

SOLUTIONS

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VOL. 2, NO. 2

**A New Addition To Our Line of Powerful
Quicklub® Lubrication Systems**

QLS 311

In This Issue:

New QLS 311 *pg. 2*

Quicklub®
203 Family *pg. 6*

Manual Lube
Products *pg. 8*

New Fax Back
Service *pg. 9*

Centro-Matic®
Programmable
Controller *pg. 10*

Recent
Products *pg. 11*



A complete package that delivers maximum performance for automated lubrication using oil.

NEW

Quickclub® QLS 311

Compact Performance for Oil Applications



The compact QLS 311 installs almost anywhere.

It's easy to describe the QLS 311, our newest automated Quickclub oil lubrication system. It's compact, rugged and easy to monitor and maintain. But best of all, it's easy on the bottom line. Because everything—pump, control monitor and metering valve—is ready to go “out of the box,” the unit delivers maximum performance, reliability and great value. OEMs and industry will both like the QLS 311 because it's easy to install. Everyone will like the fact that it brings the advantages of automated lubrication, including reduced downtime and improved safety, to machinery large and small.



Back Mount

It's Easy to Install

Installing the QLS 311 is as simple as this:

- Fasten the unit to your machinery
- Connect the flexible tubing
- Connect the unit to an electrical source
- Set the time interval
- Fill the reservoir with oil and it's ready to lubricate.



Bottom Mount

The “secret” is that the QLS 311 comes pre-assembled for quick—and money-saving—installation. The optional installation kit has everything you need, including flexible nylon tubing and quick-connecting Zerk-Lock™ and Quickline™ fittings (in either inches or millimeters).

The QLS 311 is also versatile. Because models come with the metering valve (SSV divider block) attached on the back or the bottom, the QLS 311 can be installed where other units can't.

The lubricant return line, installed externally on competitors' products, is built into the QLS 311 back-mounted versions.

It's Compact

With its all-in-one package, the QLS 311 is extremely compact. It fits in a space that's only 8.5 x 9 x 10.25 inches. That means it can be mounted in places that were unthinkable before.

It's Fully Automatic

There's nothing more up-to-date than the QLS 311. It not only controls the entire lubrication process automatically, it lets you know exactly how well it's doing through its LED display and easy-to-use keypad. The unit's integrated circuit board controls pause and operating times and automatically monitors the system's function to ensure complete lubrication cycles. It also includes external fault contacts for remote monitoring by a PLC or visual/audio device such as a light or alarm. The standard low-level control helps ensure that the pump never goes empty. It has a built-in safety relief valve, blocked line detection capability and much more. It can supply up to 18 lubrication points and can also handle larger systems with lower lubricant requirements.



It's fully automated, with a keypad and LED display for easy monitoring.

Features & Benefits

- ◆ Complete, compact system installs quickly, is ready to use “out of the box”
- ◆ Built-in controller with LED display and keypad for easy programming, system cycling, low-level monitoring and troubleshooting
- ◆ Built-in low-level control ensures that unit won't run out of oil
- ◆ Complete installation kit includes tubing as well as Zerk-Lock™ and Quicklinc™ fittings (in inches or millimeters)
- ◆ Expansion capability allows use in systems with more than 18 points that have lower lubrication requirements
- ◆ Back or bottom-mounted valves
- ◆ NEMA 4 and IP6K9K rated
- ◆ Internal relief valve eliminates oil discharge.

It's Rugged

The QLS 311 works where things get tough. It stands up to high-pressure washdowns and can handle temperatures between -10°F to +160°F (-25°C and +70°C). It's earned NEMA 4 (USA) and IP6K9K (Europe) protection ratings. Back-mounted models have been vibration-tested to the strictest specifications of the mobile equipment industry (models were tested for 100 hours at a random frequency between 10 and 500 Hz and a total acceleration of 5 g).

It's Easy to Use and Maintain

System information is always accessible on the LED display. With a touch of the keypad, you can quickly check settings, find out where the system is in a lube cycle, even manually trigger a cycle when necessary. But even better, you can mostly forget about the QLS 311 because it's always making sure that the right amount of oil is delivered exactly where and when it should be.

It's Environmentally Friendly

With the QLS 311, one problem—over-pressurized systems dumping oil on the floor—is a thing of the past. A newly developed internal pressure relief valve prevents this housekeeping and safety headache by directing oil back to the reservoir. Versions with the back-mounted metering valve have another advantage over other progressive lube systems—an internal return to reservoir line. When unused lubricant outlets are plugged, oil is automatically diverted back to the reservoir. (This feature also allows for more precise lubrication.) On bottom-mounted versions, external return to reservoir lines can be installed to save oil.



The installation kit has everything you need, including tubing along with Zerk-Lock and Quicklinc connectors in standard or metric.



The QLS 311 handles high-pressure washdowns, vibration, cold and heat.



The standard low-level control ensures unit won't run out of oil.



You can pre-fill tube lines or override the system manually with the manual lubrication fitting.



Holds up in tough environments like this paper mill.

QLS 311

Works for Many Industries

The reliable, all-in-one design of the QLS 311 makes it the best choice for smaller applications in a variety of industries, including:

- Automotive Manufacturing
- Agriculture
- Paper/Wood Products
- Food & Beverage
- Material Handling (conveyors, palletizers, depalletizers)
- Metal Working
- Textiles
- Cement
- General Industry



QLS 311 is perfect for high-speed presses and other demanding applications in the printing industry.

QLS 311 Available Models

Model	Valve Type	Valve Mount	Volt	Power Cable
P311 31211151	SSV6	Back	12DC	30' / 10m
P311 61211151	SSV12	Back	12DC	30' / 10m
P311 91211151	SSV18	Back	12DC	30' / 10m
P311 31411151	SSV6	Back	24DC	30' / 10m
P311 61411151	SSV12	Back	24DC	30' / 10m
P311 91411151	SSV18	Back	24DC	30' / 10m
P311 42611111	SSV8	Bottom	120AC	none
P311 62611111	SSV12	Bottom	120AC	none
P311 92611111	SSV18	Bottom	120AC	none
P311 42811111	SSV8	Bottom	230AC	none
P311 62811111	SSV12	Bottom	230AC	none
P311 92811111	SSV18	Bottom	230AC	none

All models come with a low-level indicator and remote contacts.



Ideal for metal working applications from simple machinery to CNC equipment.



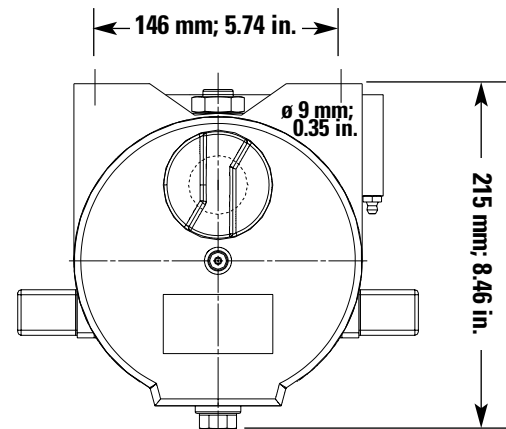
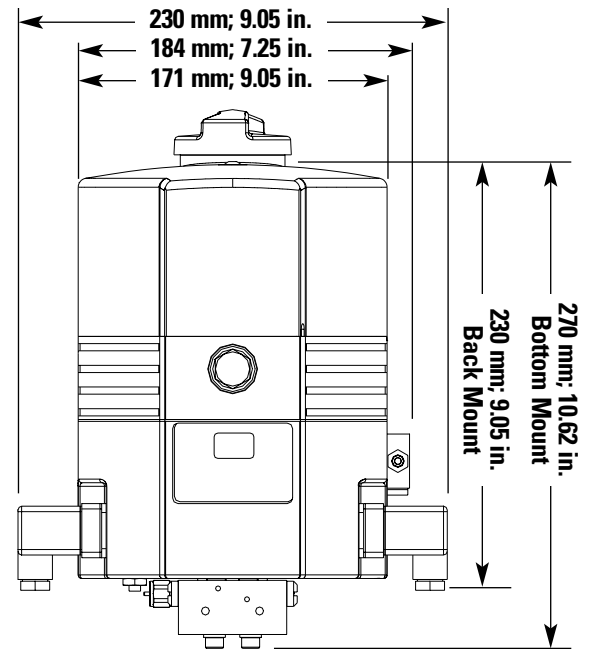
Just right for difficult applications on agricultural equipment.

QLS 311

Product Data

System Specifications

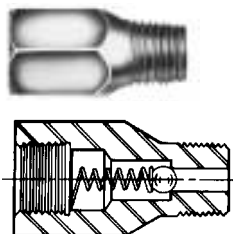
Operating voltage	12 and 24 VDC	
	120 and 230 VAC; 50/60 Hz	
Operating current	12 VDC	2.0 A
	24 VDC	1.0 A
	120 VAC	1.0 A
	230 VAC	0.5 A
Operating temperature	-10° to 160°F	-25° to 70°C
Number of outlets	6, 8, 12 or 18	
Reservoir capacity	2.1 pints	1.0 L
Protection	NEMA 4	IP6K9K
Lubrication cycle time	20 min. to 100 hours	
Number of cycles	1 (with 6, 8 divider block, 1, 2 or 3 cycles are possible)	
Timer memory	Indefinite	
Max. operating pressure	3000 psig	205 bar
Output per outlet & cycle	approx. 0.012 in ³	approx. 0.2 cm ³
Lubricant	oil	
Weight	12.5 lbs.	5.7 kg



Accessory Kits

6/8 Outlets 550-36971-1 Quantity	12 Outlets 550-36971-2 Quantity	18 Outlets 550-36971-3 Quantity	Description
8	12	18	SSV Quickline outlet fitting with check
			Quickline straight fitting
8	12	18	Zerk-Lock fitting
1	1	1	Zerk-Lock staking tool
50 feet	150 feet	150 feet	1/4" nylon tubing

Ball Type, Straight



Add a check valve to the end of each feed lines (or at lube points) to prevent lines from siphoning.

Model	Pressure		Inlet	Outlet	Hex Material	Hex in.	Length in. / mm
	Max	Opening					
87817	7500 psig	20-70 psig	1/4" NPTF(M)	1/4" NPSF(F)	Carbon Steel	11/16"	1.38 / 35.1
87818	500 bar	1.5-5 bar	1/8" NPTF(M)	1/8" NPTF(F)		9/16"	1.19 / 30.2
130021-3	6000 psig 400 bar	31-70 psig 2-5 bar	1/8" NPTF(F)	1/8" NPTF(M)		1/2"	1.06 / 27.0



Quickclub® installation at JRB in Chattanooga, TN

Lincoln Industrial's Product Line of **203 PUMPS** *Continues to Grow*

Lincoln Industrial's popular 203 pump line offering continues to grow with the addition of six new models. Three feature a low-level sensor that allows for continuous visual monitoring of lubricant supply in the pump's reservoir. Other models include the added feature of internal microprocessors that continually monitor the pump's operation.

EPROM technology utilized in the design of the microprocessor ensures that control and monitoring settings will be retained permanently in the event of an electrical power loss. Until recently, the pump's controls were on an integrated circuit (IC) board whereas all memory-based information would be lost after 72 hours in the event of power loss. The low-level sensor and microprocessor technologies alert equipment users to a low lubricant supply condition or a fault in the lubrication system that may be caused by an obstructed or broken line.

Since its US introduction in 1996, the line of 203 pumps has grown from the initial offering of two models to its current figure of 15. Plans are underway for further expansion later this year.

Available Models

Model	Low Level Sensor	Internal Microprocessor	Reservoir Capacity
94220	included	N/A	2 ltr.
94420	included	N/A	4 ltr.
94820	included	N/A	8 ltr.
94222	included	included	2 ltr.
94422	included	included	4 ltr.
94822	included	included	8 ltr.

Electric grease pump models 94222, 94422 and 94822 require purchase of one of the following proximity switches:



Part Number	Description
234-13178-2	3 m proximity switch cable without flanged plug
234-13178-5	7 m proximity switch cable without flanged plug

The popularity of 203 pumps, and the distribution valves that make up all Quickclub systems, are growing rapidly due to their versatility and proven track record for virtually any mobile equipment or industrial machinery application. For many years, OEMs in Europe have been specifying 203 pumps on their products while more recently OEMs in the Americas have followed suit.

Company engineers in St. Louis and Walldorf are constantly on the alert to develop "cutting edge" technology to meet ever changing global market needs. This is evidenced by the market introduction of these technologically advanced new products.

Caterpillar, Komatsu and Hitachi along with various hammer breaker manufacturers began to specify the 203 pumps with the larger reservoirs. In each case, their products require frequent lubrication on a continuous basis in significant volumes. The larger capacity pumps were a natural fit which provided a cost effective and reliable means of providing adequate lubrication to their products at extended preventative maintenance (replenishment of lubricant) intervals.

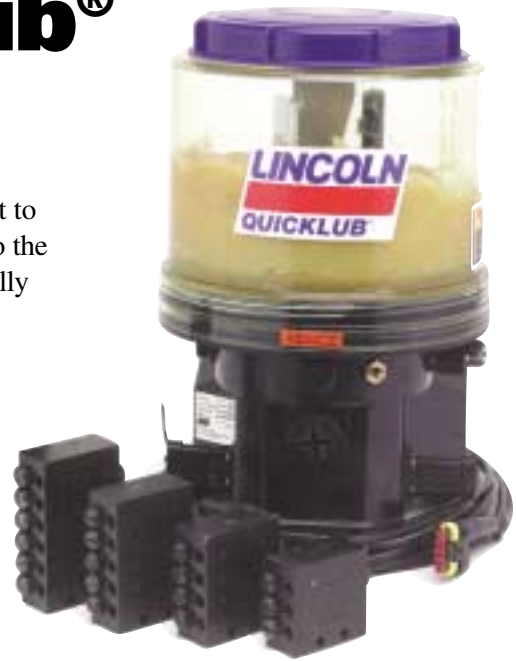
The larger capacity pumps have become especially popular with hammer breaker OEMs. Most hammer drills require lubrication at least every two hours. Failure to provide adequate lubrication to the tool bushing point(s) can ruin a new hammer in one day. Because our 203 pump can deliver continuous lubrication while the breaker is in operation, the equipment operator can concentrate more on being productive rather than worrying about greasing the hammer. He no longer has to shut the hammer down every couple of hours to grease it.

As a result of the confirmed need and growing market awareness in the benefits of automated lubrication, along with market recognition of Lincoln Industrial being the industry leader in lubrication equipment, Caterpillar, Komatsu, Hay & Forage Industries and many other OEMs have specified Quickclub (203 pump & distribution valves) as their product of choice for factory-fit standard or option equipment offering.

NEW VAC Quicklub® 203 Models

Lincoln Industrial's new VAC Quicklub 203 pumps automatically adjust to work perfectly in any of the world's different voltage systems, adding to the versatility of the popular 203 product line. The VAC models automatically handle electricity between 94 and 265 volts at either 50 or 60 Hz.

With the new models, the Quicklub 203 family of pumps and metering valves can handle the automated lubrication needs for almost any piece of mobile equipment or industrial machinery. Units come with 2, 4 or 8-liter reservoirs, with or without low-level controls and printed circuit control boards, and now in either VAC or 12 or 24 VDC. They fill from the top or bottom, can dispense up to NLGI #2 grease or oil, and can drive up to three pump elements in 5, 6 or 7 mm size feeding up to 300 lubrication points or three independent lubrication systems.



VAC 203s are currently available only by special order. Fax requests for quotes to Mary Lorenz at 1-800-424-5359 (or 314-679-4359). Delivery time is 6-8 weeks. Watch sales bulletins for announcements of inventory items and part numbers as pumps become stock items at our St. Louis headquarters.

203 AC Selection Guide Pick one from each category to build a complete pump description

Example: 203—2XLB0-1K6-AC-2A1-01-V10

Basic Pump Model: 203

Size	Reservoir Design			Pump Elements
2 liter	X-grease	N-standard designation	BO-filling from the top	Specify 1, 2 or 3 elements
4 liter	Y-oil	L-low level control	FL-flat top reservoir (2L)	K5-5mm
8 liter				K6-6mm
				K7-7mm
				KR-adjustable element
Power Supply	Number of Connections		Type of Connection	Control PCB
AC	1A=1 connection, supply voltage 2A1=1A1 + low level control		01= with socket without cable	V10= with adjustable pause and operation time No designation= pump without PCB control

Features & Benefits

- ◆ Three reservoir sizes; larger sizes offer extended intervals between refills
- ◆ 12/24 VDC models or VAC models that work with all electrical refills
- ◆ Pumps either NLGI #2 grease or oil to -13°F
- ◆ Can lube up to 300 points and three separate systems
- ◆ Versatile (with or without low-level control, printed circuit boards, microprocessors)
- ◆ Compact design to install in tight spots
- ◆ Clear reservoirs for complete lubricant level visibility
- ◆ Built-in manual override switch

Improved Lincoln Industrial Manual Lube Products

SAVE MONEY

A great product that's improved and costs less—it's a combination customers mostly dream about. With Lincoln Industrial's improved manual lubrication products, the dream is reality. In fact, some models now cost almost half as much as they did before. For a look at what products we've upgraded, check the photos and descriptions on these two pages.

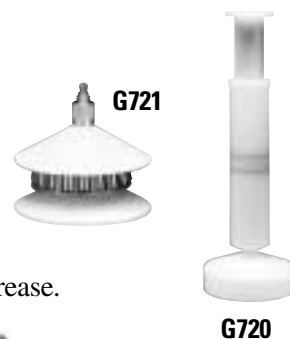


G401 Lever-Action Barrel Pump G402 Rotary Barrel Pump

Both pumps transfer petroleum-based, non-corrosive liquids efficiently. Both come with standard bung bushing and a rugged finish that prevents rust. The G401 fits 30-55 gallon drums and delivers 10 oz. per stroke. Curved metal spout threads fit all standard hoses. The G402 cast-iron pump head delivers approx. 1 gallon per 18 handle revolutions. Great for industrial applications.

G720 Bearing Packer G721 Universal Bearing Packer

Portable and compact, Lincoln Industrial bearing packers can be used with any Lincoln Industrial grease gun. The G720 will pack bearings up to 2" I.D. The G721 will pack any bearing up to 4½" I.D. while forcing out old grease.



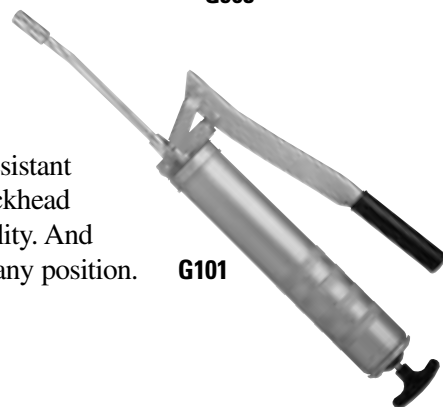
G904 and G905 4-Way Grease Fitting Tools

For tap repair of damaged threads and removal of broken fittings, Lincoln Industrial has two tools, the G904 (¼"-28) and the G905 (⅜"-NPT).



G101 Heavy-Duty Lever-Action Grease Gun

Able to accommodate any standard 14 oz. grease cartridge, it comes with a filler nipple for 3-way loading (bulk, filler pump, or cartridge). Features include electro-static corrosion-resistant finish, non-slip knurling for better grip and rubber hand grip for comfort. Steel blockhead offers protection for hardened steel plunger. Heavy-duty steel barrel ensures durability. And posi-lock follower rod with T-handle provides sure-handed grip and easy filling at any position.



G111 Mini Pistol-Grip Grease Gun with Dual Port Use

Compact and lightweight, the G111 has an additional port at the top of the head for straight-on use. It uses a standard 3 oz. grease cartridge or can be hand-filled. Durable, plated finish provides long life. Comes with one 3 oz. cartridge. The G801 Multi-Purpose Lithium Grease (not pictured) is a 4-pack of 3 oz. grease cartridges for use in the G111. Each tube contains heavy-duty lithium-based grease good for most agricultural, automotive and industrial applications and perfect for chassis and U-joints needing frequent regreasing.

New FAX BACK Enhances Lincoln Industrial's Technical Service

When you or a customer need the latest Technical Service Page on a product, there isn't time to wait. With Lincoln Industrial, you get the prompt service you expect. And you get what you need three different ways: from Technical Service pages we provide with each product, from our always online Intranet, and now with our new, easy-to-use "Fax Back" electronic file system, available 24 hours a day, 7 days a week.

You have access to our latest service enhancements from any fax machine hand set or any touch tone phone. All you need to know is the Model Number of a current product* and our fax number (see box below). The system will handle the rest, prompting

you through each easy move. The system is flexible enough to let you fax the service page to any number you enter, as well as to the specific person who needs the information. You can order up to five document pages on one call. And Technical Service Pages will be up to date because the latest version is placed in the system as soon as any changes are made.

Fax Back—it's just one more way Lincoln Industrial provides the lubrication industry's best service.

* Technical Service Pages are available on Fax Back for current Lincoln Industrial products. For service pages on other products, contact the Lincoln Industrial Technical Service Department at 314-679-4200, ext. 782.

HOW TO GET A FAX BACK

It's as easy as 1, 2, 3, 4, 5 to get a Fax Back from Lincoln Industrial:

1. Dial 314-679-4689
2. When Fax Back answers, dial "1" to order a fax or "2" for instructions on how the system works.
3. Dial the product Model Number followed by the "#" key. Omit any letters or dashes contained in model numbers. You may enter up to 5 model numbers. Hit the "#" key a second time after your last entry.
4. Dial the 10- digit phone number where you want the documents faxed. Do not dial "1" before the number. When asked to confirm the number, dial "1" if correct, "2" if you need to try again.
5. Enter the name of the person to receive the fax by dialing "1" and following the numbers in the chart below. Press "#" when finished. When the system repeats the name, dial "1" if correct, "2" if you need to re-enter it.

A = 2	B = 22	C = 222	D = 3	E = 33	F = 333	G = 4
H = 44	I = 444	J = 5	K = 55	L = 555	M = 6	N = 66
O = 666	P = 7	Q = 11	R = 77	S = 777	T = 8	U = 88
V = 888	W = 9	X = 99	Y = 999	Z = 12	, = 13	/ = 14
% = 15	\$ = 16	+ = 7	- = 18	Space = 10		

G906 Nozzle Extension

This 6" extension replacement for grease guns has 1/8" NPT male threads at each end.



G906

G160 Grease Gun Holder

Capable of being mounted to almost any surface, the G160 holds a grease gun until it's ready for use. Holds grease and suction guns with 2 1/4" O.D. barrel.



G160



G218

G212

G212 and G218 Grease Hoses

Hand-operated grease gun hoses with 1/8" NPT male threads at each end. In 12" (G212) and 18" (G218) lengths.

Working pressure 3,000 PSI. Burst pressure 12,000 PSI.

Centro-Matic® Automated Systems

Get New Low-Cost Programmable Controller

Microprocessor-Controlled Unit Outperforms Timers

Lincoln Industrial has introduced a 120-Volt AC controller with microprocessor “brains” for its reliable Centro-Matic systems. The result is effective and economical automated lubrication system control and supply line monitoring.

The fully-programmable 120-Volt AC Automated Lubrication System Controller is easier to set, adjust and maintain than the electromechanical timers it replaces. And it offers a wide range of lube cycle and feedback monitoring options—for about the same cost as many simple on/off timers.

The new controller has a much wider off-time range than timers. It also features an adjustable pressure switch (280-3000 PSI) instead of fixed settings, plus a new memory switch which turns the pre-lube option on or off. The controller is perfect for mid-sized lubrication systems.

Applications for the new 120 VAC include Centro-Matic automated lubrication systems for machinery used in paper converting, metal die casting, mineral processing, the beverage industry and more.

The controller has these impressive features:

It's Tough—NEMA 12 enclosures protect the controller from harsh environments and temperatures.

It's Flexible—You can adjust for high or low volume lubrication, large or small systems. A memory option lets you trigger a lube cycle every time the controller is turned on. And a manual push button allows for immediate lubrication.

It's Fully Automatic—

The controller displays each lube cycle. It shuts down the system if a lube cycle isn't completed and sends an alarm signal. The low-level feature tells you when it's time to refill the lubricant.



The new AC controller will be standard on the following Centro-Matic models:

1835, 1848, 1849, 201849

It will also be available as a “stand alone” model for component upgrades or new systems:

Model number 85520 replaces the 83104 Timer Assembly

Model number 85525 replaces the 83820 Controller (Timer Assembly & Pressure Switch).

Features & Benefits

- ◆ **Wide selection of programmed lube intervals (30 secs. to 30 mins.) allows high or low lube frequency**
- ◆ **Pumping/alarm time settings are selectable for large or small systems**
- ◆ **NEMA 12 enclosure for rugged performance**
- ◆ **Supply line monitoring ensures lube cycle completion**
- ◆ **Automatic system shutdown and alarm signal if lube cycle not completed**
- ◆ **Low-level feature lets you know when to refill**
- ◆ **Manual push-button over-ride for immediate lube cycle**
- ◆ **Memory option to program start-up with or without pre-lube cycle**

Recently Introduced PRODUCTS

New Product Support in Americas Makes Worldwide Lubrication Solutions Possible.

Significant improvements have been made in the service and support of our products made in Europe that will increase their availability in North and South America. Helios, dual-line and other European products are now readily available to the Americas.

FlowMaster™ Rotary-Driven Pump & Reel

Hydraulic excavator OEMs needed a compact, reliable and powerful on-board lubrication system. Lincoln Industrial met this need with the revolutionary FlowMaster rotary-activated, reciprocating hydraulic pump, heavy duty hose reel, control valve and swivel. It features performance in cold or hot weather conditions. It's compact, fitting inside machine compartments and great for use with high-viscosity grease. The wear-compensating motor is a reliable, long-lasting power source. The positive displacement pump features a unique stationary plunger and reciprocating cylinder design to ensure positive priming.



ORSCO® 160 Doubles Capacity— Drops Price per Point for Large Systems

The newly-designed ORSCO 160 system now handles up to 16 lubrication points—twice as many as the 150—greatly reducing the cost of systems requiring 9-16 points of lubrication. The 160 also features completely new, user friendly packaging so the operator can setup, monitor and adjust the system with ease.

POWER-LUBER®: For Global Markets and Special Applications

The basic heavy-duty Power-Luber is now available with chargers that are compatible with standard utilities throughout the world. Now you can select a version that meets your local electrical requirements. The Power-Luber 7.2 is a lower pressure, lighter duty version that offers Power-Luber convenience in an economical package for lubricating smaller, lower resistance bearings.



Recently Introduced PRODUCTS



System Sentry® II Controller Upgrade

The ultimate automated lubrication systems controller/ monitor is now even better. Software upgrades have resulted in greater monitoring accuracy with less sensitivity to lubricant flow rates, feedline length, or bearing back pressure. System Sentry II is always on the job, even when you can't be, to ensure that every lube point is lubricated when it's supposed to be.

Ultrasonic Sensor On 60 lb. Reservoir

Lincoln Industrial developed a new Ultrasonic High/Low Sensor to make it easier to determine when our 60 lb. Centro-Matic automated lubrication system reservoir is getting low on lubricant and when it's refilled to capacity. The new sensor detects the position of the follower plate with ultrasonic waves to report the lubricant level.



New Manual Grease Filler Pump

The new Manual Grease Filler Pump from Lincoln Industrial comes with a special adapter which allows grease, that is manually compressed from the pump, to enter the reservoir of a Quicklub pump. It takes just a fraction of the time that would normally be required using a conventional grease gun. The pump is especially valuable where equipment is working in remote areas where air supply or lube trucks are not available.



Metric Centro-Matic® Pumps

With new metric versions of Lincoln Industrial's new Centro-Matic Ram Pumps, there's now a completely metric Centro-Matic single-line automated lubrication system. The metric pumps are compatible with our new metric injectors, giving customers outside the U.S. and American manufacturers serving metric markets the kind of Centro-Matic systems they need. Installation and maintenance are simplified.



SOLUTIONS

contains new product information for Lincoln Industrial customers.

Please direct ideas, comments or questions to:

Lincoln Industrial
Marketing Communications,

Tel: 1-314-679-4255 or 4401,

Fax: 1-314-679-4359

www.lincolnindustrial.com