



# VMHP 50Hz/60Hz

High Pressure Pump for RO Seawater Desalination  
(daily output 500-20000 tons fresh water)



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E151102  
309010100044  
subject to amendments



# Company Profile



Founded in 1991, Nanfang Pump Industry Co., Ltd. (hereinafter referred to as CNP) has been listed on the Shenzhen Stock Exchange on 9th December 2010; Stock name: CNP; Stock code: 300145.

As the first enterprise specializing in the research and large-scale production of stainless steel stamping welded centrifugal pump in China, CNP is currently the professional manufacturer with the highest volume of production and marketing in that industry. It ranks first in the country in terms of product scope, sales volume, and production quality. The company has set up a complete network of marketing services to meet the requirements of overseas markets as well as domestic needs. The products have seen a wide range of application in the area of pressurization, industry, living water, cycling of air-conditioning water, heat supply, fire extinguishing system, pumping of underground water, treatment of sewage and waste water, chemical industry and desalination of sea water etc.

CNP has now entered into the fast track of development and has taken a major step forward in forging China Strong Pump Enterprise and World's famous brand in the Pump Industry. In order to better meet the client's needs and requirements for expansion, it has set up a wide network of selling and service, as well as offices and service centers in major cities in China, which are aimed at providing timely and effective services for our clients. Meanwhile, our company has successfully penetrated into the world market by forging a good business relationship with more than 50 countries and regions in the Europe, Northern American, and Southeast Asia etc.

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### Technical Data

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## VMHP High pressure pump for seawater desalination

### Working conditions

- Seawater
- Temperature: ambient temperature
- Ambient temperature: up to 40°C
- Altitude: up to 1000m
- Max. working pressure: 75 bar

### Applications

- R/O seawater desalting system

### Inlet & outlet connection

- VMHP20,40: PJE connection
- VMHP130,210,520: Flange connection

### Motor

- TEFC 2 pole three-phase asynchronous motor
- Protection level: IP55;
- Insulation level: F
- voltage: 50Hz: 3 × 380V;  
3 × 660V;  
3 × 3000V;  
3 × 6000V;

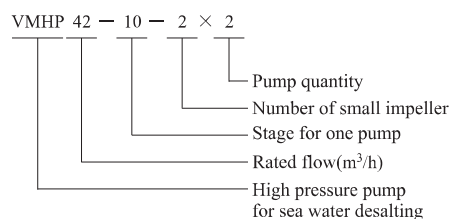
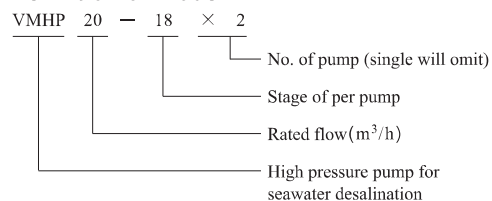
### Performance curve

- Curve tolerance in conformity to ISO9906:2012 Grade 3B.
- All curves are based on the measured value of 50Hz, constant motor speed 2950rpm.
- Measurement is done with 20°C air-free water, kinematic viscosity of 1mm<sup>2</sup>/s.

### Features

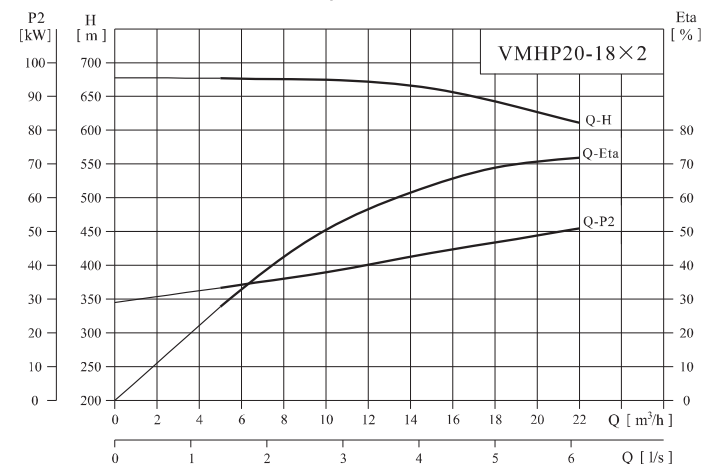
- Impellers are installed back to back, so as to balance the big thrust force of the pump.
- For the wet parts, the material of precision molding part is duplex stainless steel, the material of profile part is super austenitic stainless steel.
- Mechanical seal rings adopt anti-seawater corrosion material, the pump can work under high pressure condition.
- High delivery head, large flow.
- Compact design, good reliability, high efficiency, elegant and small appearance.
- Adopting cartridge mechanical seal, easy to assemble and maintain.

### Definition of model



## VMHP20-18 × 2(Supporting the system of daily output 500 tons fresh water)

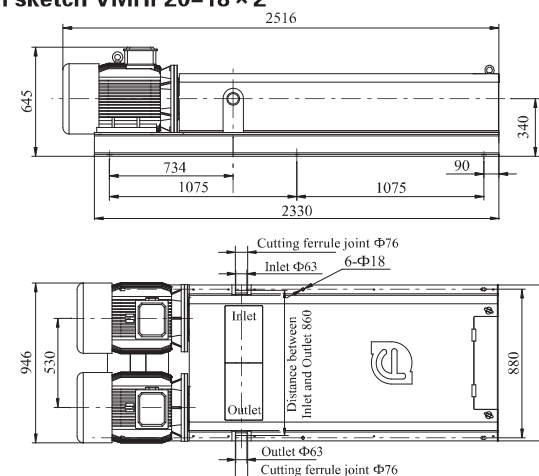
### Performance curve VMHP20-18 × 2,50Hz



### Performance table VMHP20-18 × 2

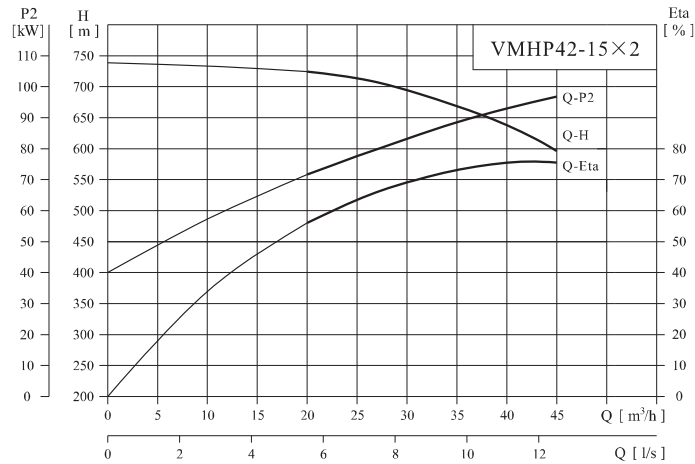
Model	Power (kW)	Q (m <sup>3</sup> /h)	5	10	15	20	22	Weight (kg)
VMHP20-18 × 2	30 × 2	H (m)	678	669	659	626	612	955

### Installation sketch VMHP20-18 × 2



VMHP42-15 × 2(Supporting the system of daily output 1000 tons fresh water)

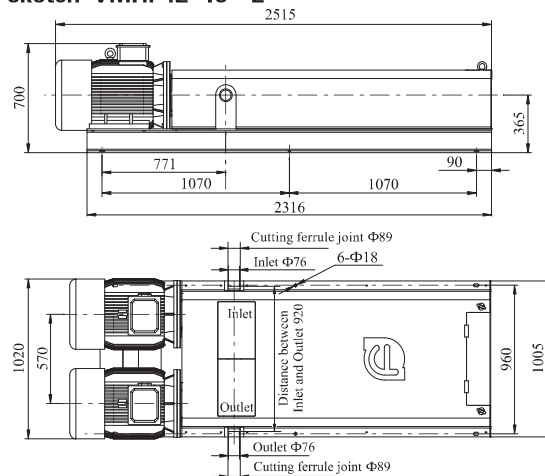
● Performance curve VMHP42-15 × 2,50Hz



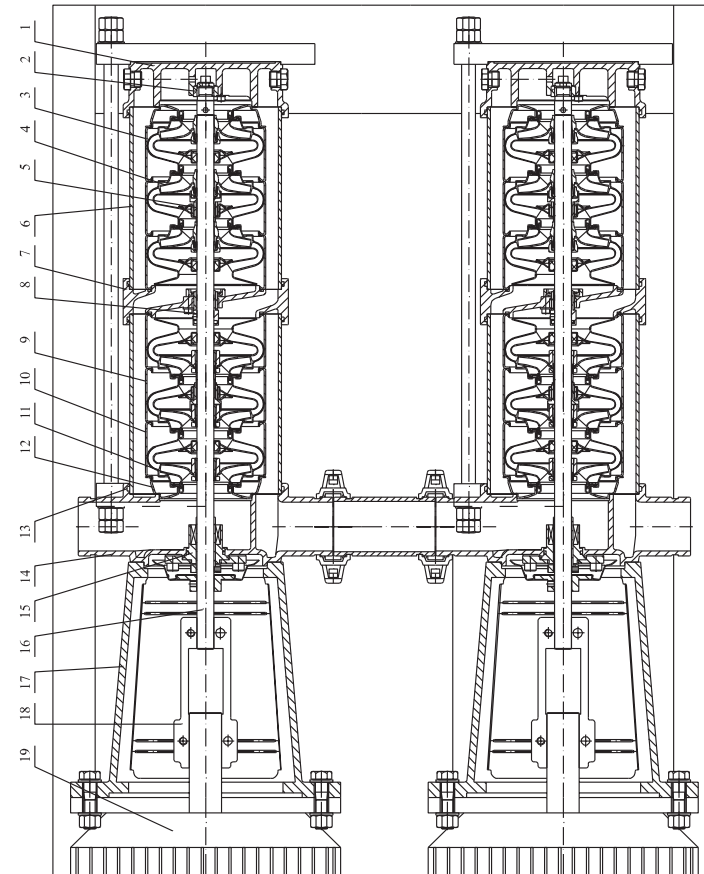
● Performance table VMHP42-15 × 2

Model	Power (kw)	Q (m³/h)	20	25	30	35	40	42	45	Weight (kg)
VMHP42-15×2	52×2	H (m)	725	718	697	670	638	620	597	1095

● Installation sketch VMHP42-15 × 2



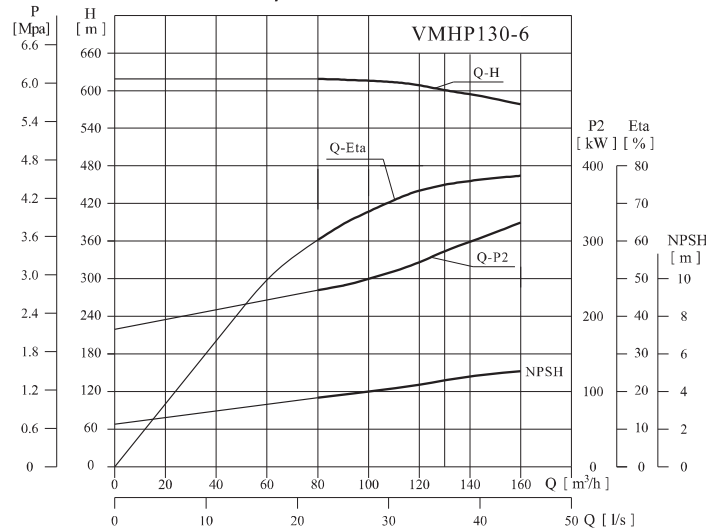
● Sectional drawing VMHP20-18 × 2, 42-15 × 2



- 1.Base
- 2.Bottom bearing
- 3.Diffuser
- 4. Impeller
- 5.Sleeve
- 6.Cylinder
- 7.Exchange chamber
- 8.Exchange chamber bearing
- 9.Reverse support diffuser
- 10.Reverse diffuser
- 11.Revers Impeller
- 12.inducer
- 13.O ring
- 14.inlet and outlet chamber
- 15.Mechanical seal
- 16.Bracket
- 17.Coupling
- 19.Motor

## VMHP130-6(Supporting the system of daily output 3000 tons fresh water)

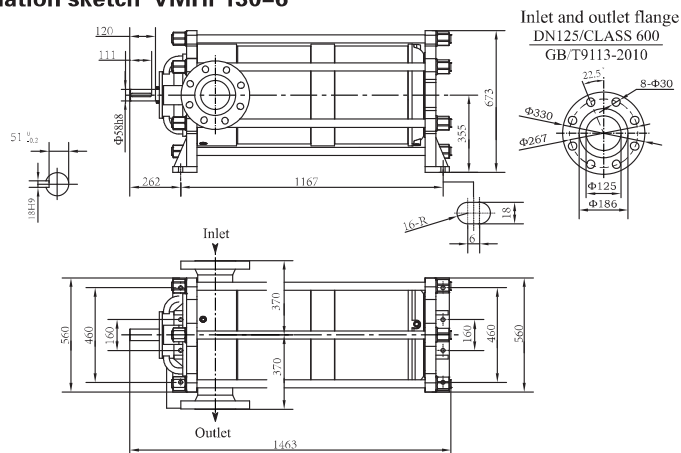
### ● Performance curve VMHP130-6,50Hz



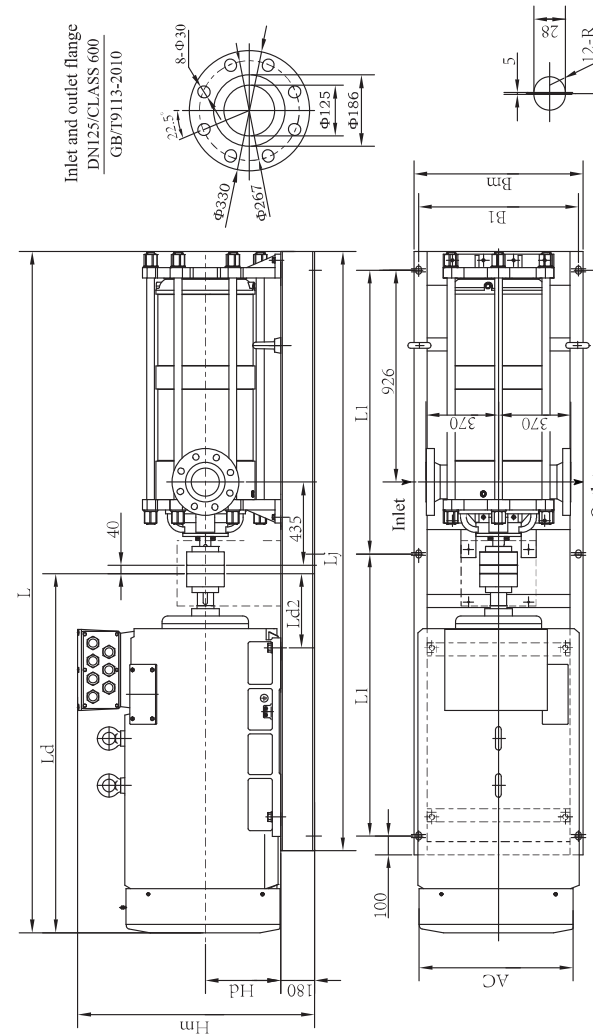
### ● Performance table VMHP130-6

Model	Power (kW)	Q (m³/h)	80	100	120	130	140	160	Weight (kg)
VMHP130-6	355	H (m)	618	616	608	600	594	578	1400

### ● Installation sketch VMHP130-6



### ● Installation sketch of pump set VMHP130-6

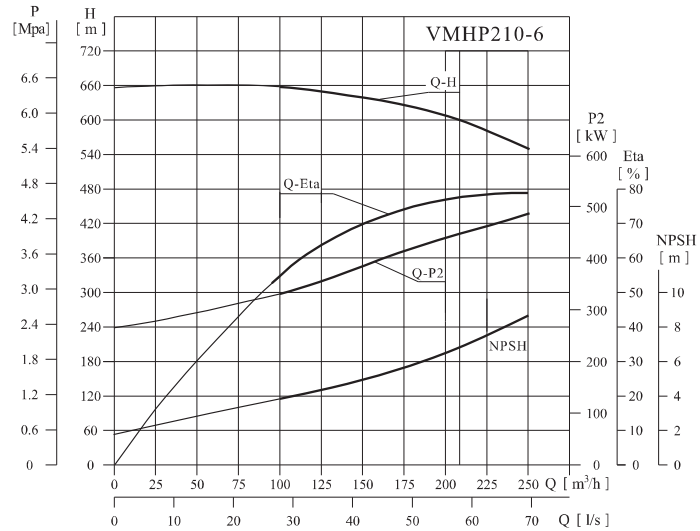


Model	Motor power Installation form	Dimension of pump set			Dimension of motor			Dimension of frame			Weight of pump set (kg)	
		L	Hm	Bm	Ld	Hd	AC	Ld2	B1	L1		
VMHP130-6	Y3-3551-2	3399	1310	820	1870	355	770	394	2860	1330	760	3900
	YKK-4002-2	3929	1880	900	2400	400	1260	545	3220	1510	840	4700

Remark: Y3-3551-2; 50Hz; 380V/660V; JB/T 10868-2008  
YKK-4002-2; 50Hz; 6000V/3000V; JB/T10315.2-2002

VMHP210-6 (Supporting the system of daily output 5000 tons fresh water)

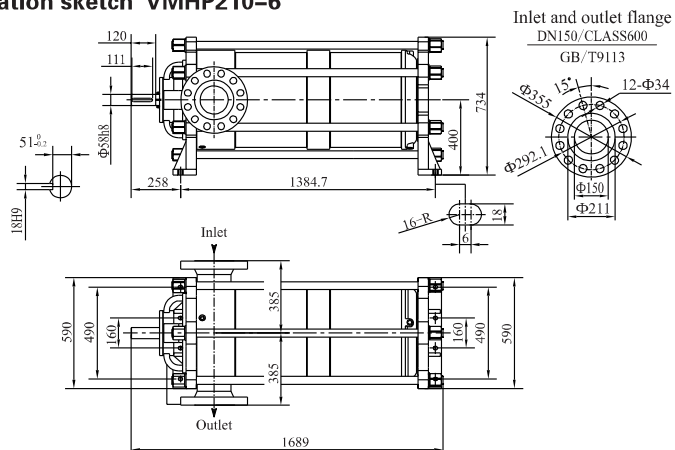
● Performance curve VMHP210-6, 50Hz



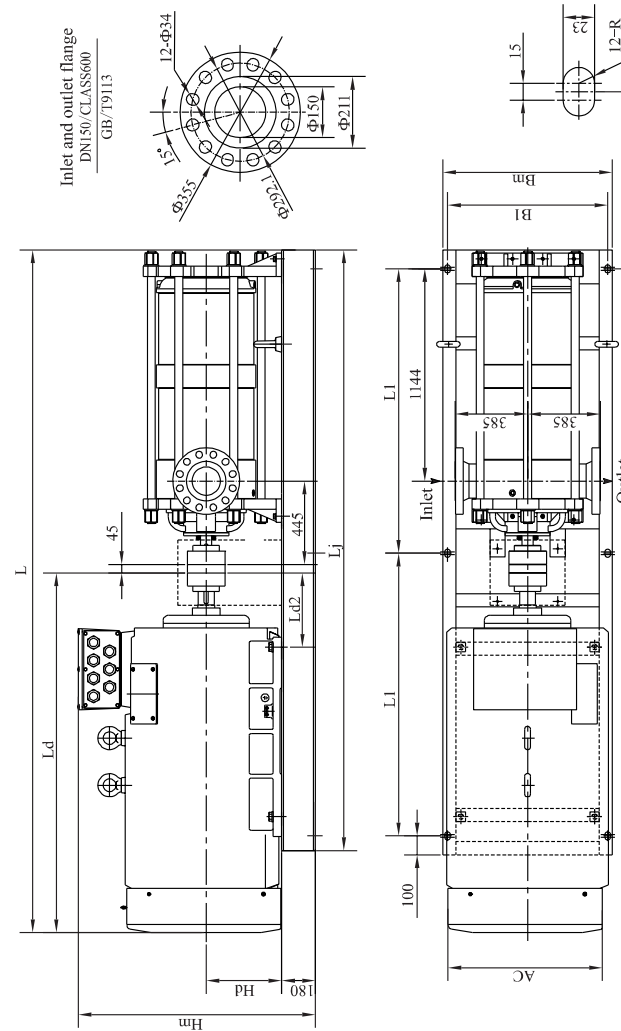
● Performance table VMHP210-6

Model	Power (kW)	Q (m³/h)	100	125	150	175	210	225	250	Weight (kg)
VMHP210-6	560	H (m)	657	650	639	626	600	582	550	1458

● Installation sketch VMHP210-6



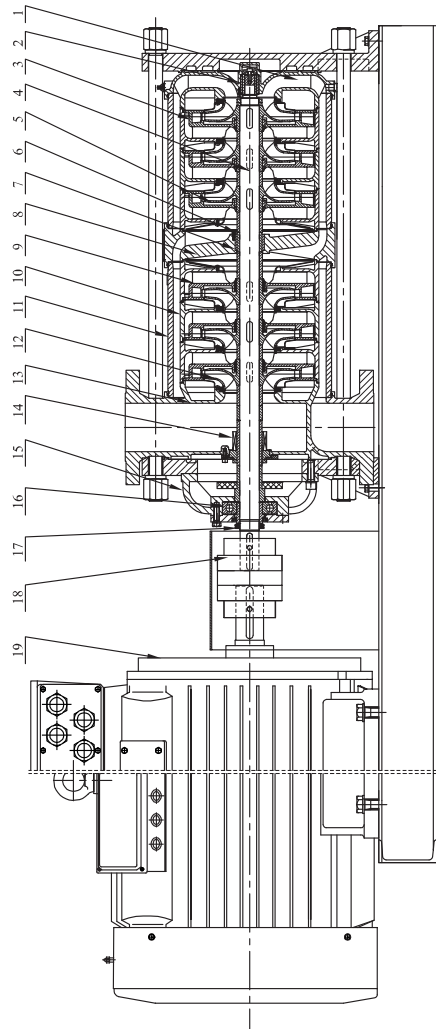
● Installation sketch of pump set VMHP210-6



Model	Motor power Installation form	Dimension of pump set				Dimension of motor				Dimension of frame			Weight of pump set (kg)
		L	Hm	Bm	Ld	Ld	Hd	AC	Ld2	L1	B1	Lj	
VMHP210-6	Y3-4003-2	3644	1440	900	1910	400	860	394	3209	1500	850	4968	5863
	YKK-4502-2	4334	1820	1000	2600	450	1200	610	3645	1722	948		

Remark: Y3-4003-2; 50Hz; 380V/660V; JB/T 10868-2008  
YKK-4502-2; 50Hz; 6000V; JB/T 10315.2-2002

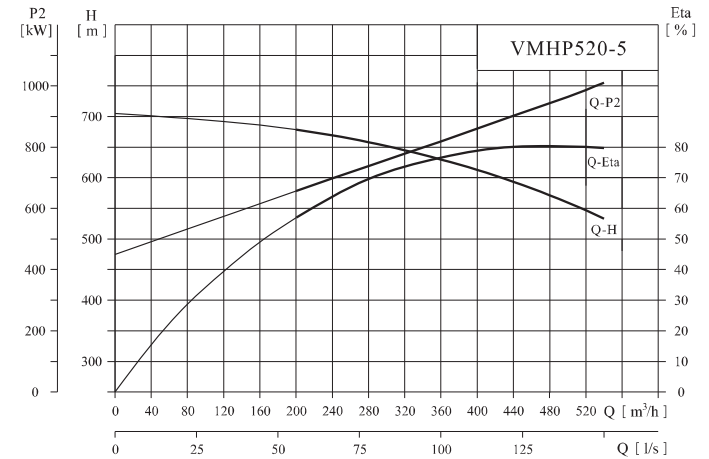
● Sectional drawing VMHP130-6, 210-6



- 15. Bearing body
- 16. Bearing
- 17. Round nut
- 18. Coupling
- 19. Motor
- 8. Exchange chamber
- 9. Reverse diffuser assembly
- 10. Diffuser shell
- 11. Cylinder
- 12. Reverse impeller
- 13. Inlet and outlet chamber
- 14. Mechanical seal
- 1. Base
- 2. Bottom bearing
- 3. Diffuser assembly
- 4. Shaft
- 5. Impeller
- 6. Sleeve
- 7. Intermediate bearing

VMHP520-5(Supporting the system of daily output 12500 tons fresh water)

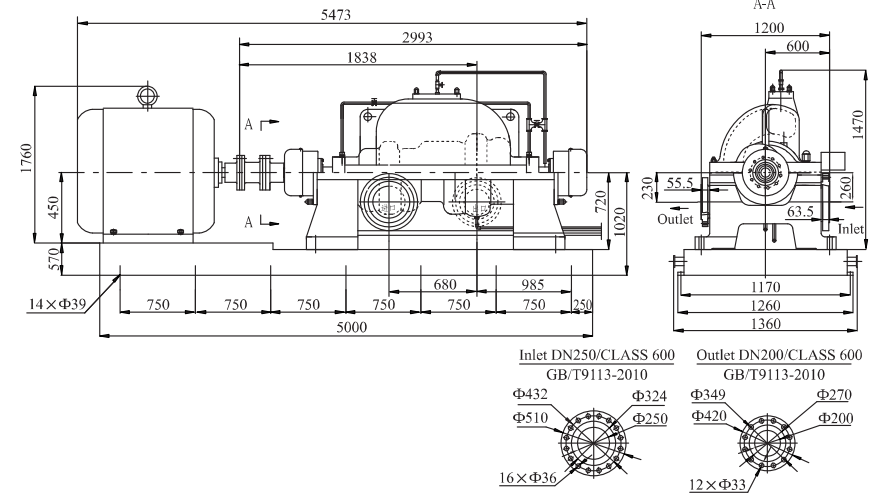
● Performance curve VMHP520-5,50Hz



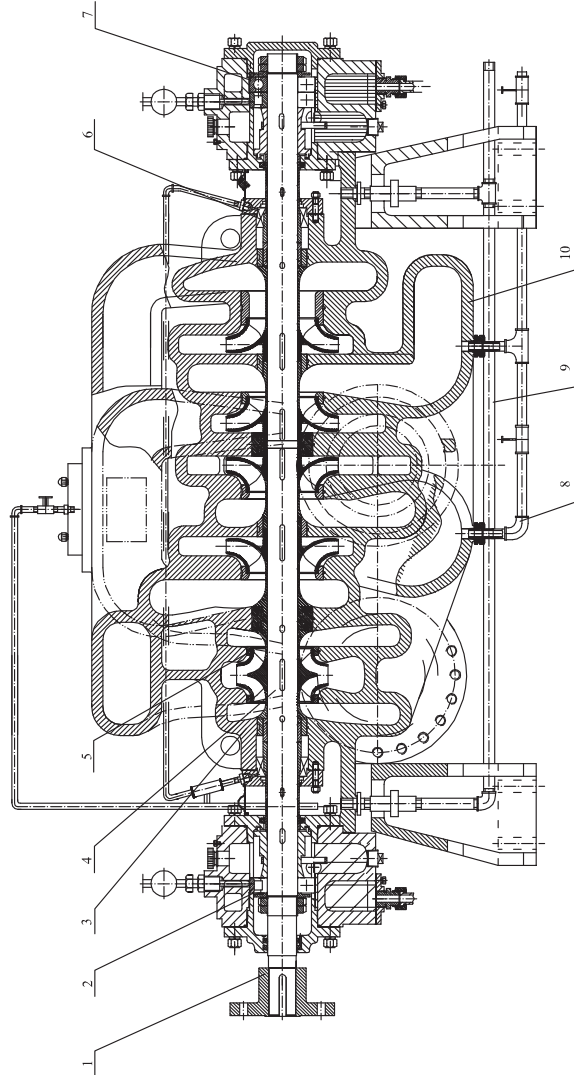
● Performance table VMHP520-5

Model	Power (kw)	Q (m³/h)	200	240	280	320	360	400	440	480	520	540	Weight (kg)
VMHP520-5	1120	H (m)	678	670	658	645	630	613	594	572	547	533	12090

● Installation sketch VMHP520-5



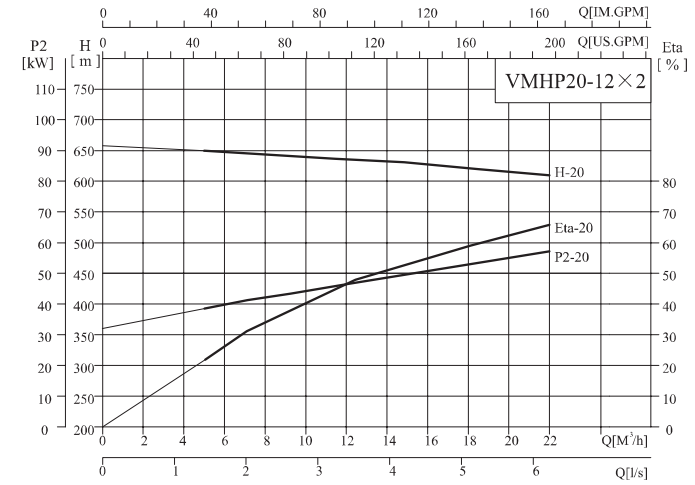
● Sectional drawing VMHP520-5



- 1. Coupling
- 2. Front bearing body subassembly
- 3. Pump cover
- 4. Rotor assembly
- 5. Impeller neck ring
- 6. Mechanical seal
- 7. Back bearing body subassembly
- 8. Oil drain pipe
- 9. Blow-off pipe
- 10. Base

VMHP20-12 x 2 (Supporting the system of daily output 500 tons fresh water)

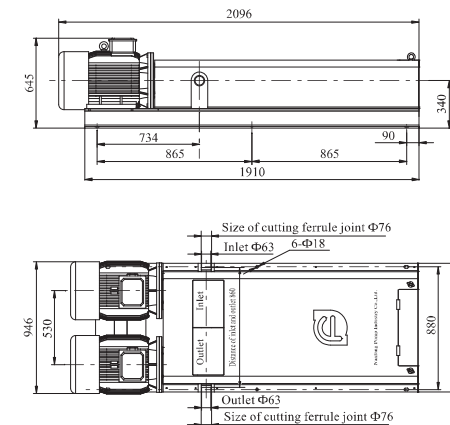
● Performance curve VMHP20-12 x 2,60Hz



● Performance table VMHP20-12 x 2

Model	Driving motor (kW)	Q (m³/h)	5	10	15	20	22	Weight (kg)
VMHP20-12 x 2	30 x 2	H (m)	650	642	633	620	612	865

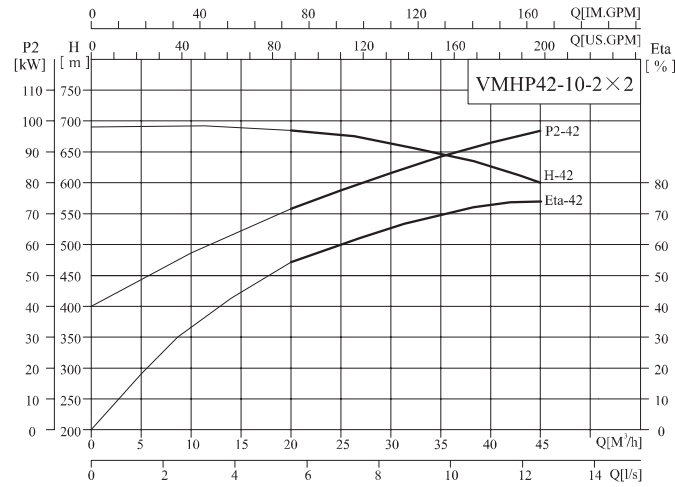
● Installation sketch VMHP20-12 x 2





VMHP42-10-2 x 2(Supporting the system of daily output 500 tons fresh water)

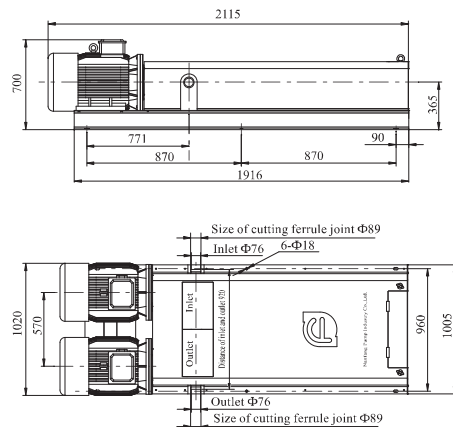
● Performance curve VMHP42-10-2 x 2 ,60Hz



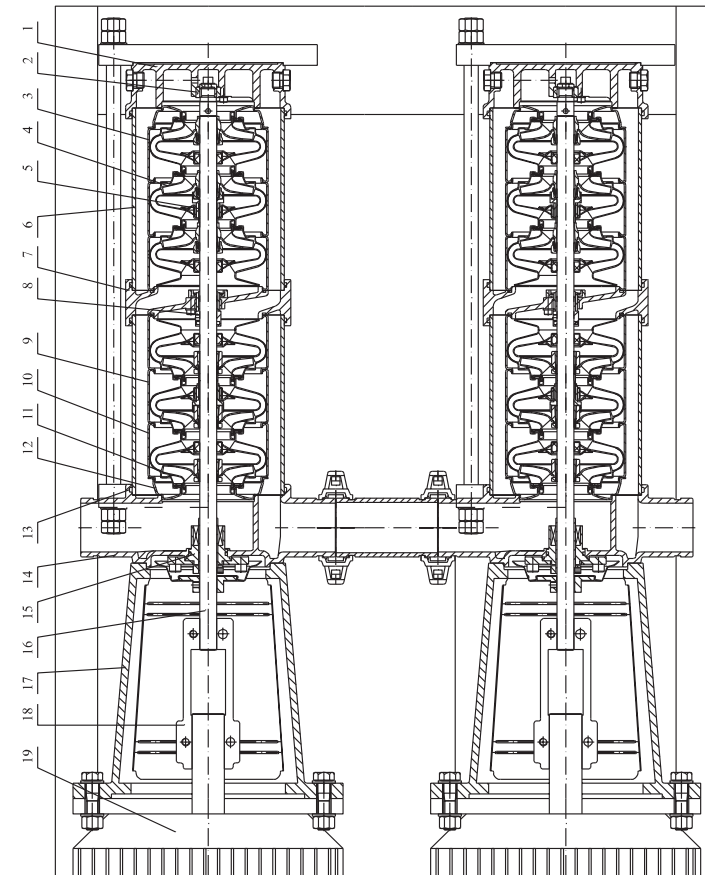
● Performance table VMHP42-10-2 x 2

Model	Driving motor (kW)	Q (m³/h)	20	22	25	30	35	40	42	45	Weight (kg)
VMHP42-10-2 x 2	52 x 2	H (m)	682	678	671	662	644	623	611	599	1015

● Installation sketch VMHP42-10-2 x 2



● Sectional drawing VMHP20-12X2, VMHP42-10-2X2



- 1.Base
- 2.Bottom bearing
- 3.Diffuser
- 4.Impeller
- 5.Sleeve
- 6.Cylinder
- 7.Exchange chamber
- 8.Exchange chamber bearing
- 9.Reverse support diffuser
- 10.Reverse diffuser
- 11.Revers Impeller
- 12.inducer
- 13.O ring
- 14.Inlet and outlet chamber
- 15.Mechanical seal
- 16.Shaft
- 17.Bracket
- 18.Coupling
- 19.Motor

## CH horizontal seawater lift pump

### Brief introduction

● CH horizontal seawater lift pump is specially designed for R/O seawater desalting system. The wet parts adopt duplex stainless steel and super austenitic stainless steel. Mechanical seal rings adopt anti-seawater corrosion material.

● It can apply to R/O seawater desalting system and boost seawater pressure of pressure exchange energy recovery system, then transfer it to R/O membrane.

### Working conditions

- Seawater
- Temperature: ambient temperature
- Ambient temperature: up to 40 °C
- Altitude: up to 1000m
- Max. working pressure: CH62.5-20-1: 75 bar  
CH125-100-315/18.5, CH200-150-315/45, CH250-200-315/75: 63 bar

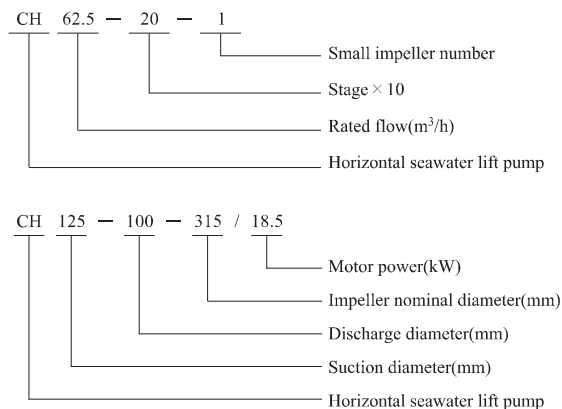
### Features

- TEFC motor; protection level IP55; insulation level: F; voltage 3x380V
- Compact design, good reliability,
- High efficiency, elegant and small appearance.

### Performance curve

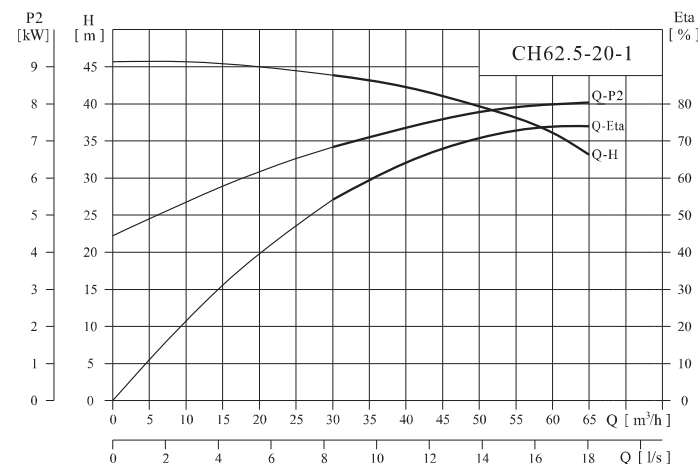
- Curve tolerance in conformity to ISO9906: 2012 Grade 3B.
- All curves are based on the measured value of 50Hz, constant motor speed 2950rpm.
- Measurement is done with 20°C air-free water, kinematic viscosity of 1mm<sup>2</sup>/s.

### Definition of model



## CH62.5-20-1(Supporting the system of daily output 1000 tons fresh water)

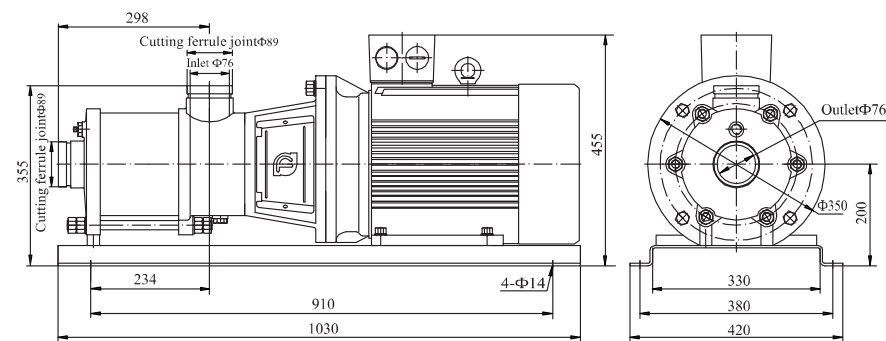
### Performance curve CH62.5-20-1,50Hz



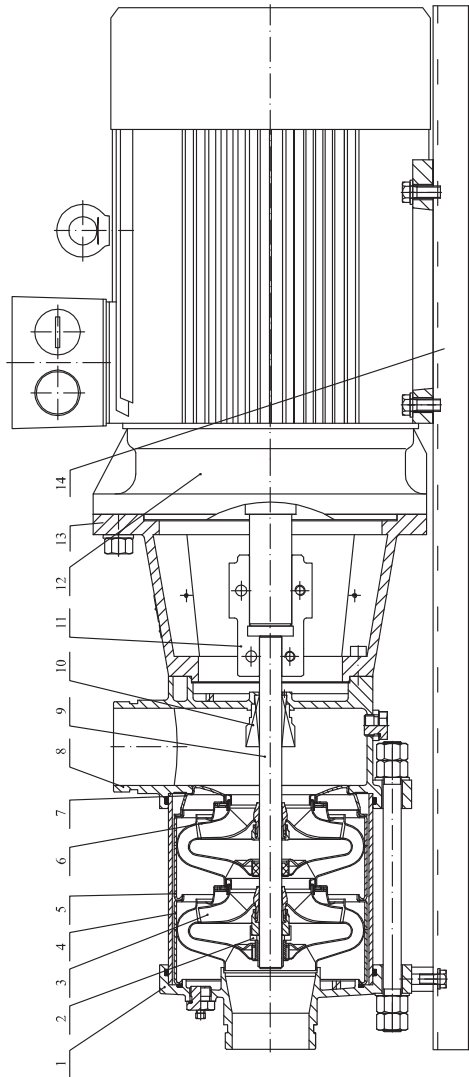
### Performance table CH62.5-20-1

Model	Power (kW)	Q (m³/h)	30	35	40	45	50	55	60	62.5	65	Weight (kg)
CH62.5-20-1	11	H (m)	44	43	42	41	39.5	38	36	35	33	170

### Installation sketch CH62.5-20-1



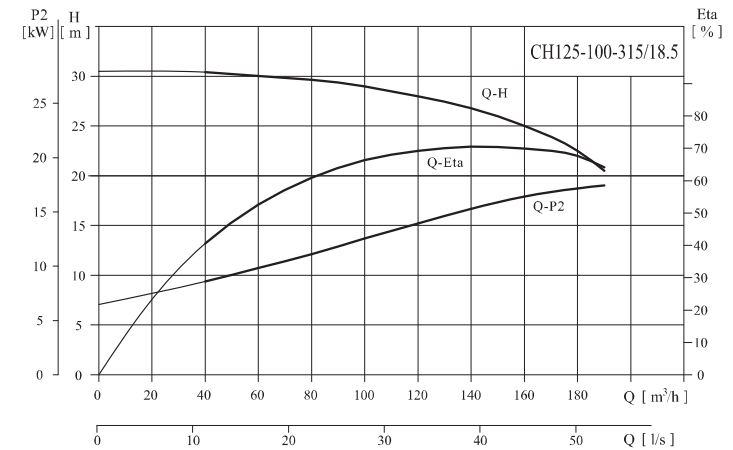
## Sectional drawing CH62.5-20-1



- 1. Outlet chamber
- 2. Sleeve
- 3. Small impeller
- 4. Support diffuser
- 5. Diffuser
- 6. Big impeller
- 7. Inducer
- 8. Inlet chamber
- 9. Shaft
- 10. Mechanical seal
- 11. Coupling
- 12. Motor
- 13. Bracket
- 14. Base

## CH125-100-315/18.5 (Supporting the system of daily output 2500 tons fresh water)

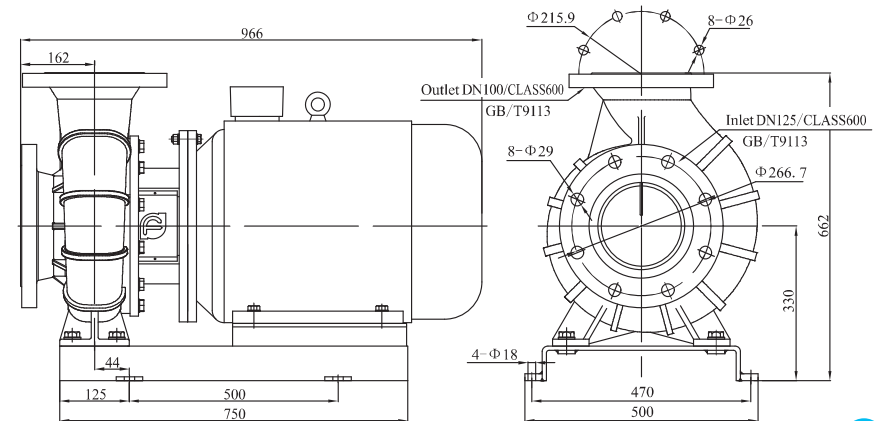
### Performance curve CH125-100-315/18.5, 50Hz



### Performance table CH125-100-315/18.5

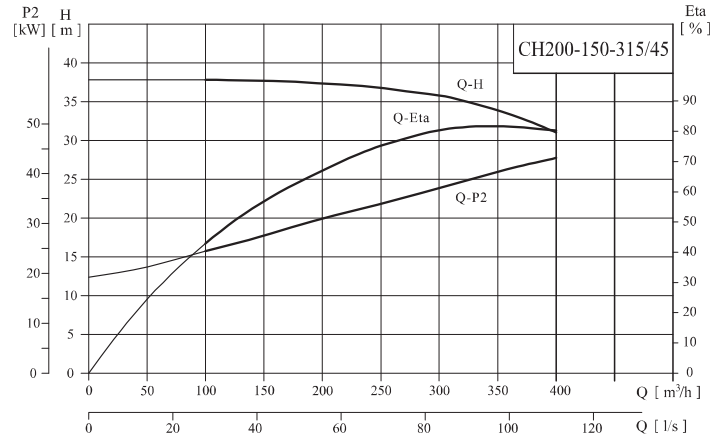
Model	Power (kW)	Q (m³/h)	40	60	80	100	120	140	160	180	190	Weight (kg)
CH125-100-315/18.5	18.5	H (m)	30.4	30	29.5	29	28	26.8	25	22.5	20.5	409

### Installation sketch CH125-100-315/18.5



## CH200-150-315/45

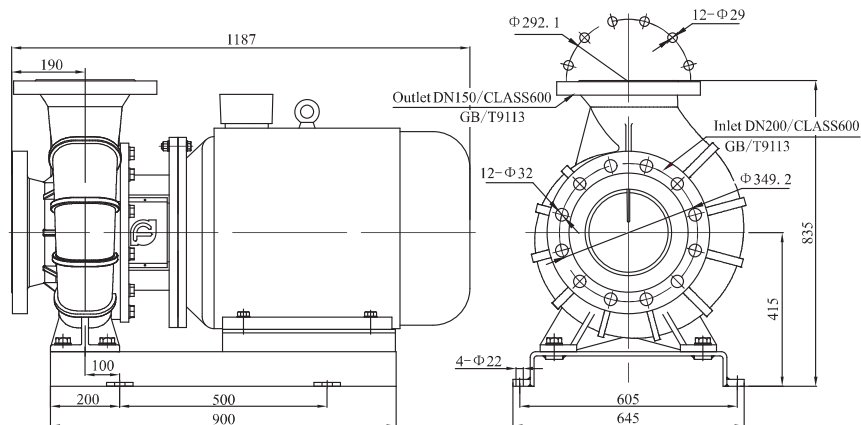
### ● Performance curve CH200-150-315/45,50Hz



### ● Performance table CH200-150-315/45

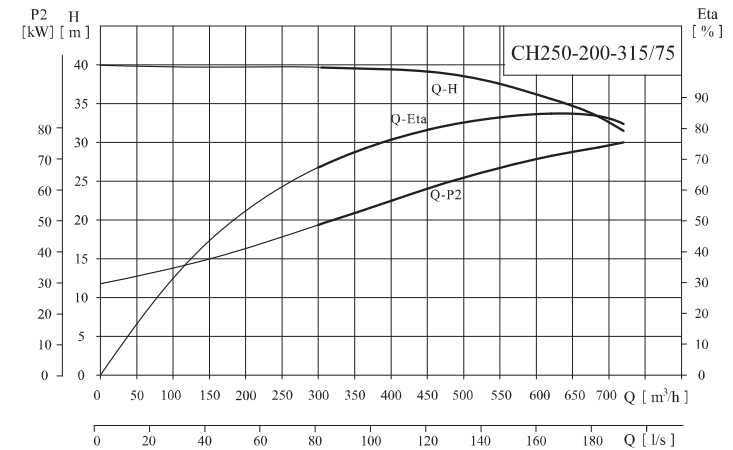
Model	Power (kW)	Q (m³/h)	100	150	200	250	300	350	400	Weight (kg)
CH200-150-315/45	45	H (m)	38.2	38	37.7	37.1	36	34.2	31.6	720

### ● Installation sketch CH200-150-315/45



## CH250-200-315/75

### ● Performance curve CH250-200-315/75,50Hz



### ● Performance table CH250-200-315/75

Model	Power (kW)	Q (m³/h)	300	350	400	450	500	550	600	660	720	Weight (kg)
CH250-200-315/75	75	H (m)	39.5	39.5	39.2	39	38.4	37.5	36	34	31.5	894

### ● Installation sketch CH250-200-315/75

