VTC

Vertical Turbine Pump

REPRESENTATIVE IN GEORGIA

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NANFANG PUMP INDUSTRY CO.,LTD.

INTRODUCTION

Nanfang Pump Industry Co.,Ltd (CNP),as a subsidiary of Nanfang Zhongjin Environment Co., Ltd, was founded in 1991,and listed on Shenzhen Stock Exchange on December 9,2010 with stock code 300145.

In 2019, CNP achieved an annual production output surpassing 900,000 units/sets, with sales exceeding 3 billion, and has consistently maintained high-speed growth, continually creating greater success. CNP, equipped with a national-level enterprise technology center, specializes in its flagship product, the next-generation CDM(F) light vertical multistage centrifugal pump, known for its superlative energy efficiency with an MEI of 20.7. In 2019, they also developed a high-temperature pump product within the same series to meet the demands in the high-temperature field. The product range includes various stainless steel light pump series products, state-of-the-art complete smart water supply and drainage equipment, TD series pipeline circulation pumps, NISO/NIS/NISF end-suction centrifugal pumps, NSC series center-split pumps, VTC series long-shaft pumps, VTM series mixed-flow pumps, ZLB series submersible axial flow pumps, NDS series multistage center-split pumps, WQ submersible sewage pumps, PQ stainless steel fountain-specific submersible electric pumps, BP silent pipe pumps, swimming pool pumps, clog-free self-priming sewage pumps, diesel engine fire pump sets, metering pumps, oil pumps, and more, providing a comprehensive pumping system solution. Southern Pump Industry has established an extensive marketing and service network, and while consistently meeting domestic market demands, it has also gained the trust of international markets, establishing long-term cooperative relationships with customers in over sixty overseas countries and regions.

CNP, an expert of green water power beside you.

Product Overview

The VTC series long-shaft pump is a product developed by CNP that combines theadvantages of long-shaft pumps and deep well pumps from both domestic and international sources. It also incorporates advanced foreign technologies.

Main Applications

1. Industrial circulating water replenishment.
2. Lifting water from deep wells, reservoirs, and rivers for long-distance, high-lift water transmission.
3. Drainage and seepage water removal during hydroelectric station maintenance.
4. Conveying corrosive industrial wastewater, seawater, or similar liquids.
5. Transporting abrasive media like wastewater with iron oxide scale from steel plants.
6. Petrochemical industry for circulating water.
7. Agricultural water conservancy projects and municipal engineering.

Specifications

Pump Outlet Diameter: 80~900mm
Head: 10~300m
Flow Rate: 15~5800m3/h
Medium Temperature: Up to 60°C

Model Explanation

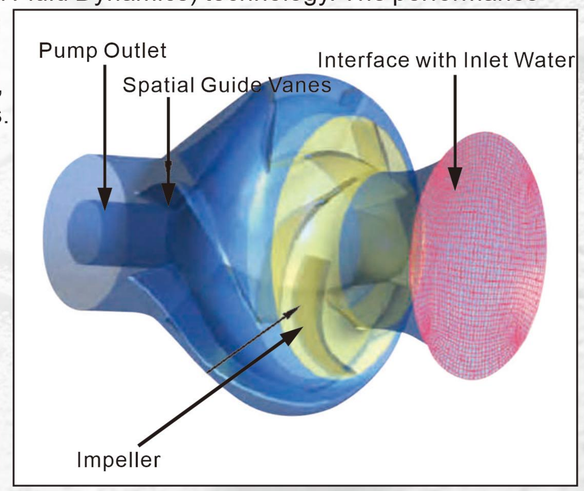
Example: 300VTC720-40X2
- 300: Pump outlet diameter is DN300
- VTC: Vertical long-shaft pump
- 720: Pump design flow rate is 720m3/h
- 40: Design single-stage head is 40m
- 2: Number of pump stages is 2

Advantageous Technologies

1. Advanced Hydraulic Modeling

The VTC vertical long-shaft centrifugal pumps are designed using excellent hydraulicmodels developed through collaboration between our company and Huazhong University of Science and Technology, utilizing CFD (Computational Fluid Dynamics) technology. The performance parameters comprehensively reach domestic advanced levels, with some even reaching international standards. Efficiency, in general, is 3-5% higher than similar domestic products.

Three-Dimensional Shape Diagram of VTC Vertical Long-Shaft Centrifugal Pump Model



2. Advanced 3D Design Technology
This product is designed and drawn using 3D software, with component strength design carried out using the finite element method. Assembling products in a computer-simulated factory ensures the successful first-time production of all new products.

3. 3D Intelligent Design System
This system is independently developed by our company and widely applied in product design. Key features of the 3D intelligent design system:
- Full 3D design for products.
- Automatic product design after inputting parameters.
- Standardization and normalization of product production.
- Shortened product design cycles through intelligent design.

4. A Broader Range of Models to Meet a Wider Range of Performance Requirements:
The VTC vertical long-shaft centrifugal pumps can achieve a head higher than 300 meters, providing a wider range of performance capabilities.

5. Diverse Product Structures
The product is designed using various new technologies, including low-wear pump design, allowing it to be suitable for various media types, including abrasive and corrosive substances, and different installation requirements:
- Standard Type: Used for transporting water or media with physical and chemical properties similar to water.
- Low-Wear Type: Used for transporting abrasive media with a high impurity content, such as transporting Yellow River water, iron oxide scale water, ash slurry, and easily crystallizing media.
- Corrosion-Resistant Type: Used for transporting corrosive media, such as acidic, alkaline media,and seawater.
- Barrel Type: Used for transporting condensate water, various oils, and other media with high cavitation performance requirements.
- Core-Pull Type: Used for large pumps, facilitating pump installation, disassembly, and maintenance.

Main Components and Structural Features

◎ **General Components (Applicable to Various Turbine Pumps)**

01. Strainer
Small pumps generally feature a strainer, which filters out large solid particles and fibers. Large pumps do not have strainers.

02. Suction Bell Mouth
Aids in the smooth and even entry of liquid into the impeller, reducing vortex formation.

03. Impeller
The impeller undergoes static balancing to reduce radial forces, ensuring stable pump rotor operation. At higher speeds, the rotor also requires dynamic balancing.

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04. Pump Shaft
The reinforced design uses 2Cr13 stainless steel for the shaft material, but other materials can also be chosen for the shaft.

05. Guide Vane Casing
The guide vane casing is cast and can be made from various materials. The flow path section is coated with epoxy resin to enhance efficiency and longevity. The guide vane casing is tongue and groove positioned to ensure coaxiality and facilitate maintenance and disassembly.

06. Guide Bearings and Bushings
Each stage of the guide vanes housing has guide bearings to support the pump rotor and withstand radial forces, ensuring smooth pump operation. All shafts have surface-hardened bushings to protect the shaft from wear.

07. Bearing Supports and Guide Bearings
Each lifting pipe section has bearing supports to support the transmission shaft. Different materials of guide bearings can be chosen depending on the medium and usage conditions. Generally, high molecular synthetic materials (mainly composed of PTFE with wear-resistant fillers and lubricants) are used, which have good self-lubricating properties, allowing the pump to start dry (without pre-water injection). Alternatively, rubber bearings (or Sylon bearings) can also be used.

08. Seal Rings
For closed-type impellers, there are double seal rings in the front and rear. The seal ring clearances are carefully controlled between the pump body seal ring and the impeller seal ring. When transporting abrasive media, the impeller is equipped with sand-discharging seal rings in front and rear to protect the impeller. The seal ring surface ishardened,resulting in a longer lifespan.

09. Balance of Axial Forces
Closed-type impellers have a balance hole in the back cover to balance most of the axial forces. Any remaining axial forces and the weight of the rotor are borne by thrust bearings installed on the motor base or thrust pads installed inside the motor (or gearboxes). Open-type impellers have their axial forces entirely supported by thrust bearings on the motor base or thrust pads inside the motor (or gearboxes).

10. Impeller Drive
Generally, there is a key drive between the impeller and the shaft, which facilitates maintenance and stable operation under variable loads and high temperatures. Small pumps can also use taper sleeve fastening drives.

11. Drive Shaft and Couplings
The drive shaft is typically connected using a sleeve coupling and key drive. This configuration offers easy installation and disassembly, good concentricity, and avoids the difficulty of disassembly associated with standard threaded couplings. For smaller diameter drive shafts, threaded couplings can also be used.

12. Discharge Bend Pipe and Motor Base

The discharge bend pipe is typically located above the foundation level. When the pump is driven by a solid shaft motor, the motor is mounted on a motor base above the discharge bend pipe. When the pump is driven by a hollow shaft motor or gearbox, the motor or gearbox is directly mounted on the discharge bend pipe. Depending on requirements, the discharge bend pipe can also be placed below the foundation level.

13. Shaft End Seals

Pump shaft seals typically use packing seals. In cases of high head, the lower part of the shaft has a pressure-reducing shaft sleeve and a pressure relief pipe to control the pressure in the packing cavity, reducing leakage and wear. For cases where the shaft is subjected to high pressure or requires zero leakage, cartridge mechanical seals can also be used.

14. Couplings for Pump and Motor

When the axial thrust is borne by the pump, an elastic coupling is used for the transmission between the pump and the motor. When the thrust is borne by the motor, a rigid coupling is used for the transmission between the pump and the motor.

15. Adjustment of Axial Clearance

The clearance between the rotor's impeller and the guide vane casing is adjusted using adjusting nuts at the upper end of the pump shaft or motor shaft.

◎ Low-Wear Structure (Suitable for Transporting Abrasive Media)

01. Shaft and Guide Bearing Enclosed Protective Tube

The pump shaft and guide bearings are protected by an enclosed protective tube. Clean pressurized water is externally supplied for lubricating and flushing the guide bearings, preventing impurities from entering and damaging the guide bearings.

02. Shutdown Seal Device

A shutdown seal device is located at the lower end of the protective tube. When the pump is stopped and the external lubrication water is shut off, it prevents external impure water from entering the protective tube.

03. Hollow Pump Shaft with Flushing Hole

Multi-stage turbine pump shafts can use hollow shafts with flushing holes. These are used in conjunction with the enclosed protective tube and externally supplied clean pressurized water for flushing the guide bearings at the guide vane casing, meeting the needs of transporting abrasive media.

04. Dual Wear-Resistant Rings with Sand Discharge Function

Both the guide casing and impeller are equipped with hardened wear-resistant rings. The impeller wear-resistant ring is processed with an anti-sand performance-enhancing reverse helical structure. This structure quickly removes mud and sand that enters the sealing

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clearance, eliminating forced wear on the guide casing wear-resistant ring and impeller wear-resistant ring by mud and sand. This protection prevents impeller wear and reduces leakage in the sealing clearance, preventing a decrease in pump head and efficiency due to mud and sand wear. This ensures that the pump always operates efficiently, and in case of wear, only the impeller wear-resistant ring needs replacement, significantly educing spare part costs.

05. Fill Pressure Relief and Sand Discharge Device

The lower part of the pump's filling chamber has a pressure relief and sand discharge device, which significantly reduces the pressure inside the filling chamber. This prevents sand and mud from entering the filling chamber, reducing seal leakage and decreasing the tightening force required for the packing gland. It also reduces wear on the packing and bushing, significantly reducing maintenance work and spare part consumption."

◎ Cylinder-Bag Structure (Suitable for Conveying Condensate Water, Oils, and Other Easily Cavitating Media)

01. Outer Cylinder Body

The lower part of the pump is entirely enclosed within the outer cylinder body, and both the inlet and outlet of the pump are located at the same horizontal level above the foundation level.

02. Shaft End Seals

Generally, a cartridge-type mechanical seal is used.

03. Pump-Motor Coupling

A longer coupling is typically used. During maintenance, there is no need to disassemble the motor. Only the extended section needs to be removed to detach the pump coupling, making it convenient for installing and removing mechanical seals.

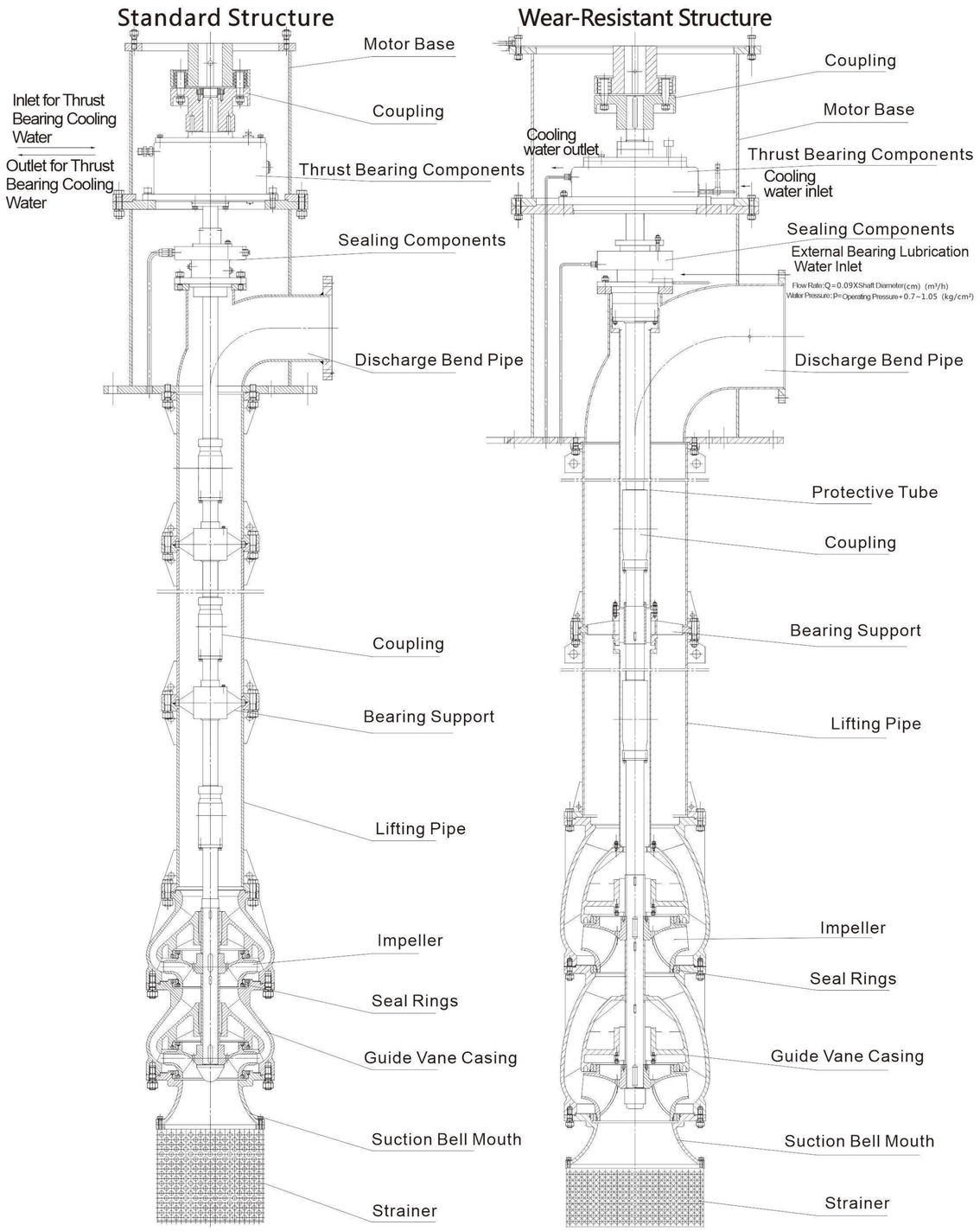
◎ Core-Pull Structure (Suitable for Large Pumps)

For large long-shaft pumps, a core-pull structure can be adopted. This allows for pump installation and removal without disassembling the discharge pipe.

◎ Other Structures and Custom Designs

Pump products with non-standard structures and special performance can be designed according to customer requirements, or products can be custom-built to fit the dimensions of existing pump stations.

VTC Pump Structure Diagram



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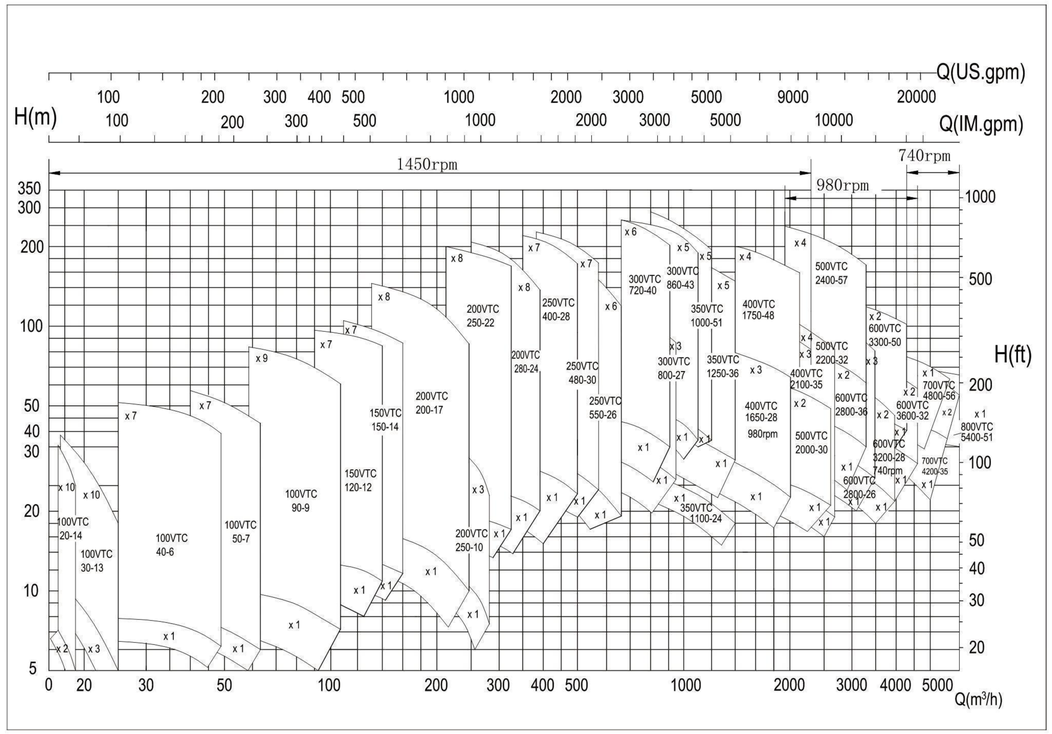
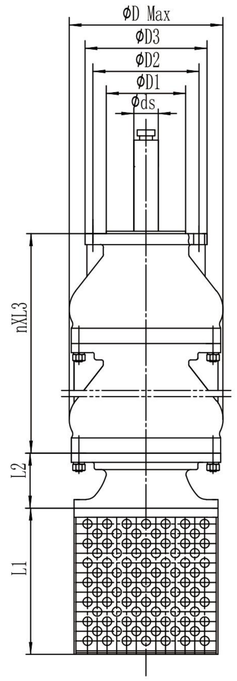
Spectrum of VTC

VTC Spectrum

1450/980/740r/min



VTC Pump Head Dimensions Table



Model	D Max	L1	L2	L3	Max. n	D1	D2	D3	ds	n-d
100VTC20-14	195	150	95	110	10	125	165	195	28	8-13
100VTC30-13	180	150	95	135	10	125	156	180	28	8-13
100VTC40-6	245	225	90	180	7	130	180	220	35	8-18
100VTC50-7	255	240	90	180	7	130	174	200	40	8-14
100VTC90-9	255	240	90	225	9	130	174	200	40	8-14
150VTC120-12	323	295	140	230	7	160	210	240	40	8-M16
150VTC150-14	323	295	140	230	7	160	210	240	40	8-M16
200VTC200-17	358	320	140	250	8	230	280	320	50	8-22
200VTC250-10	310	240	130	315	3	230	265	300	40	12-M16
200VTC250-22	420	320	165	300	8	230	280	320	50	8-22
200VTC280-24	420	320	165	300	8	230	280	320	50	8-22
250VTC400-28	477	340	185	330	7	280	330	370	60	12-22
250VTC480-30	477	340	185	330	7	280	330	370	60	12-22
250VTC550-26	430	340	170	365	6	280	330	370	60	12-22
300VTC720-40	570	350	220	390	6	340	385	425	80	12-M20
300VTC800-27	470	400	170	480	3	340	385	425	60	12-22
300VTC860-43	570	350	220	390	5	340	385	425	80	12-M20
350VTC1000-51	630	370	250	430	5	395	440	480	90	16-M20
350VTC1100-24	550	320	250	600	1	395	440	480	60	16-M20
350VTC1250-36	550	320	250	550	5	395	440	480	90	16-22
400VTC1650-28	700	400	280	720	3	440	500	550	80	16-M20
400VTC1750-48	620	400	280	615	4	440	500	550	80	16-M24
400VTC2100-35	580	320	250	660	3	440	500	550	70	16-26
500VTC2000-30	755	350	250	750	2	600	660	715	90	16-26
500VTC2200-32	754	350	250	750	5	550	600	650	80	16-26
500VTC2400-57	965	480	390	675	5	550	600	650	90	20-27
600VTC2800-26	780	350	450	550	3	660	725	780	105	20-30
600VTC2800-36	800	350	320	810	2	660	705	755	120	20-26
600VTC3200-28	930	400	280	920	1	660	705	755	100	16-26
600VTC3300-50	880	320	280	760	2	650	700	745	100	16-27
600VTC3600-32	810	450	500	800	2	660	725	780	90	20-30
700VTC4200-35	1040	450	350	1065	2	800	860	920	130	24-26
700VTC4800-56	1330	440	405	890	1	750	840	900	140	24-30
800VTC5400-51	1500	500	450	900	1	800	950	1025	140	24-39

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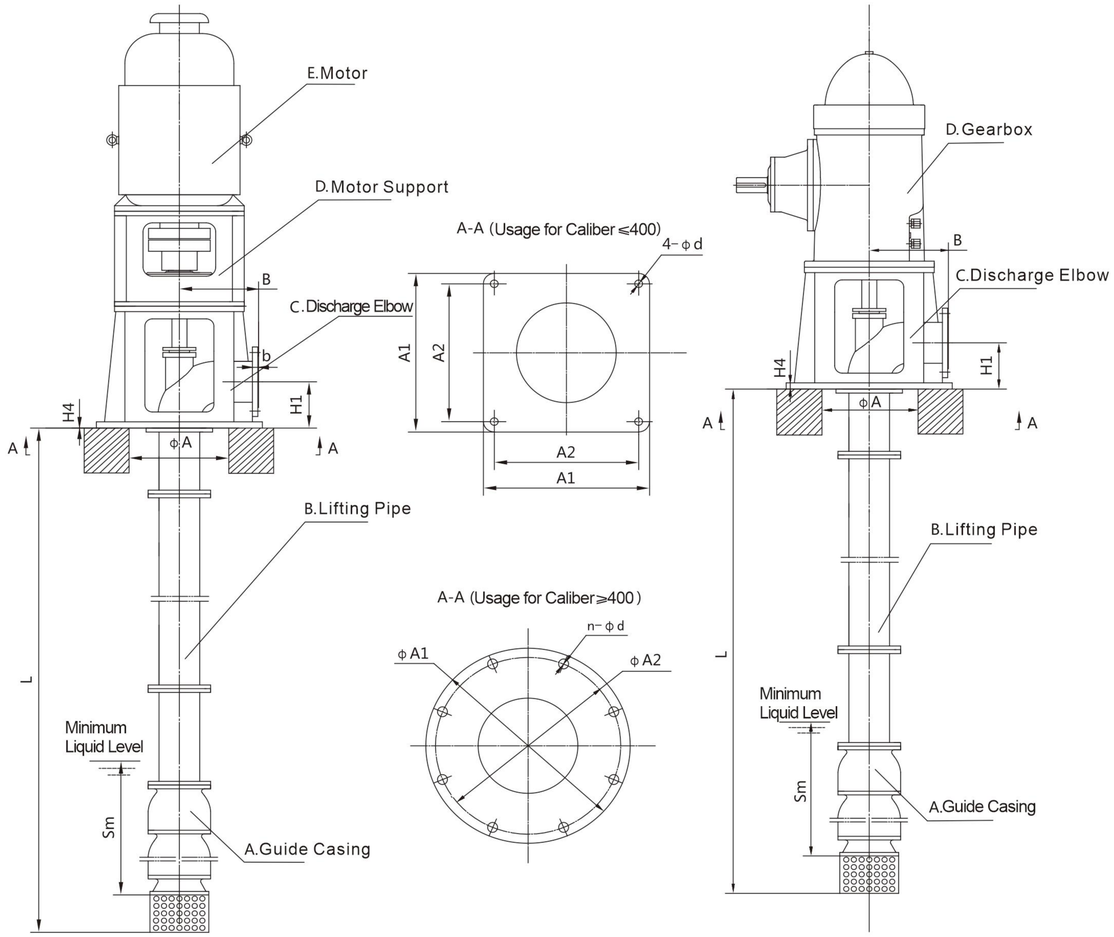
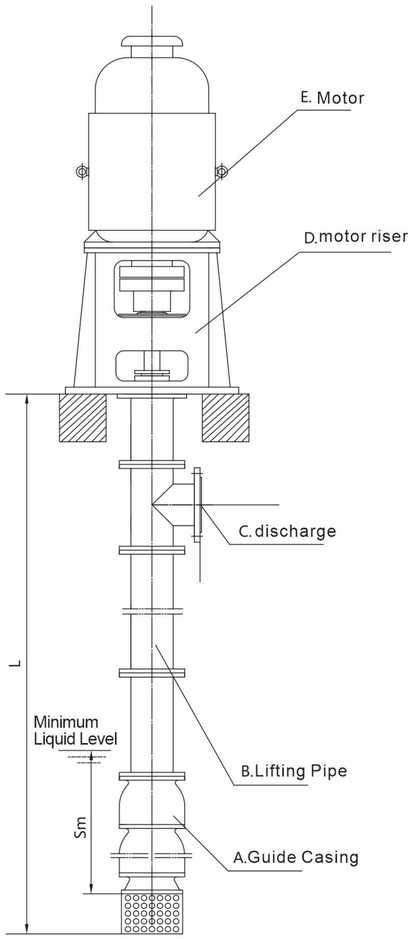
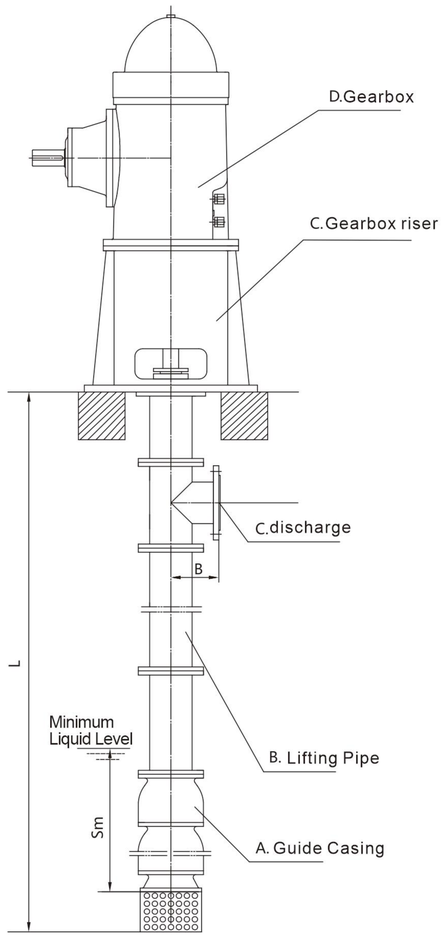
Exterior Installation Dimensions of VTC, VTG Pump (Above the Foundation Level)



Model	A1	A2	n-Φd	H1	H4	B	Sm	ΦA
80VTC	470	420	25	145	20	300	250	300
100VTC	470	420	25	145	20	300	300	300
150VTC	550	500	25	165	25	350	350	380
200VTC	700	640	30	215	25	400	400	480
250VTC	780	720	30	265	30	450	450	550
300VTC	880	820	30	320	35	500	500	650
350VTC	930	870	30	370	35	550	600	700
400VTC	1030	960	30	420	40	600	700	700
500VTC	Φ1500	Φ1400	8-40	520	40	700	900	1000
600VTC	Φ1600	Φ1500	12-40	620	45	850	1000	1100
700VTC	Φ1900	Φ1800	12-40	700	50	950	1200	1400
800VTC	Φ2000	Φ1900	12-50	800	55	1000	1400	1500

Exterior Installation Dimensions of VTC, VTG Pump (Below the Foundation Level)





1. According to customer requirements, the discharge flange can be made according to ISO, DIN, BS, or ANSI standards.
2. The final installation dimensions shall be based on the final exterior installation drawing provided by our company.
3. When the pump is driven by a diesel engine, it is recommended to use our company's independently developed gearbox.
4. In cases where the pump inlet conditions are poor and the pump operates at 60Hz, the submergence depth should be increased by 1.1-1.2 times.
5. If you need the exterior installation dimensions for discharge below the foundation level, please contact our company.

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VTC Pump Parameter Table

Pump Model	Flow Rate (m^3/h)	Head (m)	Speed (rpm)	Theoretical Efficiency (%)	Shaft Power (kW)	Matched Power (kW)
100VTC20-14	8	3.0	1450	57.8	0.1	0.75
	11	2.7		62.0	0.1	
	13	2.3		60.7	0.1	
100VTC20-14A	8	2.6	1450	58.3	0.1	0.75
	10.5	2.3		61.5	0.1	
	12.5	2.0		59.3	0.1	
100VTC20-14B	7	2.3	1450	57.3	0.1	0.75
	10	2.0		61.4	0.1	
	12	1.6		59.8	0.1	
100VTC30-13	11	3.7	1450	58.3	0.2	0.75
	17	3.1		63.7	0.2	
	23	2.2		59.9	0.2	
100VTC30-13A	10	3.3	1450	58.2	0.2	0.75
	16	2.8		63.5	0.2	
	22	1.9		59.7	0.2	
100VTC30-13B	10	2.8	1450	59.2	0.1	0.75
	15	2.4		63.1	0.2	
	21	1.5		58.8	0.1	
100VTC40-6	32	7.1	1450	59.5	1.0	2.2
	40	6.2		62.5	1.1	
	48	5.7		59.0	1.3	
100VTC40-6A	23	6.5	1450	57.1	0.7	1.5
	36	5.6		62.8	0.9	
	47	4.3		57.0	1.0	
100VTC40-6B	22	5.5	1450	57.0	0.6	1.5
	34	4.7		62.1	0.7	
	44	3.8		57.8	0.8	
100VTC50-7	40	8.1	1450	71.1	1.2	2.2
	50	7.3		74.3	1.3	
	60	6.4		73.3	1.4	
100VTC50-7A	34	7.1	1450	67.0	1.0	1.5
	48	6		74.3	1.1	
	64	4.3		68.2	1.1	
100VTC50-7B	32	6	1450	67.1	0.8	1.1
	45	5.1		73.8	0.8	
	58	3.7		68.5	0.9	
100VTC90-9	70	9.3	1450	62.3	2.8	5.5
	90	8.5		70.1	3.0	
	110	7.3		71.3	3.1	
100VTC90-9A	66	8.2	1450	60.0	2.5	4
	100	6.6		71.5	2.5	
	126	4.5		62.3	2.5	
100VTC90-9B	66	7.2	1450	60.1	2.2	3
	96	5.7		70.2	2.1	
	120	3.9		62.8	2.0	
150VTC120-12	95	13.5	1450	73.2	4.8	7.5
	120	11.7		77.0	5.0	
	145	9.8		74.1	5.2	

VTC Pump Parameter Table

Pump Model	Flow Rate (m^3/h)	Head (m)	Speed (rpm)	Theoretical Efficiency (%)	Shaft Power (kW)	Matched Power (kW)
150VTC120-12A	81	12.5	1450	70.0	3.9	5.5
	114	10.5		76.4	4.3	
	150	7.1		70.2	4.1	
150VTC120-12B	84	10.1	1450	71.1	3.3	4
	108	8.5		75.5	3.3	
	138	5.5		70.0	3.0	
150VTC150-14	120	14.3	1450	74.3	6.3	11
	150	12		79.0	6.2	
	180	9.1		74.8	6.0	
150VTC150-14A	100	13	1450	75.0	4.7	7.5
	140	10.5		79.0	5.1	
	168	7.8		75.0	4.8	
150VTC150-14B	92	11.4	1450	75.2	3.8	5.5
	132	9.3		78.5	4.3	
	160	7		75.0	4.1	
200VTC200-17	160	16.8	1450	79.1	9.3	18.5
	200	14.7		78.5	10.2	
	240	12		77.8	10.1	
200VTC200-17A	120	15	1450	76.1	6.4	11
	180	12.4		79.8	7.6	
	230	9.5		76.0	7.8	
200VTC200-17B	120	12	1450	76.2	5.1	7.5
	170	9.8		78.5	5.8	
	200	8.4		76.7	6.0	
200VTC250-10	175	13.2	1450	76.0	8.3	15
	220	12		78.4	9.2	
	260	9.5		74.0	9.1	
200VTC250-10A	180	11.5	1450	77.5	7.3	11
	215	10.5		78.2	7.9	
	245	8.5		74.2	7.6	
200VTC250-10B	170	10.5	1450	77.0	6.3	11
	205	9.5		78.1	6.8	
	230	7.5		75.8	6.2	
200VTC250-22	200	25	1450	78.1	17.4	30
	250	23		78.3	20.0	
	300	22.2		77.0	23.6	
200VTC250-22A	128	25	1450	75.2	11.6	30
	224	21.2		75.0	17.3	
	310	17.2		76.0	19.1	
200VTC250-22B	115	22	1450	75.0	9.2	22
	208	18.3		78.8	13.2	
	304	14.2		76.0	15.5	
200VTC280-24	225	25.3	1450	77.2	20.1	30
	280	24		81.0	22.6	
	335	21.5		81.7	24.0	
200VTC280-24A	200	21.2	1450	76.3	15.1	30
	300	18.6		81.5	18.7	
	380	14.5		75.6	19.9	

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VTC Pump Parameter Table

Pump Model	Flow Rate (m^3/h)	Head (m)	Speed (rpm)	Theoretical Efficiency (%)	Shaft Power (kW)	Matched Power (kW)
200VTC280-24B	200	18	1450	76.5	12.8	22
	280	16		79.5	15.4	
	350	12.5		75.6	15.8	
250VTC400-28	320	33	1450	75.6	38.1	55
	400	29.8		80.6	40.3	
	480	25		76.5	42.7	
250VTC400-28A	230	31	1450	68.3	28.4	45
	390	25.4		80.6	33.5	
	520	17.7		70.2	35.7	
250VTC400-28B	220	27	1450	68.3	23.7	37
	370	22		80.0	27.7	
	500	14		68.2	28.0	
250VTC480-30	385	32	1450	78.8	42.6	55
	480	28		82.2	44.6	
	575	24.5		80.2	47.9	
250VTC480-30A	270	31	1450	65.0	35.1	45
	470	24		82.6	37.2	
	570	15.7		65.2	37.4	
250VTC480-30B	270	26.8	1450	65.3	30.2	37
	450	20.7		81.7	31.1	
	590	13.4		65.4	32.9	
250VTC550-26	440	27	1450	73.0	44.3	55
	550	23.6		82.0	43.1	
	660	19.5		75.3	46.6	
250VTC550-26A	350	26.7	1450	65.3	39.0	55
	525	21		81.5	36.9	
	650	16.2		65.0	44.1	
250VTC550-26B	325	23.4	1450	66.0	31.4	45
	475	19.5		80.0	31.6	
	600	14.8		65.0	37.2	
300VTC720-40	690	45	1450	77.5	109.2	160
	860	39.1		81.3	112.7	
	1030	32.3		77.3	117.3	
300VTC720-40A	600	41.2	1450	76.0	88.6	132
	840	34.3		81.5	96.3	
	1000	26		75.3	94.1	
300VTC720-40B	560	36	1450	75.2	73.1	110
	760	30.3		81.3	77.2	
	920	24		76.1	79.1	
300VTC800-27	640	28.8	1450	76.8	65.4	90
	800	27.6		80.5	74.7	
	960	24.8		80.0	81.1	
300VTC800-27A	520	25.9	1450	73.2	50.1	90
	800	23.7		80.2	64.4	
	1000	20.5		73.2	76.3	
300VTC800-27B	520	23.4	1450	73.5	45.1	75
	720	21.8		79.1	54.1	
	920	18.6		73.2	63.7	

VTC Pump Parameter Table

Pump Model	Flow Rate (m^3/h)	Head (m)	Speed (rpm)	Theoretical Efficiency (%)	Shaft Power (kW)	Matched Power (kW)
300VTC860-43	575	53.8	1450	78.5	107.4	160
	720	48.6		82.0	116.3	
	865	41.5		80.2	122.0	
300VTC860-43A	480	48.2	1450	75.0	84.1	132
	680	42		81.4	95.6	
	880	33		74.8	105.8	
300VTC860-43B	440	42.2	1450	74.0	68.4	110
	640	36.3		79.3	79.8	
	800	30.2		74.3	88.6	
350VTC1000-51	700	62	1450	78.0	151.6	200
	900	56		81.2	169.1	
	1100	46.5		76.8	181.5	
350VTC1000-51A	650	52.2	1450	77.8	118.8	160
	800	48.4		81.2	129.9	
	1000	40.5		77.2	143.0	
350VTC1000-51B	600	44.2	1450	77.3	93.5	132
	700	41.3		80.7	97.6	
	950	34.5		77.4	115.4	
350VTC1100-24	950	24.8	1450	72.0	89.2	132
	1100	23		76.8	89.8	
	1300	20		76.4	92.7	
350VTC1100-24A	900	21.9	1450	75.8	70.9	110
	1100	19.7		77.8	75.9	
	1250	17.5		76.2	78.2	
350VTC1100-24B	850	20.5	1450	72.0	65.9	90
	1050	18.2		76.8	67.8	
	1250	15.3		75.4	69.1	
350VTC1250-36	1000	41.2	1450	80.3	139.8	185
	1250	36.3		81.0	152.7	
	1500	28.8		73.0	161.3	
350VTC1250-36A	800	40.2	1450	76.3	114.9	160
	1075	36.3		82.2	129.4	
	1350	29.6		77.6	140.3	
350VTC1250-36B	800	36	1450	75.9	103.4	160
	1000	33.2		79.7	113.5	
	1250	27.6		75.0	125.4	
400VTC1650-28	1320	30.5	980	80.3	136.6	220
	1650	28.5		82.8	154.8	
	1980	25.6		81.1	170.3	
400VTC1650-28A	1200	25.7	980	79.1	106.2	185
	1520	23.5		82.3	118.3	
	1960	19.1		78.1	130.6	
400VTC1650-28B	1120	21.2	980	78.0	83.0	132
	1460	20		80.8	98.5	
	1760	17		78.8	103.5	
400VTC1750-48	1400	55.8	1450	80.2	265.4	355
	1750	50.2		83.6	286.4	
	2100	42.7		83.2	293.7	

CNP NANFANG PUMP INDUSTRY CO.,LTD.

VTC Pump Parameter Table

Pump Model	Flow Rate (m^3/h)	Head (m)	Speed (rpm)	Theoretical Efficiency (%)	Shaft Power (kW)	Matched Power (kW)
400VTC1750-48A	1300	50.2	1450	79.0	225.1	280
	1760	43.2		84.0	246.7	
	2080	36		82.0	248.8	
400VTC1750-48B	1280	46	1450	80.3	199.8	250
	1680	40		83.5	219.3	
	2000	33.2		82.0	220.7	
400VTC2100-35	1680	34.7	1450	81.3	195.4	220
	2100	27.8		82.2	193.5	
	2220	24.1		78.3	186.2	
400VTC2100-35A	1380	33.4	1450	79.3	158.4	200
	1860	28		84.5	168.0	
	2040	23.5		81.0	161.3	
400VTC2100-35B	1320	30.2	1450	79.0	137.5	185
	1800	25		84.0	146.0	
	1980	21		80.0	141.6	
500VTC2000-30	1600	32	980	82.0	170.1	250
	2000	28		86.0	177.4	
	2400	23		81.0	185.7	
500VTC2000-30A	1650	27	980	82.5	147.2	200
	1920	24		85.5	146.9	
	2240	19.7		81.2	148.1	
500VTC2000-30B	1520	22	980	82.2	110.9	160
	1800	20		84.5	116.1	
	2160	16		80.0	117.7	
500VTC2200-32	1750	36.4	980	80.5	215.6	280
	2200	32.5		82.8	235.3	
	2650	28.4		81.0	253.2	
500VTC2200-32A	1600	33.4	980	76.0	191.6	250
	2150	29.5		82.3	210.0	
	2550	25		82.0	211.9	
500VTC2200-32B	1500	32.7	980	75.2	177.7	220
	2100	27.2		82.3	189.1	
	2500	23		81.1	193.2	
500VTC2400-57	1900	61.5	980	80.4	396.0	500
	2400	57		84.3	442.2	
	2900	50		84.5	467.6	
500VTC2400-57A	1680	63.3	980	78.2	370.6	450
	2640	45.3		86.0	378.9	
	3700	28		78.0	361.9	
500VTC2400-57B	1560	48.2	980	78.0	262.7	355
	2550	36.5		86.0	294.9	
	3540	22		77.8	272.9	
600VTC2800-26	2200	29.6	980	78.3	226.6	315
	2800	26.3		83.0	241.8	
	3300	23.5		77.5	272.7	
600VTC2800-26A	2040	25	980	78.0	178.2	250
	2580	23.2		83.4	195.6	
	3000	20		78.0	209.6	

VTC Pump Parameter Table

Pump Model	Flow Rate (m^3/h)	Head (m)	Speed (rpm)	Theoretical Efficiency (%)	Shaft Power (kW)	Matched Power (kW)
600VTC2800-26B	1920	20.8	980	78.0	139.5	185
	2400	19.2		82.6	152.0	
	2760	16.8		78.2	161.6	
600VTC2800-36	2240	40	980	81.5	299.6	355
	2800	35.5		84.8	319.4	
	3300	29		80.8	322.8	
600VTC2800-36A	2350	34.5	980	84.0	263.0	315
	2650	32		84.5	273.5	
	3100	26		81.8	268.5	
600VTC2800-36B	2250	31	980	83.2	228.4	280
	2500	28.5		84.2	230.6	
	2950	23.5		81.2	232.6	
600VTC3200-28	2700	30.5	740	81.0	277.0	355
	3200	29.5		86.0	299.1	
	3900	23		81.0	301.8	
600VTC3200-28A	2560	28	740	91.0	214.6	315
	3050	25.9		85.6	251.5	
	3650	20.8		81.2	254.8	
600VTC3200-28B	2400	25.2	740	81.0	203.5	250
	2900	23.1		84.8	215.3	
	3500	18.8		81.1	221.1	
600VTC3300-50	2600	63.5	980	78.3	574.6	710
	3300	57		83.6	613.1	
	3900	40		76.0	559.3	
600VTC3300-50A	2250	59.1	980	74.2	488.4	630
	3200	50.2		83.7	523.0	
	4000	40		77.0	566.2	
600VTC3300-50B	2100	49.6	980	74.3	382.0	500
	2880	43		83.0	406.6	
	3840	32.3		74.0	456.7	
600VTC3300-50C	2080	41	980	75.2	309.0	400
	2720	36.4		81.4	331.4	
	3360	30		76.5	359.1	
600VTC3600-32	3050	31.5	980	76.3	343.1	450
	3600	30		83.0	354.6	
	4150	26.3		78.3	379.8	
600VTC3600-32A	3050	27.3	980	76.2	297.8	355
	3360	26.2		82.5	290.8	
	3800	23.4		76.4	317.2	
600VTC3600-32B	2995	23.8	980	77.1	251.9	280
	3200	22.7		80.8	245.0	
	3400	21.6		77.8	257.2	
700VTC4200-35	3400	39.5	740	80.5	454.6	560
	4600	34.7		86.8	501.1	
	5500	28		82.0	511.8	
700VTC4200-35A	3200	35.9	740	80.3	389.8	500
	4400	31		86.5	429.7	
	5300	24.8		82.0	436.8	

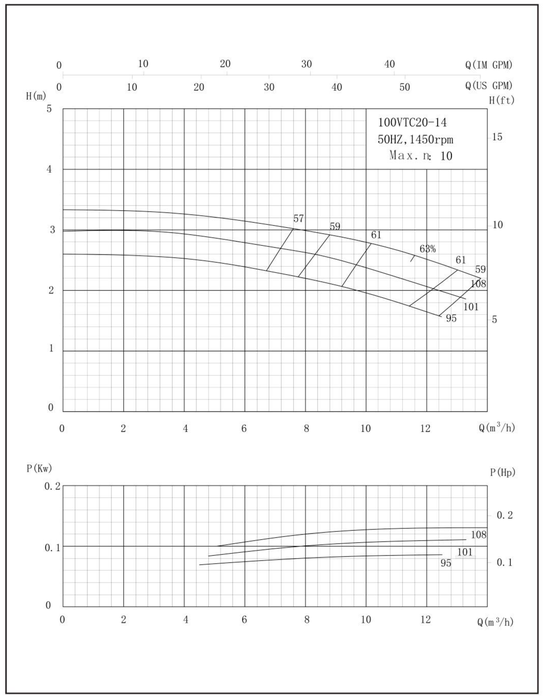
CNP NANFANG PUMP INDUSTRY CO.,LTD.

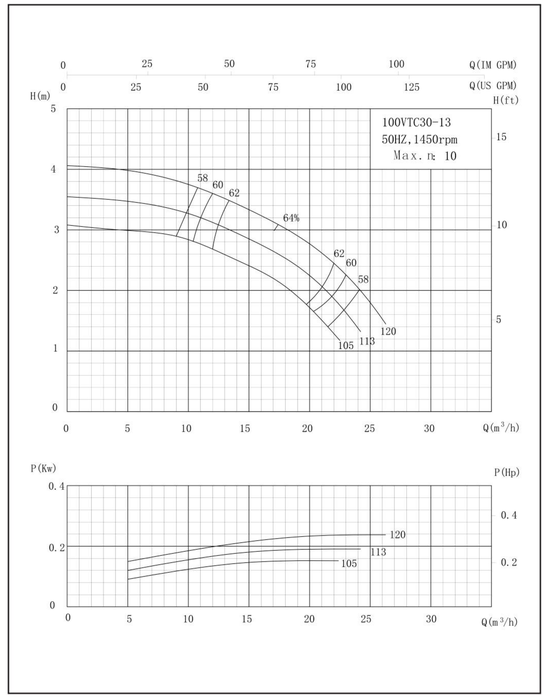
VTC Pump Parameter Table

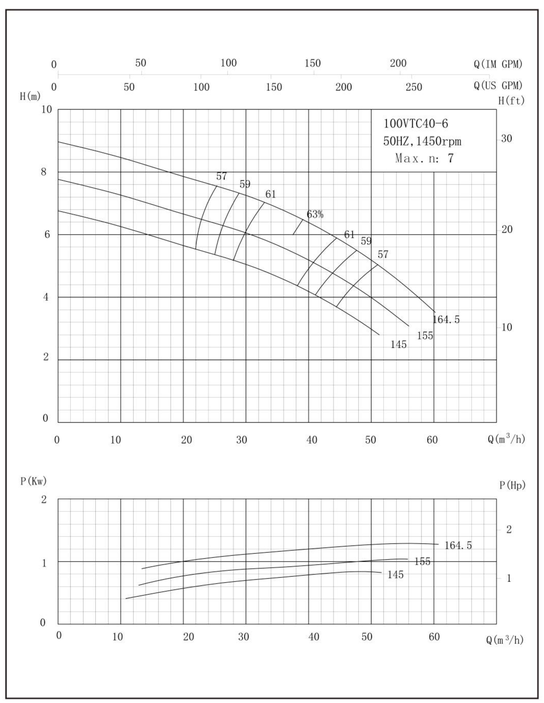
Pump Model	Flow Rate (m^3/h)	Head (m)	Speed (rpm)	Theoretical Efficiency (%)	Shaft Power (kW)	Matched Power (kW)
700VTC4200-35B	3200	31.7	740	81.4	339.6	400
	4200	27.5		86.0	366.0	
	5000	22.2		82.8	365.3	
700VTC4800-56	3800	61.7	740	83.7	763.3	1000
	4800	56.5		85.7	862.3	
	5700	50.8		84.4	934.9	
700VTC4800-56A	3000	53.8	740	81.0	543.0	800
	4400	47.8		85.0	674.3	
	5800	37		80.5	726.4	
700VTC4800-56B	3000	45.3	740	81.5	454.4	630
	4000	40.8		84.2	528.2	
	5000	34		80.5	575.5	
800VTC5400-51	4320	55.8	740	83.3	788.6	1000
	5400	51		85.0	882.9	
	6480	44.1		82.7	941.6	
800VTC5400-51A	4560	52	740	83.3	775.7	900
	5520	47		85.5	826.9	
	6480	40.5		82.3	869.0	
800VTC5400-51B	4320	49.5	740	83.2	700.4	900
	5380	44.6		85.3	766.5	
	6240	39.6		83.4	807.4	

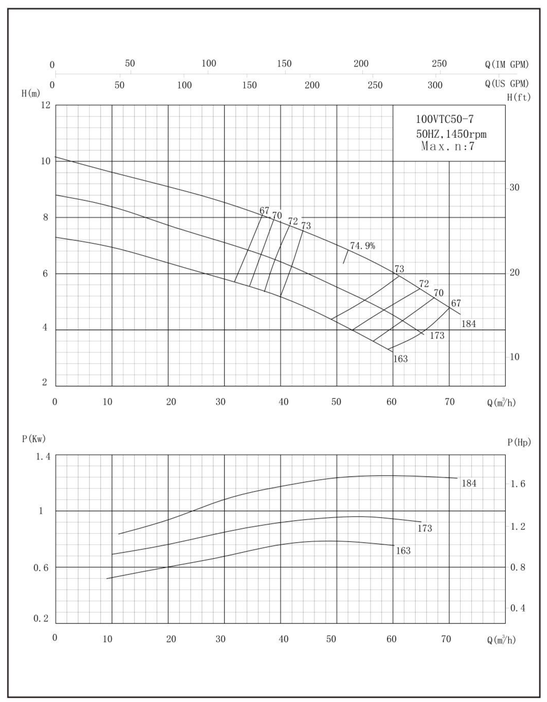
The data in the table is for single-stage pump data. For multi-stage pumps, the data is calculated as follows:
Multi-stage pump flow rate = single-stage flow rate.
Multi-stage head = Single-stage head x Number of Stages.
Multi-stage shaft power = Single-stage shaft power x Number of Stages.
Note: The direction of the pump model is viewed from the drive end, with the rotor rotating counterclockwise,
except for the models 500VTC2000-30 and 600VTC3200-28, which rotate clockwise.

VTC Pump Characteristic Curve (Single Stage)

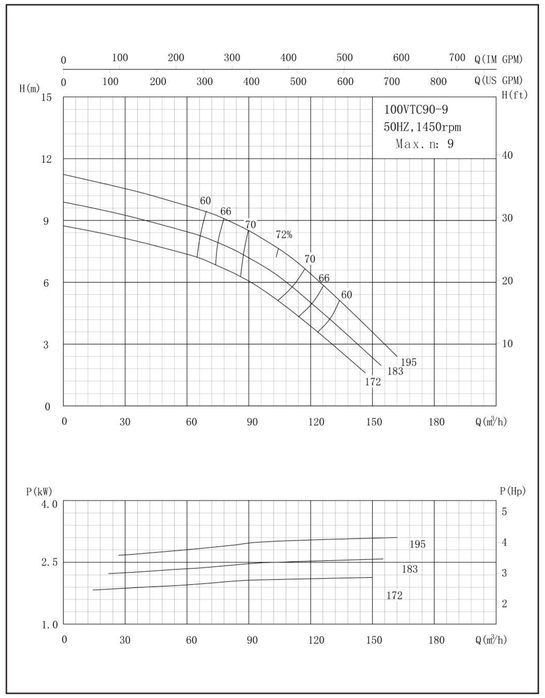


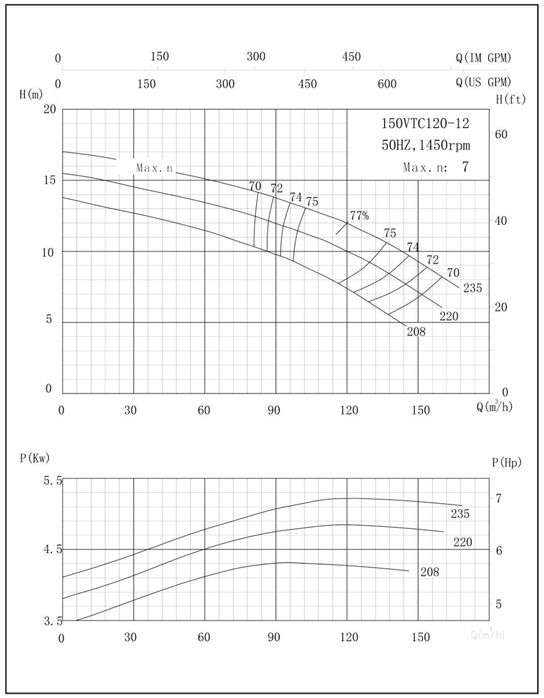


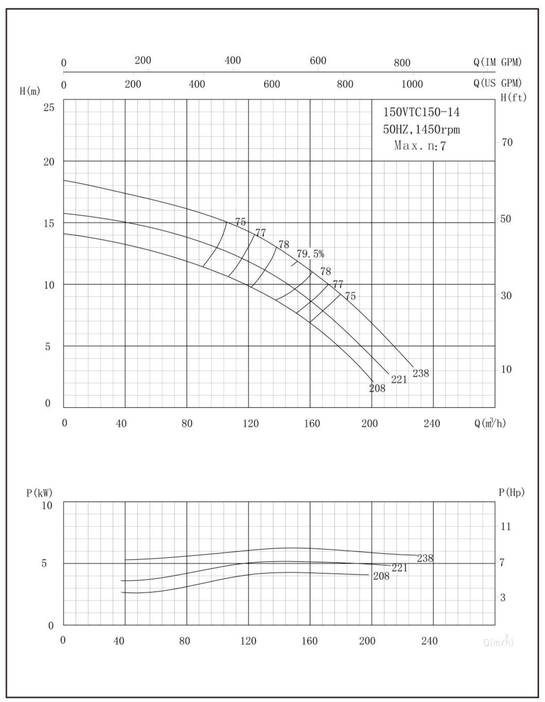


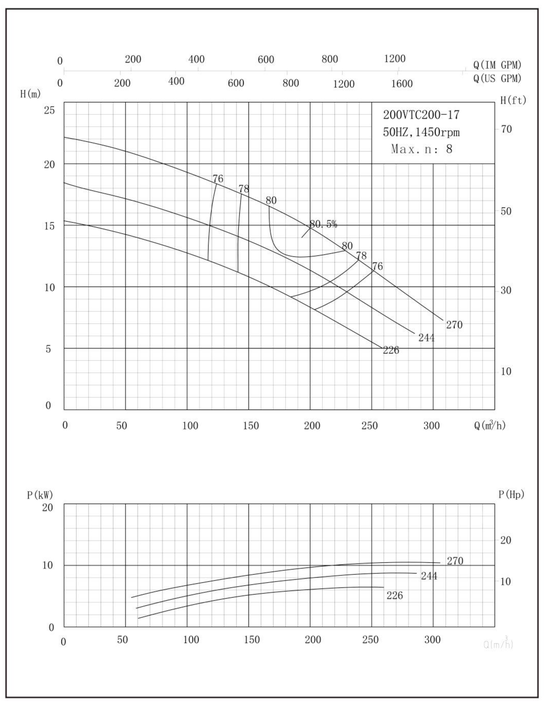


VTC Pump Characteristic Curve (Single Stage)

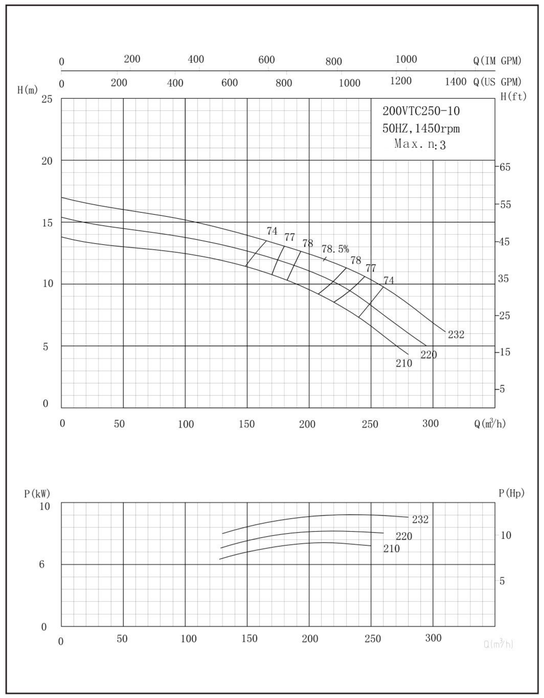


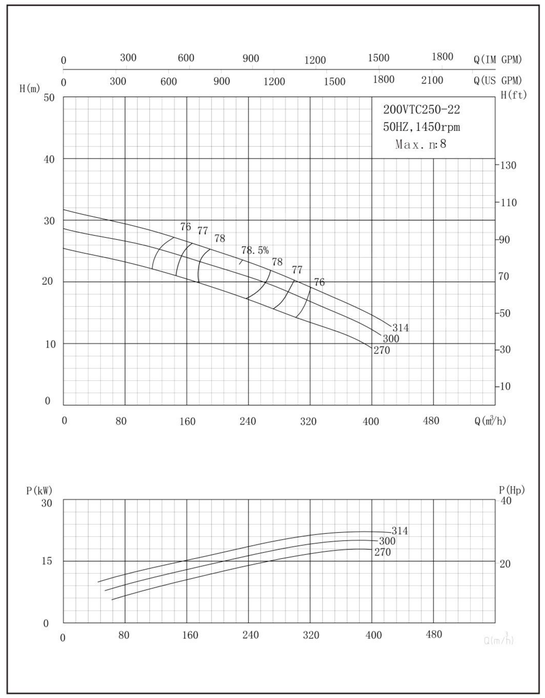


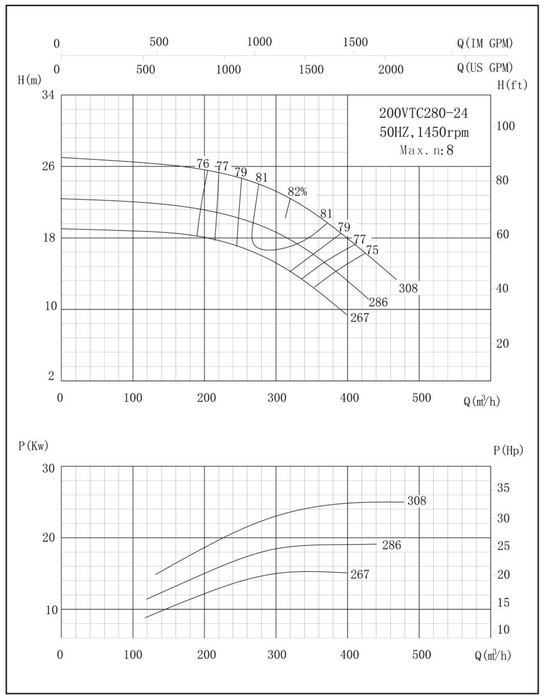


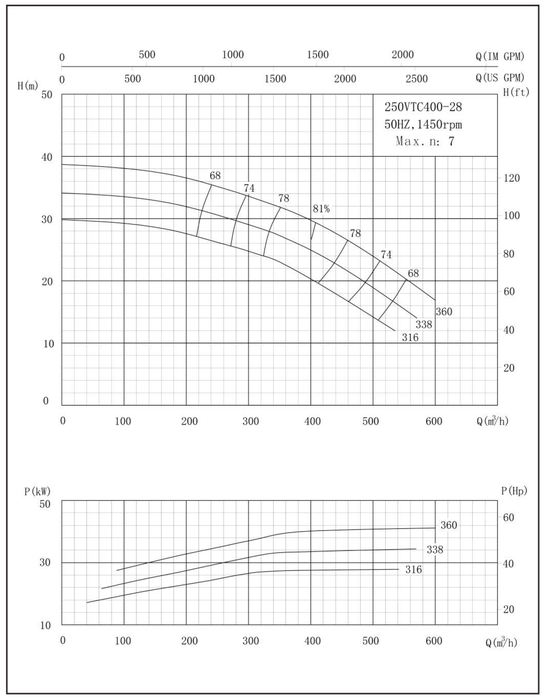


VTC Pump Characteristic Curve (Single Stage)

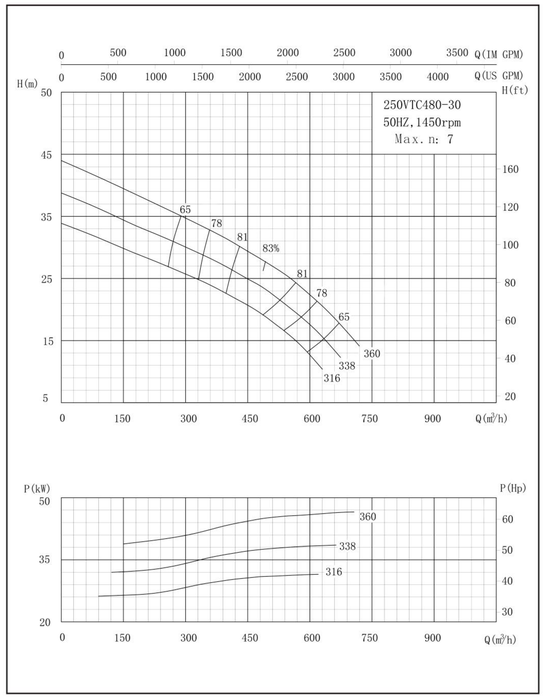


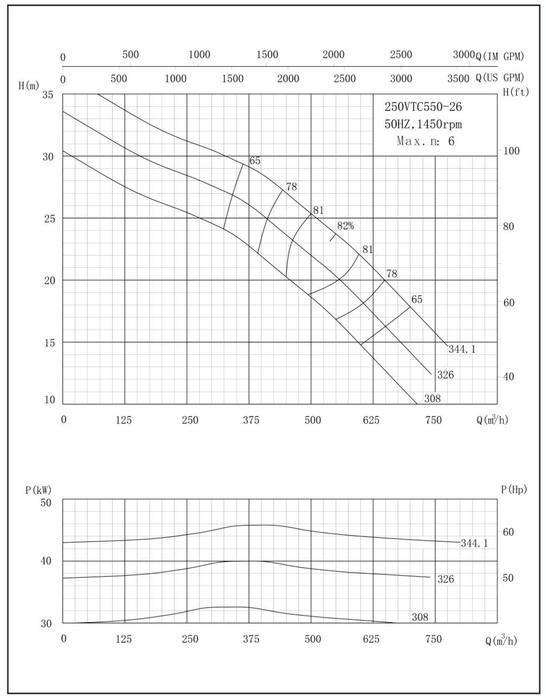


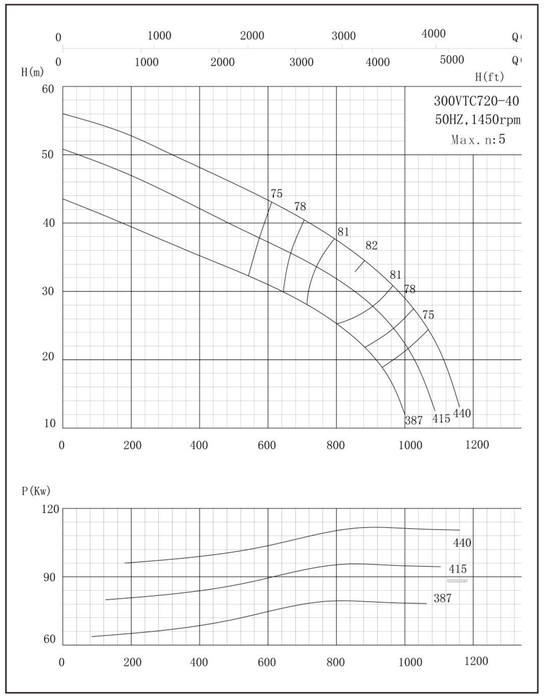


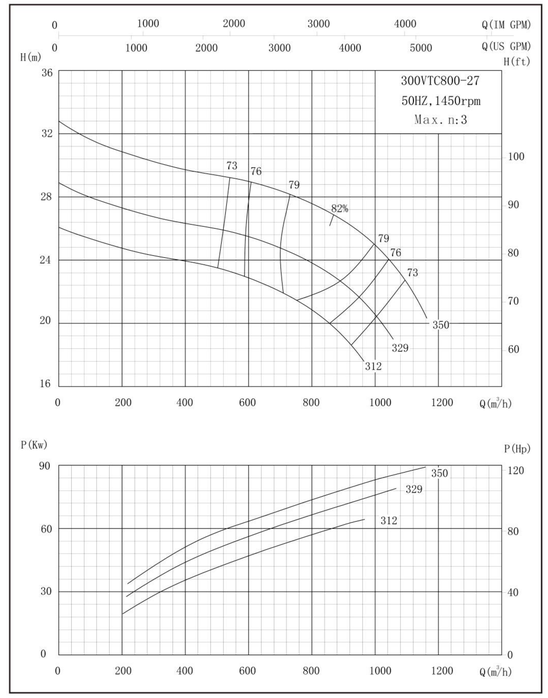


VTC Pump Characteristic Curve (Single Stage)

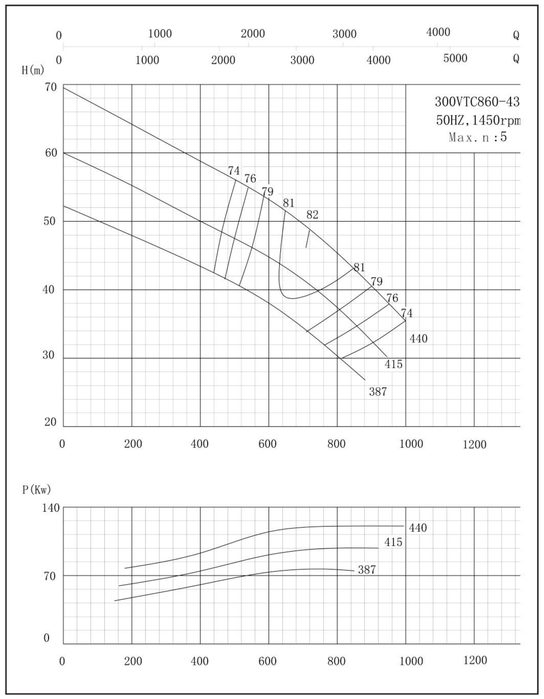


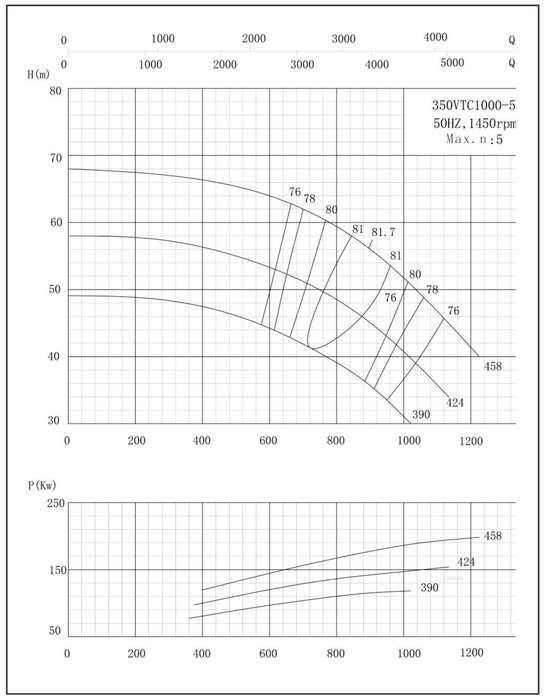


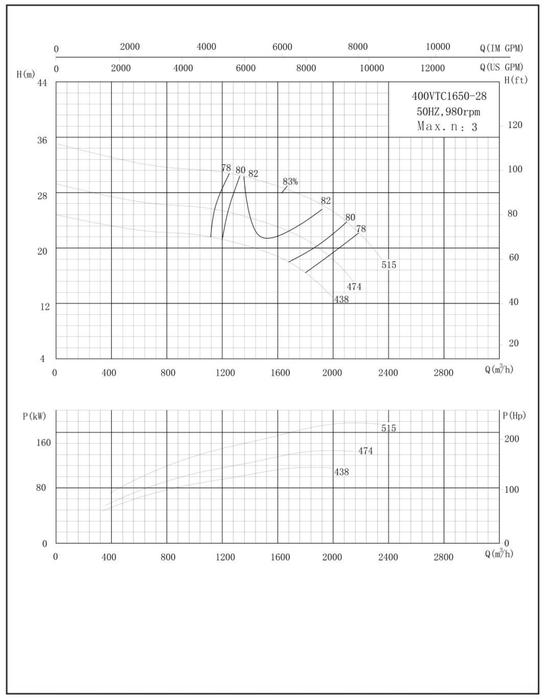


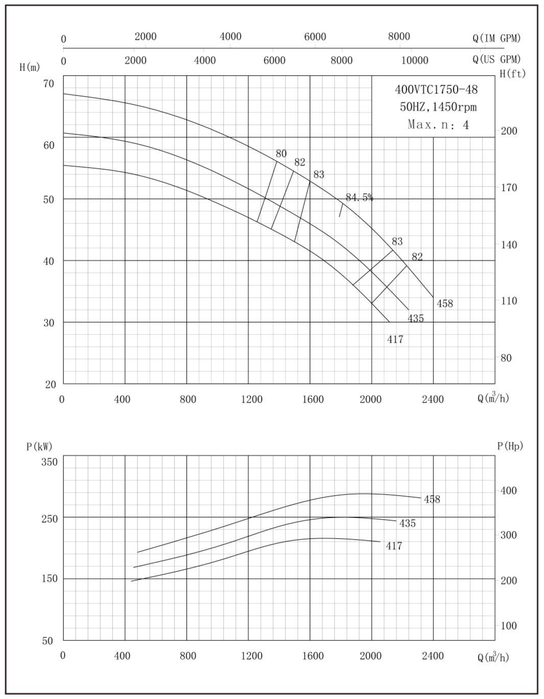


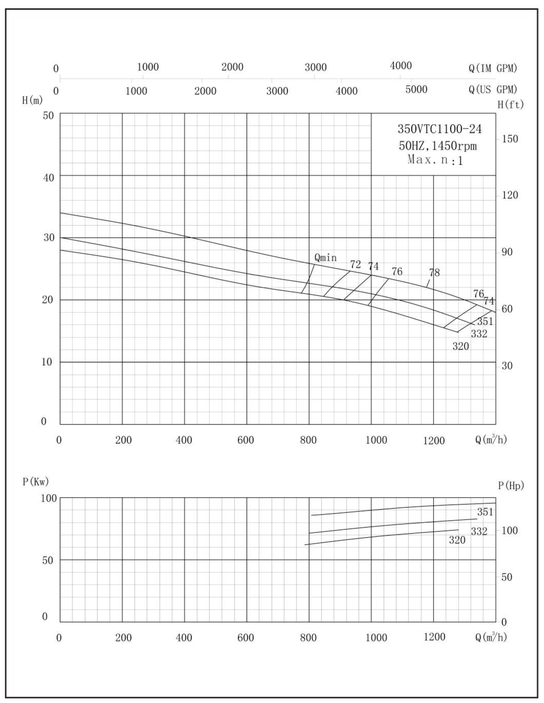
VTC Pump Characteristic Curve (Single Stage)

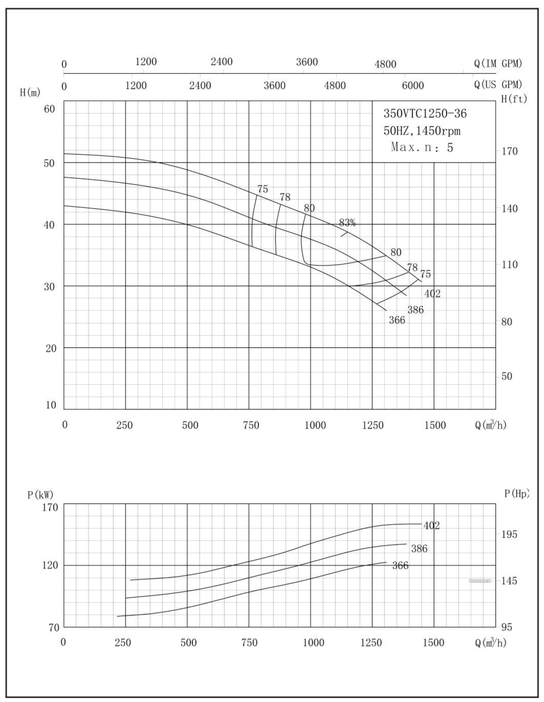


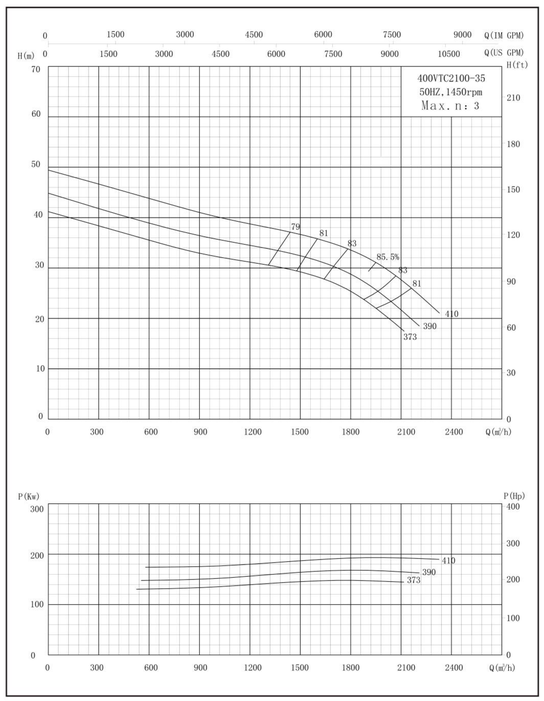


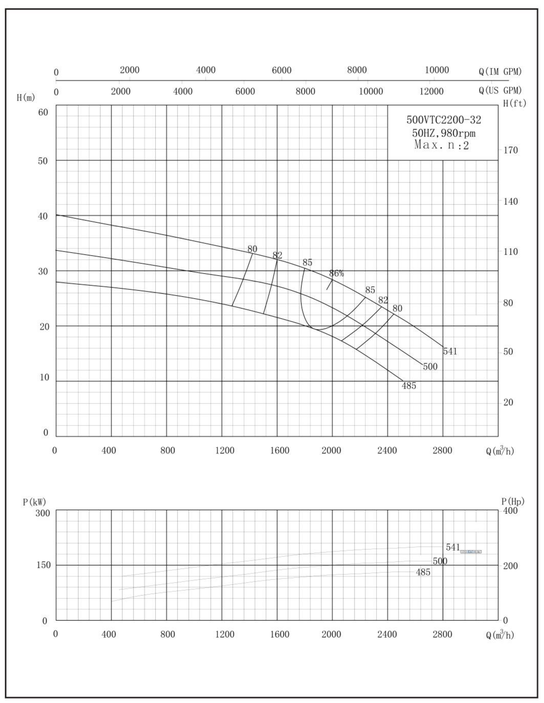




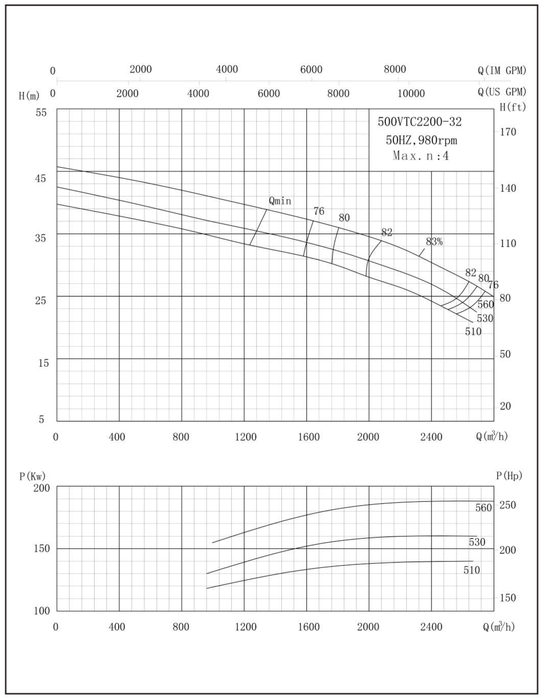


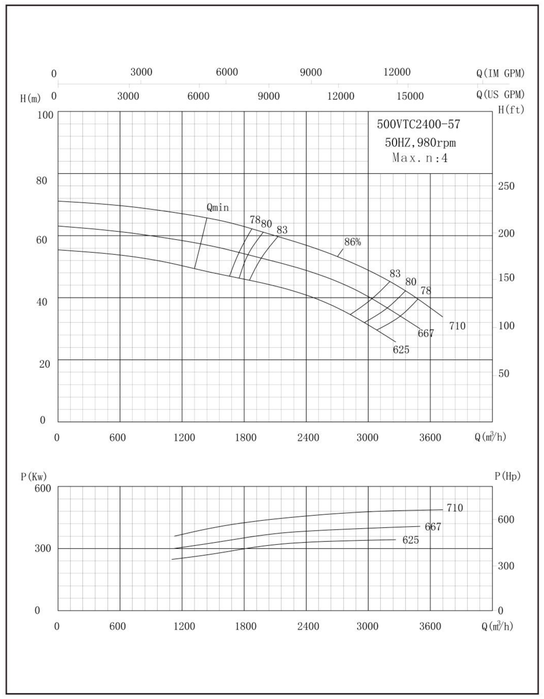


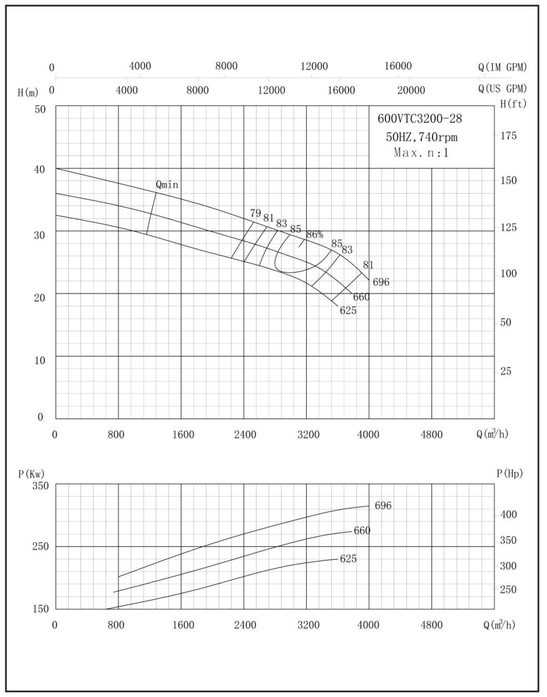


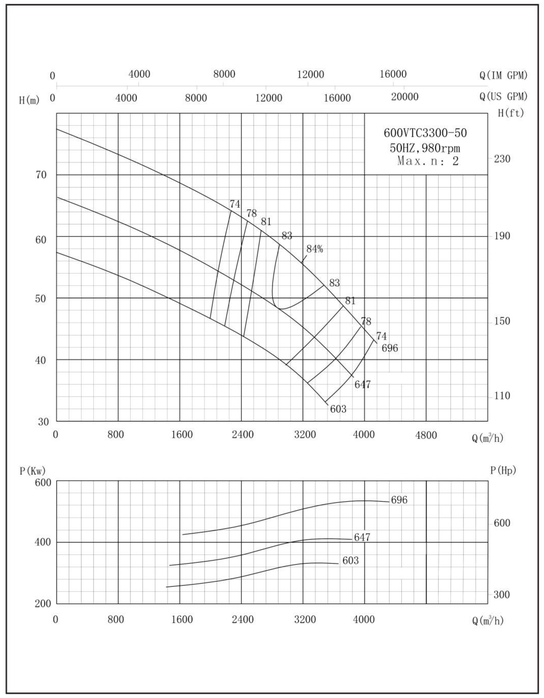


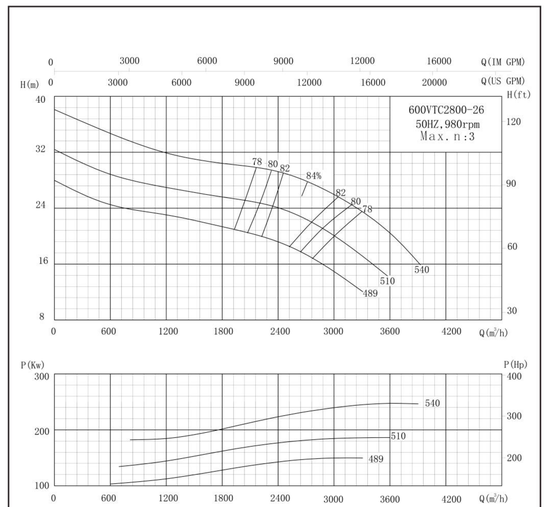
VTC Pump Characteristic Curve (Single Stage)

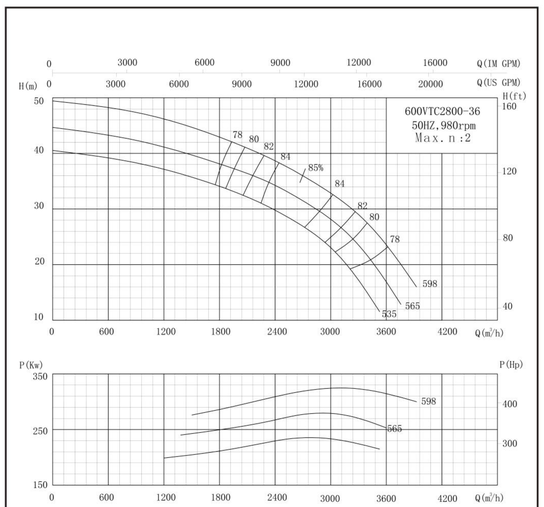


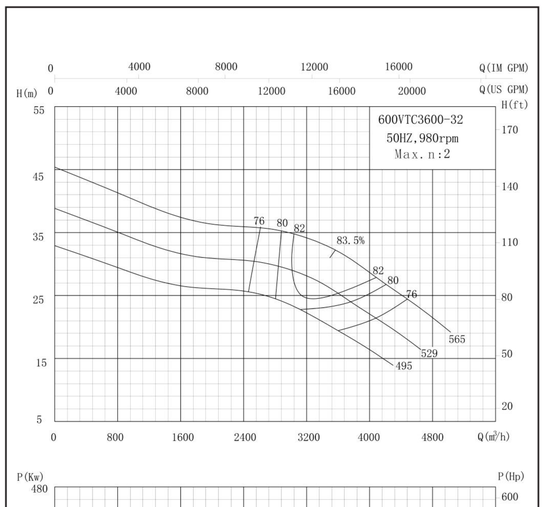


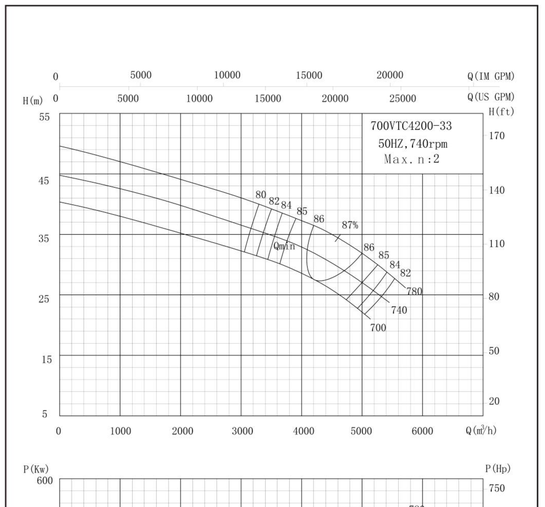












VTC Pump Characteristic Curve (Single Stage)