



FBU Sealing has successfully resolved the sealing challenge for the FLOWSERVE® BB2 pump handling PX media under extreme conditions (180°C, 2.5MPa) at a PTA plant, utilizing its high-end APOG mechanical seal and WED950 support system. This solution eliminates leakage risks and ensures long-term, stable operation of the facility.



FBU SEALING TECHNOLOGY (SUZHOU) CO.,LTD

FBU Successfully Ensures Long-Term Operation of Key Pump Units in PTA Plant

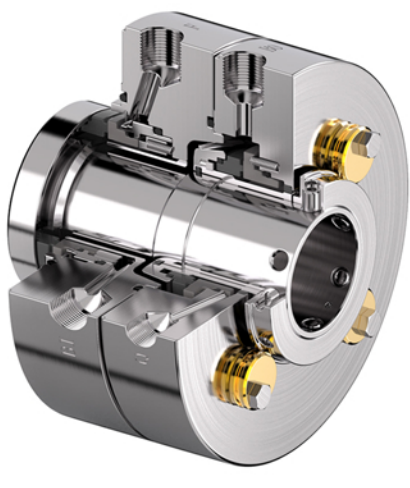
1. Chemical Field Application: Sealing Solutions Under Harsh Operating Conditions

In the key process link of a large-scale PTA (Purified Terephthalic Acid) production plant, the core conveying equipment, the FLOWSERVE® BB2 centrifugal pump, is faced with extremely high sealing challenges. This pump is required to convey PX (p-Xylene) as the medium, and the actual operating environment has a temperature as high as 147°C and a pressure up to 1.06 MPa. The PX medium is volatile, flammable, explosive and highly toxic, which puts forward extremely high requirements for the reliability and safety of the sealing system. As the "lifeline" for material conveyance in the plant, once the FLOWSERVE® BB2 pump suffers from seal failure leading to medium leakage, it will not only cause serious production interruption, but also trigger potential safety hazards and environmental risks. Therefore, the sealing system is required to have extreme reliability, temperature resistance and pressure resistance.

Mech Seal Paramater Selection

| API Pump Type | Pump wet parts Material | Speed (rpm) | Seal Process Conditions | | | | Seal Flushing Plan | Seal standard |
|---------------|-------------------------|-------------|-------------------------|----------------|-------------|--------------|--------------------|---------------|
| | | | Liquid | Shaft Dia (mm) | Temperature | Pressure | | |
| | | | | | Design | Seal chamber | | |
| BB2 | A-8 | 2950 | p-Xylene | 90 | 147 | 1.06 | 11 53B | API682-2014 |

In response to this harsh demand, after in-depth communication with the customer, the FBU team has customized an overall solution centered on the APOG mechanical seal and matched with the WED950 seal auxiliary system. The APOG mechanical seal adopts high-end sealing materials that have undergone rigorous testing and is processed and formed by fully imported numerical control production equipment. The precision of the sealing surface reaches the micron level, enabling it to maintain stable sealing performance in the environment with high temperature of 147°C and high pressure of 1.06 MPa. The supporting WED950 seal auxiliary system can adjust the pressure and temperature of the seal chamber in real time, further optimizing the sealing working conditions and effectively avoiding the leakage risk of PX medium caused by fluctuations in working conditions. At present, this set of sealing system has been operating stably on the customer's site, which has completely solved the problems of frequent failure and high maintenance cost of the previous traditional sealing solutions, and ensured the continuous and stable operation of the production line in the PTA plant.



2. Product and Service Advantages: Full-Chain Guarantee from Material to Delivery

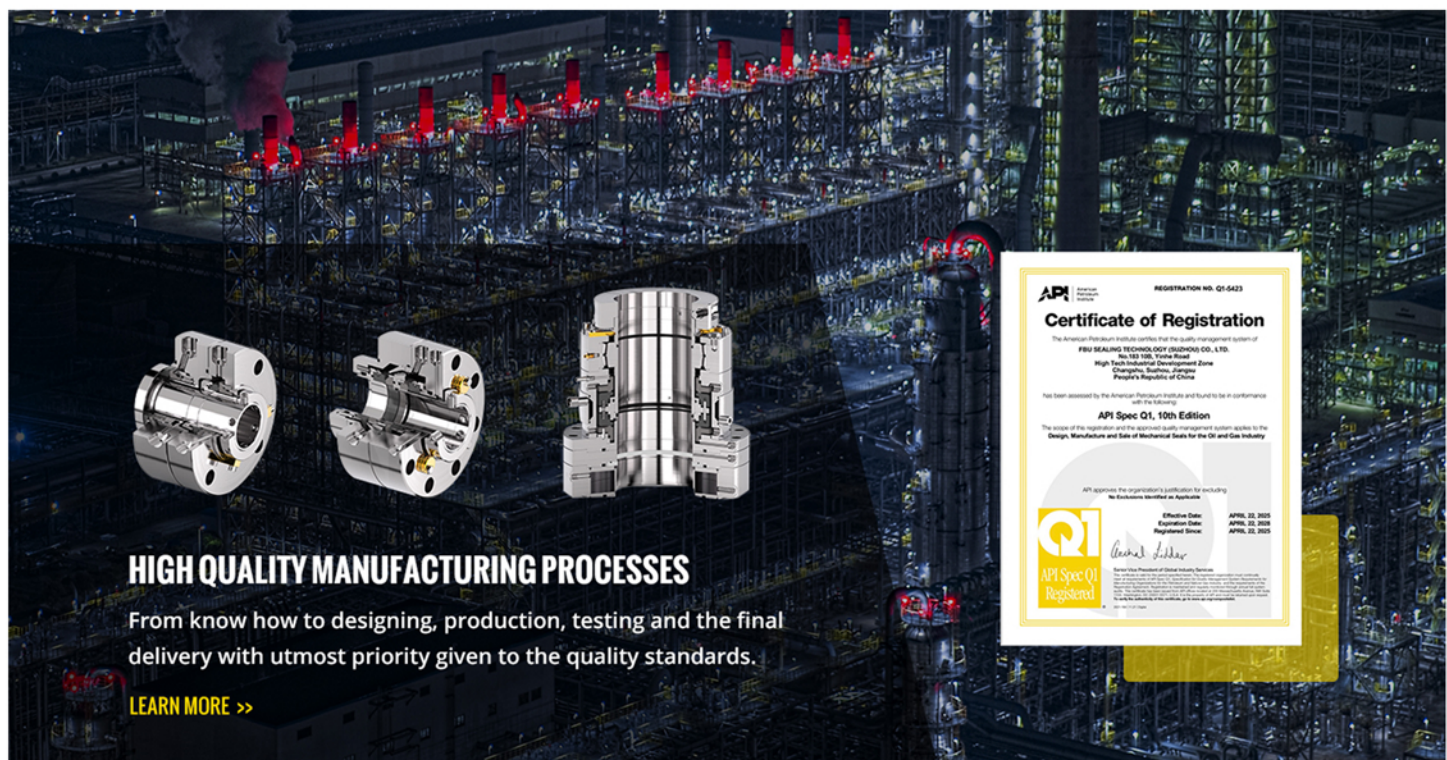
The reason why FBU can successfully overcome the harsh working conditions in this PTA plant project lies in our extreme pursuit of "high quality":

1. Strict Material Selection to Lay a Solid Foundation for Quality: We are well aware that sealing materials are the core determining the performance of products. We conduct multiple rounds of tests on temperature resistance, pressure resistance and medium compatibility for each type of material. The materials selected for the APOG mechanical seal this time are specially customized according to the characteristics of the PX medium, so as to eliminate the hidden danger of seal failure from the source.
2. Advanced Technology to Ensure Stable Precision: By adopting fully imported high-end numerical control production equipment, every process from cutting, grinding to assembly of the cartridge mechanical seal is under automatic and precise control, which avoids errors caused by manual operation, ensures the perfect adaptation between the APOG mechanical seal and the FLOWSERVE® BB2 pump, and guarantees the mechanical seal to reach the optimal state.
3. Full-Process Inspection to Eliminate Quality Risks: All products need to go through 12 inspection procedures from production to delivery, including pressure test, temperature cycle test, sealing performance simulation test, etc. The APOG seal and WED950 auxiliary system delivered this time have completed a 72-hour continuous operation test in the factory, ensuring that they can be directly installed and used upon arrival at the customer's site.
4. Sufficient Inventory to Ensure Timely Delivery: Relying on a sound spare parts inventory management system, we can achieve a fast response of "delivery within seven days". In this project, the customer needed to shorten the delivery cycle due to emergency equipment maintenance. With sufficient inventory of core spare parts for APOG seals, FBU completed the customized production and delivery in only 7 days, minimizing the plant's downtime losses.

3. Strategic Guarantee: Value Commitment Centered on Customer Needs

"Three-Year Warranty, Seven-Day Delivery" is a solemn commitment made by FBU Sealing to customers. In view of the characteristics of long-term continuous operation of equipment in the chemical industry, the "Three-Year Warranty" not only covers the quality problems of the products themselves, but also includes technical support and maintenance guidance in the later use process, so that customers do not need to worry about after-sales risks. The "Seven-Day Delivery" fully takes into account the pain point of the chemical production industry that "downtime means losses". Through efficient production and inventory management, we provide customers with fast response to solve emergency needs.

In this PTA plant project, FBU carried out in-depth cooperation with the customer throughout the process from demand communication, program design to production and delivery, and on-site commissioning. We not only provided sealing products suitable for harsh working conditions, but also won the customer's recognition with professional services. In the future, we will continue to adhere to the highest standards of API Q1, provide customized mechanical seal solutions for more customers in the petrochemical and related industries, help realize the long-term operation of key rotating equipment, and achieve win-win development.



If your enterprise is also faced with sealing problems of rotating equipment such as centrifugal pumps and agitators, no matter how harsh the working conditions are, you can contact FBU. Just inform us of your actual needs, and we will work with you to create the most suitable sealing solution!