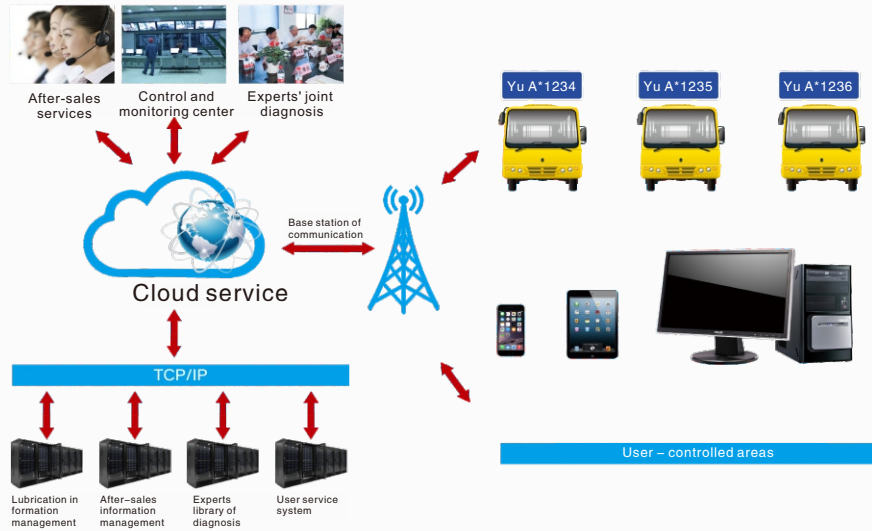


Smart lubrication management system of commercial vehicle



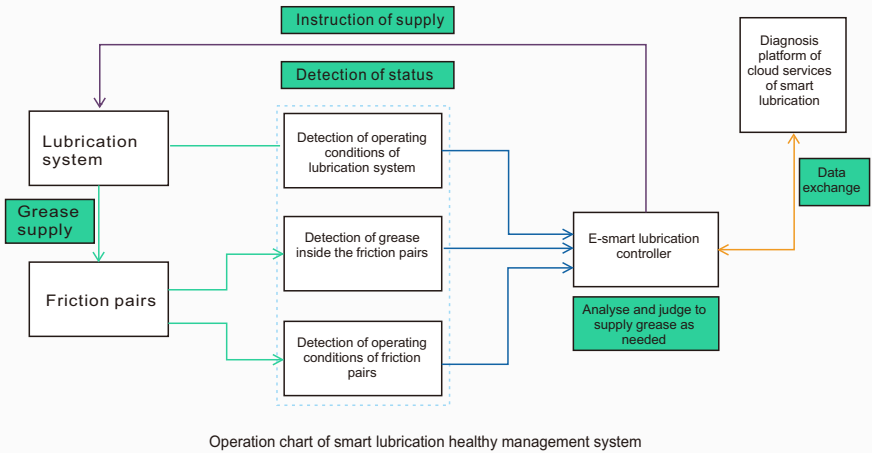
Introduction to smart lubrication healthy management system

The Autol smart lubrication healthy management system is designed with GPRS, GPS, mobile phone APP to establish a comprehensive management platform integrated with collection acquisition, control management and big data system, for remote control and monitor of the centralized lubrication system.



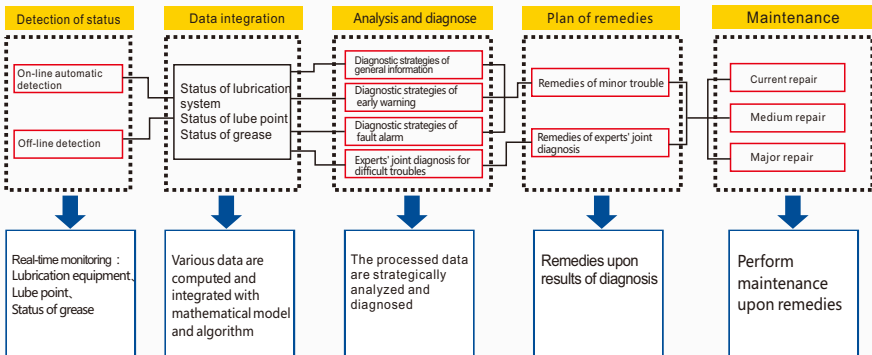
Operating principle of smart lubrication healthy management system

The smart lubrication healthy management system consists of centralized lubrication system, control and monitor module and remote control unit. It realizes smart lubrication with big data and expert diagnostic system according to bearing real-time lubrication conditions (including grease quantity, quality, film, temperature rise, vibration and noise).



Technical advantages of smart lubrication healthy management system

The operating equipment may well be greased as appropriate and the real-time lubrication conditions may be controlled and monitored.



Importance of central lubrication of wind turbine generator set (WTGS) on WTGS operation

Over the past decade, with strong support of policy and market, China wind power industry made rapid development. The WTGS operating conditions are very important to the sound development of the whole wind power industry. And, the WTGS lubrication plays a particular important role in the WTGS operation.



Difficulties of WTGS lubrication

A WTGS is a kind of large-scale, high-precision, high-value operating equipment. All the bearings and gears of the wind turbine are under operating conditions with frequent start/stop, high load and continuous operation. And, most of wind power plants are located in remote fields such as in highly mountainous area, wild area, beach, etc., with demanding natural environment causing serious harm to equipment, resulting in very inconvenient maintenance. It is truly necessary to require stricter maintenance (lubrication) of equipment.

For WTGS centralized lubrication, during application at present, there are many bottlenecks of technical application which have restrained the markets and from which urgently need to be made breakthroughs, for example, the WTGS lubrication system is unable to be centrally controlled, monitored and managed; the abnormal lubricating conditions of friction pairs (bearings) are uneasily identified; common grease pumps may occur serious pumping-out interruption under conditions of low atmospheric pressure, high altitude and extremely cold climate; grease is accumulated and deteriorated in bearings; common grease collector has bad performance for grease recovery; and the WTGS is highly contaminated by waste grease.

Background and process of Autol's R&D on centralized lubrication system of wind power

From the communication with leading manufacturers of wind power and construction machinery, at present the applications of centralized lubrication system are basically monopolized by brands from Europe and USA. Technical innovation is critical for industrial development for China's own technologies. As one of the most competitively renewable energy resources, the wind energy is full of enormous potentials.



Features of Autol central lubrication solution of wind power

With long-term marketing research and technical innovation, we have invested a large number of resources for systematic technical development. We developed new generation of professional Suplub-W smart concentrated lubrication system especially for WTG equipment in the wind power industry, applicable to lubrication of WTGS main bearings, pitch bearings, yawing bearings, generator bearings, pitch gear pairs, yawing gear pairs, etc.

This system features smart centralized management, remote on-line monitoring, energy saving and environmental protection. At present, it has had 25 Chinese patents and many international patents and has been certified by Germanischer Lloyd (GL), a world's authoritative body.



Technical advantages of Autol centralized lubrication system of wind power

The Suplub-W system is a new smart centralized lubrication solution of wind power integrated with computer, automatic control, wireless data transmission, central lubrication and other technologies. For many sets of Suplub-W system, a remote central control center may be set up in the headquarter of the wind farm management for on-line monitoring of WTGS centralized lubrication system in the wind farms. Leading technologies include:

- 1、Smart control and monitoring: The on-line operating conditions of WTGS centralized lubrication system in the wind farms may be monitored, for collection and storage of real-time operating data, accurate positioning of abnormal condition, accurate adjustment of operating data, real-time alarm, and providing emergency plan of troubleshooting.
- 2、Super high pump capacity: Our initiative air-pressure grease tank technology made breakthrough on normal pump operation of grease with high viscosity and consistency under conditions of low atmospheric pressure, high altitude and extremely cold climate to ensure effective operation of the lubrication system under demanding operating conditions. New integrated single-line distributor features high reliability and low fault rate. Any single faulty branch causes no influence on the normal operation of other branches. The grease supply may be easily adjusted. The lube points may be increased or reduced as needed. It features easy maintenance and low costs of repair and maintenance.
- 3、Smart collection of waste grease: Compared to the commercially available collector of passive recovery at present, this system is able to timely and thoroughly such and discharge the waste grease inside the bearings to ensure unclogged inner chamber and good tightness of seal and to make sure that grease may be smoothly filled into the bearing inner chamber, with easy and quick operation, high efficiency, high safety and environmentally friendly performance.



AUTOL initiative technology for collection of waste grease from bearings

- 1.Unique successful batch application of technology for collection of waste grease from bearings in the industry.
- 2.Effectively solve the technical bottleneck challenges such as grease leakage from bearing seal, and accumulation and deterioration of grease in bearing.
- 3.Effectively solve failure to bearing lubrication, and increase the service life to 5-7 years of bearings and wind turbine generator sets.

The inaugural meeting of the Party branch of Zhengzhou Autol Technology Co., Ltd. was successfully held.

In the afternoon on August 17, Zhengzhou Autol Technology Co., Ltd. held the inaugural meeting of the Party branch of Zhengzhou Autol Technology Co., Ltd. in the meeting room on Floor 2 of the Administrative Department. The related responsible persons of the Committee for Building the Party from the Wutong Office and 10 Party members in Zhengzhou Autol Technology Co., Ltd. attained the inaugural meeting. The establishment of the Party branch of the Company is to make sure that all Party members play an exemplary and vanguard role. With the Party members' taking the lead and rallying the workers around them, we will promote the enterprise's development to truly realize the development goals that the Party organization performs its functions and responsibilities and creates advanced individuals and departments, and that all Party members make excellence based on their posts. We hope that the staff will be positively close to the Party organization and make due contributions to the development of our country and enterprise by taking the Party members as example, and following the guidance of Marxism-Leninism, Mao Zedong Thought and Deng Xiaoping Theory, the important thought of Three Represents, and the Scientific Outlook on Development.



Interpretation of hot word "One Belt and One Road" on two Conferences (i.e. the National People's Congress and the Chinese Political Consultative Conference)

The One Belt and One Road means the Silk Road Economic Belt and the 21st Century Maritime Silk Road. It makes full use of existing bi- and/or multi-lateral mechanisms between China and relevant countries and relies on exiting and practically effective platform of regional cooperation. The "One Belt and One Road" Initiative will not overlap or compete with Shanghai Cooperation Organization, Eurasian Economic Union and China-ASEAN (10+1) and will assign new characteristics and vitality of these mechanisms.

Carrying forward the opening-up traditions of the Silk Road and benefiting from open regionalism of the east Asian nations, the "One Belt and One Road" Initiative insists the spirit of openness and inclusiveness instead of closed, fixed, and exclusive mechanism. The "One Belt and One Road" Initiative is intended to continue and upgrade existing cooperation instead of starting from scratch. Relevant parties may connect existing and planned cooperation projects in series to form a package of cooperation, striving to produce an integrating effect in which "one plus one can make more than two".

Historically, the people made exchange of needed goods via the Silk Roads. The scope for exchange of the "One Belt and One Road" Initiative will be far wider than the historical Silk Roads, of which priority and early harvest programs may be given to the infrastructure connectivity or to trade and investment facilitation, and industrial cooperation. Of course, cultural and people-to-people exchanges and personnel exchanges will be absolutely necessary. Various cooperation projects and modes of cooperation will be intended to turn the advantages of political mutual trust, geographical neighborhood and mutually-beneficial economic cooperation into advantages of pragmatic cooperation and sustainable growth to ensure that the goods can flow, the government functions well and people cooperate well, the countries may realize their mutual benefit and common development.

Work Conferences for the "One Belt and One Road" Initiative at various places (4): In the course of joint development of the "One Belt and One Road" Initiative, China will insist correct value of justice and benefit, with priority to morality and justice, and considering both justice and benefit. And, China is always willing to do all it can to help the developing countries and China's neighbors to truly move faster to the development of the developing countries. China is continuously increasing the investment in its neighbors, positively promoting the connectivity of its neighbors, and exploring to set up local investment and financing platforms. China will not only upgrade the Chinese economy, but also upgrade the opening-up through the "One Belt and One Road" Initiative and other approaches, and will explore the beneficial collaboration with all countries especially China's neighbors.

The "One Belt and One Road" is a common cause of all countries instead of only for China and a benefit-sharing zone of all countries instead of an benefit-exclusive zone of China. The "One Belt and One Road" Initiative, including early study, is open. China welcomes other countries to bring forward constructive opinions and suggestions to continuously enrich and improve the idea, concept, and planning of the "One Belt and One Road" Initiative. We will draw on collective wisdom, absorb all useful ideas and pool the efforts of all countries to work hard together in writing a new chapter for the Silk Road, to make joint efforts of all countries to build a community of shared benefits and destinies, and to jointly create a brighter future.

Our Honors

We express warm congratulations on that Zhengzhou Autol Technology Co., Ltd was awarded with "Quality Benchmark of Industrial Enterprises in He'nan Province"

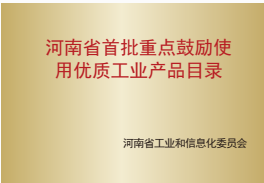
In July 2016, the experiences of Zhengzhou Autol Technology Co., Ltd. on implementing overall solution of reliability was considered as a Quality Benchmark of Industrial Enterprises in He'nan Province of 2016 by the Committee of Industry and Information Technology of He'nan Province. With this as new starting point, Zhengzhou Autol Technology Co., Ltd. will strengthen communication and experience sharing with other enterprises, continue to make innovation of quality control mode and focus on accumulation of experiences, and make continuous improvement of our quality control capability.



The smart centralized lubrication system of Zhengzhou Autol Technology Co., Ltd. was listed in the first key catalogue encouraging using high-quality industrial products of He'nan Province.

On July 20, 2016, our product "smart centralized lubrication system" was successfully listed in the first key catalogue for the guidance encouraging using high-quality industrial products of He'nan Province of 2016.

This shows that the superior authority recognizes and encourages our products and their market positions, will bring about positive influence on the sales of our products of centralized lubrication system, and strongly stimulate the early realization of our goal that the Autol centralized lubrication system is widely used in the world.



We would like to offer congratulations on that Zhengzhou Autol Technology Co., Ltd. was considered as a technical innovation demonstration enterprise in He'nan Province.

Recently, reviewed by experts, 23 enterprises including Zhengzhou Autol Technology Co., Ltd. were considered as technical innovation demonstration enterprises in He'nan Province of 2016 according to the requirements of the Circular of the Committee of Industry and Information Technology of He'nan Province and the Financial Department of He'nan Province Concerning Organization and Recommendation of Technical Innovation Demonstration Enterprises of 2016 (Yu Gong Xin Lian Ke (2016) No. 144).

The accreditation of provincial technical innovation demonstration enterprises is to further promote the development of a system of technological innovation in which enterprises play the leading role, the market provides orientation, and the efforts of enterprises, universities and research institutes are integrated. The participant enterprises shall have enterprise R&D center(s) at and above provincial level to be accredited. After having passed the accreditation, they will be recommended being nominated as one of national technical innovation demonstration enterprises. In Zhengzhou, 7 enterprises including Zhengzhou Autol Technology Co., Ltd. were presented in the list of such enterprises, accounting for 30% those of He'nan Province.



The "centralized lubrication system" of Zhengzhou Autol Technology Co., Ltd. was awarded with second prize of Zhengzhou Patent Award of 2016.

In August of 2016, the People's Government of Zhengzhou Municipality announced the list of projects winning Science and Technology Award of Zhengzhou, in which our "centralized lubrication system" was awarded with second prize of Zhengzhou Patent Award. This award represents the achievements that we have considered the technical innovation as the prime driving force of enterprise's development, and again recognizes and encourages our innovation of technologies and products. Over the recent years, Zhengzhou Autol Technology Co., Ltd. has established provincial-level work station for academicians of the Chinese Academy of Sciences and the Chinese Academy of Engineering, provincial-level center of engineering technology, provincial-level technical center of enterprise, Lubmann GmbH (Germany) R&D Center, Joint Research Center of Smart Centralized Lubrication Technology under Tianjin Research Institute for Advanced Equipment of Tsinghua University and other research platforms. With further implementation and promotion of strategy "Highest Priority Given to Innovation and Quality", Zhengzhou Autol Technology Co., Ltd. will make more achievements and awards in the future.



Exhibitions

Beijing Road Transportation Vehicle Show

On this Show, Zhengzhou Autol Technology Co., Ltd. focused on exhibiting ALP50 series of plunger-type gear pumps. This grease pump features more excellent pumping capacity of high-viscosity and -consistency grease. It may effectively prevent dry running of gear pump and especially used for northern cold regions. The volume of grease tank may be adjusted for series of design expansion according to the configuration of the completed machine. New pump structure accommodates future servicing and avoids environmental pollution.



IAA Commercial Vehicles

On September 29, the 8-day IAA2016 ended. As an innovation benchmark in the industry of centralized lubrication, following IAA 2014, Autol also presented on IAA2016 in Hannover, Germany, discussing the industrial development of centralized lubrication with partners all over the world.



ITS China

On August 25 to 27, 2016 MMC & APEC-IOV were held in Shanghai New International Expo Center. And, the activity "Week for Experience and Promotion of Future Transportation Bus" was held simultaneously, demonstrating the development trend of China's future transportation buses. As a leading enterprise of smart lubrication field of China, Zhengzhou Autol Technology Co., Ltd. (Booth No. : W5-M009) exhibited smart lubrication healthy management system for commercial vehicles on a large scale to positively respond the development requirements of "Industry 4.0" and to make contribution to "Made in China 2025". On the award ceremony of 2016MMC, Autol was awarded with 2016MMC Worldwide reviewed by experts such as Chen Qingquan, an academician of the Chinese Academy of Engineering and Chairman of APEC—IOV committee of experts; Wu Zhongze, the President of China Intelligent Transportation Systems Association; etc.



WindEnergy Hamburg

On September 27, the Autol smart lubrication solution of wind power (Suplub-w) was exhibited on WindEnergy Hamburg 2016, an important show in the international industry of wind energy. Autol set up an intuitive exchange platform of centralized lubrication technology, attracting many manufactures of turbines and professional visitors. Many visitors from the owners of wind power and manufactures of turbines specially visited the Autol Suplub-W booth of lubrication of wind power, showing high interesting and making deep communication on system with professions from Autol.



Bauma Conexpo Africa

As an innovation benchmark of centralized lubrication industry, Autol exhibited AL full range of lubrication solution of construction machinery on the Bauma Conexpo Africa in Johannesburg International Exhibition Center on September 12-16, 2016, demonstrating products of centralized lubrication technology reaching the leading world level. Through face-to-face communication with customers all over the world, we can further understand the demands of international markets and will continue to focus on technical innovation and brand building to provide solutions of system with more values.



Tug-of-war Activity at Autol

By Liang Duanping, a correspondent

Carrying forward team spirit and strengthening cohesion On August 10 and 11, 2016, Autol held a tug-of-war activity. We saw a scene of bustling activity on the site, forming a passionate and beautiful movement of a symphony mixed with cheer from cheering squad, shout from players and applause of audience.



Autol Technology Co., Ltd, In My Heart

Text/Lu Jiaojiao, from Marketing Center

During my first visit to Autol technology Co., Ltd, the staff I met were very easygoing. As a new comer, I was required to practice in the frontline—the workshop for one week as an intern. There, I had new understanding of products every day and learned increasingly more about Autol technology Co., Ltd with time passing by. Besides, my colleagues in the workshop were very friendly to each other. Even after working, I could still feel my inner enrichment, and I liked this fulfilling life. When I finished my internship and returned to office, the department leader provided me with instructions to help me rectify my working problems in time. It was the attitude towards the “family” that Autol technology Co., Ltd had, which I was deeply grateful for in my heart. If someone asks me about my impressions on Autol technology Co., Ltd, I will tell him: positive, enterprising, strong, united, harmonious and feeling like home.



Cherish the Present, Have Full Confidence

Text /Xu Jingyuan, from Customer Service Department

I have joined the Autol family for three months, and the most profound feeling I have is that this is a place full of love. For example: The assembly workshops are equipped with air-conditions during the scorching weather. The Company has redecorated the staff canteen, constantly changes dishes and provides dessert fruits; it also gives out herbal tea and drugs aperiodically for heatstroke prevention as well as organizes staff to carry out traffic safety training and issues traffic warning signs for electric vehicles. In addition to this, the Company holds cultural activities including birthday parties, karaoke contests, staff talent shows as well as playing the Olympic events in the staff activity center and so on. It also organizes tug-of-war in between the busy work. Under the circumstance of tough market conditions and pressing economic conditions, the Company never cuts down the requirements for capital investment in such aspects so that every employee can fully develop their talents in their positions in a better working condition. Praise for Autol! I love Autol!



Models

Collectivism Spirit in Autol



Is it a hot day? ----- Yes!
Is it tiring work? -----Yes!
Can we guarantee to complete the work? All answer loudly in unison: Yes! We ensure to complete the task!
It was the encouraging voice of our staff when we had a morning meeting on the third floor of the workshop on the 14th August. Everyone was enduring dog days in August when the temperature was so high and when there was a large order and shipments. However, it was never a difficulty for our staff. The staff would get up and go to work earlier than usual. if the elevators malfunctioned, the staff would lift and carry goods downstairs while wiping off sweat. All of staff has the common belief: Only through concerted efforts, can we overcome all difficulties. Once the Company's truck left full of cargos, the staff would immediately devote themselves to the production of the next order.

Let's talk about the three beauties in the pipeline and harness workshop



There are “three heroines” in the pipeline and harness workshop, who are actually three beauties. Whether in spring, summer, autumn or winter, they are representatives of devotion. Yes, who I mention are Han Chunmei, Zhang Feng, and Zhao Lixiang. I remembered that it was the afternoon of 9th August when all the staff had returned home from work. However, a rush order came suddenly, when it rained cats and dogs outside. In order to ensure the delivery of goods on time the next day, the workshop leader called and informed them to come back and to work overtime. The leader didn't hear any complaints on the phone. It was not long before they came back through the heavy rain. They even had no time to wipe the rain drops off and they just put their umbrella down before starting to work. At last, with their concerted effort, goods were delivered into storage successfully, and relief and joy were clear on everyone's face.

Ordinary People, Extraordinary Stories



Speaking of Gao Hongxia, we are very familiar with this material handler on the third floor of the workshop. It is she who does extraordinary things in an ordinary position. In the Company's “5S” activities, the Company's Personnel Administration Department put forward that the material room needed the most focus and rectification among the workshops on the third floor. Due to the large number of materials, some materials not paid attention to would be very messy. Faced with this problem, she made her attitude towards it on the spot "As long as I am a material handler, I will do it well. Please believe me that I can pass inspection." Since then, she came early and left late every day, and she was diligent, conscientious and meticulous. She managed all the materials in a normative and orderly way. When she encountered with problems, she would constantly consult others until the problems were solved. One month later, she lost weight of about 8 kilograms, but the material warehouse she managed acquired a completely new outlook and material account was clear and accurate. Everyone says that she truly pursues her job without limits. Gao Hongxia, an ordinary material handler, with the actual action proves that even ordinary people, one can also make extraordinary things.

Text/Zhao Haishen, from Manufacturing Department