THE LATEST PRODUCTS AND NEWS FOR LINCOLN CUSTOMERS

SOLUTIONS

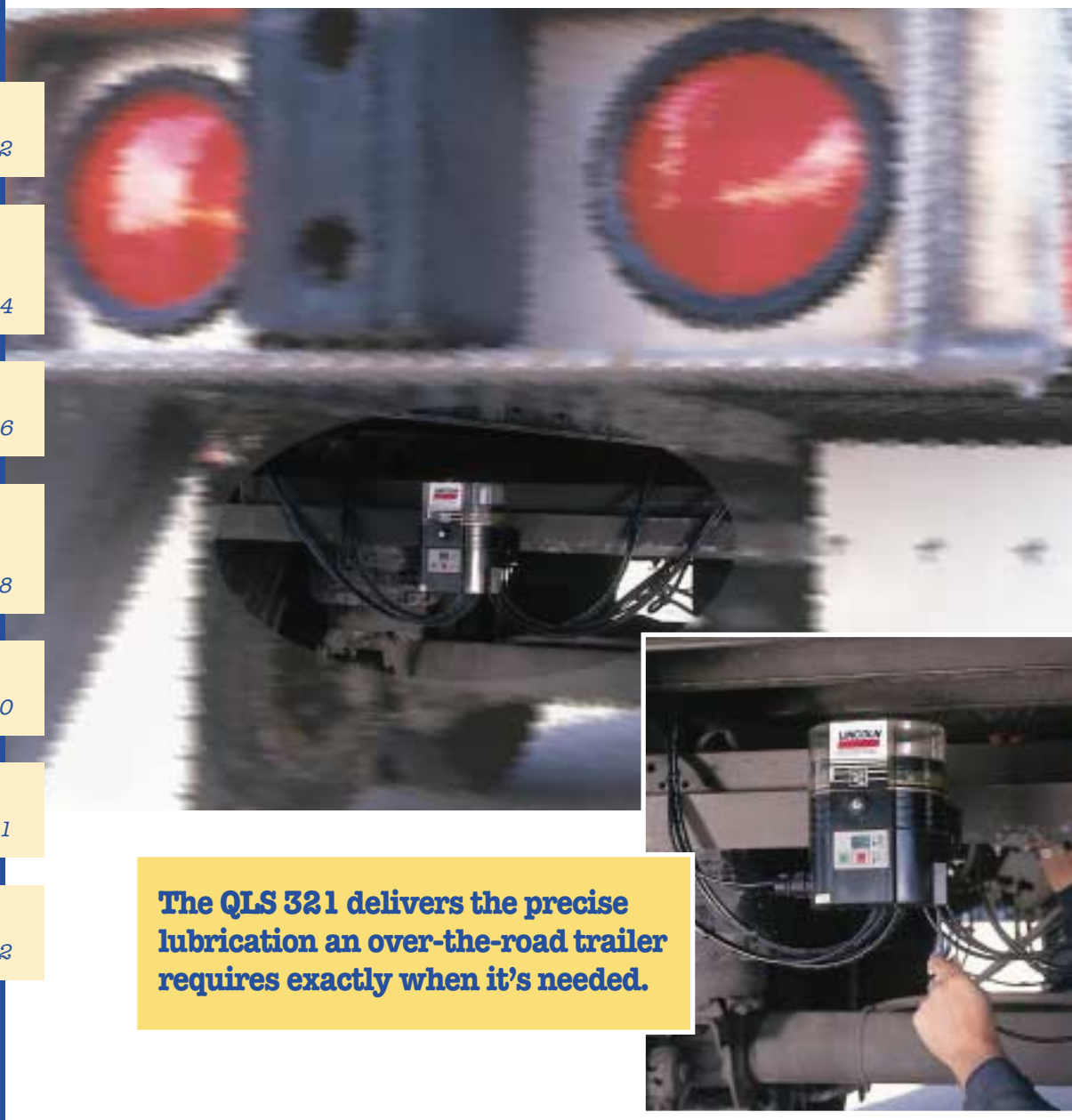
APRIL 2001 VOL. 3, NO. 2

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

QLS 321

Compact and Rugged • Easy to Install and Use • Multiple Standard Features

In This Issue:



The QLS 321 delivers the precise lubrication an over-the-road trailer requires exactly when it's needed.

CONTENTS

NEW

Quicklub QLS 321

Accurate Lubrication for Over-The-Road Trailers

Accurate lubrication without the need for continuous power—that's what Over-The-Road trailers need. That's exactly what Lincoln's new QLS 321 supplies. With a unique controller card that keeps track of the time a trailer is in use by monitoring its vibration, the QLS 321 delivers the precise lubrication an Over-The-Road trailer requires exactly when it's needed—by using the power of the trailer's brake lights.

Because it doesn't need power to monitor the time between lubrication events, the QLS 321 is ready when its controller card says "go." And the QLS 321 keeps lubricating each time the trailer's brakes are applied until its controller card adds up the "on times" and determines that the pre-set time for a complete lubrication cycle has been reached.

Compact, Rugged, Easy to Install

Just like the other members of the QLS lubrication family, the QLS 321 is compact, rugged and easy to install. With the pump, controller card and metering valve pre-assembled in a small, powerful package – and with an installation kit that has everything needed in inches or millimeters—the QLS 321 can be installed in places that were unthinkable before and is perfect for OEMs.

It also handles temperatures between -10°F and 158°F, as well as high-pressure washdowns, earning NEMA 4 (USA) and IP6K9K (Europe) protection ratings. And the QLS 321 comes in 12 or 24 VDC versions handling 6, 12 or 18 outlets.

The QLS 321—another lubrication solution from Lincoln, the industry leader.

The QLS 321 is easy to install. With the optional installation kit you have everything you need to install the system—*out of the box*.

CONTENTS

The QLS 321 can withstand high-pressure washdowns, vibration, cold and heat.

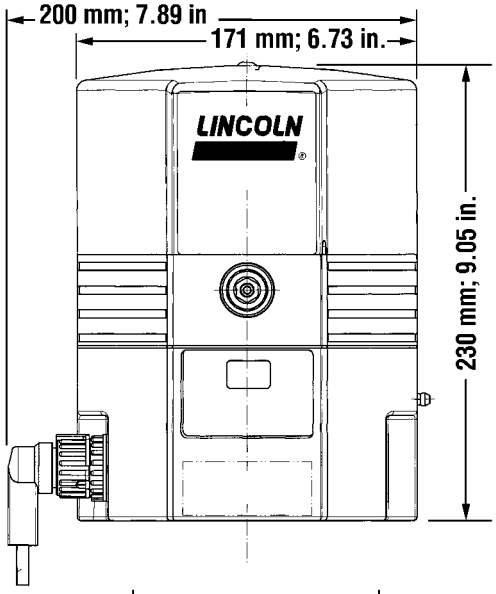
It's fully automated, with a keypad and LED display for easy checking.

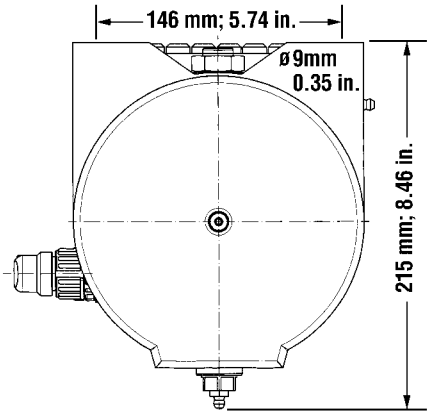
Features & Benefits

- Using existing brake light power, unique controller card provides accurate lubrication without power
- Complete, compact system ready to use "out of the box"
- Complete, easy-to-install kit comes with tubing and Zerk-Lock™ and Quicklinc™ fittings
- Works between -10°F and 158°F (-25°C and 70°C) allowing for operation in many environments
- No need to remove unit to clean trailer—handles high-pressure washdowns (NEMA 4 and IP6K9K ratings)
- 12 and 24 Volt Direct Current versions for 6, 12 or 18 outlets

Specifications

Operating voltage	12 and 24 VDC	
Operating current	12 VDC 24 VDC	2.0 A 1.0 A
Operating temperature	-10° to 158°F	-25° to 70°C
Number of outlets	6, 12 or 18	
Reservoir capacity	61 in^3	1.0 L
Protection	NEMA 4	
Time between cycles	1 hour to 16 hours	
On time range	1 to 32 minutes	
Timer memory	Indefinite	
Max. operating pressure	3000 psig	205 bar
Output per outlet per valve cycle	approx. 0.012 in^3	approx. 0.2 cm^3
Lubricant	up to NLGI 2 grease	
Weight	12.5 lbs	5.7 kg





Available Models

Model	Voltage	Valve Type	Valve Mount	Cable
P321 31210531	12 VDC	SSV6	Bottom	19 feet 6 meters
P321 31410531	24 VDC	SSV6		
P321 61210531	12 VDC	SSV12		
P321 61410531	24 VDC	SSV12		
P321 91210531	12 VDC	SSV18		
P321 91410531	24 VDC	SSV18		

Accessory Kits

Part Number	Description	6/8 Outlets 550-36971-1 Qty	12 Outlets 550-36971-2 Qty	18 Outlets 550-36971-3 Qty
244883	SSV Quicklinc outlet fitting with check	8	12	18
244047	Quicklinc straight fitting	8	12	18
247340	Zerk-Lock fitting	8	12	18
250475	Zerk-Lock staking tool	1	1	1
250687	1/4" nylon tubing	50 feet	150 feet	150 feet

CONTENTS

NEW

Quicklub QLS 301/311

FOR REMOTE CONTROL

QLS 301 for Remote Control

When Lincoln introduced great new automated Quicklub systems for up to NLGI #2 grease (QLS 301) and oil (QLS 311), these compact, rugged units came pre-assembled (pump, metering device, controller). They also came with many standard features ready to work on applications in numerous industries. But some customers were better served by systems without a controller.

So Lincoln came up with a solution to meet that need—the new QLS 301/ 311 for Remote Control. They're the same as the original great products, but now customers are in control of the all-important lubrication process. This is especially useful for remote programming or a remote manual run. Units are available in 24 volt direct current models that monitor system cycling, low lubricant levels and blocked line detection capability or in 120 volt alternating current versions with no monitoring that are on/off controlled by the customer's PLC.

QLS 311 for Remote Control

Same Great Features

The QLS 301/311 for Remote Control are as compact, rugged and easy to install as the originals. They work in a wide temperature range (-10ºF to 158ºF) and have NEMA 4 and IP6K9K ratings. The installation kit comes with everything that's needed for quick set-up. And both units come in versions for 6, 12 or 18 lube points. Environmentally-friendly, with a built-in safety valve and overfill protection.

For more information on the QLS 301 with built-in controller see Solutions*, Vol. 1, No. 2, literature form number 442892; the QLS 311 see* Solutions*, Vol. 2, No. 2, literature form number 442916.*

Available Models

Model	Valve Type	No. of Outlets	Valve Mount	Volt	Lubricant
P301 31411110	SSV6	6	Back	24 VDC	Grease
P301 61411110	SSV12	12	Back	24 VDC	Grease
P301 91411110	SSV18	18	Back	24 VDC	Grease
P311 31411110	SSV6	6	Back	24 VDC	Oil
P311 61411110	SSV12	12	Back	24 VDC	Oil
P311 91411110	SSV18	18	Back	24 VDC	Oil
650-40768-3	SSV8	8	Bottom	120 VAC	Grease
650-40768-4	SSV12	12	Bottom	120 VAC	Grease
650-40768-5	SSV18	18	Bottom	120 VAC	Grease
650-40765-4	SSV8	8	Bottom	120 VAC	Oil
650-40765-5	SSV12	12	Bottom	120 VAC	Oil
650-40765-6	SSV18	18	Bottom	120 VAC	Oil

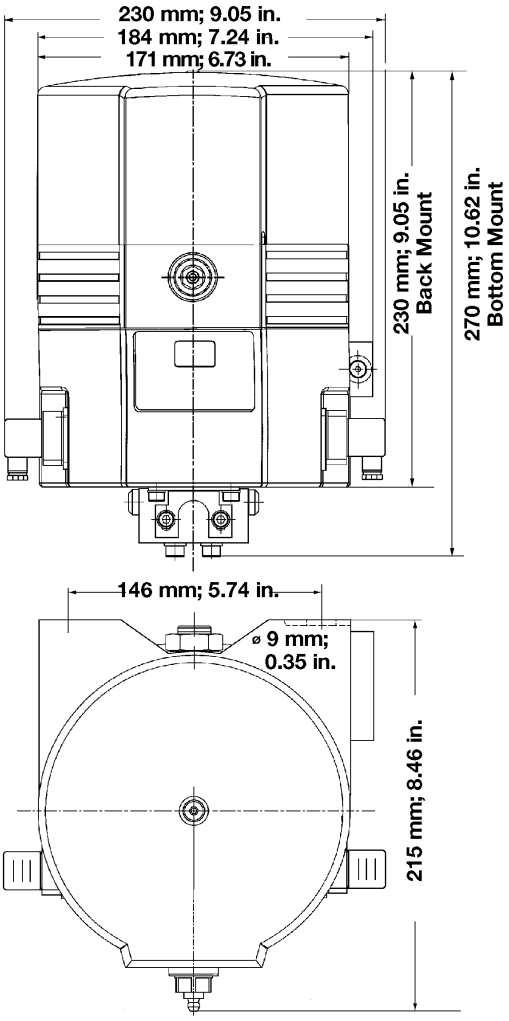
Accessory and kit models available. See page 3.

Features & Benefits

- **Compact, pre-assembled pump and metering valve work with customer's PLCs, no need for separate controller**
- **Handle up to NLGI #2 grease (QLS 301) or oil (QLS 311)**
- **Works between -10°F and 158°F (-25°C and 70°C) allowing operation in many environments**
- **NEMA 4 and IP6K9K enclosure ratings**
- **Direct and alternating current versions available**
- **Lubricates 6 to 18 points**

Specifications

Operating Voltage	24 VDC 120 VAC, 50/60 Hz	
Operating Current	24 VDC 120 VAC	1.5 A 1.0 A
Operating Temperature	-10° to 158°F	-25° to 70°C
Number of Outlets	6, 8, 12 or 18	
Reservoir Capacity	61 in3	1.0 L
Protection	NEMA 4	
Minimum Pause Time	4 min.	
Maximum Operating Time	4 min.	
Maximum Operating Pressure		
Grease	3000 psig	205 bar
Oil	1200 psi	80 bar
Output per Outlet & Cycle	approx. 0.012 in3	approx. 0.2 cm3
Lubricant	up to NLGI 2 grease or oil	
Weight	12.5 lbs.	5.7 kg



QLS 301 being programmed from machine's existing PLC.

CONTENTS

203 AC Model

Compact Automatic Lubrication Pump

Lincoln recently announced the newest addition to its worldwide product offering. This new VAC pump automatically adjusts to handle a variety of electrical supply voltages (between 94 and 265 volt, 50 to 60 Hz.)

The 203, a compact pump which can be used in progressive (Quicklub® or Modular Lube®) automated lubrication systems, offers many versions, with the St. Louis facility now stocking ten of the most popular models. Other models are available through special order.

The pump consists of a housing with integrated motor, reservoir with stirring paddle and pump element. The clear reservoir allows for easy visual monitoring of the lubricant level. Pumps with 2, 4 and 8 liter reservoirs, and units designed for either grease or oil are available. Options on some models include a low-level control that warns you before the reservoir runs out of lubricant and/or a printed circuit board, allowing for control of lubrication cycles. These versatile, economical pumps can feed well over 100 lubrication points with up to NLGI #2 grease or oil in temperatures as low as -13°F (-25°C).

Coupled with the popular SSV metering devices, these pumps are an integral part of automated lubrication systems.

The ten models now inventoried in St. Louis handle most applications. Other models/configurations are available by special order.

Refer to the Pump Identification Codes in the Owner's Manual for complete model designations. From it you can select a complete pump description to meet your needs. Contact your Lincoln representative for more information.

Available Models

Part No.	Model	Reservoir Capacity	Grease or Oil	Low level control	Printed circuit board
644-40716-2	P203-2XNBO-1K6-AC-1A1.01-V10	2 liter	Grease	No	Yes
644-40719-5	P203-4XNBO-1K6-AC-1A1.01-V10	4 liter	Grease	No	Yes
644-40719-6	P203-4YLBO-1K6-AC-1A1.01-V10	4 liter	Oil	Yes	Yes
644-40717-5	P203-2XNBO-1K6-AC-1A1.01	2 liter	Grease	No	No
644-40718-1	P203-4XLBO-1K6-AC-2A1.01	4 liter	Grease	Yes	No
644-40718-8	P203-4YLBO-1K6-AC-1A1.01	4 liter	Oil	Yes	No
644-40178-7	P203-4XNBO-1K6-AC-1A1.01	4 liter	Grease	No	No
644-40721-5	P203-8XLBO-1K6-AC-2A1.01	8 liter	Grease	Yes	No
644-40762-2	P203-8XLBO-1K6-AC-2A1.01-V10	8 liter	Grease	Yes	Yes
644-40718-5	P203-4XLBO-1K7-AC-2A1.01	4 liter	Grease	Yes	No

These pumps do not come with the pressure relief valve. It must be ordered separately.

624-28894-1	Pressure Relief Valve 350-G 1/4" A-D6
624-28895-1	Pressure Relief Valve 350-G 1/4" A-D8
624-28931-1	Return to Reservoir Pressure Relief Valve
226-14105-5	Required Adapter for 4 and 8 liter reservoirs for pressure relief valve

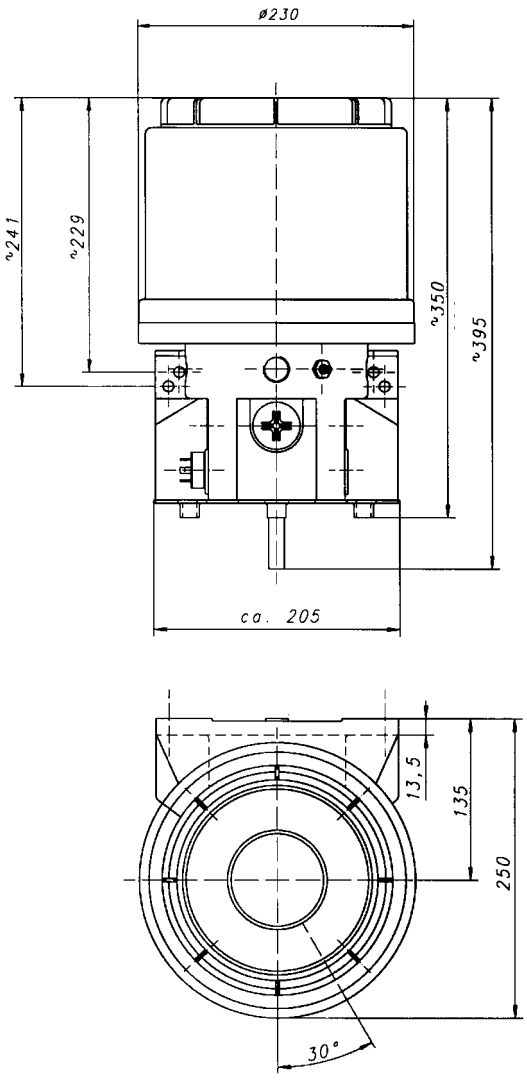
The 1/8" NPT adapter (part #249565) is not included and must be ordered separately, if required.

Features & Benefits

- **Two reservoir sizes to optimize application needs at best value**
- **Automatically accommodates alternating current power supply from 94-265 VAC allowing for variable power requirements**
- **Pumps grease up to NLGI #2 or oil of at least 40 cSt (centistokes)**
- **Pumps at temperatures from -13°F to 158°F (-25°C to 70°C)—works well in most environments year round**
- **Available with or without printed circuit board**
- **Available with or without low level control**

Specifications

Input voltage	94 - 265 VAC	
Output voltage	24 VDC	
Operating temperature	-13° to 158°F	-25° to 70°C
Number and element size	1-6 mm or 1-7 mm	
Reservoir capacity	2, 4 or 8 liter	
Output per minute	Approx. 2.8 cm^3/min. 6 mm Approx. 4 cm^3/min. 7 mm	
Lubricant	Greases up to NLGI #2 Oil with at least 40 cSt	
On time with PC board	2 to 30 minutes	
Factory set on time	6 minutes	
Factory set pause time	6 hours	
Max. operating pressure	5000 psi	350 bar
Connection thread	G1/4" for 6mm or 8mm diameter tube	



CONTENTS

205 & 215 Multiline Pumps
Now In Stock in St. Louis

205 Multiline Pump

The versatile 205 and 215 Multiline Pumps are now in stock at Lincoln's St. Louis headquarters. With high operating pressures that allow them to be used in multiline systems or as a central pump in medium to large progressive systems (see box), both the 205 and 215 work in a wide range of temperatures (-48ºF to 176ºF), pump oil or grease up to NLGI #3, and have an optional ultrasonic level control.

Each pump has a housing with an integrated motor, a reservoir with a stirring paddle and a pump element.The differences between the pumps are largely due to size. The 205 Multiline Pump is available with 1 to 5 pump elements and has 4- and 8-liter clear plastic or 5-liter sheet-metal reservoirs. Its gear ratios are 70:1, 280:1 and 700:1. The design of the pump's drive and its eccentric shaft, high-efficiency worm gear and multi-range motor provide the 205 with several advantages over its competition.

The 215 Multiline Pump is available with 1 to 15 pump elements. Reservoirs come in 4- and 8-liter clear plastic and 10- and 30-liter sheet metal varieties. Available gear ratios are 7:1, 49:1, 100:1 and 490:1. So flexible that it can be used in a wide range of applications, including spray systems, the sturdy 215 is also ideal for the most demanding jobs. Other configurations are available by special order.

Multiline, Progressive or Both?

The 205 and 215 Multiline Pumps work well in multiline and progressive automated lubrication systems. *What's the difference?*

The several pump elements in the common housing of a multiline system lubricate one friction point each. These systems work best when single points are dispersed and need large quantities of lubricant, though those amounts can differ from each other. Because pure multiline systems are not easily monitored and aren't economical when lube points are close together, progressive or combined progressive/multiline systems often provide the best lubrication solution.

Progressive and progressive/multiline systems:

- Allow visual or electric monitoring of an entire system via a metering device
- Guarantee lubrication even under severe conditions
- Are easily expandable
- Are capable of completely supplying machines or small systems with lubricant

Both types of systems operate as long as lubricant is fed to the pump, but when a progressive system is turned back on, the SSV metering device will pick up right where it left off in the lube cycle.

Specifications for 205 & 215 Models

Number of outlets	1 - 5 (205)	1 - 15 (215)
Threaded connection	G ¼" F	
Max. operating pressure	5000 psi	350 bar
Lubricant	Grease up to NLGI #2 NLGI #3 on request Oil with viscosity of min. 20 mm^2/s	
Operating temperature	-48 to 176°F	-20 to 80°C
Level control	Ultrasonic sensor for low and high level control	

205 Model

Piston diameter		5mm	6mm	7mm	Adjustable
Lubricant output/piston stroke		.11 cm^3	.16 cm^3	.23 cm^3	.04-.18 cm^3
Lubricant output per hour	*70:1 Ratio*	115 cm^3	172 cm^3	253 cm^3	46-200 cm^3
	280:1 Ratio	29 cm^3	43 cm^3	63 cm^3	11.5-52 cm^3
	700:1 Ratio	11 cm^3	17 cm^3	25 cm^3	5-22 cm^3

215 Model

Piston diameter	6mm	7mm
Lubricant output/piston stroke	.16 cm^3	.23 cm^3
Gear ratios available	490:1, 100:1, 40:1, 7:1 (available only for free shaft end or oscillating motor)	

CONTENTS

215 Multiline Pump

Features & Benefits

- High operating pressure
- Pumps grease up to NLGI #3 or oil
- Works at temperatures from -48°F to 176°F (-20°C to 80°C)
- Optional ultrasonic level control
- Available with 1 to 5 (the 205) or 1 to 15 (the 215) pump elements
- Available with 4- or 8-liter plastic reservoirs; and with 5-liter (205 only) and 10- and 30-liter (215 only) sheet metal reservoirs

Available 205 Models

Part No.	Description	Motor	Gear Ratio	Reservoir Size	Level Control	No. Elements and Size
655-40655-9	P205-M280-4XYN-4K6-380/420-440/480	3 phase	280:1	4 liter clear plastic	No	4-6 mm
655-40654-2	P205-M70-5XYN-1K7-380-420/440-480	3 phase	70:1	5 liter sheet metal	No	1-7 mm

These pumps do not come with the pressure relief valve. It must be ordered separately.

Part Number	Description
624-28070-1	Relief valve SVEVT-350-G ¼ AD6
624-28774-4	Relief valve SVEVT-350-G ¼ AD8
304-17571-1	Filling connection G ¼" F
304-17574-1	Filling connection G ½" F

Available 215 Models

Part No.	Description	Motor	Gear Ratio	Reservoir Size	Level Control	No. Elements and Size
660-40751-1	P215-M100-10XYBU-6K7-380-420/440-480	3 phase	100:1	10 liter	Yes	6-7 mm
660-40751-6	P215-M100-10XYBU-2K6-380-420/440-480	3 phase	100:1	10 liter	Yes	2-6 mm

These pumps do not come with the pressure relief valve. It must be ordered separately.

Part No.	Description	Pipe Diameter	Pressure
624-25478-1	Safety valve	6 mm	2856 psi / 200 bar
624-25479-1	Safety valve	6 mm	5000 psi / 350 bar
624-25480-1	Safety valve	8 mm	2856 psi / 200 bar
624-25481-1	Safety valve	8 mm	5000 psi / 350 bar
624-25482-1	Safety valve	10 mm	2856 psi / 200 bar
624-25483-1	Safety valve	10 mm	5000 psi / 350 bar
304-17571-1	Filling connection G ¼" F		
304-17574-1	Filling connection G ½" F		

NEW DIAPHRAGM PUMPS PART OF LINCOLN'S "One-Stop Shop" Solution

Need to handle light fluid transfer for autos, trucks, busses? What about construction and mining equipment? Our new diaphragm pumps handle the job, plus industrial process and waste fluids, solvents, and light-bodied adhesives and printing inks, too. Lincoln—your "one-stop shop" for fluid transfer.

Lincoln's two new diaphragm pumps (Models 85353 and 85354) are rugged, with a choice of Santoprene™ or Teflon™ diaphragm and check balls that make them compatible with a wide range of materials. The pumps seal even better. They're also easier to service because parts subject to normal wear are modular and can be replaced without disconnecting the pump. The pumps are self-priming, explosion-proof, and reliable, but Lincoln's new diaphragm pumps are also much more.

By complementing our reciprocating pump lines, the new pumps reinforce Lincoln's position as a "one-stop shop" for a wide range of vehicle service, manufacturing process and fluid handling applications.

Features & Benefits of New Models

- **Compatible with a wide range of materials**
- **Better seal, easier servicing due to bolted design**
- **Allows routine servicing without removal/disconnection**
- **Reliable due to stall-free air valve**
- **Self-priming**
- **Explosion-proof**

1:1 Air-Operated Diaphragm Pump Line

Model Number	Replaced by	Pump Desc.	Pump Body	Wetted or Soft Parts	Pump Inlet/Outlet NPT	Max. Free Delivery GPM	Air Inlet NPT(F)	Max. Rec. Inlet Air Pressure	Max. Susp. Solids
85359		¼"	Acetal	Buna-N	¼" / ¼"	4	⅛"	125 psig	1/64"
85361		¼"	Polyprop	Buna-N	¼" / ¼"	4	⅛"	125 psig	1/64"
284840	84840	½"	Aluminum	Hytrel	½" / ½"	16	¼"	100 psig	1/16"
84841		½"	Aluminum	Teflon	½" / ½"	16	¼"	100 psig	1/16"
84842 284842	NEW! 85353	½"	Polyprop	Santoprene	½" / ½"	14	¼"	100 psig	⅛"
84843	NEW! 85354	½"	Polyprop	Teflon	½" / ½"	14	¼"	100 psig	⅛"
284846		½"	Polyprop	Buna-N	½" / ½"	14	¼"	100 psig	1/16"
284852	84852	1"	Aluminum	Hytrel	1"/ 1"	42	½"	125 psig	¼"
84853		1"	Aluminum	Teflon	1"/ 1"	42	½"	125 psig	¼"
284855	84855	1"	Aluminum	Buna-N	1"/ 1"	42	½"	125 psig	¼"
284856		1"	Aluminum	Buna-N	dual 1"/ 1"	42	½"	125 psig	¼"
284862	84862	1½"	Aluminum	Buna-N	1½" / 1½"	115	½"	125 psig	¼"
284870	84870	2"	Aluminum	Buna-N	2"/ 2"	135	½"	125 psig	¼"
U.L. Listed									
84811		1" UL	Aluminum	Buna-N	1"/ ¾"	37	¼"	50 psig	⅛"
84812		1" UL	Aluminum	Teflon	1"/ ¾"	37	¼"	50 psig	⅛"
84813		1½" UL	Aluminum	Buna-N	1½" / 1¼"	73	¼"	50 psig	3/16"

Check local fire codes before using any pump in a used oil system. Some fire codes require the use of a U.L. Listed pump to pump used oils. Always check chemical compatibility information before putting pump into service.

CONTENTS

New 90-Pound Heavy-Duty Reservoir

Lincoln's tough 60 lb. Reservoir now boasts a "big brother"—the new 90 lb. Heavy-Duty Reservoir. Both share many features that make them perfect for grease lube systems on mobile mining and construction equipment, including:

- Rugged 14-gauge steel walls
- Large 3/4" NPT inlet for fast filling
- Wiper on follower plate that reduces lubricant waste
- Special coupling for easy pump removal when servicing
- Thick mounting ring that withstands severe vibration

Both containers work with hydraulic and air pumps. The only difference? The 90 lb. reservoir's larger capacity makes it the choice when longer maintenance intervals on machinery are possible.

The reservoir works with both hydraulic and air pumps.

Air-Operated Models with New Bucket

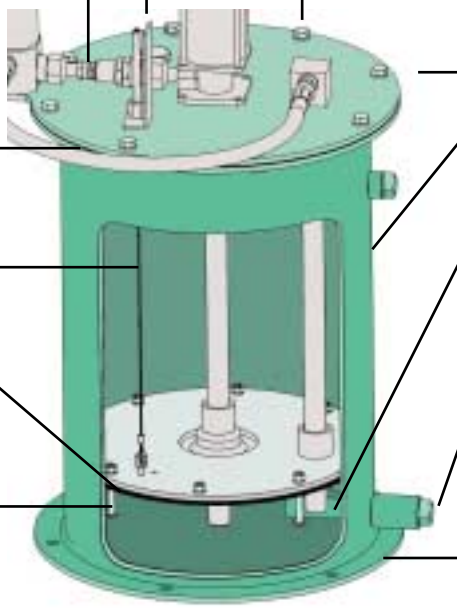
Model	Description	Height
85585	90 lb. pump assembly with low level and follower plate for Centro-Matic®	39.5"

NEW & IMPROVED SL-11 Injectors

When you need single-line high-pressure central lubrication, Lincoln's Centro-Matic® Automated Lubrication System and our Series SL-11 grease injectors are the answer. And now the SL-11 is better than ever. Redesigned to last longer, it not only does the same great job, it extends the life of your machinery even more than it did before.

Features & Benefits

- **Dispenses lubricants up to NLGI #2**
- **Externally adjustable output**
- **Indicator stem allows visual check of injector operation**
- **May be combined in a circuit of injectors (with SL-32, SL-33 and/or SL-1)**
- **Works up to 3,500 psi**
- **Tested up to 200,000 cycles without a failure**



CONTENTS

24 Volt DC ALS Controller

Low-Cost Model 85535 Is Flexible, Rugged

A rugged, low-cost, fully programmable DC controller with system feedback monitoring capability—another example of Lincoln providing a lubrication solution for industry.

Lincoln now offers a low cost, fully programmable 24 Volt DC Automated Lubrication System Controller. And that means the Centro-Matic® system on your expensive off-highway mobile equipment has a microprocessor "brain" and supply-line monitor that:

- Controls the intervals between lube cycles
- Controls how long the lube system is energized and monitors supply line pressure to insure a lube cycle takes place
- Shuts the system down and sends an alarm signal if it fails to detect a lube cycle
- Offers a wide range of lube cycle and feedback monitoring options.

Perfect for the wheel loaders and excavators used in mining and construction, the new 24 volt DC controller works in a wide temperature range (-13°F/-25°C to 150°F/65°C) and is protected by a NEMA 12-rated enclosure. Its low-level feature indicates when it's time to refill the reservoir, there's a manual button to override the program and start an immediate lube cycle, and a "memory" option can be set so the controller starts the system with a lube cycle when it's turned off and on. The controller has internal terminal connections to reduce the risk of short circuits.

Specifications for Inventoried Models

Off Time (cycle time)	Min.: 30 seconds Max.: 30 hours	
On Time (pumping/alarm time)	Min.: 30 seconds Max.: 2 minutes	
Power Requirements	21-30 DC	100 MA (less load)
Switch Capacity (Inductive load @ 30 VDC)	Load Relay: 2 amps Alarm Relay: 2 amps	
Protection	NEMA 12	
Operating Temperature Range	-13°F to 150°F	-25°C to 65°C

Features & Benefits

- **Flexible programming for high/low volume, large/small systems**
- **NEMA 12-rated; works in rugged environments**
- **Supply line monitoring shuts down system, sends alarm if lube cycle not completed**
- **Low-level monitoring feature**
- **Manual override button for immediate lube cycle**
- **Memory option starts system with/without lube cycle**

SOLUTIONS

contains new product information for Lincoln customers.

Please direct ideas, comments or questions to:

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Marketing Communications,
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www.lincolnindustrial.com

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CONTENTS