

America CROSSBY Quality Management System

- Take pursuit of zero defect as purpose and advance product quality as job content.;
- Always carry out the principle of customer first.

Quality first

Excellent after-sales quality

- In the same industry, take the lead in putting forward the complete machine warranty for two years.
- Regularly train the customers and engineer.
- UNITED OSD service engineer provides high quality service for the customers in the whole nation.

Energy conservation



ISO9001 Quality Management  
System Certification



ISO14001 Environmental  
Management System Certification

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Two stage  
compression

UNITED OSD beyond energy-saving





# UNITED OSD<sup>®</sup>

## UNITED OSD, beyond energy-saving.....

As for the products and energy saving, UNITED never stops and continues to improve, lead, and innovate. Keep aggressive state in terms of product quality, pursuit the best industry quality level, provide the high quality product to bring all-round added value and realize "users, society, enterprise" win-win-win.



Shanghai famous trademark



Shanghai famous brand

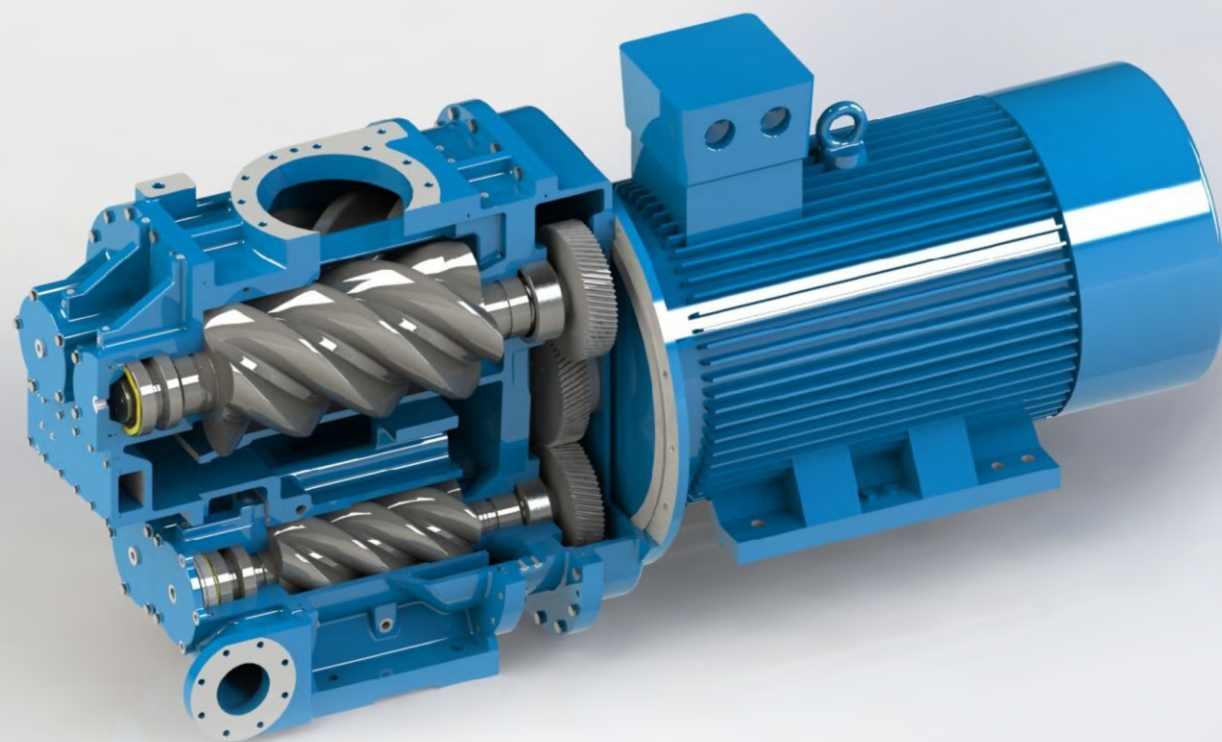


# The quality of Machine

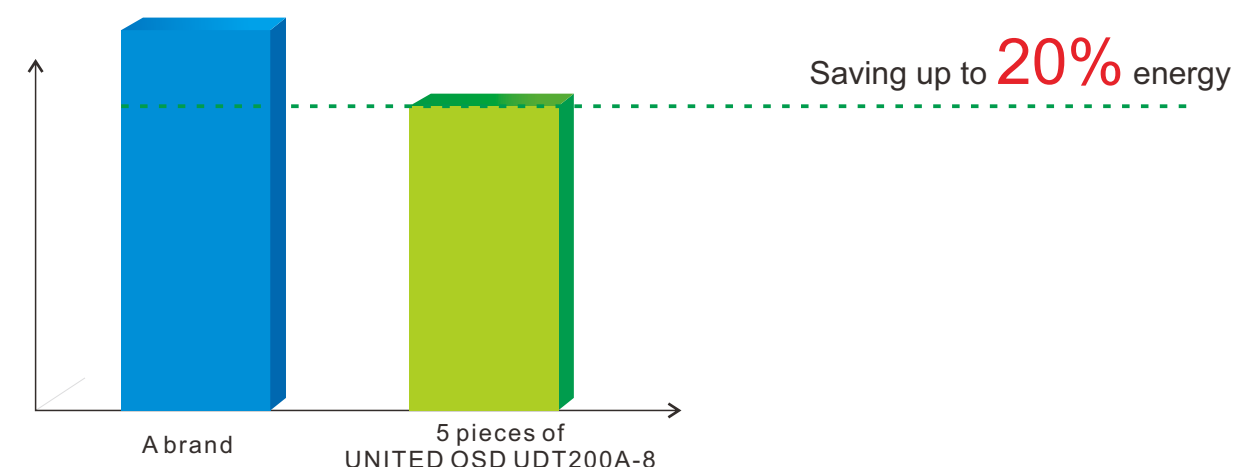
UNITED OSD  
优耐特斯

## Perfect high efficiency main engine

- World-leading high efficiency form lines are employed in rotors, which creates stable high efficiency main engines;
- Employing poles independent compression, equivalent pressure ration and low rotation speed increase gas over 15% under the same power;
- Guarantee of low pressure compression ratio of each level; less leakage of main engine; higher volumetric efficiency;
- Oil smoke spraying cooling employed between levels makes the whole compressing process close to isothermal compression, improving adiabatic efficiency of compression;
- Bevel gears directly transmit power to rotors in two sections respectively, which enables rotor in each section to acquire optimal line speed; rotor with highest compression transmission efficiency and less stress on bearings is the guarantee of long service life for constant operating of main engine;

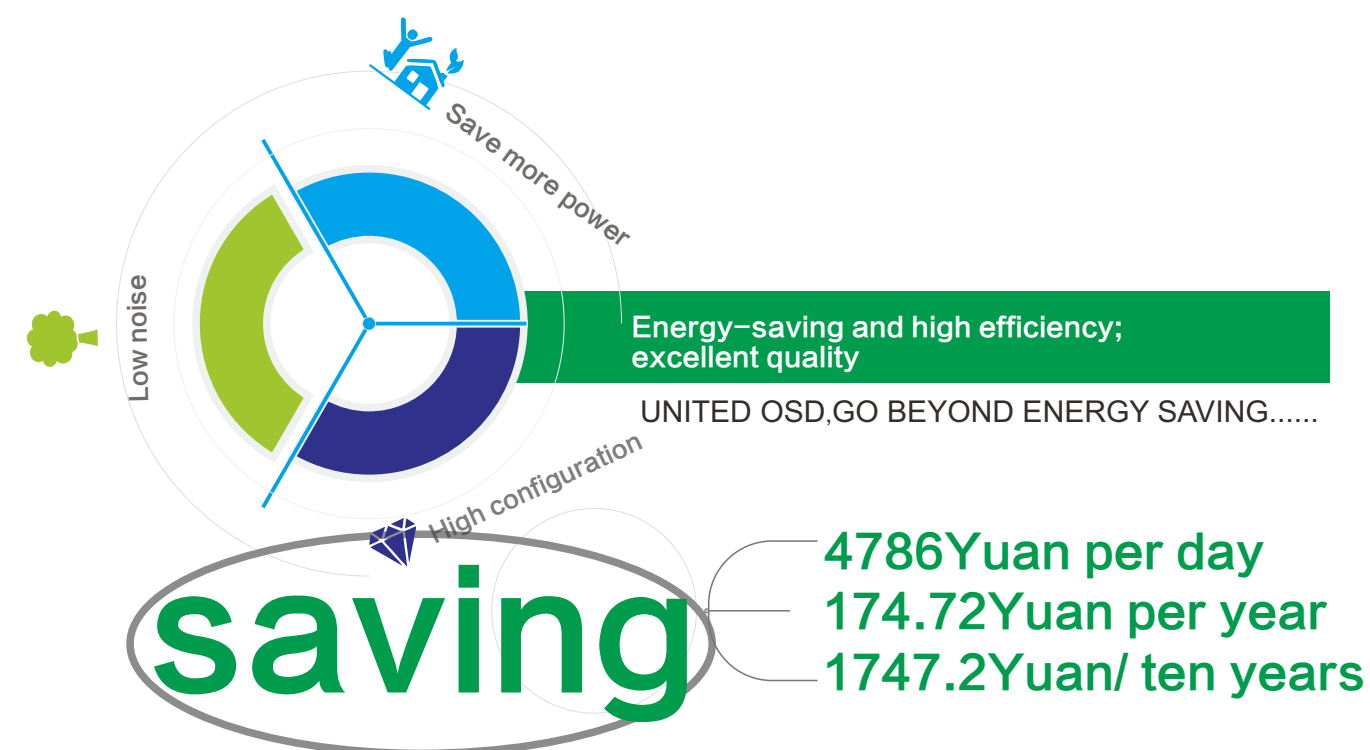


## Cases of successful energy-saving



Certain well-know heavy industrial corporation in Shandong uses 250kW compressor

Utilizing 5 pieces of UDT200A-8 polar compression spiral lobe air compressor after renovation to replace original air compressors can save electricity 2. 24 million kW\*h, creating profit of 1,747,200 RMB Yuan from energy-saving



# Product Features

UNITED OSD  
优耐特斯

## High-quality three filters

- America Donaldson heavy load air filter, oil filter, Life is longer, more prominent energy-saving effect.
- Oil and gas separator core customized in compliance with European standards has low oil in its gas emission and small pressure difference between the internal and the external

## Gas inlet valve

- Precise measurement of flow speed, small pressure loss
- Integrated control module with less loops and high stability

## Motor

- The whole system is equipped with standard YE3 high-efficiency fourth-level motor
- Explosion-proof grade: IP55
- SKF imported bearing

## Direct drive of high-efficiency gear

- Stable transmission ratio, high reliability
- Sealed structure prevents foreign substances from entering
- Direct drive of gears, rotors of all levels are at optimal efficiency point

## Independent oil supply system for gears and bearings

- Independent supply of precise oils for gears and bearings
- Prolongation of service life of gears and bearings

## New-generation smart control system

- Liquid crystal and touch screen
- Simple smart operation and more friendly human-computer interaction
- Integrating RS-485 communication function

## Zero-risk pipeline design

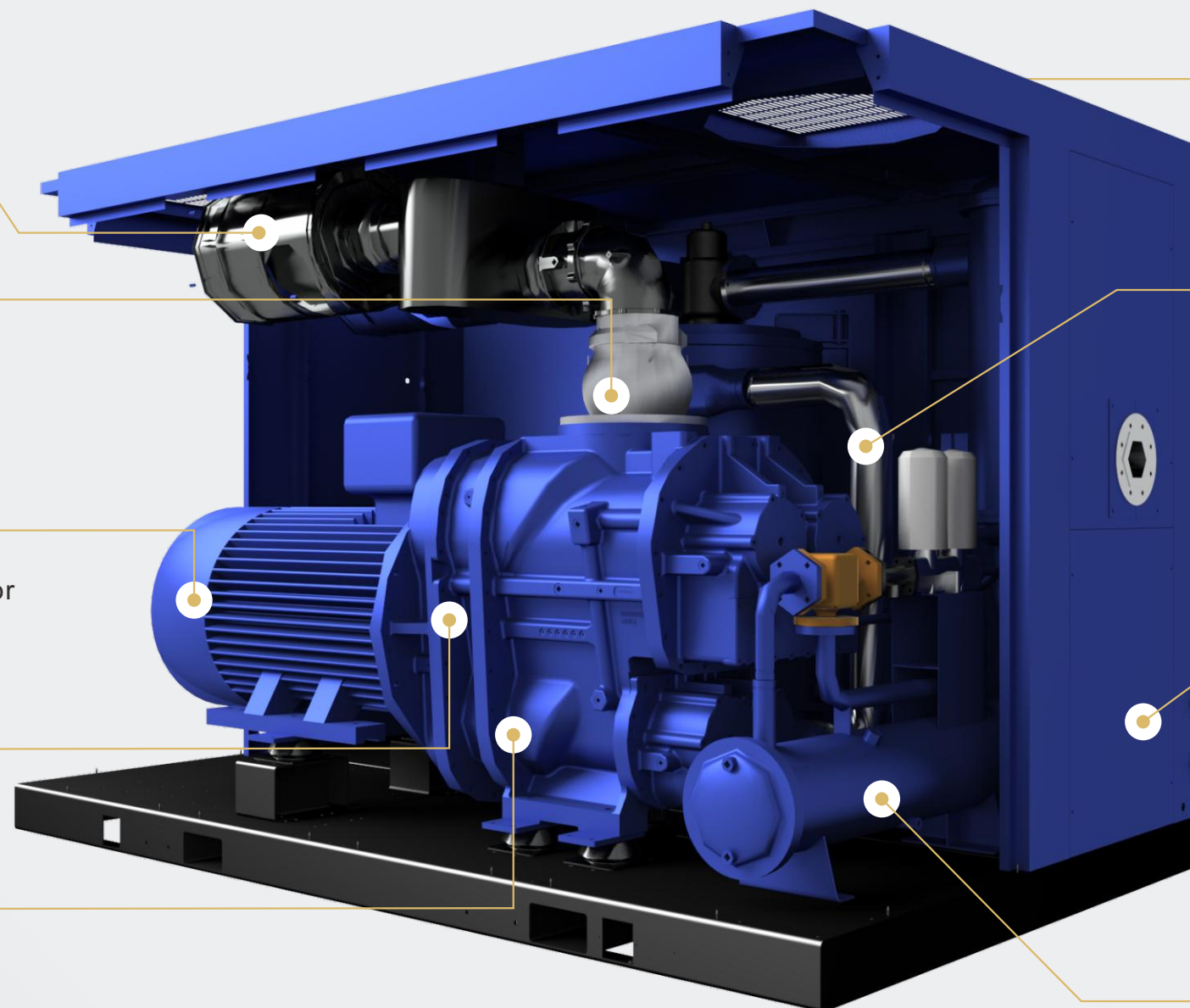
- Large pipe diameter design to reduce pressure loss
- One-off forming technology prevents leakage
- Flanged structure which makes assembling and dissembling more convenient

## Super cooling oil

- Good cooling effect
- Longer service life
- Fine separation of oil and water
- Good stability of high-temperature oxidation

## Cooling and heating separation system

- Large design margin of cooler
- Frequency conversion control of cooling fan
- Easy washing and low noise





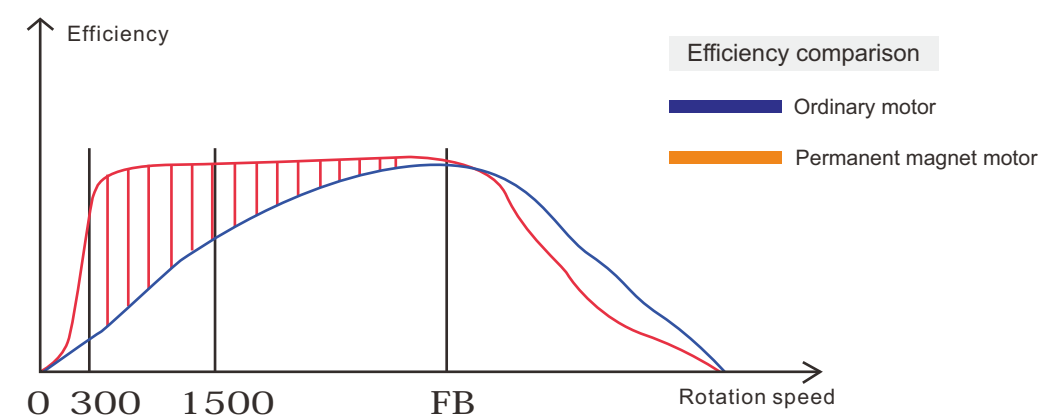
# Permanent magnet frequency characteristics Advantages

Wind of energy saving  
Leading the future  
Developing technology  
New thinking!

UNITED OSD  
优耐特斯

## The advantage of permanent magnet motor VS ordinary asynchronous motor

- High efficiency: cancel the excitation system loss and improve the efficiency.
- Still efficient in low load condition: energy efficiency of permanent magnet motor is higher over 9% than ordinary asynchronous motor and the energy efficiency remains unchanged as the speed reduces.
- Large starting torque: the ratio between the maximum starting torque and the rated torque of permanent magnet synchronous motor can reach more than three times, and the general asynchronous motor is only 1.6 times.
- More stable control: the response time of the permanent magnet motor is <50 ms and the motor can instantly adjust the gas output in a wide range which makes the pressure really stable.

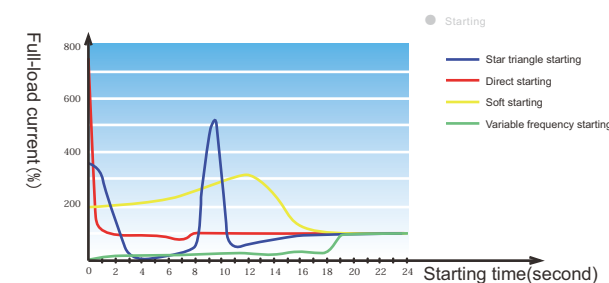


## Characteristics of UNITED OSD permanent magnet motor

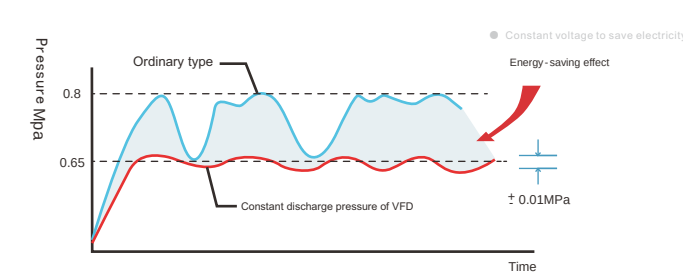
- Motor efficiency is as high as 96% above and power factor is 0.99. Far exceed the first level of energy efficiency standards
- Use permanent magnet with high coercivity and high temperature resistance. Permanent magnet guarantees no demagnetization in 150°C high temperature.
- Large centrifugal fan of independent air volume forces to cool, ensuring the safe operation of motor with low frequency in a long time.
- With F class insulation and 70K temperature rise design, high temperature conditions adapt to the working condition of air compressor.
- With fully enclosed IP55 protection grade, protect the motor internal clean environment and extend the life of the permanent magnet and insulation.
- Temperature protection is set in inside and give an alarm signal when temperature is in anomaly to protect the winding insulation and permanent magnets.

## Characteristics of UNITED OSD VPM permanent magnet frequency conversion air compressor

- With ultra-low temperature rise design, compressor allows the long-term stable operation under ultra-low frequency.
- Adopt closed-loop vector control system with more quick control and more accurate speed regulation.
- When frequency reduces more than 50%, the compressor unit can still maintain efficient operation.
- When pressure is stable, precisely control pressure fluctuations within 0.01 Mpa.
- Possess soft starting characteristic, avoid starting current shock and reduce energy consumption.



■ Figure shows comparison of several starting methods and you can see frequency converter is accelerating to start slowly which is more stable than soft starting, completely having avoided the current peak.



■ Under the setting frequency conversion pressure, the unit will automatically adjust and make the output pressure always stay within 0.1 bar, reducing unnecessary waste. (When pressure rises 1bar each time, power consumption rises 7%.)



Parameter Table

• Technical parameters of power frequency poles

| Model     | Nominal power (kW) | Discharge pressure (bar) | Volume flow (m3/min) | Outlet size | Unit weight (KG ) | External dimension (L×W×Hmm)                                                                         |
|-----------|--------------------|--------------------------|----------------------|-------------|-------------------|------------------------------------------------------------------------------------------------------|
| UDT45-7   | 45                 | 7                        | 10.3                 | Rp2         | 2150              | 2200 × 1300 × 1750(风冷)                                                                               |
| UDT45-8   |                    | 8                        | 10.1                 | Rp2         |                   |                                                                                                      |
| UDT55-7   |                    | 7                        | 13.0                 | Rp2         |                   | 2200                                                                                                 |
| UDT55-8   | 8                  | 12.0                     | Rp2                  |             |                   |                                                                                                      |
| UDT55-10  | 10                 | 10.0                     | Rp2                  |             |                   |                                                                                                      |
| UDT75-7   | 75                 | 7                        | 15.6                 | Rp2         | 2270              | 2200 × 1300 × 1750(风冷)                                                                               |
| UDT75-8   |                    | 8                        | 15.2                 | Rp2         |                   |                                                                                                      |
| UDT75-10  |                    | 10                       | 13.0                 | Rp2         |                   |                                                                                                      |
| UDT90-7   | 90                 | 7                        | 20.5                 | DN80        | 3700<br>3500      | 3050 × 1850 × 2120(风冷)<br>2850 × 1850 × 2120(水冷)                                                     |
| UDT90-8   |                    | 8                        | 19.5                 | DN80        |                   |                                                                                                      |
| UDT90-10  |                    | 10                       | 16.0                 | DN80        |                   |                                                                                                      |
| UDT110-7  | 110                | 7                        | 24.0                 | DN80        | 4100<br>3900      | 3050 × 1850 × 2120(风冷)<br>2850 × 1850 × 2120(水冷)                                                     |
| UDT110-8  |                    | 8                        | 23.0                 | DN80        |                   |                                                                                                      |
| UDT110-10 |                    | 10                       | 19.2                 | DN80        |                   |                                                                                                      |
| UDT110-13 | 132                | 13                       | 16.0                 | DN80        | 4200<br>4000      | 3050 × 1850 × 2120(风冷)<br>2850 × 1850 × 2120(水冷)                                                     |
| UDT132-7  |                    | 7                        | 30.0                 | DN80        |                   |                                                                                                      |
| UDT132-8  |                    | 8                        | 27.0                 | DN80        |                   |                                                                                                      |
| UDT132-10 |                    | 10                       | 23.0                 | DN80        |                   |                                                                                                      |
| UDT132-13 | 160                | 13                       | 19.5                 | DN80        | 5300<br>5000      | 3600 × 1850 × 2150(风冷)<br>3050 × 1850 × 2150(水冷)<br>3050 × 1850 × 2120(风冷)<br>2850 × 1850 × 2120(水冷) |
| UDT160-7  |                    | 7                        | 34.0                 | DN100       |                   |                                                                                                      |
| UDT160-8  |                    | 8                        | 33.0                 | DN100       |                   |                                                                                                      |
| UDT160-10 |                    | 10                       | 27.5                 | DN80        |                   |                                                                                                      |
| UDT160-13 | 185                | 13                       | 22.5                 | DN80        | 5450<br>5150      | 3600 × 1850 × 2150(风冷)<br>3050 × 1850 × 2150(水冷)<br>3050 × 1850 × 2120(风冷)<br>2850 × 1850 × 2120(水冷) |
| UDT185-7  |                    | 7                        | 40.0                 | DN100       |                   |                                                                                                      |
| UDT185-8  |                    | 8                        | 39.0                 | DN100       |                   |                                                                                                      |
| UDT185-10 |                    | 10                       | 32.5                 | DN80        |                   |                                                                                                      |
| UDT185-13 | 200                | 13                       | 27.5                 | DN80        | 7600<br>7250      | 4200 × 2150 × 2250(风冷)<br>3400 × 2150 × 2250(水冷)<br>3600 × 1850 × 2150(风冷)<br>3050 × 1850 × 2150(水冷) |
| UDT200-7  |                    | 7                        | 42.5                 | DN125       |                   |                                                                                                      |
| UDT200-8  |                    | 8                        | 41.5                 | DN125       |                   |                                                                                                      |
| UDT200-10 |                    | 10                       | 37.0                 | DN100       |                   |                                                                                                      |
| UDT200-13 | 220                | 13                       | 32.0                 | DN100       | 7950<br>7600      | 4200 × 2150 × 2250(风冷)<br>3400 × 2150 × 2250(水冷)                                                     |
| UDT220-7  |                    | 7                        | 50.0                 | DN125       |                   |                                                                                                      |
| UDT220-8  |                    | 8                        | 46.0                 | DN125       |                   |                                                                                                      |
| UDT220-10 |                    | 10                       | 39.0                 | DN125       |                   |                                                                                                      |
| UDT220-13 | 250                | 13                       | 33.0                 | DN125       | 8350<br>8000      | 4200 × 2150 × 2250(风冷)<br>3400 × 2150 × 2250(水冷)                                                     |
| UDT250-7  |                    | 7                        | 54.0                 | DN125       |                   |                                                                                                      |
| UDT250-8  |                    | 8                        | 51.0                 | DN125       |                   |                                                                                                      |
| UDT250-10 |                    | 10                       | 41.0                 | DN125       |                   |                                                                                                      |
| UDT250-13 | 280                | 13                       | 39.0                 | DN125       | 8550<br>8200      | 4200 × 2150 × 2250(风冷)<br>3400 × 2150 × 2250(水冷)                                                     |
| UDT280-7  |                    | 7                        | 60.0                 | DN125       |                   |                                                                                                      |
| UDT280-8  |                    | 8                        | 57.0                 | DN125       |                   |                                                                                                      |
| UDT280-10 |                    | 10                       | 49.5                 | DN125       |                   |                                                                                                      |
| UDT280-13 | 315                | 13                       | 43.0                 | DN125       | 9800<br>9000      | 5000 × 2150 × 2300(风冷)<br>3850 × 2150 × 2300(水冷)                                                     |
| UDT315-7  |                    | 7                        | 67.0                 | DN125       |                   |                                                                                                      |
| UDT315-8  |                    | 8                        | 62.0                 | DN125       |                   |                                                                                                      |
| UDT315-10 |                    | 10                       | 56.0                 | DN125       |                   |                                                                                                      |
| UDT315-13 | 355                | 13                       | 51.0                 | DN125       | 10000<br>9200     | 5000 × 2150 × 2300(风冷)<br>3850 × 2150 × 2300(水冷)                                                     |
| UDT355-7  |                    | 7                        | 73.0                 | DN125       |                   |                                                                                                      |
| UDT355-8  |                    | 8                        | 69.0                 | DN125       |                   |                                                                                                      |
| UDT355-10 |                    | 10                       | 61.0                 | DN125       |                   |                                                                                                      |
| UDT355-13 |                    | 13                       | 54.0                 | DN125       |                   |                                                                                                      |

• Technical parameters of variable frequency poles

| Model        | Nominal power (KW) | Discharge pressure (bar) | Volume flow (m3/min) | Outlet size | Unit weight (KG) | External dimension (L×W×Hmm)                                                                         |
|--------------|--------------------|--------------------------|----------------------|-------------|------------------|------------------------------------------------------------------------------------------------------|
| UDT45-7VFD   | 45                 | 7                        | 4.1-10.3             | Rp2         | 2200             | 2350 × 1300 × 1750(风冷)                                                                               |
| UDT45-8VFD   |                    | 8                        | 4.0-10.1             | Rp2         |                  |                                                                                                      |
| UDT55-7VFD   | 55                 | 7                        | 5.2-13.0             | Rp2         | 2250             | 2350 × 1300 × 1750(风冷)                                                                               |
| UDT55-8VFD   |                    | 8                        | 4.8-12.0             | Rp2         |                  |                                                                                                      |
| UDT55-10VFD  |                    | 10                       | 4.0-10.0             | Rp2         |                  |                                                                                                      |
| UDT75-7VFD   | 75                 | 7                        | 6.2-15.6             | Rp2         | 2320             | 2350 × 1300 × 1750(风冷)                                                                               |
| UDT75-8VFD   |                    | 8                        | 6.0-15.2             | Rp2         |                  |                                                                                                      |
| UDT75-10VFD  |                    | 10                       | 5.2-13.0             | Rp2         |                  |                                                                                                      |
| UDT90-7VFD   | 90                 | 7                        | 8.2-20.5             | DN80        | 3750<br>3550     | 3200 × 1850 × 2120(风冷)<br>3000 × 1850 × 2120(水冷)                                                     |
| UDT90-8VFD   |                    | 8                        | 7.8-19.5             | DN80        |                  |                                                                                                      |
| UDT90-10VFD  |                    | 10                       | 6.4-16.0             | DN80        |                  |                                                                                                      |
| UDT110-7VFD  | 110                | 7                        | 9.6-24.0             | DN80        | 4180<br>3980     | 3200 × 1850 × 2120(风冷)<br>3000 × 1850 × 2120(水冷)                                                     |
| UDT110-8VFD  |                    | 8                        | 9.2-23.0             | DN80        |                  |                                                                                                      |
| UDT110-10VFD |                    | 10                       | 7.6-19.2             | DN80        |                  |                                                                                                      |
| UDT110-13VFD | 132                | 13                       | 6.4-16.0             | DN80        | 4280<br>4080     | 3200 × 1850 × 2120(风冷)<br>3000 × 1850 × 2120(水冷)                                                     |
| UDT132-7VFD  |                    | 7                        | 12.0-30.0            | DN80        |                  |                                                                                                      |
| UDT132-8VFD  |                    | 8                        | 10.8-27.0            | DN80        |                  |                                                                                                      |
| UDT132-10VFD |                    | 10                       | 9.2-23.0             | DN80        |                  |                                                                                                      |
| UDT132-13VFD | 160                | 13                       | 7.8-19.5             | DN80        | 5410<br>5110     | 3900 × 1850 × 2150(风冷)<br>3350 × 1850 × 2150(水冷)<br>3200 × 1850 × 2120(风冷)<br>3000 × 1850 × 2120(水冷) |
| UDT160-7VFD  |                    | 7                        | 13.6-34.0            | DN100       |                  |                                                                                                      |
| UDT160-8VFD  |                    | 8                        | 13.2-33.0            | DN100       |                  |                                                                                                      |
| UDT160-10VFD |                    | 10                       | 11.0-27.5            | DN80        |                  |                                                                                                      |
| UDT160-13VFD | 185                | 13                       | 9.0-22.5             | DN80        | 5560<br>5260     | 3900 × 1850 × 2150(风冷)<br>3350 × 1850 × 2150(水冷)<br>3200 × 1850 × 2120(风冷)<br>3000 × 1850 × 2120(水冷) |
| UDT185-7VFD  |                    | 7                        | 16.0-40.0            | DN100       |                  |                                                                                                      |
| UDT185-8VFD  |                    | 8                        | 15.6-39.0            | DN100       |                  |                                                                                                      |
| UDT185-10VFD |                    | 10                       | 13.0-32.5            | DN80        |                  |                                                                                                      |
| UDT185-13VFD | 200                | 13                       | 11.0-27.5            | DN80        | 7710<br>7360     | 4200 × 2150 × 2250(风冷)<br>3400 × 2150 × 2250(水冷)<br>3900 × 1850 × 2150(风冷)<br>3350 × 1850 × 2150(水冷) |
| UDT200-7VFD  |                    | 7                        | 17.0-42.5            | DN125       |                  |                                                                                                      |
| UDT200-8VFD  |                    | 8                        | 16.6-41.5            | DN125       |                  |                                                                                                      |
| UDT200-10VFD |                    | 10                       | 14.8-37.0            | DN100       |                  |                                                                                                      |
| UDT200-13VFD | 220                | 13                       | 12.8-32.0            | DN100       | 8100<br>7750     | 4200 × 2150 × 2250(风冷)<br>3400 × 2150 × 2250(水冷)                                                     |
| UDT220-7VFD  |                    | 7                        | 20.0-50.0            | DN125       |                  |                                                                                                      |
| UDT220-8VFD  |                    | 8                        | 18.4-46.0            | DN125       |                  |                                                                                                      |
| UDT220-10VFD |                    | 10                       | 15.6-39.0            | DN125       |                  |                                                                                                      |
| UDT220-13VFD | 250                | 13                       | 13.2-33.0            | DN125       | 8500<br>8150     | 4200 × 2150 × 2250(风冷)<br>3400 × 2150 × 2250(水冷)                                                     |
| UDT250-7VFD  |                    | 7                        | 21.6-54.0            | DN125       |                  |                                                                                                      |
| UDT250-8VFD  |                    | 8                        | 20.4-51.0            | DN125       |                  |                                                                                                      |
| UDT250-10VFD |                    | 10                       | 16.4-41.0            | DN125       |                  |                                                                                                      |
| UDT250-13VFD | 280                | 13                       | 15.6-39.0            | DN125       | 8730<br>8380     | 4200 × 2150 × 2250(风冷)<br>3400 × 2150 × 2250(水冷)                                                     |
| UDT280-7VFD  |                    | 7                        | 24.0-60.0            | DN125       |                  |                                                                                                      |
| UDT280-8VFD  |                    | 8                        | 22.8-57.0            | DN125       |                  |                                                                                                      |
| UDT280-10VFD |                    | 10                       | 19.8-49.5            | DN125       |                  |                                                                                                      |
| UDT280-13VFD | 315                | 13                       | 17.2-43.0            | DN125       | 9980<br>9180     | 5000 × 2150 × 2300(风冷)<br>3850 × 2150 × 2300(水冷)                                                     |
| UDT315-7VFD  |                    | 7                        | 26.8-67.0            | DN125       |                  |                                                                                                      |
| UDT315-8VFD  |                    | 8                        | 24.8-62.0            | DN125       |                  |                                                                                                      |
| UDT315-10VFD |                    | 10                       | 22.4-56.0            | DN125       |                  |                                                                                                      |
| UDT315-13VFD | 355                | 13                       | 20.4-51.0            | DN125       | 10180<br>9380    | 5000 × 2150 × 2300(风冷)<br>3850 × 2150 × 2300(水冷)                                                     |
| UDT355-7VFD  |                    | 7                        | 29.2-73.0            | DN125       |                  |                                                                                                      |
| UDT355-8VFD  |                    | 8                        | 27.6-69.0            | DN125       |                  |                                                                                                      |
| UDT355-10VFD |                    | 10                       | 24.4-61.0            | DN125       |                  |                                                                                                      |
| UDT355-13VFD |                    | 13                       | 21.6-54.0            | DN125       |                  |                                                                                                      |

• Technical parameters of low-pressure poles compression

| Model      | Nominal power (KW) | Discharge pressure (bar) | Volume flow (m3/min) | Outlet size | Unit weight (KG ) | External dimension (L×W×Hmm)             |
|------------|--------------------|--------------------------|----------------------|-------------|-------------------|------------------------------------------|
| UDT90-5.5  | 90                 | 5.5                      | 22.5                 | DN125       | 3750              | 3200×2050×2120(风冷)<br>3000×1850×2120(水冷) |
| UDT110-5.5 | 110                | 5.5                      | 27.0                 | DN125       | 4150              | 3200×2050×2120(风冷)<br>3000×1850×2120(水冷) |
| UDT132-5.5 | 132                | 5.5                      | 32.5                 | DN125       | 4250              | 3200×2050×2120(风冷)<br>3000×1850×2120(水冷) |
| UDT160-5.5 | 160                | 5.5                      | 41.0                 | DN150       | 6000              | 4200×2150×2250(风冷)<br>3400×2150×2250(水冷) |
| UDT200-5.5 | 200                | 5.5                      | 50.0                 | DN150       | 7000              | 4200×2150×2250(风冷)<br>3400×2150×2250(水冷) |
| UDT220-5.5 | 220                | 5.5                      | 55.0                 | DN150       | 7200              | 4200×2150×2250(风冷)<br>3400×2150×2250(水冷) |
| UDT250-5.5 | 250                | 5.5                      | 60.0                 | DN150       | 7400              | 4200×2150×2250(风冷)<br>3400×2150×2250(水冷) |

• Technical parameters of permanent magnet low-pressure poles compression

| Model         | Nominal power (KW) | Discharge pressure (bar) | Volume flow (m3/min) | Outlet size | Unit weight (KG ) | External dimension (L×W×Hmm)             |
|---------------|--------------------|--------------------------|----------------------|-------------|-------------------|------------------------------------------|
| UDT90-5.5VPM  | 90                 | 5.5                      | 9.0~22.5             | DN125       | 3800              | 3200×2050×2120(风冷)<br>3000×1850×2120(水冷) |
| UDT110-5.5VPM | 110                | 5.5                      | 10.8~27.0            | DN125       | 4230              | 3200×2050×2120(风冷)<br>3000×1850×2120(水冷) |
| UDT132-5.5VPM | 132                | 5.5                      | 13.0~32.5            | DN125       | 4330              | 3200×2050×2120(风冷)<br>3000×1850×2120(水冷) |
| UDT160-5.5VPM | 160                | 5.5                      | 16.4~41.0            | DN150       | 6110              | 4200×2150×2250(风冷)<br>3400×2150×2250(水冷) |
| UDT200-5.5VPM | 200                | 5.5                      | 20.0~50.0            | DN150       | 7110              | 4200×2150×2250(风冷)<br>3400×2150×2250(水冷) |
| UDT220-5.5VPM | 220                | 5.5                      | 22.0~55.0            | DN150       | 7350              | 4200×2150×2250(风冷)<br>3400×2150×2250(水冷) |
| UDT250-5.5VPM | 250                | 5.5                      | 24.0~60.0            | DN150       | 7550              | 4200×2150×2250(风冷)<br>3400×2150×2250(水冷) |