



CHM 50Hz

Horizontal Multistage Centrifugal Pump



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ZHEJIANG NANBENG FLUID MACHINERY CO.,LTD.

Company Profile



Zhejiang Nanbeng Fluid Machinery Co.,Ltd. is a leading pump manufacturer committed to the Chinese people's water safety to make our own contribution. The team who founded the company is the first generation research and development of stainless steel centrifugal pump in China, has accumulated more than 30 years of technology research and development experience, core members presided over and participated in the development of national standard of the "light, small multistage centrifugal pump", national science and technology support plans for the 11th, 12th and 13th five-years plan, "national torch project", "national key new product project" and other projects of research and development, design and production. R&D centre equipped with industry-leading CFD fluid 3D simulation design software, domestic top stamping equipment and automatic production line to ensure high performance and high stability of products, our comprehensive R & D and production strength achieve domestic advanced level.

The construction area of the company is 82,000 square meters, design output value is one billion per year. We can offer you a wide range of stainless steel stamping and welding centrifugal pump, pipeline circulation pump, end suction centrifugal pump, sewage submersible pump, high pressure pump, fire pump and water supply and drainage complete sets of products for many applications as highest performance in booster sets and pressurization, building services, water treatment, industry, irrigation and industrial process, fire-fighting sets, pumping of underground water, drainage and sewage, utilities and desalination. Now we are looking for more partners around the world, we sincerely looking forward to your joining at Huzhou China. Global water challenges as well as opportunities, require excellence in pumping technologies and close cooperation between pump designers and manufacturers. Let's cooperate and make our contribution to the water security for more people all over the world.

Content

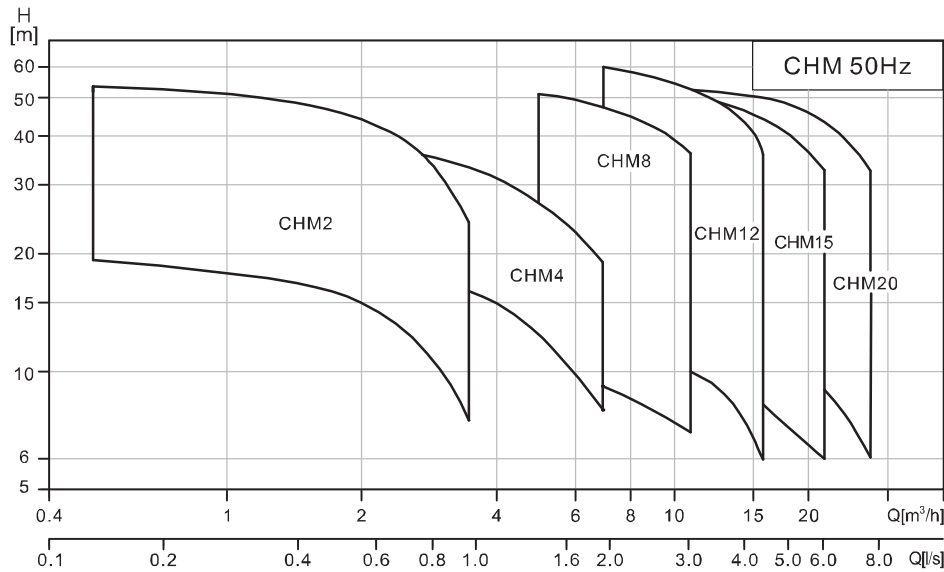
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Performance range



Product range

| Description | Model | | | | | |
|--------------------|-----------|------------|----------|---------|---------|---------|
| | CHM | | | | | |
| Rated flow[m³/h] | 2 | 4 | 8 | 12 | 15 | 20 |
| Rated flow[l/s] | 0.56 | 1.1 | 2.2 | 3.3 | 4.2 | 5.6 |
| Flow range[m³/h] | 0.5~3.5 | 1~7 | 5~11 | 7~16 | 8~22 | 10~28 |
| Flow range[l/s] | 0.14~0.97 | 0.28~1.9 | 1.4~3 | 1.9~4.4 | 2.2~6.1 | 2.8~7.8 |
| Max. pressure[bar] | 5.5 | 5.8 | 5.4 | 6.4 | 5.4 | 5.8 |
| Power[kW] | 0.37~0.75 | 0.37~1.1 | 0.75~2.2 | 0.75~3 | 1.1~4 | 1.1~4.4 |
| Temp[°C] | -15~+105 | | | | | |
| Max. efficiency[%] | 44 | 57 | 60 | 63 | 70 | 66 |
| Pipelines | G1 | 入口G1¼ 出口G1 | G1½ | G1½ | G2 | G2 |

Summary

CHM is non-self-priming light horizontal multistage centrifugal pump. It has compact structure with extended shaft motor and the liquid is input in axis direction and output in radius direction. The flow passage adopts the process of stainless steel plate stamping and welding, which features the pump of energy efficiency, low noise, environmental protection, beautiful appearance, lightweight, convenient installation and maintenance, and high reliability.

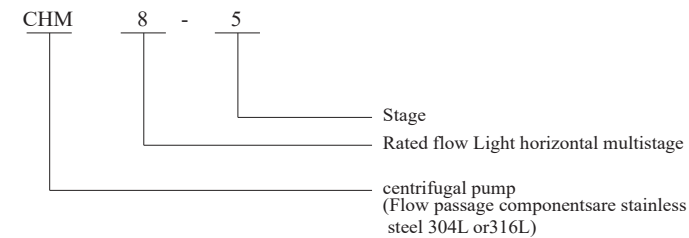
Motor

- TEFC, 2-pole motor;
- Protection class: Ip55;
- Insulation class: F;
- Standard voltage: 50Hz 1×220V
3×220V/380V
3×380V
- Max. power of single-phase motor is 2.4KW

Operating condition

- This pump is applied for thin, clean, non-flammable, non-explosive, solid free, fiber free, physically and chemically water-like liquid.
- Liquid temperature: -15°C to 70°C for the normal temperature type
-15°C to 105°C for the hot water type
- Ambient temp.: up to 40°C
- Max. working pressure: 10 bar
- The maximum inlet pressure are limited by the maximum working pressure.

Model definition



Application

CHM series pump is mainly used in industry:

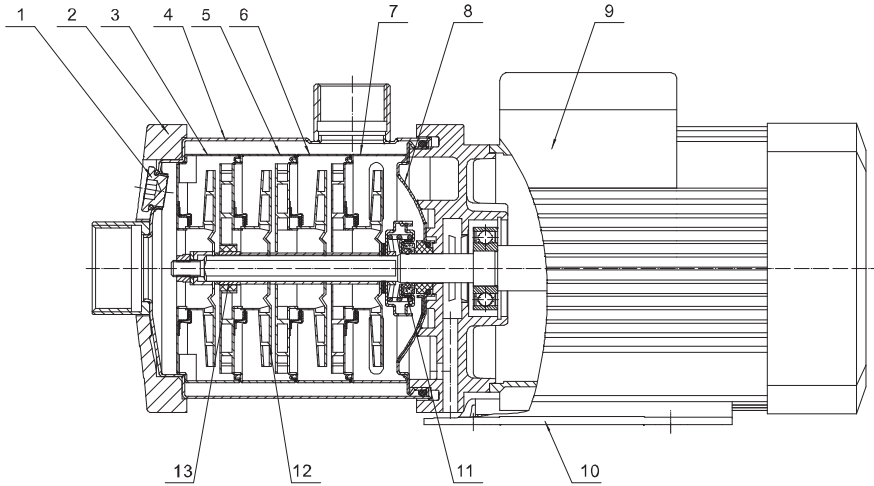
- Air conditional system
- Cooling system
- Industrial cleaning
- Water treatment (Water purification)
- Aquaculture
- Fertilization/measuring system
- Environment application
- Other specific application

Curve conditions

The requirements applies to all the performance curves below:

1. All curves are based on the measured value of the motor at a constant speed of 2900rpm.
2. Curve tolerance in conformity to S9906:2012, grade 3B.
3. Measurement is done with 20°C air-free water, kinematic viscosity of 1mm²/sec.
4. The pump use should refer to the performance range of the bold curve to prevent overheating by too little flow or motor overload by excessive flow.

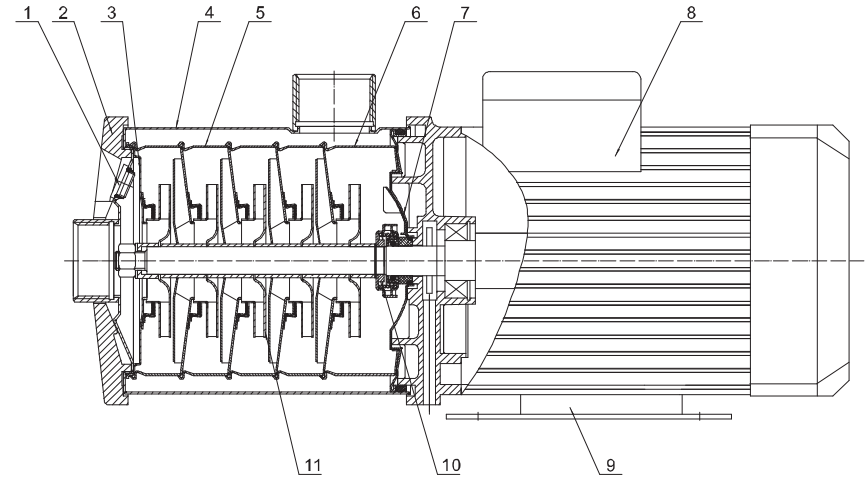
Sectional drawing CHM2,4



Material CHM2,4

| NO. | Name | Material | AISI/ASTM |
|-----|--------------------------|--------------------------|-----------|
| 1 | Plug | Stainless steel | AISI304 |
| 2 | Clamp plate | Die-cast aluminum | ASTM383.1 |
| 3 | Inducer | Stainless steel | AISI304 |
| 4 | Inlet and outlet chamber | Stainless steel | AISI304 |
| 5 | Support diffuser | Stainless steel | AISI304 |
| 6 | Diffuser | Stainless steel | AISI304 |
| 7 | Top diffuser | Stainless steel | AISI304 |
| 8 | Back seat | Stainless steel | AISI304 |
| 9 | Motor | | |
| 10 | Base plate | Steel plate | AISI1015 |
| 11 | Mechanical seal | Graphite/Silicon carbide | |
| 12 | Impeller | Stainless steel | AISI304 |
| 13 | Bearing | Tungsten carbide | |

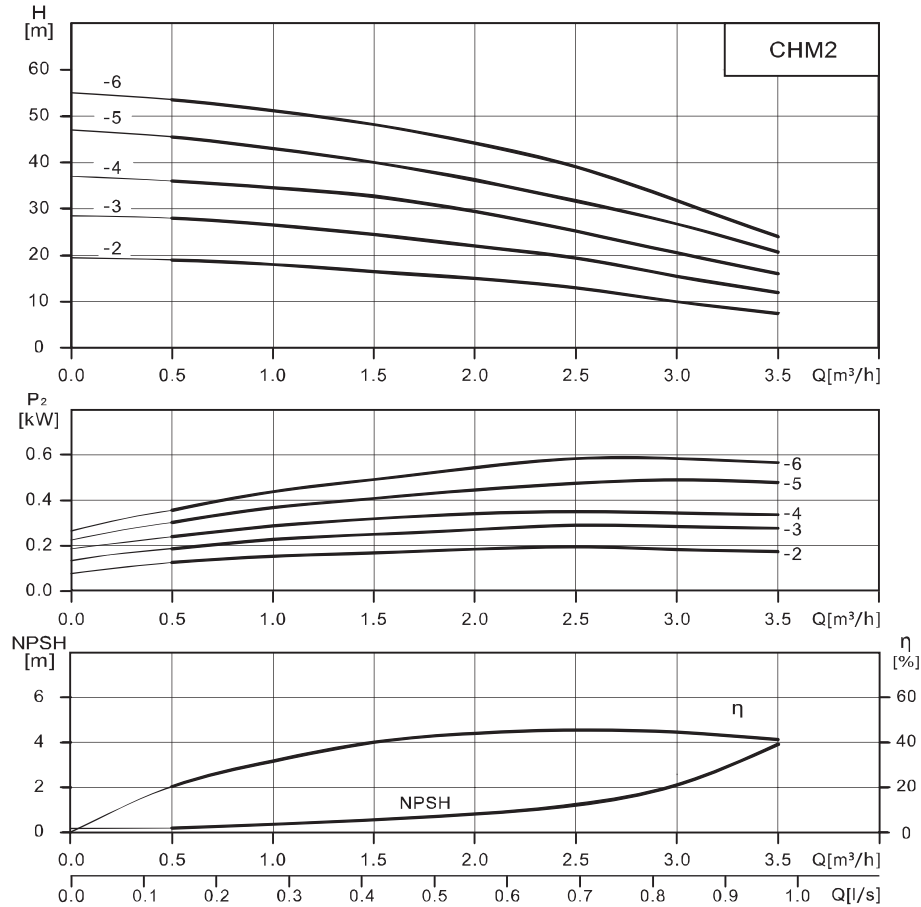
Sectional drawing CHM8,12,15,20



Material CHM8,12,15,20

| NO. | Name | Material | AISI/ASTM |
|-----|--------------------------|--------------------------|-----------|
| 1 | Plug | Stainless steel | AISI304 |
| 2 | Clamp plate | Die-cast aluminum | ASTM383.1 |
| 3 | Inducer | Stainless steel | AISI304 |
| 4 | Inlet and outlet chamber | Stainless steel | AISI304 |
| 5 | Diffuser | Stainless steel | AISI304 |
| 6 | Top diffuser | Stainless steel | AISI304 |
| 7 | Back seat | Stainless steel | AISI304 |
| 8 | Motor | | |
| 9 | Base plate | Steel plate | AISI1015 |
| 10 | Mechanical seal | Graphite/Silicon carbide | |
| 11 | Impeller | Stainless steel | AISI304 |

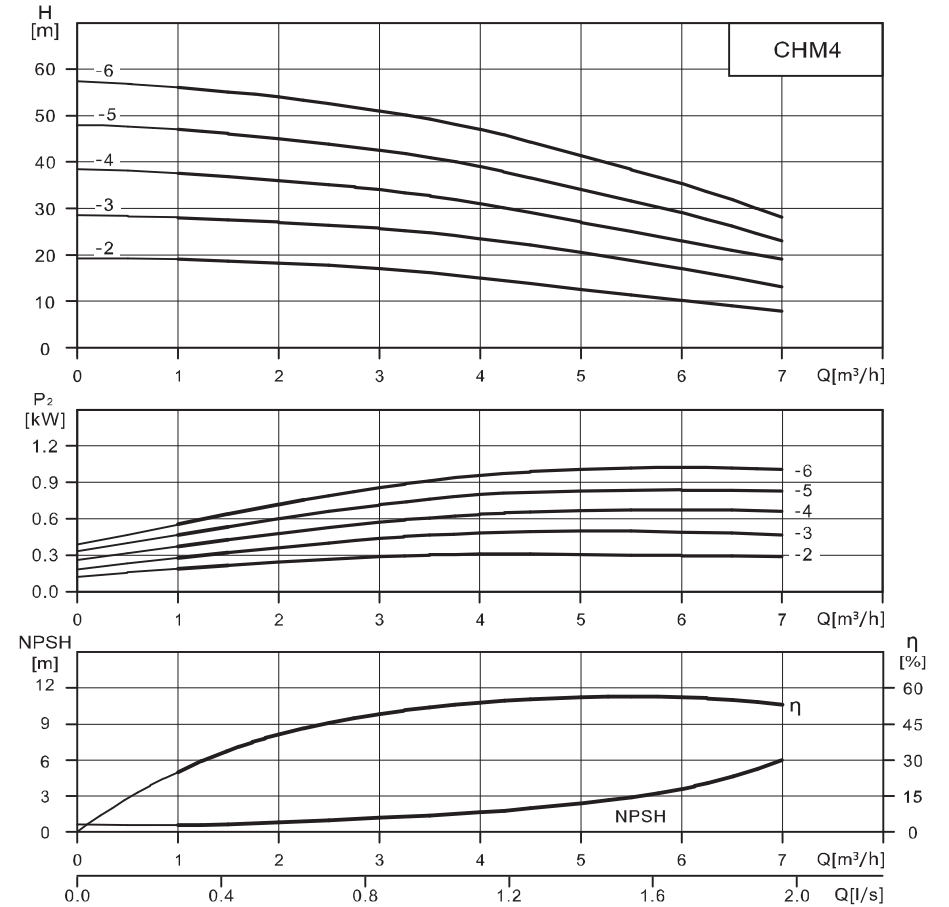
Performance Curve



Performance Table

| Model | Motor (kW) | Q (m³/h) | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 |
|-------|------------|----------|------|------|------|-----|------|------|------|
| 2-2 | 0.37 | H (m) | 19 | 18 | 16.5 | 15 | 13 | 10 | 7.5 |
| 2-3 | 0.37 | | 28 | 26.5 | 24.5 | 22 | 19 | 15.5 | 12 |
| 2-4 | 0.55 | | 36 | 34.5 | 33 | 29 | 25 | 20.5 | 16 |
| 2-5 | 0.55 | | 45.5 | 43 | 40 | 36 | 31.5 | 26.5 | 20.5 |
| 2-6 | 0.75 | | 53.5 | 51 | 48 | 44 | 39 | 32 | 24 |

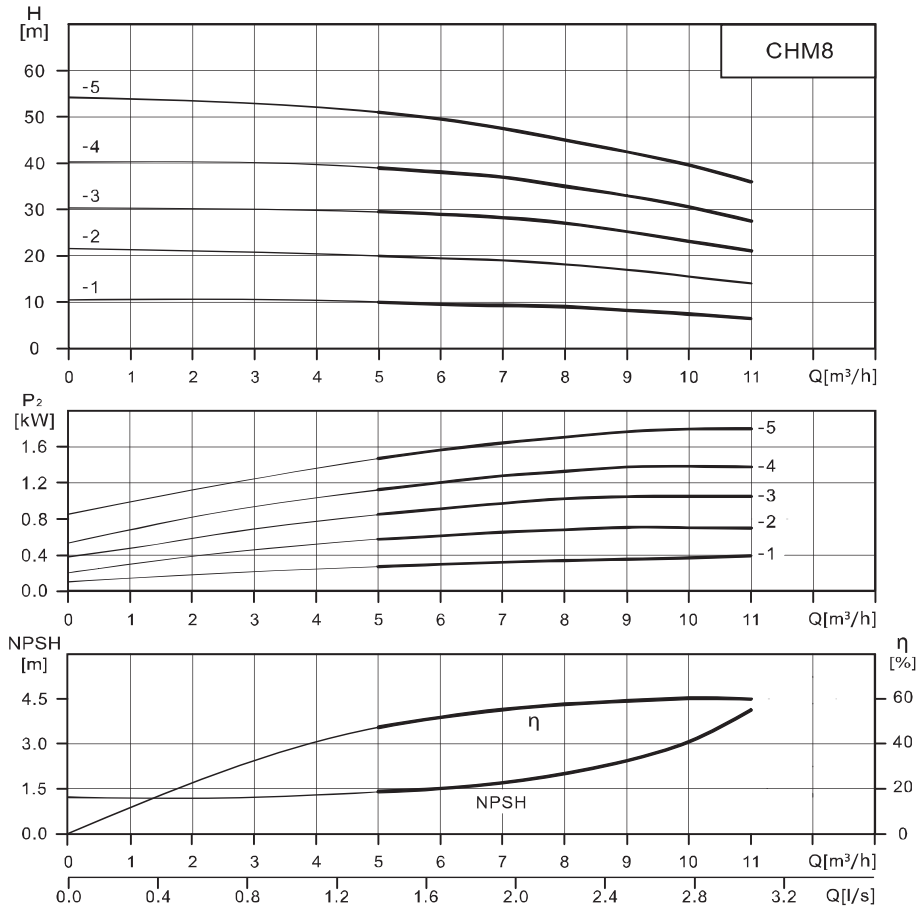
Performance Curve



Performance Table

| Model | Motor (kW) | Q (m³/h) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------|------------|----------|------|----|------|------|------|------|----|
| 4-2 | 0.37 | H (m) | 19 | 18 | 17 | 15 | 12.5 | 10 | 8 |
| 4-3 | 0.55 | | 28 | 27 | 26 | 23.5 | 20.5 | 17 | 13 |
| 4-4 | 0.75 | | 37.5 | 36 | 34 | 31 | 27 | 23 | 19 |
| 4-5 | 1.1 | | 47 | 45 | 42.5 | 39 | 34 | 29 | 23 |
| 4-6 | 1.1 | | 56 | 54 | 51 | 47 | 41.5 | 35.5 | 28 |

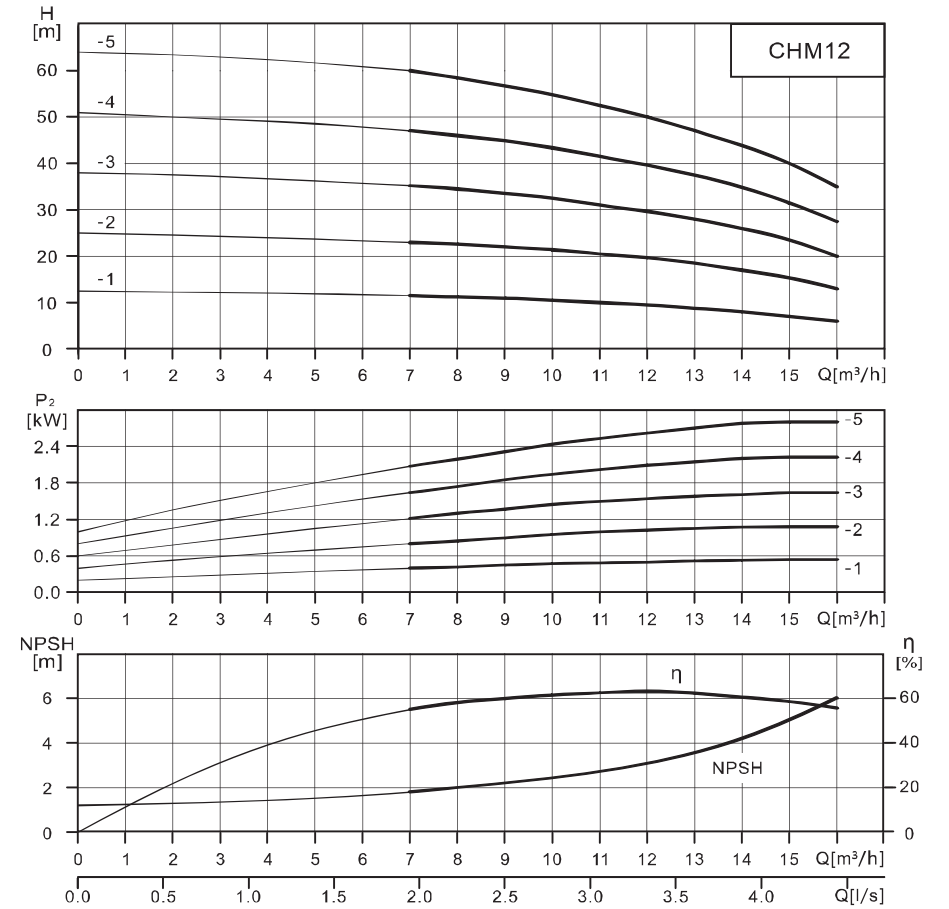
Performance Curve



Performance Table

| Model | Motor (kW) | Q (m³/h) | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|-------|------------|----------|------|------|------|----|------|------|------|
| 8-1 | 0.75 | H (m) | 10 | 9.5 | 9.3 | 9 | 8 | 7.5 | 7 |
| 8-2 | 0.75 | | 20 | 19.5 | 19 | 18 | 17 | 15.5 | 14 |
| 8-3 | 1.1 | | 29.5 | 29 | 28 | 27 | 25 | 23 | 21 |
| 8-4 | 1.5 | | 39 | 38 | 37 | 35 | 33 | 30.5 | 27.5 |
| 8-5 | 2.2 | | 51 | 49.5 | 47.5 | 45 | 42.5 | 39.5 | 36 |

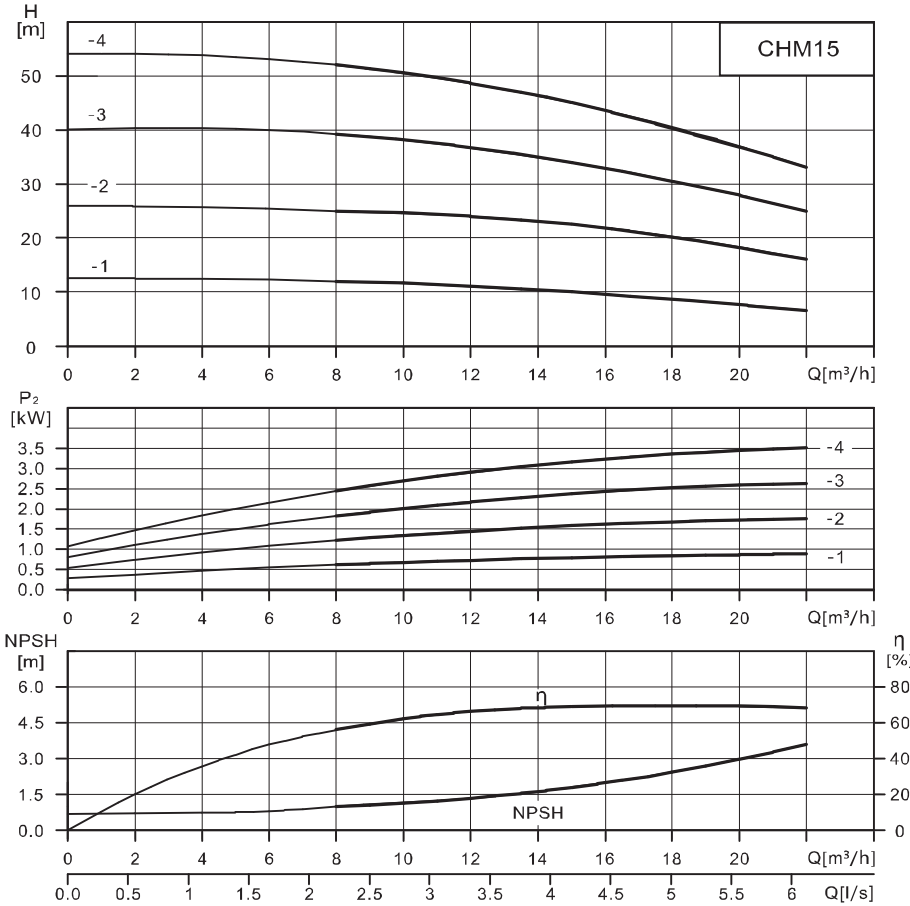
Performance Curve



Performance Table

| Model | Motor (kW) | Q (m³/h) | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|-------|------------|----------|------|------|------|------|------|------|------|----|------|------|
| 12-1 | 0.75 | H (m) | 11.5 | 11.2 | 11 | 10.5 | 10 | 9.5 | 9 | 8 | 7 | 6 |
| 12-2 | 1.2 | | 23 | 22.5 | 22 | 21.5 | 20.5 | 19.5 | 18.5 | 17 | 15.5 | 13 |
| 12-3 | 1.8 | | 35 | 34.5 | 33.5 | 32.5 | 31 | 29.5 | 28 | 26 | 23.5 | 20 |
| 12-4 | 2.4 | | 47 | 46 | 45 | 43.5 | 41.5 | 39.5 | 37.5 | 35 | 31.5 | 27.5 |
| 12-5 | 3.0 | | 60 | 58 | 56.5 | 55 | 52.5 | 50 | 47 | 44 | 40 | 35 |

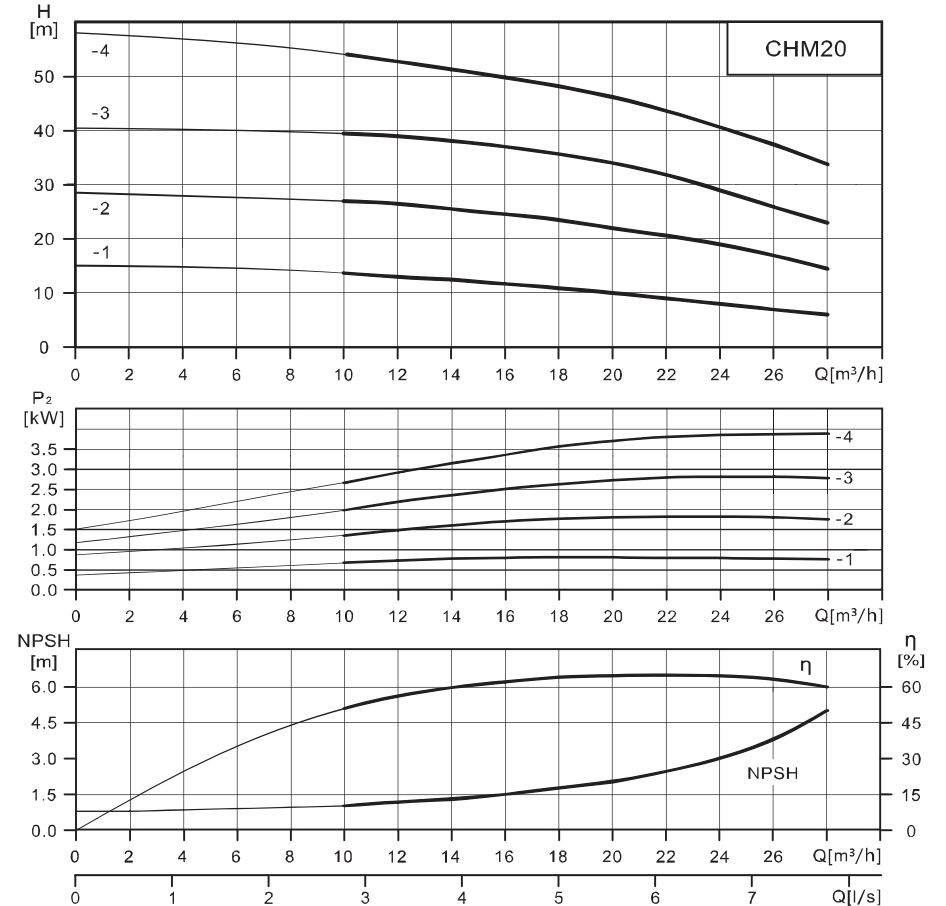
Performance Curve



Performance Table

| Model | Motor (kW) | Q (m³/h) | 8 | 10 | 12 | 14 | 15 | 16 | 18 | 20 | 22 |
|-------|------------|----------|------|----|------|-----|----|------|-----|-----|----|
| 15-1 | 1.1 | H (m) | 12 | 11 | 10.5 | 9.5 | 9 | 8.5 | 7.5 | 6.5 | 6 |
| 15-2 | 2.2 | | 24.5 | 24 | 23 | 22 | 21 | 20.5 | 19 | 18 | 16 |
| 15-3 | 3.0 | | 38 | 37 | 35.5 | 34 | 33 | 32 | 30 | 28 | 25 |
| 15-4 | 4.0 | | 51 | 50 | 48 | 46 | 45 | 43 | 40 | 37 | 33 |

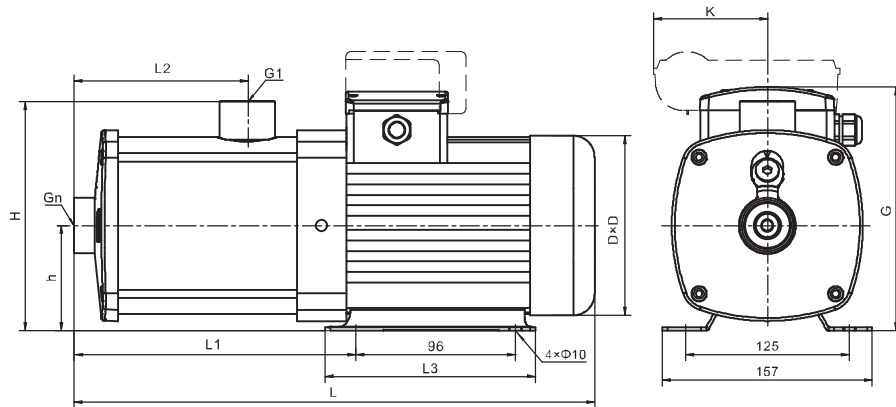
Performance Curve



Performance Table

| Model | Motor (kW) | Q (m³/h) | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 |
|-------|------------|----------|------|------|------|------|------|------|------|------|----|------|
| 20-1 | 1.1 | H (m) | 13.5 | 13 | 12.5 | 12 | 11 | 10 | 9 | 8 | 7 | 6 |
| 20-2 | 2.2 | | 27 | 26.5 | 25.5 | 25 | 23.5 | 22 | 20.5 | 18.5 | 17 | 14.5 |
| 20-3 | 4.0 | | 39.5 | 39 | 38 | 37.5 | 35.5 | 34 | 31.5 | 29 | 26 | 23 |
| 20-4 | 4.4 | | 53 | 52 | 51 | 50 | 48.5 | 46.5 | 43 | 40 | 36 | 32.5 |

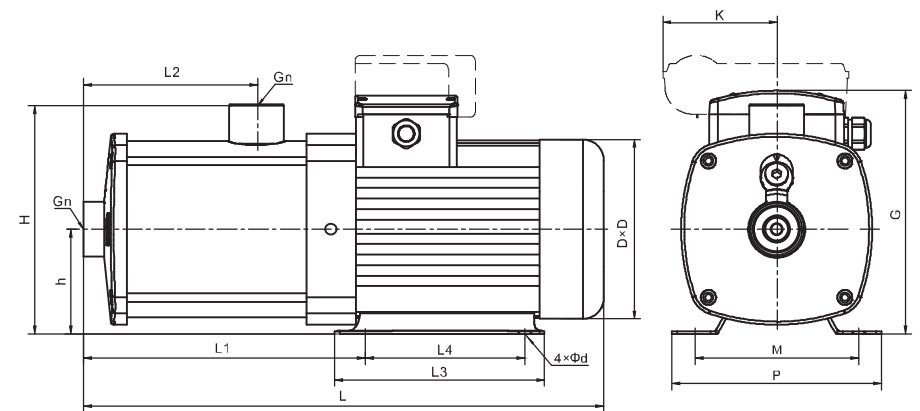
Installation sketch CHM2,4



Size and weight CHM2,4

| Motor | Model | Size(mm) | | | | | | | | | | Weight (kg) |
|----------------------------|-------|----------|-----|-----|-----|----|----|-----|---------|---------|----|-------------|
| | | L | L1 | L2 | L3 | n | h | H | D | G | K | |
| Three phase / Single phase | 2-2 | 323 | 131 | 72 | 150 | 1 | 75 | 165 | 141 | 178/212 | 62 | 12 |
| | 2-3 | 323 | 131 | 72 | 150 | 1 | 75 | 165 | 141 | 178/212 | 62 | 13 |
| | 2-4 | 341 | 149 | 90 | 150 | 1 | 75 | 165 | 141 | 178/212 | 62 | 14 |
| | 2-5 | 359 | 167 | 108 | 150 | 1 | 75 | 165 | 141 | 178/212 | 62 | 15 |
| | 2-6 | 400 | 185 | 126 | 160 | 1 | 85 | 175 | 151/161 | 195/230 | 91 | 17 |
| Three phase / Single phase | 4-2 | 322 | 131 | 72 | 150 | 1¼ | 75 | 165 | 141 | 178/212 | 62 | 13 |
| | 4-3 | 376 | 185 | 126 | 150 | 1¼ | 75 | 165 | 141 | 178/212 | 62 | 14 |
| | 4-4 | 399 | 185 | 126 | 160 | 1¼ | 85 | 175 | 151/161 | 195/230 | 91 | 16 |
| | 4-5 | 426/441 | 212 | 153 | 160 | 1¼ | 85 | 175 | 151/161 | 195/230 | 91 | 17 |
| | 4-6 | 453/468 | 239 | 180 | 160 | 1¼ | 85 | 175 | 151/161 | 195/230 | 91 | 18 |

Installation sketch CHM8,12,15,20



Size and weight CHM8,12,15,20

| Motor | Model | Size(mm) | | | | | | | | | | | | | | Weight (kg) |
|----------------------------|-------|----------|---------|-----|-----|-----|----|-----|-----|----|---------|---------|----|-----|-----|-------------|
| | | L | L1 | L2 | L3 | L4 | n | h | H | d | D | G | K | P | M | |
| Three phase / Single phase | 8-1 | 366/368 | 172/190 | 78 | 140 | 96 | 1½ | 100 | 218 | 10 | 151/161 | 210/246 | 91 | 158 | 125 | 14 |
| | 8-2 | 366/368 | 172/190 | 78 | 140 | 96 | 1½ | 100 | 218 | 10 | 151/161 | 210/246 | 91 | 158 | 125 | 15 |
| | 8-3 | 411/418 | 202/222 | 108 | 140 | 96 | 1½ | 100 | 218 | 10 | 151/161 | 210/246 | 91 | 158 | 125 | 17 |
| | 8-4 | 467/479 | 249/269 | 138 | 200 | 140 | 1½ | 100 | 218 | 10 | 171/175 | 220/256 | 91 | 200 | 160 | 21 |
| | 8-5 | 497/509 | 279/299 | 168 | 200 | 140 | 1½ | 100 | 218 | 10 | 171/175 | 220/256 | 91 | 200 | 160 | 24 |
| Three phase / Single phase | 12-1 | 366/368 | 172/190 | 78 | 140 | 96 | 1½ | 100 | 218 | 10 | 151/161 | 210/246 | 91 | 158 | 125 | 14 |
| | 12-2 | 381/368 | 172/190 | 78 | 140 | 96 | 1½ | 100 | 218 | 10 | 151/161 | 210/246 | 91 | 158 | 125 | 16 |
| | 12-3 | 437/449 | 219/239 | 108 | 200 | 140 | 1½ | 100 | 218 | 10 | 171/175 | 220/256 | 91 | 200 | 160 | 22 |
| | 12-4 | 477/479 | 249/269 | 138 | 200 | 140 | 1½ | 100 | 218 | 10 | 171/175 | 220/256 | 91 | 200 | 160 | 25 |
| | 12-5 | 548 | 277 | 168 | 180 | 140 | 1½ | 100 | 218 | 10 | 196 | 232 | / | 200 | 160 | 31 |
| Three phase / Single phase | 15-1 | 394/401 | 187/207 | 93 | 140 | 96 | 2 | 100 | 218 | 10 | 151/161 | 210/246 | 91 | 158 | 125 | 16 |
| | 15-2 | 420/432 | 203/200 | 93 | 200 | 140 | 2 | 100 | 218 | 10 | 171/175 | 220/256 | 91 | 200 | 160 | 22 |
| | 15-3 | 516 | 247 | 138 | 180 | 140 | 2 | 100 | 218 | 12 | 196 | 232 | / | 200 | 160 | 29 |
| | 15-4 | 572 | 311 | 183 | 180 | 140 | 2 | 112 | 230 | 12 | 214 | 262 | / | 230 | 190 | 37 |
| Three phase / Single phase | 20-1 | 394/401 | 187/207 | 93 | 140 | 96 | 2 | 100 | 218 | 10 | 151/161 | 210/246 | 91 | 158 | 125 | 16 |
| | 20-2 | 420/432 | 203/200 | 93 | 200 | 140 | 2 | 100 | 218 | 10 | 171/175 | 220/256 | 91 | 200 | 160 | 22 |
| | 20-3 | 527 | 266 | 138 | 180 | 140 | 2 | 112 | 230 | 12 | 214 | 262 | / | 200 | 160 | 36 |
| | 20-4 | 601 | 311 | 183 | 180 | 140 | 2 | 112 | 230 | 12 | 257 | 262 | / | 230 | 190 | 38 |