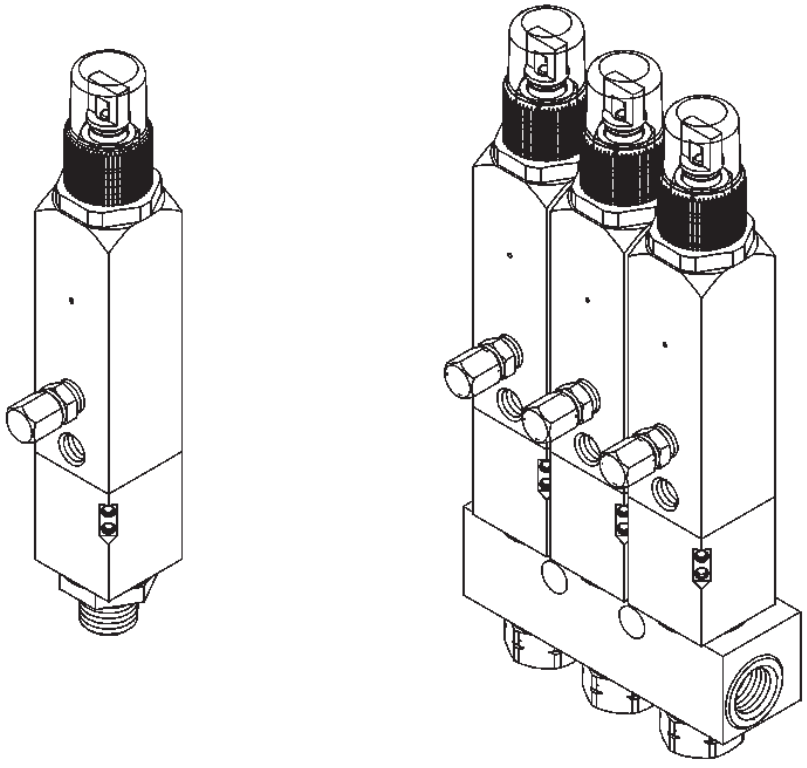
LINCOLN®

SL-V injector

Model No. 85770-1, -2, -3, -4, -5, -6, 85771, 85771HF, 85772, 85780-1, -2, -3, -4, -5, -6, 85781 and 85782
85785-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, Series “B”



U.S Patent Number 6,705,432, 6,810,998, 6,863,157, 6,986,407
Foreign Patents Pending

Version	**01**
Date of issue	**July 2012**
Form number	**404436**
Section	**C8**
Page	**301F**

⚠ WARNING

Read manual prior to installation or use of this product. Keep manual nearby for future reference. Failure to follow instructions and safety precautions can result in death or serious injury.

SKF

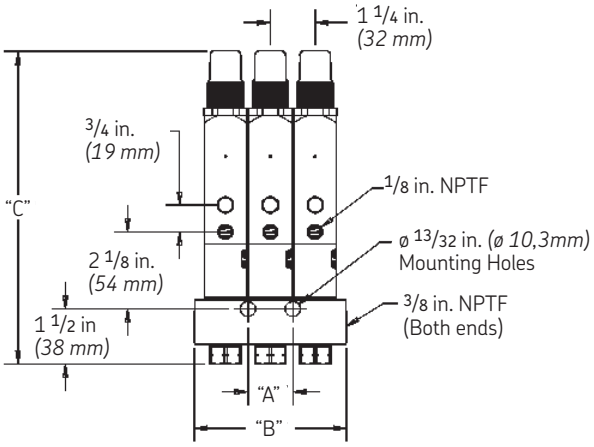
Single and manifold type injectors

for dispensing fluid lubricants and greases not exceeding Lincoln ventmeter viscosity of 600 psi.

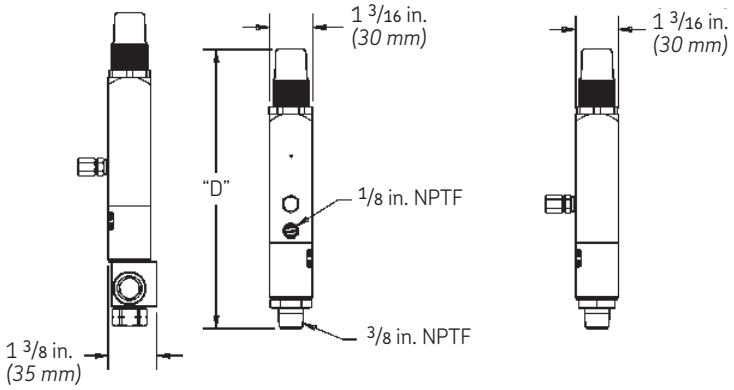
Specifications

Minimum operating pressure	1850 psi *(128 bar)*
Maximum operating pressure	6000 psi *(413 bar)*
Recommended operating pressure	2500 psi *(172 bar)*
Maximum vent (recharge) pressure	1000 psi *(69 bar)*
Temperature Range	–40 to 180 °F *(–40 to 80 °C)*
Lubricant output (adjustable)	SL–V – 0.015 to 0.080 $in.^3$ *(0,25 to 1,31 cm^3)*
	SL–V XL – 0.015 to 0.305 $in.^3$ *(0,25 to 5,00 cm^3)*

Injectors can be mounted in any position and can be used in circuits with SL-1, SL-11, SL-32 and/or SL33 injectors.



Manifold type injectors



Single unit injectors

Dimensions

Manifold type injectors

Injector	Model	Type	Dimension "A"	Dimension "B"	Dimension "C"
SL-V	85770-1	Single injector manifold	1)	2 1/2 in. *(63,5 mm)*	8 3/4 in. *(222 mm)*
	85770-2	Two injector manifold	1)	3 in. *(76,2 mm)*	
	85770-3	Three injector manifold	1 1/4 in. *(31,8 mm)*	4 1/4 in. *(108 mm)*	
	85770-4	Four injector manifold	2 1/2 in. *(63,5 mm)*	5 1/2 in *(140 mm)*	
	85770-5	Five injector manifold	3 3/4 in. *(95,3 mm)*	6 3/4 in *(171 mm)*	
	85770-6	Six injector manifold	5 in. *(127 mm)*	8 in. *(203 mm)*	
	85771	Replacement injector	N/A	N/A	
	85771HF	Replacement injector hexavalent free plating	N/A	N/A	
SL-V XL	85780-1	Single injector manifold	1)	2 1/2 in. *(63,5 mm)*	11 3/16 in. *(284 mm)*
	85780-2	Two injector manifold	1)	3 in. *(76,2 mm)*	
	85780-3	Three injector manifold	1 1/4 in *(31,8 mm)*	4 1/4 in. *(108 mm)*	
	85780-4	Four injector manifold	2 1/2 in. *(63,5 mm)*	5 1/2 in *(140 mm)*	
	85780-5	Five injector manifold	3 3/4 in. *(95,3 mm)*	6 3/4 in *(171 mm*	
	85780-6	Six injector manifold	5 in. *(127 mm)*	8 in. *(203 mm)*	
	85781	Replacement injector	N/A	N/A	

1) Single mounting holes

Single unit injectors

Injector	Model	Type	Dimension "D"
SL-V	85772	Single unit injector	7 3/4 in. *(191 mm)*
SL-V XL	85782	Single unit injector	10 3/16 in. *(248 mm)*

Spectrum adjustment system

The spectrum adjustment system consists of a set of color-coded anodized aluminum sleeves that provide an easy way to adjust the output of the injectors and gives a clear indication of the output setting. This allows for easy system installation and preventative maintenance.

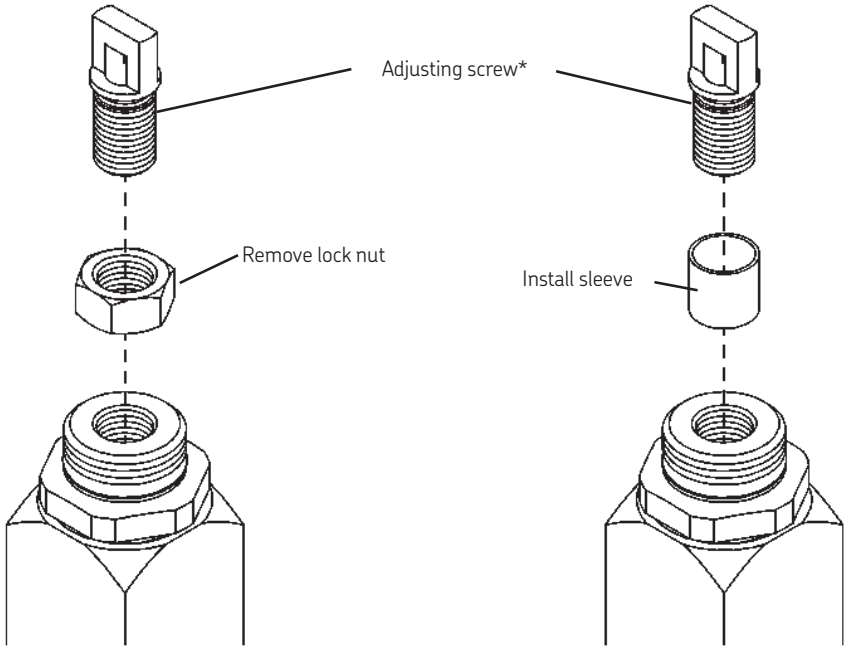
To install a spectrum adjustment sleeve
Remove and discard the Lock Nut (**4**), place Sleeve onto Adjusting Screw (**3**) and tighten.

Note
Inconsistent or much smaller grease output can be a result of improper injectors installation.

In smaller systems or in applications where injectors are installed close to a high output pump, it is important that line pressure in the system is not increased quickly. When pressurizing the system, allow the measuring pistons of the injectors to move fully downward to reload for the next lubrication cycle.

Lincoln recommends a length of high pressure hose be added between the pump and injectors to slow down the pressure increase.

Contact Lincoln technical service department for the length and size of the hose. Emphasizes useful hints and recommendations as well as information for efficient and trouble-free operation.



* After installing sleeve, torque adjusting screw to 45 to 55 in. lbf *(5 to 6 Nm).*

SL-V Spectrum adjustment sleeves

Part No.	Output	Ratio from minimum output	Ratio – maximum output	Sleeve color
N/A	0.015 in.³ *(0,25 cm³)*	1	0.2	N/A
85785-1	0.030 in.³ *(0,50 cm³)*	2	0.4	Red
85785-2	0.045 in.³ *(0,75 cm³)*	3	0.6	Silver
85785-3	0.060 in.³ *(1,00 cm³)*	4	0.8	Gold
85785-4	0.075 in.³ *(1,25 cm³)*	5	1.0	Green

SL-V XL pectrum adjustment sleeves

Part No.	Output	Ratio from minimum output	Ratio from maximum output	Sleeve color
N/A	0.015 in.³ *(0,25 cm³)*	1	0.050	N/A
85785-1	0.030 in.³ *(0,50 cm³)*	2	0.100	Red
85785-2	0.045 in.³ *(0,75 cm³)*	3	0.150	Silver
85785-3	0.060 in.³ *(1,00 cm³)*	4	0.200	Gold
85785-4	0.075 in.³ *(1,25 cm³)*	5	0.250	Green
85785-5	0.112 in.³ *(1,87 cm³)*	7.5	0.375	Black
85785-6	0.150 in.³ *(2,50 cm³)*	10	0.500	Purple
85785-7	0.188 in.³ *(3,12 cm³)*	12.5	0.625	Blue
85785-8	0.225 in.³ *(3,75 cm³)*	15	0.750	Orange
85785-9	0.262 in.³ *(4,37 cm³)*	17.5	0.875	Brown
85785-10	0.300 in.³ *(5,00 cm³)*	20	1.000	Yellow

Adjustment procedure for the SL-V type injectors:

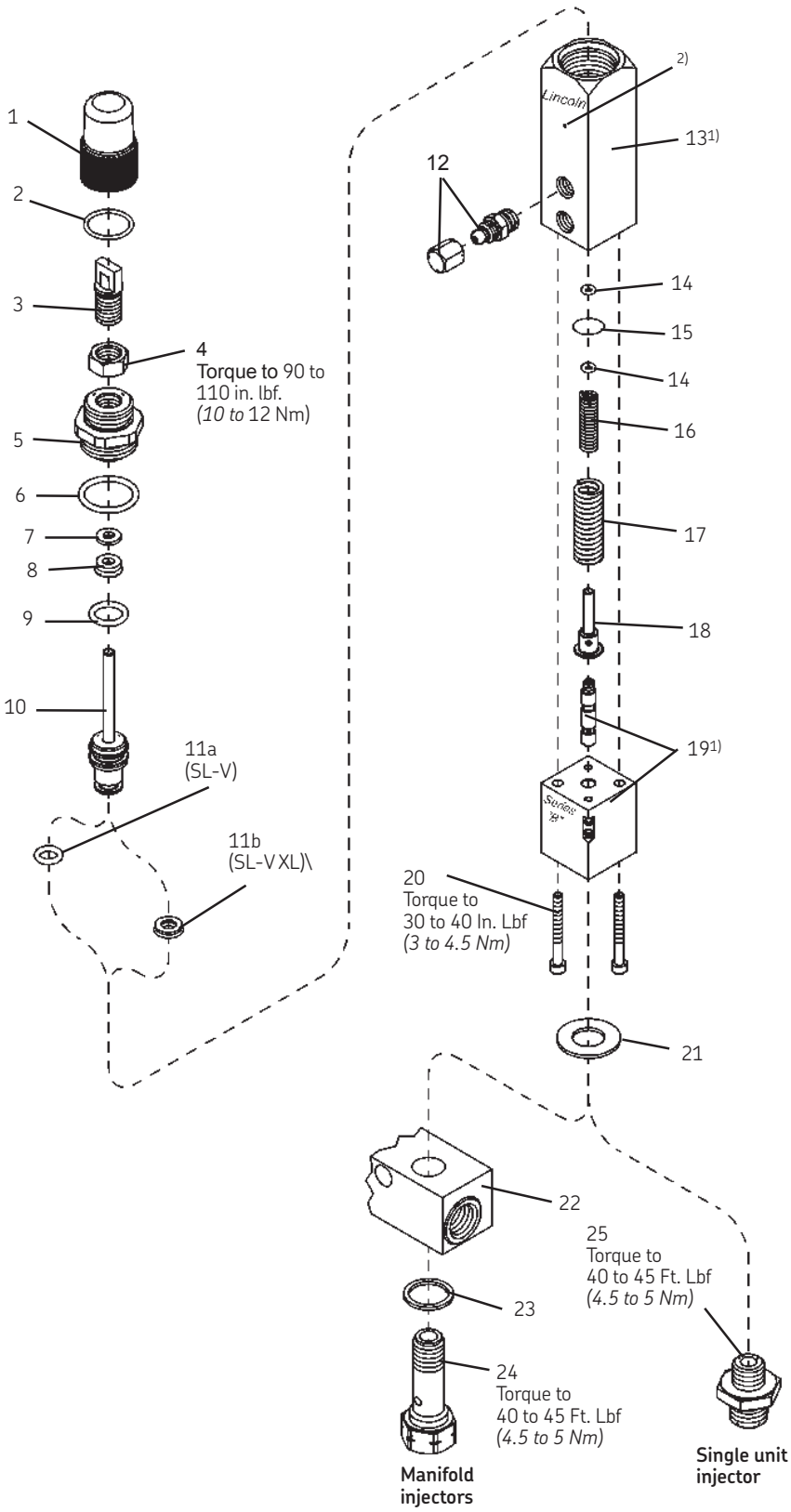
SL-V Injectors

1 Remove the protective cap.
2 Loosen the locknut and turn approximately one extra turn towards the loose position.
3 While holding the locknut turn the adjusting screw clockwise all the way down until it is finger tight. At this point the output will be 0.015 in.^{3} *(0.246 cm^3)*.
4 Now turn the adjusting screw back out counter clockwise to achieve your required output. Each turn out will add 0.014 in.^{3} *(0.229 cm^3)* and with an approximate 5 turns adjustment the maximum output will be 0.080 in.^{3} *(1.311 cm^3)*.
5 Tighten lock nut to a torque of 90 to 110 in-lbf. *(10 to12 Nm)*.
6 Install protective cap.

SL-V XL Injectors

1 Follow the first three instructions for SL-V injectors.
2 Now turn the adjusting screw back out counter clockwise to achieve your required output. Each turn out will add 0.014 in.^{3} *(0.229 cm^3)* and with an approximate 20.5 turns adjustment the maximum output will be .305 in.^{3} *(5 cm^3)*
3 Tighten lock nut to a torque of 90 to 110 in-lbf. *(10 to12 Nm)*.
4 Install protective cap.

Note
The "weep" becomes a "leak" when the amount of grease increases each time the injector cycles. When this occurs it is an indication that the injector requires attention and should be serviced soon.



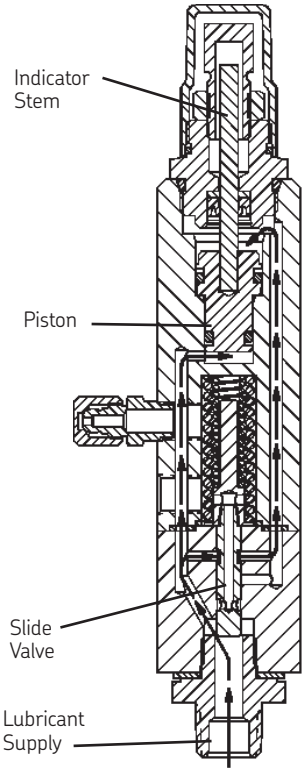
1) Etched surfaces of components **13** and **19** must be aligned and face to the front of the manifold assembly.
2) The SL-V injector is designed with a "weep" hole which indicates worn or damaged internal seals. Please refer to the Centromatic system planning manual for a more detailed description of this design characteristic. The "weeping" which occurs is a slow release of grease which may bypass the lower seal over many cycles. This "weeping" may always be present to a small amount on all of the injector.

Service parts

Item no.	Description	Qty	Part no. SL-V	SL-V hexavalent free plating	SL-V XL
1	Protective cap (polycarbonate)	1	1)	1)	273089
2	O-ring (nitrile)	1	1) 2)	1) 2)	2)
3	Adjusting screw	1	272803	272803–HF	272819
4	Lock nut	1	11624	11624–HF	11624
5	Piston stop plug	1	273090	273090–HF	273091
6	O-ring	1	2)	2)	2)
7	Backup washer	1	2)	2)	2)
8	U-cup (polyurethane)	1	2)	2)	2)
9	O-ring (polyurethane	1	2)	2)	2)
10	Piston assembly	1	273092	273092–HF	273987
11a	O-ring (polyurethane)	1	2)	2)	N/A
11b	U-cup (polyurethane)	1	N/A	N/A	2)
12	Fitting assembly	1	90471	90471–HF	90471
13	Injector body	1	275330	275330–HF	275331
14	O-ring (fluorocarbon)	2	2)	2)	2)
15	O-ring (fluorocarbon)	1	2)	2)	2)
16	Spring	1	2)	2)	2)
17	Spring	1	2)	2)	2)
18	Spring seat	1	272798	272798	272798
19	Body and plunger assembly	1	275332	275332–HF	275332
20	Sockety head screws (8-32 x 1 1/2 in.)	2	272796	272796	272796
21	Gasket	1	2)	2)	2)
22	Single injector manifold	1	12658	N/A	12658
	Two injector manifold	1	11962	N/A	11962
	Three injector manifold	1	11963	N/A	11963
	Four injector manifold	1	11964	N/A	11964
	Five injector manifold	1	11965	N/A	11965
	Six injector manifold	1	246965	N/A	246965
23	Gasket	1	2)	2)	2)
24	Adapter bolt	1	273097	273097–HF	273097
25	Adapter	1	273098	N/A	273098

1) Included in 278209 cap kit.
2) Included in 272970 repair kit.

SL-V injector operation



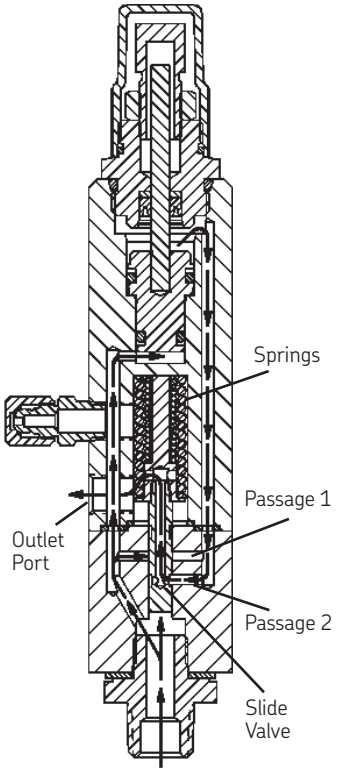
Stage 1

Stage 1

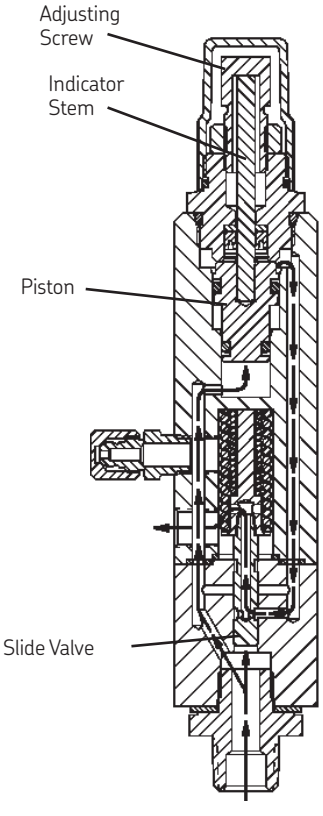
The injector starts in its normal or rest position. Incoming lubricant is directed through the slide valve to both sides of the piston. The pressure of the incoming lubricant acting on both sides of the piston causes the piston to move downward against the shoulder and fills the measuring chamber. The indicator stem is fully retracted away from the stop of the adjusting screw.

Stage 2

A further increase in pressure causes the slide valve to move against the force of the springs. As the slide valve moves, it closes passage 1 and opens passage 2 to the outlet port. The pressure of the incoming lubricant is now acting only upon the bottom of the piston. The incoming lubricant displaces the piston which forces the lubricant in the measuring chamber to be dispensed through passage 2, through the slide valve and through the outlet port to the lube point.



Stage 2



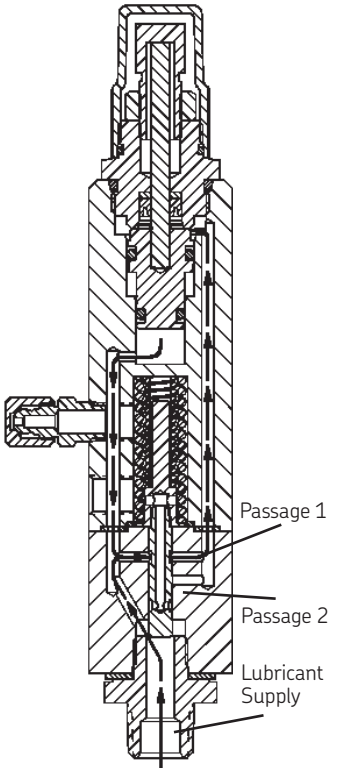
Stage 3

Stage 3

The piston will dispense lubricant until the indicator stem hits the stop of the adjusting screw. The volume of lubricant dispensed can be adjusted by limiting the travel of the piston. The piston and slide valve remain in this position until the lubricant pressure in the supply line is vented.

Stage 4

As the pressure in the supply line vents to 1,000 psi *(69 bar)*, the slide valve moves downward and closes passage 2 and opens passage 1. The lubricant pressure in the supply line is now acting upon both sides of the piston causing it to move downward. As the piston moves downward, a volume of lubricant flows from the underside of the piston, past the slide valve, through passage 1 and to the upper side of the piston. Since the volume on top of the piston is greater than the volume under the piston, an additional volume of lubricant flows from the supply line to the upper side of the piston. This volume of lubricant leaving the supply line causes the pressure to drop very quickly. The piston may or may not fully return to the shoulder, depending upon the volume of lubricant in the supply line. The injector is now ready for the next cycle.



Stage 4

Declaration by the manufacturer as defined by machinery directive 89/392/EEC Annex IIB

Herewith we declare that the supplied model of

SL-V

is intended to be incorporated into machinery covered by this directive and must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of the directive.

Applied harmonized standards in particular:

EN292 T1/T2
prEN 809

Paul H. Conley

Paul Conley,
Chief Engineer

Lincoln industrial standard warranty

Standard Limited warranty

Lincoln warrants the equipment manufactured and supplied by Lincoln to be free from defects in material and workmanship for a period of one (1) year following the date of purchase, excluding there from any special, extended, or limited warranty published by Lincoln. If equipment is determined to be defective during this warranty period, it will be repaired or replaced, within Lincoln's sole discretion, without charge.

This warranty is conditioned upon the determination of a Lincoln authorized representative that the equipment is defective. To obtain repair or replacement, you must ship the equipment, transportation charges prepaid, with proof of purchase to a Lincoln Authorized Warranty and Service Center within the warranty period.

This warranty is extended to the original retail purchaser only. This warranty does not apply to equipment damaged from accident, overload, abuse, misuse, negligence, faulty installation or abrasive or corrosive material, equipment that has been altered, or equipment repaired by anyone not authorized by Lincoln. This warranty applies only to equipment installed, operated and maintained in strict accordance with the written specifications and recommendations provided by Lincoln or its authorized field personnel.

This warranty is exclusive and is in lieu of any other warranties, express or implied, including, but not limited to, the warranty of merchantability or warranty of fitness for a particular purpose. Warranty on items sold by Lincoln, but not manufactured by Lincoln are subject to the warranty consideration, if any, of their manufacturer (such as hoses, hydraulic and electric motors, electrical controllers, etc.) Assistance in making such warranty claims can be offered as required.

In no event shall Lincoln be liable for incidental or consequential damages. Lincoln's liability for any claim for loss or damages arising out of the sale, resale or use of any Lincoln equipment shall in no event exceed the purchase price. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, therefore the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights. You may also have other rights that vary by jurisdiction.

Customers not located in the Western Hemisphere or East Asia: Please contact Lincoln GmbH and Co. Kg, Walldorf, Germany, for your warranty rights.

Special limited warranties

Special limited 2 year warranty sl-v series, single injectors-85772, 85782, and replacement injectors-85771, 85781

Lincoln warrants the SL-V Injector series to be free from defects in material and workmanship for two (2) years following the date of purchase. If an injector model (single or replacement) is determined to be defective by Lincoln, in its sole discretion, during this warranty period, it will be repaired or replaced, at Lincoln's discretion, without charge.

Special limited 5 year warranty series 20, 25, 40 bare pumps, pmv bare pumps, heavy duty and 94000 series bare reels

Lincoln warrants series 20, 25, 40 bare pumps, PMV bare pumps, Heavy Duty (82206), Mini Bench (81133, 81323), and all 94000 LFR series (single arm and dual arm) bare reels to be free from defects in material and workmanship for five (5) years following the date of purchase. If equipment is determined by Lincoln, in its sole discretion, to be defective during the first year of the warranty period, it will be repaired or replaced at Lincoln's discretion, without charge. In years two (2) and three (3), the warranty on this equipment is limited to repair with Lincoln paying parts and labor only. In years four (4) and five (5), the warranty on this equipment is limited to repair with Lincoln paying for parts only.

Special limited 5 year warranty-limited oil meters, limited fluid control valves, aod (air-operated diaphragm pumps)

Lincoln warrants the 712 series Control Valves, 912 series Lube Meters, Electronic Lube Meters (980. 981, 982 series), our Universal Inline Digital Meters (812/813 series), and our AOD Pump offering to be free from defects in material and workmanship for five (5) years following the date of purchase. If either is determined to be defective by Lincoln, in its sole discretion, during the warranty period, they will be repaired or replaced, at Lincoln's discretion, without charge.

Special DEF (diesel exhaust fluid) limited warranty

DEF products are warranted to be free from defects in material and workmanship for a period of one (1) year following the date of purchase. The following exceptions to the standard warranty period are in effect

- **85700-30/85700-50 DEF hose reels (bare reel only),**
  277251/277252 AC DEF pumps, and 277256 and 277257 DEF meters are warranted for two (2) years from date of purchase,

- **85623 DEF AOD (air operated diaphragm) pumps**
  are covered under the standard five (5) year AOD pump warranty.

If either is determined to be defective by Lincoln, in its sole discretion, during the warranty period, they will be repaired or replaced, at Lincoln's discretion, without charge.

Lincoln Industrial contact information

To find Lincoln Industrial's Nearest Service Center call one of the following number;
Customer Service 314-679-4200
or you may also use our website
Website lincolnindustrial.com

This page left intentionally blank.

The Power of Knowledge Engineering

Drawing on five areas of competence and application-specific expertise amassed over more than 100 years, SKF brings innovative solutions to OEMs and production facilities in every major industry worldwide. These five competence areas include bearings and units, seals, lubrication systems, mechatronics (combining mechanics and electronics into intelligent systems), and a wide range of services, from 3-D computer modelling to advanced condition monitoring and reliability and asset management systems. A global presence provides SKF customers uniform quality standards and worldwide product availability.

SKF **PUB LS/I1 13010 EN.US** · July 2012 · **Form** 404436

Printed in USA on environmentally friendly paper.

LINCOLN®

SKF

lincolnindustrial.com

skf.com/lubrication