



# LC Vertical Long Axis Pump





## General

Type LC vertical long-shaft pump is a newly developed product with both homeland and overseas advanced experience in design and manufacture. It is used to deliver clear water, sewage with certain solid particles (such as iron scrap, sand, coal powder etc.) and industry waste water and seawater with corrosive. The temperature of liquid can not be above 80°C. It is widely used in original water works, waste water factory, metallurgy and steel industry (especially suitable for delivering oxygenation iron sheet water in swirl pool), power station, mine, civil project and farmland etc.

## Type Description

300LC200-50\*2

- \* 300 — Outlet diameter of pump is 300mm
- \* LC — Vertical long-shaft pump
- \* 200 — Design capacity is 200m<sup>3</sup>/h
- \* 50 — The head is 50m at design point
- \* 2 — Impeller stage number

## Performance Range

Capacity: 50-8400m<sup>3</sup>/h

Head: 12.5-250m

## Construction Feature

The type LC vertical long-shaft pump is installed with single foundation, its inlet is vertical downward and outlet is horizontal. The pump and the motor are directly connected. The rotation of pump rotor is counter clockwise looking from the motor to the pump; the main features are as following:



## Construction Feature

1. It is fine designed with hydraulic design software. It makes impeller and other wearing parts have a long life because of anti-abrasive impeller and Diffuser. The pump is not only reliable, safe, steady but also saving energy.
2. There is filter in pump inlet with proper hole, this can not only prevent impurity entering pump to damage pump but also decrease inlet loss and increase pump efficiency.
3. Impeller adopts balance hole to balance axial force. There is replaceable seal ring in front and back cover board of impeller to protect impeller and pump.
4. Pump middle shaft, water column and guard pipe are multi-burl, middle shaft uses technology of sleeve coupling. Water pipe can be more or less for different inundated depth according to user's requirement. Impeller and Diffuser are multi-stage for different head.
5. Water pipe is connected by flange with guide bearing in its middle. Pump guide bearing adopts ethane, it can also adopt rubber (when the temperature of liquid is over 55℃). Shaft is protected by guard column, the guide bearing should be supplied with exterior cooling lubricating water, while delivering sewage.
6. The remaining axial force of pump and the weight of rotor parts are borne by thrust bearing in motor seat or motor with thrust bearing. The thrust bearing is lubricated by dilute oil and cooled with exterior water. The thrust bearing can have element for monitoring temperature.
7. Pump shaft seal adopts packing seal, there is replaceable shaft sleeve in shaft seal and guide bearing to protect shaft and it is convenient to adjust axial location of impeller by nut in bearing parts upper end or pump coupling.
8. Pump can be equipped with controller which can automatically start and stop pump according to liquid level, give an alarm for over loading and control many pumps in long-distance. There is automatic exhaust system for pump with diameter over 500mm.

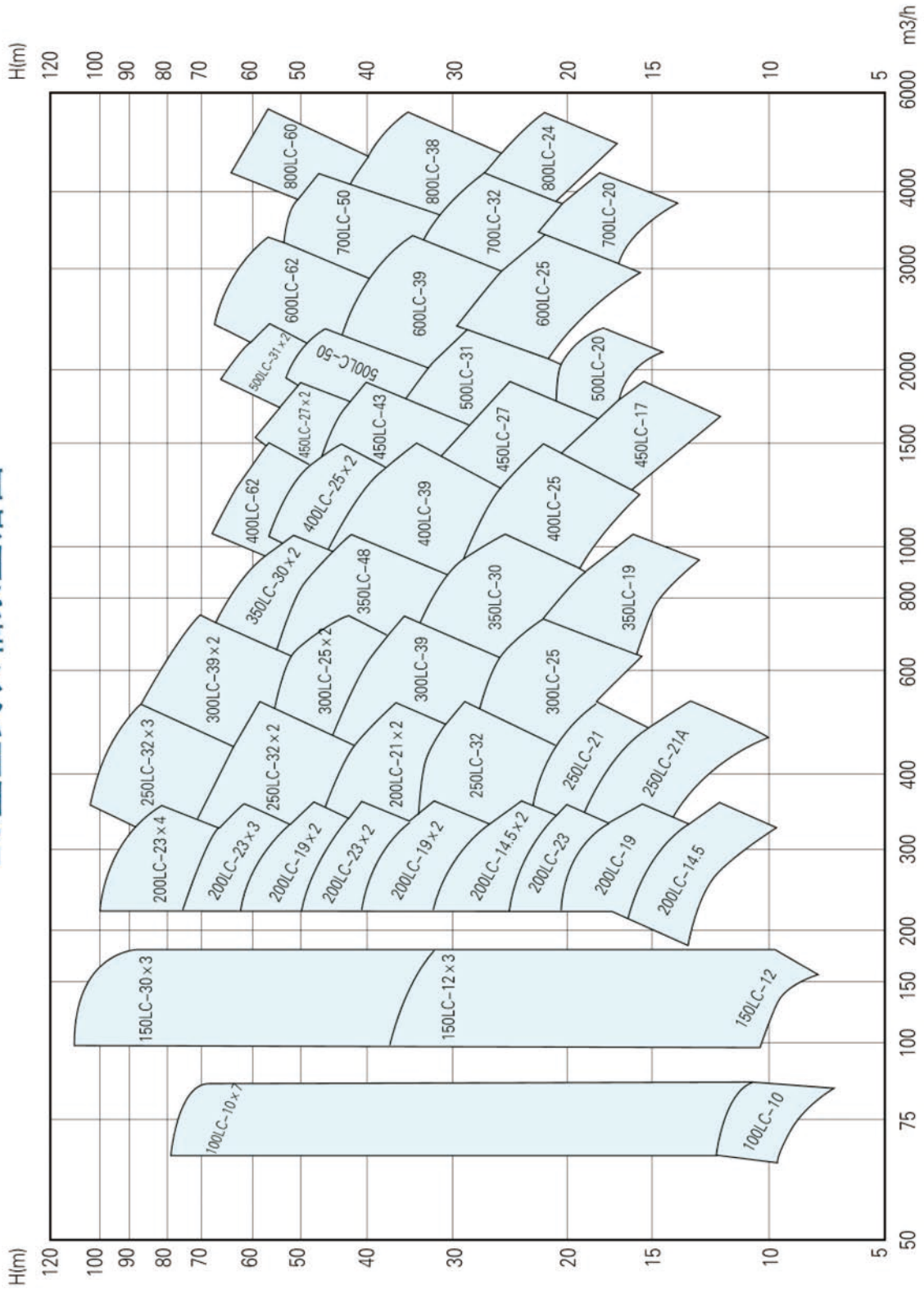


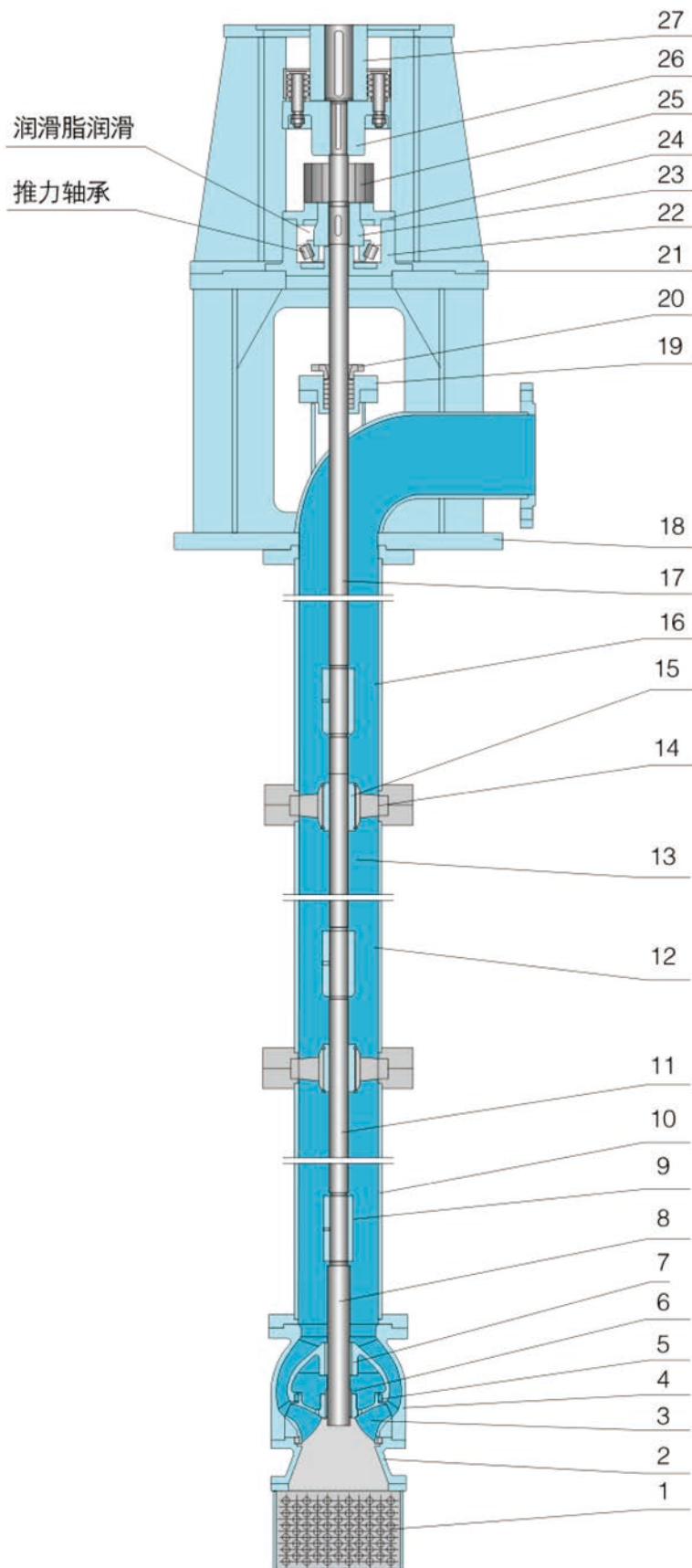
## MAIN PARTS MATERIAL

| 液体种类<br>主要零件 | 清水              | 污水                     | 海水           |                    |
|--------------|-----------------|------------------------|--------------|--------------------|
|              | I               | II                     | III          | IV                 |
| 喇叭口          | HT200           | HT200或QT400-18         | HT200Ni2Cr   | 321或316L不锈钢        |
| 叶轮           | HT200           | QT400-18或铸钢或ZG1Cr13Ni1 | ZG1Cr18Ni9Ti | ZCuZn16Si4或316L不锈钢 |
| 密封环☆         | HT200           | QT400-18或2Cr13         | HT200Ni2Cr   | ZCuZn16Si4或316L不锈钢 |
| 导叶体          | HT200           | QT400-18或铸钢            | HT200Ni2Cr   | ZG00Cr17Ni14Mo2    |
| 扬水管、护管       | Q235-A          | Q235-A                 | 1Cr18Ni9Ti   | 00Cr17Ni14Mo2      |
| 轴            | 45或2Cr13        | 45或2Cr13               | 1Cr18Ni9Ti   | 00Cr17Ni14Mo2      |
| 轴套☆          | 2Cr13           | 2Cr13                  | 1Cr17Ni2     | 1Cr17Ni2           |
| 导轴承☆         | 聚四氟乙烯/赛龙/POM高分子 |                        |              |                    |
| 导轴承体         | HT200           | HT200或QT400-18         | HT200Ni2Cr   | ZG00Cr17Ni14Mo2    |
| 螺纹、套筒联轴器     | 45或2Cr13        | 40Cr或2Cr13             | 1Cr17Ni2     | 1Cr17Ni2           |
| 出水弯管         | Q235-A          | Q235-A                 | 1Cr18Ni9Ti   | 00Cr17Ni14Mo2      |
| 电机支座         | Q235-A          | Q235-A                 | Q235-A       | Q235-A             |



LC型立式长轴泵型谱图



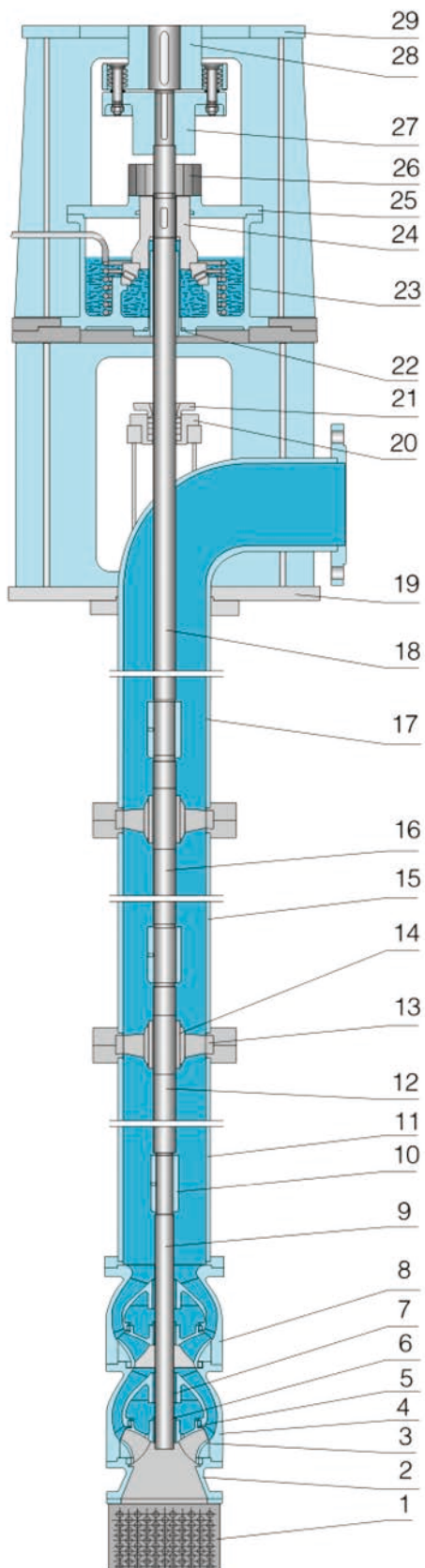


结构图一

- 1、滤网 Filter
- 2、喇叭口 Trumpet
- 3、叶轮 Impeller
- 4、导叶体 Guide Vane Body
- 5、密封环※ Sealing Ring
- 6、锥套 Sleeve
- 7、(下)导轴承※ (Bottom) Guide Bearing
- 8、叶轮轴 Impeller Shaft
- 9、螺纹联轴器 Threaded Coupling
- 10、下扬水管 Water Under The Young
- 11、下轴 Lower Shaft
- 12、扬水管 Jan Pipe
- 13、中轴 Axial
- 14、导轴承体 Guide Bearing Body
- 15、(中)导轴承※ (In) Guide Bearing
- 16、调整扬水管 Adjust Water Young
- 17、上轴 Upper Shaft
- 18、出水弯管 Water Pipe
- 19、填料函体 Stuffing The Body
- 20、填料压盖 Packing Gland
- 21、电机支座 Motor Bearing
- 22、轴承体 Bearing Body
- 23、轴承衬套 Bearing Bush
- 24、轴承体压盖 Bearing Body Gland
- 25、调整螺母 Adjusting Nut
- 26、泵联轴器 Pump Coupling
- 27、电机联轴器 Electrical Coupling

注：带※号的为易损件

With ※ is the wearing parts

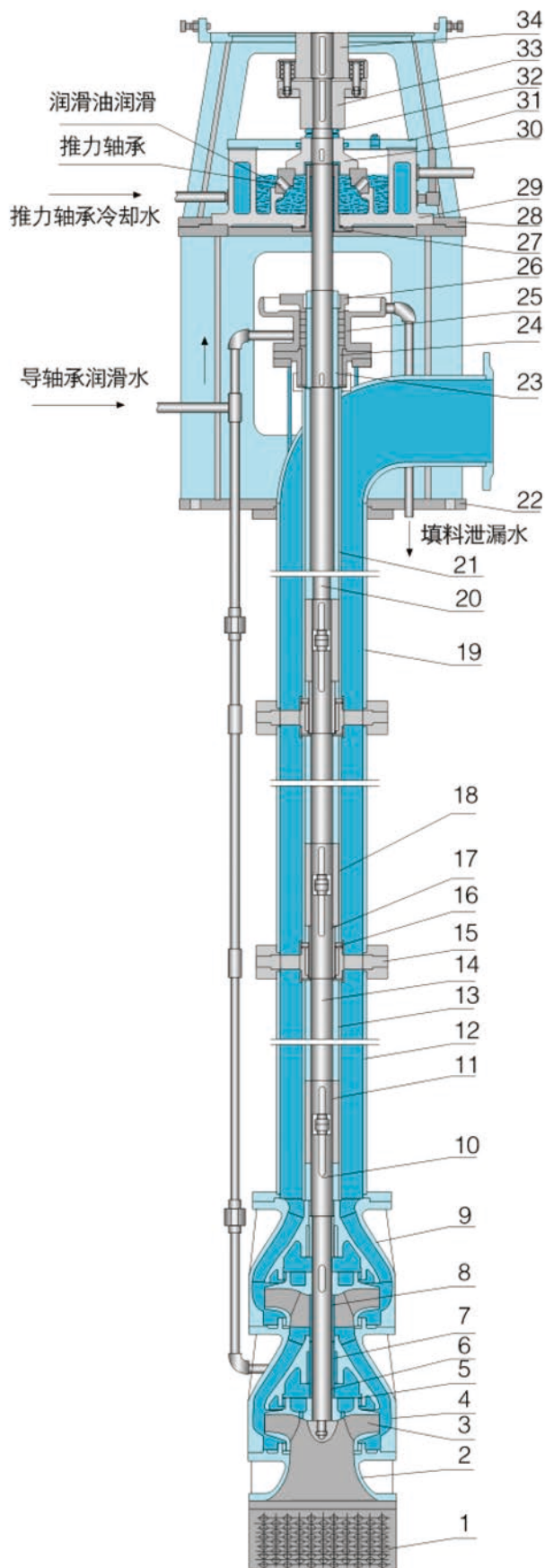


**结构图二**

- 1、滤网 **Filter**
- 2、喇叭口 **Trumpet**
- 3、叶轮 **Impeller**
- 4、导叶体 **Guide Vane Body**
- 5、密封环※ **Sealing Ring**
- 6、锥套 **Sleeve**
- 7、(下)导轴承※ **(Bottom) Guide Bearing**
- 8、末级导叶体 **Last Stage Guide Vane Body**
- 9、叶轮轴 **Impeller Shaft**
- 10、螺纹联轴器 **Threaded Coupling**
- 11、下扬水管 **Water Under The Young**
- 12、下轴 **Lower Shaft**
- 13、导轴承体 **Guide Bearing Body**
- 14、(中)导轴承※ **(In) Guide Bearing**
- 15、扬水管 **Jan Pipe**
- 16、中轴 **Axial**
- 17、调整扬水管 **Adjust Water Young**
- 18、上轴 **Upper Shaft**
- 19、出水弯管 **Water Pipe**
- 20、填料函体 **Stuffing The Body**
- 21、填料压盖 **Packing Gland**
- 22、密封套 **Gland**
- 23、轴承体 **Bearing Body**
- 24、轴承衬套 **Bearing Bush**
- 25、轴承体压盖 **Bearing Body Gland**
- 26、调整螺母 **Adjusting Nut**
- 27、泵联轴器 **Pump Coupling**
- 28、电机联轴器 **Electrical Coupling**
- 29、电机支座 **Motor Bearings**

注：带※号的为易损件

**With ※ is the wearing parts**



### 结构图三

- 1、滤网 Filter
  - 2、喇叭口 Trumpet
  - 3、叶轮 Impeller
  - 4、导叶体 Guide Vane Body
  - 5、密封环※ Sealing Ring
  - 6、(下)轴套 (Bottom) Sleeve
  - 7、(下)导轴承※ (Bottom) Guide Bearing
  - 8、叶轮挡套 Impeller Block Sets
  - 9、末级导叶体 Last Stage Guide Vane Body
  - 10、叶轮轴 Impeller Shaft
  - 11、套筒联轴器部件 Sleeve Coupling Components
  - 12、扬水管 Jan Pipe
  - 13、下护管 Under The Protective Tube
  - 14、中轴 Axial
  - 15、导轴承体 Guide Bearing Body
  - 16、(中)导轴承※ (In) Guide Bearing
  - 17、(中)轴套 (In) Sleeve
  - 18、中护管 Protective Tube
  - 19、调整扬水管 Adjust Water Young
  - 20、上轴 Upper Shaft
  - 21、上护管 Protection Tube
  - 22、出水弯管 Water Pipe
  - 23、填料轴套 Packing Sleeve
  - 24、上导轴套 Guide Sleeve
  - 25、填料函体 Stuffing The Body
  - 26、填料压盖 Packing Gland
  - 27、密封套 Gland
  - 28、电机支座 Motor Bearings
  - 29、轴承体 Bearing Body
  - 30、轴承衬套 Bearing Bush
  - 31、轴承体压盖 Bearing Body Gland
  - 32、调整螺母 Adjusting Nut
  - 33、泵联轴器 Pump Coupling
  - 34、电机联轴器 Electrical Coupling
- 注：带※号的为易损件  
With ※ is the wearing parts





泵性能表 Performance Data

| 型号<br>Type | 参数<br>Parameter | 叶轮<br>级数 | 流量<br>Capacity<br>Q |     | 扬程<br>Head<br>H | 转速<br>Speed<br>n | 轴功率<br>Shaft power<br>Pa | 配带电动机<br>Motor |       | 效率<br>Eff.<br>$\eta$ | 泵重<br>Weight |    |    |            |
|------------|-----------------|----------|---------------------|-----|-----------------|------------------|--------------------------|----------------|-------|----------------------|--------------|----|----|------------|
|            |                 |          | m <sup>3</sup> /h   | L/S |                 |                  |                          | m              | r/min |                      |              | kW | kW | 型号<br>Type |
|            |                 |          |                     |     |                 |                  |                          |                |       |                      |              |    |    |            |
| 100LC-10   | 1               | 85       | 23.6                | 10  | 1480            | 3.3              | 5.5                      | Y132S-4        | 70    | 480+90N              |              |    |    |            |
|            | 2               |          |                     | 20  |                 | 6.6              | 11                       | Y160M-4        |       | 510+90N              |              |    |    |            |
|            | 3               |          |                     | 30  |                 | 9.9              | 15                       | Y160L-4        |       | 540+90N              |              |    |    |            |
|            | 4               |          |                     | 40  |                 | 13.2             | 18.5                     | Y180M-4        |       | 570+90N              |              |    |    |            |
|            | 5               |          |                     | 50  |                 | 16.5             | 22                       | Y180L-4        |       | 600+90N              |              |    |    |            |
|            | 6               |          |                     | 60  |                 | 19.9             | 30                       | Y200L-4        |       | 630+90N              |              |    |    |            |
|            | 7               |          |                     | 70  |                 | 23.2             | 30                       | Y200L-4        |       | 660+90N              |              |    |    |            |
| 150LC-12   | 1               | 150      | 41.7                | 12  | 1480            | 6.8              | 11                       | Y160M-4        | 72    | 600+90N              |              |    |    |            |
|            | 2               |          |                     | 24  |                 | 13.6             | 18.5                     | Y180M-4        |       | 630+90N              |              |    |    |            |
|            | 3               |          |                     | 36  |                 | 20.4             | 30                       | Y200L-4        |       | 660+90N              |              |    |    |            |
|            | 4               |          |                     | 48  |                 | 27.3             | 45                       | Y225M-4        |       | 690+90N              |              |    |    |            |
| 150LC-30   | 1               | 150      | 41.7                | 30  | 2950            | 16.8             | 22                       | Y180M-2        | 73    | 600+100N             |              |    |    |            |
|            | 2               |          |                     | 60  |                 | 33.6             | 45                       | Y225M-2        |       | 630+100N             |              |    |    |            |
|            | 3               |          |                     | 90  |                 | 50.4             | 75                       | Y280S-2        |       | 680+100N             |              |    |    |            |

泵性能表 Performance Data

| 型号<br>Type | 参数<br>Parameter | 流量<br>Capacity<br>Q |      | 扬程<br>Head<br>H | 转速<br>Speed<br>n | 轴功率<br>Shaft power<br>Pa | 配带电动机<br>Motor |       | 效率<br>Eff.<br>$\eta$ | 泵重<br>Weight |    |    |            |
|------------|-----------------|---------------------|------|-----------------|------------------|--------------------------|----------------|-------|----------------------|--------------|----|----|------------|
|            |                 | m <sup>3</sup> /h   | L/S  |                 |                  |                          | m              | r/min |                      |              | kW | kW | 型号<br>Type |
|            |                 |                     |      |                 |                  |                          |                |       |                      |              |    |    |            |
| 200LC-14.5 | 240             | 66.7                | 16.4 | 1480            | 14.5             | 22                       | Y180L-4        | 74.3  | 900+170N             |              |    |    |            |
|            | 300             | 83.3                | 14.5 |                 | 15.6             |                          |                | 76.0  |                      |              |    |    |            |
|            | 360             | 100                 | 11.8 |                 | 17.4             |                          |                | 66.5  |                      |              |    |    |            |
| 200LC-19   | 240             | 66.7                | 21.3 | 1480            | 18.2             | 30                       | Y200L-4        | 76.6  | 900+170N             |              |    |    |            |
|            | 300             | 83.3                | 19   |                 | 20.4             |                          |                | 76.2  |                      |              |    |    |            |
|            | 360             | 100                 | 15.4 |                 | 21.3             |                          |                | 70.7  |                      |              |    |    |            |
| 200LC-23   | 240             | 66.7                | 25.3 | 1480            | 21.6             | 37                       | Y225S-4        | 76.7  | 900+170N             |              |    |    |            |
|            | 300             | 83.3                | 23   |                 | 24.7             |                          |                | 76.1  |                      |              |    |    |            |
|            | 360             | 100                 | 20.2 |                 | 28.1             |                          |                | 70.6  |                      |              |    |    |            |



泵性能表 Performance Data

| 型号<br>Type   | 流量<br>Capacity<br>Q |       | 扬程<br>Head<br>H | 转速<br>Speed<br>n | 轴功率<br>Shaft power<br>Pa | 配带电动机<br>Motor |            | 效率<br>Eff.<br>η | 泵重<br>Weight |
|--------------|---------------------|-------|-----------------|------------------|--------------------------|----------------|------------|-----------------|--------------|
|              | m³/h                | L/S   |                 |                  |                          | 功率<br>Power    | 型号<br>Type |                 |              |
|              |                     |       | kW              | kW               | %                        |                |            | kg              |              |
| 200LC-14.5×2 | 240                 | 66.7  | 32.8            | 1480             | 29                       | 45             | Y225M-4    | 74.3            | 1020+170N    |
|              | 300                 | 83.3  | 29              |                  | 31.2                     |                |            | 76              |              |
|              | 360                 | 100   | 23.6            |                  | 34.8                     |                |            | 66.5            |              |
| 200LC-19×2   | 240                 | 66.7  | 42.6            | 1480             | 36.4                     | 55             | Y250M-4    | 76.6            | 1020+170N    |
|              | 300                 | 83.3  | 38              |                  | 40.8                     |                |            | 76.2            |              |
|              | 360                 | 100   | 30.8            |                  | 42.6                     |                |            | 70.7            |              |
| 200LC-23×2   | 240                 | 66.7  | 50.6            | 1480             | 43.2                     | 75             | Y280S-4    | 76.7            | 1020+170N    |
|              | 300                 | 83.33 | 46              |                  | 49.4                     |                |            | 76.1            |              |
|              | 360                 | 100   | 40.4            |                  | 56.2                     |                |            | 70.6            |              |
| 200LC-19×3   | 240                 | 66.7  | 63.9            | 1480             | 54.6                     | 75             | Y280S-4    | 76.6            | 1140+170N    |
|              | 300                 | 83.33 | 57              |                  | 61.2                     |                |            | 76.2            |              |
|              | 360                 | 100   | 46.2            |                  | 63.9                     |                |            | 70.7            |              |
| 200LC-23×3   | 240                 | 66.7  | 75.9            | 1480             | 64.8                     | 110            | Y315S-4    | 76.7            | 1140+170N    |
|              | 300                 | 83.3  | 69              |                  | 74.1                     |                |            | 76.1            |              |
|              | 360                 | 100   | 60.6            |                  | 84.3                     |                |            | 70.6            |              |
| 200LC-23×4   | 240                 | 66.7  | 100.8           | 1480             | 86.0                     | 132            | Y315M-4    | 76.7            | 1260+170N    |
|              | 300                 | 83.3  | 92              |                  | 98.4                     |                |            | 76.1            |              |
|              | 360                 | 100   | 81.6            |                  | 111.2                    |                |            | 70.6            |              |
| 250LC-21     | 360                 | 100   | 23.1            | 1480             | 30.4                     | 45             | Y225M-4    | 74              | 1200+250N    |
|              | 450                 | 125   | 21              |                  | 32.6                     |                |            | 79              |              |
|              | 540                 | 150   | 18.2            |                  | 35.4                     |                |            | 75              |              |
| 250LC-21A    | 320                 | 88.9  | 18.9            | 1480             | 21.7                     | 37             | Y225S-4    | 76              | 1200+250N    |
|              | 400                 | 111.1 | 16.6            |                  | 23.5                     |                |            | 76.5            |              |
|              | 480                 | 133.3 | 13.3            |                  | 26.2                     |                |            | 66              |              |
| 250LC-32     | 360                 | 100   | 34.8            | 1480             | 44.4                     | 75             | Y280S-4    | 74.7            | 1280+250N    |
|              | 450                 | 125   | 32              |                  | 50.6                     |                |            | 77.5            |              |
|              | 540                 | 150   | 28.9            |                  | 56.8                     |                |            | 76.8            |              |
| 250LC-32A    | 320                 | 88.9  | 30.7            | 1480             | 34.7                     | 55             | Y250M-4    | 76              | 1280+250N    |
|              | 400                 | 111.1 | 28              |                  | 39.7                     |                |            | 77              |              |
|              | 480                 | 133.3 | 24.9            |                  | 44.8                     |                |            | 72.7            |              |
| 250LC-21×2   | 360                 | 100   | 46.2            | 1480             | 60.8                     | 90             | Y280M-4    | 74              | 1400+250N    |
|              | 450                 | 125   | 42              |                  | 65.2                     |                |            | 79              |              |
|              | 540                 | 150   | 36.4            |                  | 70.8                     |                |            | 75              |              |
| 250LC-32×2   | 360                 | 100   | 69.6            | 1480             | 88.8                     | 160            | Y315L1-4   | 74.7            | 1500+250N    |
|              | 450                 | 125   | 64              |                  | 101.2                    |                |            | 77.5            |              |
|              | 540                 | 150   | 57.8            |                  | 113.6                    |                |            | 76.8            |              |
| 250LC-32A×2  | 320                 | 88.9  | 61.4            | 1480             | 69.4                     | 110            | Y315S-4    | 76              | 1500+250N    |
|              | 400                 | 111.1 | 56              |                  | 79.4                     |                |            | 77              |              |
|              | 480                 | 133.3 | 49.8            |                  | 89.6                     |                |            | 72.7            |              |



泵性能表 Performance Data

| 参数<br>Parameter<br><br>型号<br>Type | 流量<br>Capacity<br>Q |       | 扬程<br>Head<br>H | 转速<br>Speed<br>n | 轴功率<br>Shaft power<br>Pa | 配带电动机<br>Motor |                       | 效率<br>Eff.<br>$\eta$ | 泵重<br>Weight |
|-----------------------------------|---------------------|-------|-----------------|------------------|--------------------------|----------------|-----------------------|----------------------|--------------|
|                                   | m <sup>3</sup> /h   | L/S   | m               | r/min            | kW                       | 功率<br>Power    | 型号<br>Type            | %                    | kg           |
|                                   |                     |       |                 |                  |                          | kW             |                       |                      |              |
| 250LC-32 × 3                      | 360                 | 100   | 104.4           | 1480             | 133.2                    | 220            | Y355M <sub>1</sub> -4 | 74.7                 | 1720+250N    |
|                                   | 450                 | 125   | 96              |                  | 151.8                    |                |                       | 77.5                 |              |
|                                   | 540                 | 150   | 86.7            |                  | 170.4                    |                |                       | 76.8                 |              |
| 250LC-32A × 3                     | 320                 | 88.9  | 92.1            | 1480             | 104.1                    | 160            | Y315L <sub>1</sub> -4 | 76                   | 1500+250N    |
|                                   | 400                 | 111.1 | 84              |                  | 119.1                    |                |                       | 77                   |              |
|                                   | 480                 | 133.3 | 74.7            |                  | 134.4                    |                |                       | 72.7                 |              |
| 300LC-25                          | 540                 | 150   | 27.5            | 1480             | 54.7                     | 75             | Y280S-4               | 74                   | 1340+270N    |
|                                   | 660                 | 183.3 | 25              |                  | 56.6                     |                |                       | 79.5                 |              |
|                                   | 750                 | 208.3 | 21.6            |                  | 58.9                     |                |                       | 75                   |              |
| 300LC-25A                         | 490                 | 136.1 | 22.8            | 1480             | 41.8                     | 55             | Y250M-4               | 73                   | 1340+270N    |
|                                   | 600                 | 166.8 | 21              |                  | 42.9                     |                |                       | 79                   |              |
|                                   | 680                 | 188.9 | 17.9            |                  | 45.0                     |                |                       | 74                   |              |
| 300LC-39                          | 540                 | 150   | 43              | 1480             | 85.5                     | 132            | Y315M-4               | 74                   | 1480+270N    |
|                                   | 660                 | 183.3 | 39              |                  | 88.8                     |                |                       | 79                   |              |
|                                   | 750                 | 208.3 | 35.6            |                  | 97.0                     |                |                       | 75                   |              |
| 300LC-39A                         | 490                 | 136.1 | 35.6            | 1480             | 65.3                     | 110            | Y315S-4               | 73                   | 1480+270N    |
|                                   | 600                 | 166.8 | 32              |                  | 67.8                     |                |                       | 78                   |              |
|                                   | 680                 | 188.9 | 29.5            |                  | 74.1                     |                |                       | 74                   |              |
| 300LC-25 × 2                      | 540                 | 150   | 55              | 1480             | 109.4                    | 160            | Y315L <sub>1</sub> -4 | 74                   | 1580+270N    |
|                                   | 660                 | 183.3 | 50              |                  | 113.1                    |                |                       | 79.5                 |              |
|                                   | 750                 | 208.3 | 43.2            |                  | 117.7                    |                |                       | 75                   |              |
| 300LC-39 × 2                      | 540                 | 150   | 86              | 1480             | 171.0                    | 250            | Y355M <sub>2</sub> -4 | 74                   | 1780+270N    |
|                                   | 660                 | 183.3 | 78              |                  | 177.6                    |                |                       | 79                   |              |
|                                   | 750                 | 208.3 | 71.2            |                  | 194.0                    |                |                       | 75                   |              |
| 300LC-39A × 2                     | 490                 | 136.1 | 71.2            | 1480             | 130.6                    | 200            | Y315L <sub>2</sub> -4 | 73                   | 1780+270N    |
|                                   | 600                 | 166.8 | 65              |                  | 135.5                    |                |                       | 78                   |              |
|                                   | 680                 | 188.9 | 59              |                  | 148.3                    |                |                       | 74                   |              |
| 350LC-19                          | 750                 | 208.3 | 22.2            | 1480             | 58.1                     | 90             | Y280M-4               | 78                   | 1540+270N    |
|                                   | 900                 | 250   | 19              |                  | 58.4                     |                |                       | 81                   |              |
|                                   | 1050                | 291.7 | 16.1            |                  | 60.6                     |                |                       | 76                   |              |
| 350LC-19A                         | 710                 | 197.2 | 20              | 1480             | 49.8                     | 75             | Y280S-4               | 78                   | 1540+270N    |
|                                   | 850                 | 236.1 | 17              |                  | 50.7                     |                |                       | 80                   |              |
|                                   | 980                 | 272.2 | 14.5            |                  | 51.5                     |                |                       | 75                   |              |
| 350LC-30                          | 750                 | 208.3 | 33.5            | 1480             | 90.1                     | 132            | Y315M-4               | 76                   | 1650+320N    |
|                                   | 900                 | 250   | 30              |                  | 92.0                     |                |                       | 80.5                 |              |
|                                   | 1050                | 291.7 | 25.5            |                  | 98.6                     |                |                       | 74                   |              |
| 350LC-30A                         | 710                 | 197.2 | 30.2            | 1480             | 78.2                     | 110            | Y315S-4               | 75                   | 1650+320N    |
|                                   | 850                 | 236.1 | 27              |                  | 80.5                     |                |                       | 79                   |              |
|                                   | 980                 | 272.2 | 23              |                  | 85.7                     |                |                       | 73                   |              |



## 泵性能表 Performance Data

| 参数<br>Parameter<br><br>型号<br>Type | 流量<br>Capacity<br>Q |       | 扬程<br>Head<br>H | 转速<br>Speed<br>n | 轴功率<br>Shaft power<br>Pa | 配带电动机<br>Motor |                       | 效率<br>Eff.<br>η | 泵重<br>Weight |
|-----------------------------------|---------------------|-------|-----------------|------------------|--------------------------|----------------|-----------------------|-----------------|--------------|
|                                   | m <sup>3</sup> /h   | L/S   | m               | r/min            | kW                       | 功率<br>Power    | 型号<br>Type            | %               | kg           |
|                                   |                     |       |                 |                  |                          | kW             |                       |                 |              |
| 350LC-30B                         | 675                 | 187.5 | 27.4            | 1480             | 68.1                     | 90             | Y280M-4               | 74              | 1650+320N    |
|                                   | 810                 | 225   | 25              |                  | 69.3                     |                |                       |                 |              |
|                                   | 945                 | 262.5 | 20.7            |                  | 74.0                     |                |                       |                 |              |
| 350LC-48                          | 750                 | 208.3 | 51.8            | 1480             | 143.1                    | 200            | Y315L <sub>2</sub> -4 | 74              | 1750+320N    |
|                                   | 900                 | 250   | 48              |                  | 146.8                    |                |                       |                 |              |
|                                   | 1050                | 291.7 | 42.5            |                  | 162.1                    |                |                       |                 |              |
| 350LC-48A                         | 710                 | 197.2 | 46.7            | 1480             | 122.6                    | 160            | Y315L <sub>1</sub> -4 | 74              | 1750+320N    |
|                                   | 850                 | 236.1 | 43              |                  | 127.4                    |                |                       |                 |              |
|                                   | 980                 | 272.2 | 38.4            |                  | 141.1                    |                |                       |                 |              |
| 350LC-48B                         | 675                 | 187.5 | 42              | 1480             | 105.8                    | 160            | Y315L <sub>1</sub> -4 | 73              | 1750+320N    |
|                                   | 810                 | 225   | 39              |                  | 109.8                    |                |                       |                 |              |
|                                   | 945                 | 262.5 | 34.4            |                  | 119.7                    |                |                       |                 |              |
| 350LC-30 × 2                      | 750                 | 208.3 | 67              | 1480             | 180.2                    | 250            | Y355M <sub>2</sub> -4 | 76              | 1920+320N    |
|                                   | 900                 | 250   | 60              |                  | 184.0                    |                |                       |                 |              |
|                                   | 1050                | 291.7 | 51              |                  | 197.2                    |                |                       |                 |              |
| 350LC-30A × 2                     | 710                 | 197.2 | 60.5            | 1480             | 156.7                    | 220            | Y355M <sub>1</sub> -4 | 75              | 1920+320N    |
|                                   | 850                 | 236.1 | 54              |                  | 160.7                    |                |                       |                 |              |
|                                   | 980                 | 272.2 | 46              |                  | 171.4                    |                |                       |                 |              |
| 350LC-30B × 2                     | 675                 | 187.5 | 54.8            | 1480             | 136.2                    | 200            | Y315L <sub>2</sub> -4 | 74              | 1920+320N    |
|                                   | 810                 | 225   | 49              |                  | 138.1                    |                |                       |                 |              |
|                                   | 945                 | 262.5 | 41.4            |                  | 148.1                    |                |                       |                 |              |
| 400LC-25                          | 1050                | 291.7 | 28.3            | 1480             | 106.6                    | 160            | Y315L <sub>1</sub> -4 | 76              | 2170+380N    |
|                                   | 1320                | 366.7 | 25              |                  | 109.7                    |                |                       |                 |              |
|                                   | 1500                | 416.7 | 22              |                  | 116.8                    |                |                       |                 |              |
| 400LC-25A                         | 1000                | 277.8 | 25.4            | 1480             | 92.5                     | 132            | Y315M-4               | 75              | 2170+380N    |
|                                   | 1250                | 347.2 | 23              |                  | 95.3                     |                |                       |                 |              |
|                                   | 1430                | 397.2 | 19.5            |                  | 101.7                    |                |                       |                 |              |
| 400LC-39                          | 1050                | 291.7 | 44.3            | 1480             | 169.0                    | 250            | Y315M <sub>2</sub> -4 | 75              | 2280+380N    |
|                                   | 1320                | 366.7 | 39              |                  | 172.1                    |                |                       |                 |              |
|                                   | 1500                | 416.7 | 34.3            |                  | 186.9                    |                |                       |                 |              |
| 400LC-39A                         | 1000                | 277.8 | 40              | 1480             | 147.0                    | 200            | Y315L <sub>2</sub> -4 | 74              | 2280+380N    |
|                                   | 1250                | 347.2 | 35              |                  | 148.5                    |                |                       |                 |              |
|                                   | 1430                | 397.2 | 31              |                  | 162.7                    |                |                       |                 |              |
| 400LC-39B                         | 950                 | 263.9 | 35.5            | 1480             | 124.9                    | 160            | Y315L <sub>1</sub> -4 | 74              | 2280+380N    |
|                                   | 1200                | 333.3 | 31              |                  | 127.9                    |                |                       |                 |              |
|                                   | 1350                | 375   | 27.8            |                  | 140.1                    |                |                       |                 |              |
| 400LC-25 × 2                      | 1050                | 291.7 | 56.6            | 1480             | 213.1                    | 315            | Y355L <sub>2</sub> -4 | 76              | 2520+380N    |
|                                   | 1320                | 366.7 | 50              |                  | 219.3                    |                |                       |                 |              |
|                                   | 1500                | 416.7 | 44              |                  | 233.6                    |                |                       |                 |              |



## 泵性能表 Performance Data

| 参数<br>Parameter<br><br>型号<br>Type | 流量<br>Capacity<br>Q |       | 扬程<br>Head<br>H | 转速<br>Speed<br>n | 轴功率<br>Shaft power<br>Pa | 配带电动机<br>Motor |                       | 效率<br>Eff.<br>η | 泵重<br>Weight |
|-----------------------------------|---------------------|-------|-----------------|------------------|--------------------------|----------------|-----------------------|-----------------|--------------|
|                                   | m <sup>3</sup> /h   | L/S   | m               | r/min            | kW                       | 功率<br>Power    | 型号<br>Type            | %               | kg           |
|                                   |                     |       |                 |                  |                          | kW             |                       |                 |              |
| 400LC-25A × 2                     | 1000                | 277.8 | 51              | 1480             | 184.9                    | 250            | Y355M <sub>2</sub> -4 | 75              | 2520+380N    |
|                                   | 1250                | 347.2 | 45              |                  | 190.7                    |                |                       | 81              |              |
|                                   | 1430                | 397.2 | 39.8            |                  | 203.3                    |                |                       | 76              |              |
| 400LC-62                          | 1050                | 291.7 | 68.5            | 1480             | 257.9                    | 355            | YLS4001-4             | 76              | 2650+400N    |
|                                   | 1320                | 366.7 | 62              |                  | 274.9                    |                |                       | 81              |              |
|                                   | 1500                | 416.7 | 56.6            |                  | 308.5                    |                |                       | 75              |              |
| 400LC-62A                         | 1000                | 277.8 | 61.8            | 1480             | 224.1                    | 315            | YLS3556-4             | 75              | 2650+400N    |
|                                   | 1250                | 347.2 | 56              |                  | 238.8                    |                |                       | 80              |              |
|                                   | 1430                | 397.2 | 51.1            |                  | 268.1                    |                |                       | 74              |              |
| 400LC-62B                         | 950                 | 263.9 | 55.5            | 1480             | 193.1                    | 280            | YLS3555-4             | 74              | 2650+400N    |
|                                   | 1200                | 333.3 | 50              |                  | 202.7                    |                |                       | 80              |              |
|                                   | 1350                | 375   | 45.8            |                  | 227.7                    |                |                       | 74              |              |
| 450LC-17                          | 1500                | 416.7 | 19.7            | 980              | 98.2                     | 132            | Y315L <sub>2</sub> -6 | 82              | 2540+450N    |
|                                   | 1740                | 483.3 | 17              |                  | 98.8                     |                |                       | 83.5            |              |
|                                   | 1920                | 533.3 | 15.7            |                  | 108.1                    |                |                       | 76              |              |
| 450LC-17A                         | 1425                | 395.8 | 17.8            | 980              | 84.8                     | 110            | Y315L <sub>1</sub> -6 | 81.5            | 2540+450N    |
|                                   | 1650                | 459.2 | 15.7            |                  | 85.2                     |                |                       | 83              |              |
|                                   | 1825                | 506.7 | 14.2            |                  | 94.1                     |                |                       | 75              |              |
| 450LC-27                          | 1500                | 416.7 | 29.8            | 980              | 152.3                    | 220            | Y355L <sub>1</sub> -6 | 80              | 2650+500N    |
|                                   | 1740                | 483.3 | 27              |                  | 155.4                    |                |                       | 83              |              |
|                                   | 1920                | 533.3 | 25              |                  | 169.9                    |                |                       | 77              |              |
| 450LC-27A                         | 1425                | 395.8 | 26.9            | 980              | 133.9                    | 200            | Y355M <sub>3</sub> -6 | 78              | 2650+500N    |
|                                   | 1650                | 459.2 | 24.5            |                  | 134.6                    |                |                       | 82              |              |
|                                   | 1825                | 506.7 | 22.6            |                  | 147.8                    |                |                       | 76              |              |
| 450LC-27B                         | 1350                | 375   | 24.1            | 980              | 113.7                    | 160            | Y355M <sub>1</sub> -6 | 78              | 2650+500N    |
|                                   | 1566                | 435   | 22              |                  | 115.9                    |                |                       | 81              |              |
|                                   | 1728                | 480   | 20.3            |                  | 127.5                    |                |                       | 75              |              |
| 450LC-43                          | 1500                | 416.7 | 46.2            | 980              | 245.3                    | 315            | YLS4003-6             | 77              | 2800+500N    |
|                                   | 1740                | 483.3 | 43              |                  | 249.2                    |                |                       | 82              |              |
|                                   | 1920                | 533.3 | 40.5            |                  | 278.8                    |                |                       | 76              |              |
| 450LC-43A                         | 1425                | 395.8 | 41.7            | 980              | 213.1                    | 280            | YLS4002-6             | 76              | 2800+500N    |
|                                   | 1650                | 459.2 | 39              |                  | 216.3                    |                |                       | 81              |              |
|                                   | 1825                | 506.7 | 36.6            |                  | 242.6                    |                |                       | 75              |              |
| 450LC-43B                         | 1350                | 375   | 37.4            | 980              | 183.5                    | 250            | YLS3556-6             | 75              | 2800+500N    |
|                                   | 1566                | 435   | 35              |                  | 185.0                    |                |                       | 80.5            |              |
|                                   | 1728                | 480   | 32.8            |                  | 205.9                    |                |                       | 75              |              |
| 450LC-27 × 2                      | 1500                | 416.7 | 59.6            | 980              | 304.5                    | 400            | YLS4005-6             | 80              | 3100+500N    |
|                                   | 1740                | 483.3 | 54              |                  | 310.8                    |                |                       | 83              |              |
|                                   | 1920                | 533.3 | 50              |                  | 339.7                    |                |                       | 77              |              |



## 泵性能表 Performance Data

| 参数<br>Parameter<br><br>型号<br>Type | 流量<br>Capacity<br>Q |       | 扬程<br>Head<br>H | 转速<br>Speed<br>n | 轴功率<br>Shaft power<br>Pa | 配带电动机<br>Motor |                       | 效率<br>Eff.<br>$\eta$ | 泵重<br>Weight |
|-----------------------------------|---------------------|-------|-----------------|------------------|--------------------------|----------------|-----------------------|----------------------|--------------|
|                                   | m <sup>3</sup> /h   | L/S   | m               | r/min            | kW                       | 功率<br>Power    | 型号<br>Type            | %                    | kg           |
|                                   |                     |       |                 |                  |                          | kW             |                       |                      |              |
| 450LC-27A × 2                     | 1425                | 395.8 | 53.8            | 980              | 267.8                    | 355            | YLS4004-6             | 78                   | 3100+500N    |
|                                   | 1650                | 459.2 | 49              |                  | 269.7                    |                |                       | 82                   |              |
|                                   | 1825                | 506.7 | 45.1            |                  | 295.0                    |                |                       | 76                   |              |
| 500LC-20                          | 1920                | 533.3 | 21              | 980              | 137.3                    | 200            | Y355M <sub>3</sub> -6 | 80                   | 3600+900N    |
|                                   | 2160                | 600   | 20              |                  | 139.3                    |                |                       | 84.5                 |              |
|                                   | 2400                | 666.7 | 17.8            |                  | 147.4                    |                |                       | 79                   |              |
| 500LC-20A                         | 1824                | 506.7 | 19              | 980              | 119.5                    | 185            | Y355M <sub>2</sub> -6 | 79                   | 3600+900N    |
|                                   | 2052                | 570   | 18              |                  | 120.5                    |                |                       | 84                   |              |
|                                   | 2280                | 633.3 | 16.1            |                  | 128.2                    |                |                       | 78                   |              |
| 500LC-31                          | 1920                | 533.3 | 34              | 980              | 222.4                    | 280            | YLS4002-6             | 80                   | 4000+900N    |
|                                   | 2160                | 600   | 31              |                  | 220.0                    |                |                       | 84                   |              |
|                                   | 2400                | 666.7 | 28.5            |                  | 235.9                    |                |                       | 79                   |              |
| 500LC-31A                         | 1824                | 506.7 | 30.7            | 980              | 193.4                    | 250            | YLS3556-6             | 79                   | 4000+900N    |
|                                   | 2052                | 570   | 28.3            |                  | 190.7                    |                |                       | 83                   |              |
|                                   | 2280                | 633.3 | 25.7            |                  | 204.7                    |                |                       | 78                   |              |
| 500LC-31B                         | 1728                | 480   | 27.5            | 980              | 163.9                    | 220            | YLS3555-6             | 79                   | 4000+900N    |
|                                   | 1944                | 540   | 25.4            |                  | 163.1                    |                |                       | 82.5                 |              |
|                                   | 2160                | 600   | 23.1            |                  | 176.6                    |                |                       | 77                   |              |
| 500LC-50                          | 1920                | 533.3 | 52.8            | 980              | 347.5                    | 450            | YLS4501-6             | 79.5                 | 4300+900N    |
|                                   | 2160                | 600   | 50              |                  | 353.2                    |                |                       | 83                   |              |
|                                   | 2400                | 666.7 | 46.1            |                  | 386.5                    |                |                       | 77                   |              |
| 500LC-50A                         | 1824                | 506.7 | 47.7            | 980              | 300.1                    | 400            | YLS4005-6             | 79                   | 4300+900N    |
|                                   | 2052                | 570   | 45              |                  | 306.2                    |                |                       | 81                   |              |
|                                   | 2280                | 633.3 | 41.6            |                  | 335.7                    |                |                       | 77                   |              |
| 500LC-50B                         | 1728                | 480   | 42.8            | 980              | 258.4                    | 355            | YLS4004-6             | 78                   | 4300+900N    |
|                                   | 1944                | 540   | 40.3            |                  | 263.6                    |                |                       | 81                   |              |
|                                   | 2160                | 600   | 37.3            |                  | 285.1                    |                |                       | 77                   |              |
| 500LC-31 × 2                      | 1920                | 533.3 | 68              | 980              | 444.7                    | 560            | YLS4503-6             | 80                   | 4600+900N    |
|                                   | 2160                | 600   | 62              |                  | 440.1                    |                |                       | 84                   |              |
|                                   | 2400                | 666.7 | 57              |                  | 471.9                    |                |                       | 79                   |              |
| 500LC-31A × 2                     | 1824                | 506.7 | 61.4            | 980              | 386.3                    | 500            | YLS4502-6             | 79                   | 4600+900N    |
|                                   | 2052                | 570   | 56.7            |                  | 382.0                    |                |                       | 83                   |              |
|                                   | 2280                | 633.3 | 51.4            |                  | 409.4                    |                |                       | 78                   |              |
| 600LC-25                          | 2400                | 666.7 | 29.7            | 980              | 239.8                    | 315            | YLS4003-6             | 81                   | 4800+1060N   |
|                                   | 3000                | 833.3 | 25              |                  | 238.8                    |                |                       | 85.6                 |              |
|                                   | 3420                | 950   | 21.6            |                  | 245.5                    |                |                       | 82                   |              |
| 600LC-25A                         | 2280                | 633.3 | 26.8            | 980              | 208.1                    | 280            | YLS4002-6             | 80                   | 4800+1060N   |
|                                   | 2850                | 791.7 | 22.6            |                  | 206.5                    |                |                       | 85                   |              |
|                                   | 3249                | 902.5 | 19.5            |                  | 213.1                    |                |                       | 81                   |              |



## 泵性能表 Performance Data

| 参数<br>Parameter<br><br>型号<br>Type | 流量<br>Capacity<br>Q |        | 扬程<br>Head<br>H | 转速<br>Speed<br>n | 轴功率<br>Shaft power<br>Pa | 配带电动机<br>Motor |            | 效率<br>Eff.<br>η | 泵重<br>Weight |
|-----------------------------------|---------------------|--------|-----------------|------------------|--------------------------|----------------|------------|-----------------|--------------|
|                                   | m <sup>3</sup> /h   | L/S    | m               | r/min            | kW                       | 功率<br>Power    | 型号<br>Type | %               | kg           |
|                                   |                     |        |                 |                  |                          | kW             |            |                 |              |
| 600LC-39                          | 2400                | 666.7  | 43.9            | 980              | 354.5                    | 450            | YLS4501-6  | 81              | 5340+1060N   |
|                                   | 3000                | 833.3  | 39              |                  | 375.1                    |                |            | 85              |              |
|                                   | 3420                | 950    | 34.3            |                  | 389.8                    |                |            | 82              |              |
| 600LC-39A                         | 2280                | 633.3  | 39.6            | 980              | 303.8                    | 400            | YLS4005-6  | 81              | 5340+1060N   |
|                                   | 2850                | 791.7  | 35.2            |                  | 325.4                    |                |            | 84              |              |
|                                   | 3249                | 902.5  | 31              |                  | 338.8                    |                |            | 81              |              |
| 600LC-39B                         | 2160                | 600    | 35.6            | 980              | 262.2                    | 355            | YLS4004-6  | 80              | 5340+1060N   |
|                                   | 2700                | 750    | 31.6            |                  | 278.4                    |                |            | 83.5            |              |
|                                   | 3078                | 855    | 27.8            |                  | 287.9                    |                |            | 81              |              |
| 600LC-62                          | 2400                | 666.7  | 68.2            | 980              | 550.1                    | 710            | YLS5001-6  | 81              | 5440+1060N   |
|                                   | 3000                | 833.3  | 62              |                  | 599.2                    |                |            | 84.5            |              |
|                                   | 3420                | 950    | 56.7            |                  | 651.7                    |                |            | 81              |              |
| 600LC-62A                         | 2280                | 633.3  | 61.6            | 980              | 477.9                    | 630            | YLS4504-6  | 80              | 5440+1060N   |
|                                   | 2850                | 791.7  | 56              |                  | 523.5                    |                |            | 83              |              |
|                                   | 3249                | 902.5  | 51.1            |                  | 564.9                    |                |            | 80              |              |
| 600LC-62B                         | 2160                | 600    | 55.3            | 980              | 411.6                    | 560            | YLS4503-6  | 79              | 5440+1060N   |
|                                   | 2700                | 750    | 50.2            |                  | 452.7                    |                |            | 82              |              |
|                                   | 3078                | 855    | 45.9            |                  | 486.8                    |                |            | 79              |              |
| 700LC-20                          | 3420                | 950    | 22.6            | 740              | 253.5                    | 315            | YLS4501-8  | 83              | 5230+1200N   |
|                                   | 3900                | 1083.3 | 20              |                  | 252.1                    |                |            | 85.5            |              |
|                                   | 4380                | 1216.7 | 17.9            |                  | 254.1                    |                |            | 84              |              |
| 700LC-20A                         | 3249                | 902.5  | 20.4            | 740              | 220                      | 280            | YLS4005-8  | 82              | 5230+1200N   |
|                                   | 3705                | 1029.2 | 18.3            |                  | 219.7                    |                |            | 84              |              |
|                                   | 4161                | 1155.8 | 16.2            |                  | 221.1                    |                |            | 81              |              |
| 700LC-32                          | 3420                | 950    | 33.4            | 740              | 388.7                    | 450            | YLS4505-8  | 80              | 5440+1200N   |
|                                   | 3900                | 1083.3 | 32              |                  | 400.6                    |                |            | 84              |              |
|                                   | 4380                | 1216.7 | 27.3            |                  | 401.9                    |                |            | 81              |              |
| 700LC-32A                         | 3249                | 902.5  | 30.1            | 740              | 337.0                    | 400            | YLS4504-8  | 79              | 5440+1200N   |
|                                   | 3705                | 1029.2 | 28.6            |                  | 347.5                    |                |            | 83              |              |
|                                   | 4161                | 1155.8 | 24.6            |                  | 348.3                    |                |            | 80              |              |
| 700LC-32B                         | 3078                | 855    | 27.1            | 740              | 291.1                    | 355            | YLS4502-8  | 78              | 5440+1200N   |
|                                   | 3510                | 975    | 25.7            |                  | 299.5                    |                |            | 82              |              |
|                                   | 3942                | 1095   | 22.1            |                  | 300.2                    |                |            | 79              |              |
| 700LC-50                          | 3420                | 950    | 53.6            | 740              | 623.8                    | 800            | YLS5601-8  | 80              | 5760+1200N   |
|                                   | 3900                | 1083.3 | 50              |                  | 635.7                    |                |            | 84              |              |
|                                   | 4380                | 1216.7 | 46.3            |                  | 681.6                    |                |            | 81              |              |
| 700LC-50A                         | 3249                | 902.5  | 48.4            | 740              | 541.9                    | 710            | YLS5004-8  | 79              | 5760+1200N   |
|                                   | 3705                | 1029.2 | 45.4            |                  | 551.7                    |                |            | 83              |              |
|                                   | 4161                | 1155.8 | 41.8            |                  | 591.8                    |                |            | 80              |              |



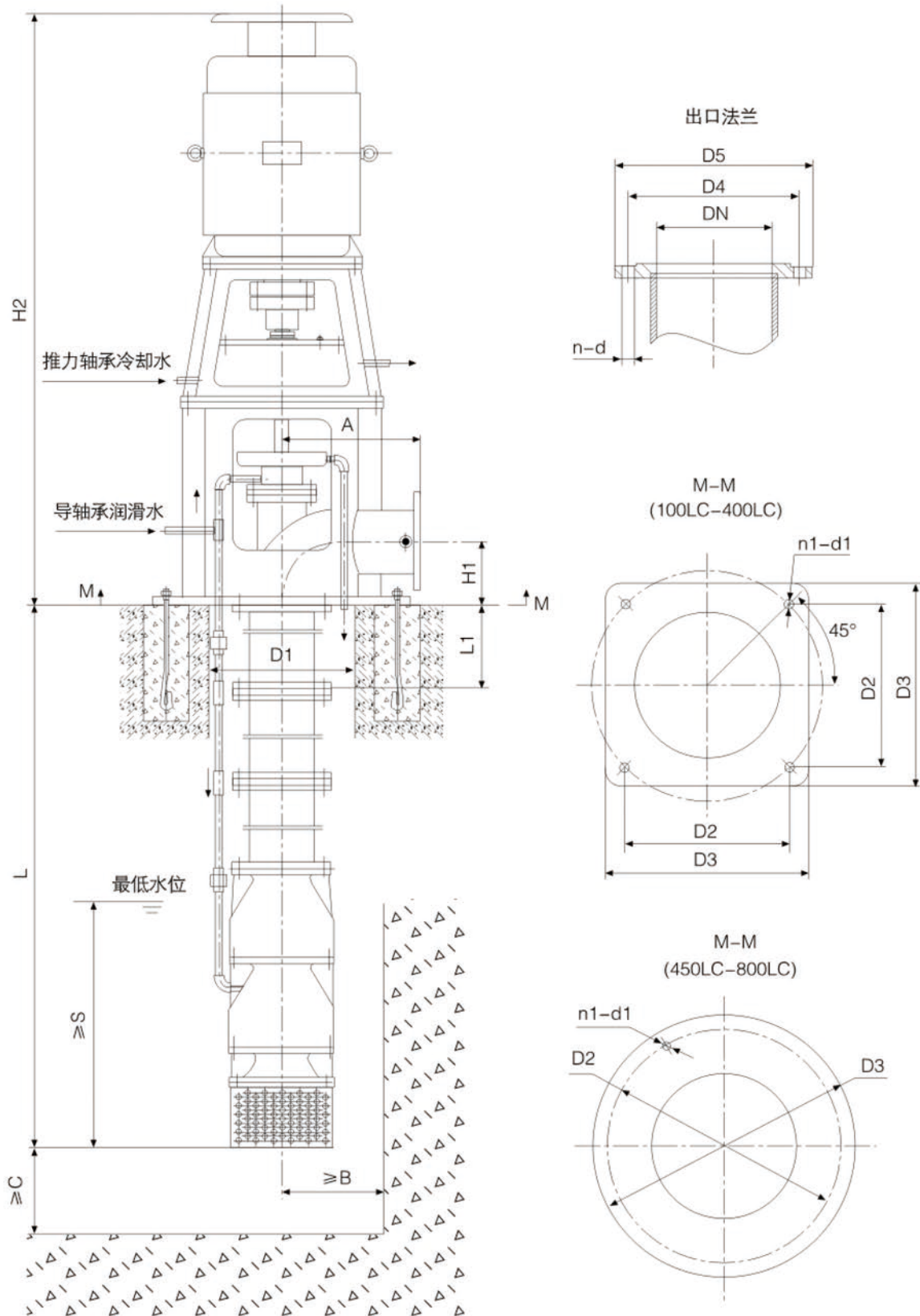
泵性能表 Performance Data

| 型号<br>Type | 流量<br>Capacity<br>Q |        | 扬程<br>Head<br>H | 转速<br>Speed<br>n | 轴功率<br>Shaft power<br>Pa | 配带电动机<br>Motor |            | 效率<br>Eff.<br>η | 泵重<br>Weight |
|------------|---------------------|--------|-----------------|------------------|--------------------------|----------------|------------|-----------------|--------------|
|            | m <sup>3</sup> /h   | L/S    | m               | r/min            | kW                       | 功率<br>Power    | 型号<br>Type | %               | kg           |
|            |                     |        |                 |                  |                          | kW             |            |                 |              |
| 700LC-50B  | 3078                | 855    | 43.4            | 740              | 466.2                    | 560            | YLS5002-8  | 78              | 5760+1200N   |
|            | 3510                | 975    | 40.7            |                  | 474.3                    |                |            | 82              |              |
|            | 3942                | 1095   | 37.5            |                  | 515.9                    |                |            | 78              |              |
| 800LC-24   | 4380                | 1216.7 | 27.4            | 740              | 398.4                    | 500            | YLS5001-8  | 82              | 6120+1380N   |
|            | 5100                | 1416.7 | 24              |                  | 401.6                    |                |            | 84              |              |
|            | 5600                | 1555.6 | 22              |                  | 419.2                    |                |            | 80              |              |
| 800LC-24A  | 4161                | 1155.8 | 24.7            | 740              | 349.7                    | 450            | YLS4505-8  | 81              | 6120+1380N   |
|            | 4845                | 1345.8 | 21.9            |                  | 348.3                    |                |            | 83              |              |
|            | 5320                | 1477.8 | 19.9            |                  | 364.8                    |                |            | 79              |              |
| 800LC-38   | 4380                | 1216.7 | 41.4            | 740              | 602.0                    | 710            | YLS5004-8  | 82              | 6340+1380N   |
|            | 5100                | 1416.7 | 38              |                  | 626.4                    |                |            | 84              |              |
|            | 5600                | 1555.6 | 34.8            |                  | 663.2                    |                |            | 80              |              |
| 800LC-38A  | 4161                | 1155.8 | 37.4            | 740              | 518.5                    | 630            | YLS5003-8  | 81              | 6340+1380N   |
|            | 4845                | 1345.8 | 34.2            |                  | 543.4                    |                |            | 83              |              |
|            | 5320                | 1477.8 | 31.4            |                  | 575.6                    |                |            | 79              |              |
| 800LC-38B  | 3942                | 1095   | 33.5            | 740              | 449.4                    | 560            | YLS5002-8  | 80              | 6340+1380N   |
|            | 4590                | 1275   | 30.7            |                  | 467.8                    |                |            | 82              |              |
|            | 5040                | 1400   | 28.2            |                  | 502.5                    |                |            | 77              |              |
| 800LC-60   | 4380                | 1216.7 | 64.8            | 740              | 953.9                    | 1120           | YLS6031-8  | 81              | 6670+1380N   |
|            | 5100                | 1416.7 | 60              |                  | 995.0                    |                |            | 84              |              |
|            | 5600                | 1555.6 | 56.7            |                  | 1054.1                   |                |            | 82              |              |
| 800LC-60A  | 4161                | 1155.8 | 58.5            | 740              | 821.1                    | 1000           | YLS5603-8  | 80              | 6670+1380N   |
|            | 4845                | 1345.8 | 54.3            |                  | 862.8                    |                |            | 83              |              |
|            | 5320                | 1477.8 | 51.2            |                  | 915.4                    |                |            | 81              |              |
| 800LC-60B  | 3942                | 1095   | 52.5            | 740              | 713.1                    | 900            | YLS5602-8  | 79              | 6670+1380N   |
|            | 4590                | 1275   | 48.8            |                  | 743.6                    |                |            | 82              |              |
|            | 5040                | 1400   | 45.9            |                  | 787.2                    |                |            | 80              |              |





外形安装尺寸图





外形安装尺寸表

| 泵型号Type      | A   | B   | C   | D <sub>1</sub> | D <sub>2</sub> | D <sub>3</sub> | n1-d1           | H <sub>1</sub> | H <sub>2</sub> | L ( max ) | L <sub>1</sub> | S   |
|--------------|-----|-----|-----|----------------|----------------|----------------|-----------------|----------------|----------------|-----------|----------------|-----|
| 100LC-10     | 305 | 200 | 150 | φ 300          | 480            | 550            | 4-φ 24(M20x400) | 165            | 900            | 8000      | 200~1200       | 500 |
| 100LC-10×2   |     |     |     |                |                |                |                 |                | 1030           |           |                |     |
| 100LC-10×3   |     |     |     |                |                |                |                 |                | 1060           |           |                |     |
| 100LC-10×4   |     |     |     |                |                |                |                 |                | 1100           |           |                |     |
| 100LC-10×5   |     |     |     |                |                |                |                 |                | 1150           |           |                |     |
| 100LC-10×6   |     |     |     |                |                |                |                 |                | 1150           |           |                |     |
| 100LC-10×7   |     |     |     |                |                |                |                 |                | 1150           |           |                |     |
| 150LC-12     | 320 | 200 | 150 | φ 300          | 480            | 550            | 4-φ 24(M20x400) | 165            | 520            | 8000      | 200~1200       | 550 |
| 150LC-12×2   |     |     |     |                |                |                |                 |                | 1100           |           |                |     |
| 150LC-12×3   |     |     |     |                |                |                |                 |                | 1150           |           |                |     |
| 150LC-12×4   |     |     |     |                |                |                |                 |                | 1185           |           |                |     |
| 150LC-30     | 320 | 200 | 150 | φ 300          | 480            | 550            | 4-φ 24(M20x400) | 165            | 1150           | 8000      | 200~1200       | 550 |
| 150LC-30×2   |     |     |     |                |                |                |                 |                | 1185           |           |                |     |
| 150LC-30×3   |     |     |     |                |                |                |                 |                | 1285           |           |                |     |
| 200LC-14.5   | 420 | 250 | 200 | φ 500          | 550            | 620            | 4-φ 24(M20x400) | 220            | 1850           | 10000     | 200~1200       | 750 |
| 200LC-19     |     |     |     |                |                |                |                 |                | 1930           |           |                |     |
| 200LC-23     |     |     |     |                |                |                |                 |                | 1960           |           |                |     |
| 200LC-19×2   |     |     |     |                |                |                |                 |                | 2115           |           |                |     |
| 200LC-14.5×2 |     |     |     |                |                |                |                 |                | 2015           |           |                |     |
| 200LC-23×2   |     |     |     |                |                |                |                 |                | 2200           |           |                |     |
| 200LC-19×3   |     |     |     |                |                |                |                 |                | 2200           |           |                |     |
| 200LC-23×3   |     |     |     |                |                |                |                 |                | 2470           |           |                |     |
| 200LC-23×4   |     |     |     |                |                |                |                 |                | 2570           |           |                |     |
| 250LC-21     | 400 | 300 | 250 | φ 550          | 600            | 670            | 4-φ 24(M20x400) | 275            | 2180           | 10000     | 200~1200       | 900 |
| 250LC-21A    |     |     |     |                |                |                |                 |                | 2155           |           |                |     |
| 250LC-32     |     |     |     |                |                |                |                 |                | 2365           |           |                |     |
| 250LC-32A    |     |     |     |                |                |                |                 |                | 2280           |           |                |     |



外形安装尺寸表

| 泵型号Type       | A    | B   | C   | D <sub>1</sub> | D <sub>2</sub> | D <sub>3</sub> | n1-d1           | H <sub>1</sub> | H <sub>2</sub> | L ( max ) | L <sub>1</sub> | S    |     |     |       |     |     |                 |     |      |       |          |      |
|---------------|------|-----|-----|----------------|----------------|----------------|-----------------|----------------|----------------|-----------|----------------|------|-----|-----|-------|-----|-----|-----------------|-----|------|-------|----------|------|
| 250LC-21 × 2  | 400  | 300 | 250 | φ 550          | 600            | 670            | 4-φ 24(M20x400) | 275            | 2415           | 10000     | 200~1200       | 900  |     |     |       |     |     |                 |     |      |       |          |      |
| 250LC-32 × 2  |      |     |     |                |                |                |                 |                | 2735           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 250LC32A × 2  |      |     |     |                |                |                |                 |                | 2635           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 250LC-32 × 3  |      |     |     |                |                |                |                 |                | 2920           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 250LC-32A × 3 |      |     |     |                |                |                |                 |                | 2735           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 300LC-25      | 480  | 350 | 250 | φ 650          | 750            | 820            | 4-φ 28(M24x500) | 325            | 2465           | 12000     | 200~1200       | 1050 |     |     |       |     |     |                 |     |      |       |          |      |
| 300LC-25A     |      |     |     |                |                |                |                 |                | 2330           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 300LC-39      |      |     |     |                |                |                |                 |                | 2785           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 300LC-39A     |      |     |     |                |                |                |                 |                | 2685           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 300LC-25 × 2  |      |     |     |                |                |                |                 |                | 2785           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 300LC-39 × 2  |      |     |     |                |                |                |                 |                | 2970           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 300LC-39A × 2 |      |     |     |                |                |                |                 |                | 2785           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 350LC-19      | 500  | 400 | 300 | φ 750          | 800            | 870            | 4-φ 28(M24x500) | 380            | 2540           | 14000     | 200~1200       | 1250 |     |     |       |     |     |                 |     |      |       |          |      |
| 350LC-19A     |      |     |     |                |                |                |                 |                | 2490           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 350LC-30      |      |     |     |                |                |                |                 |                | 2860           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 350LC-30A     |      |     |     |                |                |                |                 |                | 2760           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 350LC-30B     |      |     |     |                |                |                |                 |                | 2540           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 350LC-48      |      |     |     |                |                |                |                 |                | 2860           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 350LC-48A     |      |     |     |                |                |                |                 |                | 2860           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 350LC-48B     |      |     |     |                |                |                |                 |                | 2860           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 350LC-30 × 2  |      |     |     |                |                |                |                 |                | 3045           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 350LC-30A × 2 |      |     |     |                |                |                |                 |                | 3045           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 350LC-30B × 2 |      |     |     |                |                |                |                 |                | 2860           |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 400LC-25      |      |     |     |                |                |                |                 |                | 600            |           |                |      | 500 | 300 | φ 850 | 900 | 970 | 4-φ 28(M24x500) | 430 | 2900 | 14000 | 200~1200 | 1350 |
| 400LC-25A     |      |     |     |                |                |                |                 |                |                |           |                |      |     |     |       |     |     |                 |     | 2900 |       |          |      |
| 400LC-39      | 3085 |     |     |                |                |                |                 |                |                |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |
| 400LC-39A     | 2900 |     |     |                |                |                |                 |                |                |           |                |      |     |     |       |     |     |                 |     |      |       |          |      |



外形安装尺寸表

| 泵型号Type       | A    | B   | C   | D <sub>1</sub> | D <sub>2</sub> | D <sub>3</sub> | n1-d1           | H <sub>1</sub> | H <sub>2</sub> | L ( max ) | L <sub>1</sub> | S    |
|---------------|------|-----|-----|----------------|----------------|----------------|-----------------|----------------|----------------|-----------|----------------|------|
| 400LC-39B     | 600  | 500 | 300 | φ 850          | 900            | 970            | 4-φ 28(M24x500) | 430            | 2900           | 14000     | 200~1200       | 1350 |
| 400LC-25 × 2  |      |     |     |                |                |                |                 |                | 3085           |           |                |      |
| 400LC-25A × 2 |      |     |     |                |                |                |                 |                | 3085           |           |                |      |
| 400LC-62      |      |     |     |                |                |                |                 |                | 3600           |           |                |      |
| 400LC-62A     |      |     |     |                |                |                |                 |                | 3520           |           |                |      |
| 400LC-62B     |      |     |     |                |                |                |                 |                | 3520           |           |                |      |
| 450LC-17      | 650  | 650 | 350 | φ 950          | φ 1150         | φ 1250         | 6-φ 35(M30x600) | 485            | 2970           | 16000     | 200~2000       | 1600 |
| 450LC-17A     |      |     |     |                |                |                |                 |                | 2970           |           |                |      |
| 450LC-27      |      |     |     |                |                |                |                 |                | 3265           |           |                |      |
| 450LC-27A     |      |     |     |                |                |                |                 |                | 3265           |           |                |      |
| 450LC-27B     |      |     |     |                |                |                |                 |                | 3265           |           |                |      |
| 450LC-43      |      |     |     |                |                |                |                 |                | 3700           |           |                |      |
| 450LC-43A     |      |     |     |                |                |                |                 |                | 3700           |           |                |      |
| 450LC-43B     |      |     |     |                |                |                |                 |                | 3620           |           |                |      |
| 450LC-27 × 2  |      |     |     |                |                |                |                 |                | 3700           |           |                |      |
| 450LC-27A × 2 |      |     |     |                |                |                |                 |                | 3700           |           |                |      |
| 500LC-20      |      |     |     |                |                |                |                 |                | 650            |           |                |      |
| 500LC-20A     | 3205 |     |     |                |                |                |                 |                |                |           |                |      |
| 500LC-31      | 4020 |     |     |                |                |                |                 |                |                |           |                |      |
| 500LC-31A     | 3410 |     |     |                |                |                |                 |                |                |           |                |      |
| 500LC-31B     | 3410 |     |     |                |                |                |                 |                |                |           |                |      |
| 500LC-50      | 3690 |     |     |                |                |                |                 |                |                |           |                |      |
| 500LC-50A     | 3490 |     |     |                |                |                |                 |                |                |           |                |      |
| 500LC-50B     | 3490 |     |     |                |                |                |                 |                |                |           |                |      |
| 500LC-31 × 2  | 4540 |     |     |                |                |                |                 |                |                |           |                |      |
| 500LC-31A × 2 | 4540 |     |     |                |                |                |                 |                |                |           |                |      |



外形安装尺寸表

| 泵型号Type   | A   | B   | C   | D <sub>1</sub> | D <sub>2</sub> | D <sub>3</sub> | n1-d1           | H <sub>1</sub> | H <sub>2</sub> | L ( max ) | L <sub>1</sub> | S    |
|-----------|-----|-----|-----|----------------|----------------|----------------|-----------------|----------------|----------------|-----------|----------------|------|
| 600LC-25  | 650 | 700 | 300 | φ 1200         | φ 1200         | φ 1400         | 8-φ 35(M30x600) | 625            | 3690           | 16000     | 200~2000       | 1900 |
| 600LC-25A |     |     |     |                |                |                |                 |                | 3690           |           |                |      |
| 600LC-39  |     |     |     |                |                |                |                 |                | 3890           |           |                |      |
| 600LC-39A |     |     |     |                |                |                |                 |                | 3690           |           |                |      |
| 600LC-39B |     |     |     |                |                |                |                 |                | 3690           |           |                |      |
| 600LC-62  |     |     |     |                |                |                |                 |                | 4040           |           |                |      |
| 600LC-62A |     |     |     |                |                |                |                 |                | 3890           |           |                |      |
| 600LC-62B |     |     |     |                |                |                |                 |                | 3890           |           |                |      |
| 700LC-20  | 900 | 850 | 350 | φ 1350         | φ 1850         | φ 1950         | 8-φ 35(M30x600) | 700            | 4200           | 18000     | 200~2000       | 2100 |
| 700LC-20A |     |     |     |                |                |                |                 |                | 4100           |           |                |      |
| 700LC-32  |     |     |     |                |                |                |                 |                | 4200           |           |                |      |
| 700LC-32A |     |     |     |                |                |                |                 |                | 4200           |           |                |      |
| 700LC-32B |     |     |     |                |                |                |                 |                | 4200           |           |                |      |
| 700LC-50  |     |     |     |                |                |                |                 |                | 4450           |           |                |      |
| 700LC-50A |     |     |     |                |                |                |                 |                | 4350           |           |                |      |
| 700LC-50B |     |     |     |                |                |                |                 |                | 4350           |           |                |      |
| 800LC-24  | 950 | 900 | 400 | φ 1500         | φ 2000         | φ 2100         | 4-φ 24(M20x500) | 800            | 4520           | 18000     | 200~2000       | 2350 |
| 800LC-24A |     |     |     |                |                |                |                 |                | 4370           |           |                |      |
| 800LC-38  |     |     |     |                |                |                |                 |                | 4520           |           |                |      |
| 800LC-38A |     |     |     |                |                |                |                 |                | 4520           |           |                |      |
| 800LC-38B |     |     |     |                |                |                |                 |                | 4520           |           |                |      |
| 800LC-60  |     |     |     |                |                |                |                 |                | 4740           |           |                |      |
| 800LC-60A |     |     |     |                |                |                |                 |                | 4620           |           |                |      |
| 800LC-60B |     |     |     |                |                |                |                 |                | 4620           |           |                |      |



### 水泵出口法兰尺寸表

| 水泵口径 | 出口内径DN | D <sub>4</sub> | D <sub>5</sub> | n-d     |
|------|--------|----------------|----------------|---------|
| 100  | φ 100  | φ 180          | φ 220          | 8-φ 18  |
| 150  | φ 150  | φ 240          | φ 285          | 8-φ 22  |
| 200  | φ 200  | φ 295          | φ 340          | 8-φ 22  |
| 250  | φ 250  | φ 350          | φ 395          | 12-φ 22 |
| 300  | φ 300  | φ 400          | φ 445          | 12-φ 22 |
| 350  | φ 350  | φ 460          | φ 505          | 16-φ 22 |
| 400  | φ 400  | φ 515          | φ 565          | 16-φ 26 |
| 450  | φ 450  | φ 565          | φ 615          | 20-φ 26 |
| 500  | φ 500  | φ 620          | φ 670          | 20-φ 26 |
| 600  | φ 600  | φ 725          | φ 780          | 20-φ 30 |
| 700  | φ 700  | φ 840          | φ 895          | 24-φ 30 |
| 800  | φ 800  | φ 950          | φ 1015         | 24-φ 33 |
|      |        |                |                |         |
|      |        |                |                |         |



## Assembly and Disassembly

### 1. Preparation before installation

(1) Before pump assembly, components shall be checked if there is any defect affecting assembly at first and wiped clean. Then pump can be assembled.

(2) Checking the different fitting- each key and shaft fitting, key and impeller fitting, flat key, clasp, adapter coupling and shaft fitting, each impeller, shaft sleeve, adapter coupling and shaft fitting. And the radial clearance between each shaft sleeve and guard bearing shall be kept within 0.15-0.25mm.

### 2. Component assembly

(1) Sealing rings shall be separately assembled in suction bell mouth and diffuser with stitching screws.

(2) Guard bearing shall be separately assembled in guard bearing support and diffuser. Packing bushing is assembled in packing function. Pay attention to use retaining ring for key and hole assembly.

(3) Thrust bearing assembly: Anti-oil drum is fixed on bearing body and the outside ring of thrust bearing is put into bearing body. The inside ring of thrust bearing is put into transmission sleeve. The transmission sleeve is assembled on bearing body and bearing cover is fixed on bearing body.

(4) Center shaft assembly: Shaft sleeve is set into center shaft and fixed with retaining ring and screws.

(5) Transmission shaft assembly: O type sealing ring is set into transmission shaft and then packing shaft sleeve and shaft collars are assembled on transmission shaft with screws fixing.

### 3. Installation

The installation of pump have two ways-vertical installation or horizontal installation.

(1) Shaft sleeve, key and final stage impeller are assembled on impeller shaft. Then impeller shaft is set into final stage diffuser.



## Assembly and Disassembly

(2) Assembling sleeve, next stage shaft sleeve, diffuser, key and impeller (for multi-stage pump). Repeating the above process until finishing all secondary impeller assembly.

(3) Assembling sleeve, shaft sleeve, first stage diffuser, first stage key, impeller, stop washer, suction bell mouth and strainer and locking impeller nut.

(4) Assembling key and adapter coupling on center shaft and using split halve and adapter to link impeller shaft and center shaft and using retaining ring to put shaft into slot. Putting O type sealing ring on final stage diffuser and leading into guard column and water column and pushing into guide bearing support with bolts (O type sealing ring is put on the support). When vertical installation, transferring pump to the pit and using channel iron to support the feet of water column. According to this sequence, assembling each stage center shaft, guard column, water column and guide bearing support until assembling transmission shaft, adjusting guard column and adjusting water column.

(5) Linking discharge elbow and adjusting water column; assembling O type sealing ring on packing function and targeting adjusting guard column, putting packing function and packing cover on discharge elbow.

(6) Putting key on transmission shaft and assembling thrust bearing on discharge elbow. Screwing in the round nut.

(7) Installing the key in pump coupling and pump coupling.

(8) Fixing motor base on discharge elbow.

(9) Adjusting two round nuts in thrust bearing to lift rotor. The rotor lifting amount is 1/2 of the total rotor run. Flexible disk without stuck phenomenon.

(10) Assembling oil gauge (putting oil mark on oil gauge) and packing leakage water pipe and linking external accessories such as pipeline of bearing cooling water and guide bearing lubricating water.

If the pump thrust is beard by the motor, then there is no thrust bearing assembly in 3.6 and the rotor raising is adjusted by pump coupling. The rotor lifting amount is 1/2 of the total rotor run.





## Assembly and Disassembly

### Note:

- a. During the above assembly process, some small components are easily omission or misplacing like flat key, retaining ring and O type sealing ring in shaft sleeve. Please pay attention to these components..
- b. When transferring clean water, if guide bearing is not prepared to pass cooling lubricating water, then guard column can't be assembled.
- c. In the case of lacking lifting height, finished parts must be suspended in the pump pit for installation. Before suspended into the pump pit, strainer and pipeline of guard bearing lubricating water shall be installed.

### 4. Disassembly

The disassembly sequence of the pump can be basically reversed in the sequence of assembly When disassembling, please note the following points:

- (1) Making mark in the necessary fitting place for next time assembly.
- (2) Preparing some box for the disassembly parts to prevent loss or bump scratches, Fasteners shall be put separately.
- (3) The following parts can't be reused and need extra spare parts like O type sealing ring, paper pads, rusty fasteners, spring washers and packing gland.

## Pump Start Up, Operation and Shut Down

### 1. Inspection and preparation before startup

- (1) Checking foundation bolts for looseness.
- (2) Checking the submerged depth of the pump to meet request.
- (3) Checking pump assembled with packing gland.
- (4) Checking cooling water supply. Cooling water is clean soft water. The cooling water flow rate of thrust bearing is  $0.3\sim 0.5\text{m}^3/\text{h}$  and the pressure is  $0.1\sim 0.2\text{MPa}$ . The flow rate and pressure of cooling water is in attached table for guide bearing.



## Pump Start Up, Operation and Shut Down

(5) Making sure that the pump and motor bearing are lubricated. The brand name of pump lubricant oil is the L-AN32 machine oil. The oil level is in the oil gauge centerline about 2mm. Please refer to the installation and operation manual of the motor for motor lubrication.

(6) Before starting, the turning of pump rotor shall be smooth evenly.

(7) Checking the direction of the motor rotation. The pump rotates counterclockwise from the motor side.

### **2. Start up**

(1) Closing the outlet gate and the pressure gauge cock and connecting the cooling lubricating water of pump.

(2) Checking the flow and pressure of cooling lubricating water. If it can't meet request, then pump can't start.

(3) After the flow and pressure meeting the requirements and water supplying for 3 minutes or more, starting the motor. When the pump reaches the normal speed, opening the pressure gauge cock. Gradually opening the valve on the outlet pipe, and adjusting it to the required conditions. In the event that the outlet valve is closed, the pump may not be operated continuously for more than 2 minutes.

(4) When using packing seal, uniformly tightening the compress nut in packing cover so that the liquid droplets leak. Pay attention to the temperature of packing chamber at the same time.

#### **Note:**

a. In any case, the pumps can't be operated for long periods of time when the water gate valve is closed, as this will cause the pump to vibrate and even vaporize the liquid, which may cause equipment damage and personal injury.

b. Do not press the packing cover too tightly. A small amount of leakage can lubricate the packing. Cessation of the leakage will cause the packing to burn and abrasion of the shaft sleeve.



## Pump Start Up, Operation and Shut Down

c. Conveying sewage, guide bearing must pass cooling lubricating water. Insufficient flow and pressure of cooling Lubricating water will have a serious impact on the pump life. Before starting, the time of passing water shall be more than 3 minutes. When the pump completely stops turning, and then turning off the cooling water.

d. Convey clean water, guide bearings can't pass cooling lubricating water, but it must cancel guard column.

### 3. Operation

(1) The bearing temperature should not be allowed 35°C higher than the environment temperature. And the max bearing temperature should not exceed than 75°C ;

(2) During the starting and operation, Notice whether there are abnormal situation appears, if yes, solve it timely.

(3) If any abnormal noises, jerking or vibration is noted, stop the pump immediately, determine the cause of the abnormalities and correct them.

(4) Regular check the lubricating water pressure and flow during operation, It's Prohibited that the lubricating water cut off /interrupt during pump operation; If there are filter devices in lubricating system, clean filter screen regularly.

(5) The correct leakage rate is approximately 20 to 30 drops per minute.

(6) Keep the Lubricating oil in normal level, too high or too low is not allowed. Add the oil timely if it's too low. Generally speaking, it should change new oil after running 300 hours for the first time. Later, the user could change the new oil per 3000 hours regularly (or the user set the change period according to actual site situation or service experience).

#### Note:

a. Not allowing the pump running without enough submerged length, in case of cavitation erosion appear and further damage the pumps;

b. Not allowed the pump continuous running under the condition of 30% below the designed capacity. If the pump must operated under such condition, it should add a



## Pump Start Up, Operation and Shut Down

branch/by-pass pipe on pump discharge head, which lead the balance flow back into the pump suction pipeline.

c. Not allowed the pump running continuously under the condition of 120% higher than the design point of capacity.in case of cavitation erosion appear and motor over-loaded.

d. Not allow to improve the pump speed, and idling without liquid is prohibited too.

e. Not allow the pump keep running for a long time after shutting off the check valve.It will cause the pump vibrated, furthermore, make pump liquid vaporization. it's likely to damage the equipment or injure the workers.

f. During the operation, if it have any abnormal voice or other fault, stop the pump immediately, determine the cause of the abnormalities and correctthem.

### 4. Shut down

(1) Shut off the nut of manometer,

(2) Slowly shut off the gate valve on discharge pipe.

(3) Cut off the power

(4) When the pump stopped entirely, Shut off the cooling water

(5) If the pump stop using for a long time, we suggest disassembly it and clean related pump part and paint the oil, then get packed for storage.

## Maintenance, Repair

### 1. Maintenance

(1) Daily maintenance and check Program

a. Check the lubricating cooling water system, piping line and pump whether there are any leakage or blocks. and repair it timely if any leakage.

b. Check all of the gauges/manometer.

c. Measure the vibration data and check the noise increase or not periodically.

d. Monitor the lubricating cooling water piping line if there any blocks.

e. Adjust the leakage of gland packing correctly timely.



## Maintenance, Repair

- f. Check the gap of rotor match position whether it is loosened or not.
- g. The pump which haven't used for a long time. If permitted, before the pump started, make the rotor running smoothly one time and the time is not less than 5 minutes, if it's not permitted, make the rotor running by manual.

### (2) Yearly Checked Program.

- a. check the wear of rotor parts.
- b. Check the gap of impeller and sealing ring.
- c. Check the cavitation, corrosion or erosion of the impeller and other related flowing part.
- d. Check the wear of the bearing and shaft sleeve.

## 2. Repair

The Pump should be disassembled and get repaired if necessary (such as vibration, noise ,bearing temperature is exceed than standard ruled data, or Capacity or Head declined visibly etc), also the pump should checked per year which it's keep continuous running.

- (1) Prepare related spare parts before the repair job.
- (2) Disassembled the pump against the assembly procedure. remove the rust of spare parts, paint the oil and assembled.
- (3) Check the wear of shaft sleeve and shaft sleeve of gland packing , likely to see the groove/ditch wear, It should be replaced by new one if the diameter of is 1mm~2mm.
- (4) Check the wear of impeller and diffuser or other spare parts.
- (5) Replace the new seal part (such as gland packing, O ring, paper washer etc)
- (6) Assembled the pump according the assembly procedure. Move the rotor after finished the assembling. The rotation rotor should run smooth and steady, no shakes or big resistance.



| Troubleshooting                                      |  |   |
|--|--|---|
| Troubles   | Causes   | Remedies  |
| Pump doesn't start up                                | <ol style="list-style-type: none"> <li>1. Motor or power system have some troubles</li> <li>2. Some impurity in rotor</li> <li>3. Bearing is locked</li> <li>4. The starting condition is not satisfied</li> </ol>   | <ol style="list-style-type: none"> <li>1. Repair the motor or power system</li> <li>2. Clean out rotor part</li> <li>3. Clean or renew the bearing</li> <li>4. Check and supply the needed condition</li> </ol>   |
| Pump loses prime or not enough flow                  | <ol style="list-style-type: none"> <li>1. In the side of discharge or suction or impeller is clogged by impurity</li> <li>2. The wearing is worn out or impeller is damaged</li> <li>3. Rotating direction is wrong</li> <li>4. Speed is too low</li> <li>5. Low submerged height</li> </ol>   | <ol style="list-style-type: none"> <li>1. Clean the strainer, impeller, diffuser, discharge pipe</li> <li>2. Renew the damaged parts</li> <li>3. Correct direction</li> <li>4. Measuring voltage, frequency, motor and adjust</li> <li>5. Raise the suction water level</li> </ol>  |
| Pump requires excessive power                        | <ol style="list-style-type: none"> <li>1. Bearing is damaged (included guide bearing)</li> <li>2. Some impurity is in pump</li> <li>3. The friction between impeller and wearing</li> <li>4. Packing is too tighten</li> <li>5. Speed is too fast</li> <li>6. Pump is over the operation range</li> <li>7. One of the electric line is short</li> </ol>  | <ol style="list-style-type: none"> <li>1. Replace the bearing</li> <li>2. Clean these impurity</li> <li>3. Adjust clearance</li> <li>4. Loosen the packing gland</li> <li>5. Check voltage, frequency, motor, and adjust it</li> <li>6. Adjust the valve switch</li> <li>7. Check and repair electric line</li> </ol>   |
| Unexpected noise are heard and Pump Vibrates heavily | <ol style="list-style-type: none"> <li>1. Not enough submerged height, pump have cavitation</li> <li>2. Impeller lose balance</li> <li>3. Shaft is bent or shaft is not in center</li> <li>4. The foundation bolts is loose</li> <li>5. Bearing is damaged</li> <li>6. Friction between guide bearing and sleeve, the clearance is too big</li> <li>7. Discharge pipe is not reasonable</li> </ol> | <ol style="list-style-type: none"> <li>1. Increase suction water level or decrease the discharge flow</li> <li>2. The impeller have static balance test</li> <li>3. Adjust shaft</li> <li>4. Screw up foundation bolts</li> <li>5. Renew the bearing</li> <li>6. Renew guide bearing and shaft sleeve</li> <li>7. Ceck and clear out the pipe effect</li> </ol> |
| The bearing is overheated                            | <ol style="list-style-type: none"> <li>1. Unreasonable assembly, shaft is over center</li> <li>2. Bearing is damage</li> <li>3. The oil is not enough</li> </ol>   | <ol style="list-style-type: none"> <li>1. Correct the co-axial degree</li> <li>2. Renew the bearing</li> <li>3. Add lubricating oil</li> </ol>  |