AUTOL Automatic Lubrication System Solutions for – Mining Application

Presented by Lubmann GmbH – AUTOL Representative in Europe
AUTOL Profile

AUTOL Automatic Lubrication System for Multi-Application

AUTOL Solution for Mining Application

Service Supporting and Delivery
AUTOL Profile
A World Leading Brand in Automatic Lubrication Industry

No.1 ALS Brand in China

Autol is the No.1 brand of automatic lubrication system manufacturer in China with annual production capacity up to 200,000 units.

More Than 500,000 Units worldwide are in Service

Up to now, more than 500,000 units of AUTOL lubrication equipment are in service, which are widely distributed in commercial vehicles, wind power, construction machinery and so on.

We Export Products More Than 40 Countries and Regions

AUTOL exports products to more than 40 countries and regions and has more than 20 dealers out of China. AUTOL has set up Lubmann GmbH in Germany to accelerate its development of globalization.
奥特科技长期致力于发展具有自主知识产权和核心竞争力的集中润滑技术，已形成商用车辆、工程机械、风电设备、大型设备等多行业集中润滑系统解决方案。
R&D expenditure > 2 million dollars/per Year

8.4% of overall

Governmental investments on CLS projects

Professional lab: Machinery, electronic, hydraumatic labs.

Researcher number: 86

Cooperation partners: Tsinghua University, etc.
Our Main Customers
AUTOL Automatic Lubrication System for Multi-Application
- Interval: long and irregular.
- Grease used: too much per time and easy to degrade.
- Friction pairs: either grease excess or grease starvation.
- External dirt: easy to enter into lube points.
- Operation time: machines stop.
- Point location: some are not easy to access.

Results

- Components’ life: greatly shortened.
- Downtime: unavoidable.
- Environment: polluted for excess grease.
- Lubrication effect: no guarantee.

Waste time, waste grease, waste labor, and shorten components' service life.
Interval: short and regular.
Grease used: as required every time, fresh and clean.
Friction pairs: under adequate grease condition.
Manual labor: save 95%, and actual effect is guaranteed.
External dirt: a closed system, no dirt entrance.
Operation time: the machine is running.
Point location: regardless of location or ease of access

Results
Components’ life: greatly extended.
Downtime: greatly reduced
Environment: protected.
Lubrication effect: guarantee.
Investment: returned quickly

Save time, save grease, save labor, reduce maintenance cost.
Overview of Automatic Lubrication Systems

<table>
<thead>
<tr>
<th>System</th>
<th>Feature</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progressive</td>
<td>The most popular system; Well known by customers and service partners;</td>
<td>Mining Industry, Construction Machinery, Railway, Windmill, Port Machine, Agriculture Machine etc.</td>
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<tr>
<td></td>
<td>High price-performance rate system for NLGI 2 (max. distance 25 Meter);</td>
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<td></td>
<td>Discharge into greasing points one by one (progressively).</td>
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<tr>
<td>Single Line Pressurized</td>
<td>High price-performance rate system for NLGI 0;</td>
<td>Mining Industry, Commercial Vehicle, Food Industry etc.</td>
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<td></td>
<td>Discharge into greasing points simultaneously</td>
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<tr>
<td>Single Line</td>
<td>High Performance System for NLGI 2 (max. distance 10 Meter);</td>
<td>Windmill</td>
</tr>
<tr>
<td></td>
<td>Discharged into greasing points simultaneously</td>
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<tr>
<td>Dual Line</td>
<td>High Performance System for NLGI 2 (max. distance 40 Meter);</td>
<td>Mining Industry, Construction Machinery, Steel mill, Windmill etc.</td>
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<td></td>
<td>Discharged into greasing points simultaneously</td>
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Overview of Other Lubrication Systems or Devices

- **Single Point System** – Electrical single point pump with refillable cartridge
- **Grease Refilling Device** – Manual/electrical greasing refilling devices/pumps
- **Grease Exchanging System** – Keep the grease flow circulation of the bearing in good condition
- **Smart Lubrication Monitoring** – Online/Offline status detection, data Integration/Analysis/Diagnosing

More Specifications for the Pumps, Distributors and other components please check the product brochure of AUTOL.
AUTOL Solution for Mining Application
Overview

Grease pump delivers grease alternatively into each lube points through progressive distributors.

Components

**Piston pump:** 1 piece (Progressive, Plunger)

**Primary distributor:** 1 piece (Block Type/Progressive)

**Secondary distributor:** Optional (Block Type/Progressive)

**Monitor:** Integrated in Pump

**Indicator Rod:** 1 piece optional

**Pressure Sensor:** 1 piece optional

**Flowrate Sensor:** Optional for important greasing points

**Accessories:** Hoses and Fittings for connecting the whole system

More Specifications for the Pumps, Distributors and other components please check the product brochure of AUTOL.
AUTOL Solutions with Progressive System

For Mining Machinery: Excavator, Wheel Loader, Grader, Screener, etc.
Overview

It is a parallel single-line centralized lubrication system. The system may increase the grease suction performance of the grease pump and grease filling performance of the distributor and could solve the difficult problem that grease is accumulated on the tank bottom.

Components

**Piston pump:** 1 piece (Single Line, Gear Pump)  
**Distributor in Series:** Optional (Rack Type/Single Line Pressurized)  
**Monitor:** External, Can be integrated in CAN Bus  
**Pressure Sensor:** 1 piece optional  
**Flowrate Sensor:** Optional for important greasing points  
**Accessories:** Hoses and Fittings for connecting the whole system

More Specifications for the Pumps, Distributors and other components please check the product brochure of AUTOL.
AUTOL Solutions with Progressive System

For Mining Machinery: Trucks etc.

AUTOL supplies **over 5,000 Mining Trucks** in Chinese Market per year with our OEM partner like YUTONG, BYD, etc.
Overview (Most Reliable System)

The Dual Line System has many kinds of connection depends on the application. The distributors can be applied in Series, parallel or Series/parallel mixed.

Components

Piston pump: 1 piece (Dual Line)
Primary distributor: 1 piece (Block Type/Dual Line or Progressive)
Secondary distributor: Optional (Block Type/Progressive or Dual Line)
Monitor: Integrated in Pump
Indicator Rod: 1 piece optional
Pressure Sensor: 1 piece optional
Flowrate Sensor: Optional for important greasing points
Smart Lubrication Monitoring System: optional
Accessories: Hoses and Fittings for connecting the whole system

More Specifications for the Pumps, Distributors and other components please check the product brochure of AUTOL.

System Overview of AUTOL (Dual Line)
AUTOL Solutions with Dual Line System

For Mining Machinery: Steel Mill, Mining/Industry plant, Conveyor, Huge Trucks, Huge Machinery which has long distance, etc.
System consists:
- Central Server
- Wireless transmitter and Receiver
- Web Terminal
- Info Server
- Lubrication Station
- Mobile Terminal
Health Management Business Mode

Detection of status
- On-line automatic detection
- Off-line detection
  - Real-time monitoring: Lubrication equipment, lubrication points, lubrication medium statuses

Data integration
- Status of lubrication system
- Status of lube point
- Status of grease
- Various data are computed and integrated with mathematical model and algorithm

Analysis and diagnose
- Diagnostic strategies of general information
- Diagnostic strategies of early warning
- Diagnostic strategies of fault alarm
- Experts' joint diagnosis for difficult troubles
- The processed data are strategically analyzed and diagnosed

Plan of remedies
- Remedies of minor trouble
- Remedies of experts' joint diagnosis
- Remedies upon results of diagnosis

Maintenance
- Current repair
- Medium repair
- Major repair
- Perform maintenance upon remedies

ATL 3000 Intelligent Lubrication System Video

Dual Line Intelligent Monitoring System
Wireless Remote Monitoring System

System components and advantages

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.
Lubrication Interface for Web Terminal

Dual Line Intelligent Monitoring System
Each secondary hose/important greasing point can be monitored by a flowrate sensor amounted on the distributor box or a greasing point (by left click on the distributor).
Technical Supporting and Delivery
Technical Supporting from AUTOL to Customers

1. Presentation and Consultance with Products for ALS

2. Specification and System Layout/ Dimensions of ALS for the Application

3. DEU/ENG/FRA/PL language Instruction Manual for the System

4. Certifications which have been mentioned by customers or dealers for the System

5. Material List of the System and Spare parts List

6. Delivery Time (Normally 15 days after the payment of the order) and special conditions for the orders
Thank you for Watching!

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