CPS

Horizontal Split Case Centrifugal Pump

CPS Series pumps, are single-stage double suction split case centrifugal pumps designed for applications of clean water or similar liquids without solids in water works, municipal and industrial projects, as well as mines, power plants and agricultural irrigations etc.
The horizontal installation constructed with the suction and discharge nozzles located in the lower part and in right angle to the pump shaft central line, makes it convenient to pull out the rotor after removing the pump cover when maintaining and repairing without disturbing the inlet and outlet piping. Medium contacted parts are selectable from ductile cast iron, cast steel and stainless steel upon request.

FEATURES

- Standardized design with generalized products series.
- Double volute casing construction perfectly balances the radial forces, ensuring minimal shaft deflection lowered bearing loads.
- Double suction impeller design appropriately balances the axial forces with each impeller balanced statically and dynamically in accordance with ISO1940.
- Flanges are drilled to meet GB, ISO, DIN, BS or ANSI standards.
- Deep groove ball bearings are grease lubricated and sealed for life with optional oil lubrication available upon request.
- Shaft sealing with uncoiled soft packing or single-action unbalanced mechanical seal in accordance with DIN 24960, independent of rotation direction. Balanced mechanical seal shall be applied for operating pressures higher than 16 Bar.

Model Nomenclature

E.G. CPS300-125-290
CPS — Split Case Centrifugal Pump
300 — Suction Dia. (mm)
125 — Discharge Dia. (mm)
290 — Impeller DN (mm)

Performance Data

Pump Size:	DN	80 ~ 800
Flow Range:	Q	up to 2800l/s
Head Range:	H	up to 220m
Operating Pressure:	P	up to 25 Bar
Liquid Temperature:	t	up to 105°C

Materials of Construction

	GB	DIN
Volute Casing & Cover		
Cast iron	HT250	GG-25
Ductile Cast Iron	QT400-18	GGG-40
Cast Steel	ZG230-450	GS-C25
Impeller		
Cast iron	HT250	GG-25
Bronze	ZCuSn10Si2	G-CUSn10Zn
Brass	ZCuSn16Si4	G-CuZn15Si4
Stainless Steel	ZG1Cr18Ni12Mo2Ti	1.4581
Shaft		
Carbon Steel	45#	C45N
Cr Steel	2Cr13	1.4021
Casing Wear Ring		
Cast iron	HT250	GG-25
Bronze	ZCuSn10Si2	G-CUSn10Zn
Brass	ZCuSn16Si4	G-CuZn15Si4

Advantages

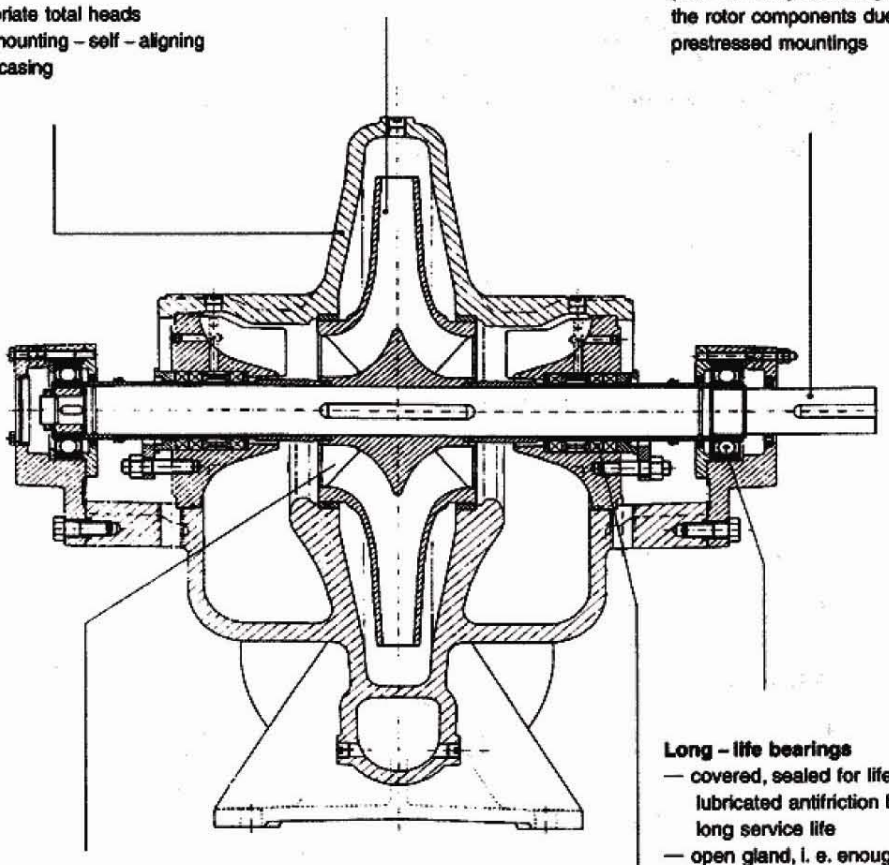
1. Your technical advantages

Innovative casing
- in – line design
- short distance between bearings and correspondingly short shaft
- leak – tight due to compact joint flange with long, prestressed bolts
- counter – rotation possible with similar parts
- double volute version for appropriate total heads
- easy mounting – self – aligning upper casing

High – performance impeller
- minimal axial thrust due to double – entry impeller
- optional impeller wear rings
- new vane passage with excellent hydraulic characteristics

2. Your service advantage

Service – friendly shaft
- completely sealed and dry for zero corrosion
- short and rigid with negligible vibrations
- replaceable shaft protecting sleeves
- no threads exposed to pumped medium, long operating life and no corrosion
- adjustment – free assembly
- quick and easy assembly/dismantling of the rotor components due to elastically prestressed mountings

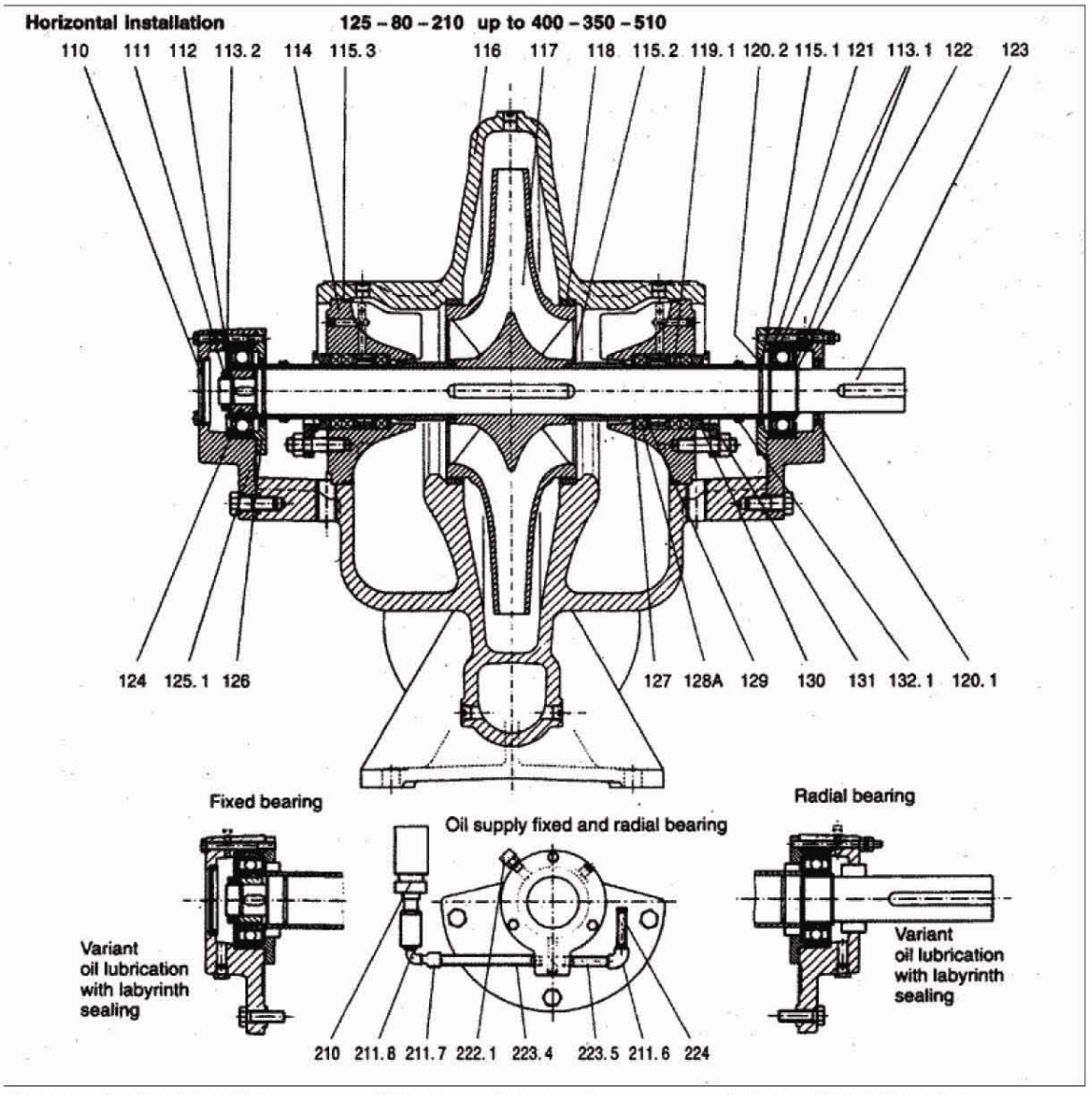


Long – life bearings
- covered, sealed for life grease lubricated antifriction bearings for a long service life
- open gland, i. e. enough space for service activities
- optional: oil lubrication with constant level oiler

Excellent efficiencies
Outstanding NPSH
- computer – optimized double entry impellers
- smooth surfaces inside the casing and on the impeller
- smooth, quiet running also guaranteed by a large impeller eye area
- no drop in efficiency due to cost effective replaceable casing wear rings and impeller wear rings
- smooth, low loss running due to a swirl – free inlet

Application – orientated seals
- asbestos – free, potable water quality soft – packed stuffing boxes
- optional: mechanical seals

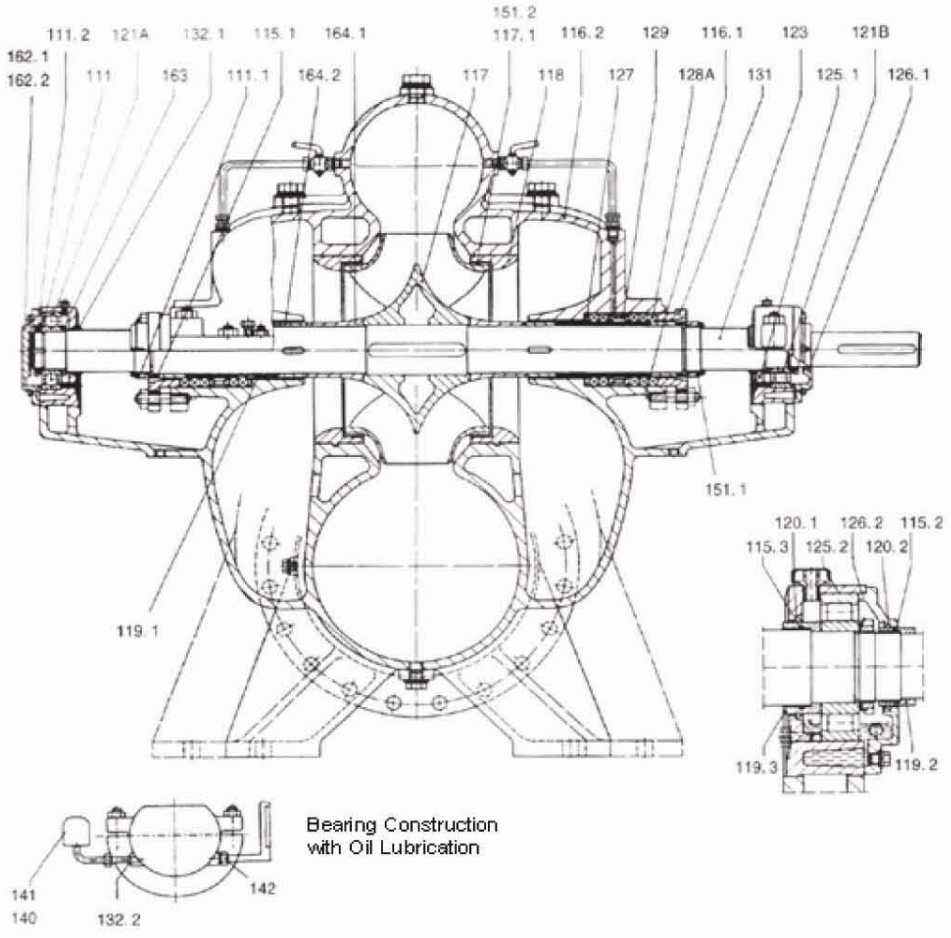
Pump Configuration Drawings



Part no.	Part designation	Part no.	Part designation	Part no.	Part designation
116	Volute casing	131	Gland	210	Constant level oiler
123	Pump shaft	128A	Gland packing	224	Oil sight gauge
117	Impeller	130	Stuffing box insert	223	Special pipe part
121	Deep grove ball bearing	127	Neck ring	211	Extension pipe
125	Bearing housing	129	Lantern ring	222	Vent plug
126	Bearing cover	118	Casing wear ring	111	Nut
132	V-Ring	124	Sleeve	122	Circlip
115	O-Ring	119	Shaft protecting sleeve	112	Spring
120	Radial shaft seal ring	113	Washer		
114	Shaft seal housing	110	Cap		

Pump Configuration Drawings

From CPS600 – 500 – 510 To 600 – 500 – 890



Bearing Construction with Oil Lubrication

Parts Code

116.1-2	Casing Cover
123	Shaft
117	Impeller
121A	Journal Ball Bearing
121B	Journal Roller Bearing
125.1-2	Bearing Housing
126.1-2	Bearing Gland
162.1-2	Bearing Cover
132.1	Wearing
132.2	Wearing
115.1	O-ring
120.1-2	Framed Oil Sealing
131	Gland Packing
127	Stuffing Box Insert
129	Lantern Ring
128A	Packing
118	Casing Ring
117.1	Impeller Ring
163	Washer
119.1-3	Shaft Sleeve
164.1-2	Sleeve
140	Oiler
141	Vent Plug
142	Temp. Sensor
151.1-2	Screw Bolt
111.2	Round Nut
112	Washer

Materials & Application

Temperatures		Suffing box/mechanical seal:max. 105℃								
Liquid handled		Raw water/clean water. Solids content max.80mg/L[2]								
Part no.	Part designation	Material combinations								
		01[1]	011[1]	02[1]	021[1]	03	31	04	41	7
116	Volute casing	HT250	QT400-18	HT250	QT400-18	HT250	QT400-18	HT250	QT400-18	ZG230-450
123	Dhaft	2Cr13				45[3]				2Cr13
117	Impeller	ZCuSn10Zn2[1]/ZCuZn16Si4				HT2502)/ZG1Cr18Ni12Mo2Ti				ZG1Cr1Ni12Mo2Ti
125	Bearing housing	HT200								
126	Bearing cover	HT200								
114	Shaft seal housin	HT250								ZG230-450
131	Gland	HT250								1Cr18Ni12Mo2Ti
118	Casing wear ring	ZCuSn5Pb5Zn5/ZCuZn16Si4				HT250/ZG0Cr18Ni12Mo2Ti				ZG0Cr18Ni12Mo2T
117.1	Impeller wear ring	-		ZCuSn5Pb5Zn5 ZCuZn16Si4		-		HT250 1Cr18Ni12Mo2Ti		1Cr18Ni12Mo2Ti
119	Shaft prot sleeve	1Cr18Ni9Ti				2Cr13				1Cr17Ni2
128B	Mechanical seal	Si-SiC/Si-SiC								

1）Not for pump sizes 150-100-310, n=3500, 230-200-670 and 400-300-700, n=1750 1/min

2）Only for pump sizes 125-80-210, n=3500; not for pump sizes 150-100-310 and 200-125-290, n=2900; not for pump sizes 200-150-605, 250-200-520,250-200-670, 300-250-600, 400-300-560, 400-300-700 and 400-350-510, n=1750; not for pump sizes 250-200-670, 300-250-600 and 400-300-700, n=1450.

3）Only for motor power≤ 20, dw=40, n=3500r/min

4）For other liquids and solid contents on request

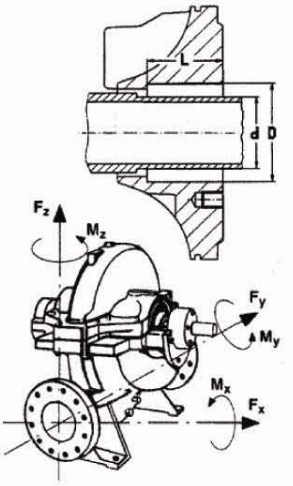
Pressure Limits

Pump sizes	Permissible operating pressures in bar											Max. permissible test pressure in bar										
	Material combinations																					
	01	011	02	021	03	031	04	041	05	06	07	01	011	02	021	03	031	04	041	05	06	07
125-80-210 125-80-270 125-80-370 150-100-250 150-100-310 150-100-375 200-125-230 200-125-290 200-125-365 200-125-500 200-150-290 200-150-360 200-150-460	16		16		16		16		16			30		30		30		30		30[4]		
200-150-605	24		24		24		24		24													
250-200-320 250-200-420 250-200-520	16	25	16	25	16	25	16	25	16		25		38		38		38		38			38
250-200-670	24		24		24		24		24													
300-250-370[5]	10		10		10		10		10			24		24		24		24		24[4]		
300-250-480	16		16		16		16		16			30		30		30		30		30[4]		
300-250-600	24		24		24		24		24													
350-300-300[5] 400-300-435[5]	10		10		10		10		10			24		24		24		24		24[4]		
400-300-560[5]	16		16		16		16		16			30		30		30		30		30[4]		
400-300-700	24		24		24		24		24													
400-350-360[5] 450-350-430[5] 400-350-510[5]	10		10		10		10		10			24		24		24		24		24[4]		

5）For material combinations 01, 01, 03, 04, at flange execution acc. To ANSI Class 125 the permissible operating pressures have to be reduced acc. To this standard. If necessary consult TURE.

Technical Data

Pump sizes	Shaft units	Nominal diameter	Stuffing box data		
		stuffing box / mechnical seal d	Diameter D	Length L	Nos. packing rings per stuffing box
125-80-210	40	50	70		3
125-80-270					
125-80-370					
150-100-250					
150-100-310					
150-100-375					
200-125-230	50	60	85	60	
200-125-290					
200-125-365					
200-125-500					
200-150-290					
200-150-360					
200-150-460	60	70	95	72	
200-150-605					
250-200-320					
250-200-420					
250-200-520	70	80	112	72	
250-200-670					
300-250-370					
300-250-480	80	90	122	93	
300-250-600					
350-300-300	70	80	122	93	
400-300-435	80	90	122	93	
400-300-560	90	110	150	120	
400-300-700					
400-350-360	80	90	122	93	
450-350-430	90	110	150	120	
400-350-510					

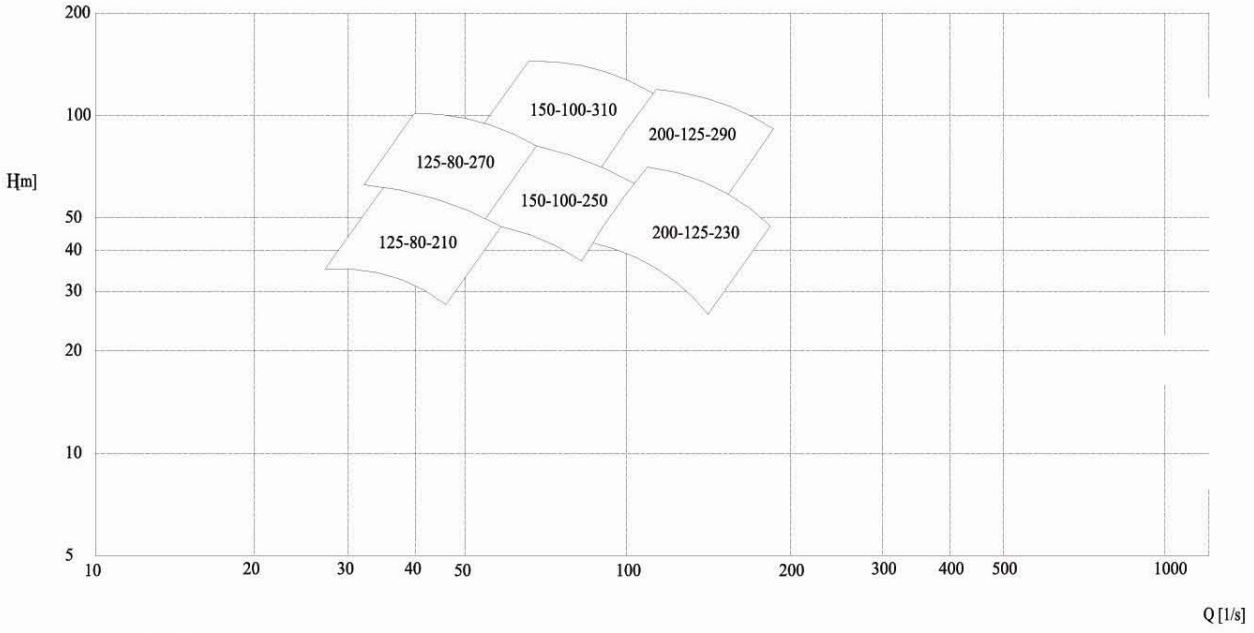


1) Values are valid for casing materials HT250 For casing material QT400-18 use 1. 4-fold value and for ZG25 use 1. 7-fold value.

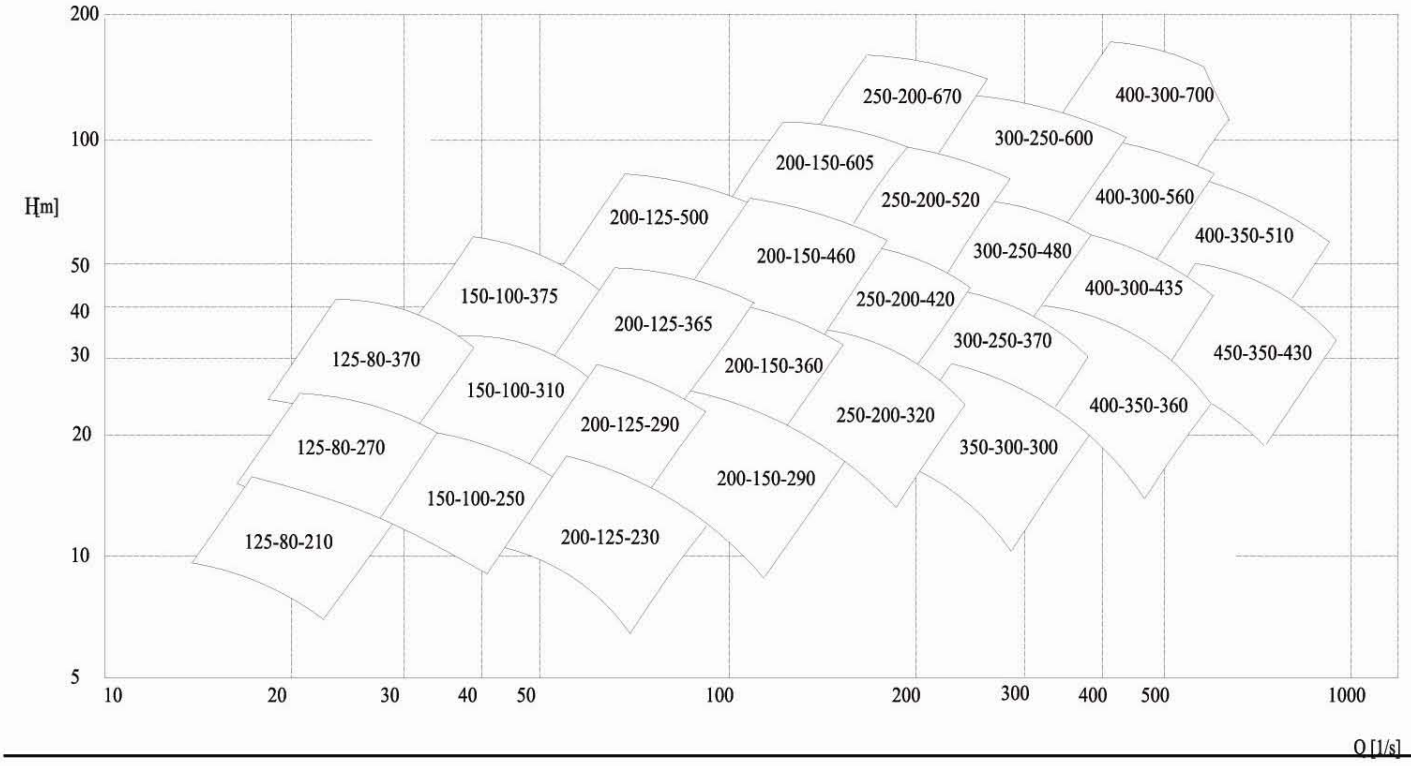
Pump sizes	Impeller dimension (mm)		Permissible nozzie moments	Permissible nozzle moments	Mass moments of inertia J (without coupling)	
	free passage	max, diameter	Fx, Fy, Fz[1]	Mx, My, Mz[1]	kgm²	
	+/- 10%		N	Nm	without water	with water
125-80-210	15	215	800	500	0.023	0.028
125-80-270	13	275			0.037	0.044
125-80-370	11	345			0.027	0.032
150-100-250	19	254	1000	700	0.048	0.058
150-100-310	15	325			0.092	0.110
150-100-375	13	408			0.229	0.275
200-125-230	23	245	1500	1000	0.161	0.193
200-125-290	19	301			0.125	0.150
200-125-365	14	392	2000	1500	0.261	0.313
200-125-500	14	482			0.688	0.825
200-150-290	27	289	2500		0.169	0.288
200-150-360	22	355		2000	0.166	0.338
200-150-460	17	462			0.456	0.775
200-150-605	16	569	3000		1.074	1.825
250-200-320	30	338	4000	2750	0.442	0.575
250-200-420	26	415			0.588	0.725
250-200-520	20	540			1.288	1.675
250-200-670	18	665			3.654	4.750
300-250-370	39	390			0.721	1.225
300-250-480	30	478			0.956	1.625
300-250-600	23	622			2.206	3.750
350-300-300	39	323		3000	0.571	0.800
400-300-435	45	450			1.785	2.500
400-300-560	35	553	5000		2.411	3.375
400-300-700	26	719			6.346	8.250
400-350-360	39	373			1.116	1.563
450-350-430	57	430			2.232	3.125
400-350-510	52	518			3.393	4.750

Family Curves 50Hz

n=2900 rpm

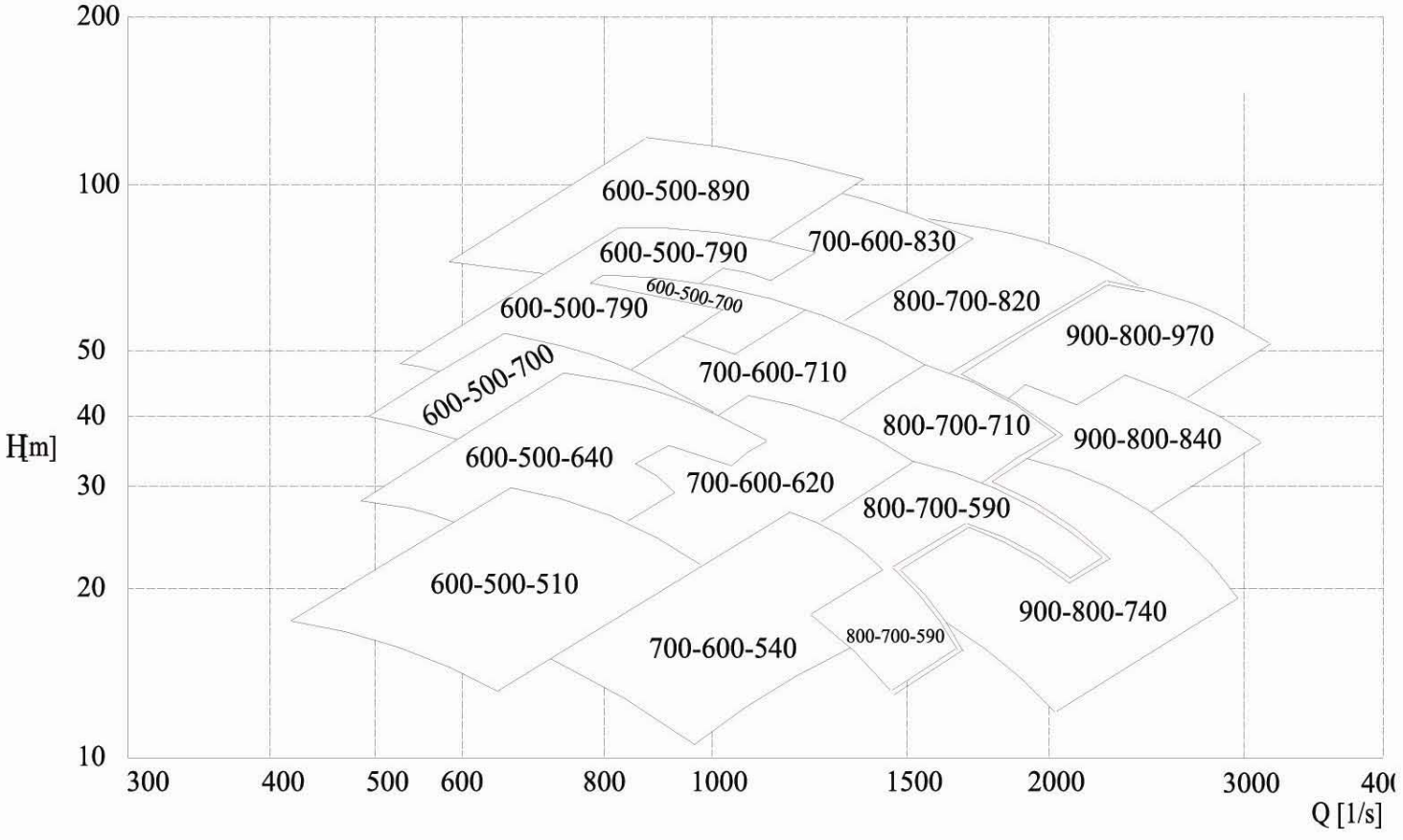


n = 1450rpm



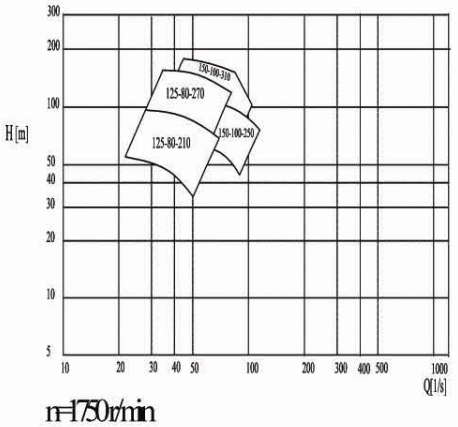
Family Curves 50Hz

n=980 rpm / 740 rpm

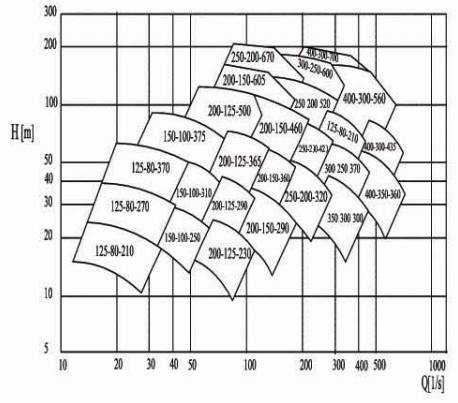


Family Curves 60Hz

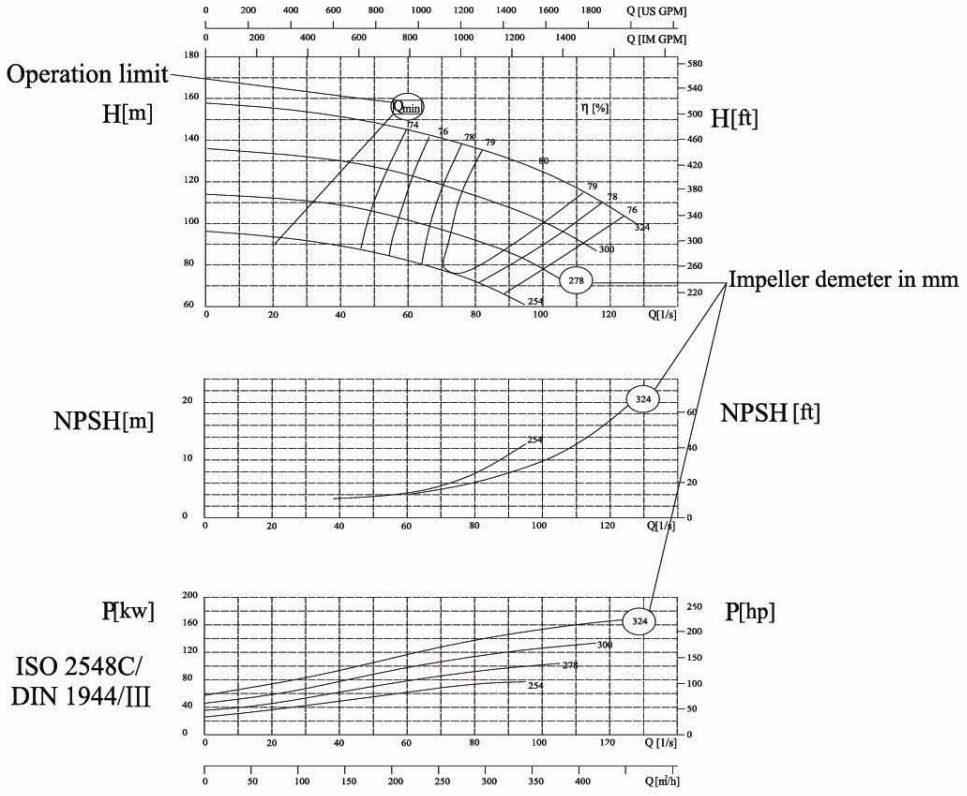
n=3500r/min



n=1750r/min



Performance Curves



Explanations

The NPSH values given in the performance curve sheets are minimum values which correspond to the inception of cavitation, they apply to degassed water.
The NPSHA values provided by the plant must range above the curve by a certain distance ,see fig. A.
In case of large pumps or high speeds the NPSHA values under part load conditions must be at least as high as that at the optimum point , see fig. B.
The relevant distance value S, which depends on the pump size, the speed and the impeller material , is indicated in form of a table for each characteristic curve.
Operating data guaranteed to ISO2548 C/DIN 1944III.
The total heads and the performance characteristics refer to mediums compressed with $\rho=1.0 kg/dm^3$ and a kinematics viscosity v up to $20mm^2/s$. If the density is not 1.0 kg/dm^3, the performance characteristics are to be multiplied by ρ.

Range of Operations

The range of operations is defined by requirements of the pumping system as well as by hydraulic ad mechanical limitations of the pumps.

Minimum flow

In normal service the pumps should not be operated to the left of the line indicating Q_{min}. Lower flows, up to 0.05xQ optimum, are permissible for short periods of up to 5 minutes. Any longer operation will cause overheating within the pump. However , at these lower flows the influence of the system as well as the pump configuration may cause the pump head to vary, Such head variations are significant if the pump is to operate in a system where the static head is a major portion of the total head or parallel or variable speed operation is to be considered.

Maximum flow

The limit of operation is given by the NPSH characteristic with the indicated margins S, relative to NPSHA. This is further explained in figures A,B and C.
In some cases there are also an operational limit due to mechanical considerations. In such cases the limit of operations is indicated by the Q_{max} line.

Specification

Model	Capacity		head	Speed	Power	Eff.	$(NPSH)_A$	Dia of Impeller	Weight
	m^3/h	L/s	(m)	(r/min)	(kw)	η (%)	(m)	(mm)	(kg)
CPS125-80-210	83	23.0	13.8	1450	3.8	82	2.1	215	181
	76	21.0	11.8		3.0	81	2.1	200	
	72	20.0	9.8		2.4	81	2.4	185	
	69	19.2	8.2		2.0	78	2.1	170	
	164	45.5	55.0	2900	29.9	82	5.1	215	181
	151	42.0	17.5		24.1	81	4.6	200	
	144	40.0	39.0		19.0	81	4.5	185	
	137	38.0	33.5		16.0	78	4.3	170	
CPS125-80-270	104	18.8	22.5	1450	8.1	79	2.8	275	194
	99	27.5	19.0		6.6	78	2.7	255	
	90	25.0	16.0		5.2	76	2.5	235	
	84	23.3	13.0		4.0	75	2.5	215	
	207	57.5	90.0	2900	64.6	79	7.0	275	194
	194	54.0	77.0		52.6	78	6.0	255	
	184	51.0	63.5		41.6	76	5.3	235	
	173	48.0	50.0		31.4	75	5.0	215	
CPS125-80-370	113	31.5	38.8	1450	16.7	72	2.8	345	194
	99	27.5	33.0		12.6	71	2.3	320	
	88	24.5	27.5		9.4	70	2.3	300	
	81	22.5	22.5		7.4	68	2.3	270	
CPS150-100-250	144	40.0	18.5	1450	8.9	83	2.9	254	207
	140	38.5	15.8		7.4	81	2.9	236	
	126	35.0	13.5		5.9	79	2.9	219	
	121	33.5	11.0		4.7	78	2.9	201	
	288	80.0	75.0	2900	71.3	83	9.0	254	207
	274	76.0	63.0		58.3	81	9.5	236	
	261	72.5	52.0		46.8	79	9.7	219	
	241	67.0	44.8		37.7	78	9.7	201	
CPS150-100-310	185	51.3	31.2	1450	19.6	80	3.1	325	233
	166	46.0	27.0		15.3	80	2.7	301	
	151	42.0	22.5		11.7	79	2.5	278	
	140	39.0	18.5		9.0	79	2.3	254	
	367	102.0	123.0	2900	153.8	80	13.7	325	223
	335	93.0	106.0		121.4	80	12.2	301	
	302	84.0	90.0		93.5	79	10.7	278	
	227	77.0	74.0		70.7	79	9.2	254	

Specification

Model	Capacity		head	Speed	Power	Eff.	$(NPSH)_A$	Dia of Impeller	Weight
	m^3/h	L/s	(m)	(r/min)	(kw)	η (%)	(m)	(mm)	(kg)
CPS150-100-375	185	51.3	52.0	1450	33.5	73	3.0	408	241
	167	46.3	44.0		25.7	72	2.7	378	
	155	43.0	38.0		20.7	71	2.5	355	
	135	37.5	30.3		14.5	69	2.1	325	
CPS200-125-230	274	76.0	14.8	1450	15.3	86	2.3	245	249
	241	67.0	13.2		12.6	85	2.3	228	
	230	64.0	10.6		10.0	83	2.2	210	
	209	58.0	8.7		7.9	78	2.2	193	
	533	148.0	60.0	2900	101.8	86	9.9	245	249
	490	136.0	52.0		82.1	84	10.1	228	
	453	126.0	43.5		65.1	82	10.3	210	
	425	118.0	34.0		50.8	77	10.7	193	
CPS200-125-290	269	74.8	27.0	1450	23.6	84	2.4	301	274
	243	67.5	22.0		17.8	82	2.4	276	
	223	62.0	18.0		13.7	80	2.3	254	
	202	56.0	14.2		10.0	78	2.3	232	
	535	148.5	108.0	2900	187.2	84	10.9	301	274
	497	138.0	88.0		145.2	82	10.7	276	
	454	126.0	72.0		111.2	80	10.5	254	
	403	112.0	57.0		80.2	78	10.4	232	
CPS200-125-365	310	86.0	47.0	1450	49.5	80	2.6	385	298
	281	78.0	39.0		37.8	79	2.8	353	
	256	71.0	31.5		28.1	78	2.9	321	
	230	64.0	24.0		19.8	76	3.0	289	
CPS200-125-500	328	91.0	76.0	1450	84.8	80	2.8	475	311
	292	81.0	66.5		67.3	79	2.7	443	
	256	71.0	56.0		50.6	77	2.5	412	
	230	64.0	47.0		33.8	76	2.5	381	

Specification

Model	Capacity		head	Speed	Power	Eff.	$(NPSH)_A$	Dia of Impeller	Weight
	m^3/h	L/s	(m)	(r/min)	(kw)	η (%)	(m)	(mm)	(kg)
CPS200-150-290	443	123.0	21.0	1450	29.1	87	2.9	289	347
	403	112.0	18.0		23.0	86	2.9	269	
	378	105.0	15.0		18.4	84	2.9	248	
	349	97.0	11.5		14.2	77	3.0	227	
CPS200-150-360	446	124.0	38.0	1450	54.3	85	3.0	355	359
	403	112.0	31.0		41.0	83	3.0	325	
	371	103.0	25.0		31.2	81	3.0	299	
	331	92.0	20.0		23.1	78	3.1	274	
CPS200-150-460	515	143.0	66.0	1450	112.8	82	3.5	454	436
	472	131.0	54.5		86.4	81	4.0	416	
	432	120.0	43.5		64.0	80	3.7	378	
	396	110.0	35.0		48.1	79	3.3	340	
CPS200-150-605	583	162.0	105.0	1450	208.5	80	4.2	560	646
	551	153.0	88.5		168.0	79	4.0	523	
	515	143.0	75.0		134.8	78	3.8	486	
	472	131.0	61.5		102.6	77	3.5	449	
CPS250-200-320	695	193.0	30.0	1450	64.9	88	3.8	338	450
	648	180.0	25.5		52.0	87	4.0	314	
	601	167.0	21.3		41.0	85	4.1	290	
	551	153.0	17.0		32.3	79	4.1	266	
CPS250-200-420	709	197.0	52.0	1450	116.1	87	3.9	415	517
	630	175.0	42.5		86.3	85	3.8	380	
	572	159.0	35.5		66.7	83	3.9	350	
	511	142.0	28.5		49.0	81	4.0	320	
CPS250-200-520	817	227.0	91.0	1450	244.0	83	4.0	530	840
	756	210.0	76.5		192.1	82	4.5	486	
	706	196.0	62.5		150.1	80	3.7	442	
	648	180.0	47.5		106.8	79	3.5	398	
CPS250-200-670	792	220.0	150.0	1450	404.4	80	3.6	655	990
	745	207.0	127.0		328.4	79	3.4	611	
	702	195.0	107.0		265.7	77	3.2	568	
	659	183.0	88.0		207.7	76	3.0	525	

Specification

Model	Capacity		head	Speed	Power	Eff.	$(NPSH)_A$	Dia of Impeller	Weight
	m^3/h	L/s	(m)	(r/min)	(kw)	η (%)	(m)	(mm)	(kg)
CPS300-250-370	1051	292.0	39.0	1450	126.9	88	4.7	389	665
	994	276.0	33.0		103.8	86	5.0	362	
	943	262.0	27.0		83.6	83	5.0	334	
	871	242.0	20.0		61.2	78	5.0	306	
CPS300-250-480	1174	326.0	66.0	1450	242.5	87	4.1	478	830
	1080	300.0	55.0		190.3	85	4.0	438	
	1001	278.0	45.5		149.4	83	4.0	403	
	929	258.0	37.5		118.6	80	4.0	369	
CPS300-250-600	1242	345.0	116.0	1450	467.1	84	4.6	610	1215
	1166	324.0	100.0		380.4	84	4.5	568	
	1084	301.0	83.0		295.1	83	4.3	520	
	1001	278.0	66.0		218.0	83	4.0	475	
CPS300-250-700	1400	389.0	137.0	1450	680.0	84	4.1	700	1530
	1400	389.0	125.0		600.0	84	4.3	675	
	1400	389.0	117.0		580.0	84	4.6	650	
	1400	389.0	105.0		500.0	84	5.0	620	
CPS350-300-300	1098	305.0	54.5	1450	85.2	86	5.3	330	630
	1044	290.0	19.8		66.6	85	5.5	308	
	1008	280.0	15.5		51.9	82	5.7	287	
	965	268.0	11.5		37.8	80	6.0	274	
CPS400-300-435	1678	466.0	53.0	1450	275.2	88	7.1	450	905
	1577	438.0	45.0		223.4	84	7.2	418	
	1476	410.0	36.5		174.7	84	7.4	386	
	1361	378.0	27.5		129.0	79	7.4	354	

Specification

Model	Capacity		head	Speed	Power	Eff.	$(NPSH)_A$	Dia of Impeller	Weight
	m^3/h	L/s	(m)	(r/min)	(kw)	η (%)	(m)	(mm)	(kg)
CPS400-300-560	1746	485.0	94.0	1450	519.7	86	5.7	553	1425
	1645	457.0	76.0		398.5	86	6.4	506	
	1573	437.0	62.0		312.5	85	6.7	466	
	1516	421.0	50.0		247.2	84	7.2	426	
CPS400-300-700	1836	510.0	160.0	1450	941.2	85	5.0	705	1690
	1735	482.0	136.0		759.6	85	5.0	655	
	1642	451.0	112.0		587.4	84	5.0	600	
	1537	427.0	91.0		453.5	84	5.0	550	
CPS400-300-800	2000	556.0	207.0	1450	1300.0	85.7	4.1	800	2310
	1800	500.0	195.0		1200.0	85	4.0	775	
	1600	444.0	190.0		1000.0	84	4.0	750	
	1500	417.0	180.0		750.0	83	3.9	725	
CPS400-350-360	1732	481.0	32.0	1450	174.5	87	3.1	382	865
	1692	470.0	26.5		143.2	85	8.4	357	
	1642	456.0	21.0		113.1	83	8.7	332	
	1602	445.0	15.0		81.3	81	8.9	317	
CPS450-350-430	2743	762.0	43.5	1450	371.4	88	12.2	440	1285
	2635	732.0	35.0		293.8	86	12.5	411	
	2563	712.0	27.5		228.5	84	13.1	382	
	2484	690.0	21.5		179.6	81	123.7	365	
CPS450-350-510	2610	725.0	70.0	1450	562.2	89	10.0	518	1395
	2430	675.0	60.0		456.4	87	10.7	482	
	2232	620.0	50.0		353.4	86	11.0	445	
	2070	575.0	38.0		271.2	79	11.5	408	
CPS400-350-620	2196	610.0	125.0	1450	879.0	85	7.0	640	1540
CPS500-400-540	2628	730.0	86.0	1450	724.0	85	7.0	540	1610
CPS500-400-620	3150	875.0	113.0	1450	1127.0	86	7.5	620	1870
CPS600-500-640	3253	903.6	38.5	980	377.0	90.5	4.9	670	2301
CPS600-500-700A	3900	1083.2	72.5	980	846.0	91	4.7	750	2967
CPS600-500-700B	2965	823.5	55.9	980	515.0	87.8	4.2	672	2967
CPS600-500-790	3345	929.2	70.7	980	715.0	90.2	4.9	790	3483
CPS600-500-890A	5070	1408.2	116.3	980	1785.0	90	6.1	930	4659
CPS600-500-890B	3666	1018.2	96.1	980	1083.0	88.6	4.7	880	4659
CPS700-600-540A	3860	1072.2	31.1	980	395.0	83.3	5.5	575	2725
CPS700-600-540B	4832	1342.1	28.4	980	440.0	85.1	5.2	630	2725
CPS700-600-830	4063	1128.6	73.8	980	897.0	91	7.7	870	4700
CPS800-700-710	61925	1720.0	51.0	980	999.6	86	6.8	720	5329
CPS900-800-740	11160	3100.0	41.0	740	1369.0	91	7.2	900	6657

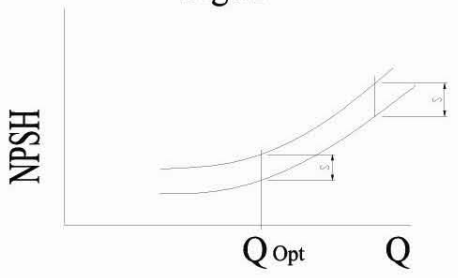
Performance Curves

NPSH add. value

Fig.A

$NPSH_A$ - available

$NPSH_A \geqslant$ available



NPSH add. value

Fig.B

$NPSH_A$ - available

$Q \geqslant Q_{Opt}$

$NPSH_A \geqslant NPSH+S$

$Q < Q_{Opt}$

$NPSH_A \geqslant NPSH_{Opt}+S$

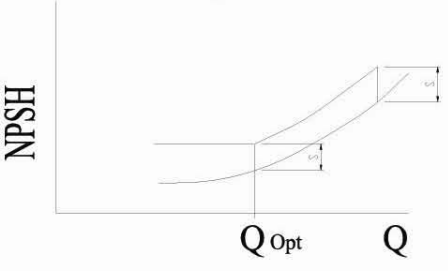
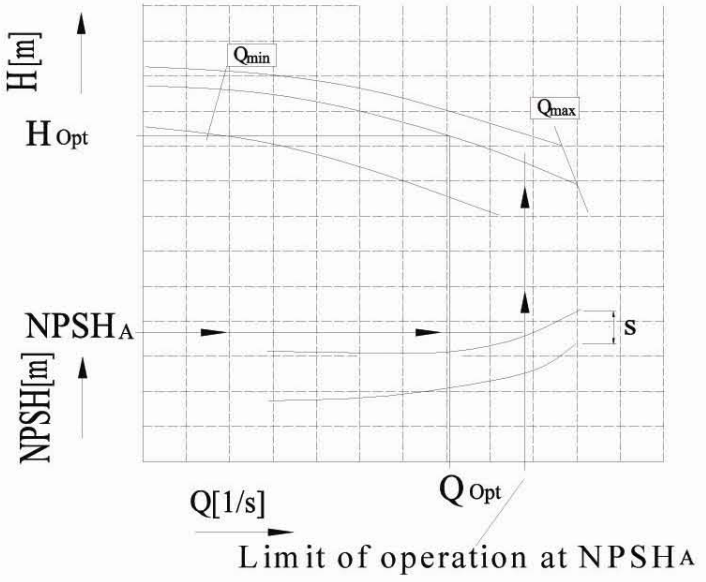
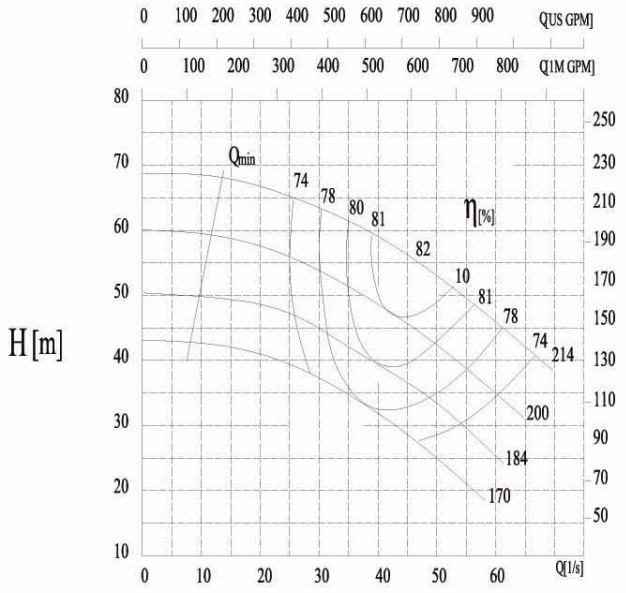


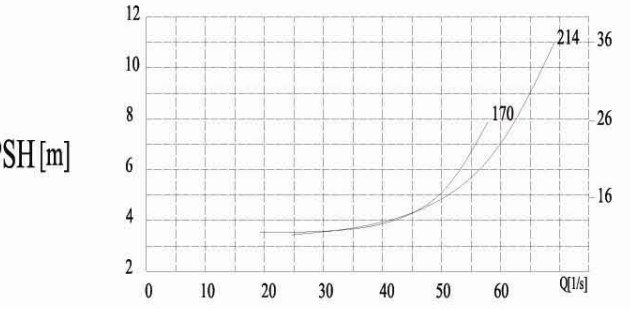
Fig.C

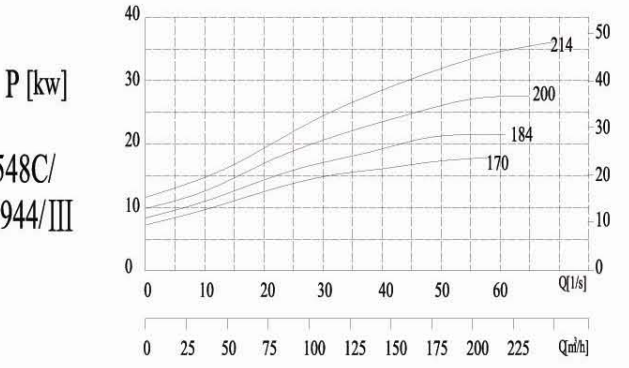


Performance Curves

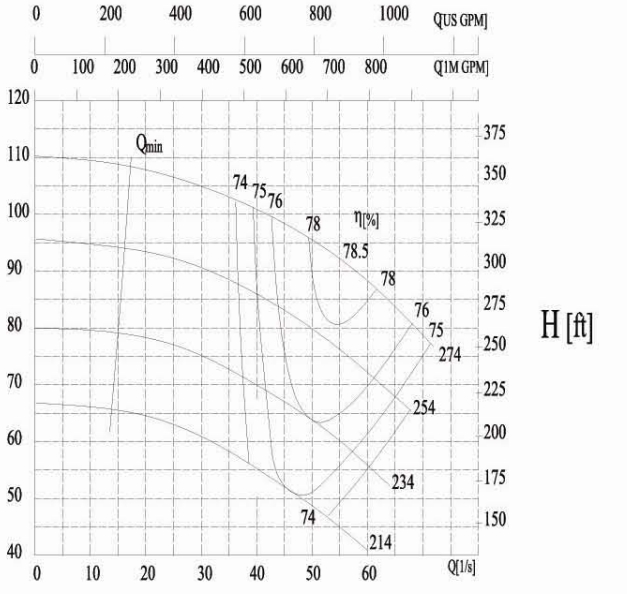
CPS 125-80-210 2900 1/min

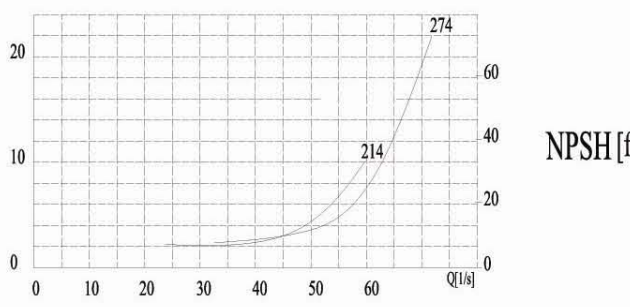


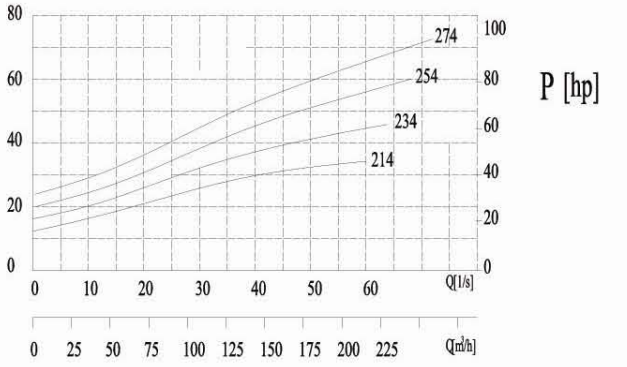




CPS 125-80-270 2900 1/min

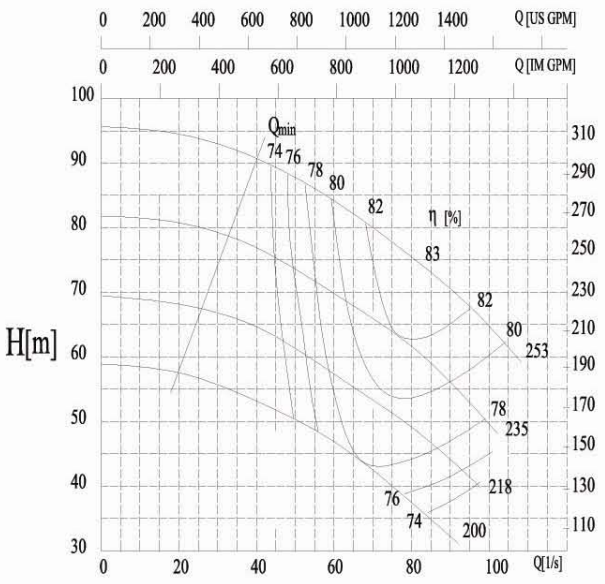


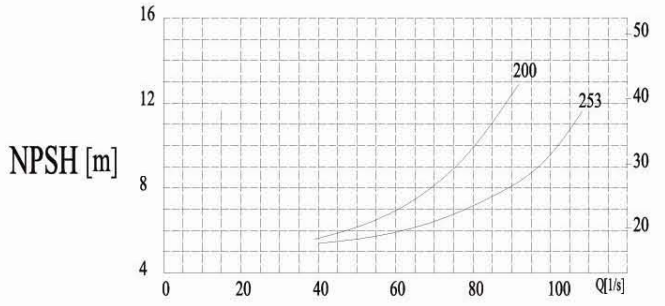


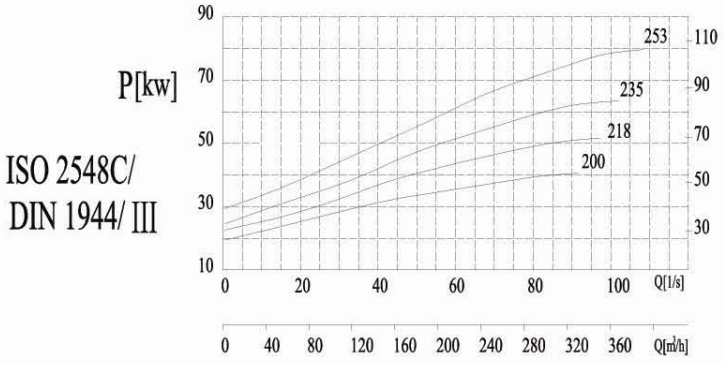


Performance Curves

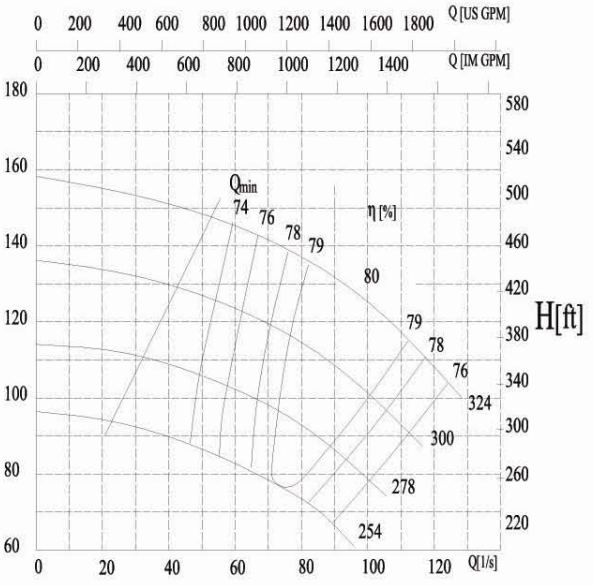
CPS 150-100-250 2900 1/min

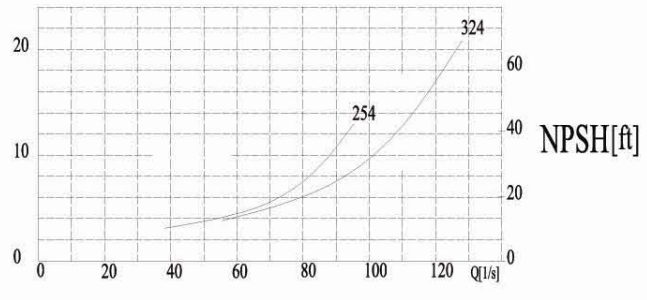


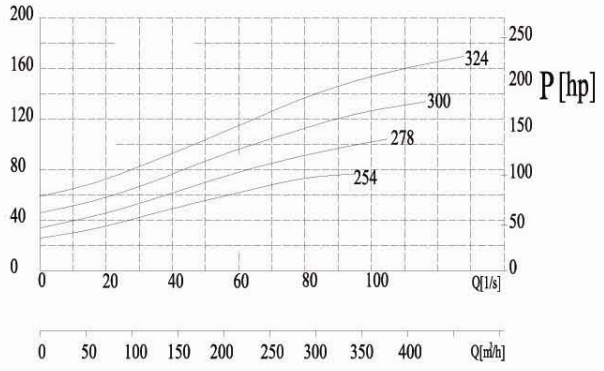




CPS 150-100-310 2900 1/min

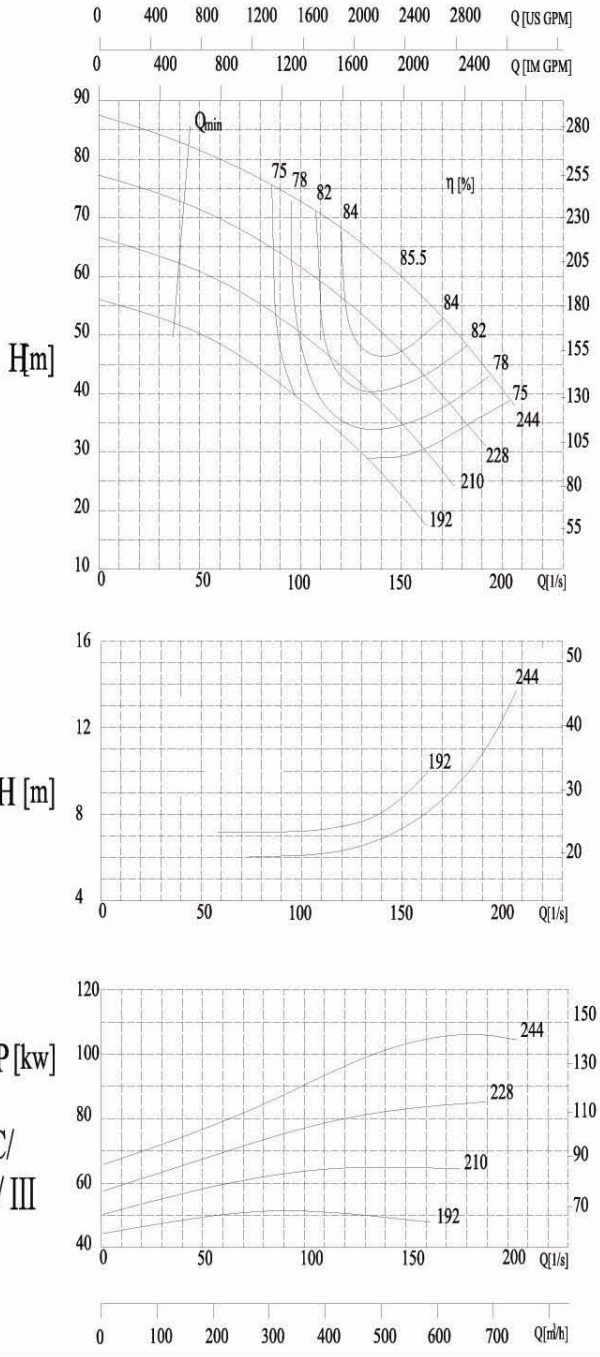




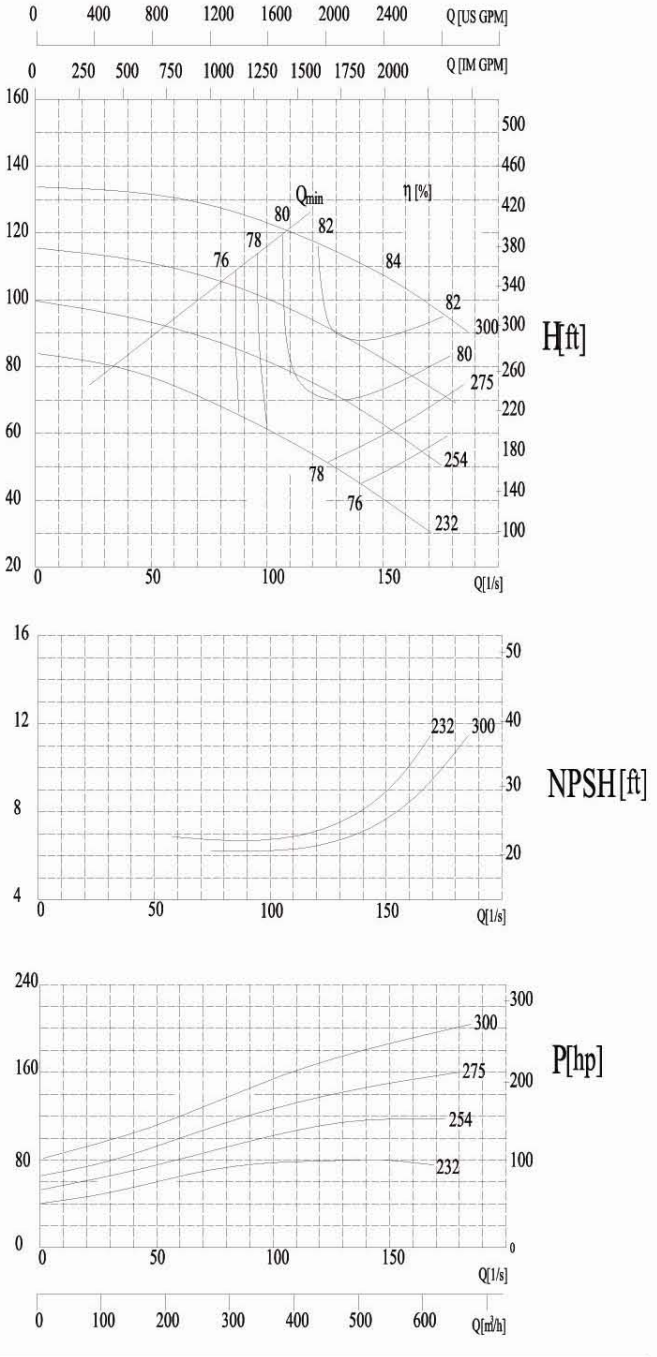


Performance Curves

CPS 200-125-230 2900 r/min



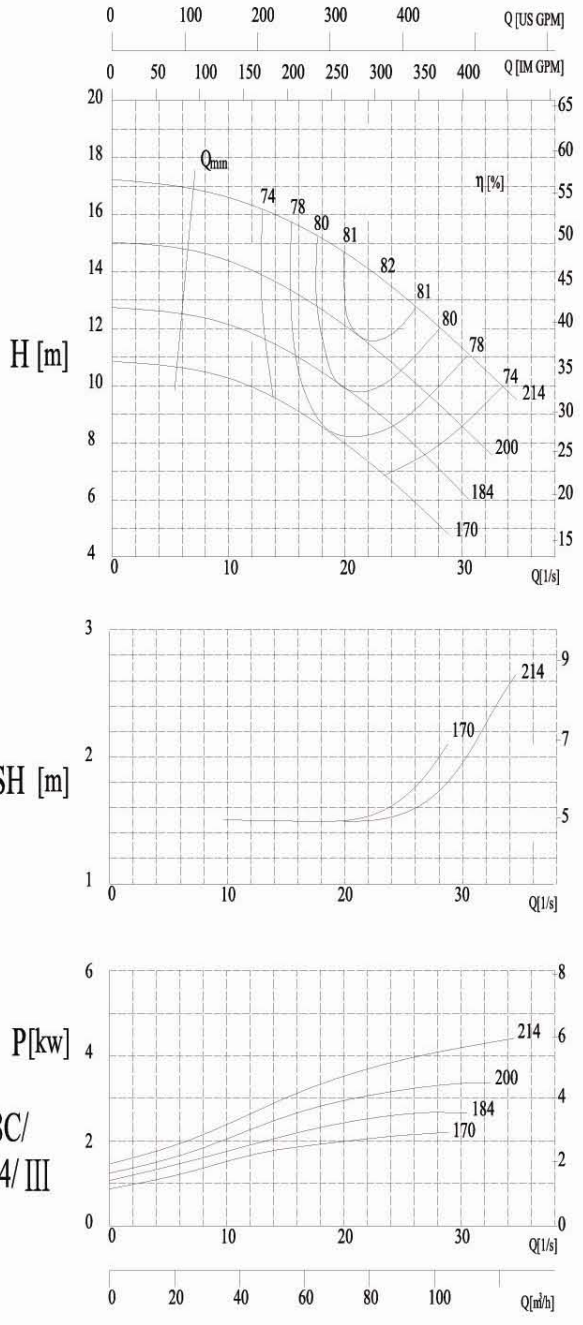
CPS 200-125-290 2900 r/min



ISO 2548C/
DIN 1944/ III

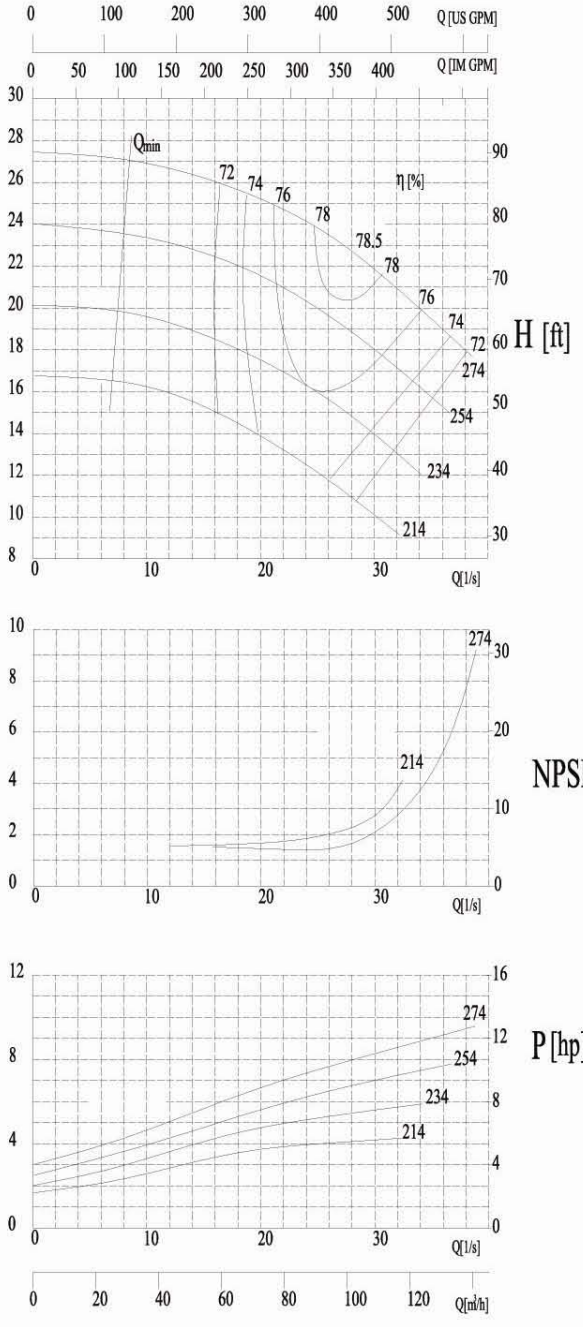
Performance Curves

CPS 125-80-210 1450 r/min



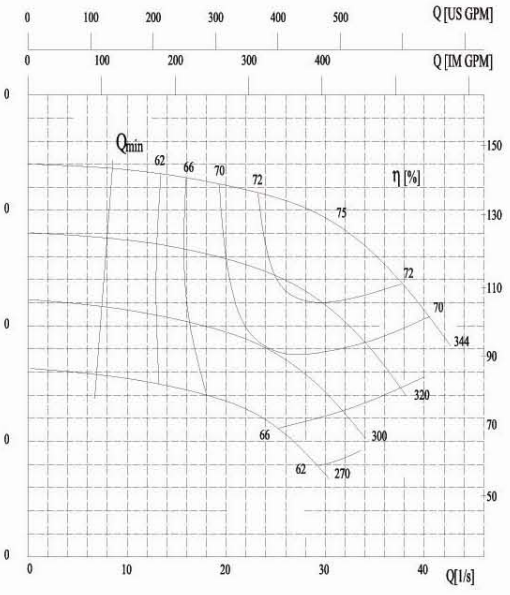
ISO 2548C/
DIN 1944/ III

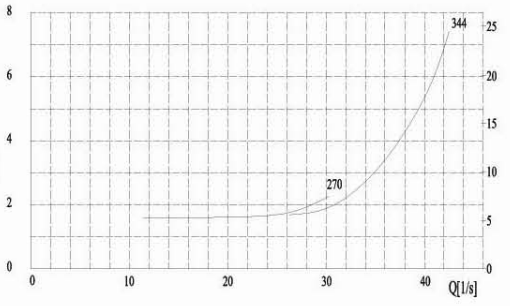
CPS 125-80-270 1450 r/min

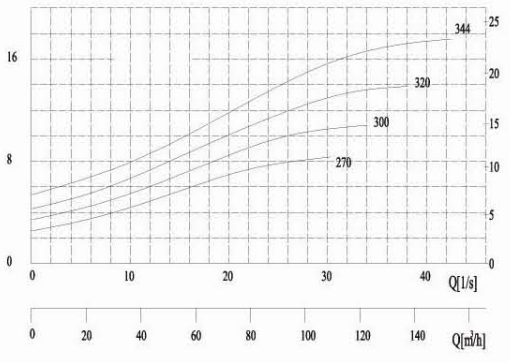


Performance Curves

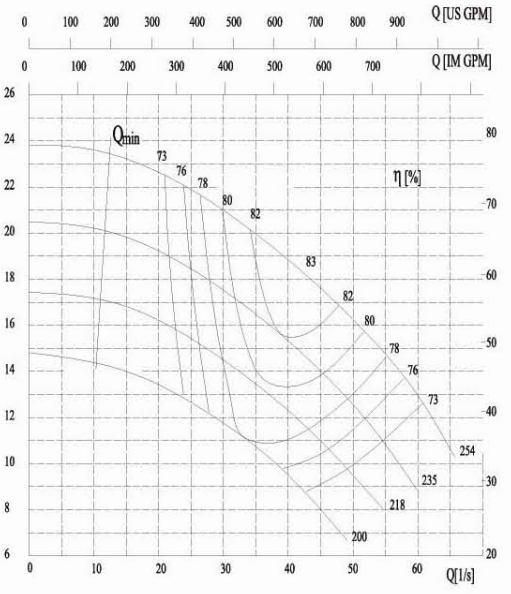
CPS 125-80-370 1450 r/min

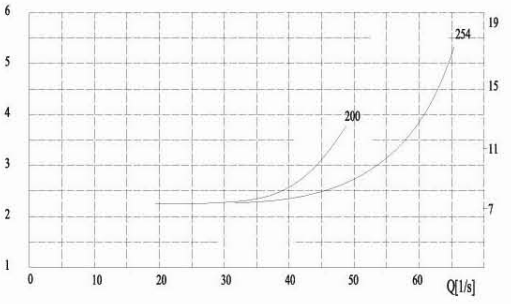


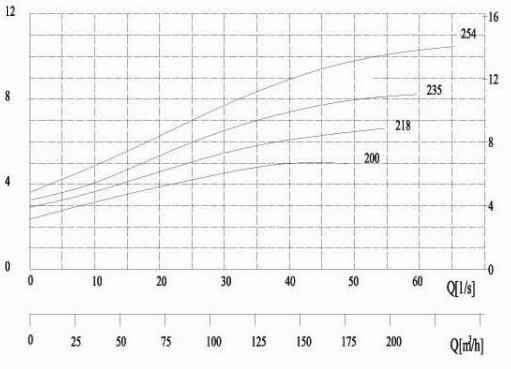




CPS 150-100-250 1450 r/min

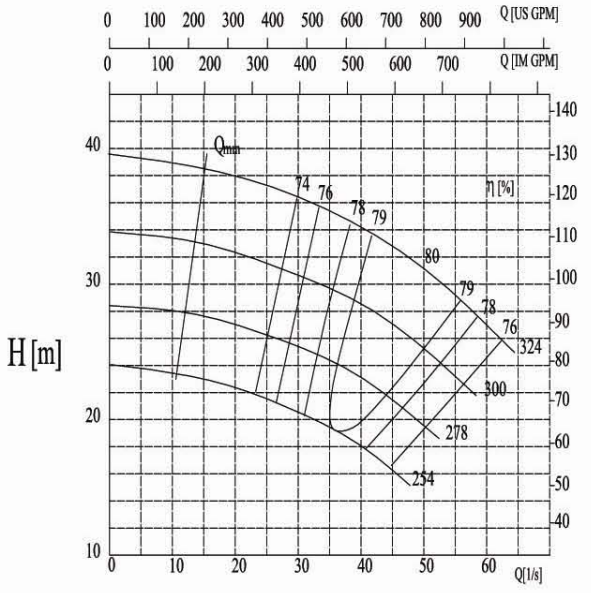


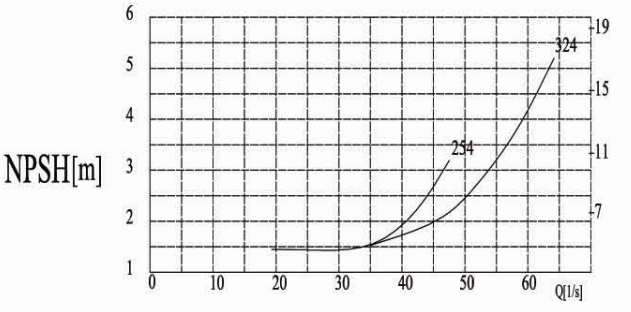


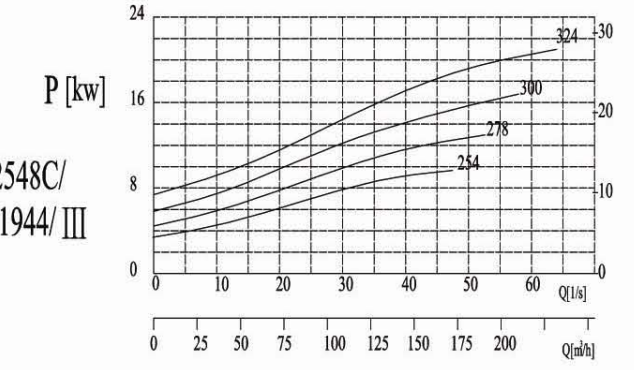


Performance Curves

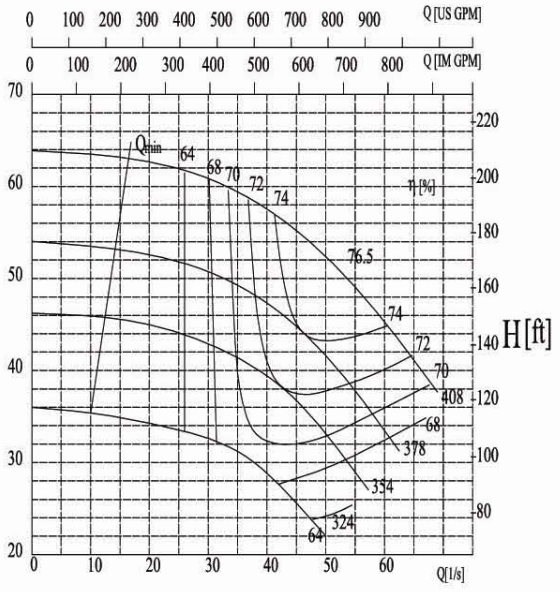
CPS 150-100-310 1450 r/min

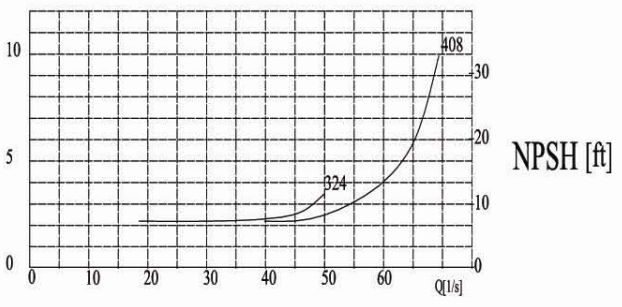


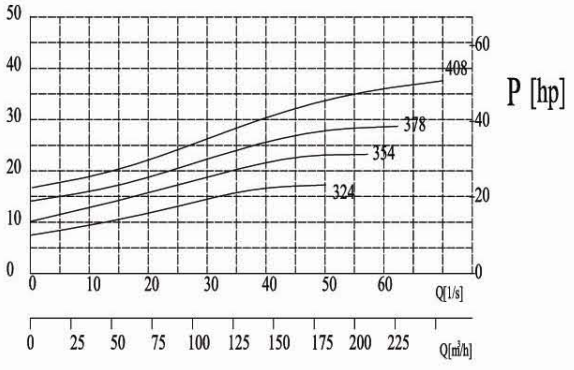




CPS 150-100-375 1450 r/min

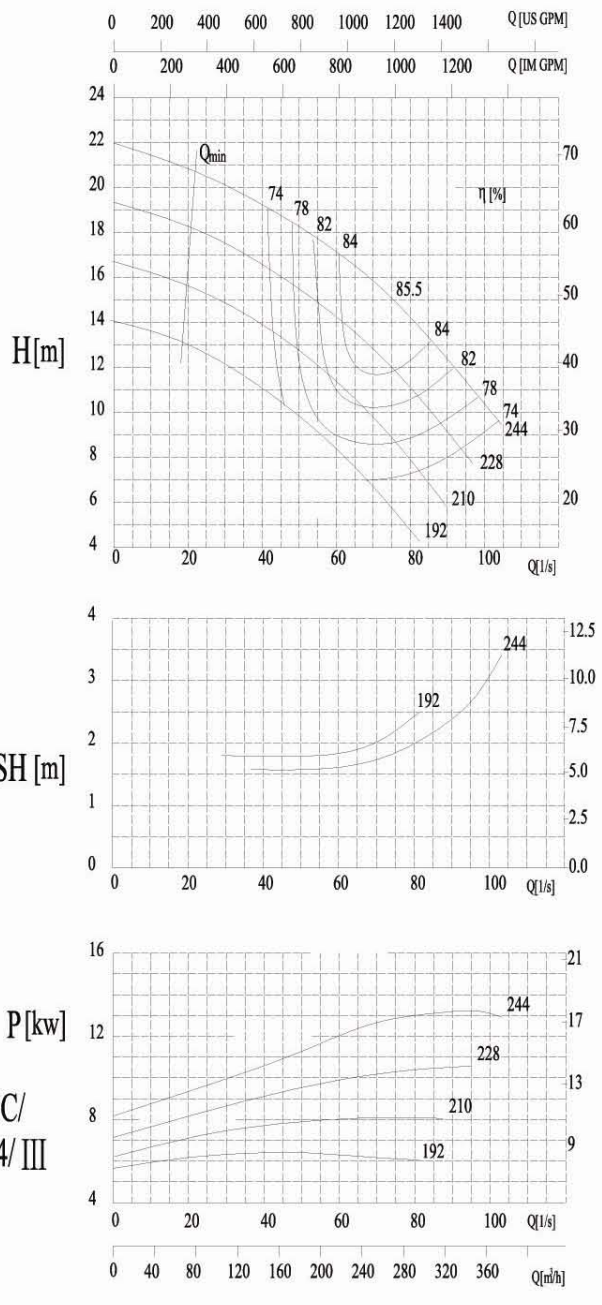




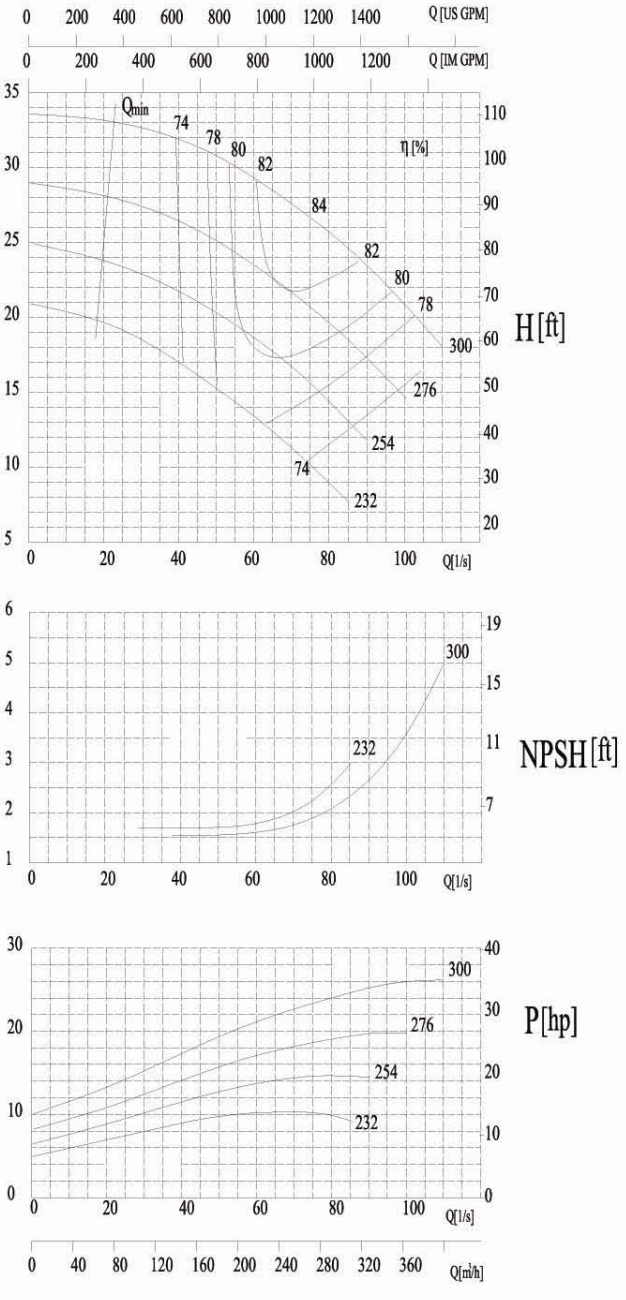


Performance Curves

CPS 200-125-230 1450 r/min

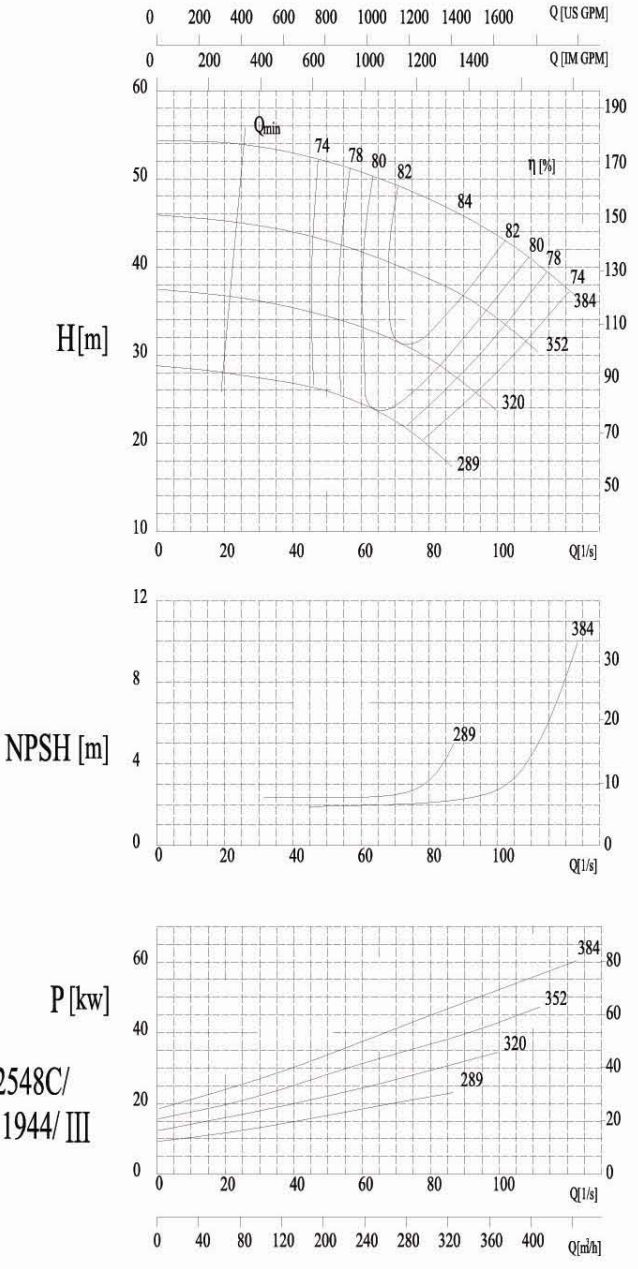


CPS 200-125-290 1450 r/min

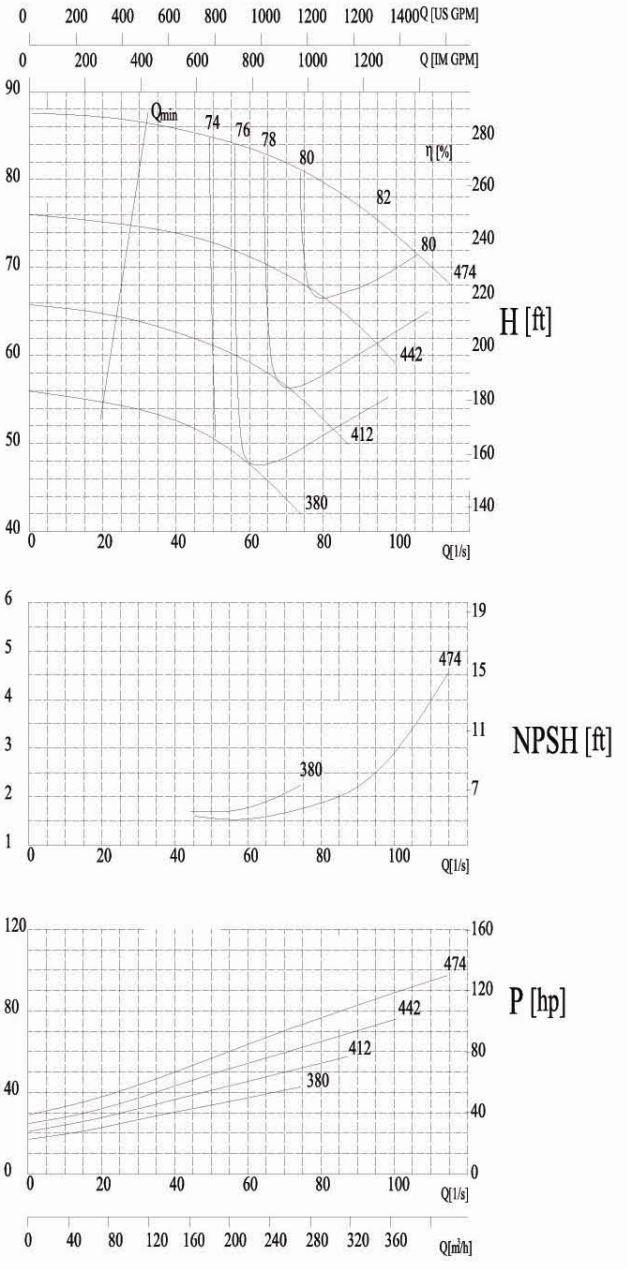


Performance Curves

CPS 200-125-365 1450 r/min

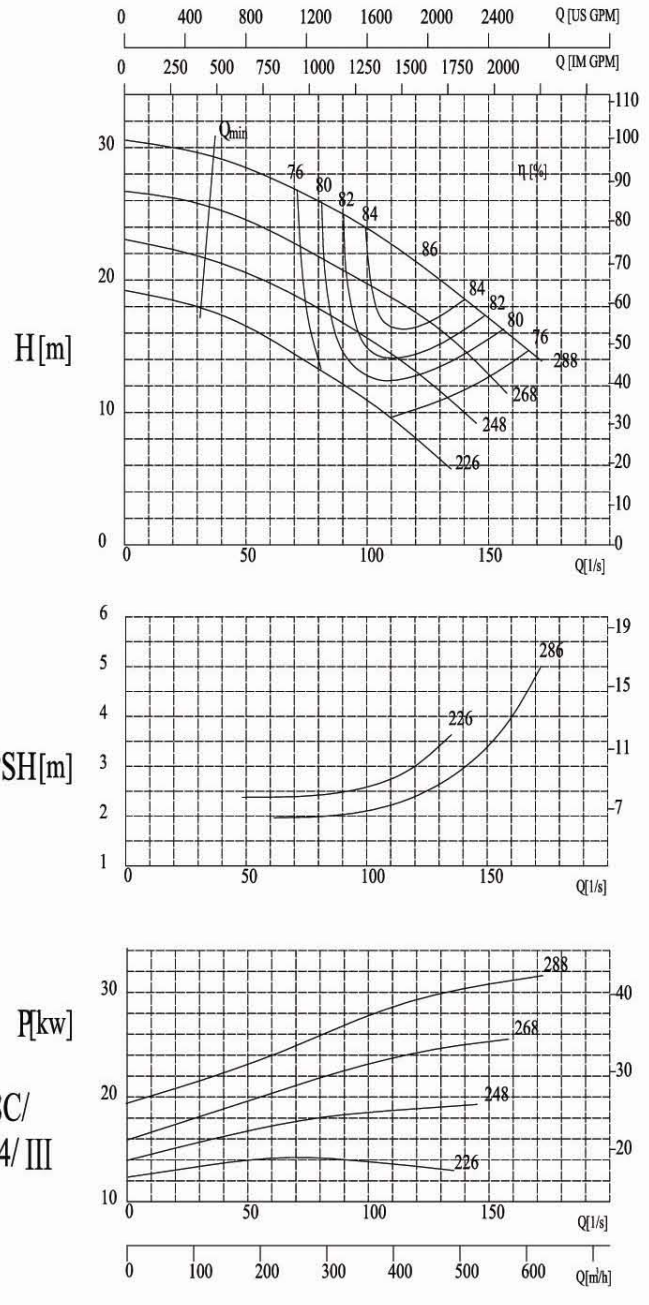


CPS 200-125-500 1450 r/min



Performance Curves

CPS 200-150-290 1450 r/min



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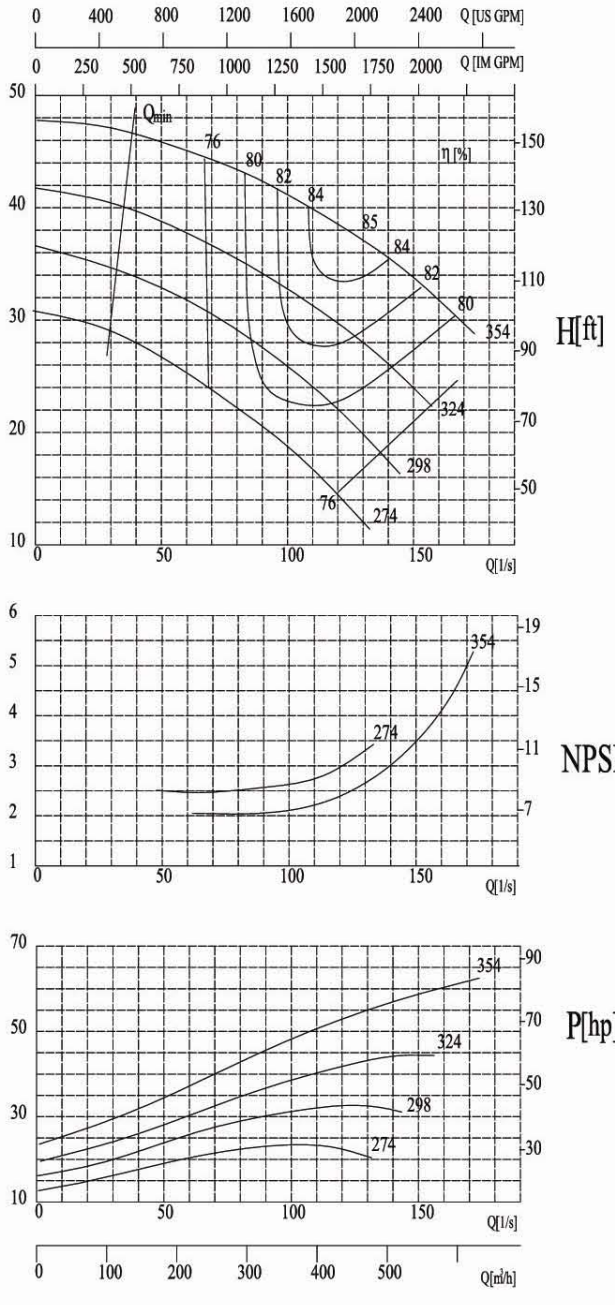
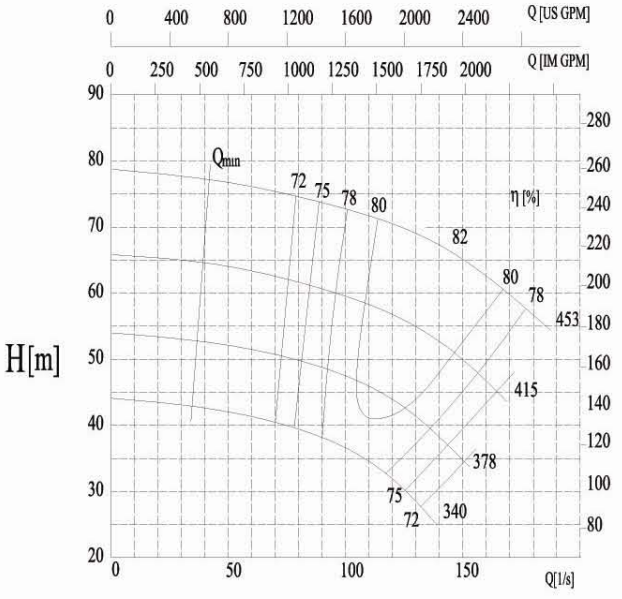
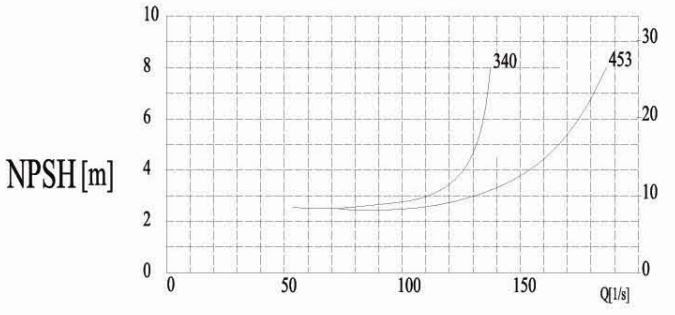
CPS 200-150-360 1450 r/min

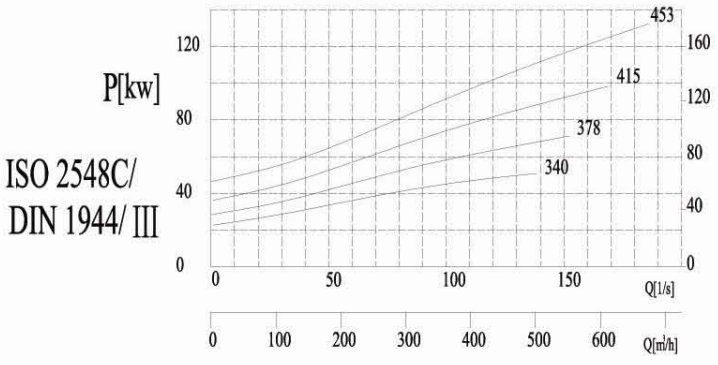


Performance Curves

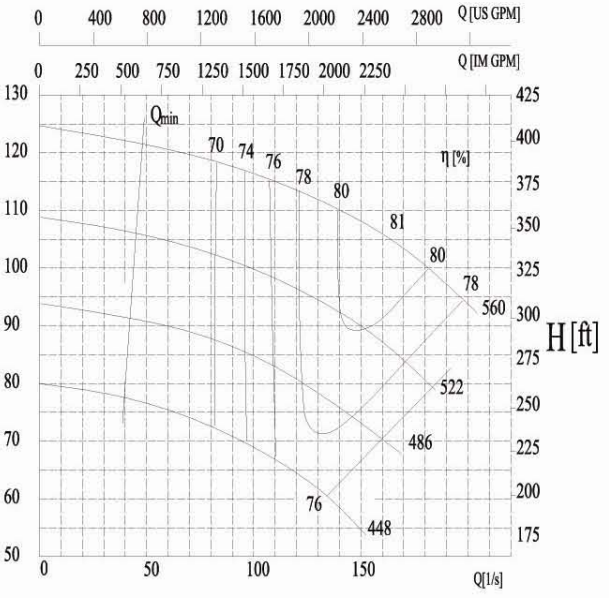
CPS 200-150-460 1450 r/min

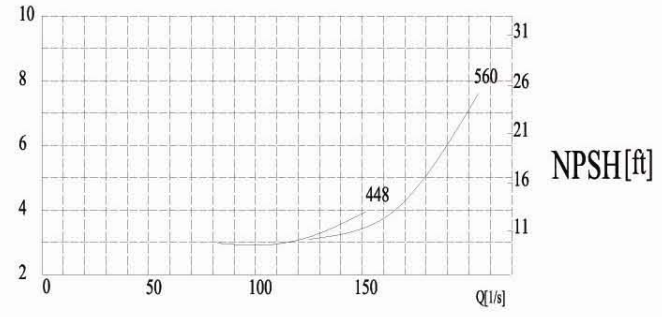


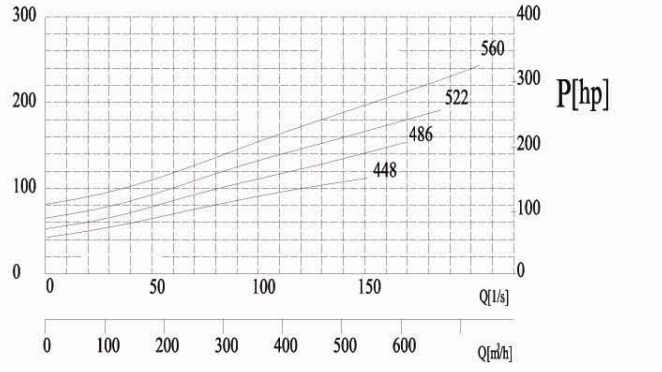




CPS 200-150-605 1450 r/min

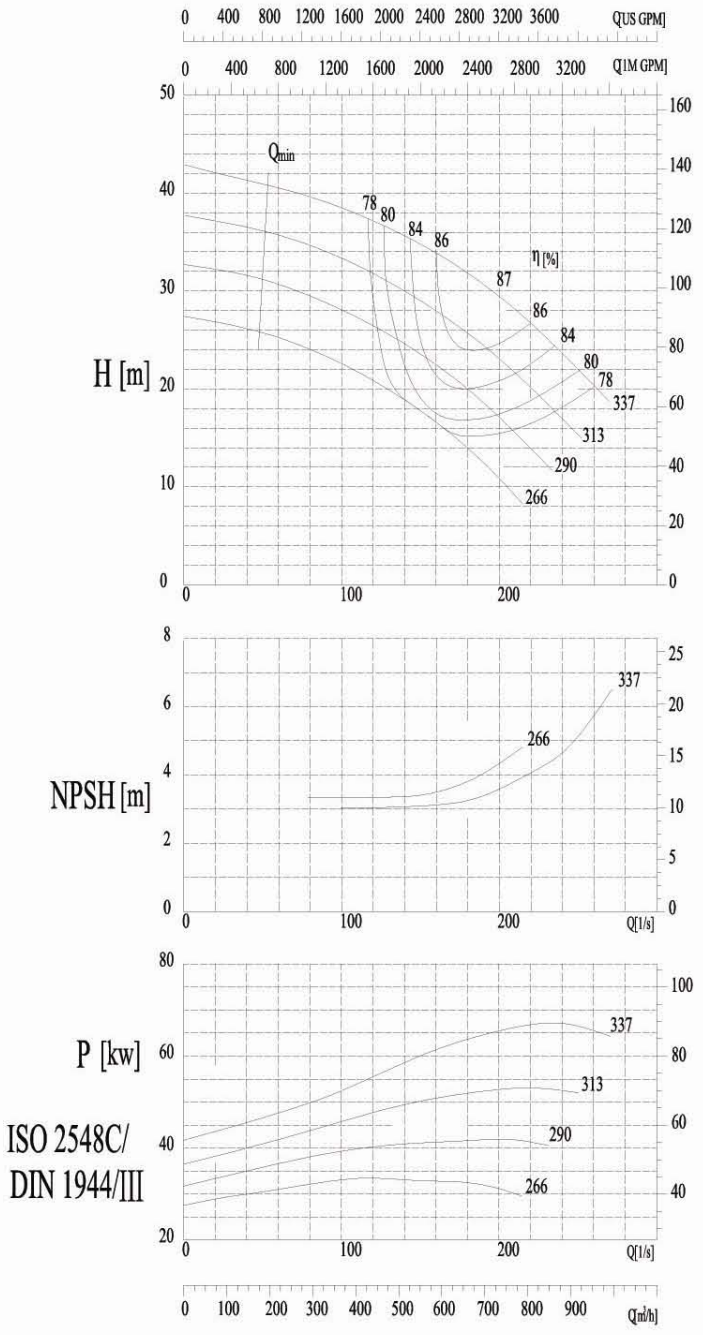






Performance Curves

CPS 250-200-320 1450 1/min



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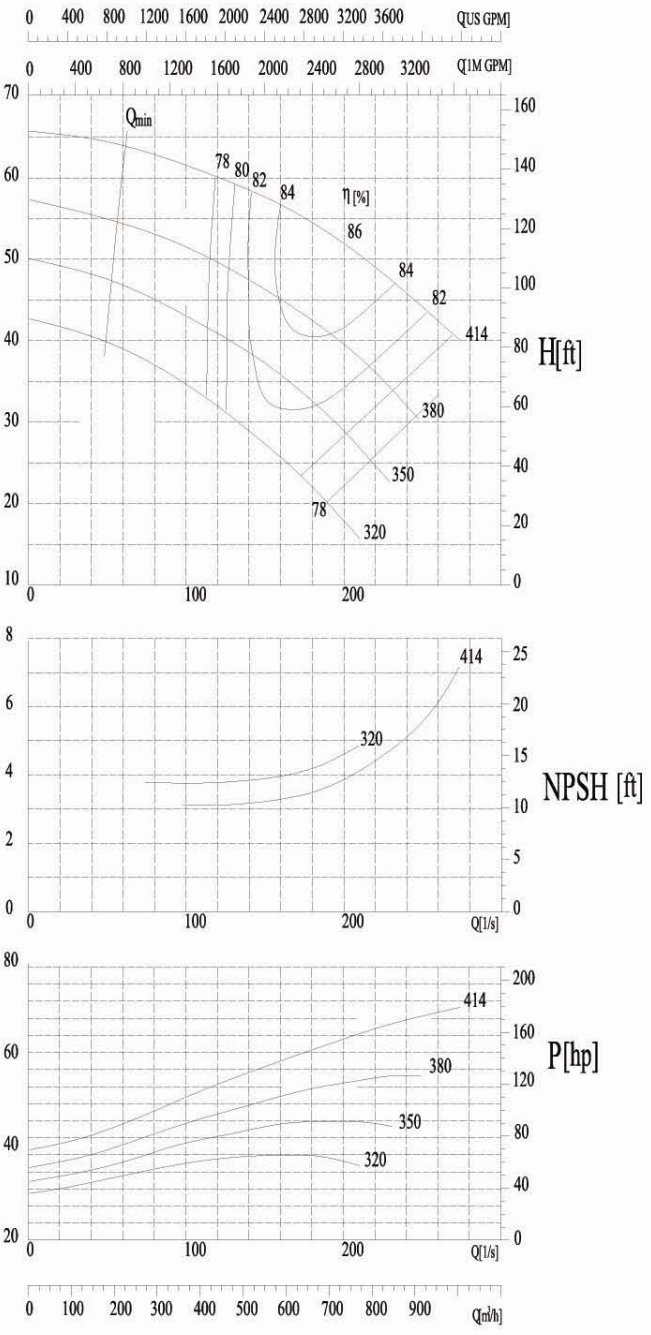
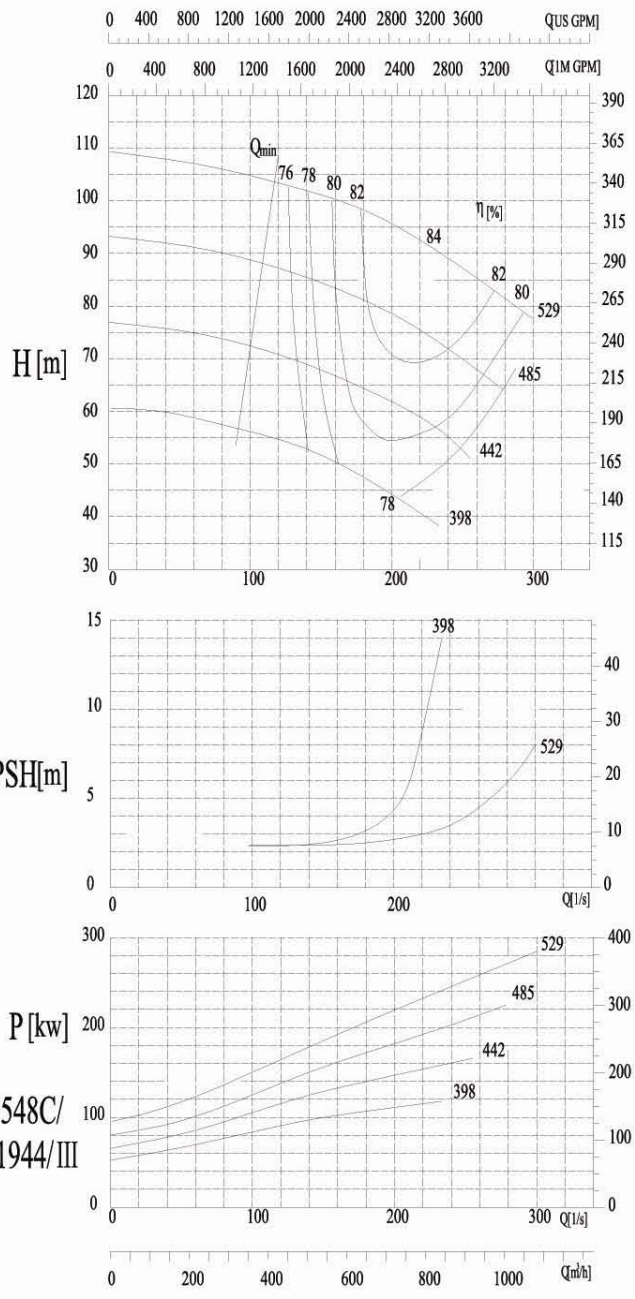
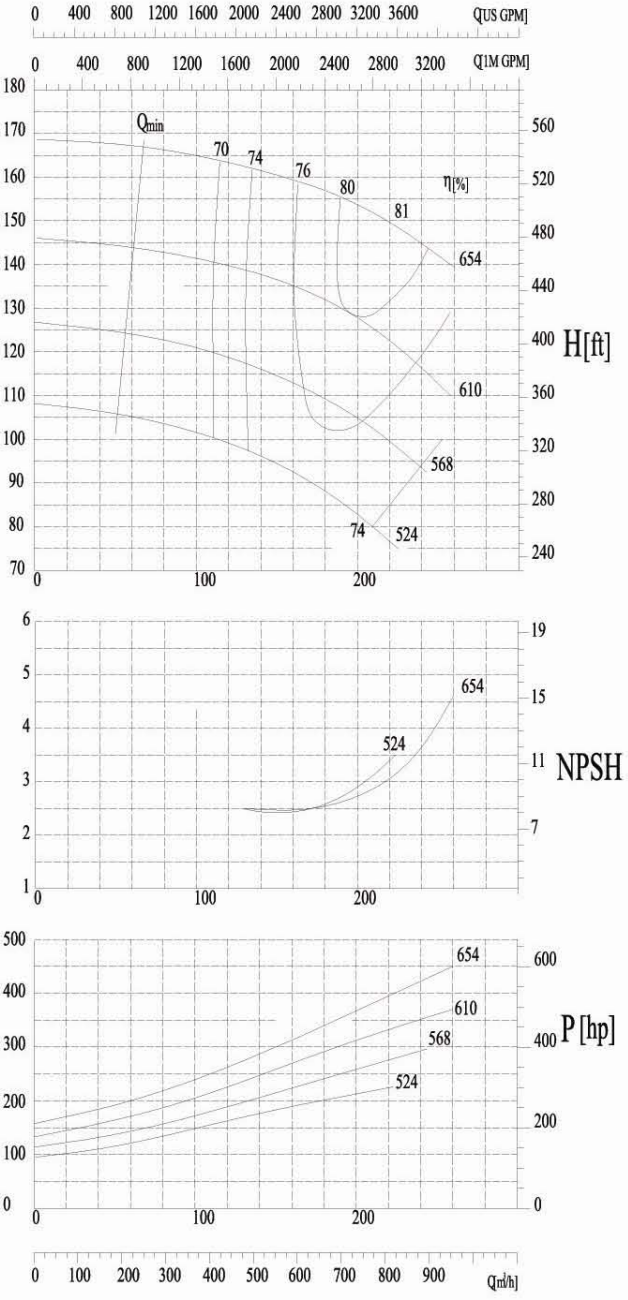


Performance Curves

CPS 250-200-520 1450 1/min

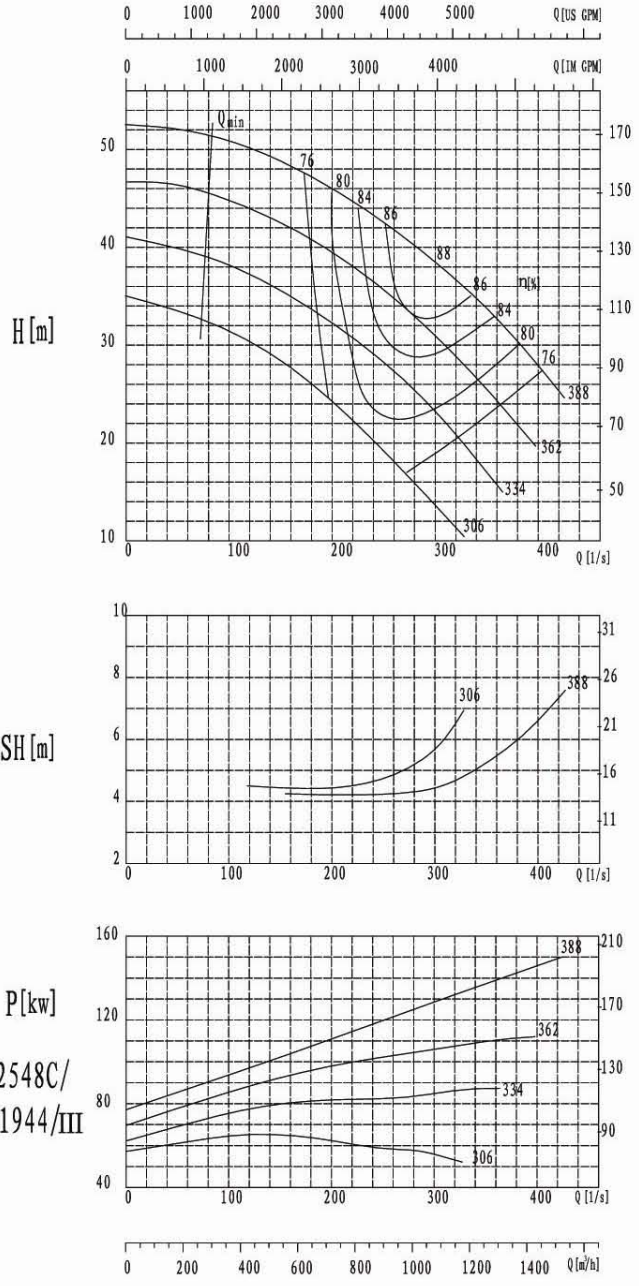


CPS 250-200-670 1450 1/min

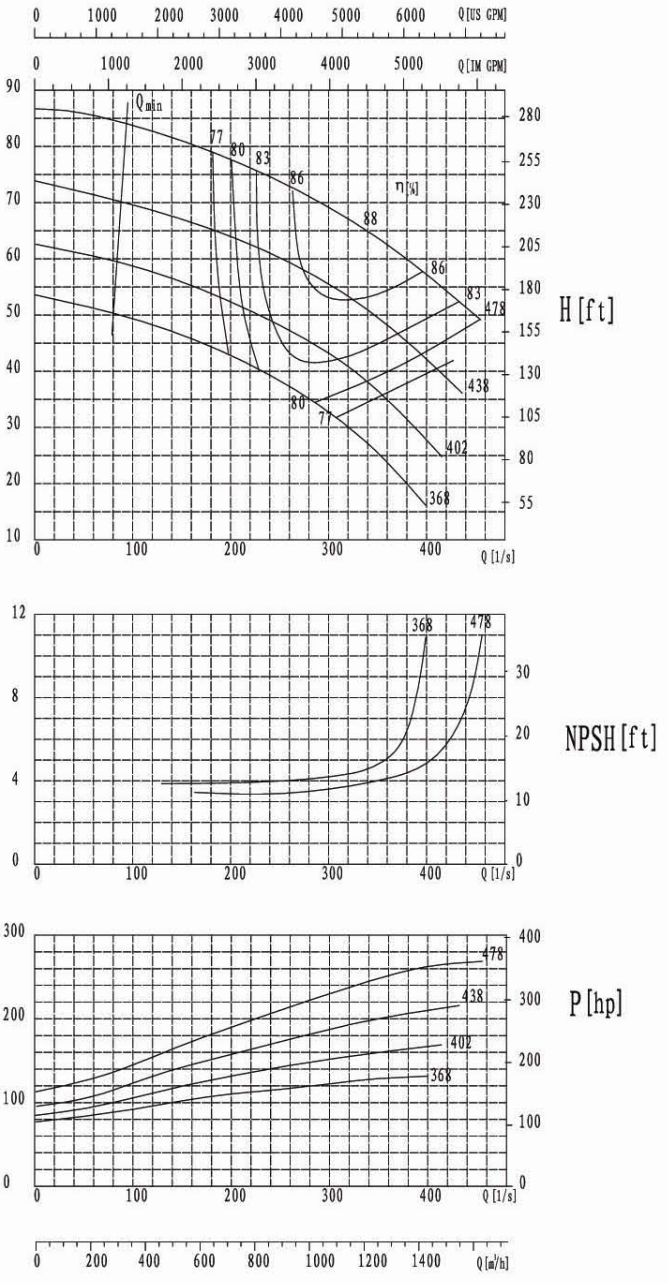


Performance Curves

CPS 300-250-370 1450 1/min

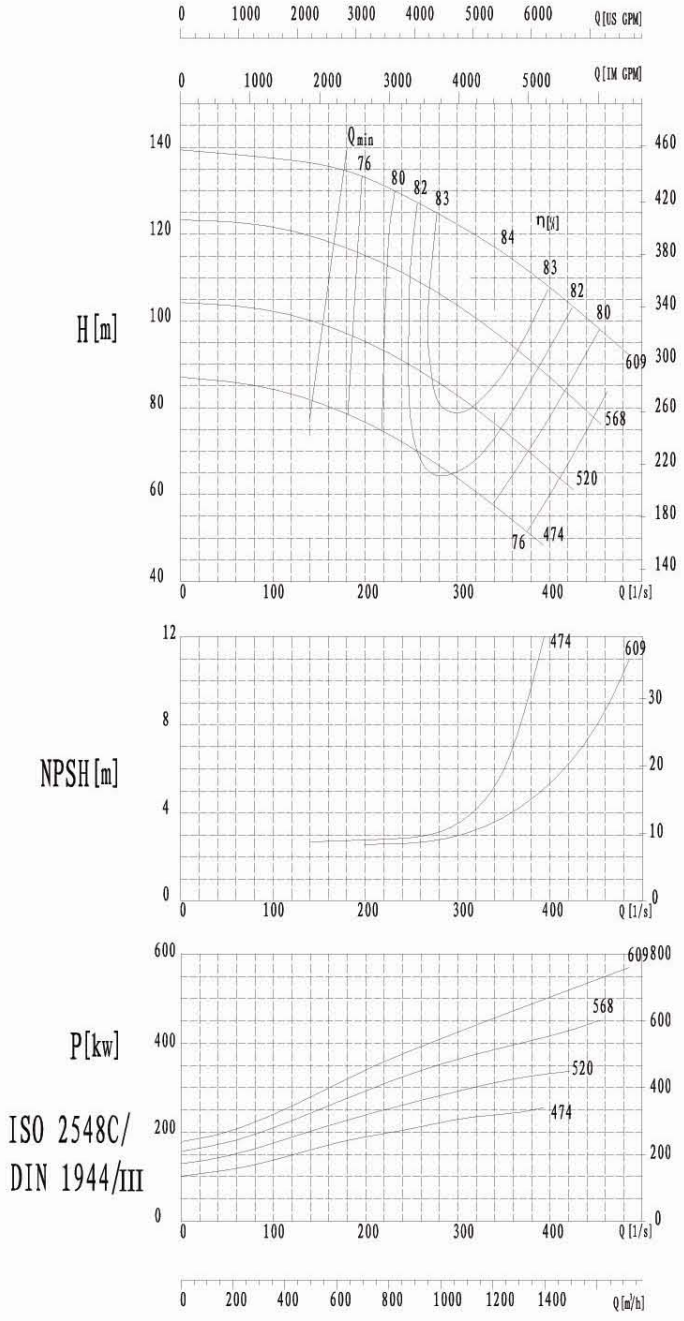


CPS 300-250-480 1450 1/min

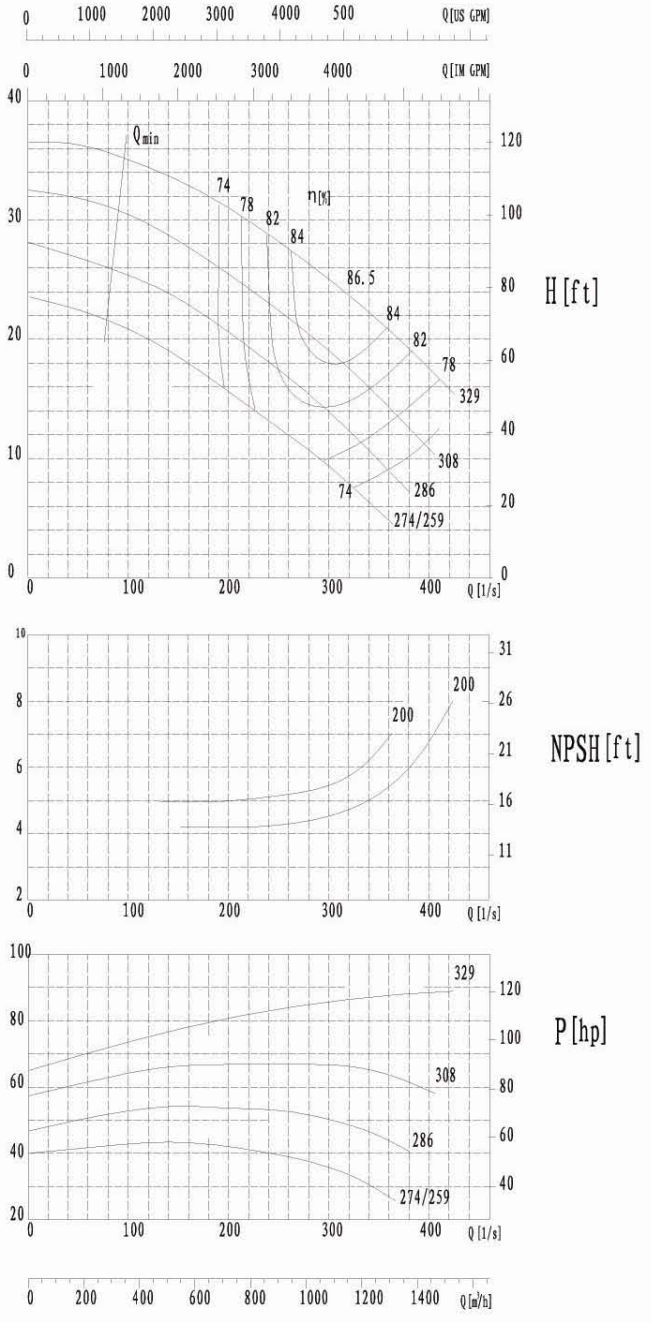


Performance Curves

CPS 300-250-600 1450 1/min

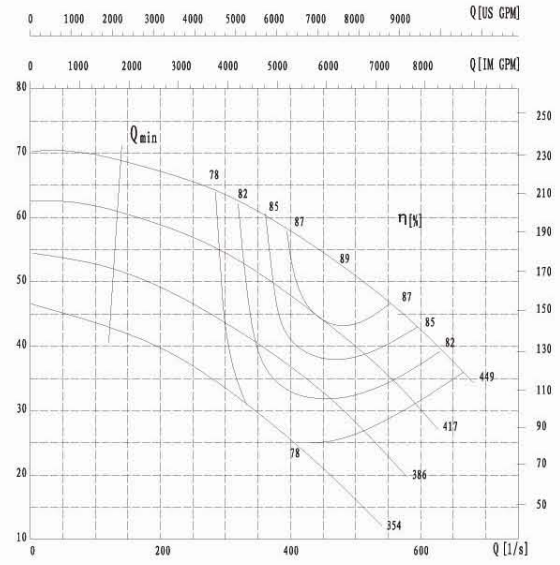


CPS 350-300-300 1450 1/min

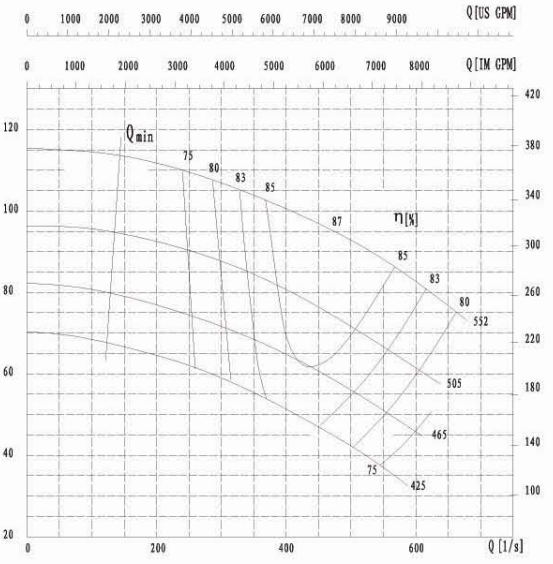


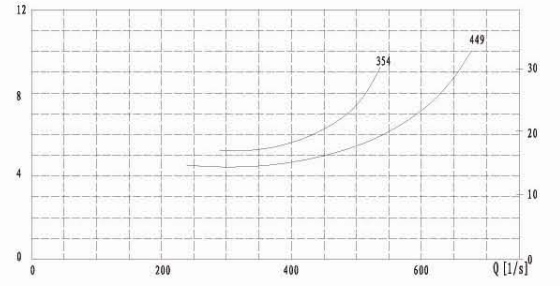
Performance Curves

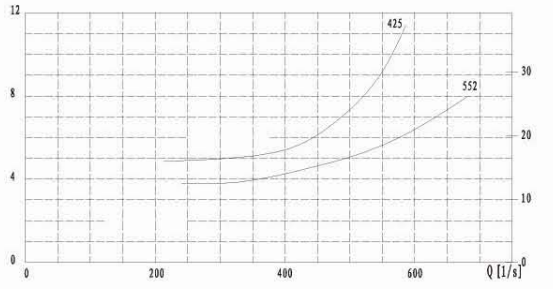
CPS 400-300-435 1450 1/min



CPS 400-300-560 1450 1/min

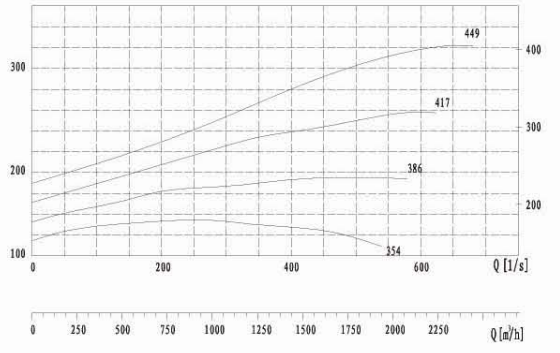


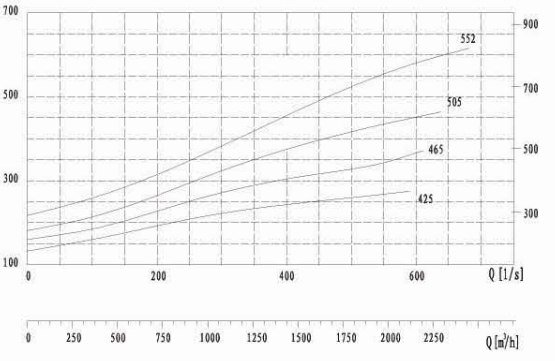




P[kw]

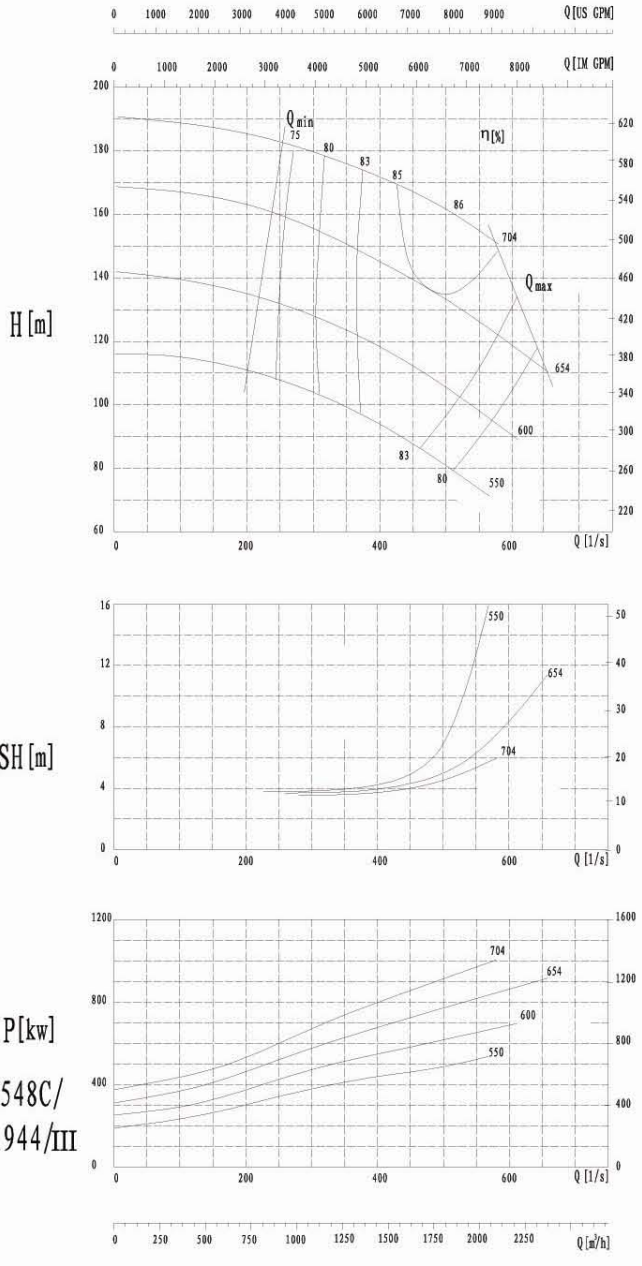
ISO 2548C/
DIN 1944/III



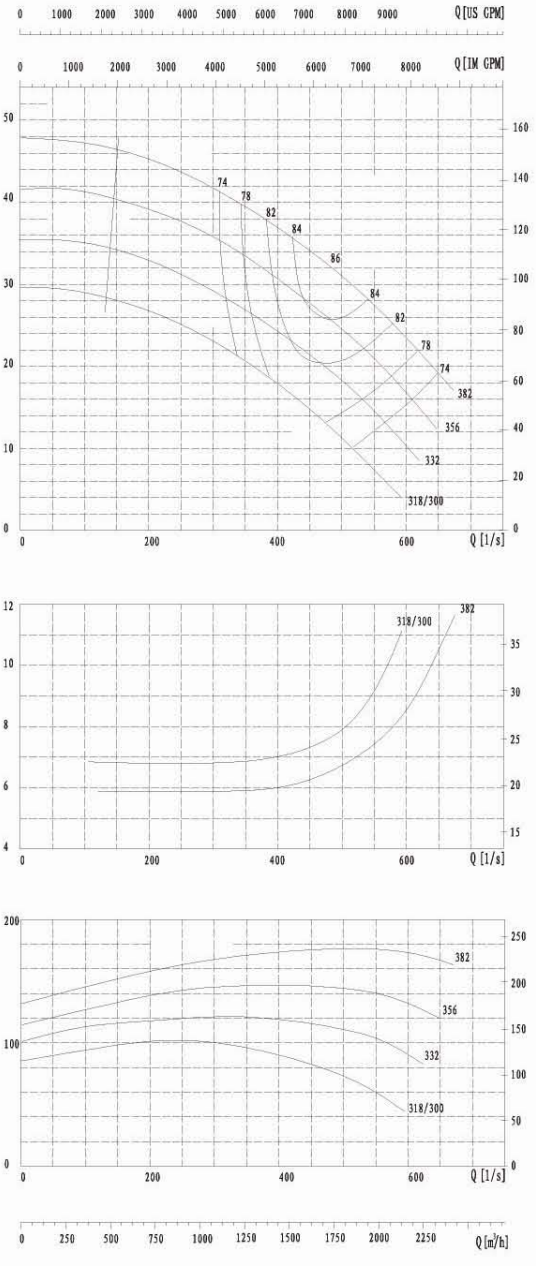


Performance Curves

CPS 400-300-700 1450 1/min

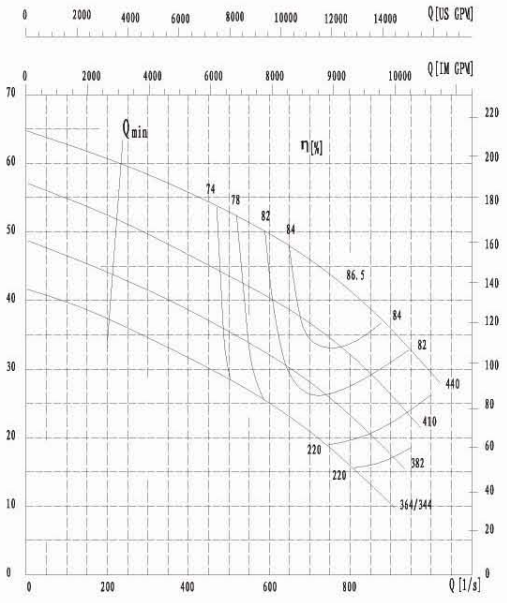


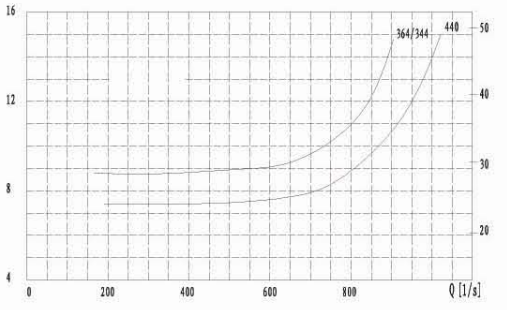
CPS 400-350-360 1450 1/min

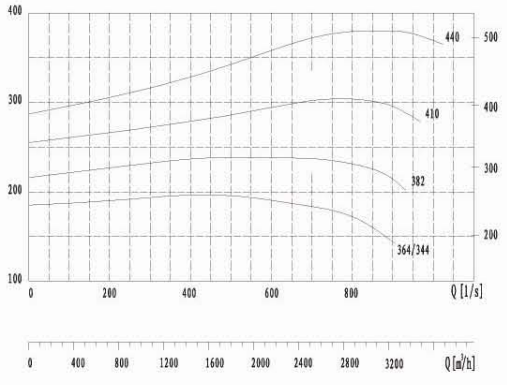


Performance Curves

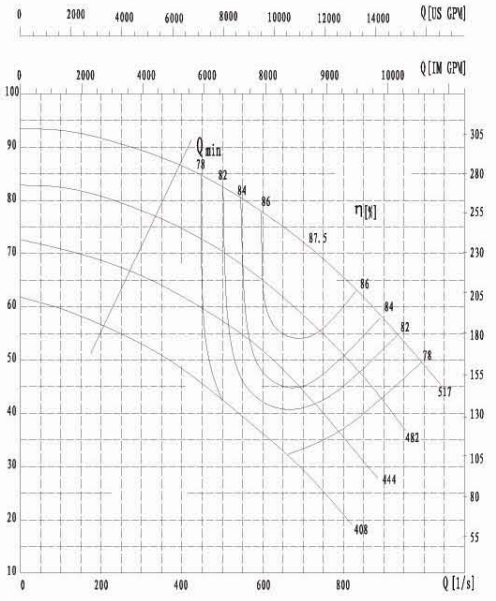
CPS 450-350-430 1450 1/min

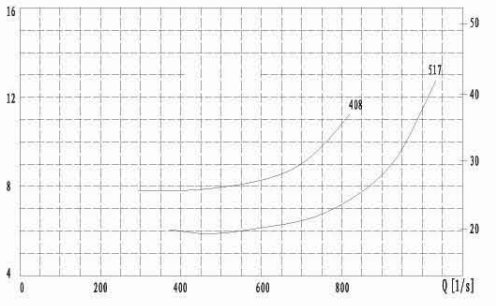


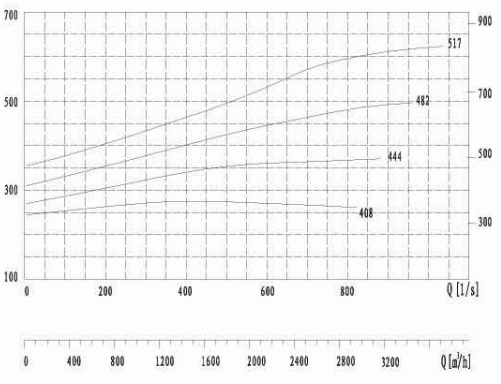




CPS 400-350-510 1450 1/min



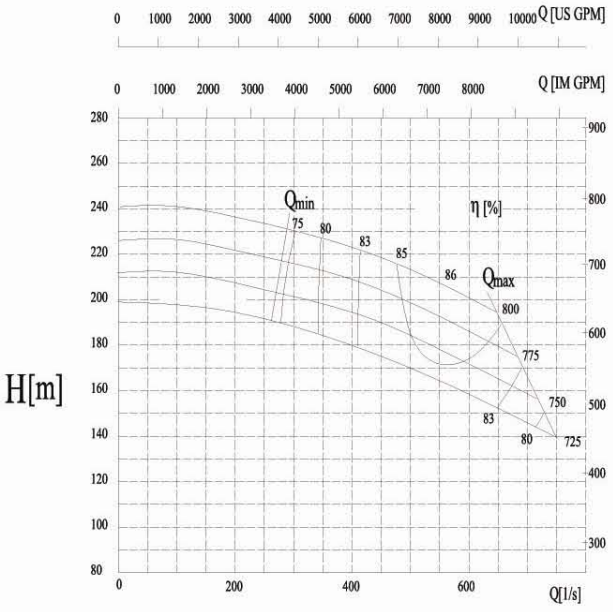


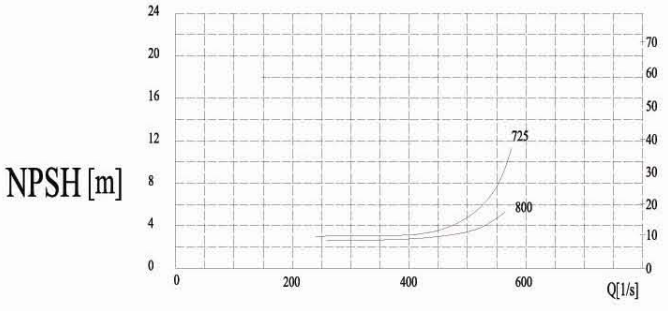


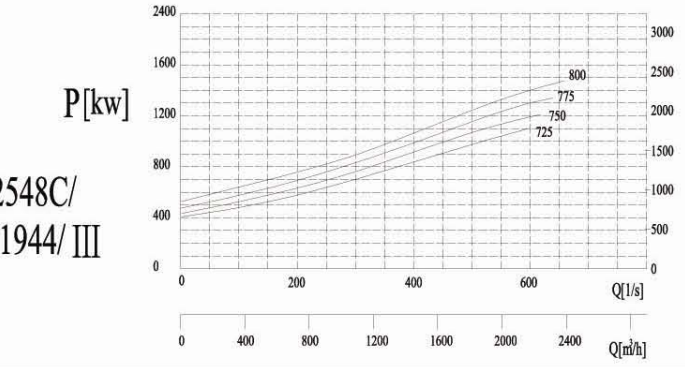
ISO 2548C/
DIN 1944/III

Performance Curves

CPS 400-300-800 1450 r/min

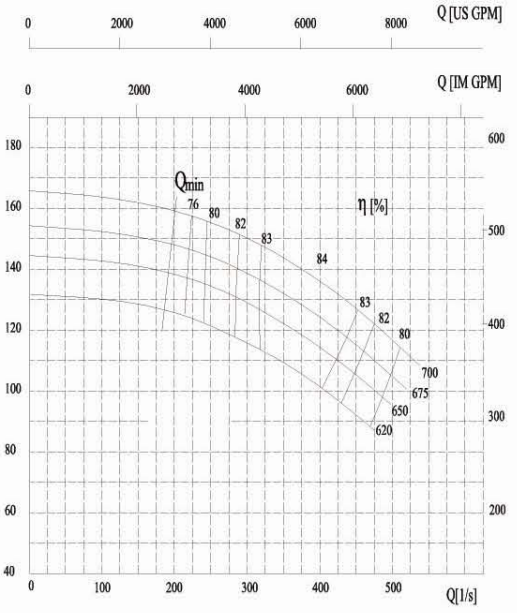


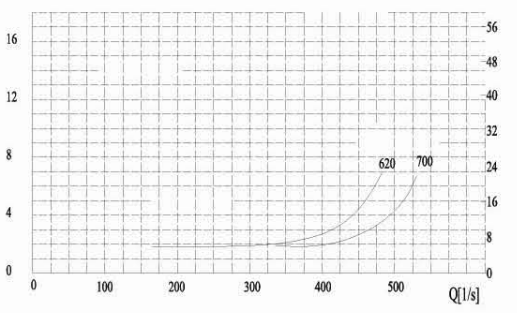


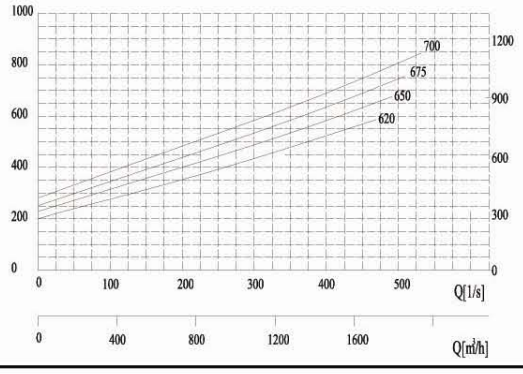


ISO 2548C/
DIN 1944/ III

CPS 300-250-700 1450 r/min

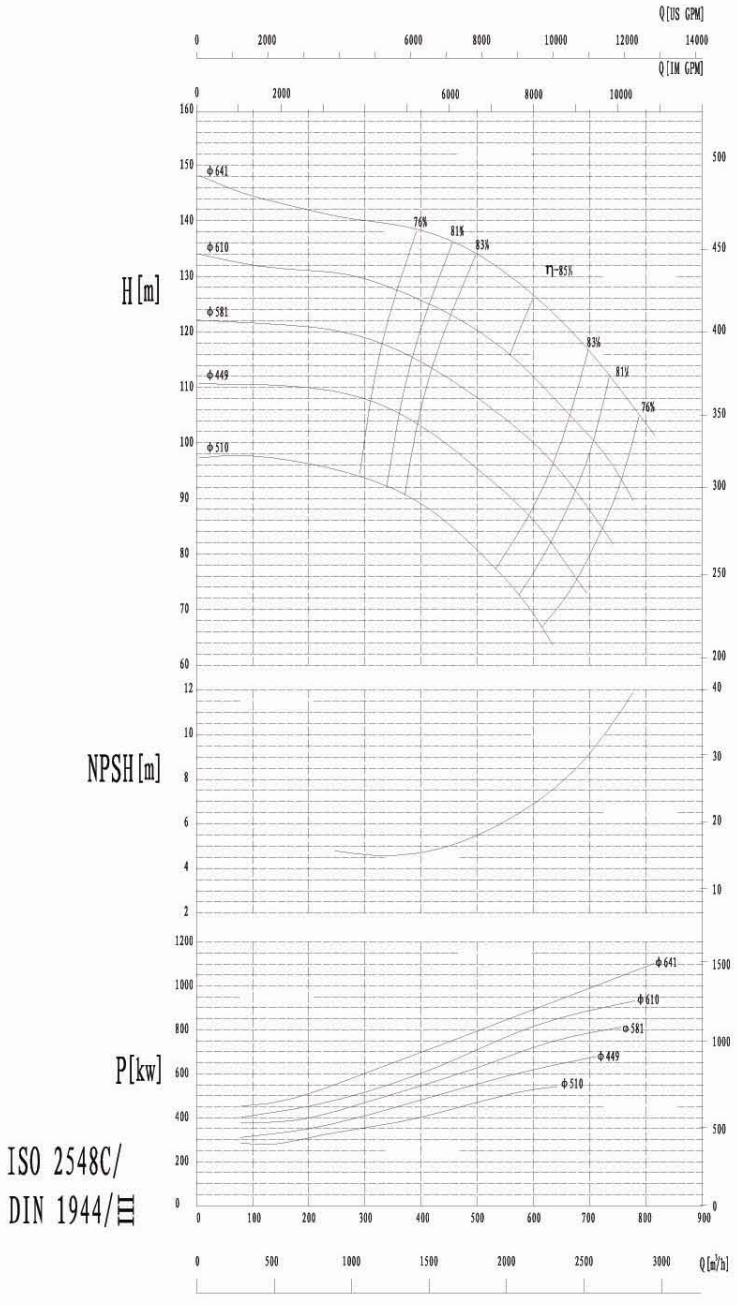




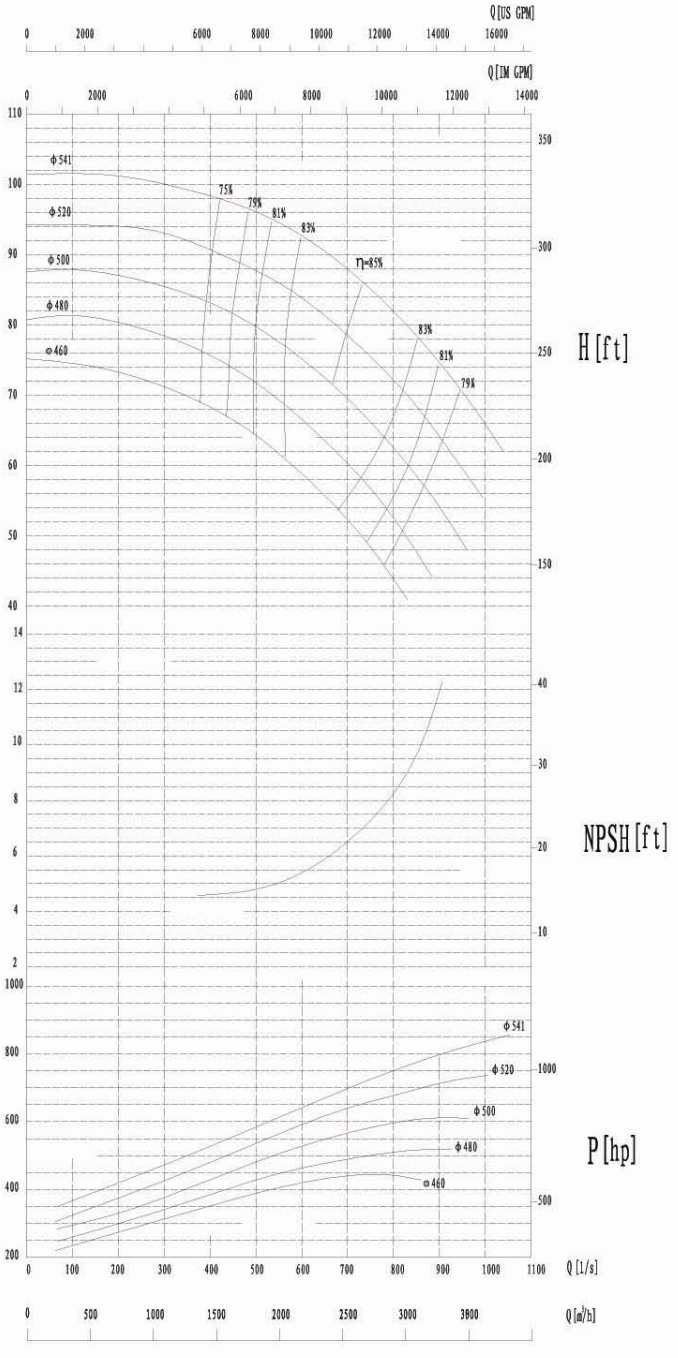


Performance Curves

CPS 400-350-620 1450 1/min

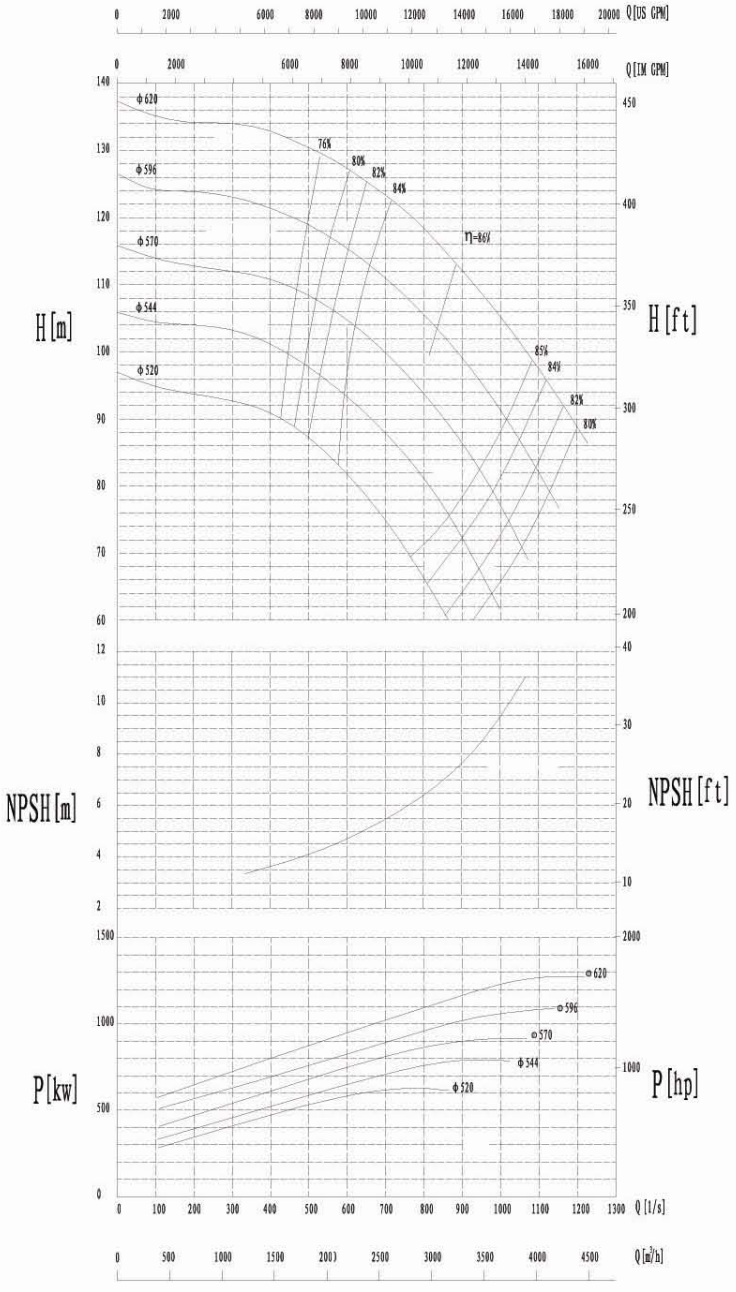


CPS 500-400-540 1450 1/min

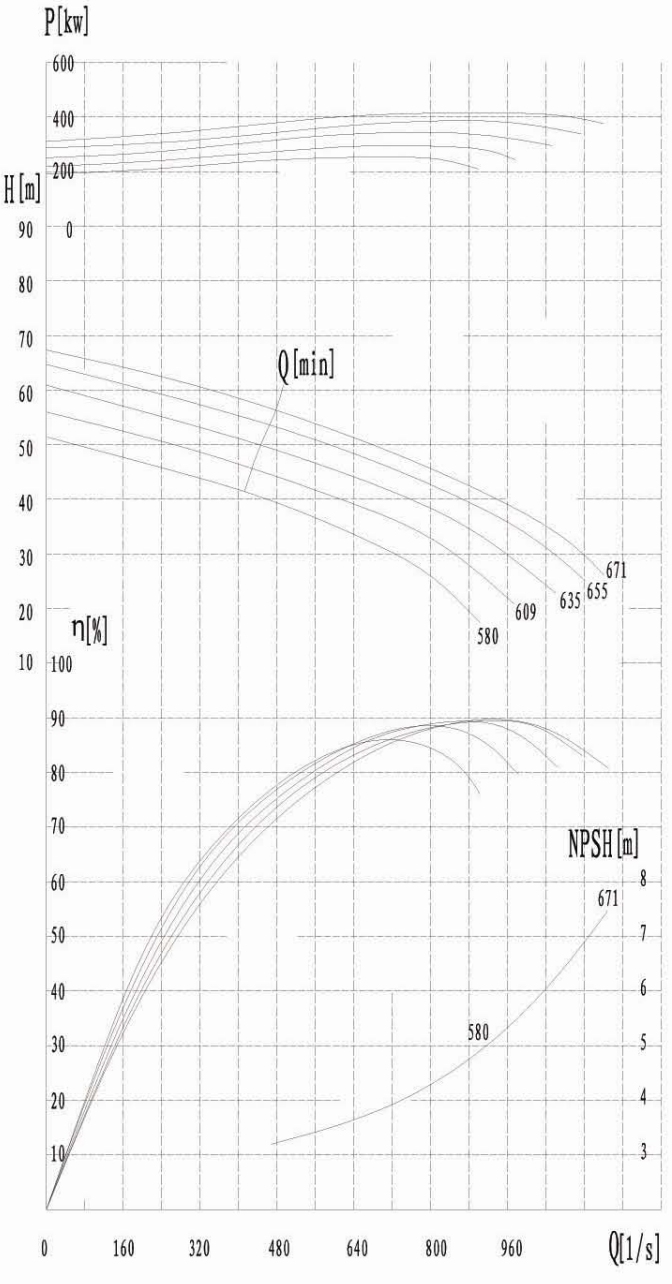


Performance Curves

CPS 500-400-620 1450 1/min

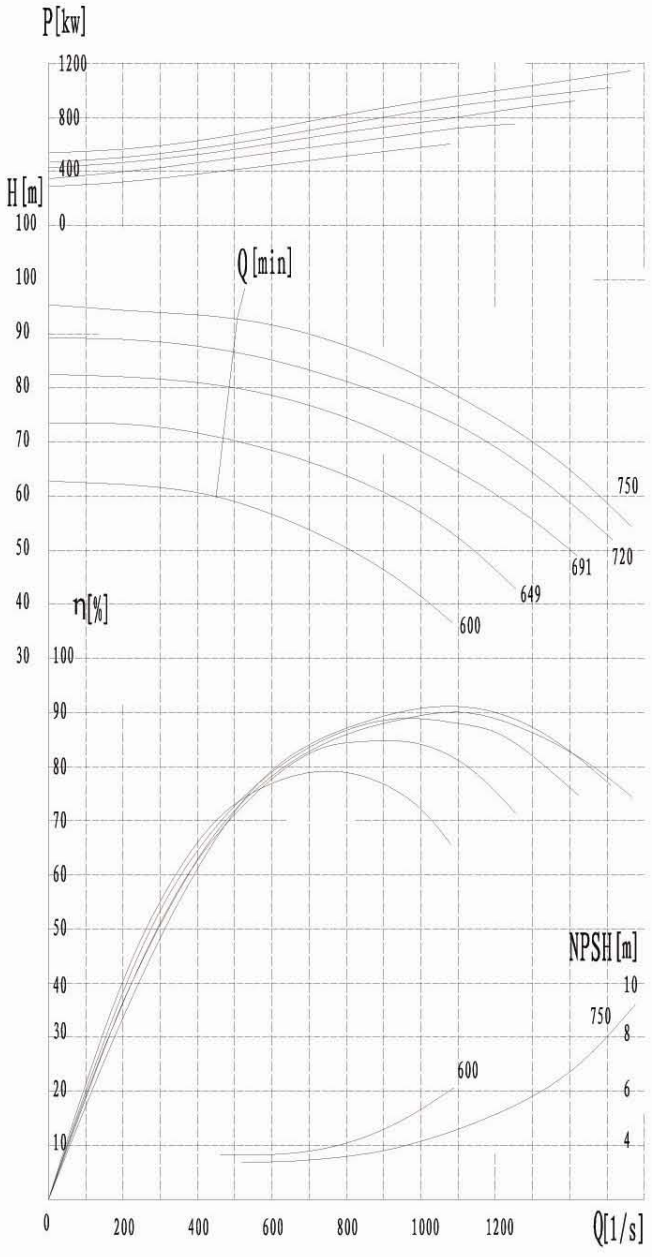


CPS 600-500-640 980 1/min

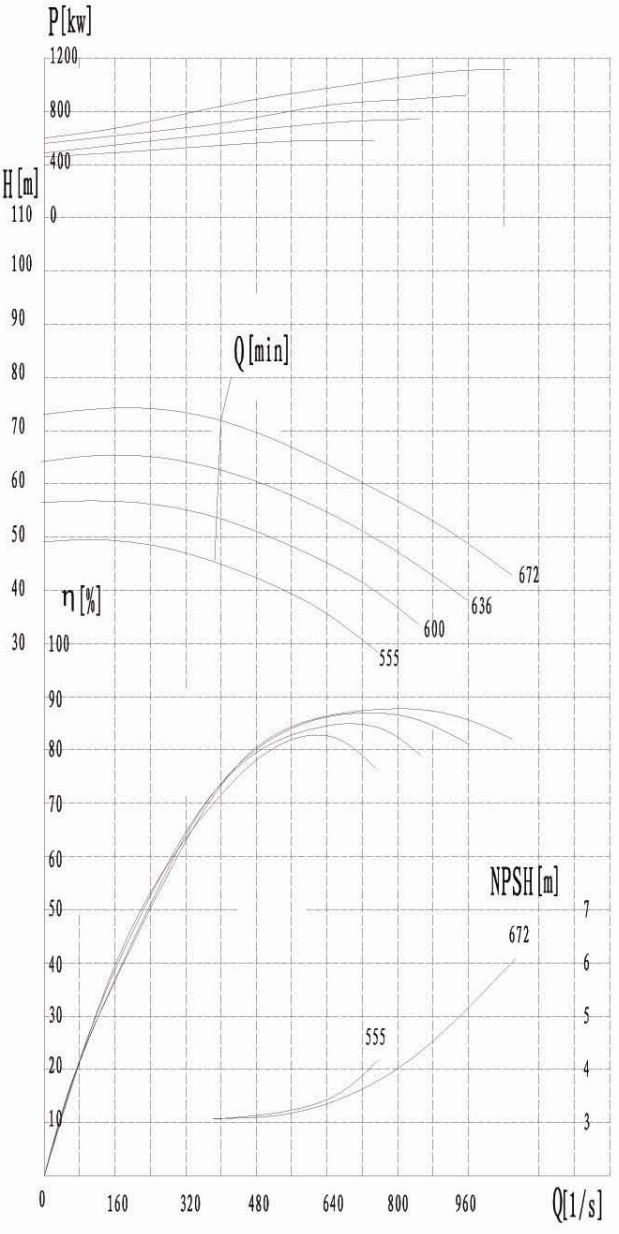


Performance Curves

CPS 600-500-700A 980 1/min

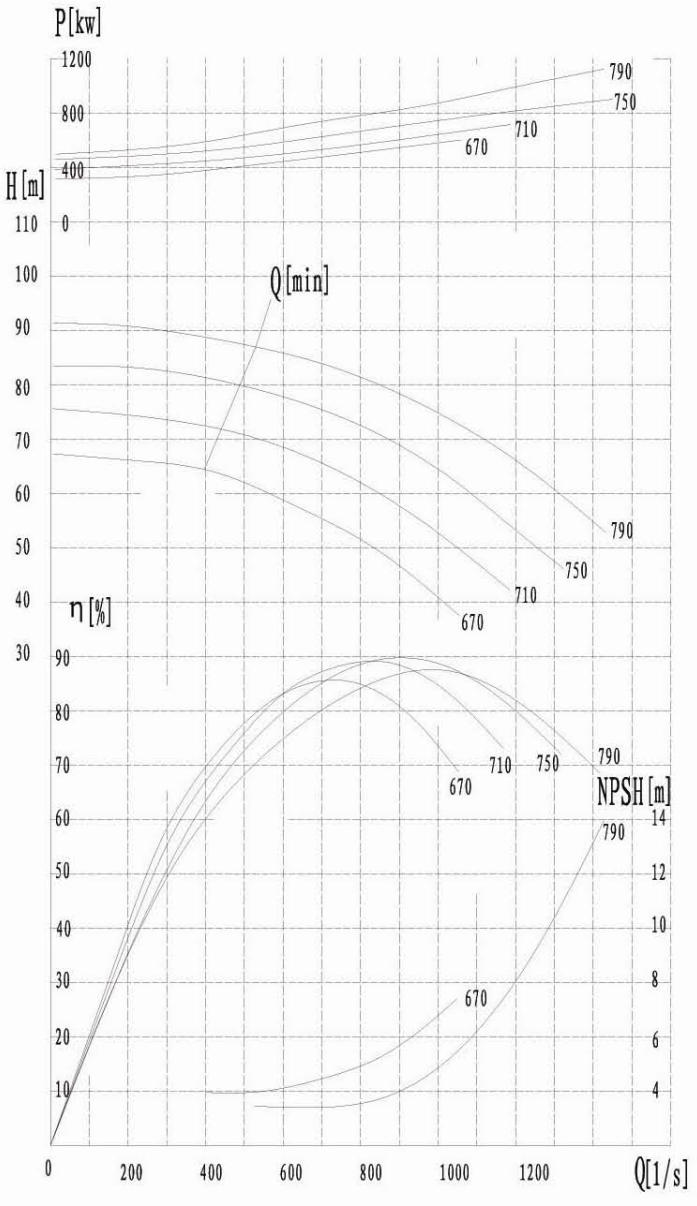


CPS 600-500-700B 980 1/min

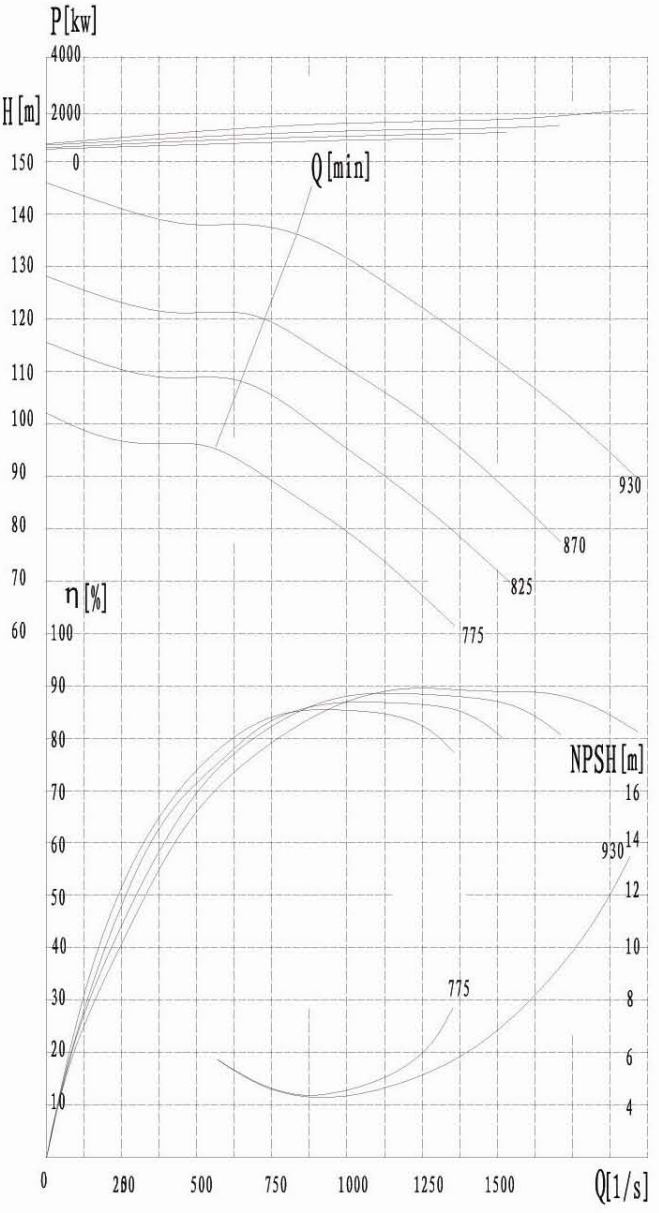


Performance Curves

CPS 600-500-790 980 1/min

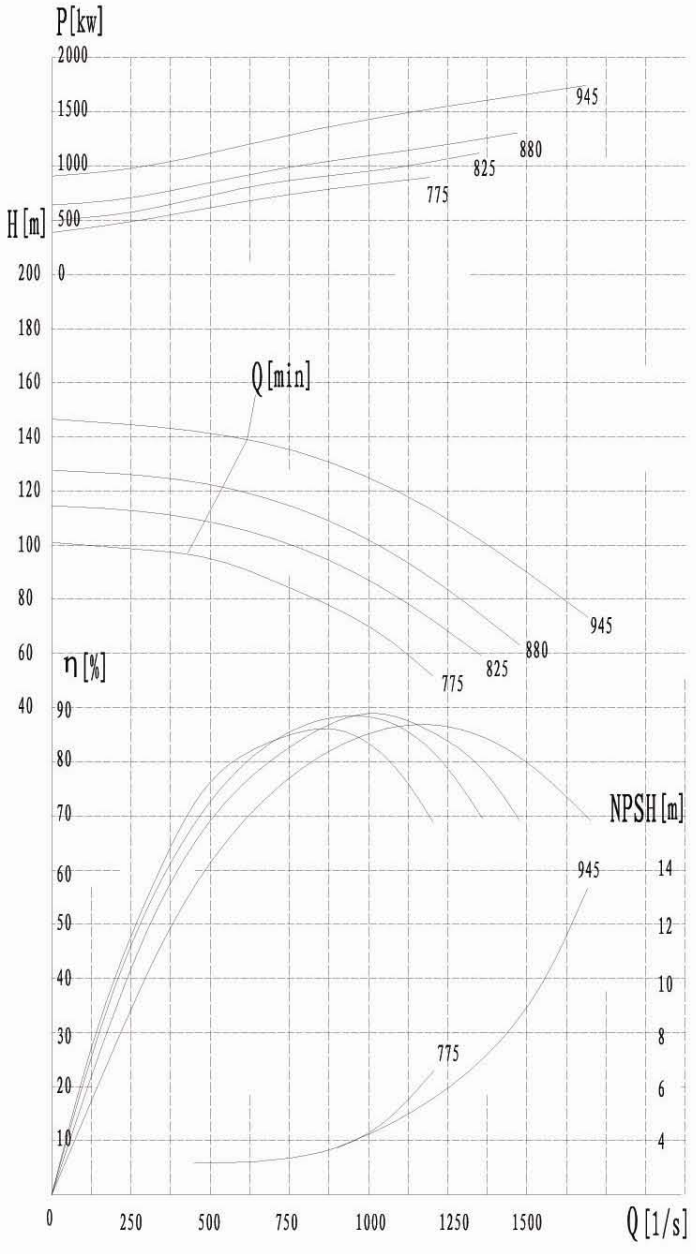


CPS 600-500-890A 980 1/min

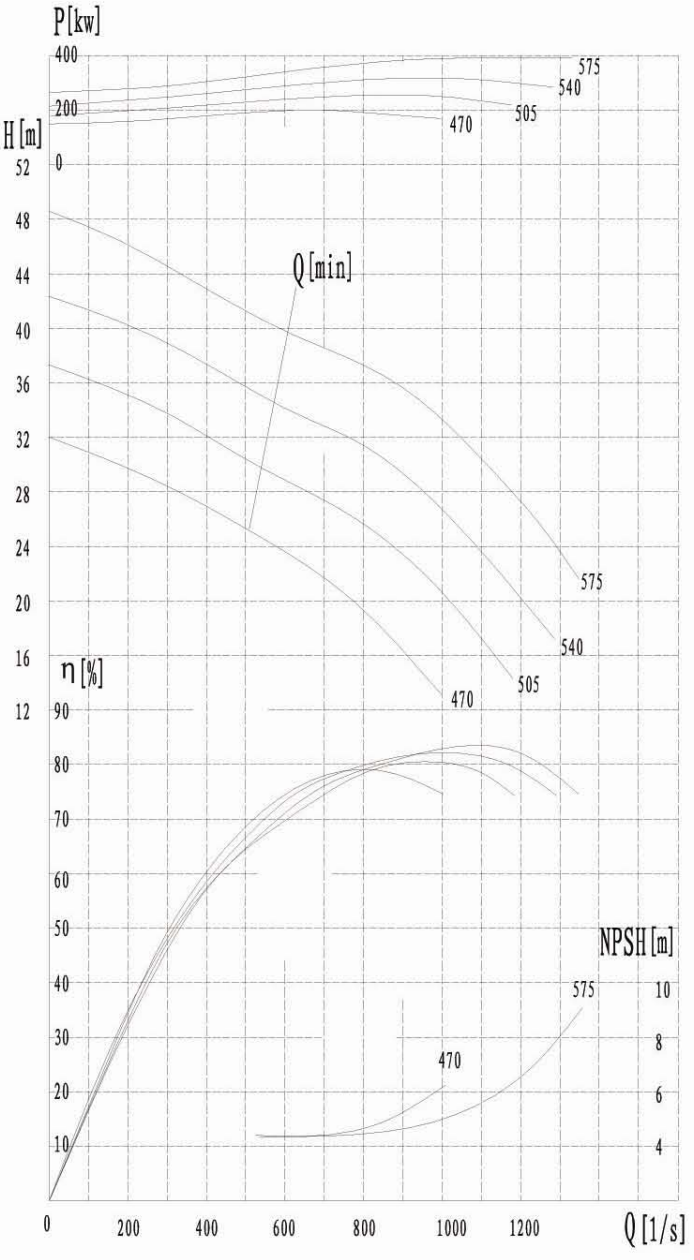


Performance Curves

CPS 600-500-890B 980 1/min

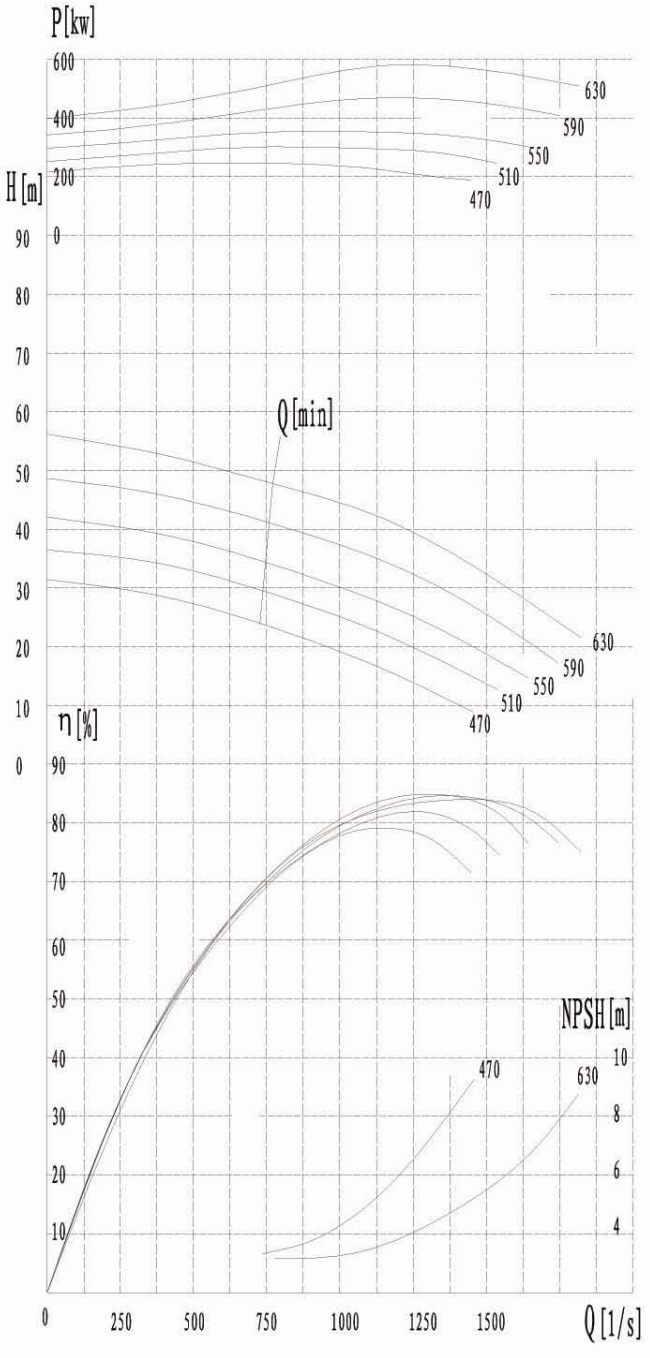


CPS 700-600-540A 980 1/min

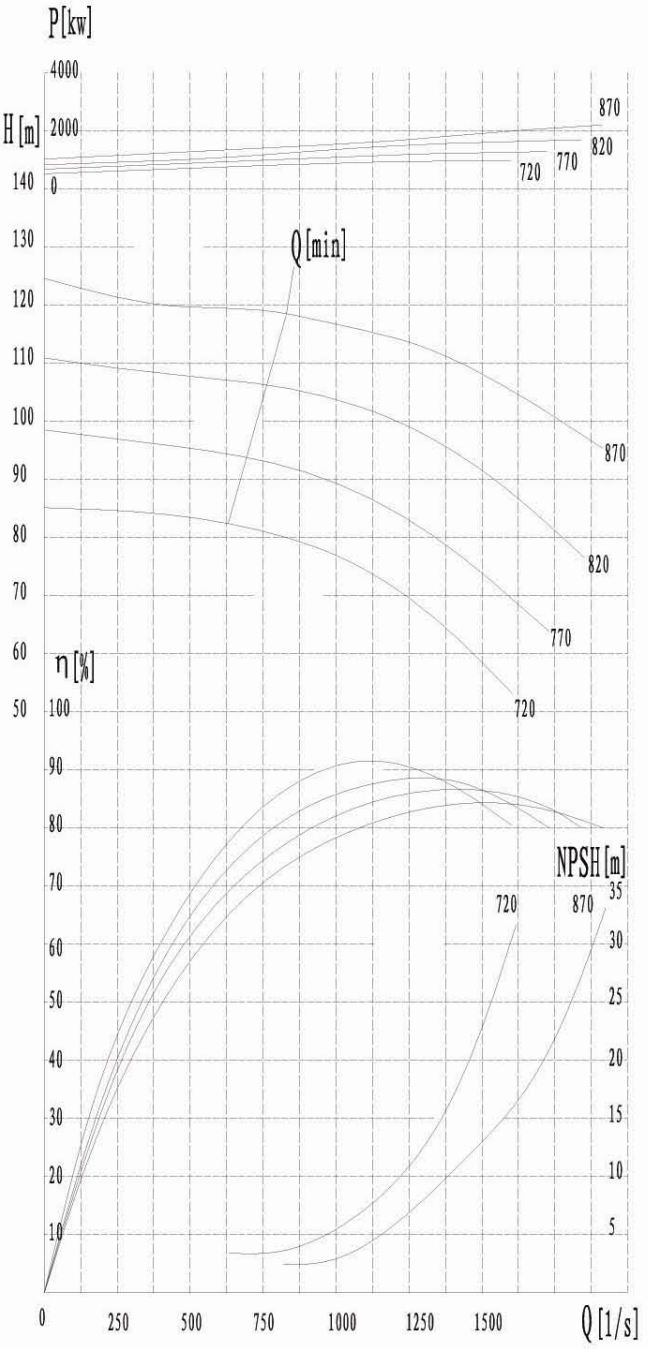


Performance Curves

CPS 700-500-540B 980 1/min

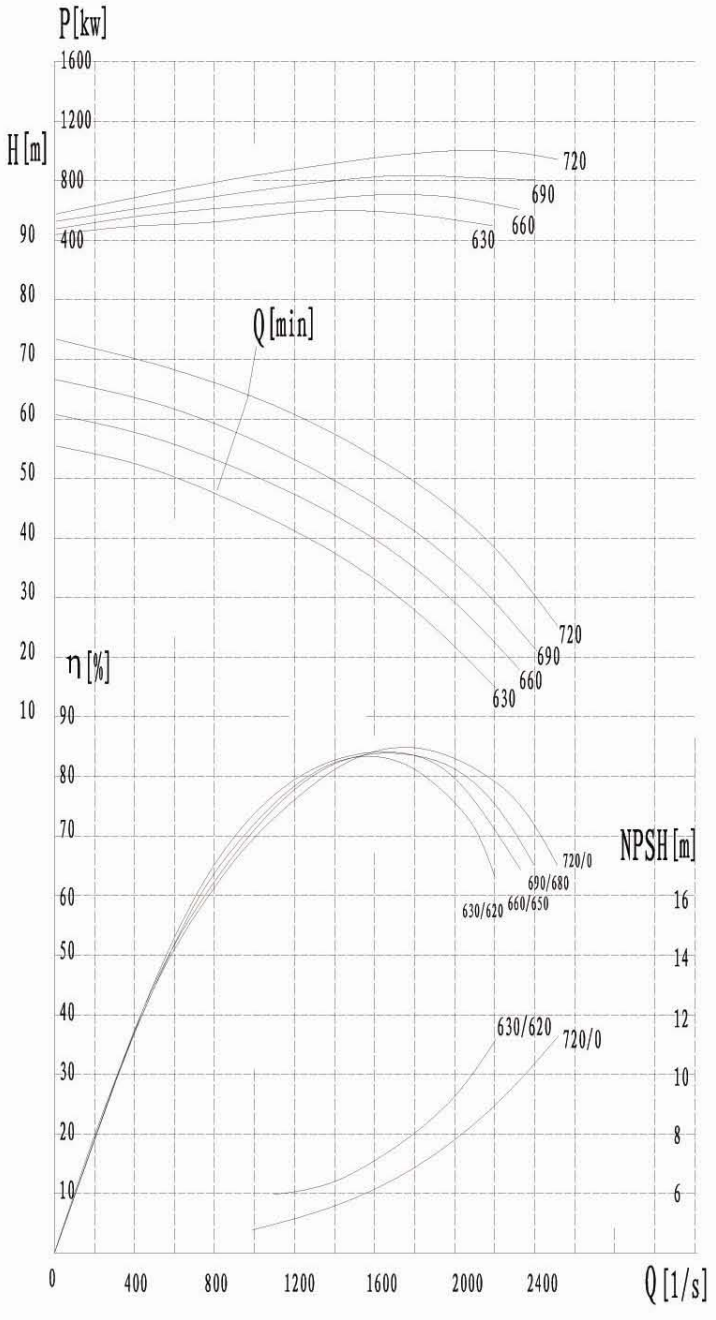


CPS 700-600-830 980 1/min

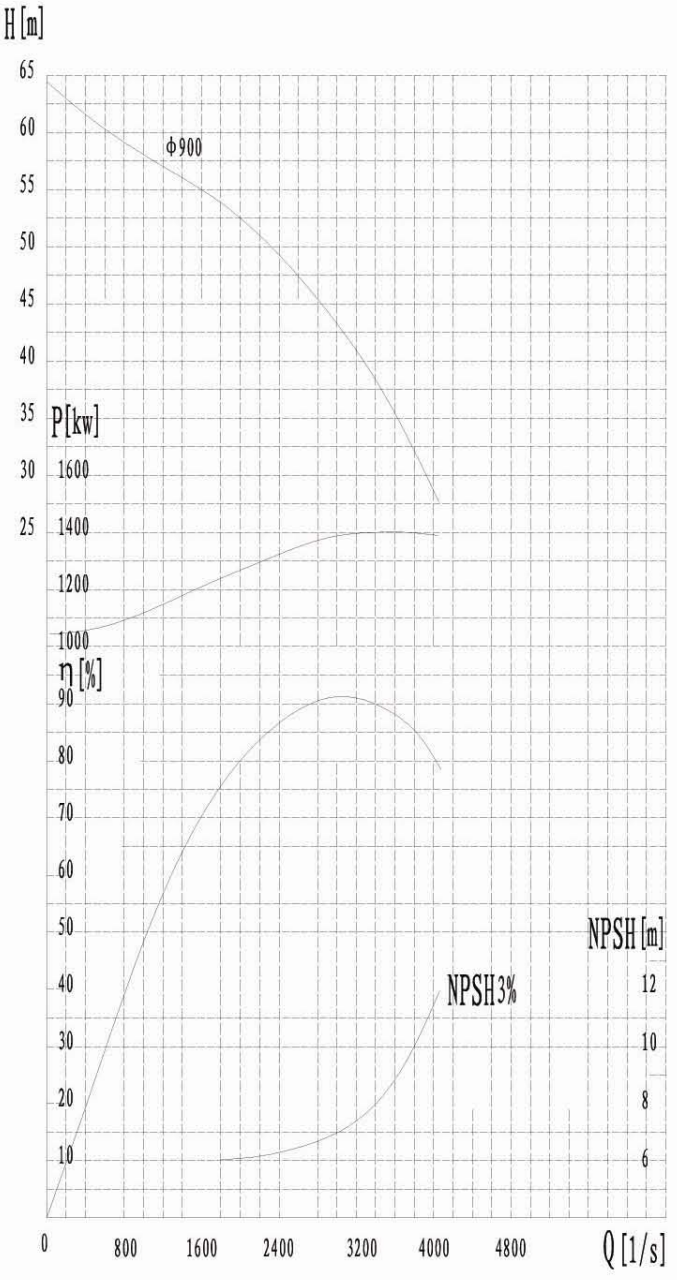


Performance Curves

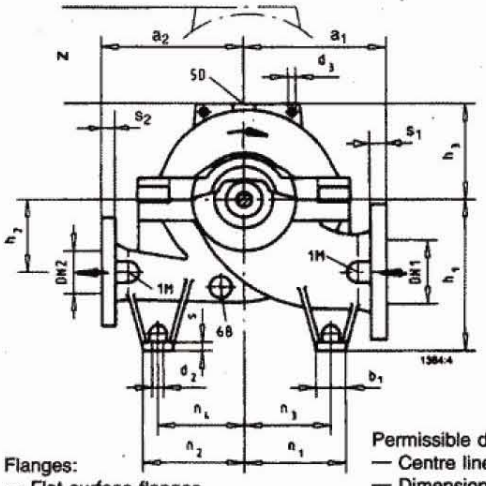
CPS 800-700-710 980 1/min

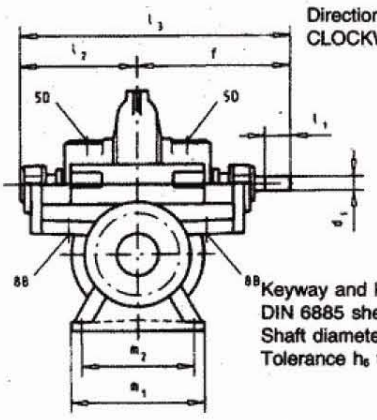


CPS 900-800-740 740 1/min



Installation Drawings & Dimensions





Direction of rotation:
CLOCKWISE

Keyway and key to
DIN 6885 sheet 1
Shaft diameter:
Tolerance h_6 to DIN7155

Flanges:
— Flat surface flanges
— Flange thickness to ANSI
— Connect pipes without stress

Permissible deviations for:
— Centre line heights DIN 747
— Dimensions without indication of tolerances DIN7168, MEDIUM
— Cast iron parts DIN 1686 GTB 18

Connections:
- 1M Pressure gauge G 1/2
- 5D Vent G 1/2
- 6B Drainage G 1/2
- 8B Leakage iquid drain G 3/4

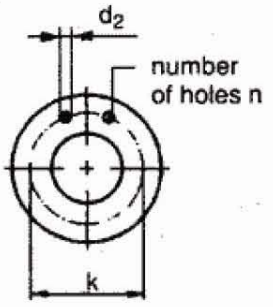
Pump size	Flange dimensions				Pump dimensions									
	DN1	DN2	S1	S2	A1	A2	d3	f	H1	H2	H3	L2	L3	Z [1)]
125-80-210	125	80	34	29	300	300	19	415	315	140	168	300	715	340
125-80-270											190			380
125-80-370					330	330					225			450
150-100-250	150	100	37	32	330	330	19	415	355	170	195	300	715	390
150-100-310											225			450
150-100-375					370	370					260			520
200-125-230	200	125	41	35	370	370	19	515	400	200	210	366	881	420
200-125-290											230			460
200-125-365											260			520
200-125-500					450	450					305			610
200-150-290	200	150	41	37	400	400	19	515	400	200	245	366	881	490
200-150-360											265			530
200-150-460					450	450		590			305	399	989	610
200-150-605					600	600			500	300	370			740

Pump size	Foot dimensions									Shaft		Weight (kg)	
	b1	d2	m1	m2	n1	n2	n3	n4	s	d1	L1	bare shaft pump	water content
125-80-210	70	18	320	270	205	205	170	170	20	35	80	185	10
125-80-270												195	15
125-80-370												205	20
150-100-250	70	18	320	270	235	235	200	200	20	35	80	210	20
150-100-310												225	25
150-100-375												245	30
200-125-230	70	18	390	340	260	260	225	225	20	45	100	250	35
200-125-290												275	40
200-125-365												300	45
200-125-500					315	315	280	280				335	55
200-150-290	70	18	390	340	260	260	225	225	20	45	100	350	50
200-150-360												360	60
200-150-460			480	430	315	215	280	280		55	125	440	75
200-150-605												650	90

Installation Drawings & Dimensions

Standard Flange Design:

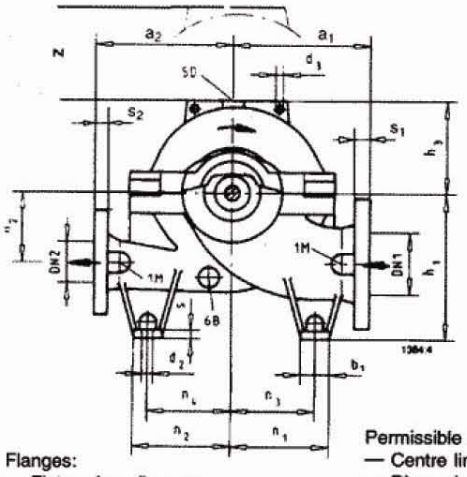
Pump size	Nominal pressure acc, to:			QT 400-18/ZG 230-450 Nominal pressure acc. ro:		
	GB2555 DIN2501 ISO 7005/2	BS4504	ANSIB 16.1	GB2555 DIN2501 ISO 7005/2	BS4504	ANSIB 16.1
125-80-210	PN16	Table 16/11	Class 250	PN25	Table 25/11	Class 250
125-80-270						
125-80-370						
150-100-250	PN16	Table 16/11	Class 250	PN25	Table 25/11	Class 250
150-100-310						
150-100-375						
200-125-230	PN16	Table 16/11	Class 250	PN25	Table 25/11	Class 250
200-125-290						
200-125-365						
200-125-500						
200-150-290	PN16	Table 16/11	Class 250	PN25	Table 25/11	Class 250
200-150-360						
200-150-460						
200-150-605	PN16	Table 16/11				

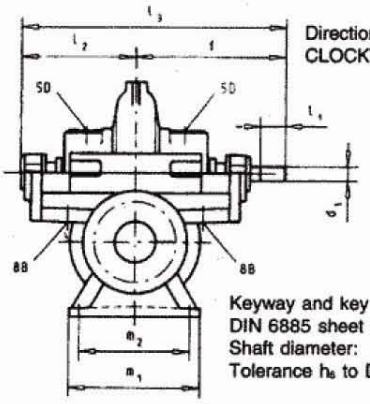


Flange Dimensions—Drilling Diagram

Standard		DN80			DN100			DN125			DN150			DN200		
		d2	k	n	d2	k	n	d2	k	n	d2	k	n	d2	k	n
IOS 7005/2 DIN 2501	PN16	19	160	8	19	210	8	19	210	8	23	240	8	23	295	12
GB2555		17.5			17.5			17.5			22			22		
IOS 7005/2 DIN 2501	PN25	19	160	8	28	220	8	28	220	8	28	250	8	28	310	12
GB2555		17.5			26			26			26			26		
BS4504	Table 16/11	19	160	8	19	210	8	19	210	8	23	240	8	23	295	12
BS4504	Table 25/11	19	160	8	28	220	8	28	220	8	28	250	8	28	310	12
ANSI B 16.1	Class 250	23	168	8	23	235	8	23	235	8	23	270	12	28	330	12

Installation Drawings & Dimensions





Direction of rotation:
CLOCKWISE

Keyway and key to
DIN 6885 sheet 1
Shaft diameter:
Tolerance h_6 to DIN7155

Flanges:
— Flat surface flanges
— Flange thickness to ANSI
— Connect pipes without stress

Permissible deviations for:

— Centre line heights	DIN 747
— Dimensions without indication of tolerances	DIN7168, MEDIUM
— Cast iron parts	DIN 1686 GTB 18

Connections:

-1M Pressure gauge	G 1/2
-5D Vent	G 1/2
-6B Drainage	G 1/2
-8B Leakage iquid drain	G 3/4

Major external pump Dimensions and Weights all dimensions in mm

Pump size	Flange dimensions				Pump dimensions									
	DN1	DN2	S1	S2	A1	A2	d3	f	H1	H2	H3	L2	L3	Z [2]
250-200-320	250	200	47.6	41.3	450	450	24.5	590	500	240	285	399	989	570
250-200-420					500	500					310			620
250-200-520					600	500		655	560	300	370	464	1119	740
300-250-670					650	550		655	600	350	430	464	1119	860
300-250-370	300	250	33.4(508) [1]	32(47.6) [1]	500	500	12.5	655	600	300	320	464	1119	640
300-250-480			50.8	47.6	550	550		730	600	300	355	515	1245	710
300-250-600			50.8	47.6	650			730	630	350	415	515	1245	830
300-250-700			50.8	47.6	700	600		730	680	400	465	515	1245	880
350-300-330	350	300	36(54) [1]	33.4 (50.8) [1]	550	500	24.5	655	630	300	360	464	1119	720
400-300-435	400		38.1(57.2) [1]		650	550		730	670	350	365	515	1245	730
400-300-560			57.2	50.8	700	650		810	710	350	430	585	1395	860
400-300-700			57.2	50.8	750	650		810	750	400	480	585	1395	960
400-300-800	400		57.2	50.8	800	700		810	800	450	530	585	1395	1010
400-350-360	400	350	38.1(57.2) [1]	36 (54) [1]	650	550	24.5	730	670	350	410	515	1245	820
400-350-430	450		41.3(60.3) [1]		750	650		810	750	400	465	585	1395	930
400-350-510	400		38.1(57.2) [1]		700	650		810	750	400	420	585	1395	840

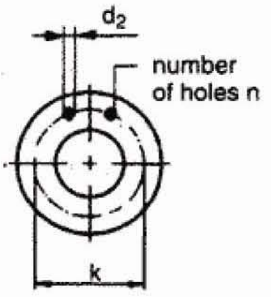
Pump size	Foot dimensions									Shaft		Weight (kg)	
	b1	d2	m1	m2	n1	n2	n3	n4	s	d1	L1	bare shaft pump	water content
125-80-210	70	17.5	320	270	205	205	170	170	20	35	80	185	10
125-80-270												195	15
125-80-370												205	20
150-100-250	70	17.5	320	270	235	235	200	200	20	35	80	210	20
150-100-310												225	25
150-100-375												245	30
200-125-230	70	17.5	390	340	260	260	225	225	20	45	100	250	35
200-125-290												275	40
200-125-365												300	45
200-125-500					315	315	280	280				335	55
200-150-290	70	17.5	390	340	260	260	225	225	20	45	100	350	50
200-150-360												360	60
200-150-460			480	430	315	215	280	280		55	125	440	75
200-150-605												650	90

[1] For casing material QT400-18,ZG230-450
[2] z = The dimensions to be maintained around the casing cover for dismantling of the rotor

Installation Drawings & Dimensions

Standard Flange Design:

Pump size	Nominal pressure acc, to:			QT 400-18/ZG 230-450		
	GB2555 DIN2501 ISO 7005/2	BS4504	ANSIB 16.1	GB2555 DIN2501 ISO 7005/2	BS4504	ANSIB 16.1
250-200-320	PN16	Table 16/11	Class 250	PN25	Table 25/11	Class 250
250-200-420						
250-200-520						
300-250-670	PN25	Table 25/11				
300-250-370	PN10	Table 10/11	Class 125	PN25	Table 25/11	Class 250
300-250-480	PN16	Table 16/11	Class 250			
300-250-600	PN25	Table 25/11				
300-250-700	PN25	Table 25/11	Class 250			
350-300-330	PN10	Table 10/11	Class 125	PN25	Table 25/11	Class 250
400-300-435						
400-300-560	PN16	Table 16/11	Class 250			
400-300-700	PN25	Table 25/11				
400-300-800	PN25	Table 25/11	Class 250			
400-350-360	PN10	Table 10/11	Class 125	PN25	Table 25/11	Class 250
400-350-430						
400-350-510						



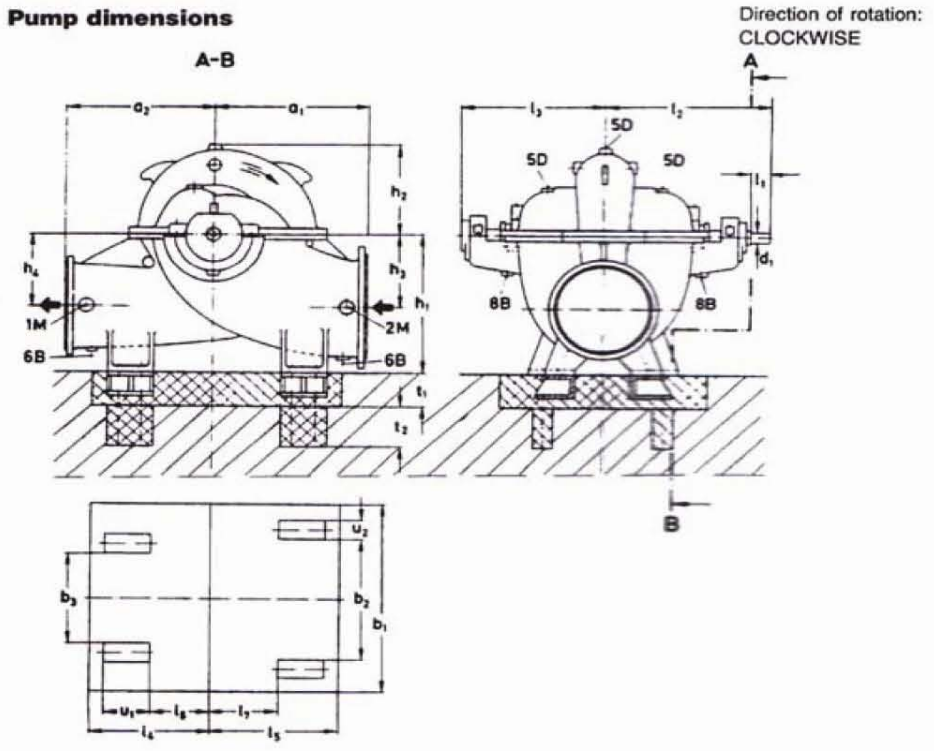
Other flange desings are avaliable on request

Flange Dimensions—Drilling Diagram

Standard		DN200			DN250			DN300			DN350			DN400			DN450		
		d2	k	n	d2	k	n	d2	k	n	d2	k	n	d2	k	n	d2	k	n
IOS 7005/2 DIN 2501	PN10	23	295	8	23	350	12	23	400	12	23	460	16	28	515	16	28	565	20
28 GB2555		22			22			22			22			26			26		
IOS 7005/2 DIN 2501	PN16	23	295	12	28	355	12	28	410	12	28	470	16	31	525	16	31	585	20
GB2555		22			26			26			26			30			30		
IOS 7005/2 DIN 2501	PN25	28	310	12	31	370	12	31	430	16	34	490	16	37	550	16			
GB2555		26			30			30			33			36					
BS4504	Table 10/11	23	295	8	23	350	12	23	400	12	23	460	16	28	515	16	28	565	20
BS4504	Table 16/11	23	295	12	28	355	12	28	410	12	28	470	16	31	525	16	31	585	20
BS4504	Table 25/11	28	310	12	31	370	12	31	430	16	34	490	16	37	550	16			
ANSI B 16.1	Class 150	23	299	8	28	362	12	28	432	12	28	476	12	28	540	16	31	578	16
ANSI B 16.1	Class 250	28	330	12	28	387	16	31	451	16	31	514	20	34	572	20	34	629	24

Installation Drawings & Dimensions

For Pumps From CPS600-500-510 To CPS900-800-970



Permissible deviations for:
DIN747 (Center line heights)
DIN7168 (Dimensions without indication of tolerances)
DIN 1688 GTB 18 (Cast iron Parts)
DIN 1685 GTB 18 (Ductile Cast iron)
DIN 1683 GTB 18 (Cast steel)
R= (Keyway and key to DIN 6885)
DIN 6885 (Shaft diameter: Tolerance h_6 to DIN 7155)

		TS600-500-510	TS800-700-590
1M	Pressure gauge	R 1/2	R 1/2
2M	Vaccum gavge	R 1/2	R 1/2
5D	Vebt	R 1	R1 1/2
6B	Drainage	R 1	R1 1/2
8B	Leakage liquid drain	R 1	R 1

Installation Drawings & Dimensions

Pump size	Flange		Pump Dimensions								Shaft Ext.		Weight kg
	Inlet	Outlet	a1	a2	h1	h2	h3	h4	L2	L3	d1	L1*	
	DN1	DN2											
600-500-510	600	500	850	550	900	560	475	475	1025	820	75	190	1528
600-500-640	600	500	850	800	920	600	495	495	1115	900	95	210	2301
600-500-700	600	500	1050	850	1000	620	550	620	1085	855	105	230	2967
600-500-790	600	500	1000	900	1050	660	600	600	1175	900	115	250	3485
600-500-890	600	500	1050	950	1100	710	650	650	1210	920	135	290	4659
700-600-540	700	600	1100	900	1100	750	610	610	1080	885	75	190	2725
700-600-620	700	600	1000	1000	1050	650	545	545	1060	840	85	225	2961
700-600-710	700	600	1000	1100	1050	650	545	545	1160	930	105	230	3427
700-600-830	700	600	1100	1200	1100	760	580	580	1275	1000	115	250	4700
800-700-590	800	700	1300	800	1150	720	600	600	1300	1090	95	210	4043
800-700-710	800	700	1200	1150	1170	750	620	620	360	1130	105	230	5329
800-700-820	800	700	1250	1250	1200	850	650	650	1440	1160	125	305	6075
900-800-740	900	800	1400	950	1380	920	770	770	1410	1180	105	230	6557
900-800-840	900	800	1400	1125	136	900	770	770	1500	1180	115	310	6624
900-800-970	900	800	1400	1300	1370	850	760	760	1580	1270	135	310	7809

Pump Model	Dimensions of Foundation										Flange Max pressure （bar）	
	b1	b2	b3	L4	L5	L6	L7	t1	t2	u1	u2	Casing Material
												HT250 / GG-25 / A48 class 35	Qt 400-18 / GGG-40 / A536 class 604018
600-500-510	1440	1000	700	460	610	140	290	220	300	220	120	10	16
600-500-640	1440	1000	700	660	660	340	340	220	300	220	120	10	25
600-500-700	1540	1100	700	710	810	390	490	220	300	220	120	16	25
600-500-790	1540	1100	725	760	860	440	540	220	300	220	120	25	25
600-500-890	1440	1000	750	810	910	490	590	220	300	220	120	25	25
700-600-540	1450	950	650	800	900	400	500	220	300	300	150	10	16
700-600-620	1450	950	650	900	900	500	500	220	300	300	150	10	16
700-600-710	1550	1050	750	900	900	500	500	220	300	300	150	16	25
700-600-830	1550	1050	750	1000	900	600	500	220	300	300	150	16	25
800-700-590	1440	940	650	700	1000	250	550	250	300	350	150	10	16
800-700-710	1440	940	650	1000	1000	550	550	250	300	350	150	10	16
800-700-820	1440	940	650	1050	1050	600	600	250	300	350	150	16	16
900-800-740	1540	1040	740	850	1000	350	500	250	300	400	150	10	16
900-800-840	1540	1040	740	1000	1050	500	550	250	300	400	150	10	16
900-800-970	1540	1040	740	1000	1100	600	600	250	300	400	150	10	16