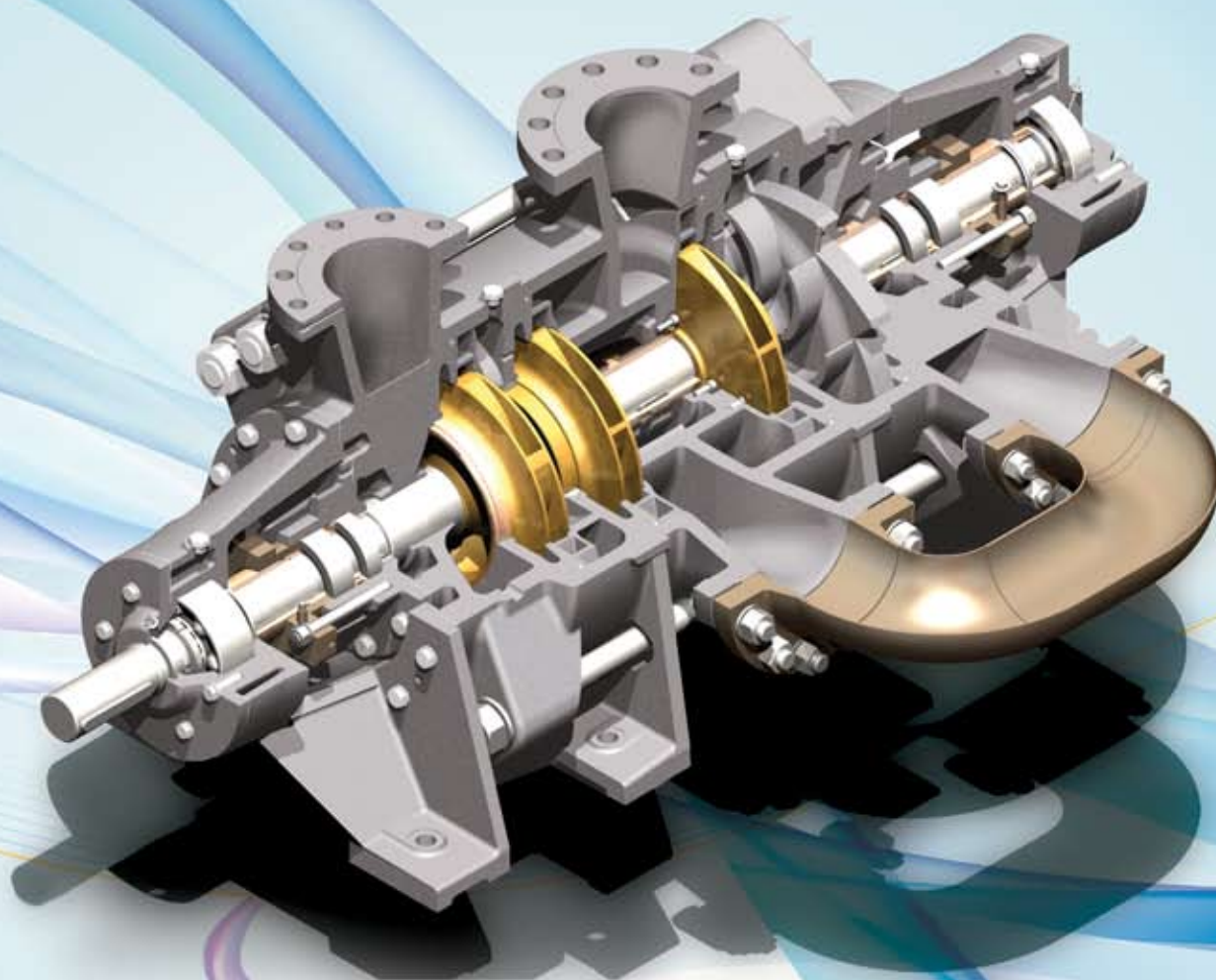




PUMP YOUR WAY TO SUCCESS



## MULTISTAGE CENTRIFUGAL PUMPS - MS,DMS,MSTD,MSS

Catalog 2009



MZT Pumpi a.d is one of the leading manufacturers of industrial pumps in the region of South-East Europe. With its extensive experience of more than 60 years, justified with existence of broad product range, it continuously strives to satisfy the utmost needs of the customer.

The key elements to survive in this globalized market are flexibility towards market changes and ability to innovate-both in product designs as well as business processes. By following the worldwide development in the pump industry, our staff constantly faces with the growing challenge to keep abreast of the numerous innovations in pump designs and this is justified by having a separate R&D department.

The basic objective of MZT Pumpi is expanding the business partnerships and building the brand name of our products worldwide. All of our employees live up to our motto: "Pump your way to success".

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## GENERAL DATA

### Technical data:

Capacity:	up to 200 l/s
Head:	up to 360 m
Temperature:	up to 160°C

### Pump type key

Example:	30	MSD	80	-3
Impeller diameter in cm	_____	_____	_____	_____
design code	_____	_____	_____	_____
rotation face	_____	_____	_____	_____
discharge DN in mm	_____	_____	_____	_____
stages	_____	_____	_____	_____

### Design:

The MS are process duty multistage centrifugal pumps in ring section design, designed(produced) for moderate to high pressure heads available in five basic sizes. The MS pumps are offered with suction and discharge flange according DIN standard, depending on the pressures and number of stages involved.

The suction and pressure bodies can be turned for 90° in both directions, which enables the pumps to be mounted and adapted to the requirements of the installation. Axial thrust is relieved by means of a drum mounted on the shaft inside the discharge hull, rest of the thrust bears one of the roller bearings.

The impellers are centrifugal of closed type identically fixed to a shaft, supported on two roller bearings.

The shaft sealing in standard execution is executed by means of soft cord packing and the shaft is protected by hardened sleeves. As option mechanical seals are available.

### Applications:

Hydraulic performance extends to 100 l/s capacity and 300 meters head, which compare them to all favorite pump types and makes them ideally suited for the most demanding industrial and process services.

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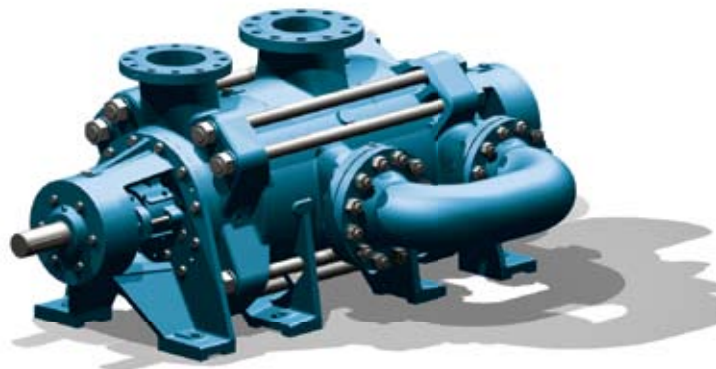
The MS pumps in standard executions with soft seal packing can be used for handling water up to temperature of 80°C, then as water supply pumps, irrigation and drainage pumps in agriculture, water circulation pumps, in mining...

In the version with mechanical seal they can, (besides the used listed above), be applied in oil industry for the transport of thin oils, petroleum products up to the temperature of 80°C.

In special version these pumps can be used in chemical and process industry. However, in each particular case of pump selection, especially, if they are intended for special purposes, it is necessary to consult the manufacturer.

### Standard material executions:

- Pump case, shaft bearing bracket and impeller in cast iron.
- Pump shaft and shaft sleeves in stainless steel.
- Other material combinations are available on special demand or due to the properties of the liquid.



#### Flexible coupling:

- Standard version
- Spacer coupling

#### Bearing assembly with shaft:

The bearings are located in two bearing housings, which are positioned at both sides of the pump lubricated with nipple greasers. Depending on pump size deep groove ball bearings or double-row roller bearing is used at drive end, and a pair of matched angular contact ball bearing or cylindrical roller at the non-drive end. The protection ring on the shaft prevents liquid from entering the bearing housing.

#### Shaft sealing:

The shaft sealing could be arranged by soft packing or mechanical seal. In soft packing arrangements the shaft is protected by replaceable stainless sleeve while the stuffing box is furnished with lantern ring for introduction of cooling liquid into the packing.

On special demand the pumps could be furnished with mechanical seal in accordance with the characteristics of the liquid and the operating conditions.

#### Wear Rings

MS pumps have replaceable wear rings, providing consistent pump efficiency. The inner diameter of the MS pumps wear rings matches the impeller inlet diameter, which produces undisturbed flow conditions. Cylindrical clearance between impeller and wear ring is of a special design which reliability and effectiveness have been well proven. It has two or three close-contact surfaces between impeller and ring. Leakage is therefore limited, which ensures high efficiency and no fibres trapped in the clearance.

#### Range of program:

A wide variety of models makes it possible to select a pump to suit any fields of the industry and the agriculture. Proper choice is important in order to minimize the energy consumption and to assure long trouble-free operation of the pump.

#### Performance

The performance curves are given in the diagrams below, indicating: Q-H, Q-P, Q-efficiency, Q-NPSH. MS pumps can operate continuously in whole the operating region within the motor power limitation.

All the pumps can run at different speeds, depending on the size of the pump and the customer requirements. For higher speeds it is necessary to check the pump limitation.

The performance curves are based on a liquid density of 1000 kg/m<sup>3</sup>. For working fluid density below or above 1000 kg/m<sup>3</sup> it is necessary to multiply the power.

#### Drive

The drive is generally a direct coupled electric motor, using a flexible coupling. For sizing of the drivers you have to add a minimum of 10 to 15% to the pump absorbed power, depending on operating condition, eventually a higher could necessary.

## GENERAL DATA– Design of MS pump

### Shaft

Stainless steel shaft, precisely machined and ground

### Casing

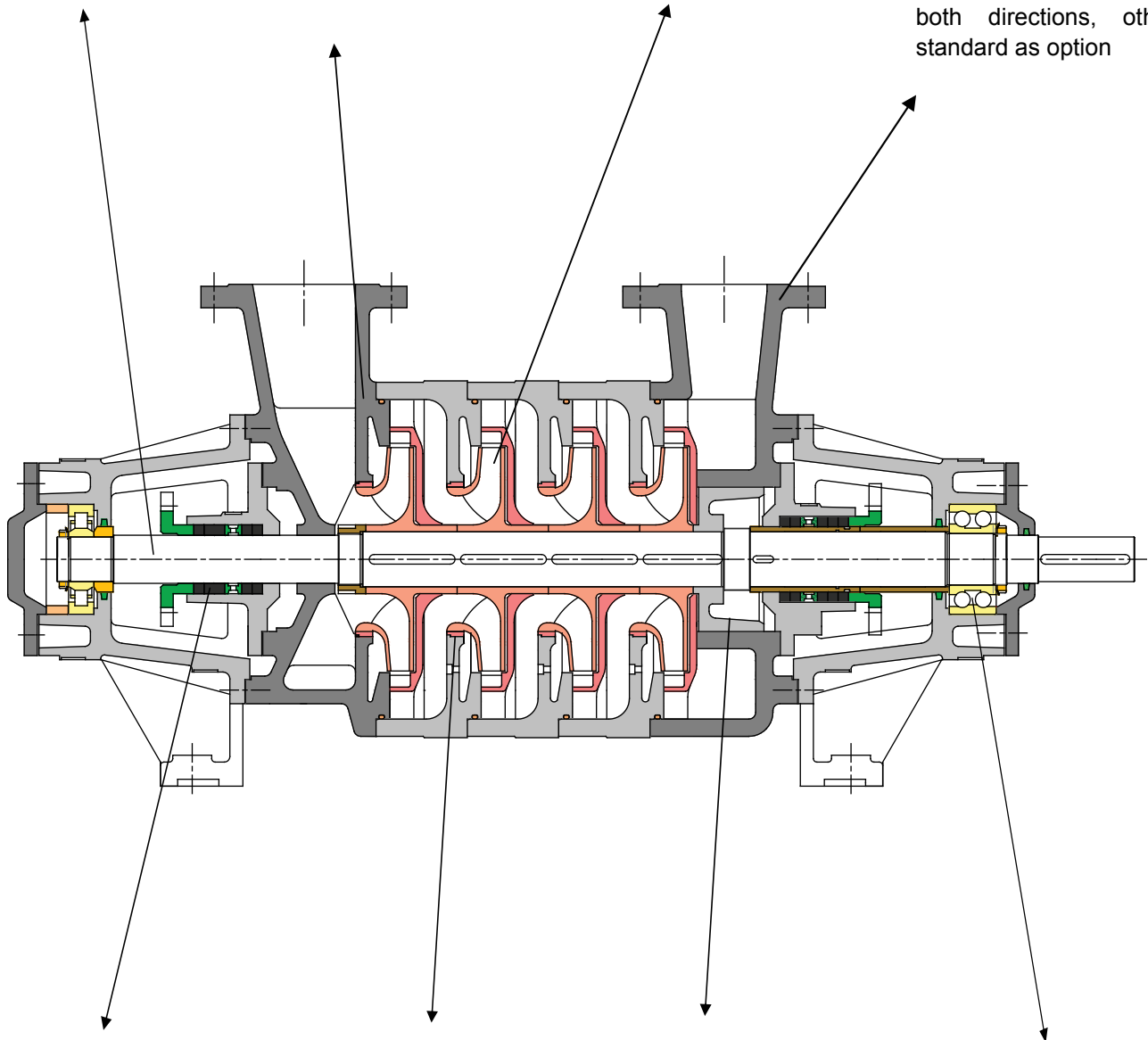
High quality casings available in grey iron as standard, other material combinations as option

### Impellers

Fully shrouded impellers statically and dynamically balanced

### Flanges

Suction and discharge flanges designed according DIN standard, can be turned for 90° in both directions, other standard as option



### Shaft sealing

Soft cord packing as standard mechanical seals as option

### Wear rings

Replaceable wear rings fitted to casing as standard, through the pump life efficiency is maintained

### Axial thrust

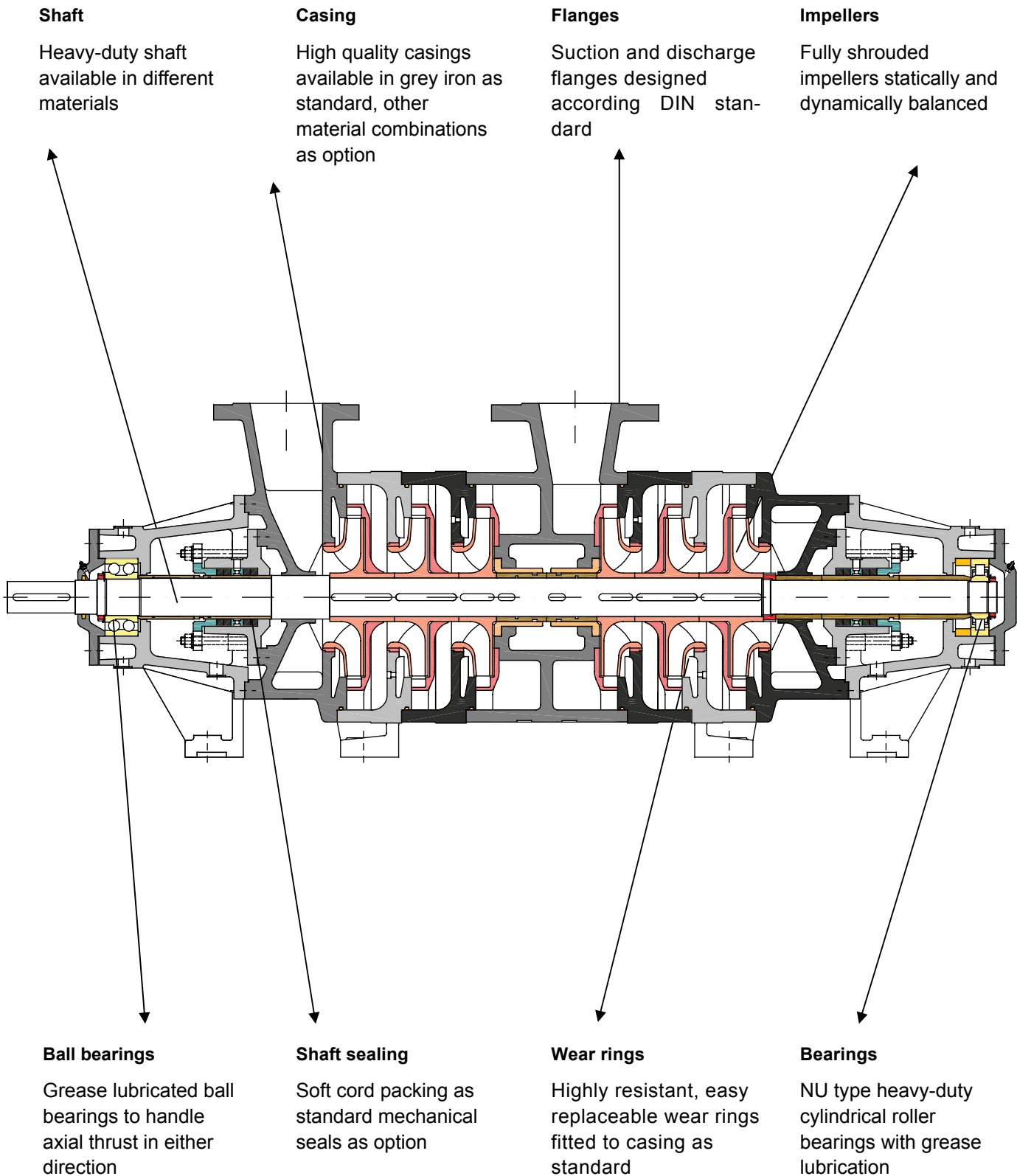
Axial thrust is relived by means of drum, the rest of the axial force bears the roller bearings

### Ball bearings

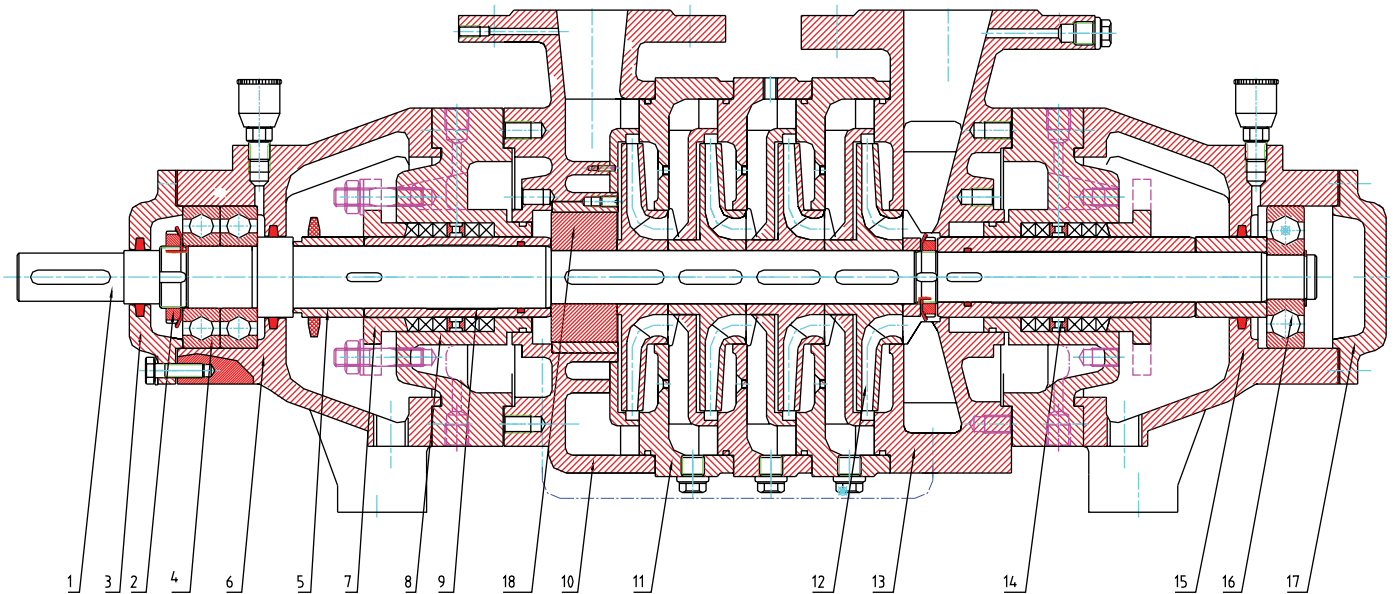
Grease lubricated ball bearings to handle axial thrust in either direction



## GENERAL DATA— Design of DMS pump



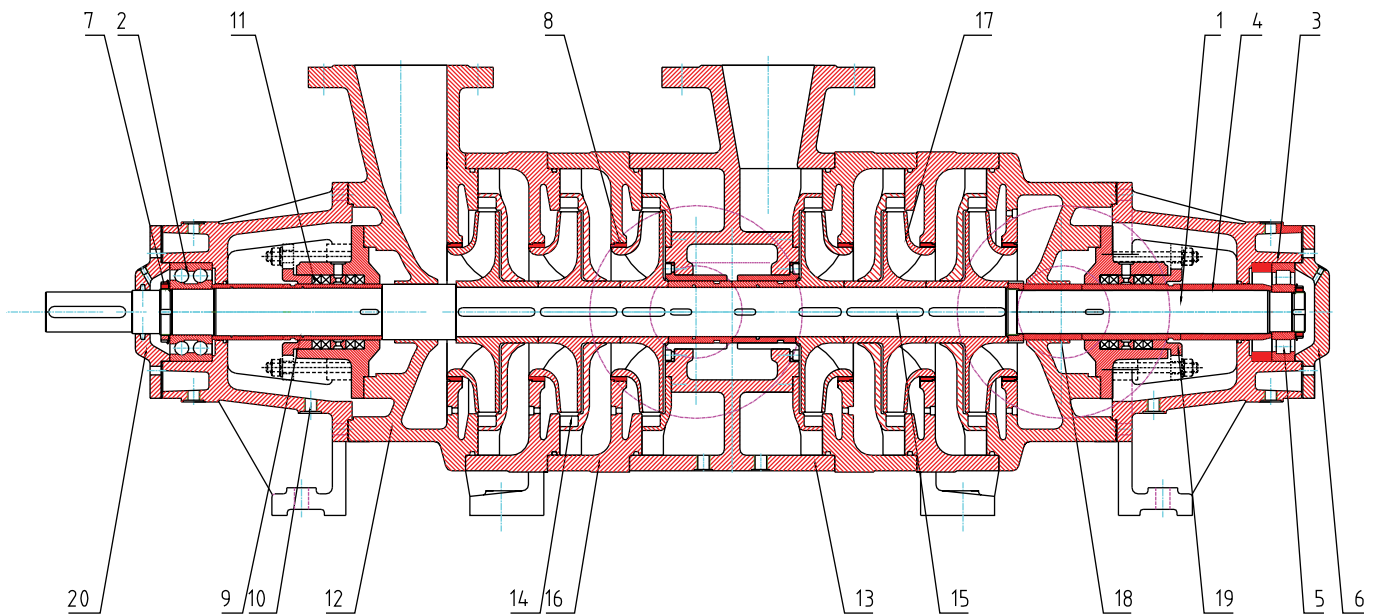
**GENERAL DATA - Sectional drawing of MS**



Pos.	Description	Pos.	Description
1.	Shaft	10.	Discharge casing
2.	Lock nut	11.	Stage casing
3.	Bearing cover	12.	Impeller
4.	Deep groove ball bearing	13.	Suction casing
5.	Spacer sleeve	14.	Lantern ring
6.	Bearing housing	15.	Bearing housing
7.	Stuffing box gland	16.	Ball bearing
8.	Stuffing box packing	17.	Bearing end cover
9.	Shaft protecting sleeve	18.	Balance drum

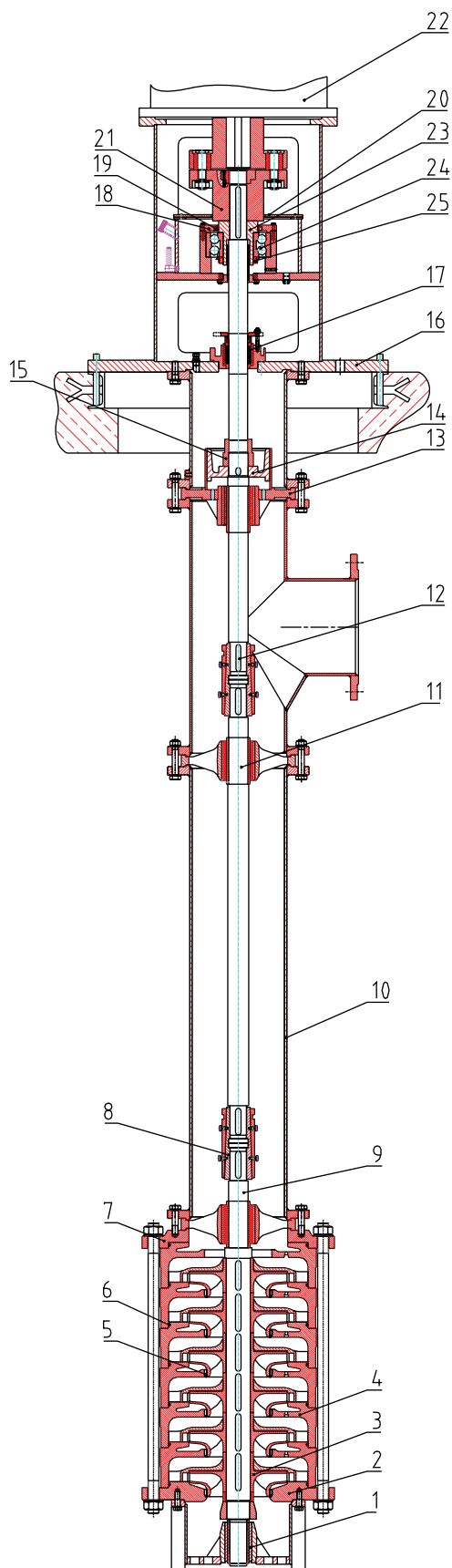


## GENERAL DATA - Sectional drawing of DMS



Pos.	Description	Pos.	Description
1.	Shaft	11.	Stuffing box packing
2.	Angular contact ball bearing	12.	Suction casing
3.	Bearing housing	13.	Discharge casing
4.	Spacer sleeve	14.	Diffuser
5.	Cylindrical roller bearing	15.	Key
6.	Bearing end cover	16.	Stage casing
7.	Lock nut	17.	Impeller
8.	Wear ring	18.	Shaft protecting sleeve
9.	Shaft protecting sleeve	19.	Stuffing box gland
10.	Leakage drain	20.	Bearing cover

## GENERAL DATA - Sectional drawing of VMS



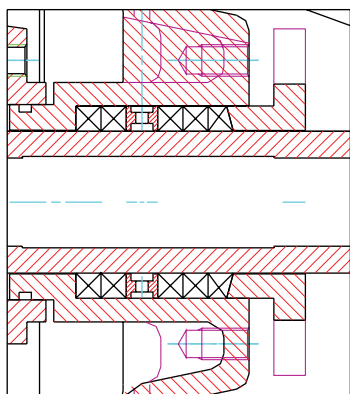
Pos.	Description
1.	Lower slide bearing
2.	Lower fastening flange
3.	Impeller
4.	Intermediate stage
5.	Wear ring
6.	O-ring
7.	Upper fastening flange
8.	Shaft coupling
9.	Shaft
10.	Flanged pipe
11.	Bearing retainer
12.	Shaft key
13.	Balance drum retainer
14.	Balance drum
15.	Fastening nut
16.	Motor frame
17.	Soft packing
18.	Bearing cover
19.	Lip seal
20.	Separable cover
21.	Coupling half
22.	Drive
23.	Bearing carrier
24.	Double row ball bearing
25.	Lock nut

This technical drawing is a vertical cross-section of a multi-stage centrifugal pump assembly. The central component is a vertical shaft (1) that passes through the center of the entire unit. At the top, the shaft is supported by a bearing (2) housed within a support structure (3). Below the bearing, the shaft passes through a series of stages. Each stage consists of an impeller (4) mounted on the shaft, which is surrounded by a volute casing (5). The impellers are arranged in series, with the discharge of one stage feeding into the inlet of the next. The casing is divided into sections by horizontal partitions (6, 11, 12, 17, 18). The shaft is supported by bearings (7, 8, 9, 10, 13, 14, 15, 16, 19, 20, 21, 22) at various points along its length. The entire assembly is housed within a large, complex frame (23) that provides structural support and protection. The drawing uses standard engineering conventions, with hatching to indicate different materials and dashed lines to show hidden internal features.

Pos.	Description
1.	Coupling
2.	Key
3.	Cord
4.	Bearing cover
5.	Bearing
6.	Drive base
7.	Lock nut
8.	Cord
9.	Gland
10.	Soft packing
11.	Shaft
12.	Suction casing
13.	Drum
14.	Shaft protecting sleeve
15.	O-ring
16.	Impeller
17.	Stage casing
18.	Discharge casing
19.	Diffuser
20.	Key
21.	Pump base
22.	Lock nut
23.	Drive

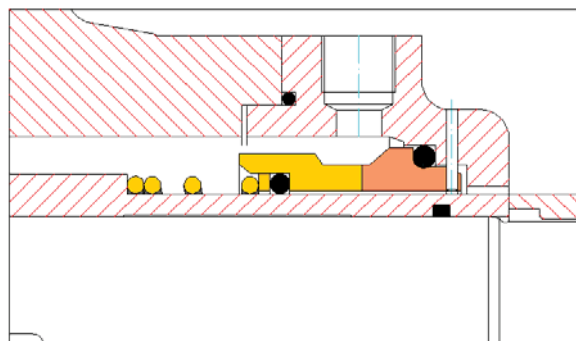
## GENERAL DATA

### Stuffing boxes



- Gland packing with or without lanternring. Product recirculation or external sealing liquid can be used.

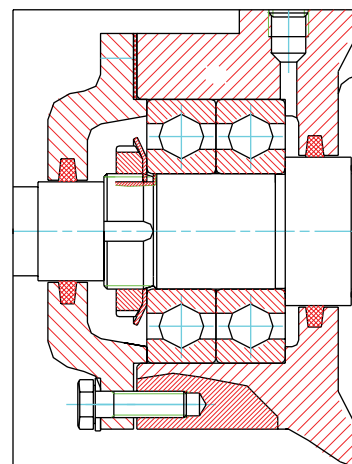
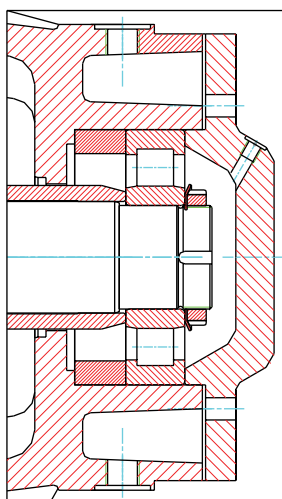
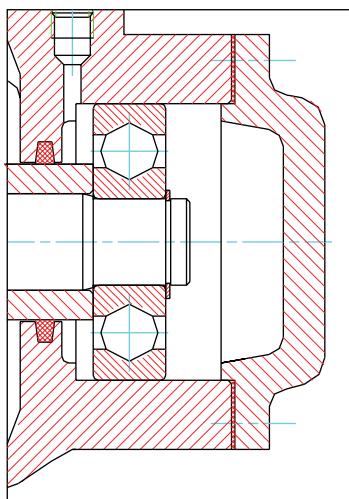
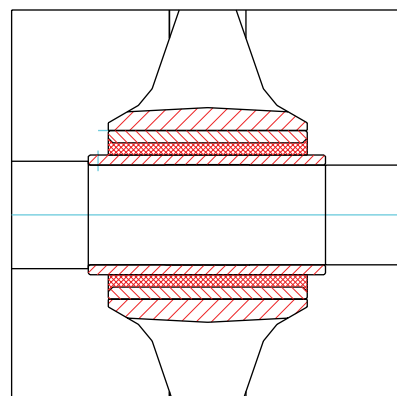
### Single mechanical seal shaft



- Standard mechanical seal for clean or slightly contaminated liquids at medium inlet pressures.

### Bearing Bracket

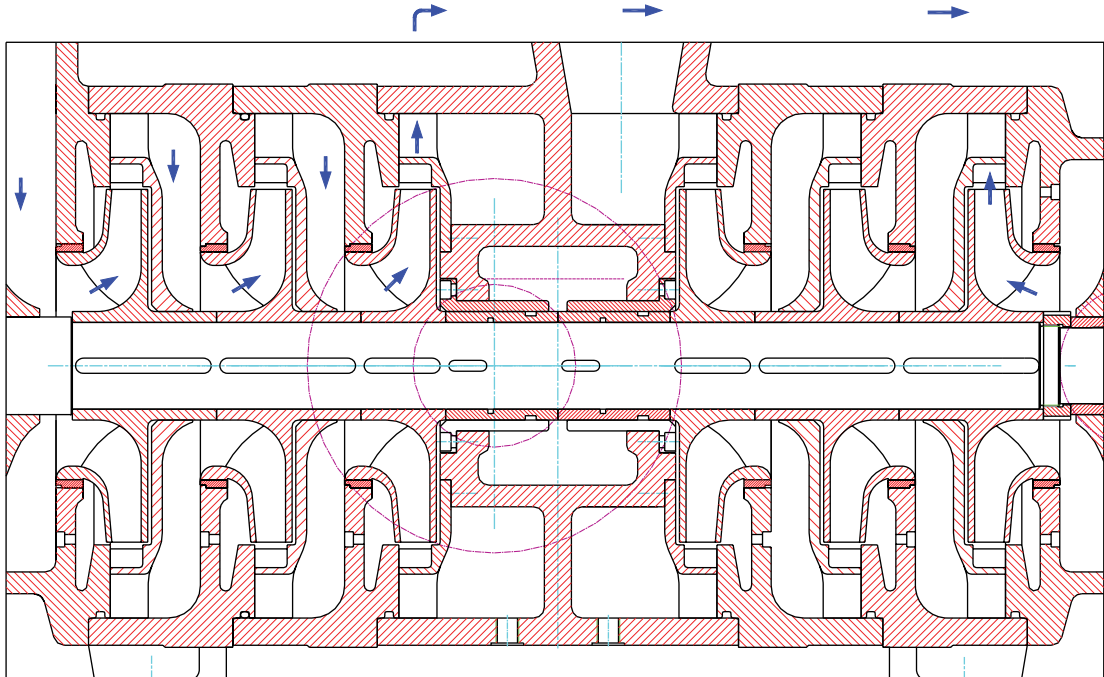
- Depending on pump size, a deep groove double row ball bearings is used at the drive end, or a cylindrical roller bearing and a pair of matched angular contact ball bearings at the non-drive end. The intermediate bearings are used at vertical designed pumps. The bearings are protected against moisture and dirt ingress.



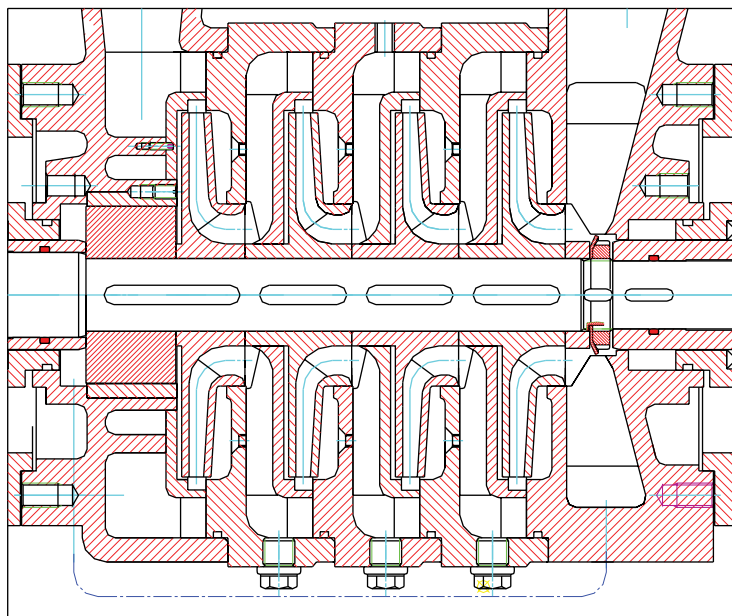
## GENERAL DATA - Sectional drawing of MSS

### Stuffing boxes

- One way to balance the axial thrust in a multistage pumps is to arrange the impellers in opposed direction. With an even number of impellers, such an arrangement can eliminate the axial thrust completely.



- Another way to balance the axial thrust is to use a balancing drum. In such case, the axial thrust is being taken up by a single drum. This device is subjected to total pressure developed by the pump on one of its faces. On its other face, it is subjected to the suction pressure at the inlet of the first impeller.



## GENERAL DATA

### Pump material list

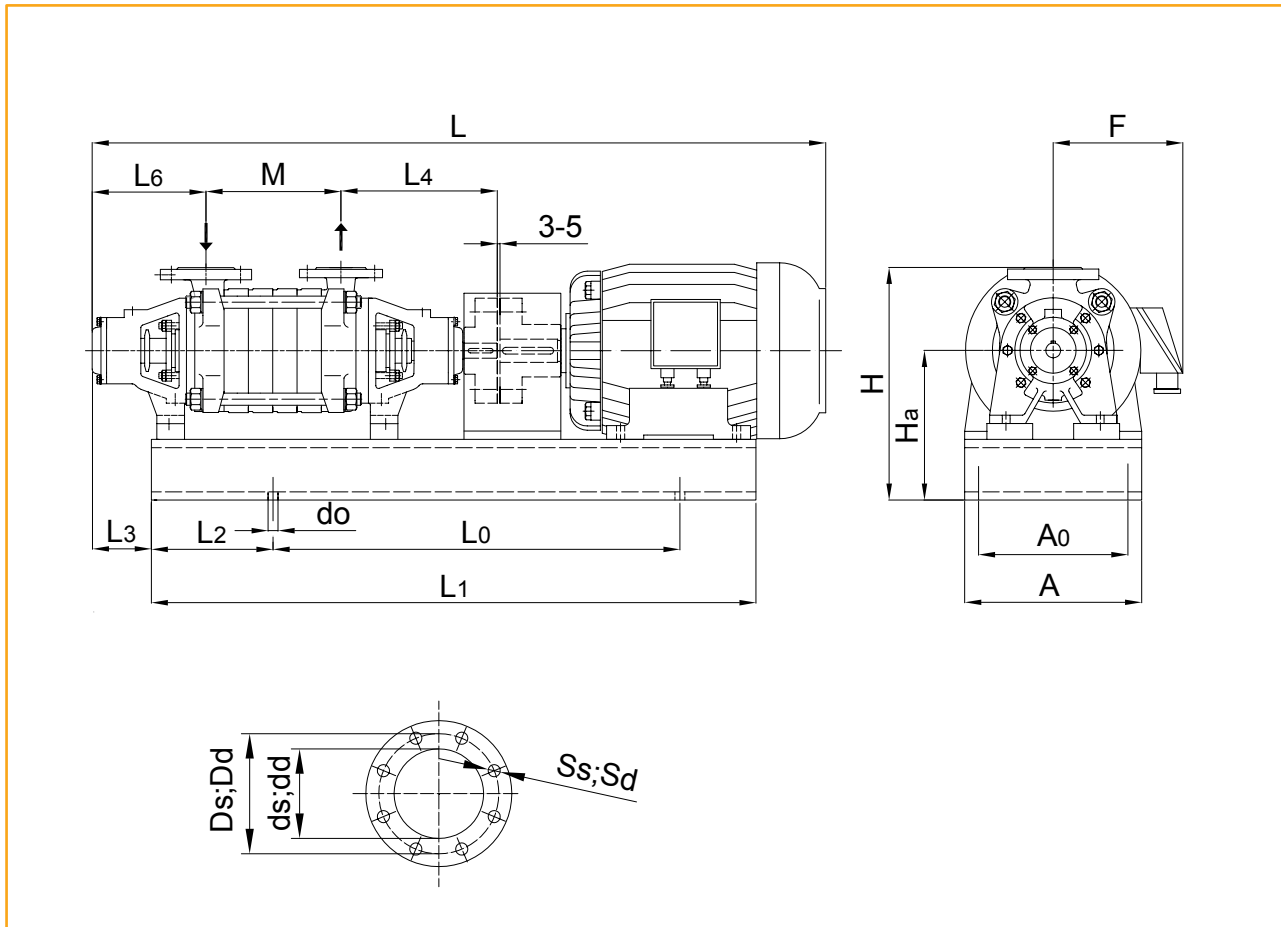
Pos.	Component	Material	Optional
1.	Pump case	GG	GGG,CS,SS,DSS, SDSS,BR
2.	Impeller	BR,GG	GGG,CS,SS,DSS, SDSS,BR
3.	Shaft	SS	SS,DSS
4.	Shaft sleeve	SS	SS,DSS,SDSS

#### Legend:

GG	-	Cast iron
GGG	-	Ductile iron
CS	-	Cast steel
SS	-	Stainless steel
DSS	-	Duplex stainless steel
SDSS	-	Super duplex stainless steel
BR	-	Bronze



## TEHNICAL DATA - Main dimensions of MSD



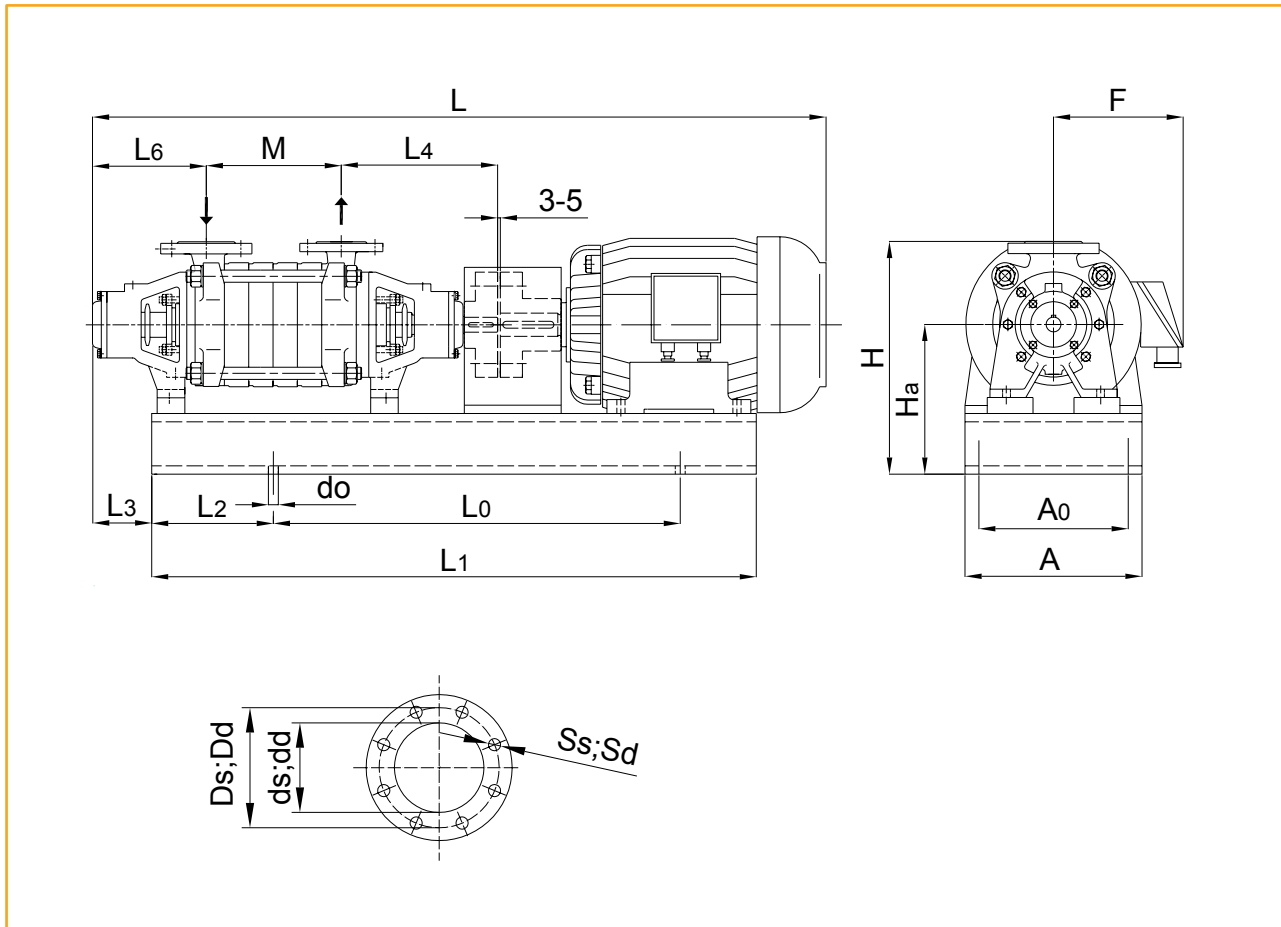
Pump size	rpm	kW	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>6</sub>	L <sub>0</sub>	M	A	A <sub>0</sub>	H	H <sub>a</sub>	F	d <sub>0</sub>	D <sub>s</sub>	d <sub>s</sub>	D <sub>d</sub>	dd	zs/s	zd/s
15MSD40-2	2900	5.5	1040	820	150	120	260	210	580	121	275	225	395	242	214	14	125	50	110	40	4/18	4/18
15MSD40-3		7.5	1085	860	170	120	260	210	590	165	275	225	395	242	214	14	125	50	110	40	4/18	4/18
15MSD40-4		11	1275	1030	200	120	260	210	700	209	320	265	450	290	258	18	125	50	110	40	4/18	4/18
15MSD40-5		15	1320	1075	220	120	260	210	735	253	320	265	450	290	258	18	125	50	110	40	4/18	4/18
15MSD40-6		15	1365	1130	240	120	260	210	740	297	320	265	450	290	258	18	125	50	110	40	4/18	4/18
15MSD40-7		18.5	1455	1200	260	120	260	210	790	341	320	265	450	290	258	18	125	50	110	40	4/18	4/18
15MSD40-8		22	1520	1255	280	120	260	210	825	385	360	295	530	355	279	18	125	50	110	40	4/18	4/18
15MSD40-9		22	1560	1300	305	120	260	210	850	429	360	295	530	355	279	18	125	50	110	40	4/18	4/18
15MSD40-10		30	1700	1420	325	120	260	210	905	473	400	335	570	370	314	18	125	50	110	40	4/18	4/18
15MSD40-11		30	1745	1465	355	120	260	210	925	517	400	335	570	370	314	18	125	50	110	40	4/18	4/18
15MSD40-12		30	1790	1510	370	120	260	210	950	561	400	335	570	370	314	18	125	50	110	40	4/18	4/18

**TEHNICAL DATA - Main dimensions of MSD**

Pump size	rpm	kW	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>6</sub>	L <sub>0</sub>	M	A	A <sub>0</sub>	H	Ha	F	d <sub>0</sub>	Ds	ds	Dd	dd	zs/s	zd/s
15MSD40-2	1450	0.75	870	740	150	120	260	210	455	121	260	200	412	262	130	14	125	50	110	40	4/18	4/18
15MSD40-3		1.1	945	800	170	120	260	210	480	165	260	200	412	262	160	14	125	50	110	40	4/18	4/18
15MSD40-4		1.5	1010	870	200	120	260	210	510	209	260	200	412	262	160	14	125	50	110	40	4/18	4/18
15MSD40-5		2.2	1100	945	220	120	260	210	540	253	260	200	412	262	174	14	125	50	110	40	4/18	4/18
15MSD40-6		2.2	1145	990	240	120	260	210	585	297	260	200	412	262	174	14	125	50	110	40	4/18	4/18
15MSD40-7		3	1180	1035	260	120	260	210	600	341	260	200	412	262	174	14	125	50	110	40	4/18	4/18
15MSD40-8		3	1235	1080	280	120	260	210	625	385	260	200	412	262	174	14	125	50	110	40	4/18	4/18
15MSD40-9		3	1280	1125	305	120	260	210	645	429	260	200	412	262	174	14	125	50	110	40	4/18	4/18
15MSD40-10		4	1330	1175	325	120	260	210	675	473	260	200	412	262	199	14	125	50	110	40	4/18	4/18
15MSD40-11		4	1375	1220	355	120	260	210	690	517	260	200	412	262	199	14	125	50	110	40	4/18	4/18
15MSD40-12		4	1420	1265	370	120	260	210	720	561	260	200	412	262	199	14	125	50	110	40	4/18	4/18

Pump size	rpm	kW	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>6</sub>	L <sub>0</sub>	M	A	A <sub>0</sub>	H	Ha	F	d <sub>0</sub>	Ds	ds	Dd	dd	zs/s	zd/s
30MSD65-2	1450	15	1679	1332	270	197	470	380	900	191	610	570	740	440	258	18	160	80	145	65	8/18	8/18
30MSD65-3		22	1810	1448	310	197	470	380	960	266	610	570	740	440	258	18	160	80	145	65	8/18	8/18
30MSD65-4		30	1951	1568	350	197	470	380	1000	341	610	570	740	440	278	18	160	80	145	65	8/18	8/18
30MSD65-5		37	2074	1670	380	197	470	380	1100	416	610	570	740	440	314	18	160	80	145	65	8/18	8/18
30MSD65-6		45	2175	1770	420	197	470	380	1125	491	610	570	740	440	314	18	160	80	145	65	8/18	8/18
30MSD65-7		55	2330	1910	460	197	470	380	1175	566	610	570	740	440	342	18	160	80	145	65	8/18	8/18
30MSD65-8		75	2405	1985	500	197	470	380	1215	641	650	610	740	440	342	18	160	80	145	65	8/18	8/18
30MSD65-9		75	2480	2060	530	197	470	380	1290	716	650	610	740	440	342	18	160	80	145	65	8/18	8/18
30MSD65-10		75	2555	2135	570	197	470	380	1365	791	710	670	760	460	368	18	160	80	145	65	8/18	8/18
30MSD65-11		90	2740	2335	600	197	470	380	1250	866	710	670	760	460	368	18	160	80	145	65	8/18	8/18
30MSD65-12		90	2815	2410	650	197	470	380	1325	941	710	670	760	460	368	18	160	80	145	65	8/18	8/18

## TEHNICAL DATA - Main dimensions of MSD



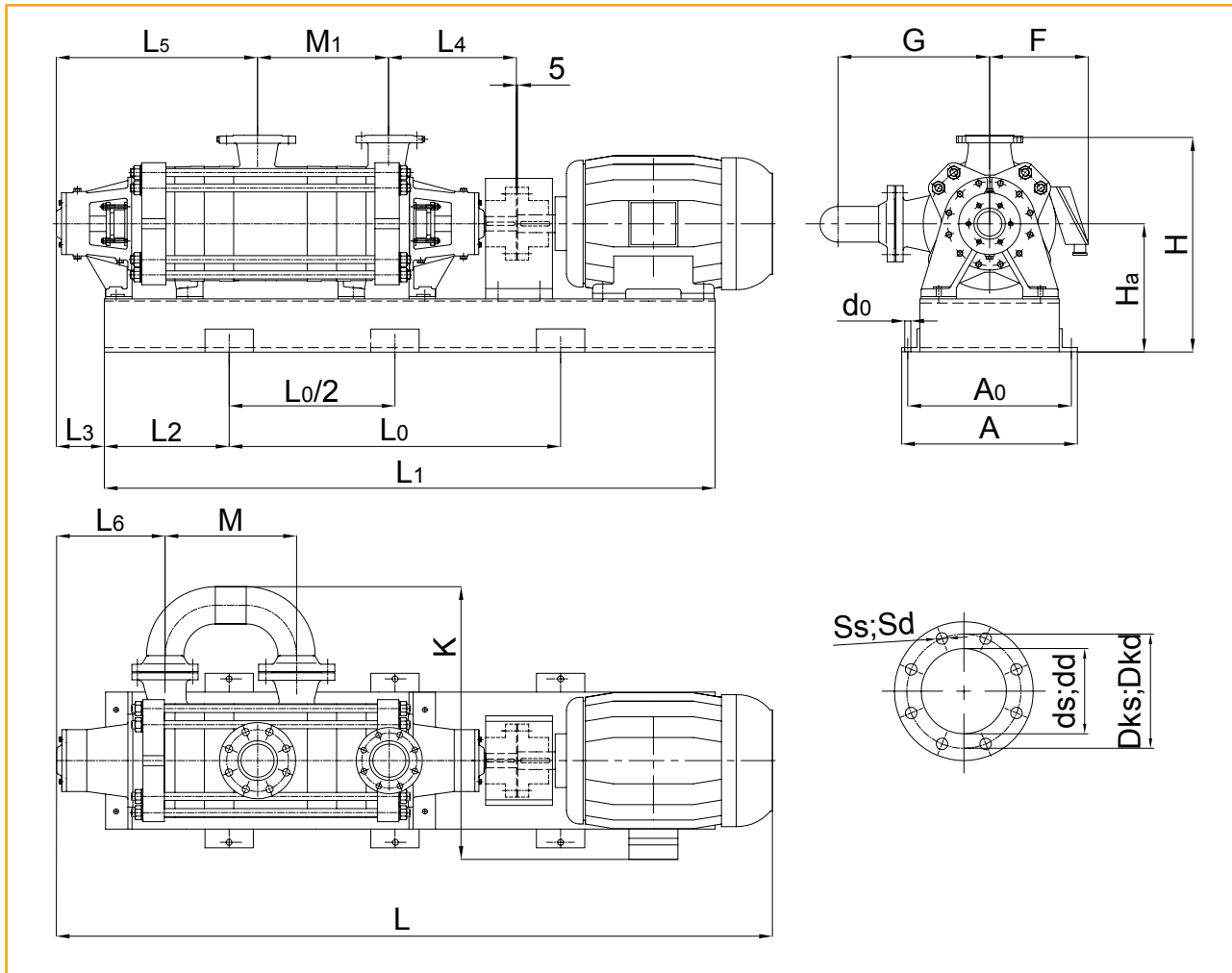
Pump size	rpm	kW	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>6</sub>	L <sub>0</sub>	M	A	A <sub>0</sub>	H	Ha	F	d <sub>0</sub>	Ds	ds	Dd	dd	zs/s	zd/s
30MSD80-2	1450	22	1705	1430	280	164	378	308	965	222	470	405	728	428	278	22	180	100	160	100	8/18	8/18
30MSD80-3		37	1905	1580	330	164	378	308	995	307	470	405	728	428	342	22	180	100	160	100	8/18	8/18
30MSD80-4		45	2000	1630	370	164	378	308	1120	392	470	405	728	428	342	22	180	100	160	100	8/18	8/18
30MSD80-5		55	2165	1835	410	164	378	308	1200	477	510	445	738	438	368	22	180	100	160	100	8/18	8/18
30MSD80-6		75	2315	1960	455	164	378	308	1260	562	570	505	783	483	395	27	180	100	160	100	8/18	8/18
30MSD80-7		75	2410	2045	490	164	378	308	1310	647	570	505	783	483	395	27	180	100	160	100	8/18	8/18
30MSD80-8		90	2540	2180	540	164	378	308	1370	732	570	505	783	483	395	27	180	100	160	100	8/18	8/18
30MSD80-9		110	2700	2310	580	164	378	308	1460	817	640	570	815	515	447	27	180	100	160	100	8/18	8/18
30MSD80-10		110	2785	2395	620	164	378	308	1510	902	640	570	815	515	447	27	180	100	160	100	8/18	8/18

## TEHNICAL DATA - Main dimensions of MSD

Pump size	rpm	kW	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>6</sub>	L <sub>0</sub>	M	A	A <sub>0</sub>	H	Ha	F	d <sub>0</sub>	Du	du	Dp	dp	zu/s	zp/s
30MSD100-2	1450	37	2062	1700	350	174	561	402	1000	289	740	690	895	550	337	27	220	125	190	100	8/26	8/23
30MSD100-3		55	2275	1900	350	174	561	402	1200	400	740	690	895	550	360	27	220	125	190	100	8/26	8/23
30MSD100-4		75	2452	2055	350	174	561	402	1355	511	740	690	895	550	379	27	220	125	190	100	8/26	8/23
30MSD100-5		90	2614	2215	350	174	561	402	1515	622	740	690	27	250	379	27	220	125	190	100	8/26	8/23
30MSD100-6		110	2803	2375	350	174	561	402	1675	733	740	690	27	250	427	27	220	125	190	100	8/26	8/23
30MSD100-7		132	2965	2540	350	174	561	402	1840	844	750	700	27	250	427	27	220	125	190	100	8/26	8/23
30MSD100-8		160	3076	2650	350	174	561	402	1950	955	750	700	27	250	447	27	220	125	190	100	8/26	8/23

Pump size	rpm	kW	L	L <sub>1</sub>	L <sub>0</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>6</sub>	M	A	A <sub>0</sub>	H	Ha	F	d <sub>0</sub>	Ds	ds	Dd	dd	zs/s	zd/s
33 MSD125-2	1450	75	2353	1923	1280	390	200	598	431	346	640	570	1010	610	395	27	250	150	240	125	8/26	8/30
33 MSD125-3		90	2537	2122	1370	460	200	598	431	479	640	570	1010	610	395	27	250	150	240	125	8/26	8/30
33 MSD125-4		132	2799	2325	1513	525	200	598	431	612	640	570	1010	610	447	27	250	150	240	125	8/26	8/30
33 MSD125-5		160	2932	2488	1580	595	200	598	431	745	640	570	1010	610	447	27	250	150	240	125	8/26	8/30
33 MSD125-6		200	3254	2766	1735	660	200	598	431	878	770	660	1035	635	580	27	250	150	240	125	8/26	8/30
33 MSD125-7		250	3387	2899	1800	730	200	598	431	1011	770	660	1035	635	580	27	250	150	240	125	8/26	8/30

## TEHNICAL DATA - Main dimensions of DMSD



Pump size	rpm	kW	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	L <sub>6</sub>	L <sub>0</sub>	M <sub>1</sub>	M	K	G	F	Ha	H	A	A <sub>0</sub>	d <sub>0</sub>	D <sub>j</sub> /D <sub>d</sub>	d <sub>s</sub> /d <sub>d</sub>	z <sub>s</sub> /z <sub>d</sub>	s <sub>s</sub> /s <sub>d</sub>
30DMSD80-6	1450	45	2307	1950	350	200	471	655	379	1200	351	351	860	518	342	460	760	610	570	18	160/160	80/80	8	18/18
30DMSD80-7		55	2458	2090	350	200	471	655	379	1300	426	351	886	518	368	460	760	610	570	18	160/160	80/80	8	18/18
30DMSD80-8		75	2533	2140	350	200	471	730	379	1450	426	426	913	518	395	460	760	650	610	18	160/160	80/80	8	18/18
30DMSD80-9		75	2675	2282	350	200	471	730	379	1550	501	426	913	518	395	480	780	650	610	18	160/160	80/80	8	18/18
30DMSD80-10		75	2750	2357	350	200	471	805	379	1650	501	501	913	518	395	480	780	710	670	18	160/160	80/80	8	18/18
30DMSD80-11		90	2876	2482	350	200	471	805	379	1750	576	501	913	518	395	500	800	710	670	18	160/160	80/80	8	18/18
30DMSD80-12		90	2951	2557	350	200	471	880	379	1850	576	576	913	518	395	500	800	710	670	18	160/160	80/80	8	18/18

## TEHNICAL DATA - Main dimensions

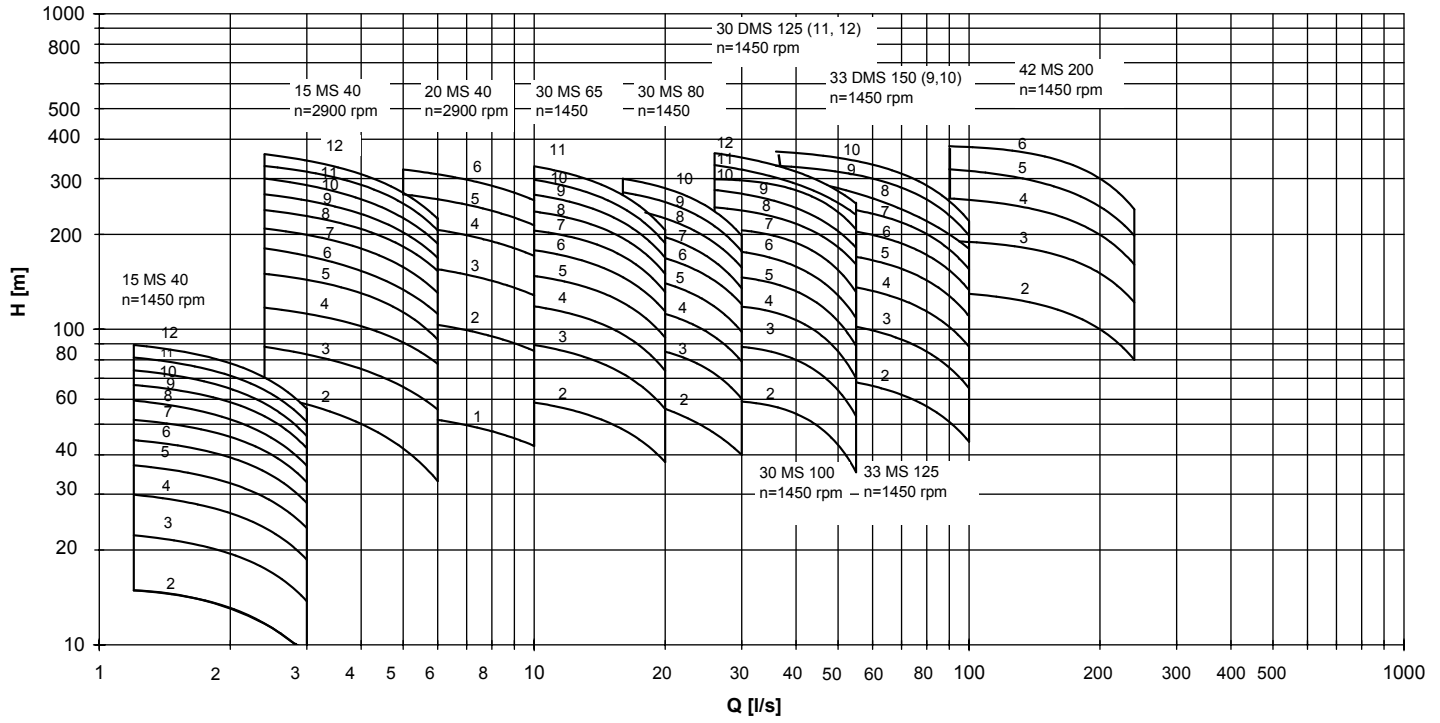
Pump size	rpm	kW	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	L <sub>6</sub>	L <sub>0</sub>	M <sub>1</sub>	M	K	G	F	Ha	H	A	A <sub>0</sub>	d <sub>0</sub>	D <sub>9</sub> /D <sub>d</sub>	d <sub>9</sub> /d <sub>d</sub>	Z <sub>9</sub> /Z <sub>d</sub>	S <sub>9</sub> /S <sub>d</sub>
30DMSD100-6	1450	75	2526	2185	350	180	460	682	366	1450	411	411	635	540	395	480	780	700	650	18	180/190	100/100	8	18/22
30DMSD100-7		75	2611	2270	350	180	460	767	366	1550	411	496	635	540	395	480	780	700	650	18	180/190	100/100	8	18/22
30DMSD100-8		90	2747	2403	350	180	460	767	366	1700	496	496	635	540	395	500	800	800	750	18	180/190	100/100	8	18/22
30DMSD100-9		110	2910	2545	350	180	460	852	366	1800	496	581	687	540	447	520	820	800	750	18	180/190	100/100	8	18/22
30DMSD100-10		110	2995	2630	350	180	460	852	366	1900	581	581	687	540	447	520	820	800	750	18	180/190	100/100	8	18/22

Pump size	rpm	kW	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	L <sub>6</sub>	L <sub>0</sub>	M <sub>1</sub>	M	K	G	F	Ha	H	A	A <sub>0</sub>	d <sub>0</sub>	D <sub>9</sub> /D <sub>d</sub>	d <sub>9</sub> /d <sub>d</sub>	Z <sub>9</sub> /Z <sub>d</sub>	S <sub>9</sub> /S <sub>d</sub>
30DMSD125-6	1450	110	2873	2460	550	196	558	723	413	1360	515	515	1092	665	427	550	900	800	750	24	220/240	125/125	8	26/26
30DMSD125-7		132	3065	2620	550	196	558	834	413	1520	515	626	1092	665	427	550	900	800	750	24	220/240	125/125	8	26/26
30DMSD125-8		160	3176	2730	550	196	558	834	413	1630	626	626	1112	665	447	550	900	800	750	24	220/240	125/125	8	26/26
30DMSD125-9		160	3287	2830	550	196	558	945	413	1730	626	737	1112	665	447	550	900	800	750	24	220/240	125/125	8	26/26
30DMSD125-10		200	3587	3100	550	196	558	945	413	2000	737	737	1245	665	580	550	900	800	750	24	220/240	125/125	8	26/26

Pump size	rpm	kW	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	L <sub>6</sub>	L <sub>0</sub>	M <sub>1</sub>	M	K	G	F	Ha	H	A	A <sub>0</sub>	d <sub>0</sub>	D <sub>9</sub> /D <sub>d</sub>	d <sub>9</sub> /d <sub>d</sub>	Z <sub>9</sub> /Z <sub>d</sub>	S <sub>9</sub> /S <sub>d</sub>
33DMSD150-6	1450	200	3394	2956	400	220	575	912	432	1800	596	596	1320	740	580	570	970	900	860	27	250/280	150/150	8	26/33
33DMSD150-7		250	3557	3079	400	220	575	1044	432	2000	596	729	1320	740	580	570	970	900	860	27	250/280	150/150	8	26/33
33DMSD150-8		250	3690	3212	400	220	575	1044	432	2000	729	729	1320	740	580	570	970	900	860	27	250/280	150/150	8	26/33
33DMSD150-9		315	4180	3700	400	220	575	1177	432	2500	729	862	1320	740	580	570	970	900	860	27	250/280	150/150	8	26/33
33DMSD150-10		315	4315	3850	400	220	575	1177	432	2500	729	862	1320	740	580	570	970	900	860	27	250/280	150/150	8	26/33

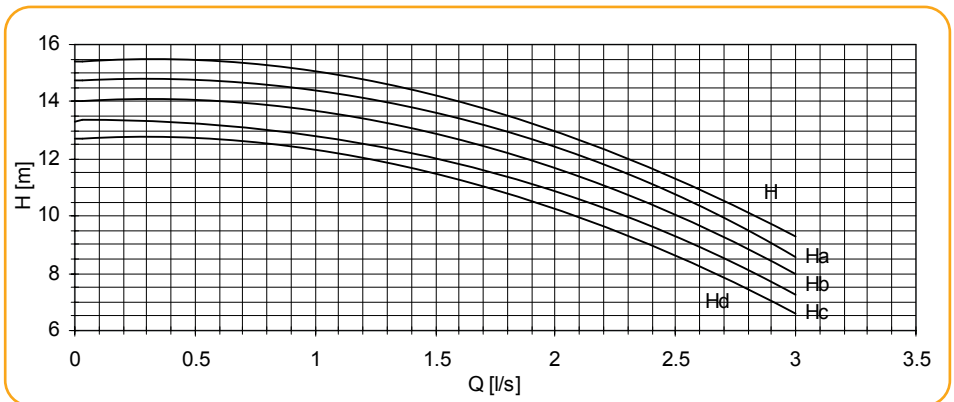


## General performance curves

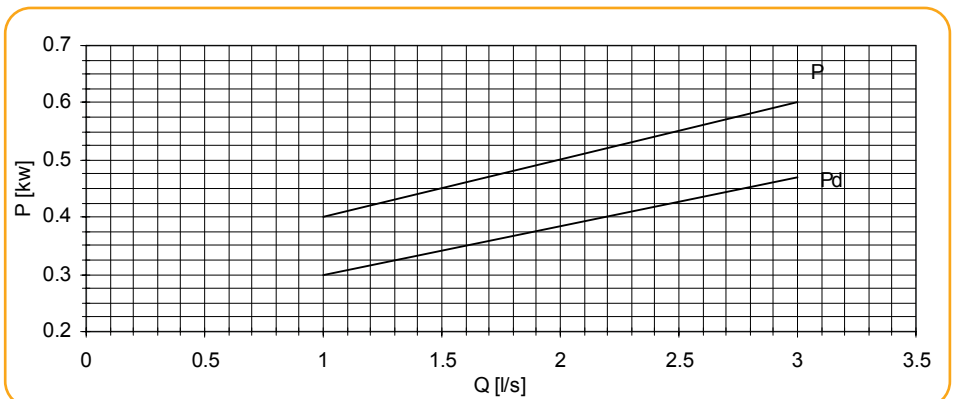


**Pump performance curves**

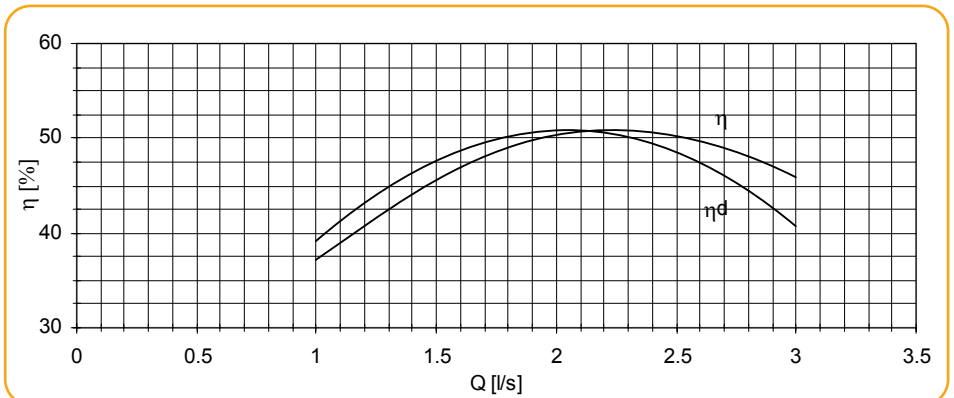
Total  
Differential  
Head



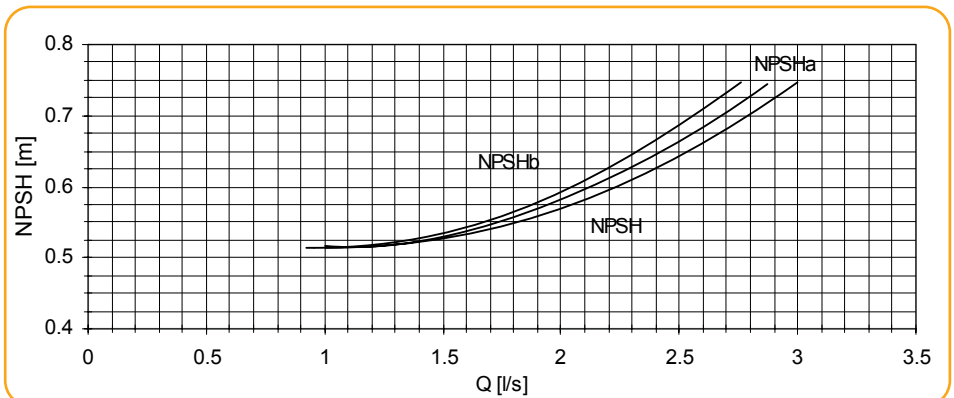
Power Input



Efficiency

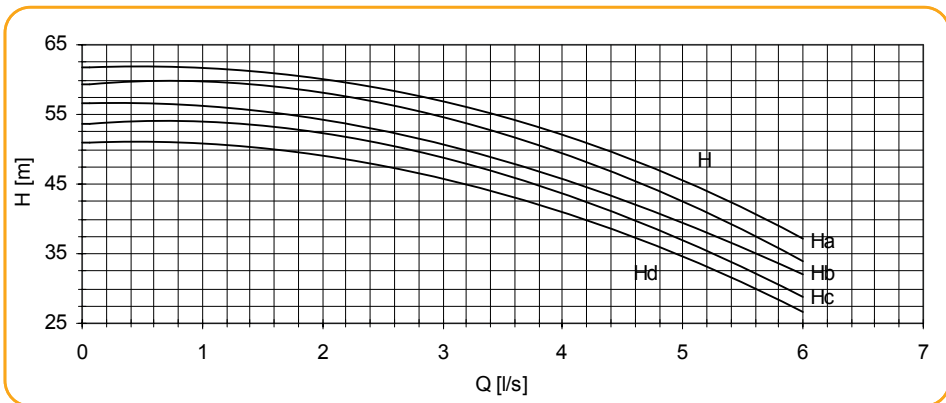


Net Positive  
Suction Head

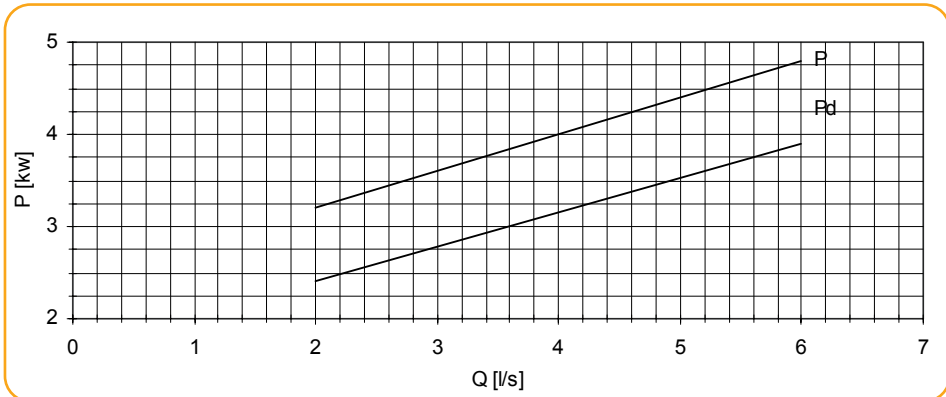


**Pump performance curves**

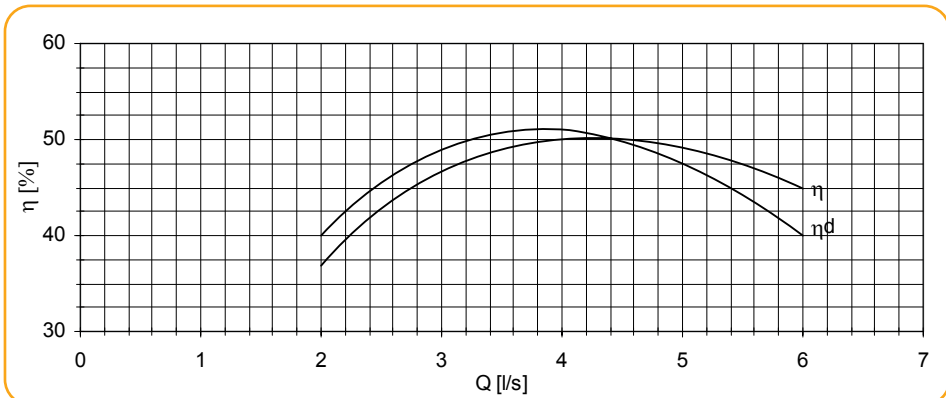
Total  
Differential  
Head



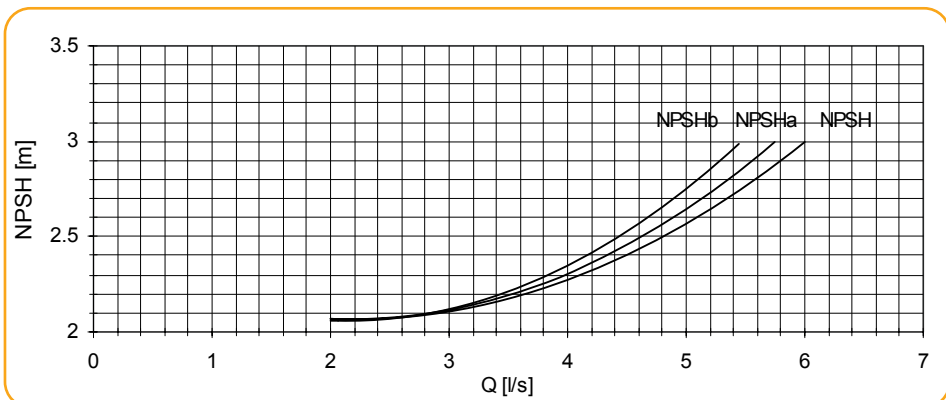
Power Input



Efficiency

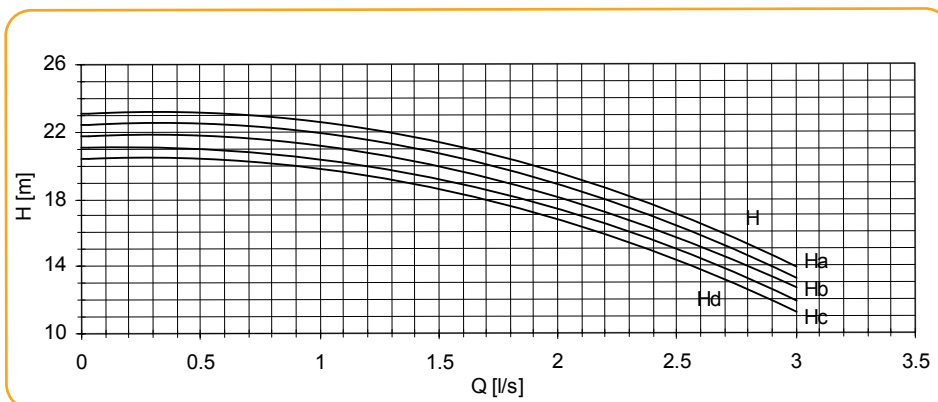


Net Positive  
Suction Head

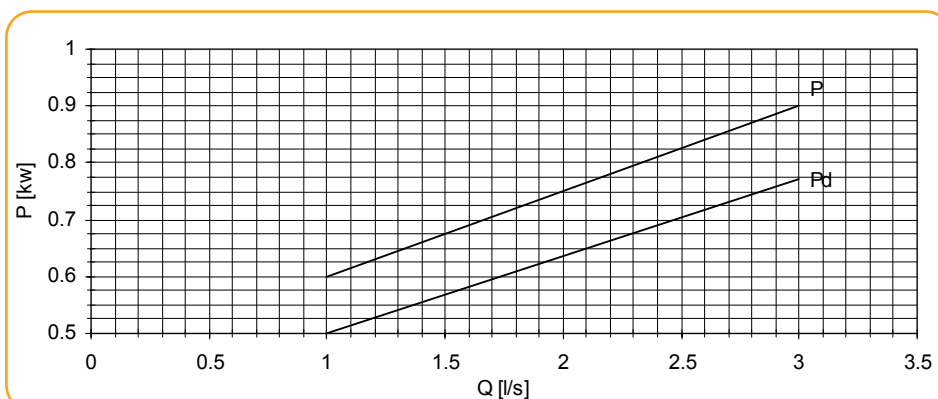


## Pump performance curves

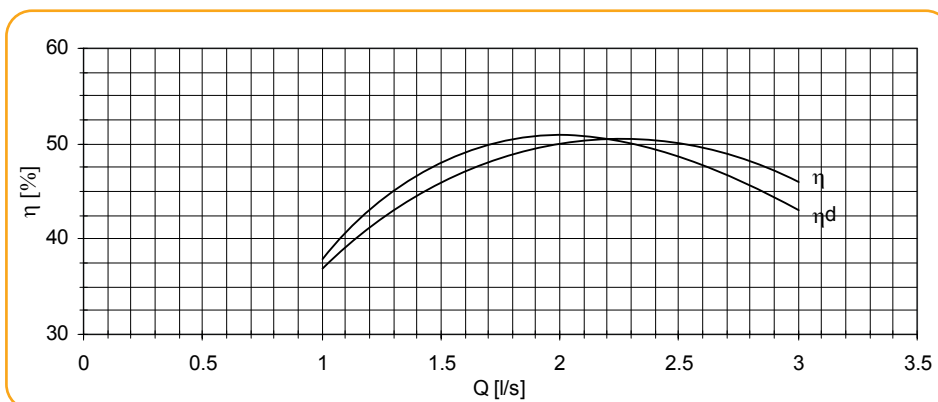
Total  
Differential  
Head



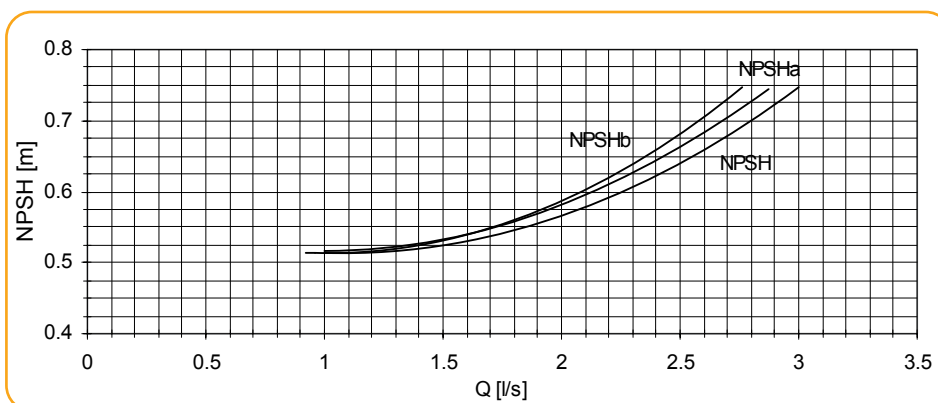
Power Input



Efficiency

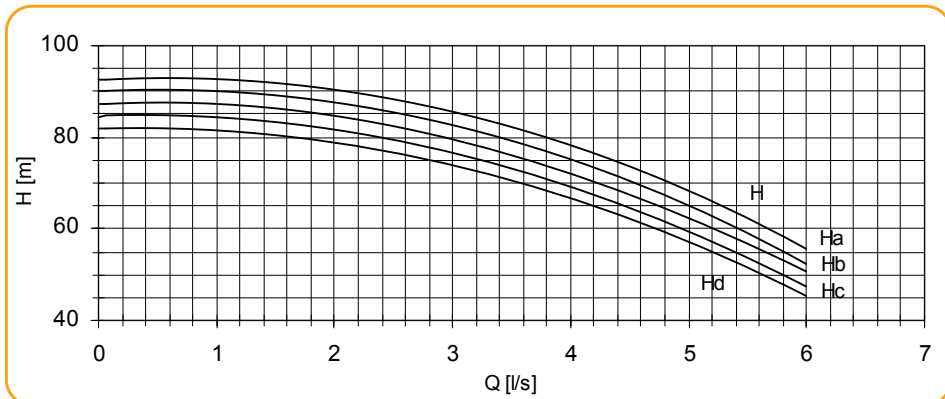


Net Positive  
Suction Head

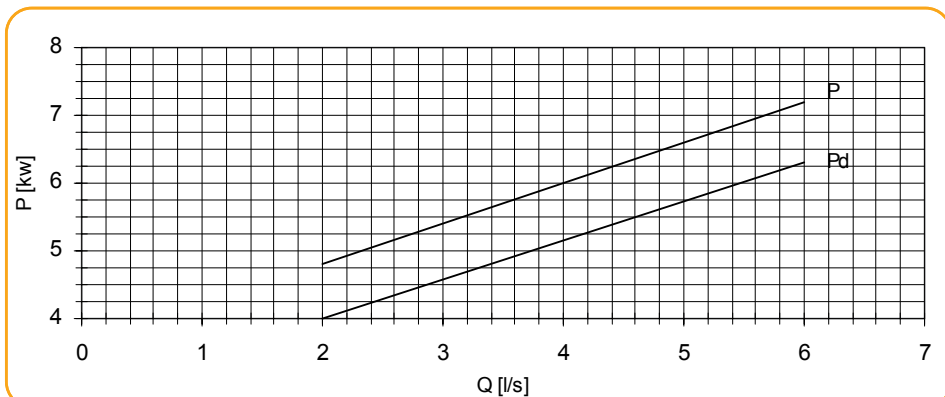


## Pump performance curves

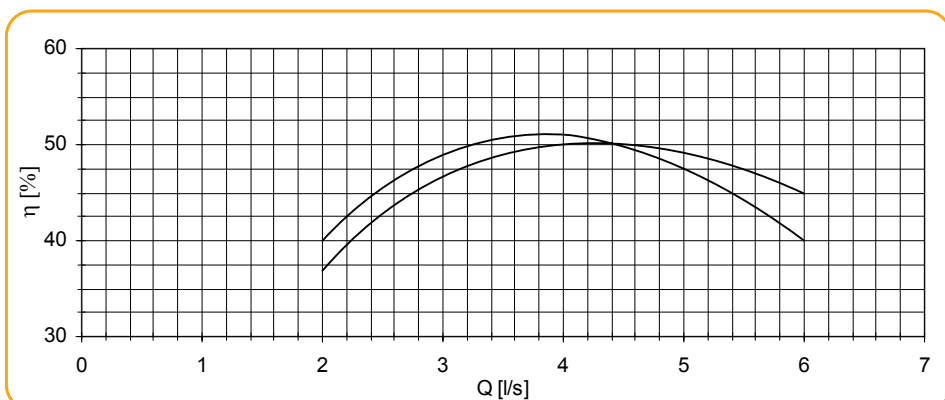
Total  
Differential  
Head



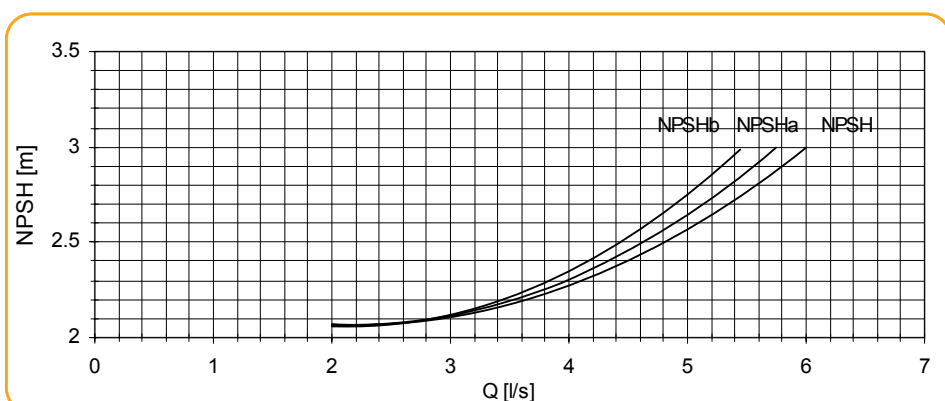
Power Input



Efficiency

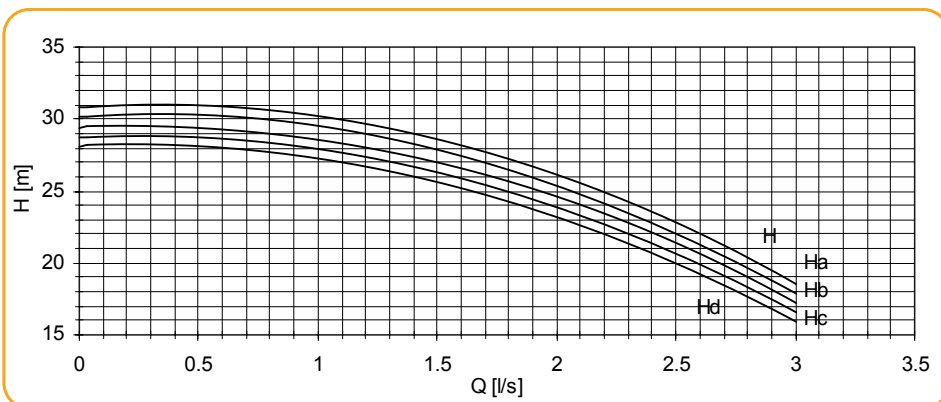


Net Positive  
Suction Head

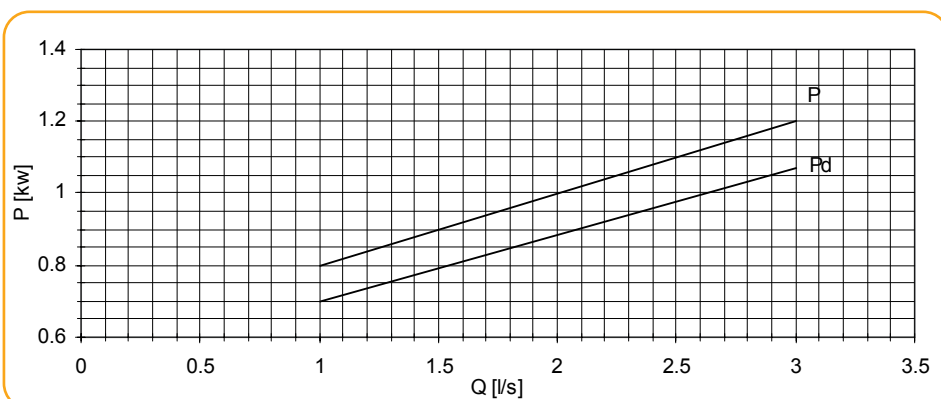


## Pump performance curves

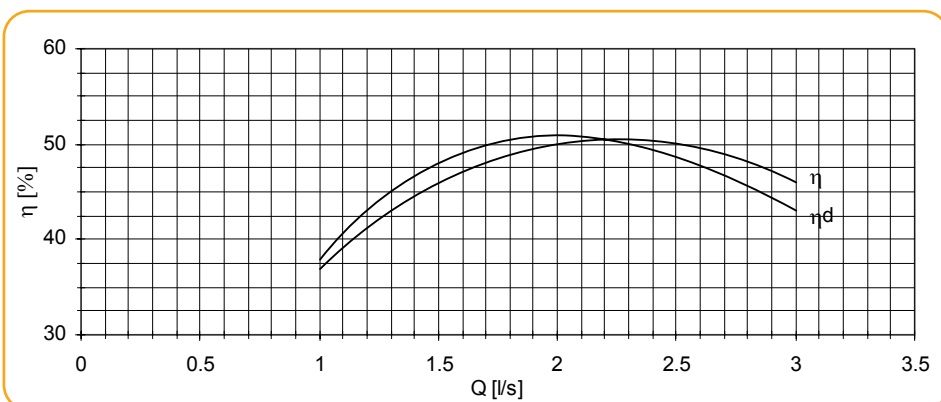
Total  
Differential  
Head



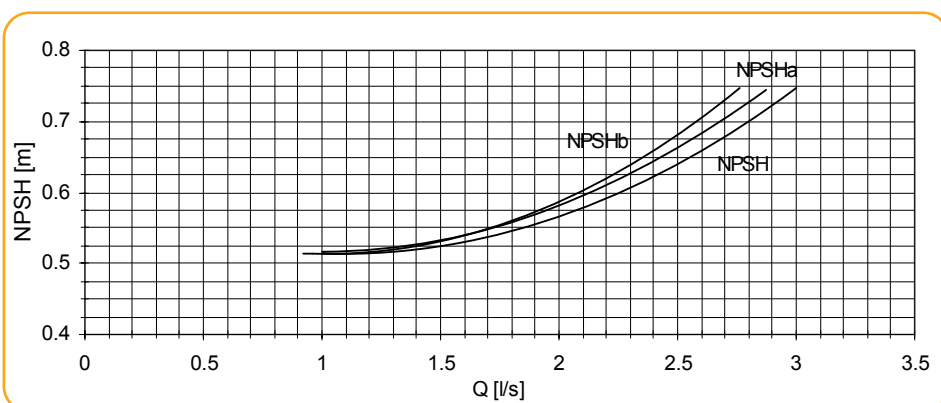
Power Input



Efficiency



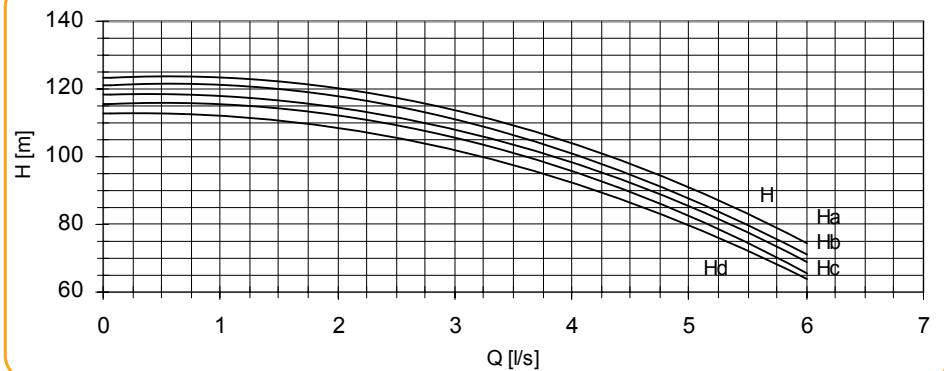
Net Positive  
Suction Head



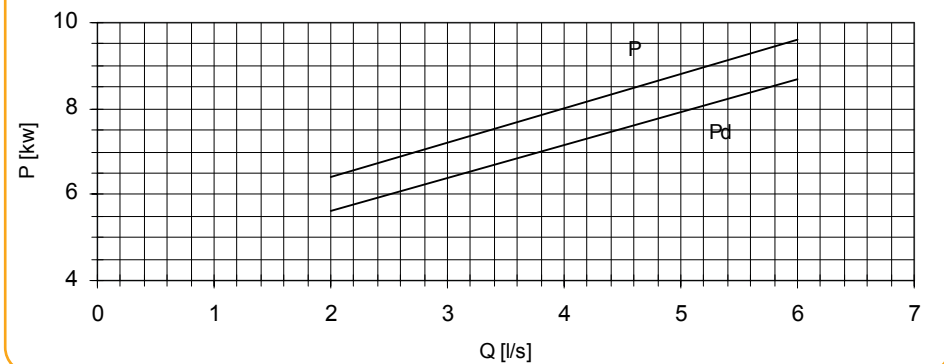


**Pump performance curves**

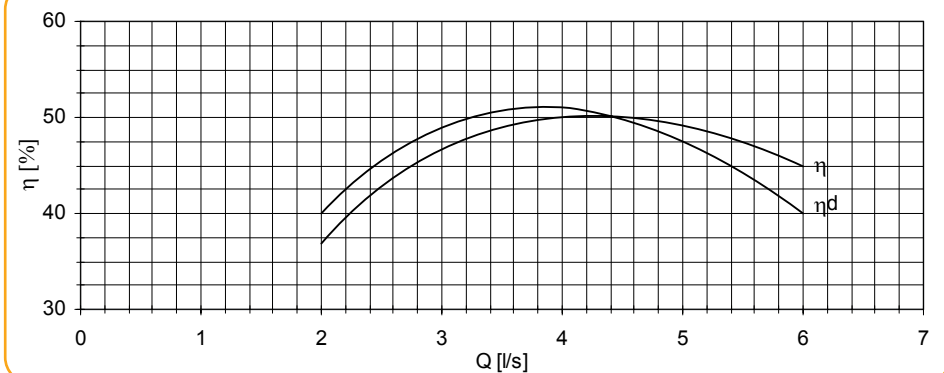
Total  
Differential  
Head



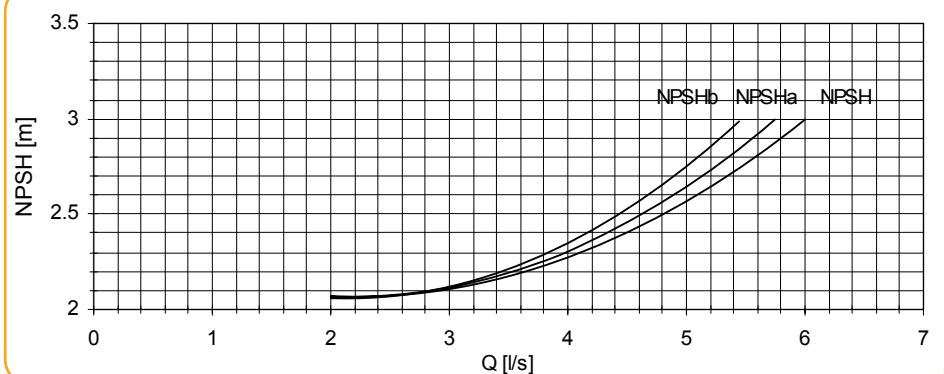
Power Input



Efficiency

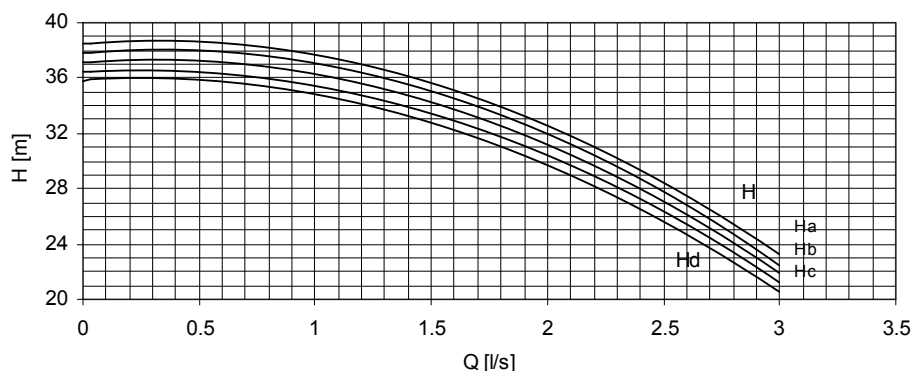


Net Positive  
Suction Head

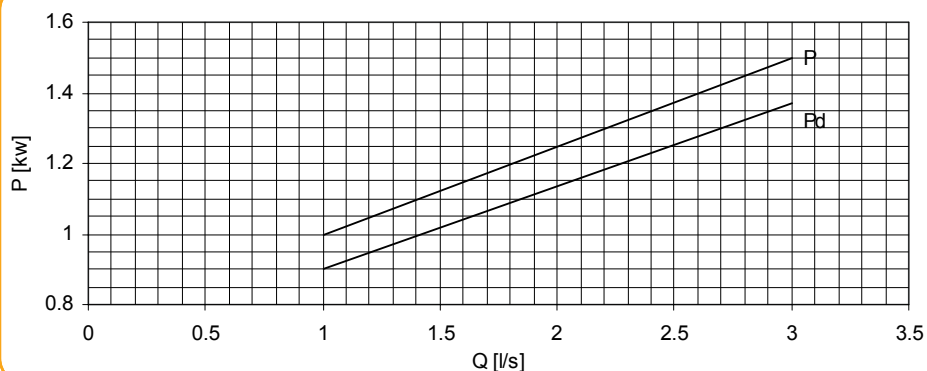


## Pump performance curves

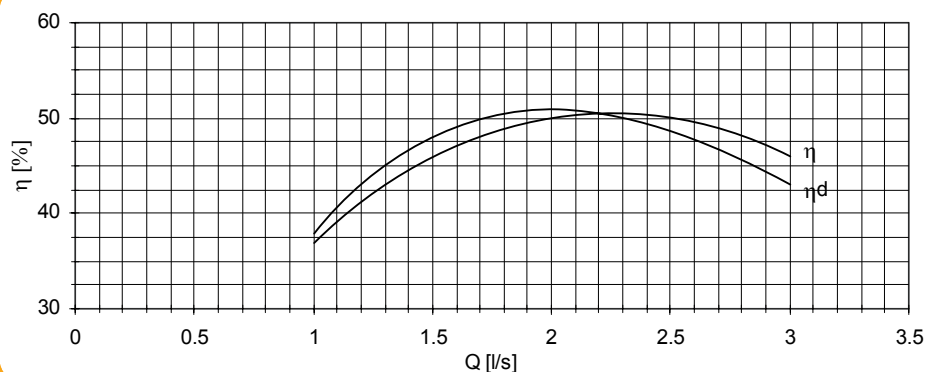
Total  
Differential  
Head



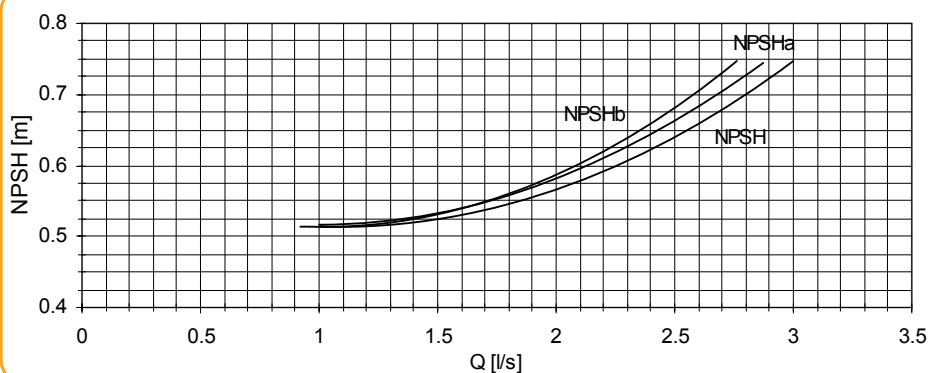
Power Input



Efficiency

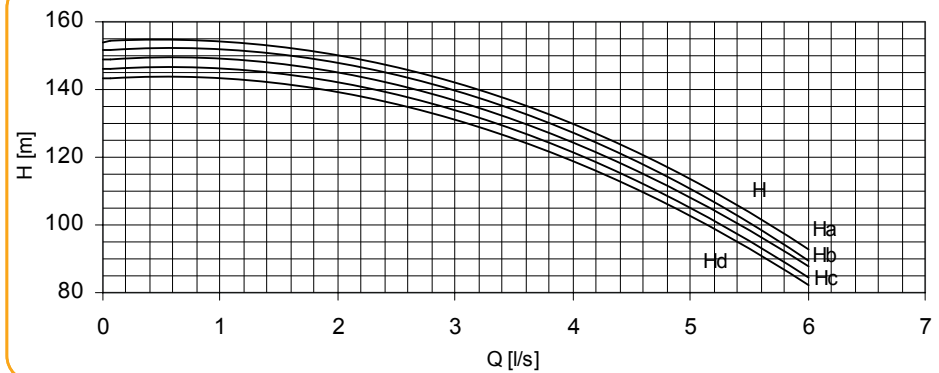


Net Positive  
Suction Head

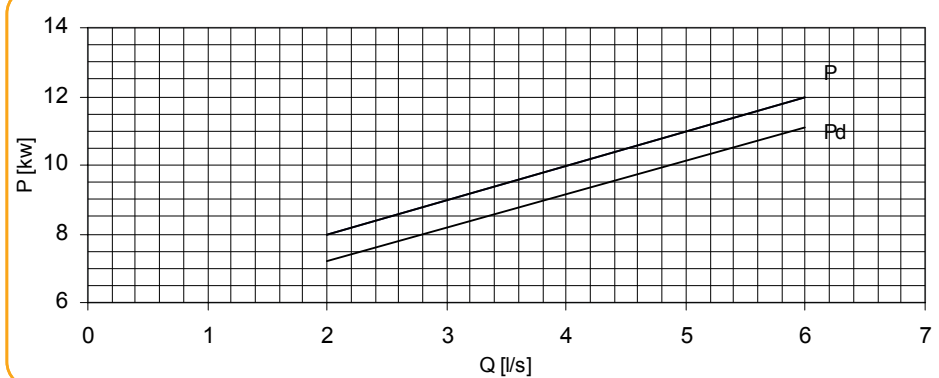


## Pump performance curves

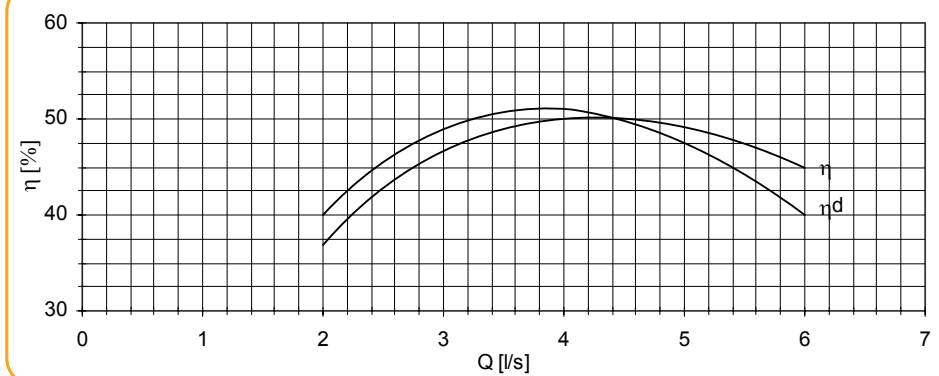
Total  
Differential  
Head



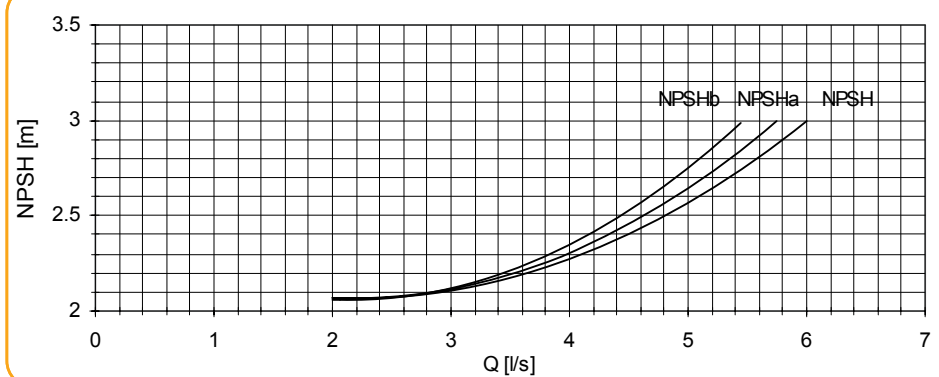
Power Input



Efficiency

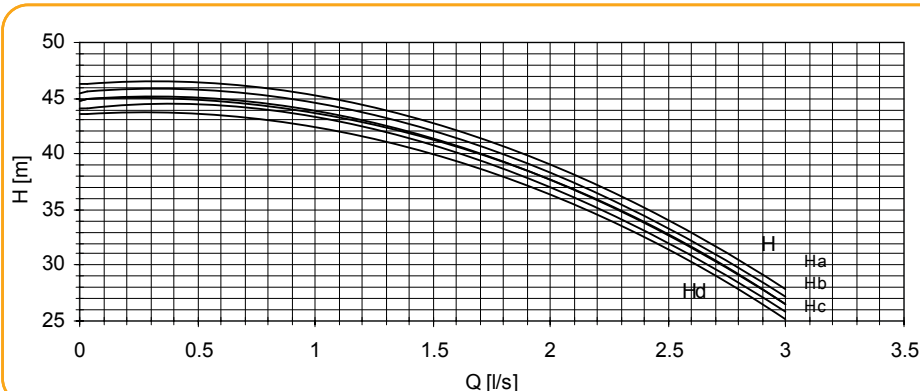


Net Positive  
Suction Head

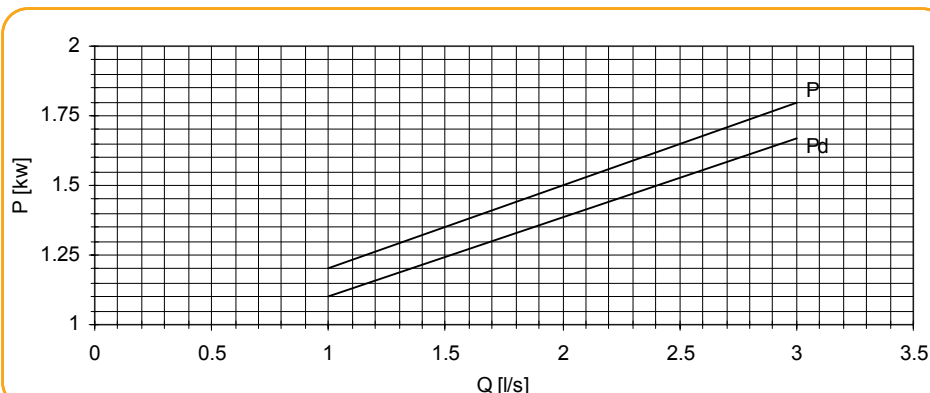


## Pump performance curves

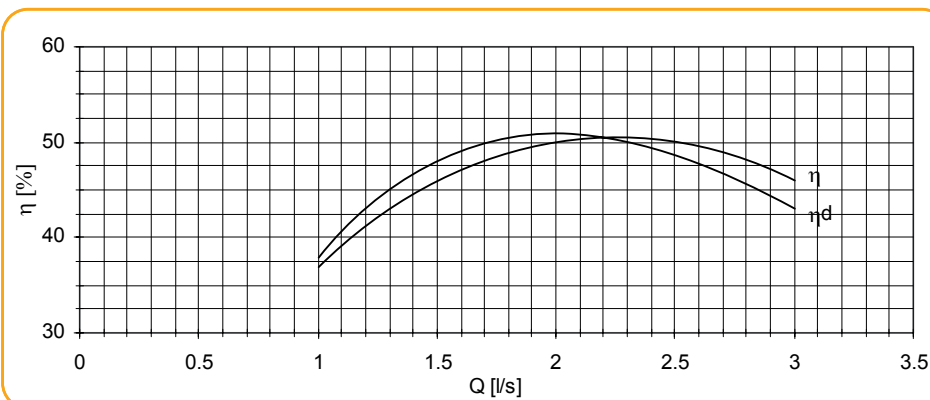
Total  
Differential  
Head



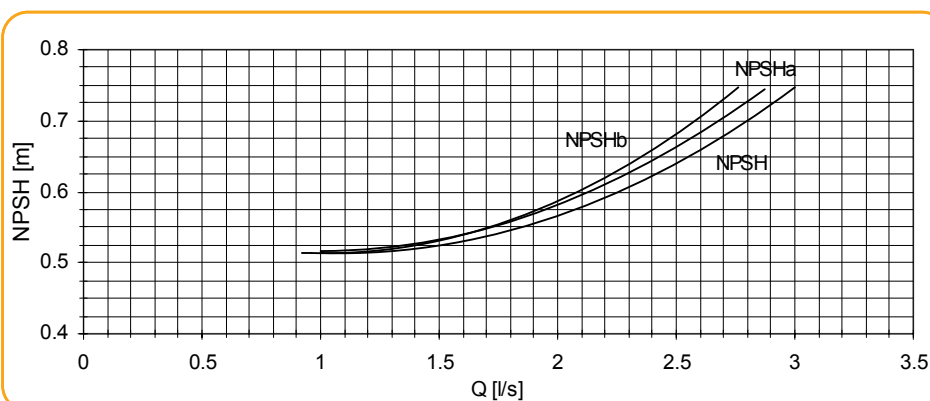
Power Input



Efficiency

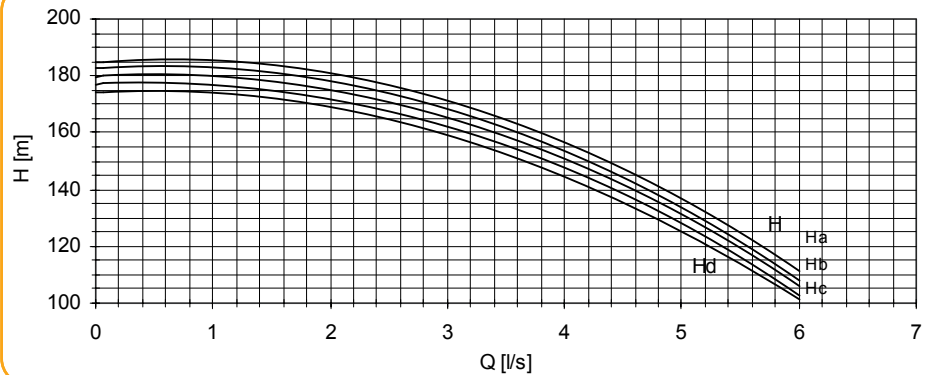


Net Positive  
Suction Head

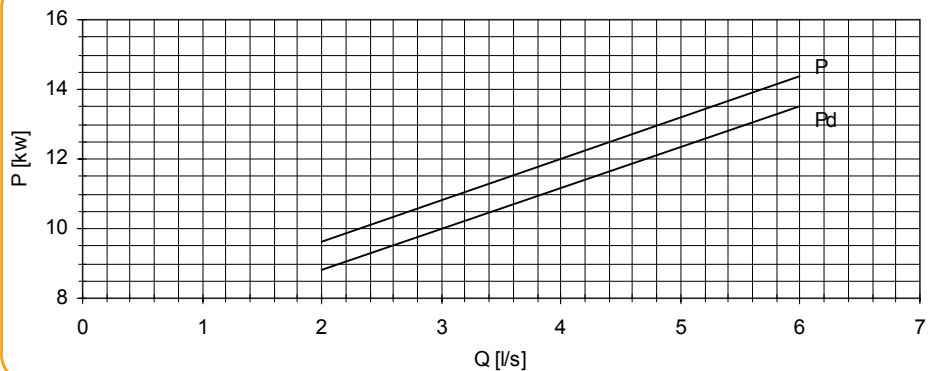


**Pump performance curves**

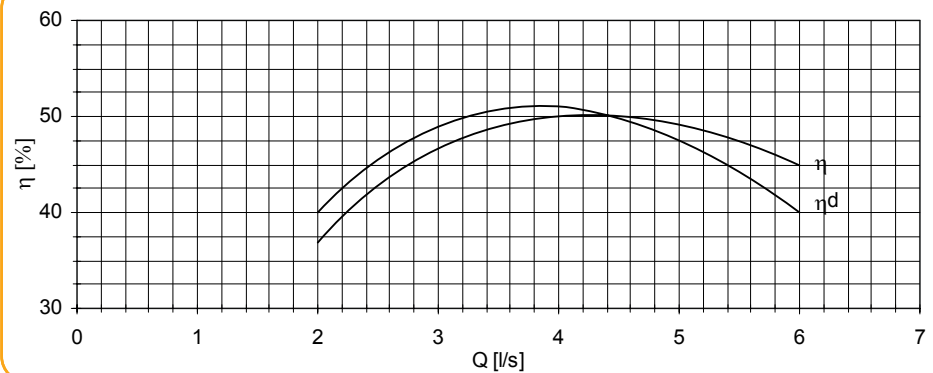
Total  
Differential  
Head



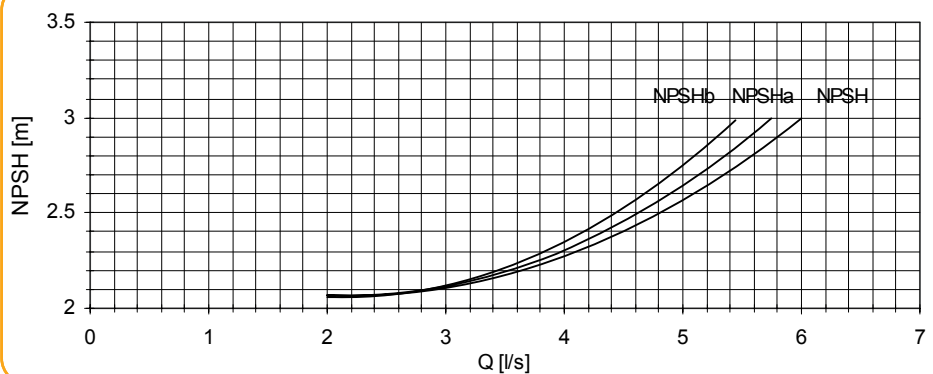
Power Input



Efficiency

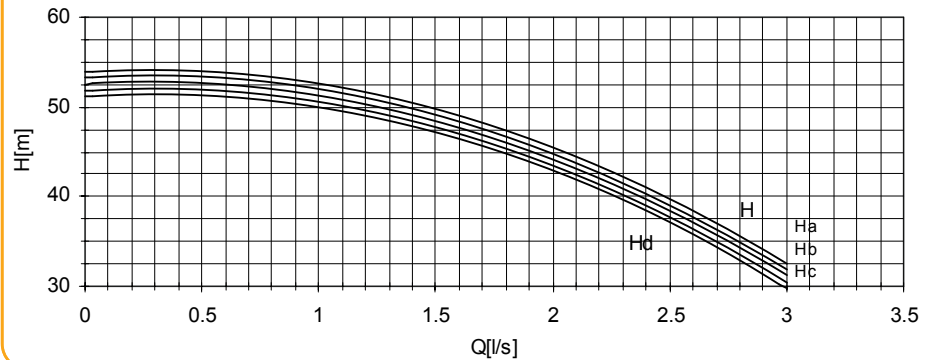


Net Positive  
Suction Head

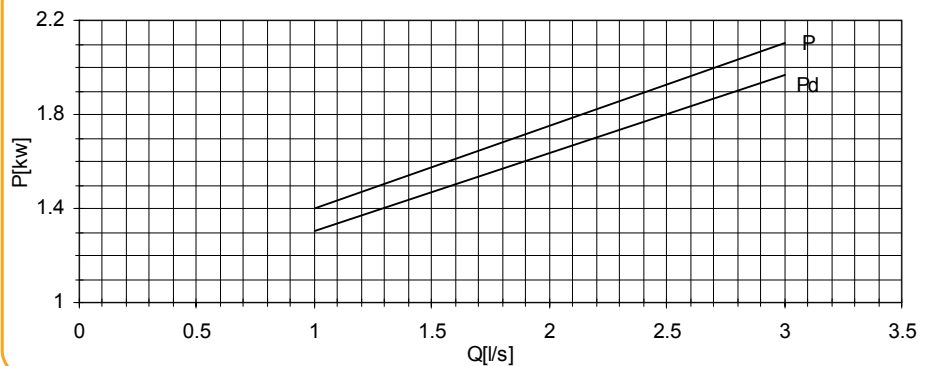


**Pump performance curves**

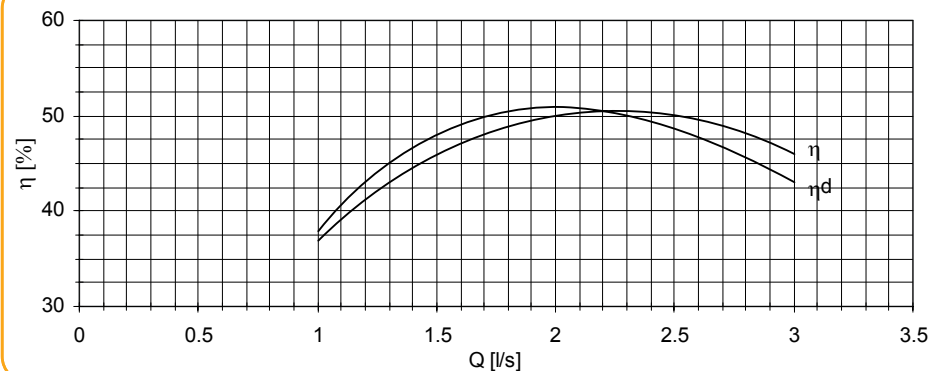
Total  
Differential  
Head



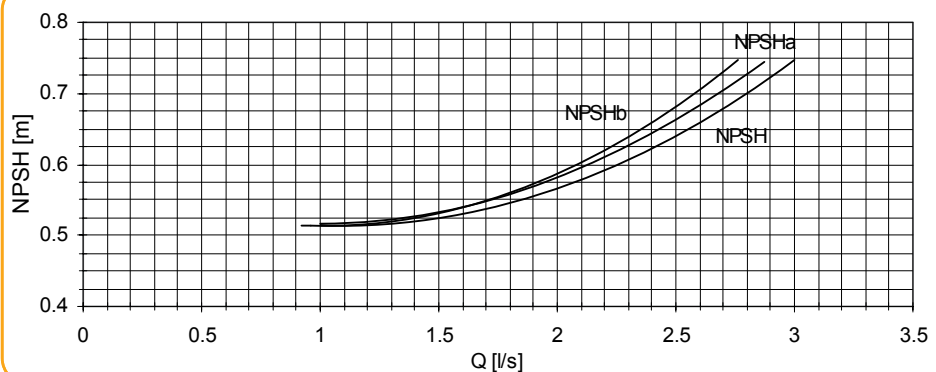
Power Input



Efficiency



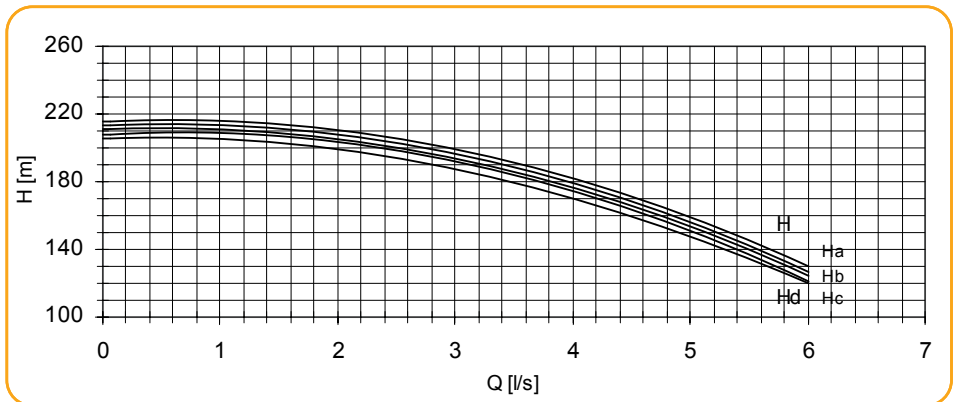
Net Positive  
Suction Head



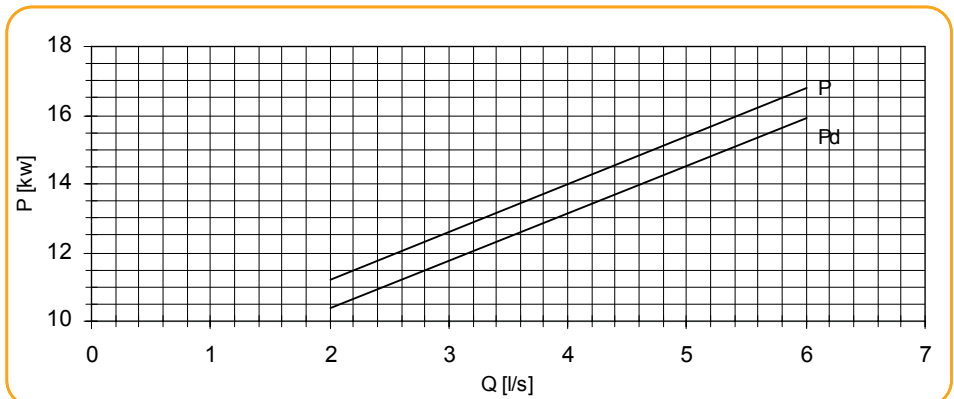


**Pump performance curves**

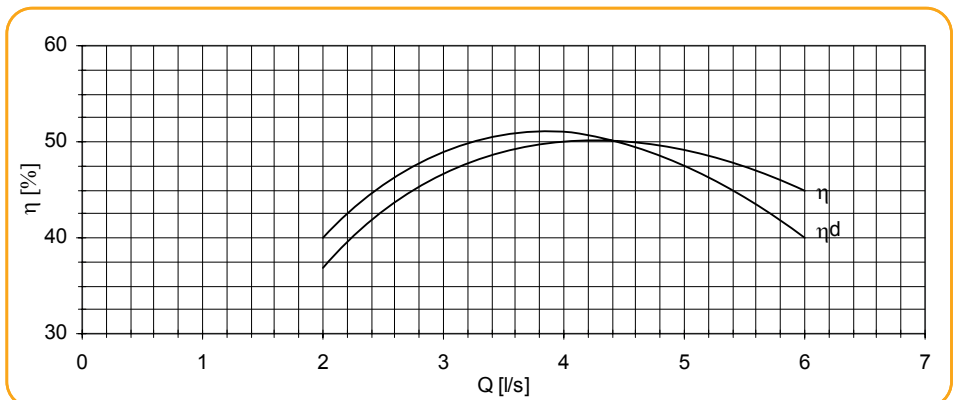
Total  
Differential  
Head



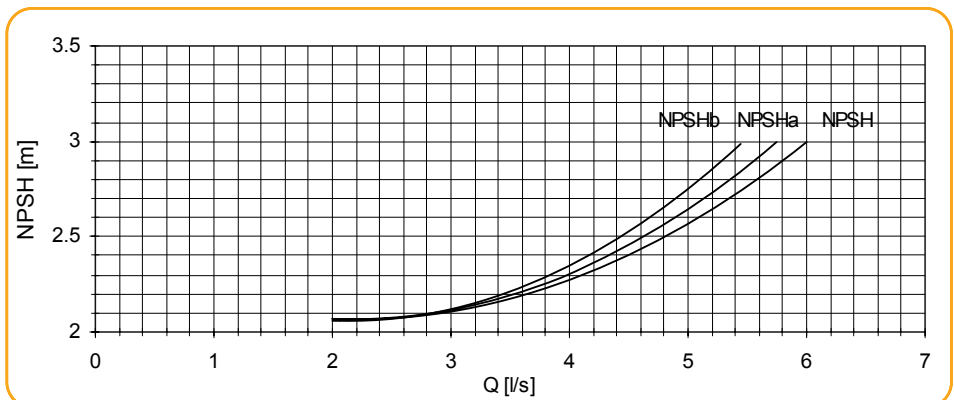
Power Input



Efficiency

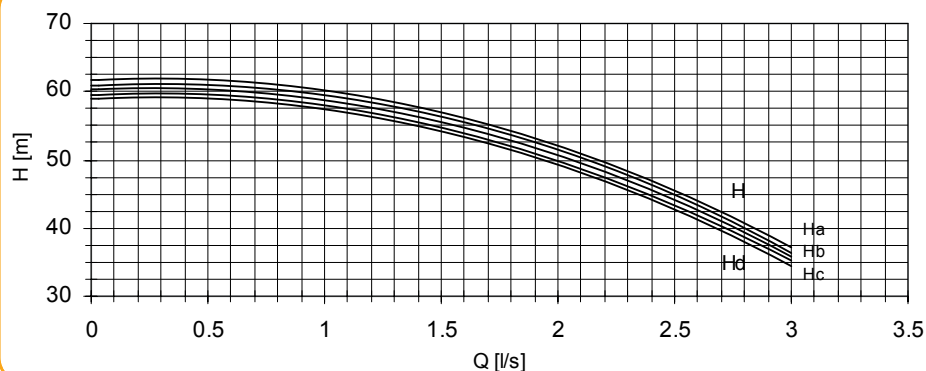


Net Positive  
Suction Head

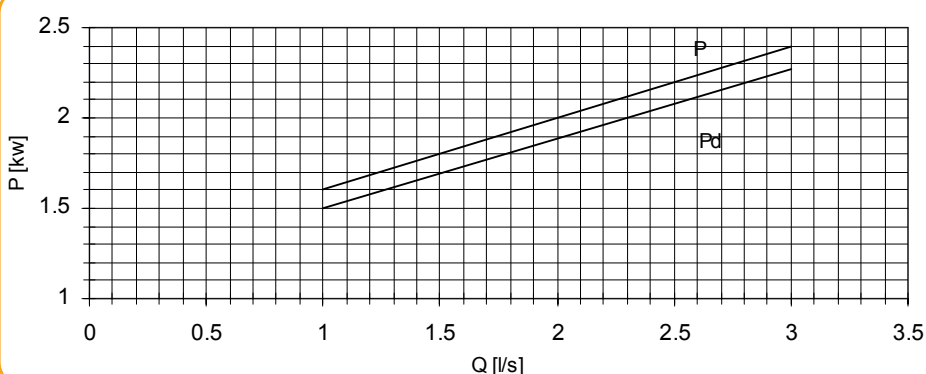


## Pump performance curves

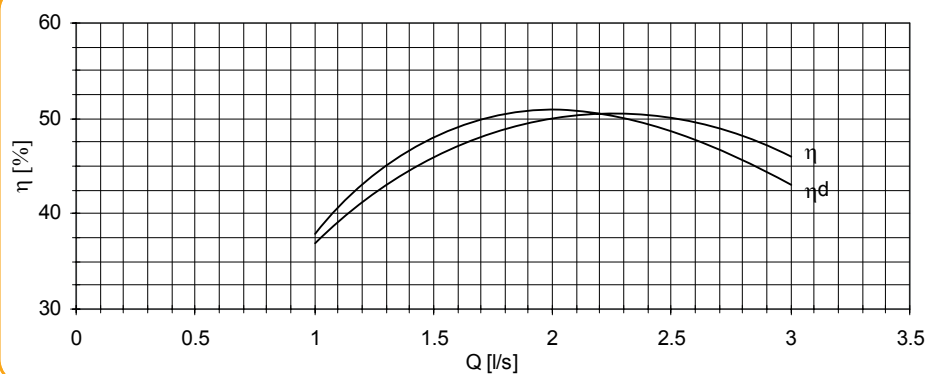
Total  
Differential  
Head



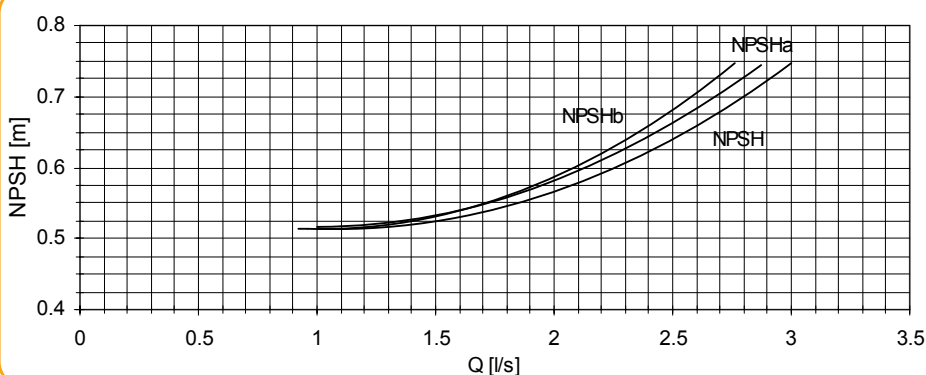
Power Input



Efficiency

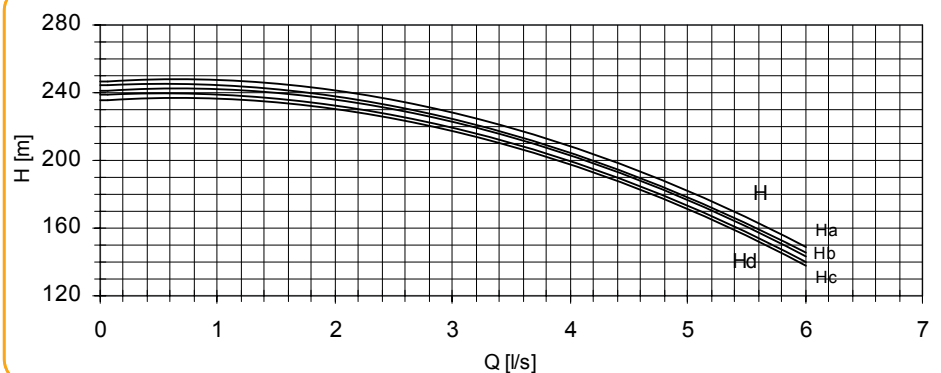


Net Positive  
Suction Head

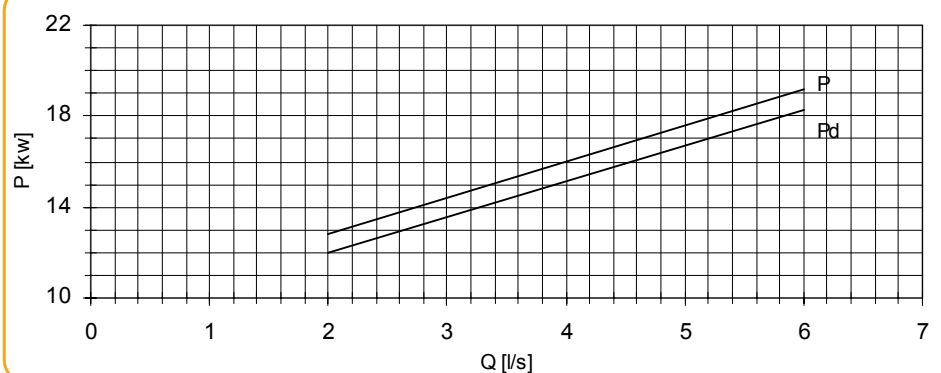


## Pump performance curves

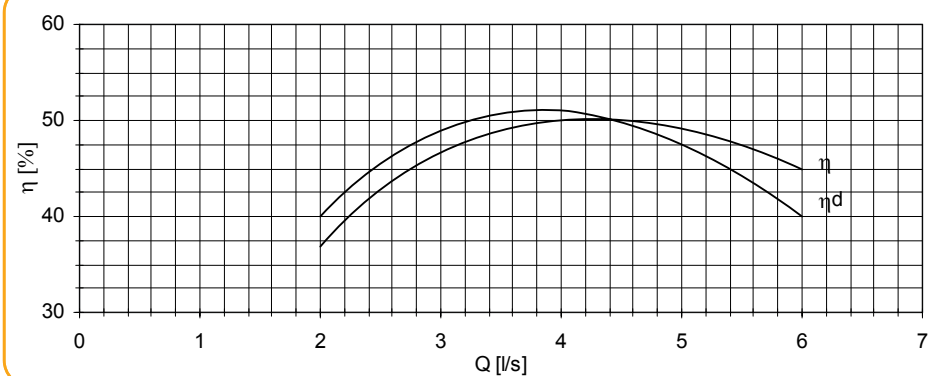
Total  
Differential  
Head



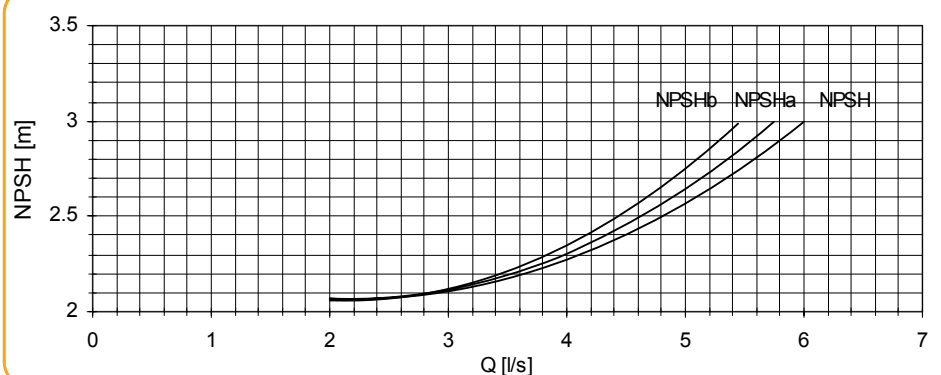
Power Input



Efficiency

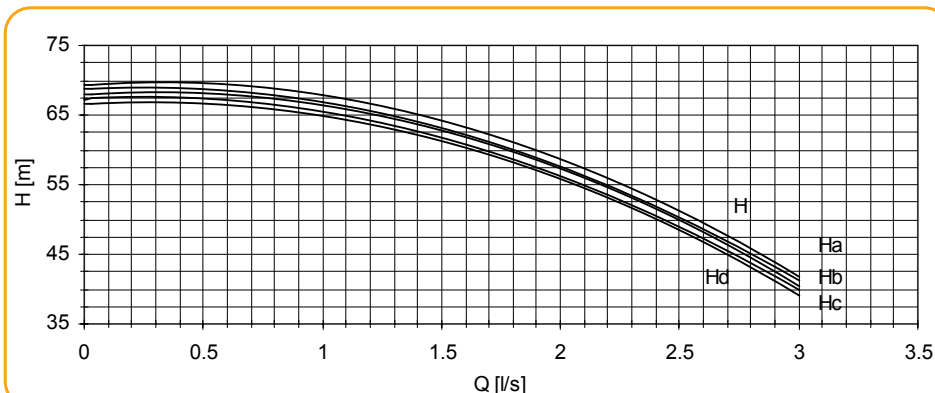


Net Positive  
Suction Head

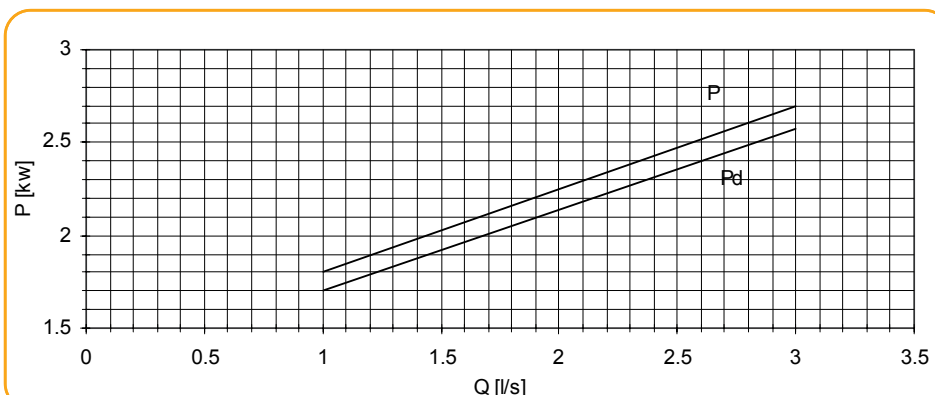


**Pump performance curves**

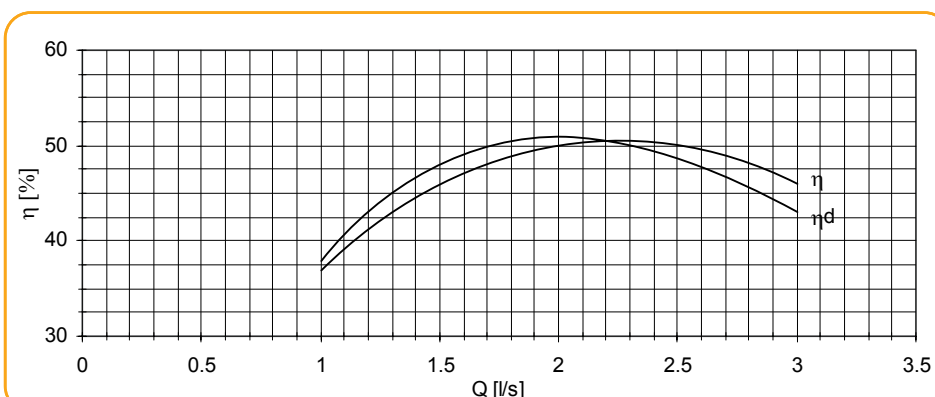
Total  
Differential  
Head



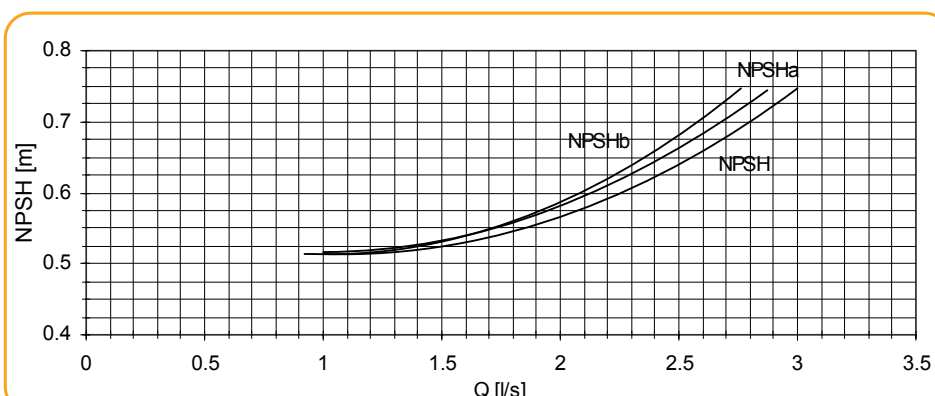
Power Input



Efficiency

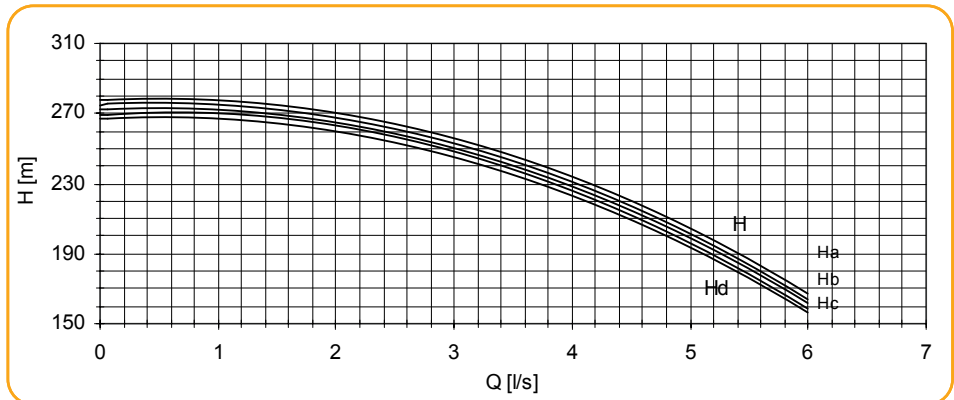


Net Positive  
Suction Head

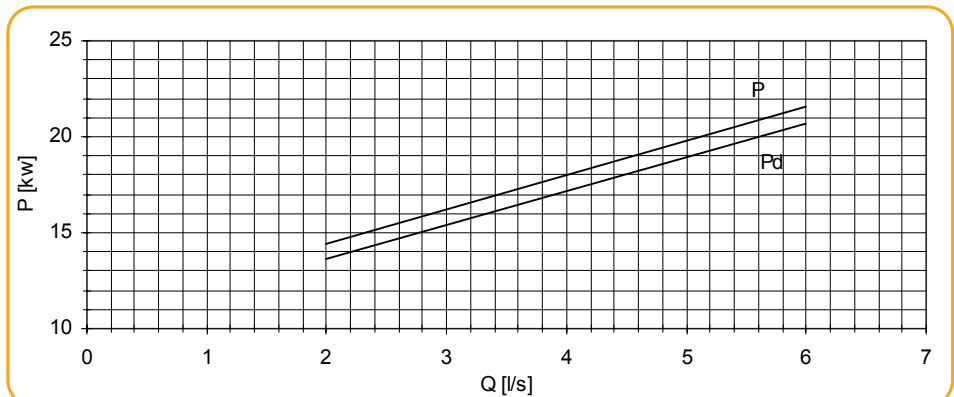


## Pump performance curves

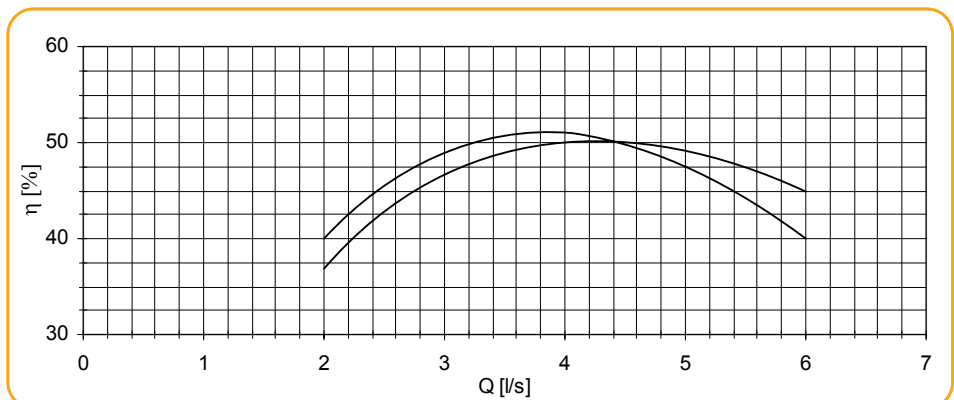
Total  
Differential  
Head



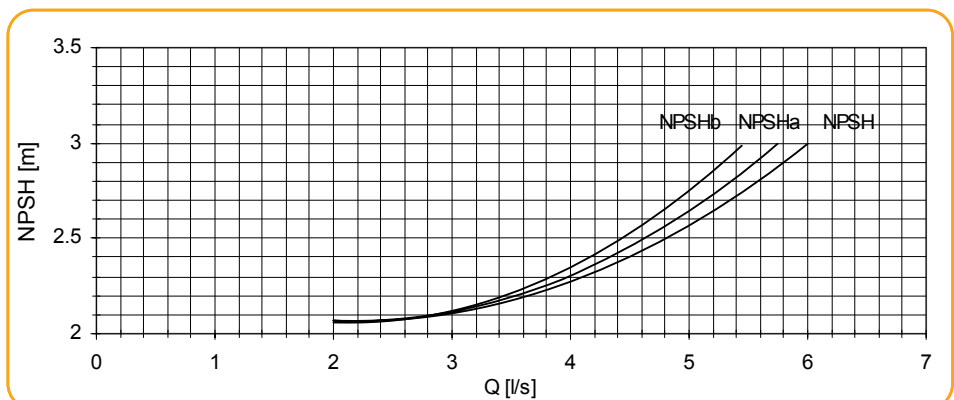
Power Input



Efficiency

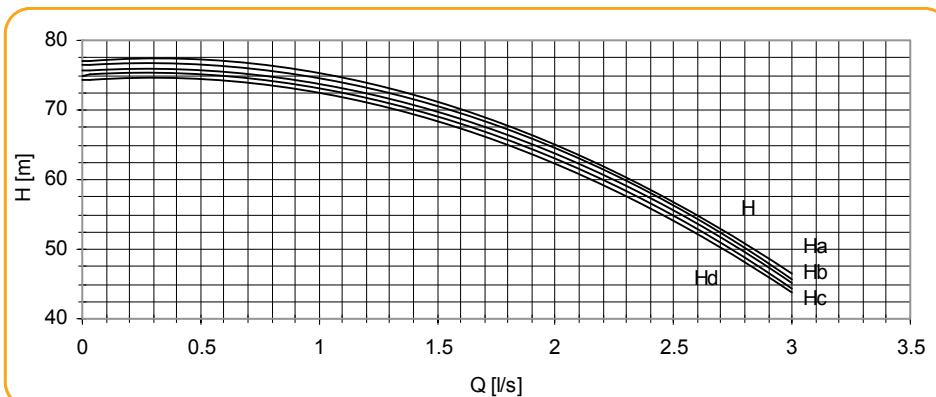


Net Positive  
Suction Head

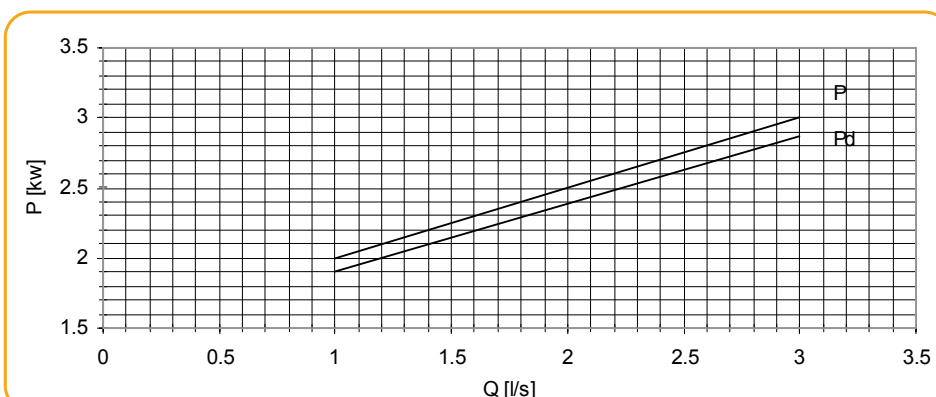


## Pump performance curves

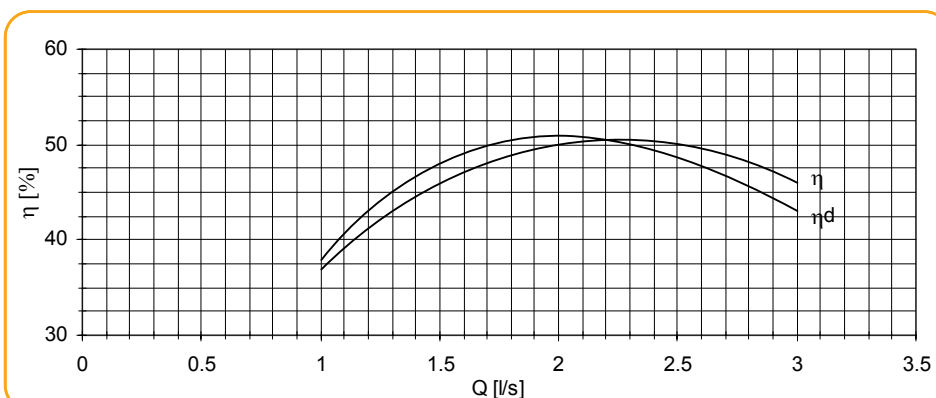
Total  
Differential  
Head



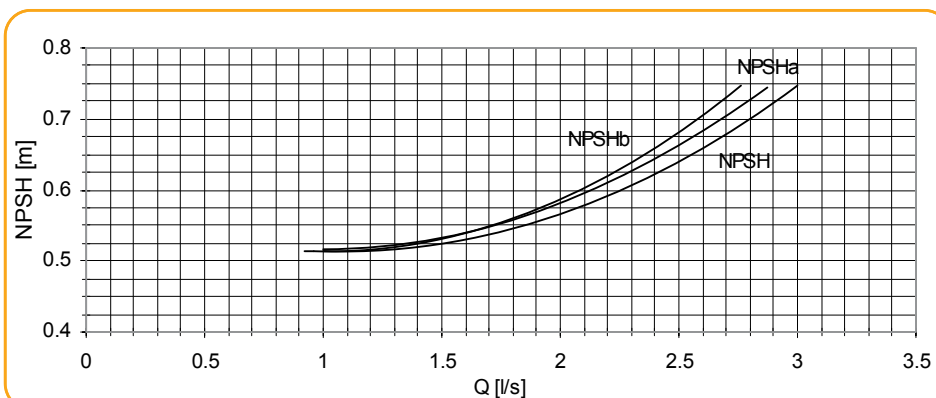
Power Input



Efficiency

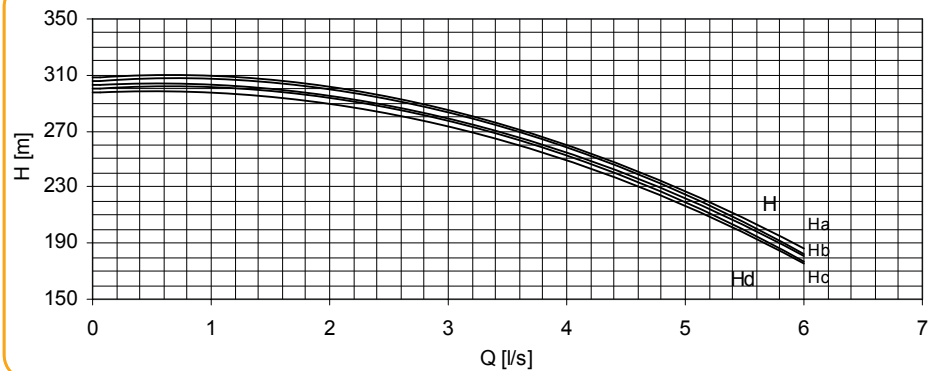


Net Positive  
Suction Head

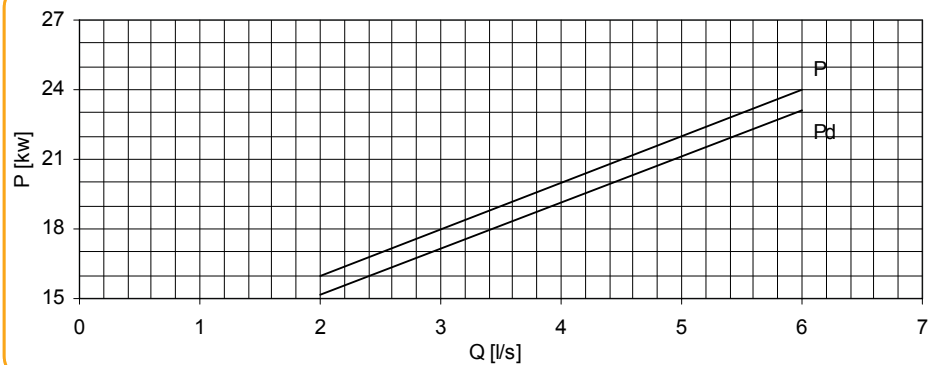


**Pump performance curves**

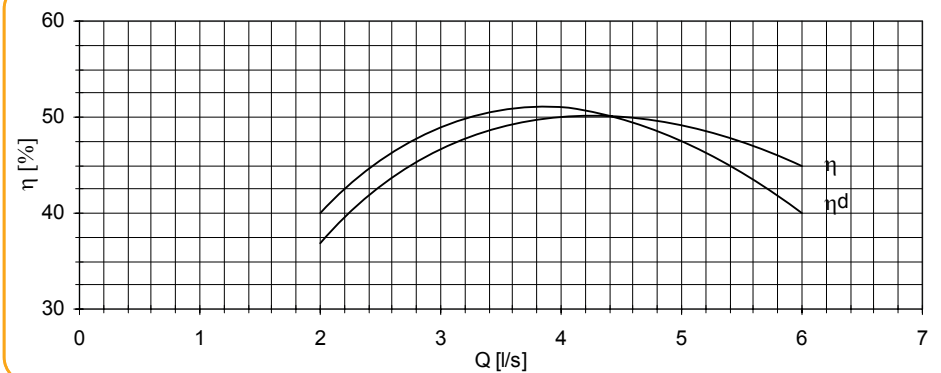
Total  
Differential  
Head



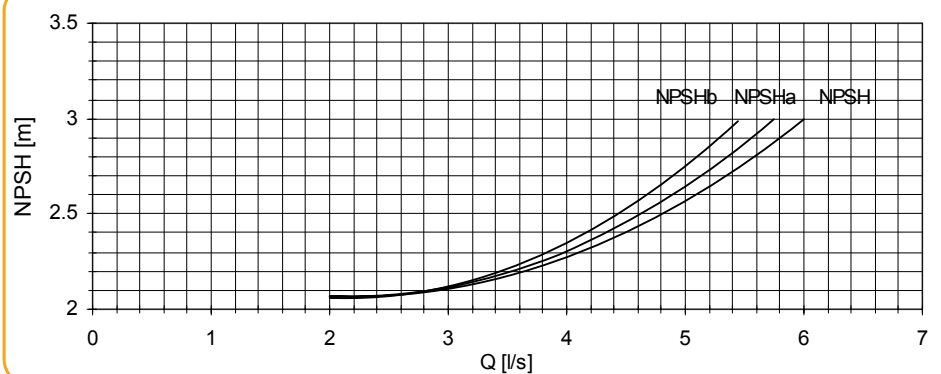
Power Input



Efficiency

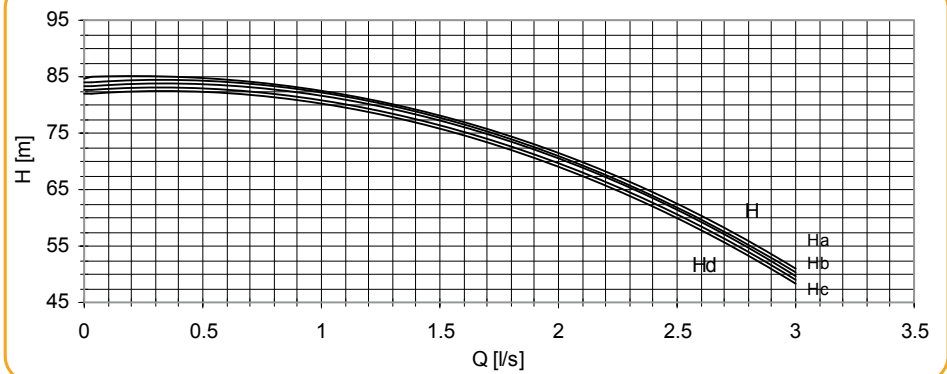


Net Positive  
Suction Head

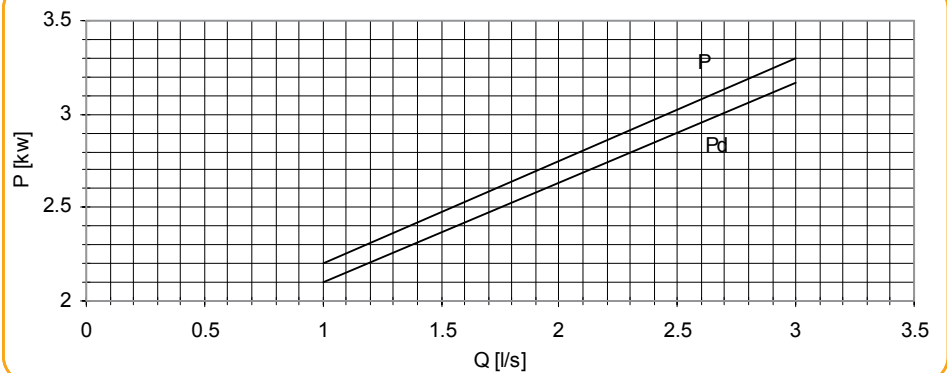


**Pump performance curves**

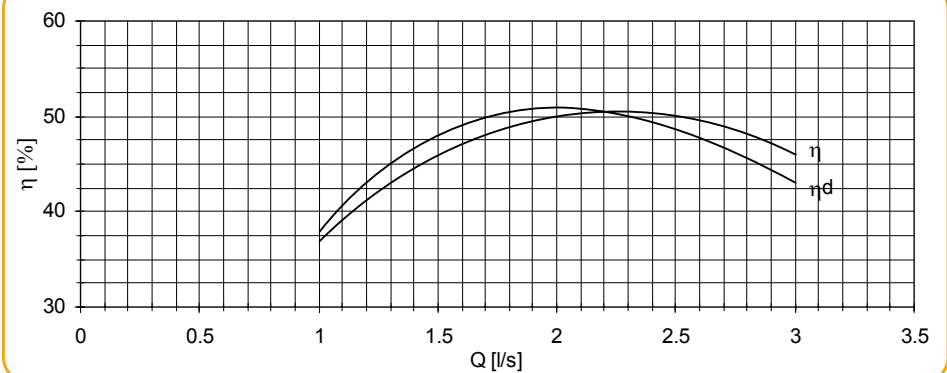
Total  
Differential  
Head



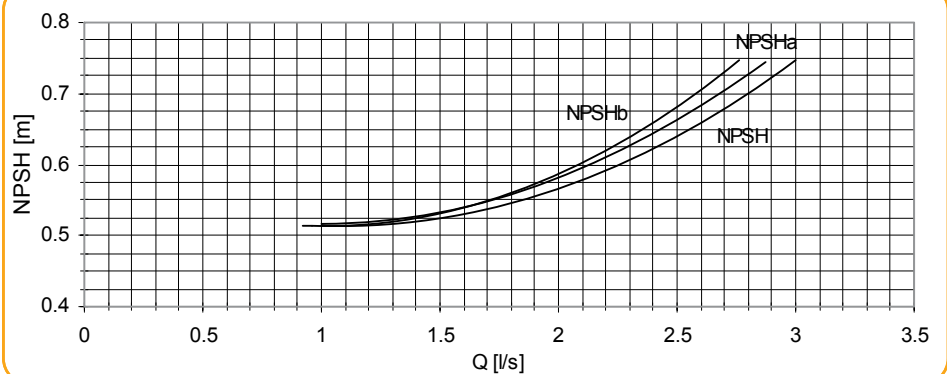
Power Input



Efficiency



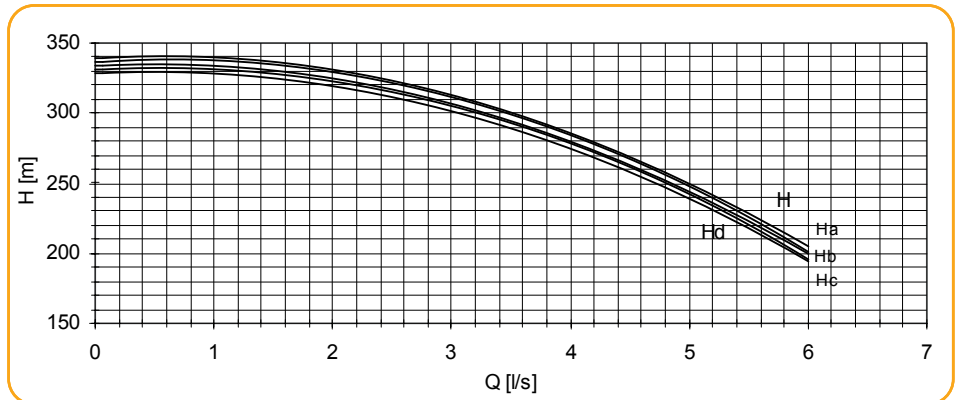
Net Positive  
Suction Head



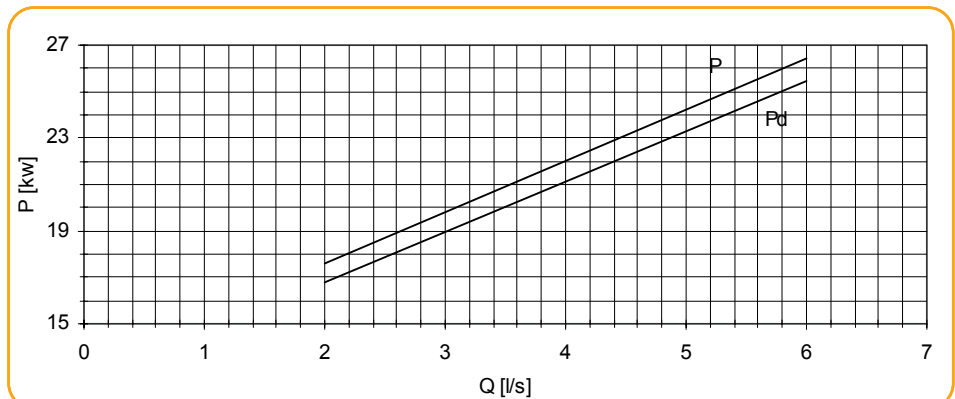


## Pump performance curves

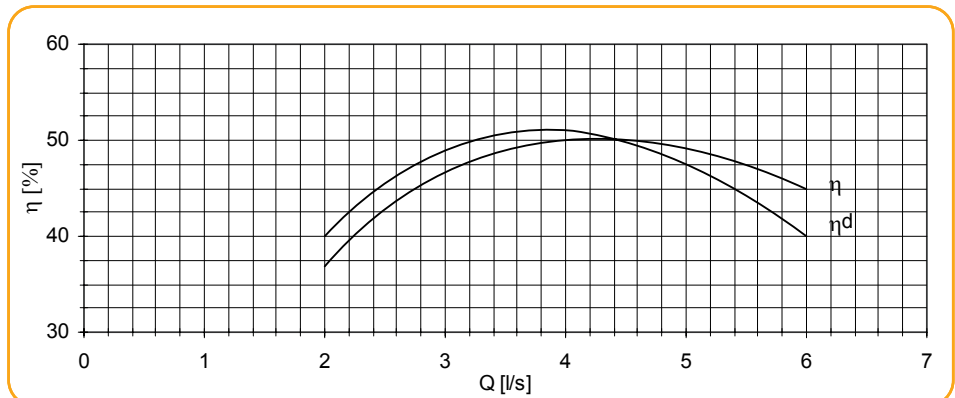
Total  
Differential  
Head



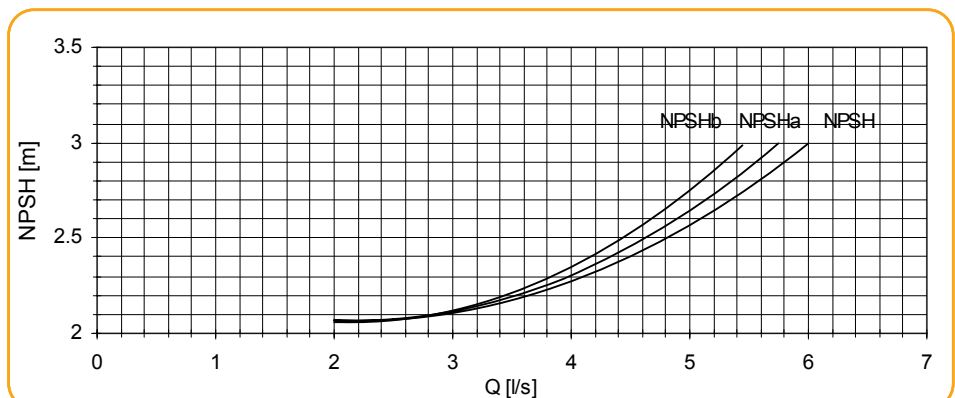
Power Input



Efficiency

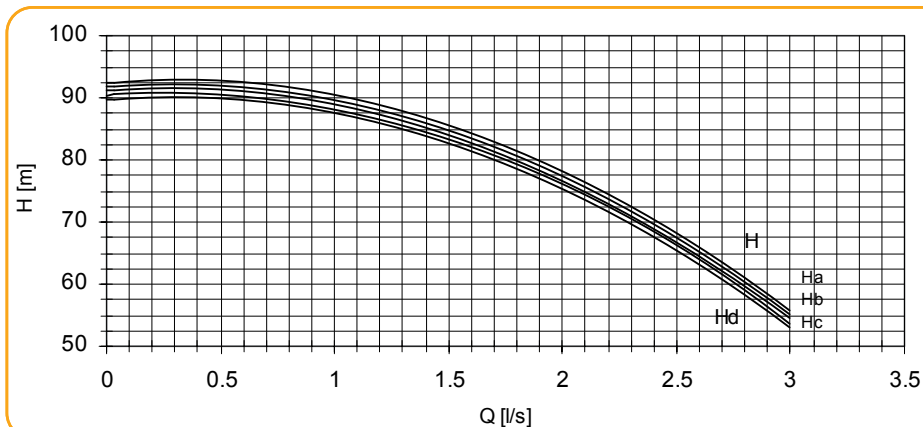


Net Positive  
Suction Head

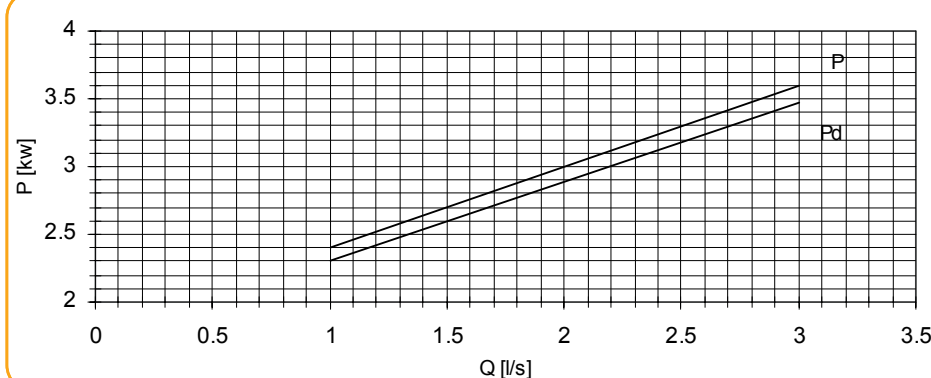


## Pump performance curves

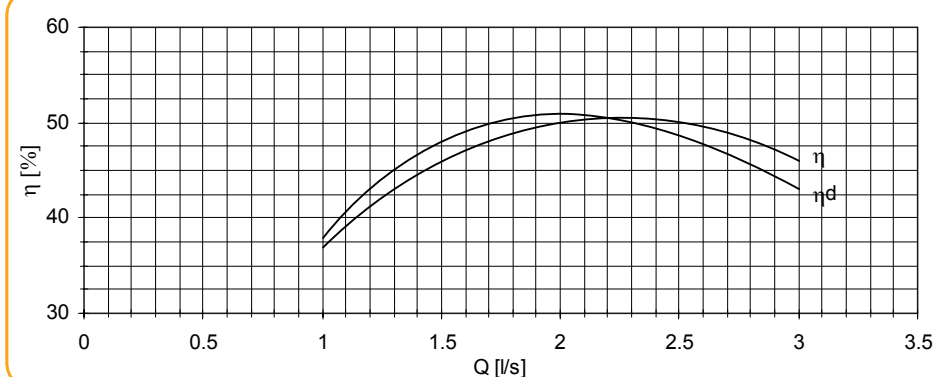
Total  
Differential  
Head



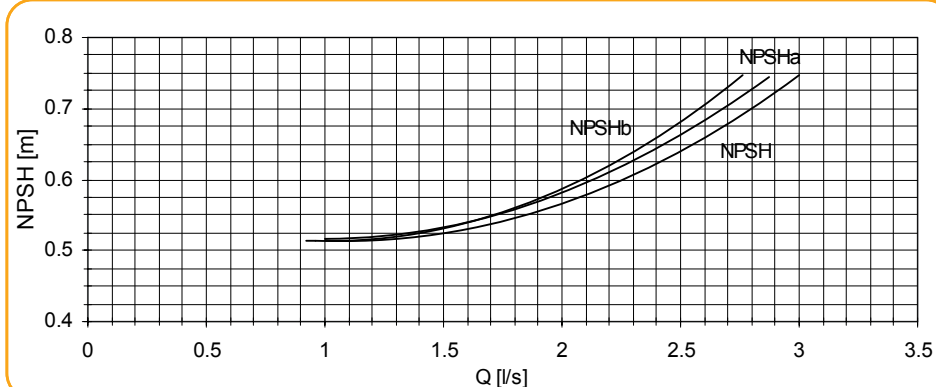
Power Input



Efficiency

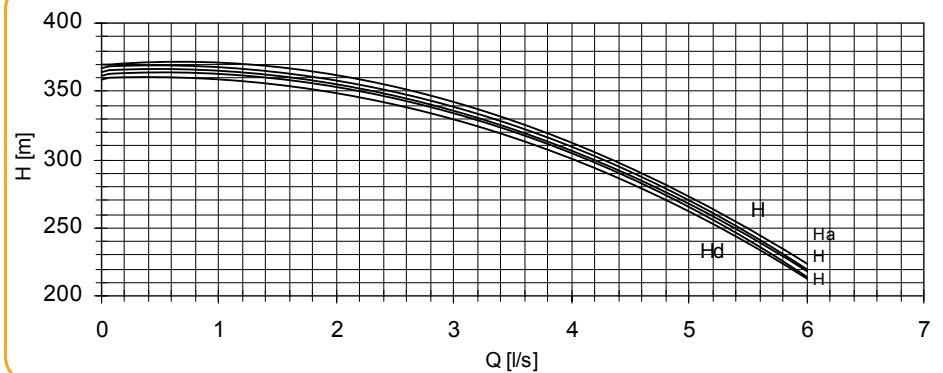


Net Positive  
Suction Head

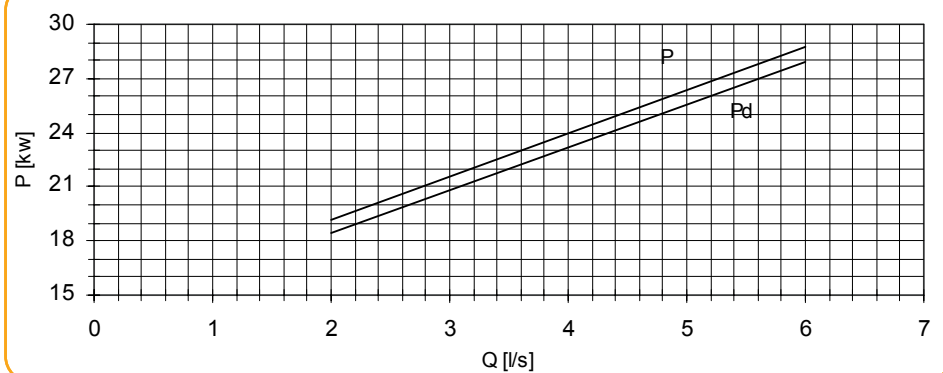


**Pump performance curves**

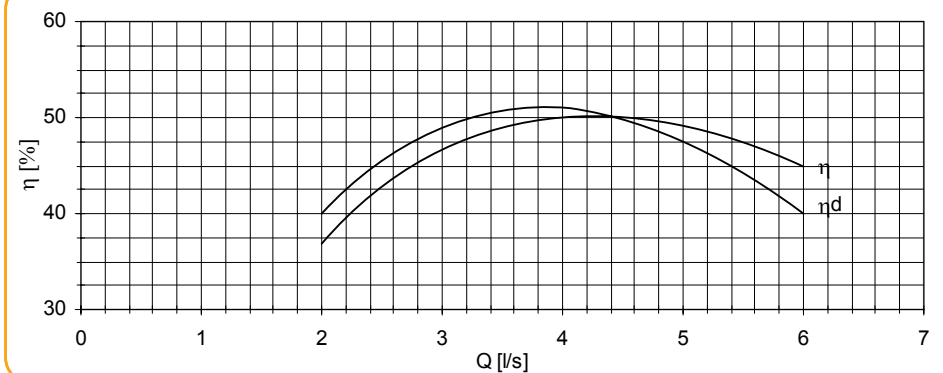
Total  
Differential  
Head



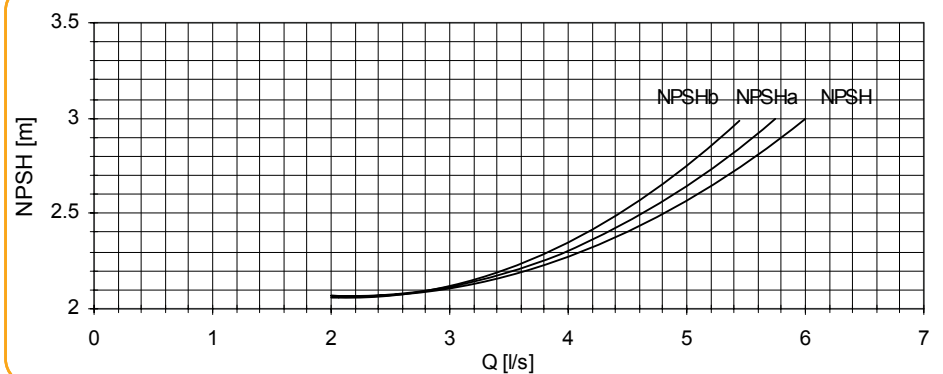
Power Input



Efficiency

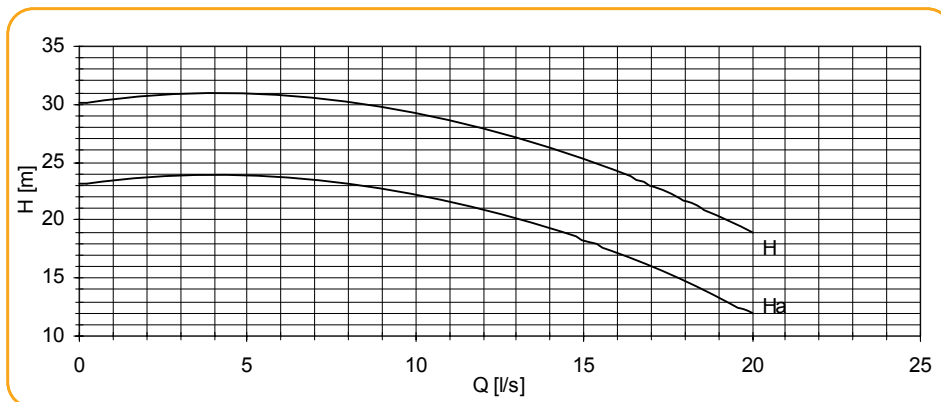


Net Positive  
Suction Head

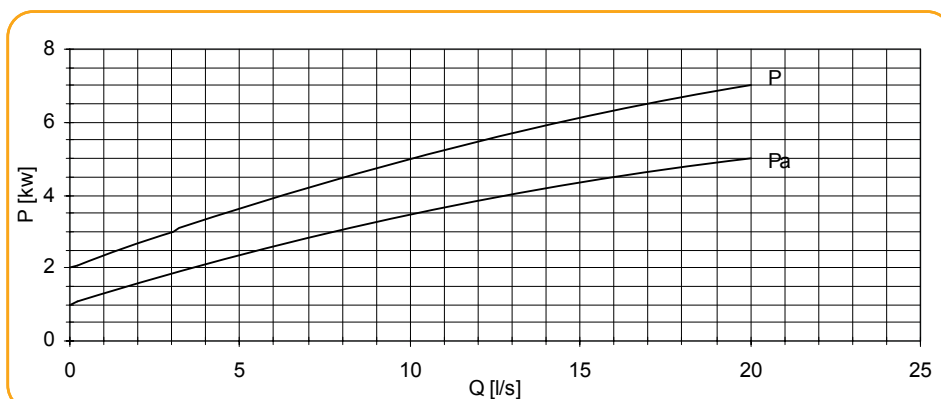


## Pump performance curves

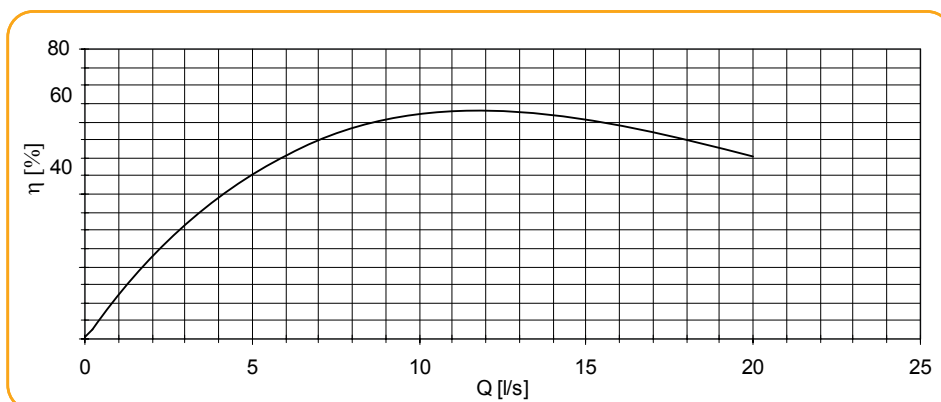
Total  
Differential  
Head



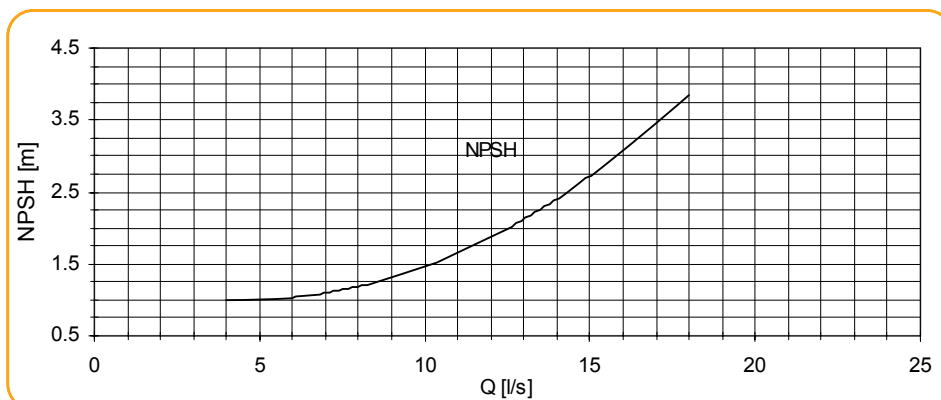
Power Input



Efficiency

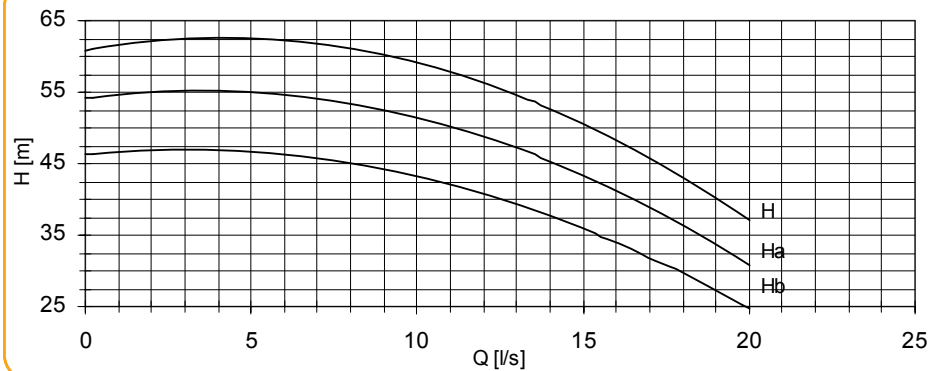


Net Positive  
Suction Head

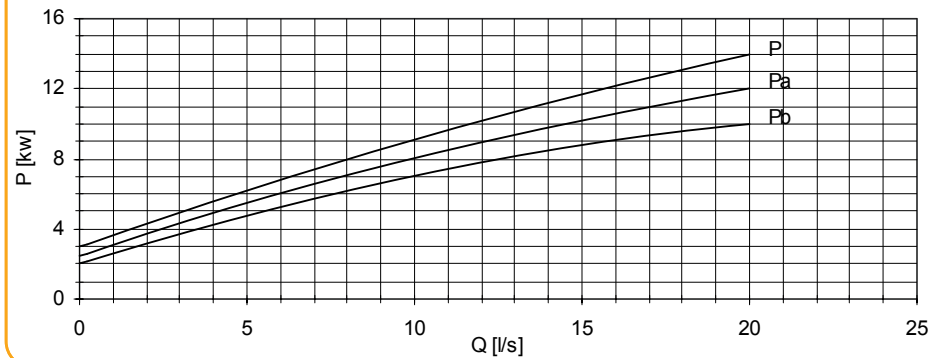


## Pump performance curves

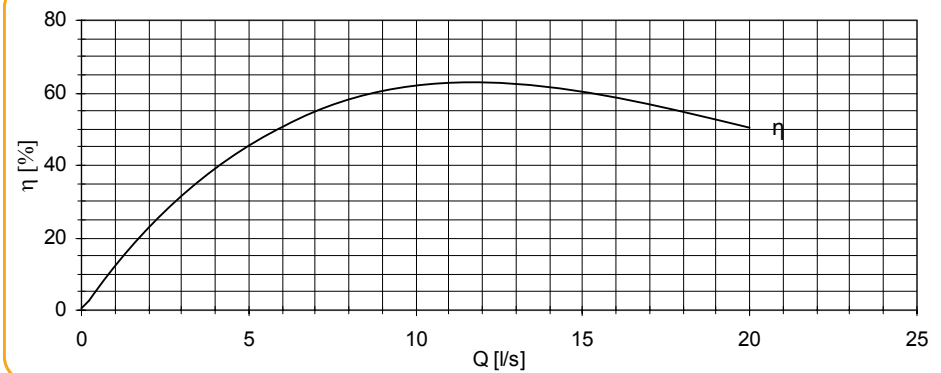
Total  
Differential  
Head



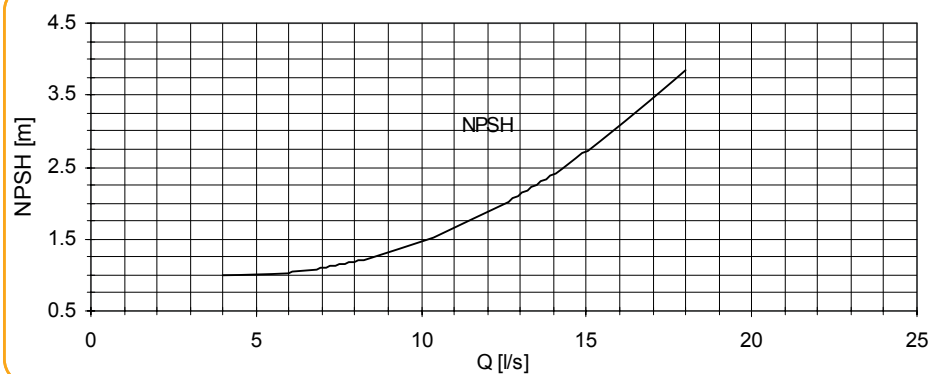
Power Input



Efficiency

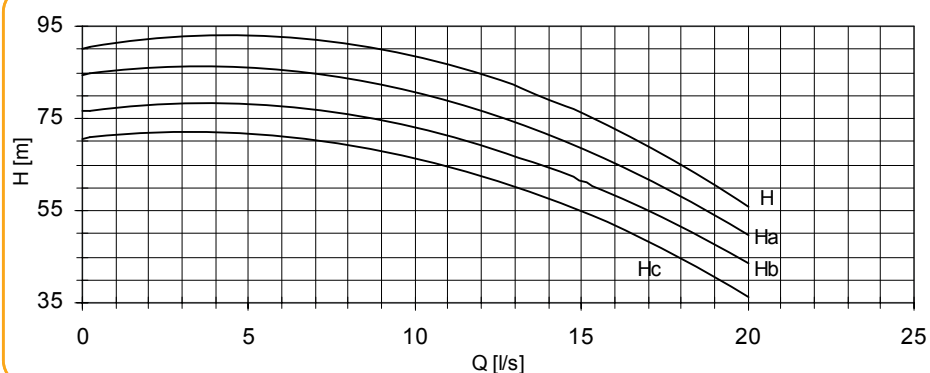


Net Positive  
Suction Head

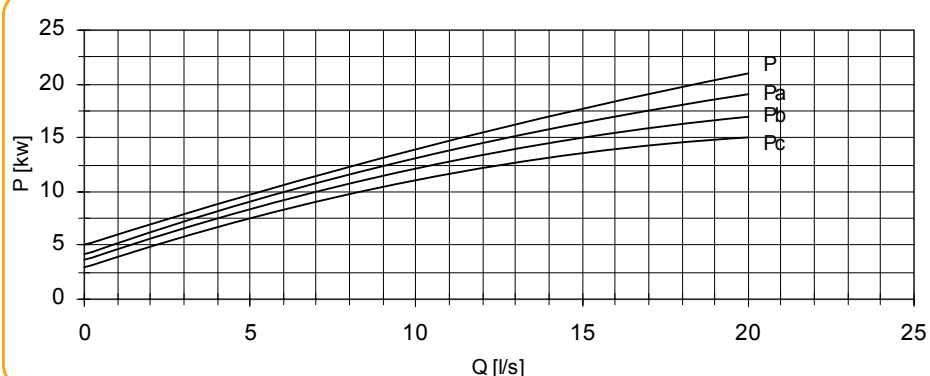


## Pump performance curves

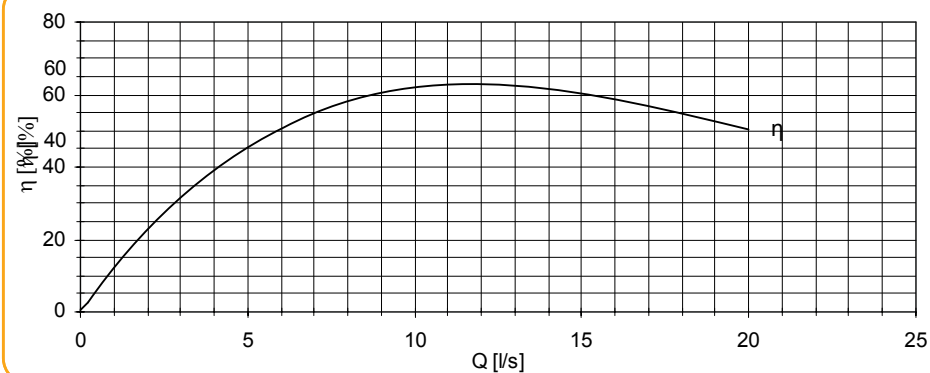
Total  
Differential  
Head



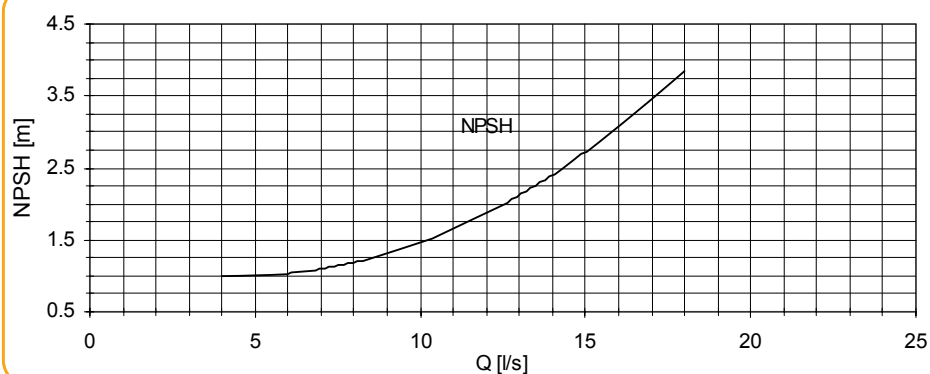
Power Input



Efficiency

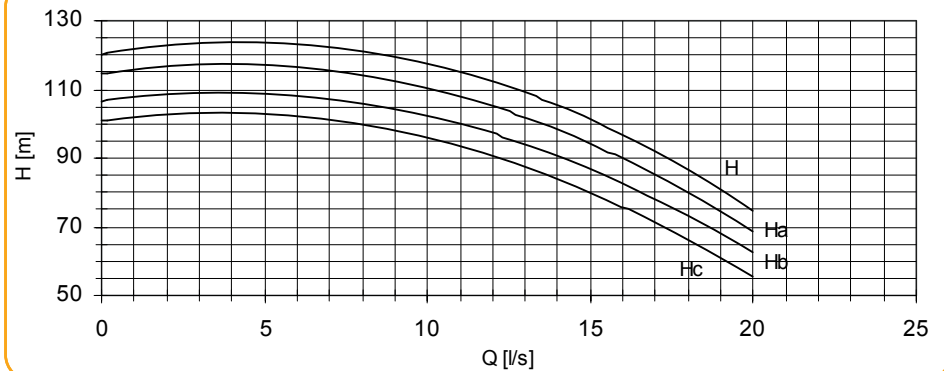


Net Positive  
Suction Head

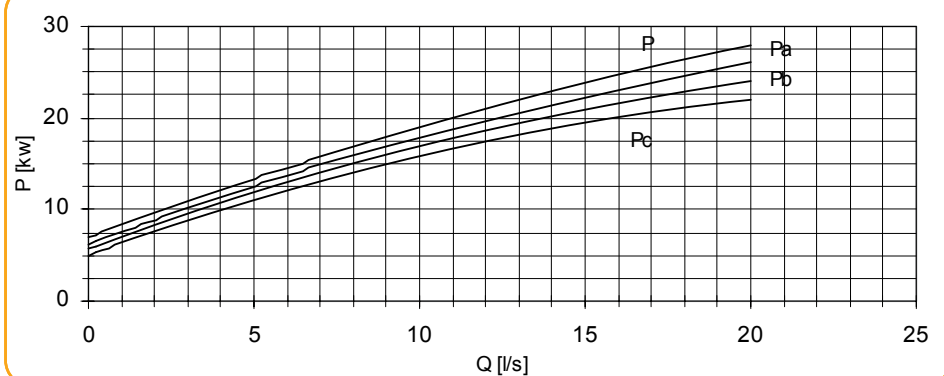


## Pump performance curves

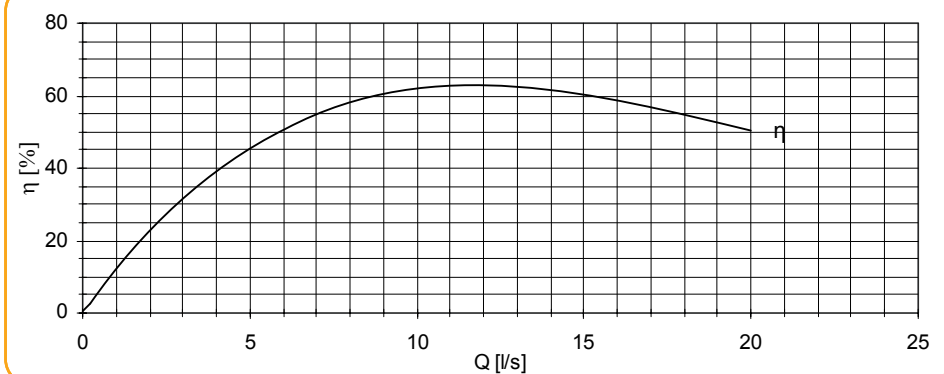
Total  
Differential  
Head



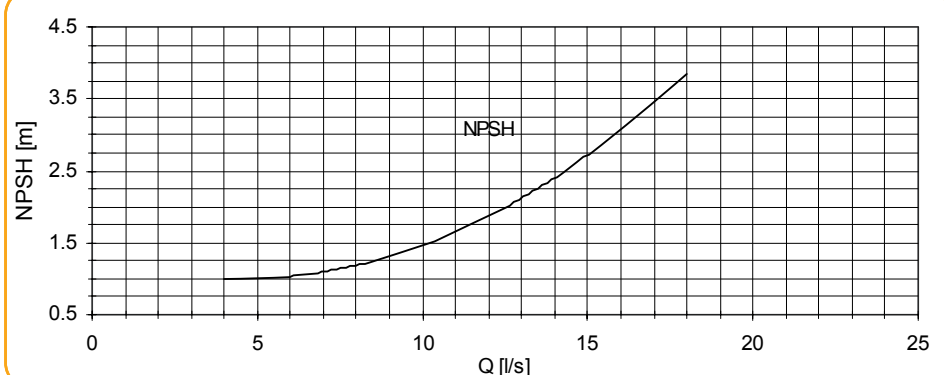
Power Input



Efficiency

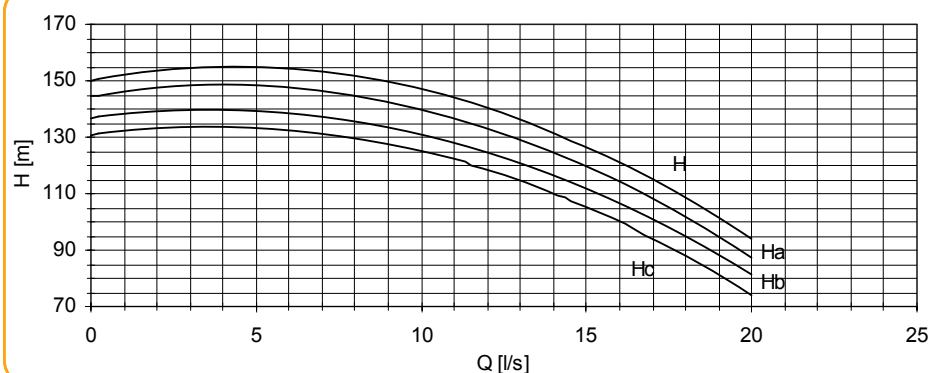


Net Positive  
Suction Head

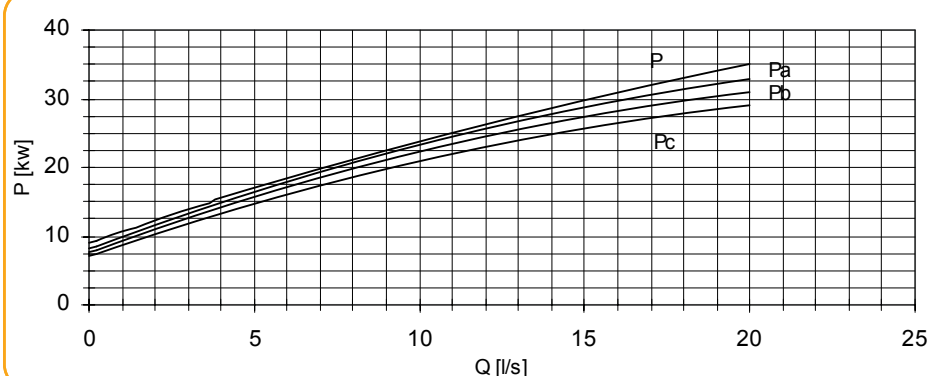


## Pump performance curves

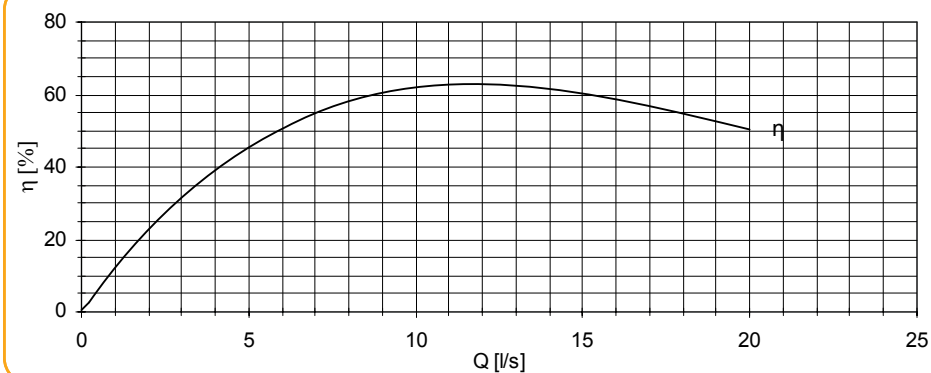
Total  
Differential  
Head



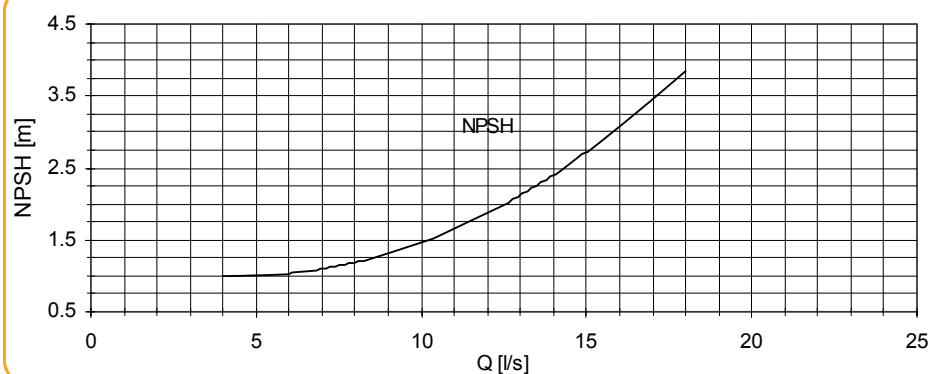
Power Input



Efficiency



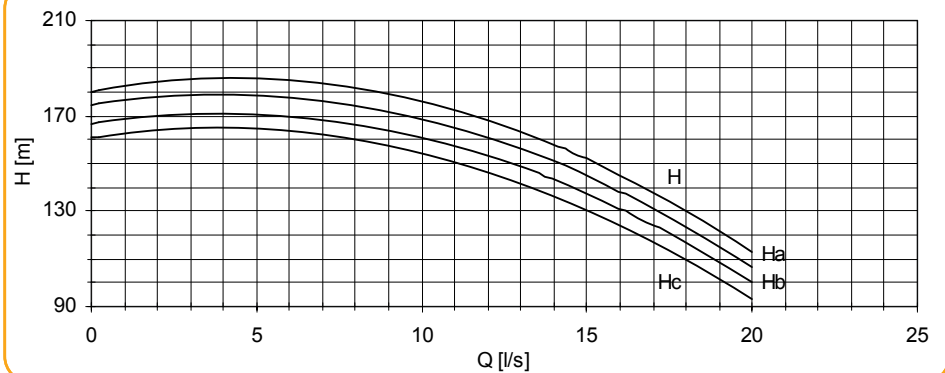
Net Positive  
Suction Head



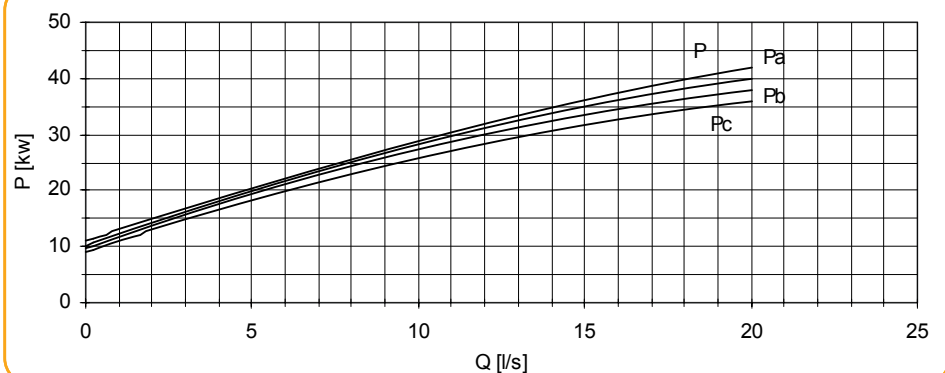


## Pump performance curves

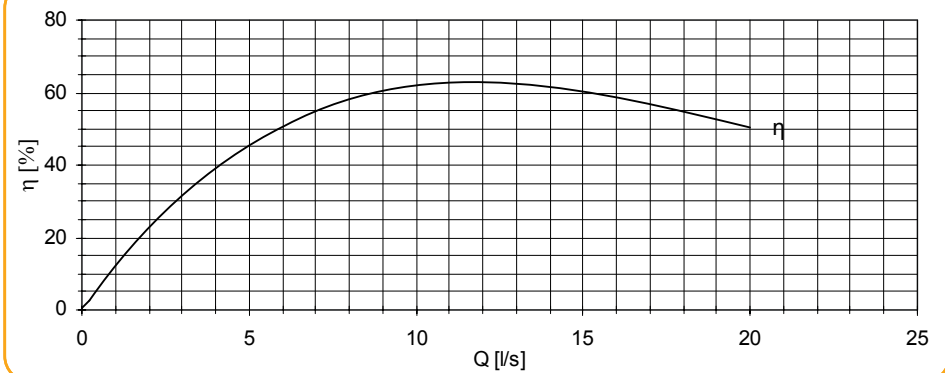
Total  
Differential  
Head



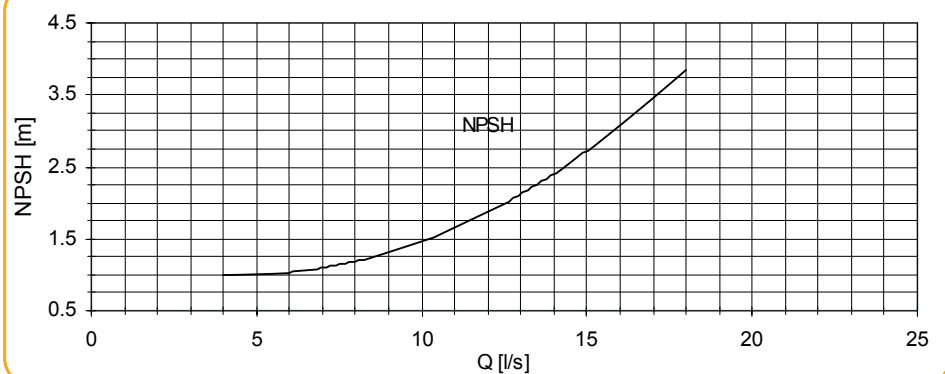
Power Input



Efficiency

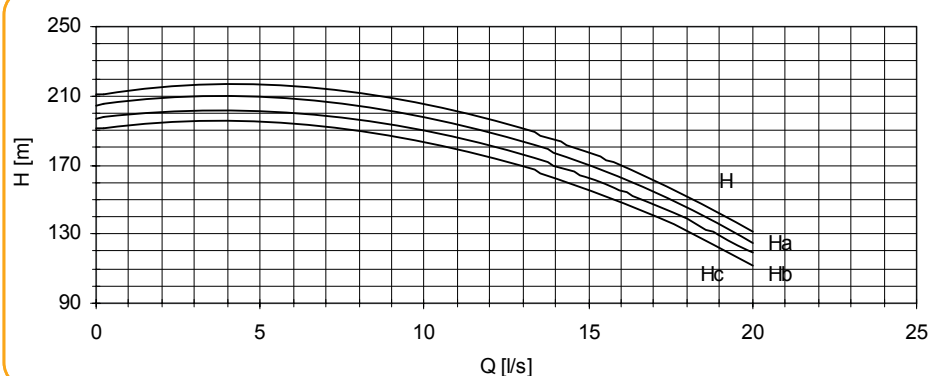


Net Positive  
Suction Head

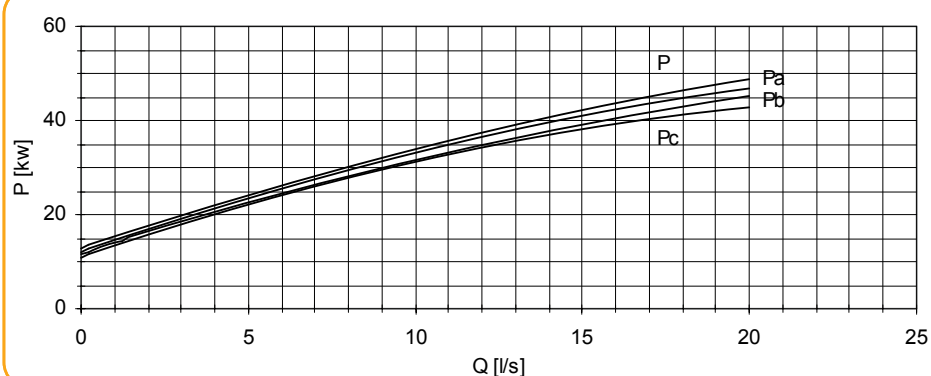


## Pump performance curves

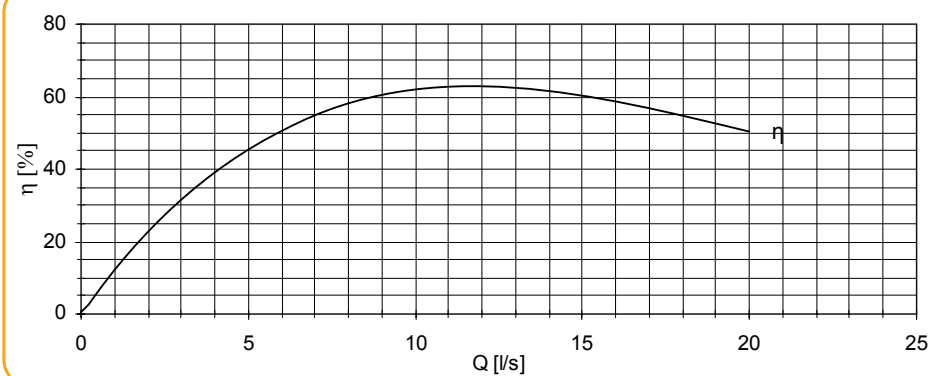
Total  
Differential  
Head



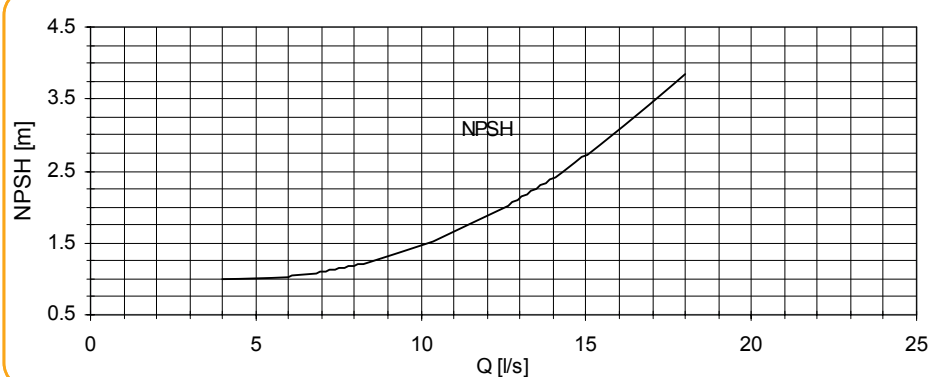
Power Input



Efficiency

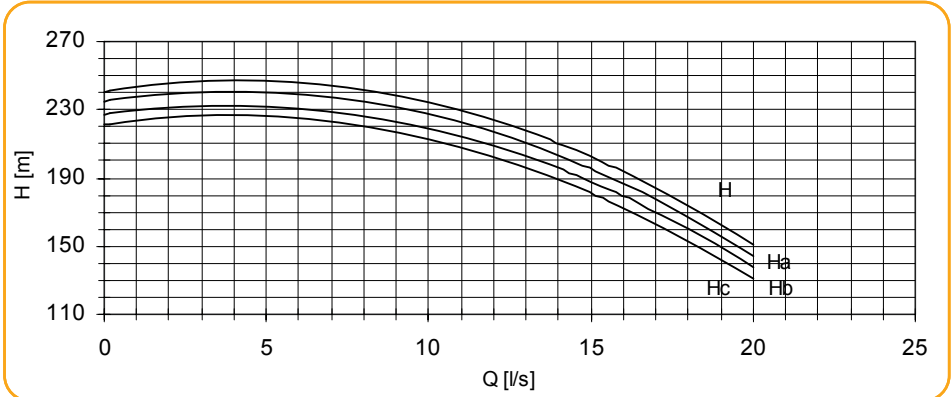


Net Positive  
Suction Head

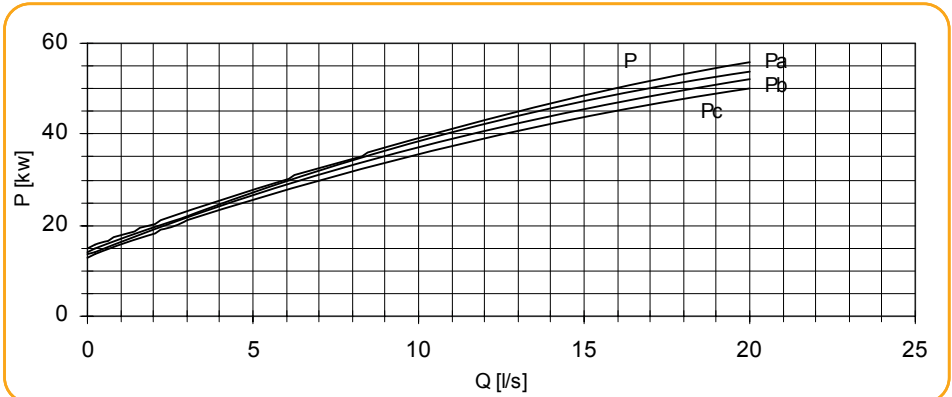


**Pump performance curves**

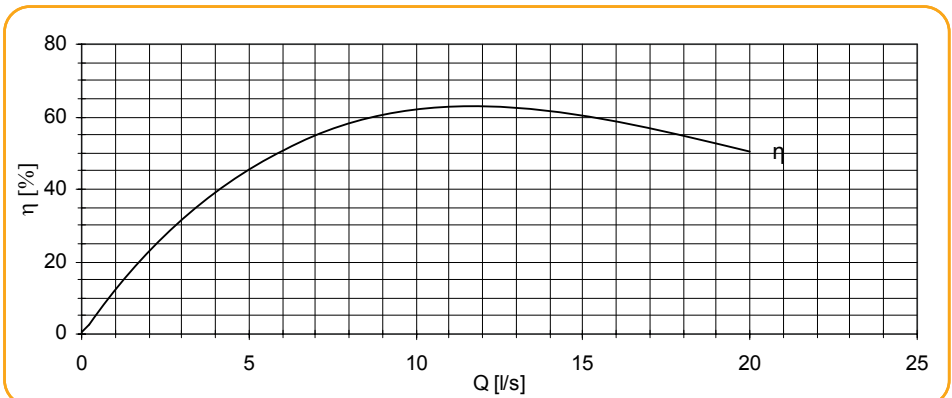
Total  
Differential  
Head



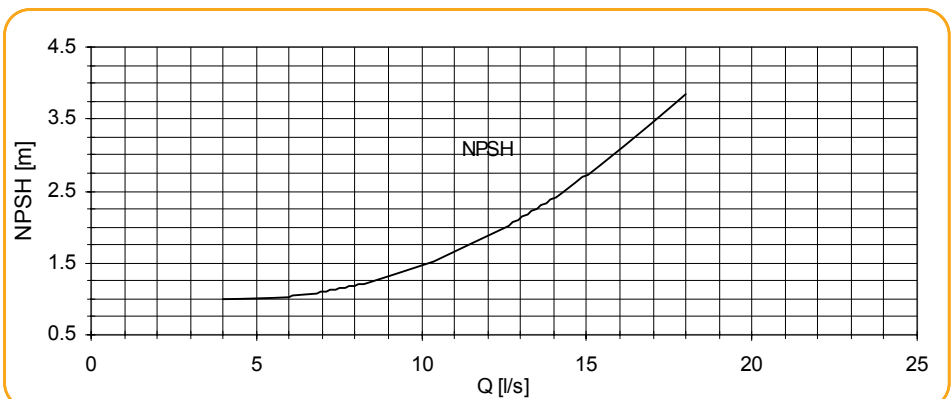
Power Input



Efficiency

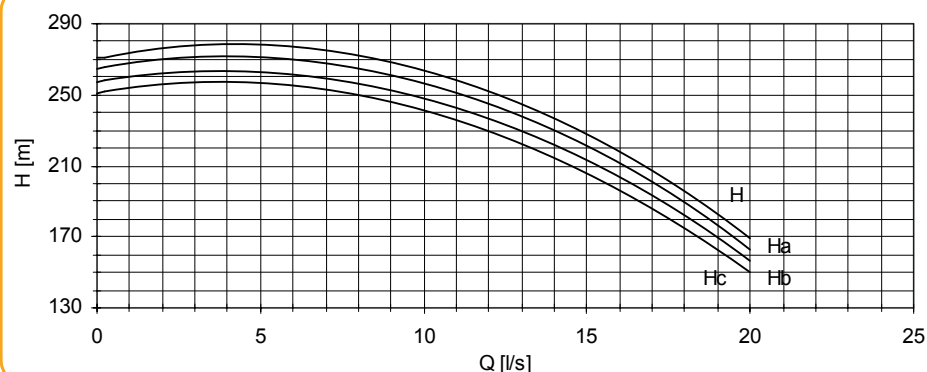


Net Positive  
Suction Head

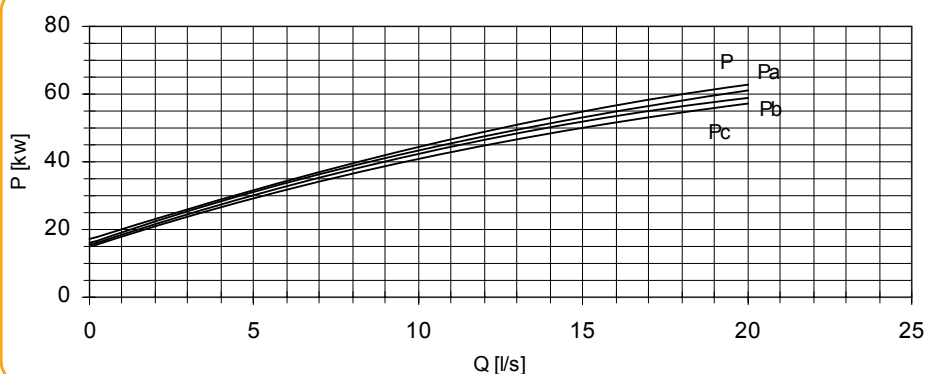


## Pump performance curves

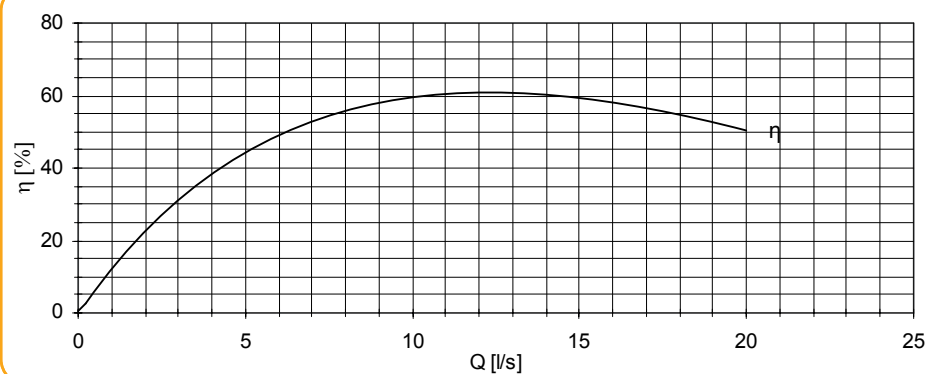
Total  
Differential  
Head



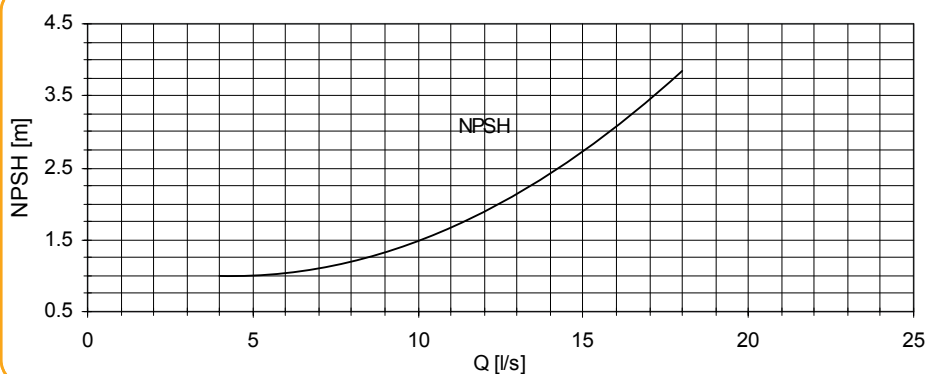
Power Input



Efficiency

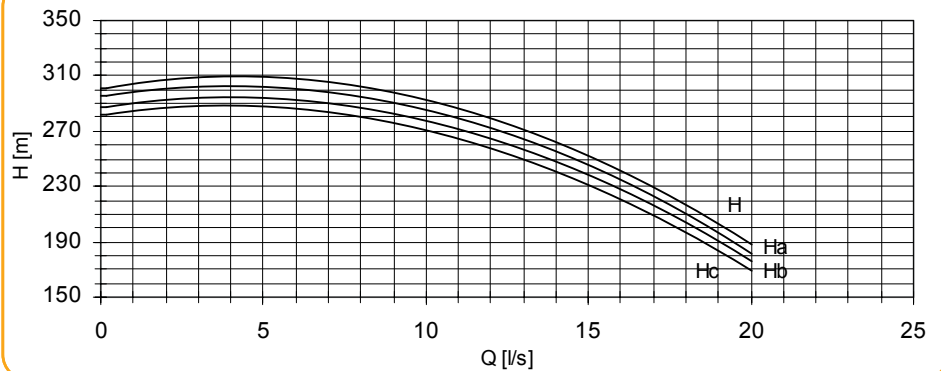


Net Positive  
Suction Head

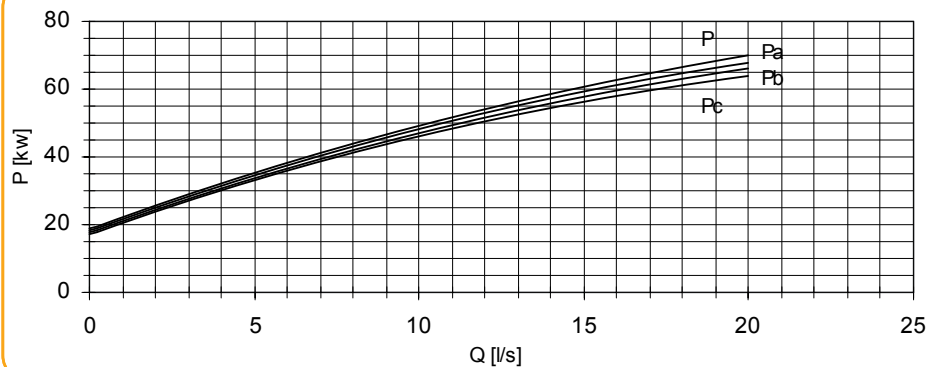


## Pump performance curves

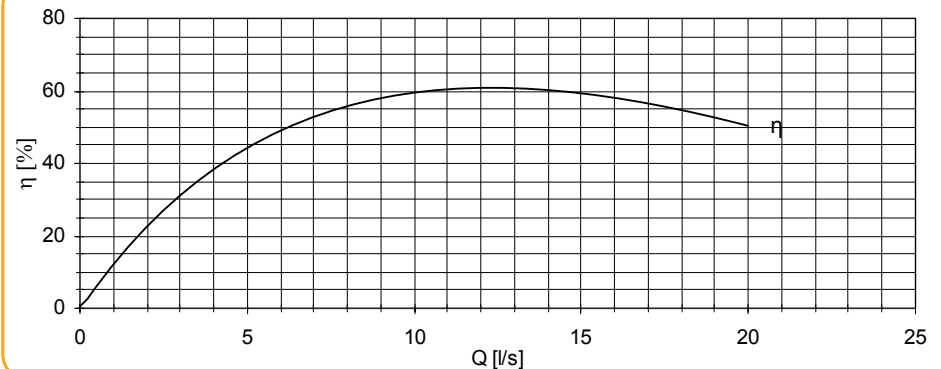
Total  
Differential  
Head



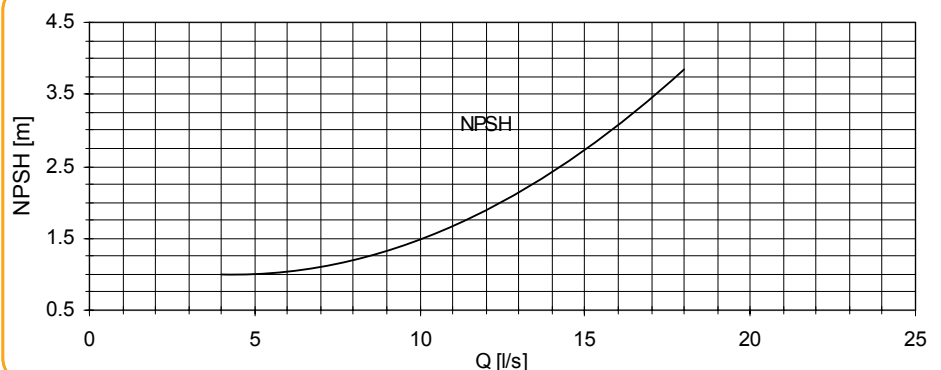
Power Input



Efficiency

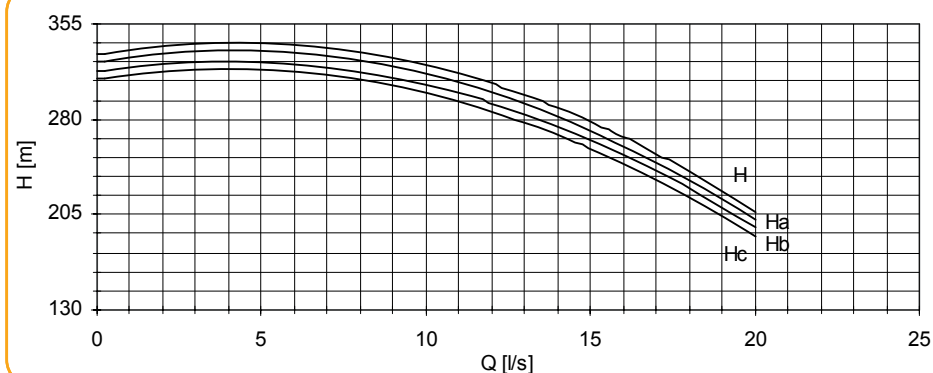


Net Positive  
Suction Head

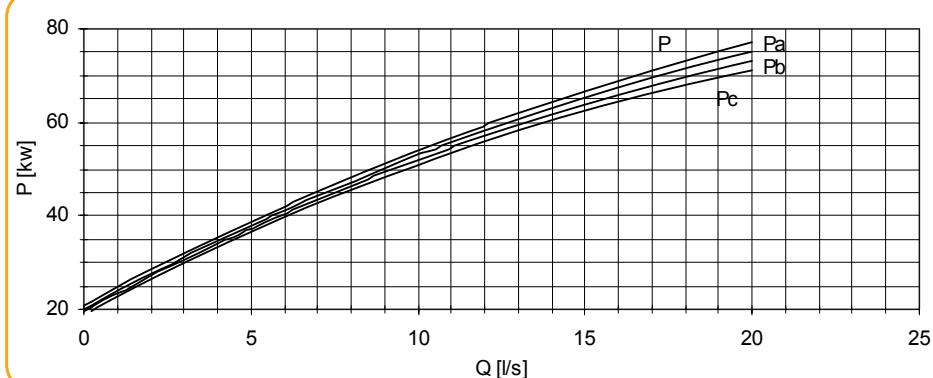


## Pump performance curves

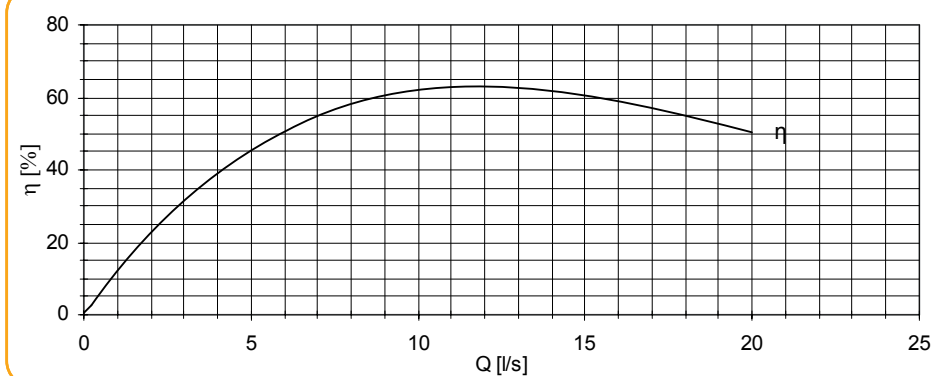
Total  
Differential  
Head



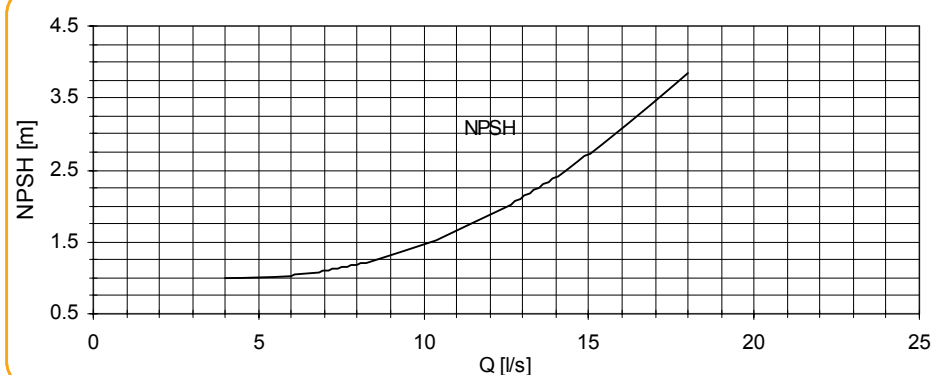
Power Input



Efficiency

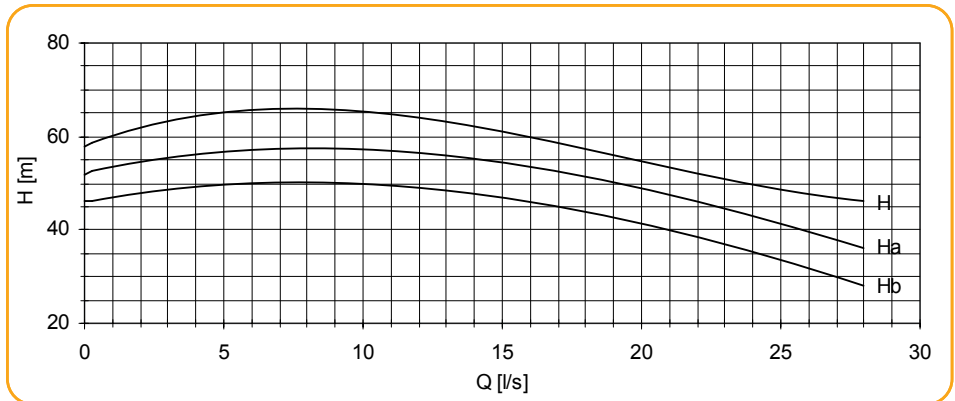


Net Positive  
Suction Head

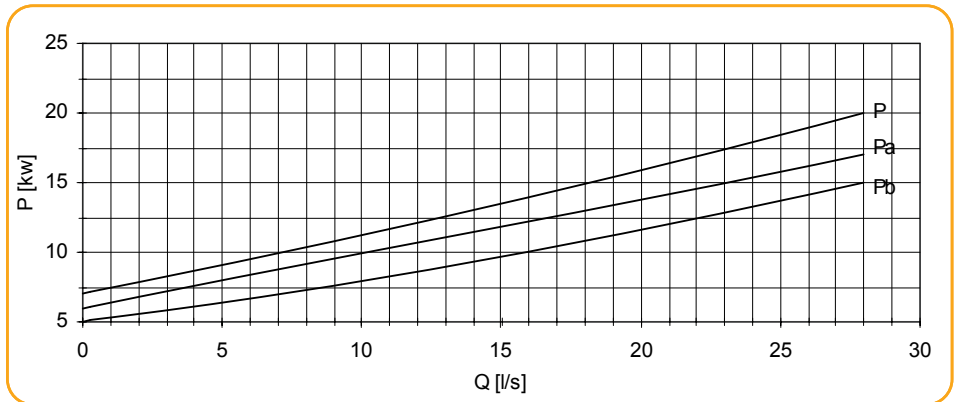


Pump performance curves

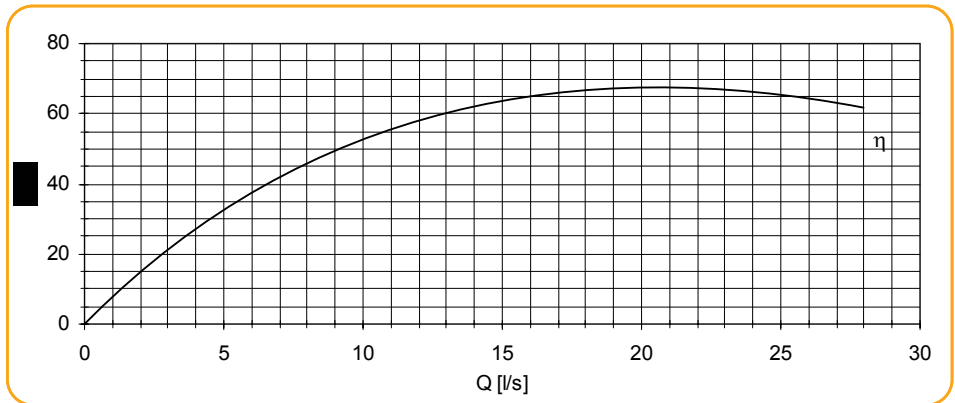
Total  
Differential  
Head



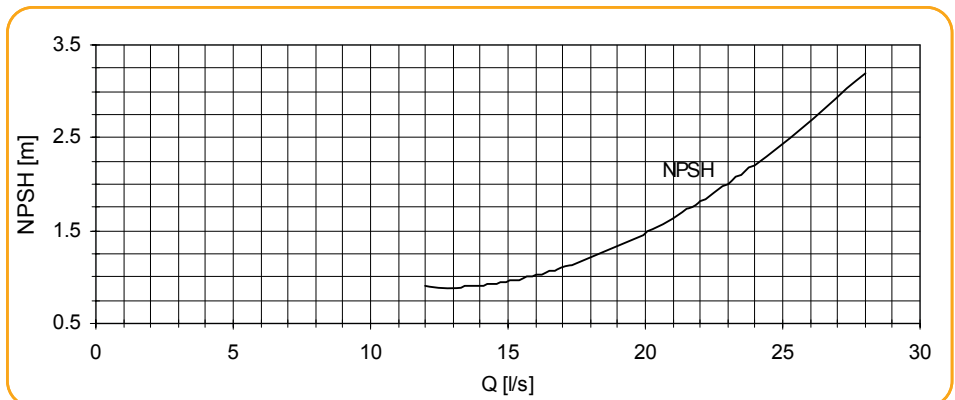
Power Input



Efficiency

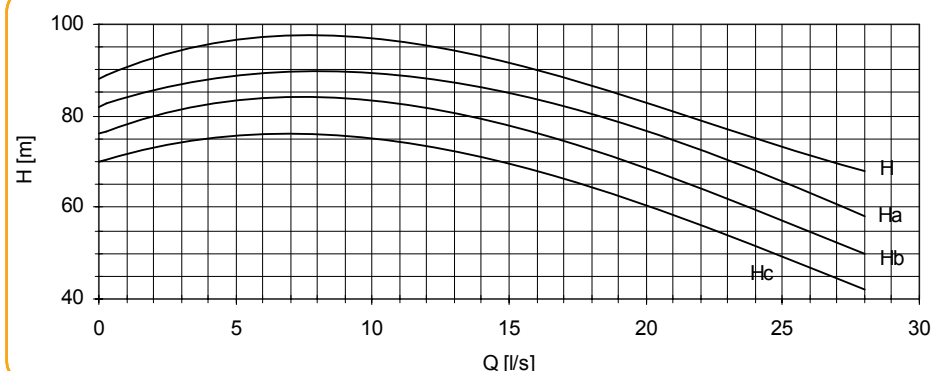


Net Positive  
Suction Head

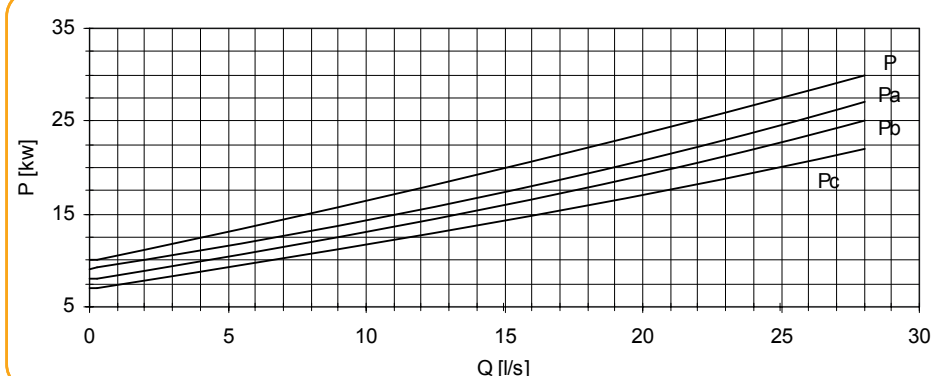


## Pump performance curves

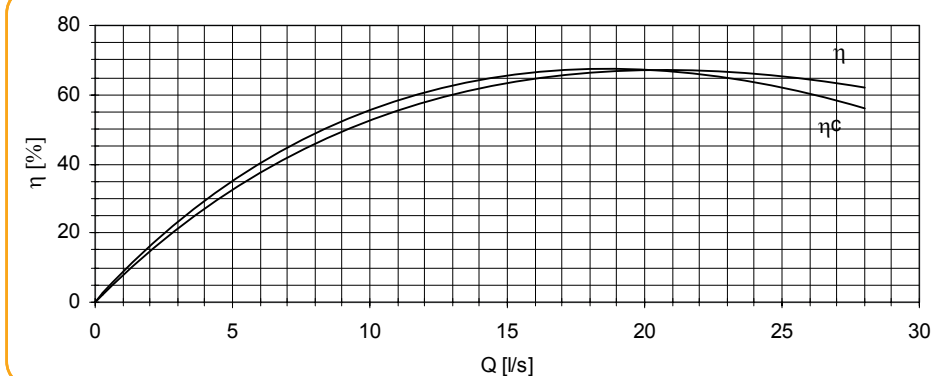
Total  
Differential  
Head



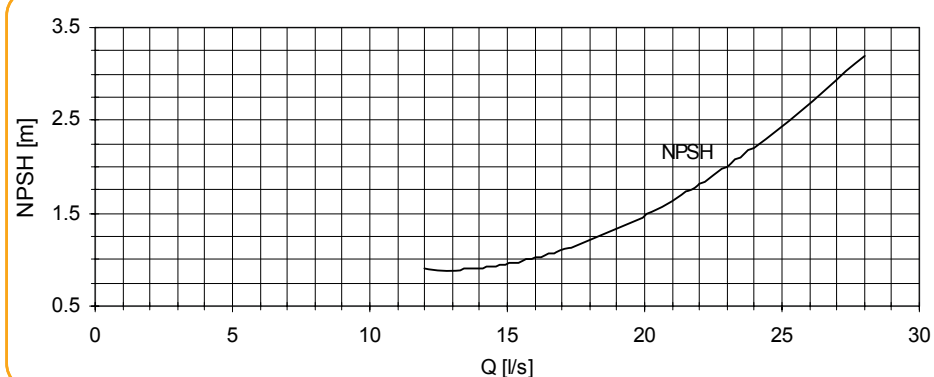
Power Input



Efficiency



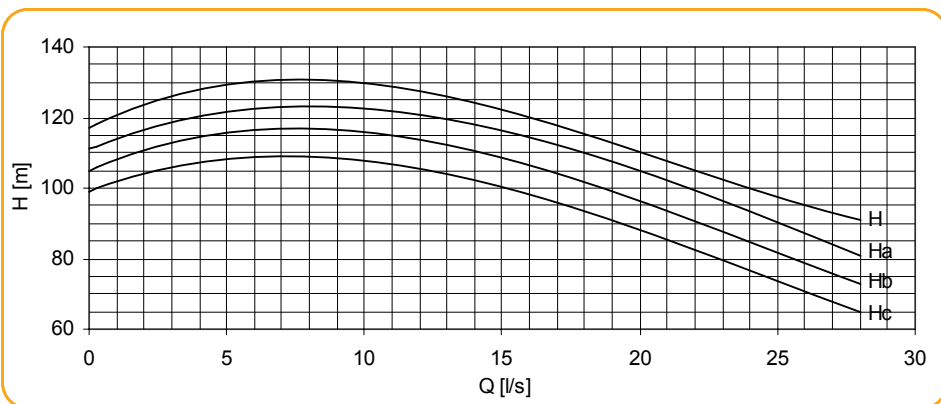
Net Positive  
Suction Head



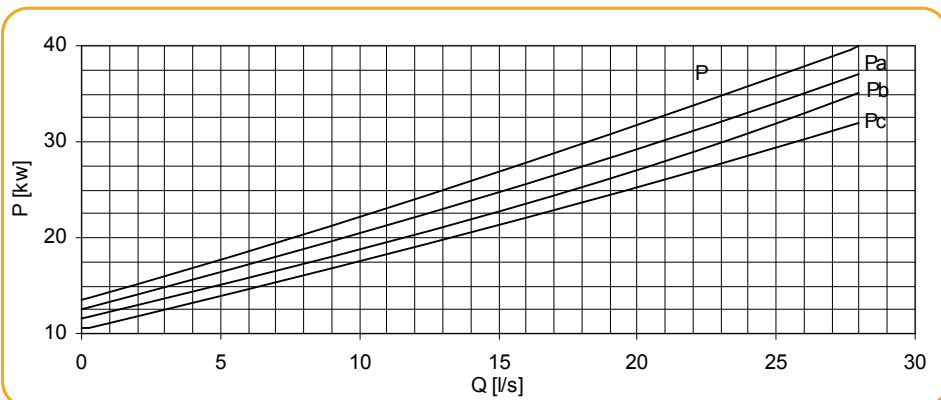


# Pump performance curves

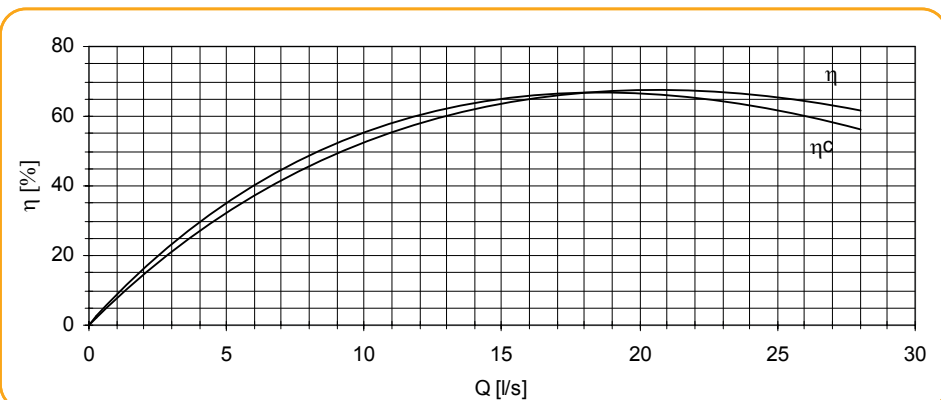
Total  
Differential  
Head



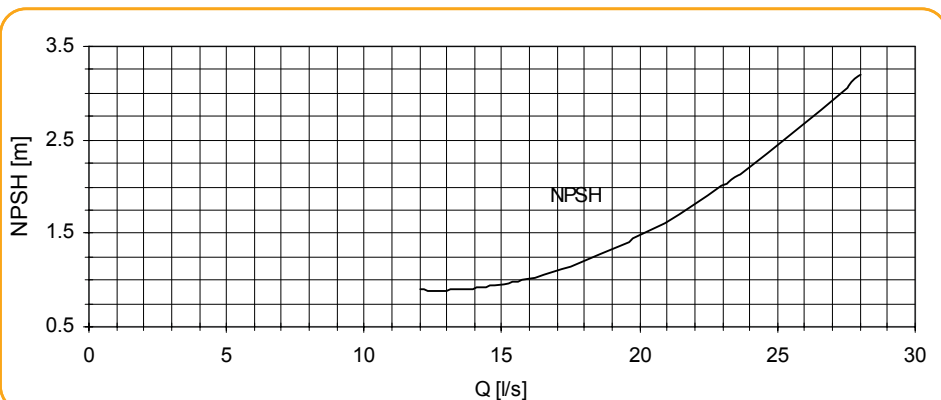
Power Input



Efficiency

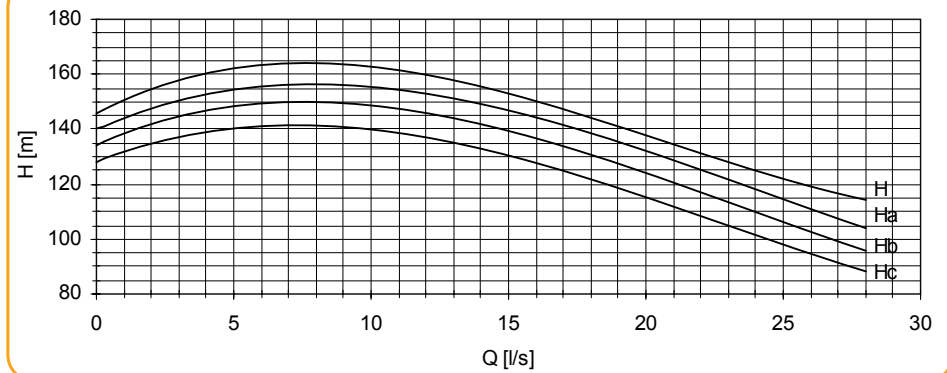


Net Positive  
Suction Head

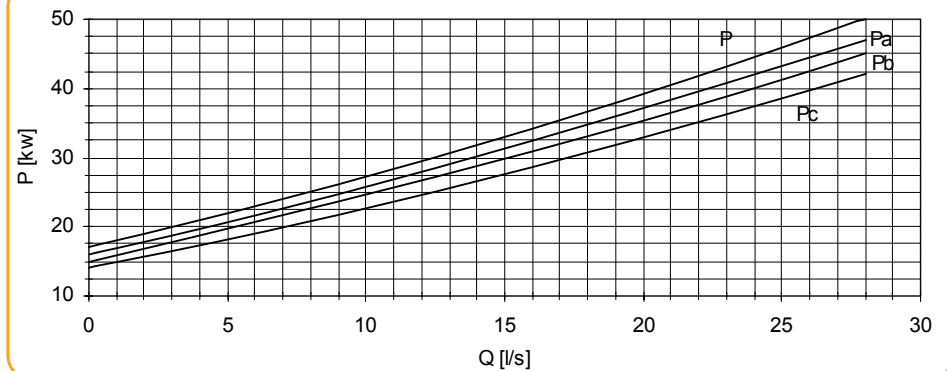


**Pump performance curves**

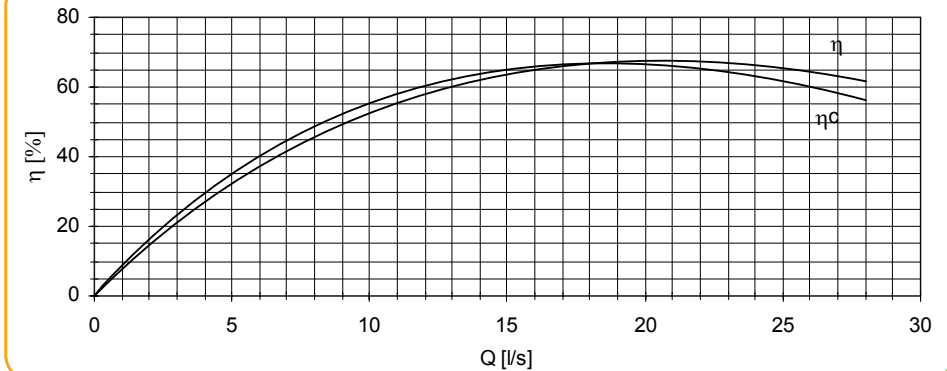
Total  
Differential  
Head



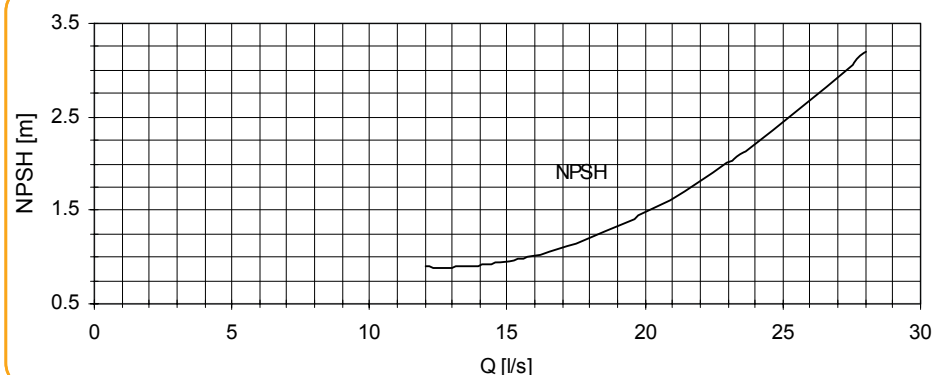
Power Input



Efficiency

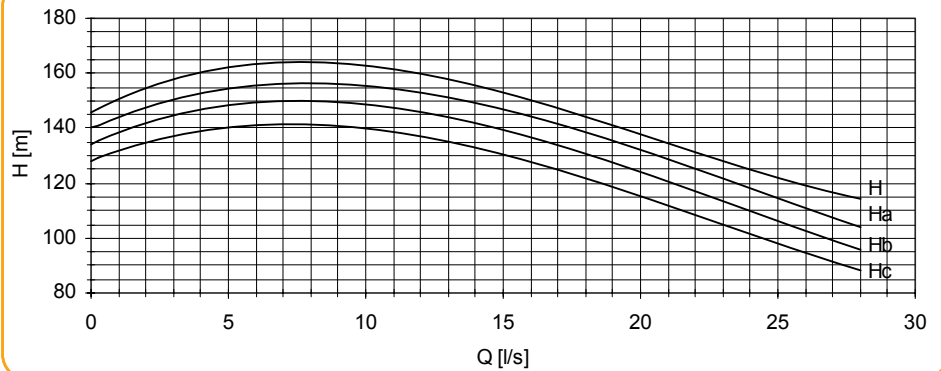


Net Positive  
Suction Head

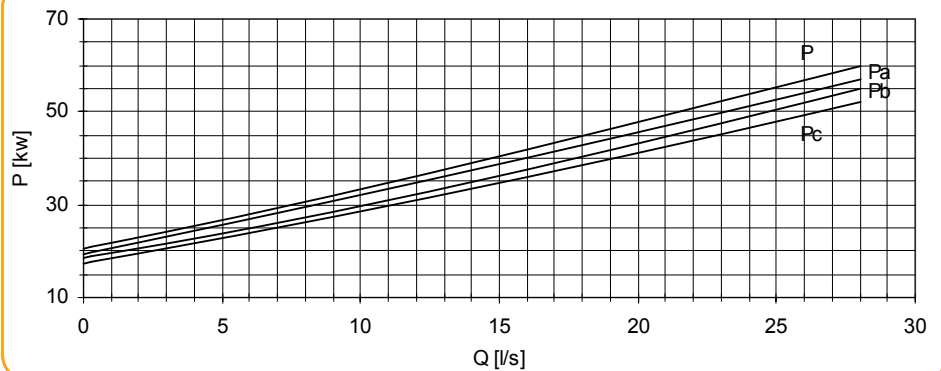


## Pump performance curves

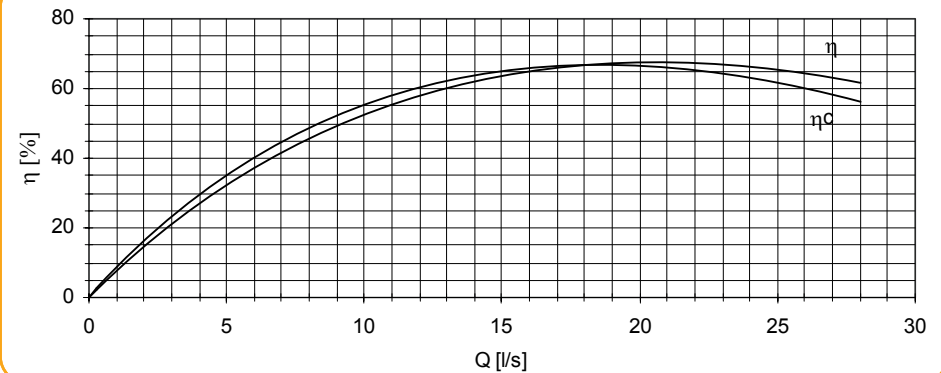
Total  
Differential  
Head



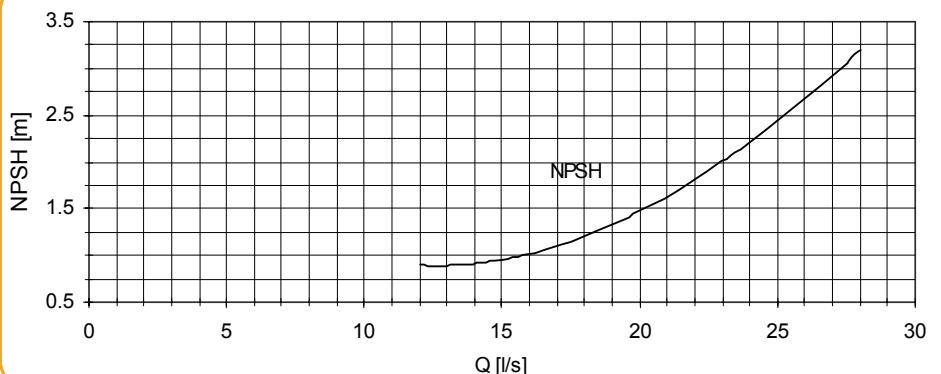
Power Input



Efficiency

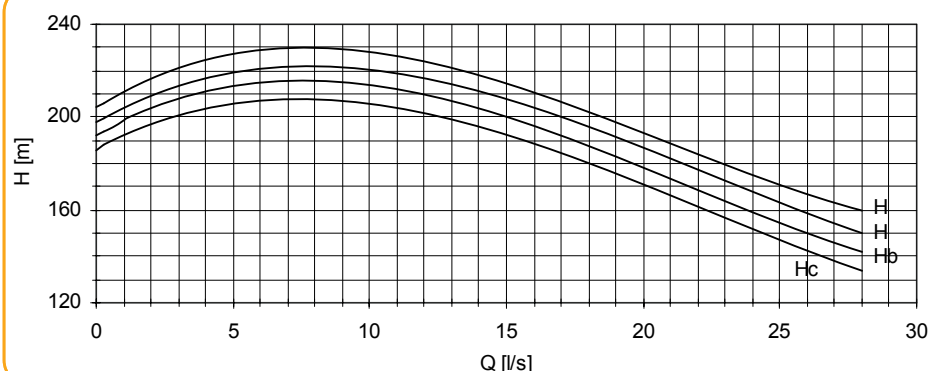


Net Positive  
Suction Head

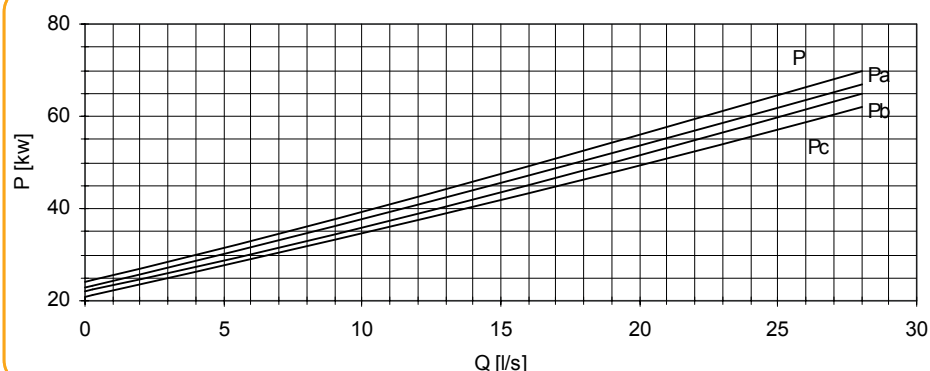


## Pump performance curves

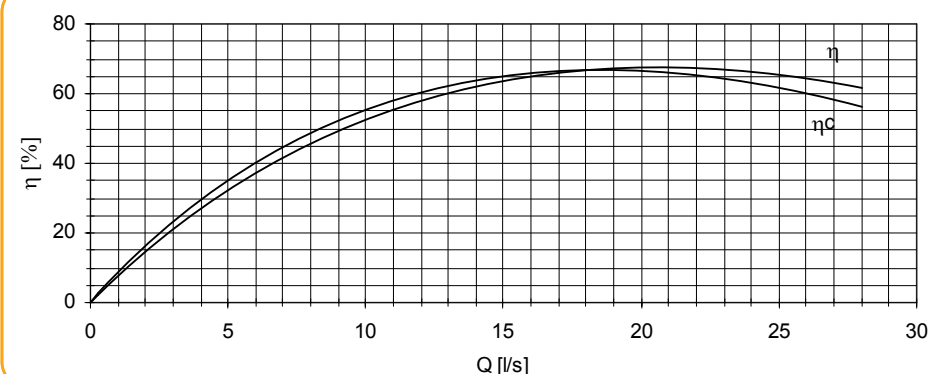
Total  
Differential  
Head



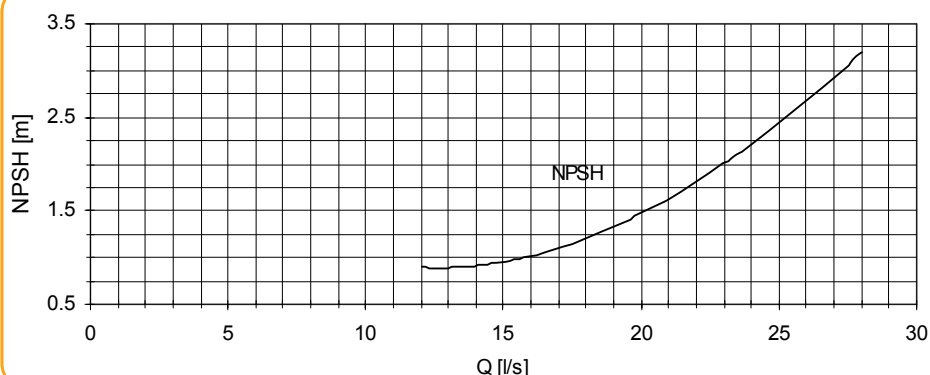
Power Input



Efficiency

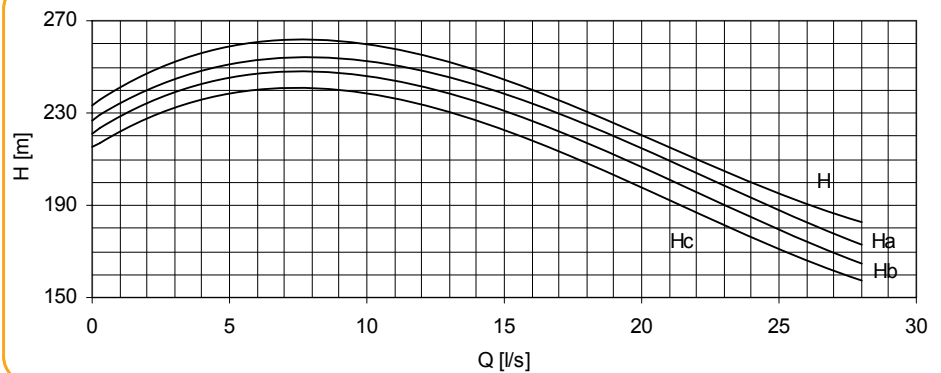


Net Positive  
Suction Head

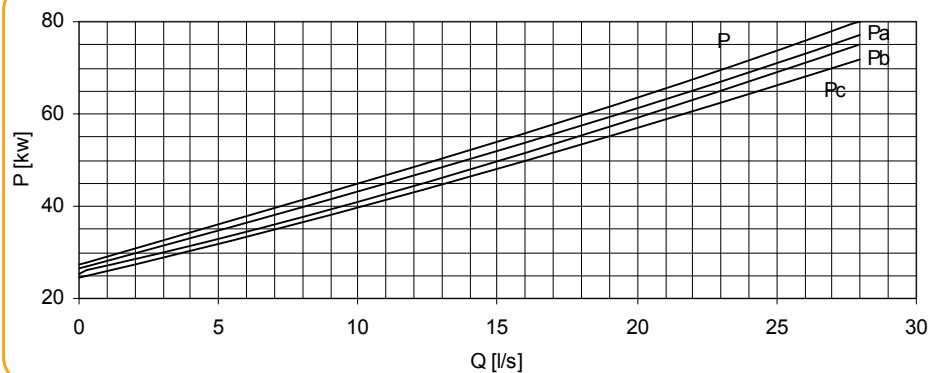


**Pump performance curves**

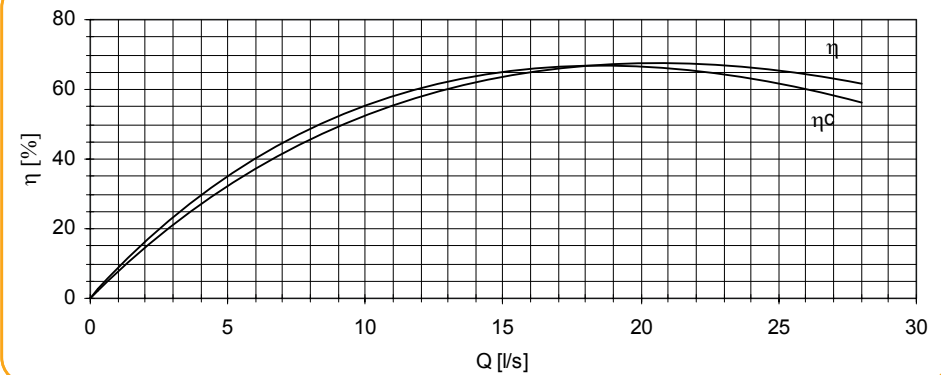
Total  
Differential  
Head



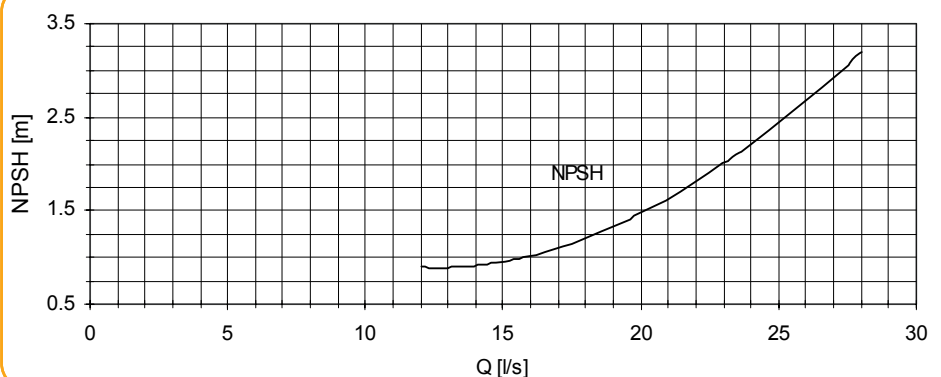
Power Input



Efficiency

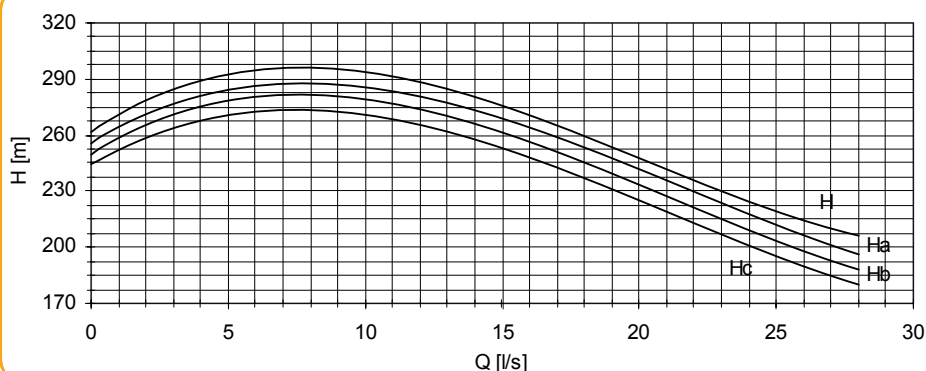


Net Positive  
Suction Head

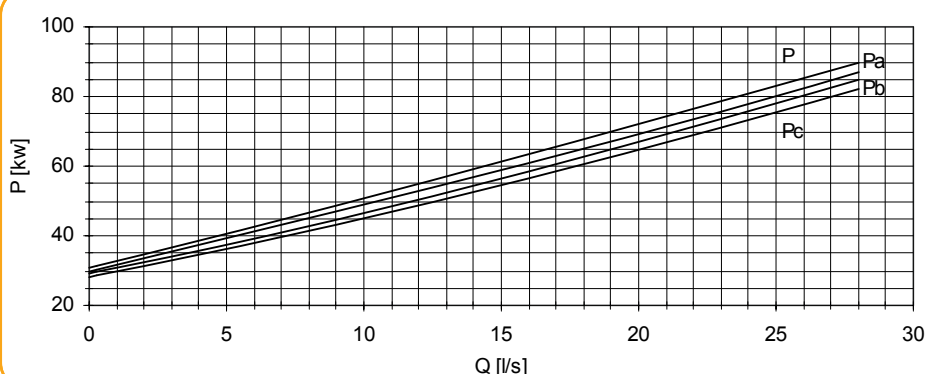


**Pump performance curves**

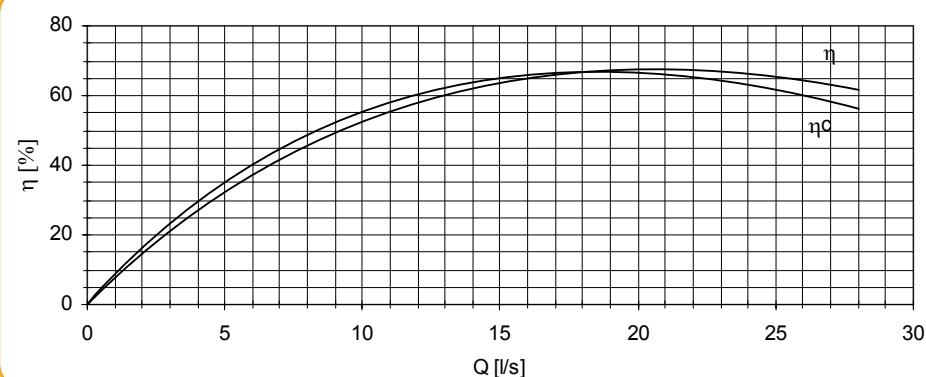
Total  
Differential  
Head



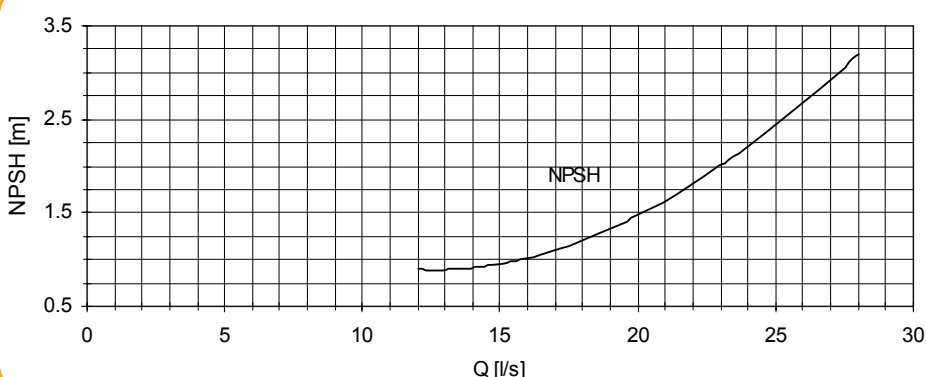
Power Input



Efficiency



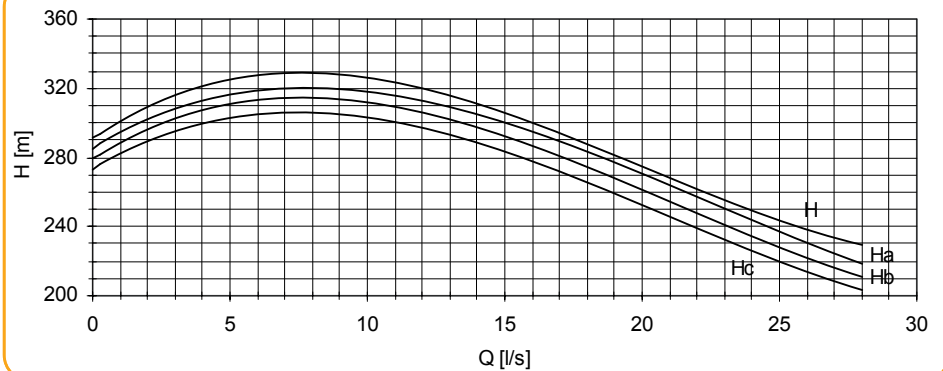
Net Positive  
Suction Head



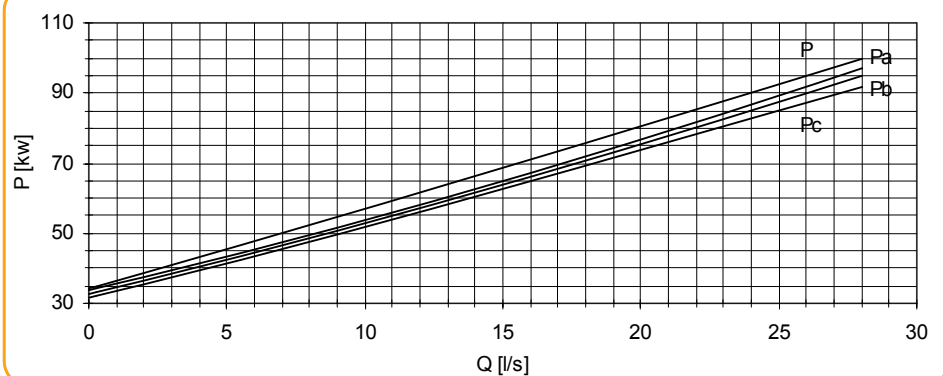
**Pump performance curves**

30 DMSD 100-10  
n = 1450 (rpm)

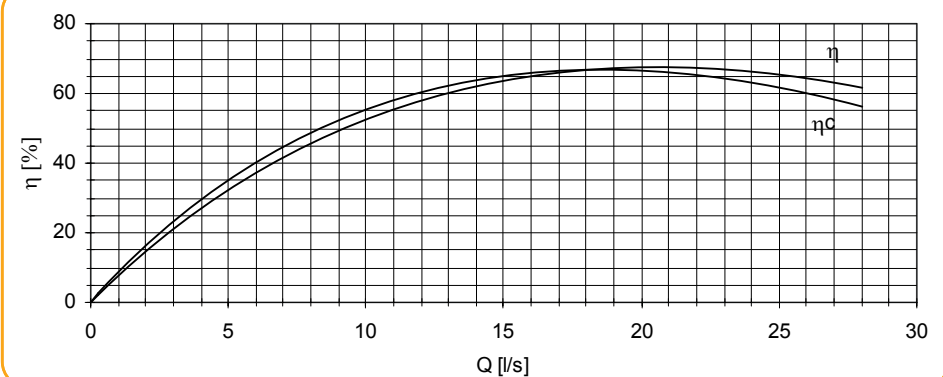
Total  
Differential  
Head



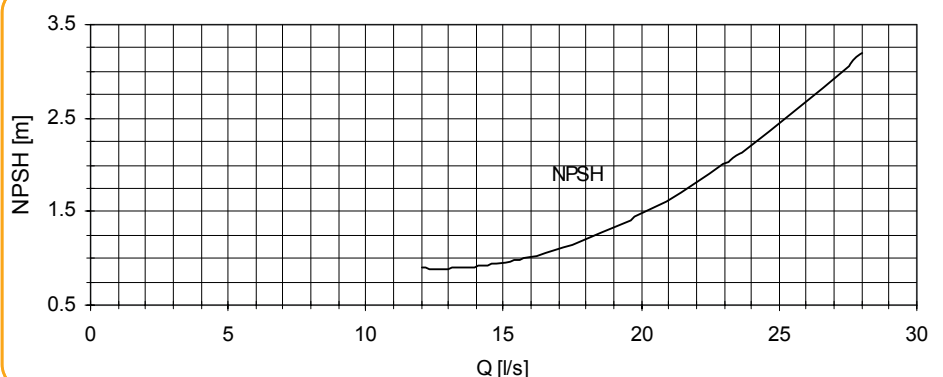
Power Input



Efficiency

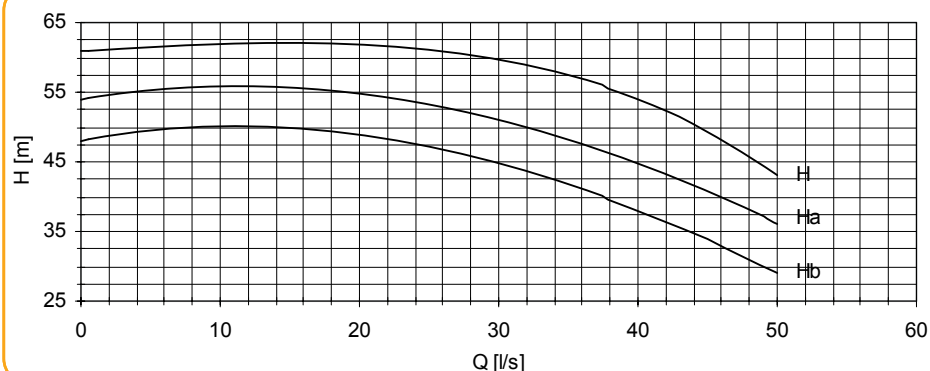


Net Positive  
Suction Head

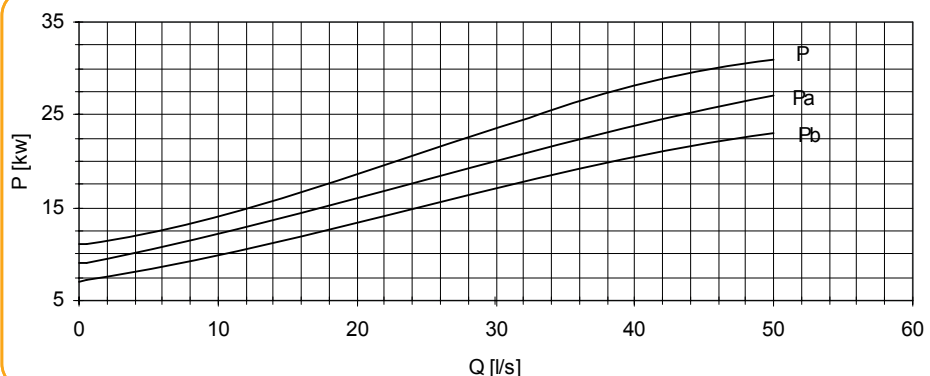


## Pump performance curves

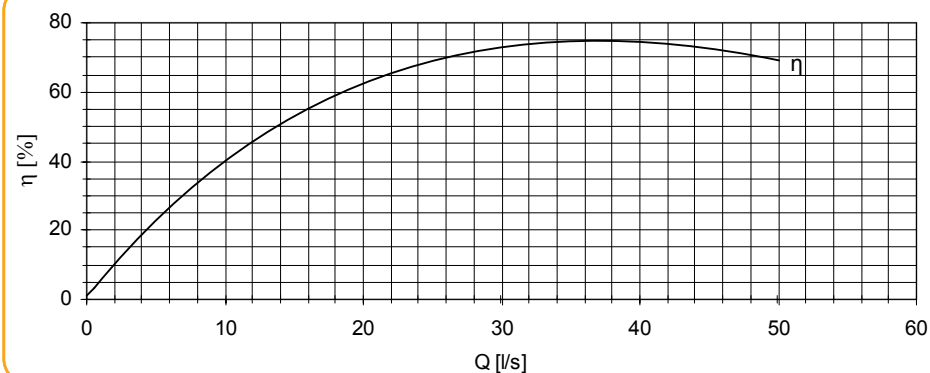
Total  
Differential  
Head



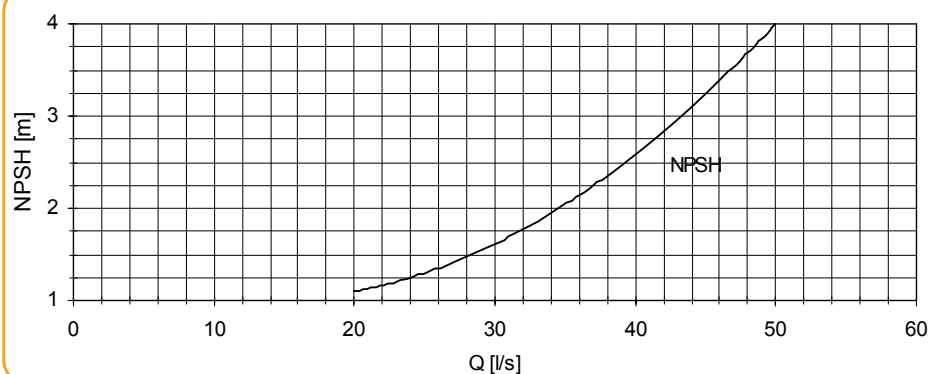
Power Input



Efficiency



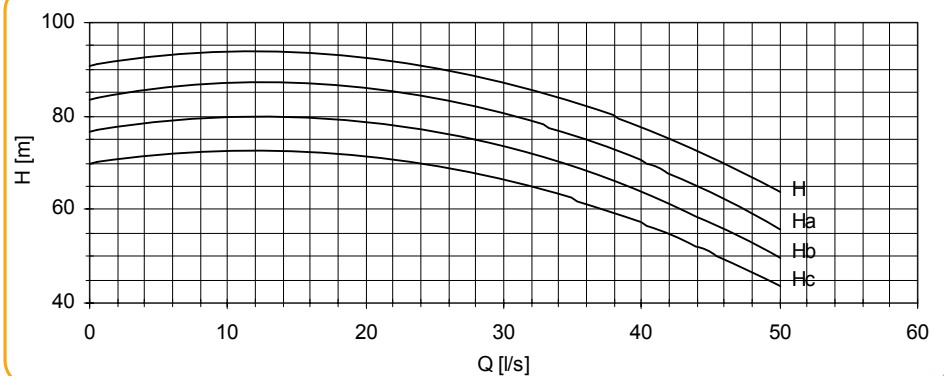
Net Positive  
Suction Head



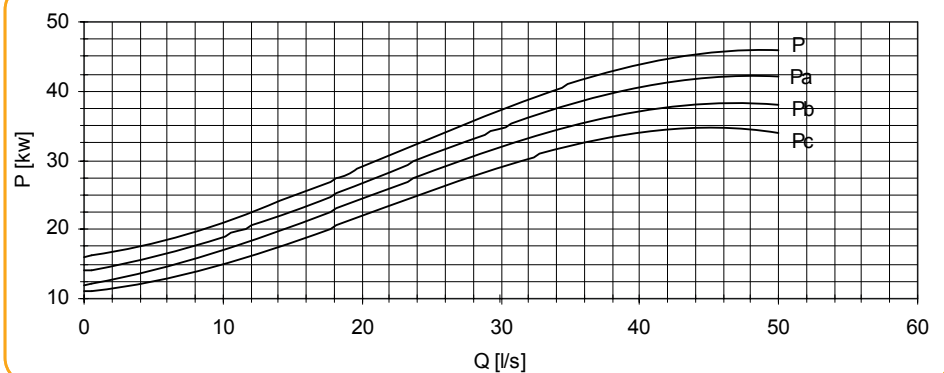


# Pump performance curves

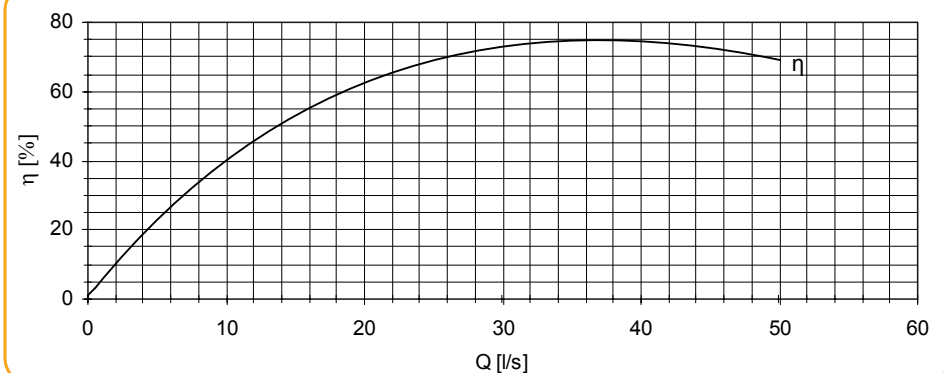
Total  
Differential  
Head



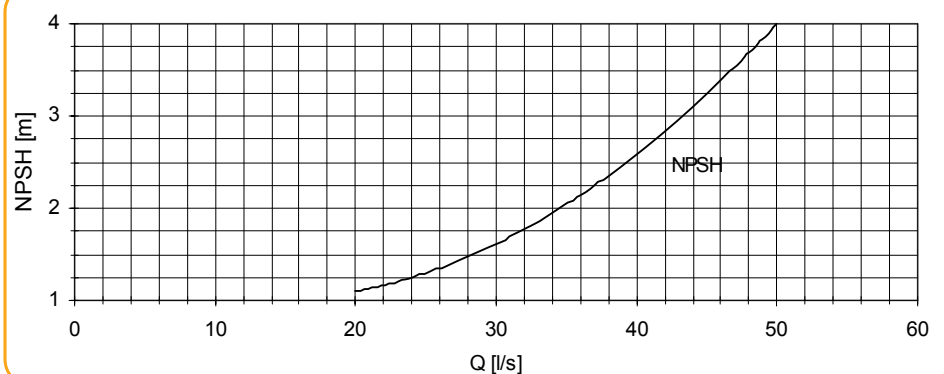
Power Input



Efficiency

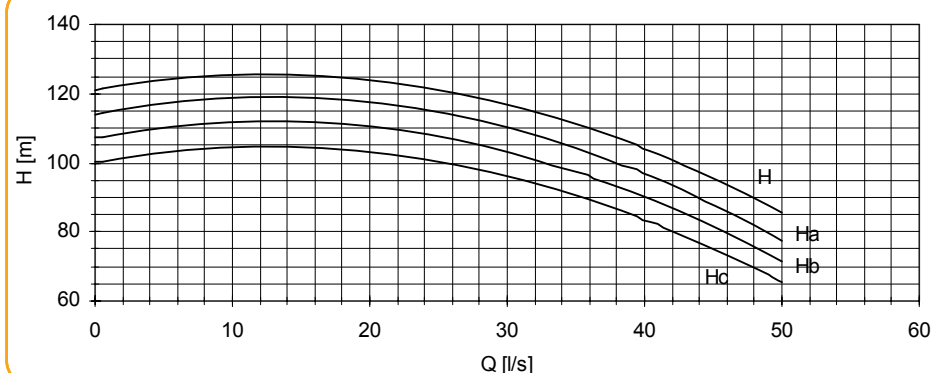


Net Positive  
Suction Head

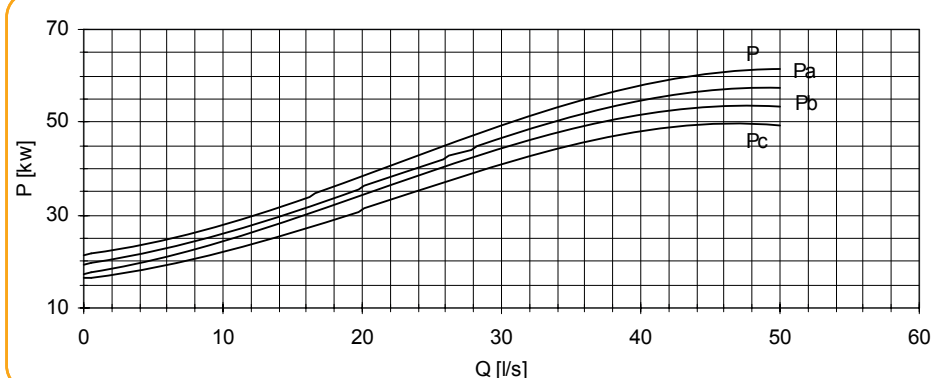


## Pump performance curves

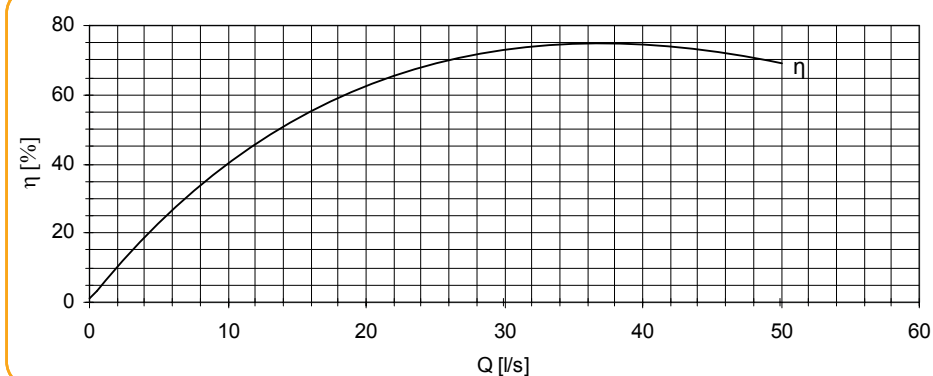
Total  
Differential  
Head



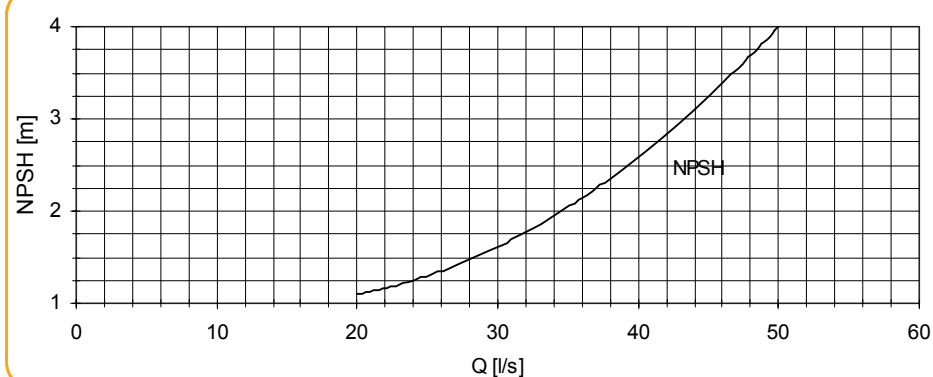
Power Input



Efficiency

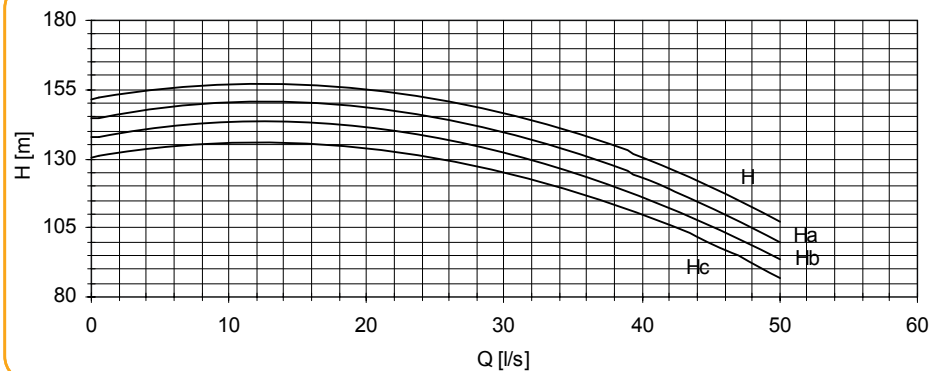


Net Positive  
Suction Head

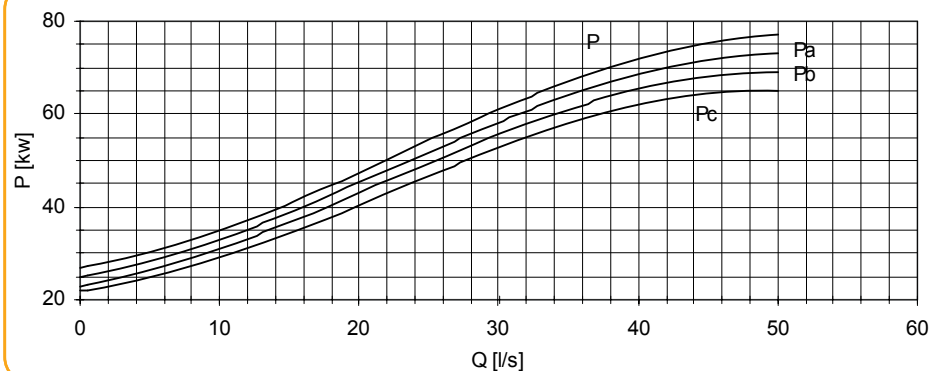


## Pump performance curves

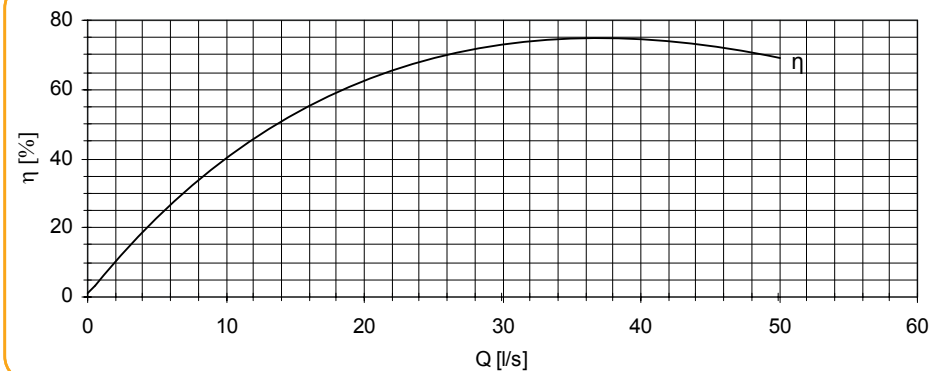
Total  
Differential  
Head



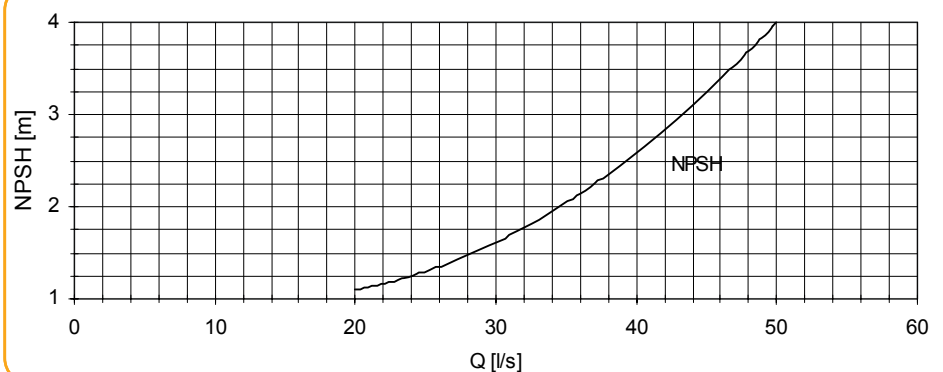
Power Input



Efficiency

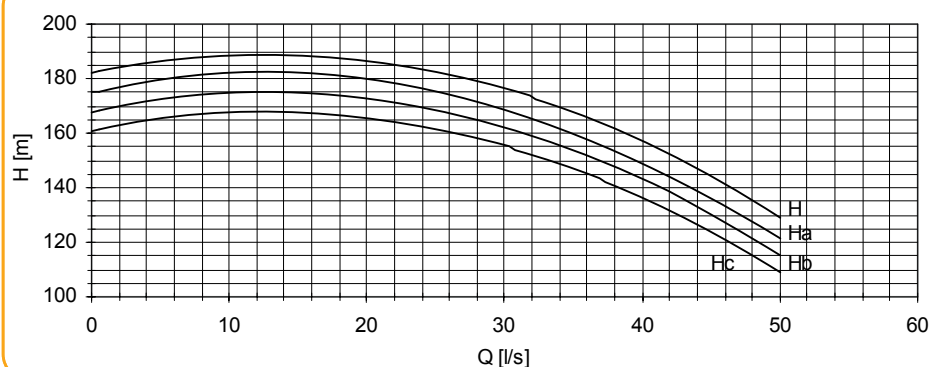


Net Positive  
Suction Head

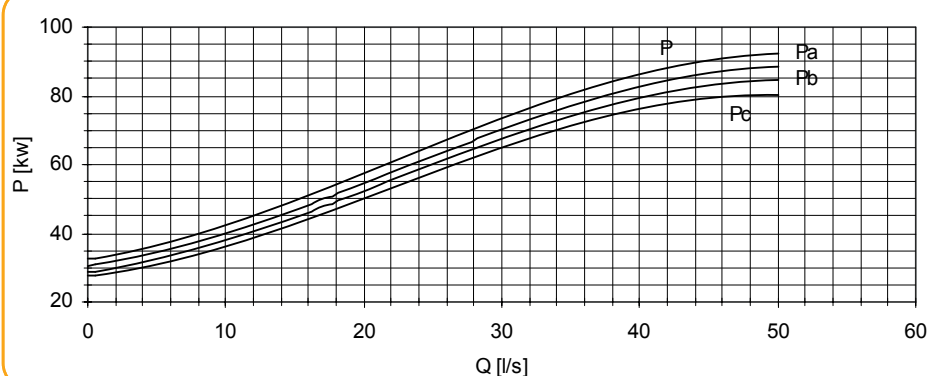


## Pump performance curves

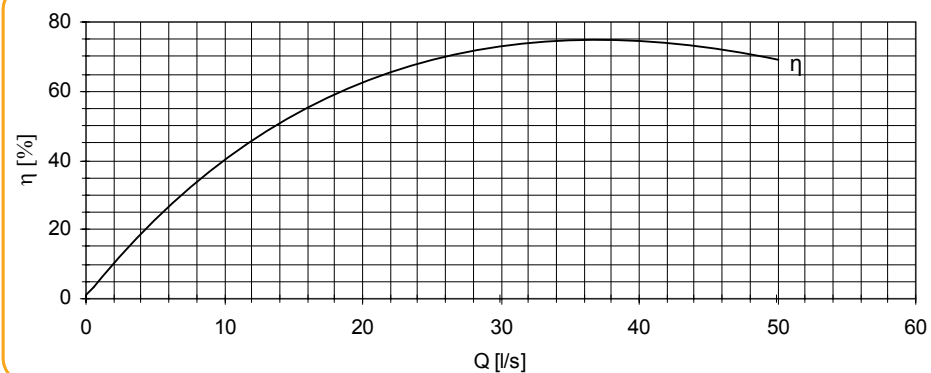
Total  
Differential  
Head



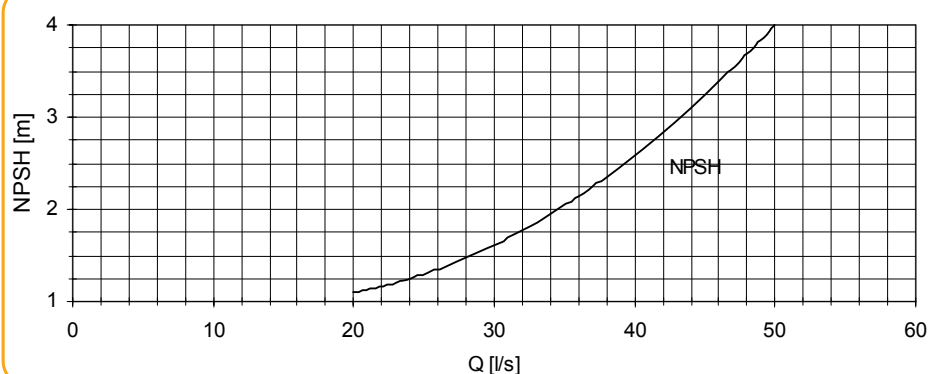
Power Input



Efficiency

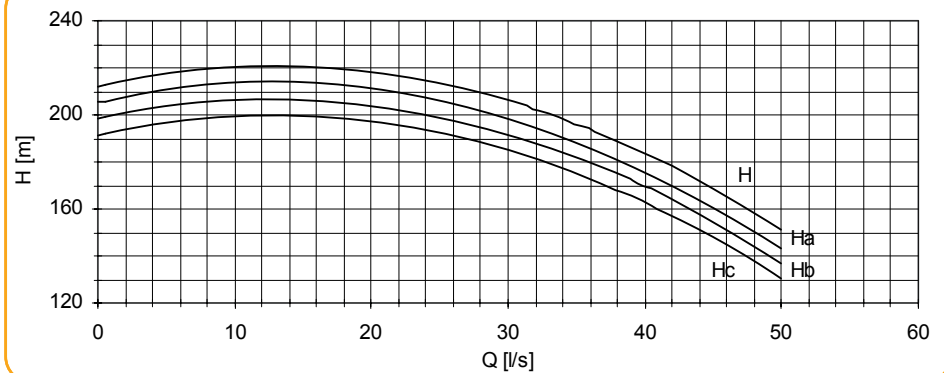


Net Positive  
Suction Head

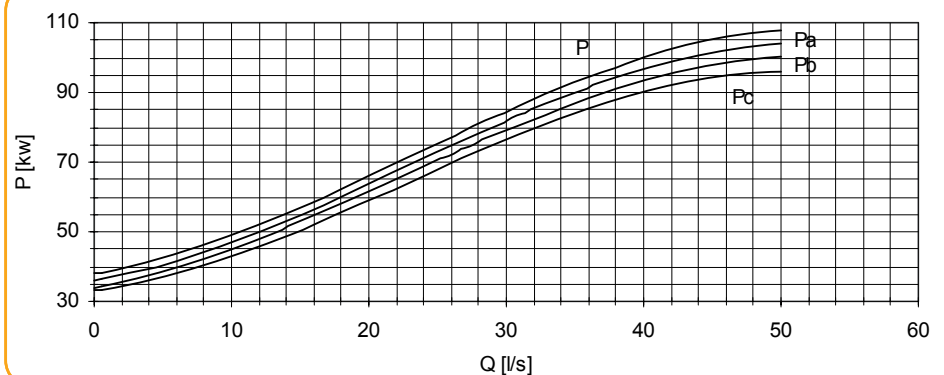


## Pump performance curves

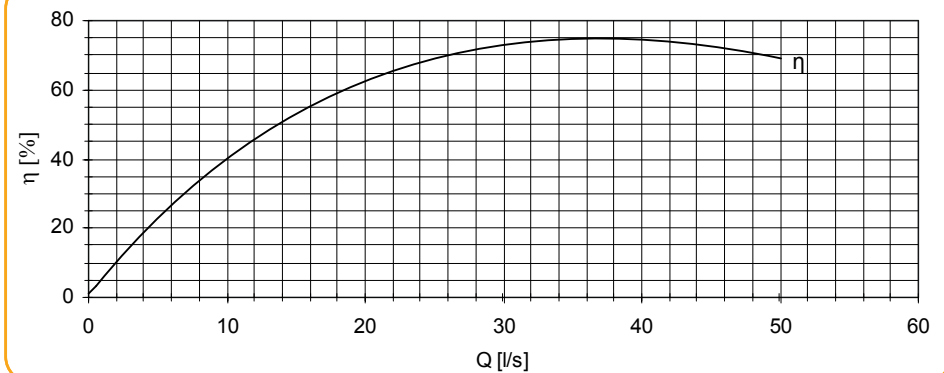
Total  
Differential  
Head



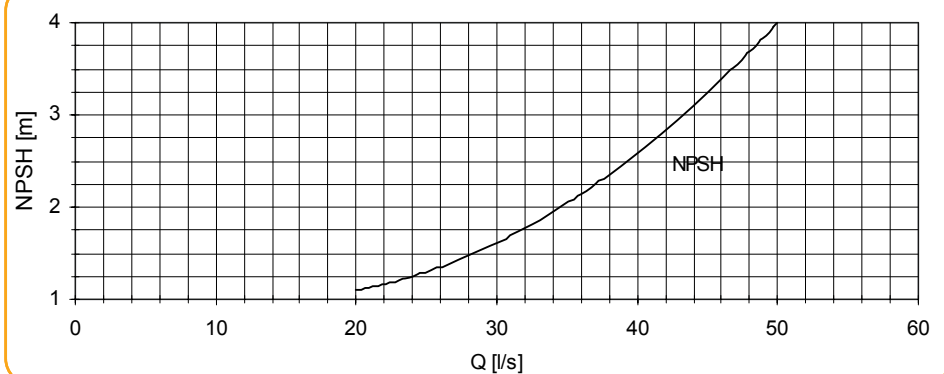
Power Input



Efficiency

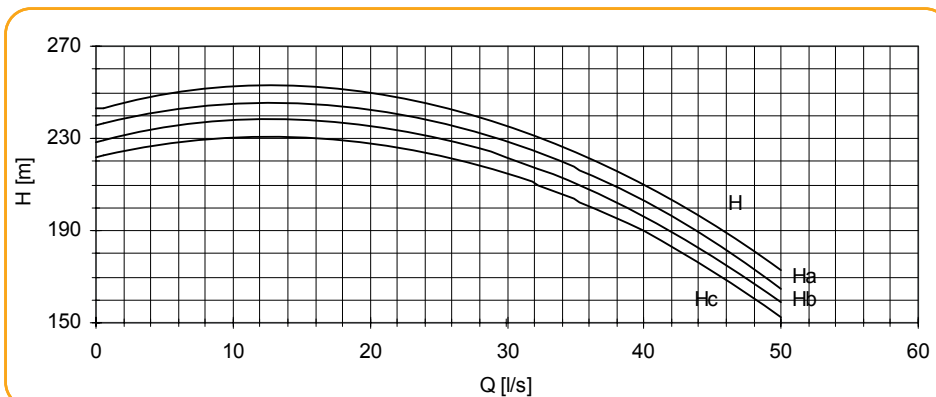


Net Positive  
Suction Head

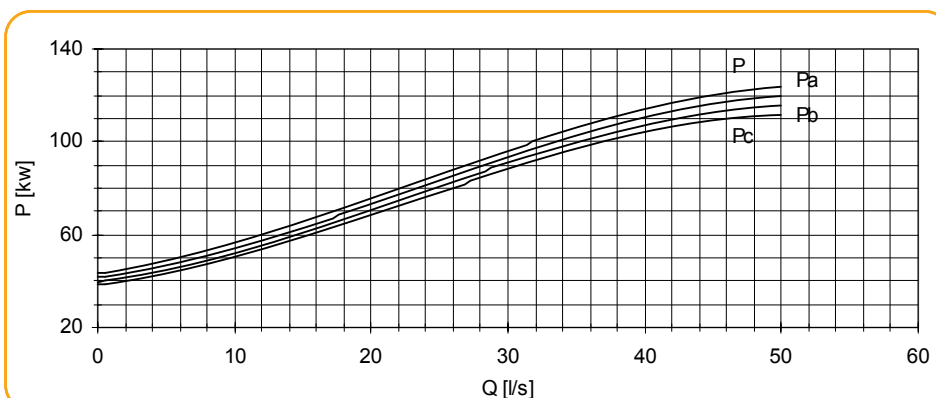


## Pump performance curves

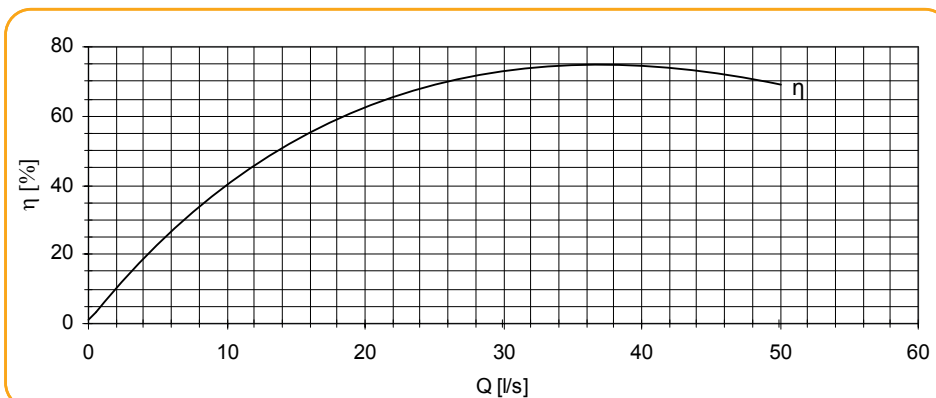
Total  
Differential  
Head



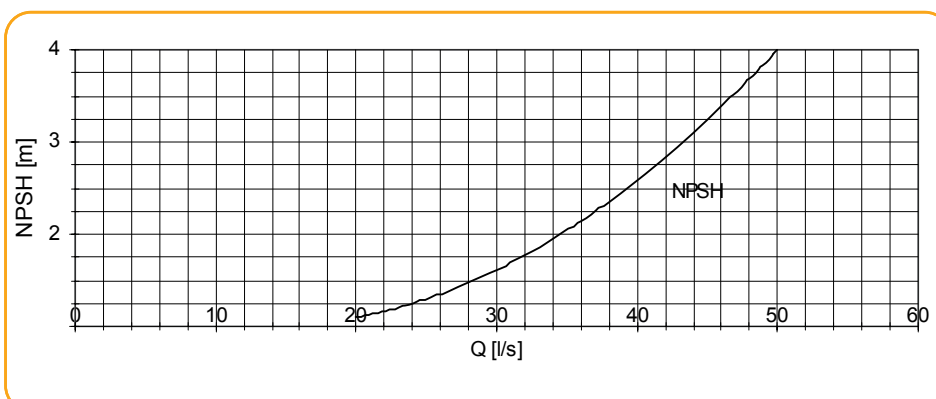
Power Input



Efficiency

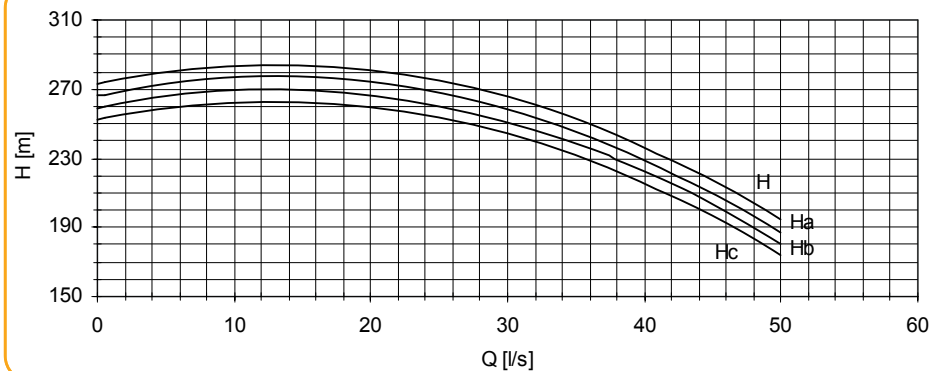


Net Positive  
Suction Head

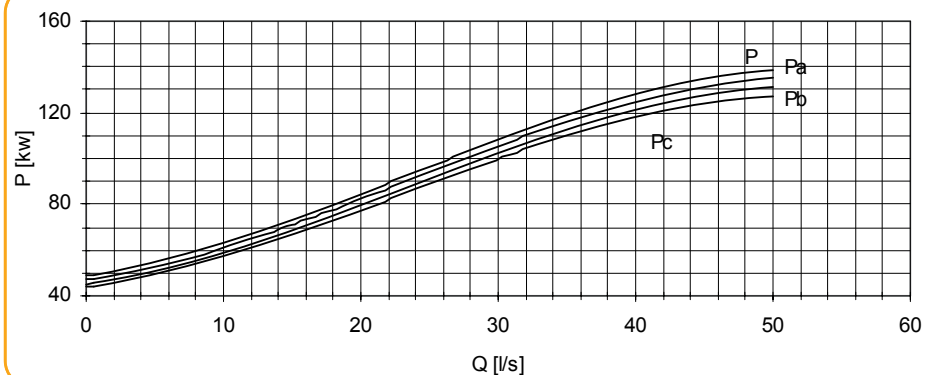


## Pump performance curves

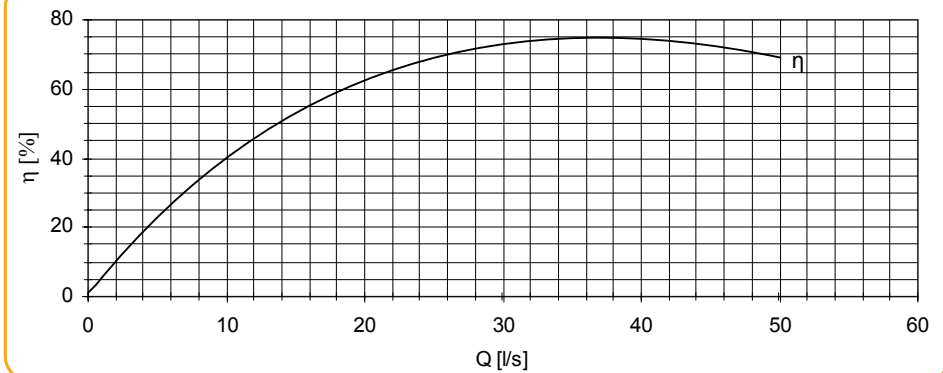
Total  
Differential  
Head



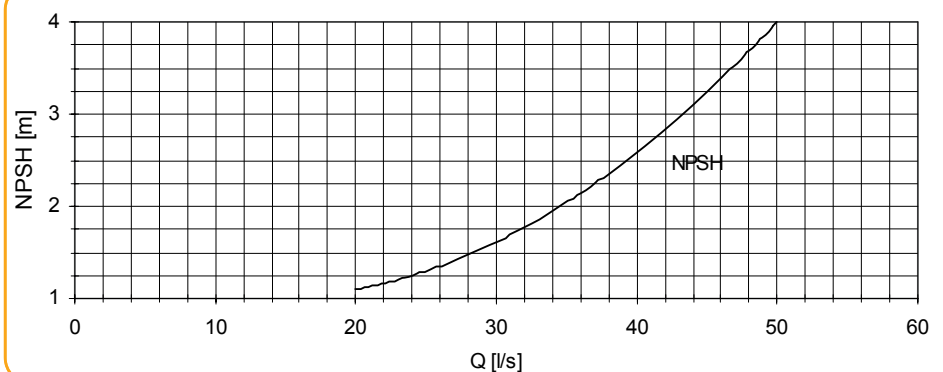
Power Input



Efficiency



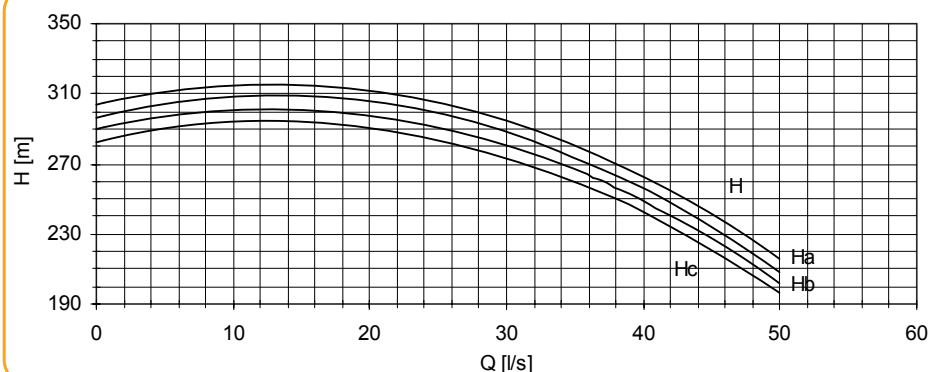
Net Positive  
Suction Head



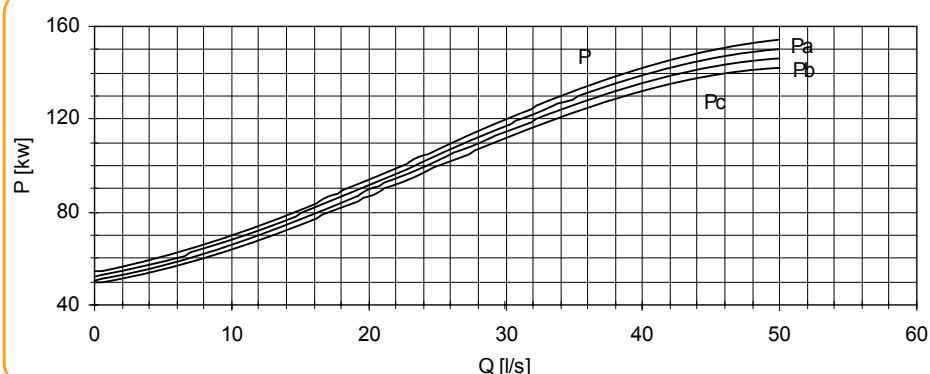
## Pump performance curves

30 DMSD 125-10  
n = 1450 (rpm)

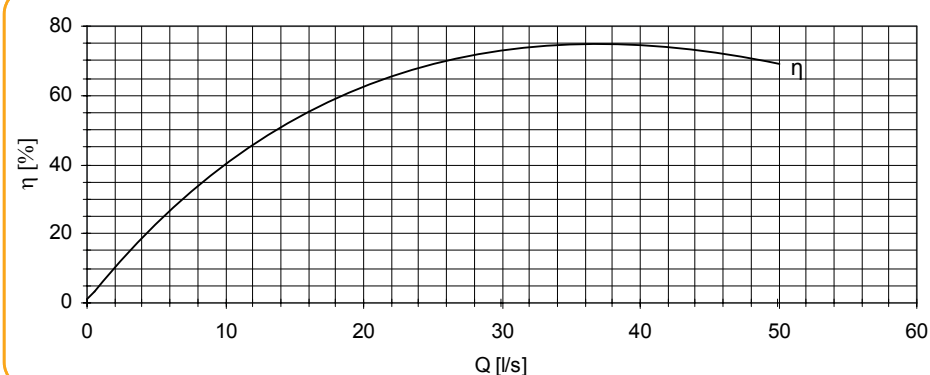
Total  
Differential  
Head



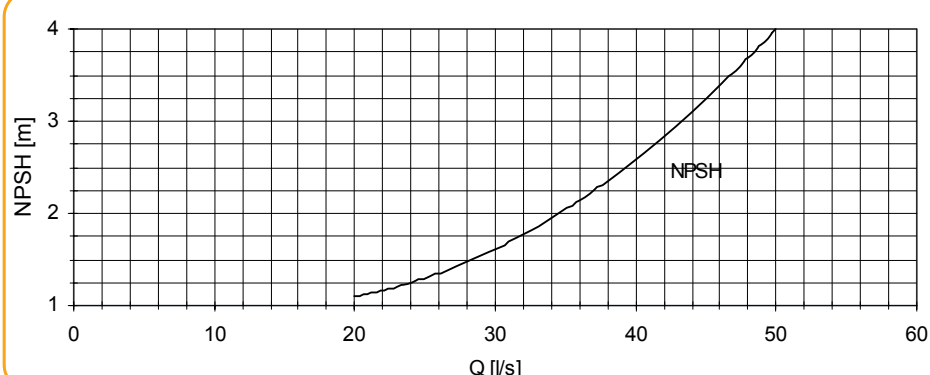
Power Input



Efficiency



Net Positive  
Suction Head

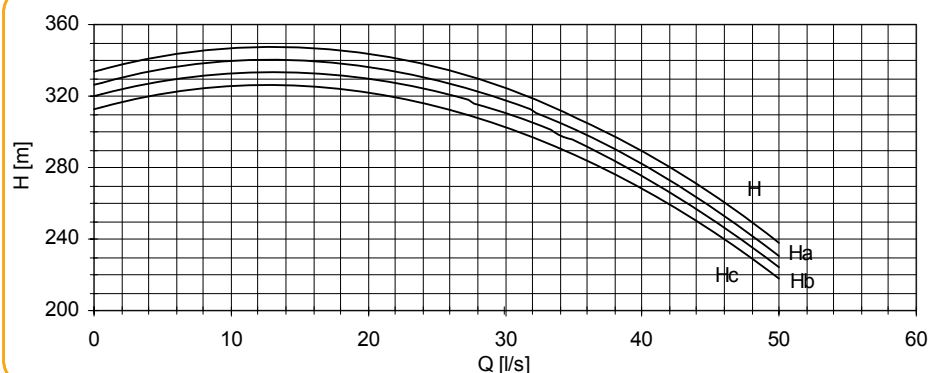




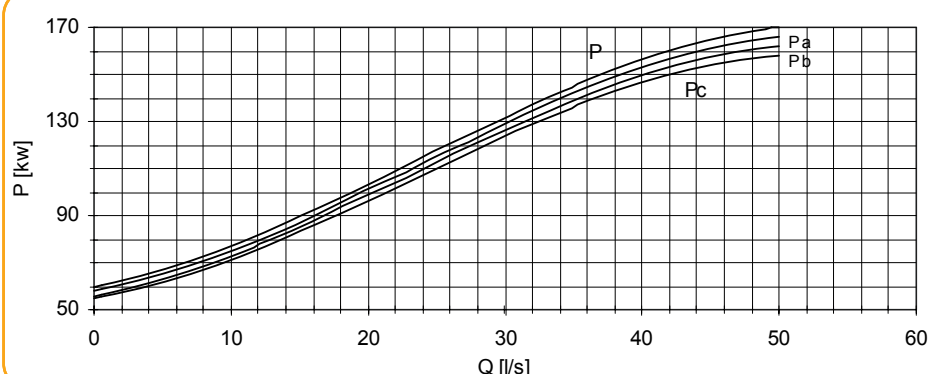
30 DMSD 125-11  
n = 1450 (rpm)

## Pump performance curves

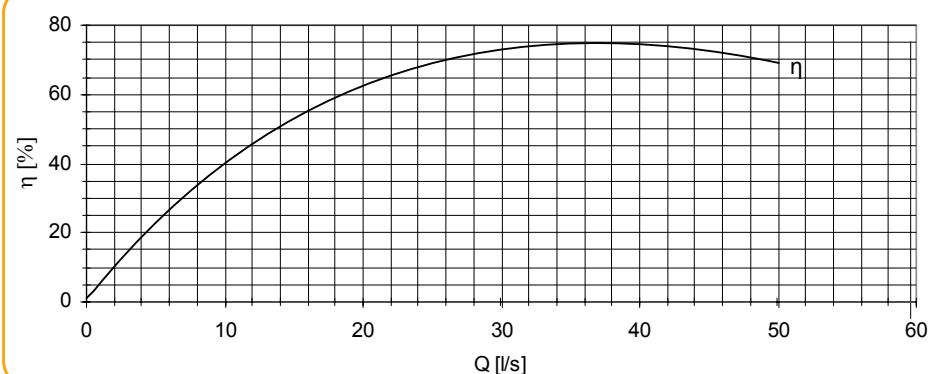
Total  
Differential  
Head



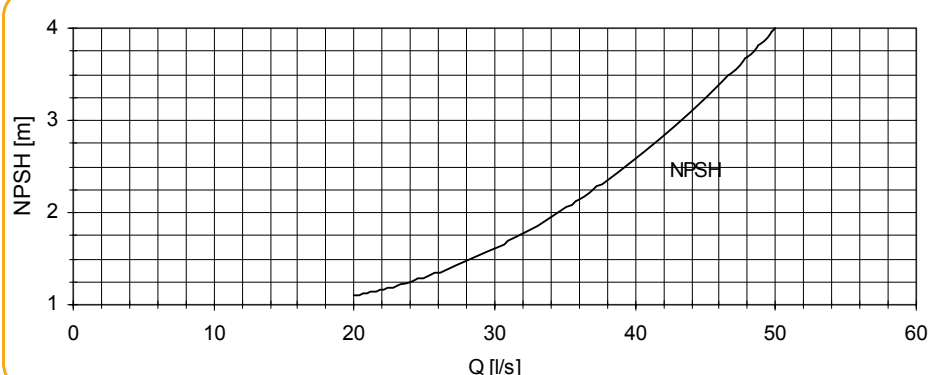
Power Input



Efficiency

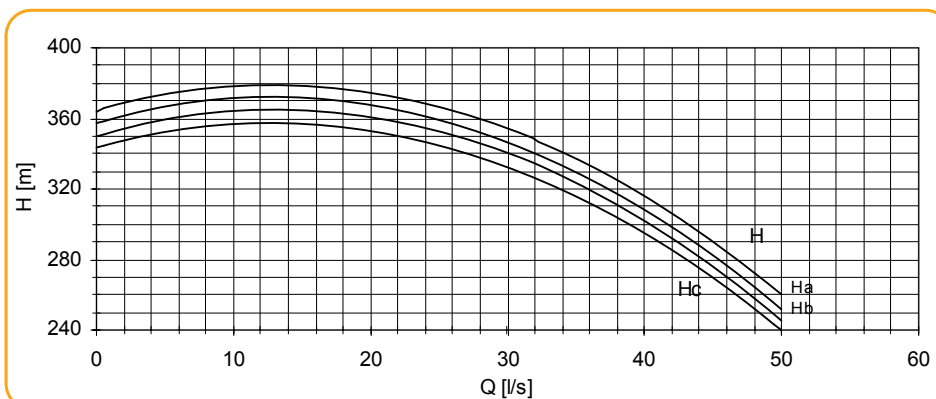


Net Positive  
Suction Head

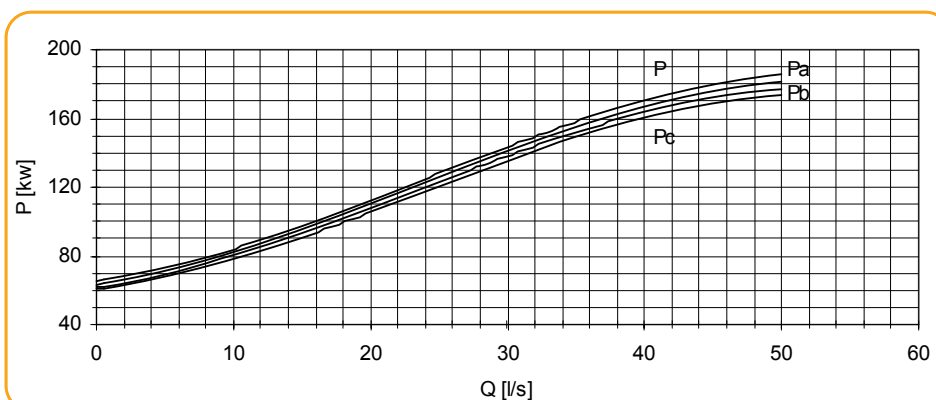


## Pump performance curves

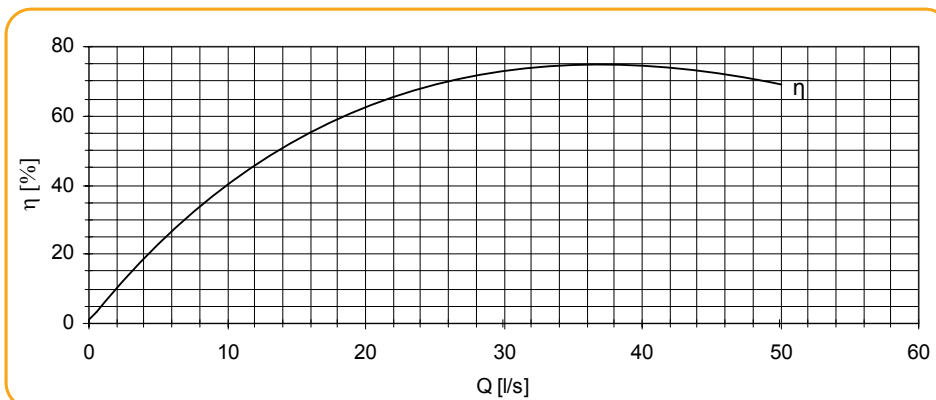
Total  
Differential  
Head



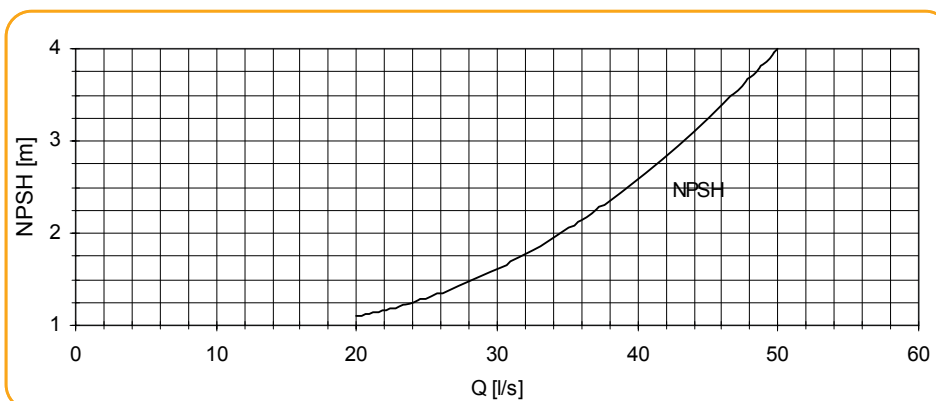
Power Input



Efficiency

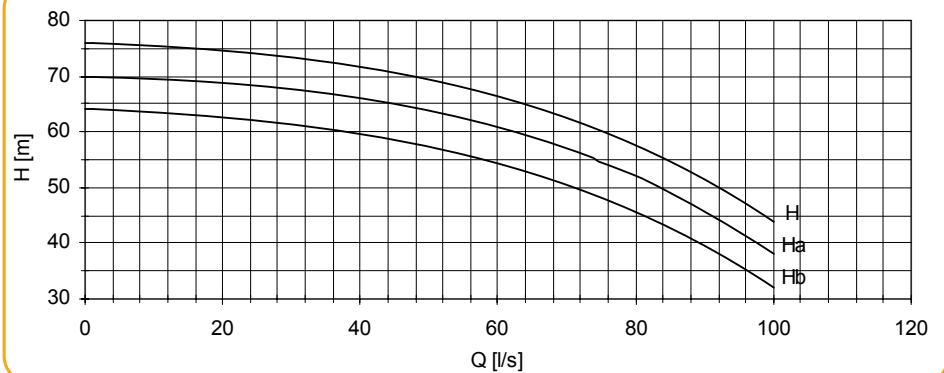


Net Positive  
Suction Head

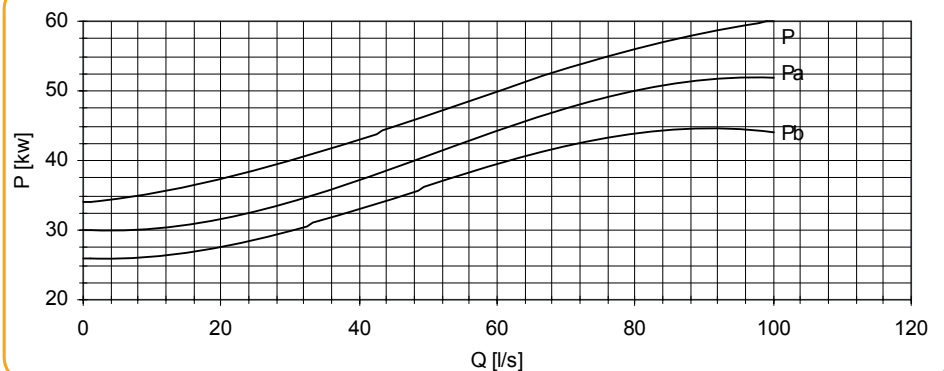


## Pump performance curves

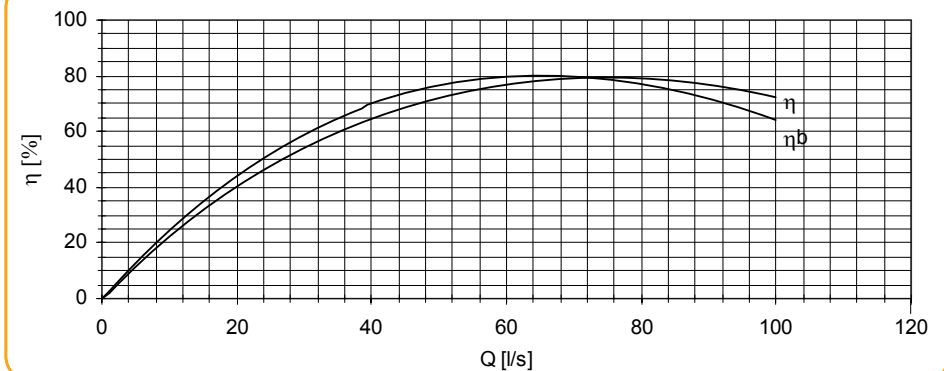
Total  
Differential  
Head



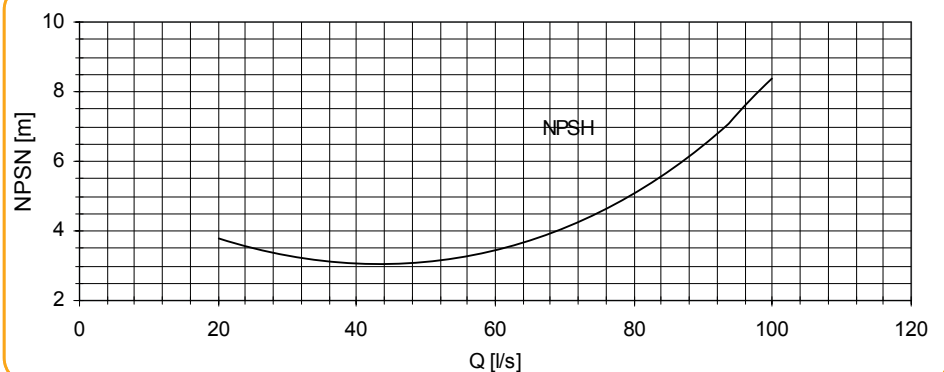
Power Input



Efficiency

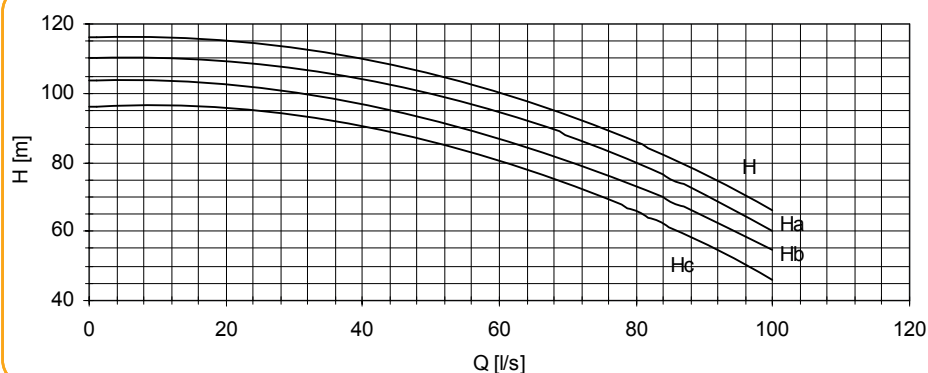


Net Positive  
Suction Head

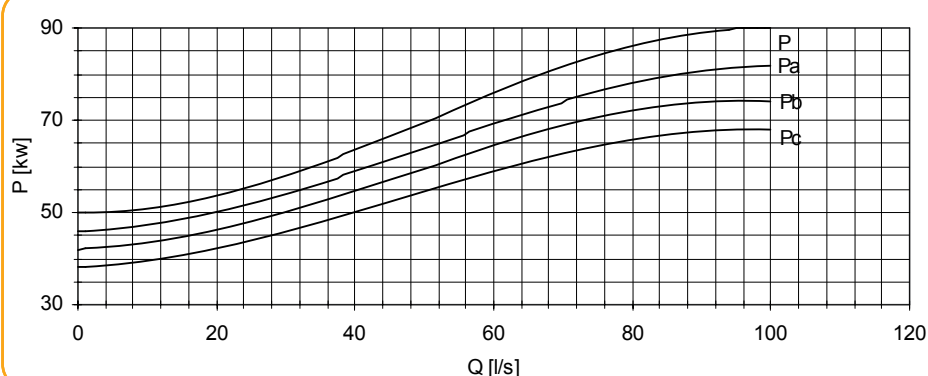


## Pump performance curves

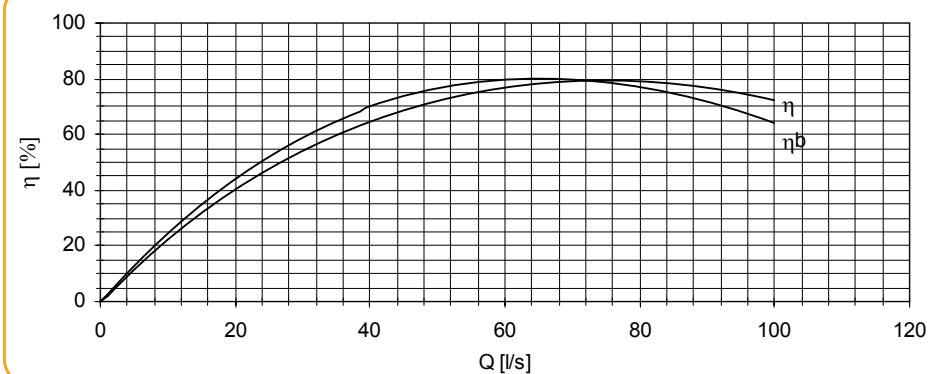
Total  
Differential  
Head



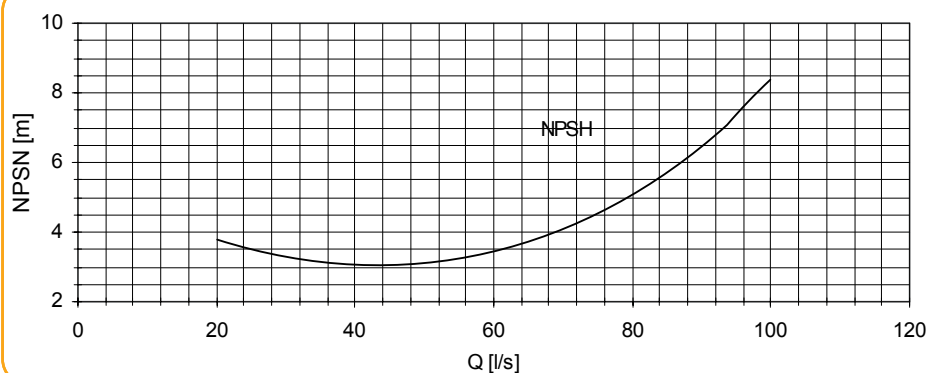
Power Input



Efficiency

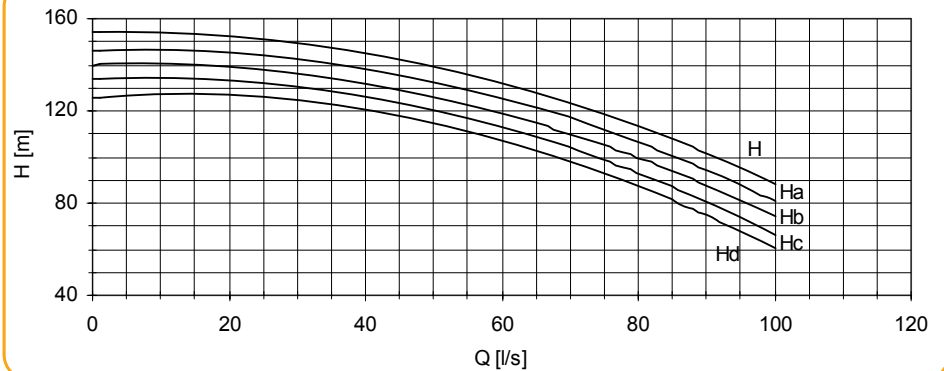


Net Positive  
Suction Head

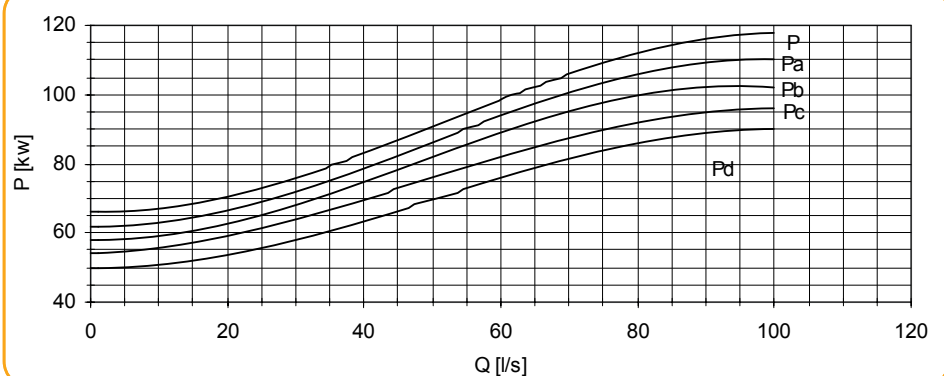


**Pump performance curves**

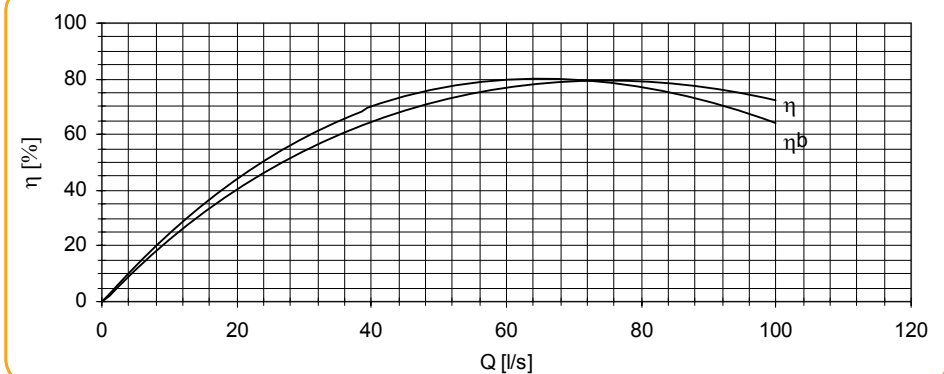
Total  
Differential  
Head



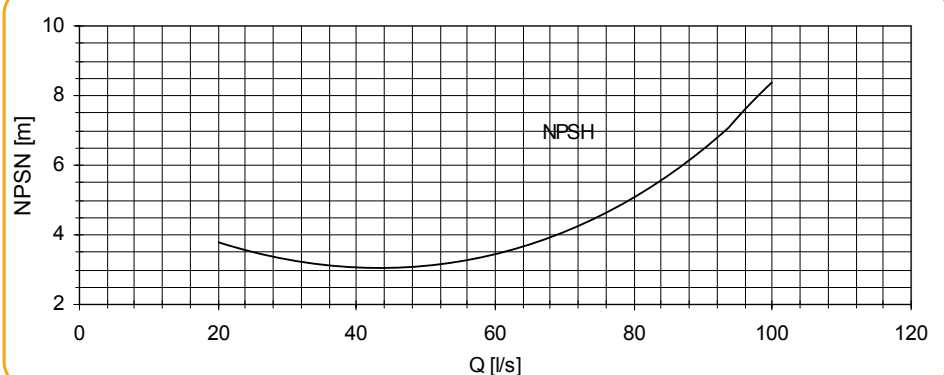
Power Input



Efficiency

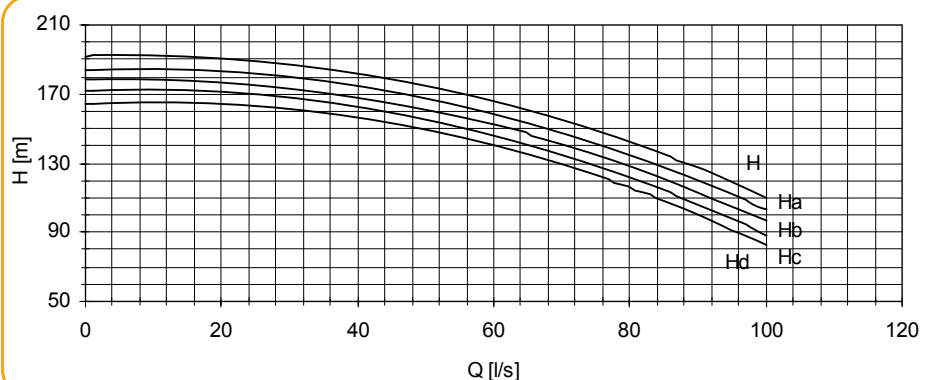


Net Positive  
Suction Head

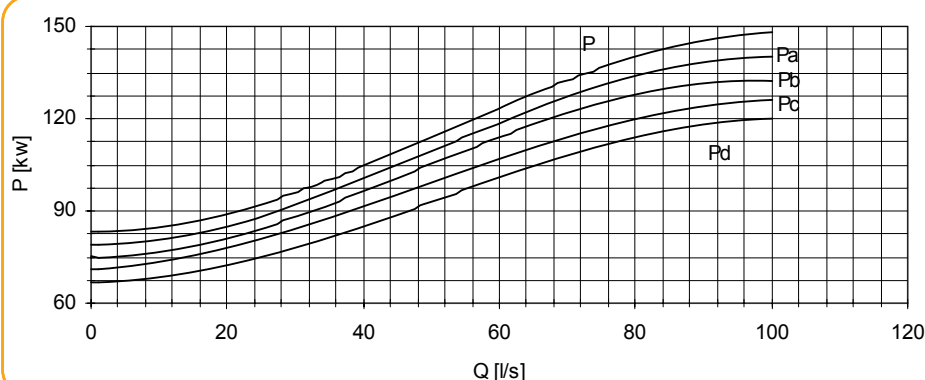


## Pump performance curves

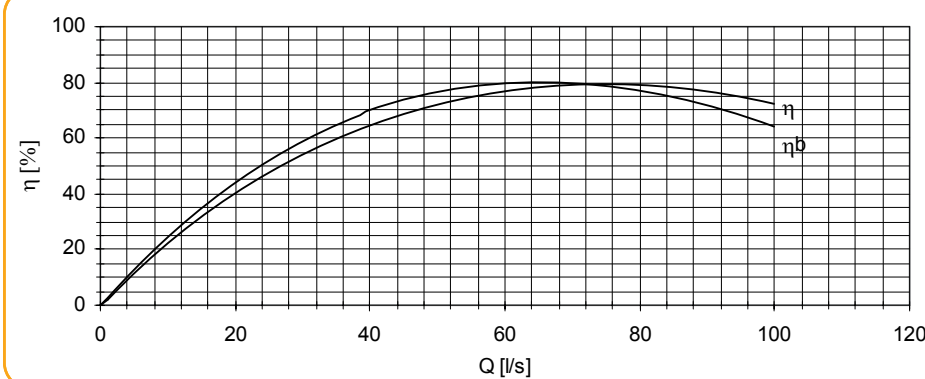
Total  
Differential  
Head



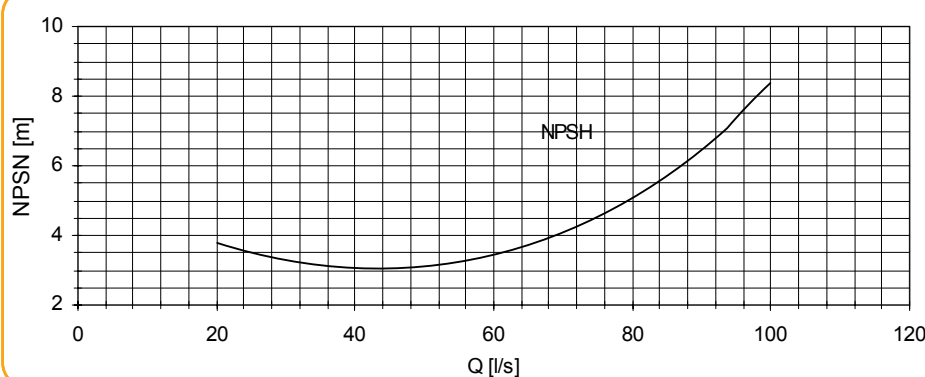
Power Input



Efficiency

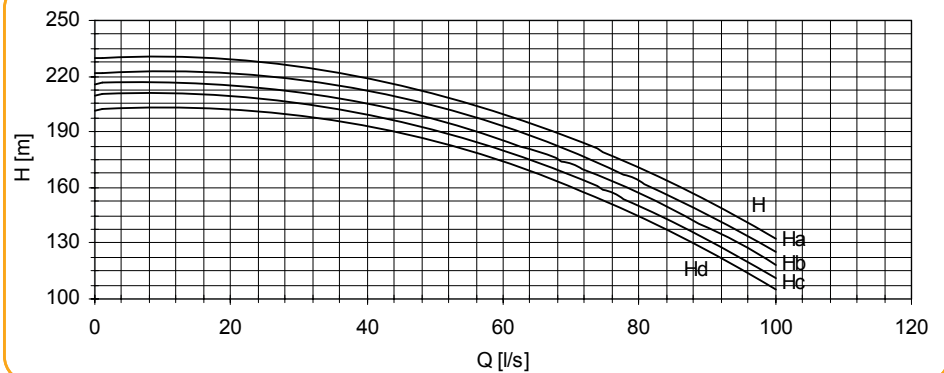


Net Positive  
Suction Head

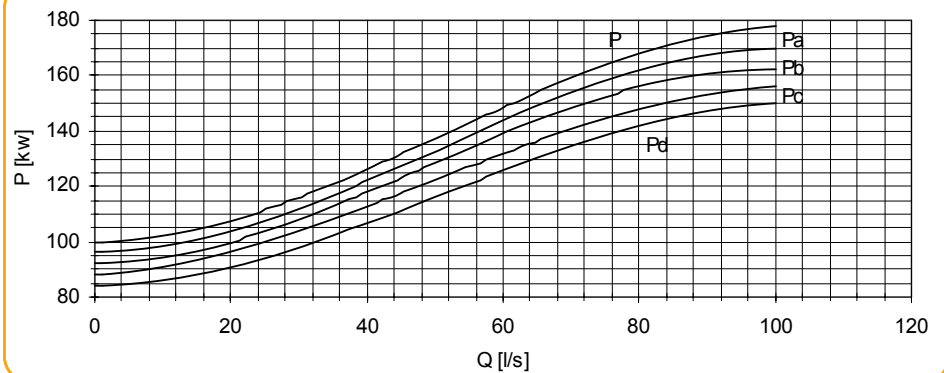


## Pump performance curves

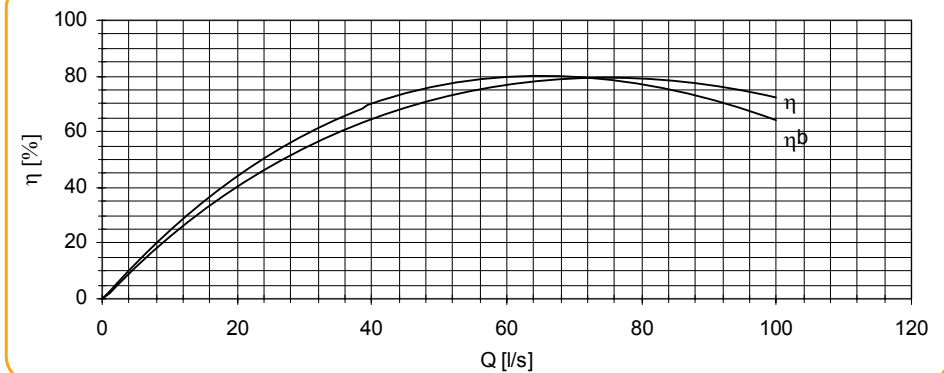
Total  
Differential  
Head



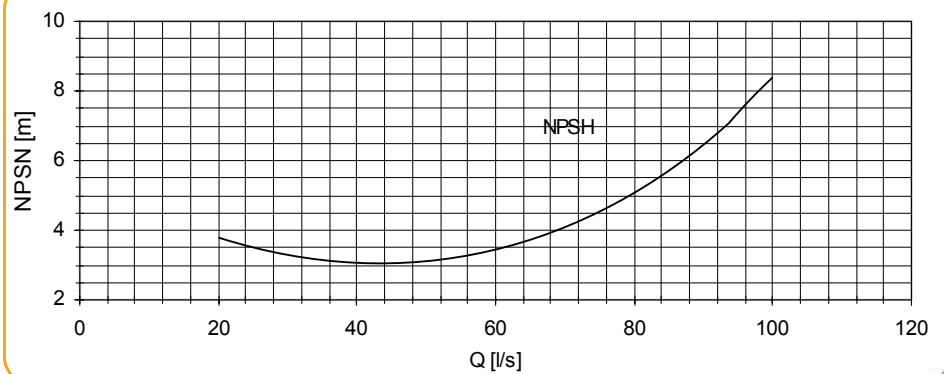
Power Input



Efficiency

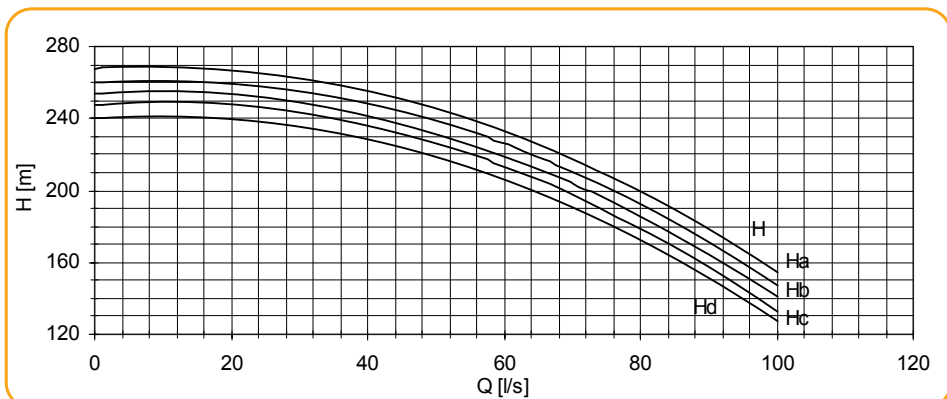


Net Positive  
Suction Head

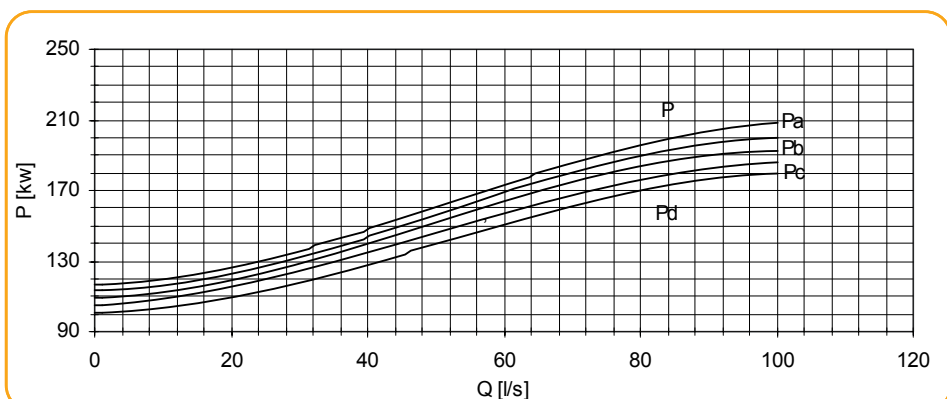


## Pump performance curves

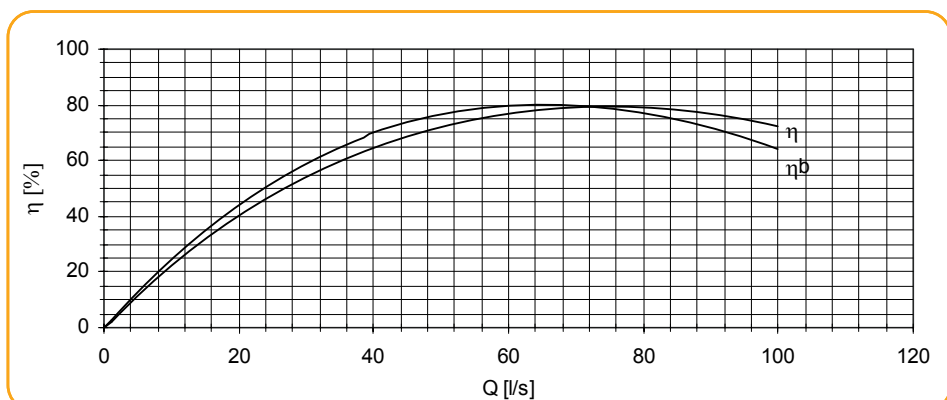
Total  
Differential  
Head



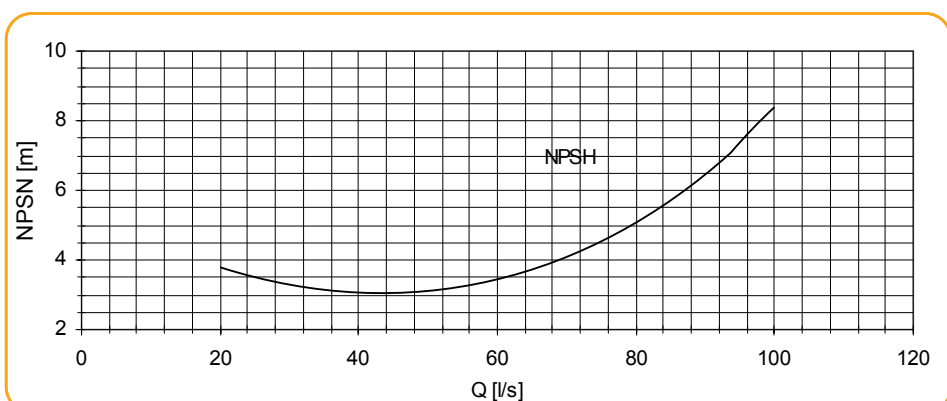
Power Input



Efficiency



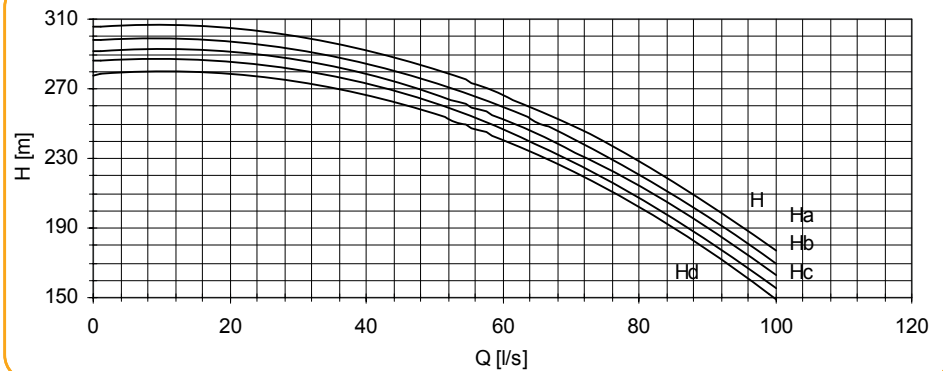
Net Positive  
Suction Head



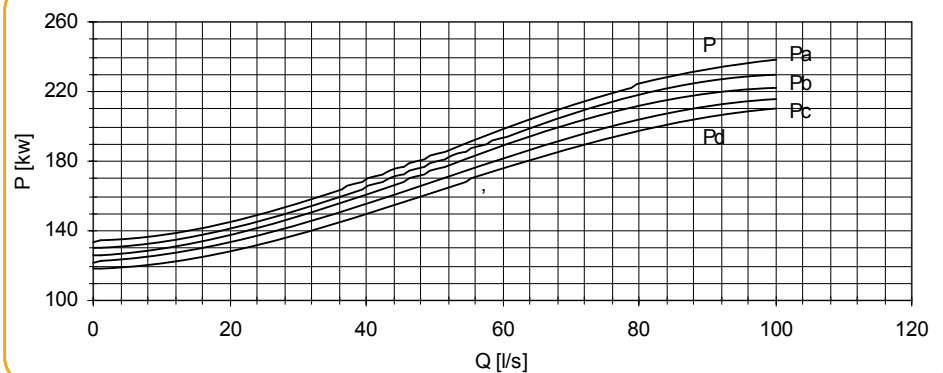


**Pump performance curves**

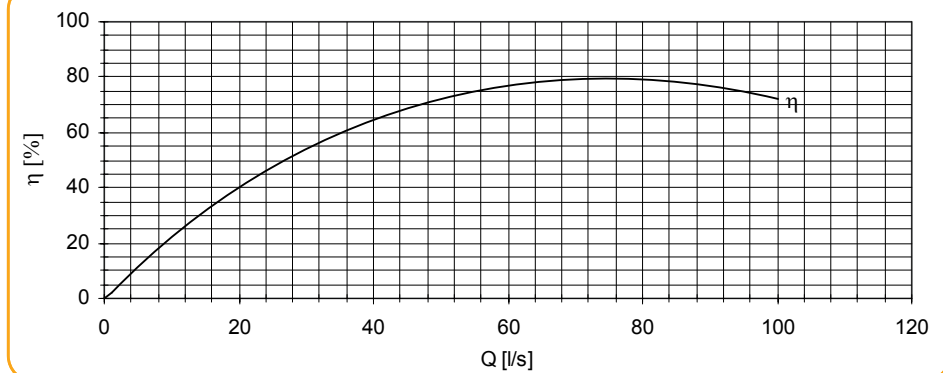
Total  
Differential  
Head



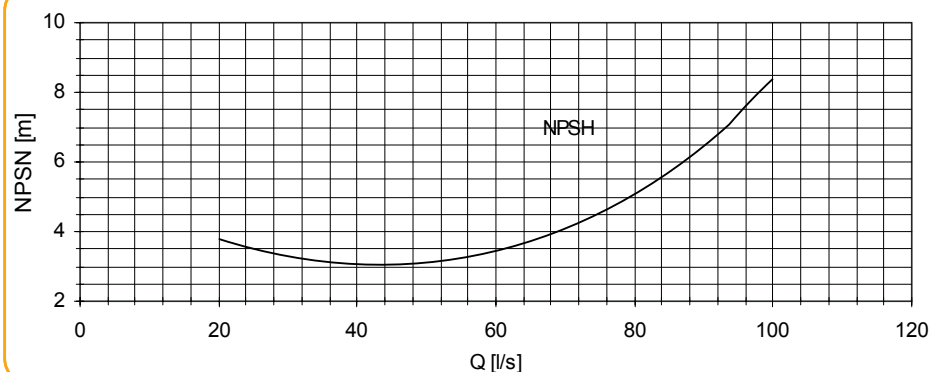
Power Input



Efficiency

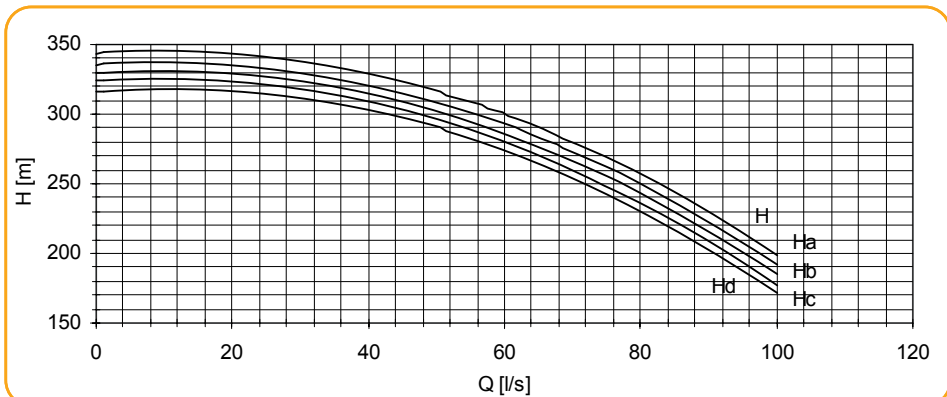


Net Positive  
Suction Head

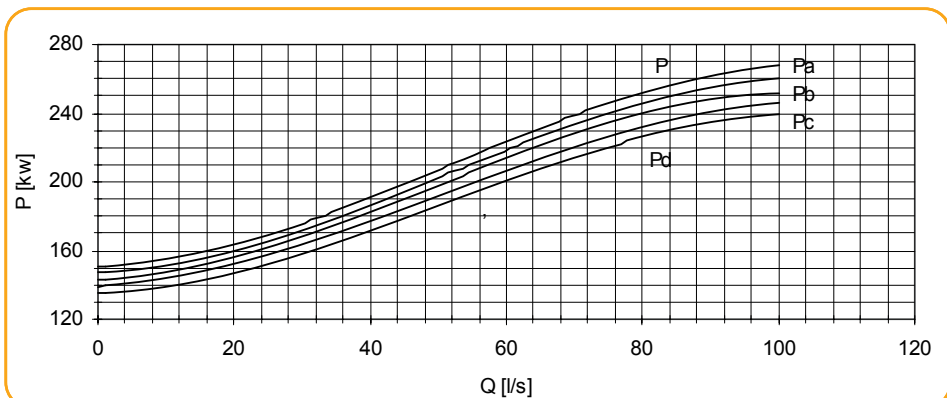


# Pump performance curves

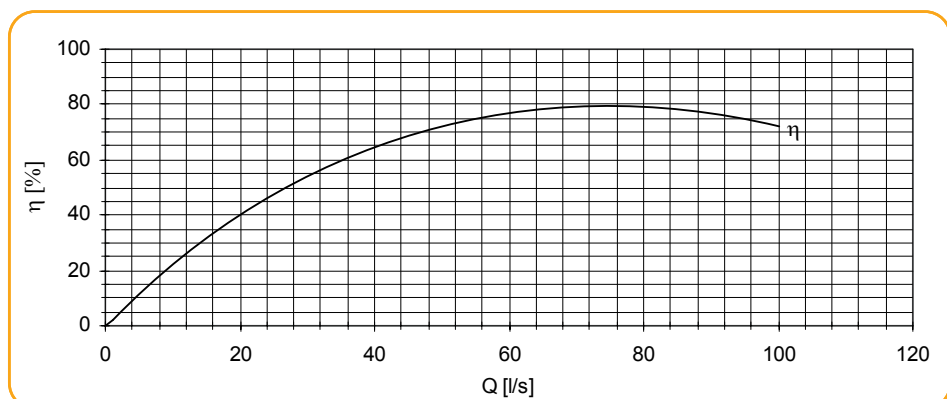
Total  
Differential  
Head



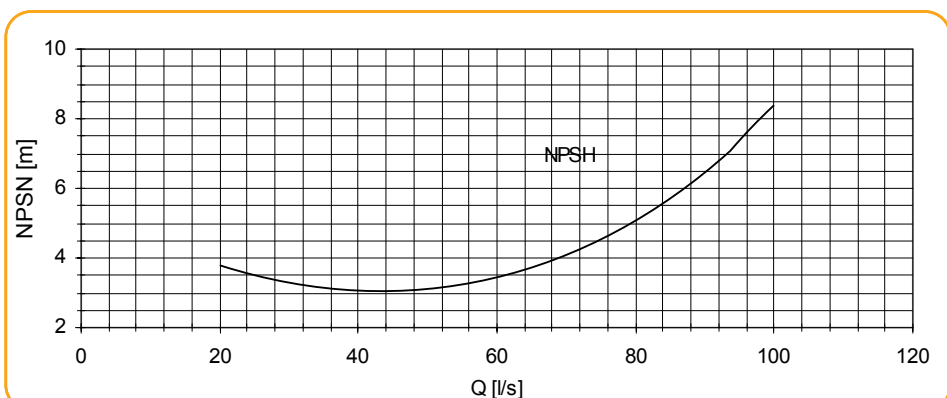
Power Input



Efficiency



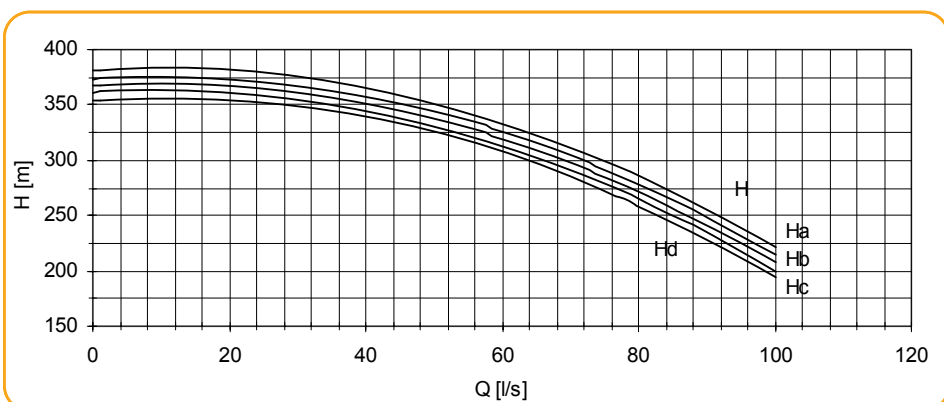
Net Positive  
Suction Head



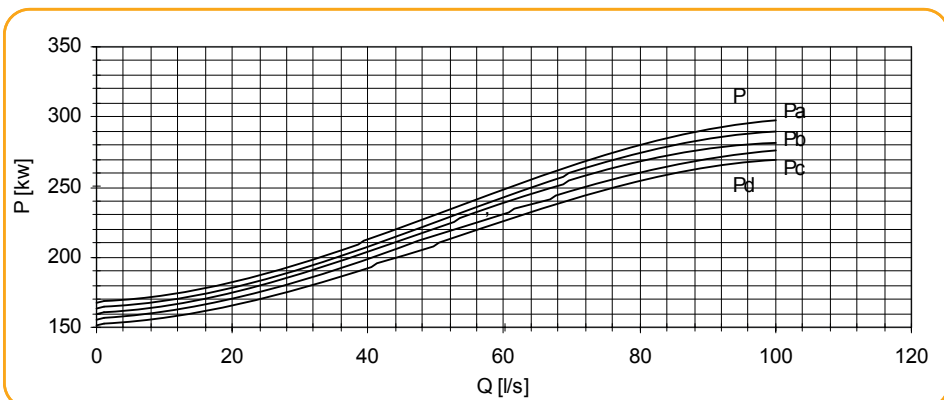
33 DMSD 150-10  
n =1450 (rpm)

## Pump performance curves

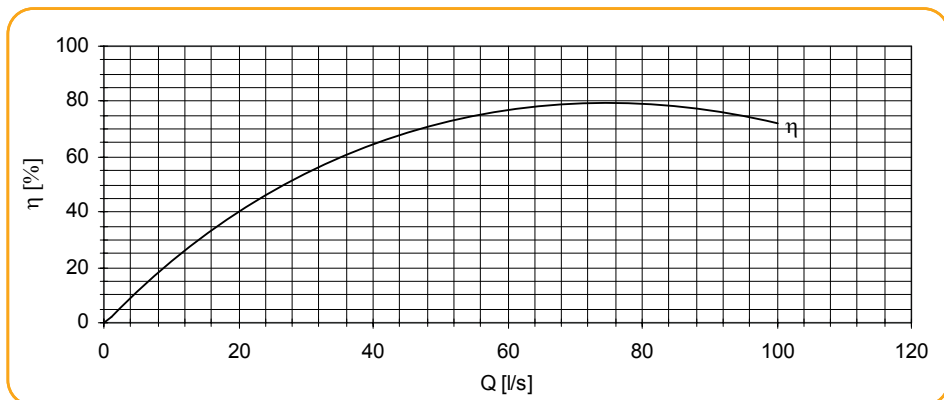
Total  
Differential  
Head



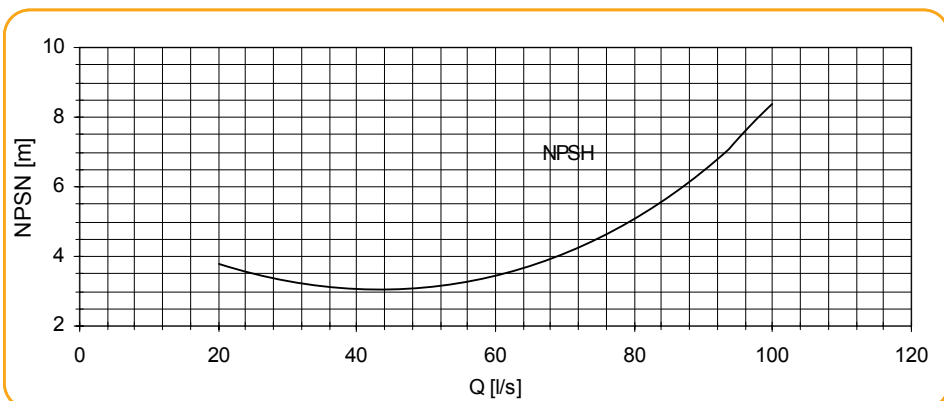
Power Input



Efficiency



Net Positive  
Suction Head





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