



KOLMEKS
EFFICIENT RELIABILITY

PUMP CATALOGUE 2009
60Hz



www.kolmeks.com

KOLMEKS – FINNISH FULL-SERVICE PUMP SUPPLIER

Oy Kolmek Ab, established in 1945, a member on the Brandt Group, has for decades offered pumps. Kolmek has an outstanding position on the Finnish market. An indication of the growing importance of foreign markets is, that more than 50% of the annual turnover of 17 million is generated by exports.

Kolmek centrifugal pumps are made at the Turenki plant, Finland and the annual production is exceeding 45 000 pumps. Our production lines includes also cooling water pumps for heavy duty diesel engines and stainless steel pumps for various industrial applications.

The future is very important to us. Getting good results demands knowledge in flow technique, pumps and frequency converters. We want to be the market leader in these areas. We are able to offer our customers a large integrated frequency converter portfolio.

Environmental issues are also one of our main interests. Our company is committed to reduce water and electricity consumption, as well as the amount of the waste. We are also forerunners in environmental issues. The recycling of our pumps has been part of Kolmek environmental programme since 1970. All our pumps are repairably and exchangeable with new motor units. This unique mode of action has an effect on the life cycle cost of our customers pumps.

ECO-PRODUCT BENEFITS

- Low life cycle cost
- Exchangeable motors
- Bearings lubricated for lifetime
- Completely repairably



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Contents

IN-LINE CENTRIFUGAL PUMPS

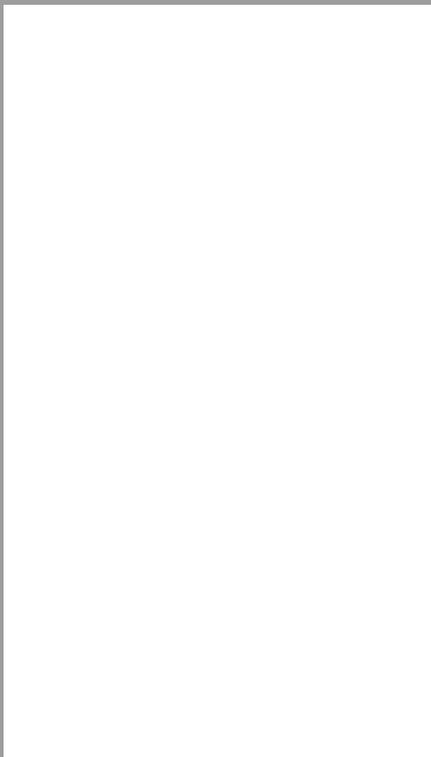
L_, AL_ and AKN_ 60 Hz

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TWIN IN-LINE CENTRIFUGAL PUMPS

T_ and AT_ 60 Hz

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IN-LINE CENTRIFUGAL PUMPS

RANGE L, AL and AKN 60 Hz

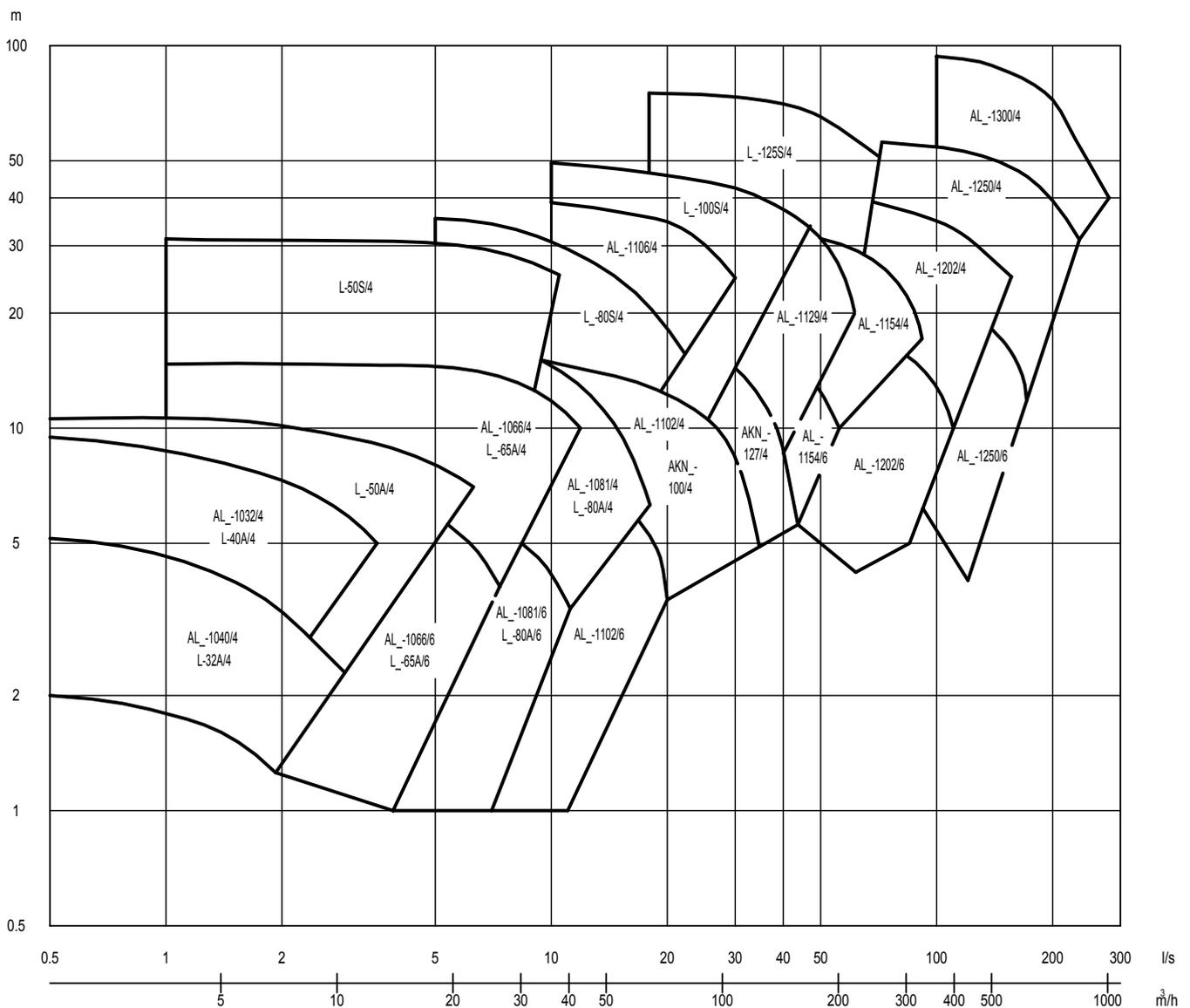
General features

The L_-, AL_- and AKN_-ranges consist of single-stage In-Line centrifugal pumps made in compact monobloc design.

Applications

The LH-, AL/ALH- and AKN/AKNH-pumps are made of cast iron and designed for applications for clean non-aggressive liquids including heating and primary hot water circulation, cooling, chilled and condense water circuits. The pumps of the LP/ALP-series, made of bronze, are more suitable for hot water including oxygen, hot water supply (HWS), secondary and other applications requiring a construction of corrosion-resistant materials. LS/ALS-pumps, made of stainless steel, fulfill various industrial pumping applications. Please contact us for correct specification whenever chemical and temperature details are different from what is given in our catalogue.

Duty chart at 60Hz, 4- and 6-poles electric motors



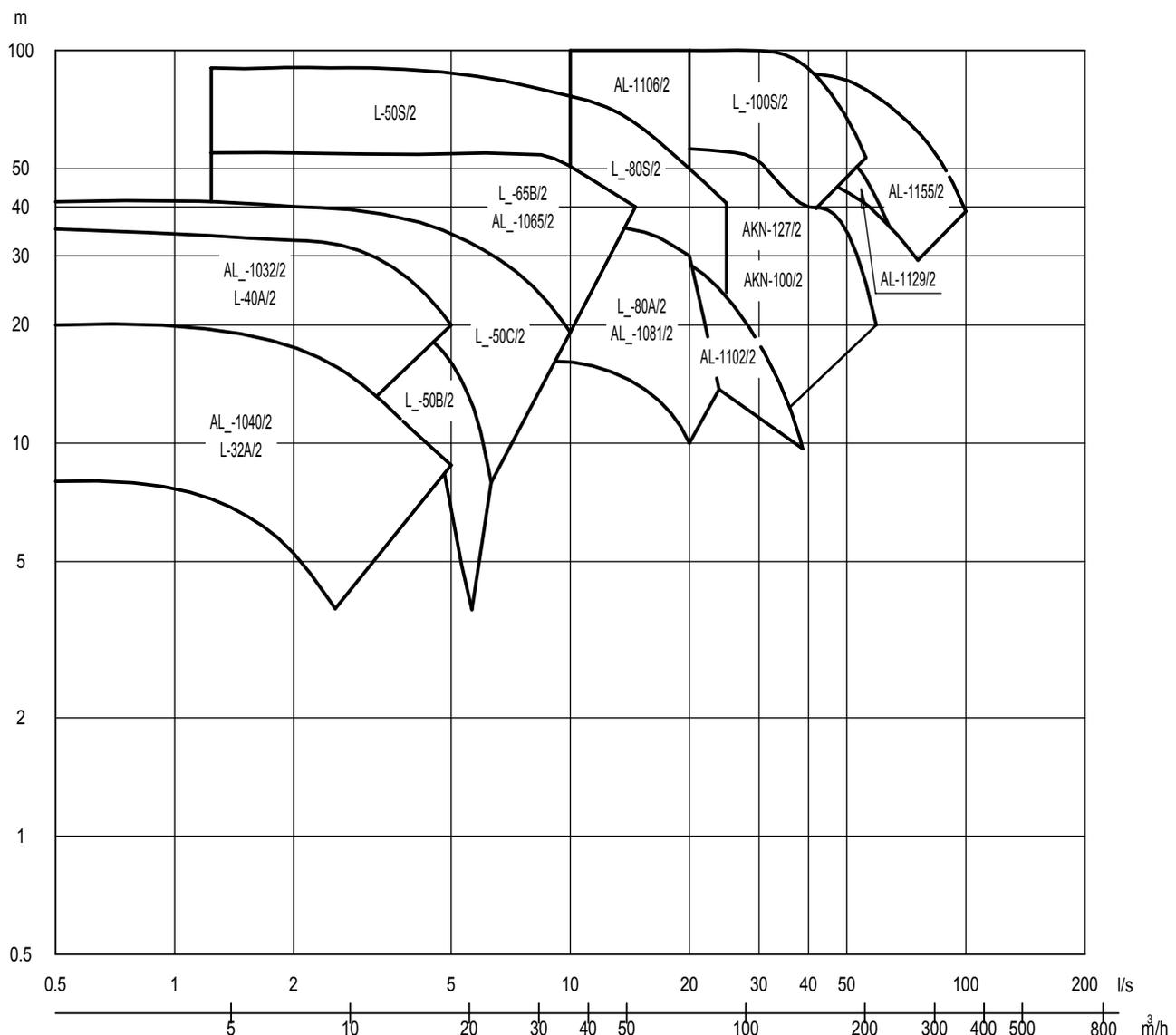
Please check the correct pump size (type, impeller size, motor) from the performance curves. There is no need for reserve margins with a Kolmek's pump, the duty point should be specified according to the real information and values of the system.

Whenever the required duty point is not found on the charts, check the possibility of using a twin pump, both units running simultaneously. For further information and performance curves, please check materials of the twin pumps in this catalogue and contact your nearest Kolmek's representative.

Whenever there is variation on the required duty point due to changes in the system one should consider the use of variable speed drives. In applications where the pump is continuously running with full load the variable speed drives seldom offer significant savings in energy consumption. All pumps with electric motor > 0.2 kW are suitable for use with variable speed drive.

The electric motor, up to 22 kW of Kolmek's pump can be integrated with frequency converter. There are two different designs available, one where the equipment is on the side of the motor (FC) and another where the equipment is on the fan cover of the motor (TC). However, the most common brands of the wall mounted variable speed drives can be delivered with the pump including pre-adjustment and parameterizing. Please contact your nearest Kolmek's representative to choose the best possible drive for your application.

Duty chart at 60Hz, 2-poles electric motors



Design

Pump

The L_-, AL_- and AKN_-range pumps are vertical, single stage, monobloc design centrifugal pumps equipped with dry type electric motor. The impeller is mounted directly on the shaft of the motor (no separate couplings).

Electric motor

The electric motors of the L_-, AL_- and AKN_-ranges are especially dimensioned and designed totally enclosed fan cooled squirrel cage motors for pump application. The motor design also ensures high efficiency and silent running and is suitable for use with frequency converter.

Voltages:	380-480/220-280 V, 60Hz, 3-phase < 4 kW (4.8 kW)
	660-690/380-480 V, 60Hz, 3-phase 4 kW (4.8 kW) and above
Enclosure:	IP54
	IP55 4 kW (4.8 kW) and above (1200, 1800 r/min), (4.8 kW) 5.5 kW (6.6 kW) and above (3600 r/min)
Insulation class:	F
Type of duty:	S1
Ambient temperature:	+ 45 °C

N.B. Other voltages (e.g. single phase) and specifications available by request!

Flanges

The dimensions of flanges in the L_-, AL_- and AKN_-ranges follow the standard ISO 7005. Both pump flanges have pressure gauge tappings, G 1/4. The flange diameters of 200 mm and above are available in accordance with PN16 or PN10 dimensions, PN10 as standard. Also other standards can be applied for flanges, by request.

The flanges DN32-DN150 are available in accordance with PN16 (same dimensions AL150 in PN10).

Shaft seals

The shaft seals in the L_-, AL_- and AKN_-ranges are maintenance-free single mechanical seals with rubber bellows. The pumps can be provided also with other types of seals suitable for various liquids and temperatures.

Name plate

Materials: without letter = Grey Cast Iron H = Nodular Cast Iron P = Bronze S = Stainless Steel	Accessories: e.g. X = Pump without baseplate P = Single phase motor V = Special voltage H = Recirculation KT = Double seal	Max. temperature of liquid
	DN-size (code)	Working pressure
Pump type (L_-, AL_-, AKN_-)		Diameter of impeller
		Factory code of motor
		Specification of impeller: PM = Bronze SS = Stainless steel R = Right hand (AL_-imp) L = Left hand (AT-imp)
Order Nr./YEAR		Input power at duty point
Flow		Type of duty
Head		Speed of rotation
Motor type		Enclosure
Nominal voltage and current		Rated power, motor
		Insulation class

Type ALH-1065/2 KT S21 K2 L3 V1-62006					
No.	012345/07	PN 16	∅ 158	PM	
Flow	11 l/s	36 m	+180 °C	P1	7,5 kW
Motor	OKN-132 E1 F19	3~ 60 Hz	58,5 r/s	S1	
Nominal voltage	690 V	8,7 A	P2 _N	7,5 kW	IP 55
and current	400 V	15,0 A	cos φ	0,86	
		Finland	Isol.F	CE	

Materials available and seals

TYPE grey cast iron	MOTOR		LH/ALH nodular cast iron	LP/ALP bronze	LS/ALS stainless steel	SHAFT SEAL Ø, materials	O-RING	
	rpm	kW					size, Ø	material
L_-32A	1800/3600	0,05-0,65	---	---	---	12 mm, carbon/SiC EPDM	100 x 2,5	NBR
AL_-1032*	1800/3600	0,2-1,5	---	yes	yes	12 mm, carbon/SiC EPDM	145 x 2,5	NBR
L_-40A	1800/3600	0,2-1,5	---	---	---	12 mm, carbon/SiC EPDM	145 x 2,5	NBR
AL_-1040*	1800/3600	0,05-0,65	---	yes	yes	12 mm, carbon/SiC EPDM	100 x 2,5	NBR
L_-50A	1200/1800	0,11-0,37	yes	yes	---	12 mm, carbon/SiC EPDM	150 x 3	NBR
L_-50B	1800/3600	0,2-1,1	yes	yes	yes	12 mm, carbon/SiC EPDM	150 x 3	NBR
L_-50C	3600	1,5-2,2	yes	yes	---	18 mm, carbon/SiC EPDM	150 x 3	NBR
L_-50S	1800/3600	1,1-15	yes	---	---	28 mm, carbon/SiC EPDM	265 x 4	EPDM
L_-65A	1200/1800	0,18-2,2	yes	---	---	18 mm, carbon/SiC EPDM	179,3 x 5,7	EPDM
L_-65B	1200/1800/3600	0,18-7,5	yes	---	---	18 mm, carbon/SiC EPDM	179,3 x 5,7	EPDM
AL_-1065*	1200/1800/3600	0,18-7,5	---	yes	yes	18 mm, carbon/SiC EPDM	179,3 x 5,7	EPDM
AL_-1066*	1200/1800	0,18-2,2	---	yes	---	18 mm, carbon/SiC EPDM	179,3 x 5,7	EPDM
L_-80A	1200/1800/3600	0,18-7,5	yes	---	---	18 mm, carbon/SiC EPDM	179,3 x 5,7	EPDM
AL_-1081*	1200/1800/3600	0,18-7,5	---	---	yes	18 mm, carbon/SiC EPDM	179,3 x 5,7	EPDM
L_-80S	1800/3600	1,1-15	yes	---	---	28 mm, carbon/SiC EPDM	265 x 4	EPDM
AL_-1102	1200/1800/3600	0,37-7,5	yes	yes	yes	18 mm, carbon/SiC EPDM	179,3 x 5,7	EPDM
AKN-100	1200/1800/3600	0,75-22	yes	---	---	25 mm, carbon/SiC EPDM	240 x 3	NBR
AL_-1106	1800/3600	3-37	yes	---	yes	32 mm, carbon/SiC EPDM	309/295 x 1	gasket
L_-100S	1800/3600	3-45	yes	---	---	32 mm, carbon/SiC EPDM	315 x 6,3	EPDM
AKN-127	1800/3600	4-22	yes	---	---	32 mm, carbon/SiC EPDM	240 x 3	NBR
AL_-1129	1800/3600	3-37	yes	yes**	yes	32 mm, carbon/SiC EPDM	309/295 x 1	gasket
AL_-1129	3600	45	yes	yes**	yes	40 mm, carbon/SiC EPDM	309/295 x 1	gasket
L_-125S	1800	18,5-37	yes	---	yes	40 mm, carbon/SiC EPDM	405 x 7	EPDM
L_-125S	1800	45	yes	---	yes	50 mm, carbon/SiC EPDM	405 x 7	EPDM
AL_-1154	1200/1800	4-30	yes	yes**	yes	32 mm, carbon/SiC EPDM	309/295 x 1	gasket
AL_-1155	3600	30-37	yes	---	yes	32 mm, carbon/SiC EPDM	309/295 x 1	gasket
AL_-1155	3600	45	yes	---	yes	40 mm, carbon/SiC EPDM	309/295 x 1	gasket
AL_-1155	3600	55	yes	---	yes	50 mm, carbon/SiC EPDM	309/295 x 1	gasket
AL_-1202	1200	5,5-11	yes	yes	yes	32 mm, carbon/SiC EPDM	315 x 6,3	EPDM
AL_-1202	1200	15-18,5	yes	yes	yes	40 mm, carbon/SiC EPDM	315 x 6,3	EPDM
AL_-1202	1800	11-18,5	yes	yes	yes	32 mm, carbon/SiC EPDM	315 x 6,3	EPDM
AL_-1202	1800	22-37	yes	yes	yes	40 mm, carbon/SiC EPDM	315 x 6,3	EPDM
AL_-1202	1800	45	yes	yes	yes	50 mm, carbon/SiC EPDM	315 x 6,3	EPDM
AL_-1250	1200	11-22	yes	yes	yes	40 mm, carbon/SiC EPDM	405 x 7	EPDM
AL_-1250	1200	30	yes	yes	yes	50 mm, carbon/SiC EPDM	405 x 7	EPDM
AL_-1250	1800	37	yes	yes	yes	40 mm, carbon/SiC EPDM	405 x 7	EPDM
AL_-1250	1800	45-55	yes	yes	yes	50 mm, carbon/SiC EPDM	405 x 7	EPDM
AL_-1250	1800	75-90	yes	yes	yes	65 mm, carbon/SiC EPDM	405 x 7	EPDM
AL_-1300	1800	110-160	yes	---	yes	75 mm, carbon/ceram. EPDM	475 x 8	EPDM

* only in bronze and/or stainless materials available

** available as types ALP-1128 and ALP-1153. Please, check dimensions.

Material standards

SERIES	MATERIAL OF HOUSING FLANGE		SEALING FLANGE	IMPELLER	SHAFT (pump)	DETAILS TO NOTE
	Name	Standard				
L / AL / AKN	grey cast iron	EN-GJL-200	EN-GJL-200	EN-GJL-200	AISI329	L_-32 impeller of Noryl GFN2 AL_-1300 impeller of EN-GJS-400
LH / ALH / AKNH	nodular cast iron	EN-GJS-400	EN-GJS-400	EN-GJL-200	AISI329	ALH-1300 impeller of EN-GJS-400
LP / ALP	bronze	CuSn10Zn2	CuSn10Zn2	CuSn10Zn2	AISI329	Bronze impeller available for every pump (exl. AL_-1155)
LS / ALS	stainless steel	AISI316	AISI316	AISI316	AISI329	L_-50S, L_-100S, L_-125S, AL_-1300 Also SS2324 and SS2378 by request

Painting

Pumps are painted in accordance with Finnish standard SFS 5873, AK 80/2 Fe Sa2.

The standard finishing colour is red, RAL 3000. With customized colour and special coating available by request.

Temperatures and pressure classes

Max. working pressure 10 bar L_-, AL_-, AKN-, LP-, ALP-

Max. working pressure 16 bar LH-, ALH-, AKNH-, LS-, ALS-
according to the mechanical seal specification

Fluid temperature range -15 ... +120°C L_-, AL_-, AKN-, LP-, ALP-
(with Noryl impeller max.+100°C)

Fluid temperature range -15 ... +150°C LH-, ALH-, AKNH-, LS-, ALS-
(with carbon/ceramic seal max.+120°C and size DN50 mechanical diameter seal 12 mm max. +135°C)

Fluid temperature range -15 ... +180°C LH-, ALH-, LS-, ALS- with double seal

N.B. The max. liquid temperature may be limited not only by material selection but also by local regulations and laws.

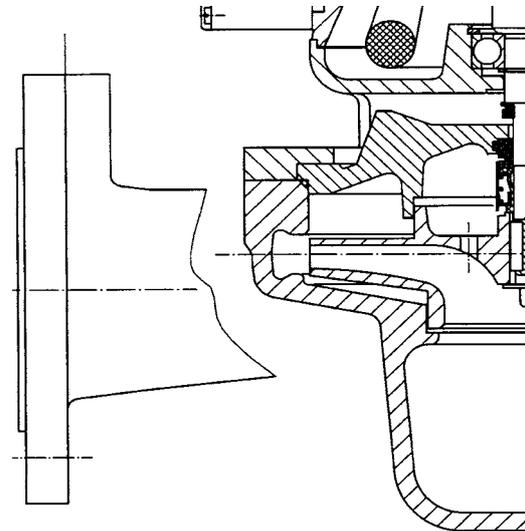
Design of sealings

Standard design

Single mechanical elastomeric bellows type shaft seal, operation water temperature max.+120°C

The standard design is also suitable for glycol and other cold liquid mixtures in chilled water systems.

Special accessories available e.g. isolated sealing flange for operation with liquids of low temperature



Recirculation (internal flush)

Single mechanical elastomeric bellows shaft seal.

Available in flange sizes DN50...300.

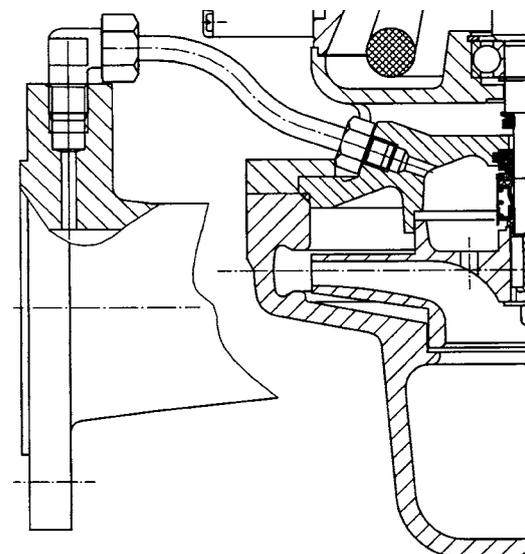
Operation water temperature max.+150°C

in size DN65 and larger, DN50 max. +135°C.

Liquid circulation via pipe from the pressure flange to the sealing chamber to ensure higher pressure, cooling and lubrication of the shaft seal.

Standard design in the LH- / ALH- / AKNH-series.

Applications in hot water systems.



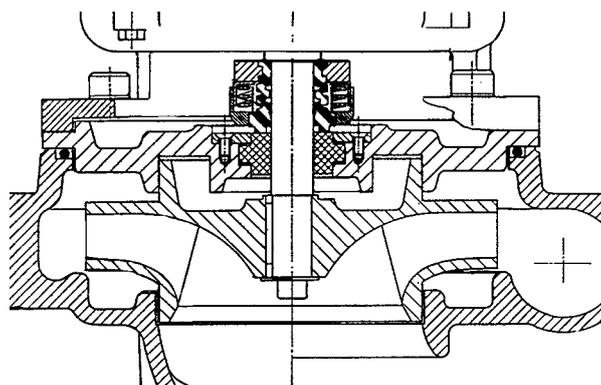
External seal

Single mechanical PTFE bellows seal externally mounted

Available in flange sizes DN65-300 for ALS-series

Applications with extremely corrosive liquids, including acids, eg. sulfuric acid

Max. working pressure 10 bar



Double seal system

Double cartridge seal

Between the seals a pressure barrier maintained by sealing fluid, external circulation

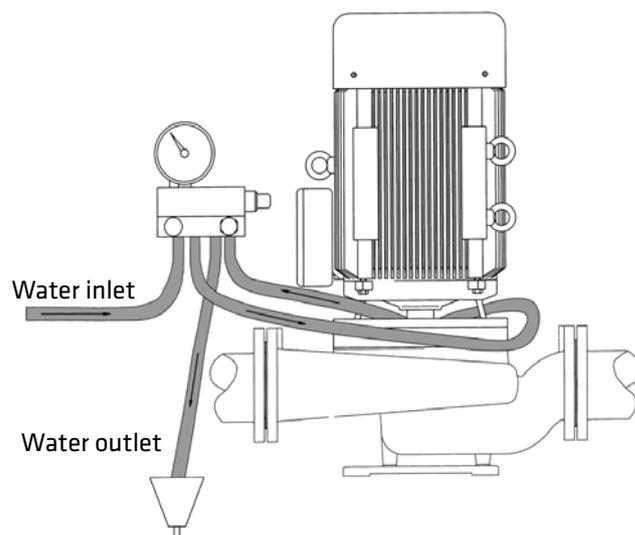
Available in flange sizes DN65-300

Maximum fluid temperature +180°C

Separate sealing fluid control unit required (e.g. Safematic can be supplied by Kolmeks)

Applications with slurries and crystallising hot solutions

Temporary dry running of pump allowed

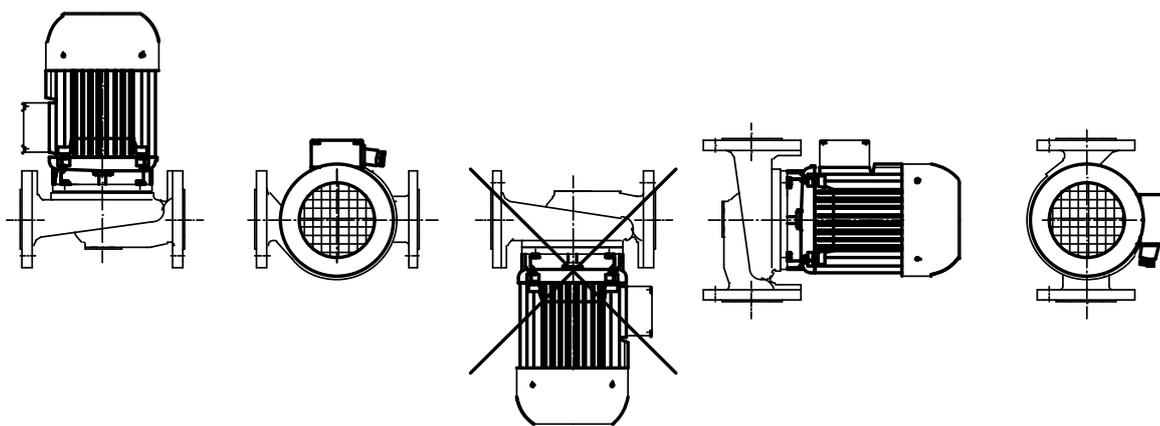


Installation

When designing and installing the pump in the system please pay attention to the following:

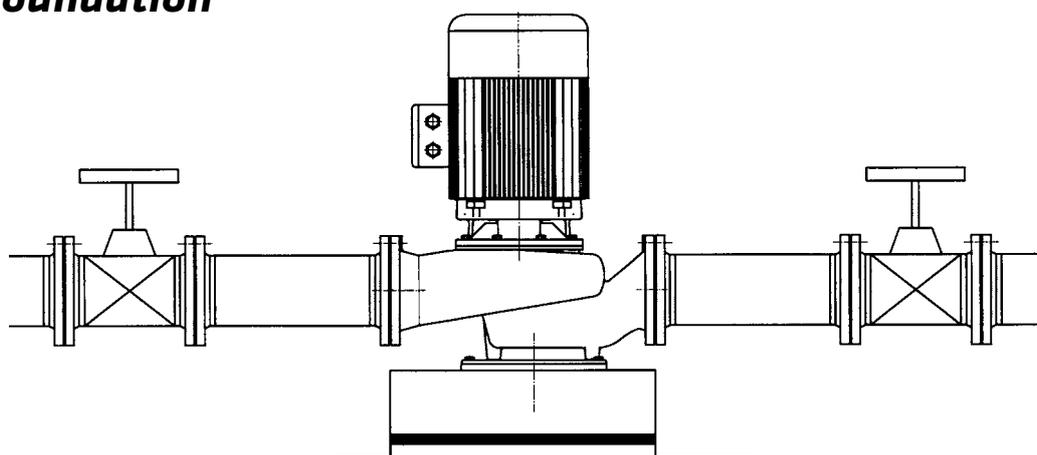
- enough space for service and control should be left around the pump
- enough clearance on top of the motor to lift the motor unit off the pump housing
- for heavier pumps you may also need space for lifting devices
- shut-off valves on both sides of the pump
- vibration and noise isolation and sufficient rigidity of the pipeworks to support the pump

The position of the motor unit and the terminal box can be changed by removing the motor unit from the pump housing and setting it in the desired position



Kolmeks In-line pumps may be fitted in horizontal or vertical (depending on motor size) pipeline configurations and must be arranged so that the adjacent pipework can be vented of air before startup. The smaller pumps may be installed without the baseplate horizontally or vertically, but the motor must never fall below the horizontal plane. The heavier and larger pumps should be installed standing on the baseplate and the pump shaft in vertical position.

Foundation



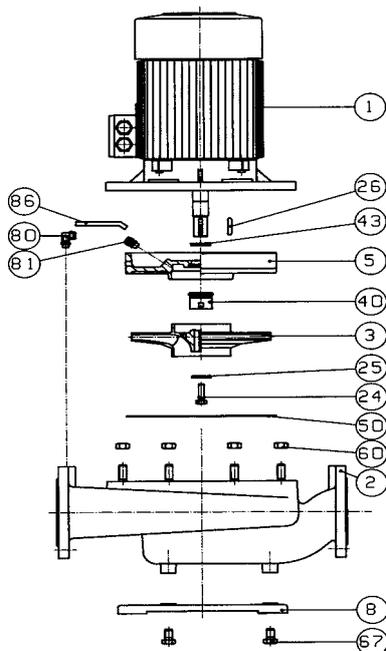
The heavier pumps (= DN150 and over or motors above 7,5 kW) should be mounted on a concrete plinth, approximately 1.5 to 2 times the weight of the pump. The foundation should be isolated from other construction with anti-vibrations mountings (20 mm thick rubber or cork plate) to prevent transmission of noise.

Recommendation limits without baseplate

Flange size	Max. motor power
DN32 ... 50	2,2 kW
DN65, 80	4 kW
DN100, 125	7,5 kW

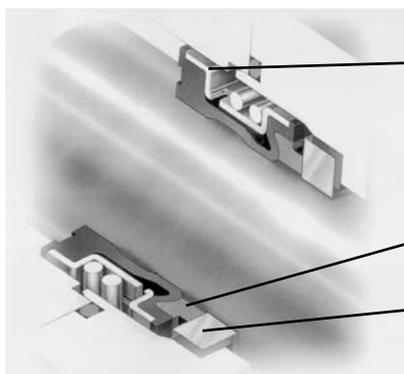
Spare parts and maintenance

List of parts



- 1 Electric motor
- 2 Pump housing
- 3 Impeller
- 5 Sealing flange
- 8 Base plate
- 24 Nut / Screw
- 25 Washer
- 26 Key
- 40 Mechanical shaft seal
- 43 V-ring (optional)
- 50 O-ring / Gasket
- 60 Nut / Screw
- 67 Screw
- 80 Fitting (ALH/LH-series)
- 81 Fitting (ALH/LH-series)
- 86 Pipe (ALH/LH-series)

Parts of the mechanical shaft seal (Design T2100)



Seal body/bellows/spring

Face, rotating ring

Seat, stationary ring

Pump head/motor unit as a simple reserve, replacement and repair

The shaft seal is a wearing part, easy to change. When changing the shaft seal and opening the sealing flange the O-ring should always be replaced.

In case of any motor or electrical malfunction or heavy wearing of seal and impeller we recommend the change of the whole pump head/motor unit (internal).

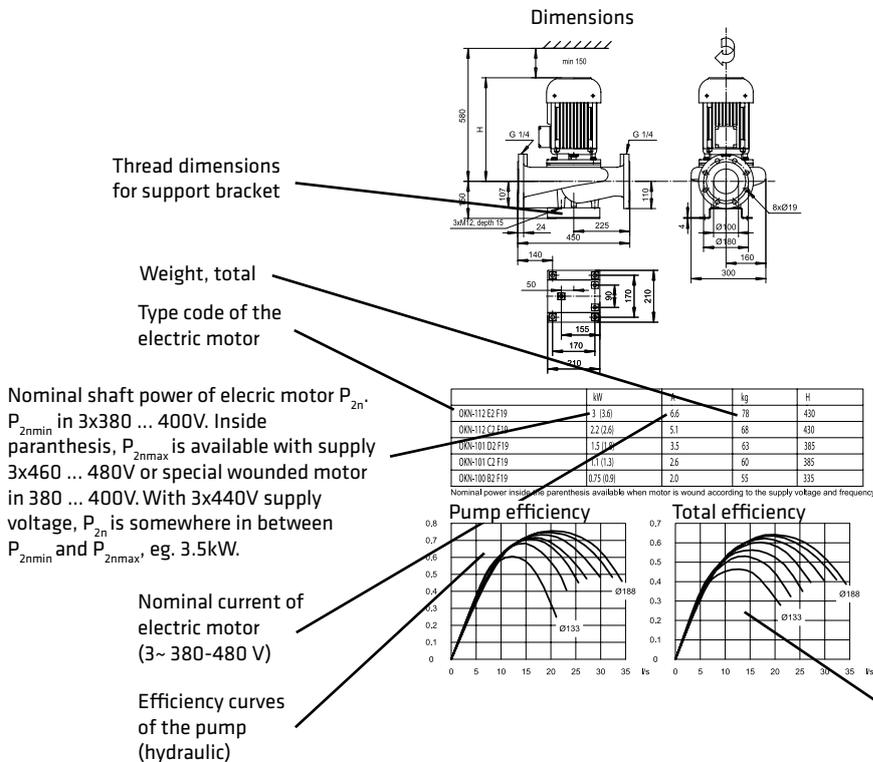
Technical information

Reading the curves

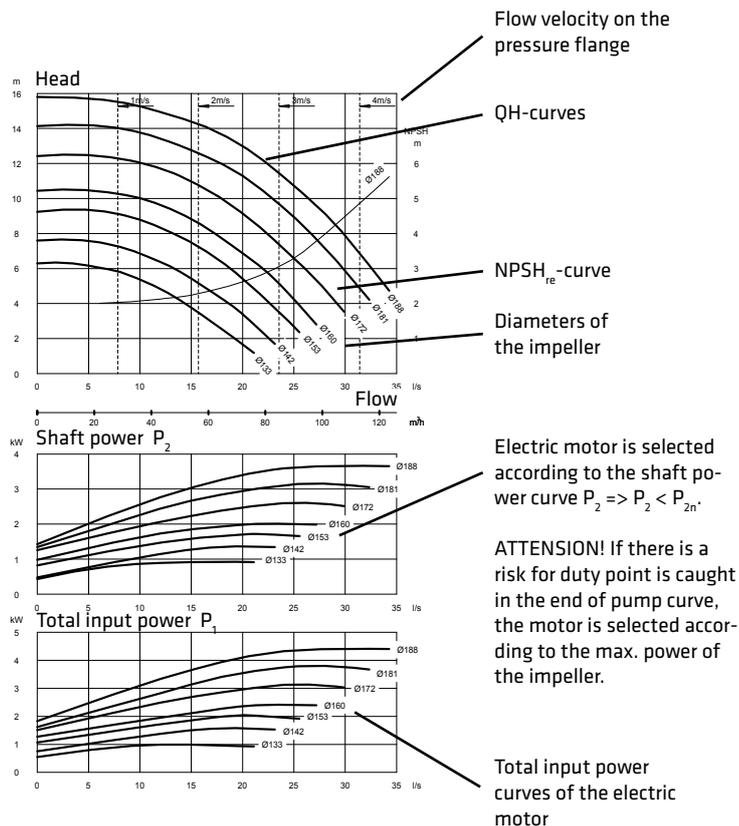
Performance curves are valid for +20°C water and 60Hz frequency.

When pumping other liquids with different viscosity direct consultancy with Kolmeks is advised.

AL_-1102/4 DN100 1800 r/min



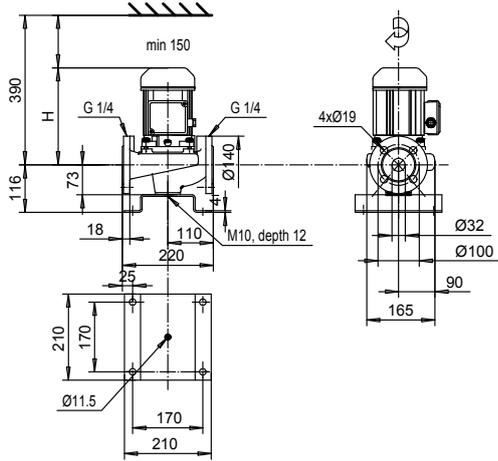
Note! The density of the liquid correlates to the power required. In case the liquid is heavier than water please check the power output of the motor.



The rule of the thumb is that the pump selection is correct when the duty point is as near as possible to the Best Efficiency Point (=BEP). We recommend that the duty point should be at least between 25...90% of the max flow (of that impeller size in question). This recommendation is based on the poor efficiency of the whole pump at very low or very high flow, see e.g. efficiency curves above. Regardless of the energy consumption will not be an essential criteria of the selection we recommend to avoid the selection where duty point is located on the very beginning or very end of the performance curve of the pump.

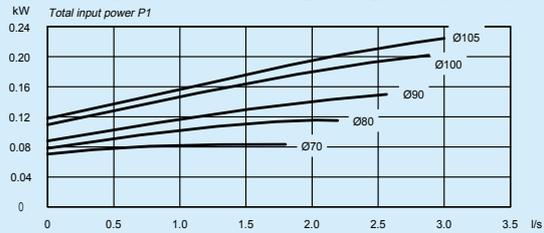
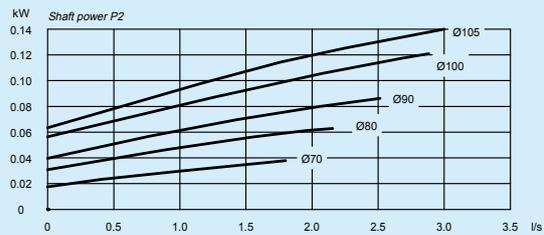
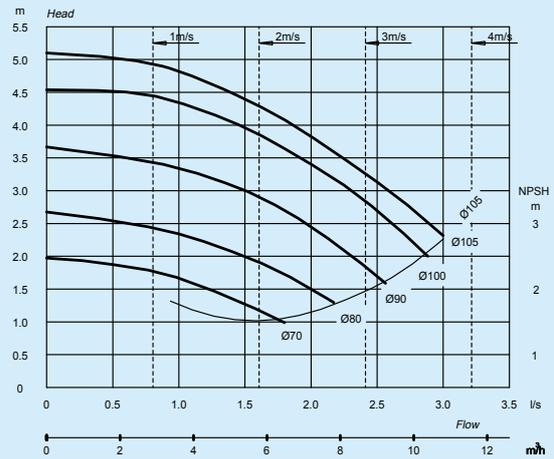
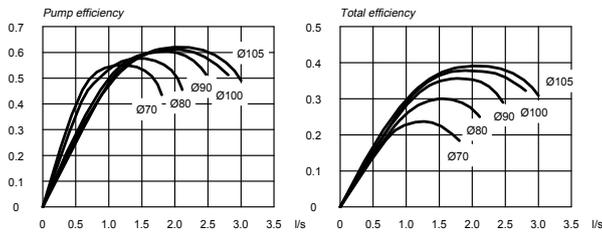
Technical data

L_-32A/4 DN32 1800r/min

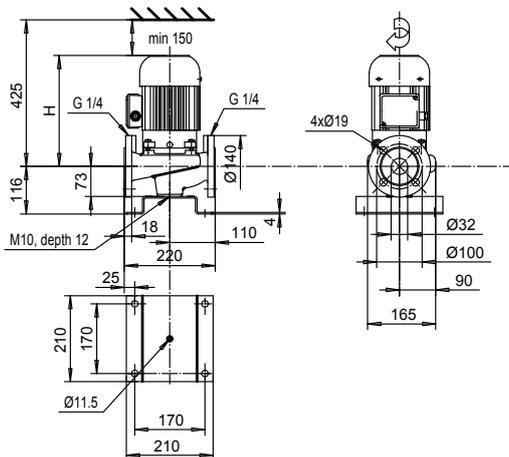


	<i>kW</i>	<i>A</i>	<i>kg</i>	<i>H</i>
OP-732 N12	0.20 (0.24)	0.65	19	240
OP-742 N12	0.08 (0.09)	0.28	17	185
OP-732 B N12	0.05 (0.06)	0.22	17	185

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

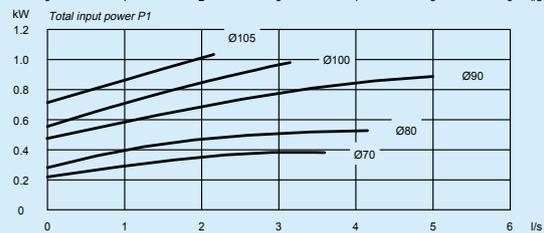
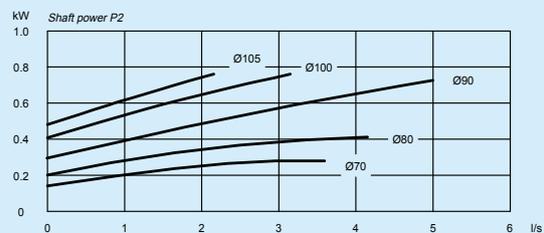
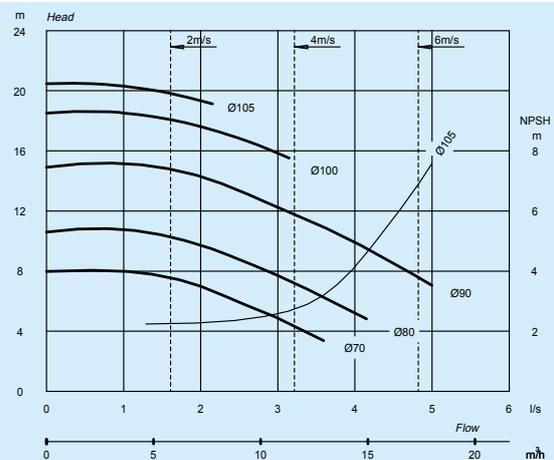
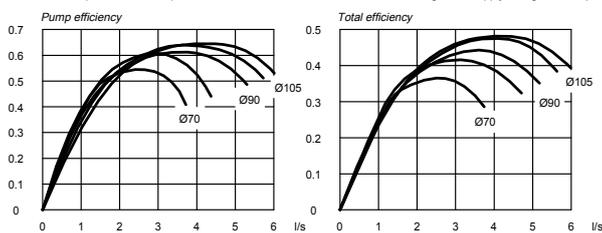


L_-32A/2 DN32 3600r/min



	<i>kW</i>	<i>A</i>	<i>kg</i>	<i>H</i>
OKN-841 D N12	0.65 (0.78)	1.8	21	275
OP-741 N12	0.25 (0.30)	0.7	17	225

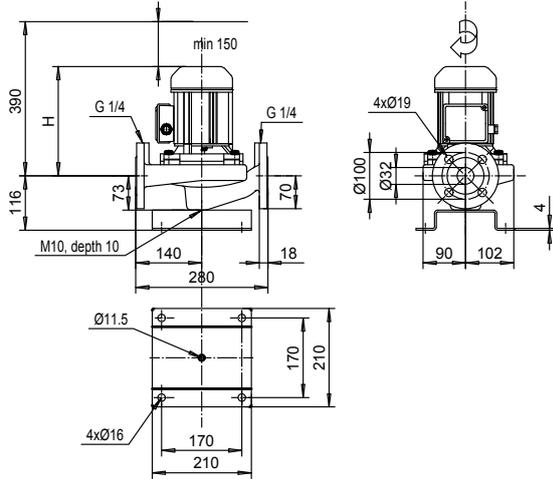
Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



Technical data

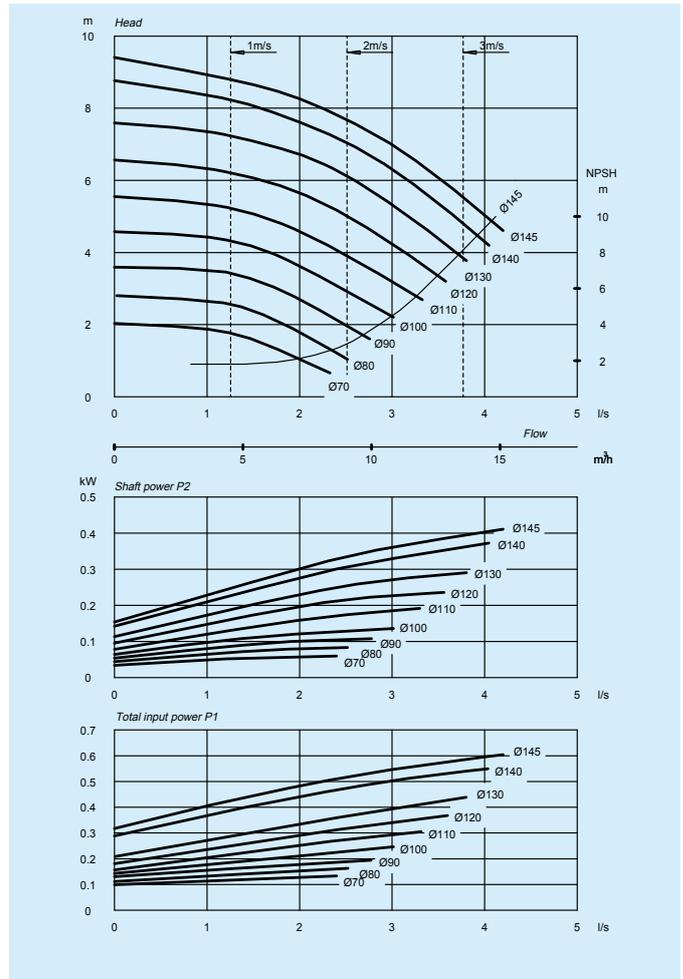
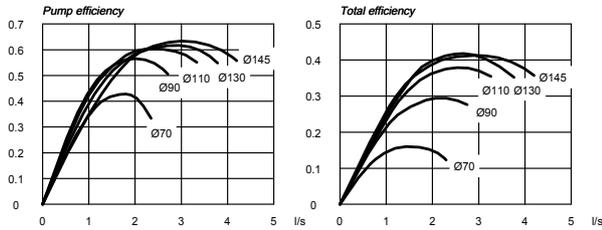
Only available in bronze / stainless steel

AL₅^P-1032/4 DN32 1800 r/min



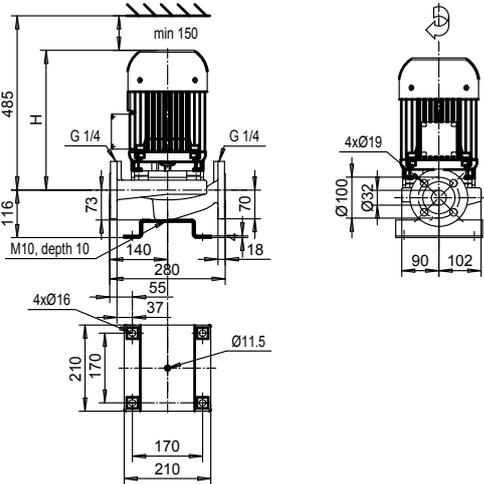
	<i>kW</i>	<i>A</i>	<i>kg</i>	<i>H</i>
OKN-862L D N13	0.37 (0.44)	1.15	25	280
OP-752 N13	0.20 (0.24)	0.65	21	240

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



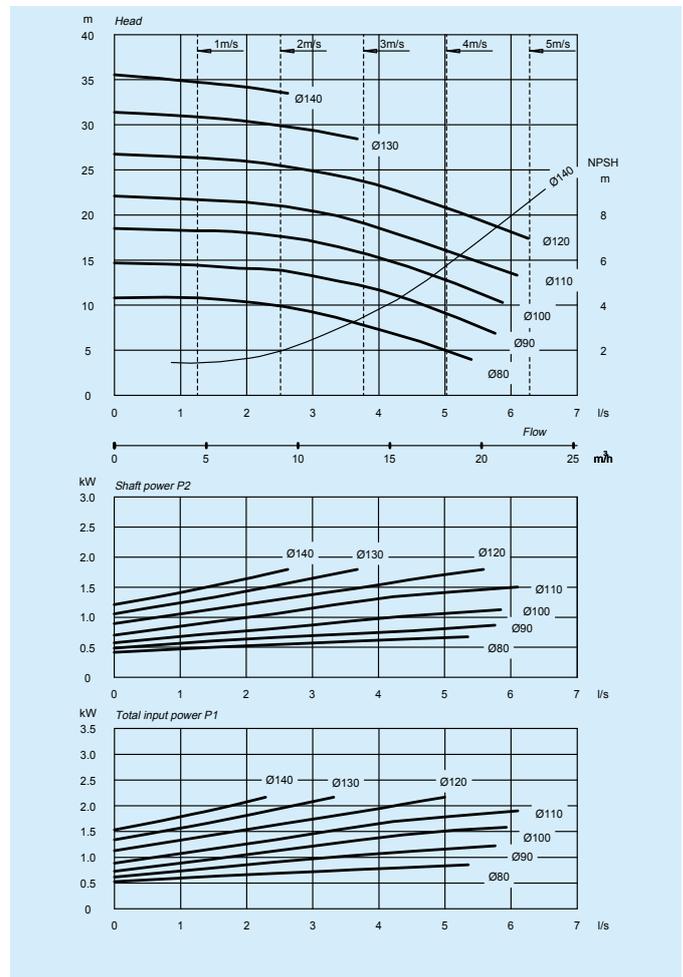
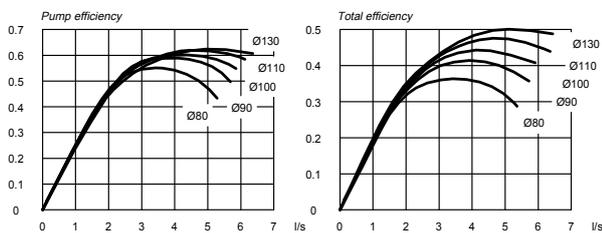
Only available in bronze / stainless steel

AL₅^P-1032/2 DN32 3600 r/min



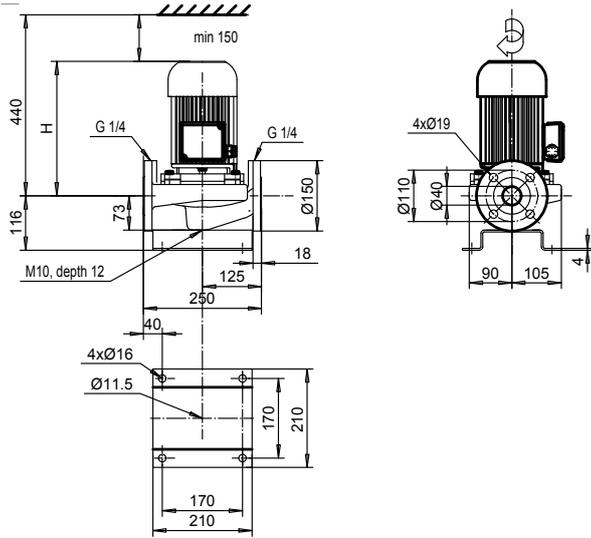
	<i>kW</i>	<i>A</i>	<i>kg</i>	<i>H</i>
OKN-101 C1 N13	1.5 (1.8)	3.3	38	335
OKN-871 D N13	1.1 (1.3)	2.8	25	280

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



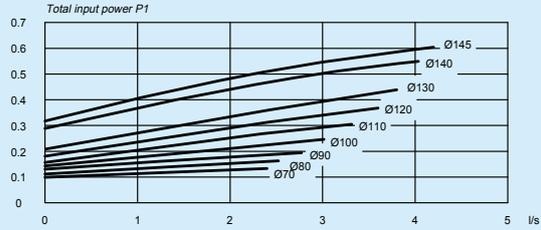
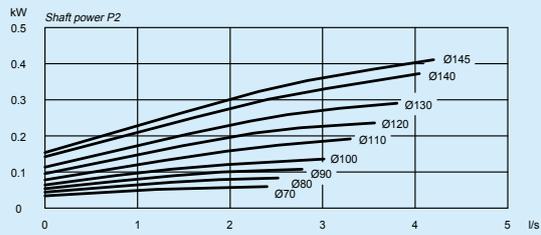
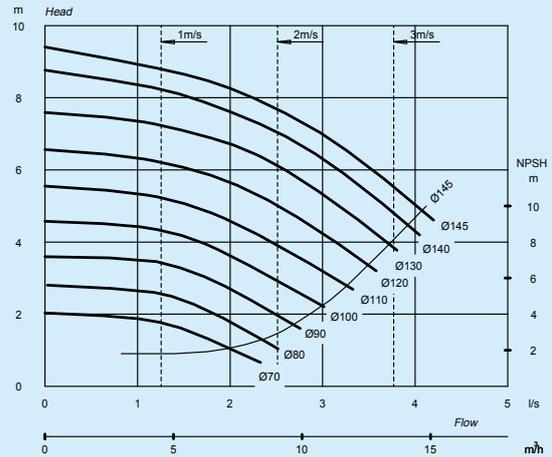
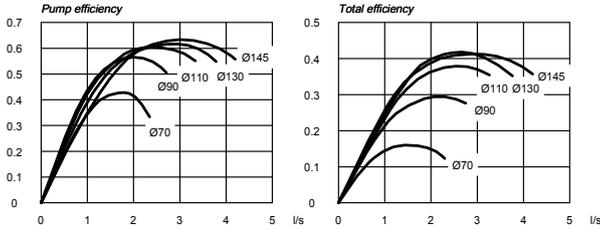
Technical data

L₋40A/4 DN40 1800 r/min

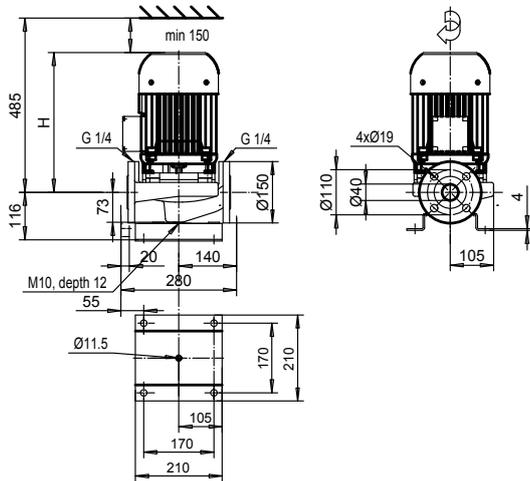


	kW	A	kg	H
OKN-862L D N13	0.37 (0.44)	1.15	25	290
OP-752 N13	0.20 (0.24)	0.65	21	240

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

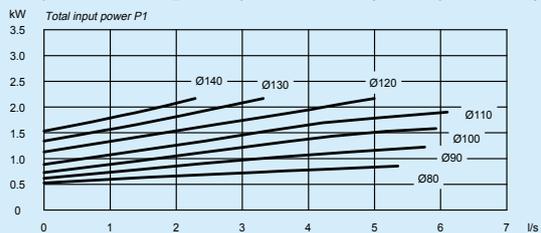
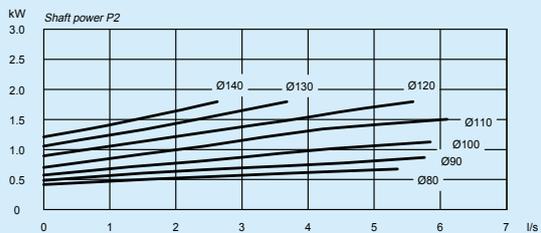
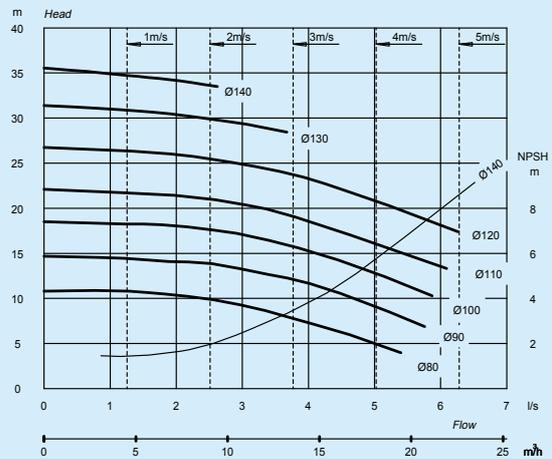
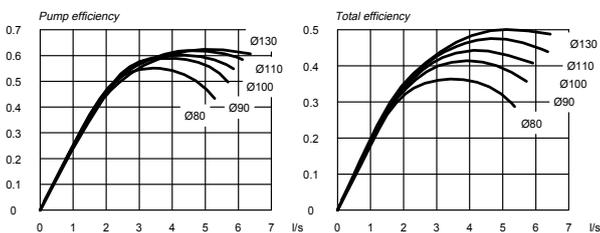


L₋40A/2 DN40 3600 r/min



	kW	A	kg	H
OKN-101 C1 N13	1.5 (1.8)	3.3	38	335
OKN-871 D N13	1.1 (1.3)	2.8	25	290

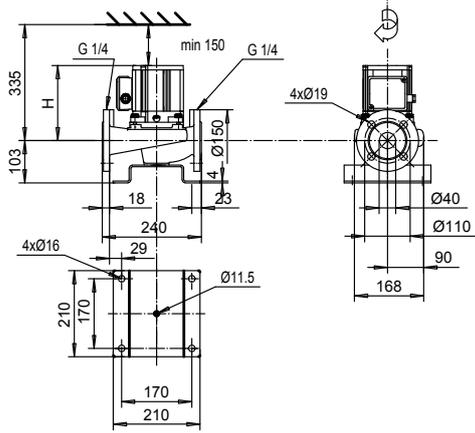
Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



Technical data

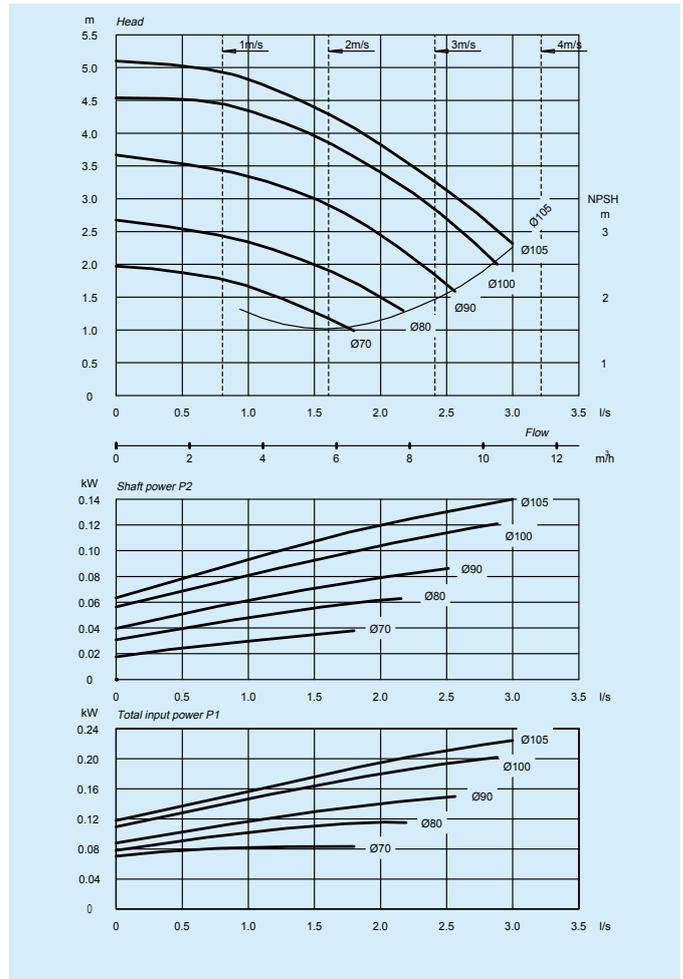
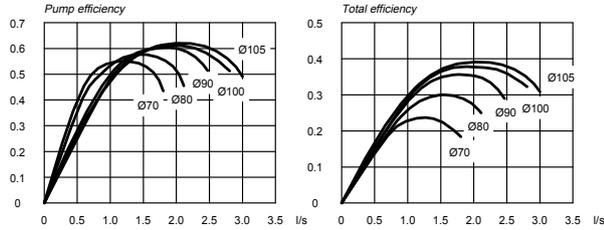
Only available in bronze / stainless steel

AL_S^P-1040/4 DN40 1800 r/min



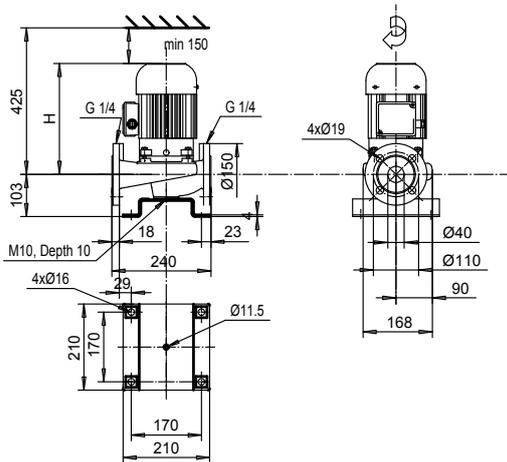
	kW	A	kg	H
OP-752 N12	0.20 (0.24)	0.65	19	240
OP-742 N12	0.08 (0.09)	0.28	17	185
OP-732 B N12	0.05 (0.06)	0.22	17	185

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



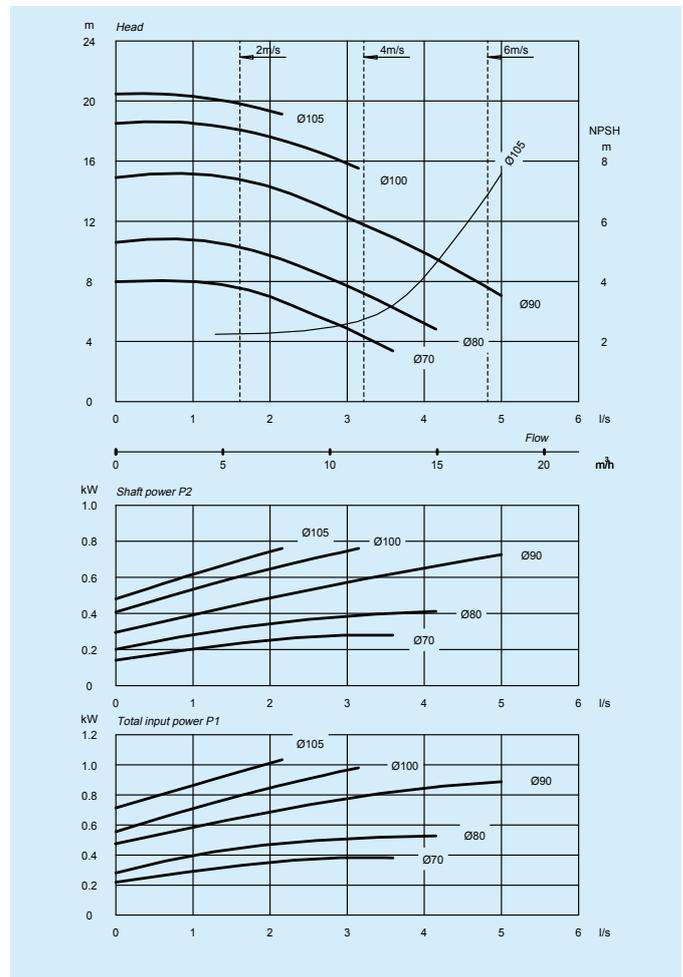
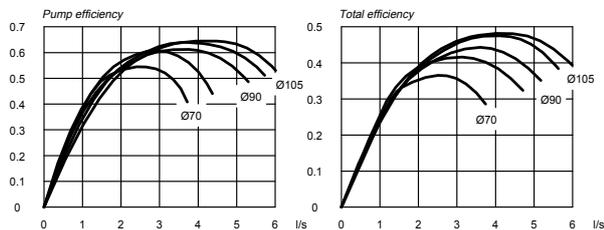
Only available in bronze / stainless steel

AL_S^P-1040/2 DN40 3600 r/min



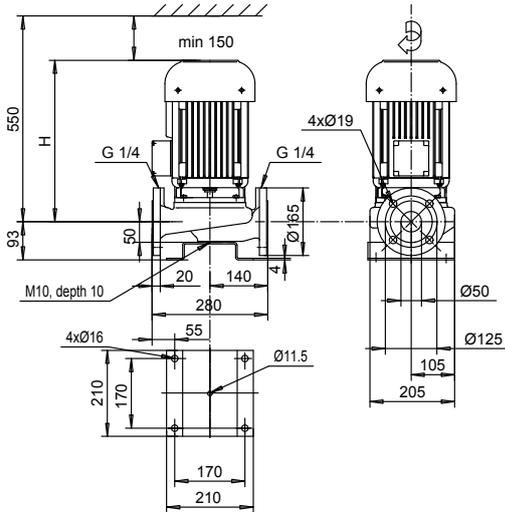
	kW	A	kg	H
OKN-841 D N12	0.65 (0.78)	1.8	21	275
OP-741 N12	0.25 (0.30)	0.7	17	225

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



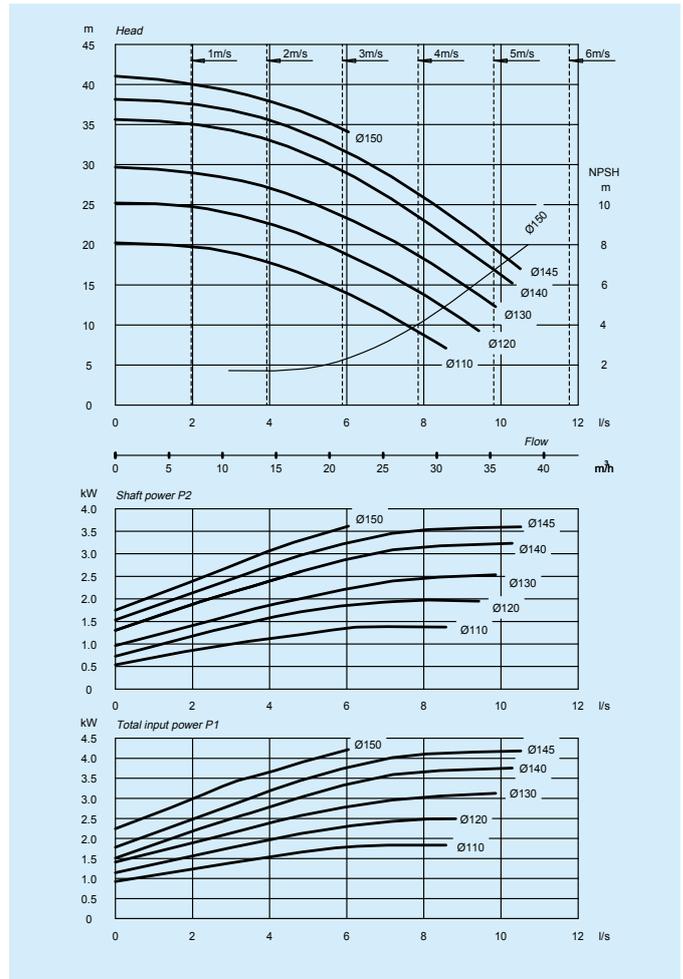
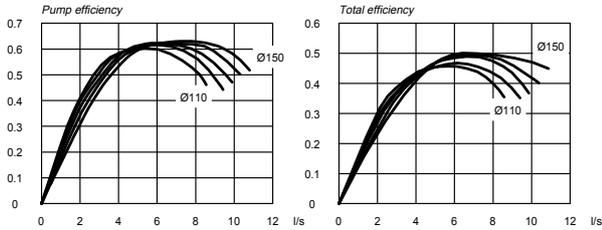
Technical data

LH-50C/2 DN50 3600 r/min

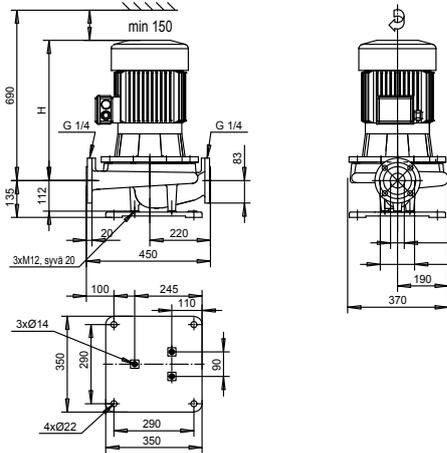


	kW	A	kg	H
OKN-112 C1 F16	3.0 (3.6)	6.4	49	400
OKN-101 D1 F16	2.2 (2.6)	4.7	43	355
OKN-101 C1 F16	1.5 (1.8)	3.3	37	355

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

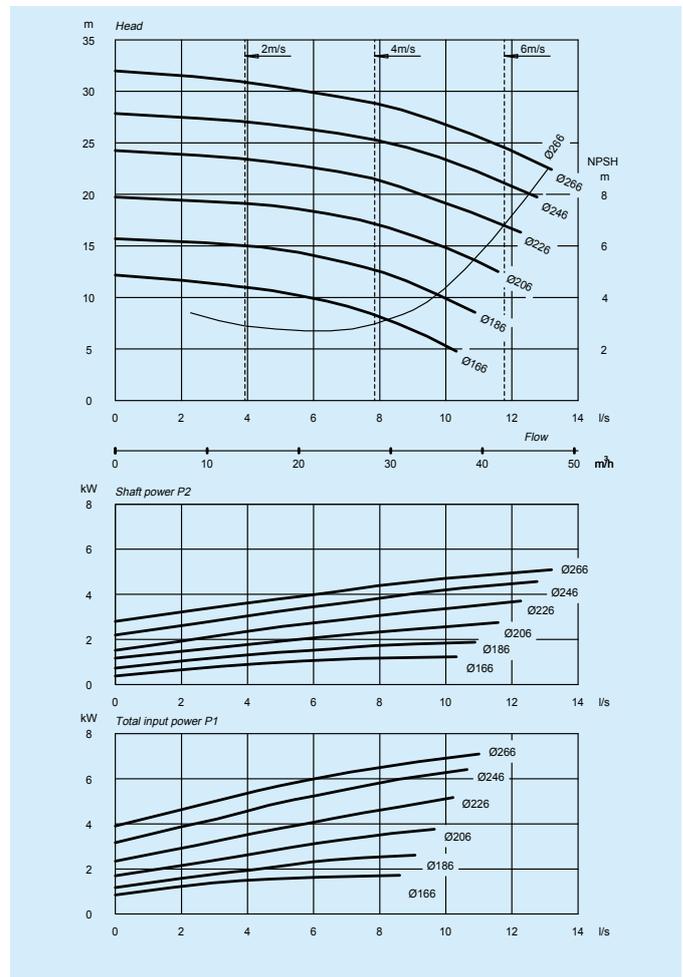
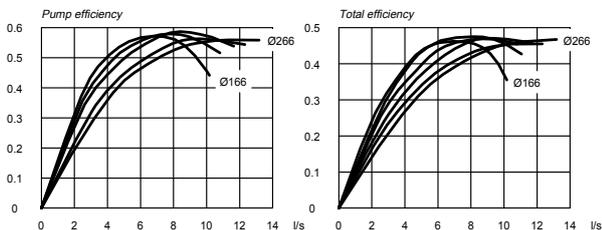


LH-50S/4 DN50 1800 r/min



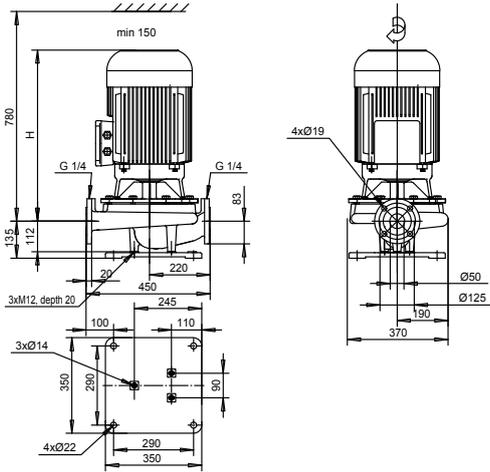
	kW	A	kg	H
OKN-132 E2 F29	5.5 (6.6)	11.9	138	540
OKN-132 C2 F29	4 (4.8)	8.7	128	540
OKN-112 E2 F29	3 (3.6)	6.6	101	475
OKN-112 C2 F29	2.2 (2.6)	5.1	97	475
OKN-101 D2 F29	1.5 (1.8)	3.5	91	430
OKN-101 C2 F29	1.1 (1.3)	2.6	88	430

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



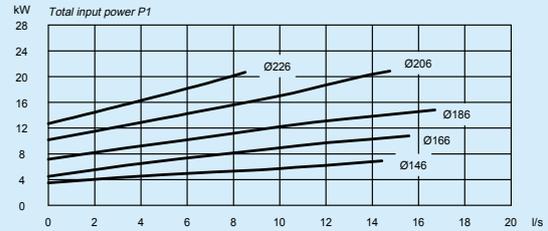
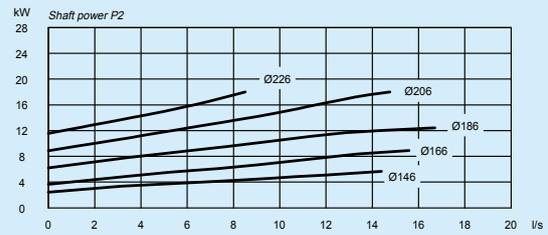
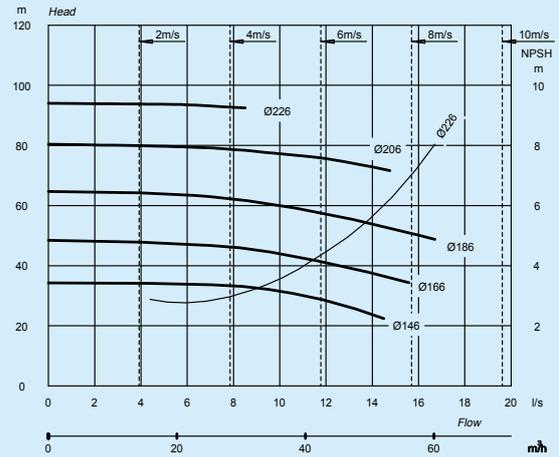
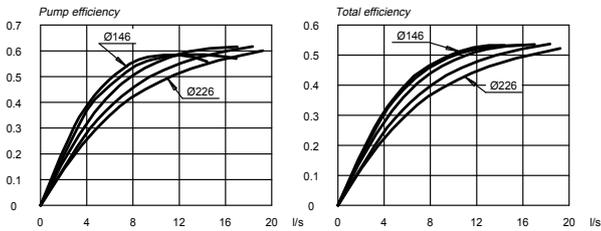
Technical data

LH-50S/2 DN50 3600 r/min

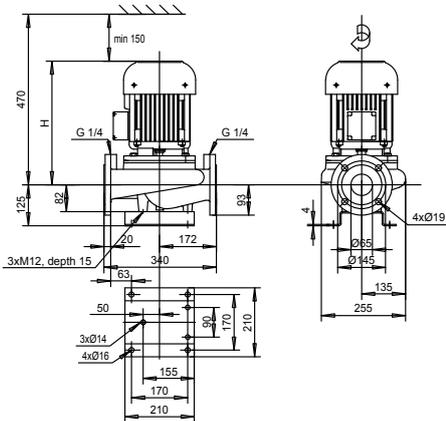


	kW	A	kg	H
OKN-164 G1 F29	15 (18)	30.5	181	630
OKN-164 F1 F29	11 (13)	22.0	176	630
OKN-132 E1 F29	7.5 (9)	15.0	133	500
OKN-132 C1 F29	5.5 (6.6)	11.0	125	500

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

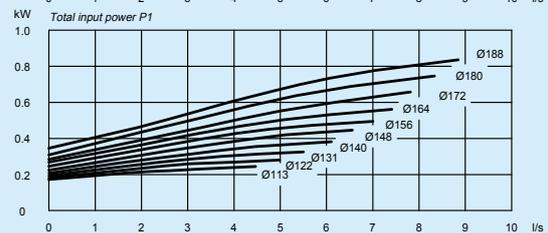
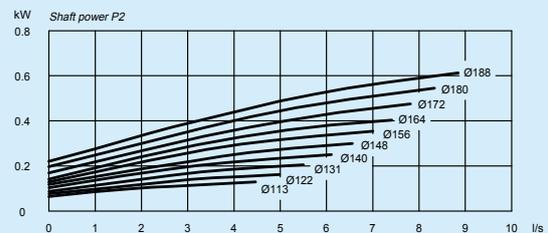
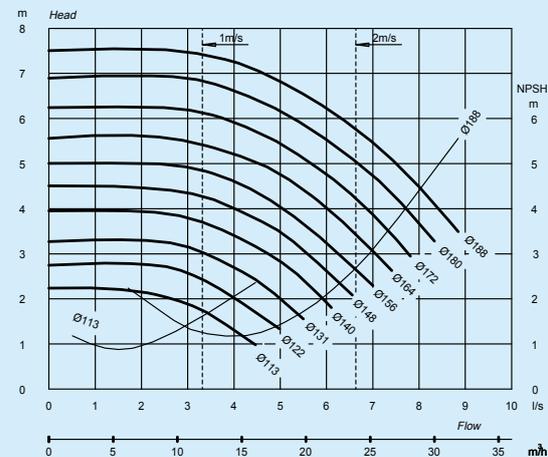
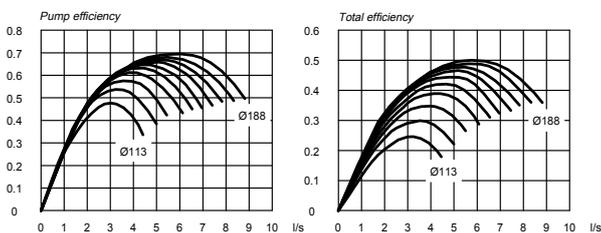


LH-65A/6 DN65 1200r/min



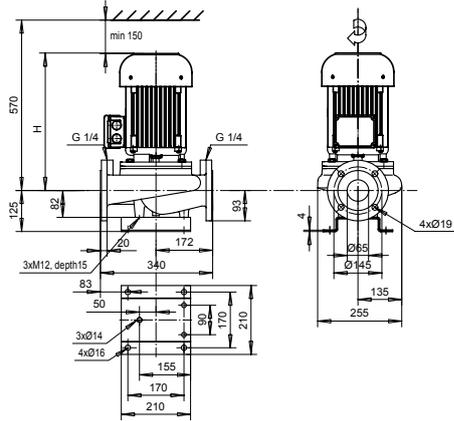
	kW	A	kg	H
OKN-101 C3 F19	0.55 (0.66)	1.75	48	370
OKN-100 B3 F19	0.37 (0.44)	1.20	44	320
OKN-100 B3 F19	0.18 (0.21)	0.95	44	320

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



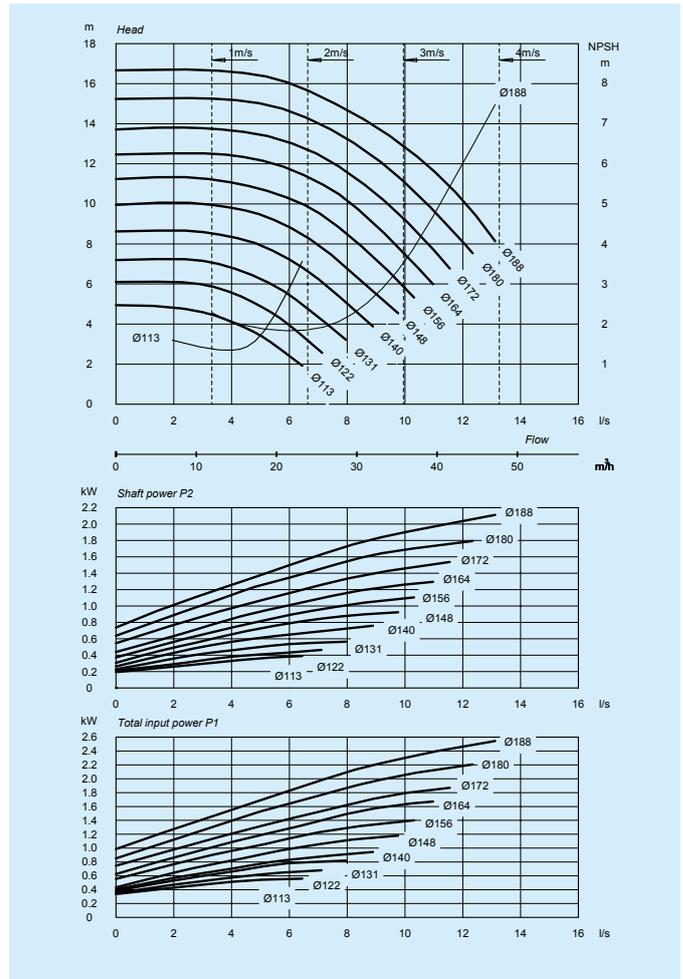
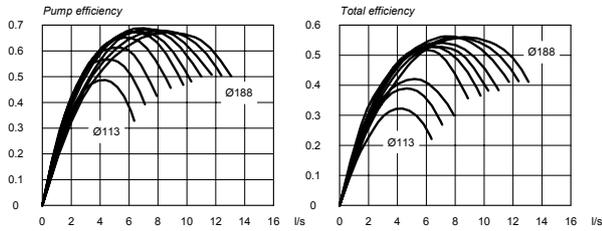
Technical data

LH-65A/4 DN65 1800 r/min

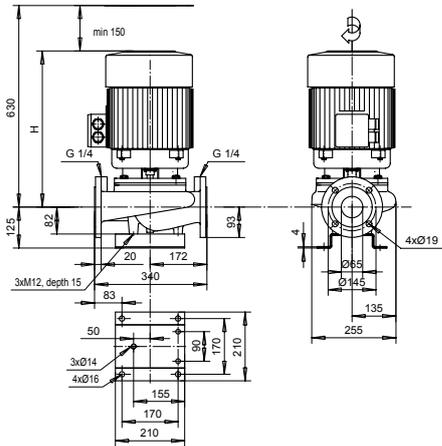


	kW	A	kg	H
OKN-112 C2 F19	2.2 (2.6)	5.1	58	420
OKN-101 D2 F19	1.5 (1.9)	3.5	52	370
OKN-101 C2 F19	1.1 (1.3)	2.6	48	370
OKN-100 B2 F19	0.75 (0.9)	2.0	44	320
OKN-100 B2 F19	0.55 (0.66)	1.4	44	320
OKN-852 D F19	0.37 (0.44)	1.0	37	310

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

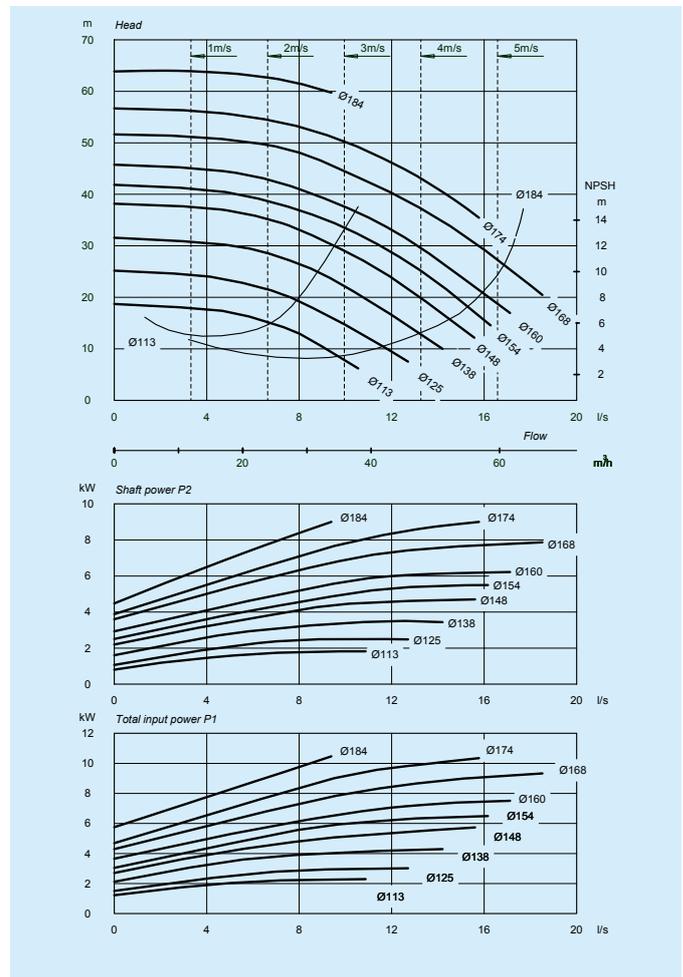
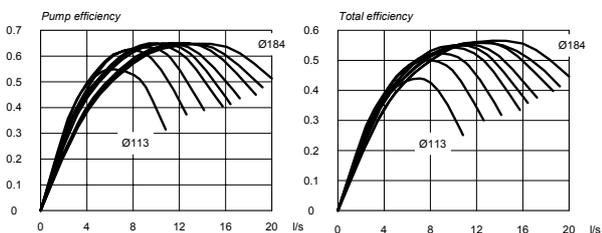


LH-65B/2 DN65 3600 r/min



	kW	A	kg	H
OKN-132 E1 F19	7.5 (9)	15.0	94	480
OKN-132 C1 F19	5.5 (6.6)	11.0	86	480
OKN-112 E1 F19	4.0 (4.8)	8.2	62	415
OKN-112 C1 F19	3.0 (3.6)	6.4	58	415
OKN-101 D1 F19	2.2 (2.6)	4.7	52	370
OKN-101 C1 F19	1.5 (1.8)	3.3	51	370

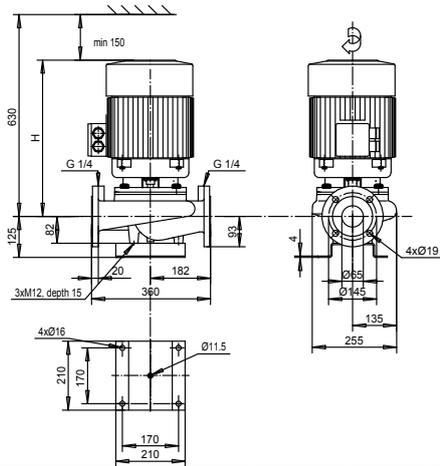
Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



Technical data

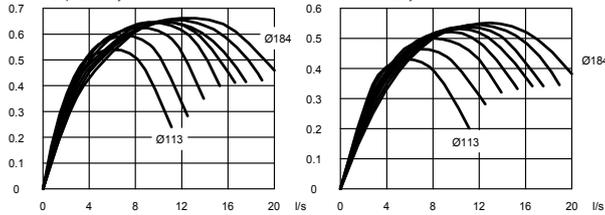
Only available in bronze / stainless steel

AL₅-1065/2 DN65 3600 r/min



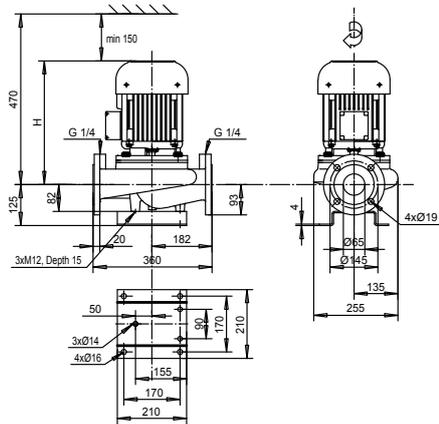
	kW	A	kg	H
OKN-132 E1 F19	7.5 (9)	15.0	94	480
OKN-132 C1 F19	5.5 (6.6)	11.0	86	480
OKN-112 E1 F19	4.0 (4.8)	8.2	62	415
OKN-112 C1 F19	3.0 (3.6)	6.4	58	415
OKN-101 D1 F19	2.2 (2.6)	4.7	52	370
OKN-101 C1 F19	1.5 (1.8)	3.3	51	370

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.
Pump efficiency



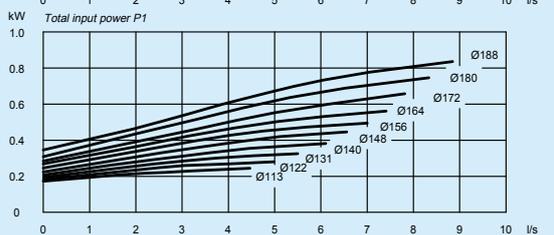
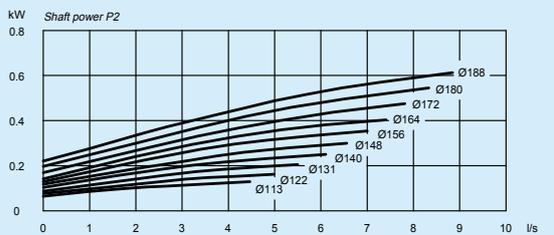
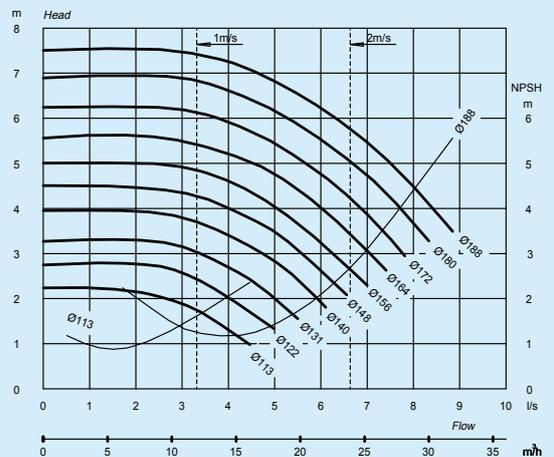
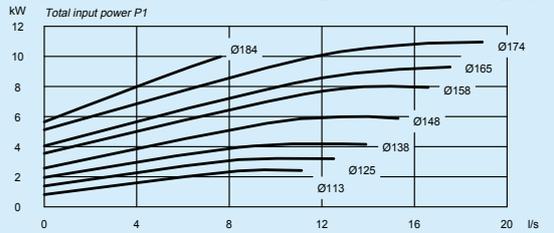
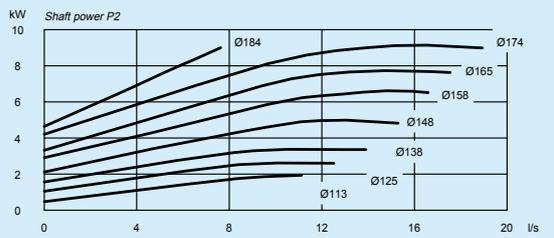
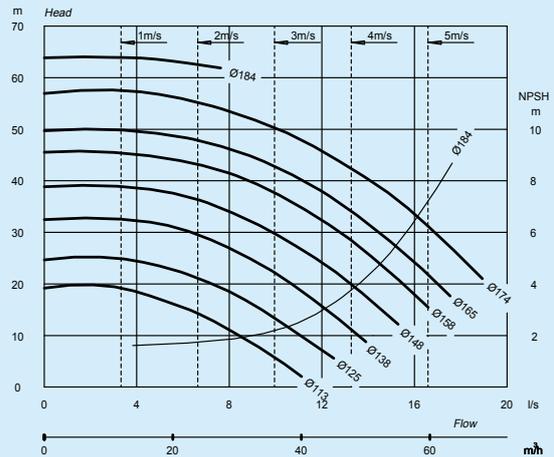
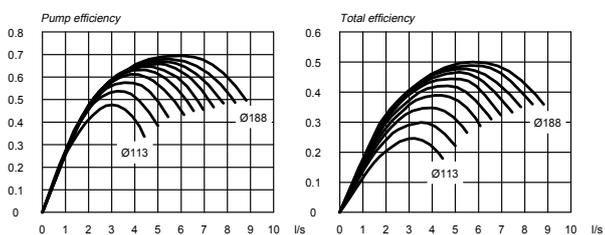
Only available in bronze

ALP-1066/6 DN65 1200 r/min



	kW	A	kg	H
OKN-101 C3 F19	0.55 (0.66)	1.75	48	370
OKN-100 B3 F19	0.37 (0.44)	1.20	44	320
OKN-100 B3 F19	0.18 (0.21)	0.95	44	320

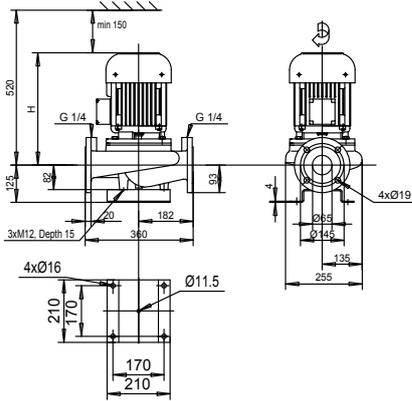
Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



Technical data

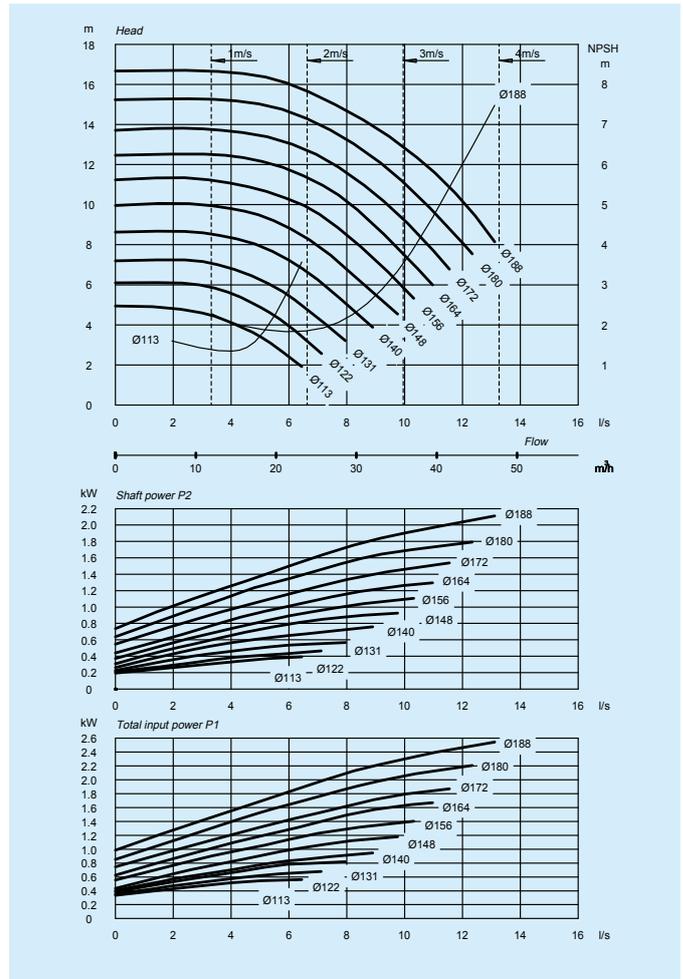
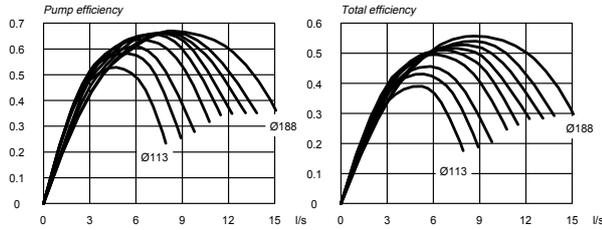
Only available in bronze

ALP-1066/4 DN65 1800 r/min

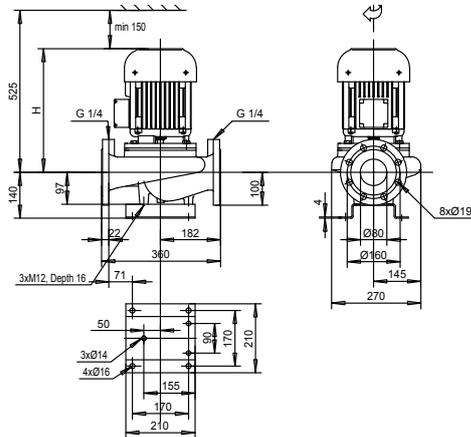


	kW	A	kg	H
OKN-112 C2 F19	2.2 (2.6)	5.1	58	420
OKN-101 D2 F19	1.5 (1.8)	3.5	52	370
OKN-101 C2 F19	1.1 (1.3)	2.6	48	370
OKN-100 B2 F19	0.75 (0.9)	2.0	44	320
OKN-100 B2 F19	0.55 (0.66)	1.4	44	320
OKN-852 D F19	0.37 (0.44)	1.0	37	310

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

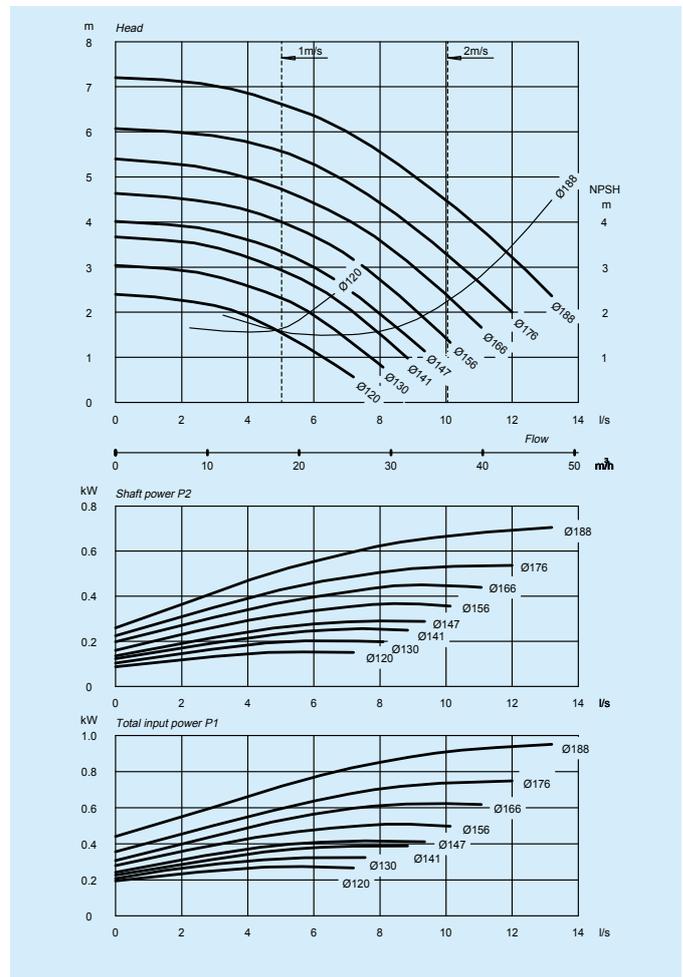
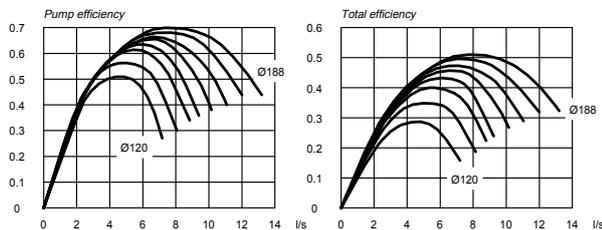


LH-80A/6 DN80 1200 r/min



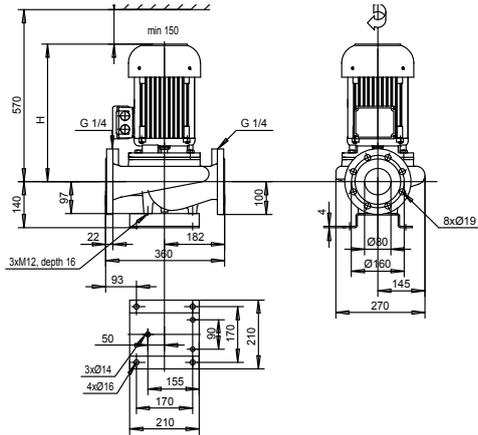
	kW	A	kg	H
OKN-101 D3 F19	0.75 (0.9)	2.4	56	375
OKN-101 C3 F19	0.55 (0.66)	1.75	52	375
OKN-100 B3 F19	0.37 (0.44)	1.2	48	325
OKN-100 B3 F19	0.18 (0.21)	0.95	48	325

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



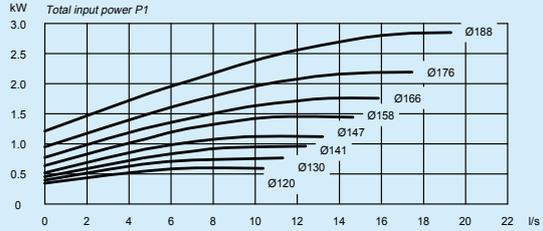
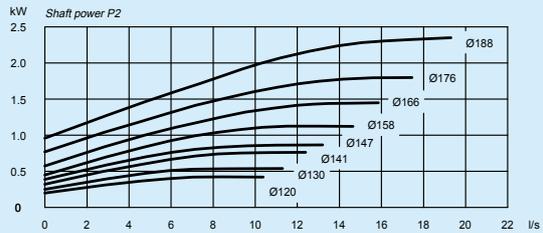
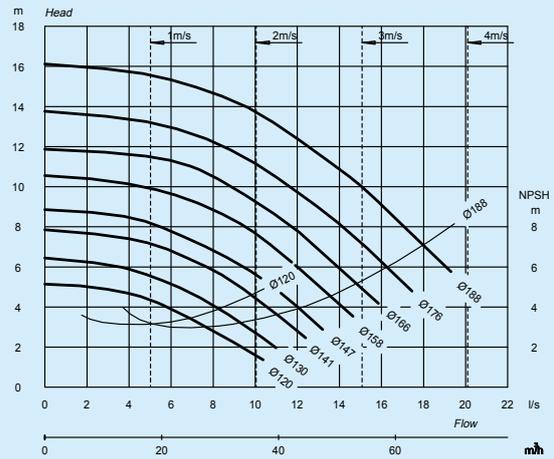
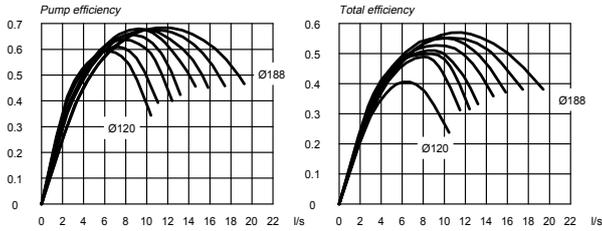
Technical data

LH-80A/4 DN80 1800 r/min

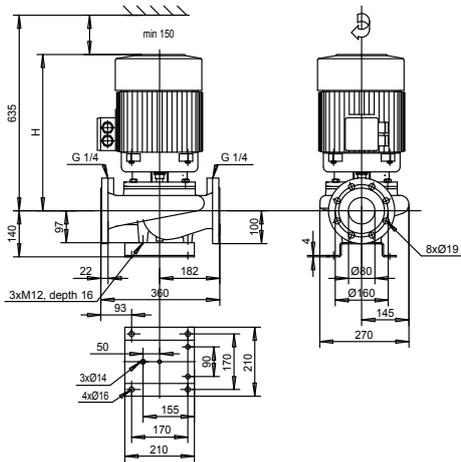


	<i>kW</i>	<i>A</i>	<i>kg</i>	<i>H</i>
OKN-112 E2 F19	3.0 (3.6)	6.6	67	420
OKN-112 C2 F19	2.2 (2.6)	5.1	62	420
OKN-101 D2 F19	1.5 (1.8)	3.5	53	375
OKN-101 C2 F19	1.1 (1.3)	2.6	51	375
OKN-100 B2 F19	0.75 (0.9)	2.0	46	325
OKN-100 B2 F19	0.55 (0.66)	1.4	46	325
OKN-852 D F19	0.37 (0.44)	1.0	38	315

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

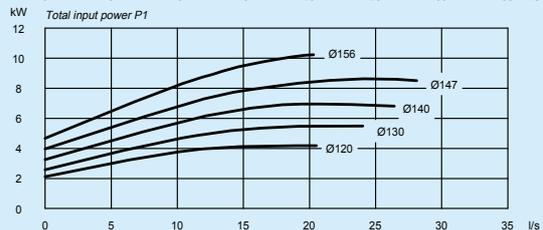
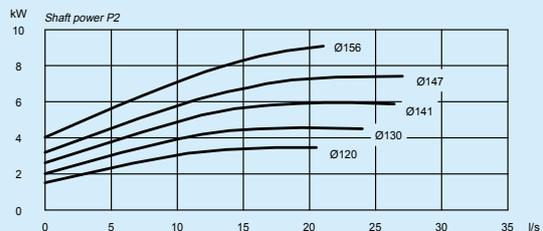
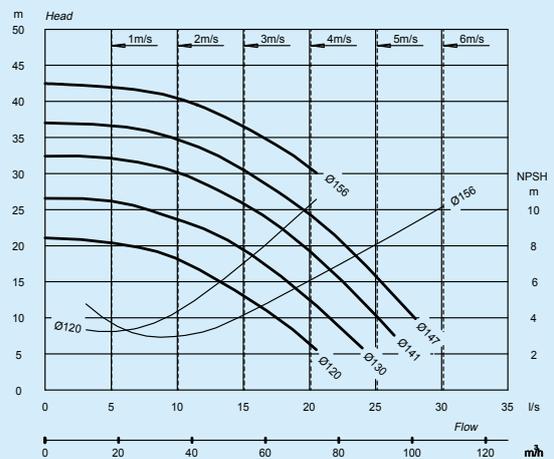
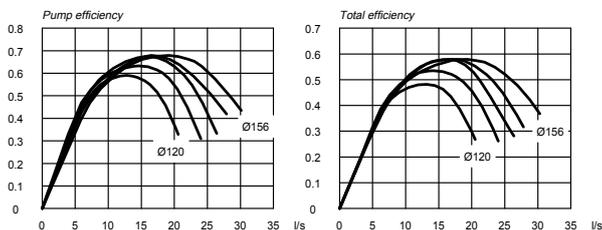


LH-80A/2 DN80 3600 r/min



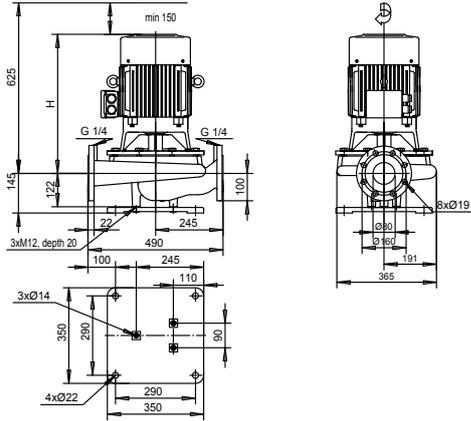
	<i>kW</i>	<i>A</i>	<i>kg</i>	<i>H</i>
OKN-132 E1 F19	7.5 (9)	15.0	96	485
OKN-132 C1 F19	5.5 (6.6)	11.0	88	485
OKN-112 E1 F19	4.0 (4.8)	8.2	64	420
OKN-112 C1 F19	3.0 (3.6)	6.4	59	420

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



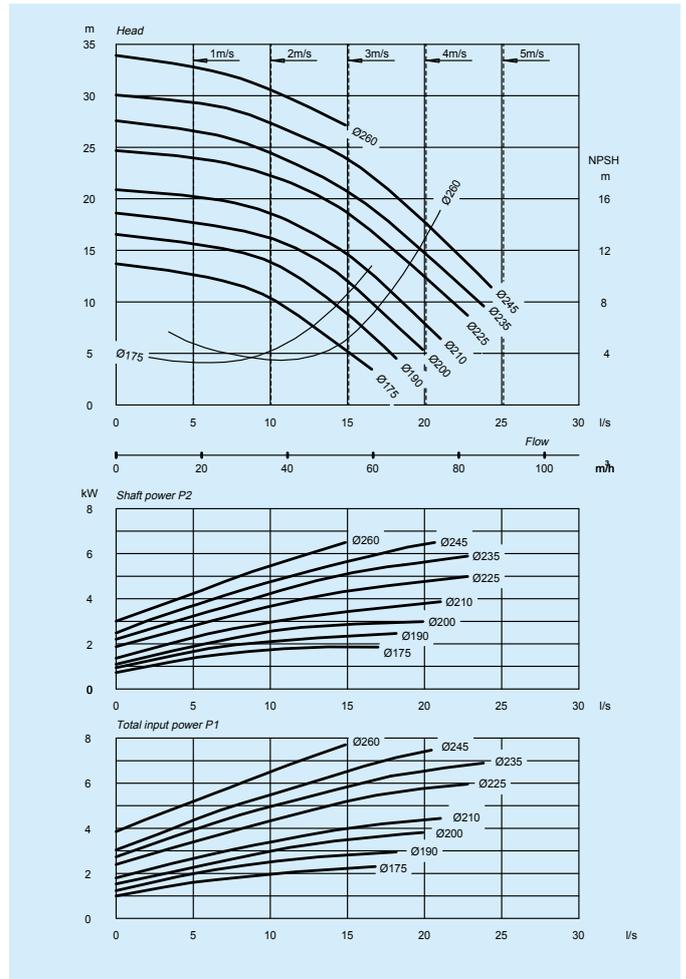
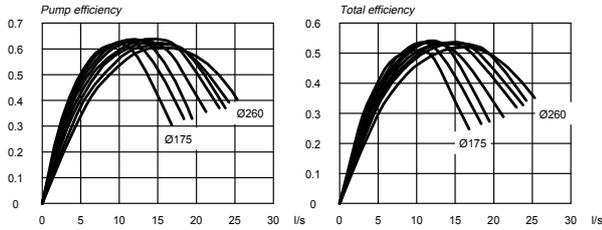
Technical data

LH-80S/4 DN80 1800 r/min

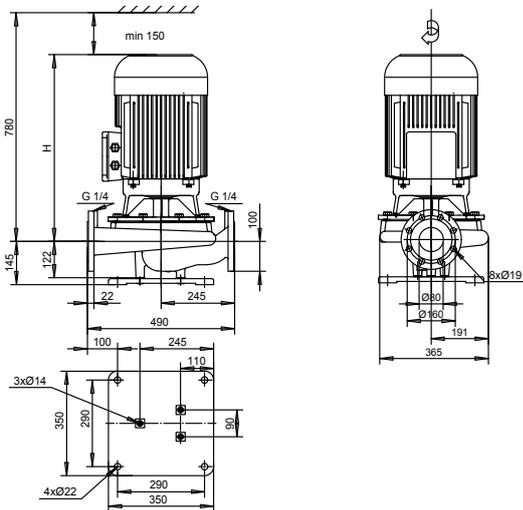


	<i>kW</i>	<i>A</i>	<i>kg</i>	<i>H</i>
OKN-132B E2 F29	5.5 (6.0)	11.9	135	510
OKN-132B C2 F29	4 (4.8)	8.7	128	510
OKN-112 E2 F29	3 (3.6)	6.6	102	475
OKN-112 C2 F29	2.2 (2.6)	5.1	98	475

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

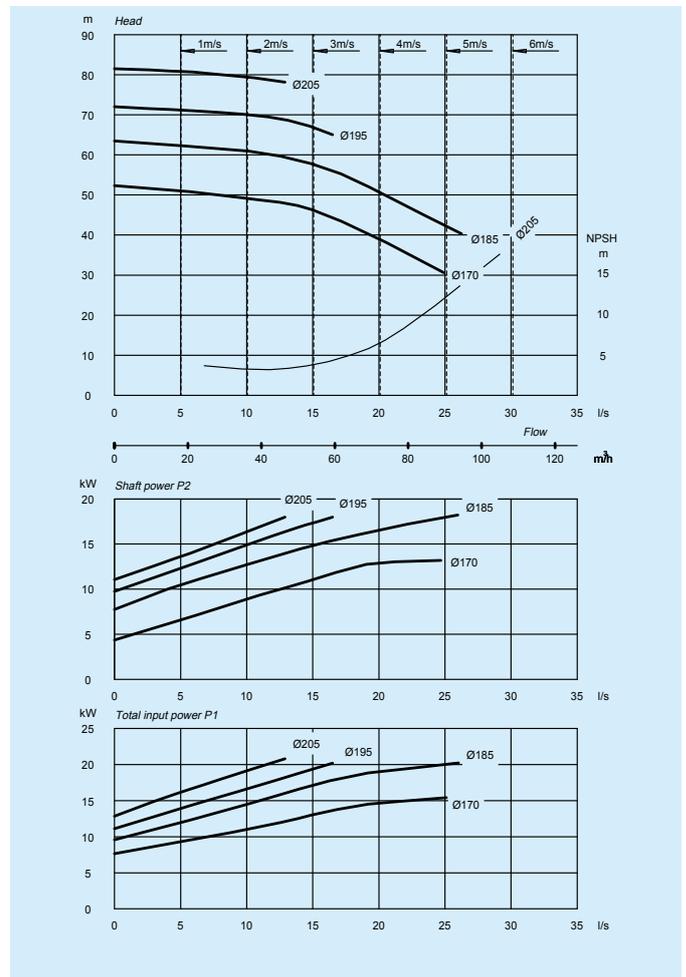
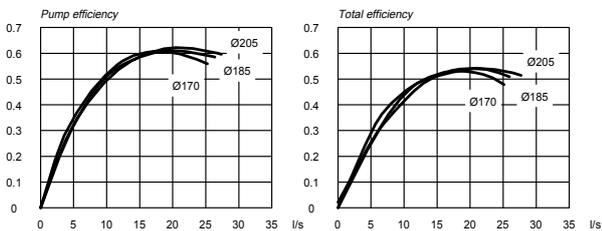


LH-80S/2 DN80 3600r/min



	<i>kW</i>	<i>A</i>	<i>kg</i>	<i>H</i>
OKN-164 G1 F29	15 (18)	30.5	189	630
OKN-164 F1 F29	11 (13)	22.0	184	630
OKN-132 E1 F29	7.5 (9)	15.0	138	500

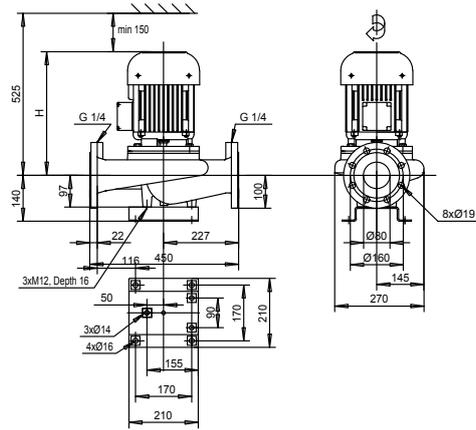
Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



Technical data

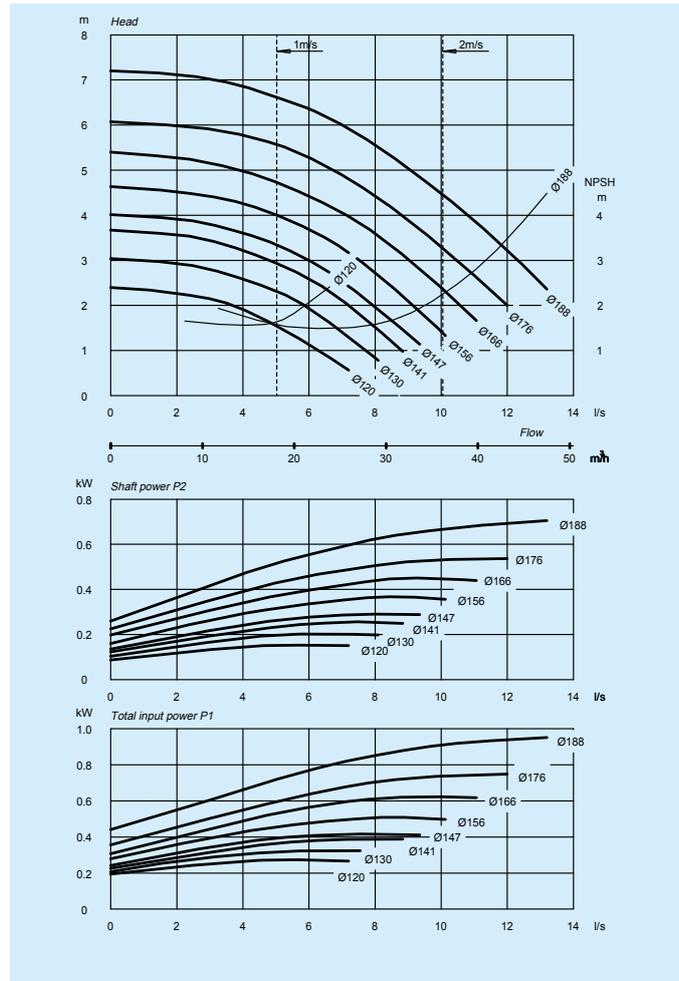
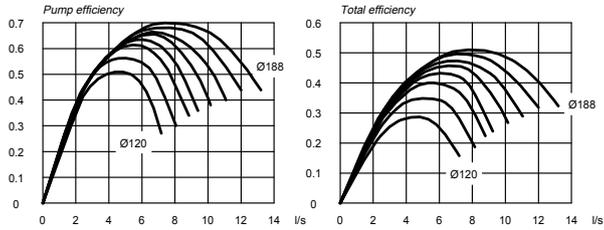
Only available in stainless steel

ALS-1081/6 DN80 1200 r/min



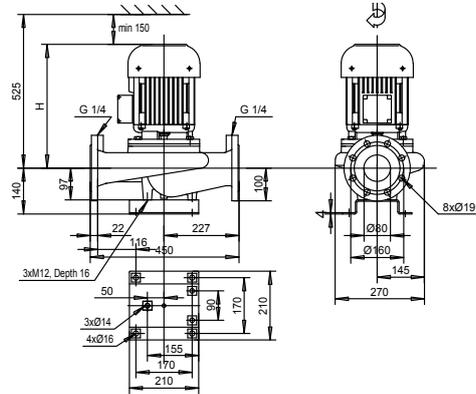
	<i>kW</i>	<i>A</i>	<i>kg</i>	<i>H</i>
OKN-101 D3 F19	0.75 (0.9)	2.4	56	375
OKN-101 C3 F19	0.55 (0.66)	1.75	52	375
OKN-100 B3 F19	0.37 (0.44)	1.2	48	325
OKN-100 B3 F19	0.18 (0.21)	0.95	48	325

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



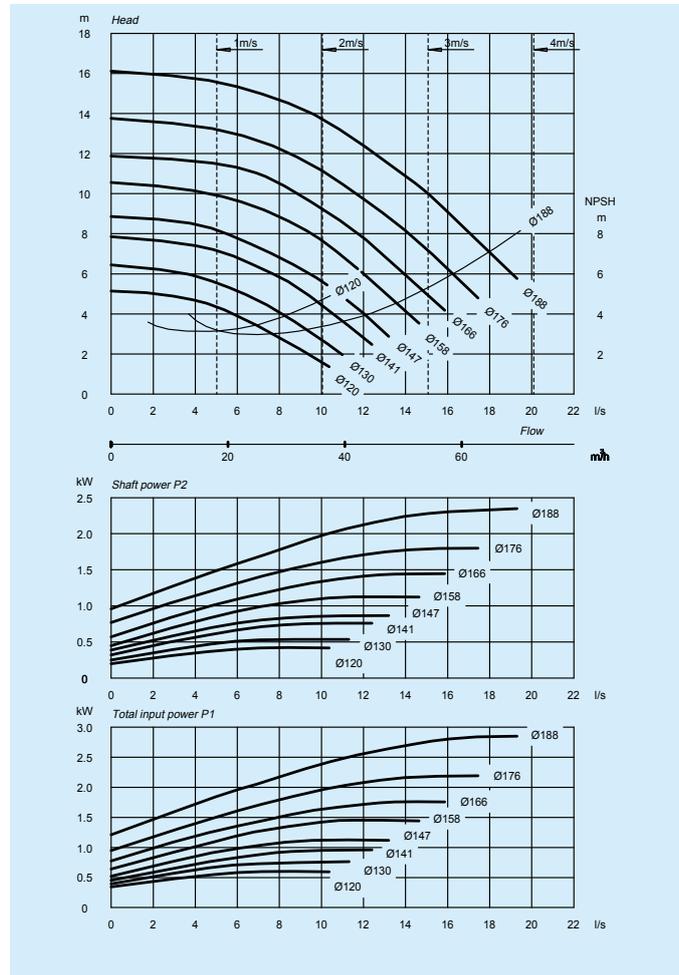
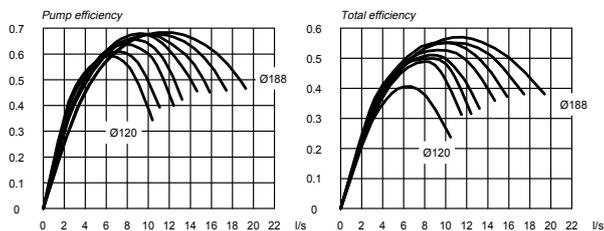
Only available in stainless steel

ALS-1081/4 DN80 1800 r/min



	<i>kW</i>	<i>A</i>	<i>kg</i>	<i>H</i>
OKN-112 E2 F19	3.0 (3.6)	6.6	67	420
OKN-112 C2 F19	2.2 (2.6)	5.1	62	420
OKN-101 D2 F19	1.5 (1.8)	3.5	53	375
OKN-101 C2 F19	1.1 (1.3)	2.6	51	375
OKN-100 B2 F19	0.75 (0.9)	2.0	46	325
OKN-100 B2 F19	0.55 (0.66)	1.4	46	325
OKN-852 D F19	0.37 (0.44)	1.0	38	315

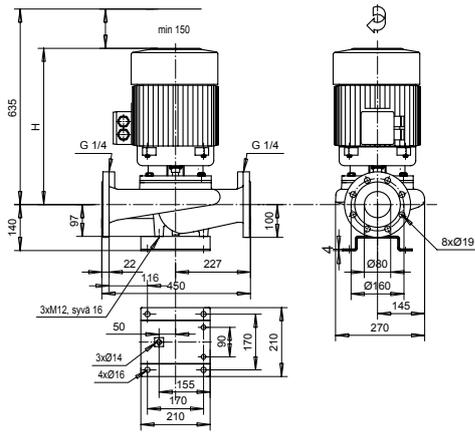
Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



Technical data

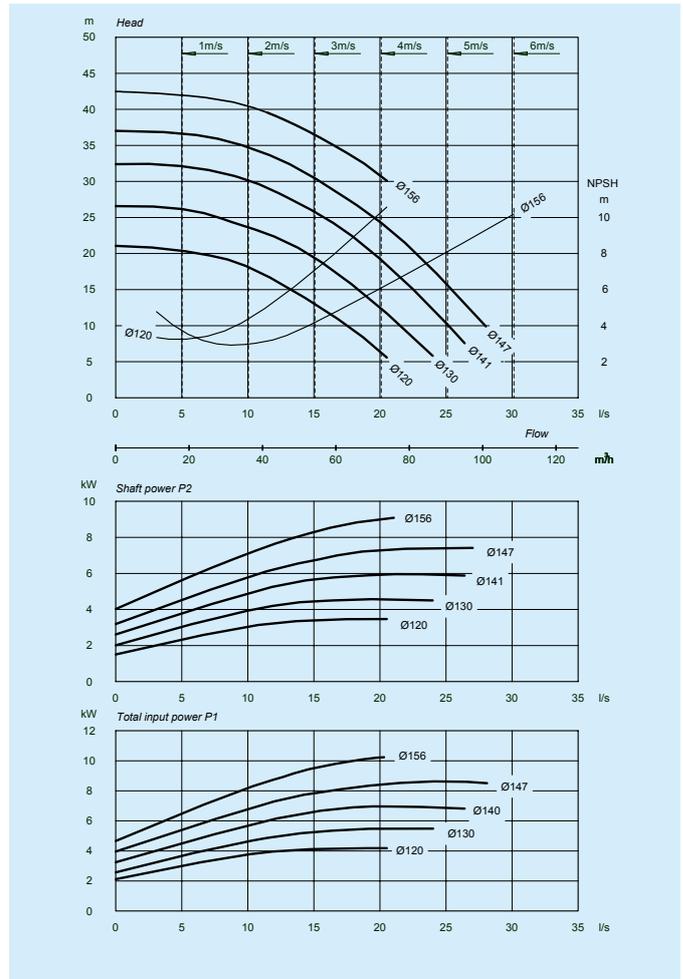
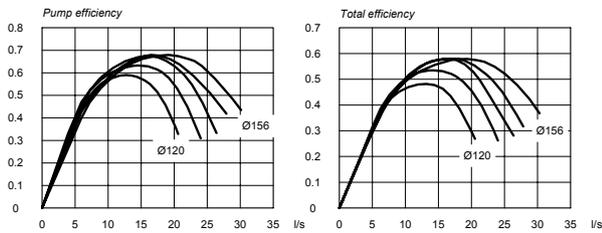
Only available in stainless steel

ALS-1081/2 DN80 3600 r/min

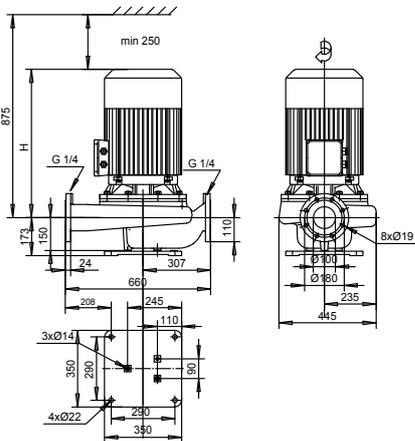


	kW	A	kg	H
OKN-132 E1 F19	7.5 (9)	15.0	96	485
OKN-132 C1 F19	5.5 (6.6)	11.0	88	485
OKN-112 E1 F19	4.0 (4.8)	8.2	64	420
OKN-112 C1 F19	3.0 (3.6)	6.4	59	420

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

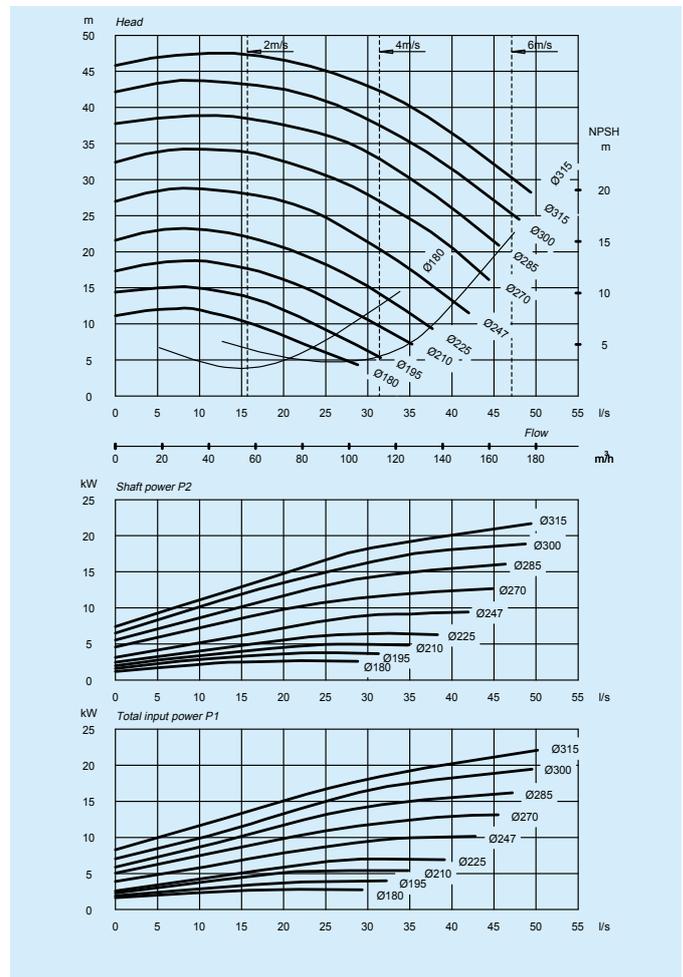
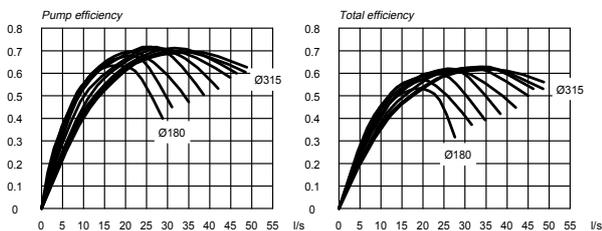


LH-100S/4 DN100 1800r/min



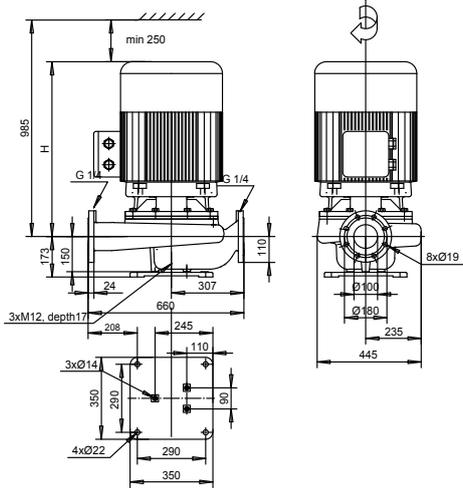
	kW	A	kg	H
OKM-187 H2 F31	18.5 (22)	34	245	640
OKN-164B J2 F31	15.0 (18)	31.0	225	600
OKN-164B G2 F31	11.0 (13)	22.6	215	600
OKN-133B G2 F31	7.5 (9)	15.7	188	555
OKN-132B E2 F31	5.5 (6.6)	11.9	176	505
OKN-132B C2 F31	4.0 (4.8)	8.7	169	505
OKN-112 E2 F31	3.0 (3.6)	6.6	141	440

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



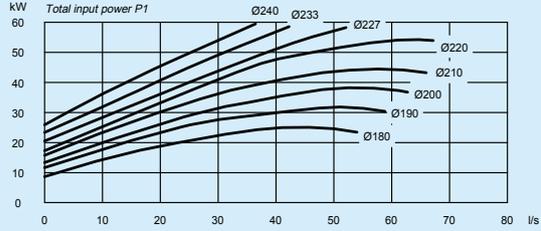
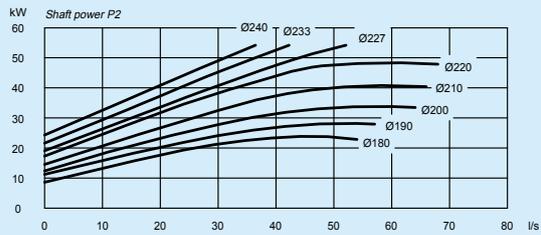
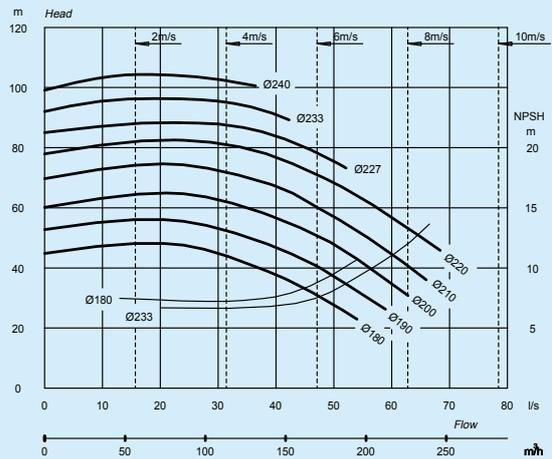
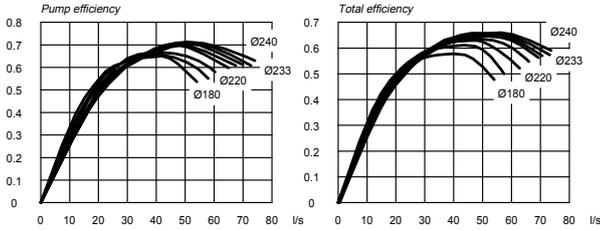
Technical data

LH-100S/2 DN100 3600r/min

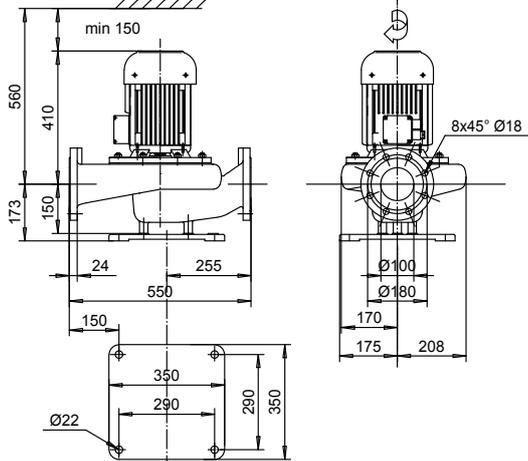


	kW	A	kg	H
OKM-227 K1 F32	45 (54)	77.5	412	735
OKM-207 J1 F31	37 (44)	64	372	735
OKM-206 K1 F31	30 (36)	53	312	645
OKM-187 G1 F31	22 (26)	38	282	645
OKM-165 H1 F31	18.5 (22)	34	252	630

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

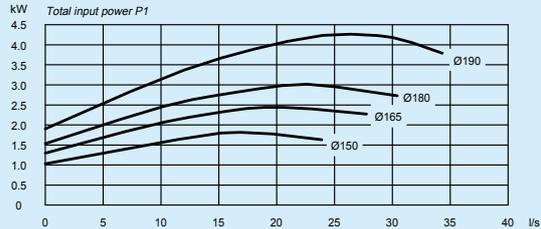
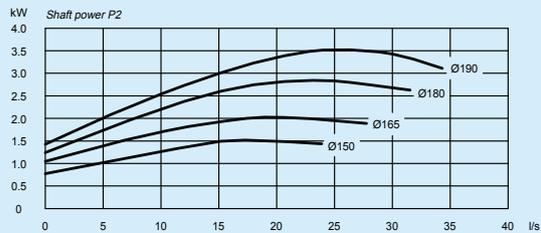
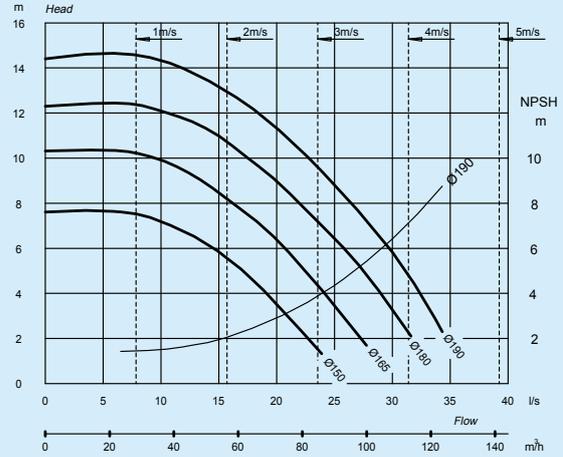
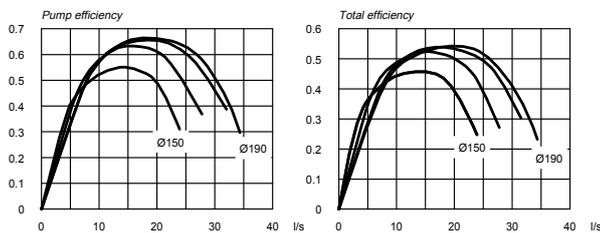


AKNH-100/4 DN100 1800 r/min



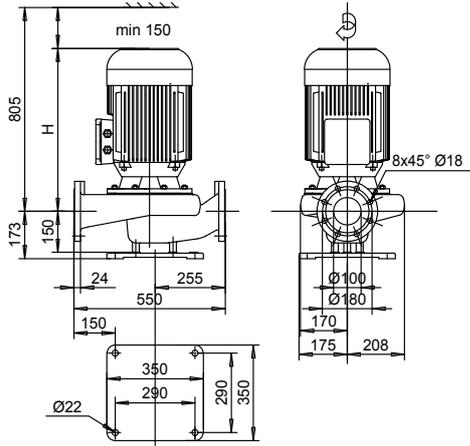
	kW	A	kg	H
OKN-112 E2 N26	3.0 (3.6)	6.6	98	410
OKN-112 C2 N26	2.2 (2.6)	5.1	93	410
OKN-101 D2 N26	1.5 (1.8)	3.5	87	365

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



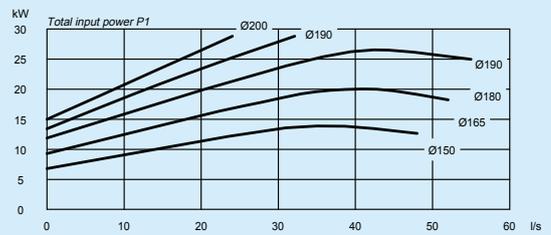
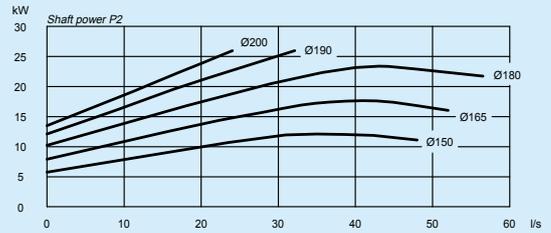
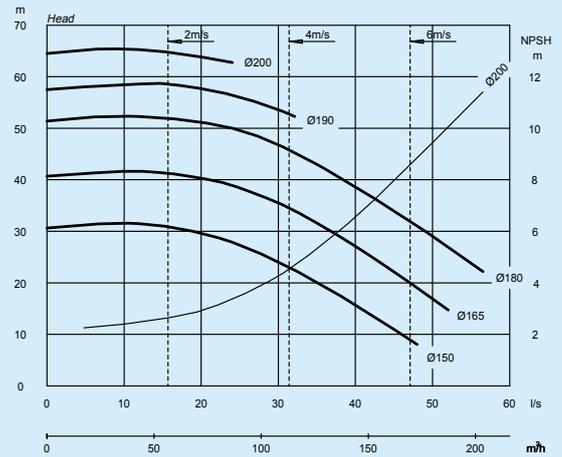
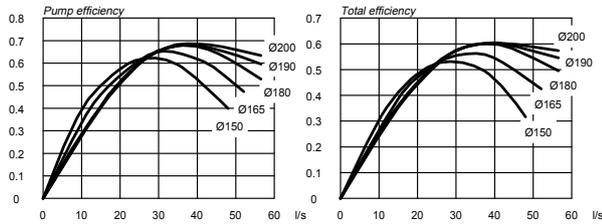
Technical data

AKNH-100/2 DN100 3600 r/min

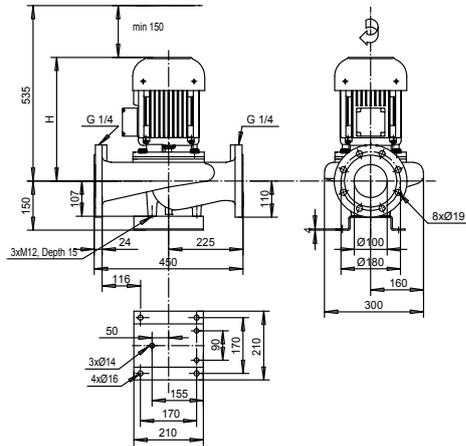


	kW	A	kg	H
OKM-187 G1 N26	22 (26)	38.0	240	655
OKM-187 G1 N26	18.5 (22)	32.0	240	655
OKN-164 G1 N26	15 (18)	30.5	173	600
OKN-164 F1 N26	11 (13)	22.5	171	600
OKN-132 E1 N26	7.5 (9)	15.0	129	470

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

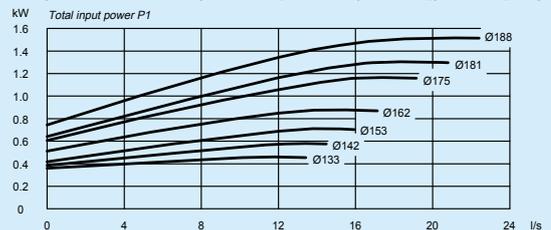
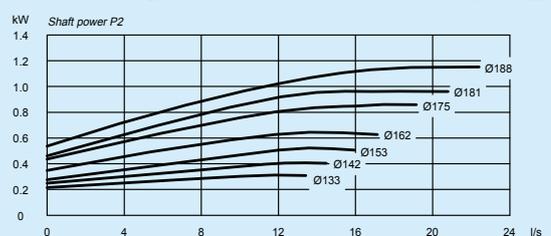
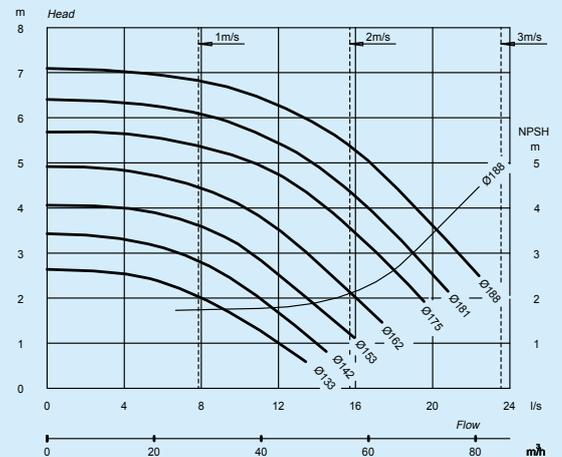
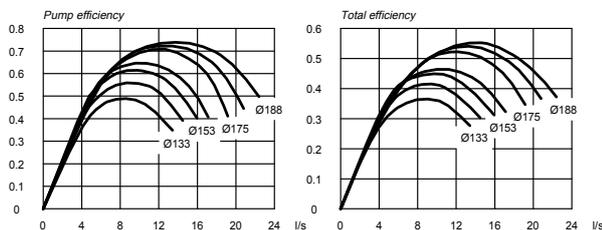


ALP-1102/6 DN100 1200 r/min



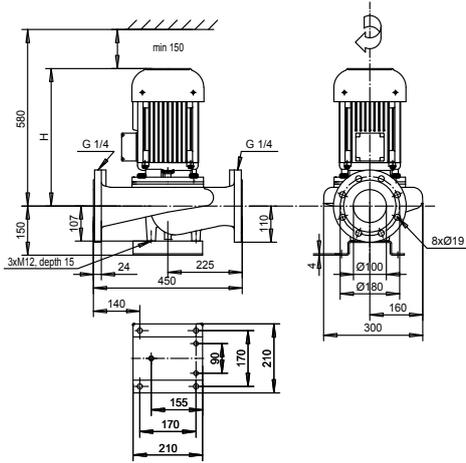
	kW	A	kg	H
OKN-101 D3 F19	1.1 (1.3)	3.5	62	385
OKN-101 D3 F19	0.75 (0.9)	2.4	62	385
OKN-101 C3 F19	0.55 (0.66)	1.75	60	385
OKN-100 B3 F19	0.37 (0.44)	1.2	55	335

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



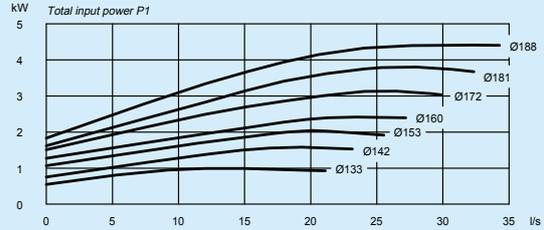
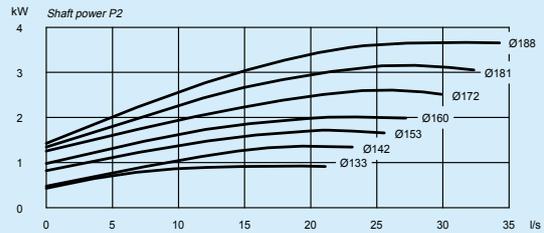
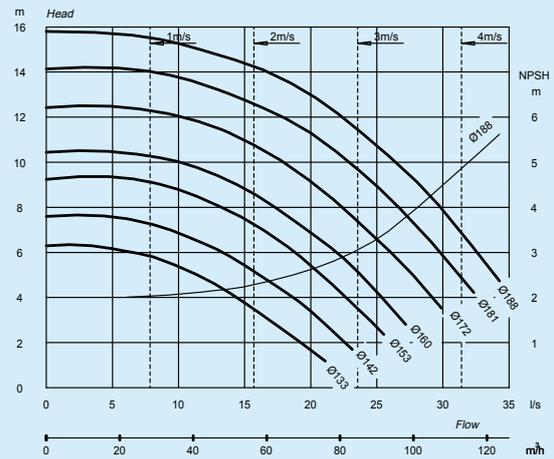
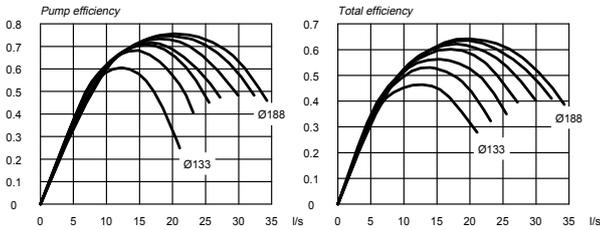
Technical data

ALP-1102/4 DN100 1800 r/min

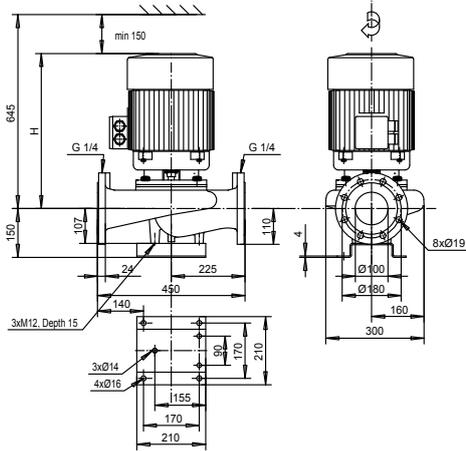


	kW	A	kg	H
OKN-112 E2 F19	3 (3.6)	6.6	78	430
OKN-112 C2 F19	2.2 (2.6)	5.1	68	430
OKN-101 D2 F19	1.5 (1.8)	3.5	63	385
OKN-101 C2 F19	1.1 (1.3)	2.6	60	385
OKN-100 B2 F19	0.75 (0.9)	2.0	55	335

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

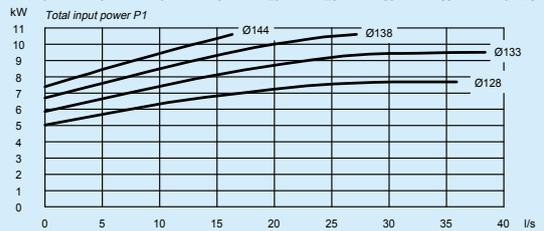
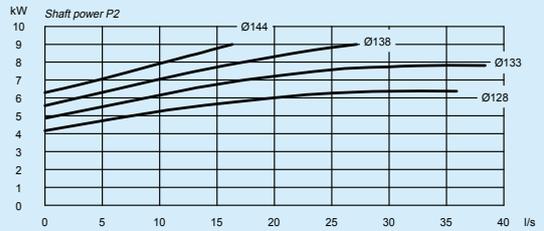
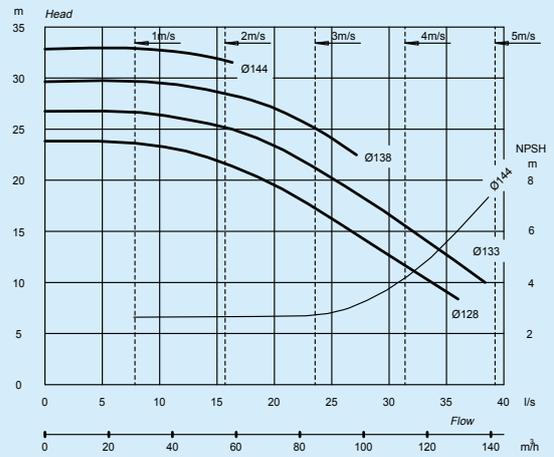
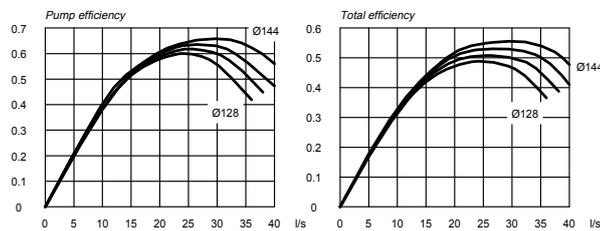


ALP-1102/2 DN100 3600 r/min



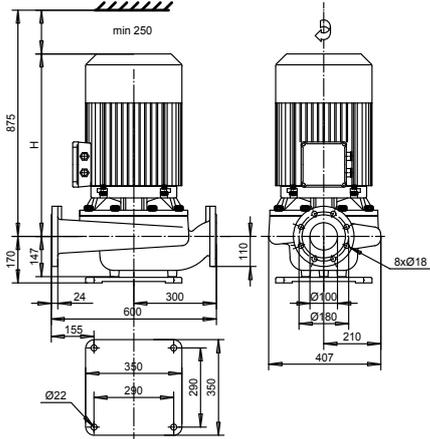
	kW	A	kg	H
OKN-132 E1 F19	7.5 (9)	15.0	109	495
OKN-132 C1 F19	5.5 (6.6)	11.0	99	495
OKN-112 E1 F19	4.0 (4.8)	8.2	75	430

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



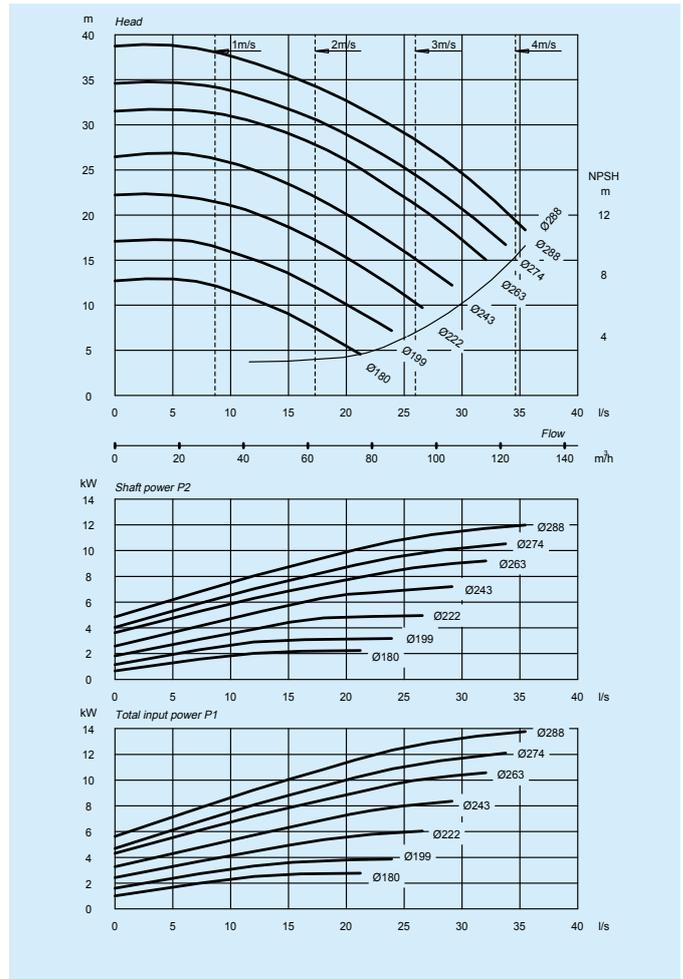
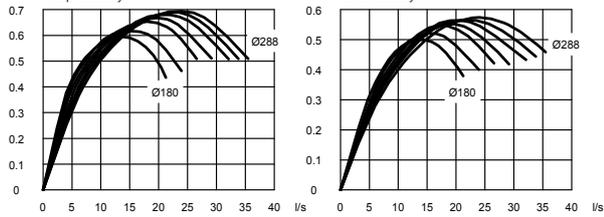
Technical data

AL_S^H-1106/4 DN100 1800 r/min

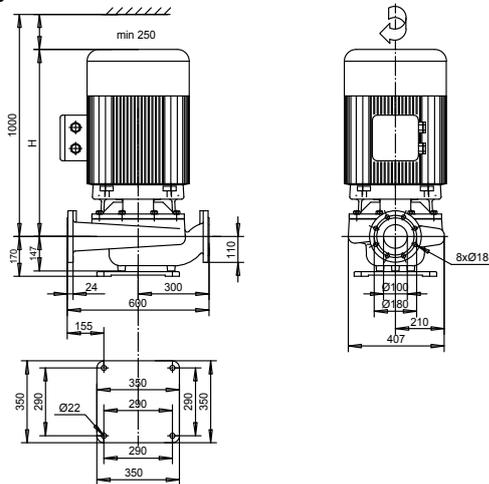


	kW	A	kg	H
OKM-187 H2 F31	18.5(22)	34	245	625
OKN-164B J2 F31	15 (18)	31.0	230	585
OKN-164B G2 F31	11 (13)	22.6	215	585
OKN-133B G2 F31	7.5 (9.0)	15.7	177	550
OKN-132B E2 F31	5.5 (6.6)	11.9	165	500
OKN-132B C2 F31	4.0 (4.8)	8.7	158	500
OKN-112 E2 F31	3.0 (3.6)	6.6	131	430

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

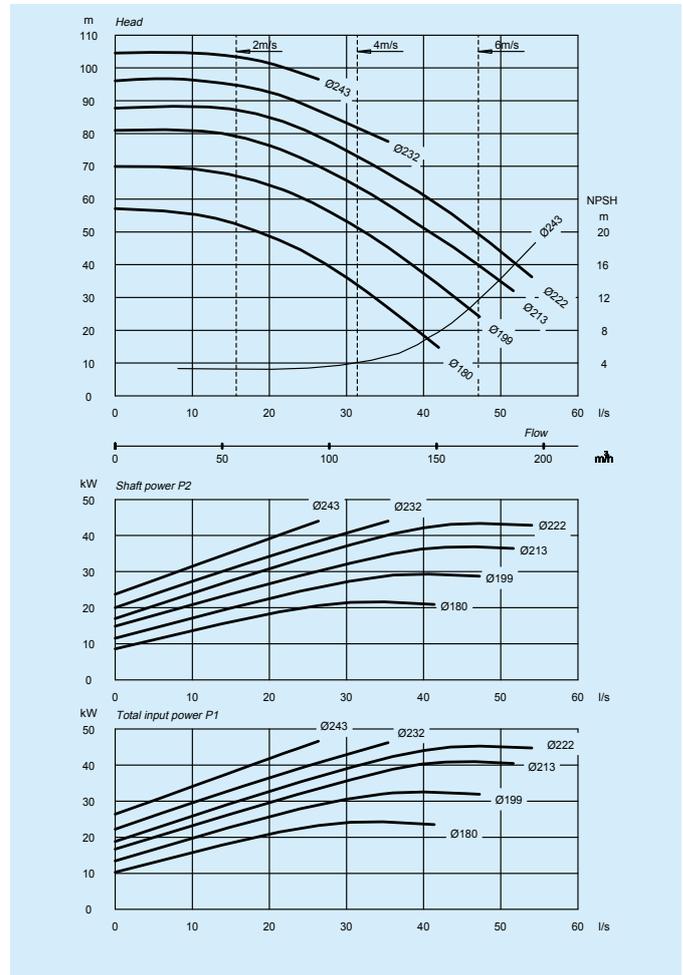
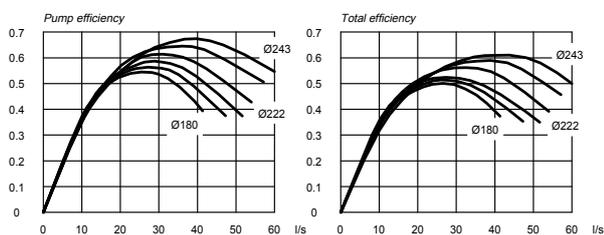


AL_S^H-1106/2 DN100 3600 r/min



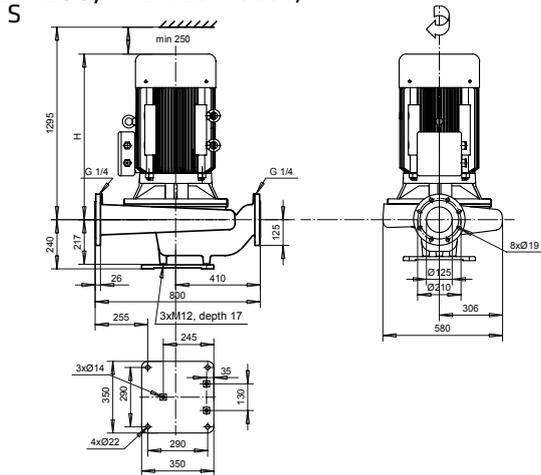
	kW	A	kg	H
OKM-207 J1 F31	37 (44)	64	380	730
OKM-206 K1 F31	30 (36)	53	300	640
OKM-187 G1 F31	22 (26)	38	270	640
OKM-165 H1 F31	18.5 (22)	34	240	625

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



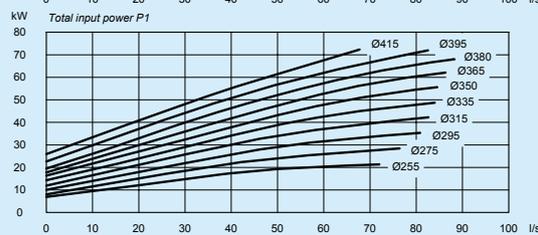
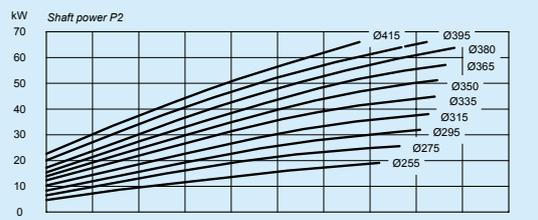
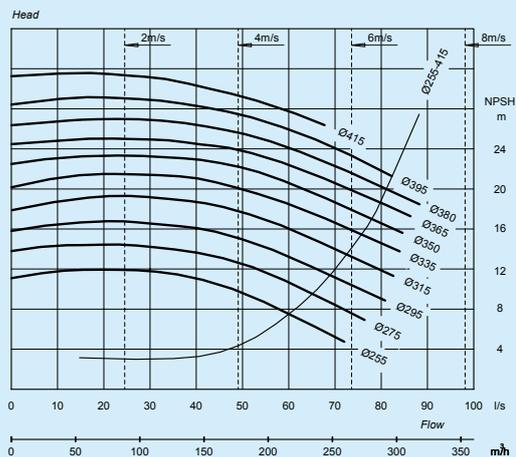
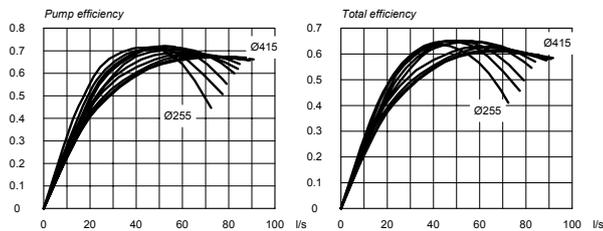
Technical data

LH-125S/4 DN125 1800 r/min

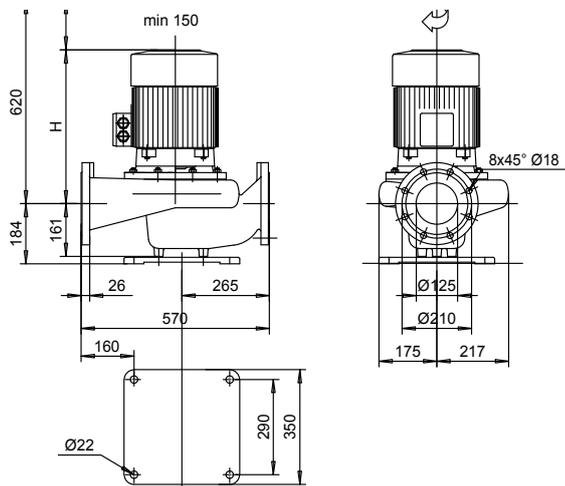


	kW	A	kg	H
OKM-257 K2 F42	55 (66)	100	630	1045
OKM-227B K2 F42	45 (54)	81	550	810
OKM-207B K2 F41	37 (44)	69.5	510	810
OKM-206 K2 F41	30 (36)	55	450	720
OKM-186 J2 F41	22 (26)	42	390	720
OKM-187 H2 F41	18.5 (22)	34	375	705

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

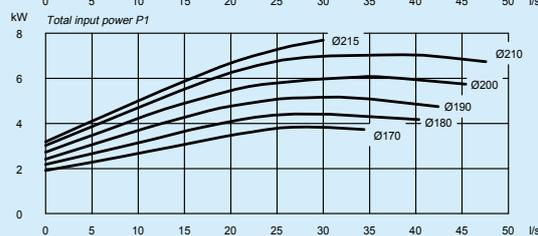
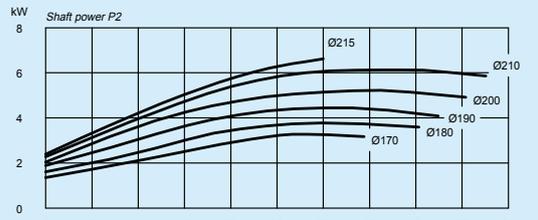
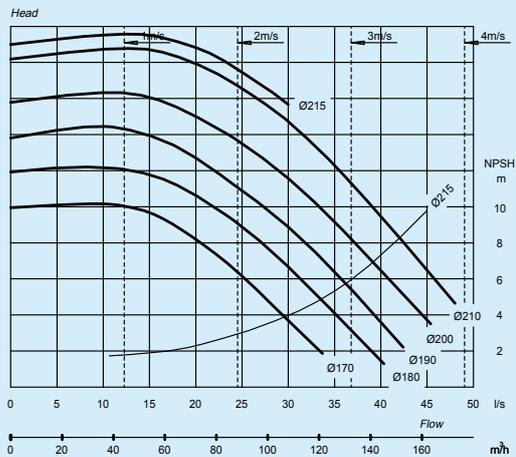
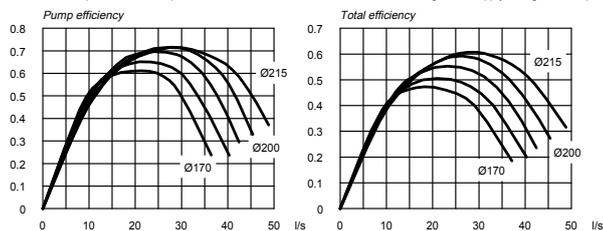


AKN^H-127/4 DN125 1800 r/min



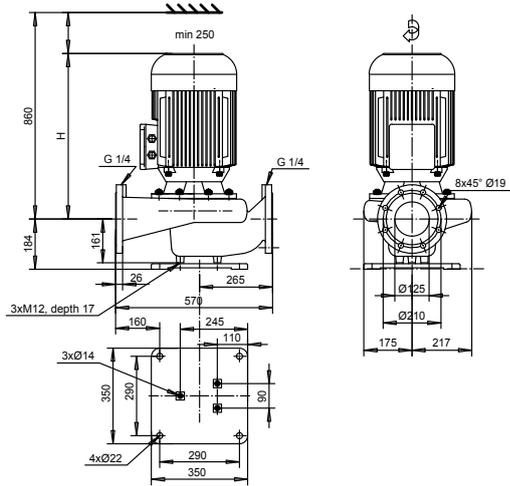
	kW	A	kg	H
OKN-132 E2 N27	5.5 (6.6)	11.9	146	470
OKN-132 C2 N27	4.0 (4.8)	8.7	139	470

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



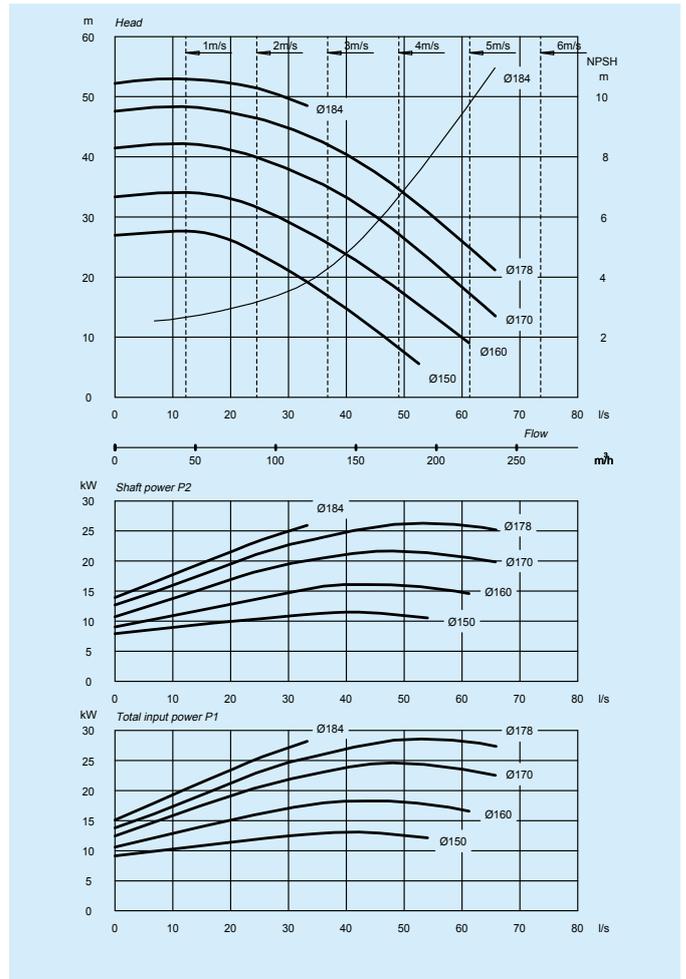
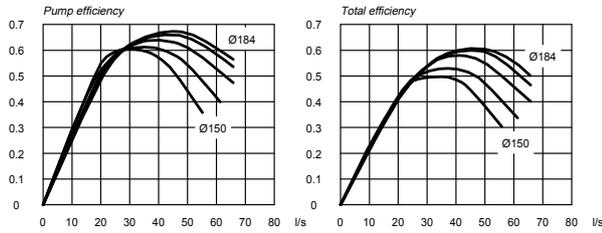
Technical data

AKN H-127/2 DN125 3600 r/min

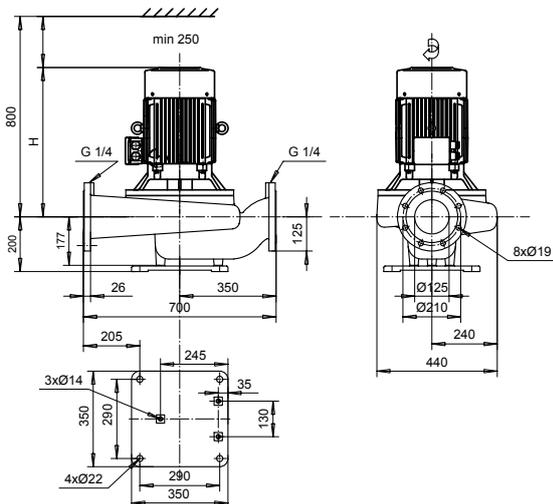


	kW	A	kg	H
OKM-187 G1 N27	22 (26)	38	251	665
OKM-187 G1 N27	18.5 (22)	32	251	665
OKN-164 G1 N27	15 (18)	30.5	185	610
OKN-164 F1 N27	11 (13)	22.0	183	610

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

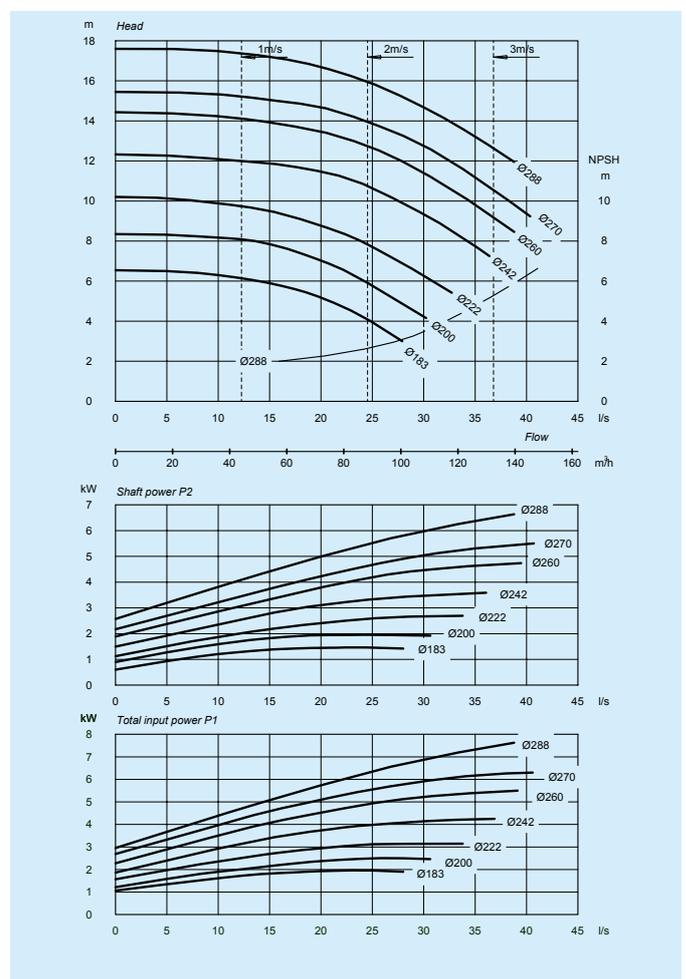
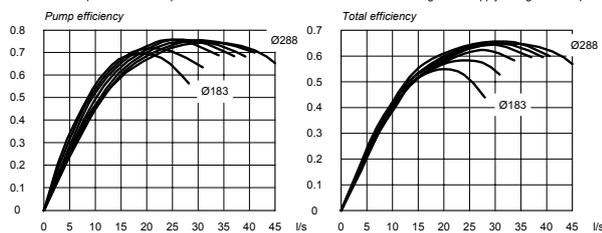


ALp-1129/6 DN125 1200 r/min



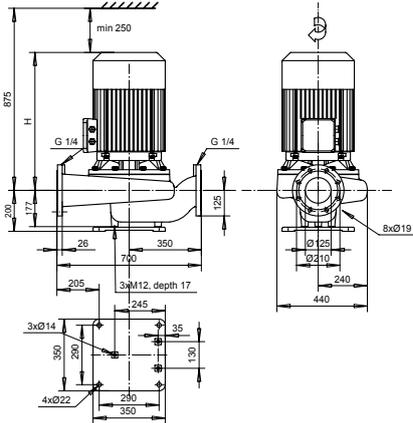
	kW	A	kg	H
OKN-133B G3 F31	5.5 (6.6)	12.7	195	550

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



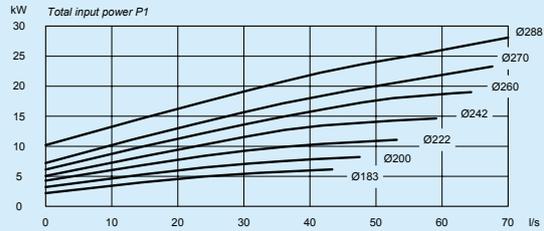
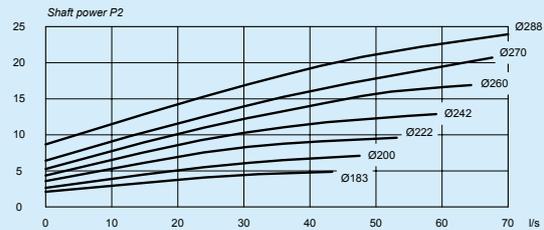
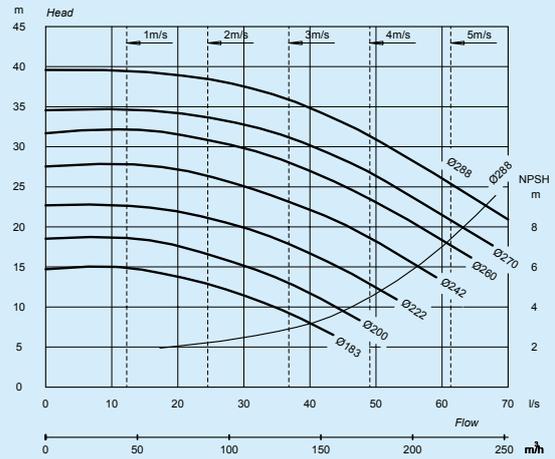
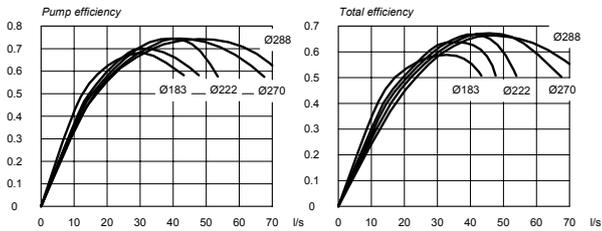
Technical data

H
ALP-1129/4 DN125 1800 r/min
S

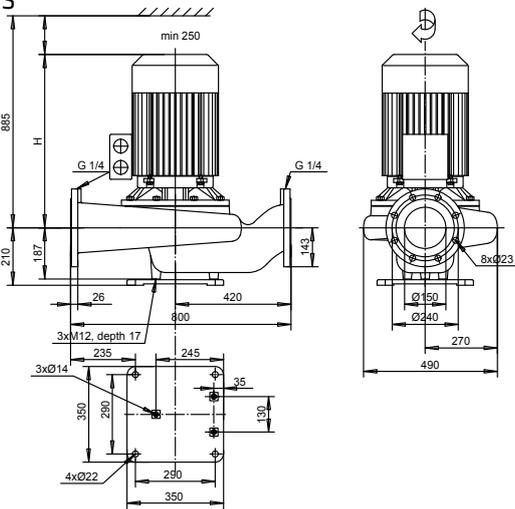


	kW	A	kg	H
OKM-186 J2 F31	22.0 (26)	42	260	640
OKM-187 H2 F31	18.5 (22)	34	245	625
OKN-164B J2 F31	15.0 (18)	31.0	225	585
OKN-164B G2 F31	11.0 (13)	22.6	215	585
OKN-133B G2 F31	7.5 (9)	15.7	188	550
OKN-132B E2 F31	5.5 (6.6)	11.9	146	500
OKN-132B C2 F31	4.0 (4.8)	8.7	141	500

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

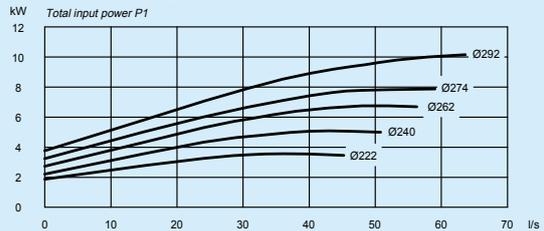
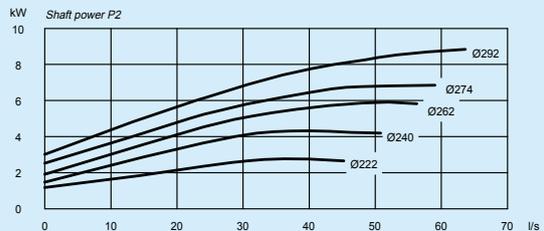
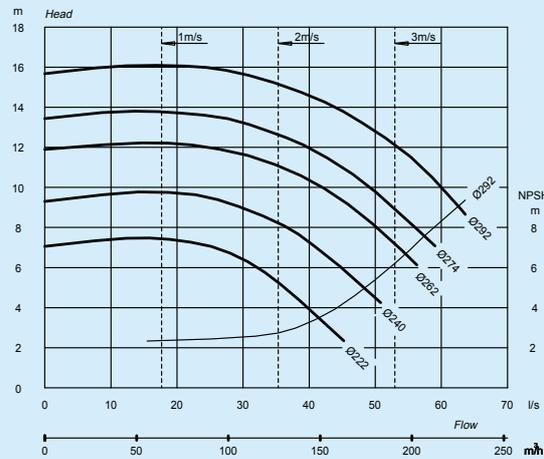
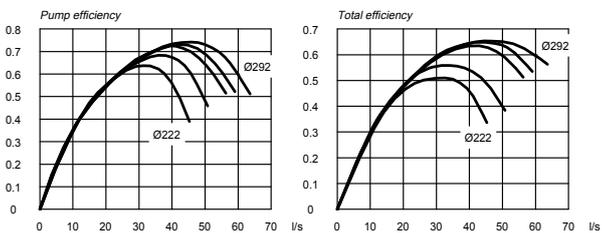


H
ALP-1154/6 DN150 1200 r/min
S



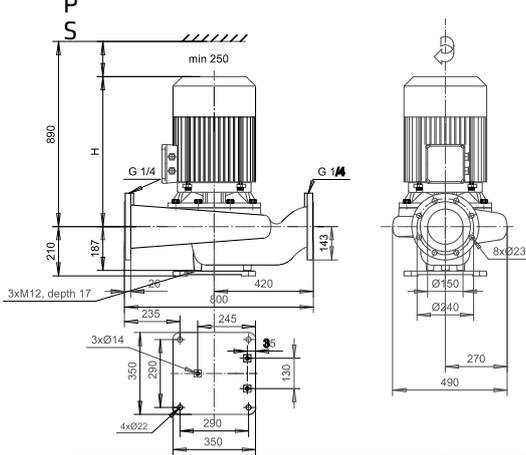
	kW	A	kg	H
OKM-165 G3 F31	11 (13)	22.5	270	635
OKM-165 G3 F31	7.5 (9)	17.0	270	635
OKN-133B G3 F31	5.5 (6.6)	12.7	201	550

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



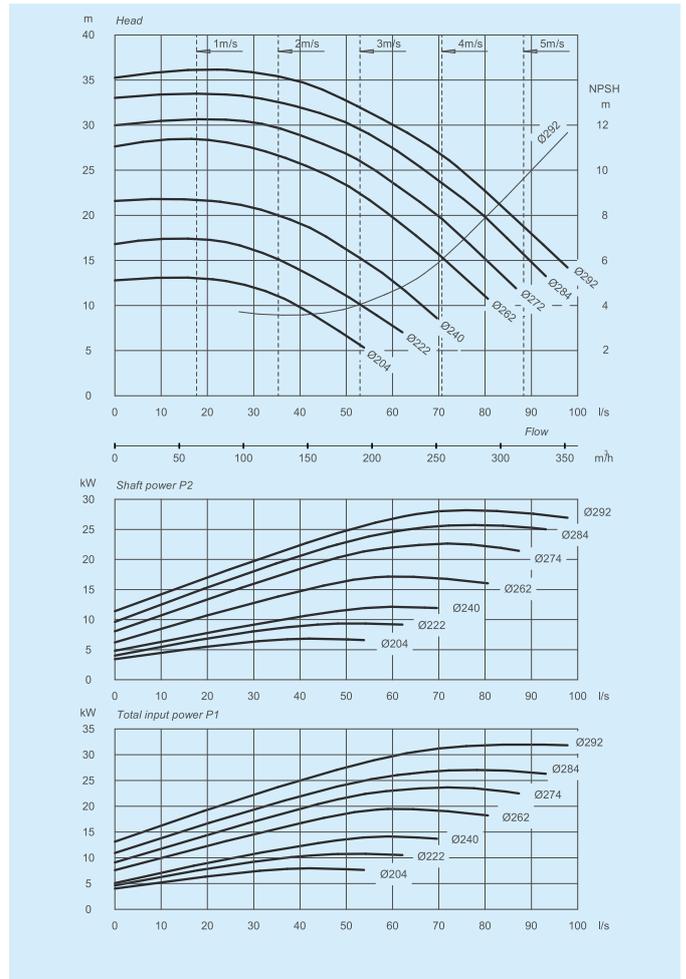
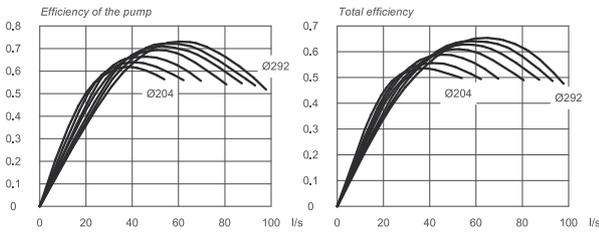
Technical data

ALH-1154/4 DN150 1800 r/min

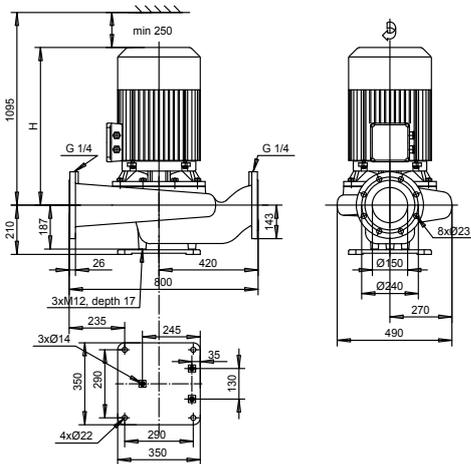


	kW	A	kg	H
OKM-206 K2 F31	30.0 (30.0)	55	360	640
OKM-186 J2 F31	22.0 (26.0)	42	280	640
OKM-187 H2 F31	18.5 (22.0)	34	265	625
OKN-164B J2 F31	15.0 (18.0)	31.0	240	585
OKN-164B G2 F31	11.0 (13.0)	22.6	230	585
OKN-133B G2 F31	7.5 (9.0)	15.7	200	550
OKN-132B E2 F31	5.5 (6.6)	11.9	190	500

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

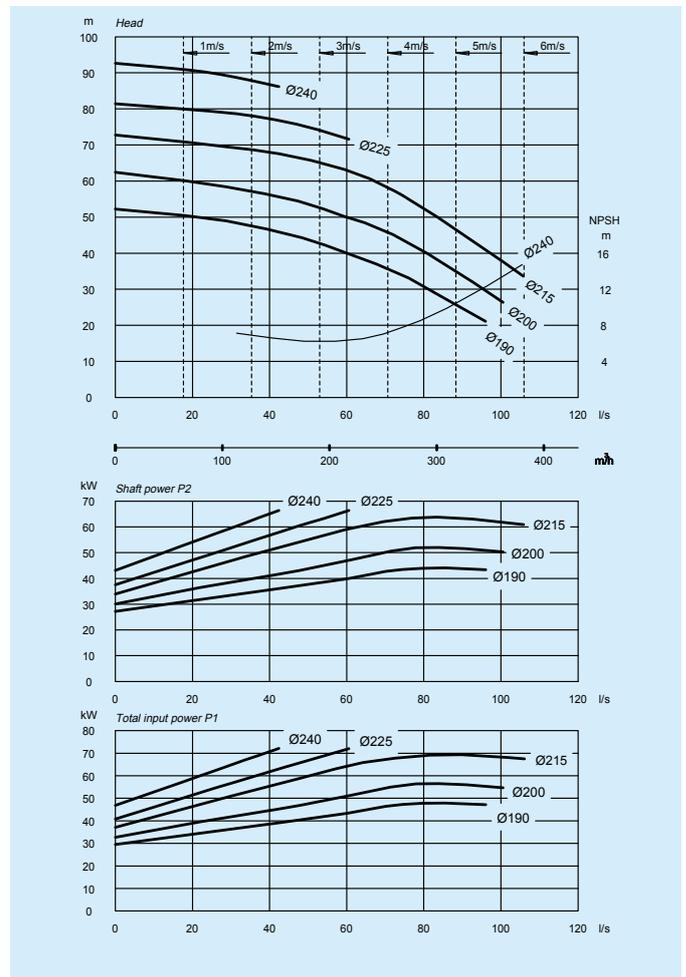
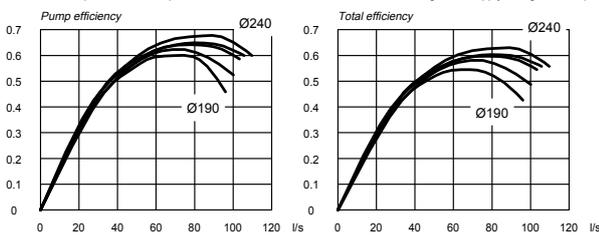


ALH-1155/2 DN150 3600 r/min



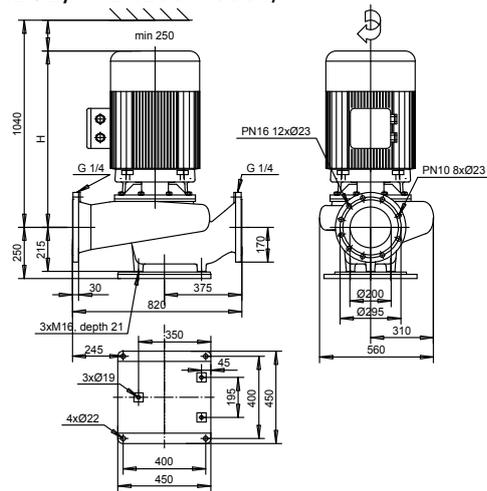
	kW	A	kg	H
OKM-257 K1 F33	55.0 (66)	93	465	845
OKM-227 K1 F32	45.0 (54)	77.5	435	730
OKM-207 J1 F31	37.0 (44)	64	385	730
OKM-206 K1 F31	30.0 (36)	53	375	640

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



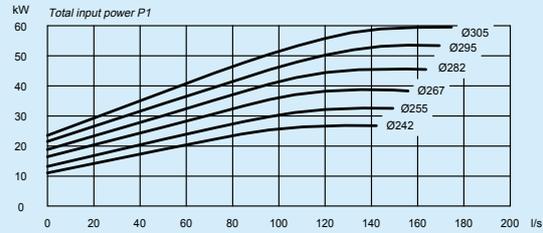
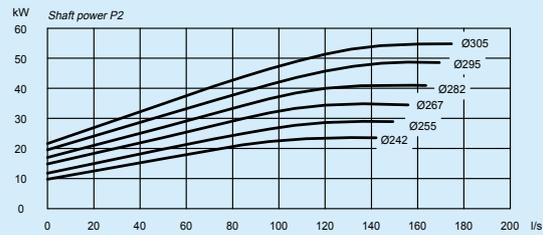
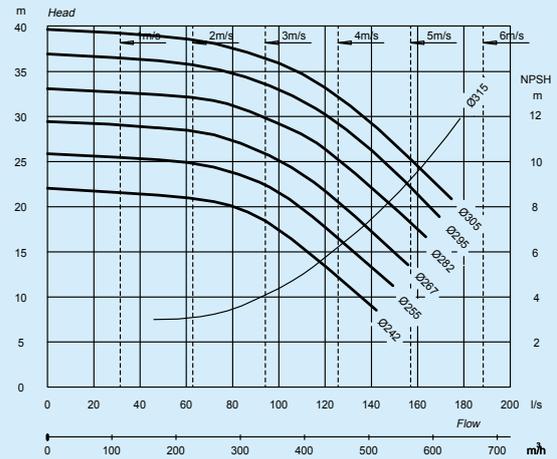
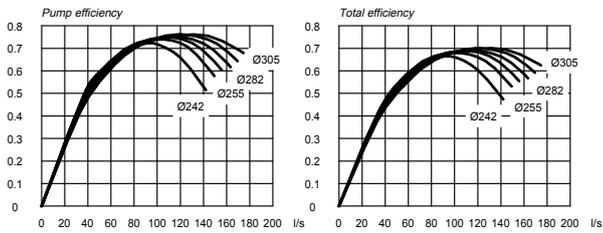
Technical data

ALP-1202/4 DN200 1800 r/min

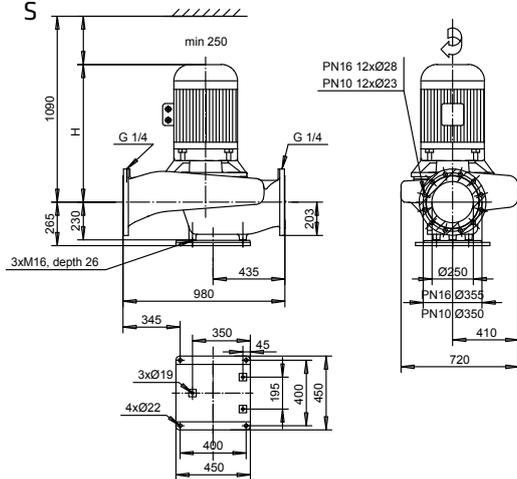


	kW	A	kg	H
OKM-227 K2 F33	45 (54)	82	508	790
OKM-207 K2 F32	37 (44)	69.5	478	700
OKM-206 K2 F32	30 (36)	55	408	700
OKM-186 J2 F32	22 (26)	42	380	700
OKM-187 H2 F31	18.5 (22)	34	338	685

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

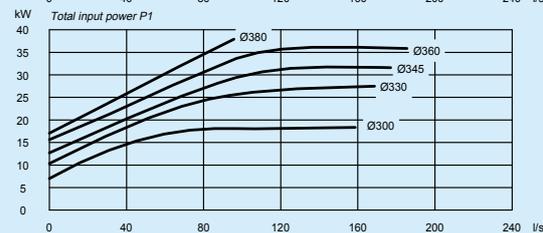
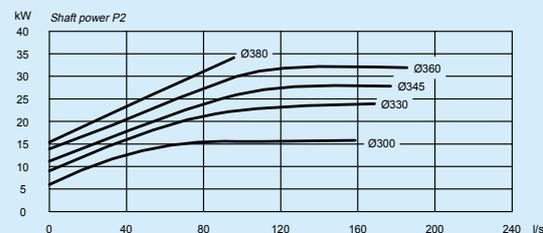
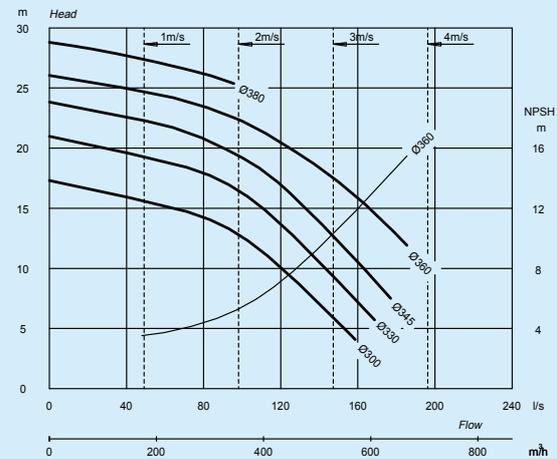
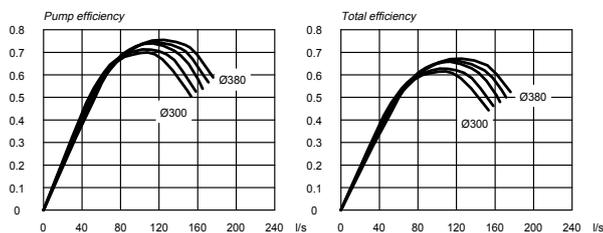


ALP-1250/6 DN250 1200 r/min



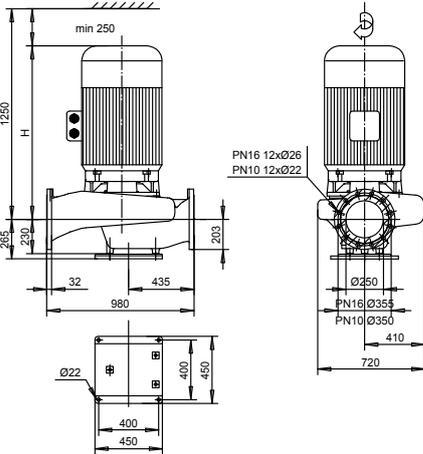
	kW	A	kg	H
OKM-226B K3 F42	30 (34)	55	563	810
OKM-207 K3 F41	22 (26)	43.5	498	810
OKM-206 K3 F41	18.5 (21)	35.5	473	720
OKM-206 K3 F41	15 (18)	30.5	473	720

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



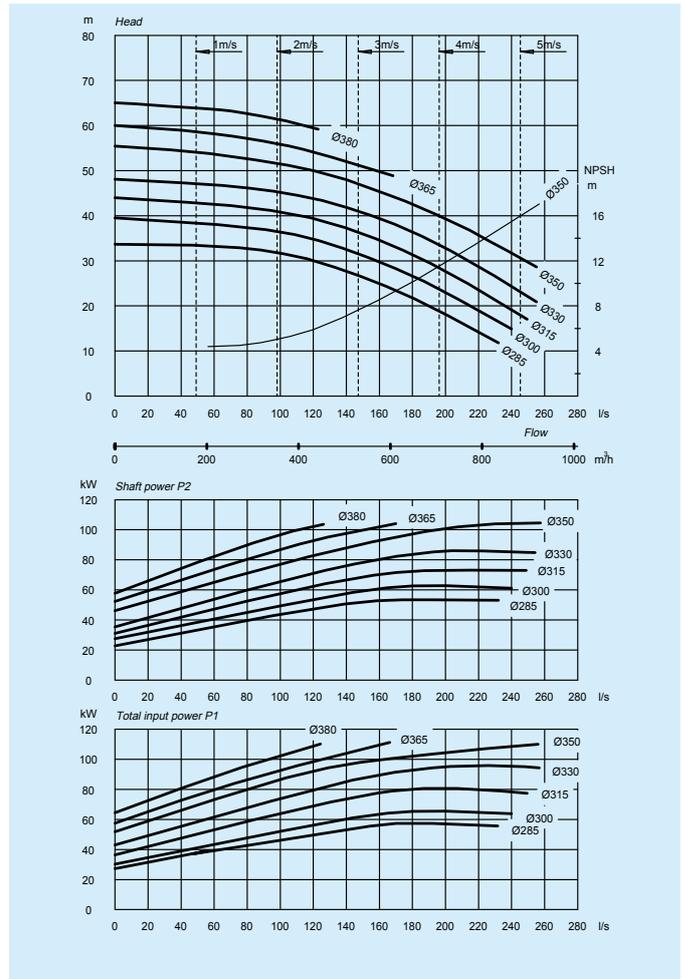
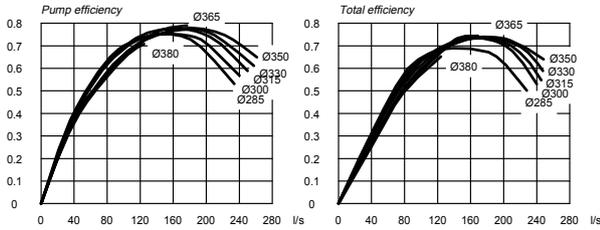
Technical data

AL^H_P-1250/4 DN250 1800 r/min
S

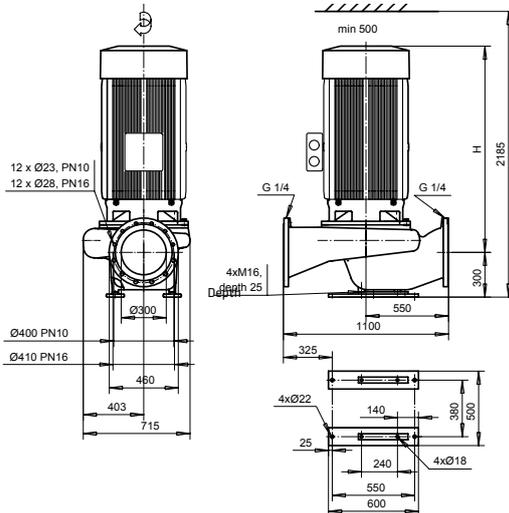


	<i>kW</i>	<i>A</i>	<i>kg</i>	<i>H</i>
OKM-300 K2 F43	90 (105)	160	950	1000
OKM-289 K2 F43	75 (90)	134	870	1000
OKM-257 K2 F42	55 (66)	100	730	980
OKM-227B K2 F42	45 (54)	81	650	810

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

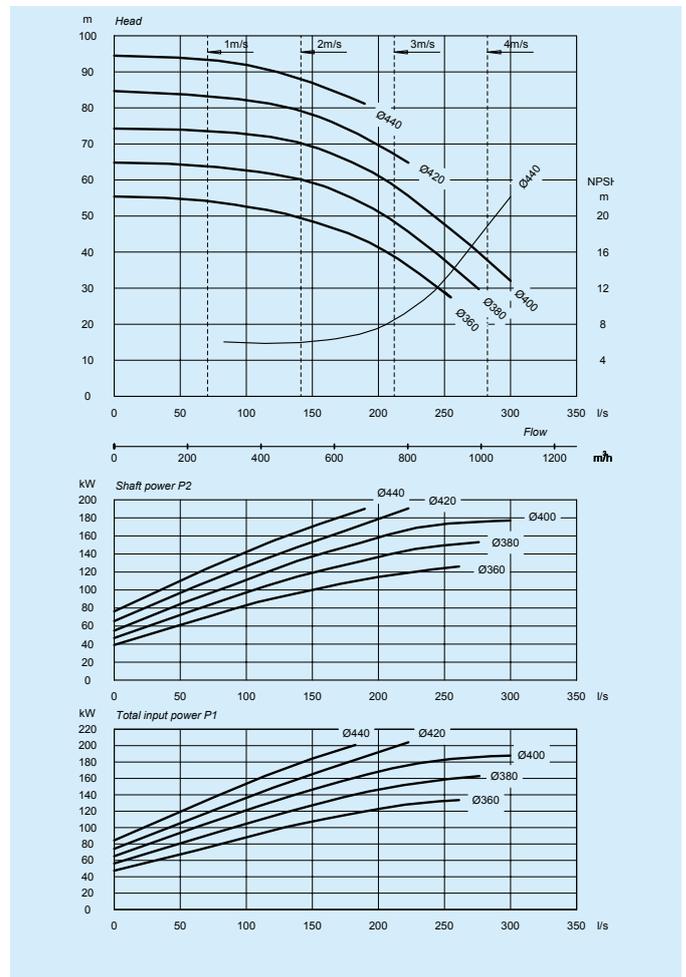
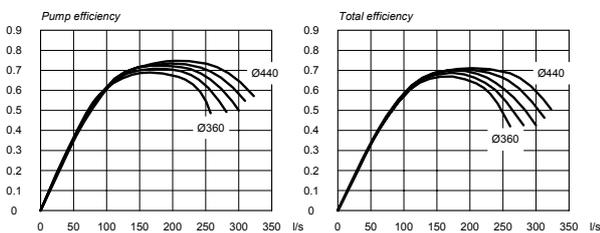


AL^H_S-1300/4 DN300 1800 r/min



	<i>kW</i>	<i>A</i>	<i>kg</i>	<i>H</i>
OKMR-315 Mx4 F53	160 (190)	279	1500	1385
OKMR-315 M4 F53	132 (158)	231	1350	1305
OKMR-315 S4 F53	110 (132)	195	1250	1250

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.





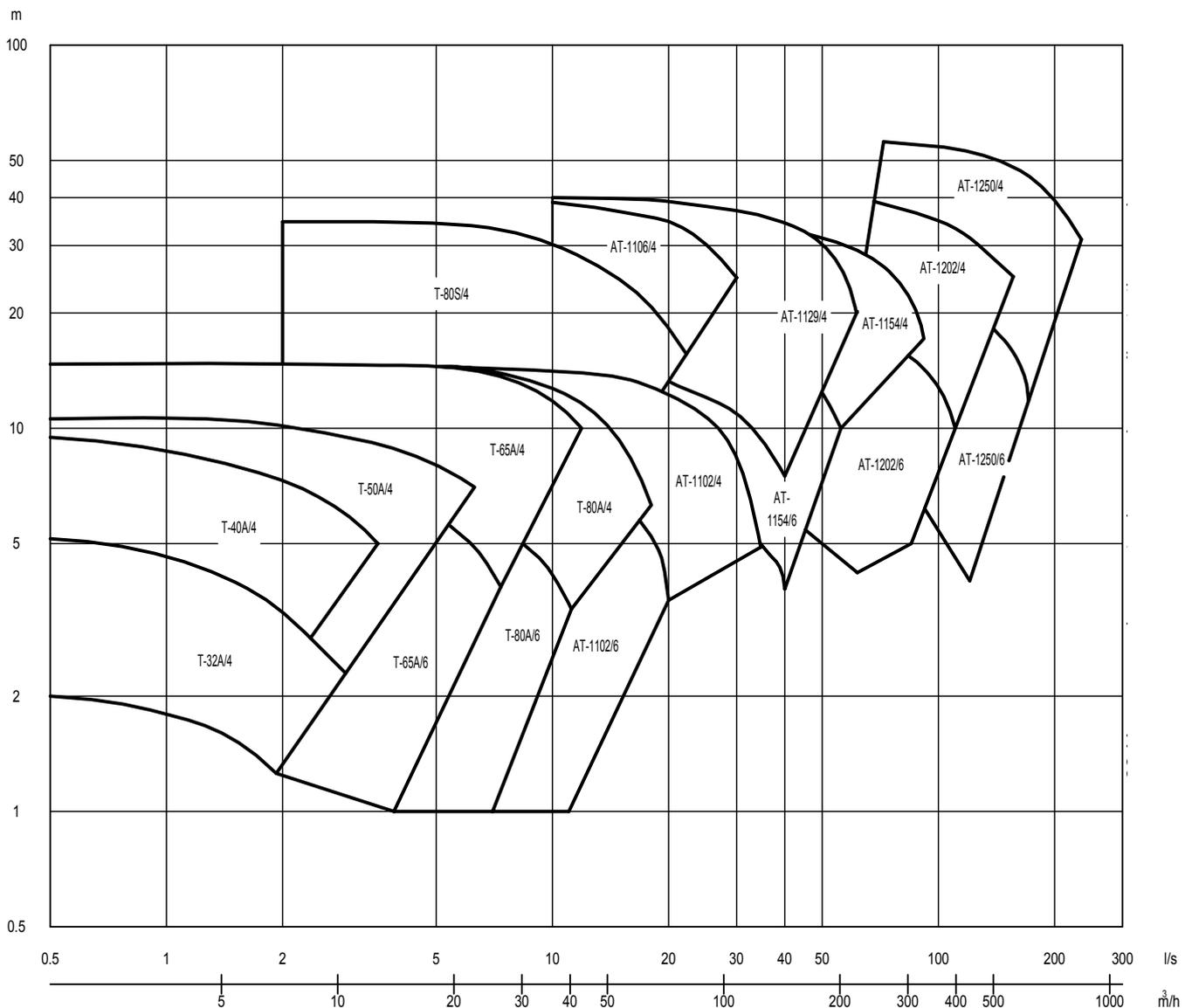
**TWIN IN-LINE
CENTRIFUGAL PUMPS**
RANGE T and AT 60Hz

General features

The T- and AT - ranges consist of twin In-Line pumps, where two single-stage centrifugal pump heads of Monobloc design are mounted on a common pump housing. The chambers of pumps are hydraulically separated by a simple non-return valve. Pump heads can have operation on single duty only or on parallel duty as well. The data sheets are showing the single duty performance.

Up to DN150 the critical mounting dimensions of single and twin pumps are equal for the same duty and type. This ensures the easy change of pump from single to twin or vice versa.

Duty chart at 60Hz, 4- and 6-poles electric motors

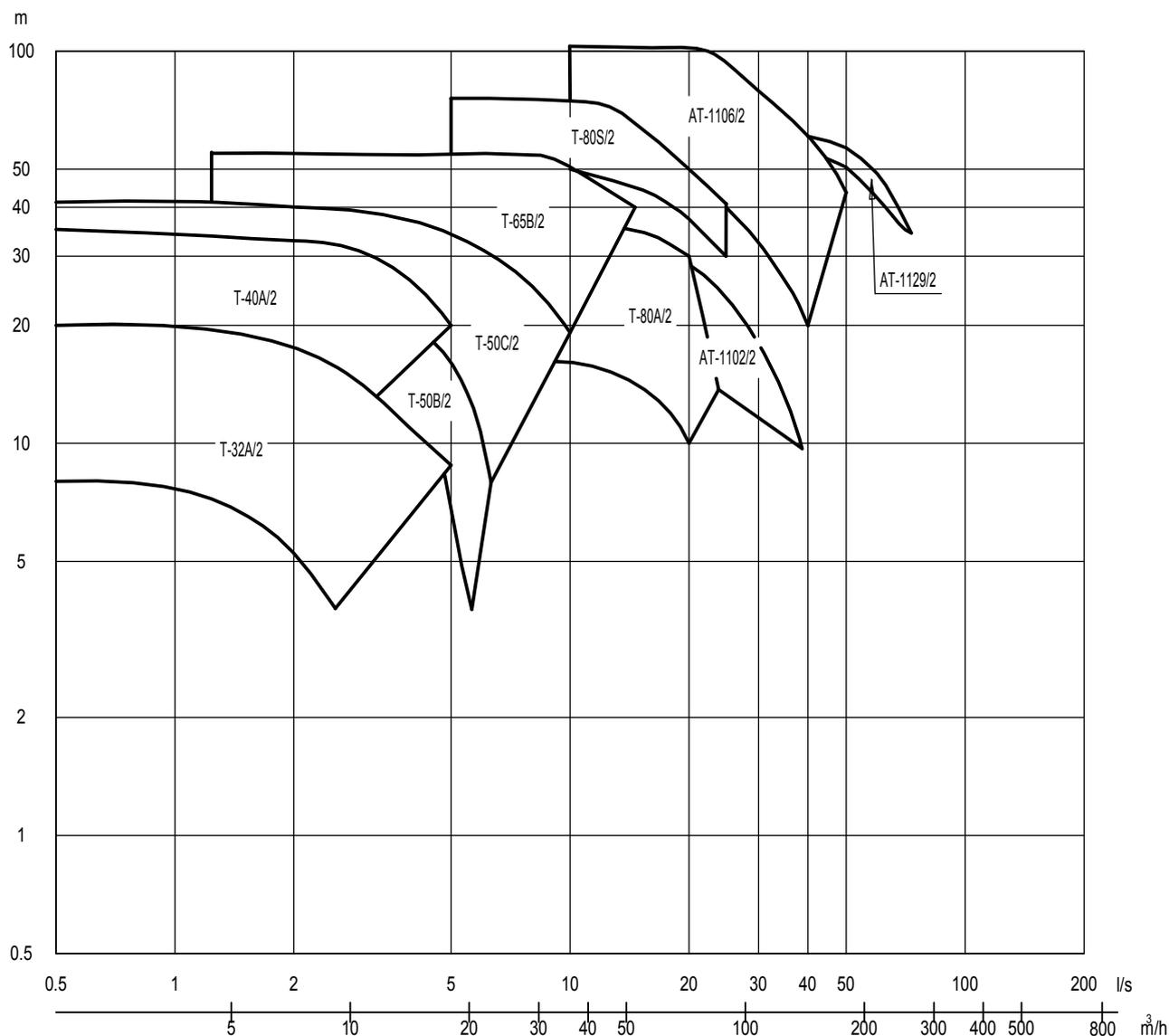


Applications

The T- and AT- pumps are made of cast iron and designed for applications of clean non-aggressive liquids including heating and primary hot water circulation, cooling, chilled and condenser water circuits in e.g. district heating and air conditioning. The twin pump will be used in applications with requirements on high safety and continuous operation.

The use of different size of pump heads in the twin pump makes it possible to have regulation of pumping in steps. This is useful in applications where also stand-by duty is required.

Duty chart at 60Hz, 2-poles electric motors



Design

Pump

The pumps of the T- and AT - ranges are vertical, single stage, centrifugal twin head pumps equipped with dry type electric motor. The impeller is mounted directly on the shaft of the motor (no separate couplings). In some types of AT-range (-1102....-1154) the direction of rotation is different between the heads i.e. the impellers are not interchangeable between left and right hand side.

The hydraulic separation with non-return flap valve between the two chambers is to prevent recirculation of liquid through the another, non-operating pump. This flap valve will not replace the non-return valve needed in the circulation system. The alterate operation of pump heads can be easily automated because no other valves in the system needed to be opened nor closed.

Electric motor

The electric motors of the T- and AT - ranges are especially dimensioned and designed for pump application, totally enclosed fan cooled squirrel cage motor. The motor design ensures high efficiency and silent running and is suitable for use with frequency converter.

Voltages:	380-480/220-280 V, 60Hz, 3-phase < 4 kW (4.8 kW) 660-690/380-480 V, 60Hz, 3-phase 4 kW (4.8 kW) and above
Enclosure:	IP54 IP55 4 kW (4.8 kW) and above (1200, 1800 r/min), (4.8 kW) 5.5 kW (6.6 kW) and above (3600 r/min)
Insulation class:	F
Type of duty:	S1
Ambient temperature:	+ 45 °C

N.B. Other voltages (e.g. single phase) and specifications available by request!

Flanges

The dimensions of flanges in the T- and AT-ranges follow the standard ISO 7005. Both pump flanges have pressure gauge tapings, G 1/4. PN10 as standard. Also other standards can be applied for flanges, by request.

Shaft seals

The shaft seals in the T- and AT - ranges are maintenance-free single mechanical seals with rubber bellows. The pumps can be provided also with other types of seals suitable for various liquids and temperatures. Please check the possible sealing designs on the following pages.

Materials and seals

TYPE	MOTOR		CASING material	SHAFT SEAL		O-RING	
	r/min	kW		Ø, materials	size, Ø material		
T-32A	1800/3600	0,05-0,65	Grey cast iron	12 mm, carbon/SiC	EPDM	100 x 2,5	NBR
T-40A	1800/3600	0,2-1,5	Grey cast iron	12 mm, carbon/SiC	EPDM	145 x 2,5	NBR
T-50A	1200/1800	0,11-0,37	Grey cast iron	12 mm, carbon/SiC	EPDM	150 x 3	NBR
T-50B	1800/3600	0,2-1,1	Grey cast iron	12 mm, carbon/SiC	EPDM	150 x 3	NBR
T-50C/S	3600	1,5-2,2	Grey cast iron	18 mm, carbon/SiC	EPDM	150 x 3	NBR
T-65A	1200/1800	0,18-2,2	Grey cast iron	18 mm, carbon/SiC	EPDM	179,3 x 5,7	EPDM
T-65B	1200/1800/3600	0,18-7,5	Grey cast iron	18 mm, carbon/SiC	EPDM	179,3 x 5,7	EPDM
T-80A	1200/1800/3600	0,18-7,5	Grey cast iron	18 mm, carbon/SiC	EPDM	179,3 x 5,7	EPDM
T-80S	1800	1,1-5,5	Grey cast iron	28 mm, carbon/SiC	EPDM	265 x 4	EPDM
AT-1102	1200/1800/3600	0,37-7,5	Grey cast iron	18 mm, carbon/SiC	EPDM	179,3 x 5,7	EPDM
AT-1106	1800/3600	3-37	Nodular cast iron	32 mm, carbon/SiC	EPDM	309/295 x 1	gasket
AT-1129	1800/3600	3-37	Nodular cast iron	32 mm, carbon/SiC	EPDM	309/295 x 1	gasket
AT-1129/2	3600	45	Nodular cast iron	40 mm, carbon/SiC	EPDM	309/295 x 1	gasket
AT-1154	1200/1800	4-18,5	Nodular cast iron	32 mm, carbon/SiC	EPDM	309/295 x 1	gasket
AT-1202/6	1200	5,5-11	Nodular cast iron	32 mm, carbon/SiC	EPDM	315 x 6,3	EPDM
AT-1202/6	1200	15-18,5	Nodular cast iron	40 mm, carbon/SiC	EPDM	315 x 6,3	EPDM
AT-1202/4	1800	11-18,5	Nodular cast iron	32 mm, carbon/SiC	EPDM	315 x 6,3	EPDM
AT-1202/4	1800	22-37	Nodular cast iron	40 mm, carbon/SiC	EPDM	315 x 6,3	EPDM
AT-1202/4	1800	45	Nodular cast iron	50 mm, carbon/SiC	EPDM	315 x 6,3	EPDM
AT-1250/6	1200	11-22	Nodular cast iron	40 mm, carbon/SiC	EPDM	405 x 7	EPDM
AT-1250/6	1200	30	Nodular cast iron	50 mm, carbon/SiC	EPDM	405 x 7	EPDM
AT-1250/4	1800	37	Nodular cast iron	40 mm, carbon/SiC	EPDM	405 x 7	EPDM
AT-1250/4	1800	45-55	Nodular cast iron	50 mm, carbon/SiC	EPDM	405 x 7	EPDM
AT-1250/4	1800	75-90	Nodular cast iron	65 mm, carbon/SiC	EPDM	405 x 7	EPDM

Material standards

Types	MATERIAL OF HOUSING		SEALING FLANGE	IMPELLER	SHAFT (pump)	DETAILS TO NOTE
	Name	Standard				
T-32...T-80, AT-1102	grey cast iron	EN-GJL-200	EN-GJL-200	EN-GJL-200	AISI329	T-32A impellers of Noryl GFN2 Bronze impeller available for every pump
AT-1106... AT-1250	nodular cast iron	EN-GJS-400	EN-GJS-400	EN-GJL-200	AISI329	

Painting

Pumps are painted in accordance with Finnish standard SFS 5873, AK 80/2 Fe Sa2. The finishing colour is red, RAL 3000. Special coating available by request.

Temperatures and pressure classes

Max. working pressure 10 bar

T- and AT- range

Fluid temperature range -15 ... +120°C

T- and AT-range
(Noryl imp. max.+100°C)

N.B. The max. liquid temperature may be limited not only by material selection but also by local regulations and laws.

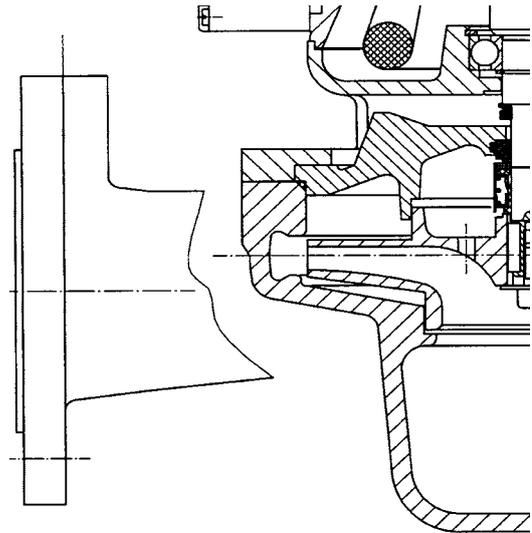
Design of sealings

Standard design

Single mechanical elastomeric bellows type shaft seal, carbon against ceramic or Silicon carbide

Max. +120 °C water temperature in short time operation.

The std-design is also suitable for glycol and other cold liquid mixtures in chilled water systems.



Recirculation (internal flush)

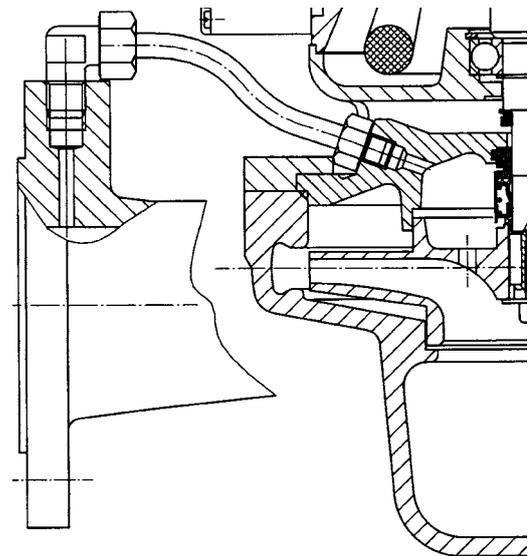
Shaft seal as above described

Available in flange sizes DN50...250

Applications in hot water systems

Operation temperature max. +120 °C

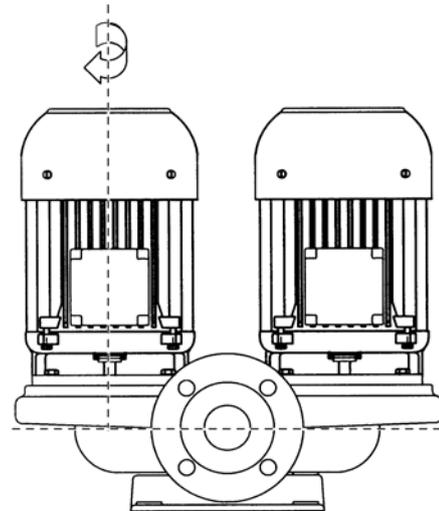
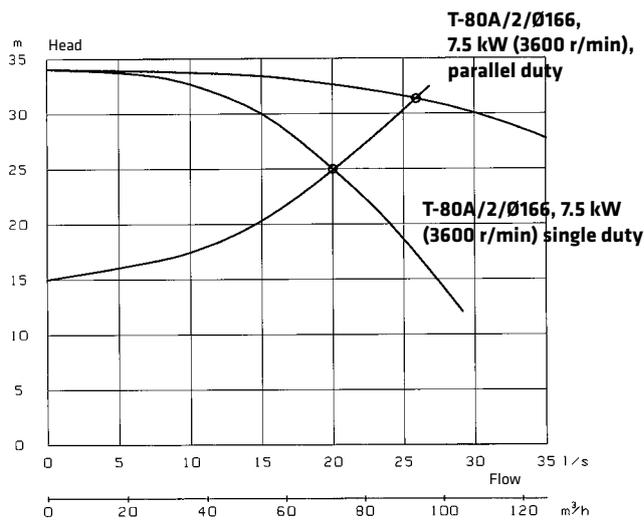
Liquid circulation via pipe from the pressure flange to the sealing chamber to ensure cooling and lubrication of the shaft seal



Various duties of twin pumps

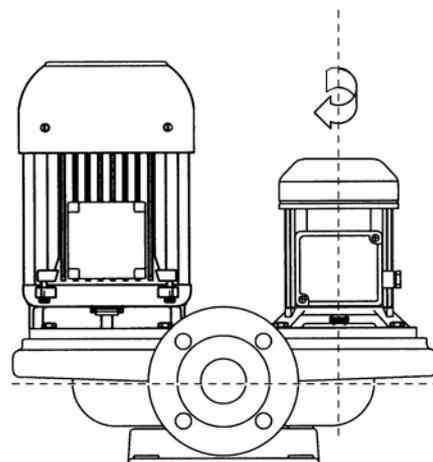
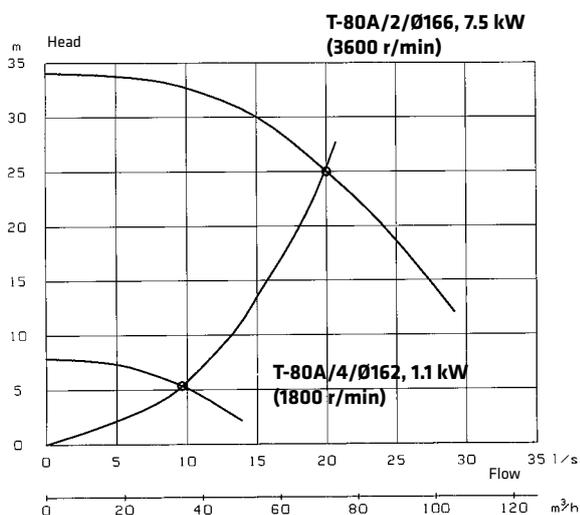
a) Parallel operation

In this application the units are equal in performance and for the duty both units will be used simultaneously. This design can be utilized as alternative for single In-Line pump. The achieved duty point of parallel running pump heads is a combination of the performance curves of the units, and the operating curve of the system itself. Data sheet of parallel performance by request. This arrangement is suitable for applications where high static pressure is needed, e.g. pumping liquid from one tank to another one on a higher level. Due this arrangement the motor(s) could be selected smaller which further may reduce the size and costs of other electrical components.



b) Operation according to needed flow

In this application the pump units are different. The larger unit will be used only for high duty peaks and the smaller one will run continuously for lower normal duty. This arrangement will offer savings in operation costs and also throttling (=noise) of a larger single pump can be avoided. The reserve pump function can be used and automated within some restrictions. The usual data input used as control information for operation is temperature, pressure or pressure difference, time.



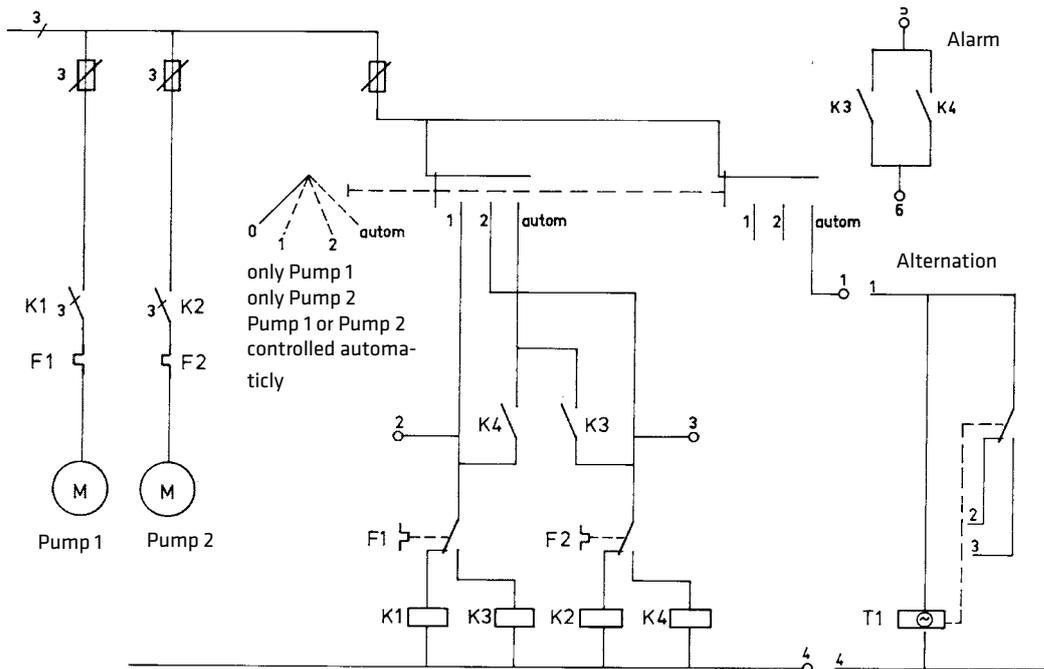
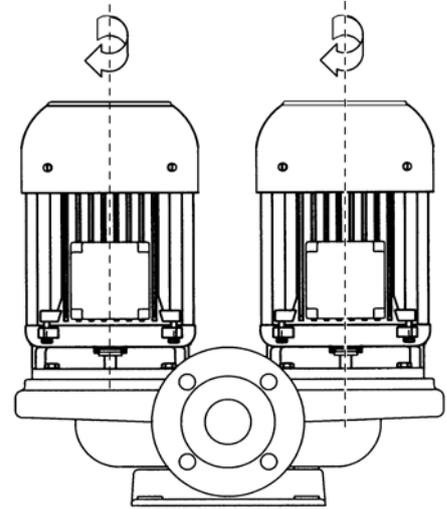
Technical information

T-, AT-range

c) Reserve pump and alternate operation

This application is based on a twin pump where both motor units are equal in performance, which is the most common design. While the other one is operating the other one is turned off in reserve. With automated programming the reserve unit can be switched on whenever the other one is stopped, e.g. because of tripping of motor protection.

The optimal operation of the pump is even alteration between the units, both units will get uniform operating hours and remain in equal condition. The alternating operation can be arranged by means of a timer, e.g. weekly.



Control of the pumps is connected to terminals 1 ... 4 (in the drawing alternate use).
Relays 3 or 4 start reserve pump and alarm when thermal relay is triggered.

d) Integrated frequency converter and automated alternate operation

The variable speed drives i.e. electric motors with frequency converters are the best solution when ever regulation of operation and lower energy consumption are required. With twin pumps there are two options for this arrangement; one is to use separate frequency converters and the another is to use pumps with integrated frequency converters. Selected pumps of AT- and T-range can be delivered with integrated frequency converter. In both operations the alteration control can be easily added in the delivery scope of the frequency controller.

In many applications the design where one pump head is provided with variable speed drive and the another one with constant speed drive could be the most recommendable solution.

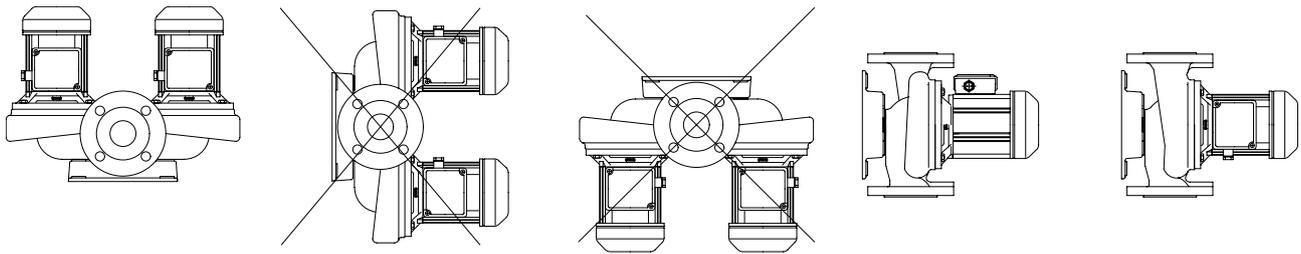
To receive more detailed information, please contact your Kolmeks contact person.

Installation

When designing and installing the pump in the system please pay attention to the following:

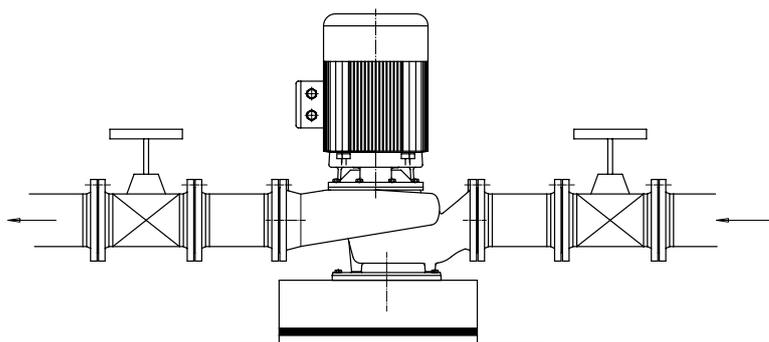
- enough space for service and control should be left around the pump
- enough clearance on top of the motor to lift the motor unit off the pump housing
- for heavier pumps you may also need space for lifting devices
- shut-off valves on both sides of the pump
- vibration and noise isolation and sufficient rigidity of the pipeworks to support the pump

The position of the motor unit and the terminal box can be changed by removing the motor unit from the pump housing and setting it in the desired position.



Kolmeks In-line pumps may be fitted in horizontal or vertical (depending on motor size) pipeline configurations and must be arranged so that the adjacent pipework can be vented of air before startup. The smaller pumps (< DN80, < 1,5 kW motors) may be installed without support and baseplate horizontally or vertically, but the motor must never fall below the horizontal plane. The heavier and larger pumps should be installed standing on the baseplate and the pump shaft in vertical position.

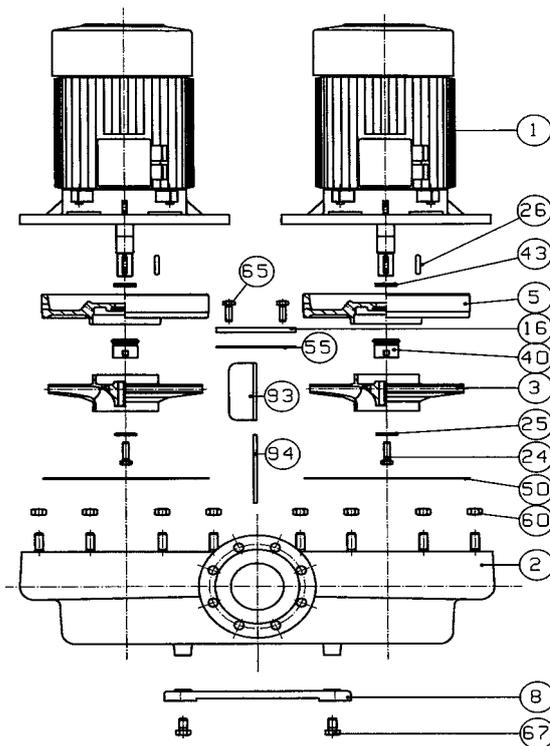
Foundation



The heavier pumps (= DN80 and over or motors above 1,5 kW) should be mounted on a concrete plinth, approximately 1.5 to 2 times the weight of the pump. The foundation should be isolated from other construction with anti-vibration mounting (20 mm thick rubber or cork plate) to prevent transmission of noise.

Spare parts and maintenance

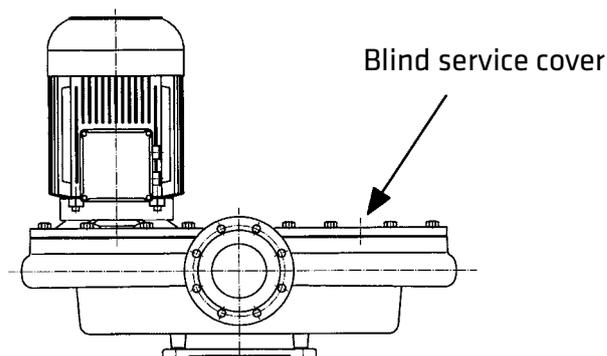
List of parts



- 1** Electric motor
- 2** Pump housing
- 3** Impeller (Note below)
- 5** Sealing flange
- 8** Base plate
- 16** Flap cover
- 24** Nut / Screw
- 25** Washer
- 26** Key
- 40** Mechanical shaft seal
- 43** V-ring (optional)
- 50** O-ring / Gasket
- 55** Flap cover gasket
- 60** Nut or Screw
- 65** Screw
- 67** Screw
- 93** Flap device
- 94** Flap pin

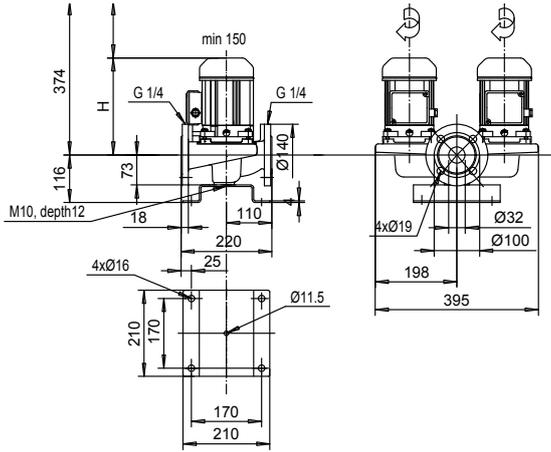
Blind service cover

One or both pump heads can be replaced by blind service cover. This is for each twin pump specific blind sealing flange, which can be ordered as a spare part later on when needed or already together with the pump. The other pump head can be dismantled for repair while the another pump head can be used for the duty.



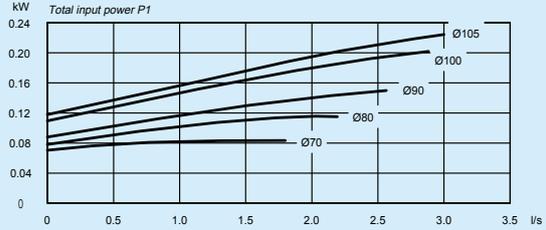
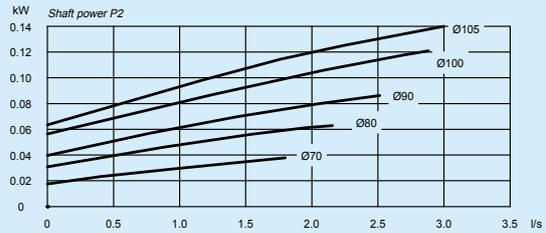
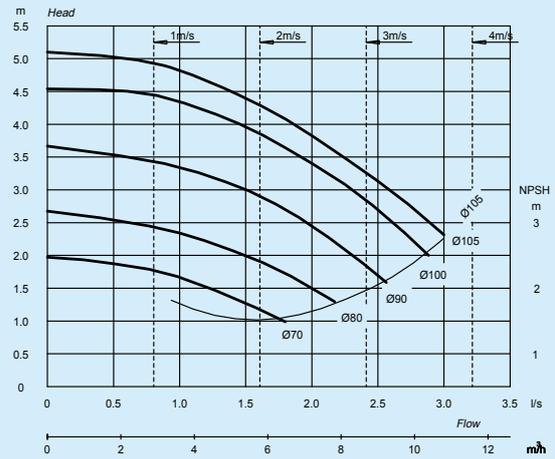
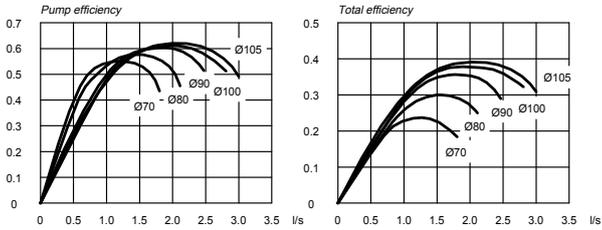
Technical data

T-32A/4 DN32 1800 r/min

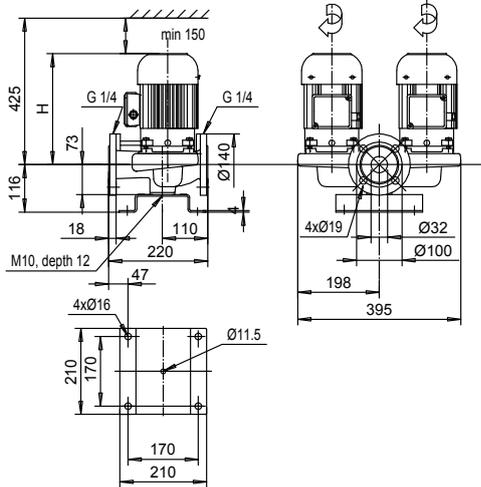


	kW	A	kg	H
OP-732 N12	0.20 (0.24)	0.65	32	240
OP-742 N12	0.08 (0.09)	0.28	28	185
OP-732 B N12	0.05 (0.06)	0.22	28	185

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

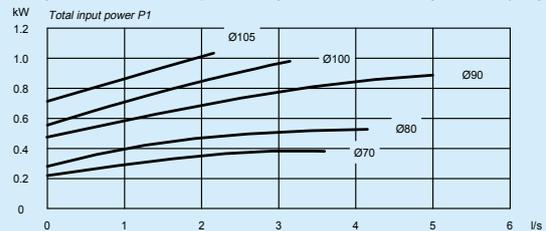
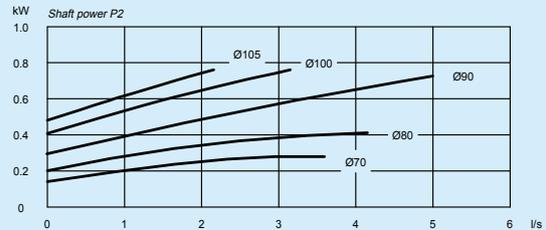
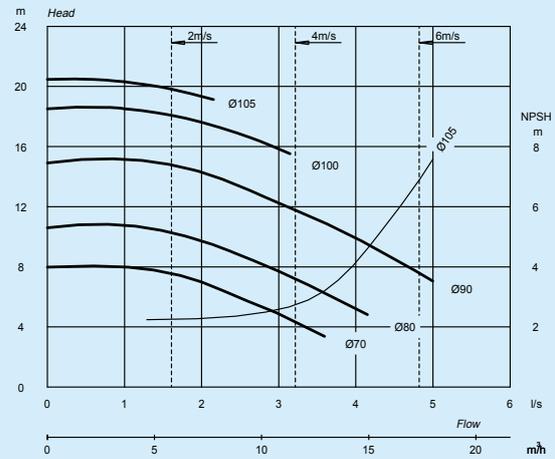
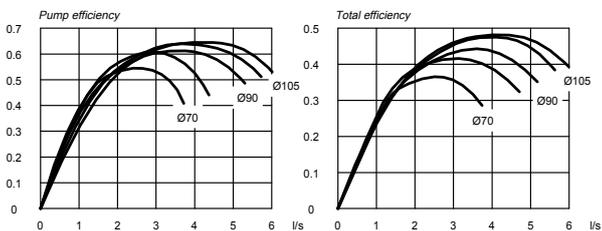


T-32A/2 DN32 3600 r/min



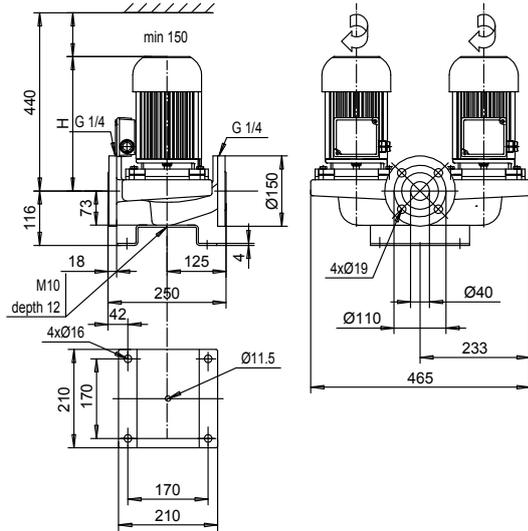
	kW	A	kg	H
OKN-841 D N12	0.65 (0.78)	1.8	36	275
OP-741 N12	0.25 (0.30)	0.7	30	225

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



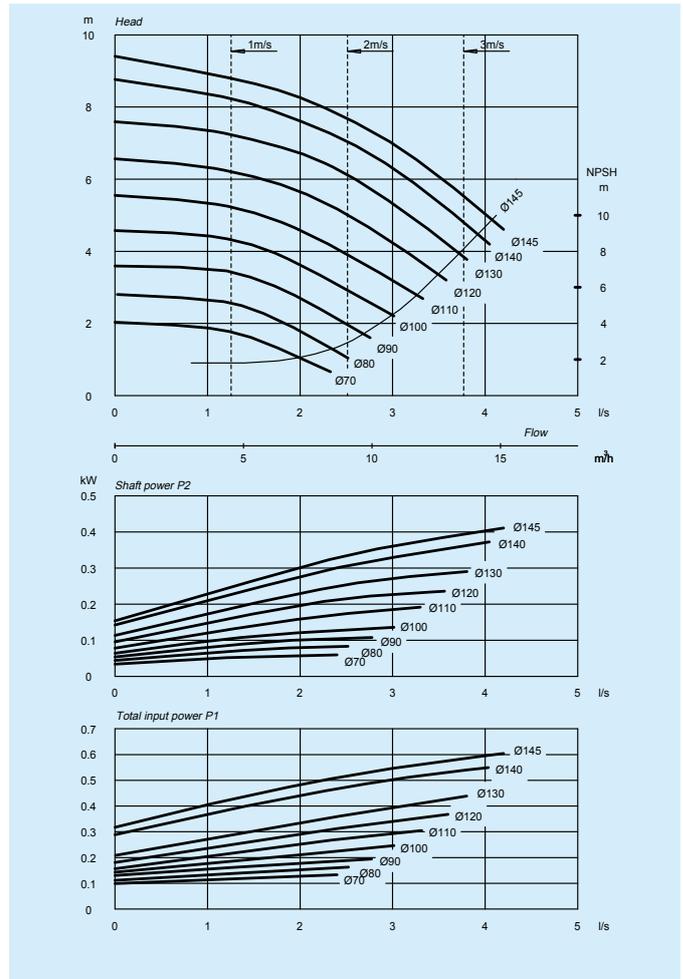
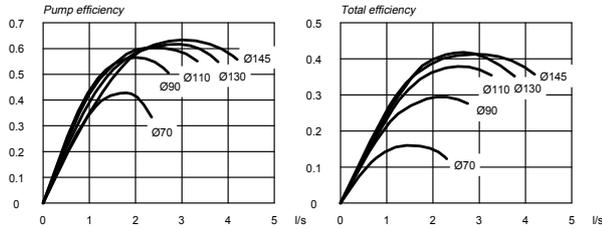
Technical data

T-40A/4 DN40 1800 r/min

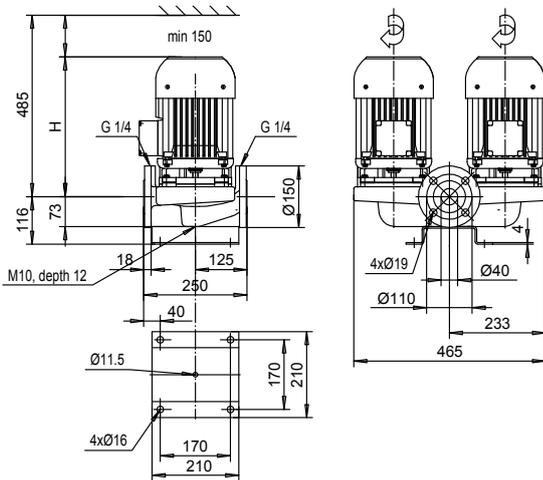


	<i>kW</i>	<i>A</i>	<i>kg</i>	<i>H</i>
OKN-862L D N13	0.37 (0.44)	1.15	46	290
OP-752 N13	0.20 (0.24)	0.65	38	240

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

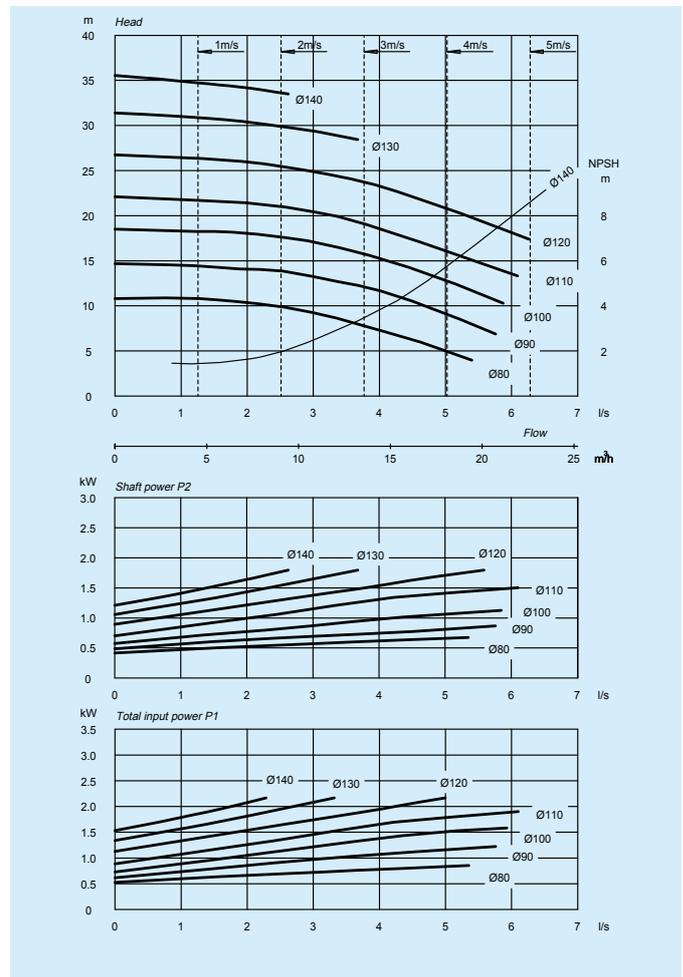
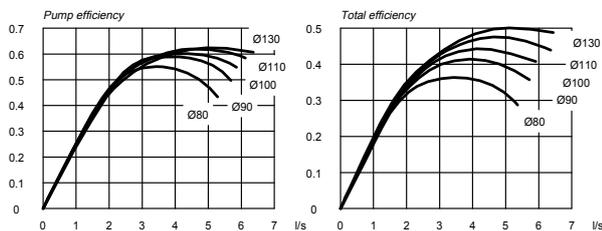


T-40A/2 DN40 3600 r/min



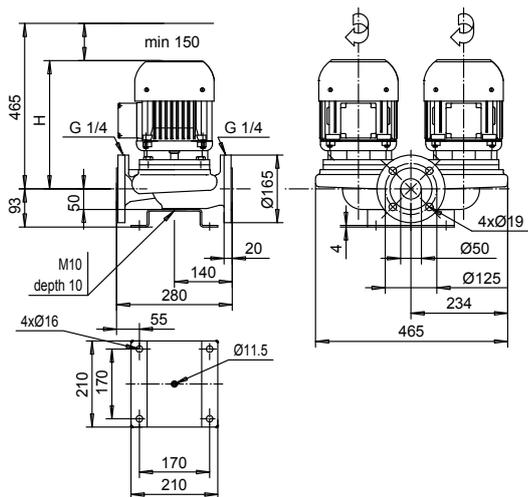
	<i>kW</i>	<i>A</i>	<i>kg</i>	<i>H</i>
OKN-101 C1 N13	1.5 (1.8)	3.3	71	335
OKN-871 D N13	1.1 (1.3)	2.8	46	290

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



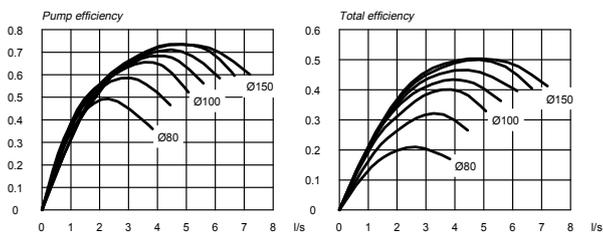
Technical data

T-50A/4 DN50 1800 r/min

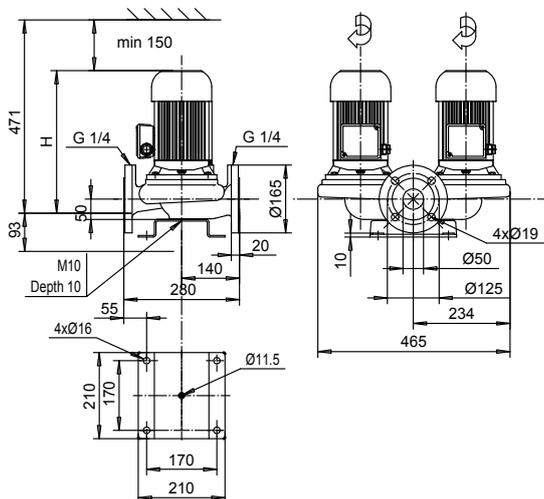


	kW	A	kg	H
OKN-100 B2 F15	0.55 (0.66)	1.4	37	325
OKN-862 D F15	0.37 (0.44)	1.15	30	315
OP-762 F15	0.25 (0.3)	0.82	24	250
OP-752 F15	0.2 (0.24)	0.65	24	250

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

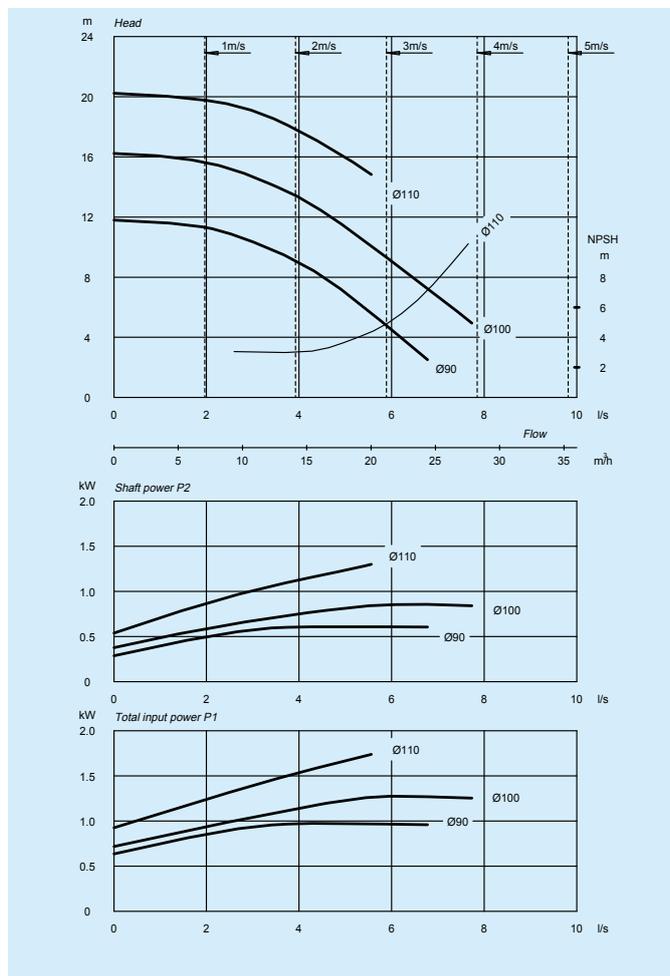
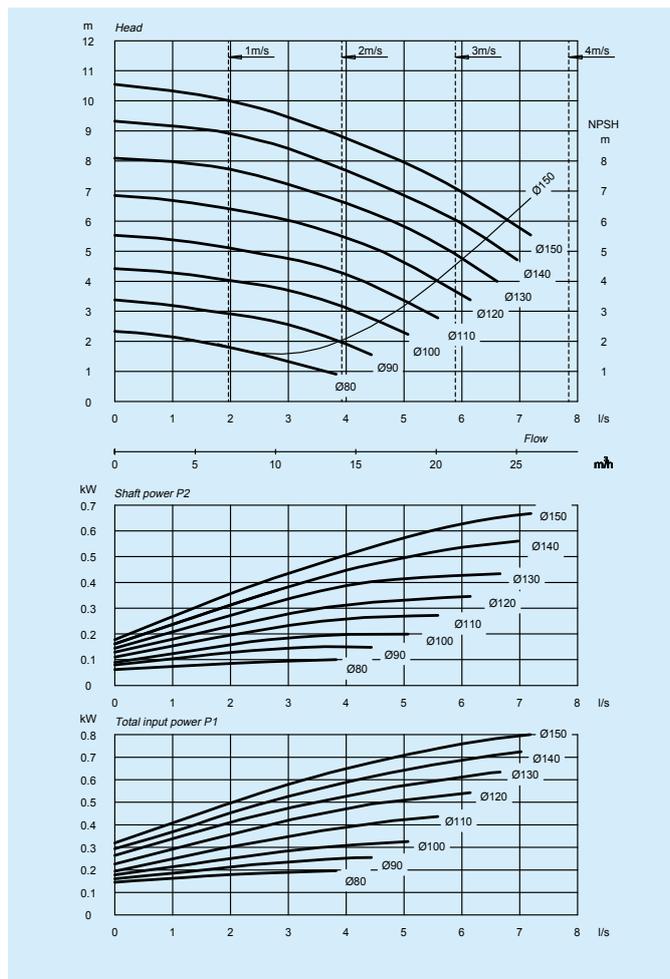
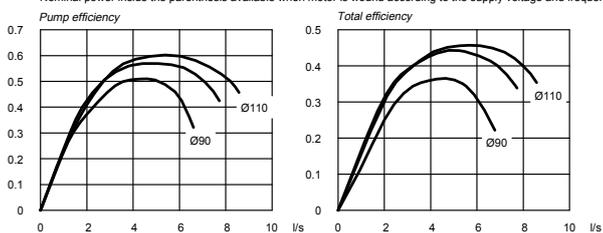


T-50B/2 DN50 3600 r/min



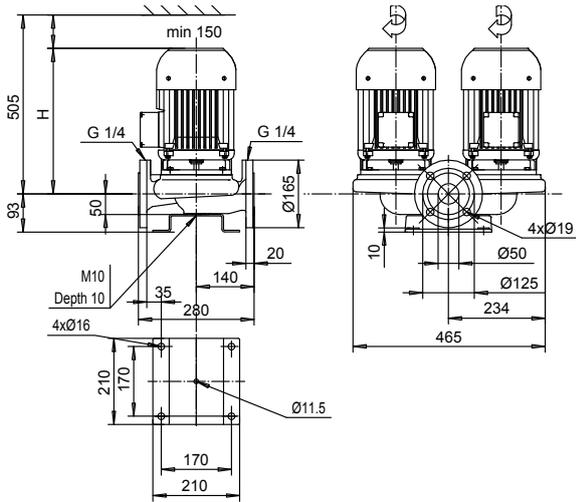
	kW	A	kg	H
OKN-871 D F15	1.1 (1.3)	2.8	48	315

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



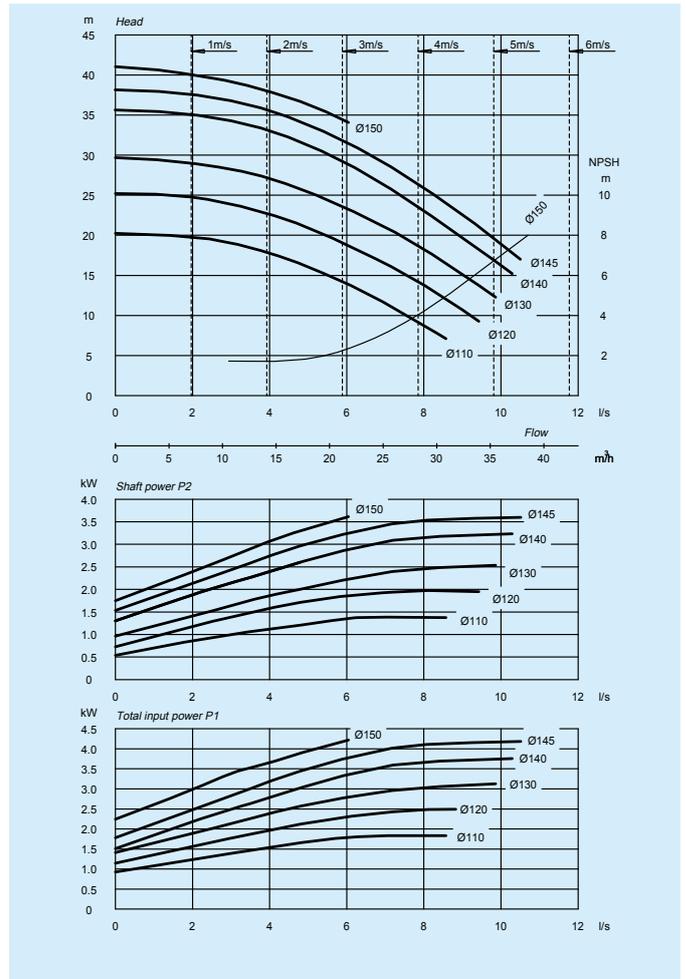
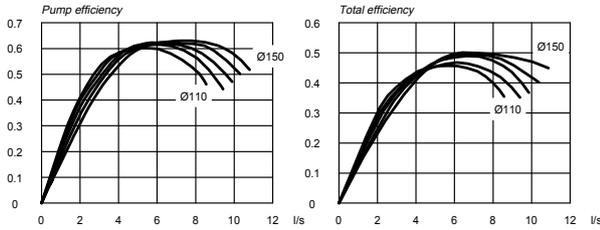
Technical data

T-50C/2 DN50 3600 r/min

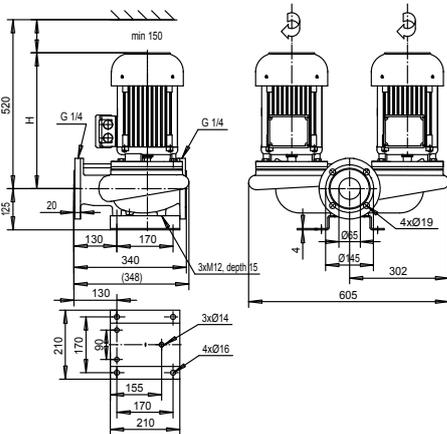


	kW	A	kg	H
OKN-112 C1 F16	3.0 (3.6)	6.4	49	400
OKN-101 D1 F16	2.2 (2.6)	4.7	43	355
OKN-101 C1 F16	1.5 (1.8)	3.3	37	355

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

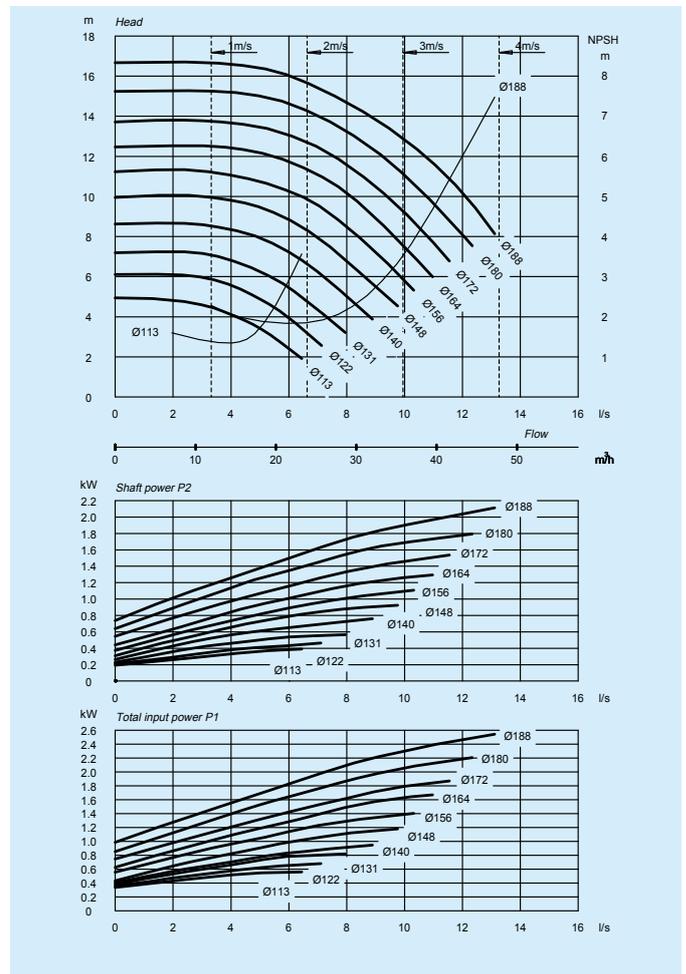
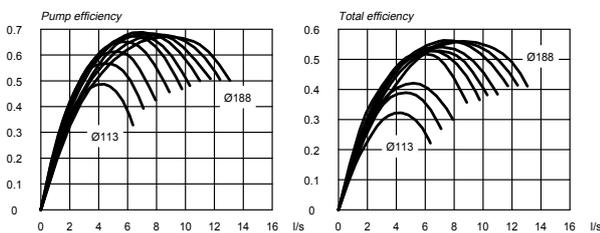


T-65A/4 DN65 1800 r/min



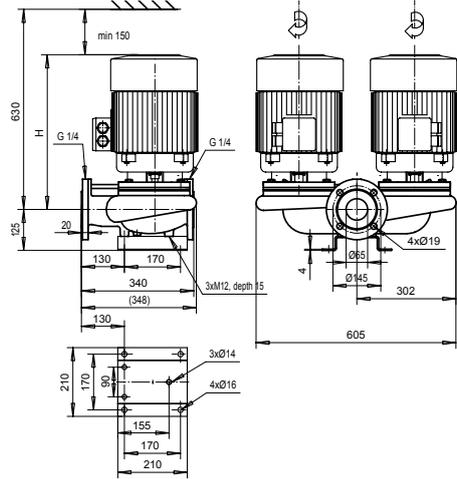
	kW	A	kg	H
OKN-112 C2 F19	2.2 (2.6)	5.1	119	420
OKN-101 D2 F19	1.5 (1.8)	3.5	107	370
OKN-101 C2 F19	1.1 (1.3)	2.6	102	370
OKN-100 B2 F19	0.75 (0.9)	2.0	92	320
OKN-100 B2 F19	0.55 (0.66)	1.4	92	320

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



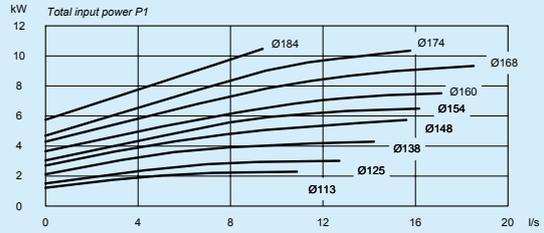
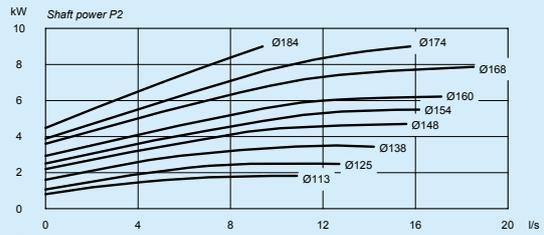
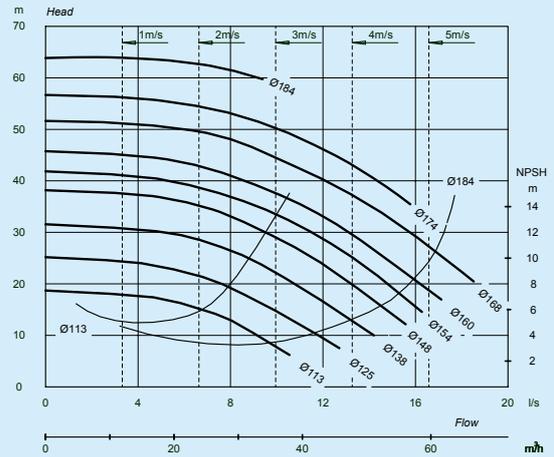
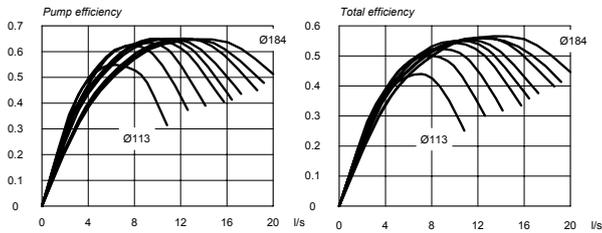
Technical data

T-65B/2 DN65 3600 r/min

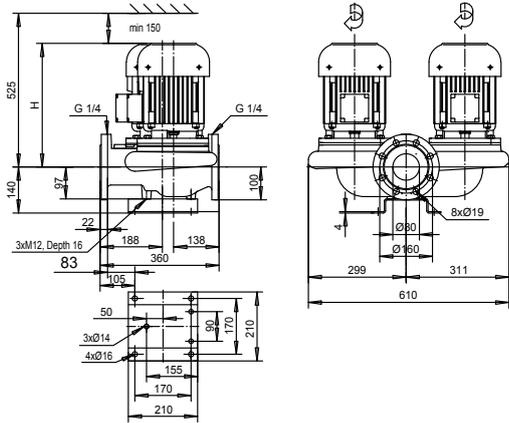


	kW	A	kg	H
OKN-132 E1 F19	7.5 (9)	15.0	193	480
OKN-132 C1 F19	5.5 (6.6)	11.0	177	480
OKN-112 E1 F19	4.0 (4.8)	8.2	128	415
OKN-112 C1 F19	3.0 (3.6)	6.4	120	415
OKN-101 D1 F19	2.2 (2.6)	4.7	108	370
OKN-101 C1 F19	1.5 (1.8)	3.3	101	370

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

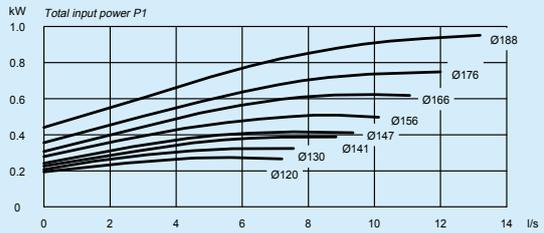
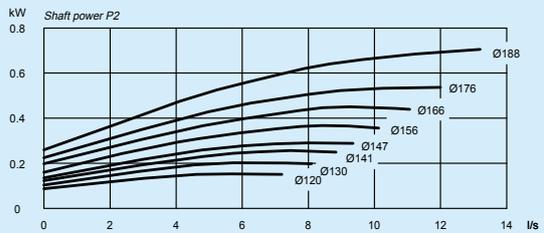
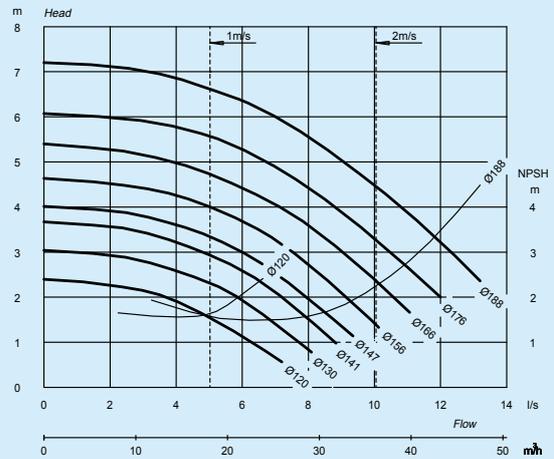
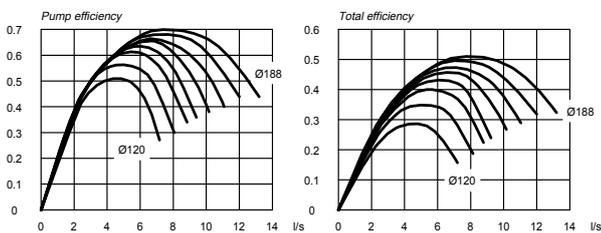


T-80A/6 DN80 1200 r/min



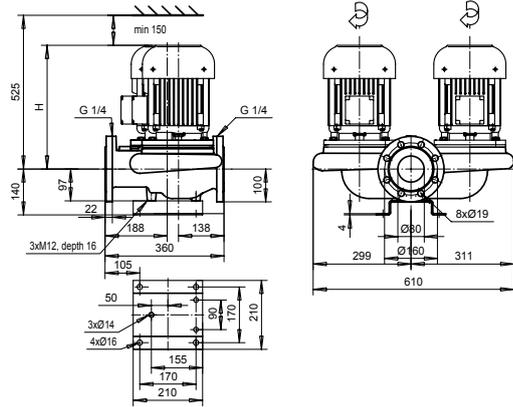
	kW	A	kg	H
OKN-101 D3 F19	0.75 (0.9)	2.4	115	375
OKN-101 C3 F19	0.55 (0.66)	1.75	105	375
OKN-100 B3 F19	0.37 (0.44)	1.2	95	325
OKN-100 B3 F19	0.18 (0.21)	0.95	95	325

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



Technical data

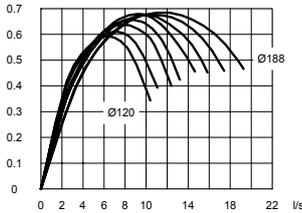
T-80A/4 DN80 1800 r/min



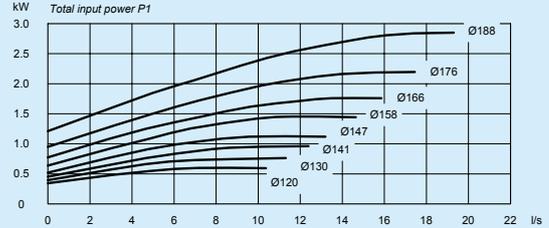
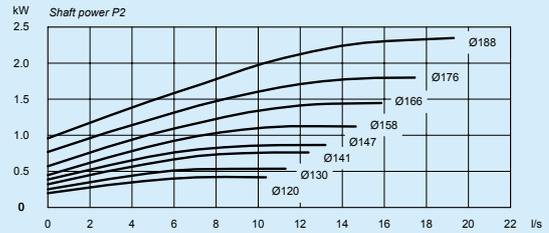
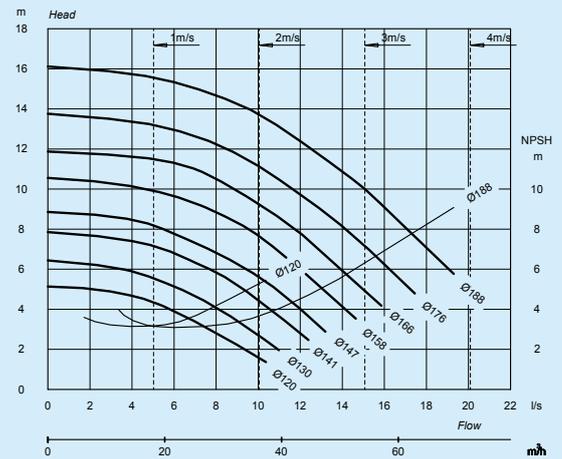
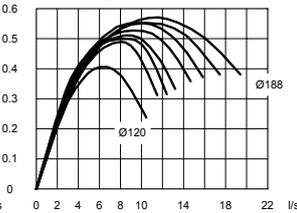
	kW	A	kg	H
OKN-112 E2 F19	3.0 (3.6)	6.6	126	420
OKN-112 C2 F19	2.2 (2.6)	5.1	121	420
OKN-101 D2 F19	1.5 (1.8)	3.5	110	375
OKN-101 C2 F19	1.1 (1.3)	2.6	105	375
OKN-100 B2 F19	0.75 (0.9)	2.0	95	325
OKN-100 B2 F19	0.55 (0.66)	1.4	95	325
OKN-852 D F19	0.37 (0.44)	1.0	79	315

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

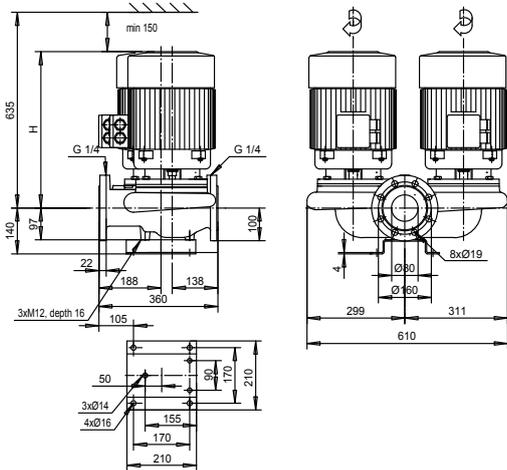
Pump efficiency



Total efficiency



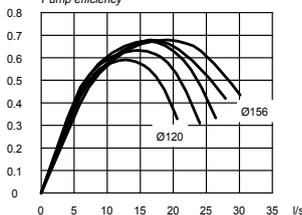
T-80A/2 DN80 3600 r/min



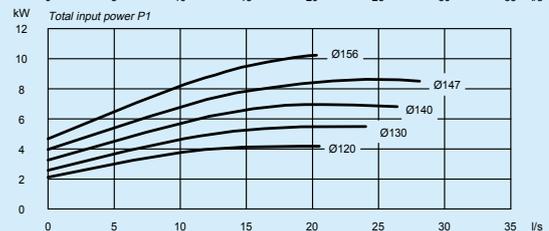
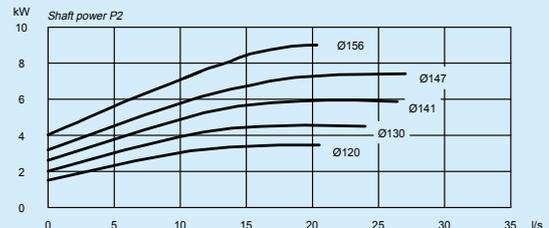
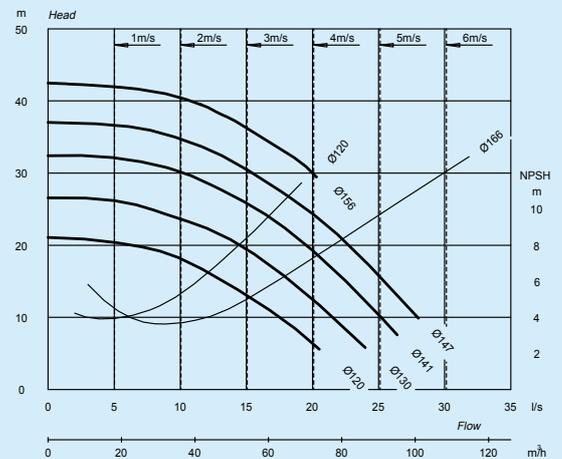
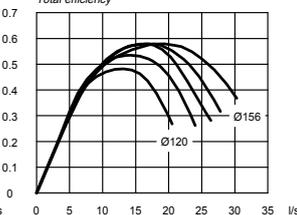
	kW	A	kg	H
OKN-132 E1 F19	7.5 (9)	15.0	196	485
OKN-132 C1 F19	5.5 (6.6)	11.0	180	485
OKN-112 E1 F19	4.0 (4.8)	8.2	131	420
OKN-112 C1 F19	3.0 (3.6)	6.4	123	420

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

Pump efficiency

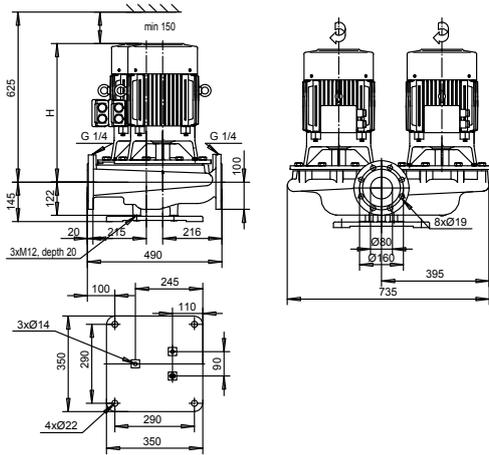


Total efficiency



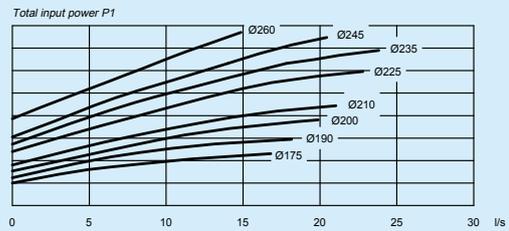
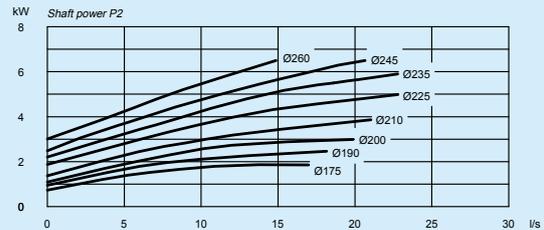
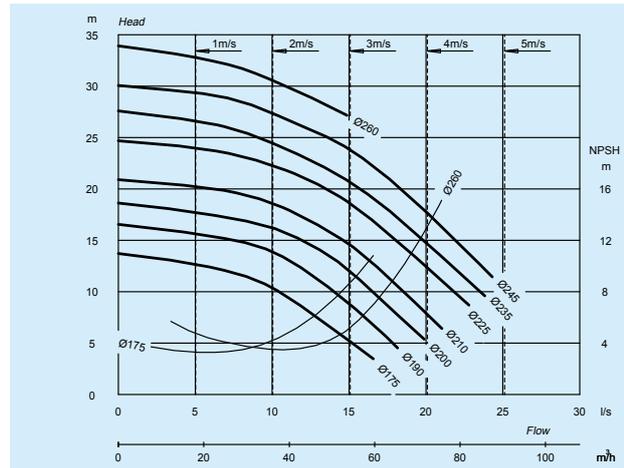
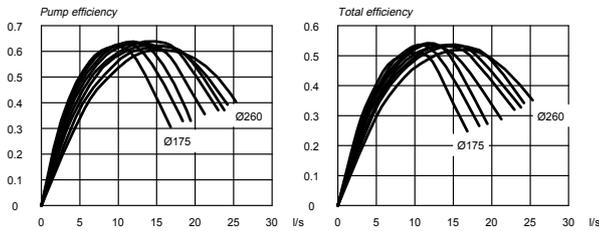
Technical data

T-80S/4 DN80 1800 r/min

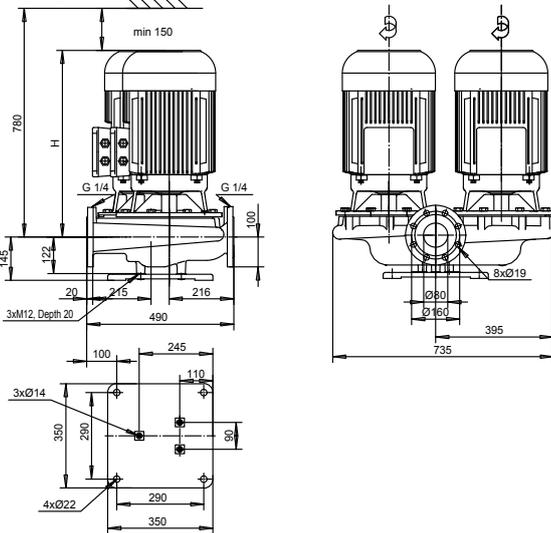


	kW	A	kg	H
OKN-132B E2 F29	5.5 (6.6)	11.9	263	510
OKN-132B C2 F29	4 (4.8)	8.7	243	510
OKN-112 E2 F29	3 (3.6)	6.6	203	475
OKN-112 C2 F29	2.2 (2.6)	5.1	191	475

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

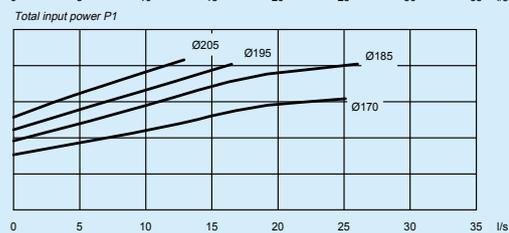
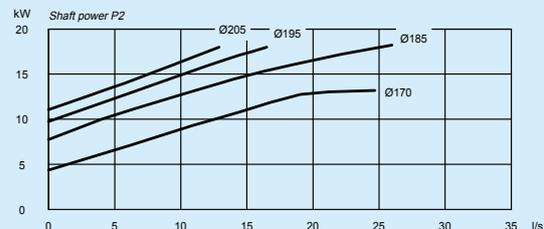
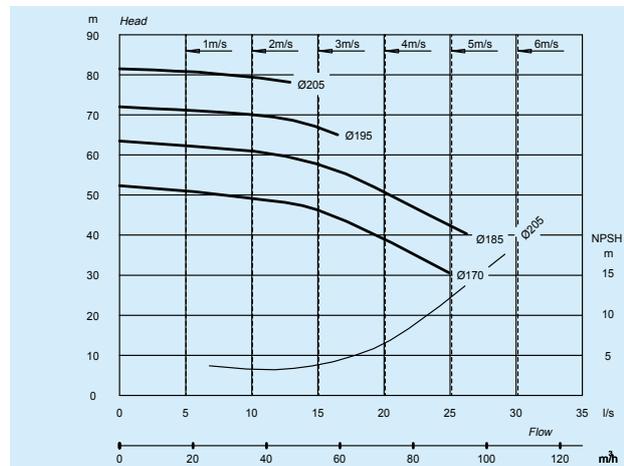
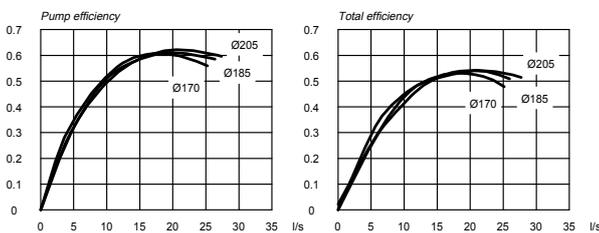


T-80S/2 DN80 3600 r/min



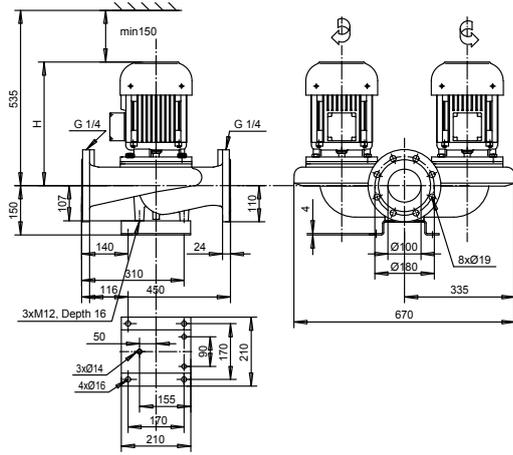
	kW	A	kg	H
OKN-164 G1 F29	15 (18)	30.5	365	630
OKN-164 F1 F29	11 (13)	22.0	355	630
OKN-132 E1 F29	7.5 (9)	15.0	263	500

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



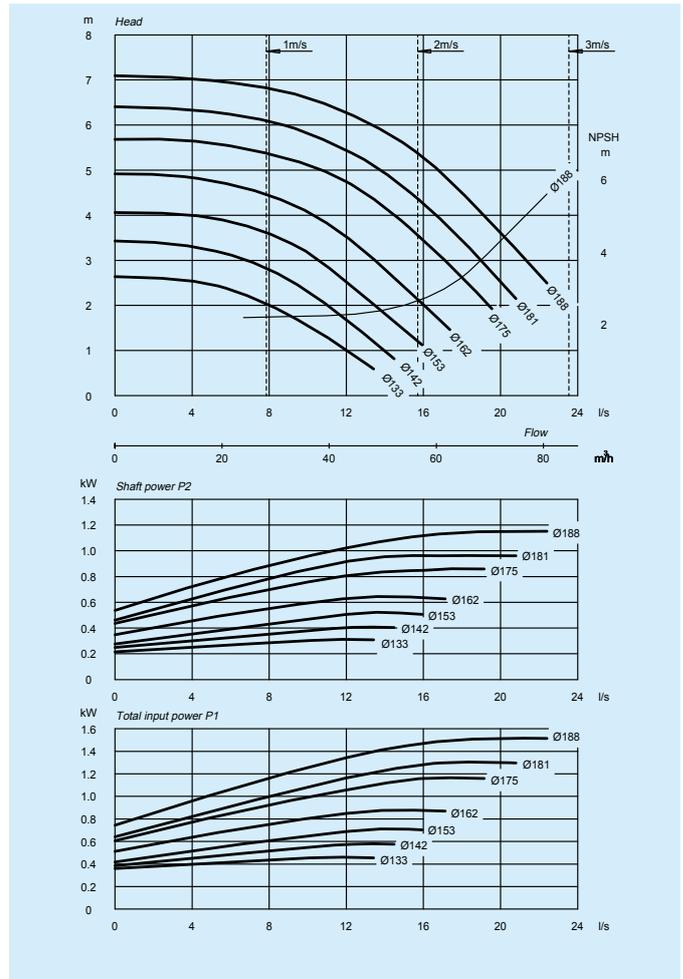
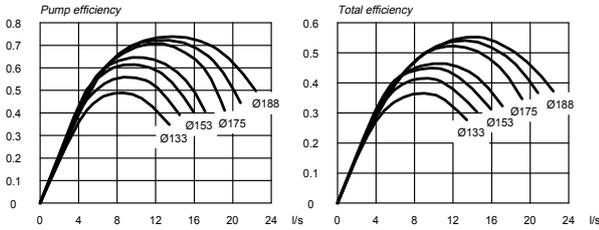
Technical data

AT-1102/6 DN100 1200 r/min

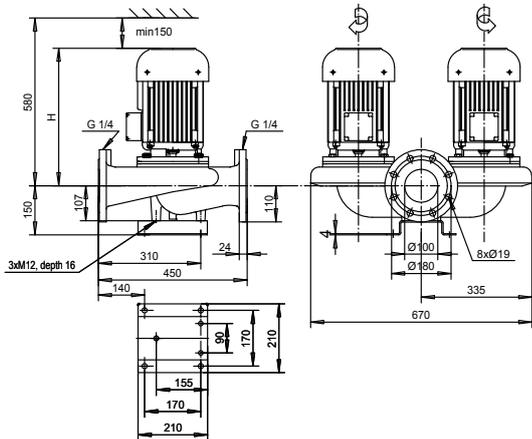


	<i>kW</i>	<i>A</i>	<i>kg</i>	<i>H</i>
OKN-101 D3 F19	1.1 (1.3)	3.5	125	385
OKN-101 D3 F19	0.75 (0.9)	2.4	125	385
OKN-101 C3 F19	0.55 (0.68)	1.75	117	385
OKN-100 B3 F19	0.37 (0.44)	1.2	111	335

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

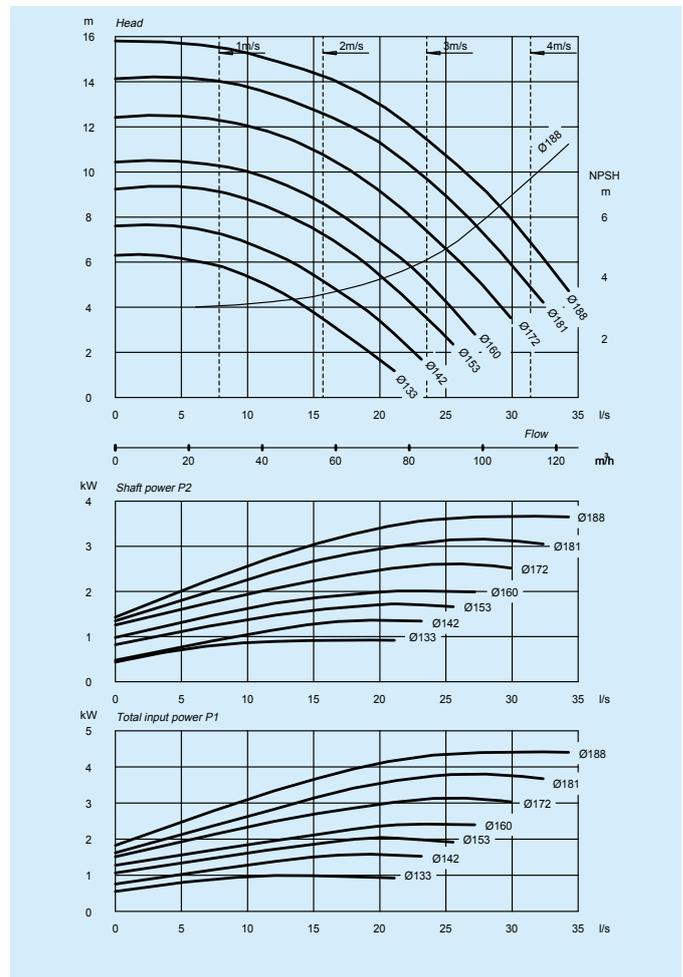
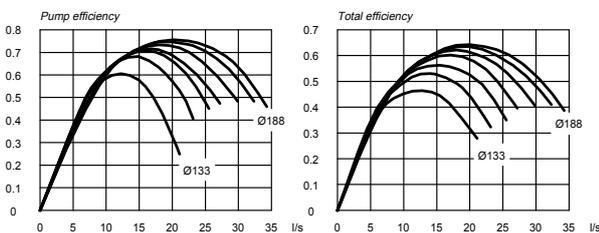


AT-1102/4 DN100 1800 r/min



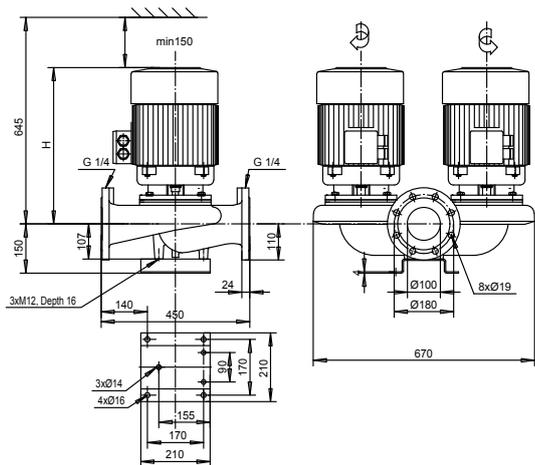
	<i>kW</i>	<i>A</i>	<i>kg</i>	<i>H</i>
OKN-112 E2 F19	3 (3.6)	6.6	145	430
OKN-112 C2 F19	2.2 (2.6)	5.1	137	430
OKN-101 D2 F19	1.5 (1.8)	3.5	125	385
OKN-101 C2 F19	1.1 (1.3)	2.6	117	385
OKN-100 B2 F19	0.75 (0.9)	2.0	111	335

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



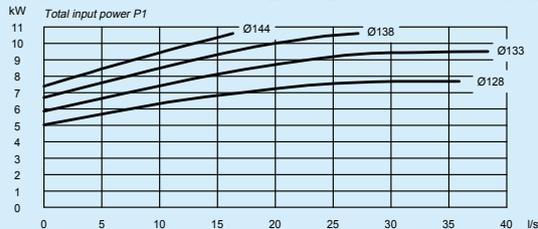
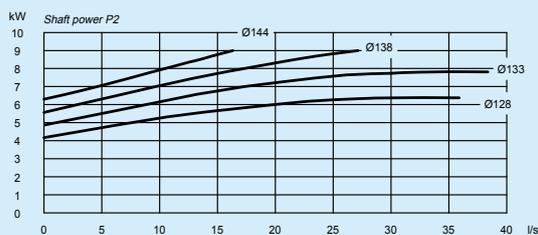
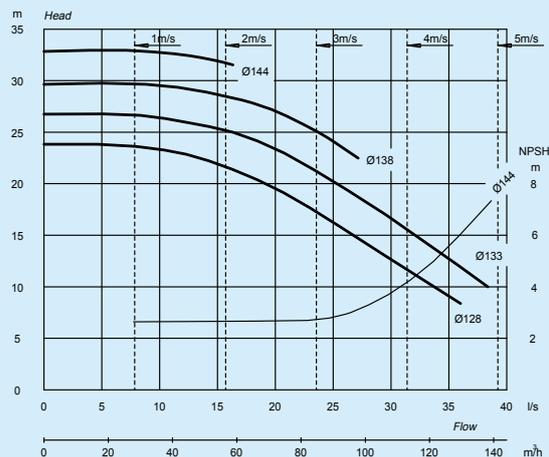
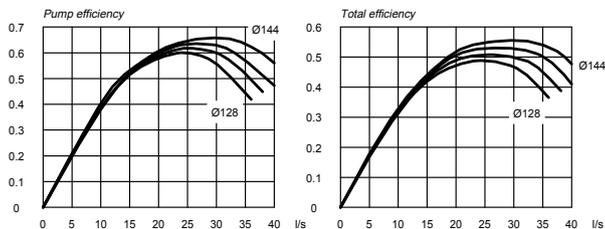
Technical data

AT-1102/2 DN100 3600 r/min

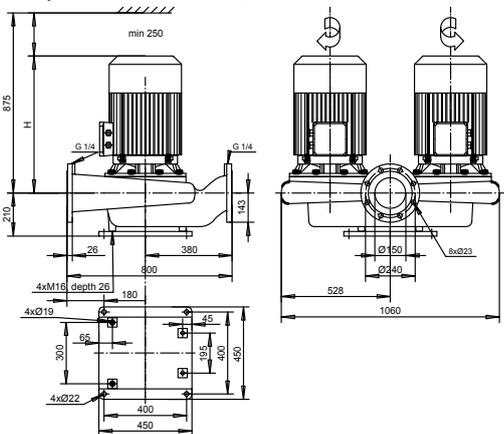


	kW	A	kg	H
OKN-132 E1 F19	7.5 (9)	15.0	202	495
OKN-132 C1 F19	5.5 (6.6)	11.0	186	495
OKN-112 E1 F19	4.0 (4.8)	8.2	138	430

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

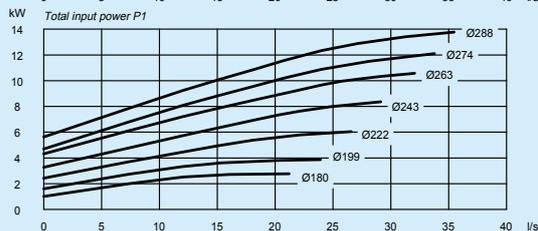
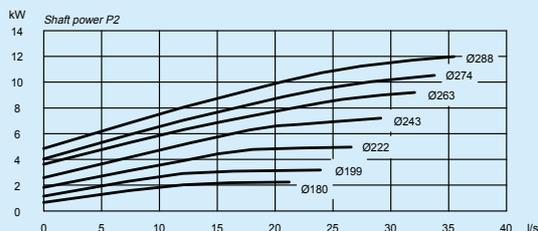
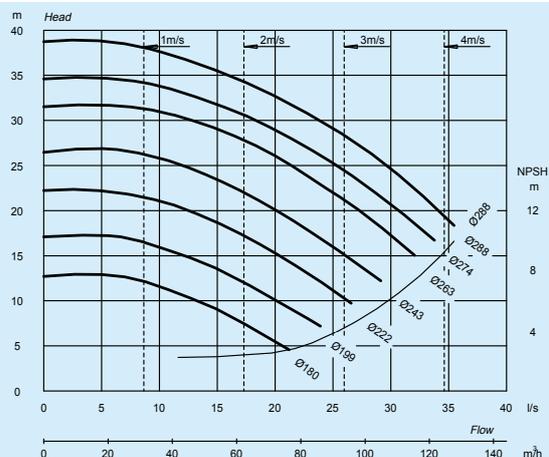
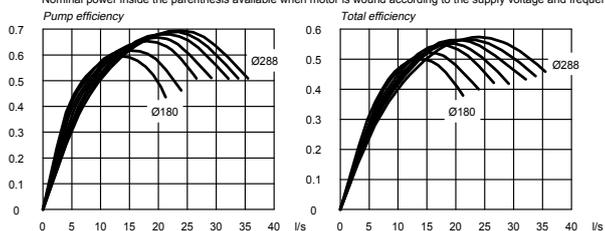


AT-1106/4 DN100 1800 r/min



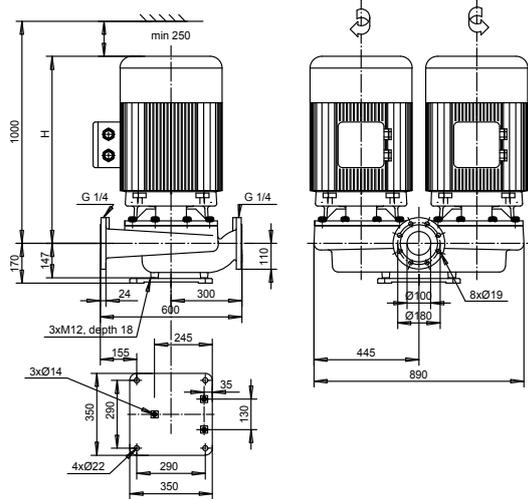
	kW	A	kg	H
OKN-187 H2 F31	18.5 (22)	34	515	625
OKN-164B J2 F31	15 (18)	31.0	465	585
OKN-164B G2 F31	11 (13)	22.6	435	585
OKN-133B G2 F31	7.5 (9.0)	15.7	380	550
OKN-132B E2 F31	5.5 (6.6)	11.9	330	500
OKN-132B C2 F31	4.0 (4.8)	8.7	320	500
OKN-112 E2 F31	3.0 (3.6)	6.6	280	430

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



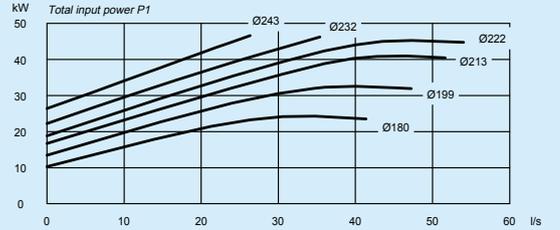
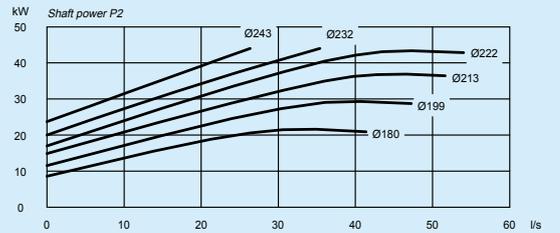
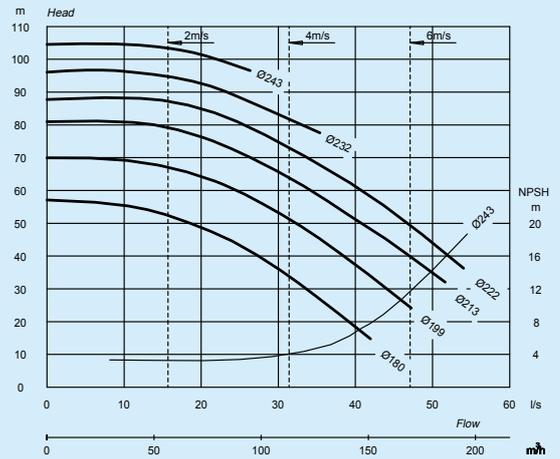
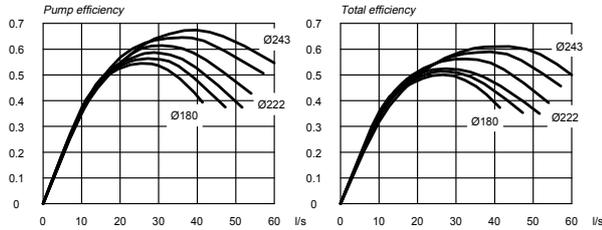
Technical data

AT-1106/2 DN100 3600 r/min

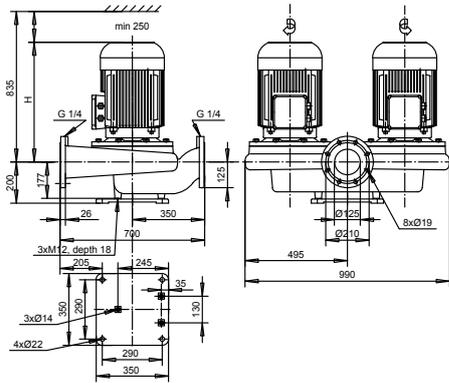


	kW	A	kg	H
OKM-207 J1 F31	37 (44)	64	700	730
OKM-206 K1 F31	30 (36)	53	660	640
OKM-187 G1 F31	22 (26)	38	520	640
OKM-165 H1 F31	18.5 (22)	34	460	625

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

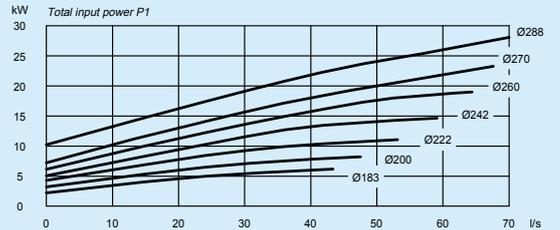
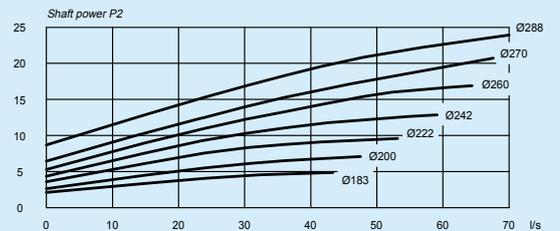
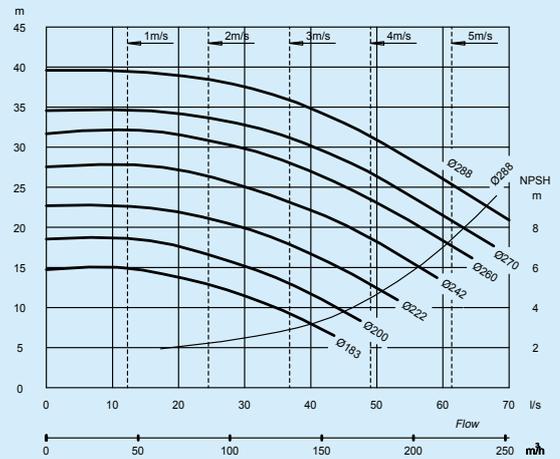
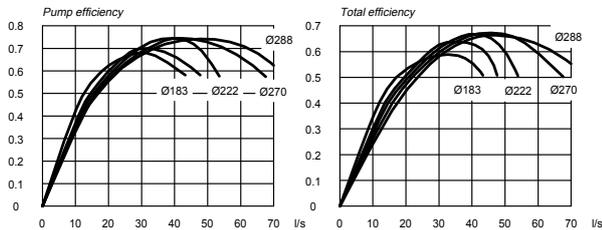


AT-1129/4 DN125 1800 r/min



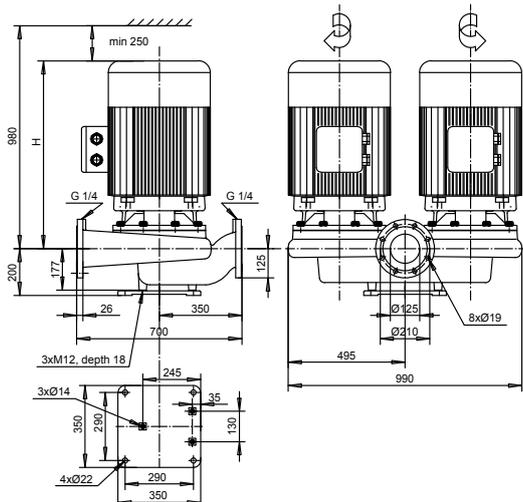
	kW	A	kg	H
OKM-186 J2 F31	22.0 (26)	42	510	640
OKM-187 H2 F31	18.5 (22)	34	495	625
OKN-164B J2 F31	15.0 (18)	31.0	465	585
OKN-164B G2 F31	11.0 (13)	22.6	435	585
OKN-133B G2 F31	7.5 (9)	15.7	395	550
OKN-132B E2 F31	5.5 (6.6)	11.9	365	500
OKN-132B C2 F31	4.0 (4.8)	8.7	350	500

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



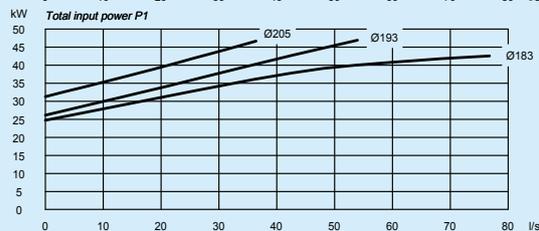
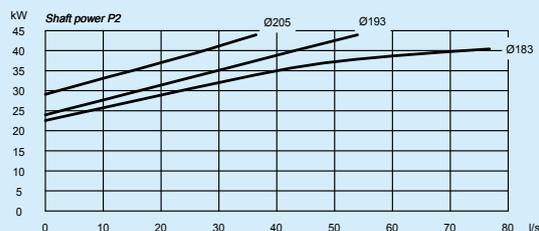
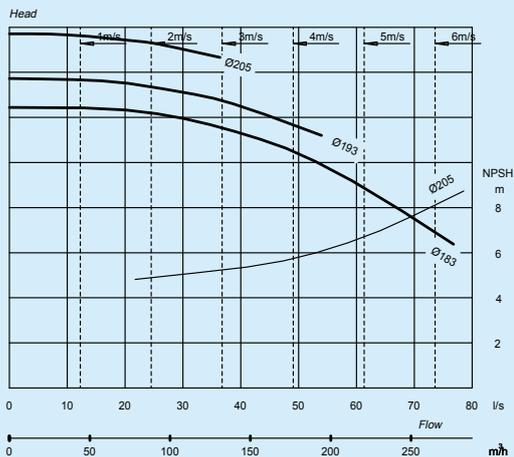
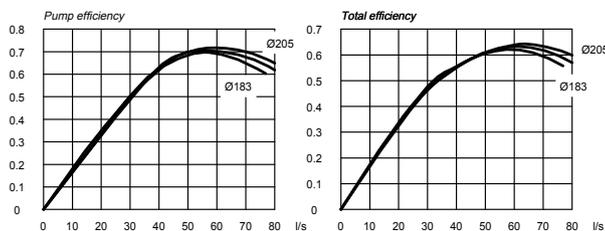
Technical data

AT-1129/2 DN125 3600 r/min

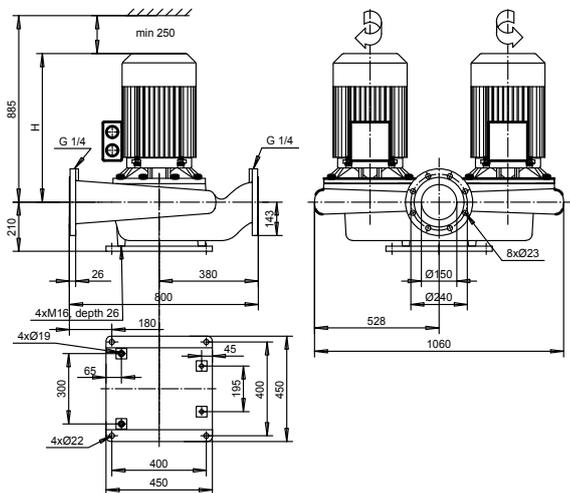


	kW	A	kg	H
OKM-207 J1 F31	37 (44)	64	745	730
OKM-206 K1 F31	30 (36)	53	705	640

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

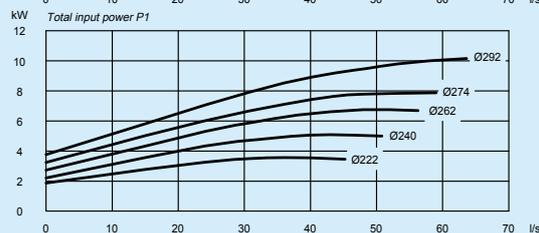
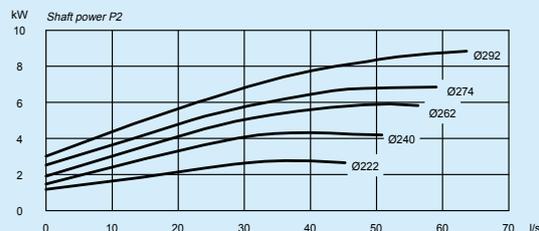
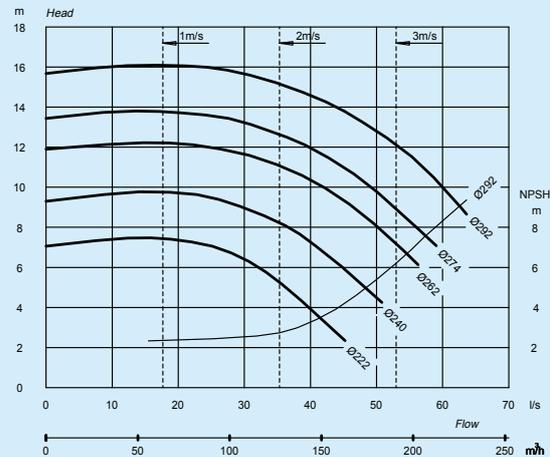
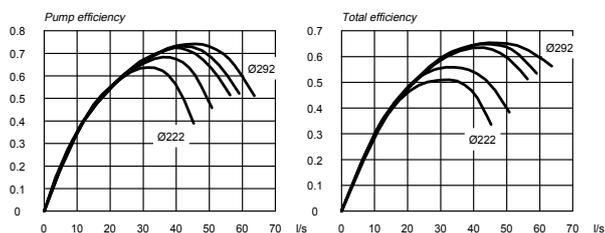


AT-1154/6 DN150 1200 r/min



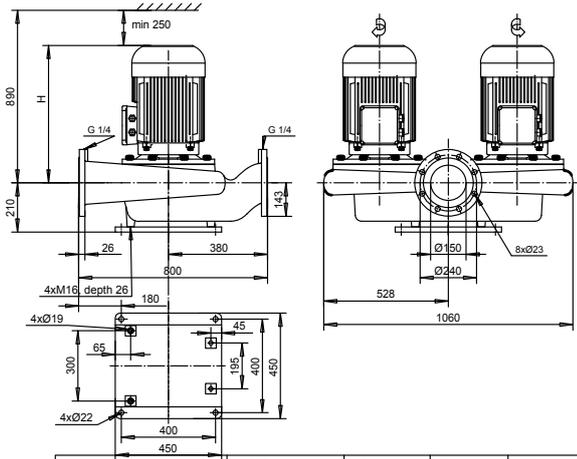
	kW	A	kg	H
OKM-165 G3 F31	11 (13)	22.5	485	635
OKM-165 G3 F31	7.5 (9)	17.0	485	635
OKM-133B G3 F31	3.5 (6.6)	12.7	415	550

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



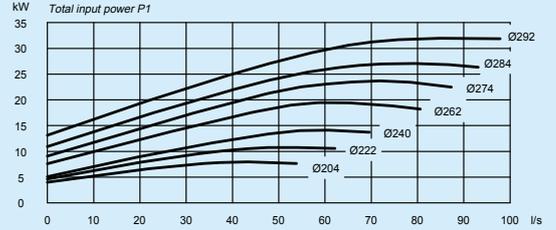
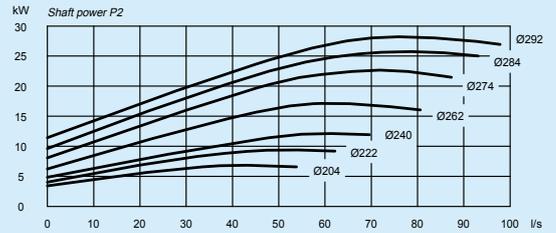
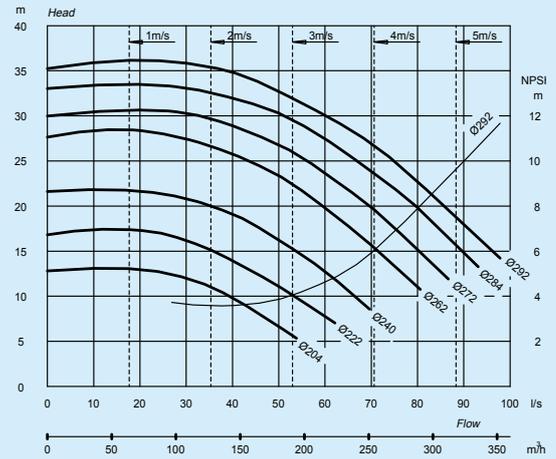
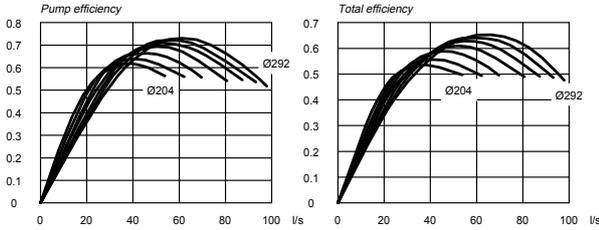
Technical data

AT-1154/4 DN150 1800 r/min

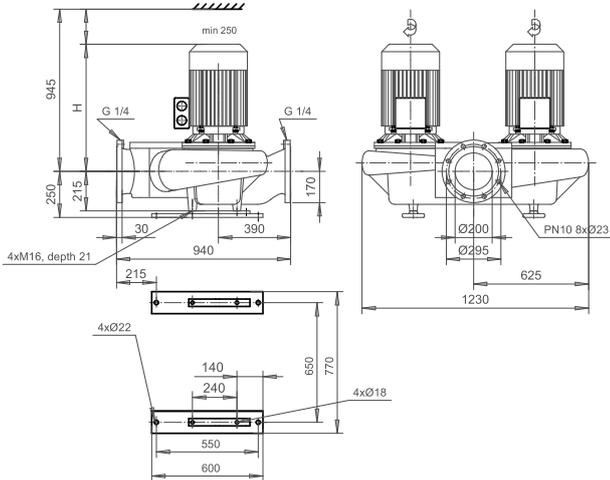


	kW	A	kg	H
OKM-206 K2 F31	30.0 (30.0)	55	360	640
OKM-186 J2 F31	22.0 (26.0)	42	280	640
OKM-187 H2 F31	18.5 (22.0)	34	265	625
OKN-164B J2 F31	15.0 (18.0)	31.0	240	585
OKN-164B G2 F31	11.0 (13.0)	22.6	230	585
OKN-133B G2 F31	7.5 (9.0)	15.7	200	550
OKN-132B E2 F31	5.5 (6.6)	11.9	190	500

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

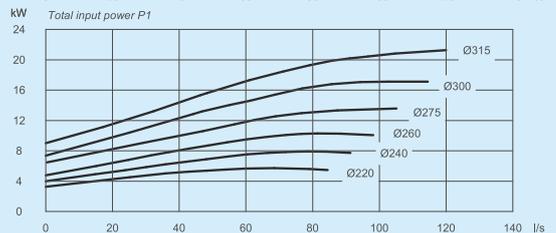
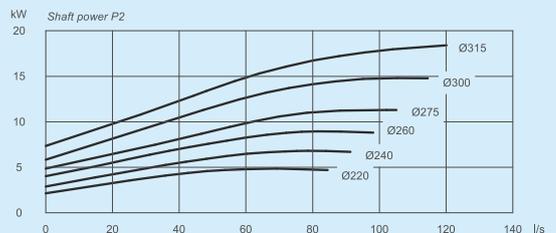
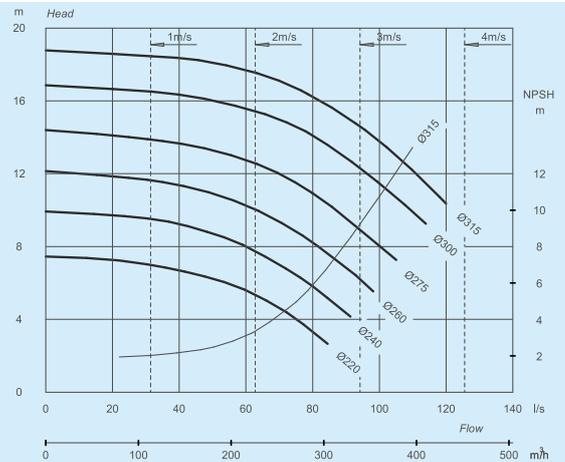
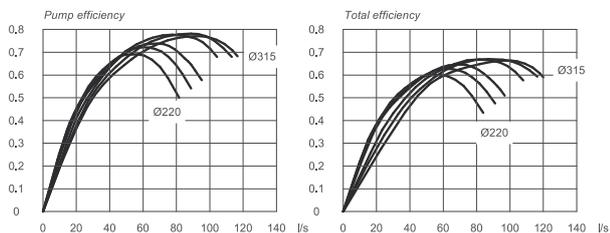


AT-1202/6 DN200 1200 r/min



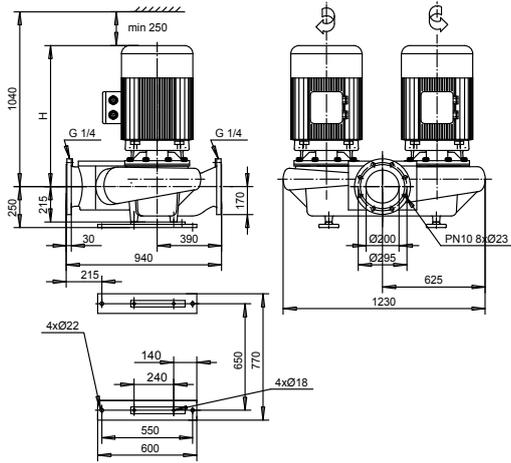
	kW	A	kg	H
OKM-206 K3 K32	18.5 (21)	35.5	667	800
OKM-206 K3 K32	15 (18)	31.5	667	800
OKM-165 G3 K31	11 (13)	22	580	735
OKN-165 G3 K31	7.5 (9)	17	580	735
OKN-133 G3 B31	5.5 (6.6)	12.7	580	610

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



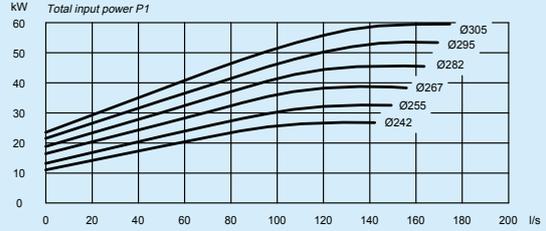
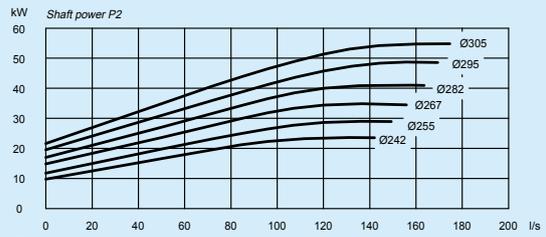
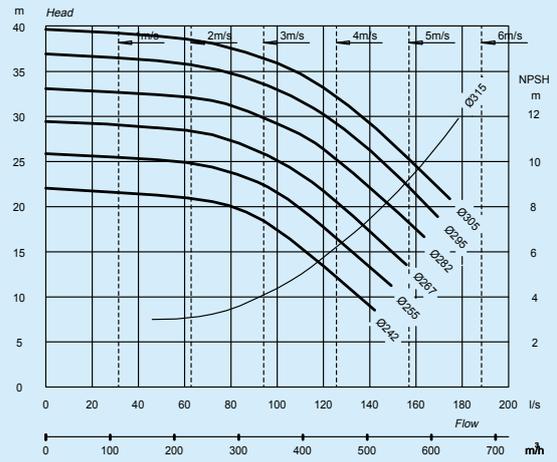
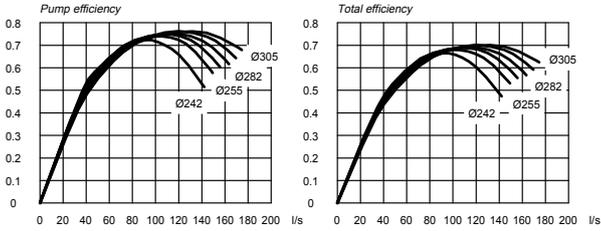
Technical data

AT-1202/4 DN200 1800 r/min

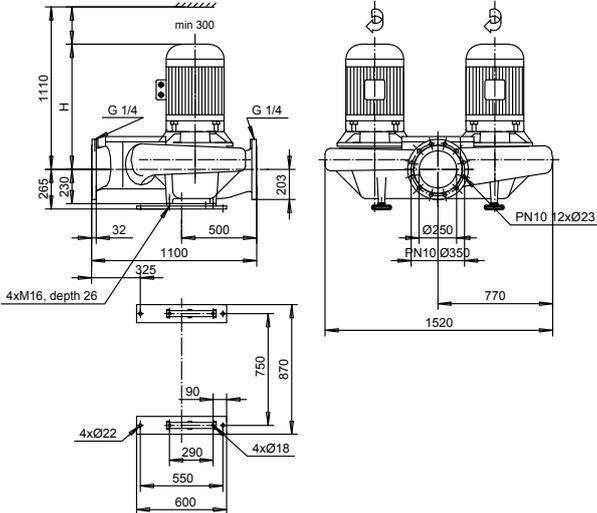


	kW	A	kg	H
OKM-227 K2 F33	45 (54)	82	508	790
OKM-207 K2 F32	37 (44)	69.5	478	790
OKM-206 K2 F32	30 (36)	55	408	700
OKM-186 J2 F32	22 (26)	42	380	700
OKM-187 H2 F31	18.5 (22)	34	338	665

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.

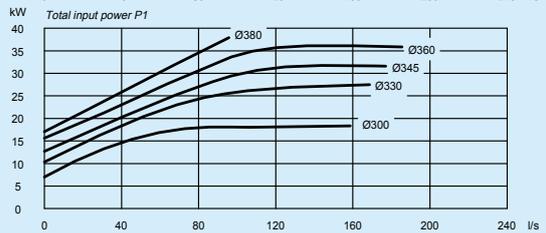
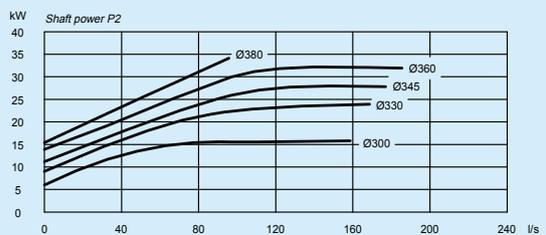
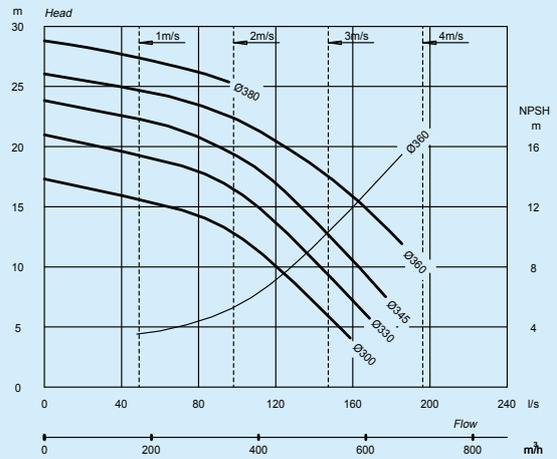
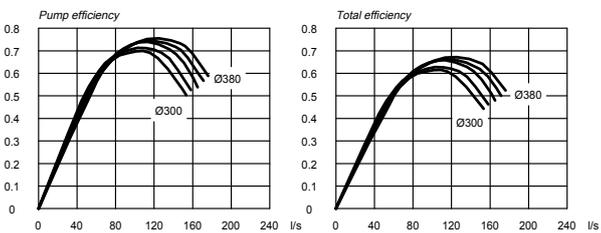


AT-1250/6 DN250 1200 r/min



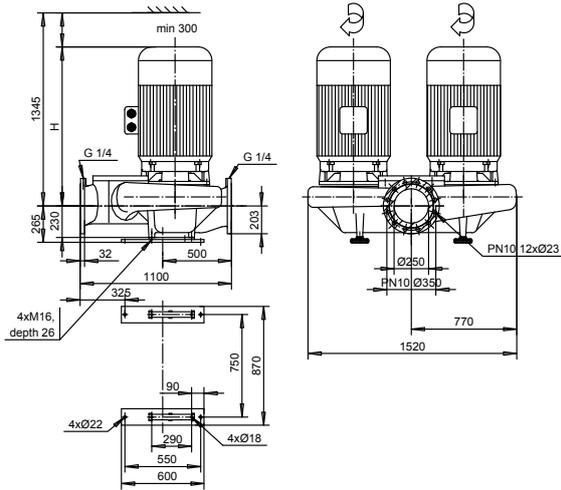
	kW	A	kg	H
OKM-226B K3 F42	30 (34)	55	1110	810
OKM-207 K3 F41	22 (26)	43.5	980	810
OKM-206 K3 F41	18.5 (21)	35.5	980	720
OKM-206 K3 F41	15 (18)	30.5	810	720

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.



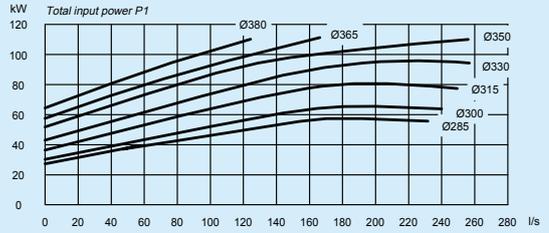
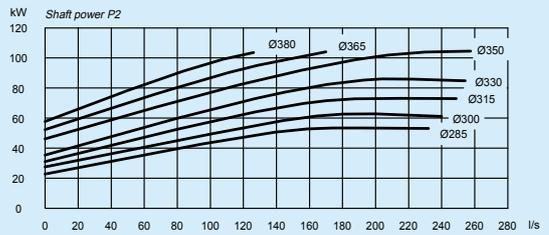
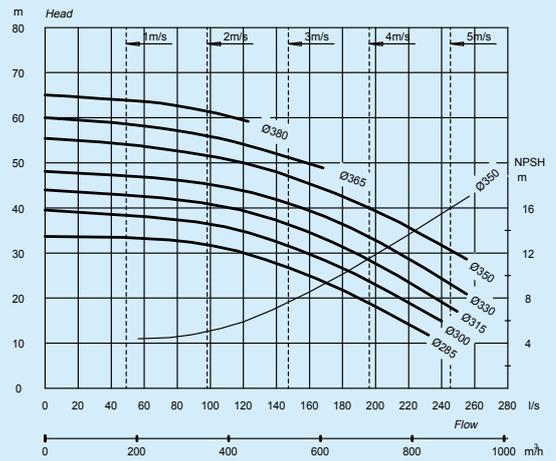
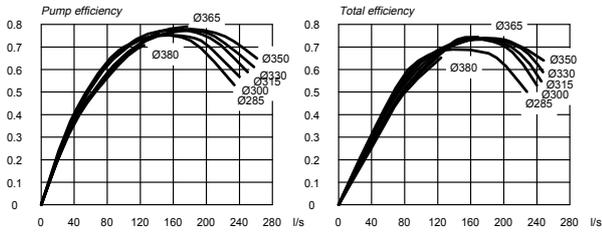
Technical data

AT-1250/4 DN250 1800 r/min



	<i>KW</i>	<i>A</i>	<i>kg</i>	<i>H</i>
OKM-300 K2 F43	90 (105)	160	950	1000
OKM-280 K2 F43	75 (90)	134	870	1000
OKM-257 K2 F42	55 (66)	100	730	960
OKM-227B K2 F42	45 (54)	81	650	810

Nominal power inside the parenthesis available when motor is wound according to the supply voltage and frequency.







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