200

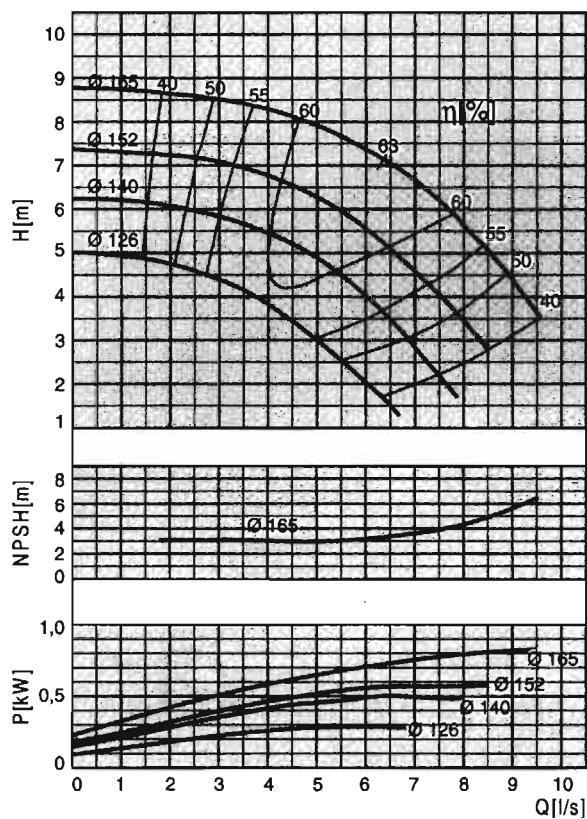
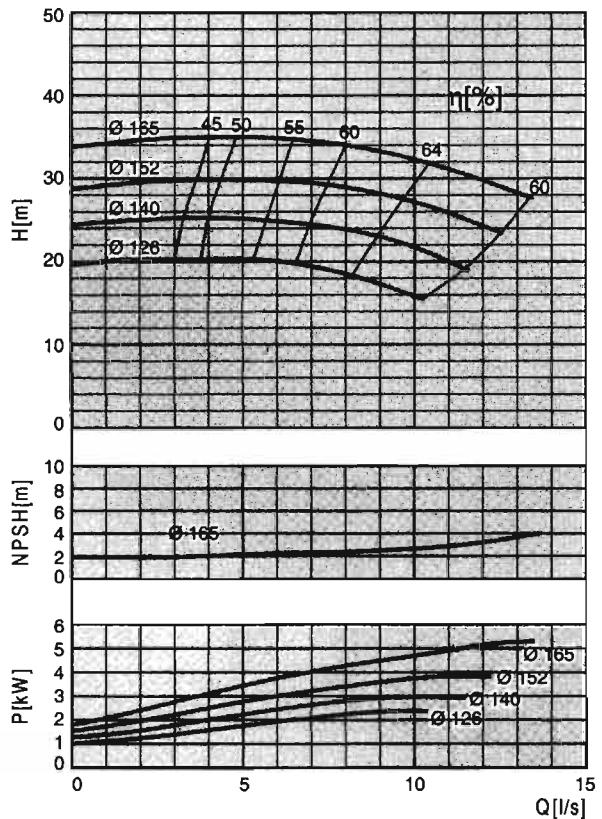
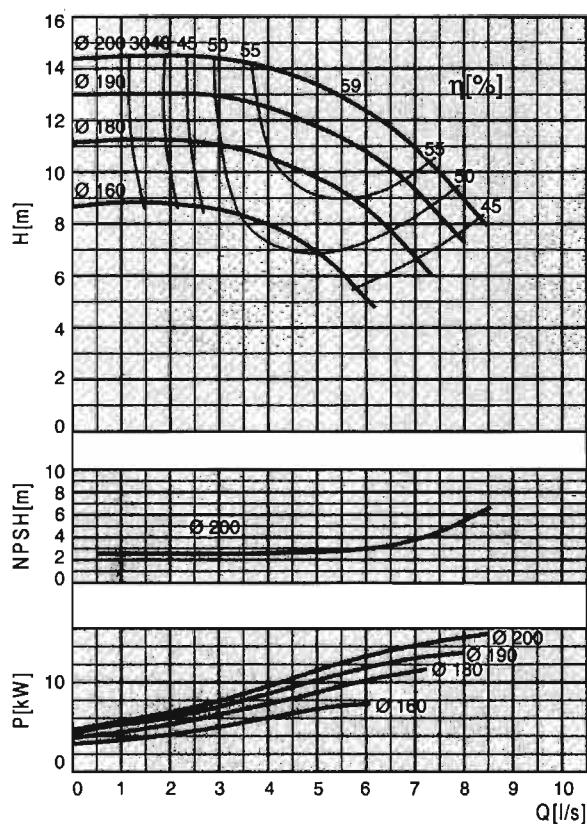
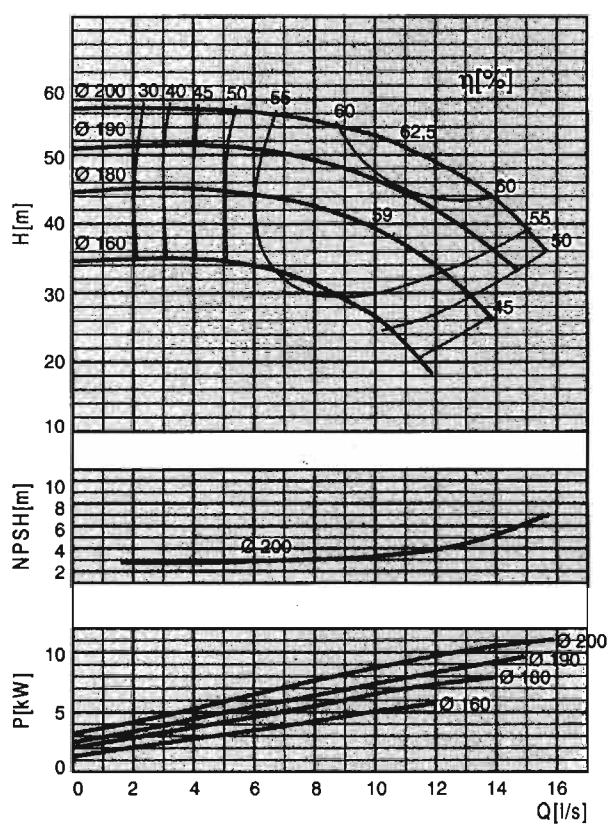
$n=24,2\text{s}^{-1}$

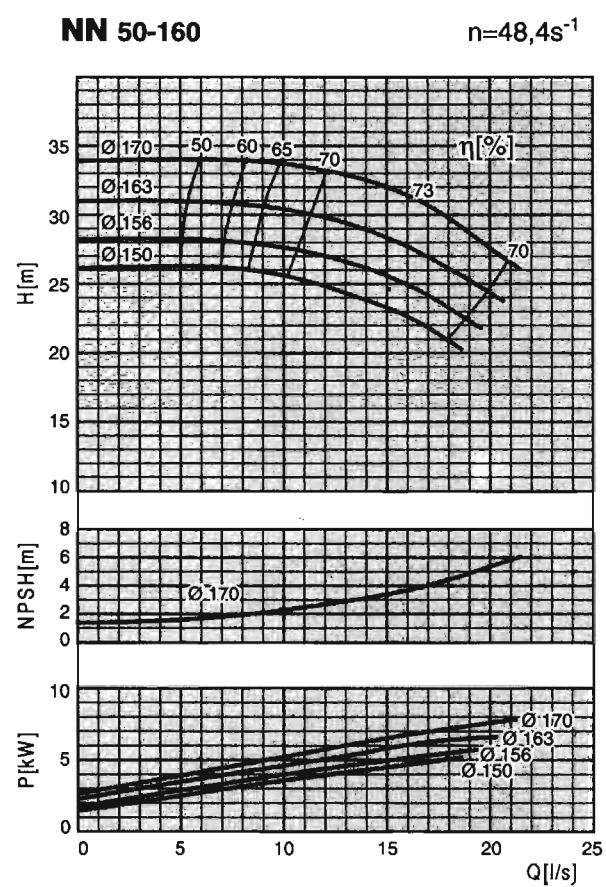
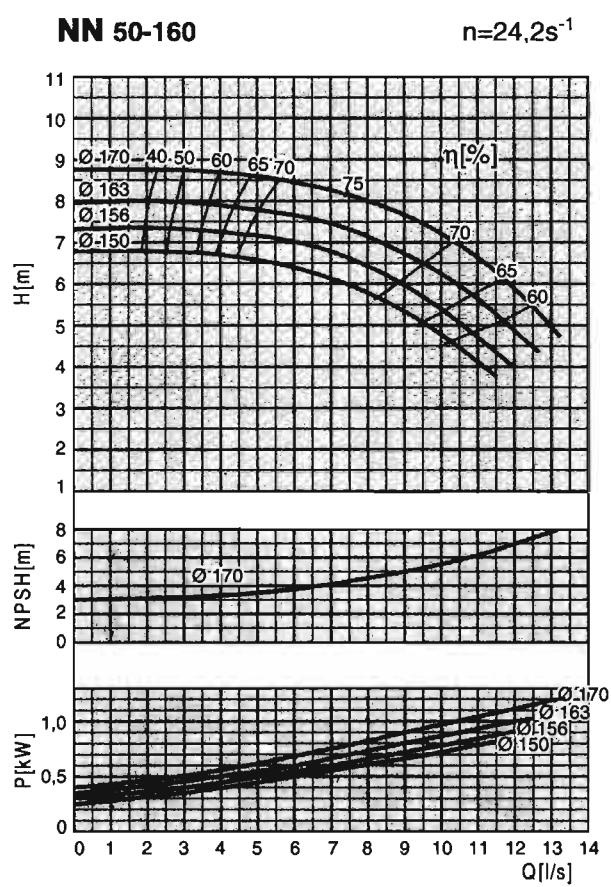
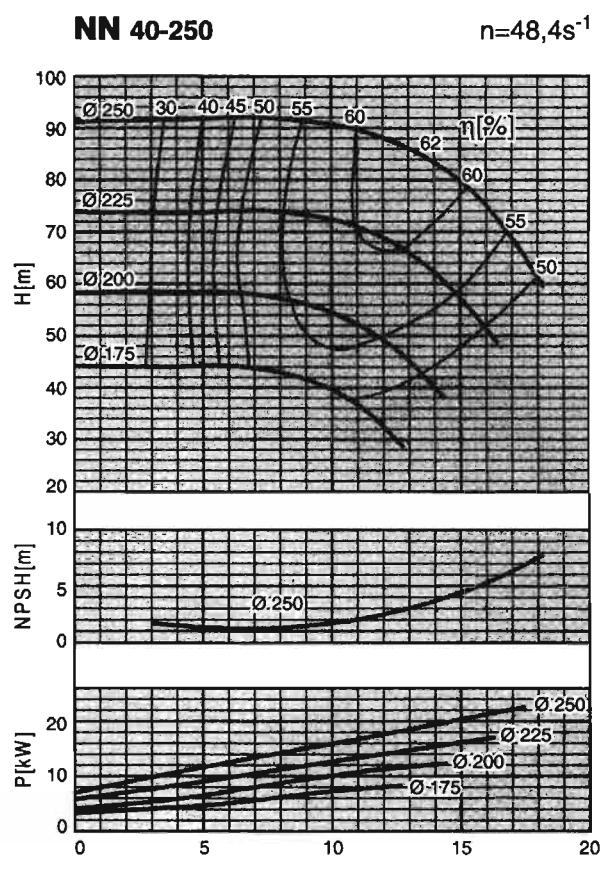
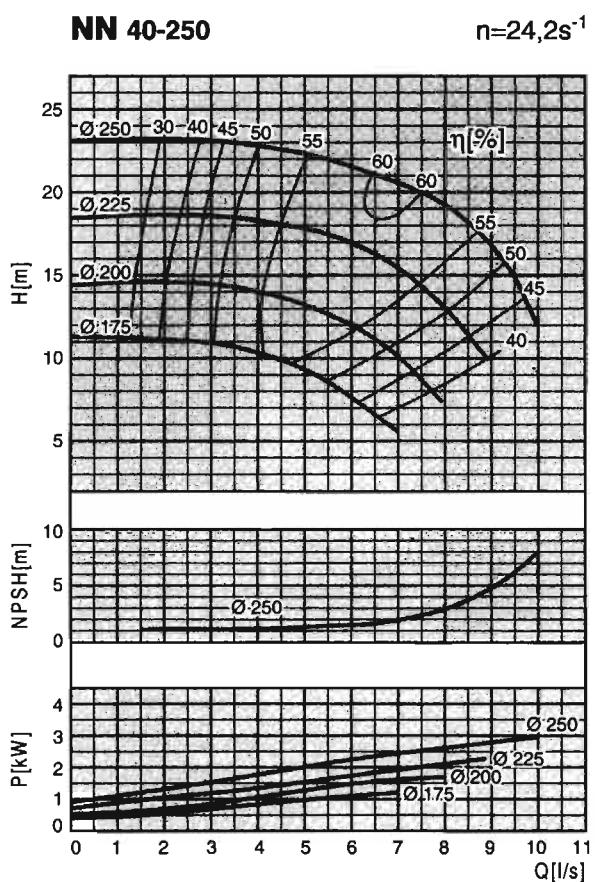


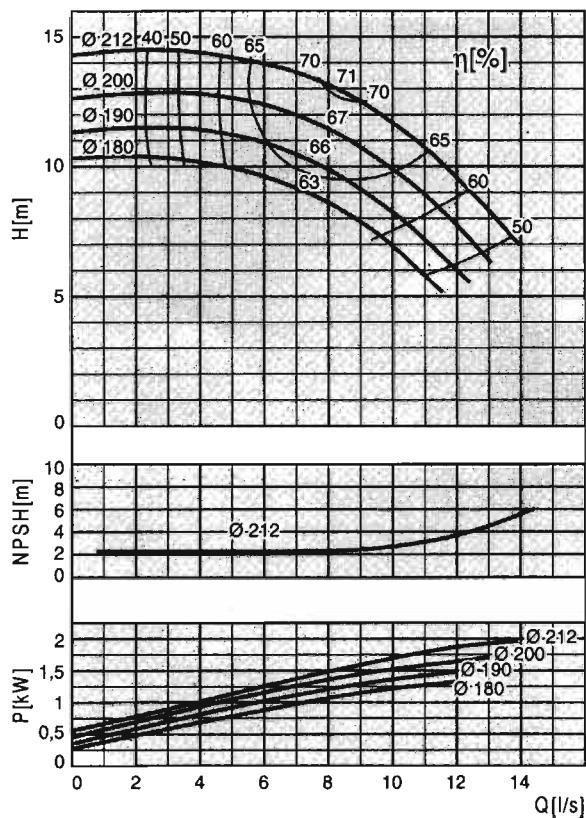
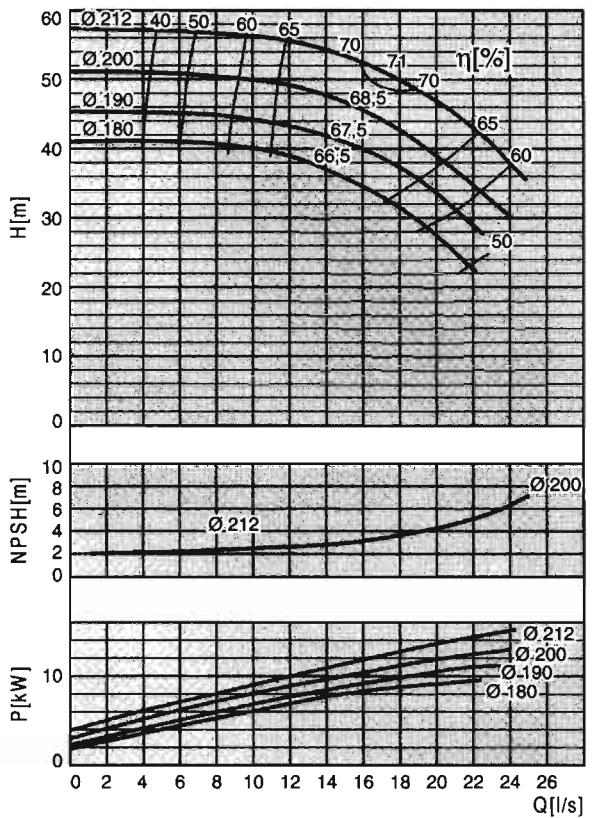
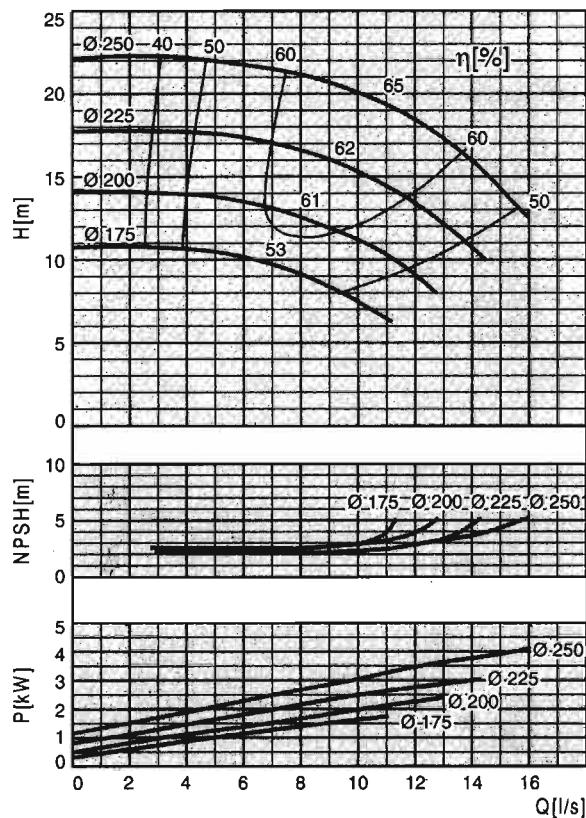
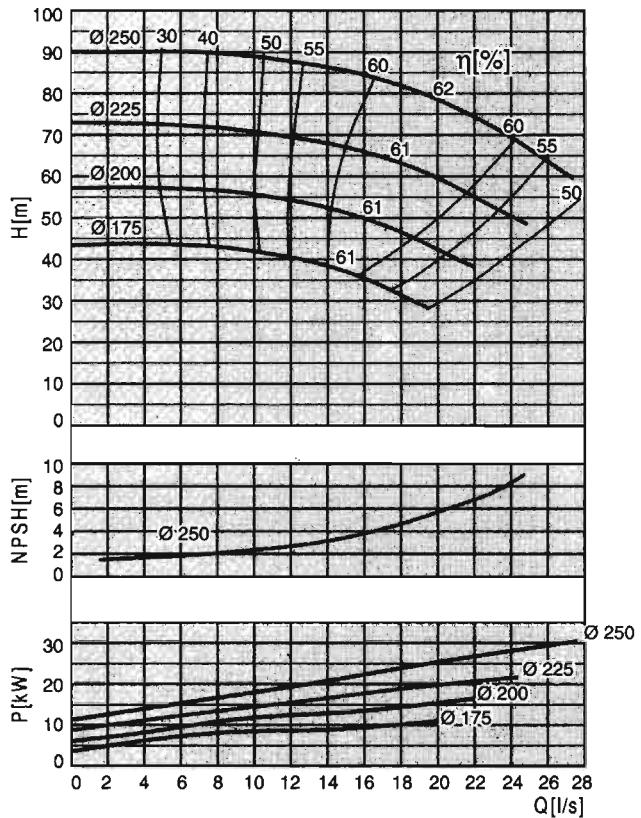
NN 32-200

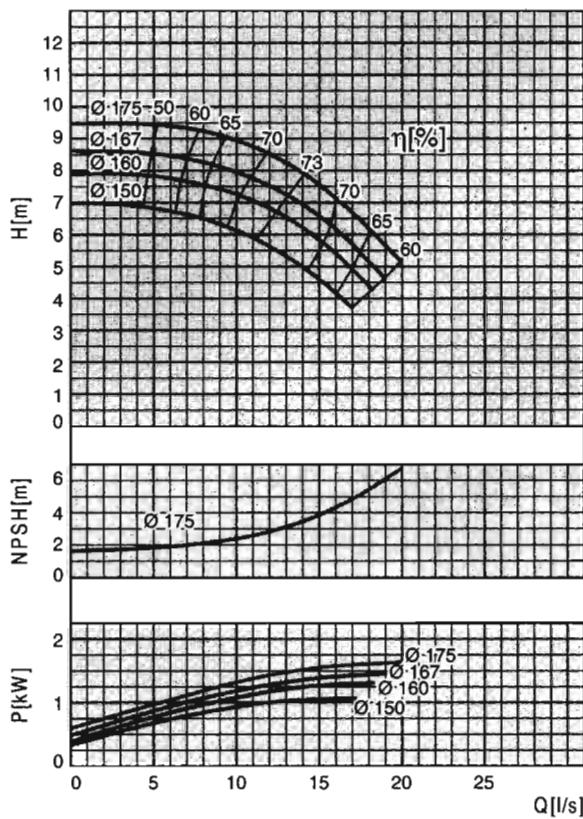
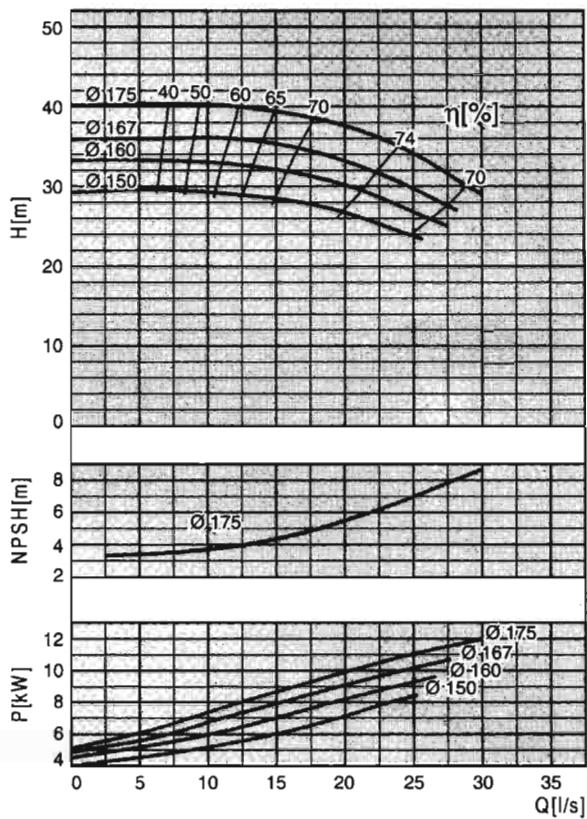
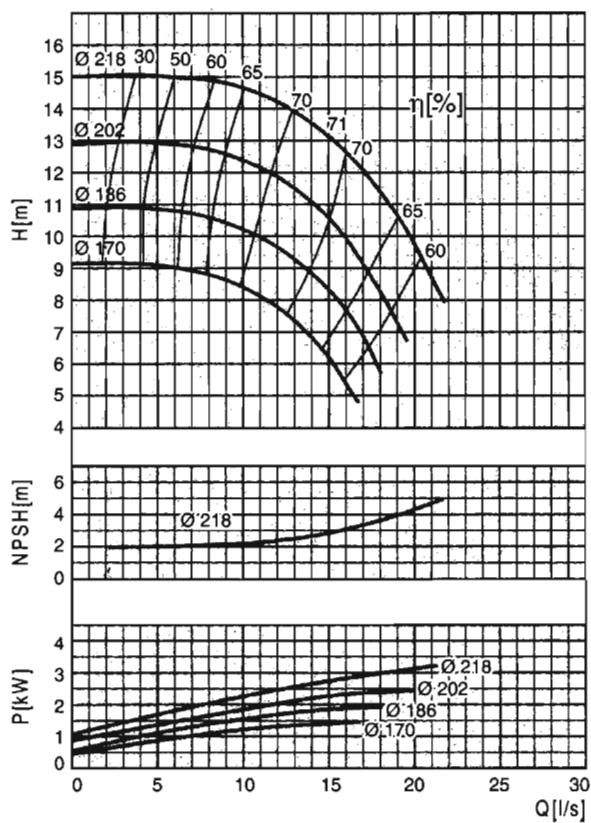
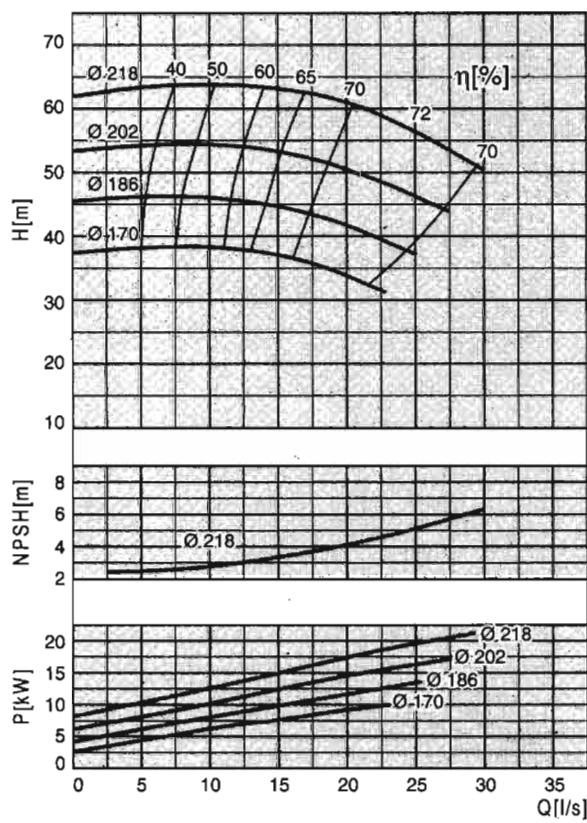
$n=48,4\text{s}^{-1}$

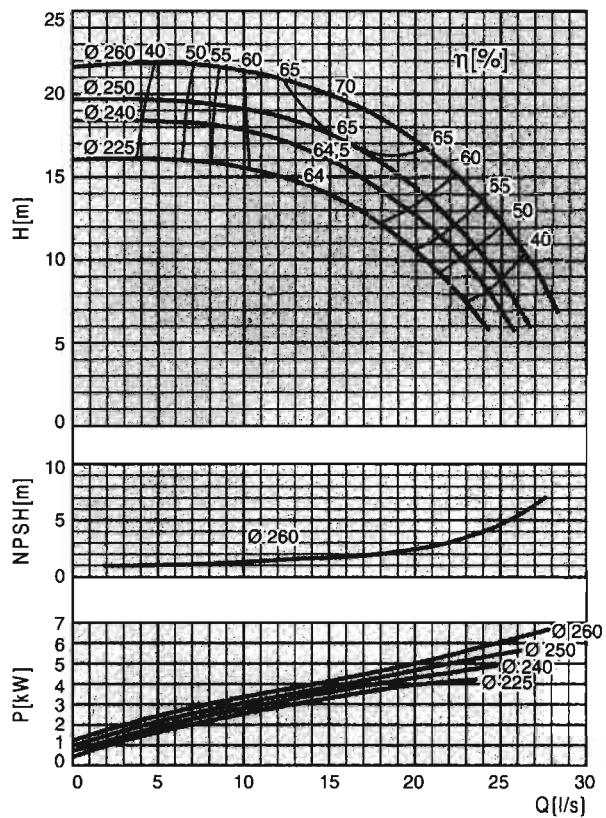
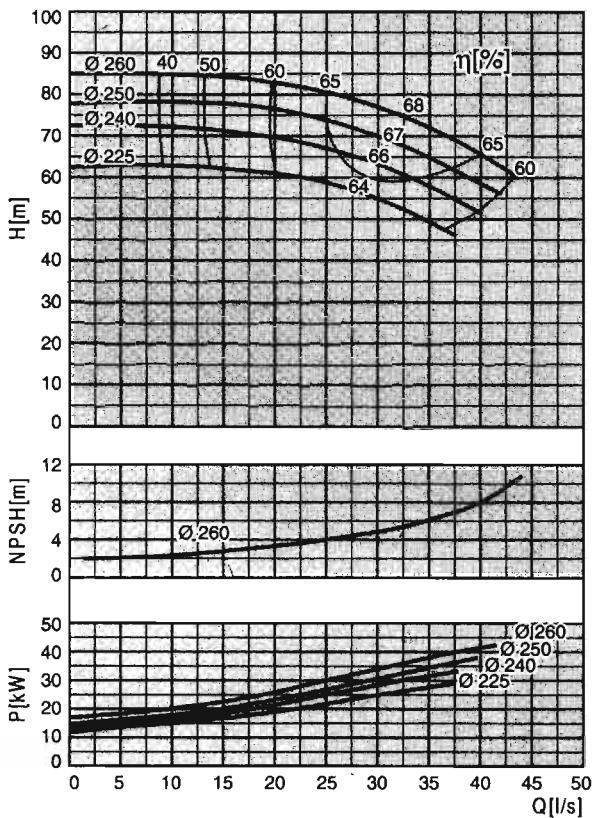
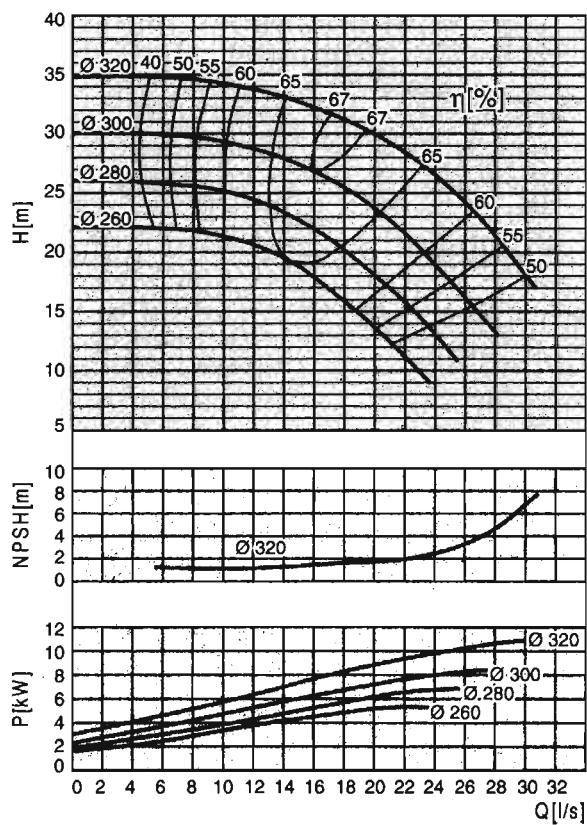


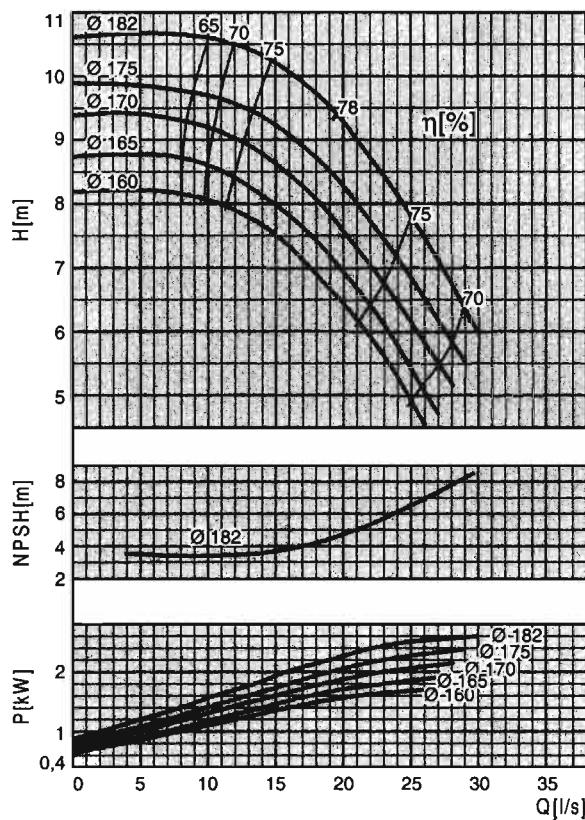
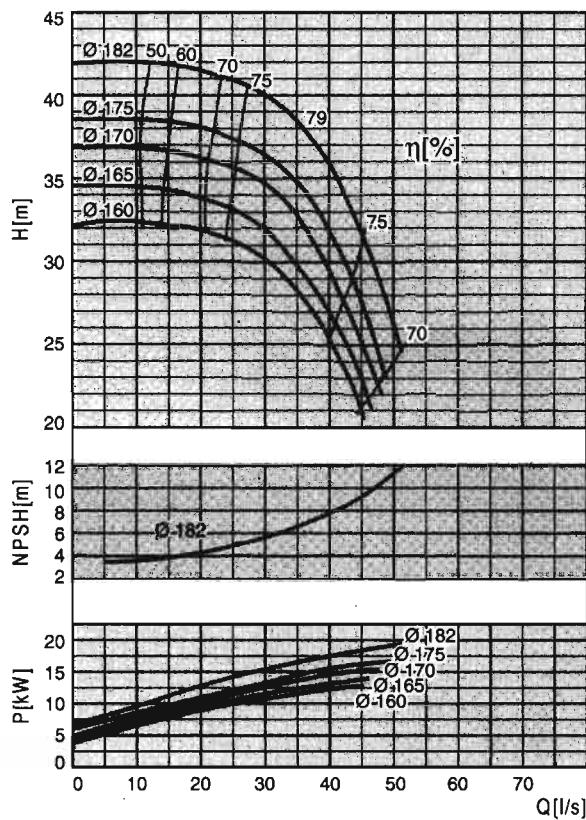
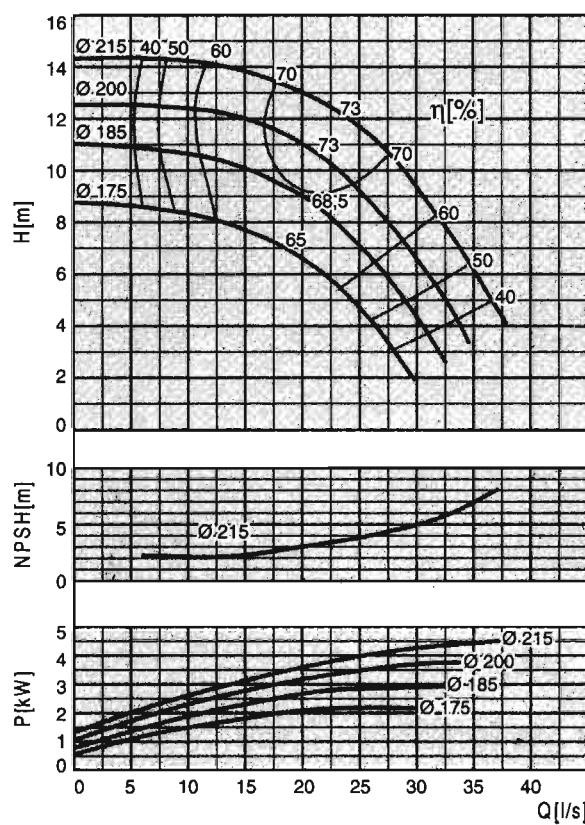
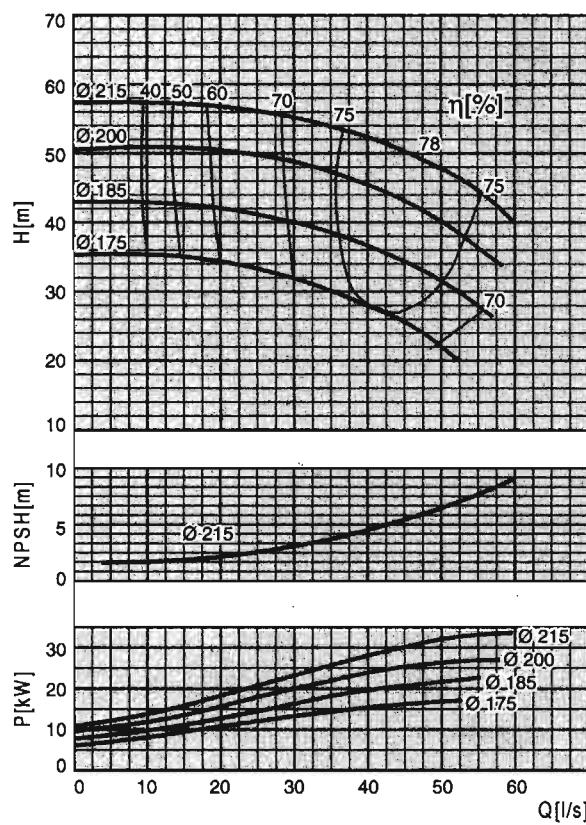
NN 40-160 $n=24,2\text{s}^{-1}$ **NN 40-160** $n=48,4\text{s}^{-1}$ **NN 40-200** $n=24,2\text{s}^{-1}$ **NN 40-200** $n=48,4\text{s}^{-1}$ 

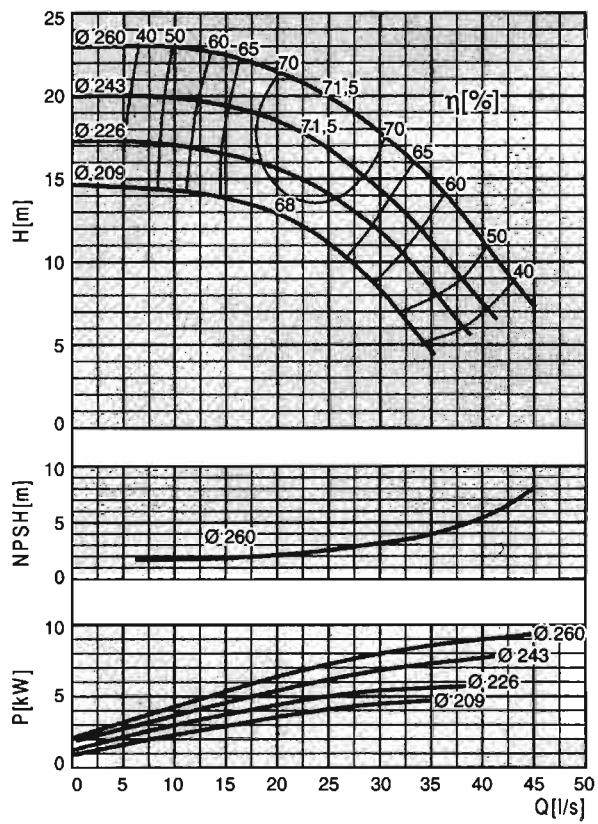
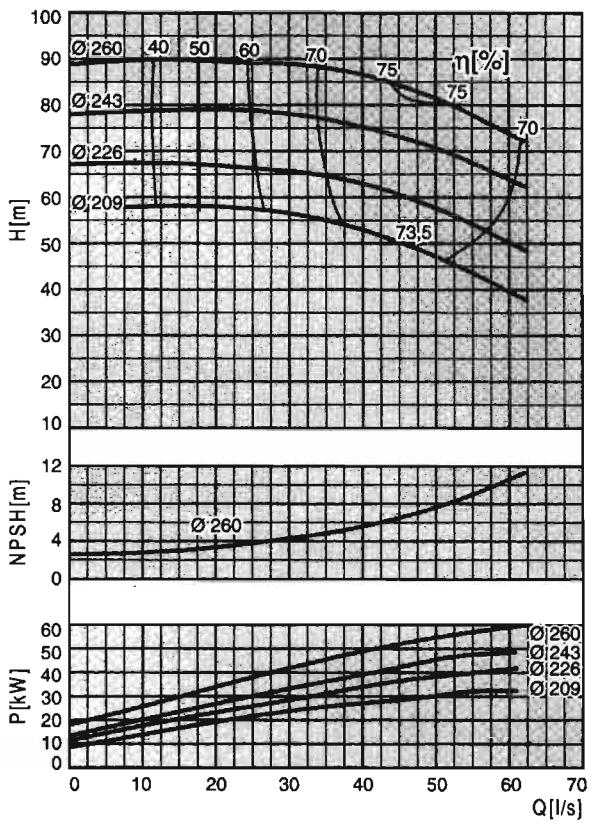
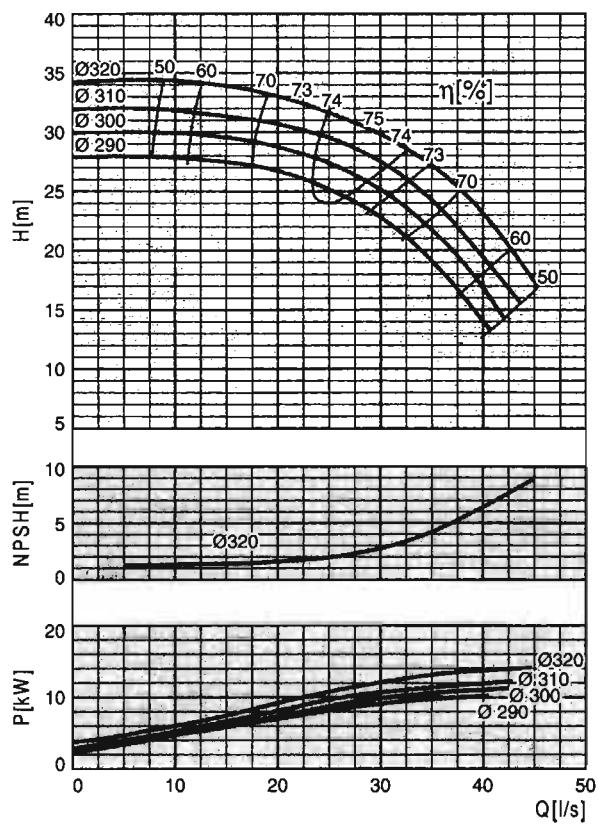


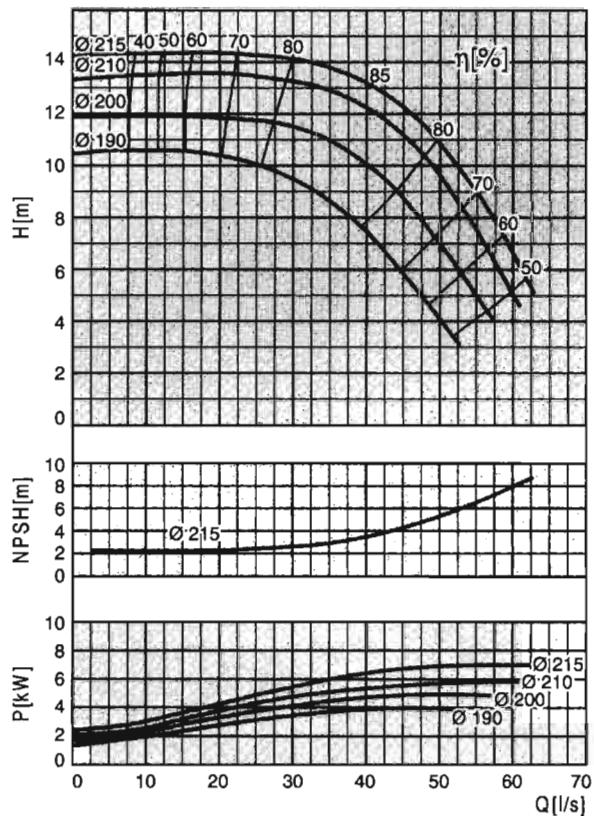
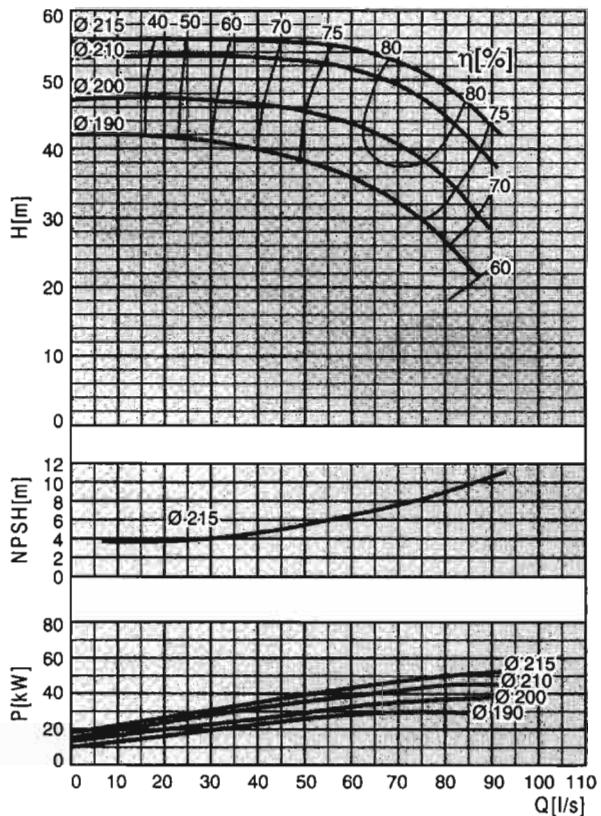
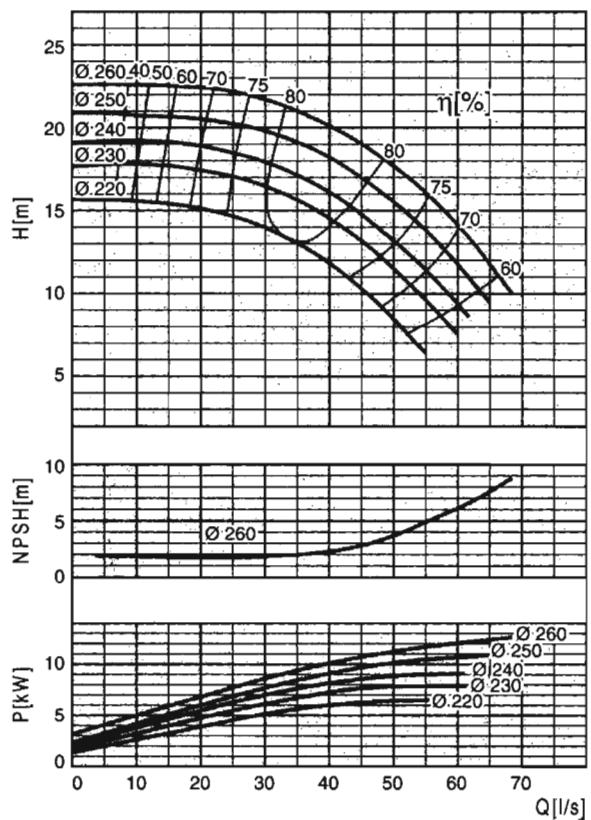
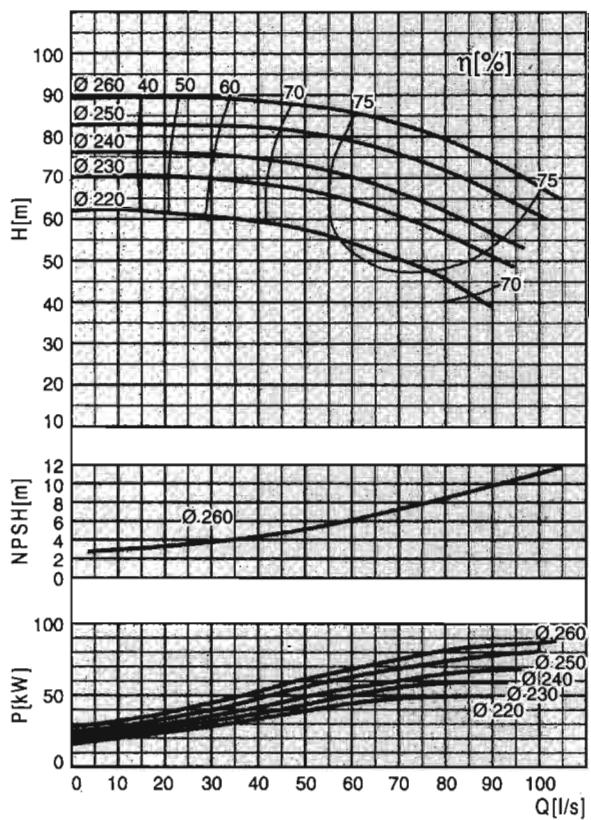
NN 50-200 $n=24,2\text{s}^{-1}$ **NN 50-200** $n=48,4\text{s}^{-1}$ **NN 50-250** $n=24,2\text{s}^{-1}$ **NN 50-250** $n=48,4\text{s}^{-1}$ 

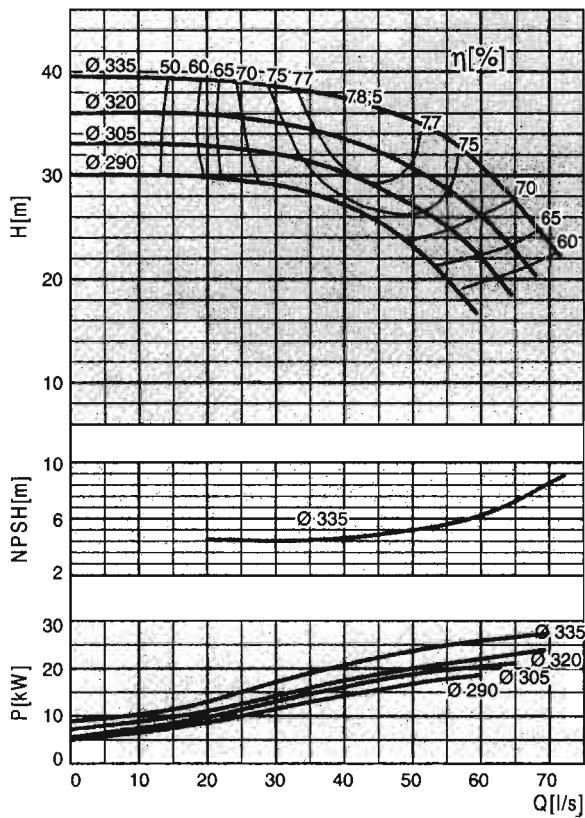
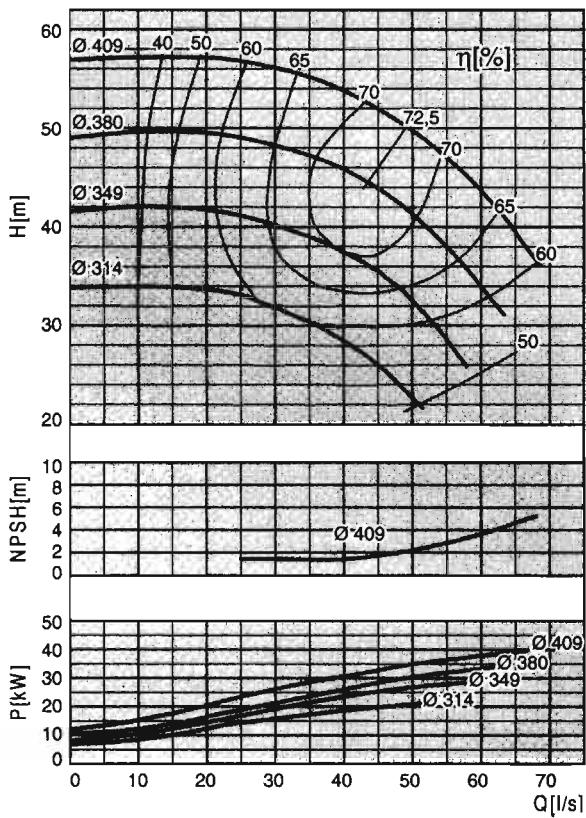
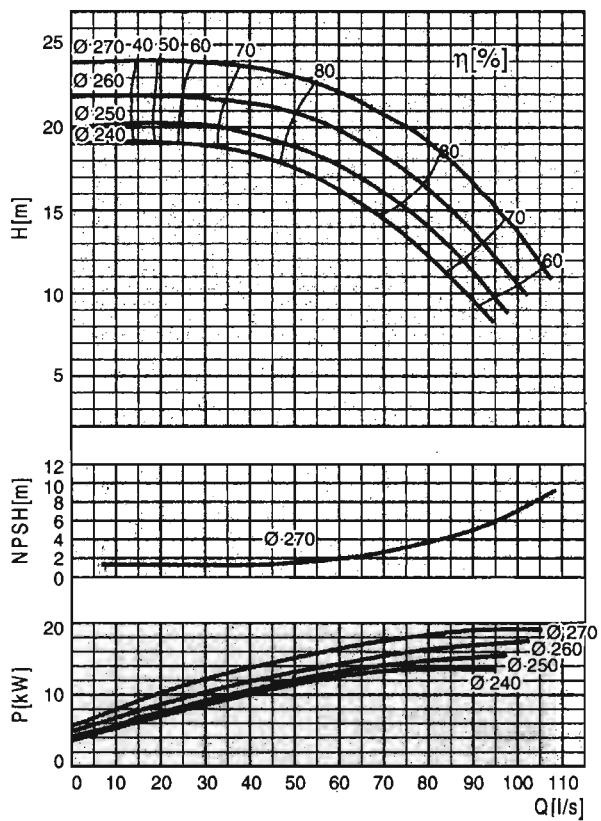
NN 65-160 $n=24,2\text{s}^{-1}$ **NN 65-160** $n=48,4\text{s}^{-1}$ **NN 65-200** $n=24,2\text{s}^{-1}$ **NN 65-200** $n=48,4\text{s}^{-1}$ 

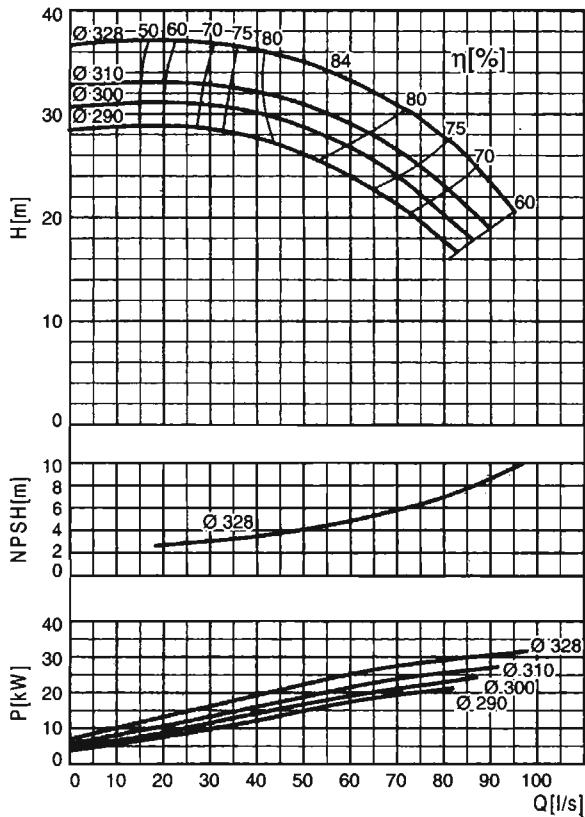
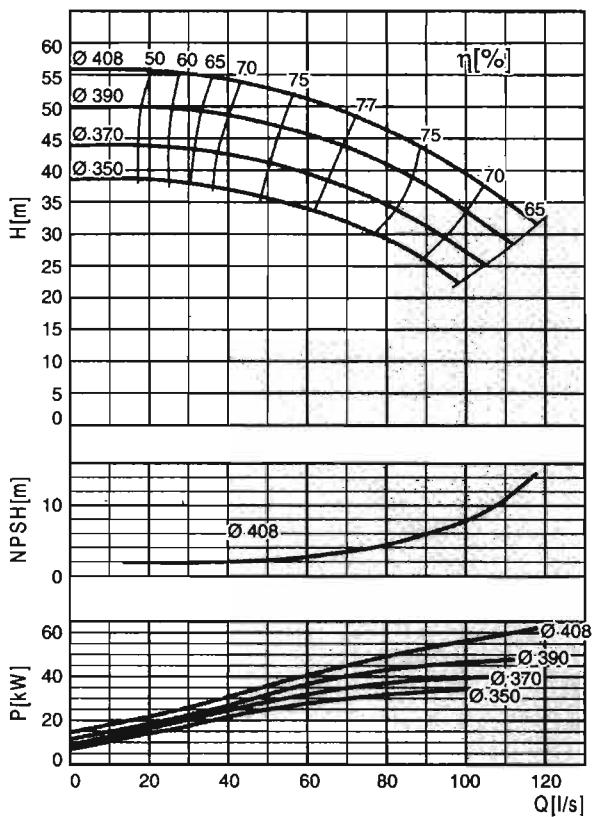
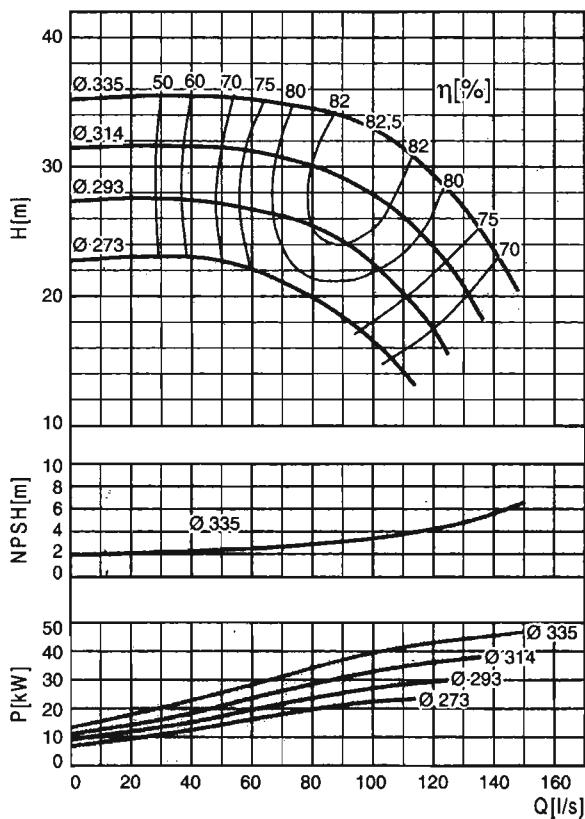
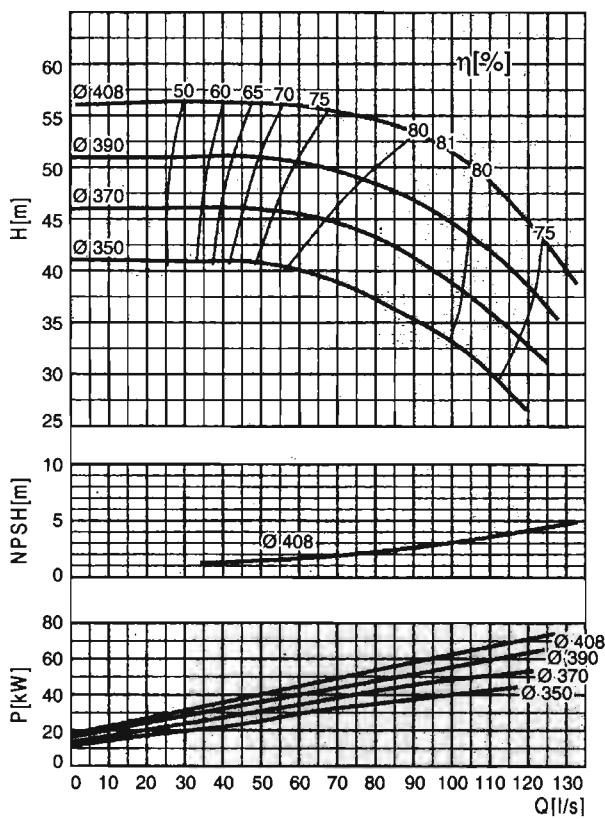
NN 65-250 $n=24,2\text{s}^{-1}$ **NN 65-250** $n=48,4\text{s}^{-1}$ **NN 65-315** $n=24,2\text{s}^{-1}$ 

NN 80-160 $n=24,2\text{s}^{-1}$ **NN 80-160** $n=48,4\text{s}^{-1}$ **NN 80-200** $n=24,2\text{s}^{-1}$ **NN 80-200** $n=48,4\text{s}^{-1}$ 

NN 80-250 $n=24,2\text{s}^{-1}$ **NN 80-250** $n=48,4\text{s}^{-1}$ **NN 80-315** $n=24,2\text{s}^{-1}$ 

NN 100-200 $n=24,2\text{s}^{-1}$ **NN 100-200** $n=48,4\text{s}^{-1}$ **NN 100-250** $n=24,2\text{s}^{-1}$ **NN 100-250** $n=48,4\text{s}^{-1}$ 

NN 100-315 $n=24,2\text{s}^{-1}$ **NN 100-400** $n=24,4\text{s}^{-1}$ **NN 125-250** $n=24,2\text{s}^{-1}$ 

NN 125-315 $n=24,2\text{s}^{-1}$ **NN 125-400** $n=24,2\text{s}^{-1}$ **NN 150-315** $n=24,2\text{s}^{-1}$ **NN 150-400** $n=24,2\text{s}^{-1}$ 



**CROATIA
PUMPE**

Croatia Pumpe Nova d.o.o.
Mala Švrača 155
47000 Karlovac
HRVATSKA

Telefon: +385 47 434 022, 47 434 032
Fax: +385 47 434 110
E-mail: info@croatia-pumpe.com

Prodaja:
Telefon: +385 47 434 033, 47 434 038, 47 434 121

Marketing:
Telefon: +385 47 434 099
E-mail: info@croatia-pumpe.com