

Installation

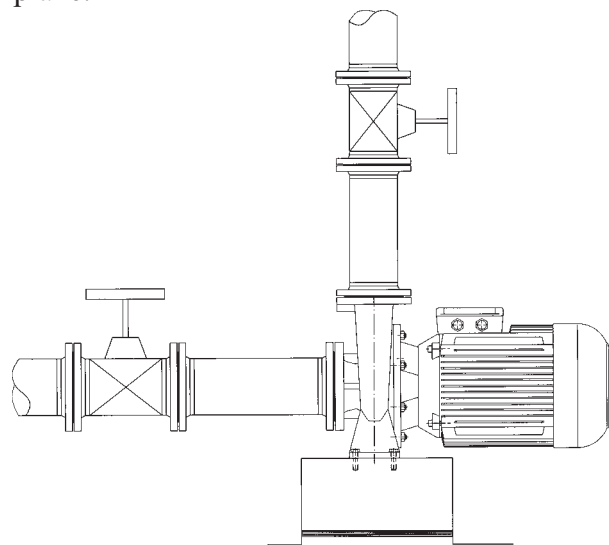
When designing and installing the pump in the system pay attention to the following:

- 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 pump should be mounted in a such way that the electric motor (i.e. the pump shaft) is in a horizontal position. 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 to the desired position.

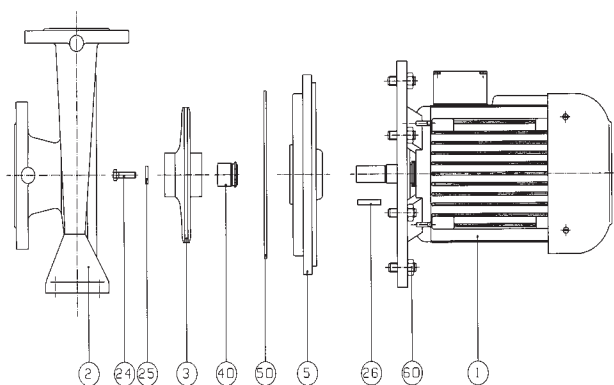
The smaller pumps (< 1,1 kW motors) may be installed without support and baseplate, but the motor must never fall below the horizontal plane.

The heavier pumps (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



Spare parts and maintenance

List of parts

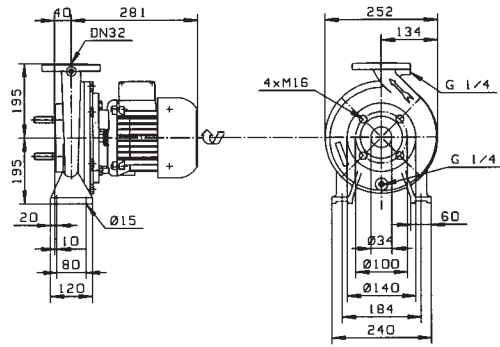


- | | |
|----|-----------------------|
| 1 | Electric motor |
| 2 | Pump housing |
| 3 | Impeller |
| 5 | Sealing flange |
| 24 | Screw |
| 25 | Washer |
| 26 | Key |
| 40 | Mechanical shaft seal |
| 43 | V-ring (optional) |
| 50 | O-ring |
| 60 | Nut/Screw |

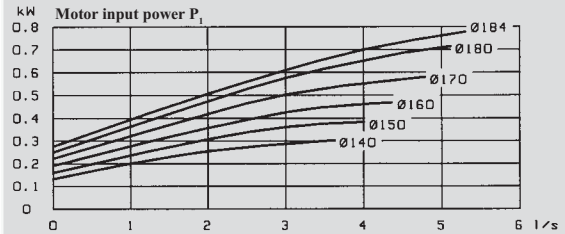
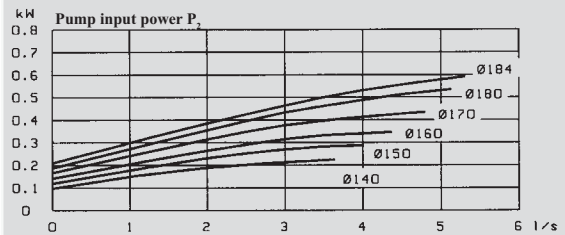
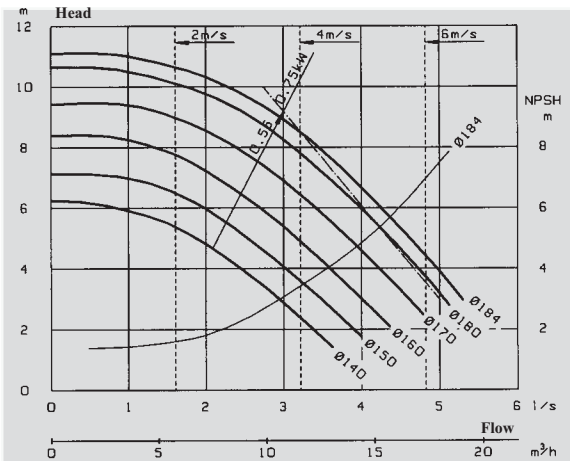
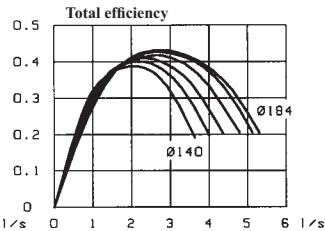
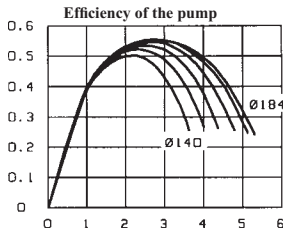
Detailed information for installation and maintenance of the KolmekS pump can be found from the Instruction manual attached with the pump.

Technical data

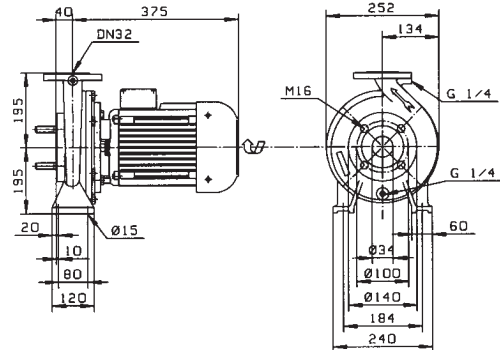
AS_-32 B DN32 1500 r/min



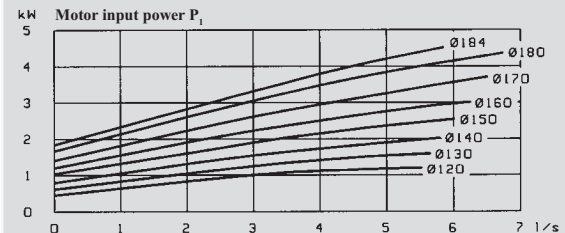
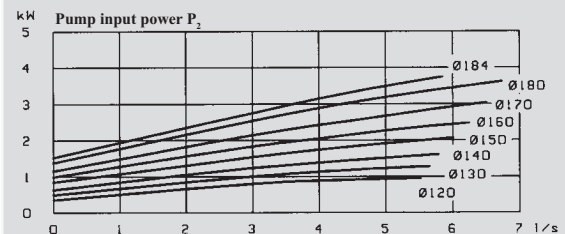
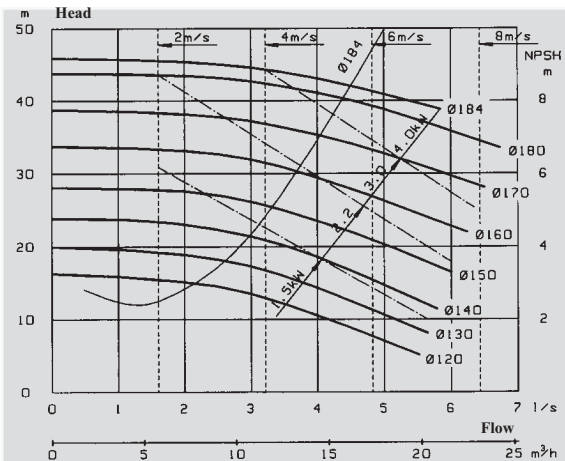
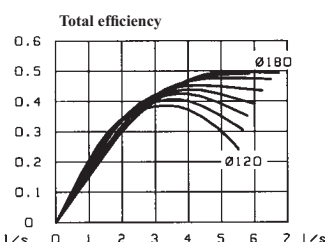
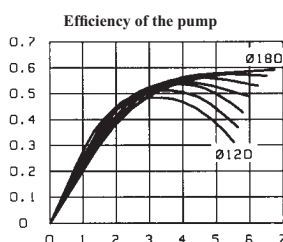
	kW	A	kg
OKN-100 B2 Ne	0.75	2.0	38
OKN-100 B2 Ne	0.55	1.4	38
OKN-100 B2 P Ne 1~	0.55	3.4	38



AS_-32 H DN32 3000 r/min

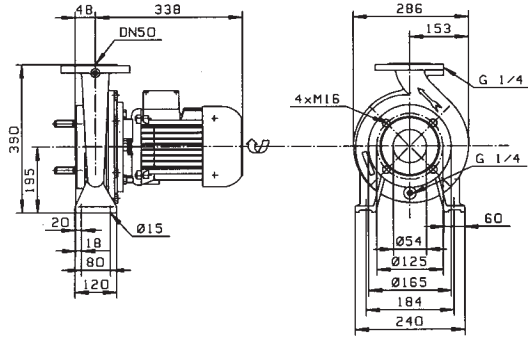


	kW	A	kg
OKN-112 E1 Ne	4.0	8.2	57
OKN-112 C1 Ne	3.0	6.4	53
OKN-101 D1 Ne	2.2	4.7	46
OKN-101 C1 Ne	1.5	3.3	43

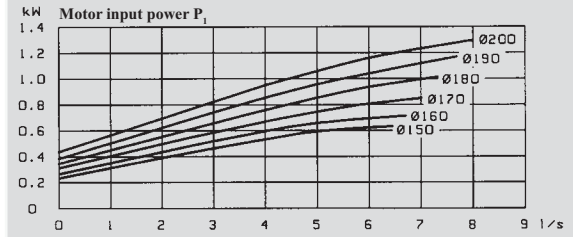
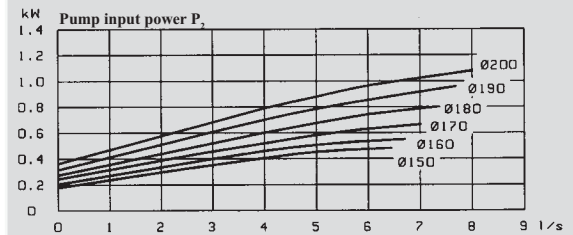
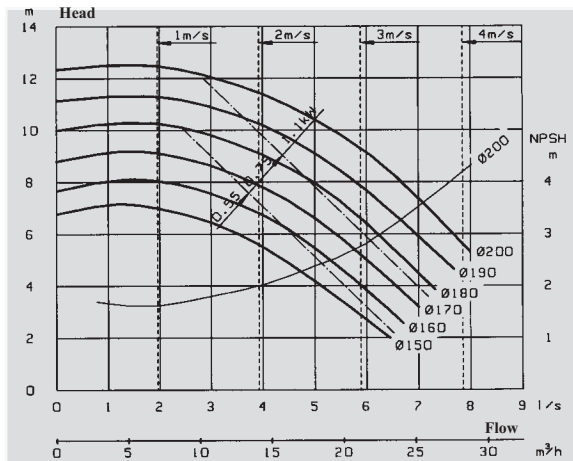
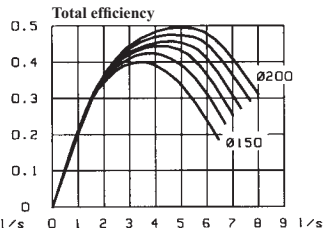
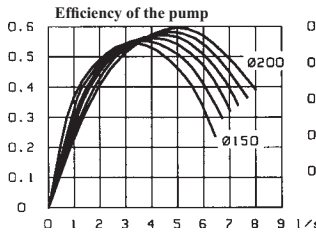


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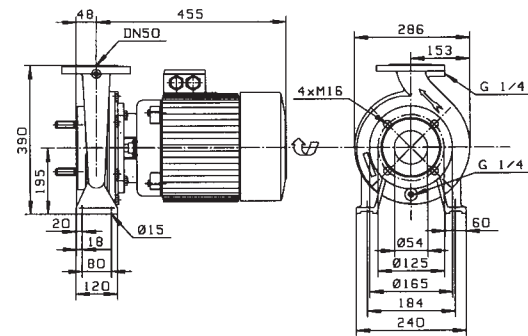
AS₋50 B DN50 1500 r/min



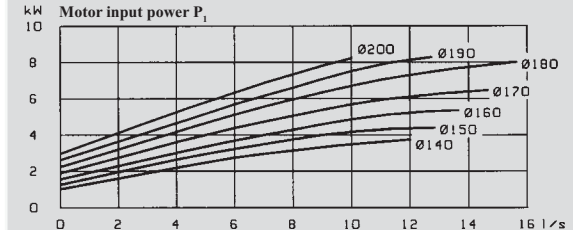
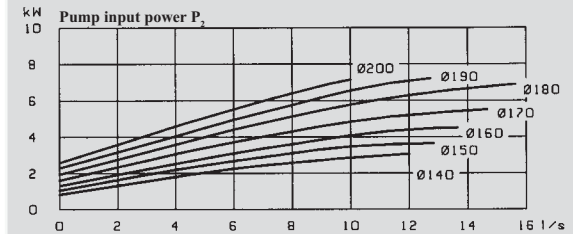
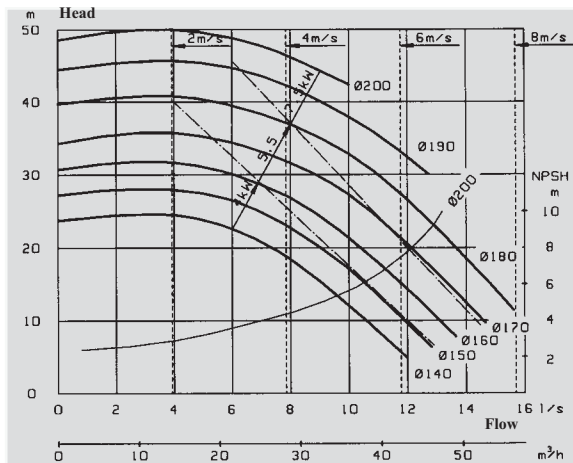
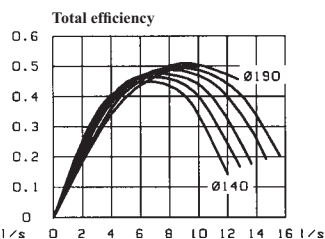
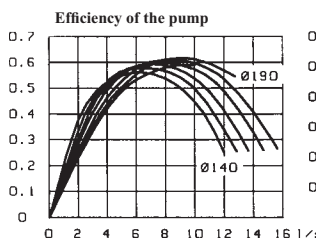
	kW	A	kg
OKN-101 C2 Ne	1.1	2.6	46
OKN-101 C2 P Ne 1~	1.1	6.9	46
OKN-100 B2 Ne	0.75	2.0	41
OKN-100 B2 Ne	0.55	1.4	41
OKN-100 B2 P Ne 1~	0.55	3.4	41



AS₋50 H DN50 3000 r/min

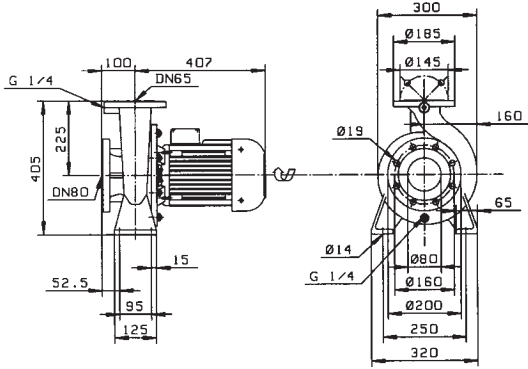


	kW	A	kg
OKN-132 E1 Ne	7.5	15	92
OKN-132 C1 Ne	5.5	11	85
OKN-112 E1 Ne	4.0	8.2	62

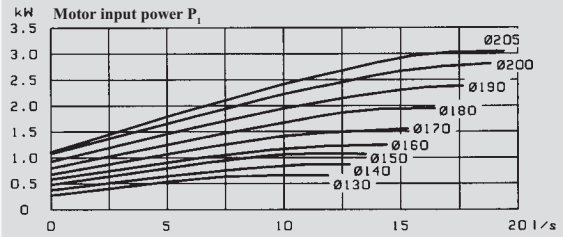
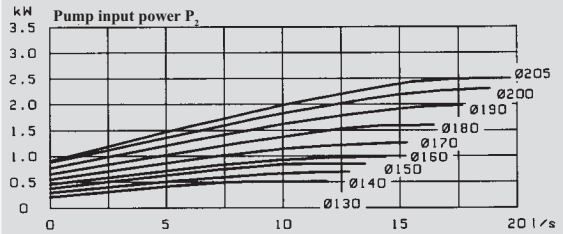
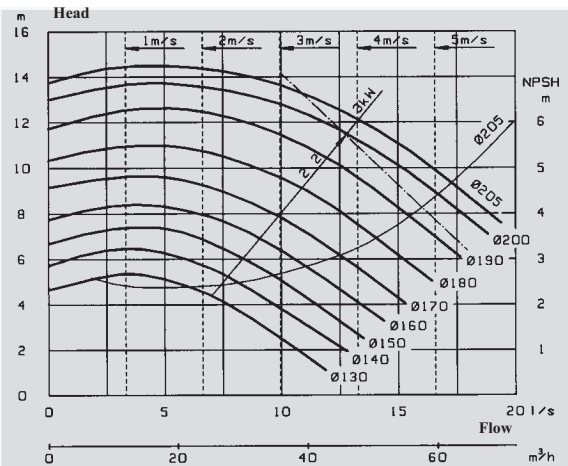
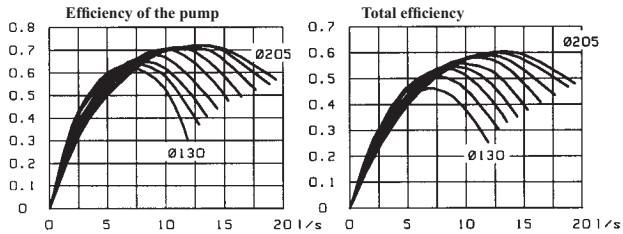


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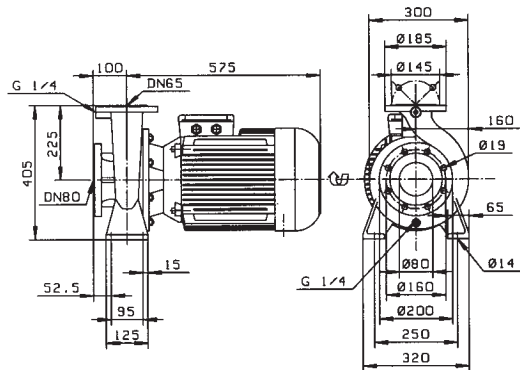
KN_-65/4 DN80/65 1500 r/min



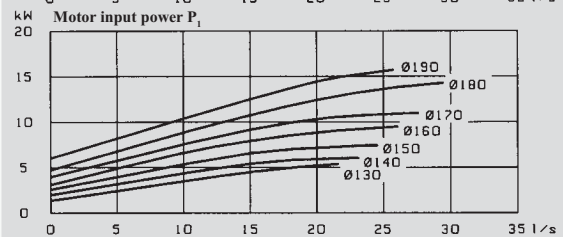
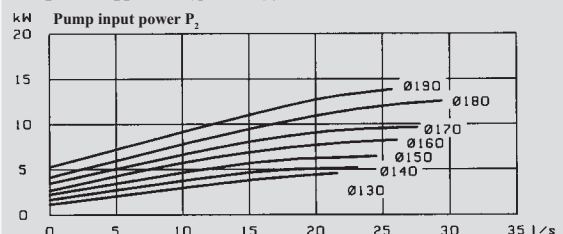
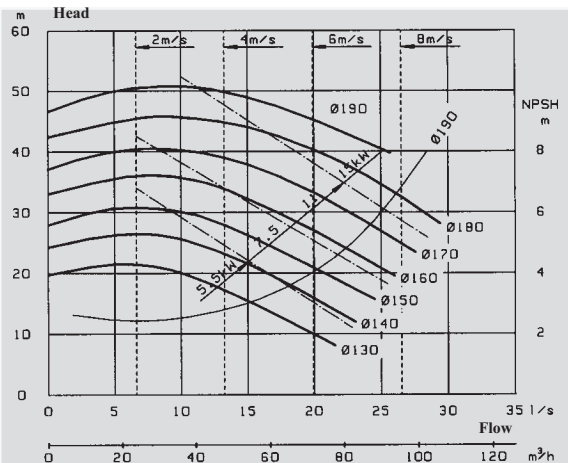
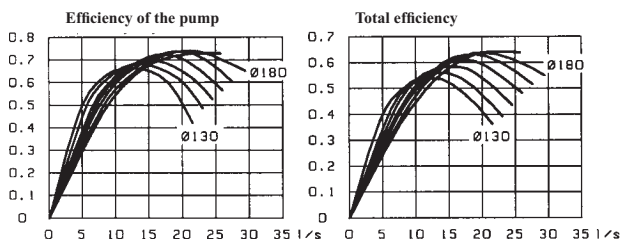
	kW	A	kg
OKN-112 E2 N22	3.0	6.5	71
OKN-112 C2 N22	2.2	5.1	66



KN_-65/2 DN80/65 3000 r/min



	kW	A	kg
OKN-164 G1 N22	15	30.5	157
OKN-164 F1 N22	11	22.0	152
OKN-132 E1 N22	7.5	15.0	102
OKN-132 C1 N22	5.5	11.0	95



***CHECKLIST FOR INQUIRY***

P.O.B. 27
 FIN-14201 Turenki FINLAND
 Telephone +358-3-535 3 1
 Telefax +358-3-535 3 200

Date / 200_

Client	Project
Contact person	Tel. Fax.

Liquid		_____
Concentration	%	_____
Temperature	°C	_____
Density	kg/m ³	_____
Viscosity	cSt/cP	_____
Vapour pressure		_____
Solids	Y/N	_____
Safety in operation		_____

Capacity		l/s	_____
Head		m	_____
Reserve margins	Y/N		_____
Voltage/Frequency		V/Hz	_____
Speed of rotation		r/min	_____
Protection form	IP		_____
Temp. of environment	°C		_____
EX-protection	Y/N		_____

Suction head		m	_____
(Open system) Static pressure	bar		_____
(Close system)			_____
Suction connection		DN	_____
Discharge connection	DN		_____
NPSH (available)		m	_____
Nominal pressure		bar	_____
Max. working temp.		°C	_____
Continuous operation	Y/N		_____
Starting frequency			_____

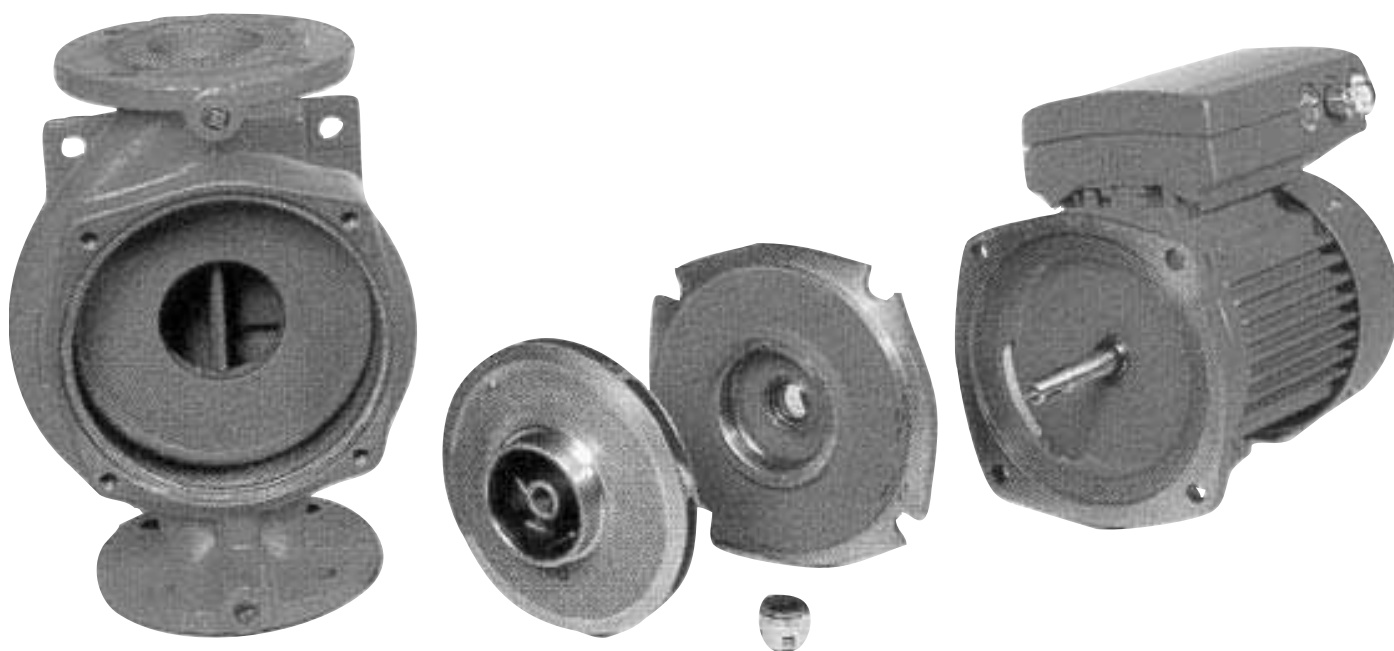
Construction/Type	_____
Materials	_____
Mechanical seal	_____
Tests, certificates, documents	_____

Notice





PUMP SERVICE



General features

The Kolmeks pumps do not require regular maintenance, nevertheless they need regular operational control. The needed maintenance and repairs depend on the type of application and the cleanness of the pumped medium. The mechanical shaft seal is a wearing part, which can be changed in case of leakage. Small leakage e.g. some drops per hour is allowed, especially when pumping water-clygol mixtures.

The bearings of the motor are lubricated for the whole life-time, which is several years in continuous operation. The change of bearings requires special tools and instructions together with special silent-running bearings. We recommend to change the whole pump head or the electric motor in case of the electrical or mechanical failure of the motor.

Exchange motor unit

The exchange motor unit (internal, drive unit, rotating parts, exchange pump head) includes the electric motor, sealing flange, impeller and all seals. Please pay attention to the direction of the rotation mentioned in the pump label especially when there is a twin pump in concern. The failure of electric motor or leakage of mechanical seal can be easily overhauled with the exchange pump head because pump housing remains connected in the pipe line and the shut down time is therefore very short.

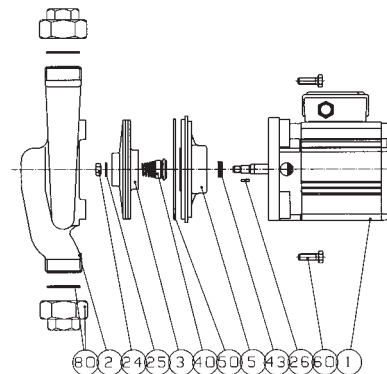
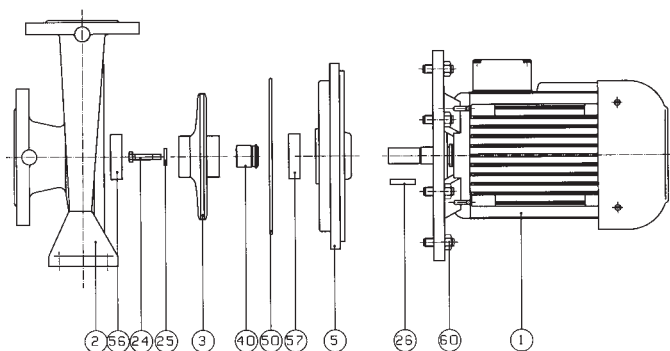
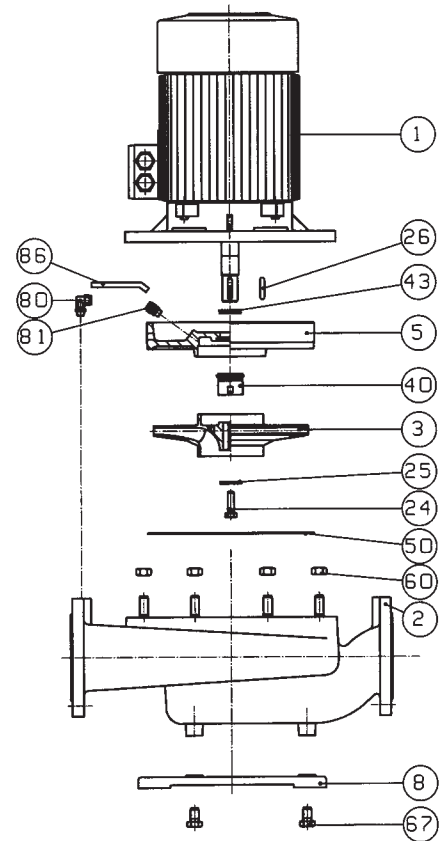
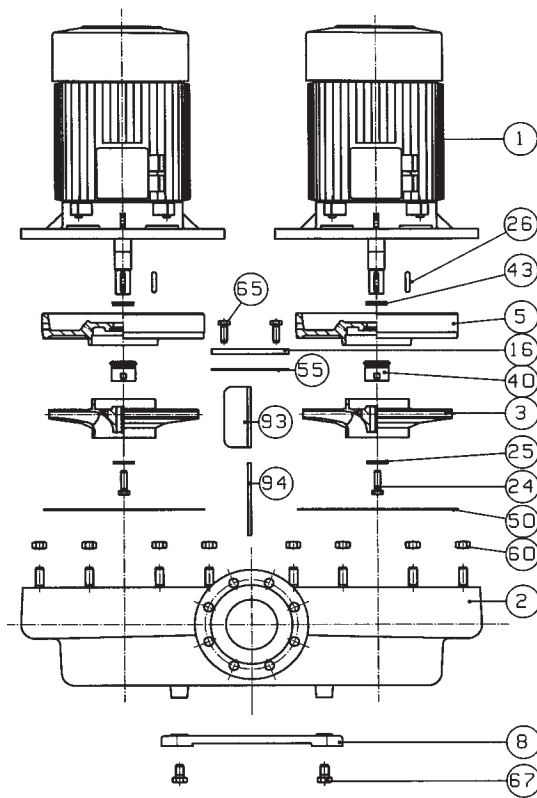


PUMP SERVICE

Spares

The spares available for KOLMEKS pumps are specified as follows

No.	NAME	No.	NAME
1	Electric motor	55	Gasket (AT- ja T-range)
2	Pump housing	56/57	Wear ring (N-range)
3	Impeller	60	Nut / Screw
5	Sealing flange	65	Screw (AT- ja T-range)
8	Base plate	67	Screw
16	Cover	80	Pipe joint (AMK-25, AHV-25, AE-26, -33, AP -33)
24	Nut / Screw	81	Pipe joint (ALH-range)
25	Washer	86	Pipe (ALH-range)
26	Key	93	Flap device (AT- ja T-range)
40	Mechanical seal	94	Pin (AT- ja T-range)
50	O-ring / Gasket	xx	Blind service cover



PUMP SERVICE

SEALS

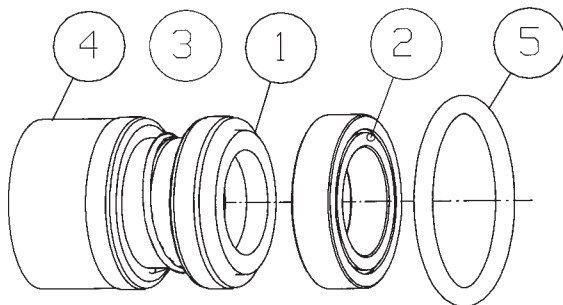
Mechanical seal Serie N:o 7

10 mm shaft dia	Flange O-ring	In use from year
AMK-25	100x2,5	1994

12 mm shaft dia	Flange O-ring	In use from year
AHV/AH-25	66x2,5	1986
ASH-20	115x2,5	1986
ASH-25	123x2,5	1986
ASH-32,-50	145x2,5	1986
AE-20,-25,-26	123x2,5	1989
AE-32	145x2,5	1989
AKN-32,-40	100x2,5	1986
AKN-53	150x3	1986
ASP-15	100x2,5	1986
ASP-20	115x2,5	1986
ASP-25	123x2,5	1986
ASP-32	145x2,5	1986
AP-15	100x2,5	1990
AP-20,-25	123x2,5	1990
AP-32	145x2,5	1990
AKP-20	56x2,5	1986
AKP-25	100x2,5	1990
ASV-26	100x2,5	1986
AL /AT-1032	145x2,5	1990
AL /AT-1040	100x2,5	1986
AL /AT-1053	150x3	1986
AL -1054	150x3	1994
L /T-32A	100x2,5	2000
L /T-40A	145x2,5	2000
L /T-50A, -50B	150x3	2000

18 mm shaft dia	Flange O-ring	In use from year
AKN-50	150x3	1995
AKN-65, -80	184,5x3	1986
AL /AT-1055	150x3	1996
L /T-50C	150x3	2000
AL /AT-1065	179,3x5,7	1989
AL -1066	179,3x5,7	1993
L /T-65A, -65B	179,3x5,7	2002
AL /AT-1081	179,3x5,7	1989
L -T-80A	179,3x5,7	2002
AL /AT-1082	279,3x5,7	1996
AL /AT-1102	179,3x5,7	1989

25 mm shaft dia	Flange O-ring	In use from year
AKN_-100	240x3	1989
AS(P)-32 B,H	184,5x3	1996
AS(P)-50 B,H	203x3	1996



28 mm shaft dia	Flange O-ring	In use from year
N_-32-200A	220x4	1996
N_-32-250B	265x4	1996
N_-40-200A	220x4	1996
N_-40-250A	265x4	1996
N_-50-250A	265x4	1996
N_-65-200A	220x4	1996
L-50S		2001
L-80S		2002

32 mm shaft dia	Flange O-ring	In use from year
AKN_-127	240x3	1989
AL /AT-1105 -1128, 1153	309/295x1	1986
AL /AT-1106 -1129, -1154	309/295x1	1995
AL_-1155 -37 kW	309/295x1	1999
AL_-1200 -18,5 kW	315x6,3	1991
AL /AT-1202/4 11-18,5 kW	315x6,3	1995
AL /AT-1202/6 5,5-11 kW	315x6,3	1995

40 mm shaft dia	Flange O-ring	In use from year
N_-50-315B	330x3,53	1996
N_-65-315B	330x3,53	1996
N_-80-315B	330x3,53	1996
N_-100-315B	330x3,53	1996
AL_-1155 45 kW	309/295x1	1999
AL_-1200 18,5-37 kW	315x6,3	1990
AL /AT-1202/4 22-37 kW	315x6,3	1995
AL /AT-1202/6 15-18,5 kW	315x6,3	2002
AL /AT-1250/6 11-22 kW	405x7	1996
AL /AT-1250/4 37 kW	405x7	1993

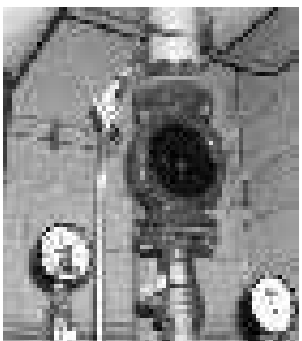
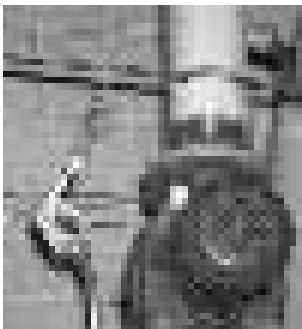
50 mm shaft dia	Flange O-ring	In use from year
AL_-1155 55 kW	309/295x1	1999
AL_-1200 55-75 kW	315x6,3	1990
AL /AT-1202 45 kW	315x6,3	1995
AL /AT-1250/6 30 kW	405x7	1996
AL /AT-1250/4 45-55 kW	405x7	1993

65 mm shaft dia	Flange O-ring	In use from year
AL /AT-1250 75-90 kW	405x7	1993

75 mm shaft dia	Flange O-ring	In use from year
AL_-1300 110-160 kW	475x8	2000

CHANGING THE MOTOR UNIT

Small pumps 1,5 kW or less



1) Stop the pump, open the main switch and take fuses away. Shut the valves.

2) Disconnect the electric cable from terminal box. Open the screws/nuts of the connection flange.

3) Lift the motor unit from the pump housing.

4) Change the O-ring or gasket on the housing.

5) Mount the new motor unit. Tighten the screws/nuts

Larger pumps above 1,5 kW





6) Connect the electric cable and open the valves. Start the pump and control the direction of rotation. Note the possible difference on twin pumps. Check the function of the pump.



CHANGING THE IMPELLER when the motor unit is dismantled



1) Put the pump head vertical on its fan cover.



2) Open the nut or screw of the impeller.



3) Use screw drivers to pull the impeller from the shaft.

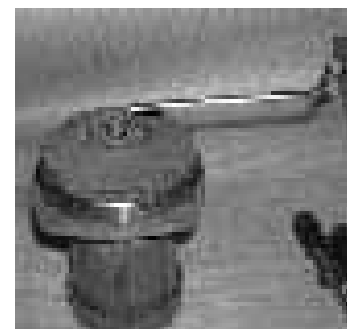


4) You may have to use special tools to pull out the impeller.



5) Change the shaft seal when needed, see next pages.

6) Mount the impeller. Use rubber hammer to get the impeller against to the shoulder on the shaft. Tighten the screw/nut.



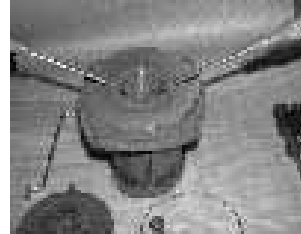
CHANGING THE MECHANICAL SHAFT SEAL

Dismounting the seal

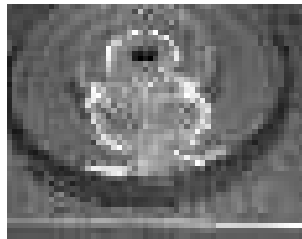
Read the instructions for change the pump head and change the impeller before you follow these instructions.



Pump head without impeller as the start position.



1) Dismount the shaft seal with two screw drivers. Do not damage the shaft.



2) Dismantle the sealing flange from the motor bracket. Replace with new when necessary.



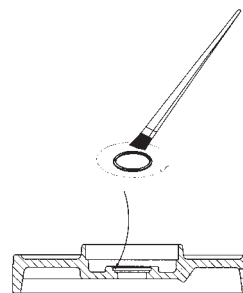
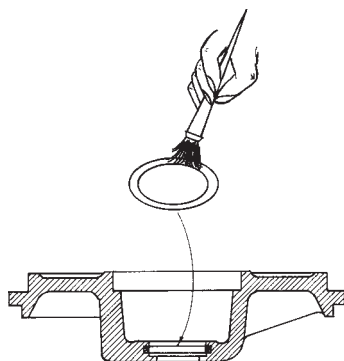
3) The pump head (exchange unit, internal) disassembled together with required tools.

Mounting the seal

Lubrication and mounting of O-ring

N.B.! Please do not touch the parts of the seal if not necessary. Use only clean hands. Check the correct seal size and other information before opening the package.

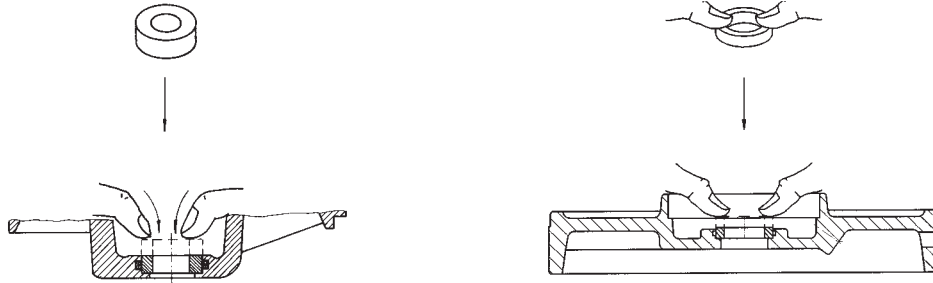
Clean the sealing flange boring and groove for O-ring. Check and lubricate the O-ring, use soft hand soap and water, or glycerine. Set the ring into the groove in the sealing flange (or in the BO and BP types on the counter ring).



PUMP SERVICE

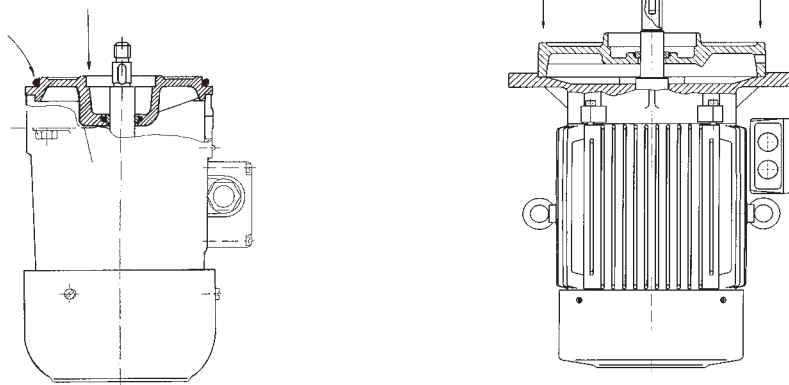
Fitting the seat into the sealing flange

Remove the protective packaging from the seat, check for any damage and wipe clean. Fit the seat into the sealing flange, smoother surface on the top (to the pump). Ensure that the O-ring is in position and will not be displaced during fitting. Using more lubrication on the O-ring it will be easier to fit the seat. Wipe the surface clean again after successful fitting. Please note that by types BO and BP the sealing flange should be mounted first on the motor.

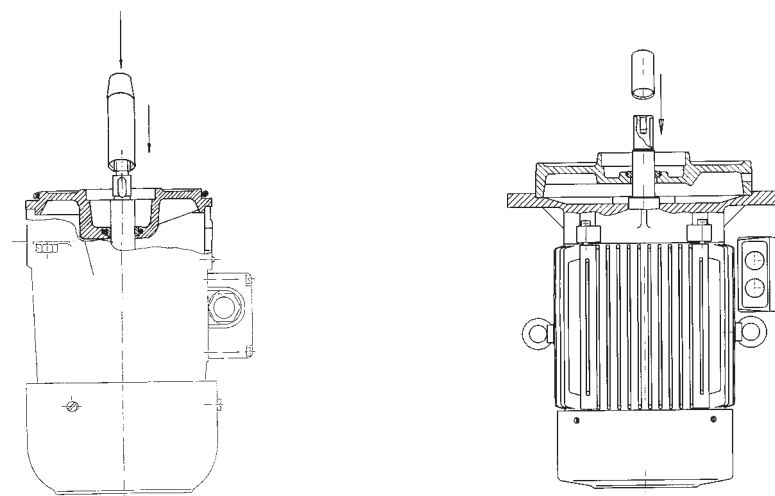


Mounting of the sealing flange

Set the sealing flange on the motor



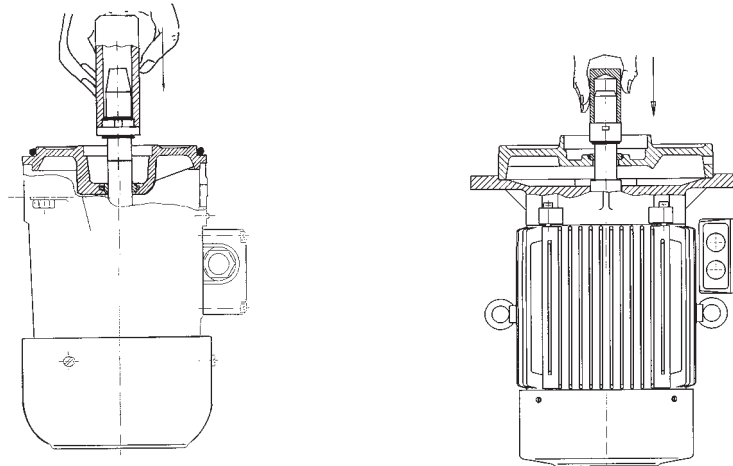
and place the fitting tool on to the shaft.



Fitting the seal unit

Check the seal body, bellows and face for any damages, wipe clean. Clean the shaft and lightly lubricate the shaft and the neck of the bellows. Use soft hand soap and water.

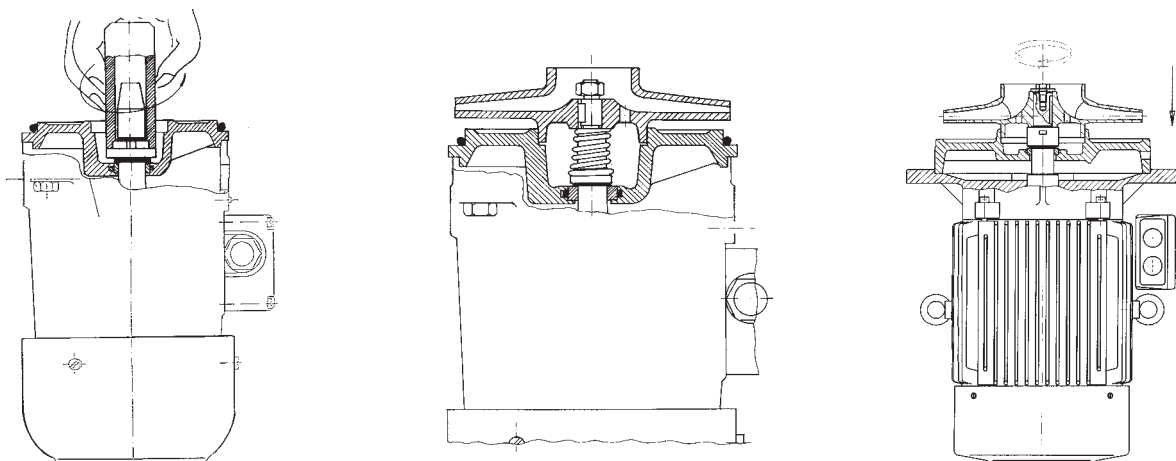
Take the separate spring away if needed. Carefully slide using the tool the seal unit along the shaft so that sealing surfaces; the face and the seat are in proper contact. Avoid too heavy forces. Some seal units are to be fitted in parts, first the face and then the seal body and bellows. Wipe the seal clean. Do not touch to the sealing surface!



Mounting the impeller

Rotate the shaft lightly and ensure that the seal is perfectly located. Mount the spring and backing plate (if separate) before setting the impeller on the shaft.

DO NOT LET THE PUMP RUN DRY!



Other repairs require more expertise on the electric motors and should be carried out in the workshop with necessary tools and instruments. In the most cases the best solution is to use the electric motor or even the whole pump head as a spare.

Please note: warranty does not cover the damages caused by false connection to the mains.

**KOLMEKS**

CHECKLIST FOR INQUIRY

P.O.B. 27
 FIN-14201 Turenki FINLAND
 Telephone +358-3-535 3 1
 Telefax +358-3-535 3 200

Date / 200_

Client	Project
Contact person	Tel. Fax.

Liquid		_____
Concentration	%	_____
Temperature	°C	_____
Density	kg/m ³	_____
Viscosity	cSt/cP	_____
Vapour pressure		_____
Solids	Y/N	_____
Safety in operation		_____

Capacity		l/s	_____
Head		m	_____
Reserve margins	Y/N		_____
Voltage/Frequency		V/Hz	_____
Speed of rotation		r/min	_____
Protection form	IP		_____
Temp. of environment	°C		_____
EX-protection	Y/N		_____

Suction head		m	_____
(Open system) Static pressure	bar		_____
(Close system)			_____
Suction connection		DN	_____
Discharge connection	DN		_____
NPSH (available)		m	_____
Nominal pressure		bar	_____
Max. working temp.		°C	_____
Continuous operation	Y/N		_____
Starting frequency			_____

Construction/Type	_____
Materials	_____
Mechanical seal	_____
Tests, certificates, documents	_____

Notice	_____
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Density	kg/m ³	<hr/>
Viscosity	cSt/cP	<hr/>
Vapour pressure		<hr/>
Solids	Y/N	<hr/>
Safety in operation		<hr/>

Capacity		l/s
Head		m
Reserve margins	Y/N	<hr/>
Voltage/Frequency		V/Hz
Speed of rotation		r/min
Protection form	IP	<hr/>
Temp. of environment	°C	<hr/>
EX-protection	Y/N	<hr/>

Suction head		m
(Open system) Static pressure	bar	<hr/>
(Close system)		<hr/>
Suction connection		DN
Discharge connection	DN	<hr/>
NPSH (available)		m
Nominal pressure		bar
Max. working temp.		°C
Continuous operation	Y/N	<hr/>
Starting frequency		<hr/>

Construction/Type
Materials
Mechanical seal
Tests, certificates, documents

Notice

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Concentration	%	_____
Temperature	°C	_____
Density	kg/m ³	_____
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Vapour pressure		_____
Solids	Y/N	_____
Safety in operation		_____

Capacity		l/s	_____
Head		m	_____
Reserve margins	Y/N		_____
Voltage/Frequency		V/Hz	_____
Speed of rotation		r/min	_____
Protection form	IP		_____
Temp. of environment	°C		_____
EX-protection	Y/N		_____

Suction head		m	_____
(Open system) Static pressure	bar		_____
(Close system)			_____
Suction connection		DN	_____
Discharge connection	DN		_____
NPSH (available)		m	_____
Nominal pressure		bar	_____
Max. working temp.		°C	_____
Continuous operation	Y/N		_____
Starting frequency			_____

Construction/Type	_____
Materials	_____
Mechanical seal	_____
Tests, certificates, documents	_____

Notice	_____
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KOLMEKS – pumping is our business





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