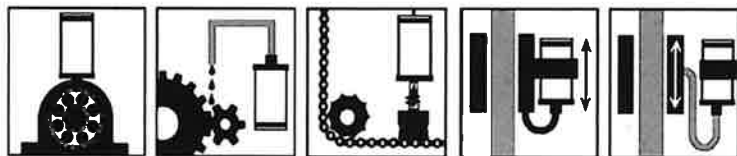


# *s i m a l u b e* **AUTO GREASE**

(Automatic lubricator)

## [Insutraction manual]

Thank you for purchasing it. Read this instruction manual well, and use it properly.



# *s i m a l u b e* **AUTO GREASE**

## Contents

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### ⚠ Warning

For applications in an environment with an explosive atmosphere, there is a risk of electrostatic discharges or of propagating brush discharge on the surface of the lubricator. Suitable precautionary measures must be taken to minimize the risk. To Avoid electrostatic charging during cleaning, only clean the lubricator with a damp cloth. Do not expose the lubricator to any air flow that may result in electrostatic charging of the lubricator.

## Specification

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name                | AUTO GREASE (Automatic lubricator)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Driving method      | H <sub>2</sub> gas pressure (Dry battery type)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Mounting direction  | Free (A cap with the check valve is used in the case of the oil)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Contents volume     | 125ml                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Working pressure    | Max. 0.5MPa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Delivery term       | Set range 0 step, 1~12 *Set values and months for use may differ depending on the working temperature or lubricants.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Ex approval         | <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;"> <small>95(2023年04月)HA</small><br/> <b>DEX 23.0004X</b><br/> <small>SIMATEC AG</small> </div> <div> <small>JPEX DEX 23.0004X</small><br/> <small>Ex ia IIC T<sub>60</sub> Ga</small><br/> <small>Ex ia IIC T<sub>200</sub> 80°C Da</small><br/> <small>KEMA 09ATEX0098X</small><br/> <small>IECEx DEX 20.0032X</small><br/> <small>II 1 G Ex ia IIC T<sub>60</sub> Ga</small><br/> <small>II 1 D Ex ia IIC T<sub>200</sub> 80°C Da</small><br/> <small>I M1 Ex ia I Ma</small> </div> </div> |
| Working temperature | -20°C to +55°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Usage of period     | Activation within 2years after production date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Storage place       | Keep it by the room temperature in the dark place.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Weight              | Approx. 190g(with lubricant) 75g(empty weight)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Outside dimension   | O. D. 52mm, Height 118mm, male screw G1/4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Precaution for use  | Avoid direct heat                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Use in water        | Usable in water<br>(Be cautious not to mix water when mounting)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

- Mounting**
- ① Grease type: Remove a sealing cap at the thread part. Oil type: The tip part of the sealing cap is cut off.
  - ② Using a minus driver, set a ▲ mark to the desired set value in the gas generator in the upper side. Switch on (No output at once)  
\*A high quality minus driver is used for the adjustment hole which is easy to transform, then carefully.
  - ③ Enter the starting date on the label of the container side an oily pen. (**Starting date**)
  - ④ Screw the container into a lubricating portion by hand. \*Please read notes below.
  - ⑤ When delivery term of this equipment has completed (piston touches to the bottom), change it to new Auto Grease or replace to refilled Auto Grease.



## ※notes

- (1) Clean the lubricating passage to ensure the operation of Auto Grease. Refill the grease to the lubricating passage using grease gun in advance.
- (2) When Auto Grease is mounted with lubricating passage clogged, gas pressure will abnormally increase. When gas pressure approx. 0.7MPa this equipment is designed that the bottom of the body or the upper side of the generator will break out. When lubricating passage is clogged during smooth lubricating process, be careful that the bottom of the body will break out.
- (3) it during the operation. See page 5-7 for the rate. Delivery rate/day=123ml working delivery days(Residual quantity:2ml)
- (4) It will take time from switching on (setting of the value) of a gas generator to starting of grease output. It may take several hours in a long term setting in the normal temperature. in the normal temperature (When no grease comes out, check causes including gas leakage due to tightening defect of a gas generator and omitting to remove a sealing cap at thread part).

### Setting of delivery term

For periodical grease-up using a grease gun, calculate the delivery term using the formula below.

- ① Greasing 10 strokes/month at the rate of 2.0ml/stroke (standard rate for manual type). Delivery amount/month=2ml × 10=20ml, so set the deliver term of Auto Grease to (123ml ÷ 20ml=approx. 6 months, Residual quantity : 2ml)
- ② Set Auto Grease to 4.5 under the average use temperature of +℃ in the relation chart at page 6. It will be empty in 6 months, which means the conventional grease-up has done.

### (Example)

When the equipment is operated only for a certain period of time: operating term of Auto Grease, 6 months (average use temperature: -15℃)

Completion of service (switching on Auto Grease): Nov.

End of operation (switching off Auto Grease): Apr.

If Auto Grease is set to 8 (will be empty in 345 days), the grease will be exhausted in 2 years.

When the equipment is operated all the year in an even feed rate: Set Auto Grease set to 9 in Nov. (average winter temperature: 0℃), then Auto Grease will deliver the rate every day at which the grease will be exhausted in 370 days. Set Auto Grease to 12 in Apr. (average summer temperature: 20℃), then Auto Grease will deliver the rate every day at which the grease will be exhausted in 365 days.

Through this setting, the grease will be delivered at the even rate all the year and be exhausted in a year.

\*Depending on grease types that are filled to Auto Grease, separation of oil and extender may occur in a long-term setting of 9 or more and extender may remain without using up. Please pay attention for a piston movement in the last phase of greasing when using Auto Grease in the value range of 9-12.

### Calculation of delivery rate

You can calculate the delivery rate based on the current rate. Refer to the chart below for unclear points. (Set values below are reference values, so they do not guarantee the oiling necessary for each part) \*Selection by BRG dimensions: Set values under the genuine grease consistency No.1 at the temperature of 20℃.

#### [Rolling bearing]

| Shaft diameter                   | 40mm | 50 | 60 | 75 | 100 | 200 | 300 | 400 |
|----------------------------------|------|----|----|----|-----|-----|-----|-----|
| Rotation speed:<br>50rpm or less | 12   | 12 | 12 | 12 | 10  | 5   | 4   | 2   |
| 50~ 100rpm                       | 12   | 12 | 12 | 11 | 9   | 5   | 3   | 2   |
| 100~ 300rpm                      | 12   | 12 | 11 | 10 | 8   | 4   | 2   | 1   |
| 300~ 600rpm                      | 12   | 11 | 10 | 9  | 7   | 4   | 2   | 1   |
| 600~1000rpm                      | 11   | 10 | 9  | 8  | 6   | 3   | 1   | —   |
| 1000~1800rpm                     | 10   | 9  | 8  | 7  | 5   | 2   | 1   | —   |
| 1800~3500rpm                     | 8    | 7  | 6  | 5  | 3   | 1   | —   | —   |

When the oil seal work perfect, set the value a little longer than those in the chart above. For the dusty environment or inside the water, set the value a little shorter.

#### [Plain bearing]

It may differ depending on the materials or loads, but generally calculate the delivery rate using the following formula (A)

$$A \text{ (necessary quantity per day)} = 3.14 \phi WT \times 24 \text{ (ml)}$$

$\phi$  : BRG diameter (cm)

W : BRG width (cm)

T : Rotation factor

rpm : Rotation speed (min)

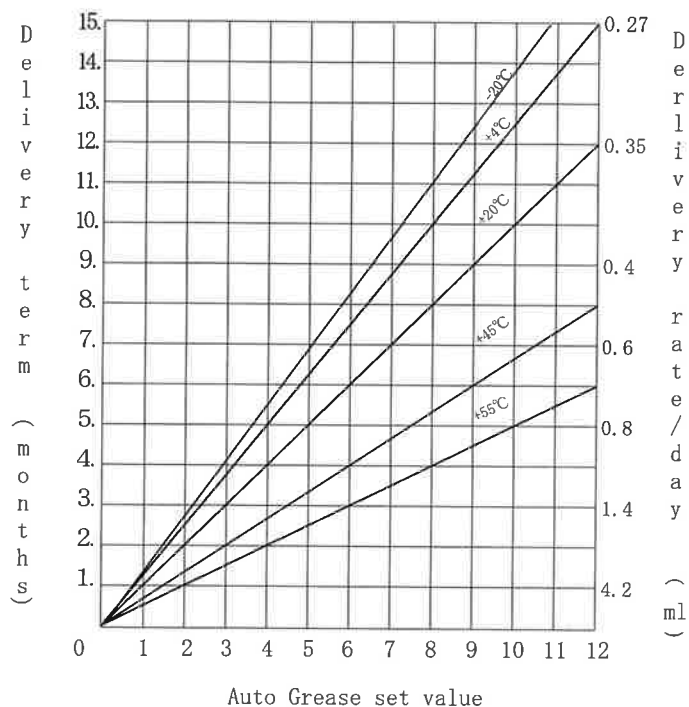
| r p m | 50 less | 51~ 200 | ~ 300  |
|-------|---------|---------|--------|
| T     | 0.0002  | 0.0003  | 0.0004 |

## sima lube **AUTO GREASE**

Relation between temperature, Delivery rate and term

The temperature, the viscosity and the backpressure in the lubricating passage will affect the lubricant delivery rate per day. Install the equipment within 50 cm for the head and 1 m for the horizontal distance.

Please refer to the following chart to adjust the delivery rate resulting from the temperature change or the change of the necessary quantity of a lubricant.



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Table of set values. Temperature and working term

| Set   | Operating (day) |       |       |       |       |       |
|-------|-----------------|-------|-------|-------|-------|-------|
| value | -20°C           | -10°C | 0°C   | 10°C  | 20°C  | 40°C  |
| 0     | No operation    |       |       |       |       |       |
| 1     | 7 0             | 6 0   | 5 0   | 4 0   | 3 0   | 2 0   |
| 2     | 1 1 0           | 1 0 0 | 9 0   | 7 5   | 6 0   | 4 5   |
| 3     | 1 5 0           | 1 4 0 | 1 3 0 | 1 1 0 | 9 0   | 7 0   |
| 4     | 1 9 0           | 1 8 0 | 1 7 0 | 1 4 5 | 1 2 0 | 9 5   |
| 5     | 2 3 0           | 2 2 0 | 2 1 0 | 1 8 0 | 1 5 0 | 1 2 0 |
| 6     | 2 7 0           | 2 6 0 | 2 5 0 | 2 1 5 | 1 8 0 | 1 4 5 |
| 7     | 3 1 0           | 3 0 0 | 2 9 0 | 2 5 0 | 2 1 0 | 1 7 0 |
| 8     | 3 5 0           | 3 4 0 | 3 3 0 | 2 8 5 | 2 4 0 | 1 9 5 |
| 9     | 3 9 0           | 3 8 0 | 3 7 0 | 3 2 0 | 2 7 0 | 2 2 0 |
| 10    | 4 4 0           | 4 2 0 | 4 1 0 | 3 5 5 | 3 0 0 | 2 4 5 |
| 11    | 4 9 0           | 4 6 0 | 4 5 0 | 3 9 0 | 3 3 0 | 2 7 0 |
| 12    | 5 5 0           | 5 1 0 | 4 9 0 | 4 2 5 | 3 6 5 | 3 0 0 |

Use of Grease consistency No.1 in the backpressure[0]

(Working term may be shorter than the table above when using Grease consistency No.0 and oil and may be longer if there is a backpressure or When using Grease consistency No.2.)

## Refilling

Optional refilling nipple and gas generator will be necessary to refill genuine grease using a grease gun. The container can be reused 3-5 times, but a gas generator is an exandable part. Replace to a new gas generator every time.

## How to refill

- (1) Remove the gas generator part installed on the top of Auto grease by using 27mm socket wrench.
- (2) Mount a refilling nipple to Auto Grease. Using a grease gun. Lift the piston inside the container to the top and refill the grease until the grease is filled a little into the transparent space between the body and the piston.
- ※ Slow down at the last phase of the grease refilling work.  
Slowly refill the grease so that air will go down to the bottom peripheral part of the piston and bleed off through the piston lip seal.
- ※ Grease gun may supply the pressure enough to destroy Auto Grease (Withstand pressure of Auto Grease container 0.7MPa)
- (3) Apply a little amount of grease to O-ring of new gas generator. Tighten it at the torque of approx.  
2 Nm (20kgfcm)
- (4) If Auto Grease is used soon after refilling, set the switch to the set value and enter the starting date on the label. If Auto Grease is stored, mount an attached sealing cap to the threaded portion.
- (5) For oil type, follow the same refilling method as the grease or lift the piston to the top first and then, pour  
the oil through the threaded portion.

## Instruction for disposal of "Autogrease"

- 1) Please do not unscrew the gas generator near an open flame. Please take care "H2 gas" inside lubricator.
- 2) After use of "Autogrease", please unscrew the gas generator by proper tools and dispose of complete unit of gas generator as battery. Please dispose of other plastic part as plastic.

## Troubleshooting: if you notice the following trouble

| Phenomena                    | Causes                                                                                                                                                                                                                                                                      | Measures                                                                                                                                                                                                                                          |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No output of a lubricant     | <ul style="list-style-type: none"> <li>• Did not remove a sealing cap.</li> <li>• Did not switch on.</li> <li>• Clogging of lubricating passage.</li> <li>• Looseness of a gas generator.</li> <li>• Defective gas generator.</li> <li>• Grease may be hardened.</li> </ul> | <ul style="list-style-type: none"> <li>• Remove a sealing cap.</li> <li>• Set a gas generator to [1-12]</li> <li>• Clean the lubricating passage.</li> <li>• Tighten to approx. 2Nm</li> <li>• Replace.</li> <li>• Replace or refill.</li> </ul>  |
| Shortage of lubricant        | <ul style="list-style-type: none"> <li>• Set value of a gas generator is too big.</li> <li>• Low ambient temperature.</li> <li>• Foreign matters in the lubricating passage or narrow passage.</li> <li>• Piston moved back due to a temporary low temperature.</li> </ul>  | <ul style="list-style-type: none"> <li>• Reduce the set value.</li> <li>• See page5-7 and set to the proper set value.</li> <li>• Clean the lubricating passage, or secure a proper lubricating passage.</li> <li>• Can be used as is.</li> </ul> |
| Excess output of a lubricant | <ul style="list-style-type: none"> <li>• Set value of a gas generator is too small.</li> <li>• High ambient temperature.</li> <li>• Temporary high temperat.</li> </ul>                                                                                                     | <ul style="list-style-type: none"> <li>• Increase the set value.</li> <li>• See page5-7 and set to the proper set value.</li> <li>• Can be used as is.</li> </ul>                                                                                 |
| Destroyed                    | <ul style="list-style-type: none"> <li>• Clogging of lubricating passage.</li> <li>• Hit of other driving part.</li> </ul>                                                                                                                                                  | <ul style="list-style-type: none"> <li>• Clean the lubricating passage.</li> <li>• Check the surroundings of mounting.</li> </ul>                                                                                                                 |

*sima lube* **AUTO GREASE**

Genuine lubricant

| Product Name                                                                          | Temperature range | Base oil              | Extender                  | Consistency |
|---------------------------------------------------------------------------------------|-------------------|-----------------------|---------------------------|-------------|
| Grease consistency No.1 for high load and wide range temperature 16kg can, Cartridge. | -20 to +200       | Mineral/synthetic oil | L i                       | 340         |
| Grease consistency No.2 for high load and wide range temperature 16kg can, Cartridge. | -20 to +200       | Mineral/synthetic oil | L i                       | 274         |
| Grease for food equipment 16kg can No.1 16kg can No.2 Cartridge No.2                  | -10 to +150       | Mineral/synthetic oil | Compound -ing of aluminum | 325<br>280  |
| Chain oil for high load 4L can Viscosity #68, #100, #150, #220, #320, #460~#15000     | -20 to +200       | Mineral/synthetic oil | —                         | —           |

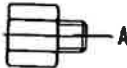
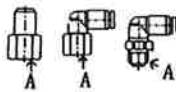
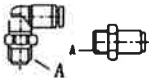
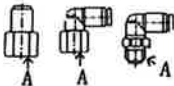
※Please specify the desired viscosity for the chain oil for high load.

※For the use of non-genuine lubricant, please use only lubricants that have been tested at the manufacturer approved. Manufacturer is not responsible for the use of lubricants except approved ones.

※Some lubricants may not be used up depending on the installation environment. See page 4.

*sima lube* **AUTO GREASE**

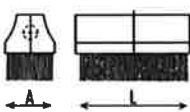
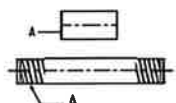
Options

|                                                                                       |                                                           |          |          |         |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------|----------|----------|---------|
|    | Gas generator (Battery to generate a gas for replacement) |          |          |         |
| No.                                                                                   | 7081100                                                   |          |          |         |
|    | Refilling nipple (Connect Auto Grease and a grease gun)   |          |          |         |
| A                                                                                     | Rc1/4                                                     |          |          |         |
| No.                                                                                   | 9051101                                                   |          |          |         |
|    | Adapter                                                   |          |          |         |
| A                                                                                     | R1/8•Rc1/4                                                | M6•Rc1/8 | M6•Rc1/4 |         |
| No.                                                                                   | 0510000                                                   | 0020001  | 0520002  |         |
|    | Quick joint (for an O.D. 8 mm hose)                       |          |          |         |
| A                                                                                     | Rc1/4 S                                                   | Rc1/4 L  | R1/4 L   |         |
| No.                                                                                   | 0030201                                                   | 0040201  | 0040202  |         |
|    | Quick joint (for an O.D. 8 mm hose)                       |          |          |         |
| A                                                                                     | R1/8 S                                                    | R1/8 L   | R1/4 S   |         |
| No.                                                                                   | 0020202                                                   | 0040203  | 0020201  |         |
|   | Quick joint (for an O.D. 6 mm hose)                       |          |          |         |
| A                                                                                     | Rc1/4 S                                                   | Rc1/4 L  | M6 S     | M6 L    |
| No.                                                                                   | 0030202                                                   | 0040204  | 0030203  | 0040205 |
|  | Clamp (Plastic mounting bracket)                          |          |          |         |
| A                                                                                     | 50mm                                                      |          |          |         |
| No.                                                                                   | 7090102                                                   |          |          |         |

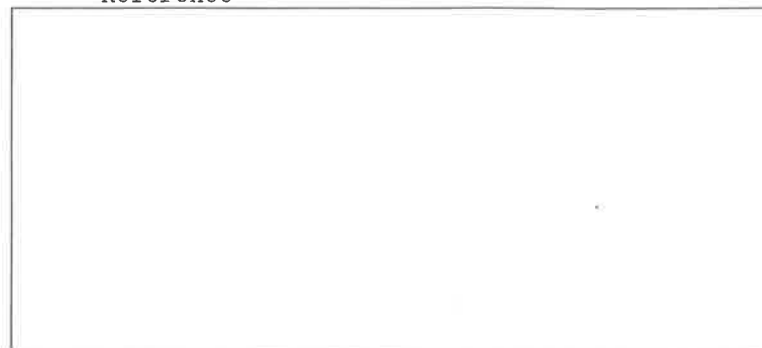
*s i m a l u b e* **AUTO GREASE**

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Options

|                                                                                     |                                                    |                         |              |                       |
|-------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------|--------------|-----------------------|
|    | Round type brush (for chain lubrication)           |                         |              |                       |
|                                                                                     | A/L                                                | 15/50 Rc1/8             | 30/80 Rc1/4  | (mm)                  |
|                                                                                     | No.                                                | 8001003                 | 8081103      |                       |
|    | Square type brush (for chain lubrication)          |                         |              |                       |
|                                                                                     | A/L                                                | 20/40                   | 20/60        | 20/100                |
|                                                                                     | No.                                                | 8052104                 | 8013105      | 8014106               |
|    | Oil-resistant hose,<br>Annealed copper tube per 1m |                         |              |                       |
|                                                                                     | A/L                                                | O. D. 8mm               | O. D. 6mm    |                       |
|                                                                                     | No.                                                | 0020301                 | 0030302 (Cu) | 0020303               |
|    | Socket, Long nipple (mm)                           |                         |              |                       |
|                                                                                     | A/L                                                | Rc1/4                   | 75 R1/4      | 30 R1/4               |
|                                                                                     | No.                                                | 0020400                 | 0010402      | 0800403               |
|    | Genuine multi-type grease and for food             |                         |              |                       |
|                                                                                     | Cartridge                                          | No. 1                   | No. 2        | food No. 2            |
|                                                                                     | No. 400g                                           | 8071001                 | 80071002     | 8071003               |
|   | Genuine multi-type grease and for food             |                         |              |                       |
|                                                                                     | 16kg                                               | No. 1                   | No. 2        | food No. 1 food No. 2 |
|                                                                                     | No.                                                | 8000421                 | 8000422      | 8000423 8000424       |
|  | Genuine chain oil high load, 4L can                |                         |              |                       |
|                                                                                     | A/L                                                | #68, 100, 150, 220, 320 |              |                       |
|                                                                                     | No.                                                | 8082001                 |              |                       |

Reference



A total sales cause

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