



SKF LAGD 1000

Instructions for use

Table of contents

EC Declaration of Conformity	4
Safety recommendations.....	6
1. Description	8
1.1 Application	8
1.2 Identification of parts	8
1.3 Designations.....	9
1.4 LAGD 1000 unit dimensions	10
2. Installation	11
2.1 Preparation of lubrication points.....	11
2.2 Pump unit preparation.....	12
2.3 Pump unit installation.....	13
2.4 Electrical connection	14
2.4.1 Electrical specifications.....	14
2.4.2 LAGD 1000/DC.....	14
2.4.3 LAGD 1000/AC	15
2.5 Lubricant filling.....	16
2.5.1 Suitability of greases	16
2.5.2 Compatibility of greases	16
2.5.3 Initial filling of Lubricant.....	16
2.5.4 Bleeding the system	17
2.5.5 Installation of lubrication pipes	17
2.6 Level monitoring	19
2.6.1 Visual monitoring of level	19
2.6.2 Level switch.....	19
3. Selection of grease quantity for application	19
4. Operation of LAGD 1000/AC.. and LAGD 1000/DC.. units.....	20
4.1 LAGD 1000/AC.. & LAGD 1000/DC.. display and control unit.....	20
4.1.1 Operation via push buttons	20
4.1.2 Three digit LED display	21
4.2 Display mode for LAGD 1000/AC.. and LAGD 1000/DC	22
4.2.1 Display of the operating values for LAGD 1000/AC.. & LAGD 1000/DC.....	22
4.3 Programming the LAGD 1000/AC.. and LAGD 1000/DC.....	24
4.3.1 Changing the lubrication interval times.....	24
4.3.2 Programming sequence LAGD 1000/AC.. and LAGD 1000/DC.....	25
4.3.3 Changing the system monitoring.....	27
4.3.4 Changing the operating mode	28

5. Faults	29
5.1 Displaying faults.....	29
5.1.1 LAGD 1000/AC.. and LAGD 1000/DC.. faults.....	29
5.1.2 Block operation.....	30
5.1.3 Clearing the fault message	30
5.1.4 Storing the fault times	30
6. Maintenance and repair.....	31
7 Spare parts and accessories	31
8. Technical data.....	32

EC Declaration of conformity

We,
SKF Maintenance Products
Kelvinbaan 16
3439 MT Nieuwegein
The Netherlands

declare that the:

Multipoint automatic lubricators LAGD 1000 series

conforms to the essential protection requirements set out in the Directive(s) of the Council for harmonization of the member states' legal regulations.

- Electromagnetic compatibility 89/336/EEC through application of the following (harmonized) European standards in respect to the Directive(s) EMC89/336/EEC
61000-6-2
61000-6-3
- Electrical equipment for use within certain voltage limits (Low-voltage directive) 73/23/EEC through application of the following (harmonized) European standards in respect to the Directive(s)
Low voltage 73/23/EEC
EN 60204-1
EN 60034-1
- This declaration certifies conformity with the aforementioned directives, but does not contain any assurance of properties.
- The safety instructions in the documentation included with the product must be observed.
- Operation of the products on non-standard mains voltage as well as nonobservance of installation instructions can affect the EMC properties and electrical safety.
- The certified products must not be started up until it is assured that the machine, in which the product was installed, meets the provisions and requirements of the directives to be applied.

In addition, the Multipoint automatic lubricators LAGD 1000 series

- Is in accordance with EC Machinery Directive 98/37/EC, Appendix 11B intended for installation in a machine / for assembly with other

machinery to form a machine. Its startup is prohibited until conformity of the overall machine has been established in accordance with the appropriate accident prevention regulations, in particular in implementation of the Use of Work Equipment Directive. The harmonized standards applied here are, in particular DIN EN 809, DIN EN ISO 12100-1 and DIN EN ISO 12100-2.

- That as regards EC Pressure Equipment Directive 97/23/EC the unit may only be used for its intended purpose and in accordance with the information contained in the documentation.

The following must be observed in this connection:

- The products are neither designed nor approved for use in conjunction with Group I fluids (hazardous fluids), as defined by Article 2, Par. 2 of Directive 67/548/EEC dated 27th June 1967.
- The products are neither designed nor approved for use in conjunction with gases, liquefied gases, pressurized gases in solution, vapors and fluids with a vapor pressure exceeding normal atmospheric pressure (1013 mbars) by more than 0.5 bar at the maximum permissible temperature.
- When used as intended the products supplied by us do not reach the limit values cited in Article 3, Par. 1, Number 1.1 to 1.3 and Par. 2 of Directive 97/23/EC. They are therefore not subject to the requirements set forth in Appendix I of the Directive. They are consequently not provided with a CE mark in respect to Directive 97/23/EC. They are classified by us in keeping with Article, 3 Par. 3 of the directive.

Nieuwegein, the Netherlands,
December 2006

SKF Maintenance Products



Sébastien David
Manager Product Development and Quality



Safety recommendations



This symbol appears in the manual whenever it is necessary to draw your attention to special dangers or important actions.

General

The components are designed and manufactured in conformity with the generally accepted engineering standards as well as applicable industrial safety and accident prevention regulations. Though constructed to meet all relevant safety requirements, their use may still entail dangers leading to personal injury of the user or third parties or damage to property. Therefore, the components shall only be used when they are in a technically perfect condition, the operating instructions having to be duly observed. Any faults, in particular faults, which may affect safety, shall be rectified without delay.

Use in conformity with intended purpose

The SKF Multipoint automatic lubricators LAGD 1000 are designed for plant and machine lubrication. They are capable of delivering greases up to NLGI grade 2. Any other use is not in conformity with the intended purpose. They must not be used for vehicle lubrication applications.

Approved personnel

The components described in this manual may be installed, operated, maintained and repaired only by competent personnel in accordance with local statutory requirements.

Disclaimer of liability

SKF cannot be held liable for any damage caused by;

- Lack of lubricant,
- Contaminated or unsuited lubricants, installation of components or spare parts other than genuine SKF components or spare parts,
- Any use which is not in conformity with the intended purpose,
- Inappropriate installation and filling, wrong electrical connection,
- Erroneous programming, improper reactions to malfunctioning,
- and non-observance of the instructions for use.

Installation work

When installing the LAGD 1000, the local accident prevention regulations and the applicable operating and maintenance instructions must be observed.

Danger caused by electrical current

The units must only be connected to the power supply by competent personnel, in conformity with the local connection conditions and regulations. Improperly connected equipment may lead to serious personal injury and damage to property.

Danger caused by system pressure

The units may be pressurized. Therefore, they must be made pressure-less before any extension work, modifications or repairs are carried out.

Grease reservoir

Take care when opening the grease reservoir cover. There is a strong spring inside. The cover may be ejected with force.

Plastic pipes

Protect all pipes against damage and excessive heat.



No other material shall be used than those permitted for this type of unit. Any unsuitable material may cause a failure of the unit and lead to serious injuries or property damage.

Lubricants

In general, the following lubricants can be used in LAGD 1000 series:

- Greases up to an NLGI grade of 2 with a maximum effective flow pressure of ≤ 750 mbar (10.8 psi)
- Base oils of mineral, synthetic and rapidly biodegradable type.
- Consistency adjustment and additives depend on the individual case.

However there are lubricants that have properties that make them unsuitable for use in central lubrication units.

Synthetic lubricants, for example, may be incompatible with elastomers. SKF provides the possibility to check the lubricants for their suitability for central lubrication units. Consult the SKF specialists.

Transport and storage

In general, there are no limitations with respect to land, air or sea transport.

Store in a dry place with a storage temperature between -40 °C & $+70$ °C (-40 °C & 160 °F). Handle with care!

1. Description

1.1 Application

The SKF Multi-Point Lubricator LAGD 1000 can supply up to 20 lubrication points (depending on variant) with a metered amount of lubricant (0,2 cm³). The LAGD 1000 can be power by AC or DC. The LAGD 1000 has a large 1 litre grease reservoir that is supplied to a micro processor controlled pump unit. The pump is programmed to operate for one or more cycles with a pause time in between. Each cycle of the pump supplies grease to a progressive distributor that supplies a metered amount of grease to the application, via pipes.

1.2 Identification of parts



Fig 1 Scope of delivery of the LAGD 1000

Item	Quantity	Description
1	1	pump unit
2	1	fitting material for the pump unit: • 3 x M8 nuts • 3 x M8 hexagon head screws • 6 x washers for screws M8
Connection kit LAGD 1000-G consisting of items 3-7:	1	
3	50 m (164 ft)	Plastic pipe
4	11	Straight connectors G ¹ / ₈
5	11	Right angle swivel connectors G ¹ / ₈
6	1	Connection bar
7	140	Cable tie
8	1	Pipe filling nipple

1.3 Designations

LAGD 1000	/	voltage variants	number of lube points
generic designation		DC: 24V DC	10/12/14/16/18/20
		AC: 115-240 AC	10/12/14/16/18/20
eg: LAGD 1000/AC16 is a LAGD 1000 with AC power with 16 outlets			

1.4 LAGD 1000 unit dimensions

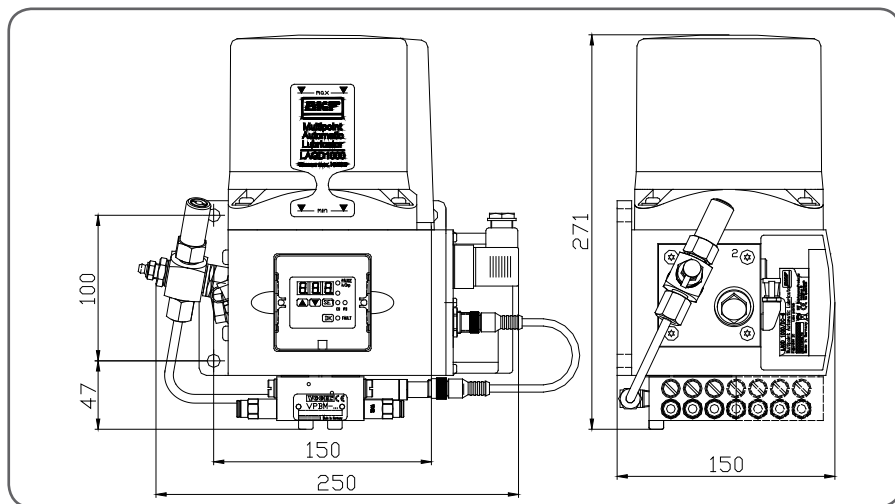


Fig 2 LAGD 1000/DC.. dimensions

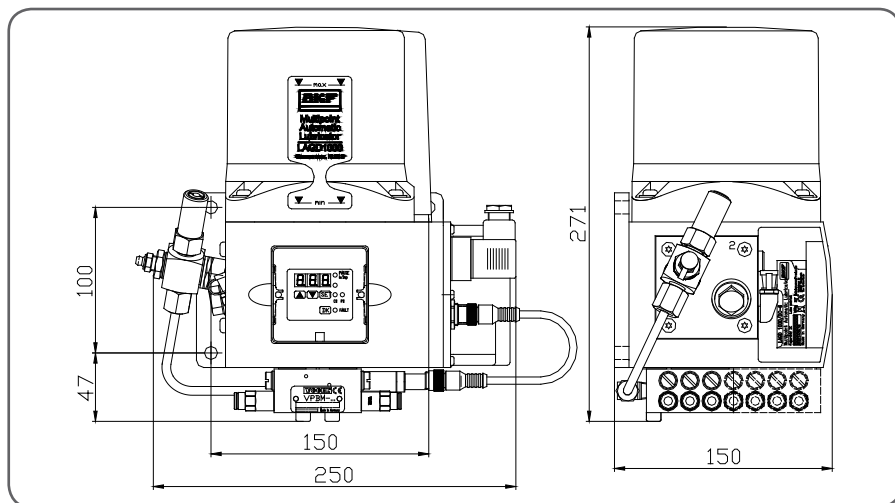


Fig 3 LAGD 1000/AC.. dimensions

2. Installation

General

The SKF Multipoint automatic lubricators LAGD 1000 are designed to lubricate plant and machines. They must not be used for vehicle lubrication. They are capable of delivering greases up to NLGI grade 2. The pump units differ in the way they can be electrically connected as well as in number of lubrication points they can supply.

2.1 Preparation of lubrication points

Initially, check all lubricating points for possible damage and test the permeability by means of a grease gun or a different lubrication device.

When operating new machines, fill any existing cavities in bearing points with a respective lubricant. Otherwise, bearing damage may occur as a result of insufficient lubrication. Remove the grease nipples at the lubricating points.

Screw in the supplied connectors ($G^{1/8}$) to the lubricating points.



Ensure cleanness. Even minor contamination may result in system errors or bearing damage.

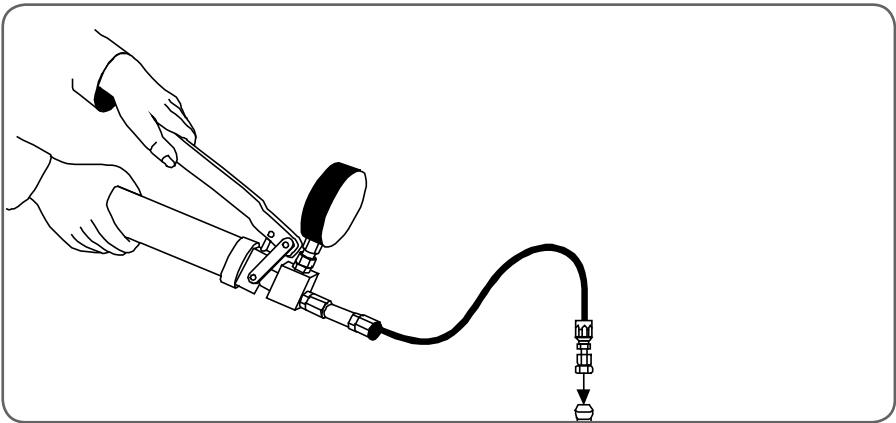


Fig 4 Check the permeability of the lubricating points and fill any cavities in the bearing points.

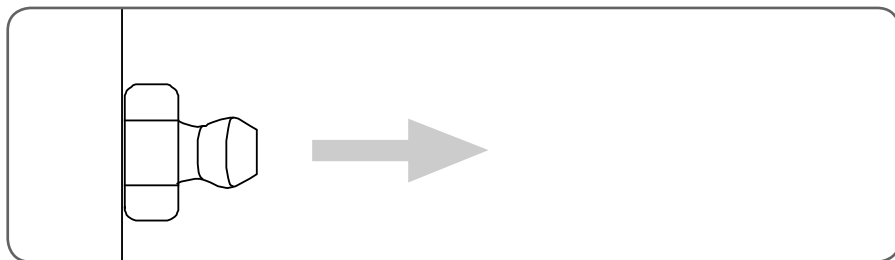


Fig 5 Remove the grease nipples.

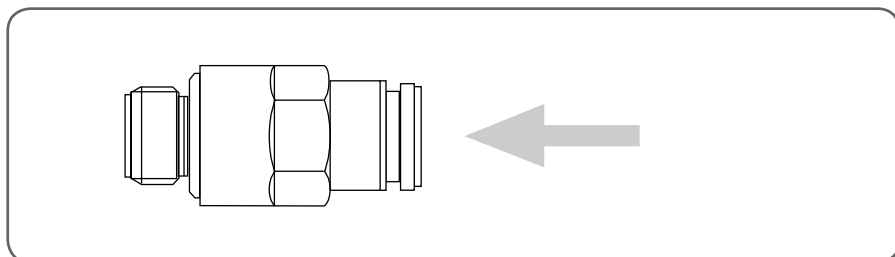


Fig 6 Screw in the connector fittings.

2.2 Pump unit preparation

Connection with uneven number of lubricating points If the number of lubricating points to be supplied is uneven, two of the outputs located at the distributor of the pump unit have to be connected by means of the enclosed connection bar (Fig 7). This is necessary for a proper distributor operation. To be able to screw in the connection bar, you first have to remove two adjacent fittings on the distributor.

Then, screw in the connection bar.



No distributor output must be closed, as this would block the distributor.



When two outlets are connected by means of the connection bar, the output flow from the connection bar is twice the volume of a single outlet.



Ensure cleanness. Even minor contamination may result in system errors or bearing damage.



Fig 7 Connection bar for progressive distributors

2.3 Pump unit installation

The pump unit should be installed in a way which ensures protection against dirt, splash water and vibration but also provides for easy access to make sure that all further installation works can be carried out without difficulty and the unit can be easily refilled later. The liquid level of the reservoir should be clearly visible. The unit must be installed in vertical position.

For installation, the unit is equipped with a connection flange with three fixing points.

Mount the SKF Multipoint automatic lubricators LAGD 1000 to the machine with the three supplied M8 bolts, washers and self-locking nuts (Tightening torque: 16 Nm, 11.8 ft.lbs). The unit should be mounted in a position that is protected to the greatest possible extent. Where holes have to be drilled for installation, position these holes as shown below, using the template in Appendix 1.



When drilling the mounting holes, be aware of possible sources of danger, such as available supply pipes, other units, non-stationary parts and heat sources. Ask the machine manufacturer to confirm the position of the mounting holes



Fitting with less than three screws is not allowed and may result in breakage of the assembly flange.



The installation surface must be even. Otherwise the assembly flange may be overloaded when tightening the screws and break.



Mount the unit at a safe distance from other items and conform to local installation and accident prevention regulations.

2.4 Electrical connection



Follow the information and instructions contained in this document and the functional description of the respective control unit. Refer to the safety recommendations (see section 1).



If the protective conductor connection is not properly made or damaged, dangerous live voltages may occur on the unit!



The units must only be connected to the power supply by competent personnel, in conformance with the local connection conditions and regulations. Improperly connected equipment may lead to serious personal injury and damage to property.

2.4.1 Electrical specifications

Item	Rated voltage	Typical power input (load dependent)	Starting current (ca. 20 ms)	Back-up fuse
LAGD 1000A/DC.	24 V DC	0,5 A	ca. 1,4 A	3,0 A ¹
LAGD 1000A/AC.	230 V/50 Hz	0,45 A	-	2,5 A ²
	230 V/60 Hz	0,66 A	-	2,5 A
	115 V/50 Hz	1,0 A	-	2,5 A
	115 V/60 Hz	1,3 A	-	2,5 A

1 Fuse according to DIN 72581 T.3

2 Lead: Cross-section 1,5 mm², length ≤12 m (39.4 ft)

2.4.2 LAGD 1000/DC

The LAGD 1000/DC is supplied with level monitoring as standard. One electrical power connection is required.

Power connection to DIN EN 175 301-803 Plug supplied

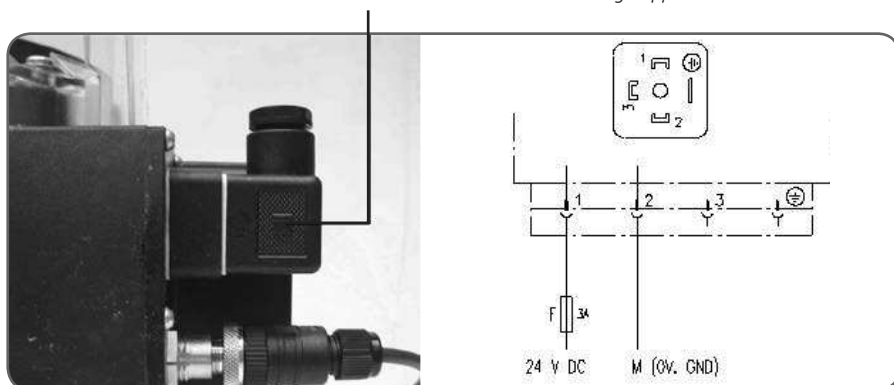


Fig 8/9 LAGD 1000/DC Electrical connector position / LAGD 1000/DC Electrical connection diagram.

2.4.3 LAGD 1000/AC

The LAGD 1000/AC is supplied with level monitoring as standard. One electrical connection is required.

Power connection to DIN EN 175 301-803 Plug supplied

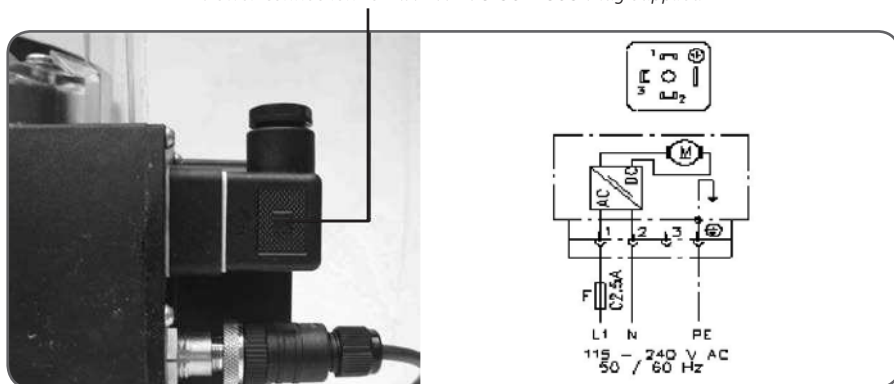


Fig 10/11 LAGD 1000/AC Electrical connector position / LAGD 1000/AC Electrical connection diagram.

2.5 Lubricant filling

All LAGD 1000 units are supplied unfilled.

2.5.1 Suitability of greases

The grease reservoir can hold up to 1 litre (33.8 US fl. oz) of grease, and the lubricator is supplied empty. SKF greases LGFP 2, LGGB 2, LGWA 2 and LGHB 2 are recommended to be used in LAGD 1000 lubricators at temperatures down to -10 °C (14 °F).

For temperatures down to -25 °C (-13 °F), SKF greases LGWA 2 and LGGB 2 are suitable. Greases with graphite such as LGEM 2 aren't suitable for the LAGD 1000. For all other SKF greases please contact SKF.

2.5.2 Compatibility of greases

Check for grease compatibility. If filling with a different grease to that already used in application, it is always best to remove as much of the old grease from the units and pipes as possible.

2.5.3 Initial filling of Lubricant

The lubricator reservoir is filled in via the conical head lubrication nipple shown as A in Fig. 12. This can be done using a filler pump or a grease gun. However, an air driven, battery driven or electrical driven filler pump or grease gun is recommended for ease of use.

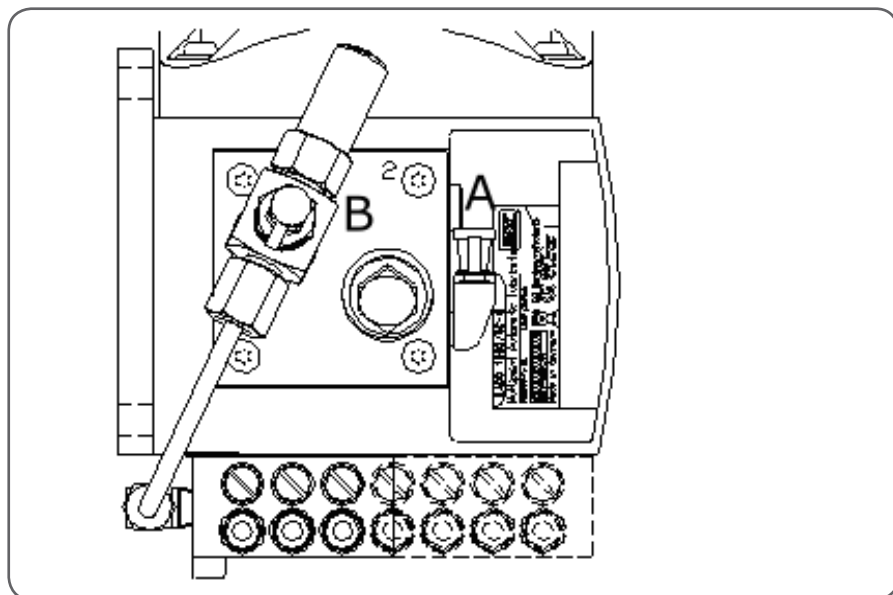


Fig. 12 Position of grease nipples for filling and purging.

When the unit is filled for the first time, the lubricant forces the follower (rubber ring plate) upward until the overfill outlet hole is reached. As filling continues, the air escapes until the entire reservoir is filled with lubricant. When excess lubricant starts to emerge from the overfill outlet, stop filling completely. When topping up, take care not to let lubricant emerge from the overfill outlet hole. The levels (minimum and maximum) of the grease in the container are shown by the rubber ring below the metal plate. Figure 13 clearly shows the minimum, maximum and overfill details.

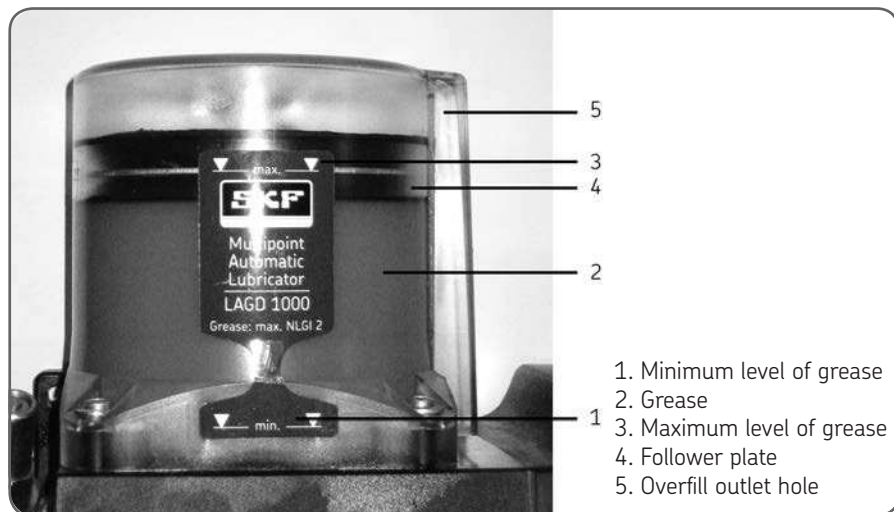


Fig 13 Position of grease filling marks

2.5.4 Bleeding the system

Connect the grease gun to the nipple shown as B in figure 12, and pump until the lubricant emerging from the distribution block is free of air. The pressure relief valve is used to protect the entire lubrication system against excessive internal pressures. The valve is set to open at a pressure of 150 bars. If the operating pressure increases beyond 150 bars due to a blocked progressive feeder or lubricating point, the valve opens, and grease visibly emerges from the valve.

2.5.5 Installation of lubrication pipes

Carefully cut the lubrication pipe to the correct lengths for the application.

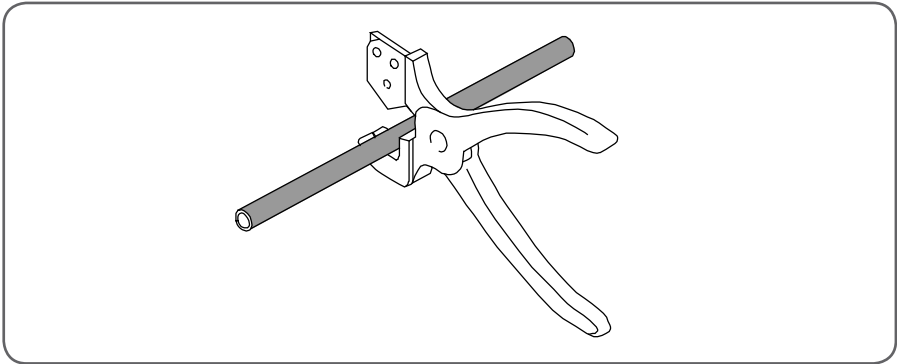


Fig 14 Shorten the plastic pipe

Use a grease gun to pre-fill the cut pipes. Firmly push the pipe into the open end of the pipe filling nipple included with the lubricator. Connect the grease gun to the other end of the filling nipple. Operate the grease gun to fill the pipe with grease. To remove the grease filled pipe, push on the collar and at the same time pull out the pipe.

If the end of the pipe is damaged by the filling nipple, cut off the damaged end before you connect the lubrication pipe to the divider block.

Push the pipes into the outlet of divider block. Lightly pull on each lubrication pipe to ensure that a firm connection is made. The lubrication pipes can be routed.

Fix the lubrication pipes to suitable positions on the machine by means of the enclosed cable ties. Cut the protruding ends of the cable tapes with scissors or a similar tool.



When routing the lubrication pipes, make sure that the pipes cannot be bent, squeezed, sheared off nor rubbed through during operation.

Insert the pipes into the connectors fitted to the application. Lightly pull on each lubrication pipe to ensure that a firm connection made.

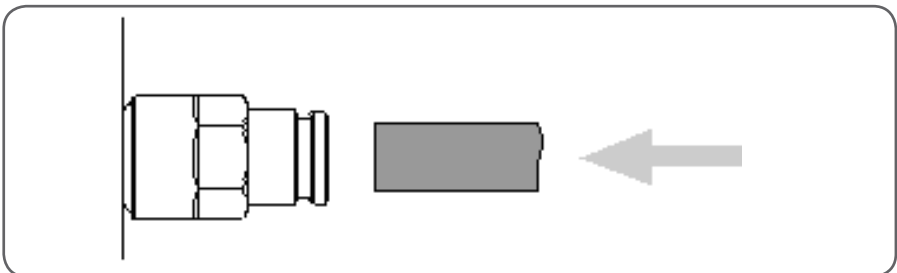


Fig 15 Insert the plastic pipe into the fitting.

To detach the pipe, press the plastic pipe forcefully into the fitting and pull it out.



The lubrication pipes are made from black nylon that has a high bursting strength. Genuine SKF pipes must be used. The grease can be pumped, through the pipes, to a recommended distance of 6 meters depending on environmental temperature (recommended ambient temperature 20 °C, 68°F)

2.6 Level monitoring

2.6.1 Visual monitoring of level

The transparent reservoir enables you to visually monitor the level. The level should be checked at regular intervals for safety reasons. The current level can be precisely seen from the position of the follower.



When the grease level in the reservoir drops below the “min” marking, you must bleed the entire system. (see section 2.5.4)

TIP. If the grease level does not go below the “min” level, you do not need to bleed the entire system.

2.6.2 Level switch

The SKF Multipoint automatic lubricators LAGD 1000 series are delivered with an automatic level control function. When the level drops below the “min” marking, the sequence of operations is stopped, and a fault message “FLL” appears in the display.

3. Selection of grease quantity for application

The SKF Dial Set CD ROM (MP3506) or LubeSelect for SKF greases <http://www.skf.com/portal/skf/home/aptitudexchange> can be used to calculate the amount of grease required over a given time period.

Example:

LubeSelect calculates the following grease requirement for a bearing over the relubrication interval.

Grease L1 life (SKF re-lubrication interval), hrs	3800
Grease quantity replenish through lubrication holes, grams	155

Assuming that the grease has a specific density of around 0,9, the total amount of grease required over the lubrication interval is $155/0,9 = 172 \text{ cm}^3$

A complete internal cycle of the LAGD 1000 dispenses $0,2 \text{ cm}^3$ per outlet.

Therefore the number of cycles required is $172/0,2 = 860$ cycles

Over a period of 3800 hours, 860 cycles are required, that is: one cycle every 4,4 hours (or two cycles every 8,8 hours and so on).

The LAGD 1000 can now be programmed accordingly, see section 4.3.2.

4. Operation of LAGD 1000/AC.. and LAGD 1000/DC.. units

4.1 LAGD 1000/AC.. & LAGD 1000/DC.. display and control unit

A transparent plastic cover, to protect against water splashes and mechanical damage, protects the display and control unit. To program or to display the current functions, the cover has to be removed using a screwdriver. Replace the cover after use to protect the unit.

Led display	LAGD 1000/AC.. LAGD 1000/DC..
	• Seven-segment display: Values and operating state
○ PAUSE h/lmp	• Pause time
○ CONTACT min/lmp	• Pump operation
○ CS	• CMonitoring of system function by means of an external cycle switch CS = Cycle Switch
○ PS	• NOT USED FOR LAGD 1000. This LED must not light
○ FAULT	• Fault message
Push buttons	
 	• Turn on display • Display values and parameters • Call up the last parameter in the programming mode • Set values and parameters
	• Change between programming and display mode • Confirm values
	• Activate intermediate lubrication • Clear fault message

4.1.1 Operation via push buttons

Push button	Operating possibilities
	- Operating the button during PAUSE, will initiate an intermediate lubrication cycle - Fault messages are acknowledged and cleared
	- Automatically activates the display in display mode - Calls up the next parameter in programming mode - Increases the displayed value by 1
	- Automatically activates the display in display mode - Calls up the last parameter in programming mode - Decreases the displayed value by 1
	- Change between programming and display mode - Confirm entered values

4.1.2 Three digit LED display

During normal operation, the display is off. It is activated by briefly operating one of the two push buttons. It is used for displaying current values and preset parameters. In addition, the display is used for operator prompting during programming of operating parameters.

Display	Function	Description	
	t = TIMER PA = PAUSE	The control unit operates as a time controlled contact maker (TIMER) and is in the PAUSE mode	- Part of lubrication cycle - Entered and displayed value in hours
	c = COUNTER PA = PAUSE	The control unit operates as a contact counter (COUNTER) and is in the PAUSE mode	- Part of lubrication cycle - The device counts the pulses from an external contact maker and compares them with the preset values
	t = TIMER CO = CONTACT	The control unit operates as a timecontrolled contact maker (TIMER) and is in the pump running mode (CONTACT)	- CONTACT = time during which the pump delivers - Entered and displayed value in minutes
	c = COUNTER CO = CONTACT	DO NOT USE	

COP	C = Cyclus O = OFF P = Pressure	Display of beginning of menu „Monitoring settings“	
OFF	Monitoring OFF	The monitoring function PS and CS is deactivated	• No system monitoring
CS	Cycle Switch	Cycle switch monitoring is active	• The cycle switch is monitored for signal transmission during the pump running time CONTACT
PS	Pressure Switch	Not to be used for LAGD 1000 units!	
FL	Fault: Low Level	The minimum level in the reservoir has been reached	• The control unit is in the FAULT mode • The sequence of operations is stopped
FS	Fault: Cycle Switch	No signal from cycle switch during pump running time	• The control unit is in the FAULT mode • The sequence of operations is stopped
OH	Operation Hour Meter	The subsequently displayed values are the operating hours of the control unit. Display ranges 0,1 h to 99.999,9 h	
Fh	Fault Hour Meter	The subsequently displayed values are the fault hours. Time during which the control unit or the machine has been operated in the FAULT mode. Display ranges 0.1 h to 99.999,9 h	
blo	Block operation	Signal from cycle switch missing. Contrary to normal operation, the control unit is still in the monitoring mode. If the fault continues to exist for 3 pump running periods, a fault message is displayed	

4.2 Display mode for LAGD 1000/AC.. and LAGD 1000/DC

Lit LED's indicate that the unit is in the display mode. **No flashing!**

Using this mode, the user can have current settings and operating parameters displayed.

4.2.1 Display of the operating values for LAGD 1000/AC.. & LAGD 1000/DC

During normal operation, the display is off. It is activated by briefly operating one of the two pushbuttons   It is used for displaying current values and preset parameters. In addition, the display is used for operator prompting during programming of operating parameters.

Step	Key	Display		
1	Press briefly ▲ or ▼		Current operating state is indicated Example: Timer is in Pause mode	
2	▲		Indicates remaining pause time of current lubricating cycle Example: 3,8 h	
3	▲		Indicates preset total pause time Example: 1 h (factory setting is 10 h)	
4	▲		Indicates preselected pump running time Example: Timer operation	
5	▲		Example: System is in Pause mode, indication of current tC0 is not possible	
6	▲		Indicates preset value Example: 4 min (factory setting)	
7	▲		Indicates system monitoring menu	
8	▲			
		Monitoring deactivated	or monitoring via cycle switch (factory setting) The LAGD 1000 should always be in this mode	or monitoring via pressure switch. This mode is not permitted for LAGD 1000!
9	▲		Indicates operating hours	
10/11	▲			

		Example: Part 1 of total value. Note down!	Part 2 of total value Total value: 00533,8 h Maximum value: 99999,9 h	
12			Indicates fault hours	
13/14				
		Example: Part 1 of total value. Note down!	Part 2 of total value Total value: 00033,8 h Maximum value: 99999,9 h	
15		LED indicators extinguish Oh and Fh values are stored in an undeletable way in the EEPROM		

4.3 Programming the LAGD 1000/AC.. and LAGD 1000/DC

Read the complete section before programming!

Before programming the LAGD 1000/AC.. or LAGD 1000/DC.., make a note of what you want to achieve. This makes the process easier to perform.

4.3.1 Changing the lubrication interval times

The following table gives the running time for one internal cycle of the LAGD 1000/AC.. and LAGD 1000/DC.. One internal cycle equates to 0,2 cm³ per outlet.

Designation	Number of outlets	Running time (tCo) for one internal cycle of progressive feeder giving 0,2 cm ³ /outlet (minutes)
LAGD 1000/AC10	10	1,0
LAGD 1000/AC12	12	1,2
LAGD 1000/AC14	14	1,4
LAGD 1000/AC16	16	1,6
LAGD 1000/AC18	18	1,8
LAGD 1000/AC20	20	2,0

Designation	Number of outlets	Running time (tCo) for one internal cycle of progressive feeder giving 0,2 cm ³ /outlet (minutes)
LAGD 1000/DC10	10	1,0
LAGD 1000/DC12	12	1,2
LAGD 1000/DC14	14	1,4
LAGD 1000/DC16	16	1,6
LAGD 1000/DC18	18	1,8
LAGD 1000/DC20	20	2,0

Using the calculated example shown in section 3. If the LAGD 1000/DC10 was to be used, then the contact time (tCO) should be set to 1,0 minutes (meaning that all outlets receive 0,2 cm³). The tPA should be set to 4,4 hours.

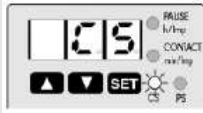
4.3.2 Programming sequence LAGD 1000/AC.. and LAGD 1000/DC

The table below shows the sequence of how to program the unit.

Step	Key	Display	
1	SET Press for more than 2s		000 in display flashes
2	SET Press briefly (confirm code)		Automatically indicates first parameter Example: "Pause in timer operation" LED "Pause" flashes
3	SET Press briefly		Pause time 1 h (factory setting). Values between 0,1 and 99,9 hrs, should be a minimum of : • LAGD 1000/AC 4 x pump running time (tCO) in hours. eg. if tCO = 5 minutes, tPA=0,4 hours minimum • LAGD 1000/DC 9x pump running time (tCO) in hours. eg. if tCO = 5 minutes, tPA=0,8 hours minimum

4			Set new value Example: 6,8 h = 6 h 48 min
5	SET Press briefly (confirm new value)		Indicates next parameter "Pump running time in timer mode" LED "Contact" flashes
6	SET Press briefly		Pump running time 4 min (factory setting). Values between 0,1 and 99,9 minutes: • LAGD 1000/AC maximum tCO = 5 minutes • LAGD 1000/DC maximum tCO = 5 minutes
7			Set new value Example: 3 min
8	SET Press briefly	Confirm new value	
9	SET Press for more than 2s	Changes are written to the memory, and the LED indicators extinguish.	

4.3.3 Changing the system monitoring

Step	Key	Display	
1	SET Press for more than 2s		000 in display flashes
2	SET Press briefly (confirm code)		Automatically indicates first parameter. Example: "Pause in timer operation" LED "Pause" flashes
3	   Operate keys until:		Monitoring menu is displayed
4	SET Press briefly		Monitoring deactivated
5	  Press appropriate key until	 	monitoring with cycle switch is active LED "CS" flashes. (factory setting for LAGD 1000) or monitoring with pressure switch is active Not to be used with LAGD 1000
6	SET Press briefly	Confirm new settings	
7	SET Press for more than 2 seconds	New settings are written to the memory, and the LED indicators extinguish	

4.3.4 Changing the operating mode

Step	Key	Display	
1	SET Press for more than 2s		000 in display flashes
2	SET Press briefly (confirm code)		Automatically indicates first parameter Example: "Pause in timer operation" LED "Pause" flashes
3	▲		Changes from Timer mode to Counter mode (only possible with external electrical transmitter) Values in pulses
4	SET Press briefly		Indicates preselected pump running time in Timer mode
5	▲		Change over from pump running time to Counter mode Special application Do not activate! Not to be used with LAGD 1000
6	SET Press briefly	Confirm new settings	
7	SET Press for more than 2 seconds	New settings are written to the memory, and the LED indicators extinguish	

5. Faults

 **Check level in reservoir at regular intervals. If the reservoir has been emptied completely, the entire system must be bled after topping up.**

All fault messages are displayed as a centralized alarm via the LED  or  **FAULT**, depending on version. When a fault message is given, the control unit stops the normal sequence of operations. The fault concerned is stored and displayed. The cause of the fault can be read on the display. This considerably helps the fault diagnosis.

5.1 Displaying faults

5.1.1 LAGD 1000/AC.. and LAGD 1000/DC.. faults

Start display mode by pressing one of the two keys  . Operate until fault is displayed.

Display	Meaning
	Fault Low Level: Lubricant has dropped below minimum level in reservoir The further sequence of operations is stopped
	Fault Cycle Switch: No signal from cycle switch during pump running time
	Block operation: Signal from cycle switch missing. Contrary to normal operation, the control unit is still in the monitoring mode. If the fault continues to exist for three pump running periods, a fault message is displayed

5.1.2 Block operation

The control unit responds to a missing signal from the cycle switch by changing over to the block mode. Possible causes:

- Insufficient bleeding
- Too high breathing volume (hose pipes too long)
- Defective lubricant pipes
- Clogged progressive feeder
- Defective cycle switch
- Lack of lubricant

No signal from cycle switch during pump running time:

- Normal operation is aborted
- Block pause commences with interrogation of cycle switch

No signal from cycle switch during block pause:

- Second lubrication cycle commences in block mode
As soon as a signal from the cycle switch is received, block operation is aborted, and the normal lubrication cycle commences with the pause.



A total of three lubrication cycles are carried out with interrogation of the cycle switch

5.1.3 Clearing the fault message

All fault messages can be acknowledged and cleared with key **DK** or .



Before clearing the fault message, determine and rectify cause of fault. The user is liable for any damage resulting from the operation of the machine without lubrication. The time for which the control unit and the pump unit have been operated without lubrication is remembered by the LAGD 1000 and displayed as fault hours Fh or error hours Eh.

5.1.4 Storing the fault times

DFault (Error) time counter

The time which elapses since the occurrence of a fault message up to the time when the fault is rectified is added in hours. Releasing a lubrication cycle via the **DK** or  key causes the fault message to be cleared. Thereafter, this value is automatically transferred to the fault hour counter.

Fault (Error) hour counter

In the fault hour counter, all fault times, which have occurred during the entire operating period of the unit, are totalled up. After calling up Fh, the current reading of the counter in the display mode can be seen as two blocks of three digits each (see section 4.2.1).

The counter can display a maximum of 99,999.9 hours. The smallest storable interval is 0,1 hour = 6 minutes. The memory cannot be erased.

6. Maintenance and repair

Carry out the following maintenance and inspection works at regular intervals:

- Check level in reservoir
- Check the plant components for leakage at regular intervals
- Check the bearings visually for a proper lubricating condition
- Check electrical cables for damage
- Check electrical connections and contacts
- Check the basic function of the control unit and system components by initiating an intermediate lubrication cycle
- Check electrical connections in case of fault messages
- Replace defective fuses only by new equivalent fuses.



Any works beyond the above-mentioned scope must only be performed by approved SKF service personnel. Replenish with clean grease only. The service life of the pump and lubricated machine elements is dependent on the cleanness of the lubricants used.

7. Spare parts and accessories

Item	Imperial Connection Kit*
Description	LAGD 1000-G
Contents	Plastic pipe 50 m (164 ft) 11 x Straight connectors G ¹ / ₈ 11 x Right angle swivel connectors G ¹ / ₈ 1 x Connection bar 140 x Cable tie

* This item is supplied standard with all LAGD 1000 series lubricators.

8. Technical data

	LAGD 1000/DC	LAGD 1000/AC
Max. operating pressure	150 bars (2 175 psi)	150 bars (2 175 psi)
Permissible operating temperature	-25°C/+75°C (-13°F/+167°F)	-25°C/+60°C (-13°F/+140°F)
Number of outlets	10 to 20	10 to 20
Max length of pipes	6 metres (20ft)	6 metres (20ft)
Output of pump element	2 cm ³ /min (0.122 in ³ /min)	2 cm ³ /min (0.122 in ³ /min)
Reservoir capacity	1 l (61 in ³)	1 l (61 in ³)
Greases	up to NLGI grade 2	up to NLGI grade 2
Weight (max depending on outlets)	3,7 kg (8.2 lbs)	4,8 kg (10.6 lbs)
System of protection	IP65	IP65
Electrical specifications		
Rated voltage	24 V DC	115 V / 50 Hz; 115 V / 60 Hz 230 V / 50 Hz; 230 V / 60 Hz
Typ. power input at 20°C (68°F) and max. Operating pressure	0,5 A	115V: 1 A / 50 Hz; 1.3 A / 60 Hz 230V: 0.45 A / 50 Hz; 0.66 A / 60 Hz

The contents of this publication are the copyright of the publisher and may not be reproduced (even extracts) unless prior written permission is granted. Every care has been taken to ensure the accuracy of the information contained in this publication but no liability can be accepted for any loss or damage whether direct, indirect or consequential arising out of the use of the information contained herein.

SKF Maintenance Products

® SKF is a registered trademark of the SKF Group.
© SKF Group 2016/06

www.mapro.skf.com
www.skf.com/mount

MP5234EN

Appendix 1

LAGD 1000 series - Mounting hole drilling template

