

General

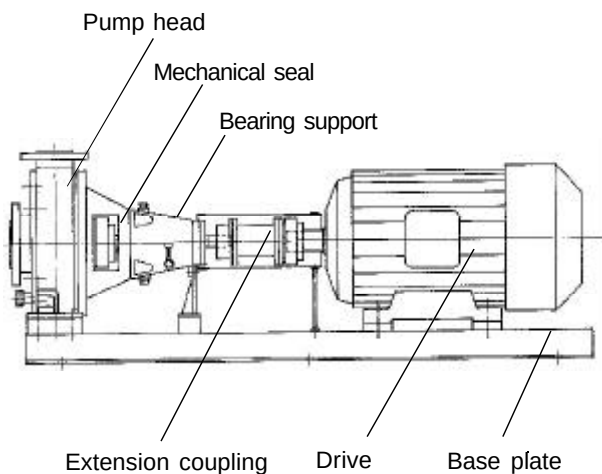
Pump

N-type standard pumps are normal-priming, single-stage, plastic centrifugal pumps with horizontal axis. Their dimensions and flow rates correspond to DIN/EN 22858.

The pumps of this series were developed to meet the requirements of the chemical industry and are therefore especially suited to pump pure or solid matter containing, acid or alkaline, low-viscosity liquids.

As the materials getting in contact with the pumped medium are physiologically harmless, the pumps can also be used in the food industry.

The standard use of extension coupling ensures simple dismantling of bearing supports and internal pump components without removing the pipe connections and motor. This avoids laborious alignment of the pump and motor when assembling the system.



Pump head, impeller

All wetted-end parts are made of high-quality materials such as PP, PVDF, hard carbon, EPDM or FPM elastomers. The external metallic parts are protected against corrosion by a chemically resistant varnish coat. For all pump sizes, closed impellers with relief borings for compensation of the axial thrust are used. The transmission of the torque is form-locking.

Position of connections, flanges

The suction connection is positioned axially, the pressure flange radially in upward direction. As a standard the suction and pressure connections are fitted with flanges according to DIN 2501/PN 10.

Shaft and bearing

Bearing of the strongly dimensioned stainless steel shaft is done by two oil or grease-lubricated roller bearings accommodated by a 26 cast iron bearing support.

A shaft sleeve of synthetic resin-impregnated carbon (or PVDF) protects the pump shaft against contact with the pumped medium.

Shaft seals

The shafts are sealed by means of maintenance-free mechanical seals. Depending on the operating conditions, internal, single-acting or double-acting versions are used. Double-acting mechanical seals require a sealing liquid.

Sliding materials in silicon carbide (SiC), bellows and secondary seals of EPDM or FPM, metallic parts of stainless steel (1.4571) or Hastelloy C-4 (2.4610) are standard combinations and cover a large range of applications.

The space available in the sealing area allows to use standard seals.

Special versions on request.

Base plate

Chemical N-type standard pumps are supplied as complete units consisting of pump, coupling and electric motor mounted on a common steel base plate.

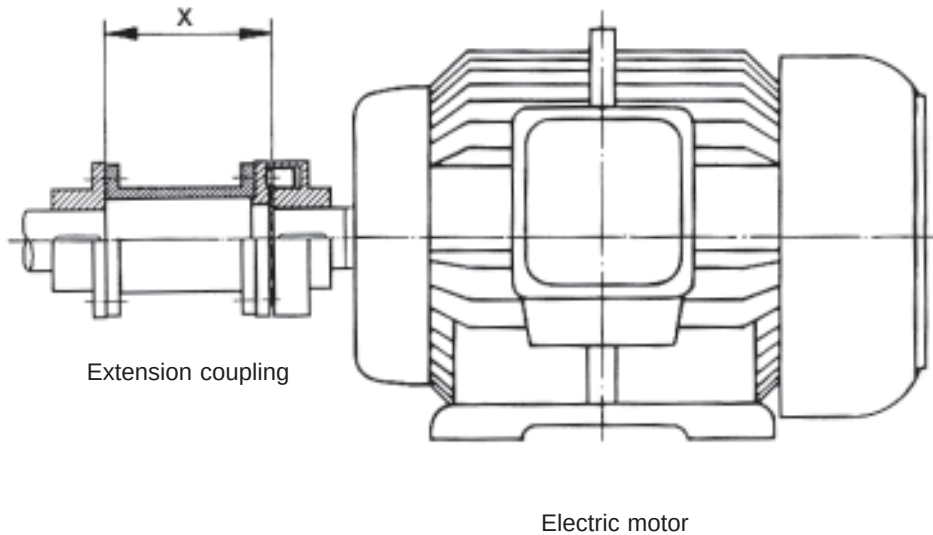
Drive

Surface-cooled three-phase motors according to IEC standard, 1450 rpm or 2900 rpm, enclosure IP 55, insulation class F, mounting IM B3.

Nominal pump capacities according to DIN/EN 22 858

Pumpe size N ...	Output at 1450 rpm		Output at 2900 rpm	
	Nominal flow rate [m³/h]	Nominal head [m]	Nominal flow rate [m³/h]	Nominal head [m]
50-32-125	8,3	5	12,5	20
50-32-160		8		32
50-32-200		12,5		50
50-32-250		20		80
65-40-125	12,5	5	25	20
65-40-160		8		32
65-40-200		12,5		50
65-40-250		20		80
65-40-315		32		100
80-50-125	25	5	50	20
80-50-160		8		32
80-50-200		12,5		50
80-50-250		20		80
80-50-315		32		100
100-65-125	50	5	100	20
100-65-160		8		32
100-65-200		12,5		50
100-65-250		20		80
100-65-315		32		100
125-80-160	80	8	160	32
125-80-200		12,5		50
125-80-250		20		80
125-80-315		32	---	---
125-100-200	125	12,5	---	---
125-100-250		20	---	---
125-100-315		32	---	---
150-125-250	200	20	---	---
200-150-250	315	10	---	---

Extension coupling and electric motor



Electric motor

Three-phase motor assembly, mounting B3, according to IEC standard, 3x400 V / 50 Hz, insulation class F, enclosure IP 55.

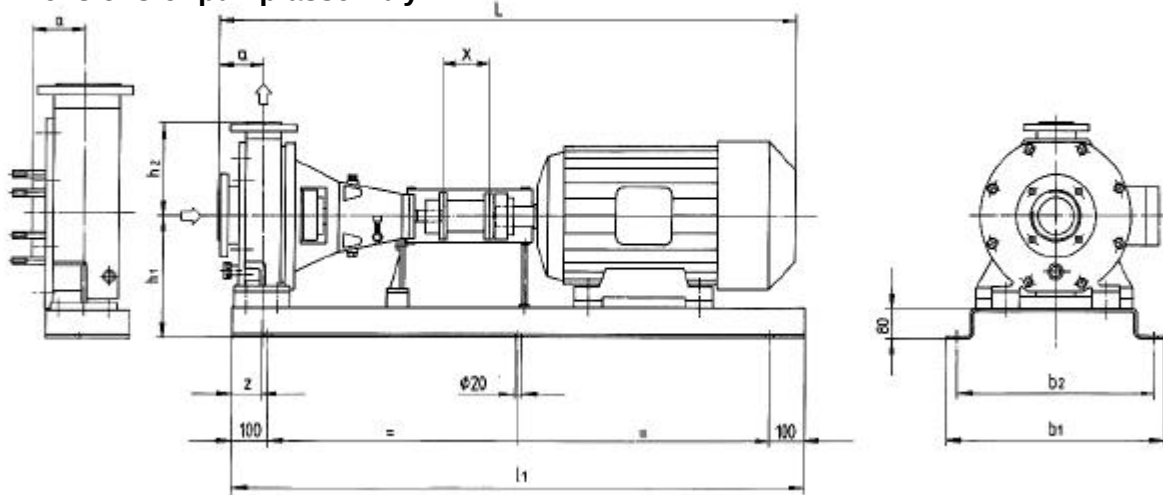
Extension coupling N-EUPEX

Type	Dim. X [mm]	Part No. coupling rubber kit
H 80	100	68430
H 95	100	68431
	140	68431
H 110	100	68432
	140	68432
H 125	100	68433
	140	68433
H 140	100	68434
	140	68434
H 160	140	68435

The part numbers of the extension coupling depend on pump and engine sizes and are available on request.

Power [kW]	Size 1450 rpm	Part No.	Size 2900 rpm	Part No.
0,55	80	78863	---	---
0,75	80	78864	80	78848
1,1	90S	78865	80	78849
1,5	90L	78866	90S	78850
2,2	100L	78867	90L	78851
3,0	100L	78868	100L	78852
4,0	112M	78869	112M	78853
5,5	132S	78870	132S	78854
7,5	132M	78871	132S	78855
11,0	160M	78872	160M	78856
15,0	160L	78873	160M	78857
18,5	180M	78874	160L	78858
22,0	180L	78875	180M	78859
30,0	200L	78876	200L	78860
37,0	225S	78877	200L	78861
45,0	225M	78878	225M	78862

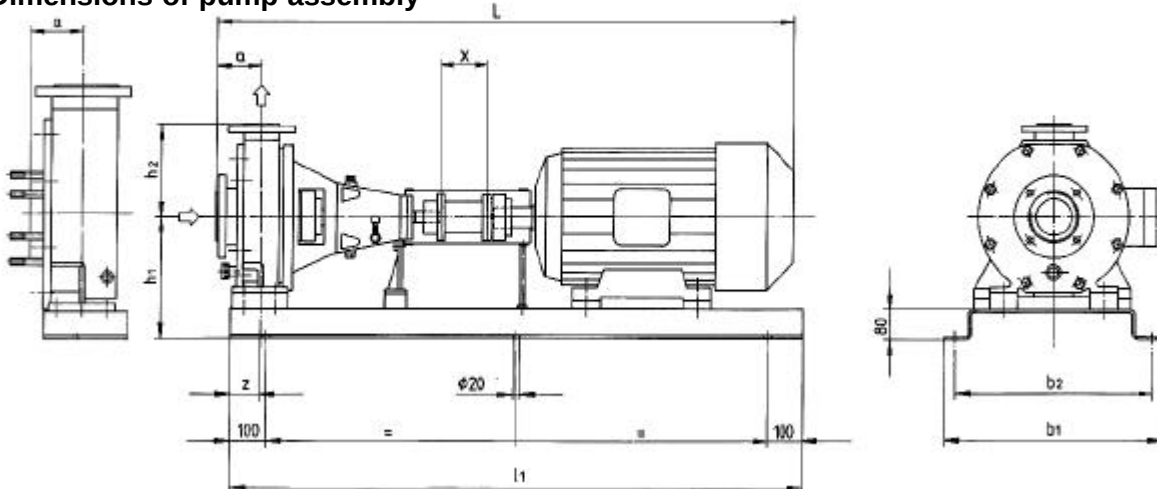
Dimensions of pump assembly



Pump size N ...	Drive motor 1450 rpm			Drive motor 2900 rpm		
	Max. power [kW]	Motor size	*L	Max. power [kW]	Motor size	*L
50-32-125	1,5	90L	885	5,5	132S	1012
50-32-160	4,0	112M	946	11,0	160M	1148
50-32-200	4,0	112M	946	18,5	160L	1192
50-32-250	5,5	132S	1150	22,0	180M	1350
65-40-125	3,0	100L	1150	5,5	132S	1012
65-40-160	4,0	112M	946	15,0	160M	1148
65-40-200	5,5	132S	1150	22,0	180M	1350
65-40-250	11,0	160M	1170	37,0	200L	1485
65-40-315	11,0	160M	1170	37,0	200L	1485
80-50-125	3,0	100L	930	15,0	160M	1148
80-50-160	7,5	132M	1070	18,5	160L	1212
80-50-200	7,5	132M	1070	37,0	200L	1485
80-50-250	15,0	160L	1395	37,0	200L	1485
80-50-315	30,0	200L	1506	37,0	200L	1485
100-65-125	7,5	132M	1070	22,0	180M	1350
100-65-160	7,5	132M	1070	30,0	200L	1485
100-65-200	15,0	160L	1395	37,0	200L	1485
100-65-250	15,0	160L	1395	45,0	225M	1565
100-65-315	7,0	225S	1573	---	---	---
125-80-160	7,5	132M	1070	45,0	225M	1565
125-80-200	15,0	160L	1395	45,0	225M	1565
125-80-250	30,0	200L	1506	45,0	225M	1565
125-80-315	45,0	225M	1590	---	---	---
125-100-200	18,5	180M	1415	---	---	---
125-100-250	22,0	180L	1520	---	---	---
125-100-315	45,0	225M	1653	---	---	---
150-125-250	22,0	180L	1520	---	---	---
200-150-250	30,0	200L	1638	---	---	---

* at max. motor power

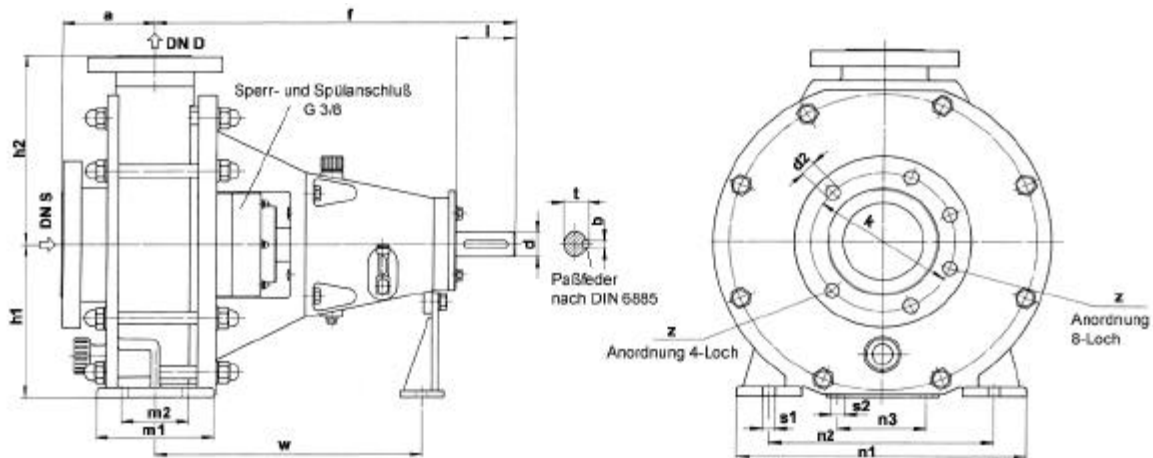
Dimensions of pump assembly



Pump size N ...	Flange connection dimensions according to DIN 2501, Part 1 f. PN10		Pump dimensions							
	DN _s Inlet	DN _d Outlet	a	z	* l1	h1	h2	b1	b2	X
50-32-125	50	32	80	75	1000	192	140	430	370	100
50-32-160			80	75	1000	212	160	430	370	
50-32-200			80	75	1000	240	180	430	370	
50-32-250			100	87,5	1200	260	225	510	450	
65-40-125	65	40	80	75	1000	192	140	430	370	100
65-40-160			80	75	1000	212	160	430	370	
65-40-200			100	75	1000	240	180	430	370	
65-40-250			100	87,5	1200	260	225	510	450	
65-40-315			125	87,5	1200	280	250	510	450	
80-50-125	80	50	100	75	1000	212	160	430	370	100
80-50-160			100	75	1000	240	180	430	370	
80-50-200			100	75	1000	240	200	430	370	
80-50-250			125	87,5	1200	260	225	510	450	
80-50-315			125	87,5	1400	305	250	560	500	
100-65-125	100	65	100	87,5	1000	240	180	430	370	100
100-65-160			100	87,5	1200	240	200	510	450	
100-65-200			100	87,5	1400	260	225	560	500	140
100-65-250			125	105	1400	280	250	560	500	
100-65-315			125	105	1600	305	280	610	550	
125-80-160	125	80	125	87,5	1200	260	225	510	450	140
125-80-200			125	87,5	1400	260	250	560	500	
125-80-250			125	105	1600	305	280	610	550	
125-80-315			125	105	1600	330	315	610	550	
125-100-200	125	100	125	100	1400	280	280	560	500	140
125-100-250			140	100	1400	305	280	560	500	
125-100-315			140	100	1600	330	315	610	550	
150-125-250	150	125	140	100	1400	330	355	560	500	140
200-150-250	200	150	160	115	1600	360	375	610	550	180

* at max. motor power

Dimensions of pump head / bearing support assembly

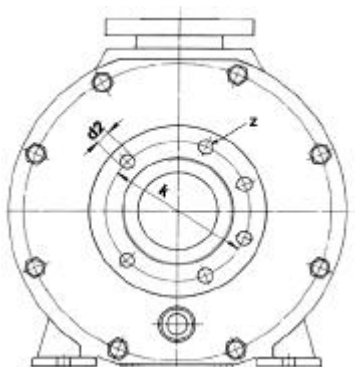


Pump size N ...	Flange connection dimensions according to DIN 2501, Part 1 f. PN10		Pump dimensions				Shaft end DIN 748			
	DN _s Inlet	DN _d Outlet	a	f	h ₁	h ₂	d	l	t	b
50-32-125	50	32	80	385	112	140	24	50	27	8
50-32-160			80	385	132	160	24	50	27	8
50-32-200			80	385	160	180	24	50	27	8
50-32-250			100	500	180	225	32	80	35	10
65-40-125	65	40	80	385	112	140	24	50	27	8
65-40-160			80	385	132	160	24	50	27	8
65-40-200			100	385	160	180	24	50	27	8
65-40-250			100	500	180	225	32	80	35	10
65-40-315	80	50	125	500	200	250	32	80	35	10
80-50-125			100	385	132	160	24	50	27	8
80-50-160			100	385	160	180	24	50	27	8
80-50-200			100	385	160	200	24	50	27	8
80-50-250			125	500	180	225	32	80	35	10
80-50-315	100	65	125	500	225	280	32	80	35	10
100-65-125			100	385	160	180	24	50	27	8
100-65-160			100	500	160	200	32	80	35	10
100-65-200			100	500	180	225	32	80	35	10
100-65-250			125	500	200	250	32	80	35	10
100-65-315	125	80	125	530	225	280	42	110	45	12
125-80-160			125	500	180	225	32	80	35	10
125-80-200			125	500	180	250	32	80	35	10
125-80-250			125	500	225	280	32	80	35	10
125-80-315	125	100	125	530	250	315	42	110	45	12
125-100-200			125	500	200	280	32	80	35	10
125-100-250			140	530	225	280	42	110	45	12
125-100-315			140	530	250	315	42	110	45	12
150-125-250	150	125	140	530	250	355	42	110	45	12
200-150-250	200	150	160	530	280	375	42	110	45	12

Pump head / bearing support assembly

Pump size N ...	Base dimensions							
	m1	m2	n1	n2	n3	f. screws		
						s1	s2	w
50-32-125	100	70	190	140	110	M12	M12	285
50-32-160	100	70	240	190				285
50-32-200	100	70	240	190				285
50-32-250	125	95	320	250				370
65-40-125	100	70	210	160	110	M12	M12	285
65-40-160	100	70	240	190				285
65-40-200	100	70	265	212				285
65-40-250	125	95	320	250				370
65-40-315	125	95	345	280				370
80-50-125	100	70	240	190	110	M12	M12	285
80-50-160	100	70	265	212				285
80-50-200	100	70	265	212				285
80-50-250	125	95	320	250				370
80-50-315	160	95	345	280				370
100-65-125	125	95	280	212	110	M12	M12	285
100-65-160	125	95	280	212		M12		370
100-65-200	125	95	320	250		M12		370
100-65-250	160	120	360	280		M16		370
100-65-315	160	120	400	315		M16		370
125-80-160	125	95	320	250	110	M12	M12	370
125-80-200	125	95	345	250		M12		
125-80-250	160	120	400	315		M16		
125-80-315	160	120	400	315		M16		
125-100-200	160	120	360	280	110	M16	M12	370
125-100-250	160	120	400	315				
125-100-315	160	120	400	315				
150-125-250	160	120	400	315	110	M16	M12	370
200-150-250	200	150	500	400	110	M16	M12	370

Dimensions of pump head / bearing support assembly



Flanges according to DIN 2501			
DN	k	d2	z
32	100	18	4
40	110	18	4
50	125	18	4
65	145	18	4
80	160	18	8
100	180	18	8
125	210	18	8
150	240	22	8
200	295	22	8

Assignment of base plates and couplings

Motor size	80	90S	90L	100L	112M	132S	132M
Power [kW]							
2900 rpm	0,75+1,1	1,5	2,2	3,0	4,0	5,5+7,5	-
1450 rpm	0,55+0,75	1,1	1,5	2,2+3,0	4,0	5,5	7,5
Coupling size							
2900 rpm	H80	H80	H80	H80	H80	H95	-
1450 rpm	H80	H80	H80	H80	H80	H95	H95
Pump / base plate size							
50-32-125	1	1	1	1	1	1	1
50-32-160	-	1	1	1	1	1	1
50-32-200	-	1	1	1	1	1	1
50-32-250	-	2	2	2	2	3	3
65-40-125	-	1	1	1	1	1	1
65-40-160	-	1	1	1	1	1	1
65-40-200	-	1	1	1	1	1	1
65-40-250	-	2	2	2	2	3	3
65-40-315	-	2	2	2	2	3	3
80-50-125	-	1	1	1	1	1	1
80-50-160	-	1	1	1	1	1	1
80-50-200	-	1	1	1	1	1	1
80-50-250	-	2	2	2	2	3	3
80-50-315	-	2	2	2	2	3	3
100-65-125	-	1	1	1	1	1	1
100-65-160	-	1	1	1	1	3	3
100-65-200	-	2	2	2	2	3	3
100-65-250	-	-	-	3	3	3	3
100-65-315	-	-	-	4	4	4	4
125-80-160	-	2	2	3	3	3	3
125-80-200	-	-	-	3	3	3	3
125-80-250	-	-	-	4	4	4	4
125-80-315	-	-	-	4	4	4	4
125-100-200	-	-	-	-	-	4	4
125-100-250	-	-	-	-	-	-	-
125-100-315	-	-	-	-	-	-	-
150-125-250	-	-	-	-	-	-	-
200-150-250	-	-	-	-	-	-	-

Other motor sizes on request

Assignment of base plates and couplings

Motor size	160M	160L	180M	180L	200L	225S	225M
Power [kW]							
2900 rpm	11,0+15,0	18,5	22,0	-	30,0+37,0	-	45,0
1450 rpm	11,0	15,0	18,5	22,0	30,0	37,0	45,0
Coupling size							
2900 rpm	H95	H95	H110	-	H125	-	H125
1450 rpm	H95	H110	H110	H125	H125	H140	H140
Pump / base plate size							
50-32-125	-	-	-	-	-	-	-
50-32-160	3	-	-	-	-	-	-
50-32-200	3	3	-	-	-	-	-
50-32-250	3	3	5	5	5	-	-
65-40-125	-	-	-	-	-	-	-
65-40-160	3	3	-	-	-	-	-
65-40-200	3	3	3	3	-	-	-
65-40-250	3	3	5	5	5	-	-
65-40-315	3	3	3	5	5	7	-
80-50-125	3	3	-	-	-	-	-
80-50-160	3	3	3	3	-	-	-
80-50-200	3	3	3	3	5	-	-
80-50-250	3	3	5	5	5	7	-
80-50-315	3	3	5	5	5	7	-
100-65-125	3	3	3	3	-	-	-
100-65-160	3	3	3	5	5	-	-
100-65-200	5	5	5	5	5	7	-
100-65-250	5	5	5	5	5	7	-
100-65-315	5	5	5	5	7	7	-
125-80-160	5	5	5	5	7	7	7
125-80-200	5	5	5	5	7	7	7
125-80-250	5	5	5	5	7	7	7
125-80-315	5	5	5	5	7	7	7
125-100-200	5	5	5	-	-	-	-
125-100-250	5	5	5	5	-	-	-
125-100-315	-	-	5	5	7	7	7
150-125-250	5	5	7	7	-	-	-
200-150-250	7	7	7	7	7	-	-

Other motor sizes on request

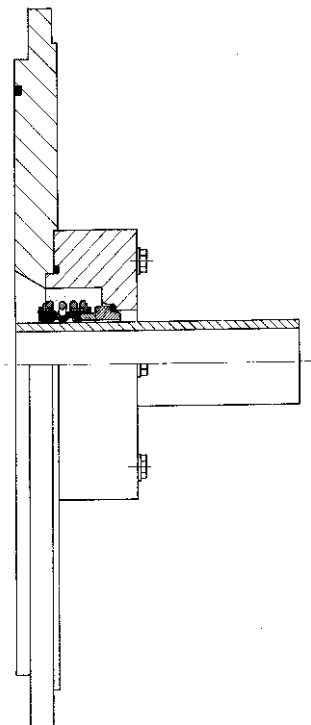
Mechanical seals

General

Mechanical seals basically consist of two perfectly plane surfaces. One surface rotates with the shaft, while the other one is stationary. The sealing effect is achieved by the direct contact between the two plane surfaces. The stationary counter-ring is normally fixed in position.

The sliding ring is able to move axially and radially in order to compensate the shaft deflections during operation. This axial mobility enables mechanical seals to be fitted within practicable manufacturing tolerances, the accuracy required being dependent on the design of the seal.

Type B2I

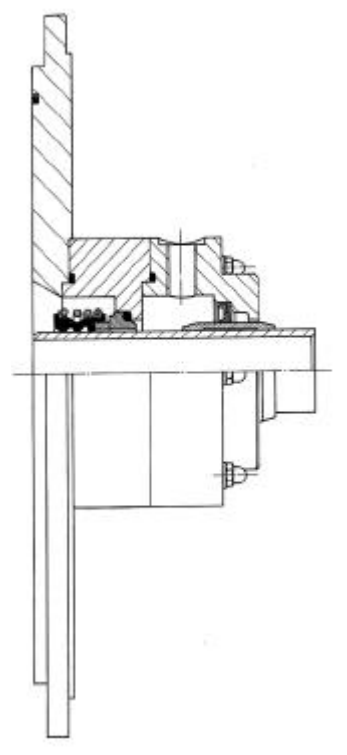


Single-acting, loaded, internal seal, independent of direction of rotation.

Combination of sliding materials in silicon carbide (SiC). Bellows and secondary seals of EPDM and FPM. Metallic parts of stainless steel or Hastelloy C-4.

Suitable for application with neutral and aggressive media which do not crystallize out and are free from solid matter.

Type B2Q



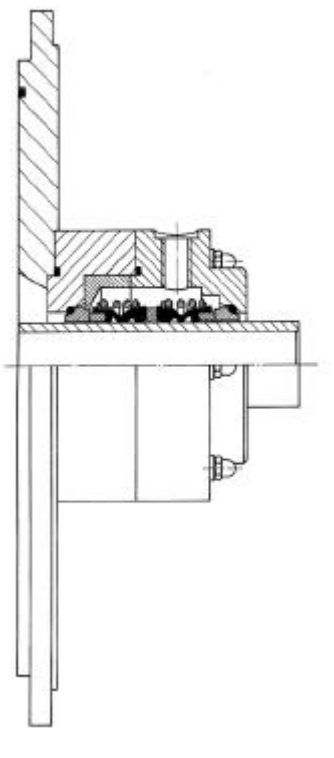
Single-acting, loaded, internal seal, independent of direction of rotation, with quenching chamber. The quenching chamber is sealed from the atmosphere by a shaft sealing ring to prevent deposits and/or reduction of the temperature in the area of the mechanical seal.

Combination of sliding materials in silicon carbide (SiC). Bellows and secondary seals of EPDM and FPM. Metallic parts of stainless steel or Hastelloy C-4.

Suitable for application with aggressive media tending to crystallize out.

Function of quenching:

- Prevention of crystallizing rings (air seals)
- Absorption of leakage
- Cooling of sliding rings
- Monitoring of leakage rate
- Lubricating film stabilization during vacuum operation

Type B2D

Double-acting, loaded, internal seal, independent of direction of rotation, arranged back-to-back with sealing chamber. This arrangement is the most usual form of double-acting seals used for difficult, chemically particularly aggressive media.

Combination of sliding materials in silicon carbide (SiC). Bellows and secondary seals of EPDM and FPM. Metallic parts of stainless steel.

Suitable for application with aggressive and abrasive media.

Function of sealing:

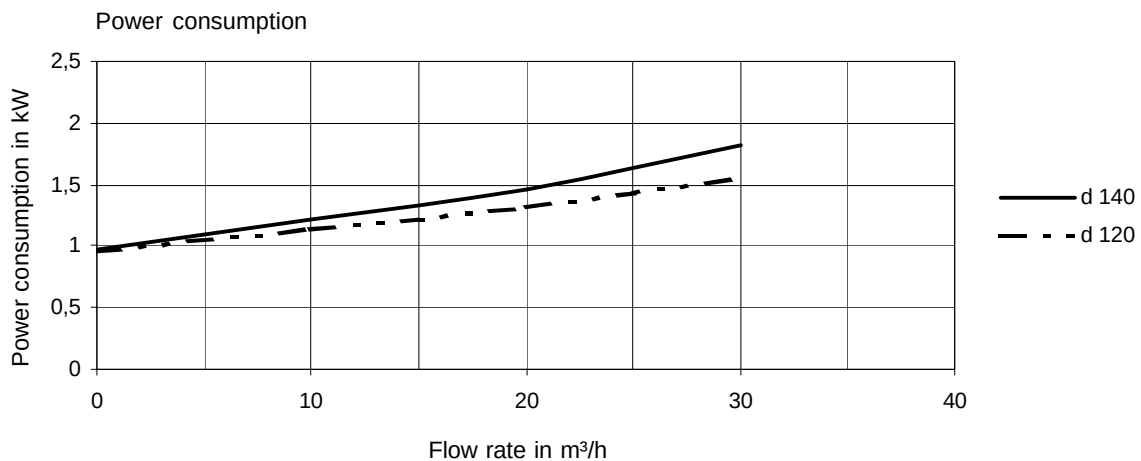
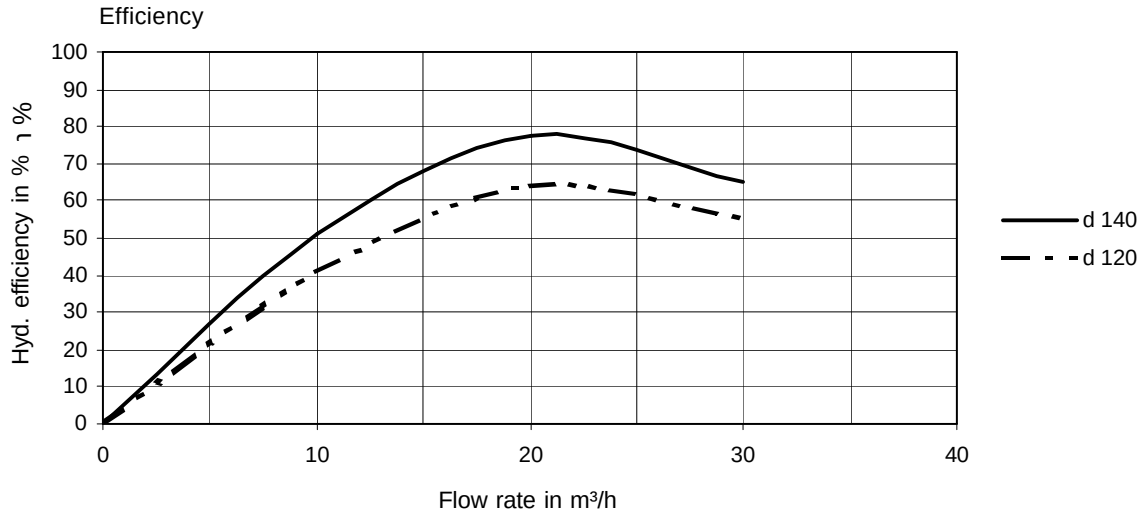
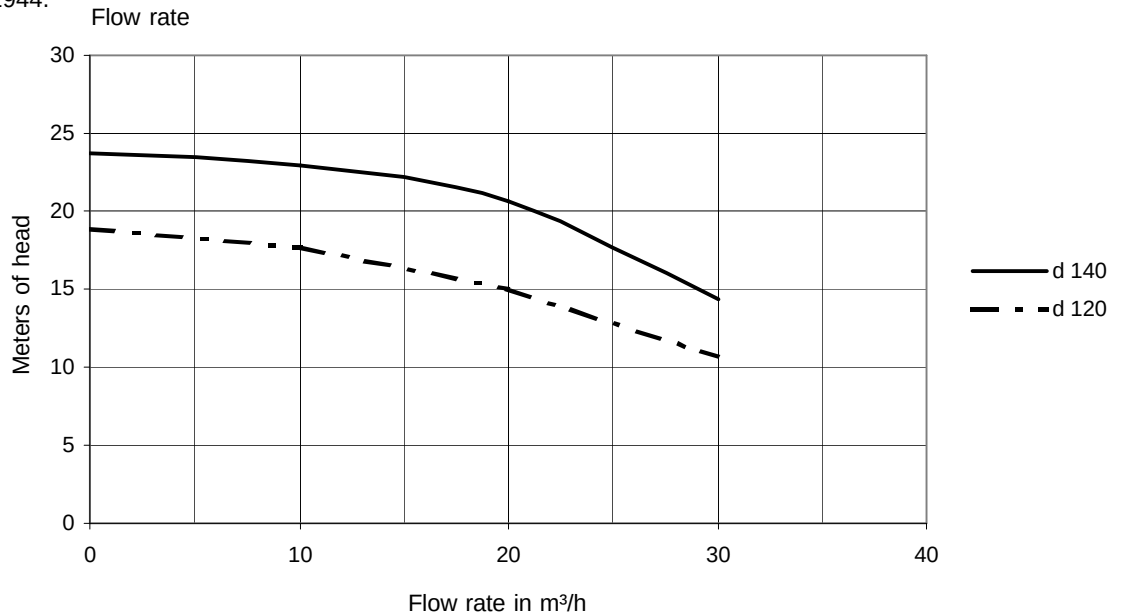
- Prevention of contact between pumped liquid and atmosphere
- Formation of lubricating film between the sliding rings
- Cooling of sliding rings
- Monitoring of leakage rate

Performance curves

The following diagrams show the Q-H curves in dependence of the impeller diameter as well as the power consumption in kW, the efficiency and the NPSH value (only for nominal speed of 2900 min⁻¹). Flow rate and efficiency guarantees according to DIN 1944.

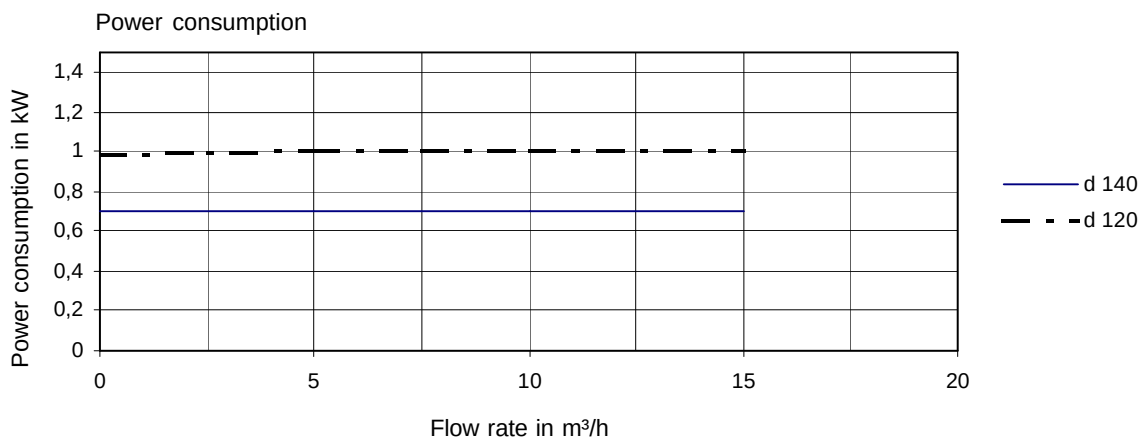
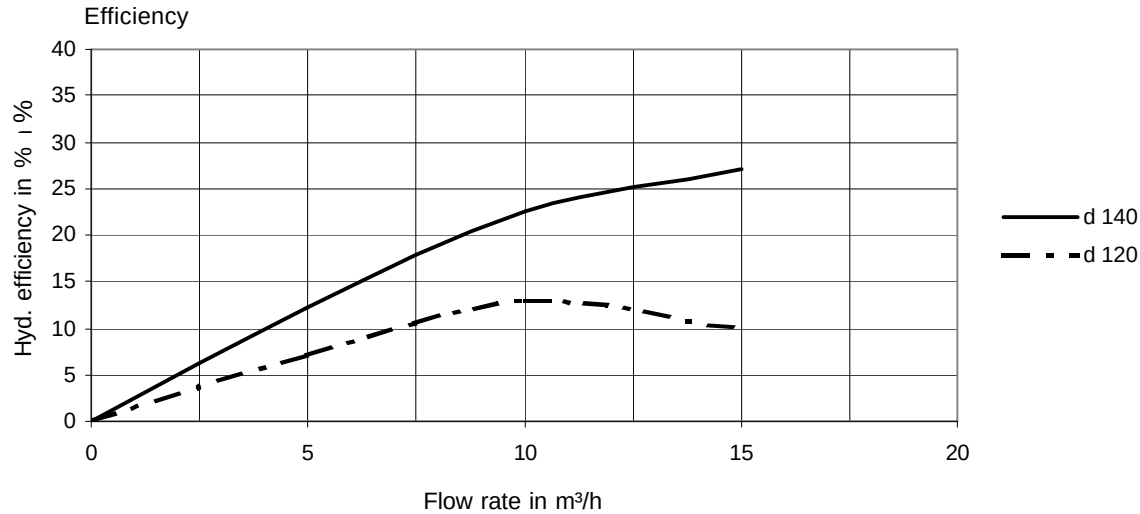
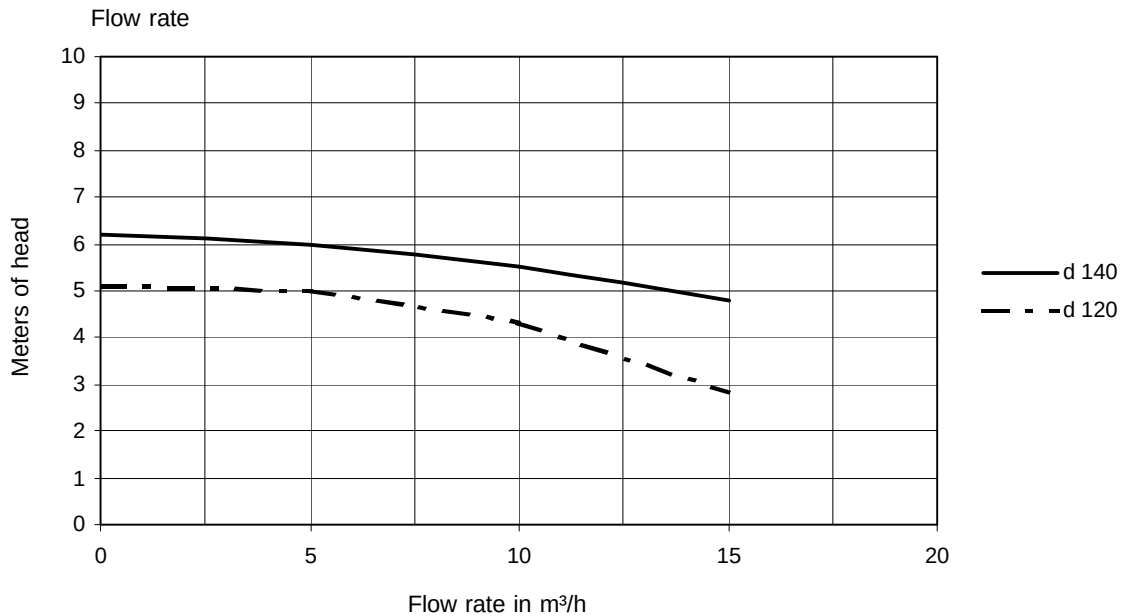
Type N 50 - 32 - 125

Motor kW: 2.2
Speed: 2900



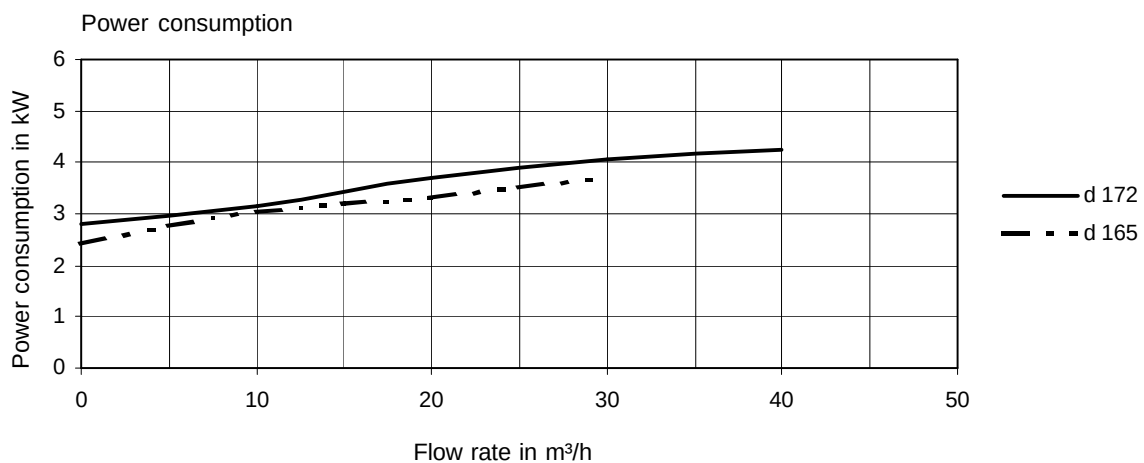
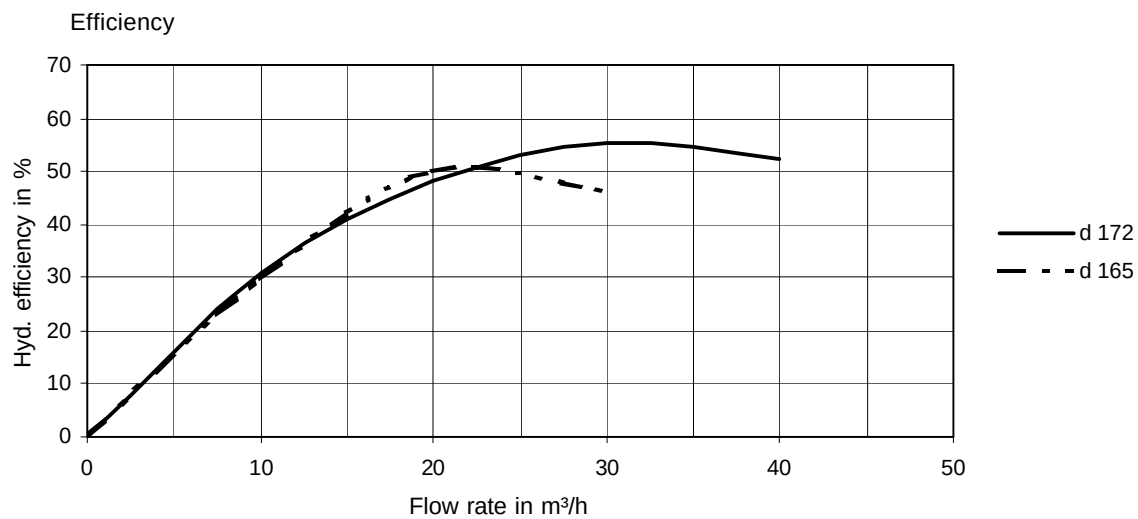
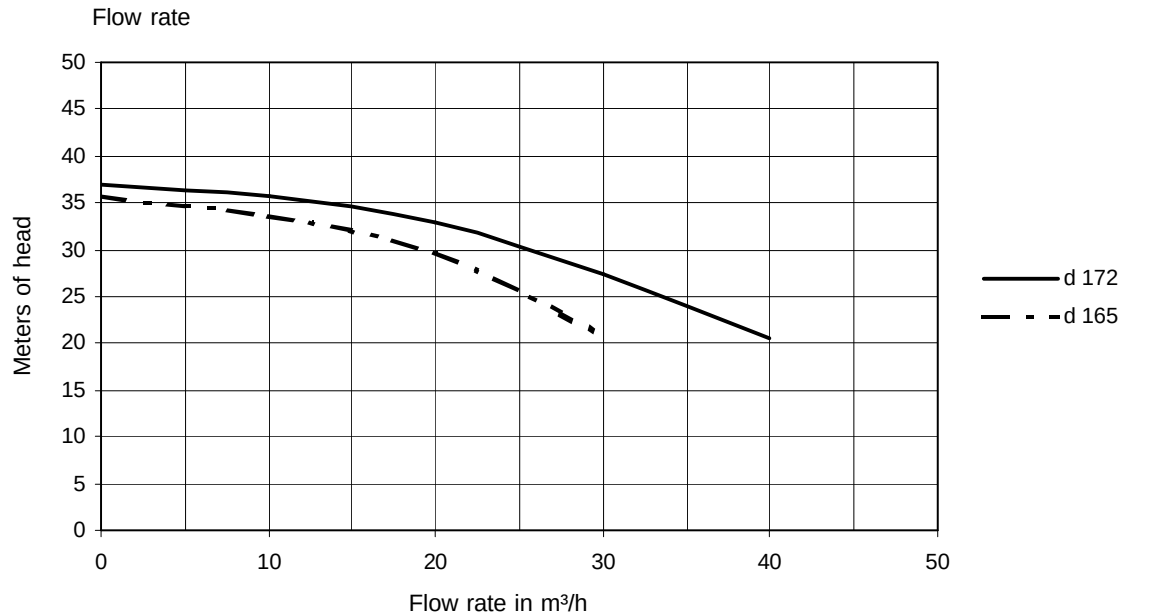
Type N 50 - 32 - 125

Motor kW: 1,1
Speed: 1450



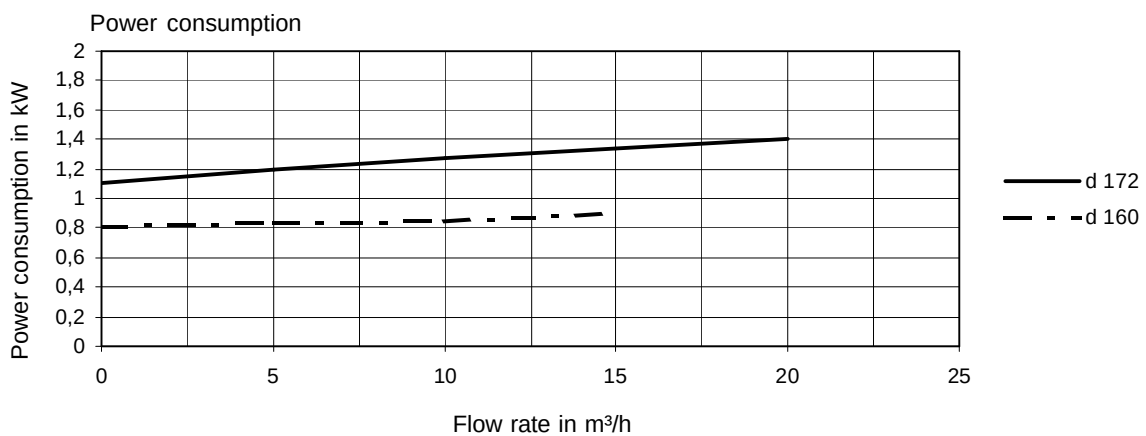
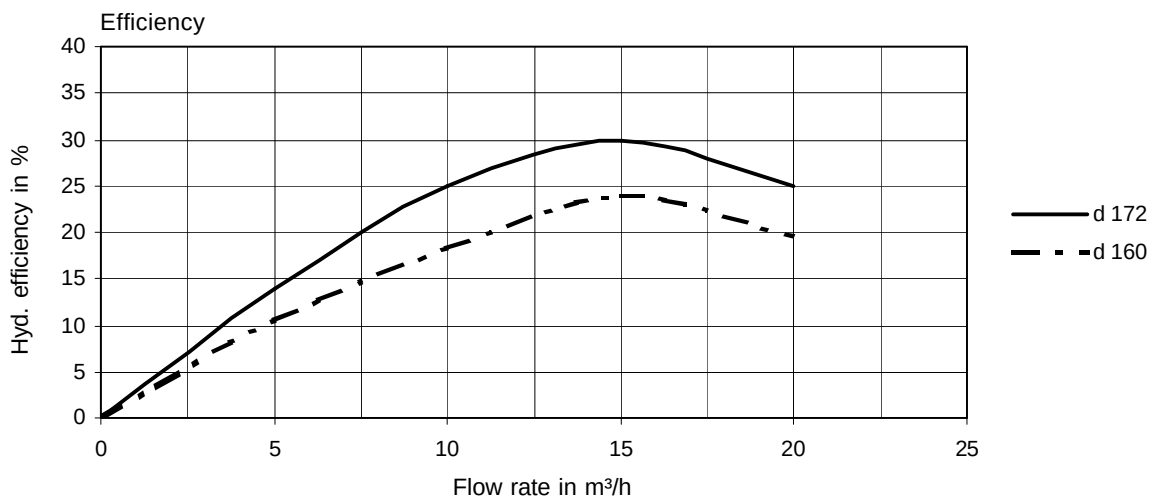
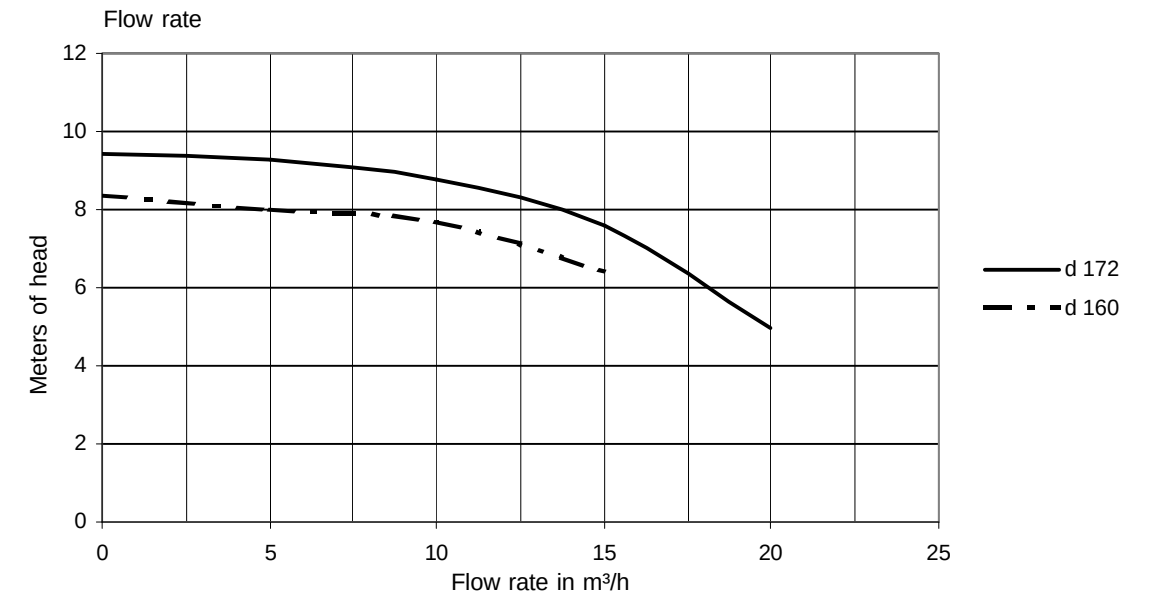
Type N 50 - 32 - 160

Motor kW: 4
Speed: 2900



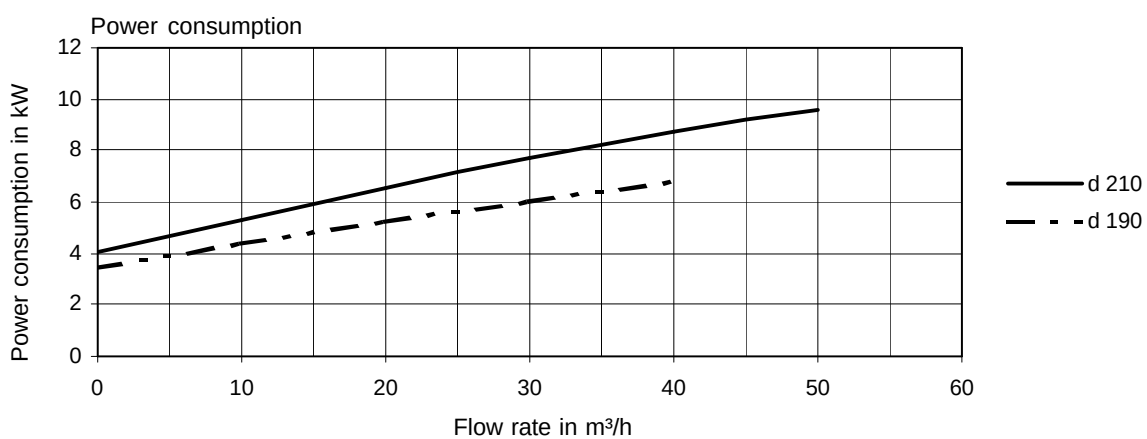
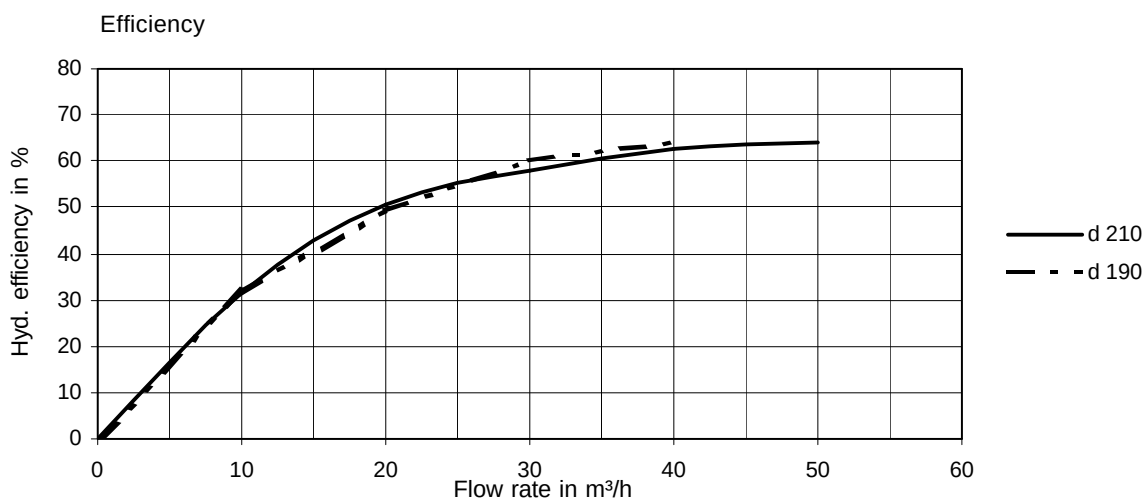
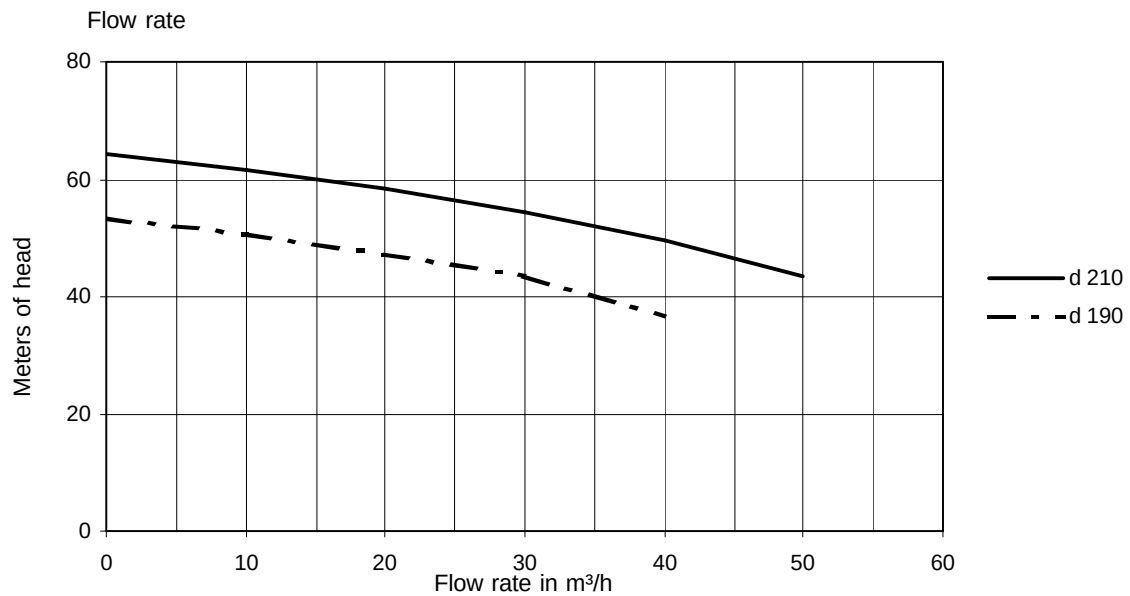
Type N 50 - 32 - 160

Motor kW: 1,5
Speed: 1450



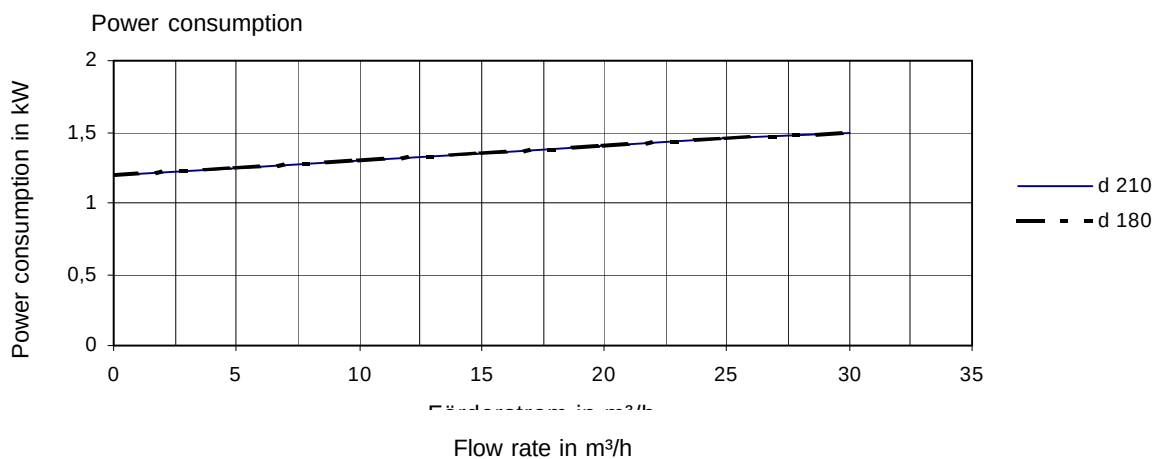
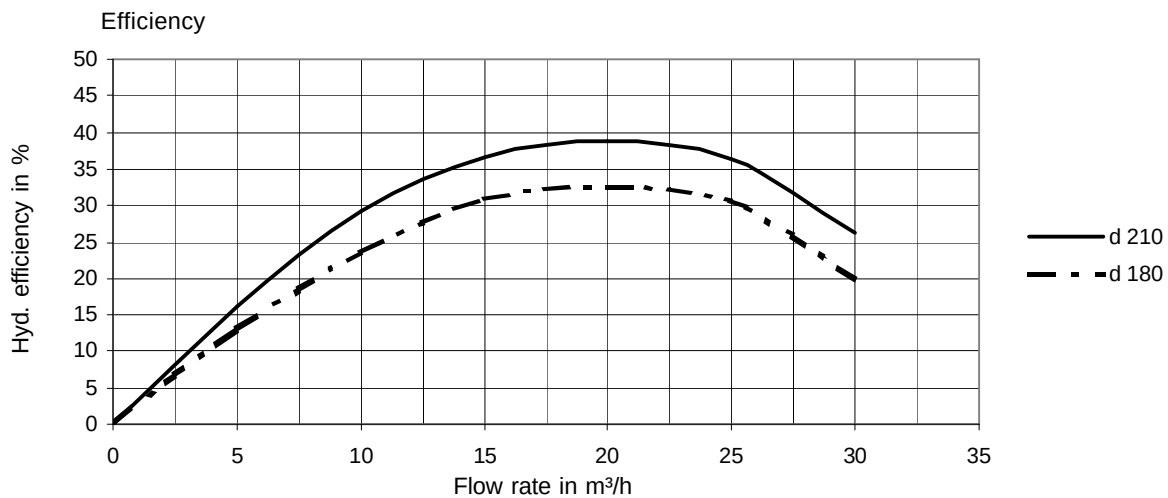
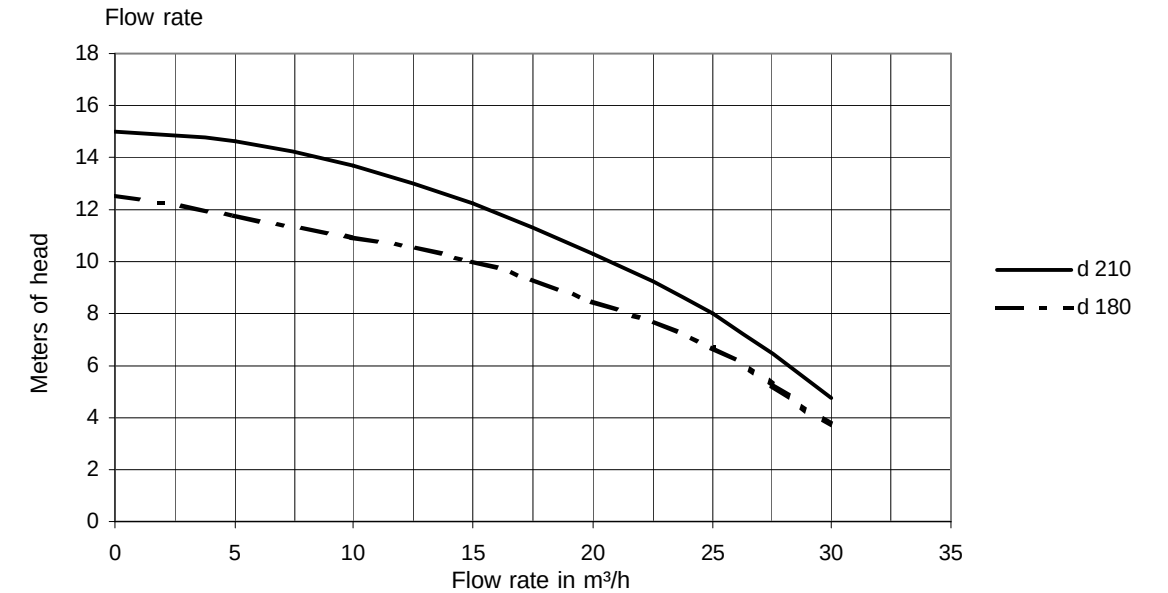
Type N 50 - 32 - 200

Motor kW: 7,5
Speed: 2900



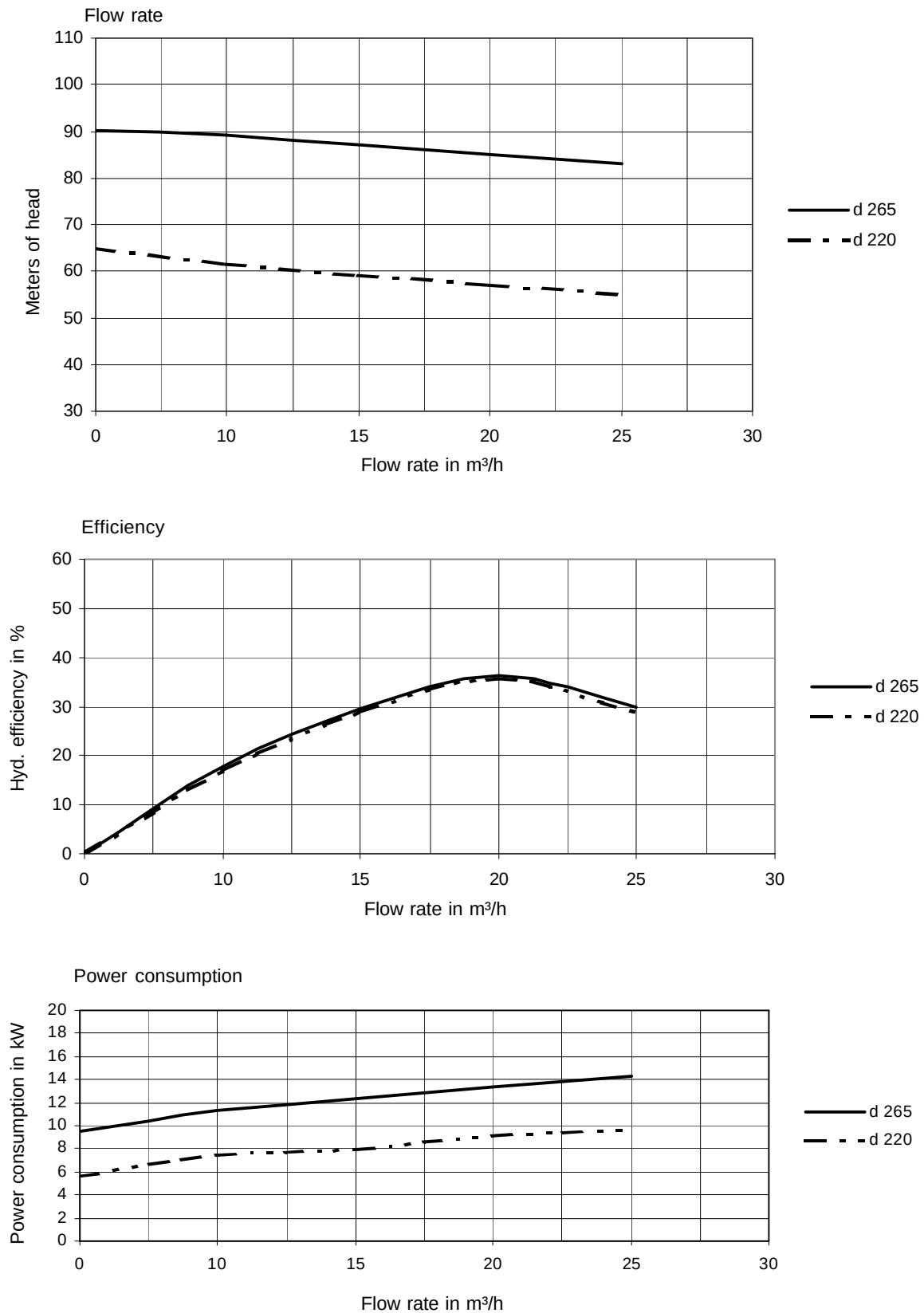
Type N 50 - 32 - 200

Motor kW: 1,5
Speed: 1450



Type N 50 - 32 - 250

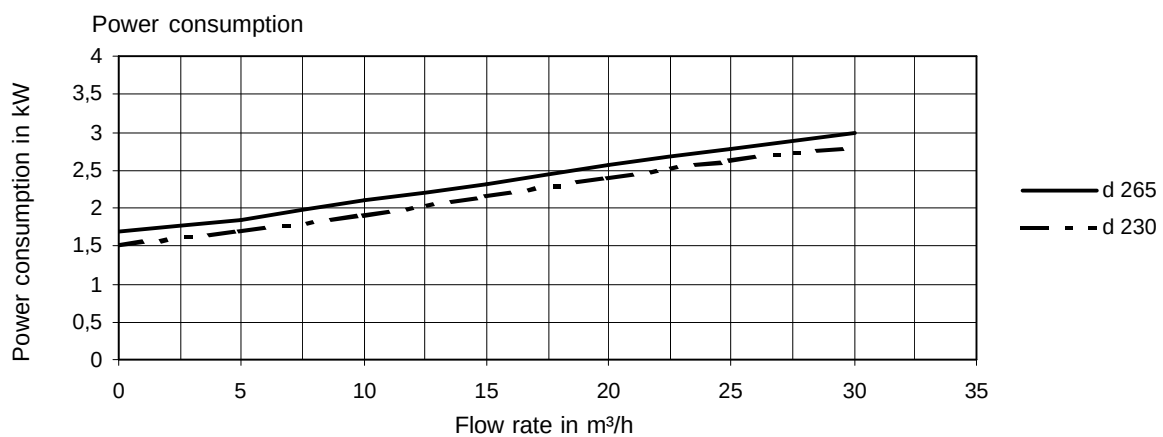
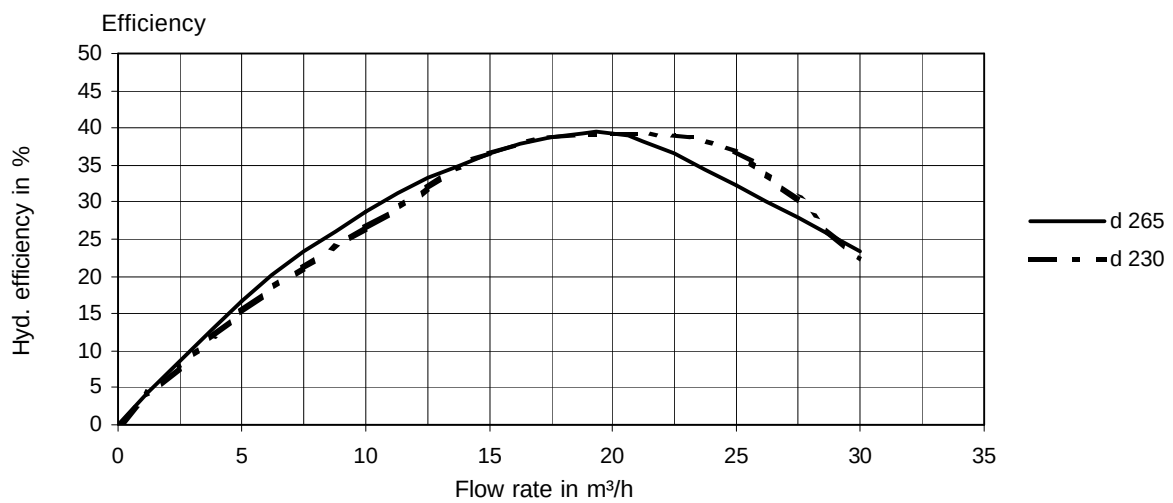
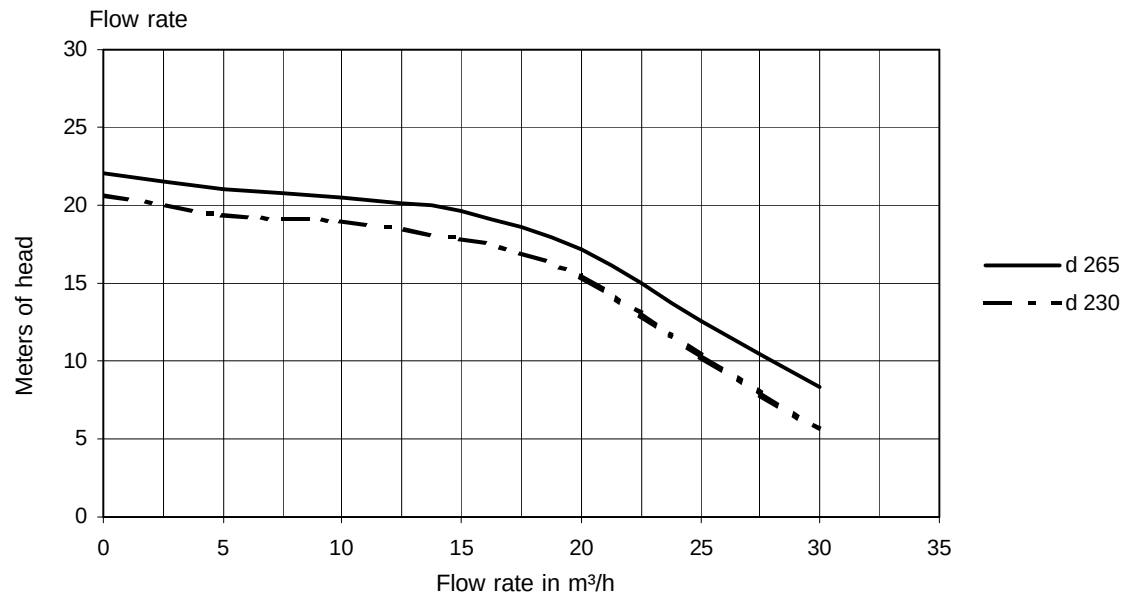
Motor kW: 3
Speed: 2900



Type N 50 - 32 - 250

Motor kW: 2,2
Speed: 1450

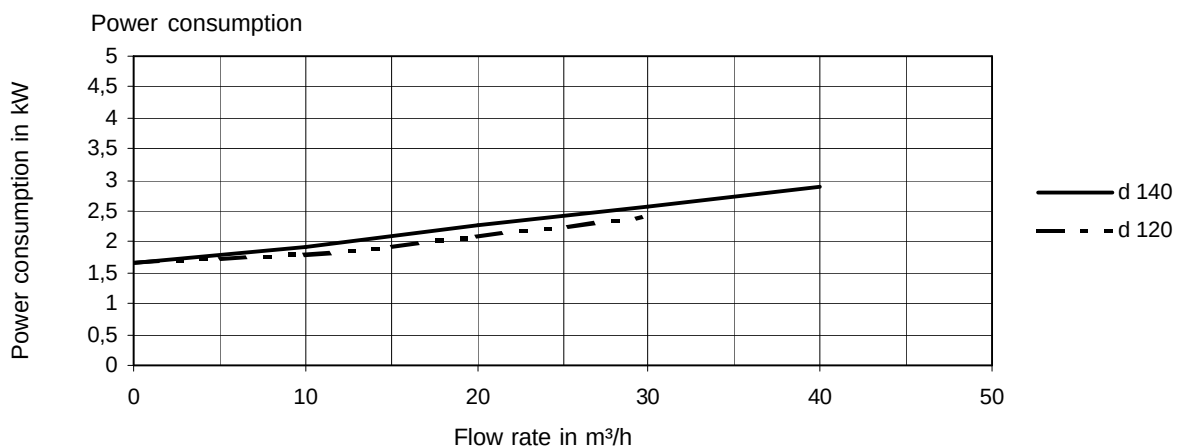
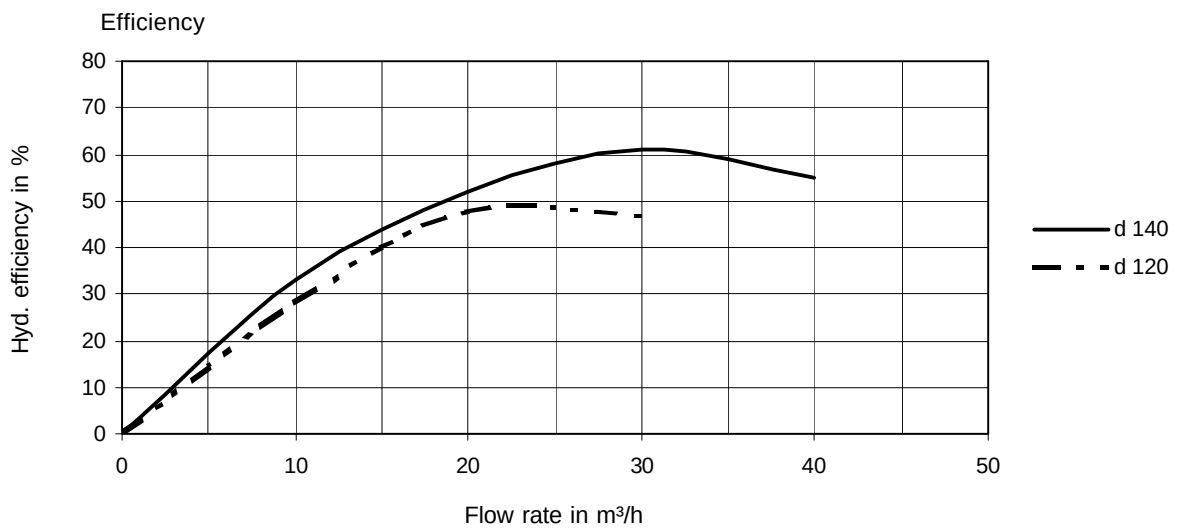
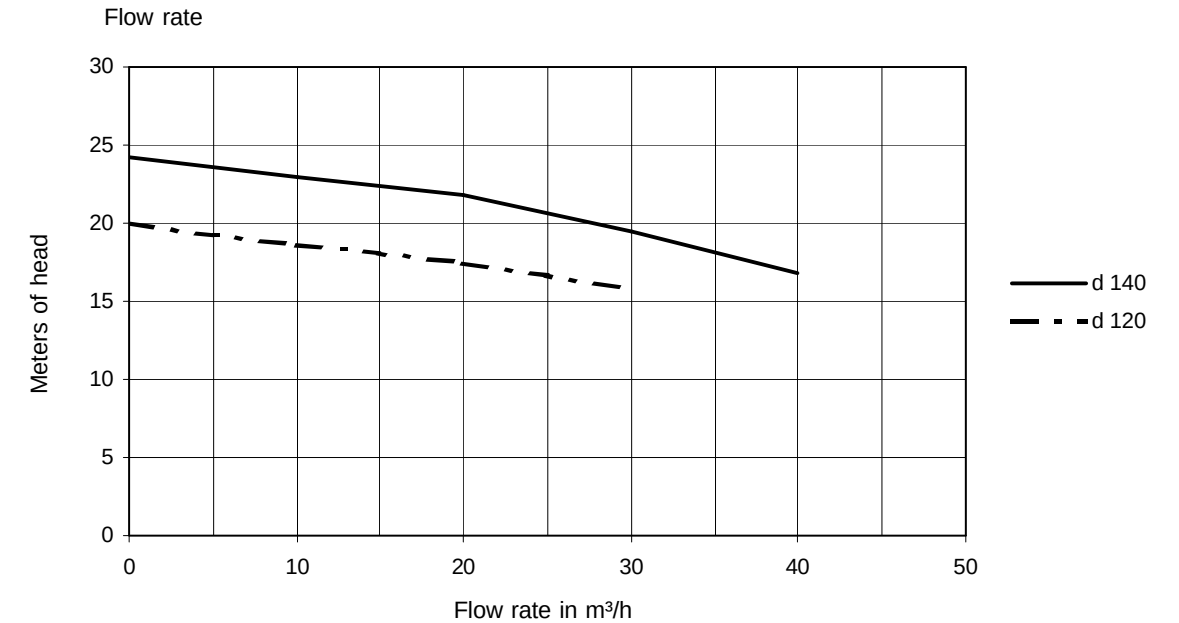
Standard Pump N



Type N 65 - 40 - 125

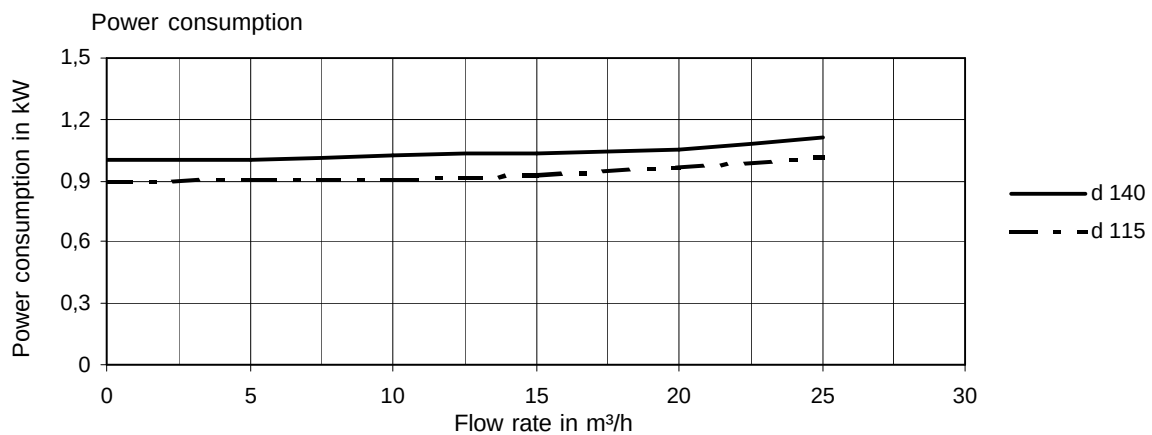
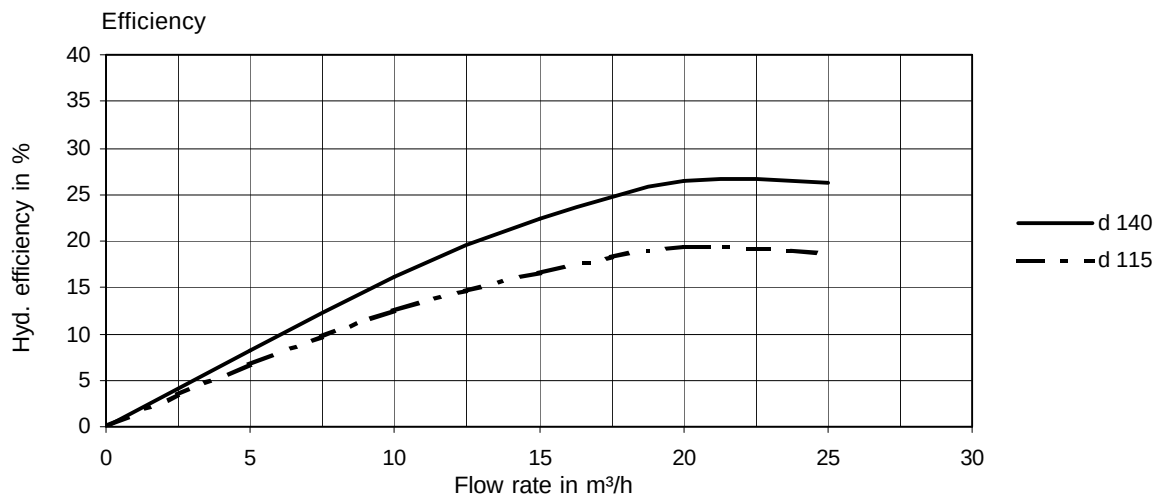
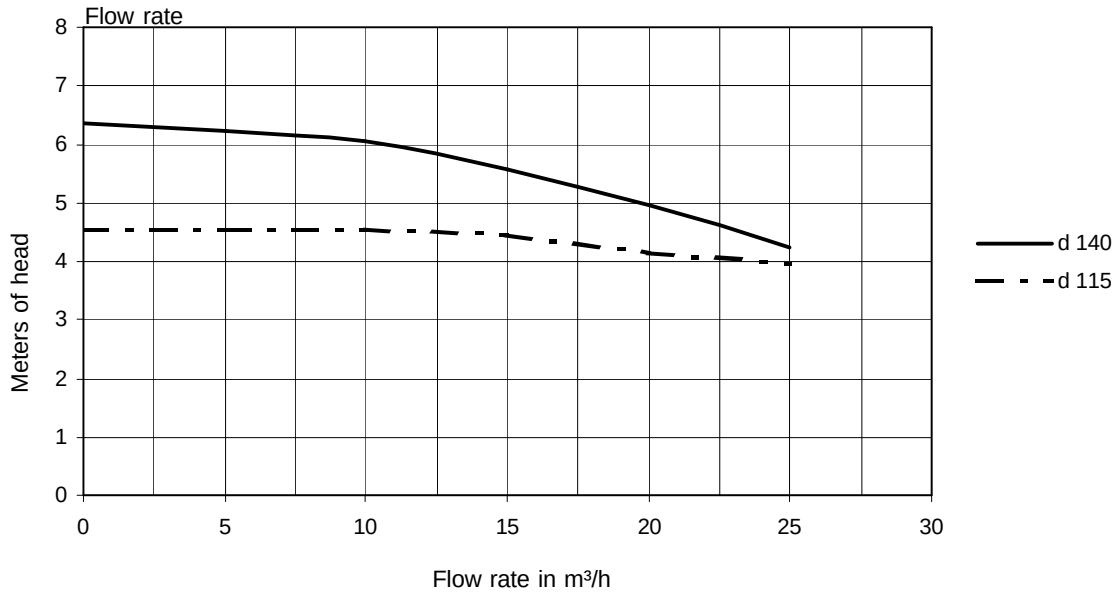
Motor kW: 3
Speed: 2900

Standard Pump N



Type N 65 - 40 - 125

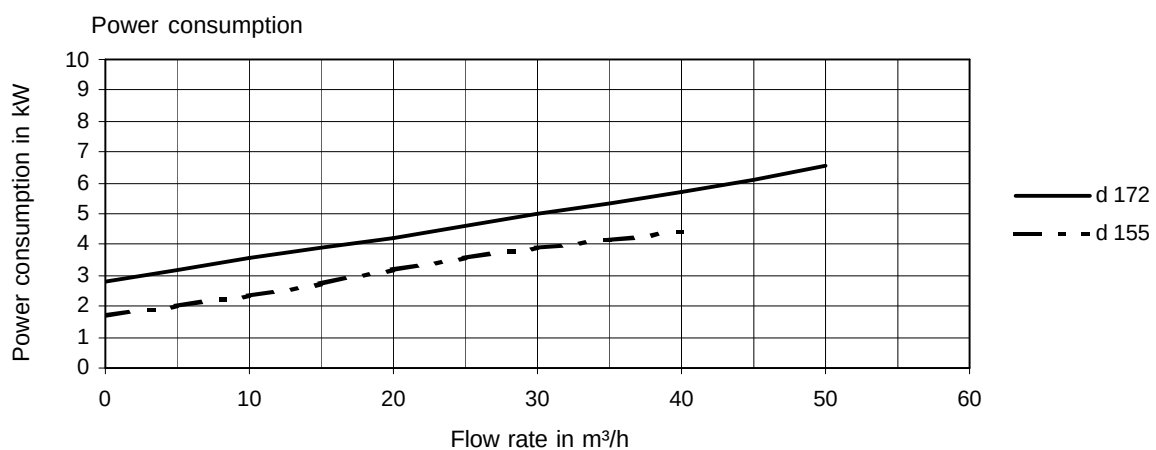
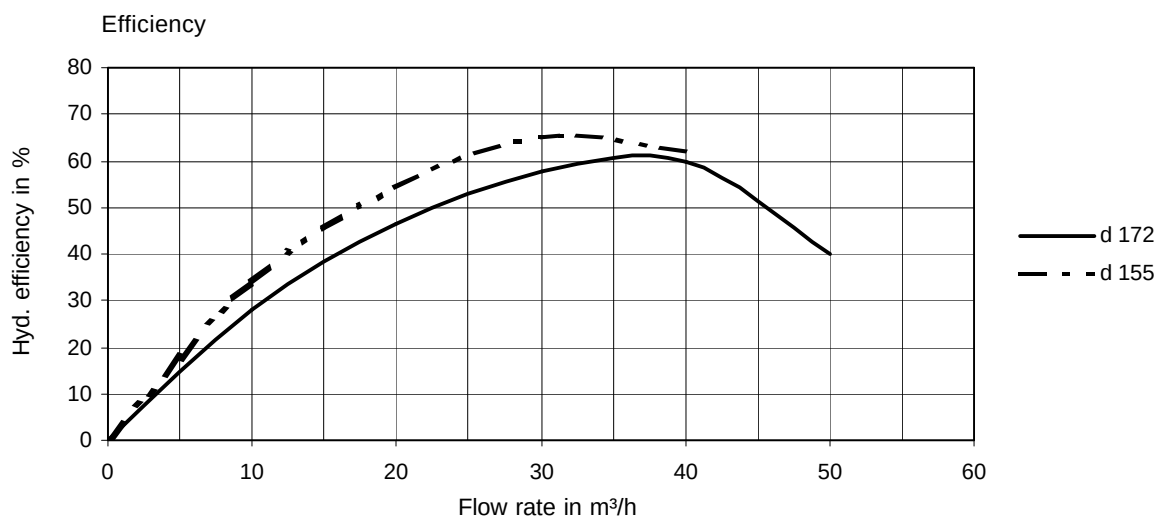
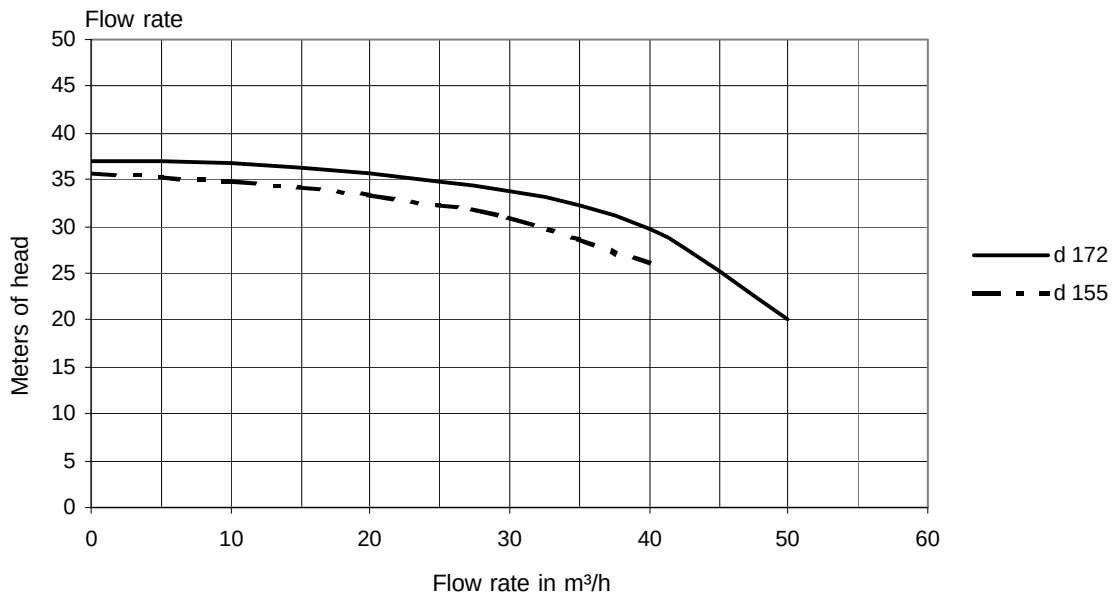
Motor kW: 1,5
Speed: 1450



Type N 65 - 40 - 160

Motor kW: 7,5
Speed: 2900

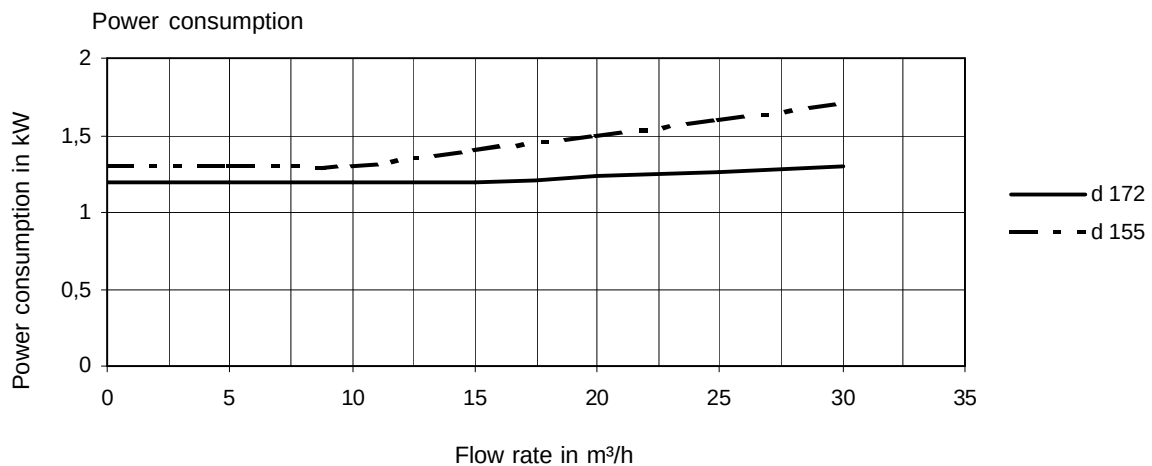
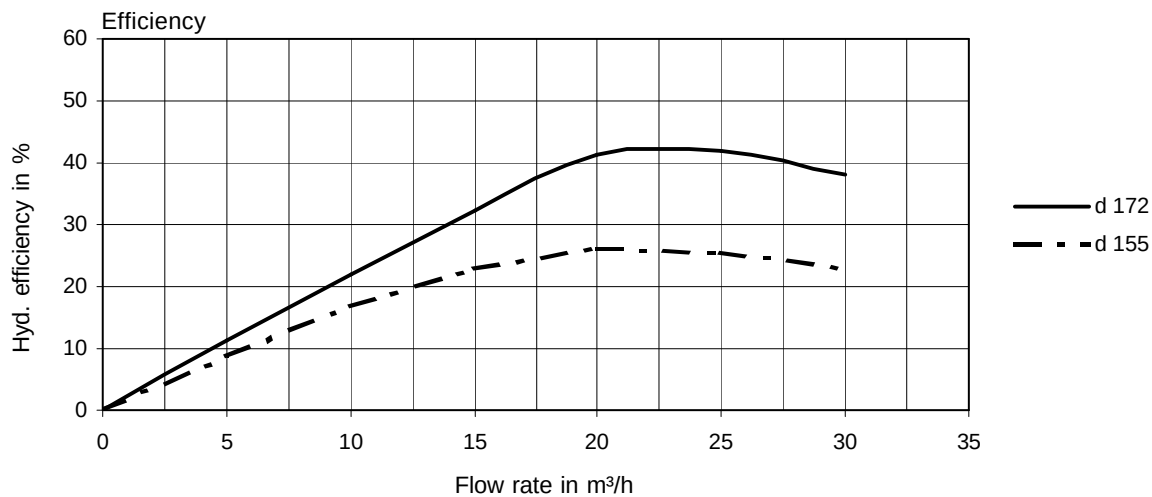
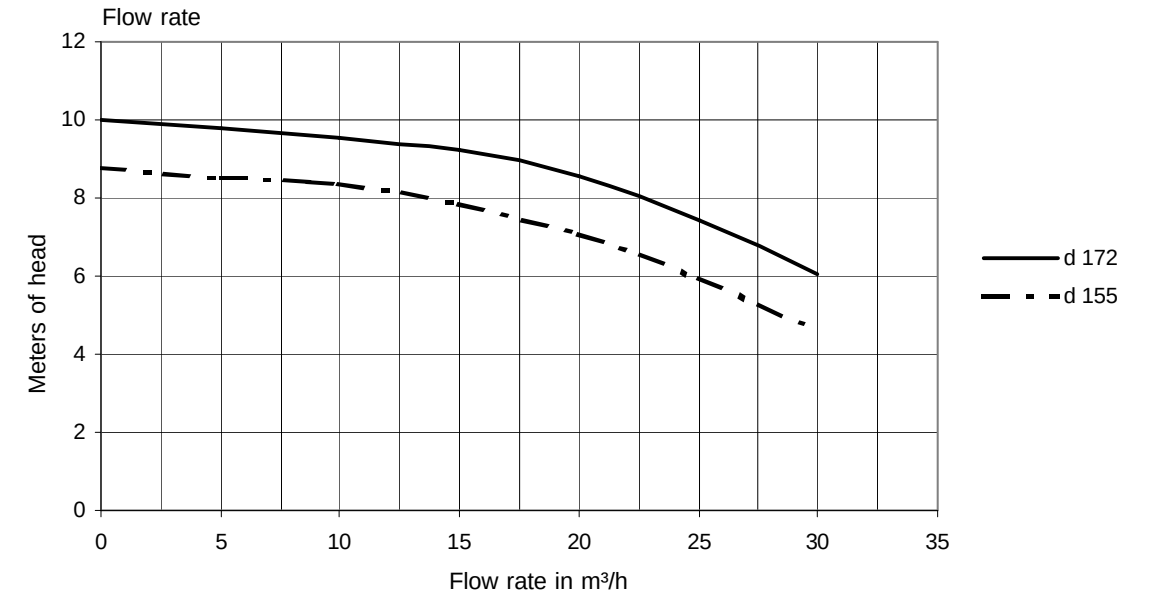
Standard Pump N



Type N 65 - 40 - 160

Motor kW: 2,2
Speed: 1450

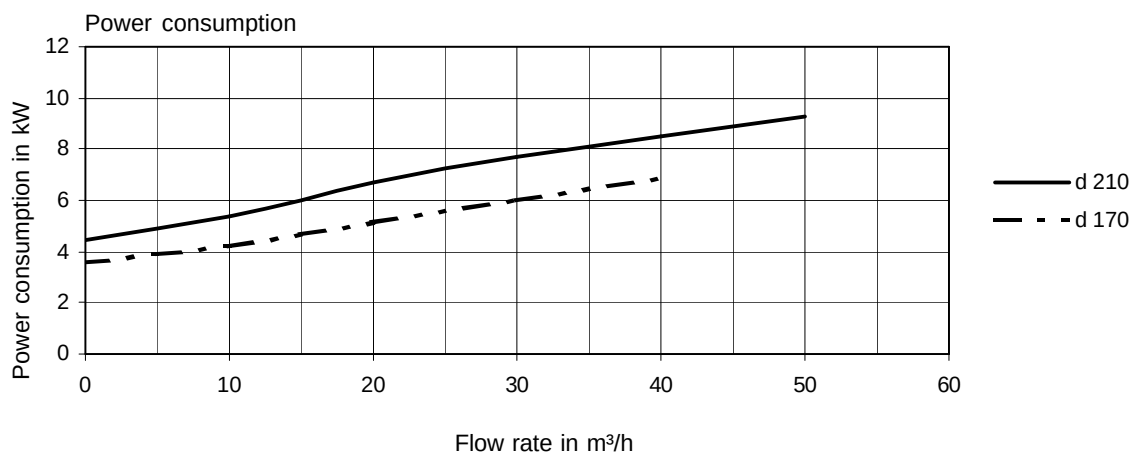
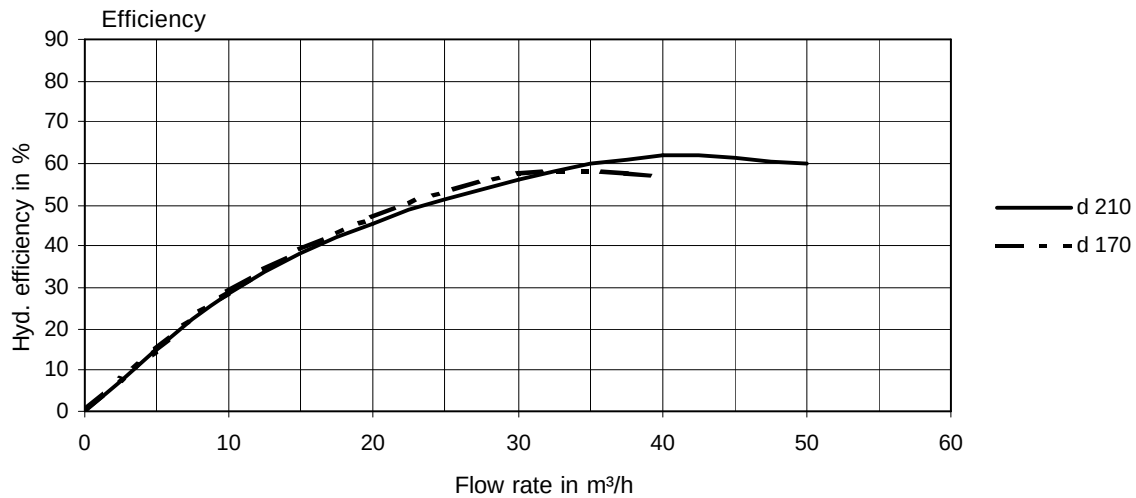
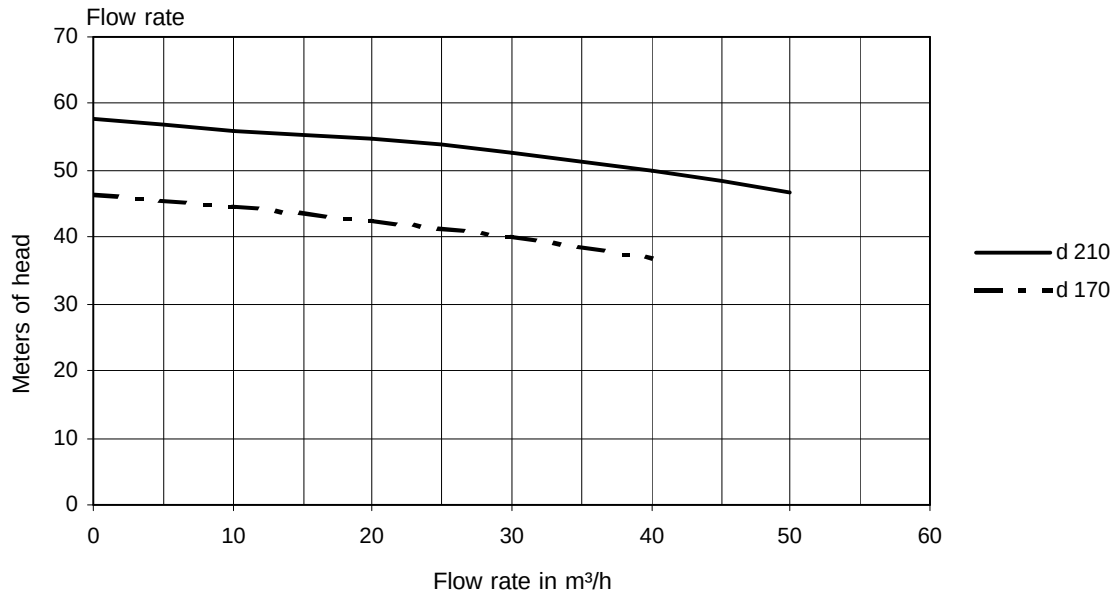
Standard Pump N



Type N 65 - 40 - 200

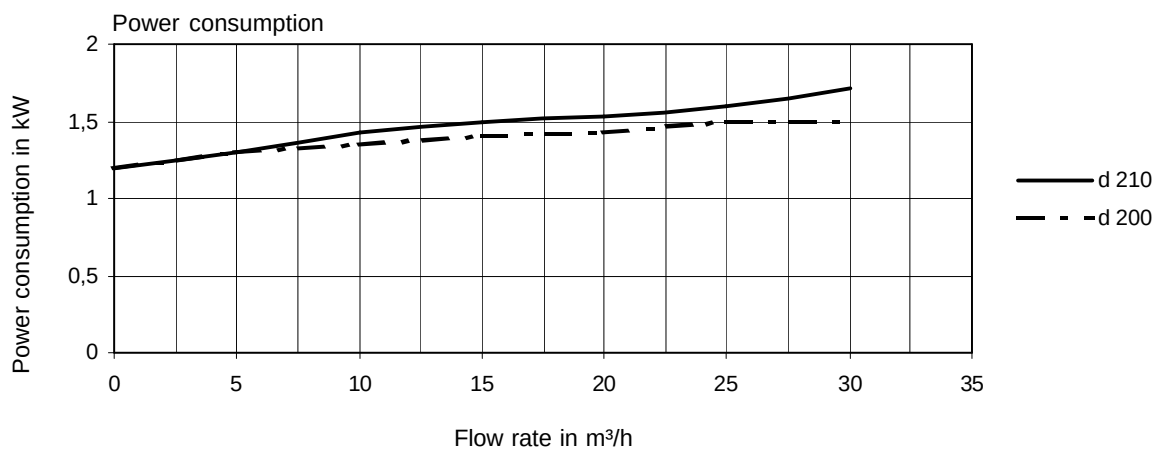
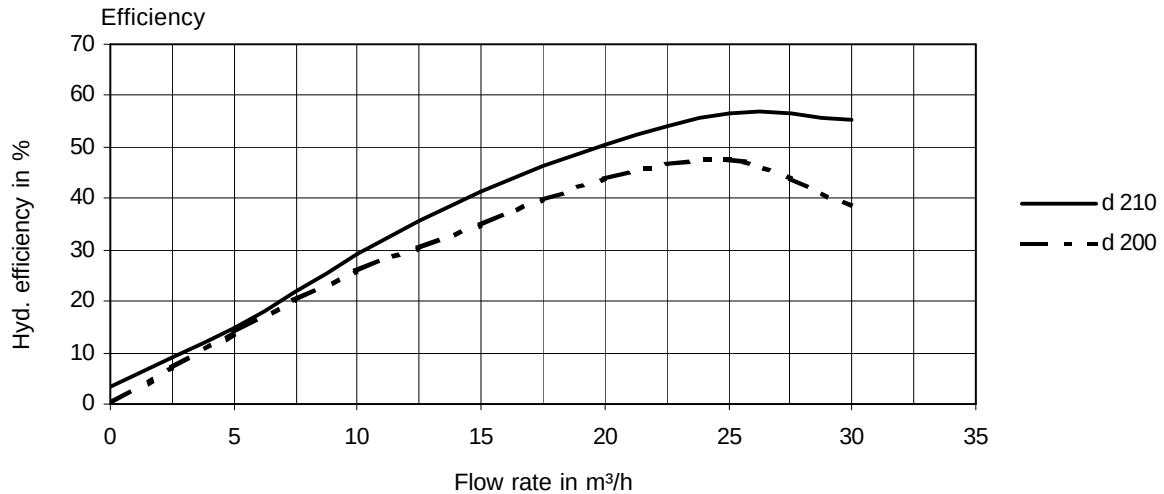
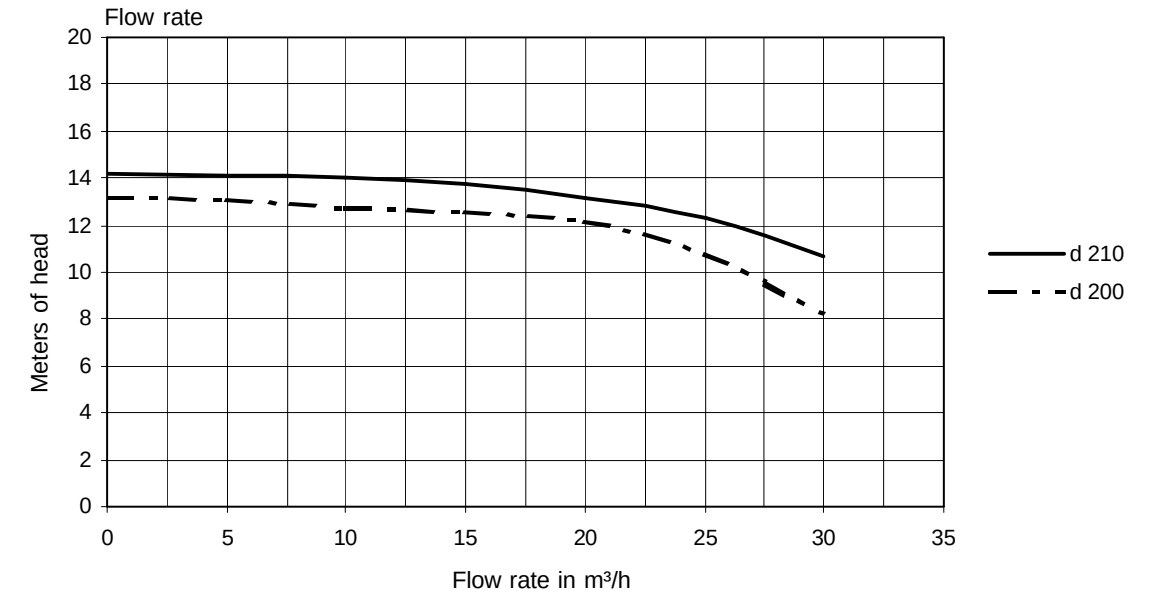
Motor kW: 7,5
Speed: 2900

Standard Pump N



Type N 65 - 40 - 200

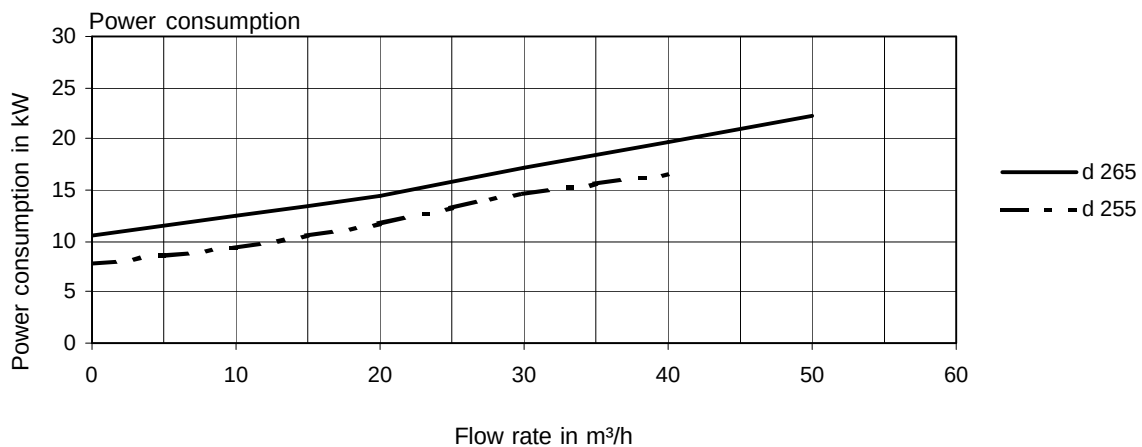
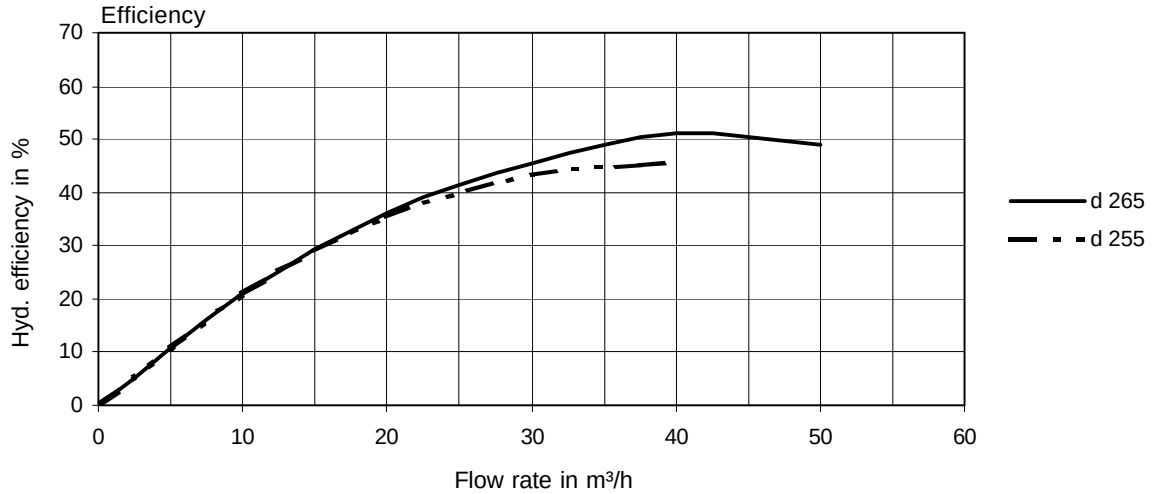
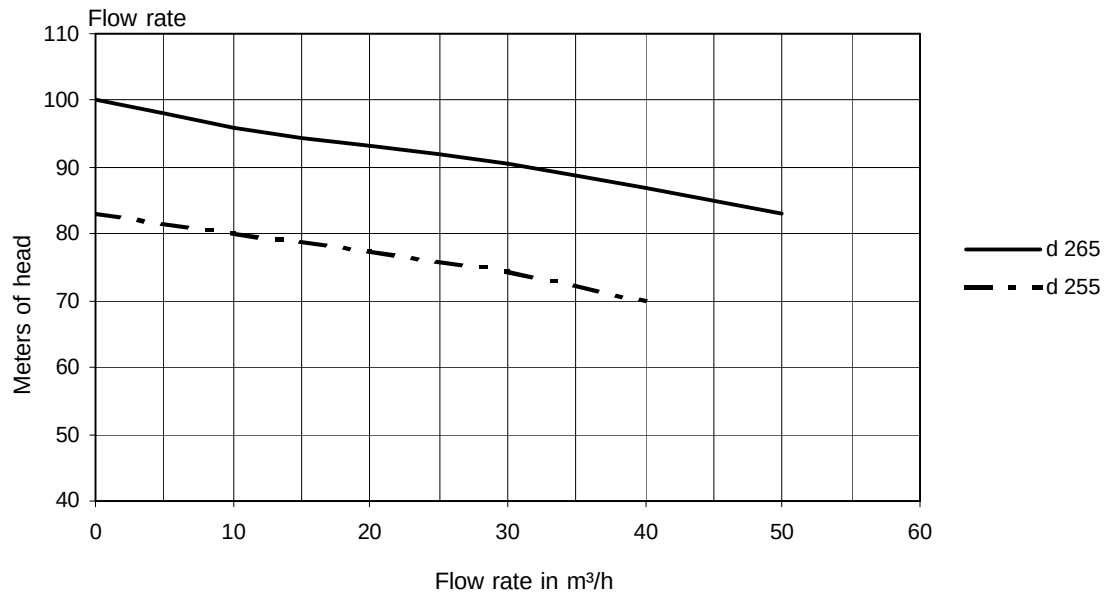
Motor kW: 2,5
Speed: 1450



Type N 65 - 40 - 250

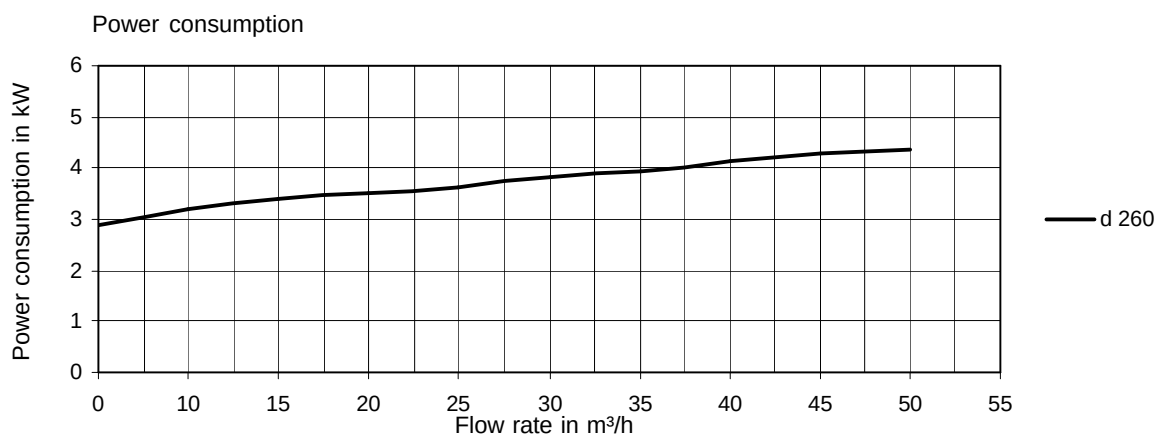
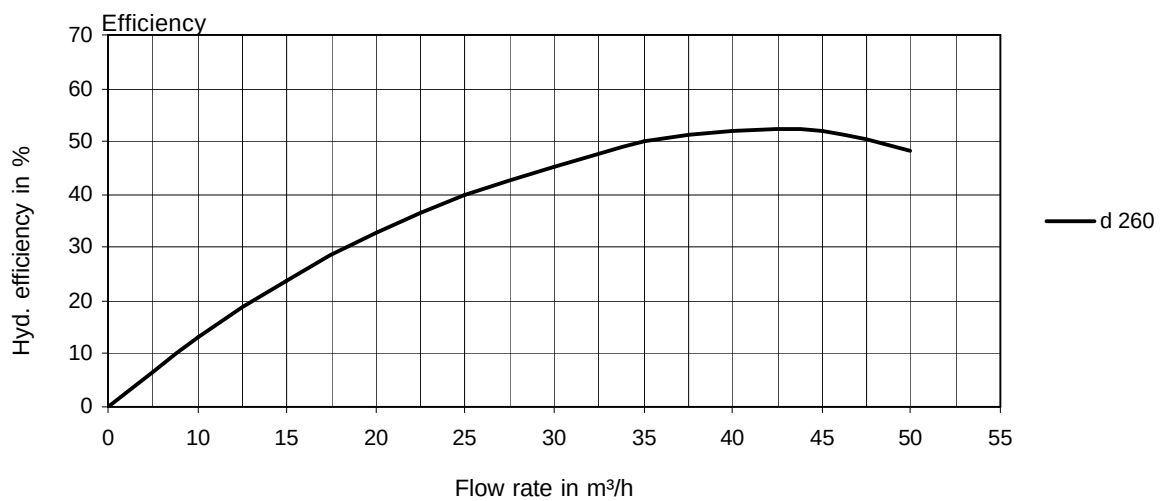
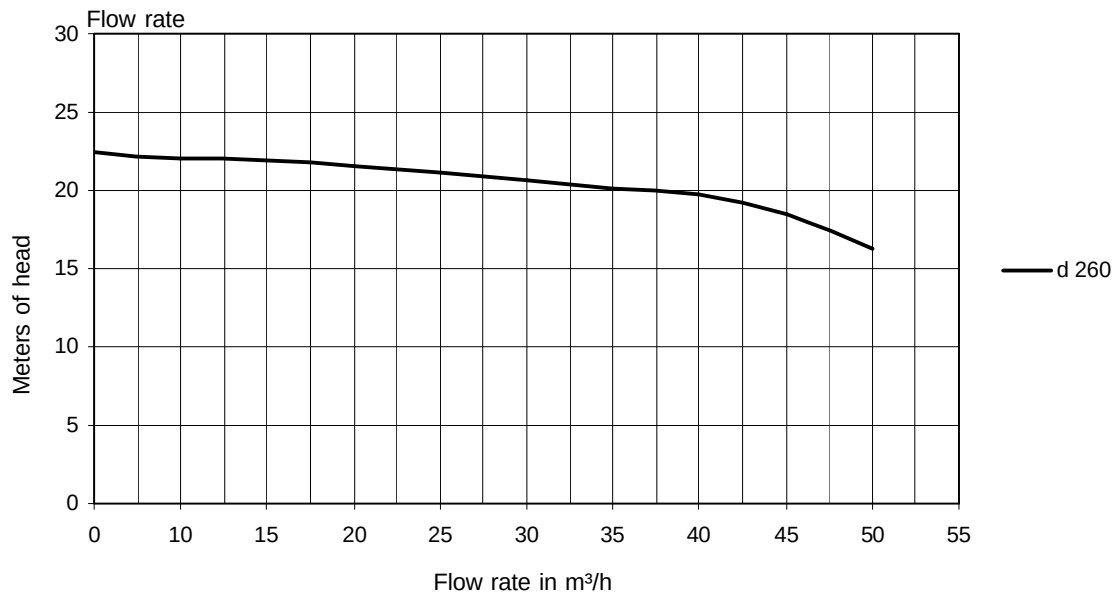
Motor kW: 22
Speed: 2900

Standard Pump N



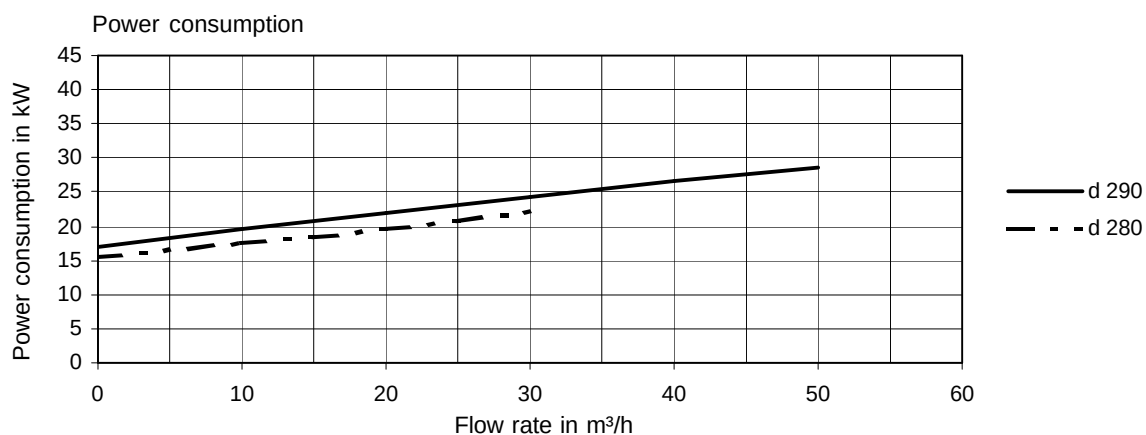
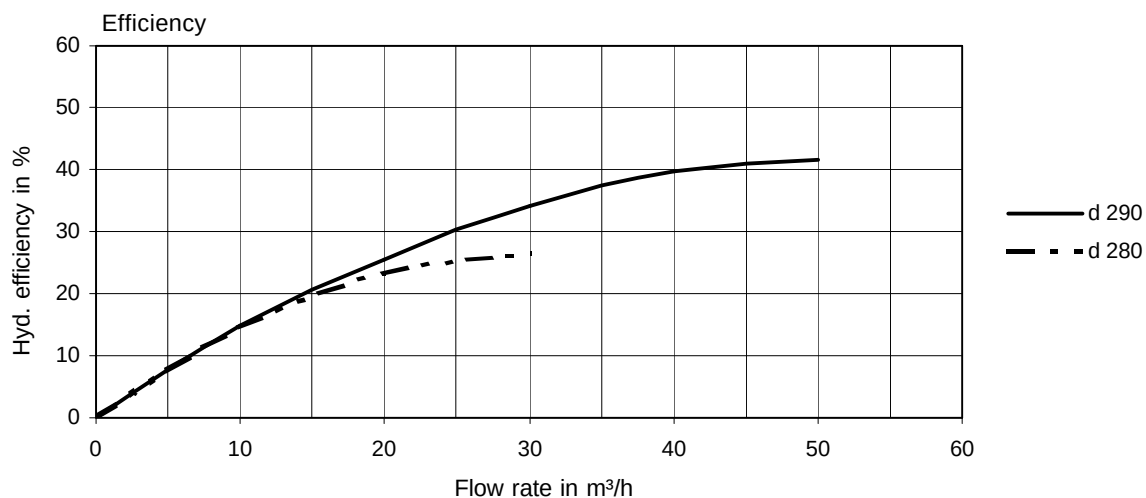
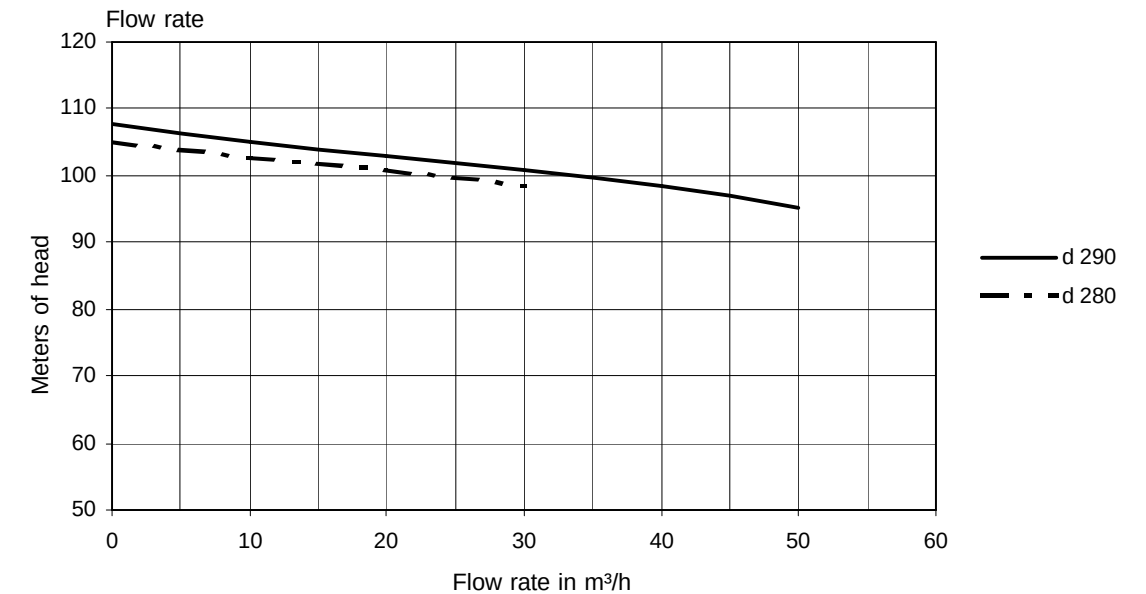
Type N 65 - 40 - 250

Motor kW: 5,5
Speed: 1450



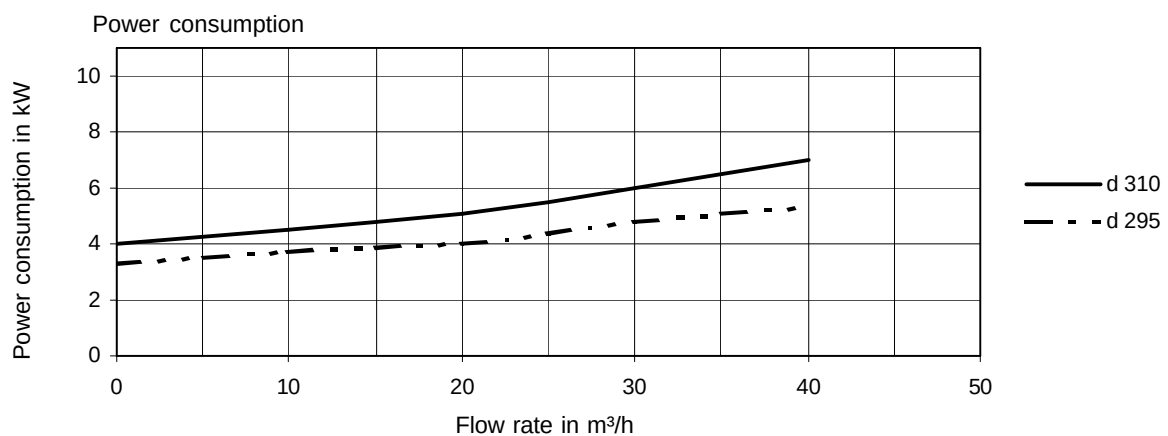
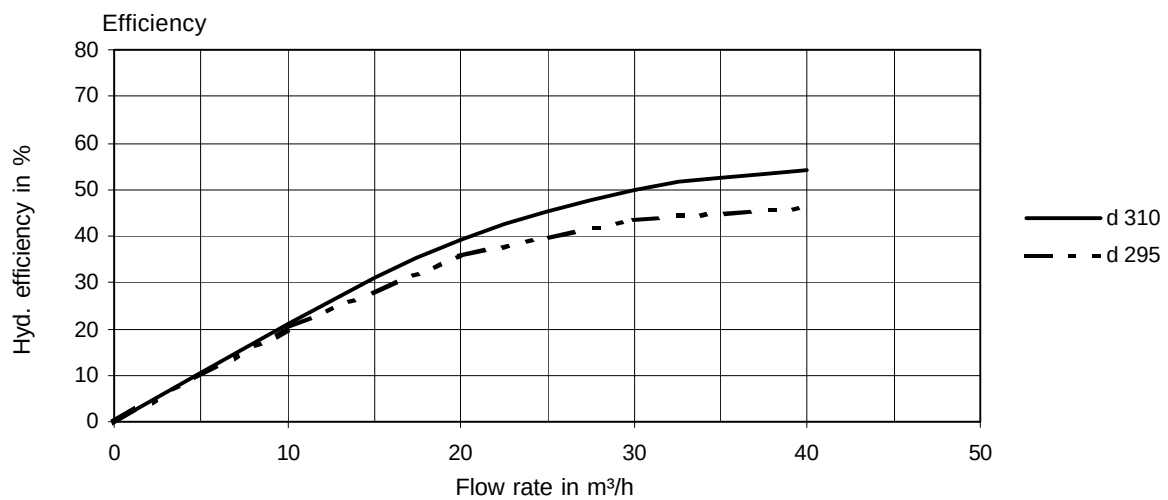
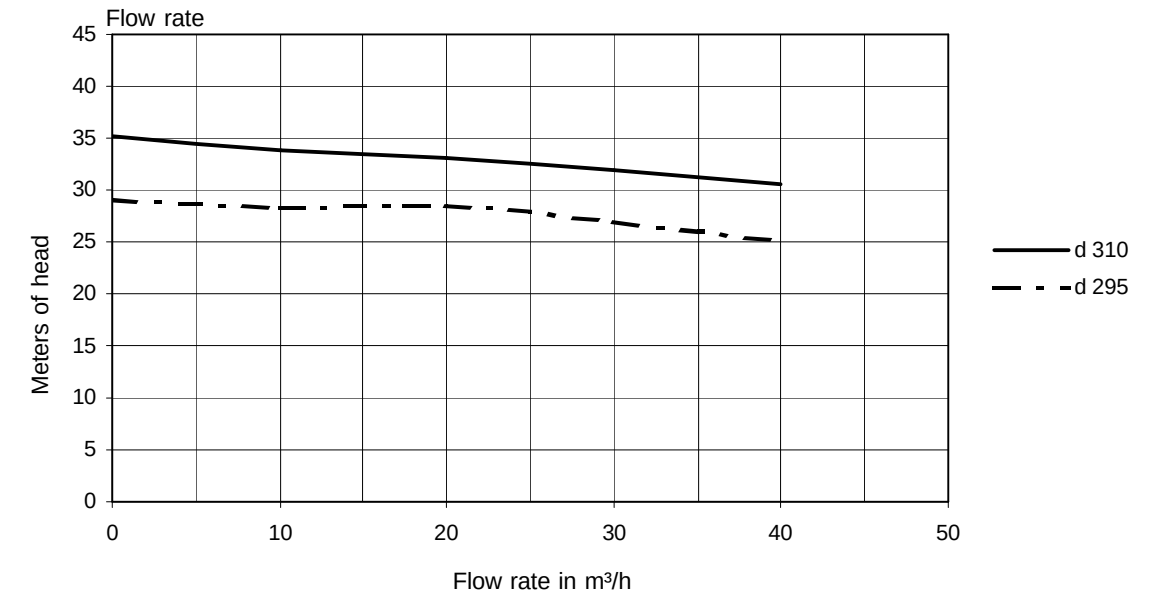
Type N 65 - 40 - 315

Motor kW: 30
Speed: 2900



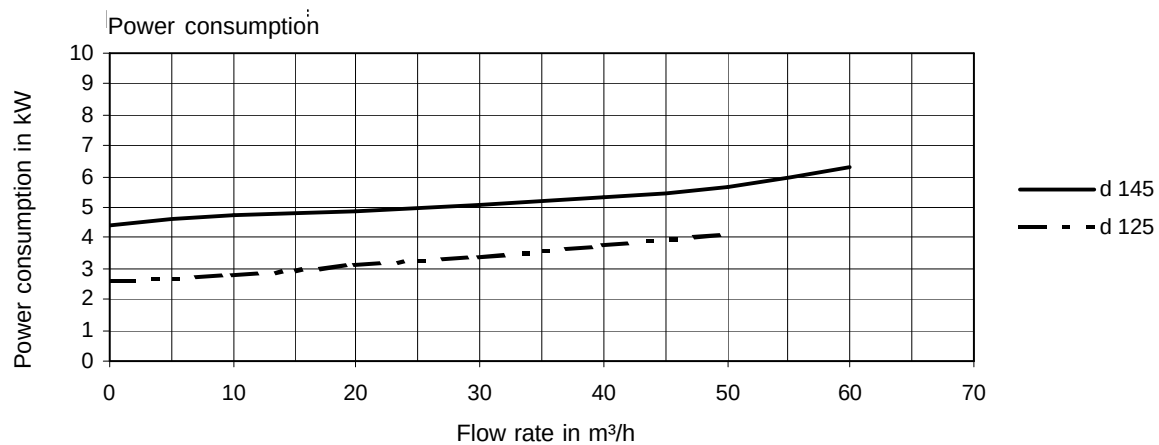
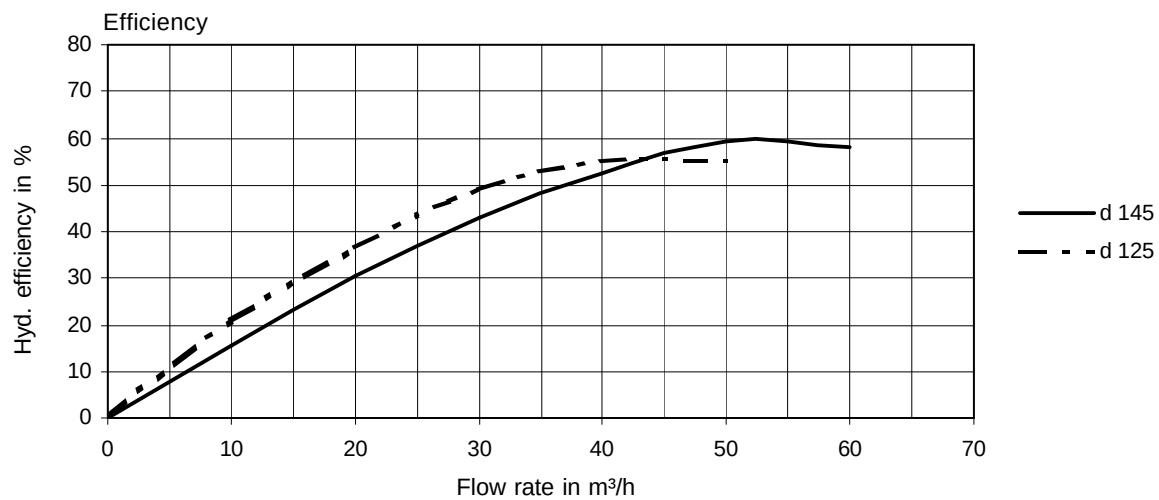
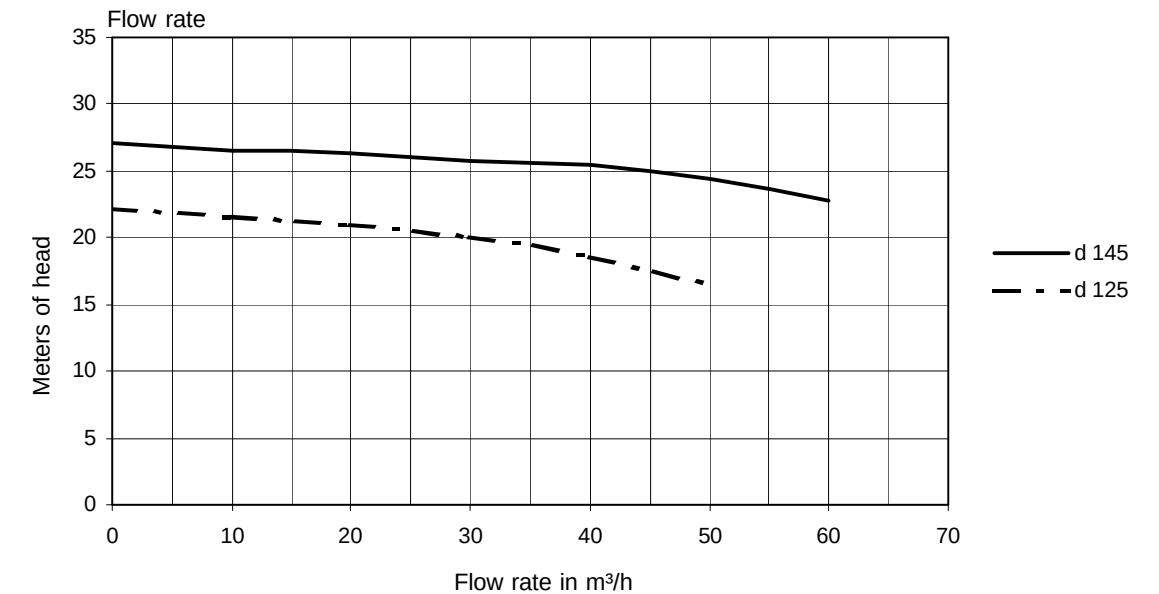
Type N 65 - 40 - 315

Motor kW: 5,5
Speed: 1450



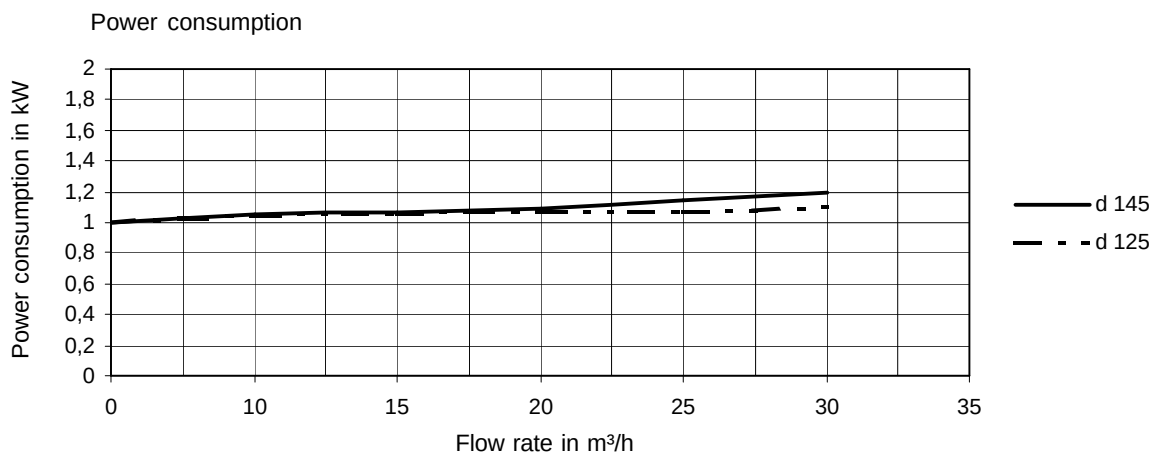
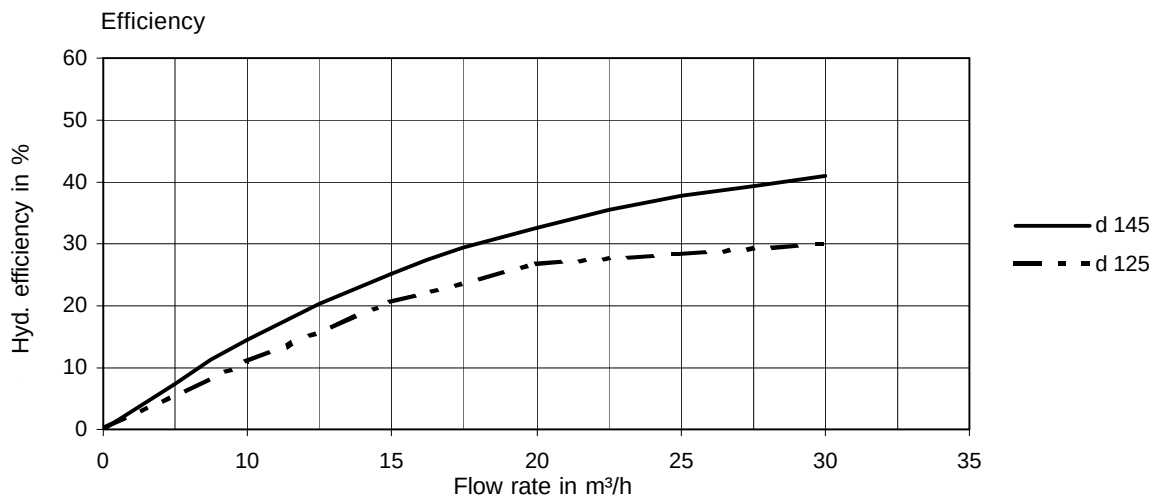
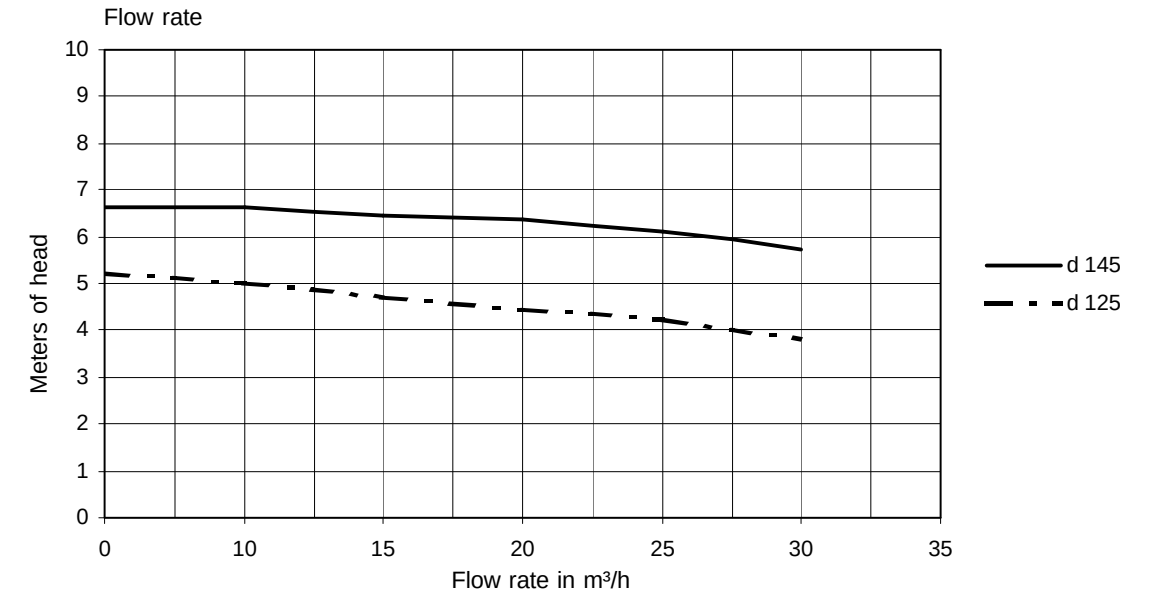
Type N 80 - 50 - 125

Motor kW: 7,5
Speed: 2900



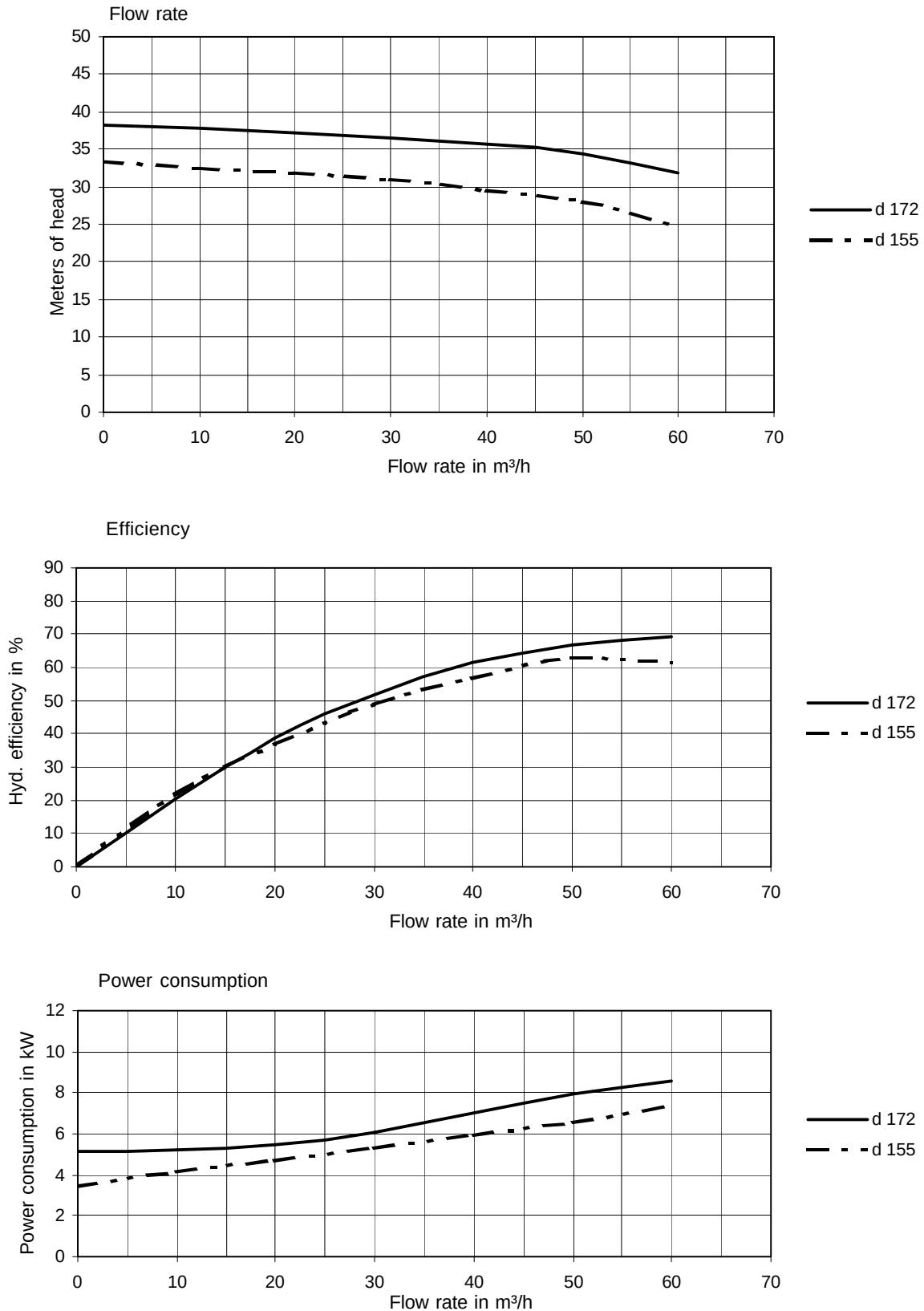
Type N 80 - 50 - 125

Motor kW: 1,5
Speed: 1450



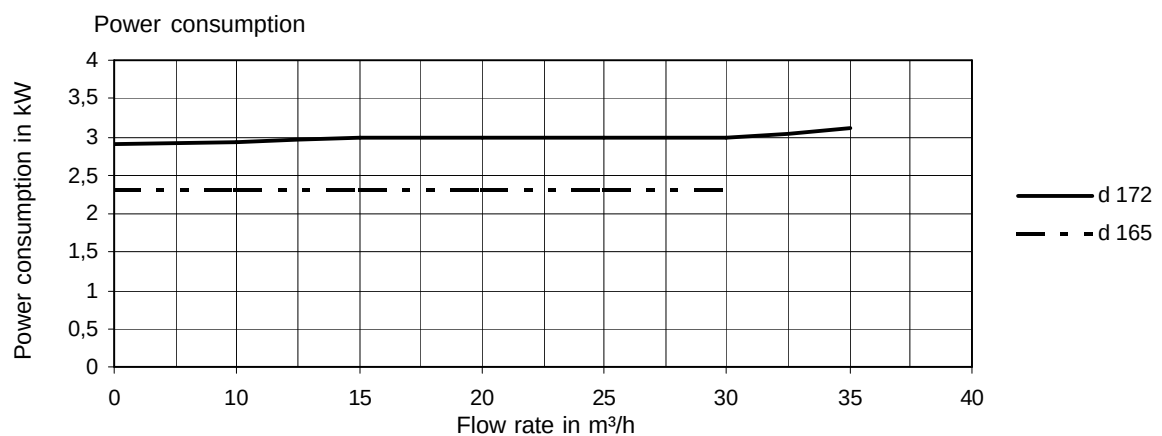
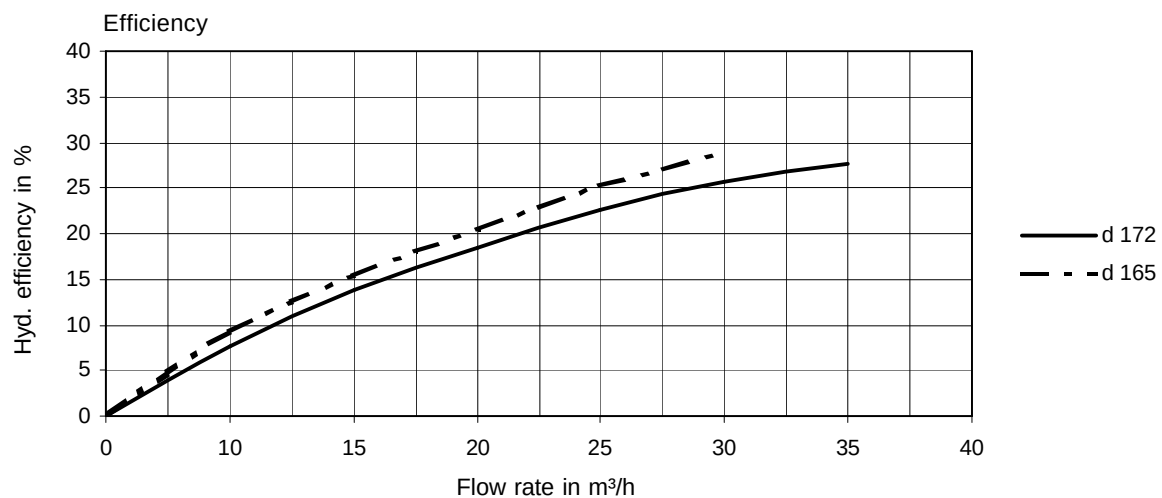
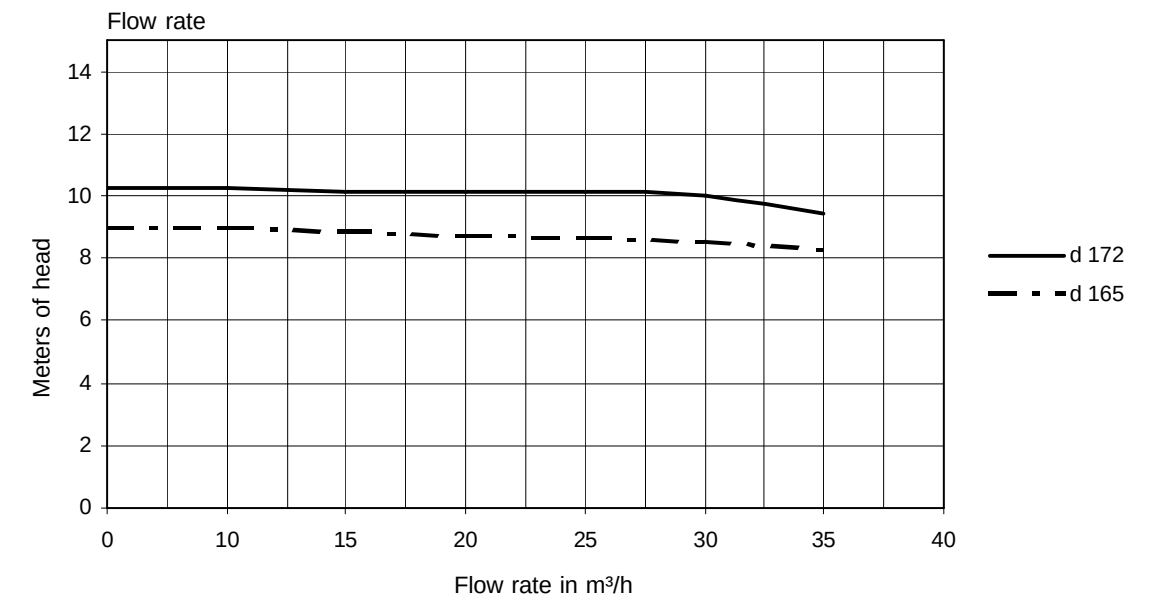
Type N 80 - 50 - 160

Motor kW: 11
Speed: 2900



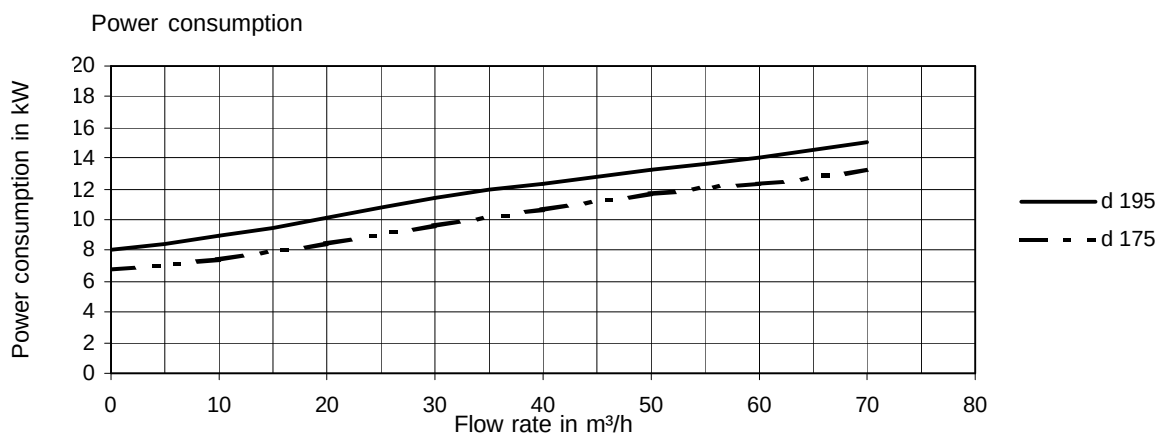
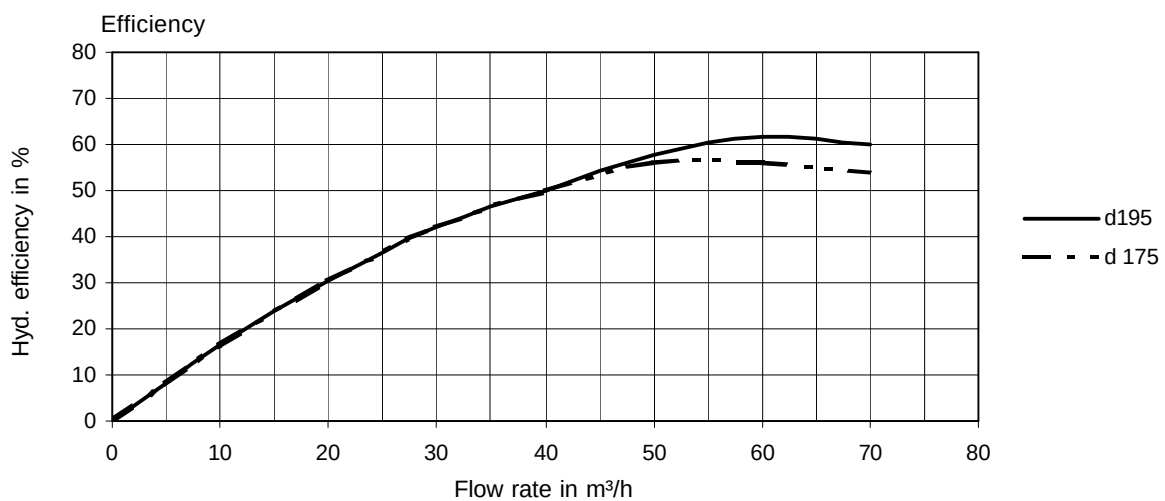
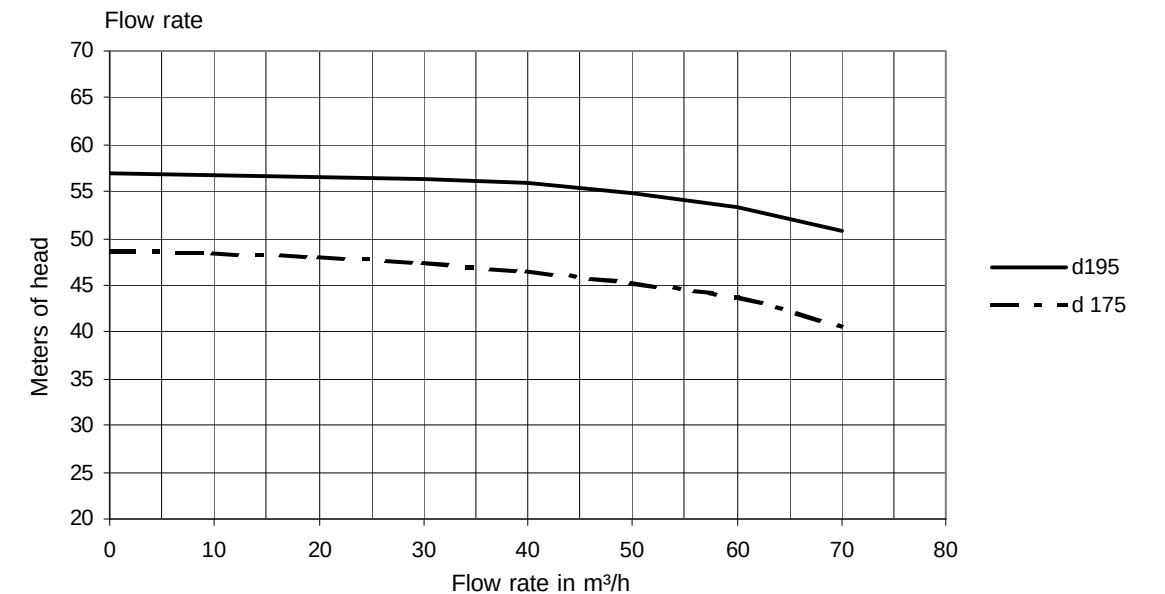
Type N 80 - 50 - 160

Motor kW: 4
Speed: 1450



Type N 80 - 50 - 200

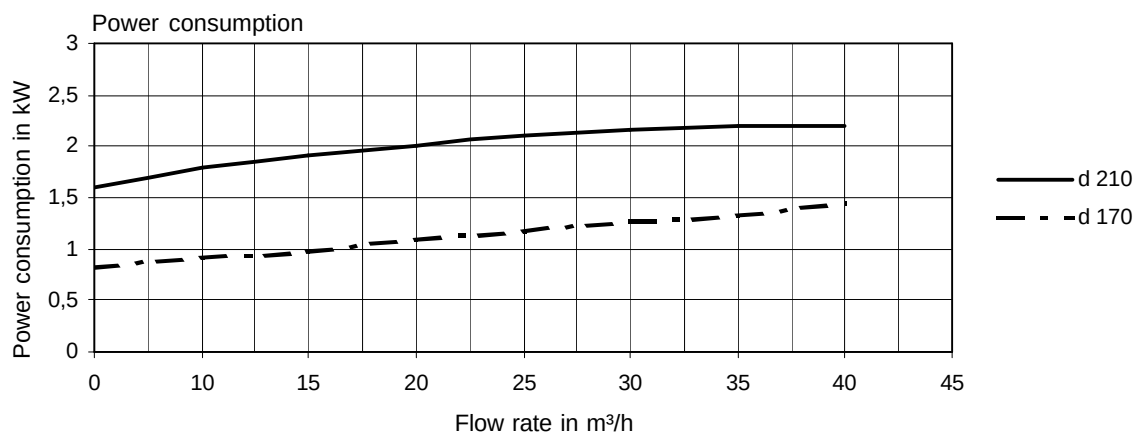
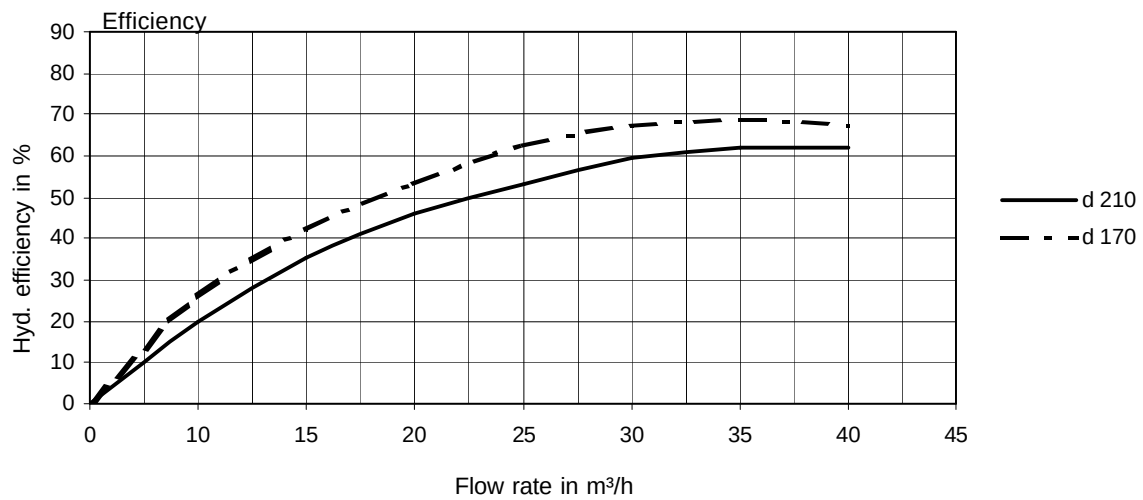
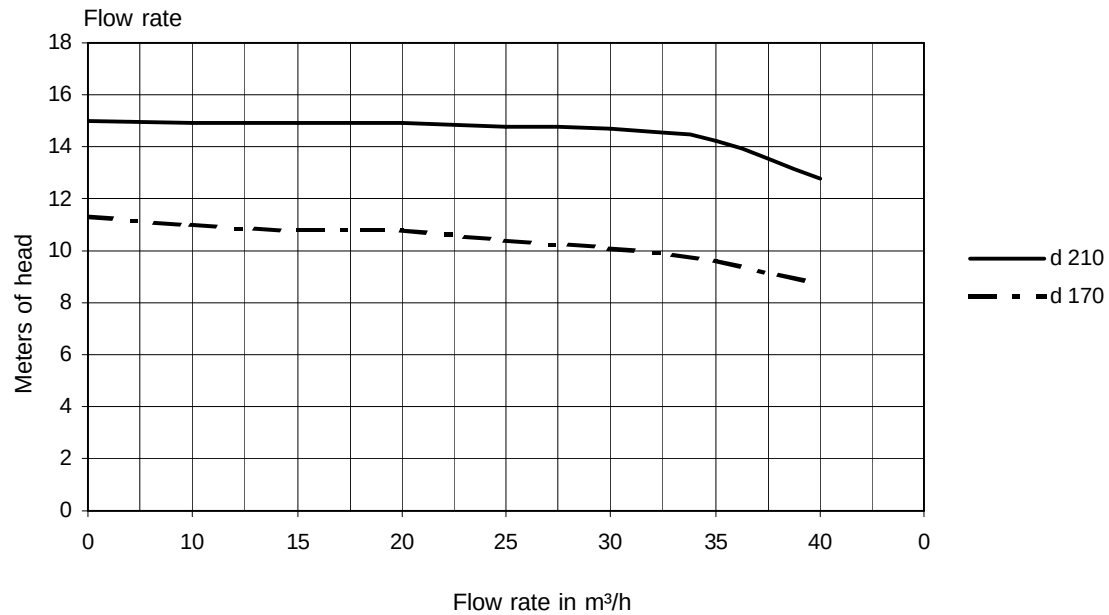
Motor kW: 15
Speed: 2900



Type N 80 - 50 - 200

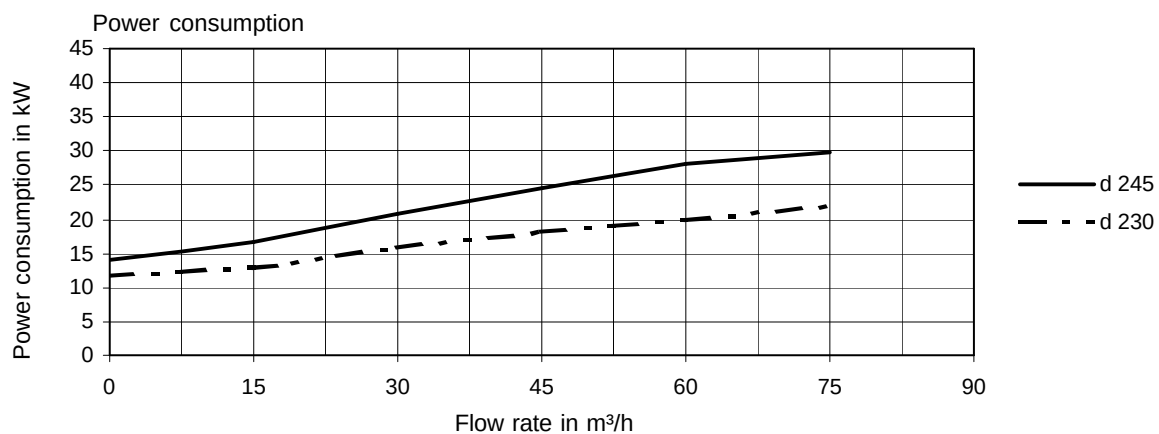
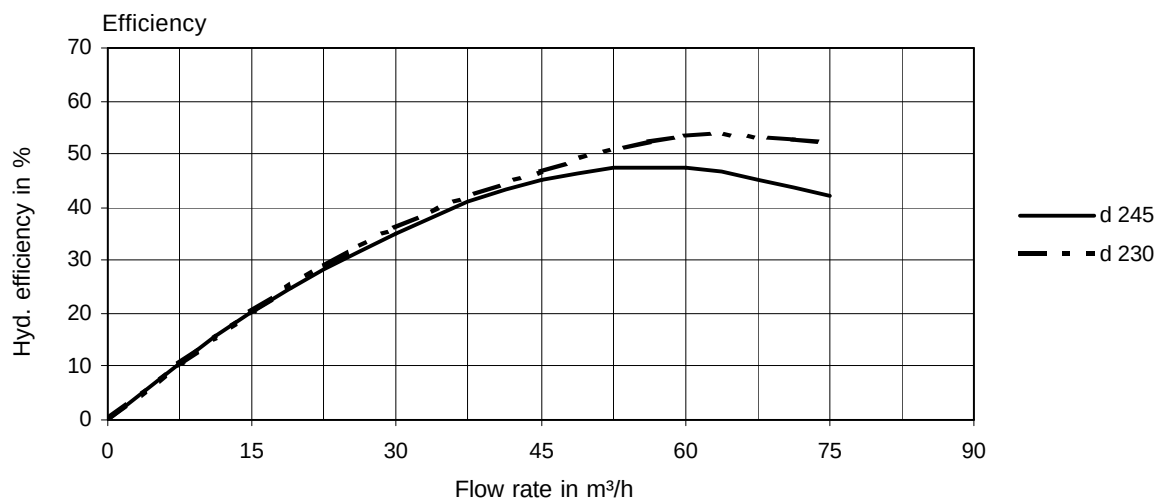
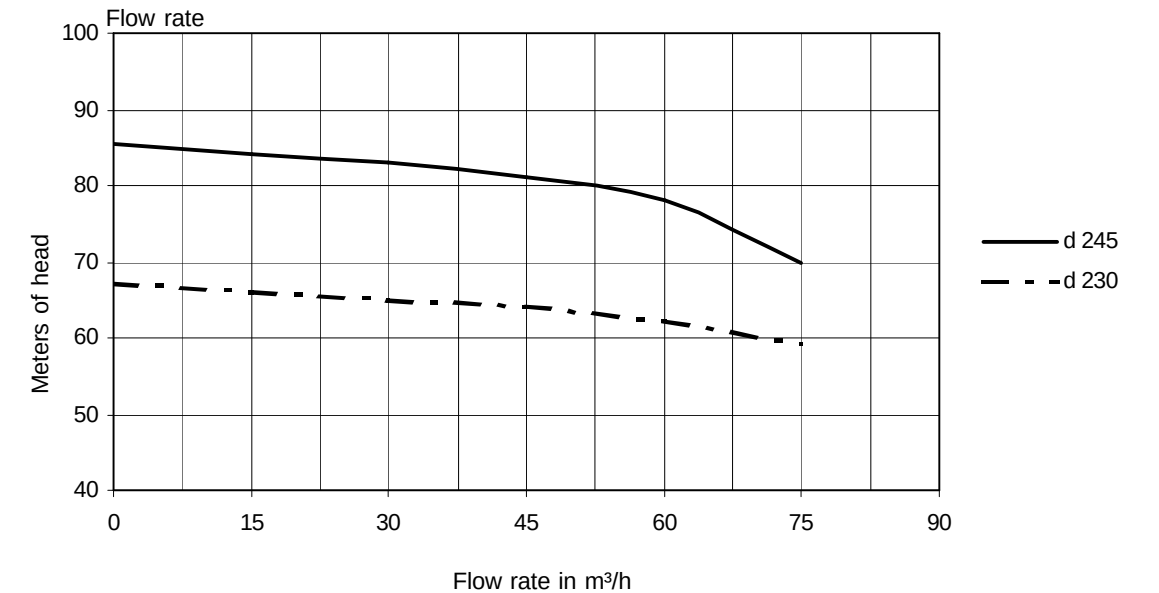
Motor kW: 3
Speed: 1450

Standard Pump N



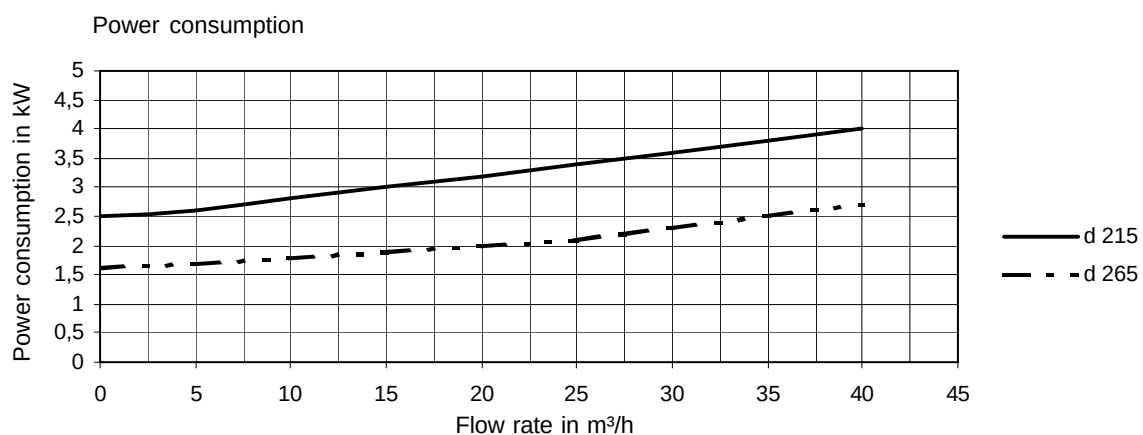
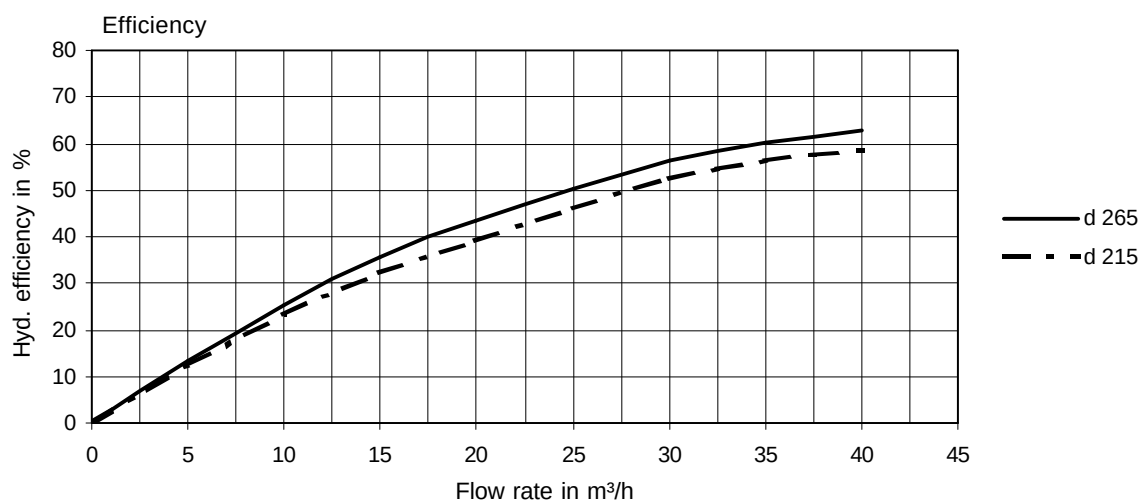
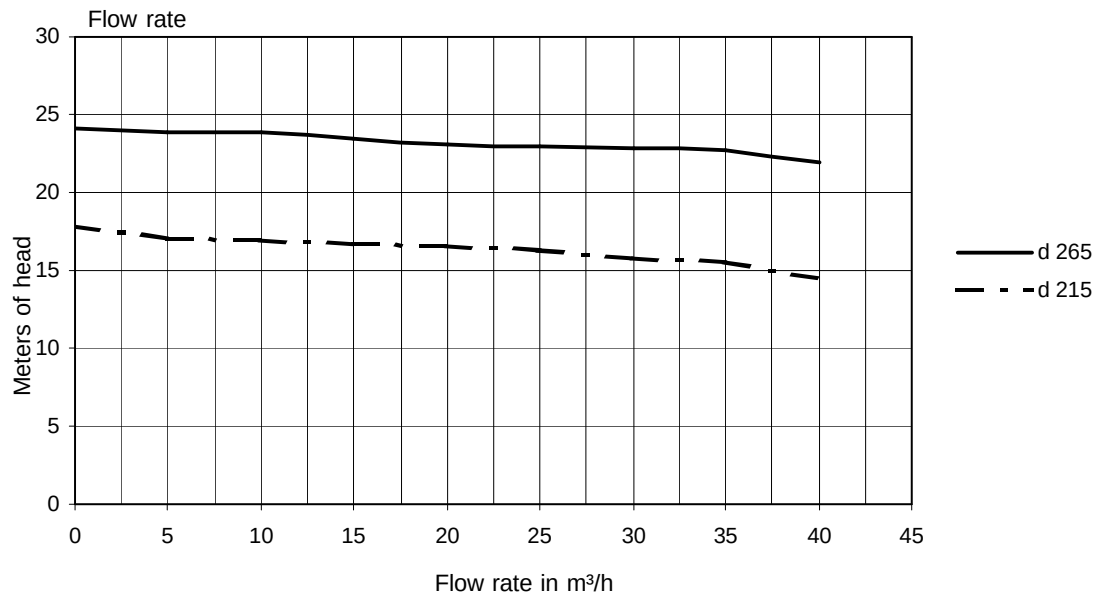
Type N 80 - 50 - 250

Motor kW: 22
Speed: 2900



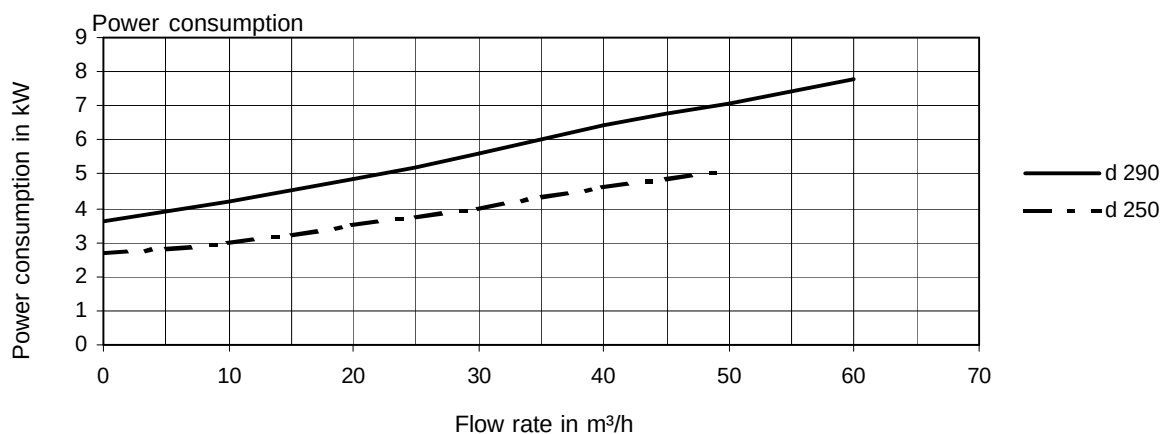
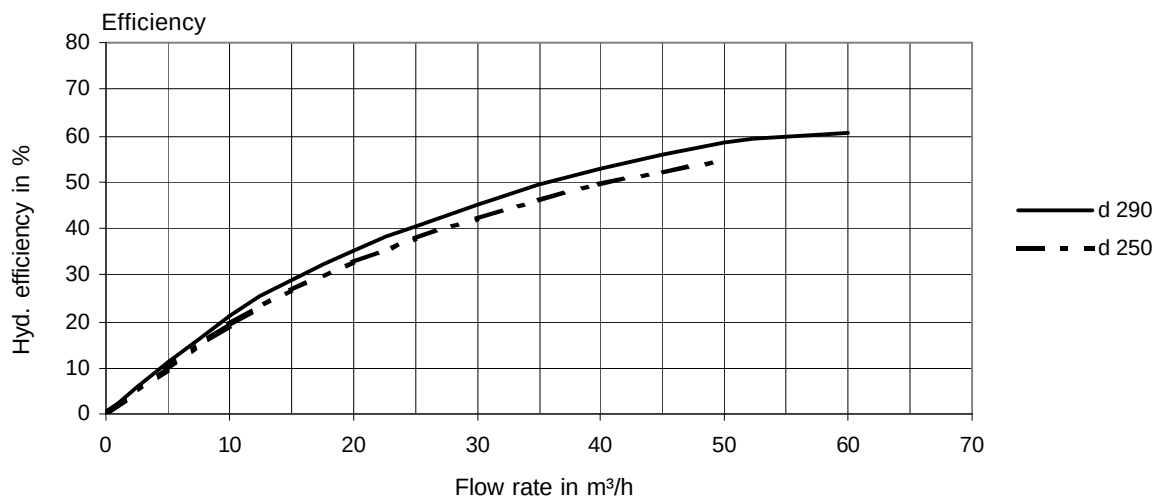
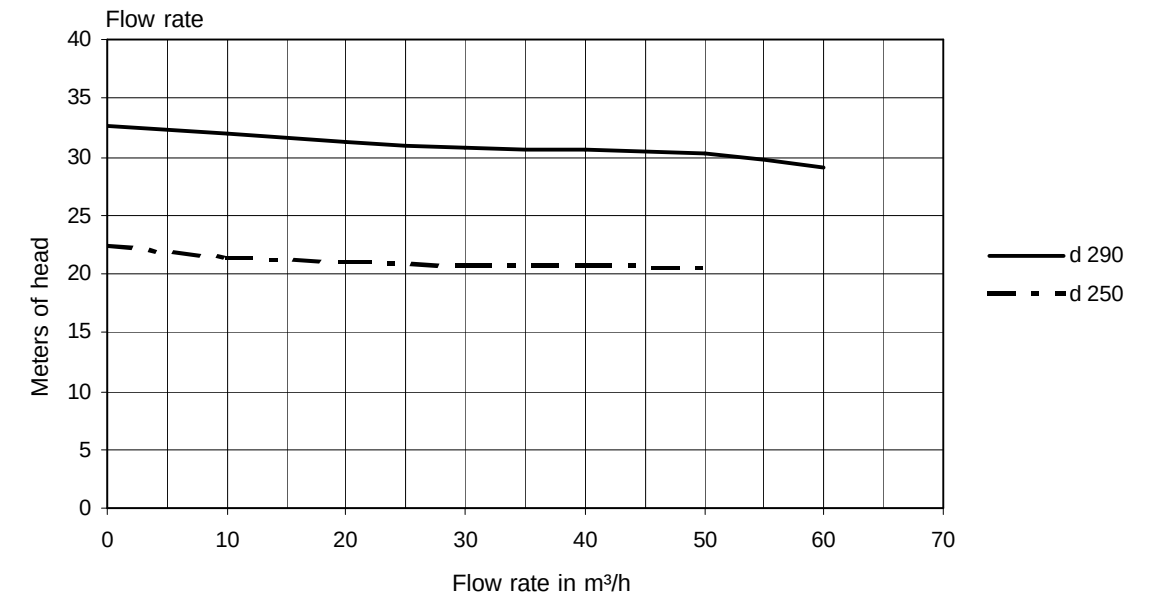
Type N 80 - 50 - 250

Motor kW: 5,5
Speed: 1450



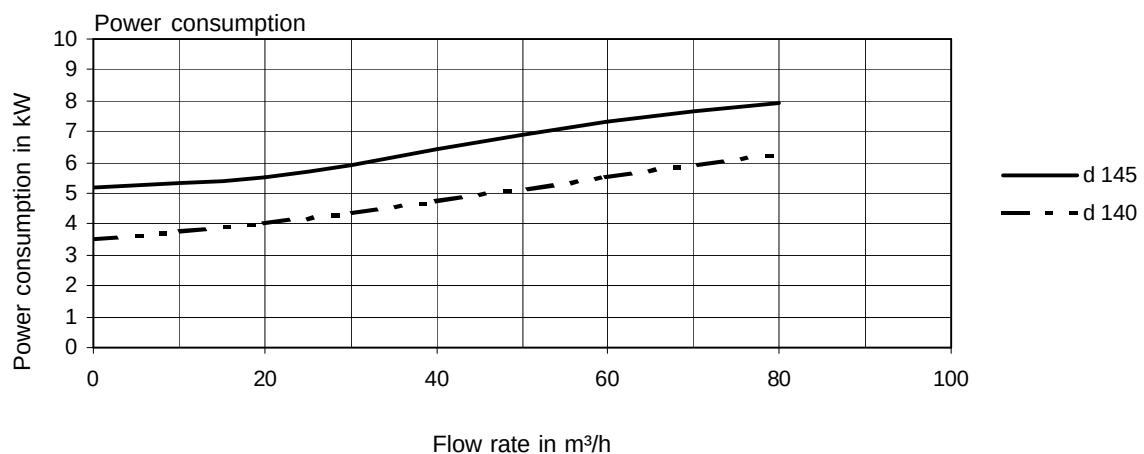
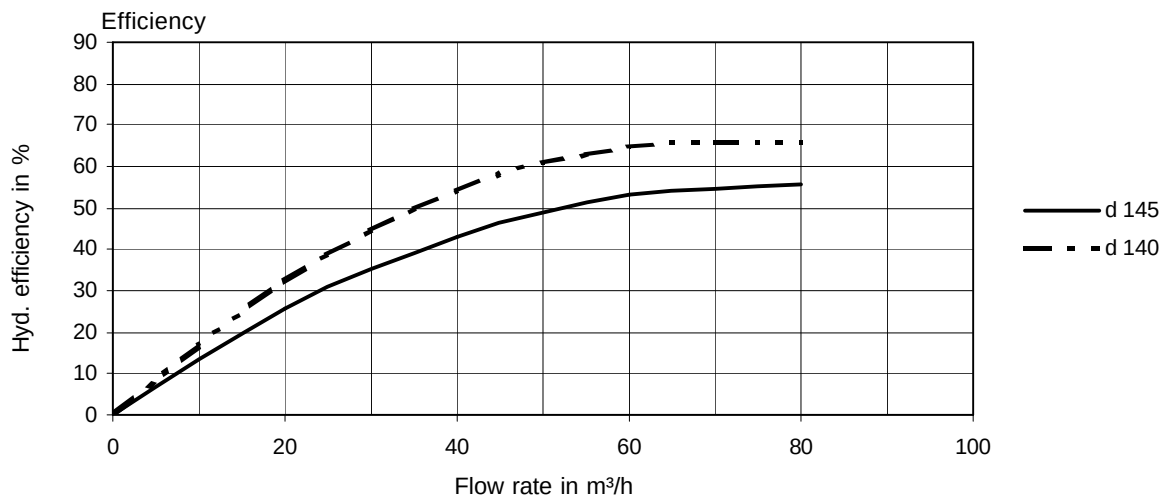
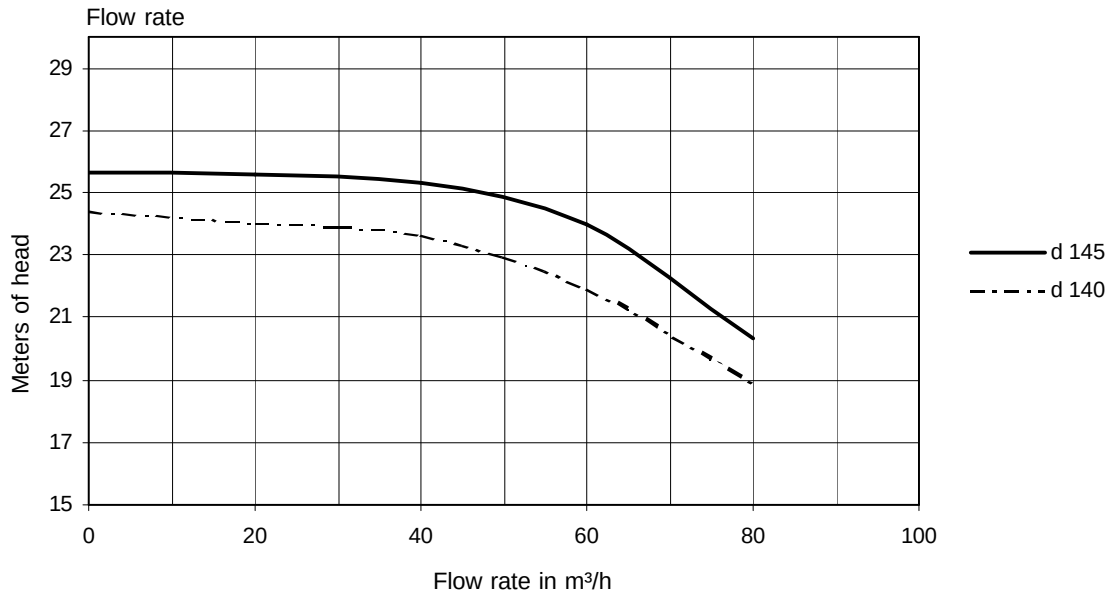
Type N 80 - 50 - 315

Motor kW: 7,5
Speed: 1450



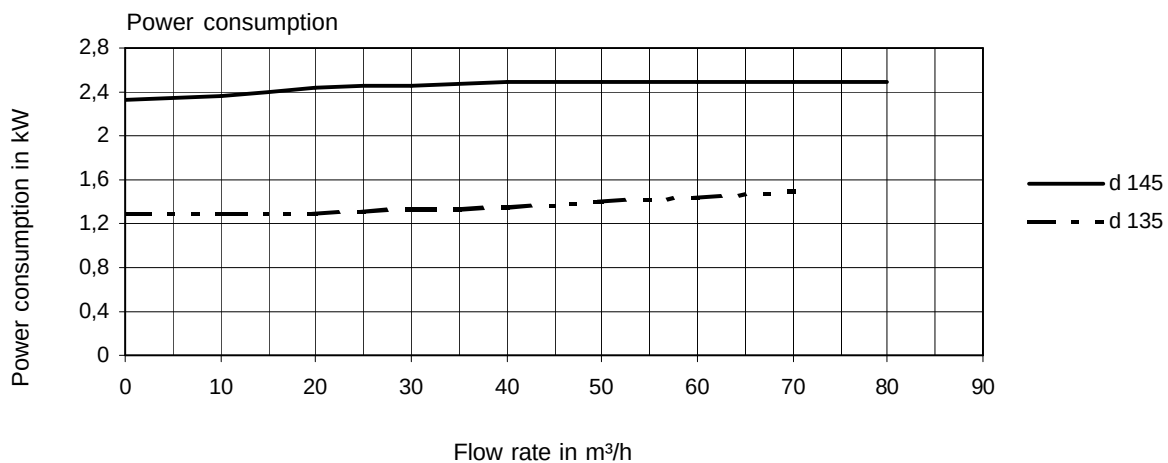
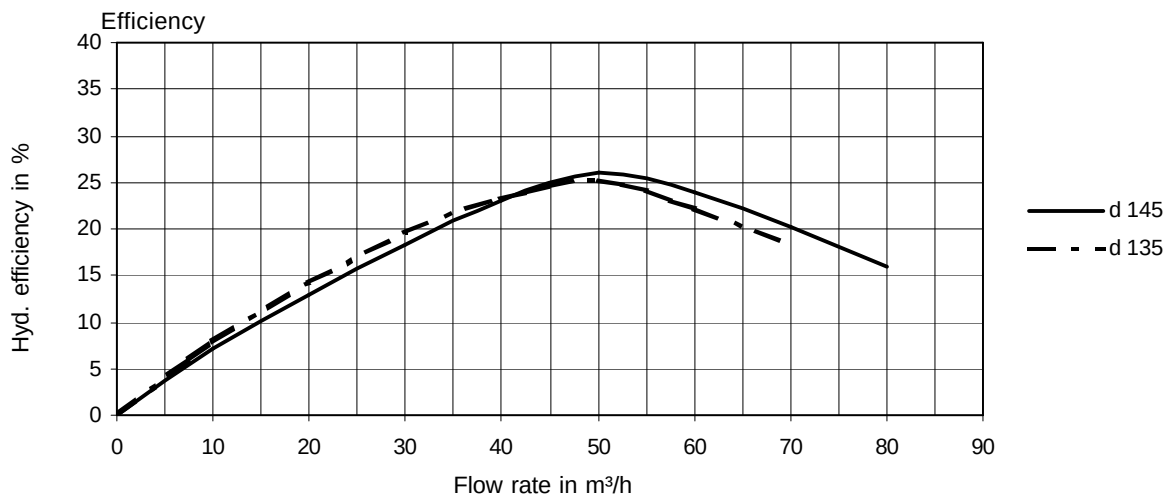
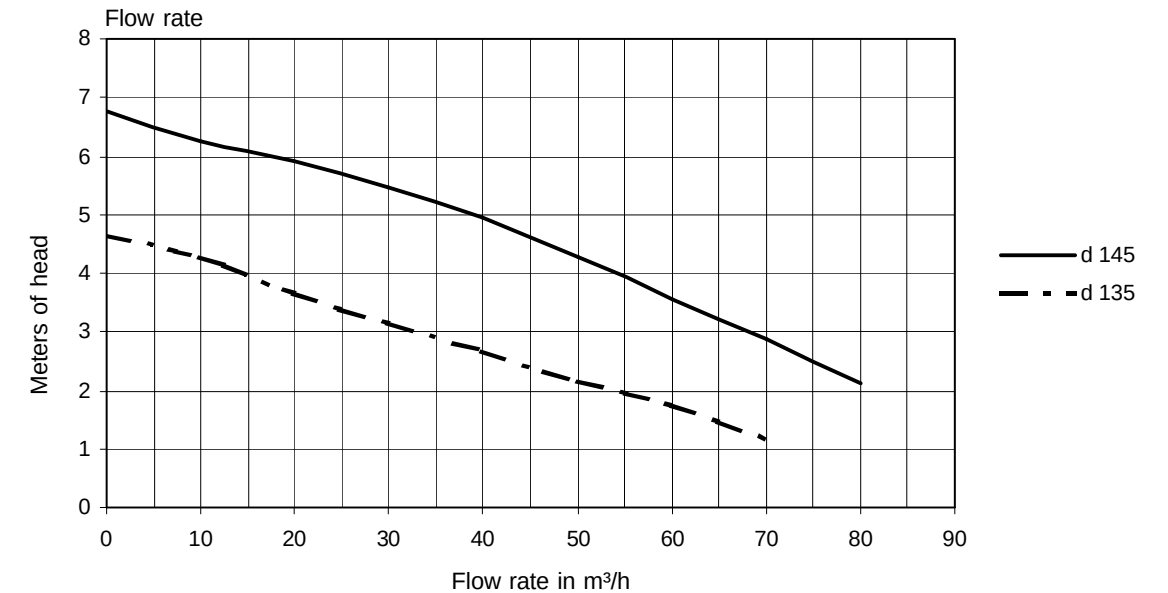
Type N 100 - 65 - 125

Motor kW: 11
Speed: 2900



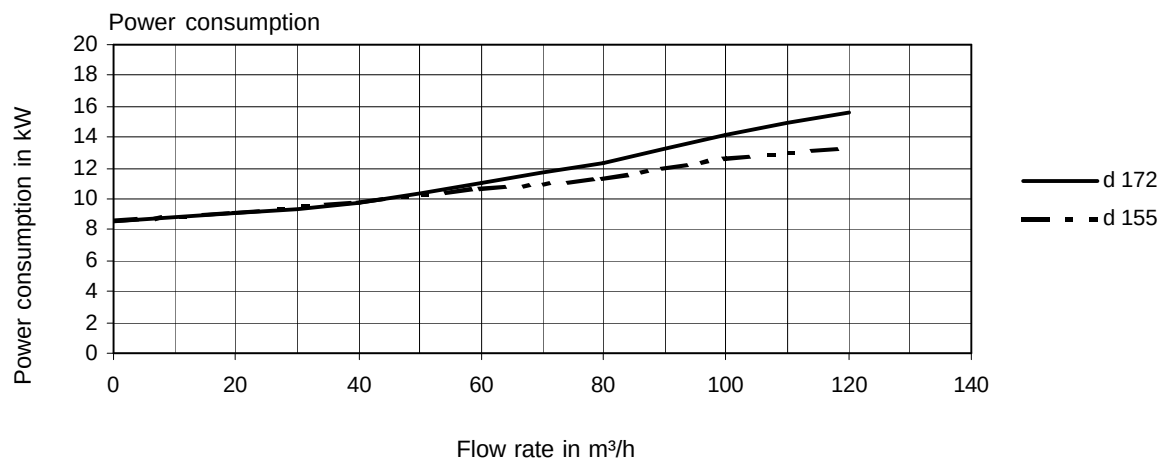
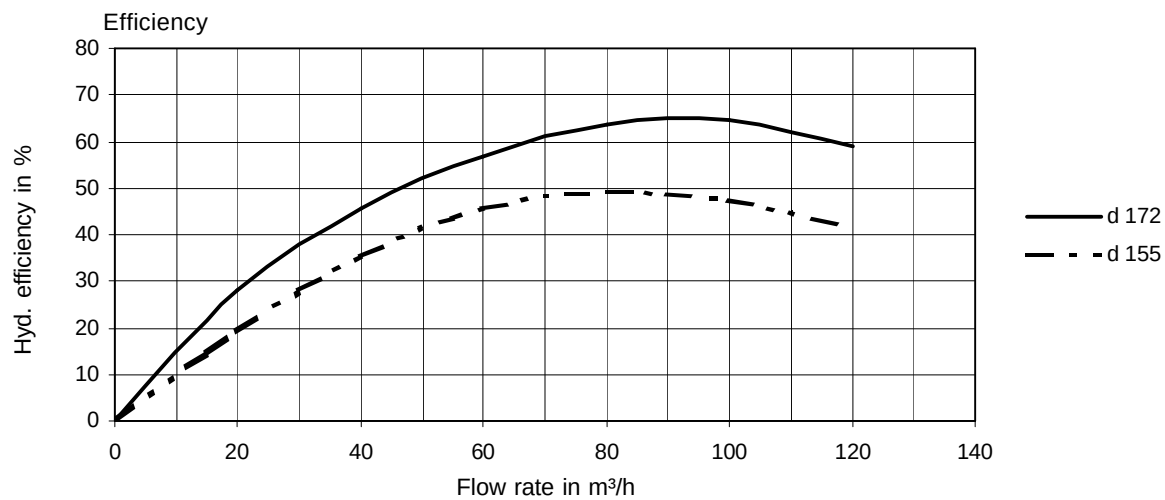
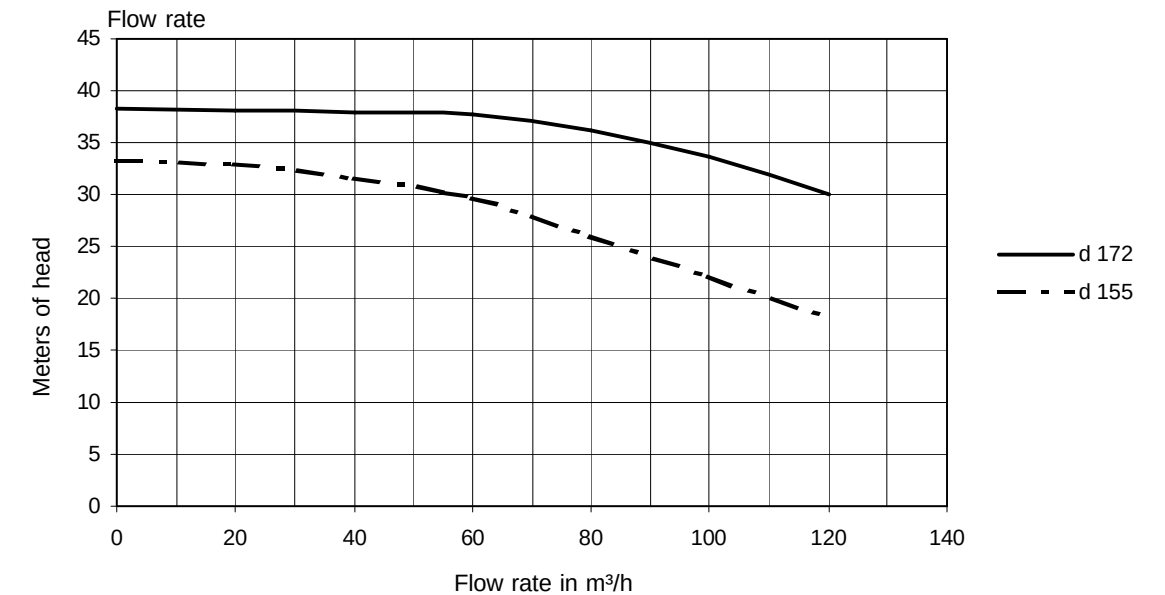
Type N 100 - 65 - 125

Motor kW: 5,5
Speed: 1450



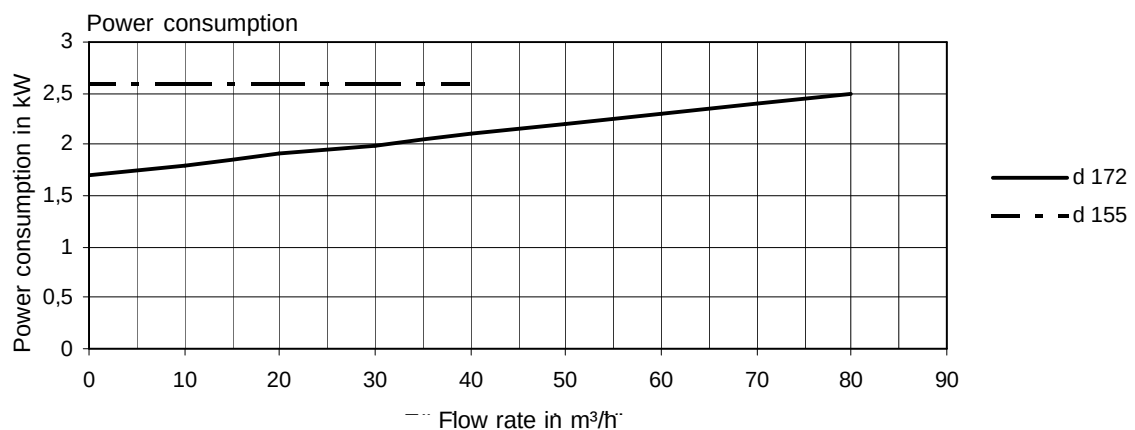
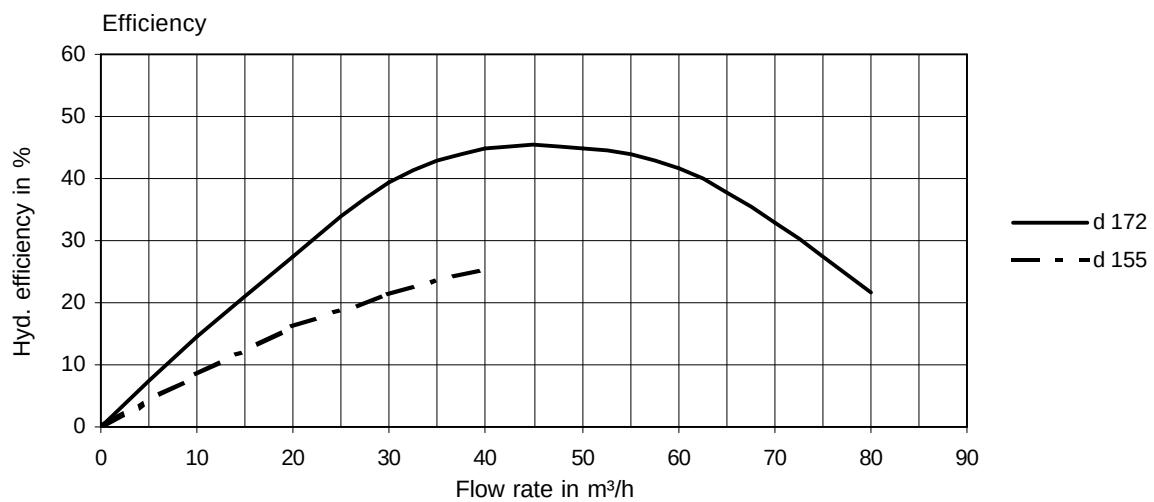
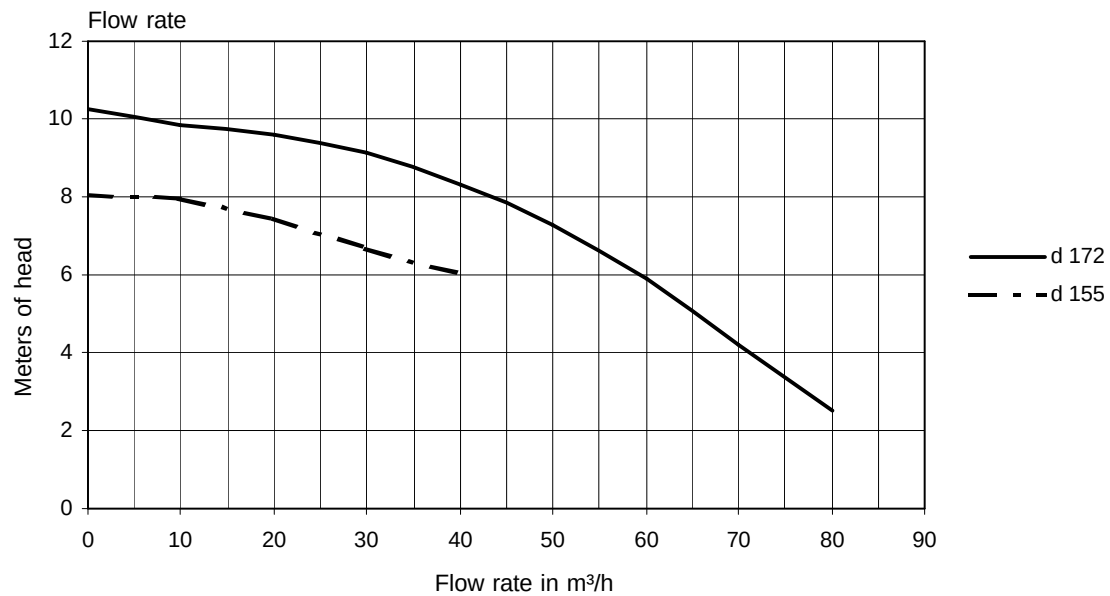
Type N 100 - 65 - 160

Motor kW: 15
Speed: 2900



Type N 100 - 65 - 160

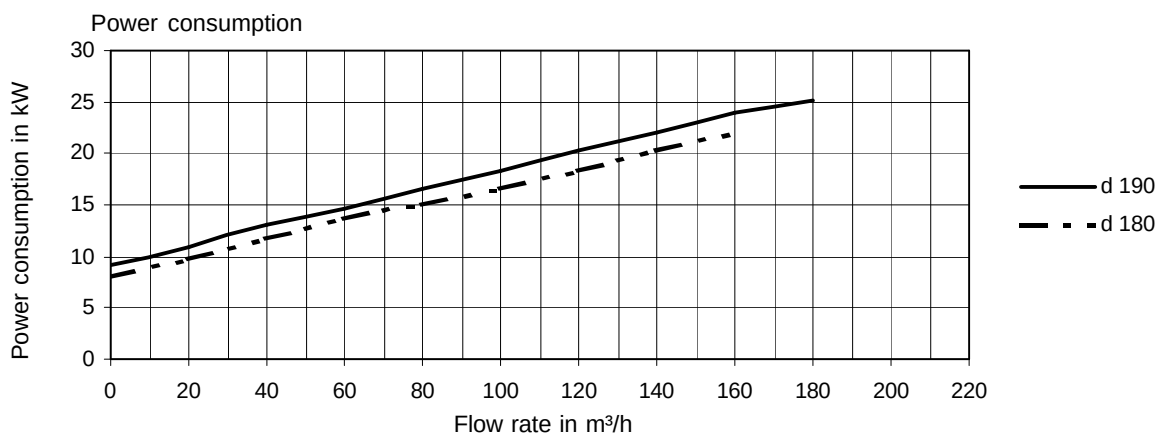
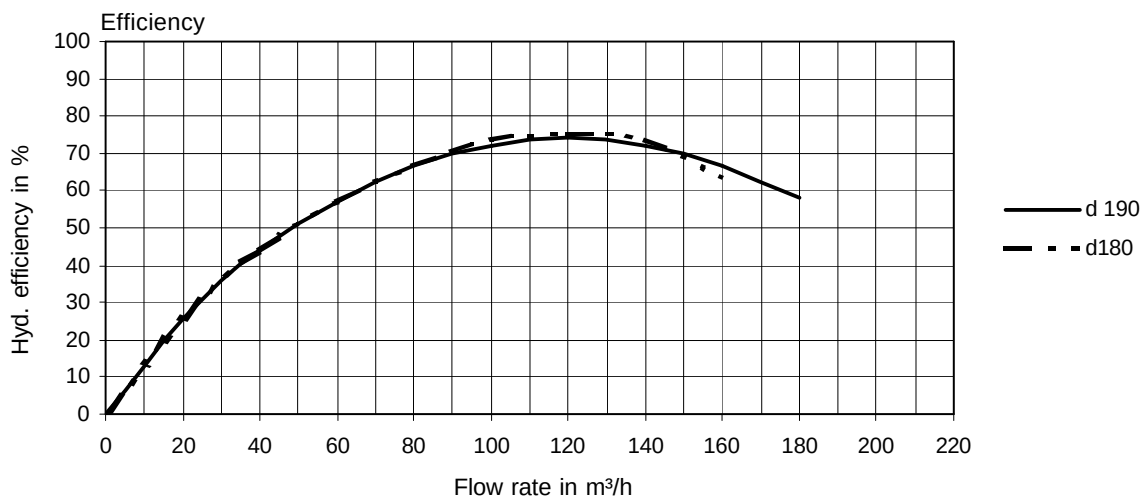
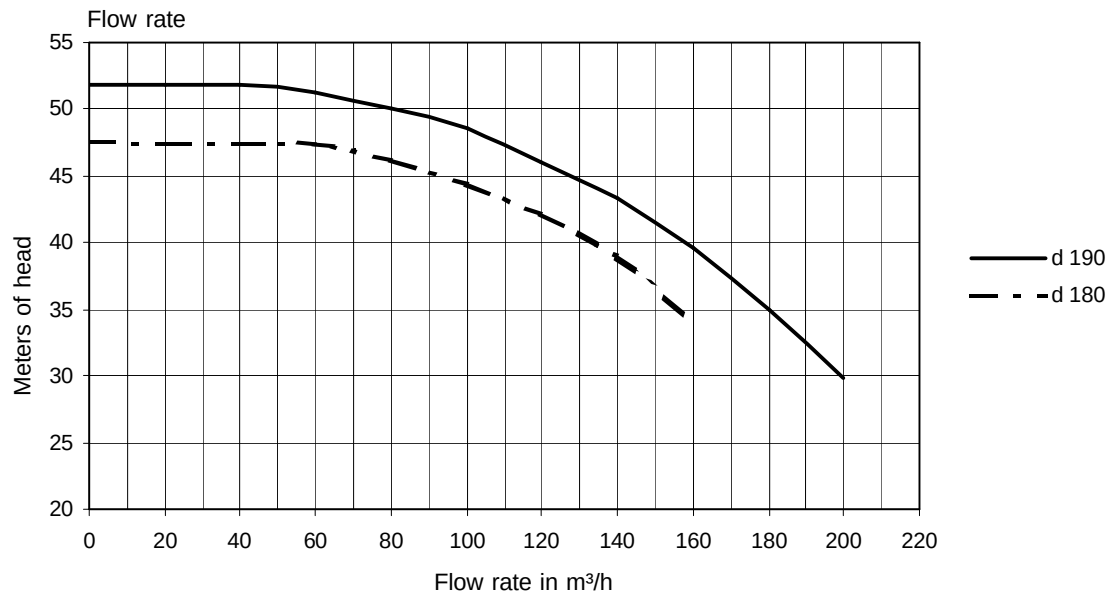
Motor kW: 3
Speed: 1450



Type N 100 - 65 - 200

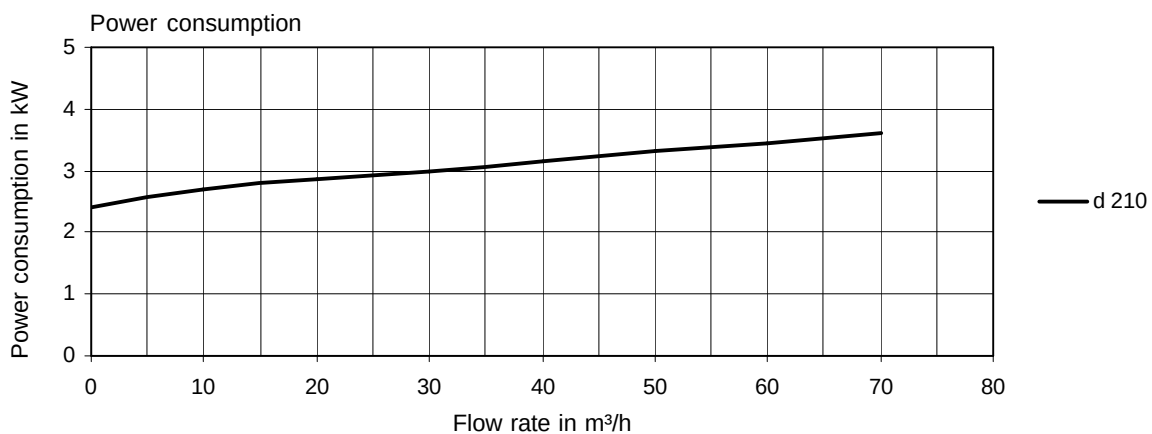
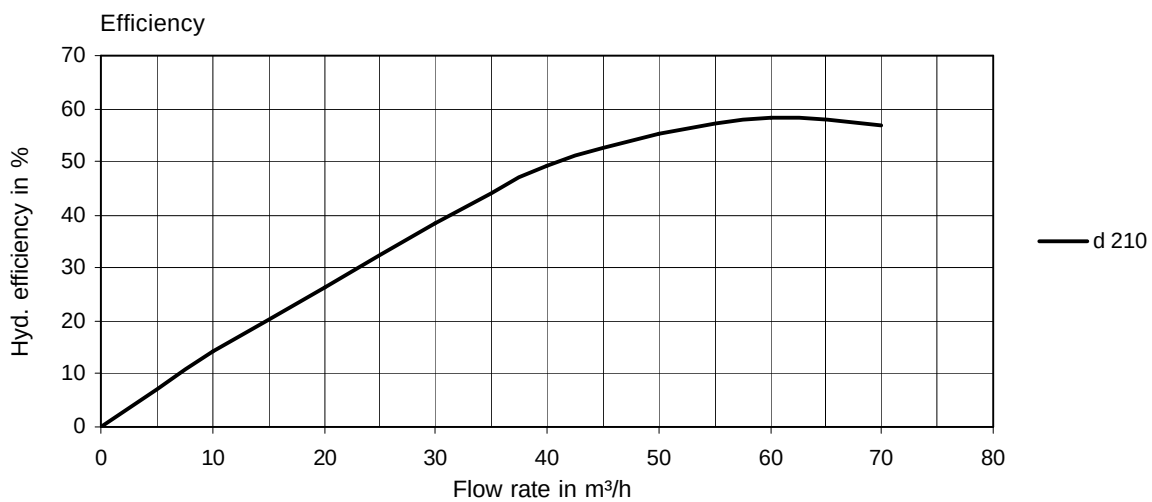
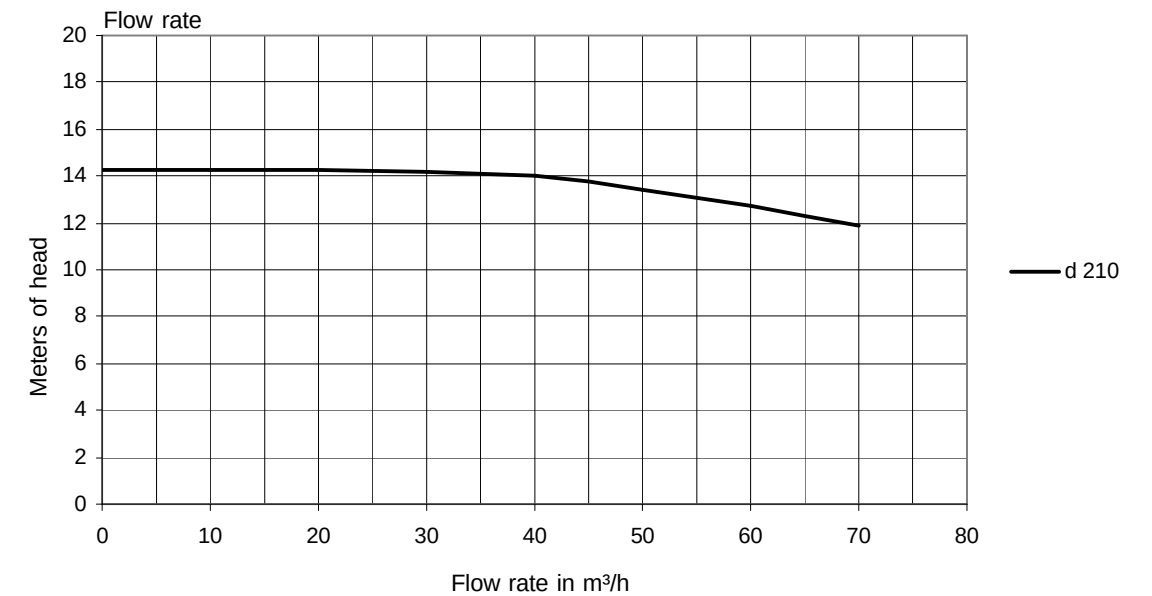
Motor kW: 22
Speed: 2900

Standard Pump N



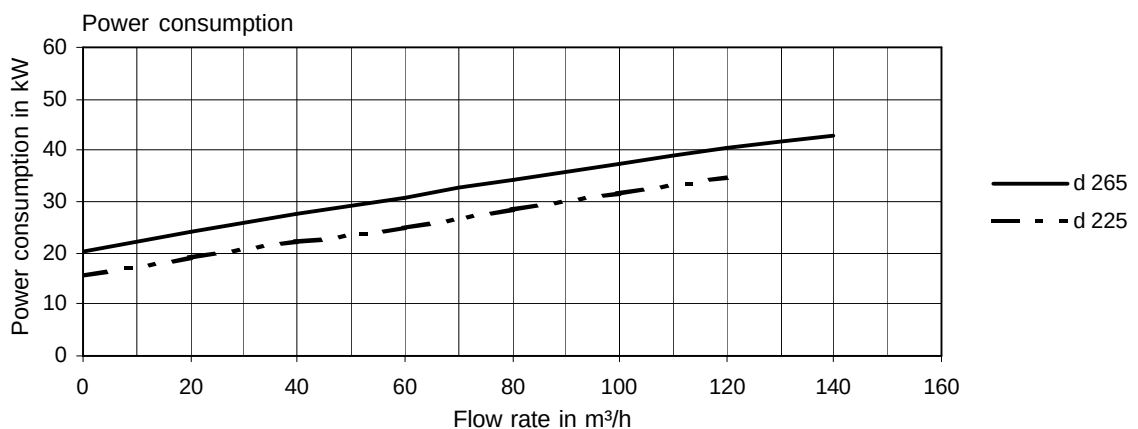
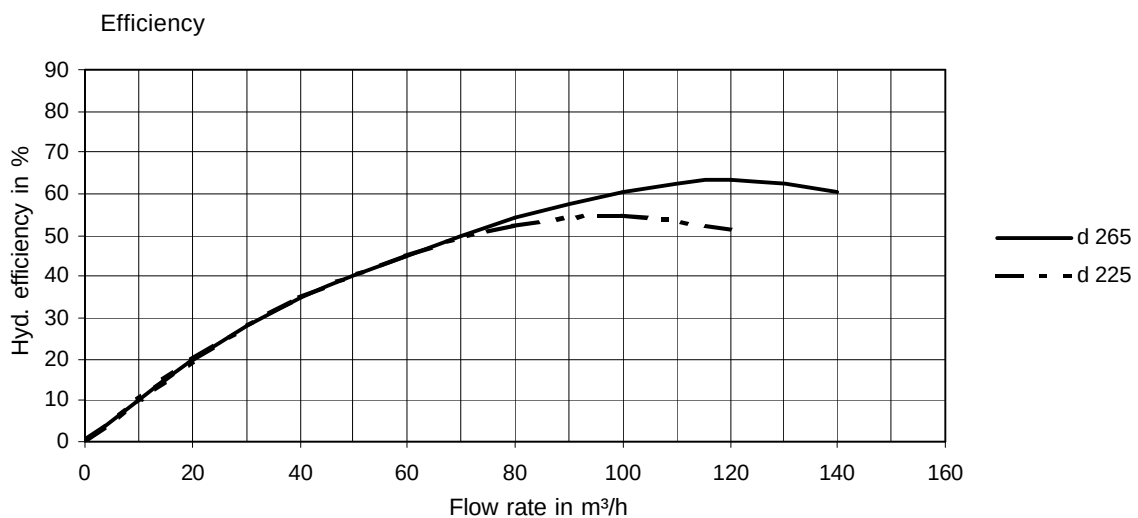
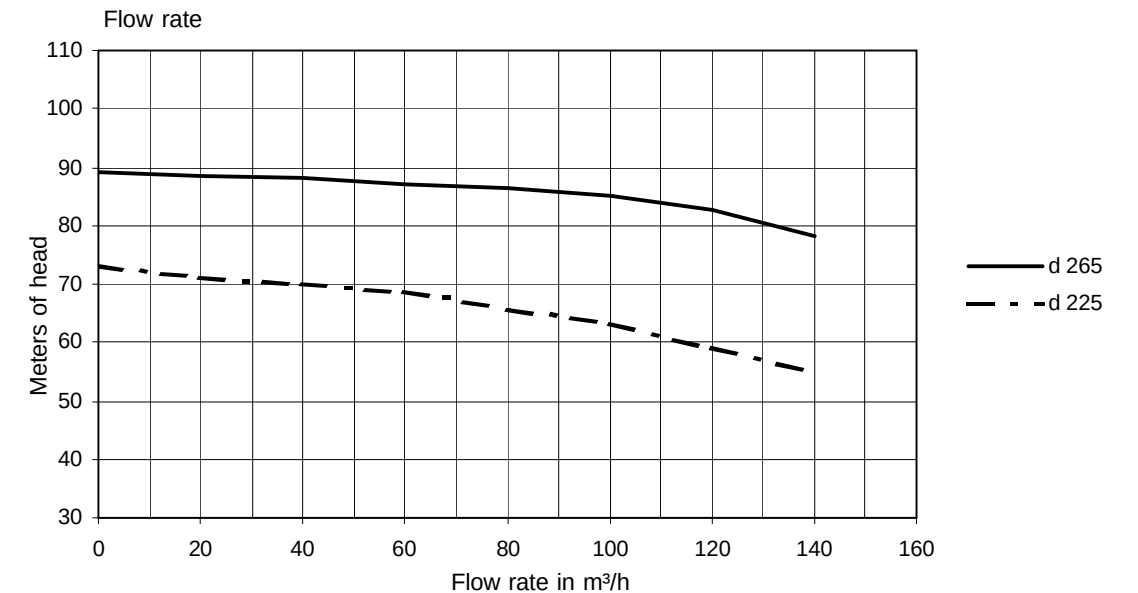
Type N 100 - 65 - 200

Motor kW: 4
Speed: 1450



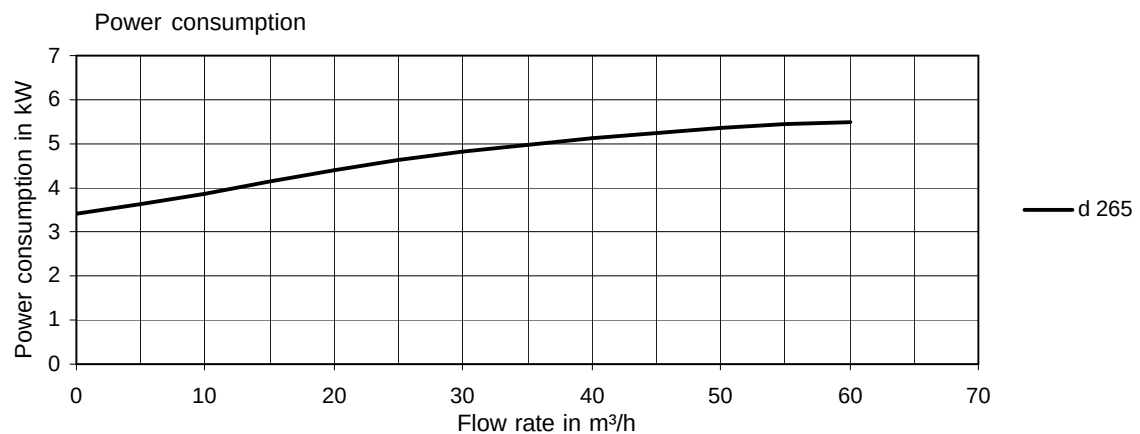
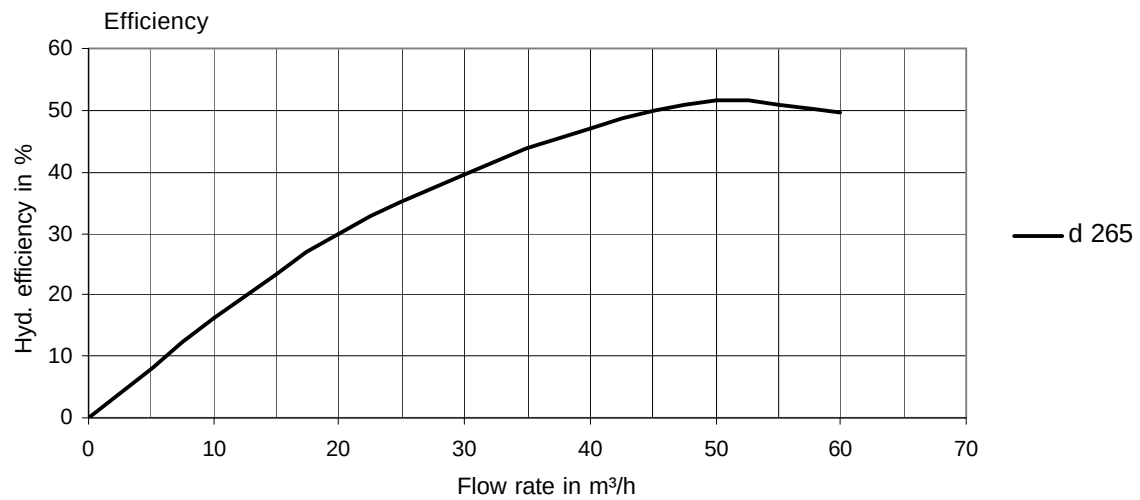
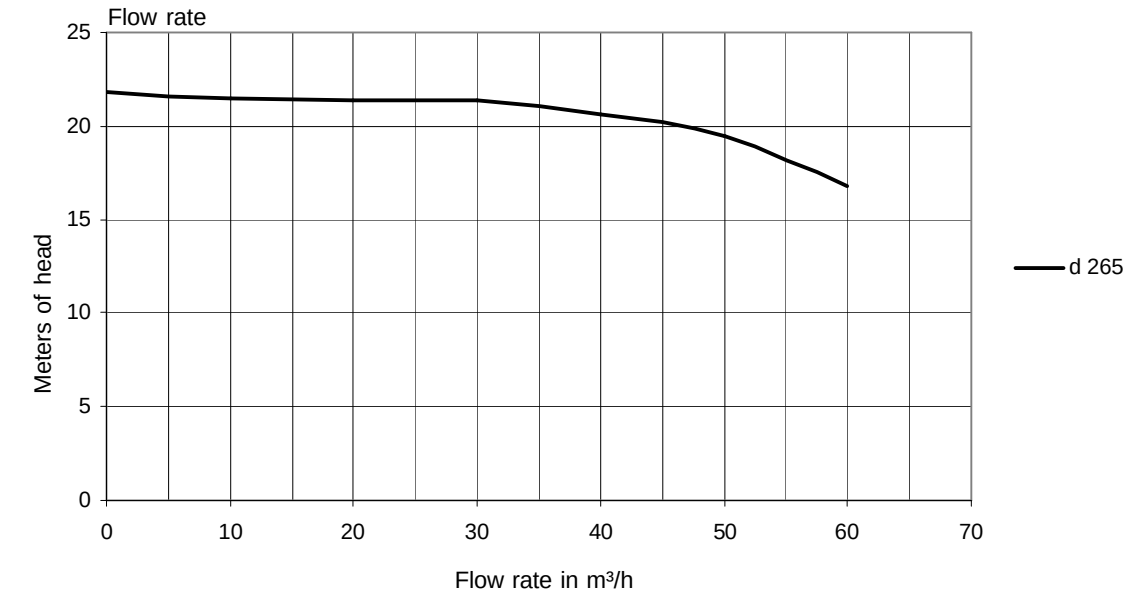
Type N 100 - 65 - 250

Motor kW: 30
Speed: 2900



Type N 100 - 65 - 250

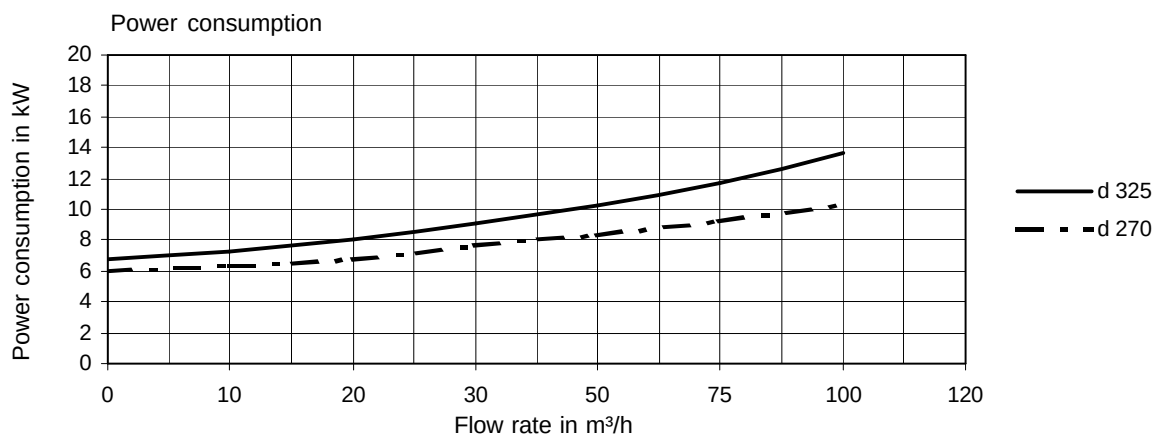
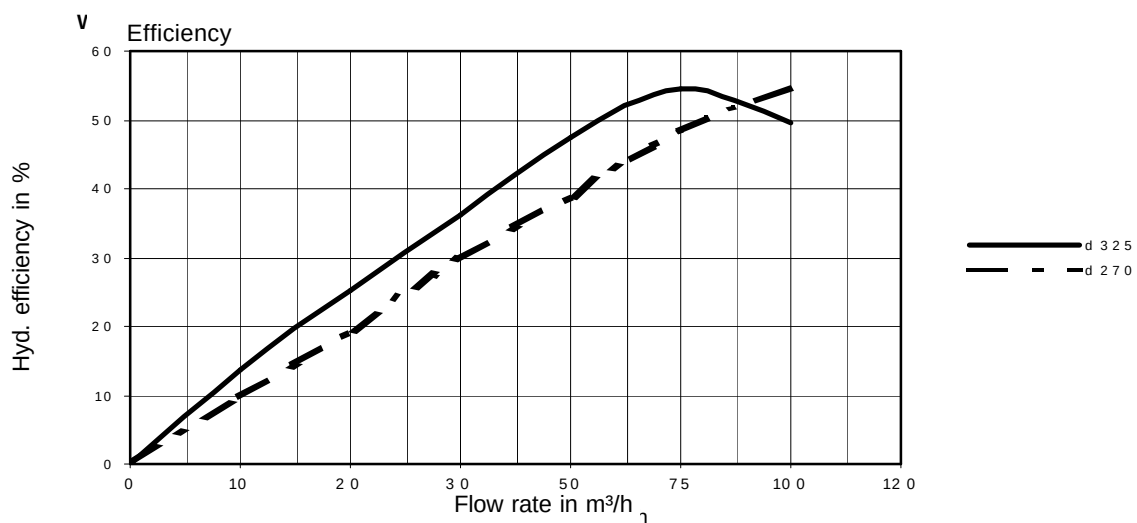
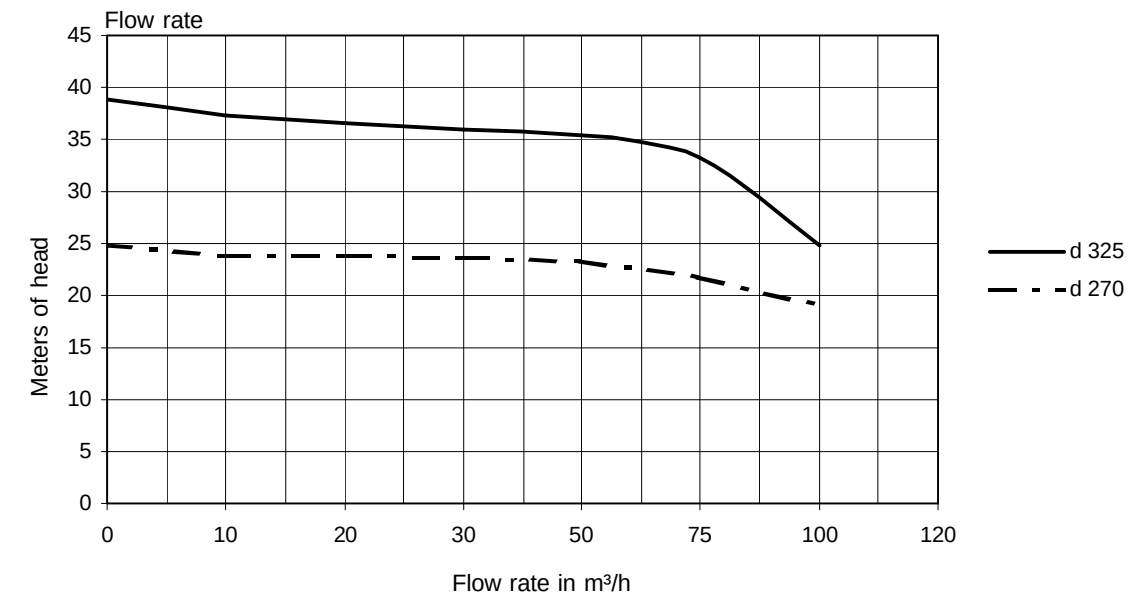
Motor kW: 5,5
Speed: 1450



Type N 100 - 65 - 315

Motor kW: 18,5
Speed: 1450

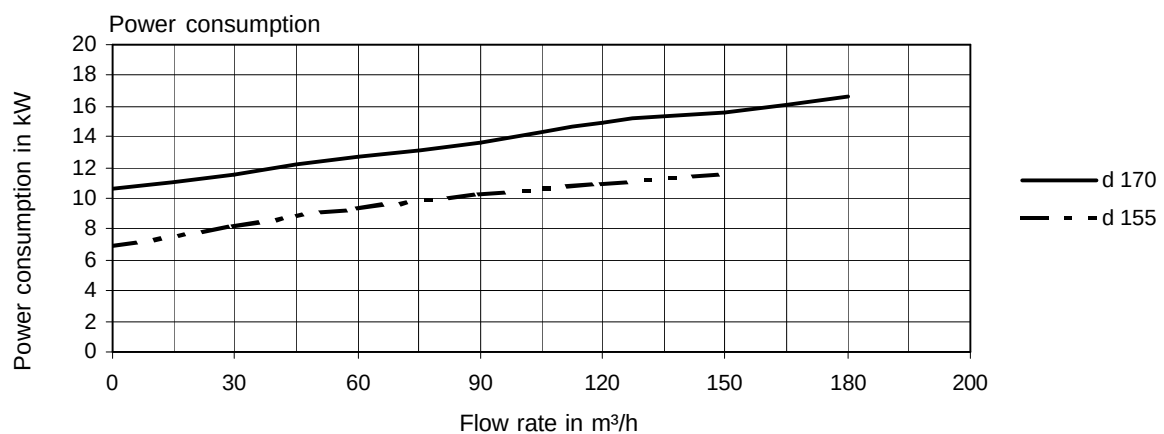
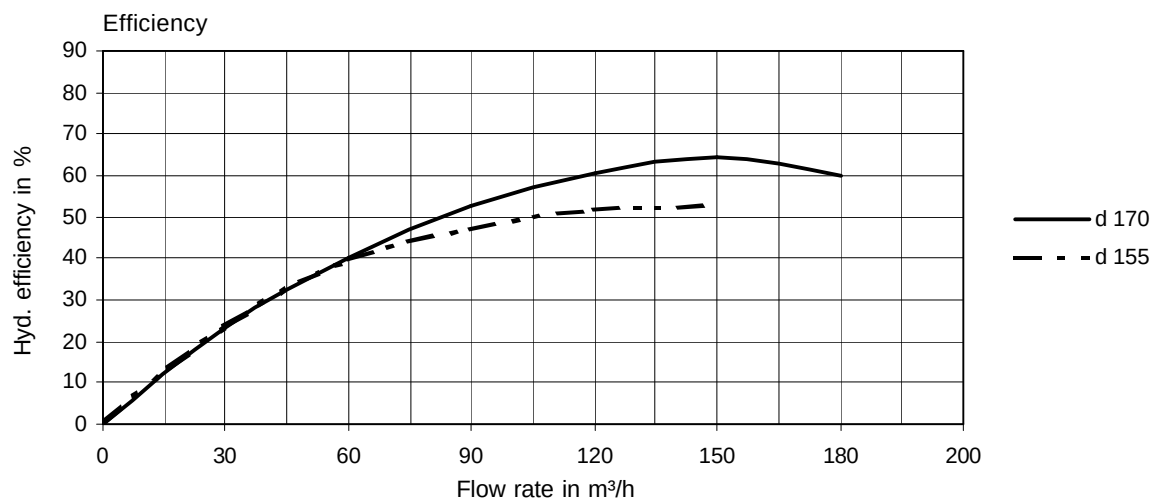
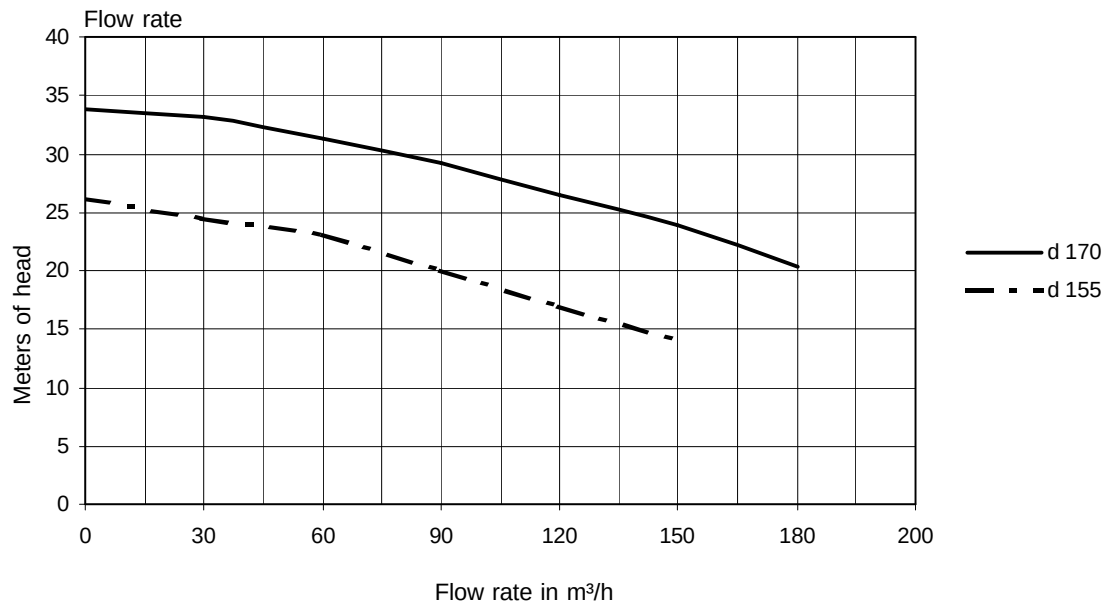
Standard Pump N



Type N 125 - 80 - 160

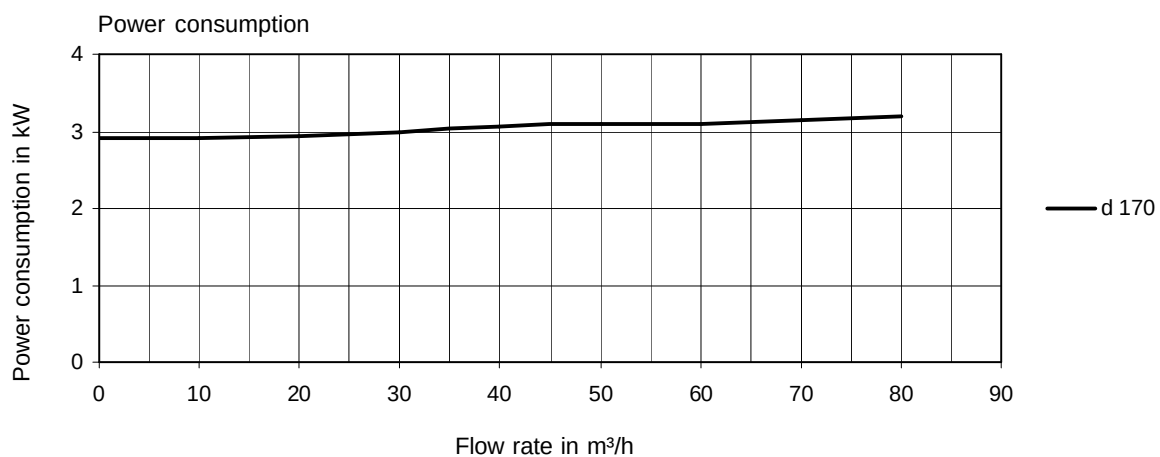
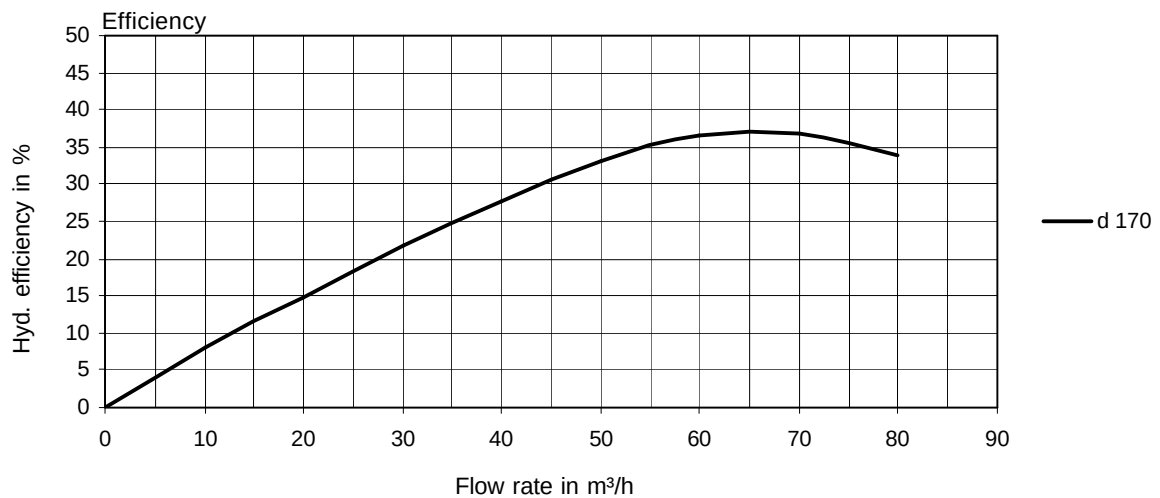
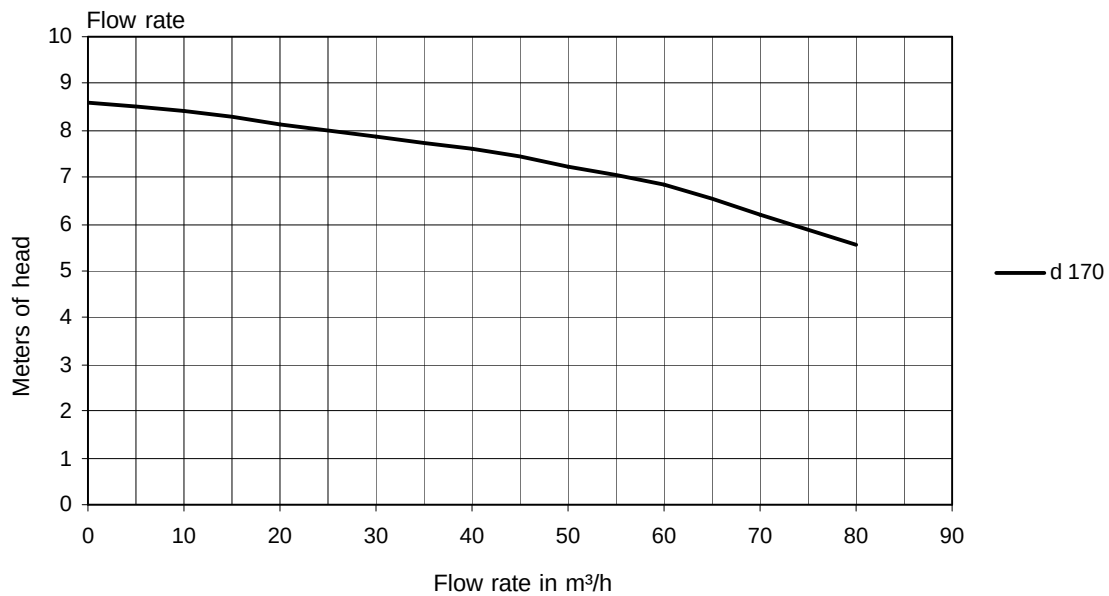
Motor kW: 15
Speed: 2900

Standard Pump N



Type N 125 - 80 - 160

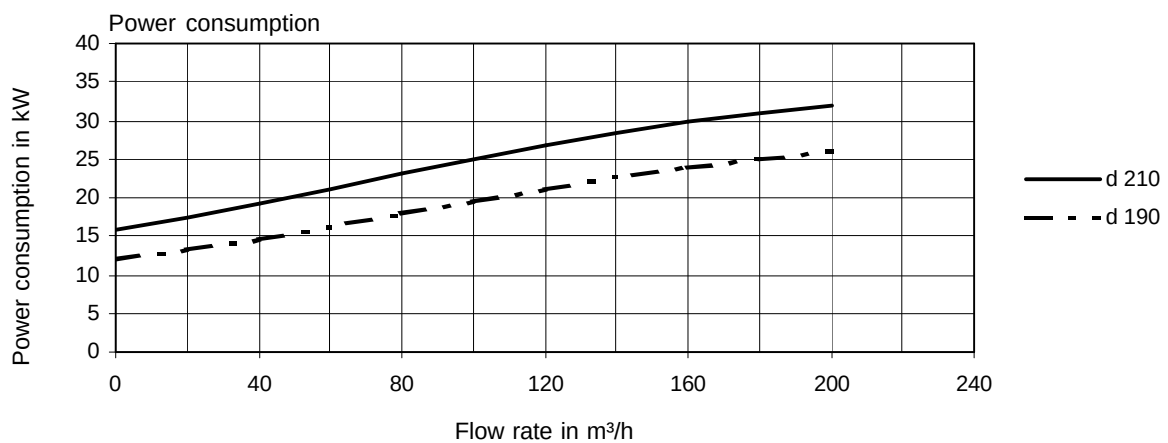
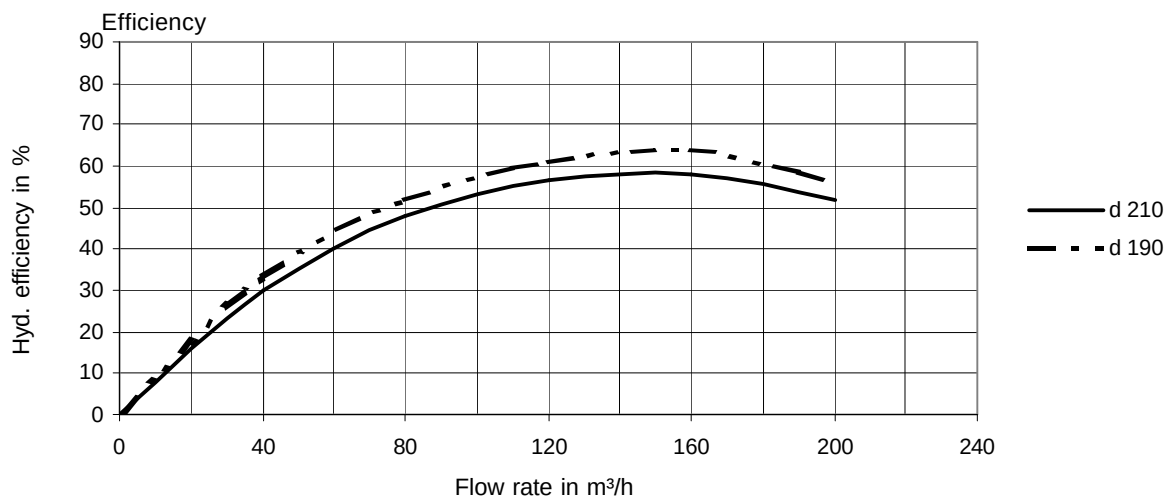
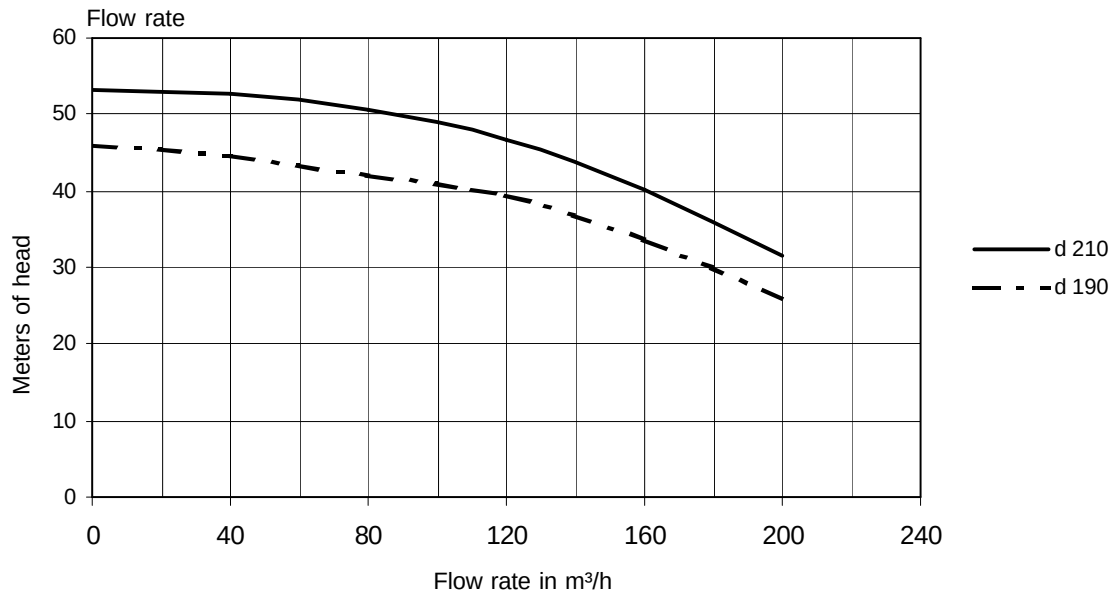
Motor kW: 5,5
Speed: 1450



Type N 125 - 80 - 200

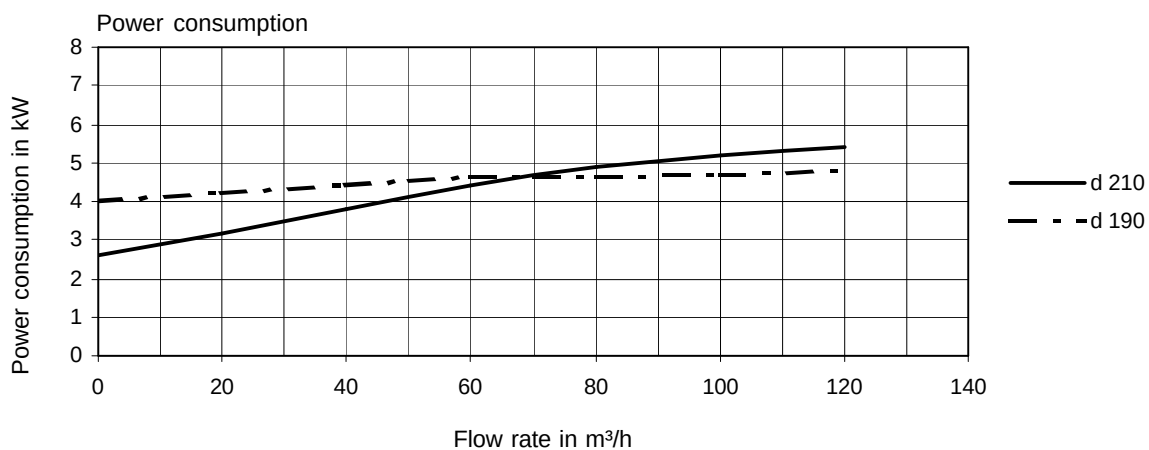
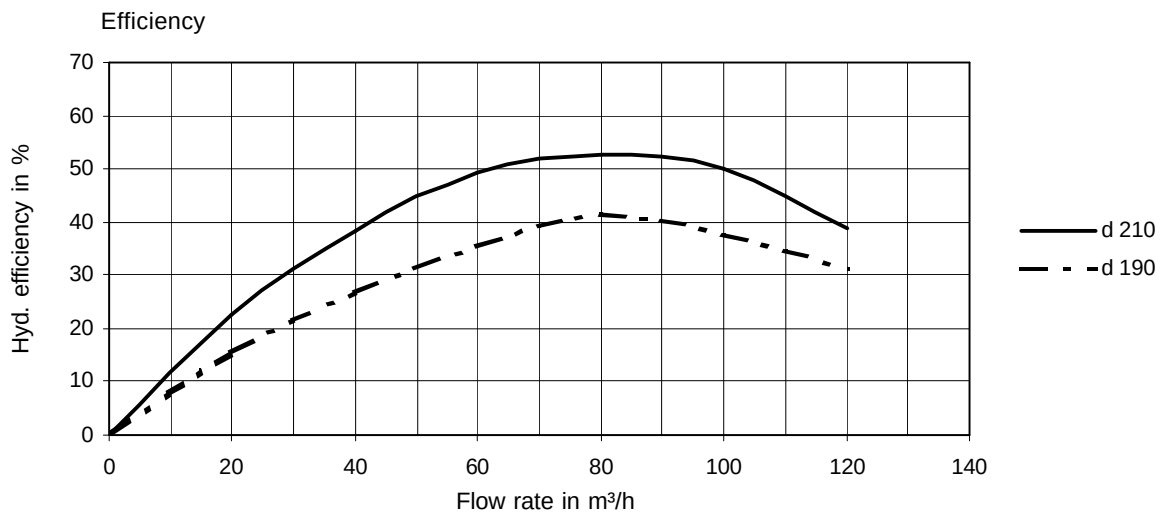
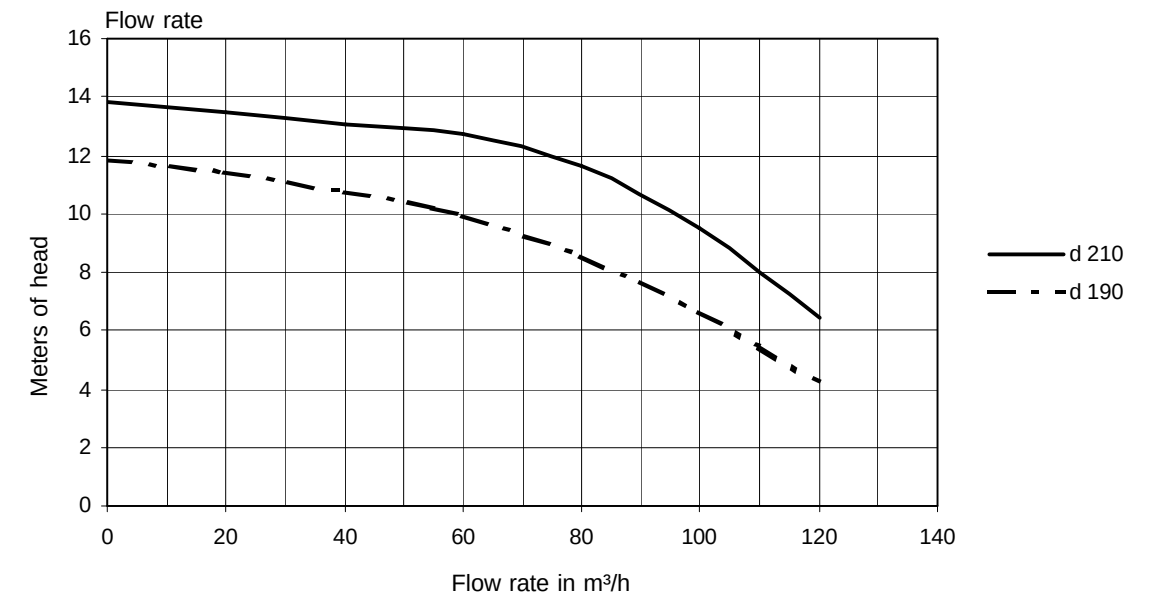
Motor kW: 30
Speed: 2900

Standard Pump N



Type N 125 - 80 - 200

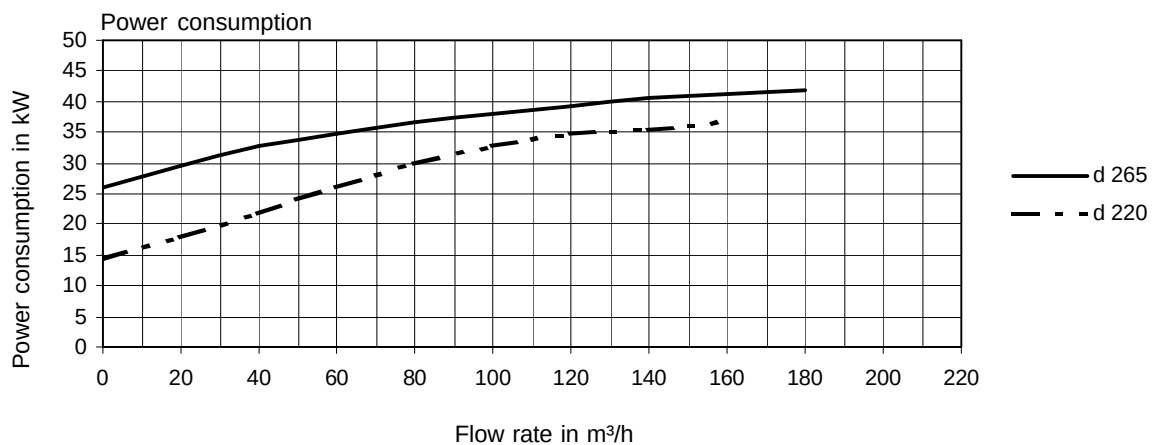
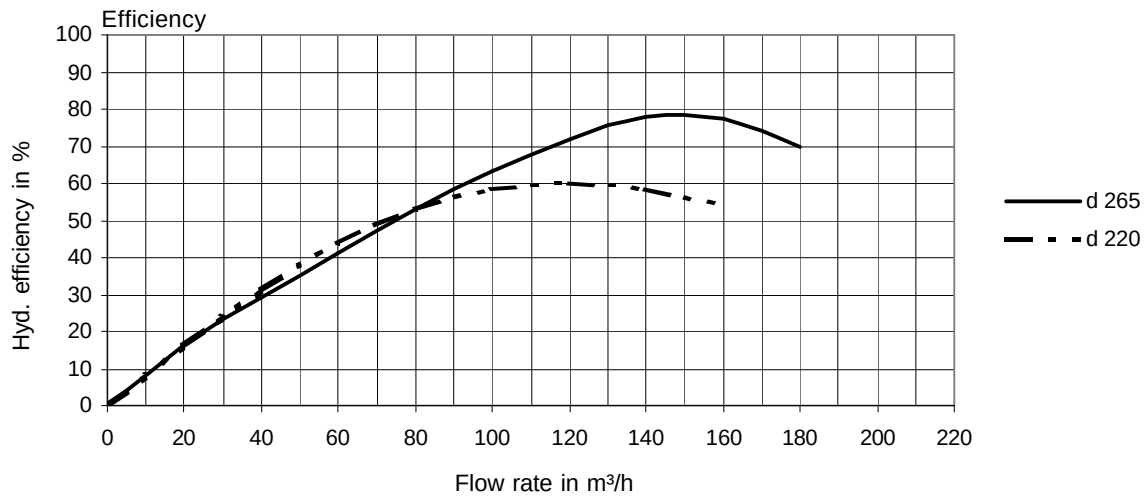
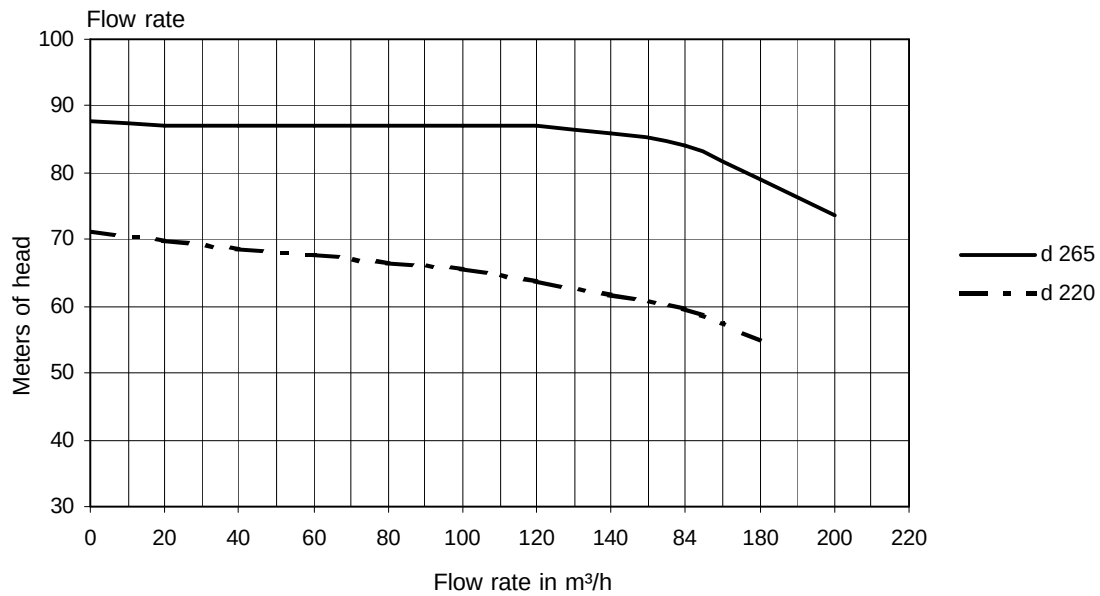
Motor kW: 7,5
Speed: 1450



Type N 125 - 80 - 250

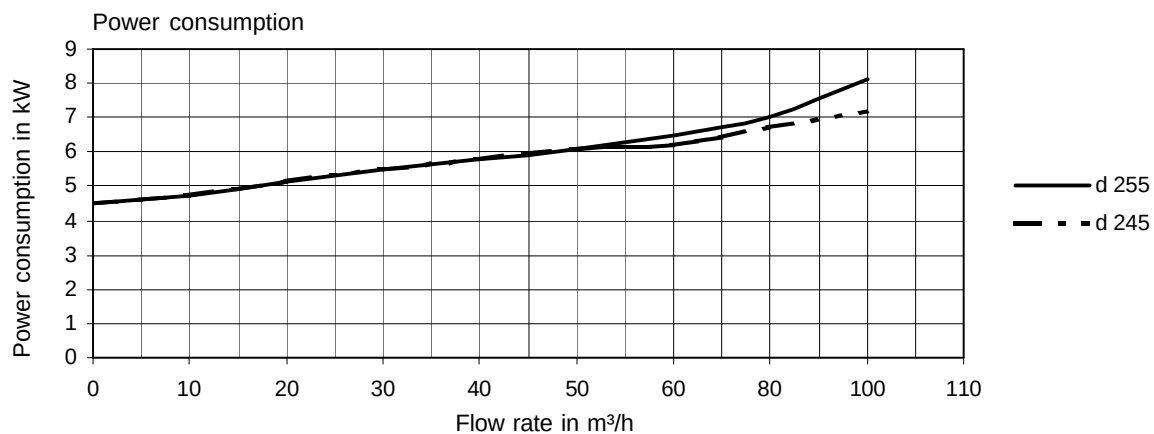
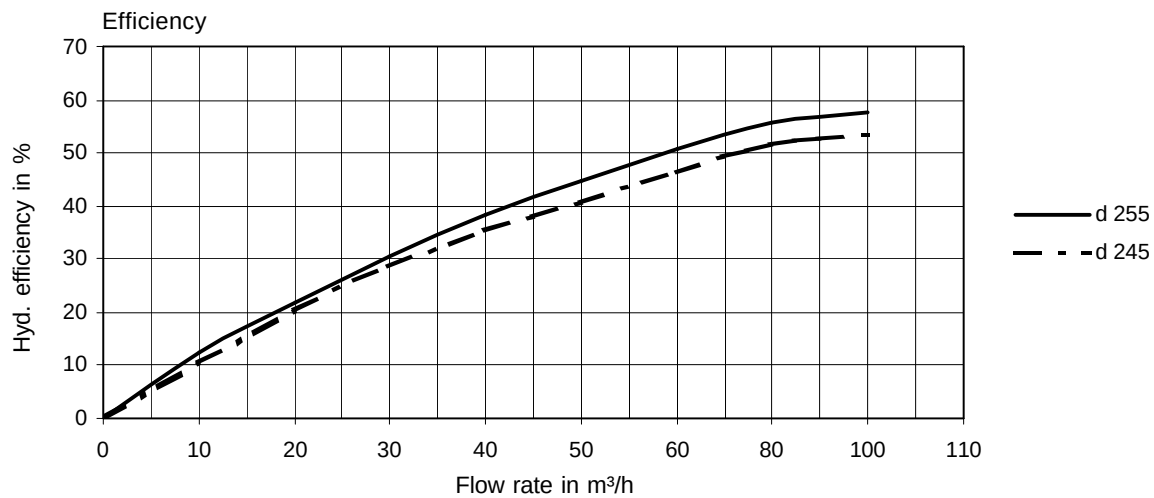
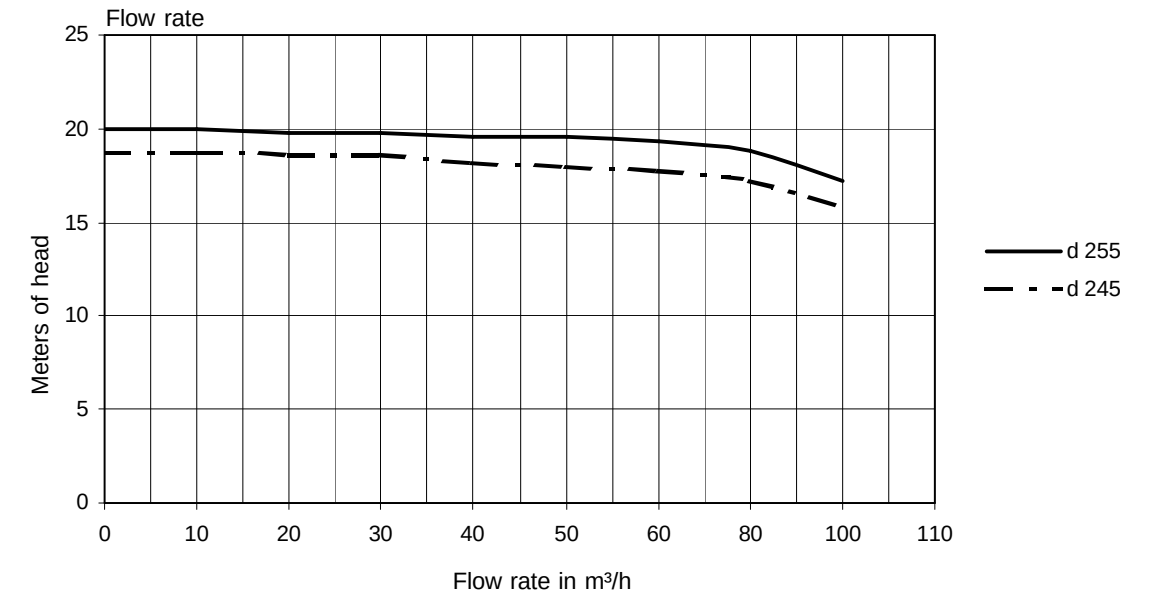
Motor kW: 15
Speed: 2900

Standard Pump N



Type N 125 - 80 - 250

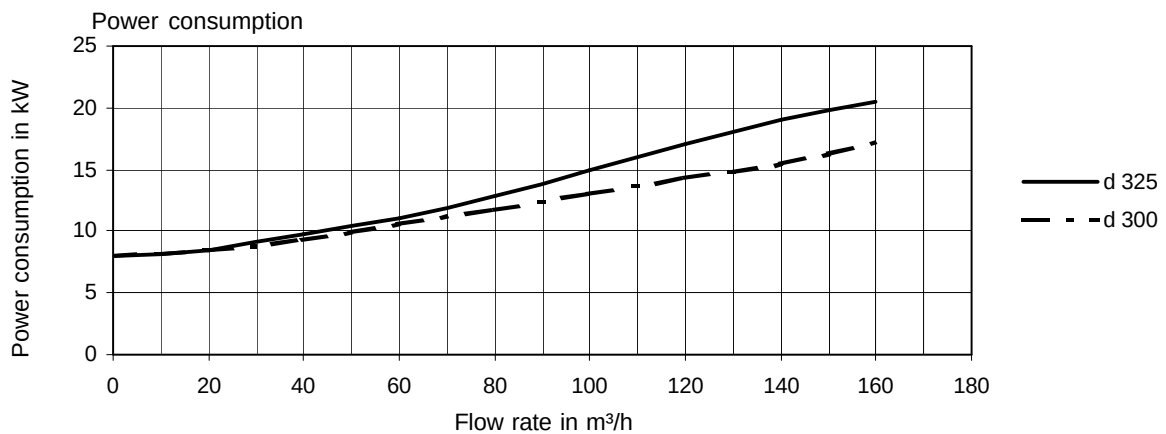
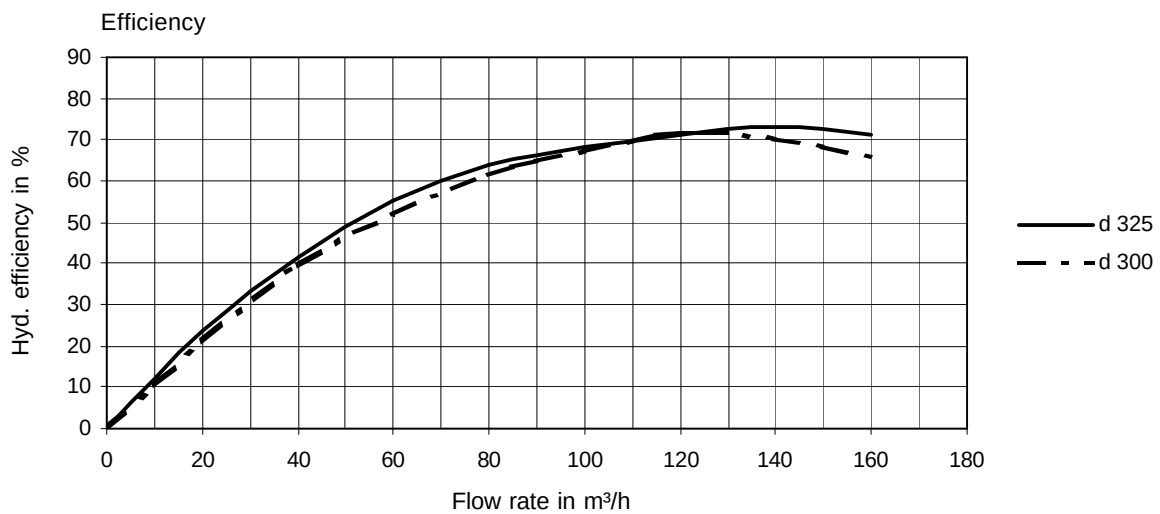
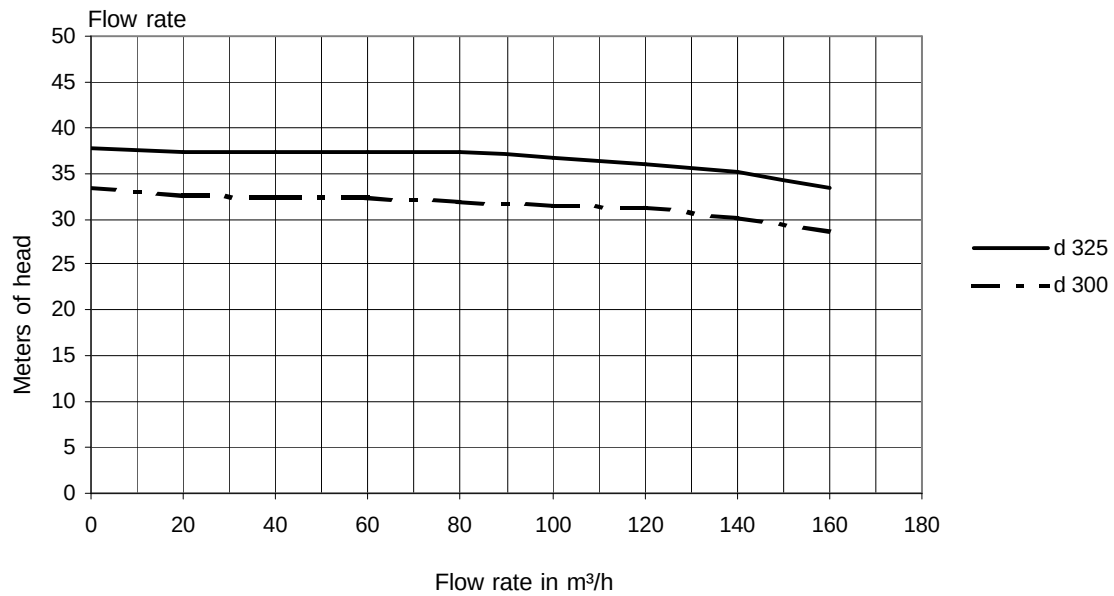
Motor kW: 11
Speed: 1450



Type N 125 - 80 - 315

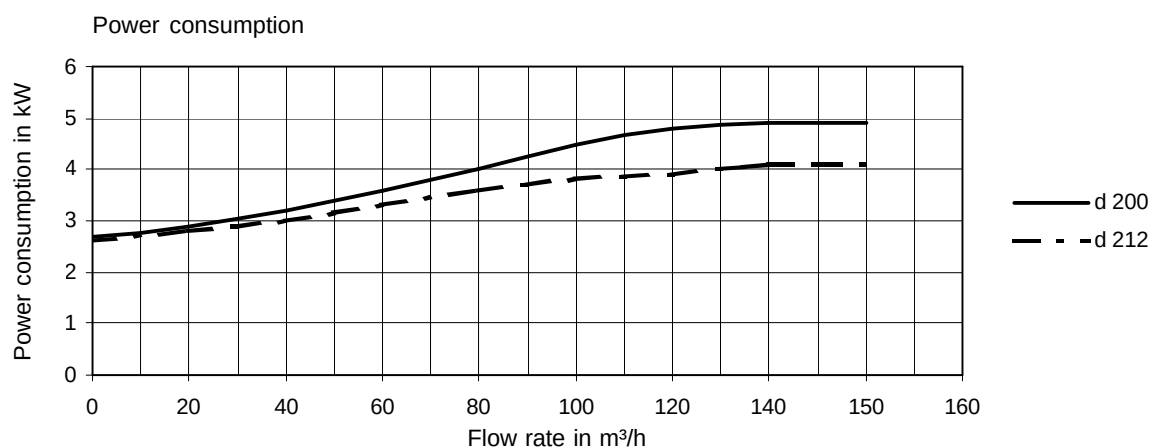
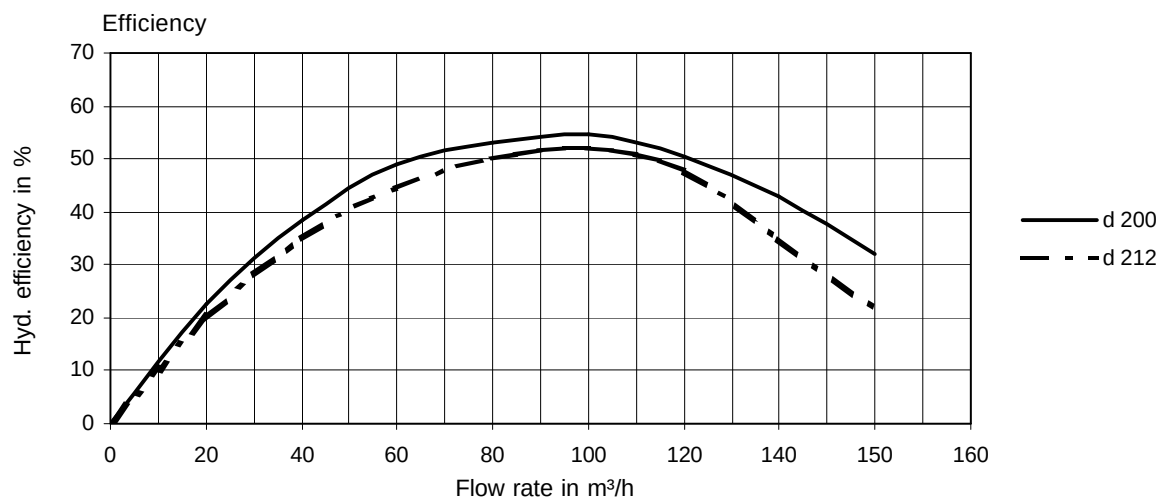
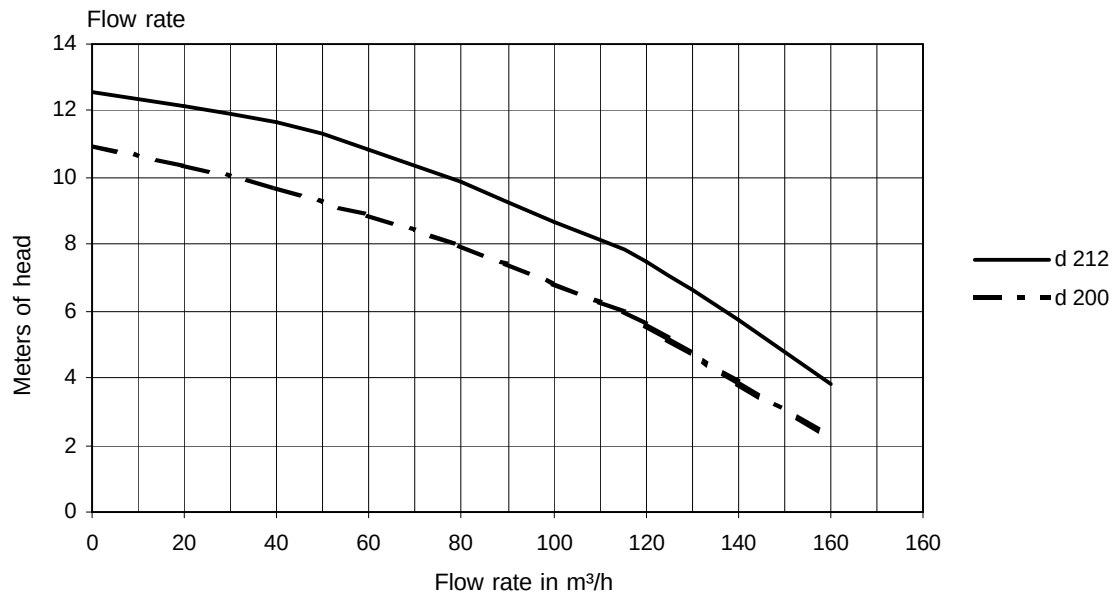
Motor kW: 20
Speed: 1450

Standard Pump N



Type N 125 - 100 - 200

Motor kW: 5,5
Speed: 1450

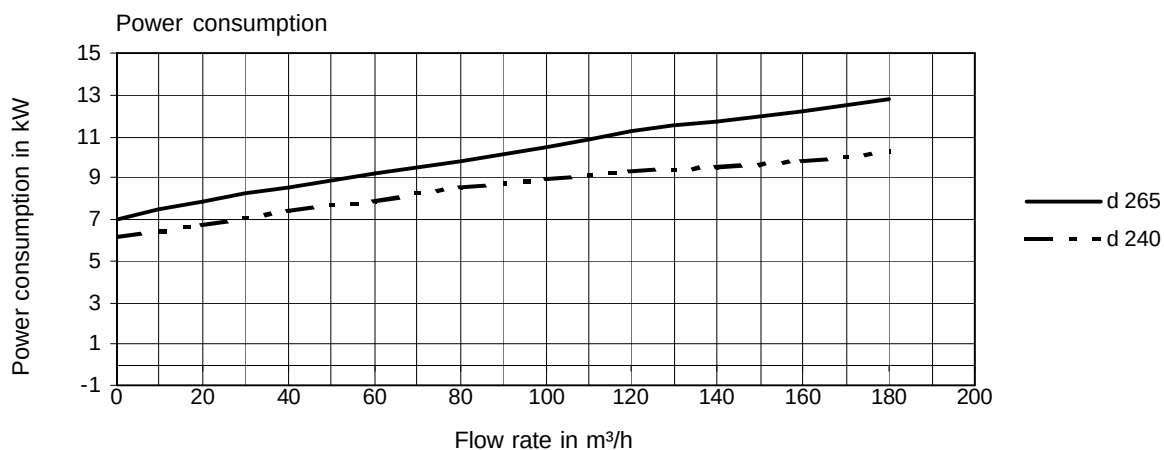
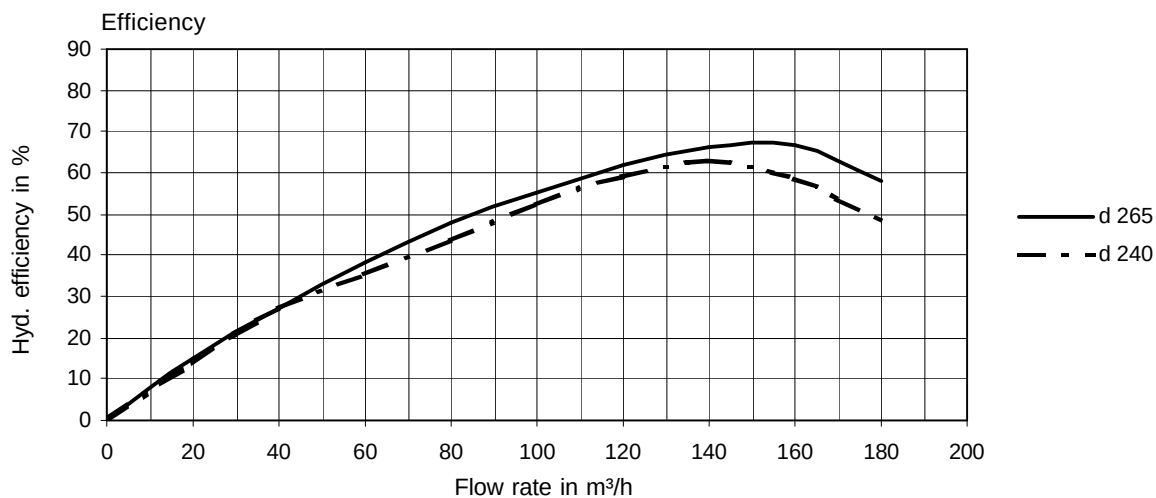
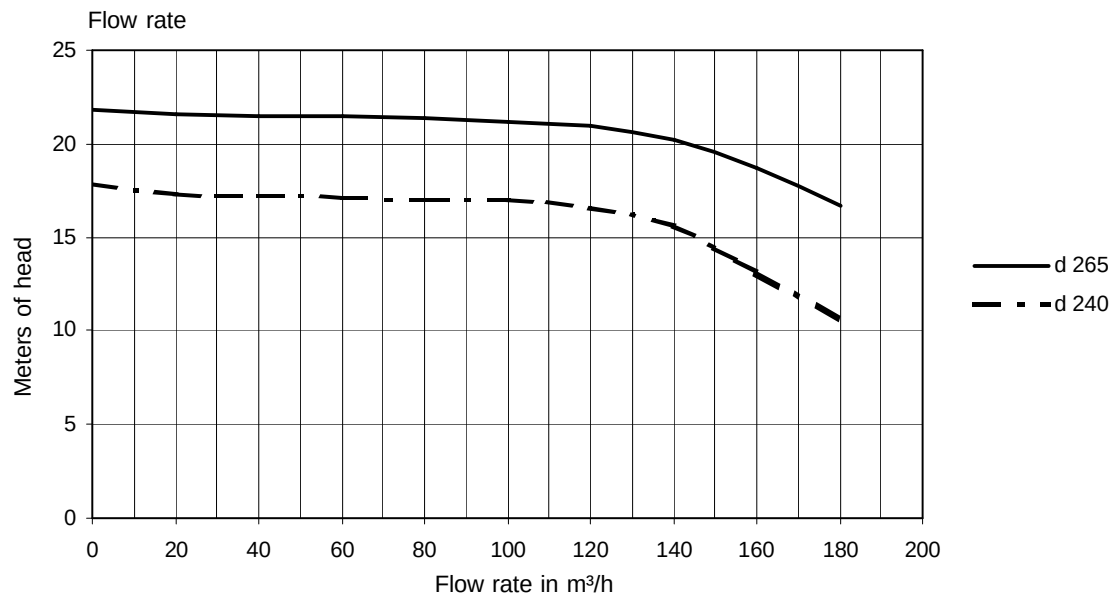


Standard Pump N

Type N 125 - 100 - 250

Motor kW: 15
Speed: 1450

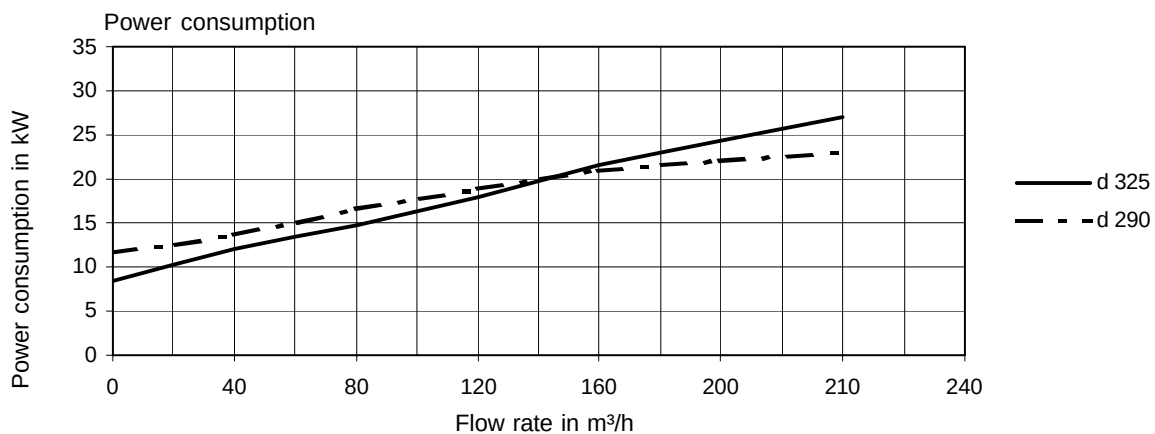
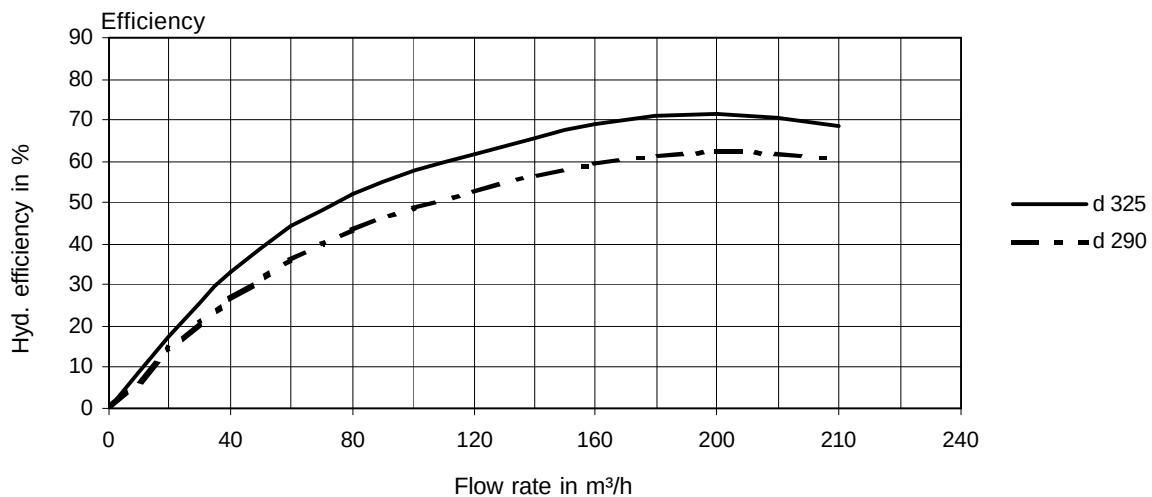
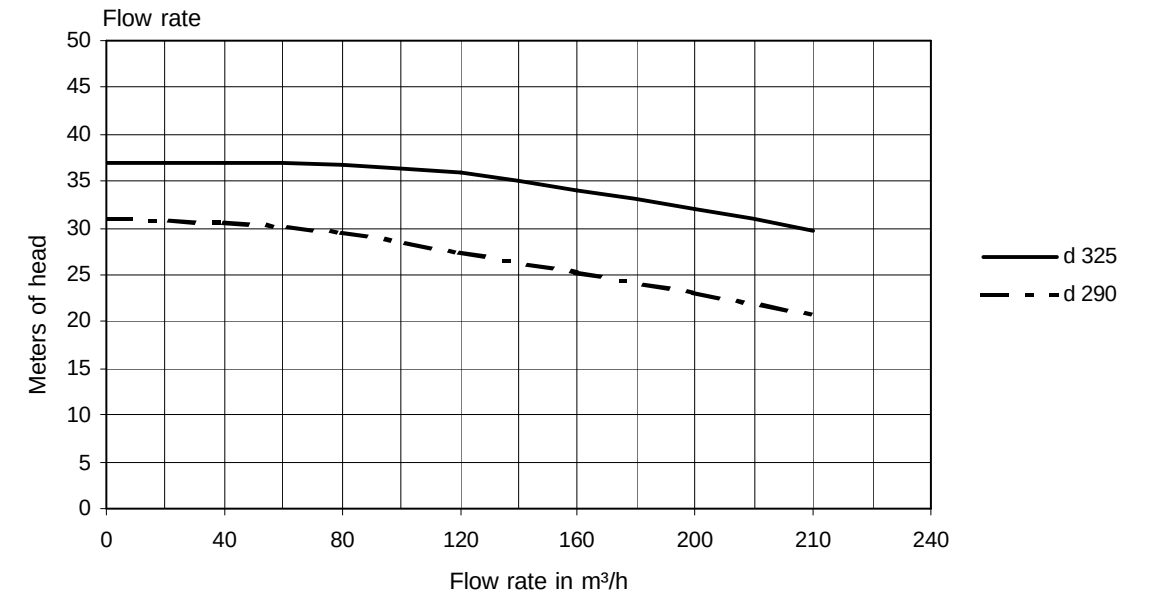
Standard Pump N



Type N 125 - 100 - 315

Motor kW: 22
Speed: 1450

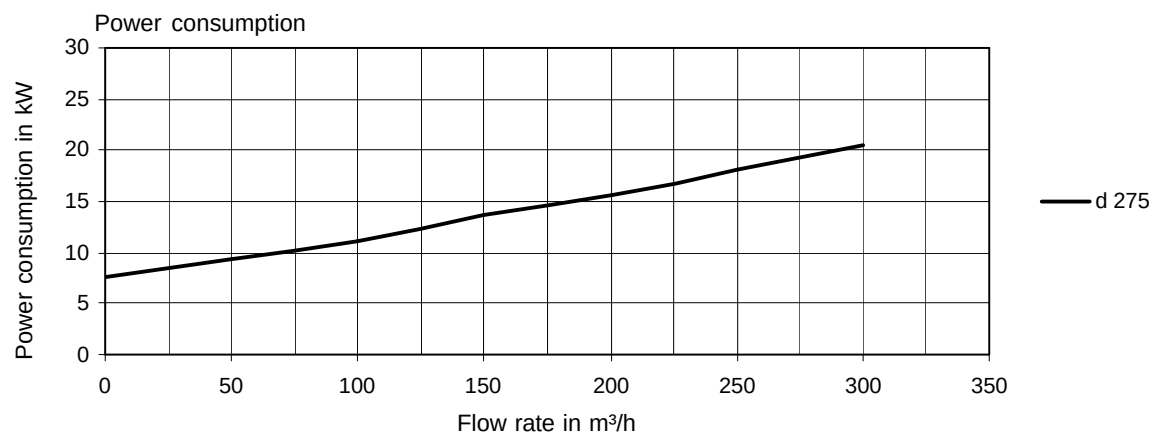
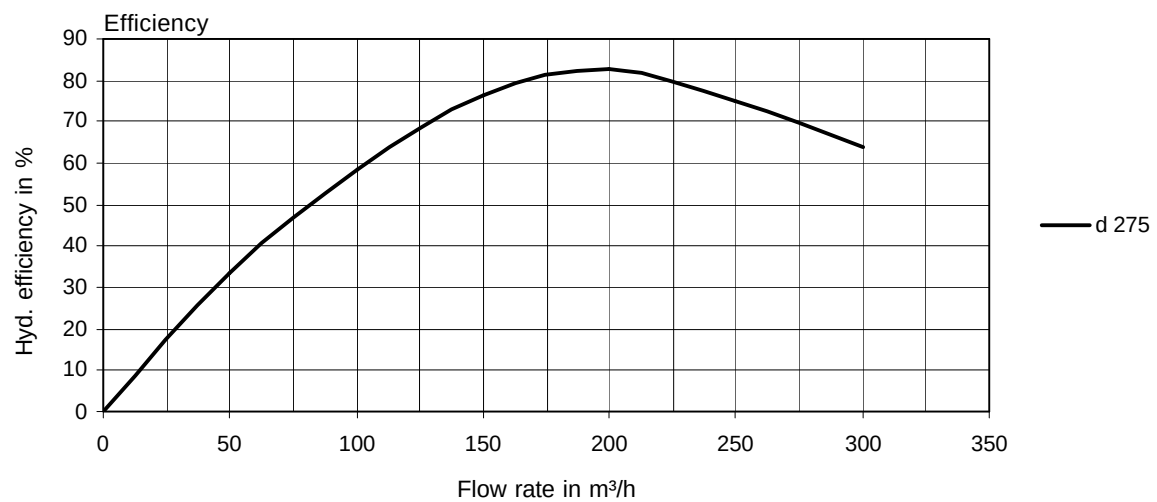
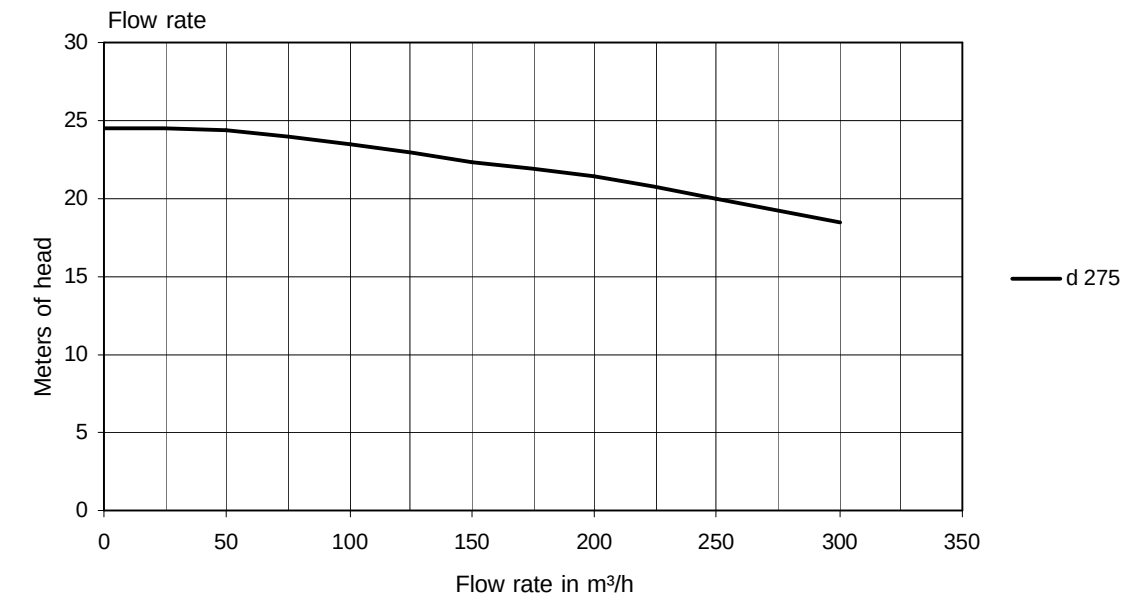
Standard Pump N



Type N 150 - 125 - 250

Motor kW: 11
Speed: 1450

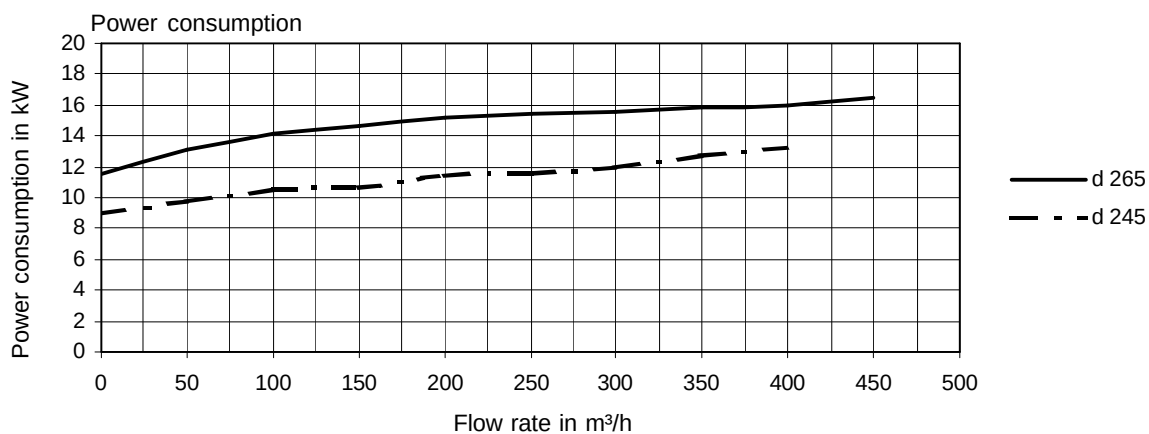
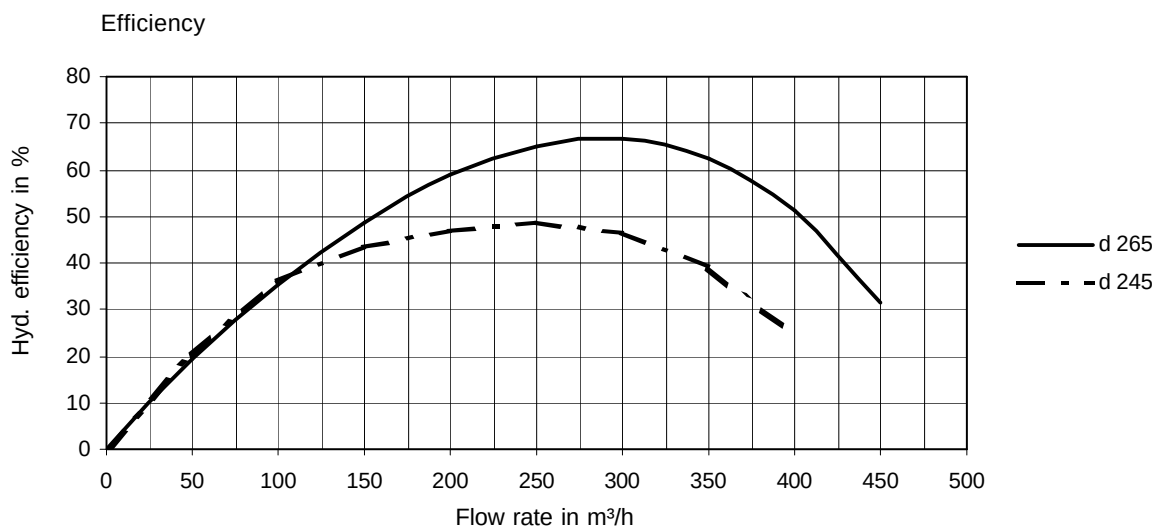
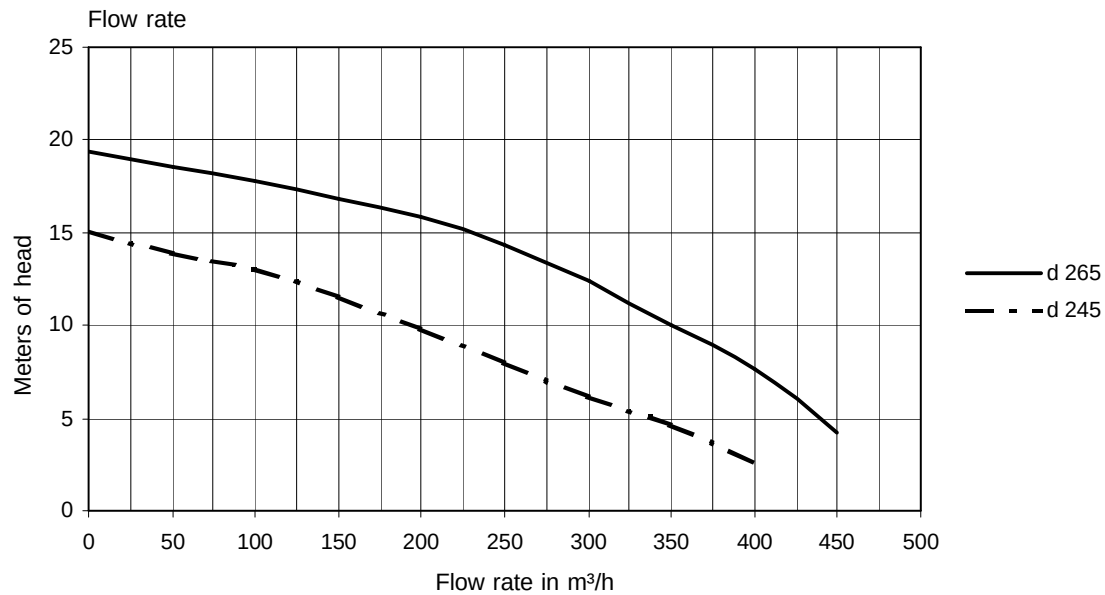
Standard Pump N



Type N 200 - 150 - 250

Motor kW: 18,5
Speed: 1450

Standard Pump N



Operating & Maintenance Instructions

Standard Pump N

The operating instructions of the centrifugal pump and the accessories should be located close to the pump.

These instructions should be read carefully before installing and commissioning the pump. Every JESCO pump is dimensioned, tested and supplied according to the data of the order. If the operating conditions change at a later date (e.g. different medium, viscosity, temperature, feed conditions, etc.) we must check and confirm, if necessary, in the specific case whether the pump can be operated correspondingly. We cannot accept any liability for damage caused by misuse or failure to observe the operating instructions.

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▮ Installation	BW 5 03 01 / 5
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General

Description of the pump

Centrifugal chemical pumps are used for pumping acids and alkalis and other low-viscosity, aggressive liquids and neutral media.

Before each pump is dispatched, it undergoes a thorough functional test, including measurement of the discharge rate, the pump head and the power consumption of the drive motor.

Each pump has a nameplate showing the type designation and rating, and a corresponding plate for the motor data. In the event of queries, please refer to these plates.

Description of mechanical seal

Mechanical seals basically consist of two perfectly plane surfaces. One surface rotates with the shaft, while the other one is stationary. The sealing effect is achieved by the direct contact between the two plane surfaces. The stationary counter-ring is normally fixed in position.

The sliding ring is able to move axially and radially in order to compensate the shaft deflections during operation. This axial mobility enables mechanical seals to be fitted within practicable manufacturing tolerances, the accuracy required being dependent on the design of the seal.

Type B2I

Single-acting, loaded, internal seal, independent of direction of rotation. Combination of sliding materials in silicon carbide (SiC). Bellows and secondary seals of EPDM or FPM. Metallic parts of stainless steel (1.4571) or Hastelloy C4.

Type B2Q

Single-acting, loaded, internal seal, independent of direction of rotation, with quenching chamber. The chamber is sealed from the atmosphere by a shaft sealing ring to prevent deposits and/or reduction of the temperature in the area of the mechanical seal. Combination of sliding materials in silicon carbide (SiC). Bellows and secondary seals of EPDM or FPM. Metallic parts of stainless steel (1.4571) or Hastelloy C4.

Type B2D

Double-acting, loaded, internal seal, independent of direction of rotation, arranged back-to-back with sealing chamber. This arrangement is the most usual form of double-acting seals used with difficult, chemically particularly aggressive media. Combination of sliding materials in silicon carbide (SiC). Bellows and secondary seals of EPDM or FPM. Metallic parts of stainless steel (1.4571).

Quenching fluid

A clean, usually cold liquid is used for quenching, which must be highly compatible with the medium in order to prevent any chemical reaction. The quenching pressure should not exceed 0.5 bar.

Function of quenching:

- Prevention of crystallizing rings (air seal)
- Absorption of leakage
- Cooling of sliding rings
- Monitoring of leakage rate
- Lubricating film stabilization in vacuum operation

Important:

In order to avoid dry running of the radial seal on the atmosphere side, sealing systems fitted with a quenching chamber must always be supplied with quenching liquid (see installation of quenching fluid, BW 5 03 01/2).

Sealing liquid

For their operation back-to-back double acting seals require a sealing liquid under pressure flowing through the sealing space from bottom to top. The sealing pressure must be 1 to 2 bar higher than the pressure of the medium to be sealed, so that both seals only have to seal against the neutral sealing liquid. The sealing liquid must have good compatibility with the pumped medium.

Function of sealing:

- Prevention of contact between pumped liquid and atmosphere
- Formation of lubricating film between the sliding rings
- Cooling of sliding rings
- Monitoring of leakage rate

Important:

To avoid dry running of the mechanical seal on the atmosphere side, sealing systems provided with a sealing chamber must always be supplied with sealing liquid (see installation of sealing liquid, BW 5 02 01/3).

Improved changes are always reserved without notice.

Sealing liquid installation

Double-acting mechanical seals basically need a sealing system, which meets the following requirements:

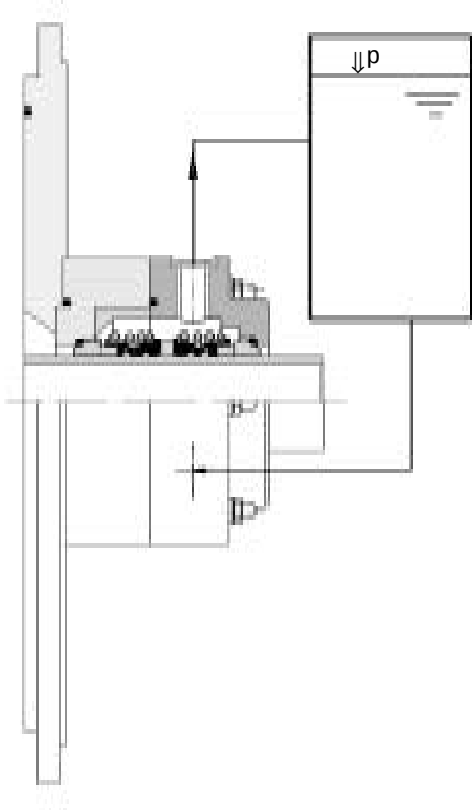
- The space between the mechanical seal on the product and atmosphere side must be filled with clean sealing liquid.
- During operation the pressure of the sealing liquid must always be 1.0 to 2.0 bar higher than the pressure to be sealed.
- A continuous exchange of liquid should take place to prevent overheating in the sealing chamber (by thermo-siphon action or additional circulating device.)

The following functions of the sealing system result from these basic conditions:

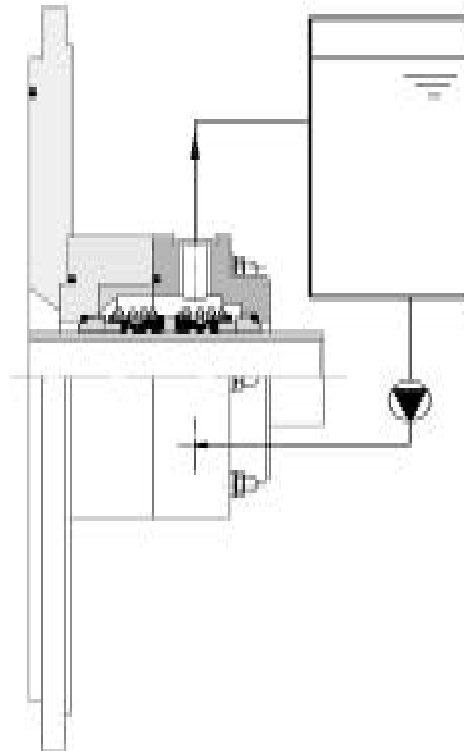
- Pressure build-up in the sealing chamber
- Leakage compensation
- Circulation of the sealing liquid

Installation diagram for sealing chambers::

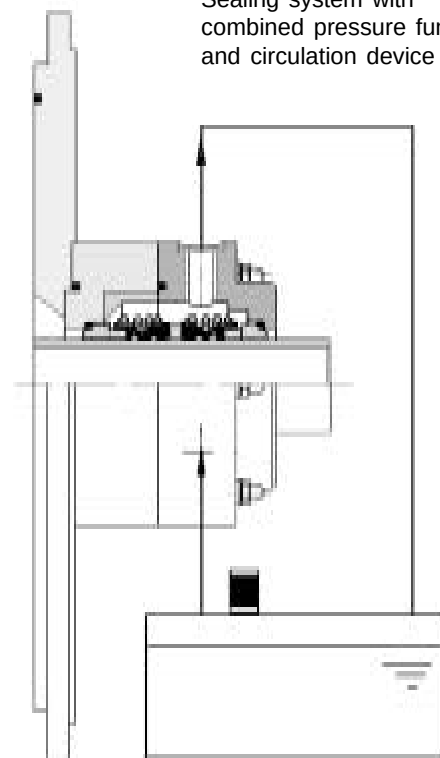
Sealing system
with thermo-siphon
circuit



Sealing system with
circulation device
outside the
mechanical seal



Sealing system with
combined pressure function
and circulation device

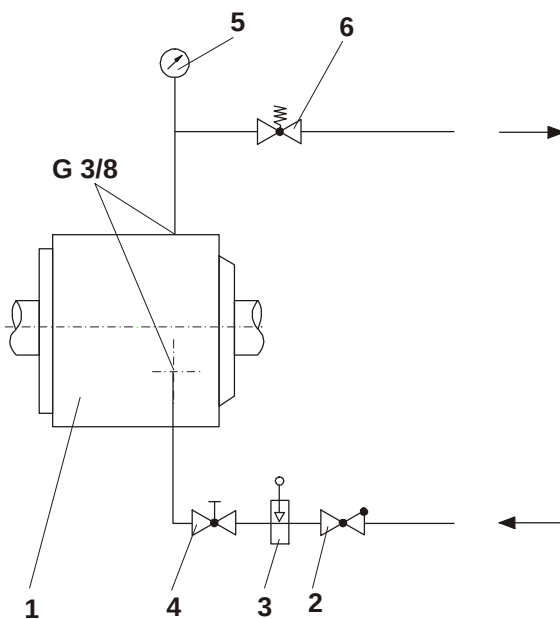


Regulation of the sealing pressure

The sealing pressure can be regulated according to the following diagram:

Legend

- 1 Sealing chamber
- 2 Non-return valve
- 3 Float-type flow meter
- 4 Flow control valve
- 5 Pressure gauge (0-10 bar)
- 6 Backpressure valve



Requirements for sealing liquid:

- Compatible with medium to be sealed
- Suitable regarding corrosion resistance of all parts contacted
- Free from solid matter
- Must not tend to form deposits
- Good lubricating properties
- High specific thermal capacity
- High evaporation temperature
- Not affecting the environment
- Easy procurement and high availability
- During operation the sealing pressure must always be 1.0 to 2.0 bar higher than the pressure to be sealed

Note on temperature:

The outlet temperature must not exceed 60°C and should lie approx. 40°C below the evaporation temperature of the sealing liquid.

Transportation and storage of pump

No special precautions are necessary for transportation and storage of plastic centrifugal pumps under normal ambient conditions. At ambient temperatures below -10°C, however, it must be ensured in particular that especially cast metal parts are protected against impact stress by suitable packing. The pump connectors must be closed.

When putting a pump into service after several years of storage, the following measures must be taken:

- Check elastomer seals for elastic properties
 - replace if necessary.
- Check quality of the bearing grease
 - renew if necessary.
- Check if the mechanical seals can be turned
 - otherwise fill the pump head with water and check after a few minutes if they can be turned. If still not, you should repair the mechanical seal.

Warranty

Every pump is given a functional test before dispatch with measurement of rate of delivery, pump head and power consumption of the drive motor. A warranty for durability of materials can only be provided if the exact operating conditions were known when the system was designed.

Excluded from the warranty are all sealing elements and damage resulting from non-observance of these operating and maintenance instructions.

Our "General Sales Conditions" have over-riding priority.

General technical safety information

The operating safety of the pump is only guaranteed if used for the intended purpose (according to the test certificate).

Removal of environmentally hazardous leaking media conveyed must comply with the statutory regulations. Avoid danger of accidents during installation and disassembly.

Ensure the stability of the pump during installation. Secure installation parts against falling. Support or underlay loose components. Connecting flanges, tapped holes and other openings on pumps must be closed during transportation and storage.

Caution:

Eye-bolts on pump components and motors must not be used for lifting the completely fitted pump or even the entire assembly. The eye-bolts are only provided for raising individual components during installation and dismantling. Use eyes on base plate, if present, for crane suspension of the assembly or place ropes around casing (connectors, bearing bodies).

EC machine guidelines

- Any work done on the whole pump arrangement may only be carried out by authorized and trained personnel.
- According to the Machine Guidelines 89/392/EEC, these products are not regarded as machines; they can, however, be built into installations which are regarded as machines. In this case, please observe the following note!



Note

We distinctly emphasize that operation is prohibited until it has been confirmed that the machine (plant) into which these products have been built corresponds to the conditions of the EC Machine Guidelines 89/392/EEC. A respective declaration of conformity is supplied with the product on request.

Installation

Installation of complete pump assembly

Erection/foundation

Every complete pump assembly is carefully set up and tested at the factory before delivery.

The complete assembly must be secured in the plant onto a level, stable foundation using the corresponding fixing straps. Any unevenness must be averaged out by suitable base plates. In general base plates should be cast, the foundation bolts only being tightened after the concrete has set. With free (non-cast) installation the foundation must meet special requirements. After tightening the foundation bolts successfully, the alignment of the complete assembly, especially of the elastic coupling, must be checked.

Alignment of coupling

Standard pumps are normally fitted with an elastic detachable coupling and are aligned carefully at the factory.

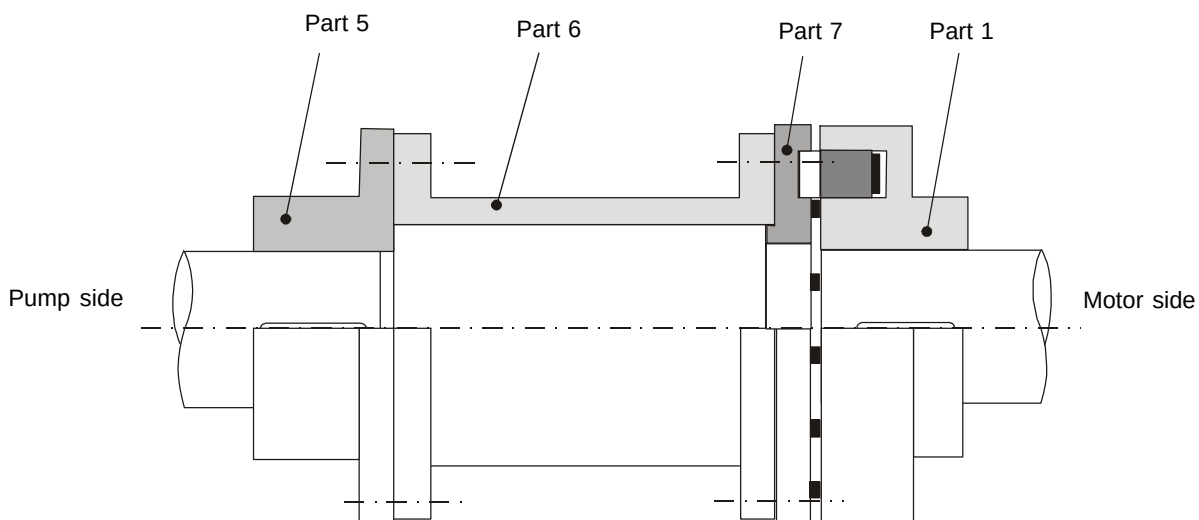
This adjustment can change during transportation to the plant or during erection onto the foundation and must therefore be checked and corrected if necessary.

Check

Use a straight-edge, dial gauge or feeler gauge in two places displaced by 90° at the periphery of the coupling to check the alignment

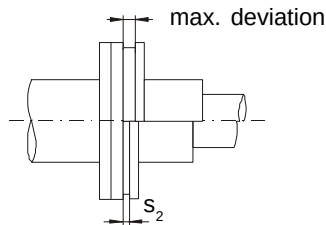
Straight-
edge

Feeler gauge



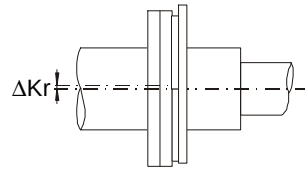
Axial offset

Axial offset of coupling parts 1 and 7 is possible within the max. permissible deviation for dimension s_2 (see table).



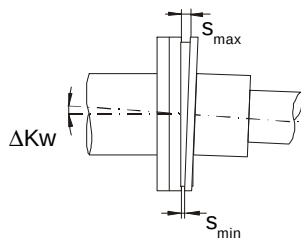
Radial offset DKr

Radial offset of coupling parts 1 and 7 is permissible within the values for ΔKr .



Angular offset DKw

The max. permissible angular offset ΔKw is determined as the difference between dimensions s_{max} and s_{min} (for max. permissible values see table).



Important:

If angular and radial offset occur simultaneously, the sum of the two displacement values must not exceed those for DKr or DKw, respectively..

		Coupling size						
		H 80	H 95	H 110	H 125	H 140	H 160	H 180
Axial offset [mm]								
Dimension s_2		5	5	5	5	5	6	6
Admissible deviation s_2		+1	+1	+1	+1	+1	+1	+1
Angular offset ($s_{max}-s_{min}$) ΔKw [mm]								
at 50 Hz	1450 rpm	0,20	0,23	0,27	0,26	0,30	0,27	0,30
	2900 rpm	0,13	0,11	0,14	0,10	0,12	0,14	0,12
at 60 Hz	1750 rpm	0,20	0,23	0,23	0,21	0,24	0,20	0,23
	3500 rpm	0,10	0,11	0,09	0,11	0,12	0,11	0,12
Radial offset ΔKr [mm]								
at 50 Hz	1450 rpm	0,20	0,23	0,27	0,26	0,30	0,27	0,30
	2900 rpm	0,13	0,11	0,14	0,10	0,12	0,14	0,12
at 60 Hz	1750 rpm	0,20	0,23	0,23	0,21	0,24	0,20	0,23
	3500 rpm	0,10	0,11	0,09	0,11	0,12	0,11	0,12
Tightening torque for part 5/6, 6/7 [NM]		13	13	14	17,5	29	35	44
Width across flats (screw according to DIN 912) [mm]		5	5	6	6	8	8	8

Installation and assembly of pump and drive motor

If the assembly is only completed at site, installation of the coupling should be performed as follows:

For the first installation, generally it is not necessary to dismantle the coupling, since its two complete halves are placed onto the shaft pivots of pump and motor.

1. Clean pump and motor shaft ends, cover it with a thin grease film and insert adjusting springs.
2. Fit coupling halves onto pump and motor shaft end using a tension device. If no such device is available, position coupling halves evenly by lightly tapping.
Caution: Hold pump shaft on impeller side and motor shaft on fan side against each other when fitting without tension device (remove fan cover if necessary). Axial impact load onto the roller bearings of the pump or motor must be avoided. Heating of the coupling parts makes fitting possibly easier. In order to ensure simple dismantling of the intermediate piece (part 6), dimension b of the below drawing must be observed by all means when fitting the coupling halves.
3. The intermediate piece (part 6) is marked with a groove all around the "zero side" to ensure correct functioning. This side must be screwed to the coupling half on the pump side (part 5).
4. Tighten and check screw connections according to the tightening torques specified in the table on page BW 5 03 01/5.
5. Align coupling as described on BW 5 03 01/4.

Laying of pipes

Nominal widths

The nominal widths of the pipes should not be smaller than those of the pump connections. The width of short pipes should be large enough to ensure that the resistance to flow is as small as possible, especially in the suction pipe. For long pipes the economical width should be determined from case to case.

Changes in cross-section and direction

Abrupt changes in cross-section and direction, as well as unduly sharp bends should be avoided. Flange seals must not project internally.

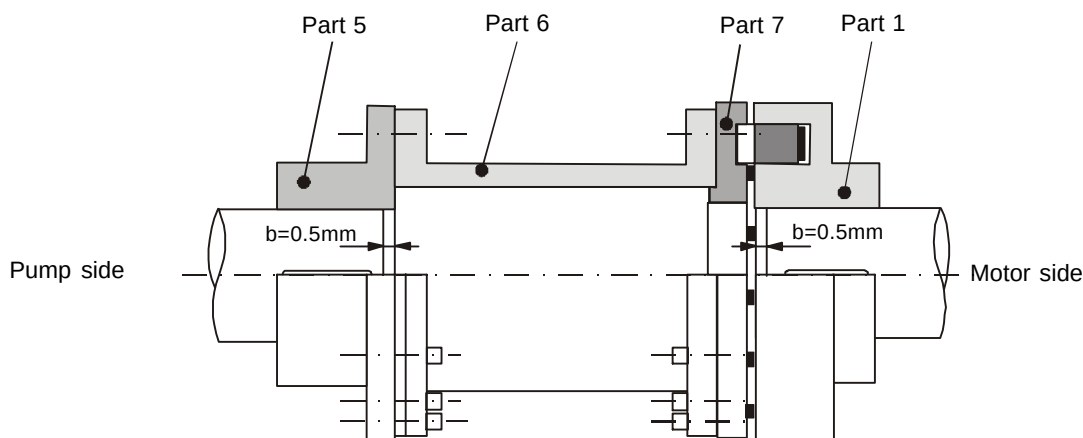
Supporting and flange mounting

Pipes should be connected to the pump without stress. They should be supported close to the pump and screwed on easily so as to avoid distortion. After releasing the screws the flanges must neither be inclined nor spring or press against each other.

Stress possibly applied to the piping (e.g. due to temperature influences, etc.) must be kept away from the pump body by appropriate measures, e.g. installation of compensators.

Cleaning of piping

Before mounting, all piping parts and fittings must be cleaned thoroughly.

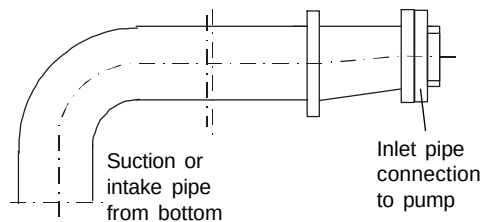


Suction or intake pipe

Direction and cross-section of pipes

Suction or intake pipes should generally be layed as short as possible and without sharp changes in direction (e.g. arches instead of angles). The pipe cross-section must be selected so that flow speeds of max. 2.0 m/s are not exceeded.

Unequal nominal widths of suction connection and horizontal suction pipes must be compensated for by eccentric spacers (see drawing).



The installation of suction pipes must be absolutely tight. To prevent the formation of air pockets, the suction pipe must rise towards the pump, the intake line being layed with a slight downward gradient. "Priming over the mountain" should be avoided. If local conditions do not allow the suction pipe to rise continuously, a venting device should be provided at its highest point.

Fittings in the suction or intake pipe

If the pump is operated without priming chamber in the case of suction operation, a foot valve (non-return valve) must be installed at the end of the suction pipe to prevent the pump and pipe from emptying during standstill. For dirty media a suction filter must be mounted so that dirt from swamp or air from the liquid cannot enter the pipe (see installation examples). In the case of intake operation, a low-loss shutoff valve should be integrated in the intake pipe so that the pump can be removed (e.g. for revision) without having to empty the supply tank.

Pressure pipe

Pressure pipe cross-sections

Pressure pipe cross-sections should be dimensioned so that the flow speed is in the range of 1-3 m/s. The optimum pipe width within this tolerance must be defined from case to case.

Fittings in the pressure pipe

Shutoff valve

A shutoff valve must be installed in the pressure line close to the pump to regulate the flow of the pumped medium.

Prevention of reverse flow

When long pressure pipes or high pressures are involved a backstop must be installed. In the case of standstill the pump is mechanically relieved, and siphoning, i.e. flowing back of the pumped medium is prevented. Thus harmful pressure surges on the pump and foot valve can be avoided.

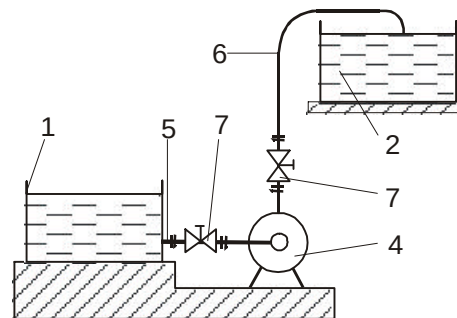
Suction action

In general standard pumps of the N series are not self-priming. If the media are free from solid matter the pump can operate in the suction mode by using a foot valve (non-return valve at the end of the suction pipe). It is essential that the basic physical conditions are fulfilled and that suction pipe is completely filled with liquid before startup (see examples of installation). If a priming chamber is provided a normal-priming centrifugal pump is able to evacuate the suction pipe itself, i.e.: under these conditions the medium can be primed from a lower level (see examples of installation). Also in this case correct operation depends on adherence to the basic physical conditions.

Examples of installation

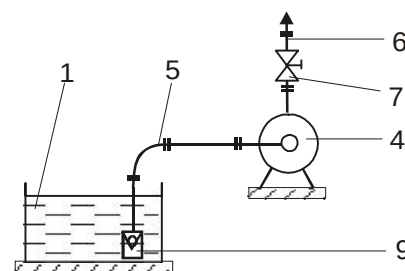
Flooded suction

As long as the level of the tank liquid is maintained above the height of the pump head, the pump will not run dry. The level can be controlled by a suitable level switch.



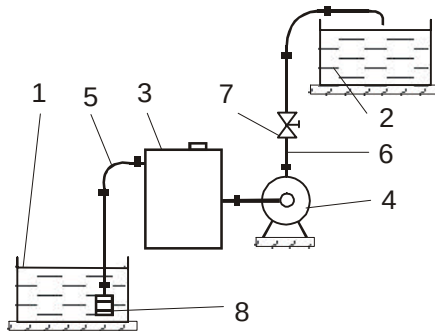
Suction with non-return valve

The use of this suction mode is only recommended with clean media ensuring safe functioning of the non-return valve.



Suction with priming chamber

The priming chamber must be filled before starting. The level in the priming chamber is maintained when the pump is running, because the medium is primed into the priming chamber due to the vacuum formed in the suction pipe. The volume of the priming chamber must match the capacity of the centrifugal pump and the volume of the suction pipe.



Legend

- | | | |
|--------------------|------------------|--------------------------------|
| 1 Supply tank | 2 Receiving tank | 3 Priming chamber |
| 4 Centrifugal pump | 5 Suction pipe | 6 Pressure pipe |
| 7 Shutoff valve | 8 Suction filter | 9 Foot valve, non-return valve |

Commissioning

Measures to be taken before startup

- ❑ Remove impurities (solid matter) from the piping, resulting from installation.
- ❑ Check piping for tightness (compression test).
- ❑ Check if piping connections to pump are under stress (see supporting and flange mounting).
- ❑ Check coupling between pump and drive unit for proper alignment and adjust, if necessary (see alignment of coupling).
- ❑ Fill and vent pump and system correctly (see filling and venting of the pump).
- ❑ Check direction of rotation of whole unit (see direction of rotation).

Filling and venting of the pump

The pump is filled and vented at the same time as the system. While filling, it is advisable to turn the pump shaft slowly by hand.

Direction of rotation

The motor must rotate in the direction indicated by the arrow on the motor casing. To check the direction of rotation the motor may be briefly switched on. Rotation in the wrong direction affects the discharge capacity and can result in damage to the pump.

Starting

Before startup check once more if the system and the pump are filled and vented correctly. If the mechanical seal is operated with quenching or sealing chamber it must be checked if the supply of the quenching fluid or sealing liquid is ensured.

Shutoff valves

The shutoff valve in the pressure pipe must be closed, the shutoff valve on the suction side must be opened.

Switching on the motor

Shutoff valve on the pressure side

Directly after startup the shutoff valve on the pressure side must be slightly opened.

Insufficient venting

If the discharge head does not rise with increasing speed, switch off the pump and re-vent the unit.

Adjusting the discharge values

After reaching the operating speed, the shutoff valve on the pressure side should be opened to such an extent that the necessary discharge values are attained. The shutoff valve on the suction side must not be used for adjusting the discharge flow. The discharge flow can be increased provided that the maximum load of the motor is taken into account.

Operating against a closed shutoff valve

It is essential to avoid operation for any length of time against the closed shutoff valve on the pressure side, because apart from the pumped fluid becoming warm, the pump might be damaged.

Electrical connection

The electric motor mounted on the pump should be connected according to the instructions printed inside the terminal box cover. In addition to the usual fuses, each pump motor must be protected by a thermal motor protection switch (see fig. 1). The external electrical connection should be made by a qualified electrician in accordance with local regulations.

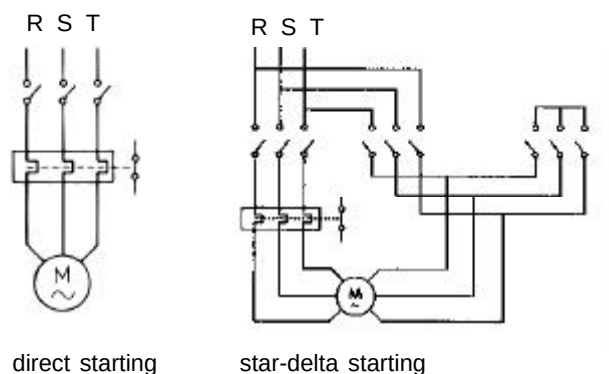


Fig.1

Motor data

Surface-cooled 3-phase motor according to IEC standards, speed 1450 rpm or 2900 rpm, voltage 3x230/400V or 3x400/690V, frequency 50Hz, enclosure IP55, insulation class F, mounting IM B3.

Motor power [kW]	Rated current [A] at	
	1450 rpm	2900 rpm
0,55	1,5	---
0,75	2,0	---
1,1	2,7	2,4
1,5	3,5	3,3
2,2	4,8	4,6
3,0	6,6	6,2
4,0	8,8	7,9
5,5	11,5	10,5
7,5	15,5	14,0
11,0	21,0	21,5
15,0	29,0	28,0
18,5	36,0	33,0
22,0	42,0	41,0
30,0	55,0	53,0
37,0	67,0	66,0
45,0	84,0	79,0
55,0	97,0	99,0

Changing the operating data

Higher density of the pumped medium

If the density of the pumped medium is higher than assumed when ordering, or when the pump was originally dimensioned, it is essential to make sure that the motor is not overloaded.

Higher flow rate

If the flow rate is higher than mentioned in the order or originally dimensioned, it is important to ensure that the head is still adequate. If it is not, this could result in cavitation and thus damage to the pump.

Measures to be taken in the case of longer standstills

If the concentration of the pumped liquid is likely to change, or if it may crystallize when the pump is out of operation for a longer time, the pump must be emptied and flushed with a conserving liquid.

Dry running

It is also essential to ensure that the mechanical seal does not run dry - even for a short time - as this can damage the sliding faces and prevent the shaft seal from functioning correctly.

Switching off the pump

Pressure pipe

If a non-return valve is fitted in the pressure pipe, the shutoff valve may remain open. If there is no non-return valve in the pressure pipe, the shutoff valve must be kept closed.

Motor

Switch off the motor.

Switching the pump on again

Before switching on again, make sure that the pump shaft is not rotating.

If the shutoff valve in the pressure pipe is leaking or not fully closed, it is possible that the pump shaft rotates backwards due to the reverse flow of the pumped medium.

Maintenance

Standard pumps of the N series require hardly any maintenance. As a standard, they are fitted with a high-quality, maintenance-free mechanical seal which is automatically adjusted by spring action. The bearings of the electric motor are permanently lubricated. The pump bearing should be checked regularly and greased or lubricated according to the below diagram, if necessary.

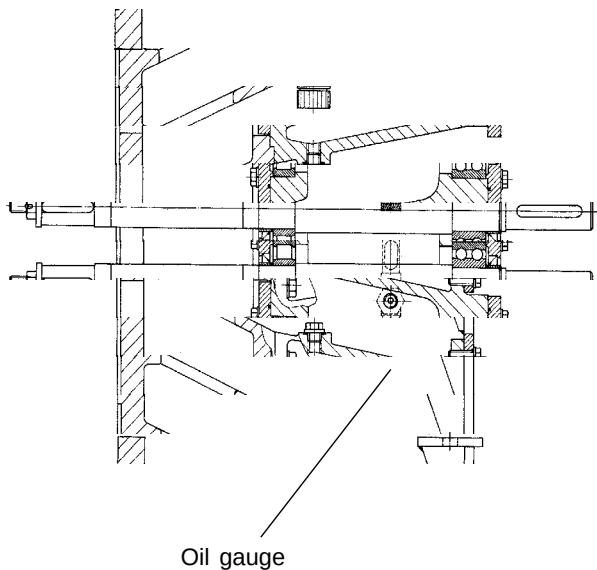
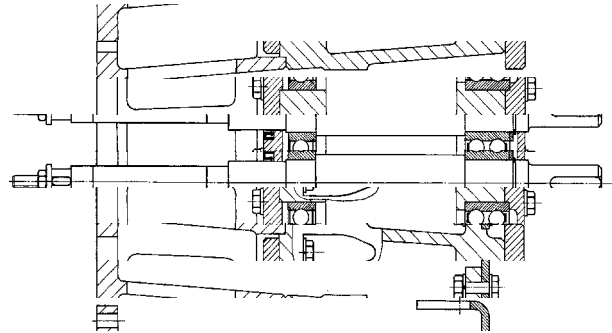
Apart from this, maintenance of the complete pump unit is reduced to a mere inspection of the following points at regular intervals:

- Does the pump attain the desired capacity (discharge flow/head)?
- Is any unusual noise or vibration of the pump or motor observed?
- Is the mechanical seal perfectly tight?
- Is the temperature rise of the motor normal?

Lubrication diagram

Bearing support A1

Maintenance-free, bearing lubricated for life.



- ✓ Oil level must always be between the marks in the oil gauge.
- ✓ The oil should be exchanged every 3000 hours of operation.

Amount of oil

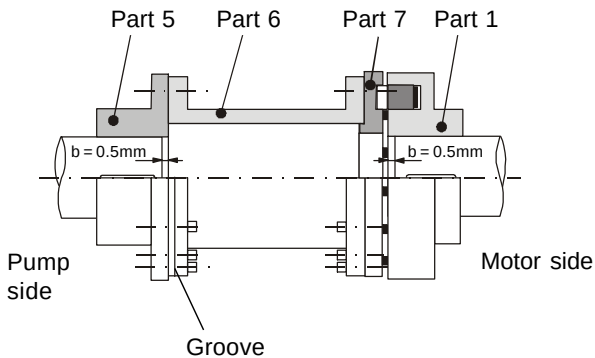
Size	Amount of oil
50/32-125 to 125/80-315	0.8 - 0.85 l
200/150-250	1.1-1.2 l

Recommendation of grease

	Bearing temperature		
	20° C - 40° C	40° C - 70° C	70° C - 100° C
ARAL	ALUR E 22	KOSMOL T 46	KOSMOLT T 100
BP	ENERGOL SHF LT 15	TURBINOL 32	ENERGOL RC-R 100
ESSO	SPINESSO 10	TERESSO 32	NUTO 100
MOBIL OIL	GARGOYLE ARCTIC OIL 155	GARGOYLE ARCTIC OIL 155	VACTRA OIL HEAVY ISO VG 100
SHELL	CLAVUS OIL 22	TELLUS OIL 22	TELLUS OIL 100

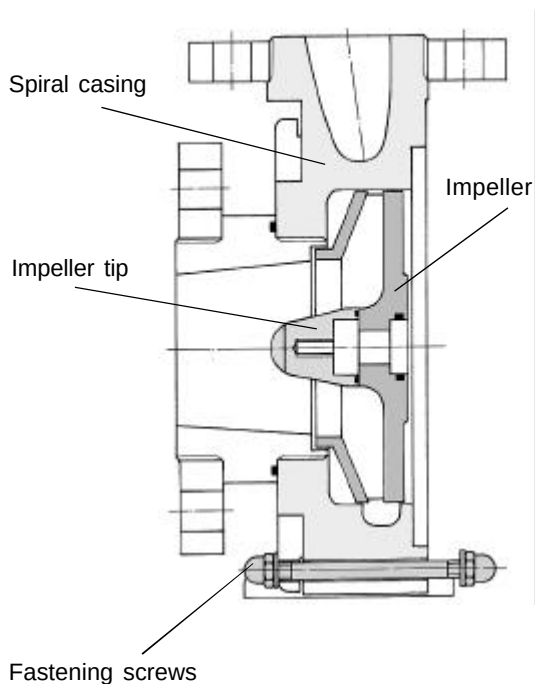
Detachable coupling

After loosening the screw connections, parts 5 and 7 are pushed out of the centerings using the release thread located in part 6. Part 7 is then pushed as far as possible into part 1 so that part 6 can be removed radially. Withdraw part 7 from part 1. Re-assembly is done in reverse order. Refer to BW 5 03 01 / 7 before recommissioning.



Mounting and dismantling Complete pump body

The standard application of extension couplings ensures simple dismantling of bearing supports and internal pump components without dismantling the pipe connections and motor. This avoids laborious alignment of the pump and motor when assembling the system.



Spiral casing

- Loosen fixing screws.
- Remove spiral housing forwards.

Impeller

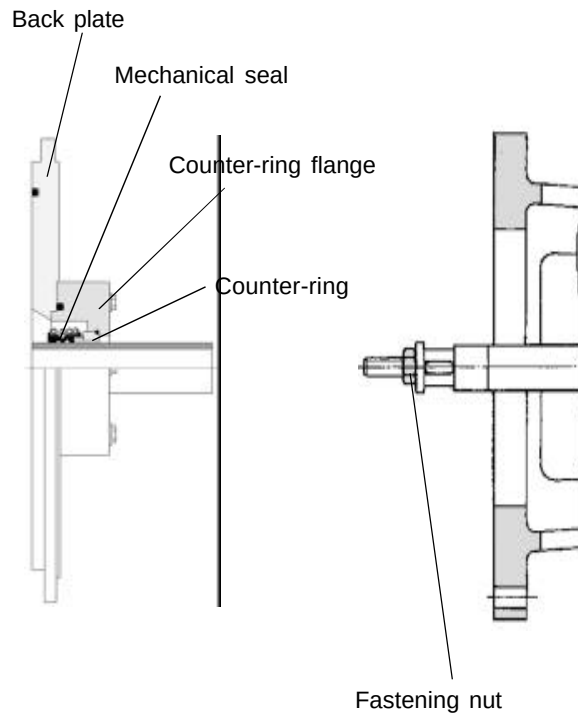
- Unscrew impeller cap.
(Caution: left-hand thread).
- Release fastening nut.
- Remove impeller forwards from the motor shaft.

Mechanical seal

- Carefully remove back plate forwards, together with the mechanical seal.
- In order to dismantle the counter-ring of the mechanical seal, detach the counter-ring flange or quenching/sealing chamber from the back plate. The counter-ring can now be pressed out carefully of the counter-ring flange.

Measures to be taken when mounting new mechanical seals

- During mounting make sure that everything is absolutely clean and that sealing faces and O-rings are not damaged. A possibly existing sliding face protection must be removed immediately without leaving residues on the faces.
- Never use lubricants for sliding faces but mount them absolutely dry, free of dust and clean.
- When pressing counter-rings ensure that the stress is distributed evenly.



Mounting aids

Mechanical seals with elastomer bellows are fitted on the shaft using normal or relieved water (with detergent additive). Sealing seat and shaft must be wetted thoroughly. Never use oil or grease! After mounting check whether the angle rings, the spring and the slide ring are seated correctly and firmly.

Replacement of carbon shaft sleeves before installation of the shaft sleeve

Remove old shaft sleeve by heating. Clean shaft thoroughly using an abrasive cloth (grain size 400) and a solvent. Remove grease residues.

Mounting of the new shaft sleeve

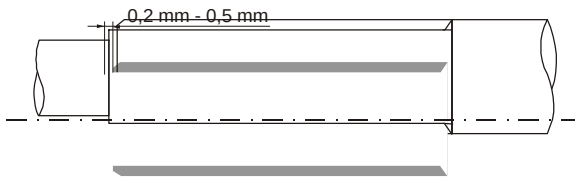
Caution: Shaft must be visible by 0.2 to 0.5 mm with the corresponding sleeve (see drawing). Clean the shaft once more (remove dust).

Caution: Use protective glasses during gluing!

Coat the relevant shaft section uniformly with the adhesive. Slide shaft sleeve in one operation onto the shaft.

Remove adhesive residues.

Drying time according to the user instructions (attached to the adhesive).



Mounting the pump

- The pump is assembled in reverse order.
- Ensure that the O-rings are firmly seated. (Use new O-rings, if possible.)
- It is essential that assembly is stress-free.

Troubleshooting

In the event of faults that occur the following table may be treated as instructions on how to determine their possible causes. If faults occur that are not mentioned

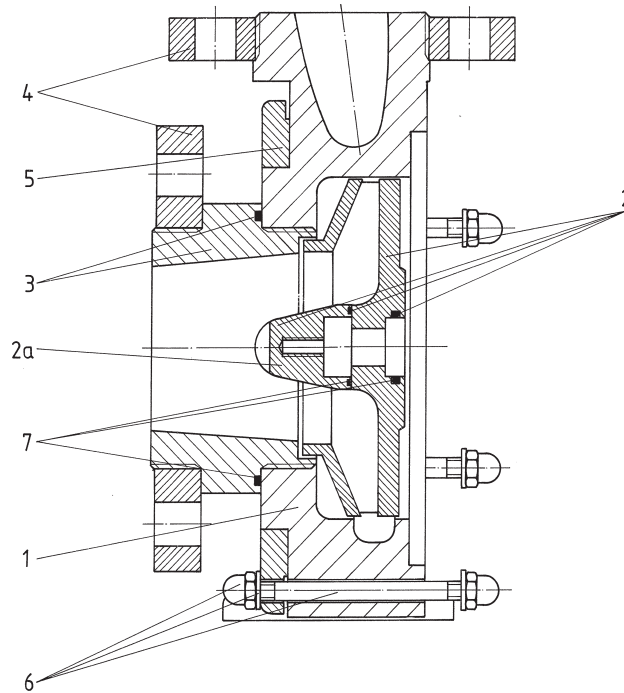
here, or if they cannot be traced back to the causes listed and remedied, consult the supplier.

Fault	Cause	Remedy
Pump not pumping	Motor rotating in wrong direction	Exchange 2 mains leads
	Pump primes in air	Check suction pipe, foot valve and mechanical seal for leakage
	Pump not adequately filled	Fill pump to pressure connection
	Suction pipe contains air pockets	Lay the piping to that air can escape
	Existing back-pressure higher than maximum pump pressure	Use a larger pump
Pump discharge insufficient	Stop valve in suction and pressure pipe not fully open	Fully open the stop valve
	Piping or impeller blocked	Clean piping and the impeller
	Geodetic head too large	Use a larger pump
	Piping resistance greater than assumed	Lay pipes with larger cross-section or use a larger pump.
	Suction head too high (formation of steam in the pump, cavitation)	Clean suction strainer, foot valve and suction pipe, enlarge cross-section, or mount pump at a lower position.
	Viscosity of the pumped medium higher than assumed	Dilute or preheat (to observe max. operating temp.)
	Priming of air	Check suction pipe and mechanical seal for leakage Seal suction pipe, replace seal
Pump discharge too high	The head in the installation is lower than that of the pump	Throttle the stop valve on the pressure side Possibly install a smaller pump
Motor overloaded	Pump pumping too much	See above "Pump discharge too high"
	Solids in the pump	Open the pump and clean it
	Impeller fouling casing; Causes: - Impeller not fixed tight enough - Impeller deformed by excessive-temperature	- Examine impeller fixing and tighten up if necessary - Replace impeller and eliminate reason for excess temperature
	Pump distorted	Connect piping free from stress
	Density or viscosity of medium too high	Check discharge data, fit a larger motor
Unsteady or noisy running	Pump discharge too high	See under "Pump discharge too high"
	Suction head too high	See under "Pump discharge insufficient"
	Cross section of suction pipe too small	Enlarge cross-section of suction pipe
	Stop valve on suction side throttled too severely	Open stop valve
	Motor bearing damaged	Examine bearing, renew if necessary
Shaft seal (mechanical seal) dripping	Mechanical seal worn	Install a new mechanical seal
	Mechanical seal unsuitable for the medium handled	Consult the supplier - install the appropriate mechanical seal
Pump dripping from casing	Piping does not fit into the pipe connections	Adjust the piping to match
	Sealing material unsuitable	Use correct sealing material
	Spiral casing leaking	Tighten up connections and fixing screws Examine O-ring and replace if necessary

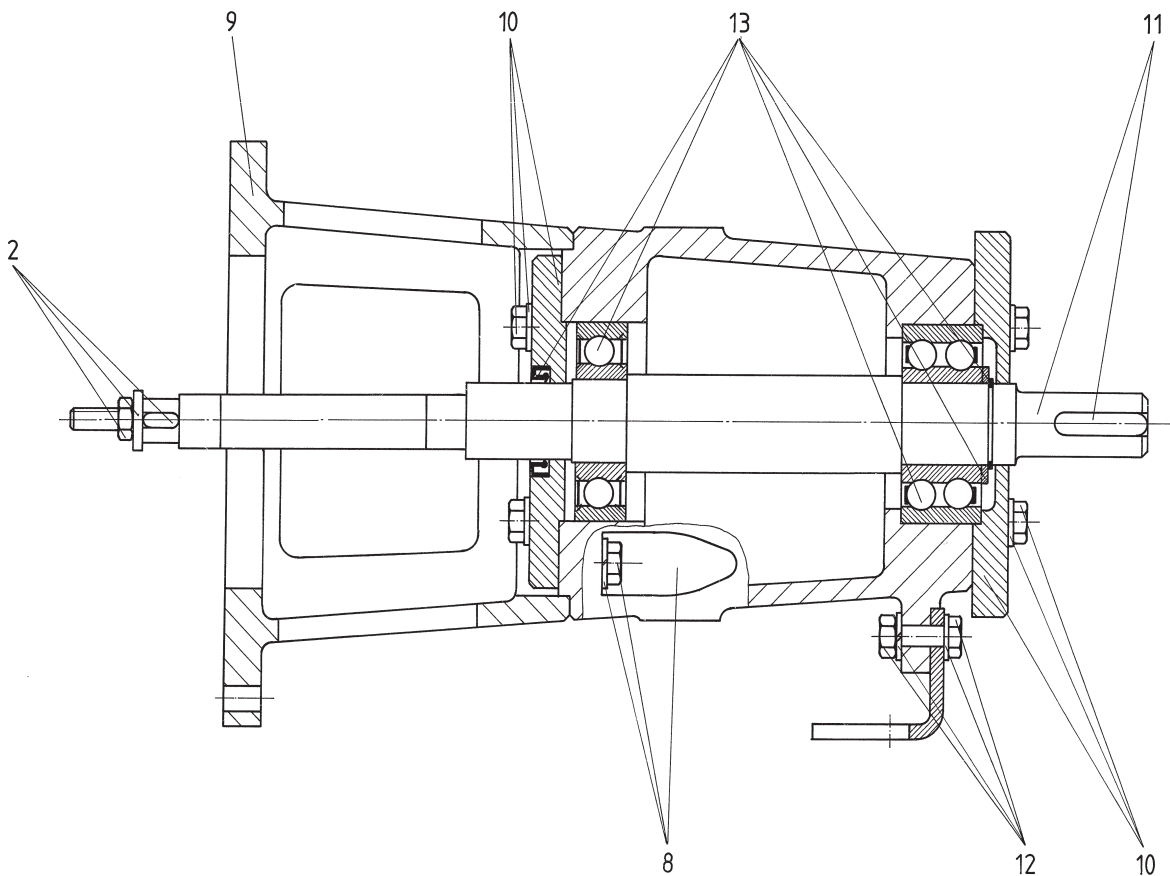
Spare Parts List for Pump Head & Bearing Support A1

Standard Pump N

Pump head assembly



Bearing support assembly A1



Standard Pump N

Item	Description	Material	Order numbers for Pump type ...				
			50-32-125	50-32-160	50-32-200	65-40-125	65-40-160
1	Spiral casing	PP	50191	50193	50195	50199	50201
		PVDF	50192	51194	50196	50200	50202
2	Impeller set	PP/EPDM	68101	68103	68105	68109	68111
		PP/FPM	69049	69050	69051	69052	69053
		PVDF/EPDM	68102	68104	68106	68110	68112
		PVDF/FPM	69072	69073	69074	69075	69076
2a	Impeller cap	PP	50289	50289	50289	50289	50289
		PVDF	50290	50290	50290	50290	50290
3	Suction connector	PP/EPDM	68133	68134	68134	68135	68136
		PP/FPM	69010	69011	69011	69012	69013
		PVDF/EPDM	68142	68143	68143	68144	68145
4	Flange set	GFK	68151	68151	68151	68152	68152
5	Casing flange	GG	50316	50317	50319	50316	50317
6	Stud set	A4	69095	68155	68158	69095	68155
7	O-ring set	EPDM	68051	68052	68053	68054	68055
		FPM	68061	68062	68063	68064	68065
8	Bearing support-housing	var.	68484	68484	68484	68484	68484
9	Bearing support-spacer	GG	50536	50537	50538	50536	50537
10	bearing cover set	var.	68485	68485	68485	68485	68485
11	Shaft set	var.	68486	68487	68487	68486	68487
12	Support foot set	var.	68410	68411	68412	68410	68411
13	Roller bearing set	var.	68488	68488	68488	68488	68488

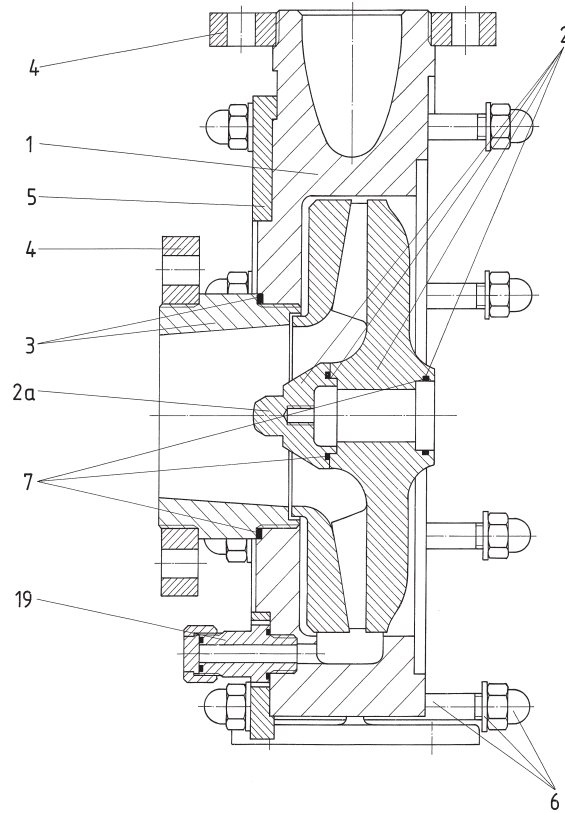
Spare Parts List for Pump Head & Bearing Support A1

Item	Description	Material	Order number for Pump type				
			65-40-200	80-50-125	80-50-160	80-50-200	100-65-125
1	Spiral casing	PP	50203	50209	50211	50213	50219
		PVDF	50204	50210	50212	50214	50220
2	Impeller set	PP/EPDM	68113	68119	68121	68123	68129
		PP/FPM	69054	69055	69056	69057	69058
		PVDF/EPDM	68114	68120	68122	68124	68130
		PVDF/FPM	69077	69078	69079	69080	69081
2a	Impeller cap	PP	50289	50289	50289	50289	50289
		PVDF	50290	50290	50290	50290	50290
3	Suction connector	PP/EPDM	68137	68138	69000	68139	68140
		PP/FPM	69014	69015	69016	69017	69018
		PVDF/EPDM	68146	68147	69005	68148	68149
		PVDF/FPM	69034	69035	69036	69037	69038
4	Flange set	GFK	68152	68153	68153	68153	68154
5	casing flange	GG	50319	50317	50319	50319	50319
6	Stud set	A4	68158	68155	68156	68156	68157
7	O-ring set	EPDM	68056	68057	68059	68059	69097
		FPM	68066	68067	68069	68069	69098
8	bearing support-housing set	Div.	68484	68484	68484	68484	68484
9	Bearing support spacer	GG	50538	50537	50538	50538	50538
10	Bearing cover set	var.	68495	68485	68485	68485	68485
11	Shaft set	var.	68487	68487	68487	68487	68487
12	Support foot set	var.	68412	68411	68412	68412	68412
13	Roller bearing set	var.	68488	68488	68488	68488	68488

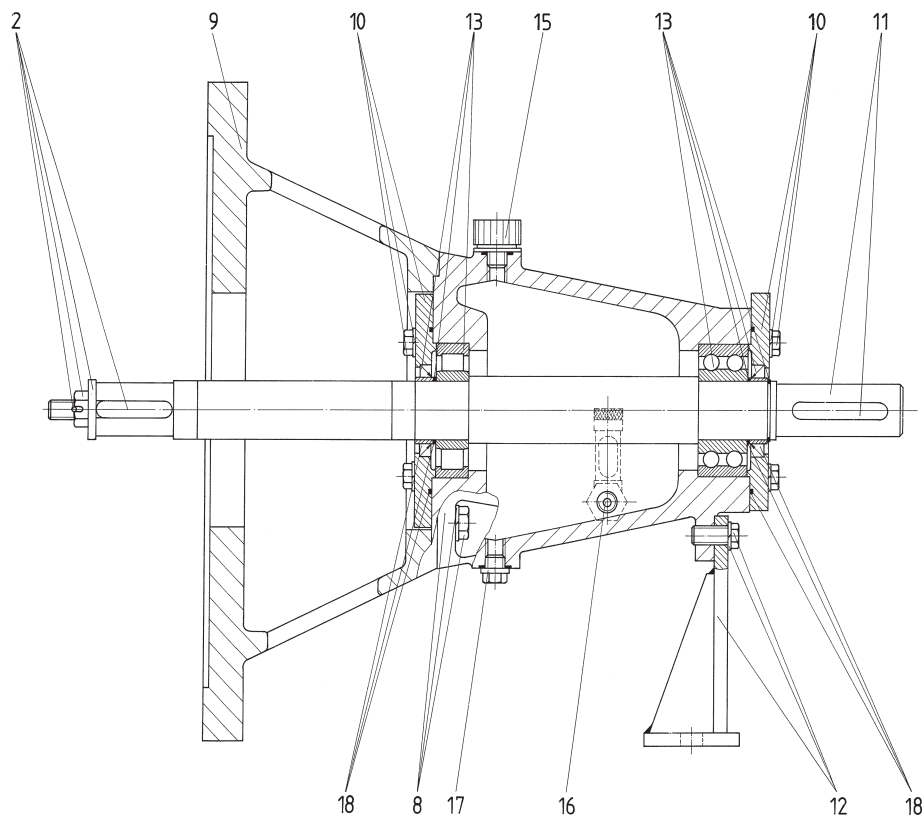
Standard Pump N

Standard Pump N

Pump head assembly



Bearing support assembly B



Spare Parts List for Pump Head & Bearing Support B

Item	Description	Material	Order number for Pump type					
			50-32-250	65-40-250	65-40-315	80-50-250	80-50-315	100-65-160
1	Spiral casing	PP	50197	50205	50207	50215	50217	50221
		PVDF	50198	50206	50208	50216	50218	50222
2	Impeller set	PP/EPDM	68107	68115	68117	68125	68127	68131
		PP/FPM	69059	69060	69061	69062	69063	69064
		PVDF/EPDM	68108	68116	68118	68126	68128	68132
		PVDF/FPM	69082	69083	69084	69085	69086	69087
2a	Impeller cap	PP	50391	50391	50391	50391	50391	50289
		PVDF	50392	50392	50392	50392	50392	50290
3	Suction connector with seal	PP/EPDM	69001	69002	69003	68252	69004	68141
		PP/FPM	69020	69021	69022	69023	69024	69025
		PVDF/EPDM	69006	69007	69008	68253	69009	68150
		PVDF/FPM	69039	69040	69041	69042	69043	69044
4	Flange set	GFK	68151	68152	68152	68153	68153	68154
5	Casing flange	GG	50403	50403	50404	50403	50405	50319
6	Stud set	A4	68273	68273	68274	68273	68276	69096
7	O-ring set	EPDM	68080	68081	68082	68083	68084	68058
		FPM	68090	68091	68092	68093	68094	68068
8	Bearing support	var.	68402	68402	68402	68402	68402	68402
9	Bearing support spacer	GG	50550	50550	50551	50550	50552	50553
10	Bearing cover set	var.	68204	68204	68204	68204	68204	68204
11	Shaft set	var.	68214	68214	68214	68214	68214	68215
12	Support foot set	var.	68413	68413	68414	68413	68415	68416
13	Roller bearing set	var.	68210	68210	68210	68210	68210	68210
15	Vent screw	var.	83707	83707	83707	83707	83707	83707
16	Oil level indicator	var.	69099	69099	69099	69099	69099	69099
17	Sealing screw	var.	69100	69100	69100	69100	69100	69100
18	Sealing set	var.	68202	68202	68202	68202	68202	68202
19	Entleerung	PP/EPDM	52338	52338	52338	52338	52338	---
		PP/FPM	52339	52339	52339	52339	52339	---
		PVDF/EPDM	52900	52900	52900	52900	52900	---
		PVDF/FPM	52901	52901	52901	52901	52901	---

Standard Pump N

Standard Pump N

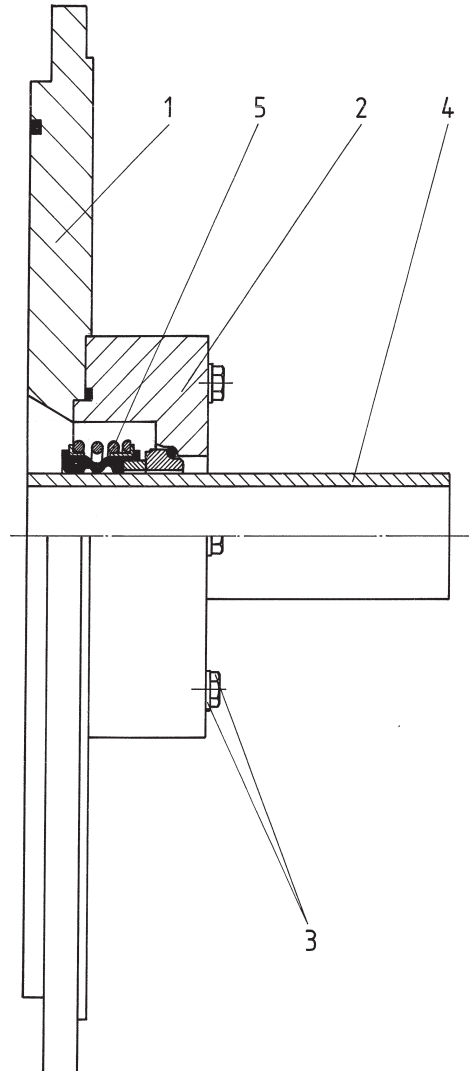
Item	Description	Material	Order numbers for Pump type ...					
			100-65-200	100-65-250	100-65-315	125-80-160	125-80-200	125-80-250
1	Spiral casing	PP	51744	50225	50227	50229	51746	51914
		PVDF	51745	50226	50228	50230	51747	51915
2	Impeller set	PP/EPDM	68232	68234	68236	68238	68240	68242
		PP/FPM	69065	69066	69067	69068	69069	69070
		PVDF/EPDM	68233	68235	68237	68239	68241	68243
		PVDF/FPM	69088	49089	69090	69091	69092	69093
2a	Impeller cap	PP	50289	50391	50391	50289	50289	50391
		PVDF	50290	50392	50392	50290	50392	50392
3	Suction connector with seal	PP/EPDM	68140	68258	68260	68262	68264	--
		PP/FPM	69018	69026	69027	69028	69029	--
		PVDF/EPDM	68149	68259	68261	68263	68265	--
		PVDF/FPM	69038	69045	69046	69047	69048	--
4	Flange set	GFK	68154	68154	68154	68272	68272	50313
5	Casing flange	GG	50403	50424	50425	50403	50403	50425
6	Stud set	A4	68273	68273	68276	68277	68277	68276
7	O-ring set	EPDM	68058	68086	68087	68088	69902	68217
		FPM	68068	68096	68097	68098	69103	68218
8	Bearing support housing set	var.	68402	68402	68403	68402	68402	68402
9	Bearing support spacer	GG	50550	50555	50552	50550	50550	50552
10	Bearing cover set	var.	68204	68204	68205	68204	68204	68204
11	Shaft set	var.	68215	68214	68216	68215	68215	68214
12	Support foot set	var.	68413	68414	68415	68413	68413	68415
13	Roller Bearing set	var.	68210	68210	68211	68210	68210	68210
15	Vent screw with flat seal	var.	83707	83707	83707	83707	83707	83707
16	Oil level indicator	var.	69099	69099	69099	69099	69099	69099
17	Sealing screw	var.	69100	69100	69100	69100	69100	69100
18	Sealing set	var.	68202	68202	68203	68202	68202	68202
19	Entleerung	PP/EPDM	--	52338	52338	--	52338	52338
		PP/FPM	--	52339	52339	--	52339	52339
		PVDF/EPDM	--	52900	52900	--	52900	52900
		PVDF/FPM	--	52901	52901	--	52901	52901

Spare Parts List for Pump Head & Bearing Support B

Item	Description	Material	Order number for Pump type ...					
			125-80-315	125-100-200	125-100-250	125-100-315	150-125-250	200-150-250
1	Spiral casing	PP	50235	52910	52948	52912	52914	51627
		PVDF	50236	52911	52951	52913	52915	51628
2	Impeller set	PP/EPDM	68244	69106	69144	69110	69114	69119
		PP/FPM	69071	69107	69145	69111	69115	69120
		PVDF/EPDM	68245	69108	69146	69112	69116	69121
		PVDF/FPM	69094	69109	69147	69113	69117	69122
2a	Impeller cap	PP	50391	50391	50391	50391	50391	52924
		PVDF	50392	50392	50392	50392	50392	52925
3	Suction connector with seal	PP/EPDM	--	--	--	--	--	69123
		PP/FPM	--	--	--	--	--	69124
		PVDF/EPDM	--	--	--	--	--	69125
		PVDF/FPM	--	--	--	--	--	69126
4	Flange set	GFK	50313	50314	50314	50314	50315	51626
5	Casing flange	GG	50427	50424	50425	50427	52919	52929
6	Stud set	A4	68276	68274	69118	68276	69118	69127
7	O-ring set	EPDM	68217	69104	68217	68217	68217	69128
		FPM	68218	69105	68218	68218	68218	69129
8	Bearing support	Div.	68403	68402	68403	68403	68403	69130
9	Bearing support spacer	GG	50552	50555	50552	50552	50552	51618
10	Bearing cover set	var.	68205	68204	68205	68205	68205	69131
11	Shaft set	var.	68216	68214	68216	68216	68216	69132
12	Support foot set	var.	68417	68414	68415	68417	68417	69134
13	Roller bearing set	var.	68211	68210	68211	68211	68211	69133
15	Vent screw	var.	83707	83707	83707	83707	83707	83707
16	Oil level indicator	var.	69099	69099	69099	69099	69099	69099
17	Sealing screw	var.	69100	69100	69100	69100	69100	69100
18	Sealing set	var.	68203	68202	68203	68203	68203	69135
19	Entleerung	PP/EPDM	52338	52338	52338	52338	52338	52920
		PP/FPM	52339	52339	52339	52339	52339	52921
		PVDF/EPDM	52900	52900	52900	52900	52900	52922
		PVDF/FPM	52901	52901	52901	52901	52901	52923

Standard Pump N

Standard Pump N



Item	Description	Material	Order numbers for Pump type ...					
			50-32-125 65-40-125	50-32-160 65-40-160 80-50-125	50-32-200 65-40-200 80-50-160 80-50-200 100-65-125	50-32-250 65-40-250 80-50-250	80-50-315	100-65-250
1	Back-plate	PP	50353	50355	50357	50570	50572	50574
		PVDF	50354	50356	50358	50571	50573	50575
2	Counter-ring flange	PP	50069	51750	51750	51752	51752	51752
		PVDF	50070	51751	51751	51753	51753	51753
3	Screw set	A4	68162	68453	68453	68453	68453	68453
4	Shaft protection sleeve	Carbon imp.	50361	50362	50362	50580	50580	50580
5	Mechanical seal set	EPDM/A4	60002	60006	60006	60010	60010	60010
		FPM/A4	60003	60007	60007	60011	60011	60011
		EPDM/HC-4	60004	60008	60008	60012	60012	60012
		FPM/HC-4	60005	60009	60009	60013	60013	60013

For O-ring kit see spare parts lists for pump head and bearing support.

Improved changes are always reserved without notice. 1.00

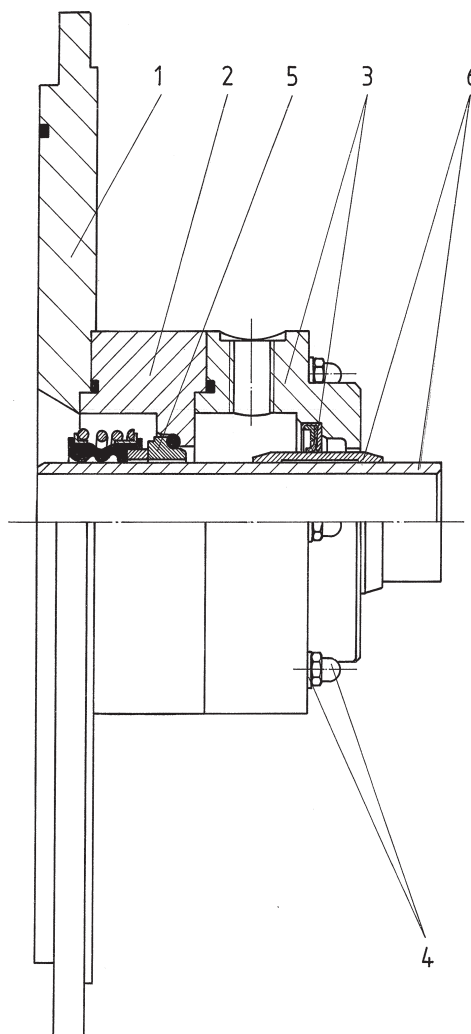
Single-Acting, Internal Mechanical Seal B2I

Item	Description	Material	Order numbers for Pump type ...					
			65-40-315 125-80-250	100-65-160	100-65-200	100-65-315	125-80-160	125-80-200
1	Back-plate	PP	51017	51108	51742	50572	50949	51780
		PVDF	51018	51109	51743	50573	50955	51781
2	Counter ring flange	PP	51752	51752	51752	51752	51752	51752
		PVDF	51753	51753	51753	51753	51753	51753
3	Screw set	A4	68453	68453	68453	68453	68453	68453
4	Shaft protection sleeve	Carbon imp.	50580	50580	50580	50581	50580	50580
5	Mechanical seal set	EPDM/A4	60010	60010	60010	60010	60010	60010
		FPM/A4	60011	60011	60011	60011	60011	60011
		EPDM/HC-4	60012	60012	60012	60012	60012	60012
		FPM/HC-4	60013	60013	60013	60013	60013	60013

Item	Description	Material	Order numbers for Pump type ...					
			125-80-315	125-100-200	125-100-250	125-100-315	150-125-250	200-150-250
1	Back-plate	PP	50576	52400	51017	50576	51397	51672
		PVDF	50577	52401	51018	50577	51398	51673
2	Counter-ring flange	PP	51752	51752	51752	51752	51752	51631
		PVDF	51753	51753	51753	51753	51753	51632
3	Screw set	A4	68453	68453	68453	68453	68453	68136
4	Shaft protection sleeve	Carbon imp.	50581	50580	50581	50581	50581	---
		PVDF	---	---	---	---	---	51658
5	Mechanical seal set	EPDM/A4	60010	60010	60010	60010	60010	60051
		FPM/A4	60011	60011	60011	60011	60011	60052
		EPDM/HC-4	60012	60012	60012	60012	60012	60053
		FPM/HC-4	60013	60013	60013	60013	60013	60054

For O-ring kit see spare parts lists for pump head and bearing support.

Standard Pump N



Item	Description	Material	Order numbers for Pump type ...					
			50-32-125 65-40-125	50-32-160 65-40-160 80-50-125	50-32-200 65-40-200 80-50-160 80-50-200 100-65-125	50-32-250 65-40-250 80-50-250	80-50-315	100-65-250
1	Back-plate	PP	50353	50355	50357	50570	50572	50574
		PVDF	50354	50356	50358	50571	50573	50575
2	Counter-ring flange	PP	50069	51750	51750	50612	50612	50612
		PVDF	50070	51751	51751	50613	50613	50613
3	Quenching chamber	PP	52890	52892	52892	52894	52894	52894
		PVDF	52891	52893	52893	52895	52895	52895
4	Screw set	A4	68176	68177	68177	68177	68177	68177
5	Mechanical seal set	EPDM/A4	60002	60006	60006	60010	60010	60010
		FPM/A4	60003	60007	60007	60011	60011	60011
		EPDM/HC-4	60004	60008	60008	60012	60012	60012
		FPM/HC-4	60005	60009	60009	60013	60013	60013
6	Shaft sealing ring with ring	Carbon imp.	52896	52897	52897	52898	52898	52898

For O-ring kit see spare parts lists for pump head and bearing support.

Improved changes are always reserved without notice. 6.01

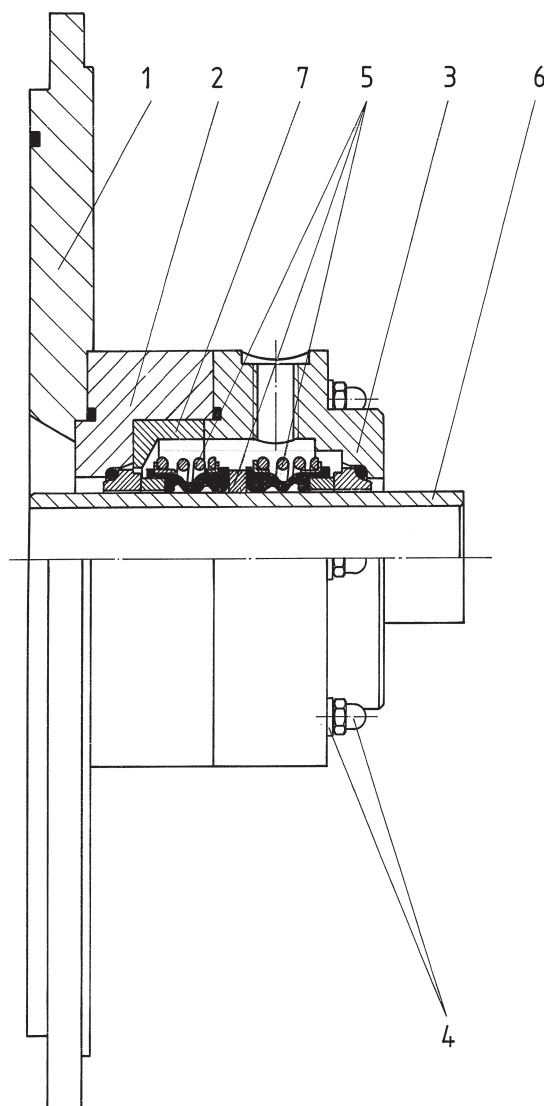
Mechanical Seal with Quenching Chamber B2Q

Item	Description	Material	Order numbers for Pump type ...					
			65-40-315 125-80-250	100-65-160	100-65-200	100-65-315	125-80-160	125-80-200
1	Back-plate	PP	51017	51108	51742	50572	50949	51780
		PVDF	51018	51109	51743	50573	50955	51781
2	Counter-ring flange	PP	50612	50612	50612	50612	50612	50612
		PVDF	50613	50613	50613	50613	50613	50613
3	Quenching chamber	PP	52894	52894	52894	52894	52894	52894
		PVDF	52895	52895	52895	52895	52895	52895
4	Screw set	A4	68177	68177	68177	68177	68177	68177
5	Mechanical seal set	EPDM/A4	60010	60010	60010	60010	60010	60010
		FPM/A4	60011	60011	60011	60011	60011	60011
		EPDM/HC-4	60012	60012	60012	60012	60012	60012
		FPM/HC-4	60013	60013	60013	60013	60013	60013
6	Shaft protection sleeve	Kohle imp.	52898	52898	52898	52899	52898	52898

Item	Description	Material	Order numbers for Pump type...					
			125-80-315	125-100-200	125-100-250	125-100-315	150-125-250	200-150-250
1	Back-plate	PP	50576	52400	51017	50576	51397	51672
		PVDF	50577	52401	51018	50577	51398	51673
2	Counter-ring flange	PP	50612	50612	50612	50612	50612	50633
		PVDF	50613	50613	50613	50613	50613	50634
3	Quenching chamber	PP	52894	52894	52894	52894	52894	52926
		PVDF	52895	52895	52895	52895	52895	52927
4	Screw set	A4	68177	68177	68177	68177	68177	68177
5	Mechanical seal set	EPDM/A4	60010	60010	60010	60010	60010	60051
		FPM/A4	60011	60011	60011	60011	60011	60052
		EPDM/HC-4	60012	60012	60012	60012	60012	60053
		FPM/HC-4	60013	60013	60013	60013	60013	60054
6	Shaft protection sleeve	Carbon imp.	52899	52898	52899	52899	52899	---
		PVDF	---	---	---	---	---	52928

For O-ring kit see spare parts lists for pump head and bearing support.

Standard Pump N



Item	Description	Material	Order numbers for Pump type ...					
			50-32-125 65-40-125	50-32-160 65-40-160 80-50-125	50-32-200 65-40-200 80-50-160 80-50-200 100-65-125	50-32-250 65-40-250 80-50-250	80-50-315	100-65-250
1	Back-plate	PP	50353	50355	50357	50570	50572	50574
		PVDF	50354	50356	50358	50571	50573	50575
2	Counter-ring flange	PP	51697	50378	50378	50597	50597	50597
		PVDF	51698	50379	50379	50598	50598	50598
3	Sealing chamber	PP	50082	50380	50380	50599	50599	50599
		PVDF	50083	50381	50381	50600	50600	50600
4	Screw set	A4	68176	68177	68177	68177	68177	68177
5	Mechanical seal set	EPDM/A4	68567	68568	68568	68569	68569	68569
		FPM/A4	68565	68566	68566	68570	68570	68570
6	Shaft protection sleeve	Carbon imp.	50361	50362	50362	50580	50580	50580
7	Release look	PVDF	51701	51694	51694	51653	51653	51653

For O-ring kit see spare parts lists for pump head and bearing support.

Double-Acting Mechanical Seal w. Sealing Chamber B2D

Item	Description	Material	Order numbers for Pump type ...					
			65-40-315 125-80-250	100-65-160	100-65-200	100-65-315	125-80-160	125-80-200
1	Back-plate	PP	51017	51108	51742	50572	50949	51780
		PVDF	51018	51109	51743	50573	50955	51781
2	Counter-ring flange	PP	50597	50597	50597	50597	50597	50597
		PVDF	50598	50598	50598	50598	50598	50598
3	Sealing chamber	PP	50599	50599	50599	50599	50599	50599
		PVDF	50600	50600	50600	50600	50600	50600
4	Screw set	A4	68177	68177	68177	68177	68177	68177
5	Mechanical seal set	EPDM/A4	68569	68569	68569	68569	68569	68569
		FPM/A4	68570	68570	68570	68570	68570	68570
6	Shaft protection sleeve	Carbon imp.	50580	50580	50580	50581	50580	50580
7	Release look	PVDF	51653	51653	51653	51653	51653	51653

Item	Description	Material	Order numbers for Pump type ...					
			125-80-315	125-100-200	125-100-250	125-100-315	150-125-250	200-150-250
1	Back-plate	PP	50576	52400	51017	50576	51397	51672
		PVDF	50577	52401	51018	50577	51398	51673
2	Counter-ring flange	PP	50597	50597	50597	50597	50597	51612
		PVDF	50598	50598	50598	50598	50598	51613
3	Sealing chamber	PP	50599	50599	50599	50599	50599	51636
		PVDF	50600	50600	50600	50600	50600	51637
4	Screw set	A4	68177	68177	68177	68177	68177	68177
5	Mechanical seal set	EPDM/A4	68569	68569	68569	68569	68569	69138
		FPM/A4	68570	68570	68570	68570	68570	69139
6	Shaft protection sleeve	Carbon imp.	50581	50580	50581	50581	50581	---
		PVDF	---	---	---	---	---	51658
7	Release look	PVDF	51653	51653	51653	51653	51653	51640

For O-ring kit see spare parts lists for pump head and bearing support.

EU-Konformitätserklärung

Der Unterzeichnete Lutz-Jesco GmbH, Am Bostelberge 19, 30900 Wedemark, bestätigt, dass die nachfolgend bezeichneten Geräte in der von uns in Verkehr gebrachten Ausführung die Anforderungen der harmonisierten EU-Richtlinien, EU-Sicherheitsstandards und produktspezifischen Standards erfüllen. Bei einer nicht mit uns abgestimmten Änderung der Geräte verliert diese Erklärung ihre Gültigkeit.

(EN) EU Certificate of Conformity

The undersigned Lutz-Jesco GmbH, Am Bostelberge 19, 30900 Wedemark, hereby certifies that, when leaving our factory, the units indicated below are in accordance with the harmonised EU guidelines, EU standards of safety and product specific standards. This certificate becomes void if the units are modified without our approval.

(FR) Certificat de conformité aux directives européennes

Le constructeur, soussigné: Lutz-Jesco GmbH, Am Bostelberge 19, 30900 Wedemark, déclare qu'à la sortie de ses usines le matériel neuf désigné ci-dessous était conforme aux prescriptions des directives européennes énoncées ci-après et conforme aux règles de sécurité et autres règles qui lui sont applicables dans le cadre de l'Union européenne. Toute modification portée sur ce produit sans l'accord express de Jesco supprime la validité de ce certificat.

(ES) Declaración de conformidad de la UE

El que subscribe Lutz-Jesco GmbH, Am Bostelberge 19, 30900 Wedemark, declara que la presente mercancía, objeto de la presente declaración, cumple con todas las normas de la UE, en lo que a normas técnicas, de homologación y de seguridad se refiere, En caso de realizar cualquier modificación en la presente mercancía sin nuestra previa autorización, esta declaración pierde su validez.

(NL) EU-overeenstemmingsverklaring

Ondergetekende Lutz-Jesco GmbH, Am Bostelberge 19, 30900 Wedemark, bevestigt, dat het volgende genoemde apparaat in de door ons in de handel gebrachte uitvoering voldoet aan de eis van, en in overeenstemming is met de EU-richtlijnen, de EU-veiligheidsstandaard en de voor het product specifieke standaard. Bij een niet met ons afgestemde verandering aan het apparaat verliest deze verklaring haar geldigheid.

(HU) EG (EK)– Egyezőségi nyilatkozat

A Lutz-Jesco GmbH, Am Bostelberge 19, 30900 Wedemark ezúton kijelenti, hogy a szóban forgó termék annak tervezése és szerkezeti módja, valamint forgalomba hozott kivitele alapján a vonatkozó alapvető biztonság technikai és egészségügyi követelményeknek és az alábbi felsorolt EG –irányelveknek minden szempontból megfelel. A terméken engedélyünk nélkül végrehajtott módosítások következtében jelen nyilatkozat érvényét veszíti.

Bezeichnung des Gerätes:	Chemie-Kreiselpumpe
Description of the unit:	Chemical Centrifugal Pump
Désignation du matériel:	Pompes centrifuges
Descripción de la mercancía:	Bombas centrifugas
Omschrijving van het apparaat:	Centrifugaalpompen
A termék megnevezése:	Vegyipari centrifugálszivattyúk

Typ / Type / Tipo / Típusjelölés:

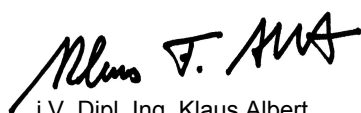
BN
N
VTP

EU-Richtlinie / EU directives/
Directives européennes / Normativa UE /
EU-richtlijnen / Vonatkozó EG-irányelvek

2006/95/EG
98/37/EG

Harmonisierte Normen / harmonized
standards / Normes harmonisées /
Estándares acordemente / Toegepaste
normeringen / Hatályos normák

EN ISO 12100-1 : 2003
EN ISO 12100-2 : 2003
EN 809 : 1998
EN 50081-1 : 01.92
EN 50081-2 : 08.93
EN 50082-1 : 01.92
EN 50082-2 : 03.95
EN 733:1995-08
EN 22858:1993-07



i.V. Dipl. Ing. Klaus Albert
Lutz-Jesco, Wedemark, 01.06.2008

Technische Leitung / Technical Departement Manager / Direction technique /
Dirección Técnica / Hoofd technische dienst / Műszaki irodavezető

Declaration of Harmlessness

Please fill out a separate form for each appliance!

We forward the following device for repairs:

Device and device type:

Part-no.:

Order No.:

Date of delivery:

Reason for repair:

.....

.....

Dosing medium

Description:

Irritating: ☐ Yes ☐ No

Properties:

Corrosive: ☐ Yes ☐ No

We hereby certify, that the product has been cleaned thoroughly inside and outside before returning, that it is free from hazardous material (i.e. chemical, biological, toxic, flammable, and radioactive material) and that the lubricant has been drained.

If the manufacturer finds it necessary to carry out further cleaning work, we accept the charge will be made to us.

We assure that the aforementioned information is correct and complete and that the unit is dispatched according to the legal requirements.

Company / address:

Phone:

.....

Fax:

.....

Email:

Customer No.:

Contact person:

Date, Signature:

Warranty Application

Please copy and send it back with the unit!

If the device breaks down within the period of warranty, please return it in a cleaned condition with the complete warranty application, filled out.

Sender

Company: Phone: Date:

Address:

Contact person:

Manufacturer order no.: Date of delivery:

Device type: Serial number:

Nominal capacity / nominal pressure:

Description of fault:.....

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Service conditions of the device

Point of use / system designation:.....

.....

.....

Accessories used (suction line etc.):.....

.....

.....

.....

.....

Commissioning (date):

Duty period (approx. operating hours):

Please describe the specific installation and enclose a simple drawing of the chemical feed system, showing materials of construction, diameters, lengths and heights of suction and discharge lines.