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# Glimpse of Myande

Oils&Fats Equipment and Technology    Starch&Derivatives Equipment and Technology  
Solid-state Fermentation Equipment and Technology    Evaporation Crystallization Equipment and Technology

*Passion Preceision Honesty*

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Newsletter

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With professionalism, we manufacture high quality mechanical products and supply complete solutions that enable our clients to succeed. We are dedicated to create a bright future for us as well as for our clients.



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MYANDE MYANDE GROUP



## Myande Oils & Fats Engineering: Brief Annual Review

### Project Documentary: Cooperation Among the Strong to Achieve Win-win Situation

Following the first cooperation in warehousing and logistics projects with Jiangsu Dafeng Port Xingnong Agricultural Products in 2018, Myande once again undertook the Dafeng Port warehousing and logistics transportation equipment and affiliated equipment expansion project. The cooperation mode of supply and installation of Yihai Kerry complete sets of equipment was in progress. In this year Myande undertook two rice bran oil turnkey projects of Yihai Kerry Group and one 600 tpd corn germ pre-press extraction and extraction projects for Fuyu Company. Installation of the two Kerry rice bran extraction lines has been completed and loaded commissioning is going on.

The successful completion of the complete set of 3,000 tons rapeseed pre-extraction production line undertaken for COFCO Donghai Grain and Oil marks a major step forward

between the cooperation between Myande and COFCO Group. Contract signed with Daodao Group Maoming Company for its second 2,000 tons rapeseed project proofs once again Myande's strength in the field of rapeseed processing. The contract signed with a major Russian grain & oil processor for the supply of turnkey engineering project (capacity: 3,000 tpd soybeans, 2700 tpd sunflower seeds, and 2,000 tpd rapeseed including a complete set of hydration degummed phospholipid drying line) set up a new milestone on Myande's road of global operation.

Also in this year, Jinsheng Group's 300 tpd peanut crushing and refinery lines were successfully commissioned. The smooth installation of 600 tons of rapeseed cake extraction project for Aiju Group in Kazakhstan area provided one concrete manifestation of Myande's active response to the country's "Belt and Road" initiative.

### Efficient and Reliable Core Products

Story of a coin: In the oil production plant, on the 5000 tpd production line, a flaker from Myande is running. Someone places one yuan coin vertically on the running machine gently, and there it remains standing for quite some time. This is just an example scene of the running flaker in the plant.

Let figures speak for themselves. In 2019, Myande flakers and crackers got the new breakthroughs. The performance has been rigorously tested, and massive data shows that product quality, processing output and electricity Consumption, all are among the best. In this year, Myande flakers were also successfully sold in batches to COFCO and other major players in the global grain trading and processing sectors. So far over 200 units of Myande flakers and crackers are running in various parts of the world. Their stability and reliability of the equipment have been fully verified.

After the successful launch of Myande brand meal reclaimer system in July 2016, the first unit has been running smoothly and steadily in Jiangsu Huifu plant. So far Myande has supplied over 50 units. Buyers include Fangchenggang Fengye Grains & Oils Co., and Anhui Fengyuan Group. The successful launch and sales Myande meal reclaimer system not ended market monopoly but also provided customers with a system solution to discharge materials that are prone to arching and bridging.



### Technical Innovation: Intelligent Factory with Data Management

The professionally customized factory digitization and intelligent solutions according to customer needs supplied by Myande can made the factory achieve a complete factory-wide intelligent automation control system from raw material



procurement to product sales. With high integration of information technology and industrial technology, the highly interactive communication networks, computer technology, automation technology and software systems created a new value model. The resource, information, goods and persons are interconnected to form a virtual-real system. It makes the factory equipment "speak and think", and realize three major functions at the same time as minimize the dependence of the manufacturing industry on labor, minimize

the circulation cost, and meet the individual needs of users to the greatest extent. While providing customized intelligent control systems for factories, Myande also leads the development of the industry, depending on the Internet and huge data to realize intelligent management and service integration. (Translated by Chen Ting)



### A Letter from a Satisfied Customer

Dear Mr. Huang  
Greetings from VI Company India!

We are grateful to you for always taking our project on top priority and personally intervening whenever we faced problems in the project. We are also thankful to you for taking out time from your busy schedule whether it was for locating the missing gearbox or other missing parts or arranging for the operation manual in English or the spare parts list and joining us for conference call to ensure that your team understand our problem and acts immediately.

Dear sir we would like to put on the record the efforts put in by all your engineers namely Mr. WU HONGWEI, Mr. MA WEIKUAN, Mr. SUN YU & Mr. HUANG HAILONG.

We would further like to bring on records the efficient and great work done by Mr. Wu- Project Engineer, who despite being on the site for so long, was always full of energy and never hesitated in solving any of our problem and ensuring fast erection and commissioning of our project. Mr. Wu and your team was always at the site very early and worked till late night to ensure that the project work completed faster. We are happy to learn that you have such hard working, enthusiastic and dedicated engineers in the team who put in all their efforts and initiatives to ensure that the project is completed on time.

We would also like to recommend promotion of Mr. Wu as he is a very good team leader and very intelligent and dedicated person.

We thank you for a favorable time in business together.

Best Regards,

Director of VI Company India



### Myande Completed Another MVR Evaporation Project

Recently, a mustard brine MVR evaporation project undertaken by Myande for Chongqing Fuling Baiheliang passed the acceptance check. The project was successfully commissioned three months ago and has been running steadily since then. All process indices meet the contract requirements, and the energy consumption figures are better than the contract requirements.

Chongqing Fuling Mustard Group Co., Ltd. is the largest mustard manufacturer in China. Consistent with its emphasis on environmental protection, sustainable development, and resource conservation, the company entrusted Myande to supply this MVR evaporation facility for the purpose of improve its environmental performance by pretreating, evaporation and concentration the mustard brine generated from its production line. The condensate is discharged to wastewater treatment station, and the concentrated brine is returned to the workshop for reuse.

Taking into account the production characteristics, energy conservation and environmental protection requirements of Fuling Mustard Group, Myande designed the brine evaporation and concentration system. The mechanical vapor recompression (MVR) technology is adopted to improve vapor quality and to greatly reduce steam consumption. The system has multiple advantages of excellent performance, significant energy saving, high automation and easy operation, and has achieved the resource utilization of mustard brine.

Myande has more than ten years of experience in process design and project implementation in the field of evaporation and crystallization, as well as has specialized technical personnel and project implementation team, and continuously pursues innovation in the field of evaporation.

(Translated by Lu Le)





### Myande Group Was Awarded "Jiangsu AAA Product Quality Enterprise"

Recently, Jiangsu Provincial Market Supervision and Administration announced "List of 2019 Qualified AAA Product Quality Enterprises of Jiangsu Province". Myande Group was one of the five Yangzhou companies that were included in this list. Procedures of assessment on these companies include application, document review, on-site inspection and multiple level of screenings.

The awarded "AAA Product Quality Symbol", the highest quality credit rating, represents comprehensive strength of the company as well as its level of services and contribution to the entire industry.

(Translated by Wang Xin)

### Myande Group Won the Title of "2019 Quality Benchmark Enterprise" of Jiangsu Province

At the end of 2019, Myande Group was awarded the Title of 2019 Quality Benchmark Enterprise" of Jiangsu Province.

Over the past years, Myande Group in compliance with its ISO9001 quality management system certification, ASME certification and CE certification has developed a complete management system, a sophisticated information system, a highly innovative research and development platform, and a first-class research and development and management software. Myande Group has a globally leading manufacturing platform in the field of oil, starch and fermentation equipment, and a "customer-centric" service system.

(Translated by Wang Xin)

## Excessive Vibration of High-speed Centrifugal Vapor Compressor: Causes and Solutions

Single-stage high-speed centrifugal vapor compressors are mainly used in evaporation systems in biopharmaceutical, food, chemical and other industries. After being compressed by the compressor, the pressure and temperature of secondary steam generated from the evaporation system increase, and its enthalpy increases accordingly. This secondary steam can then be sent to the heating chamber of the evaporator to be used as heating steam. Among the various monitoring indicators, the vibration value of the compressor is an important figure indicating how stably the compressor and the whole system is running.

The following part of this paper studies causes excessive compressor vibration and offers solutions.

### 1. Lubrication System

Adequate lubrication is a prerequisite for smooth operation of compressors. The lubricating system lubricates the bearings and gears of the compressor and takes away heat generated by these high-speed running parts. After leaving the working part, the lubricating oil returns to the working part after filtration and cooling, thus forming a closed circulation system. Generally, LTSA32 lubricant, whose viscosity is 32mm<sup>2</sup>/s at 40°C, is used for lubricating turbines.

Viscosity of the lubricating oil decreases as its temperature goes up, resulting in insufficient oil film stiffness and may cause vibration value of the compressor to fluctuate or even trigger relevant alarming devices. When oil supply pressure does not exceed 0.1Mpa, insufficient oil film stiffness will also occur. In more serious cases, it may lead to contact between the bearing and the bearing pad. In case lubricant is not deteriorated with no water ingress, if oil temperature cannot be controlled below 50 ° C after cooling down, the adjustable range of oil inlet temperature can be increased by using turbine oil LTSA46 or LTSA68 to meet operational requirements.

### 2. Bearing

Bearing contacts include point contact, line contact, and surface contact. Single-stage high-speed centrifugal steam compressor is normally equipped with surface-contact sliding bearings because of its high rotating speed and load. Major

categories include oval bearing (Figure 1) and tilting bearing (Figure 2).

Clearance between the pad and the shaft neck varies from 0.2% to 0.3% of the diameter. If the clearance is too big or too small, excessive vibration or fluctuation will occur in the early operation stage of the compressor. In this case, you need to adjust the oil wedge of the bearing.

However, sliding bearing has a unique type of faulty oil film oscillation. A strong oil film resonance occurs in the rotor bearing system, and the resonance eddy is called oil film oscillation. It is a self-excited vibration caused by the oil film force, the instantaneous amplitude suddenly rises, and a local oil film rupture occurs quickly. When the oil film oscillates, the energy input from the rotor is big, which causes damage to the components of the rotor bearing system and even the entire unit.



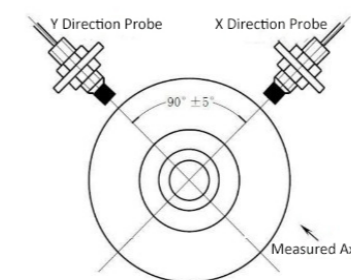
Figure 1



Figure 1

### 3. Vibration Sensor

Vibration sensor is one of the key components in measurement technology. It is a relatively non-contact sensor. It measures the vibration displacement or amplitude of an object by the change in the distance between the sensor end and the measured object. The distance between the sensor and the shaft is adjusted to a suitable range by the feedback voltage, and the data obtained when the rotor is running is the vibration value feedback.



However, the voltage adjustment of the vibration sensor should be within the required range. Otherwise the feedback signal will be wrong.

### 4. Dynamic Balance

The rotor of a rotating machine is affected by factors such as material quality and processing technology. The mass of the rotor ought to be distributed on the center line, but it cannot be absolutely axisymmetric. Therefore, it is impossible for any rotor to achieve absolute balance. There is always an eccentric distance between the mass center of the rotor and the rotation



center, which causes a periodic centrifugal force interference when the rotor rotates, ultimately causing the machine to vibrate. The causes of vibration may be the inherent imbalance in the manufacturing process, or the entrained material in the secondary steam entering the compressor. The secondary steam entrained with the material will slowly scale the surface of the impeller during operation, causing the compressor to vibrate. Therefore, the compressor impeller needs to be cleaned regularly, or a secondary separator or steam scrubber needs to be added at the compressor inlet to maintain the stable operation of the compressor.

### Summary

In addition to the above reasons for the vibration of the compressor, there are other factors that maybe cause unusual vibration or fluctuation:

1. If the vibration sensor signal wire is a shielded one, and whether it is grounded.
2. The no-load setting should be performed before setting parameters of the inverter, and the calibration should be performed again when the load is set.
3. Align the coupling again after the compressor is in place.
4. Check the foundation and installation.
5. Whether the lubrication system is blocked by impurities.

When the vibration of the compressor occurs, you need to find out the problem by combining the situation on the spot and solve the problem in the shortest time.

(Translated by Lu Le)