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CENTRALIZED LUBRICATION SYSTEMS APPLIED
TO CONSTRUCTION MACHINERY

About Us

A WORLD LEADING BRAND IN CENTRALIZED LUBRICATION SOLUTION

No.1 CLS Brand in China

Autol is the No.1 brand of centralized lubrication system in China with annual production capacity up to 200,000 units. Autol is an only organization establishing "Work Station for Academicians of Healthy Management of Smart Equipment Lubrication" in the centralized lubrication system industry.

9 Testing Laboratories

Autol has 9 product testing laboratories including Hydraulic R&D Testing Laboratory, Bearing Lubrication Laboratory, Environment Laboratory, Reliability Laboratory, Electronic and Electrical Laboratory, Hydraulic Quality Laboratory, Precise Measurement Room, Oil Testing and Analysis Laboratory and Materials Testing and Analysis Laboratory.

We Export Products More Than 30 Countries and Regions

Autol exports products to more than 30 countries and regions and are highly appraised by overseas customers. Autol has offices in Germany, India and Philippines, sets up Lubmann research institute in Germany to accelerate its development of globalization.



Autol Full-time R&D Team includes 85 Engineers.

Autol has full-time 85 engineers, including 1 academician, 5 doctors, 10 masters and other personnel with special expertise. It has established a long-term strategic partnership with such well-known universities and institutes such as Tsinghua University, PLA Information Engineering University, Tianjin Research Institute for Advanced Equipment.

More Than 100 Technical Patents

Autol centralized lubrication system products have applied for more than 100 technical patents at home and abroad. They are widely applied to commercial vehicles, wind power generation, construction machinery, military machinery, metallurgy, port machinery, etc.

More Than 400,000 Units of Lubrication in Service

Up to now, more than 400,000 units of Autol lubrication equipment are in service, which are widely distributed in commercial vehicles, wind power, construction machinery.

Autol's Construction Machinery Lubrication Solution Create Value for You

In the field of construction machinery, the value created by centralized lubrication system is grossly undervalued. Faulty mechanical equipment may reduce performance and production capacity, increase operating costs and unexpected equipment shutdown will cause production downtime resulting in sharp reduction in income. On fiercely competitive markets, an industry faces challenge that the equipment should operate more profitably and efficiently. The Autol's centralized lubrication system may create more values for customers with respects to:

Prolonged Free-of-trouble Operating Hours of Construction Machinery and Reduced Unexpected Shutdown

Demanding working environment causes challenge to normal operation of construction machinery. Unexpected equipment shutdown results in tremendous loss of customer. Autol centralized lubrication system significantly reduces the fault rate of construction machinery and therefore loss of customer due to unexpected shutdown of construction machinery. Autol integrates resources from global top research institutes and universities. It established "Work Station for Academicians of Healthy Management of Smart Equipment Lubrication" with academicians from Chinese Academy of Engineering. It also set up Lubmann research institute in Germany (Autol Branch in Germany). Autol is committed to research and development of top-notch technologies of centralized lubrication system to ensure construction machinery trouble-free operation and reduce unexpected shutdown.

It Insures Increase in Prolong Service Life of Key Components and Interval of System Maintenance and Reduce Maintenance Cost.

Irrespective of brand and model of construction machinery, the moving components such as bearings and gears always need to be lubricated. The operating conditions of construction machinery are abominable. Autol centralized lubrication system may effectively reduce frictional resistance, surface friction, frictional surface temperature. It also features corrosive resistance, vibration damping and sealing. As a result, the service life of key components and parts is increased by 60% and above the service life of completed machine is increased. Autol centralized lubrication system may simplify services, prolong interval of system maintenance and keep normal operation of equipment under various climate conditions.

Smart Remote Control and Monitoring of Lubrication to Reduce Costs of Maintenance

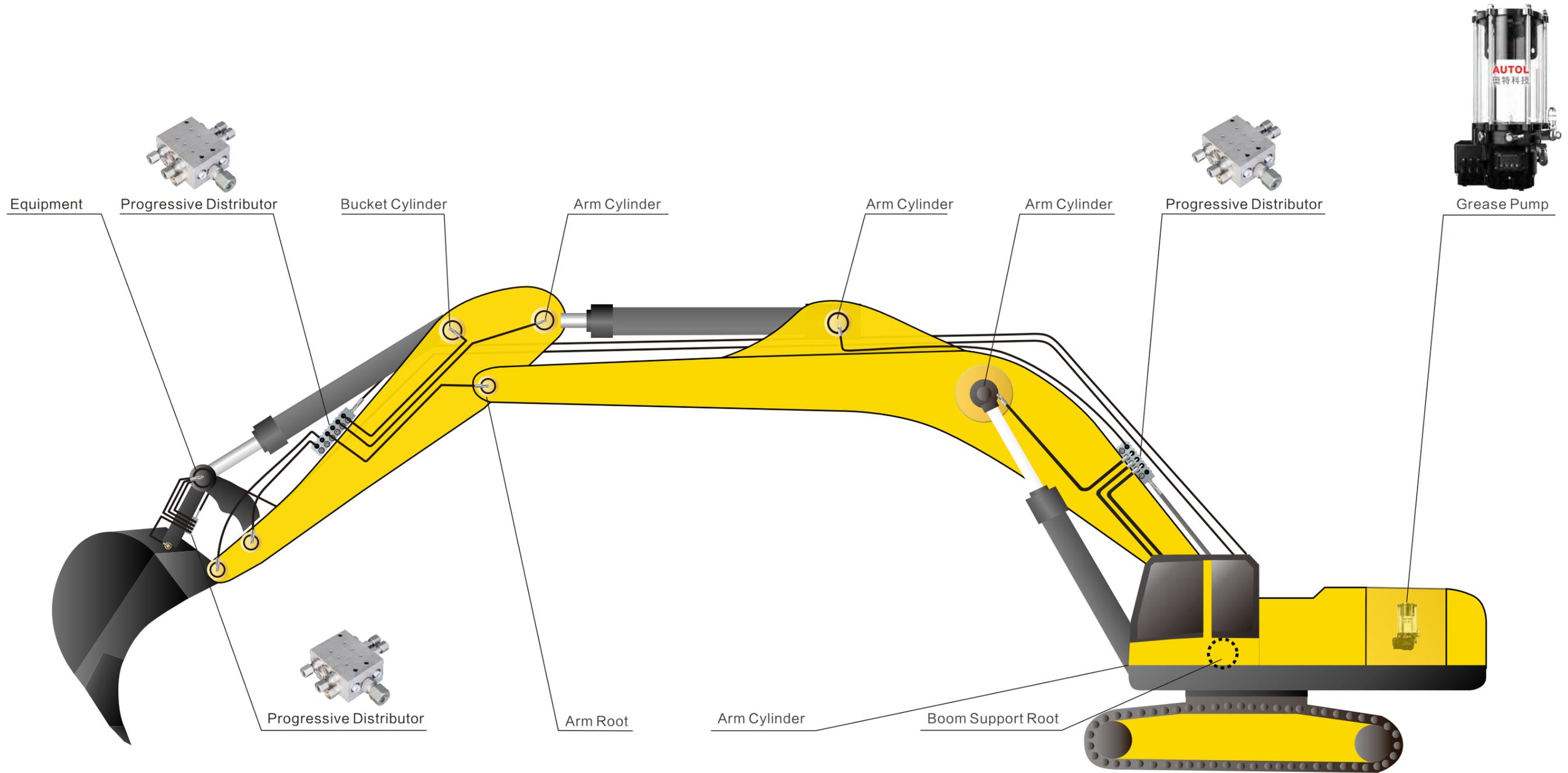
In a large construction site, the centralized lubrication systems of all construction machinery work independently, and difficult to remotely or centrally controlled, monitored and managed.

With smart Internet as carrier, Autol smart monitoring system collects signals from automatic centralized lubrication system and performs evaluation. The dedicated sensors performs real-time record and storage of operating data of the lubrication system and sends real-time alarm and fulfill accurate positioning of anomaly so that you could view lubrication data anytime and anywhere. It also provides troubleshooting plan to prevent potential fault during operation, effectively reduces maintenance cost, managing equipment safer, more efficiently and easily.

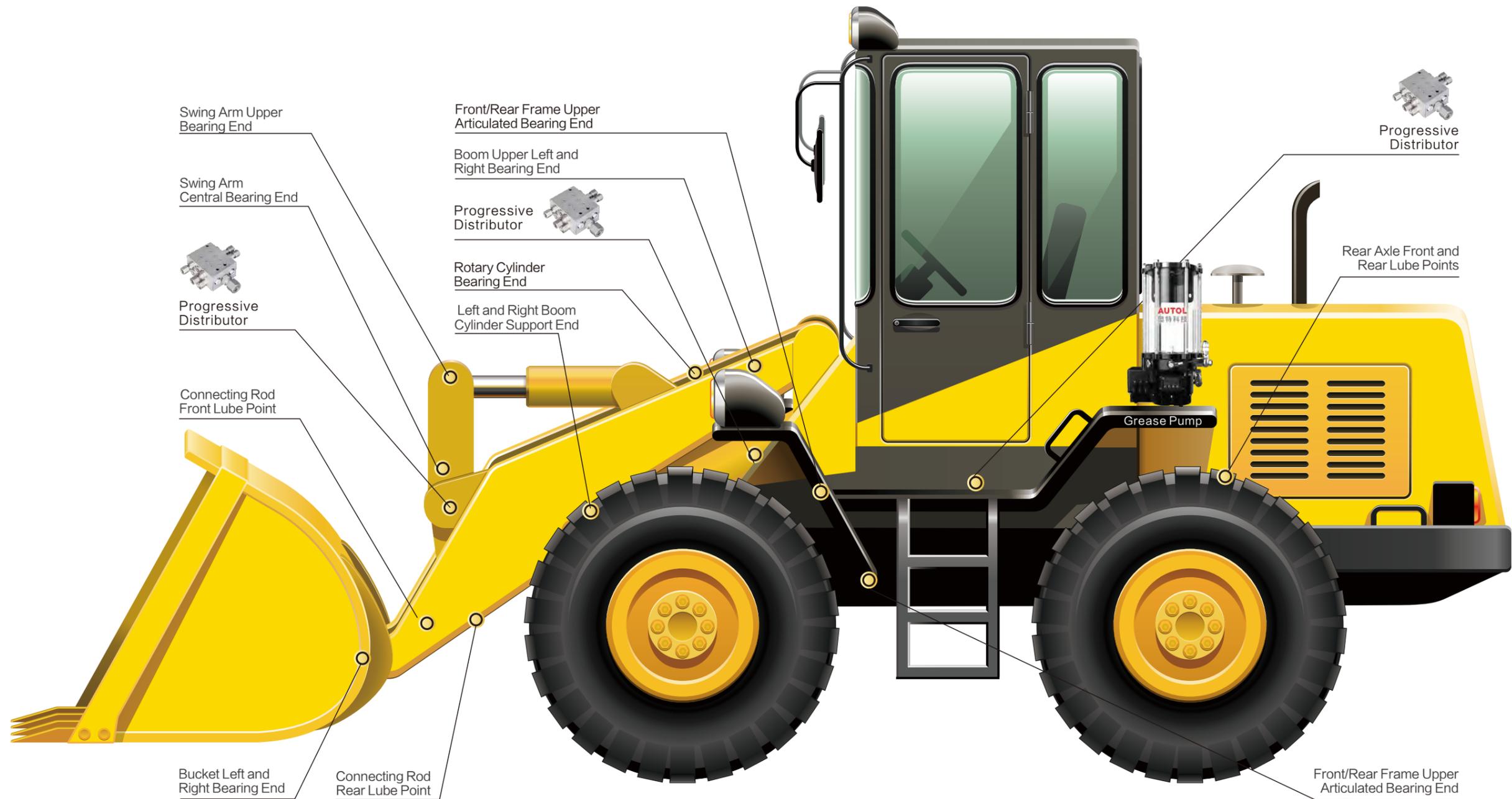
This technology can also ensure actuate adjustment of operating parameters anytime for advanced mode of lubrication at proper time and sufficient amount for grease saving and environment protection.



Lubrication Solution of Construction Machinery



Lubrication Solution of Construction Machinery



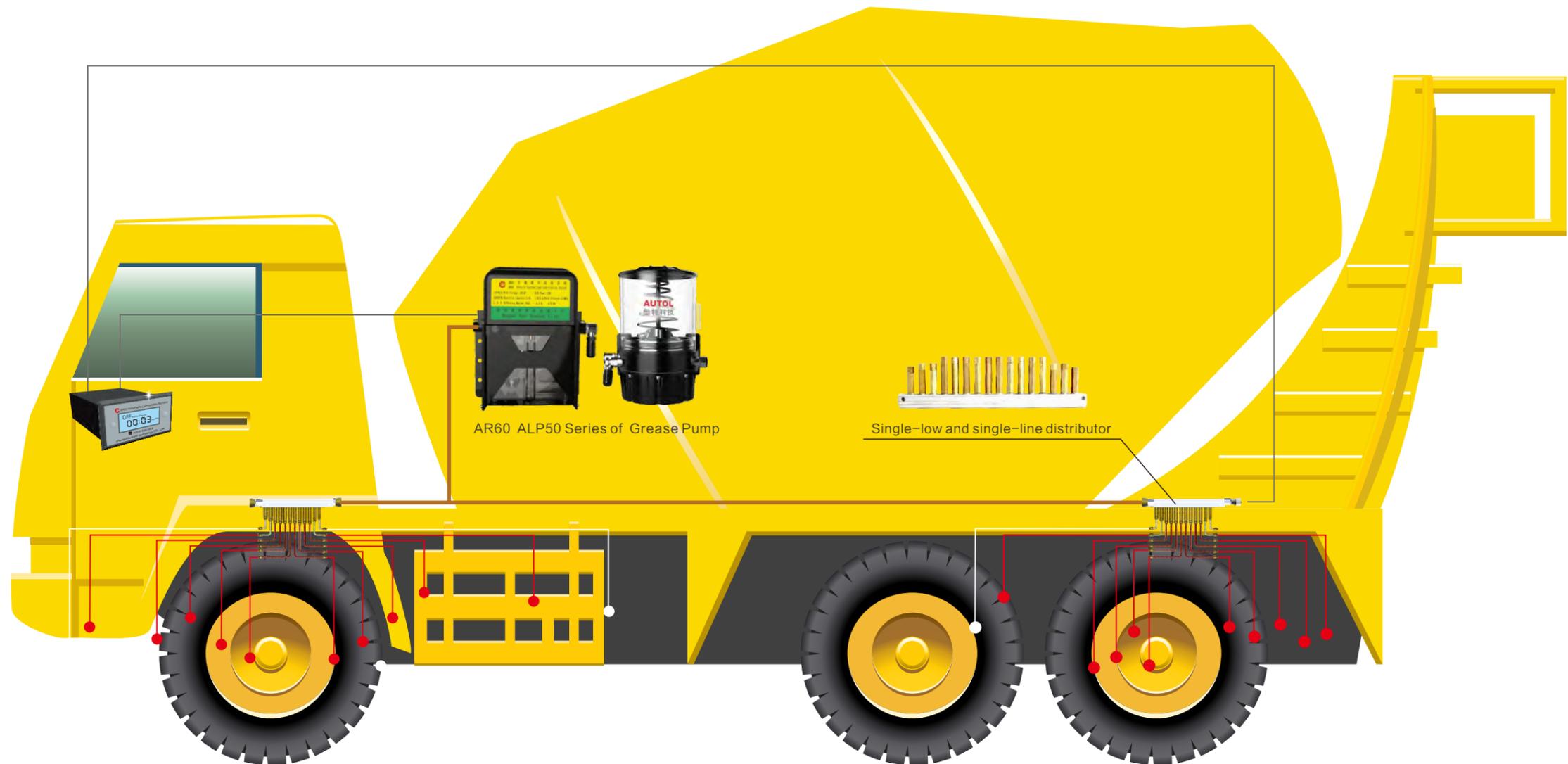
Lubrication Solution of Construction Machinery



Lubrication Solution of Construction Machinery



Lubrication Solution of Construction Machinery



Remote Control and Monitoring System Solution of Construction Machinery Lubrication

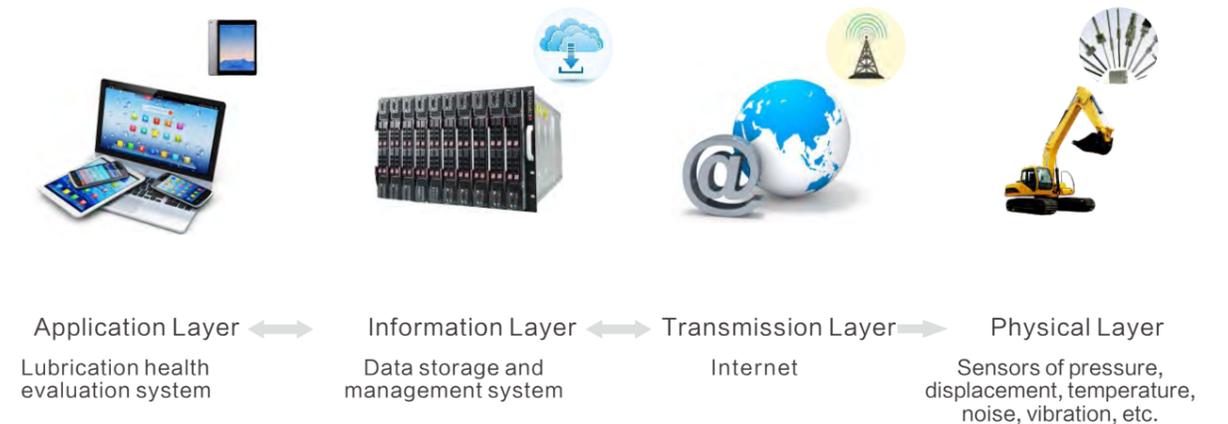
System components and advantages

The system consists of centralized lubrication system server, wireless receiver-transmitter, Web client, centralized lubrication system, SMS service, and smart mobile phone client.

1. It supports mobile phone SMS inquiry function to know lubrication conditions at lube points whenever and wherever possible.
2. The Web client allows for checking operating conditions of the whole lubrication system, user management, lubrication parameters, and lubrication report.
3. Application of modern networking technology to network the distributed lube points. The personnel responsible for management and maintenance may know the lubrication operating conditions whenever possible.
4. The wireless remote monitoring system allows for checking lube points information on faults, without troubleshooting point by point, with less labor intensity of maintenance personnel.
5. The level information of every set of lubrication system and the operating condition of every distributor may be checked in a timely manner.
6. With the wireless remote monitoring system, the lubrication parameters of lube points can be set and checked.

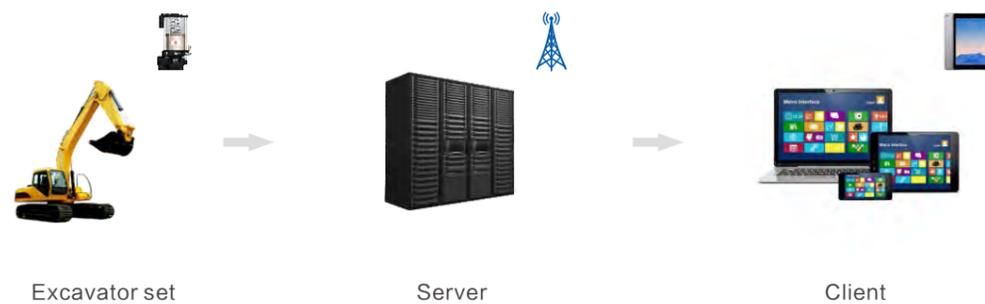


Equipment Health Management System

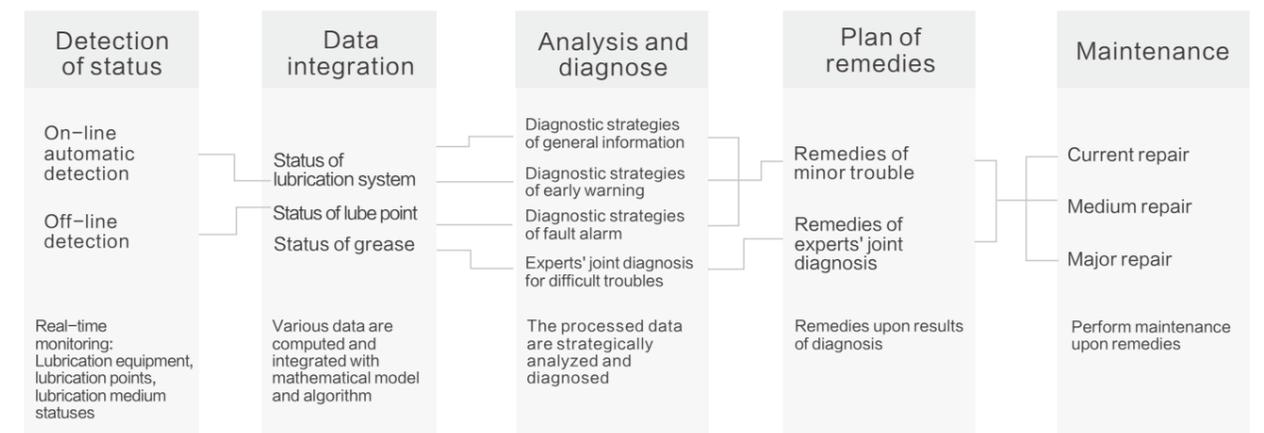


Note: It is active when the mobile phone signal (3G/4G) is available under fibre-optical network conditions.

Wireless Remote Monitoring System



Health Management Business Mode



Note: It is active when the mobile phone signal (3G/4G) is available under fibre-optical network conditions.

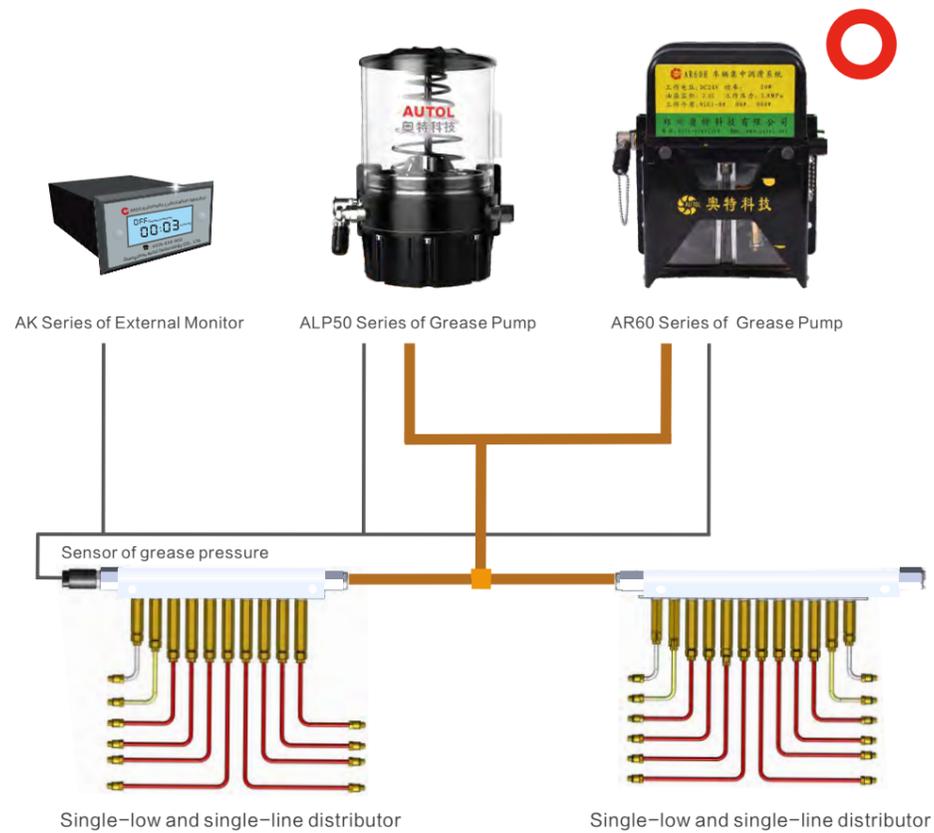
Single-row Single-line CLS

The single-row and single-line centralized lubrication system is designed with LED control, monitoring and working cyclically.

After the amount is fixed by different plungers of the single-row and single-line distributor, the grease supplied by the grease pump is delivered to all the lube points.

NLGI-000, NLGI-00, NLGI-0 grease available.

It applies to mechanical equipment for construction machinery, commercial vehicles, metallurgy, port, wharf, ship, crane, woodworking, food, construction project, material handling etc.

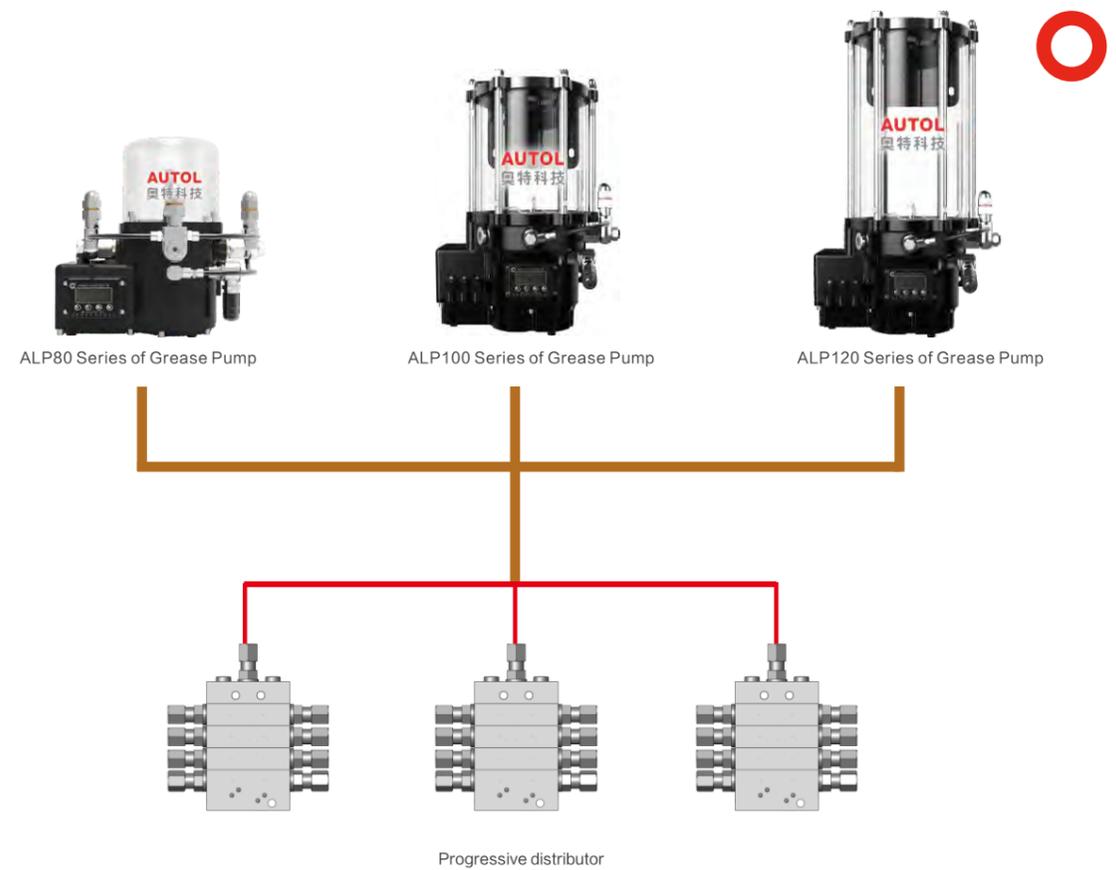


Progressive CLS

The progressive centralized lubrication system is designed with LED control and monitoring and working cyclically. After the amount is fixed by the single-low and single-line distributor, the grease supplied by the grease pump is delivered to all the lube points.

NLGI-0, NLGI-1, NLGI-2 grease available.

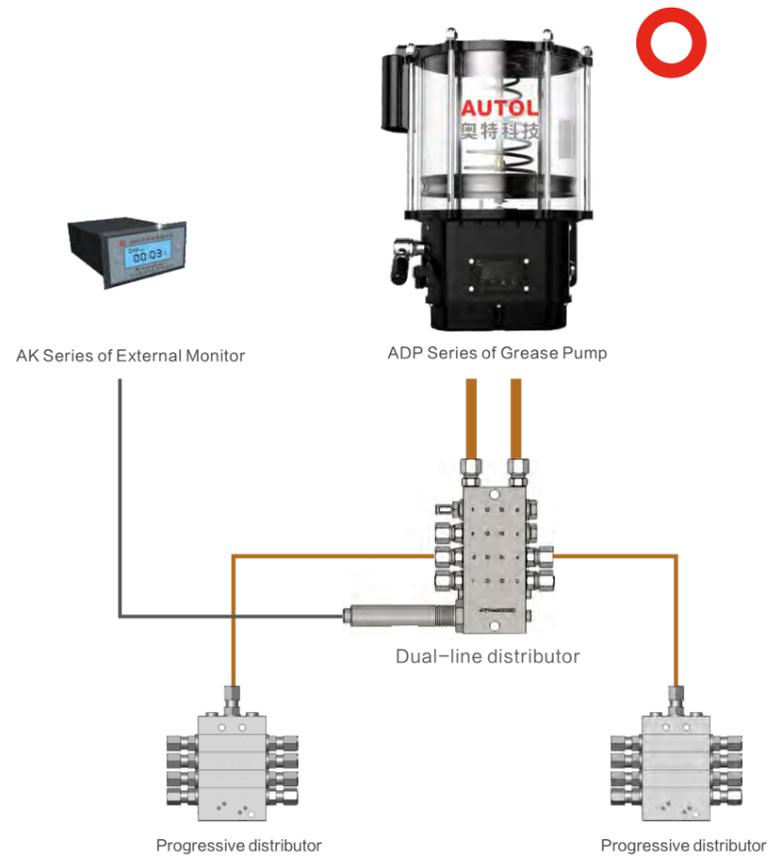
It applies to mechanical equipment for construction machinery, metallurgy, harbor, wharf, ship, crane, woodworking, food, construction project, etc.



Dual-line CLS

A dual-line centralized lubrication system has many kinds of connection depending on actual demands. The double-line distributors may be connected in series, parallel, or series-parallel way. A grease sensor is provided at the end of the double-line distributor to detect the operating conditions of the double-line centralized lubrication system.

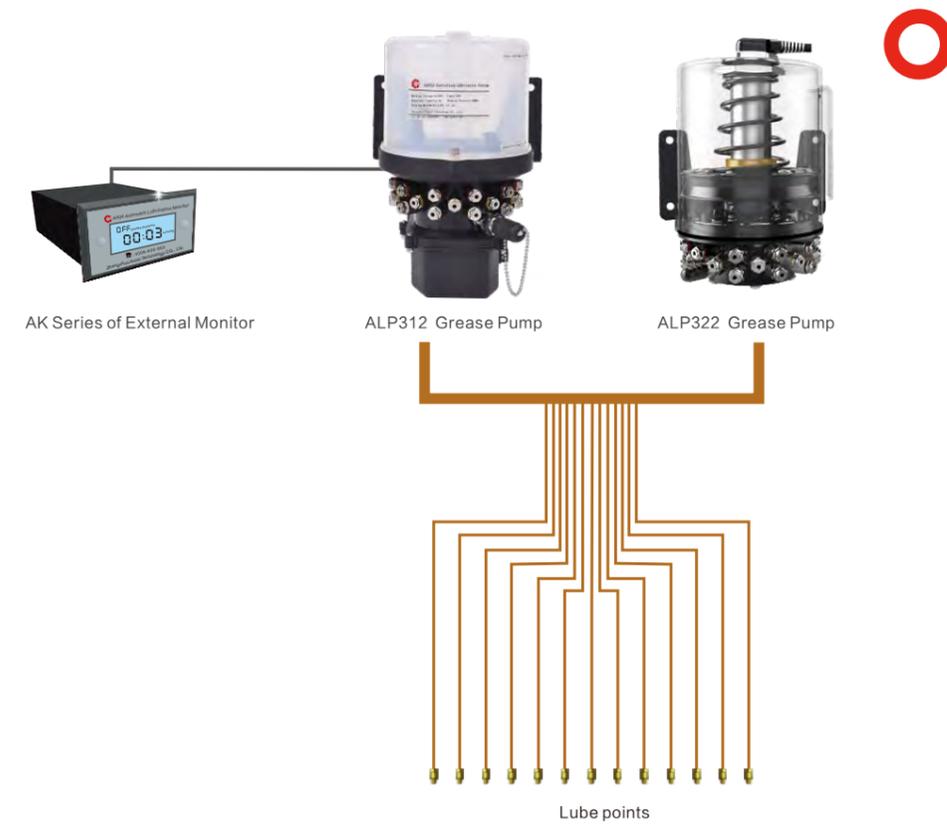
A double-line centralized lubrication system consists of double-line pump, double-line distributor, grease pressure sensor, monitors and accessories.



Multi-point CLS

The centralized lubrication system with multi-point pump is a simple and efficient centralized lubrication system, featuring advantages as simple structure, easy installation, no grease distributor, and high operating reliability, etc. The grease lines in the system are relatively independent each other. Failure to a single grease line will have no influence on the system.

It applies to mechanical equipment for construction machinery, commercial vehicles, metallurgy, harbor, wharf, ship, crane, woodworking, food, construction project, etc.



ALP80/100/120 Series Piston Pump

AL80/100/120 series of centralized lubrication system primarily consists of high-pressure lubrication pump, distributor and monitor.

The AL80/100/120 series applies to mechanical equipment of construction machinery, wind power, port, electric power, mining, crane, engineering, woodworking, beverage machinery, etc.

In the system, the ECU LCD-based monitor controlled the high-pressure grease pump operates cyclically. During operation, the reducer motor drives the eccentric wheel to reciprocate the plunger pair for grease pumping. After the pressurized grease enters into the supply line, the grease is supplied to lube points via the distributor metering chamber.

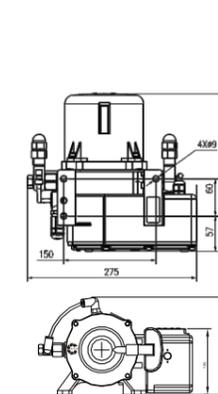
Drawing of Overall Dimension



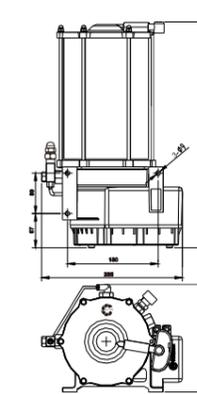
Technical Data of ALP80/ALP100/ALP120 Series of Lubrication Pump

Model	Control mode	work time	Nominal flow	Maximum operating pressure	Capacity	Height	Parameters of motor	Grease available	Suitable temperature
ALP80	External/built-in monitor	1~99min	2~5ml/min	35MPa	1L	328mm	24VDC 30W	NLGI-0#, 1#, 2#	-40°C~70°C
					2L	378mm			
ALP100	External/built-in monitor	1~99min	2~5ml/min	35MPa	2L	335mm	24VDC 30W	NLGI-0#, 1#, 2#	-40°C~70°C
					4L	485mm			
					6L	585mm			
					8L	685mm			
ALP120	External/built-in monitor	1~99min	2~5ml/min	35MPa	4L	428mm	24VDC 30W	NLGI-0#, 1#, 2#	-40°C~70°C
					8L	523mm			
					10L	596mm			
					15L	716mm			
					20L	848mm			

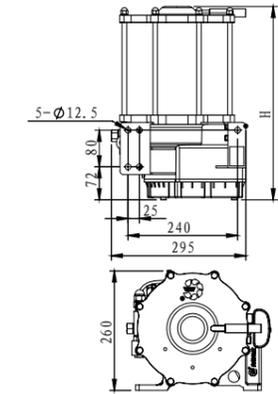
[Note] Please use reasonably the same grade of low-temperature grease in cold region in winter.



ALP80 Series of Grease Pump



ALP100 Series of Grease Pump



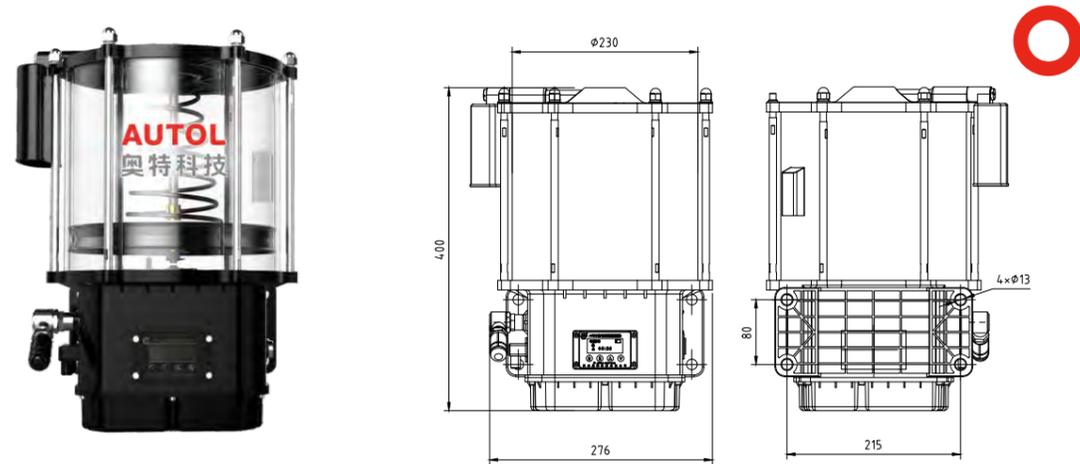
ALP120 Series of Grease Pump

Points of innovation: NLGI-2# may be available throughout the year to challenge the high altitude and extremely cold climate.

Dual-Line Series Piston Pump

The dual-line lubrication pump is a high-pressure plunger lubrication pump. It has a built-in relief valve and a mechanical reversing valve, which not only makes the lubrication pump look simple and beautiful, but also solves the problem of the overflow valve sealing.

The dual-line lubrication pump is based on the lubrication part of the lubrication equipment, and quantitatively supplies the lubrication parts of the equipment. Timing, quantitative lubrication of lubrication parts can reduce frictional resistance, reduce contact wear, reduce friction surfaces, and also play a role in rust prevention, shock absorption and sealing, suitable for wind power generation, construction machinery and Heavy machinery and other industries.



Technical Data of Dual-Line Series of Lubrication Pump

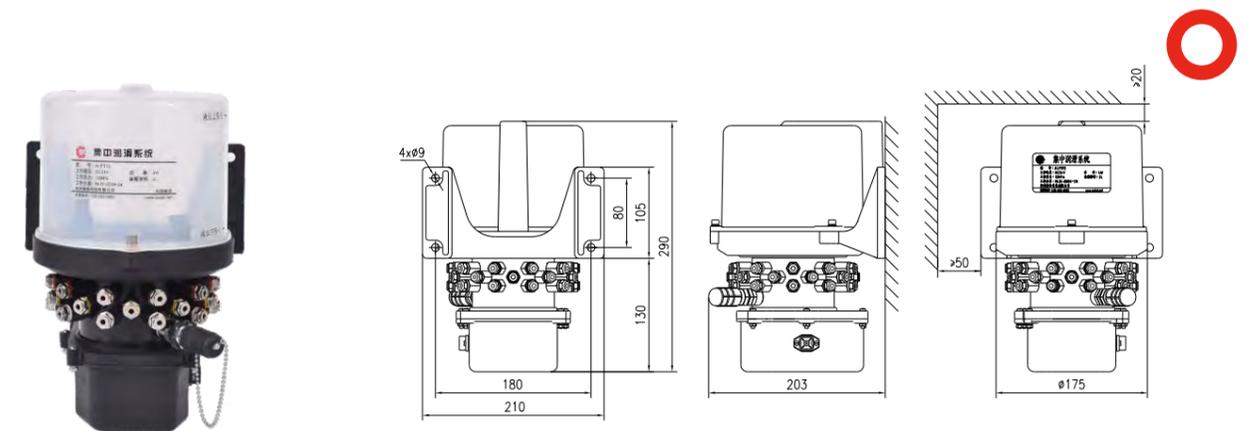
Model	Control mode	Nominal pressure	Maximum operating pressure	Nominal flow	Parameters of motor	Grease available	Protection level	Suitable temperature
Dual-Line	External/built-in monitor	25MPa	30MPa	12mL/min	DC24V /AC220V	NLGI-0#、1#、2#	IP65	-40°C~75°C

ALP30 Series Piston Pump

The AL30 system is a simple and efficient centralized lubrication system, featuring advantages as simple structure, easy installation, no grease distributor, and high operating reliability, etc. The grease lines in the system are relatively independent. Failure to a single grease line will have no influence on the system.

It applies to welding robot, commercial vehicle, etc.

The reducer motor drives the eccentric wheel to rotate in the pump and in turn to reciprocate plungers which deliver grease to the pairs of friction components through individual supply lines.



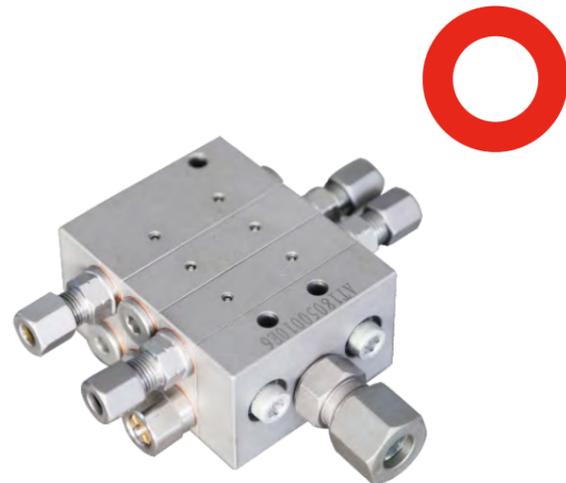
Technical Data of ALP312/ALP322 Series of Lubrication Pump

Model	Control mode	Number of plungers	Pressure output	Capacity	Height	Parameters of motor	Grease available	Suitable temperature	Revolution	Displacement of plunger
ALP312	External monitor	30	12MPa	2L	290mm	24V/4W	NLGI-000 ⁰ -2 ¹	-40°C~70°C	2r/min	0.015ml/cy(white) 0.02ml/cy(yellow) 0.04ml/cy(red)
ALP322	External monitor	29	12MPa	1.1L	265mm	24V/4W	NLGI-000 ⁰ -2 ¹	-40°C~70°C	1r/min	

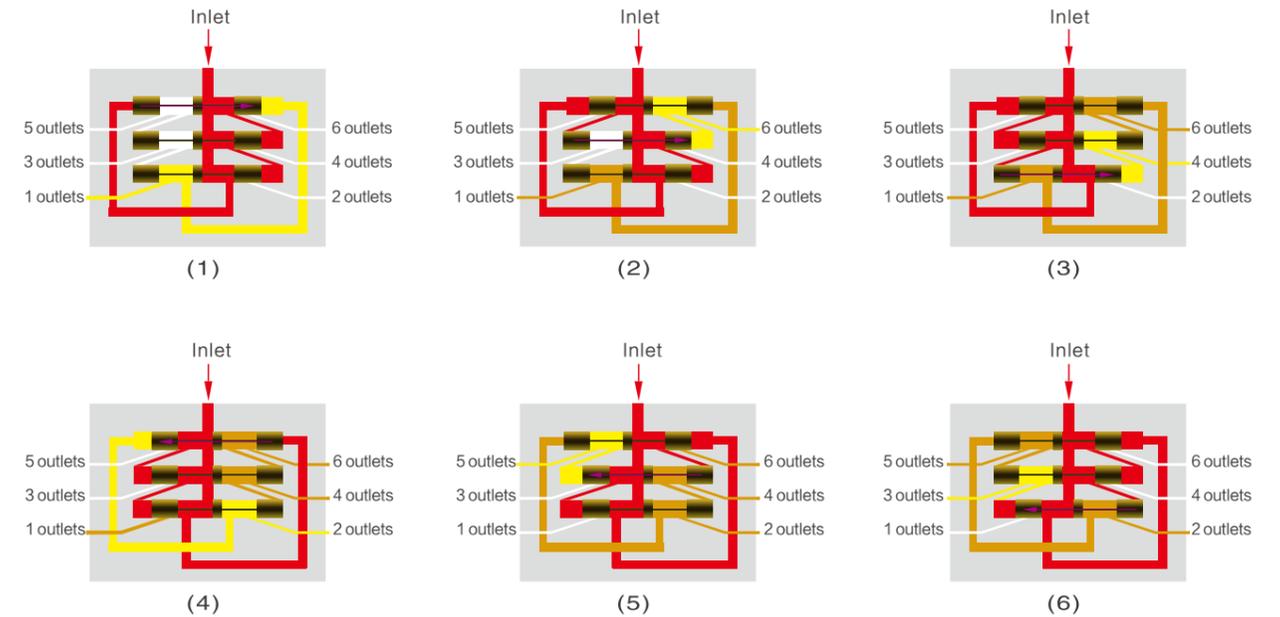
SSV Progressive Distributor

Through sequential actions of plungers, the progressive distributor progressively supplies lube points. It may be constructed with blocks or pieces. A block-type distributor is structured with one block, with outlet being connected with 6/8/10/12/14 ways, with high operating pressure, suitable for heavy-duty machinery. A piece-type distributor consists of one front piece, one rear piece and intermediate pieces. Each intermediate piece is designed with 2 outlets. Each group of intermediate piece include 3 to 8 pieces. Each delivery may be independently design, depending on plunger area and stroke.

Maximum operating pressure: 30MPa
 Grease available: NLGI-0#, 1#, 2#
 Displacement: 0.2mL/cy



Operating Principle



For a progressive distributor, plungers act in sequence. The pressure grease enters from the inlet of the distributor. The internal plungers act in sequence. As a result, the grease is delivered to lube points in turn. After the plungers stop moving for a long time, the high-pressure grease is supplied into the

distributor again. And, the plungers will immediately move from the stopping point of last movement. After the previous plunger has finished filling, the next plunger can only be activated by the pushing force of the pressure grease (As an example, the following figure shows a block-type structure with 6 outlets).

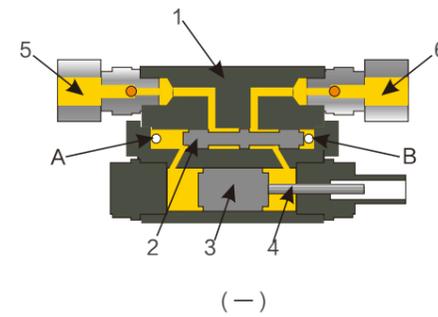
Dual-line Distributor

The oil pressure sensor at the end of the dual-line distributor is used to control the commutation of the dual-line pump and to detect the operation of the dual-line distributor; the end of the progressive distributor is equipped with a plunger detector to monitor the operation of the progressive distributor.

Protection level: IP67
 temperature: 15°C~75°C
 Maximum operating pressure: 25MPa
 Grease available: NLGI-0#, 1#
 High withstand voltage: not lower than 30MPa
 Displacement: 0.2、0.4、0.6、0.8、1.0mL/cy



Operating Principle



The double-line distributor has two inlets 1a, 1b respectively corresponding to lines A and B. If one of them is supplied from the grease pump, another is opened for the reservoir (tank).

Figure 1

As shown in Figure 1, the grease from the pump is delivered to the double-line distributor via the supply line 1a, and then pressurized at the left end of the control piston 2 to push the control piston 2 towards the right. Now, the right side is connected to the supply line 1b for unloading. With the control piston 2 moved right, the left chamber of the metering piston 3 is connected to the left chamber of the control piston and the right chamber of the metering piston to the outlet. The supplied grease enters the left chamber of the metering piston to move the metering piston right so that the grease in the right chamber is delivered to the lube points via the discharge line 6b. Now, the grease supply in Stage 1 has been finished.

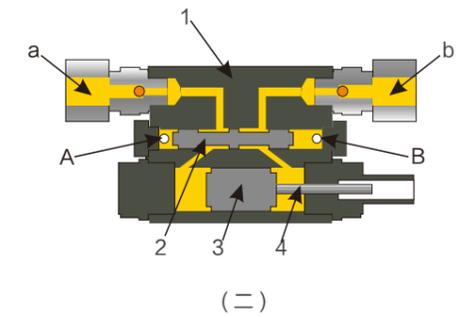
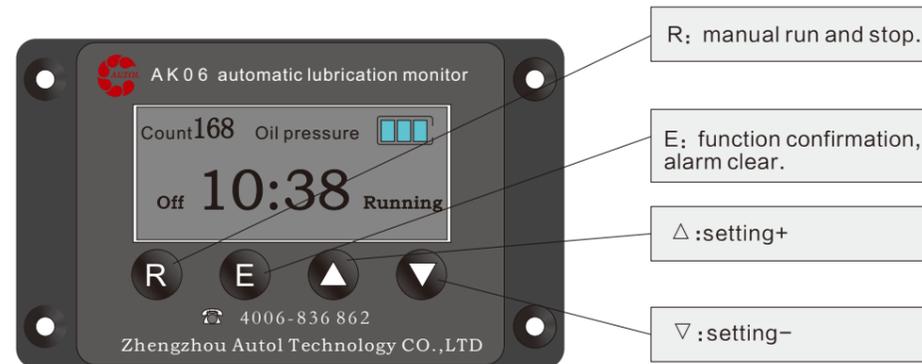


Figure 2

As shown in Figure 2, the grease is supplied to the double-line distributor from the supply line 1b, and pressurized at the right end of the control piston 2, to push the control piston 2 left. Now, the right side of the supply line 1a for unloading. With control piston 2 moved left, the right chamber of the metering piston 3 is connected to the right chamber of the control piston and the left chamber of the metering piston to the outlet 6a, allowing that the grease flows into the metering piston right chamber to push the metering piston to be moved left so that the grease in the left chamber is delivered to the lube points through the discharge line 6a. Now, the grease supply in Stage 1 has been finished.

Monitor

Built-in Monitor



Important information:

Press and hold both "▲" and "▼" for 4s and above and press the "E" to enter into the mode of setting. It is automatically locked after exiting the mode of setting. Press briefly the "E" to enter into the setting interface and press briefly in turn the "E" to select the setting items "1P, 2P, 3P and 4P". Confirmed.

- 1P: Press briefly the "▲" or "▼" to set the off time (1 to 30 h, customizable) ;
- 2P: Set the number of pulses to be detected (0 to 99 min, customizable);
- 3P: Press briefly the "▲" or "▼" to set the operation time (1 to 60 min, customizable) ;
- 4P: Press briefly the "▲" or "▼" to set the low-temperature standby temperature (-50°C to 0°C); Briefly press the "E" to confirm entering into the "OFF" state.

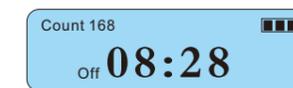
Special Attention!

This monitor is designed with function against misoperation:



Setting Interface

1 Off status



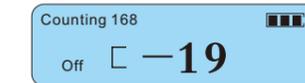
2 Oil quantity pulse not detected during operation



3 Oil quantity pulse detected during operation



4 Low-temperature standby



5 Low level early warning status



6 Low level early warning status



7 Alarm due to lack of grease

(Alarm sends and the machine will be shut down after 6 consecutive operations, the alarm will be automatically acknowledged after the tank is fully filled)



8 Alarm due to insufficient filling

(It has no influence on system operation. Fault will be automatically cleared at the time of next normal operation)



Monitor

Remote Monitor

As a control center of the lubrication system, the monitor is used to dynamically display the grease pressure signal in the grease line, time countdown to the OFF state, operating hours, total number of operations and fault code, etc. It features protection for standby at low temperature and fault alarm. The monitor may be built-in or externally mounted. A built-in monitor is integrated with grease pump. An externally mounted monitor is installed for easy operation. The monitor is provided with a remote control, allowing for adjusting the system off time (1 to 30 h, non-standard, customizable) according to equipment operating conditions.



Accessory



Electric Greaser



DC-801 Greaser

This greaser is supplied by 220 VAC and features such advantages as stable performance, high greasing efficiency, and wide scope of application, etc. It may be just inserted into 15 kg grease drum, quick and easy to fill with 0#-2# grease. Using distributor disc may cause higher filling efficiency.

The DC-801 greaser consists of a planetary reduction mechanism, an eccentric transmission structure, a plunger and a check valve sealing structure. The structure principle is simple, the performance is reliable, and the maintenance is convenient.

Voltage: AC220V/50Hz
 Displacement: 1L/min
 Maximum working pressure: 15MPa
 Weight: 16Kg
 Grease available: NLGI-00#, 0#, 1#, 2#, 3#

Voltage: DC24V
 Power: 300W
 Displacement: 350g/min
 Maximum working pressure: 40MPa
 Weight: 8.5kg
 Grease available: NLGI-0#, 1#, 2#



Manually Operated Grease Gun

Technical parameters:
 Displacement: 42ml/cy
 Grease: NLGI-0#, 1#, 2#



Greaser

This unit is a kind of tool used to suck grease manually from the drum and delivered into the grease tank of the various electric grease pumps. It is able to easily and efficiently fill electric grease pumps to avoid contamination of grease.

Sketch for installation of Ak series of monitor

Points of innovation:

It is designed with initiative intelligent temperature control technology to challenge the high altitude and extremely cold climate. The operating parameters may be dynamically displayed by an automatic ECU LCD-based system and microcomputer based automatic control.

A CAN interface is reserved for remote wireless management via CAN platform.

After-sales Services Freeing You From Worries

We keep forging ahead unswervingly to provide excellent products and best of the services to customers. We provide technical services to users with as quick response as possible and arrange regular visits to system inspection.

1. Before use of equipment, we will provide professional training services free of charge;
2. We will give instructions to installation and commissioning until normal operation.
3. After the equipment is put into service, we will go the customers' site for after-sales services such as follow-up inspection, etc. on a regular basis.
4. We provide training services to the users with respect to basic operation and routine maintenance of systems.
5. During warranty period, Autol will unconditionally replace or repair the defective products (if any) due to their quality.
6. For the products from the other manufactures, which were used by the customers in the past, we will provide service for the same.



Marketing Network

In China



Except Hong Kong special administrative region, the Autol's marketing network covers 23 provinces, 5 autonomous regions, 4 municipalities directly under the central government and 1 special administrative region.

In the world



In 2015, Autol established Lubmann GmbH Research Institute for Lubrication in Germany, one of eight major industrial countries in the world. At present, the Autol's marketing network covers more than 30 countries and regions such as USA, Germany, Russia, France, Japan, India, South Africa, etc.

Construction Machinery Case



SanY Excavator

Installation time: 2018.3.28
Installation model: ALP1026
Installation details: The pumping station is fixed at the air filter fixing bracket behind the cab seat, and the welding fixing plate is used. The progressive distributor 8/7 is used for the stick and the oil intake is 7 ml/min.



SanY Rotary Drilling Rig

Installation time: 2018.3.20
Equipment model: Sany 365 rotary drilling Rig
Installation model: ADP1224 dual-line pump
Installation details: This rotary drilling has a total of 46 lubrication points, using a two-line progressive centralized lubrication system. This system is equipped with one ADP1224 two-line plunger pump, 1 dual-line distributor and 5 progressive distributors.



Kobelco Excavator

Installation time: 2018.6.10
Installation model: ALP1024
Installation details: The lubrication pump of this project uses ALP1024HNA system, set 3 oil outlets, 4.5ML/MIN plunger pump for centering port, 2.5ML/MIN plunger pump on both sides, and 3 progressive distributors at the same time a total of 18 oil outlets, actually provide lubrication for 17 points on the car; individual lubrication points are also protected by metal protective shells.



XCMG Excavator

Installation time: 2017.3.18
Installation model: ALP1026
Installation details: Piping and shaft oil piping connections
After the completion, turn on the power to let the pump station run
Record the pressure time, set the operation stop
Technical parameters such as pump station running time.
At the same time, check the oil output of each lubrication point.
Make sure that grease is produced at all points.

Construction Machinery Case



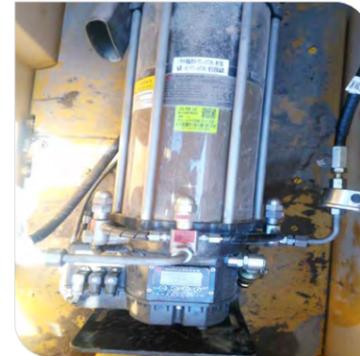
Volvo Excavator

Installation time: 2018.10.25
Installation model: ALP1026
Installation details: The pump station is fixed in the hydraulic station box behind the cab, the hole is fixed, and the three oil filling pipes are bundled together in one direction. The three distributors are distributed on the back of the bucket connecting rod, near the side of the hinge at the rear end of the arm, and near the lower side of the side of the oil collecting block at the root of the boom.



Ginaf Heavy Duty Truck

Installation time: 2014.7.7-7.11
Installation model: ALP502
Installation details: Our technicians have carefully designed and surveyed according to the specific conditions of the customer's model, and finally determined the number of lubrication points to be set up to 67. According to the characteristics of the imported straight rods, the imported lubrication-free characteristics are used. Add 2 lubrication points.



Caterpillar Excavator

Installation time: 2017.11
Installation model: ALP1026
Installation details: The lubrication system is: ALP1026 plus 2 progressive distributors, 11 lubrication points, customer satisfaction through installation and commissioning, and system parameters adjusted according to customer actual needs;



Doosan Loader

Installation time: 2018.5.15
Installation model: ALP1026
Installation details: one ALP1026 pump, one 10 and 7 port distributor, the second 12 and 6 distributor, the third 8 and 4 distributor. The oil pump is installed in the tool box on the right side of the cab. The distributor is installed in the lower end of the boom, the middle part of the arm, and the connecting rod of the bucket.