## **Technical Information GREASE MAX**<sup>®</sup> Automatic lubricator

The information in this document is meant for the general use of *GREASE MAX*<sup>®</sup> as well as for your product documentation. It is not intended to be exhaustive in content but will cover most of the points that should be known when handling this product. The information given corresponds to previous test results and practical expe-

rience. They are not a legal warranty of specific characteristics or suitability for a specific purpose and, because of the abundance of potential influences, do not exempt the customer from their own testing and appropriate precautions.

For expert advice we, company Oberrecht GmbH [], as well as our distribution partners are always at your disposal.

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You can find the Installation instructions on our website at www.oberrecht.de

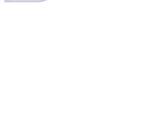


All lubricators can be found in the current J catalogue or at www.oberrecht.de

We wish you a good run with your new *GREASE MAX*<sup>®</sup> Lubricator.









### 1. General Description of GREASE MAX®

GREASE MAX<sup>®</sup> is a chemically operated fully automatic lubricator.

*GREASE MAX*<sup>®</sup> is designed to be screwed into the bearing grease nipple seating, or onto an extension pipe, and to feed lubricant at a **constant rate** for a **set period** of time.

Depending on the lubricant requirement of the lubrication point, *GREASE MAX*<sup>®</sup> is available in four different versions. The cubic capacity is 120 ccm lubricant, which is dispensed in **1**, **3**, **6 or 12 months** according to the selected dispenser running times. After the later has elapsed, the lubricator simply is replaced by a new unit.

*GREASE MAX*<sup>®</sup> adjusts itself fully automatically and self-regulating to the lubrication point and should be replaced in connection with the maintenance plan of the plant or the machine. The replacement of *GREASE MAX*<sup>®</sup> should be planned and carried out at set periods.

Operation of *GREASE MAX*<sup>®</sup> is simple and trouble free. Despite technical simplicity, this product offers extensive possibilities. *GREASE MAX*<sup>®</sup> can be used for many lubrication problems.

*GREASE MAX*<sup>®</sup> has **no electrical or mechanical components** and has **only one moving part**, which is the piston. For this reason *GREASE MAX*<sup>®</sup> is extremely reliable.

#### 2. Benefits through GREASE MAX®

- Cost savings compared to manual lubrication.
- Increasing productivity by reducing the maintenance-related downtime of machines and plants.
- **Cost savings** through reduced maintenance and downtimes (e.g. bearing failures caused by incorrect or missed lubrication).
- Lubrication also and especially takes place when the plant is running at full capacity and when it is of the **most economic benefit**.
- Environmentally friendly due to optimal utilization of the lubricant.
- The **bearing is sealed** while *GREASE MAX*<sup>®</sup> is screwed in. Dust and moisture are prevented from entering the bearing.
- The lubrication is **fully automated** and changeovers can be integrated into the plant maintenance schedule.
- The lubrication point remains **clean**, there is no excess lubricant, affecting either the cleanliness of the system or the environment.
- Operational safety is improved as employees are less likely to visit hazardous areas.
- A constant supply of **fresh lubricant** flushes any foreign matter, moisture or harmful chemical substances out of the bearing that could otherwise accumulate detrimentally.
- A constant grease supply ensures that the **bearing seals** last longer.
- GREASE MAX<sup>®</sup> has no electrical or mechanical components, which could lead to unreliability.



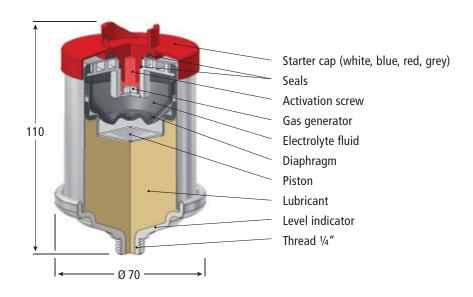
• GREASE MAX<sup>®</sup> has a **solid steel body** ensuring that it withstands high operating pressures and ambient temperatures.

### 3. Function and Structure of GREASE MAX®

*GREASE MAX*<sup>®</sup> is activated by screwing in the colour coded plastic starter cap into the bottom of the lubricator. The colour coding of this cap matches the colour coding of the pre-installed plastic activation screw.

When the starter cap is screwed in, the pre-assembled activation screw automatically gets screwed in, too, and presses a gas generator into the closed reaction diaphragm. In the diaphragm there is an electrolyte fluid (KOH), which triggers a galvanic reaction at the gas generator. The generated gas expands the diaphragm and as it does so, a steel piston, which is located between the diaphragm and the lubricant, is continuously advanced. Thus, lubricant is reliably released in constant rates.

The following drawing serves to illustrate the function and **construction of GREASE MAX**®:



*GREASE MAX*<sup>®</sup> requires approximately 8 hours with a type "1 month" unit and approximately 40 hours with a type "12 month" unit to develop sufficient internal pressure to commence discharging lubricant. This period in general is no problem for well-maintained bearings. However, if lubrication is required earlier, *GREASE MAX*<sup>®</sup> should be activated accordingly prior to assembly.

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*GREASE MAX*<sup>®</sup> has no internal pressure prior to activation. The pressure is only generated after activation of the lubricator. The lubricant discharge pressure is virtually in equilibrium with bearing or grease line resistance.

The chemical reaction is designed to ensure a **constant delivery rate** throughout the whole runtime of the lubricator. The *GREASE MAX*<sup>®</sup> discharge quantity is **not affected by** severe conditions of use such as **dust, moisture, jerky movement, strong vibration, etc.** 

### 4. Installation and Use of GREASE MAX®

The starter cap and activation screw are colour coded. Kindly ensure that the **colour of the starter cap matches the colour of the activation screw** in the base of the *GREASE MAX*<sup>®</sup>.

**1. Hand-tighten the starter cap into the bottom of the lubricator.** While the starter cap is turned down, you can feel the plastic bottom of the membrane breaking through. Please continue to turn in the starter cap **until it is tight.** 

2. Then tighten the starter cap firmly with a screwdriver or similar tool (lever) (approximately 1/4 turn more). This is essential to ensure a gas and liquid tight seal.

#### Do not loosen the start cover or even remove it!

Now *GREASE MAX*<sup>®</sup> is activated and begins to build up pressure. Until the lubricant starts, you can count on the following **start times**:





**1 month** Type: **GM ... 01W** Start time approx. 8 hrs



**3 months** Type: **GM ... 03B** Start time approx. 24 hrs



6 months Type: GM ... 06R Start time approx. 30 hrs



**12 months** Type: **GM ... 12G** Start time approx. 40 hrs

We recommend to pre-grease the lubrication point with a grease press before the first installation of the lubricator. This ensures that the lubrication paths are not clogged by old, hardened lubricant and that the bearing shell is filled with grease. Subsequent lubrication will not be required when replacing the device, as previous use of *GREASE MAX*<sup>®</sup> will have ensured that there is sufficient lubricant in the bearing shell.

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GREASE MAX<sup>®</sup> has been designed to operate in a variety of conditions:

- Strong vibration or impact load
- Underwater and wet areas
- Heat and cold
- All mounting positions
- · Influence of dust, dirt and corrosive substances

#### 5. Effect of Ambient temperature on the Discharge quantity

The standard run times of *GREASE MAX*<sup>®</sup> are set to an average ambient temperature of 25 ° C. Runtime and discharge quantity of *GREASE MAX*<sup>®</sup> will vary as the average ambient temperature changes. The table below illustrates this situation:

<b>Type 01 Whit</b> e 1 month			<b>Type 03 Blue</b> 3 months		<b>Type 06 Red</b> 6 months		<b>Type 12 Grey</b> 12 months	
Ø Ambient temperature	Runtime in months	Grease supply in g / day	Runtime in months	Grease supply in g / day	Runtime in months	Grease supply in g / day	Runtime in months	Grease supply in g / day
65°C	0.15	24.0	0.5	8.0	1	3.6	2	1.8
55°C	0.3	12.0	1	3.6	2	1.8	4	0.9
45°C	0.5	7.3	1.5	2.3	3	1.2	6	0.6
35°C	0.7	5.2	2.5	1.5	4.5	0.8	9	0.4
25°C	1	3.6	3	1.2	6.0	0.6	12	0.3
15°C	1.5	2.3	4.5	0.8	9.0	0.4	18	0.2
5°C	2	1.8	6	0.6	14	0.26	28	0.13
-5°C	4	0.9	12	0.3	24	0.15	48	0.08
-15°C	6	0.6	18	0.2	36	0.1		
-25°C	9	0.4	27	0.13				

#### Duration and change interval of GREASE MAX®

Note: The average ambient temperature is the average temperature at the lubricator during the entire run time.

Short-term temperature deviations up or down have little or no effect on the overall running time of *GREASE MAX*<sup>®</sup>. These include e.g. time periods with exceptionally hot or cold days.



### 6. Pressurization by GREASE MAX®

*GREASE MAX*<sup>®</sup> can develop a maximum discharge pressure of up to 8 bar. In practice, the operating pressure is considerably lower: The pressure required to introduce lubricant into a rotating bearing is not so high when the grease nipple is removed. *GREASE MAX*<sup>®</sup> accumulates a pressure and keeps the discharge pressure in equilibrium with the back pressure of the lubrication point. It is thus always just as much lubricant supplied as the lubrication point currently requires. This process describes the fully automatic self-regulation principle of *GREASE MAX*<sup>®</sup>.

A grease press generates a higher pressure to overcome the resistance of the grease nipple. Over-lubrication with excessive pressure can cause damage to the bearing and its seal. The use of *GREASE MAX*<sup>®</sup> avoids damage of this kind.

*GREASE MAX*<sup>®</sup> generates enough pressure to carry lubricant through extension pipes of up to 2 meters in length (see point 8).

### 7. Impact of back pressure

*GREASE MAX*<sup>®</sup> builds up its discharge pressure to the point where there is a balance between the back pressure of the lubrication point and the discharge pressure of *GREASE MAX*<sup>®</sup>. If *GREASE MAX*<sup>®</sup> was activated and not mounted on a lubrication point, the lubricator would have been emptied before the end of the operating time.

If *GREASE MAX*<sup>®</sup> is screwed onto a lubrication point that creates a back pressure, *GREASE MAX*<sup>®</sup> builds the pressure balance in a short time and will then reliably empty according to its running time. *GREASE MAX*<sup>®</sup> **automatically adapts to the resistance of the lubrication point:** If no lubricant is required at times, the pressure inside the lubricator is stored until the lubrication point demands more lubricant.

#### 8. Installation with extension pipes

*GREASE MAX*<sup>®</sup> easily can be combined with extension hoses or metal extension pipes to achieve difficult-to-reach lubrication points. If hoses are used, retaining clips are required for the attachment of *GREASE MAX*<sup>®</sup>. Numerous accessories are available in our range.

The following dimensions must be considered:

Lubricant	Max. length of pipe	Required inner diameter of pipe
Grease	2 m	8 mm
Oil	10 m	3 mm

**Note:** It is possible to install *GREASE MAX*<sup>®</sup> on longer feed pipes than listed above. For installations outside these dimensions, please contact **Oberrecht GmbH**  $\square$  or our sales partners.

**Attention: All extension lines must be pre-filled with lubricant.** We supply you with appropriate lubricants - even in smaller quantities. Use nylon extension tubes so that the condition of the lubricant can always be monitored.





### 9. GREASE MAX® with Oil filling

*GREASE MAX*<sup>®</sup> is available filled with a variety of oils, e.g. for the lubrication of slides, rails, guides, chains, steel cables and much more. All commercially available oils in the common viscosity classes are available; also special products with adhesion additives, synthetic oils and products for the food industry with NSF-H1 approval.

Oil-filled lubricators must be mounted with the lubricant outlet facing up. If this is not possible, a check valve must be screwed on to prevent uncontrolled leakage of the oil.

**Chains and ropes:** *GREASE MAX*<sup>®</sup> lubricates chains and steel cables of all kinds economically and reliably. You only need one set of accessories: control valve, retaining clip, grease brush and possibly a flexible extension pipe.

A complete list of accessories can be found at www.oberrecht.de

### 10. Replacement of GREASE MAX® and Level indicator

We recommend changing *GREASE MAX*<sup>®</sup> in conjunction with the lubrication and maintenance schedule of your machines and plant. This optimizes your maintenance operations and ensures that there is a regular change of expired lubricators.

Change the lubricator every 1, 3, 6 or 12 months according to the running times. We recommend not to spend any time on checking if the piston would be visible in the transparent plastic cone of the lubricator after the set time has elapsed. It is much more economical to change the lubricator according to a fixed schedule, even if there is still a small amount of lubricant left.

**Level indicator:** *GREASE MAX*<sup>®</sup> was designed in such a way that at the end of its runtime the piston as a silver ring becomes clearly visible through the transparent plastic cone. At this state still about 10% lubricant are available. *GREASE MAX*<sup>®</sup> continues to operate reliably until all the lubricant has been delivered and the piston rests directly against the plastic cone.

**Caution:** When using  $MoS_2$  and graphite greases, or with very heavily coloured products, it may happen that the piston is not clearly visible after the lubricator has run out.



## 11. Standard lubricant range and Special fillings

GREASE MAX<sup>®</sup> we have selected only high-quality lubricants with large power reserves.

Below you will find the selection of our standard lubricants. These lubricants cover most applications. We are happy to advise you on the selection of the right lubricant and are always available for information regarding special fillings with the lubricant of your choice.

#### **GREASE MAX<sup>®</sup> standard lubricant range:**

Lubricant Code	Description	Basis	Operating temperature range °C	Dropping point °C	Application
F-001	Multi-purpose grease EP NLGI 2	Li, Ca	-30 – 120	155	Universal - DIN KP2K - 30
F-002	High temperature grease NLGI 1/2	Polyurea	-30 — 150 short-term 170	215	Long-term lubrication, use at high temperatures – DIN KP2P - 30
F-003	High performance EP grease + MoS <sub>2</sub> NLGI 2	Li, Ca	-30 – 120	150	Use at high stress with emergency running properties – DIN KPF2K - 30
F-004	High temperature grease + MoS <sub>2</sub> NLGI 1/2	Polyurea	-35 – 150 short-term 170	220	Long-term lubrication at very high stress and high temperatures, emergency running properties, DIN KPF2P - 30
F-006	Gear fluid grease EP NLGI 0	Li	-25 – 100	150	Gear drive, Chain drive DIN KPOK - 40
F-100	High performance grease for the food industry NLGI 2	Al-complex	-10 – 180	268	Food processing, filling and packaging machines, NSF H-1, USDA H-1, HACCP
0-001	Spindle oil CL/HL	Mineral oil	ISO VG	10	Spindle bearings on high-performance textile and precision machines
0-004	Multi-purpose oil CLP / HLP / CGLP	Mineral oil	ISO VG 68		Highly loaded bearings, excellent wear and corrosion protection
0-015 0-016	Adhesive oil	Mineral oil	ISO VG 320 ISO VH 220		Adhesive oil for lubrication of chains, bolts, plungers, joints and bearings
O-100	High performance oil	Synthesis oil	ISO VG 220		Extremely pressure-sensitive adhesive lubricant, capable of creep and hot water resistant

#### 12. Identification of GREASE MAX®

- **1. Lubricant code:** On the label of the lubricator a lubricant code is imprinted e.g. F001 for the multi-purpose grease EP (see table above).
- **2. Manufacturing Code:** Additionally, behind the lubricant code you will find the month and the year of manufacture on the label.





**3. Running time:** The activation screw and the starter cap each have a colour coding corresponding to the running time. The table below shows the labeling of the four types.

Colour coding of the running time of GREASE MAX®:

Colour	Туре	Discharge Period at 25°C
<b>W</b> hite	01 W	1 month
Blue	03 B	3 months
Red	06 R	6 months
Grey	12G	12 months

Attention: The colour of the activation screw in the bottom of the lubricator must always match the colour of the starter cap!

### 13. Selection of the right Operating period

There are no hard and fast rules for selecting the type of *GREASE MAX*<sup>®</sup> to be used on any given application. Every bearing is different, the variety of operating conditions is unlimited, and other factors need to be taken into account such as wear, seal condition, moisture presence, heat, etc.

Areas of application, lubrication points and operating conditions are very different in practice. We recommend to first determining the lubricant requirement of the lubrication point. For this, the maintenance requirements of the machine are usually used.

#### The following parameters must be taken into account:

- Degree of utilization of the machine, condition of the lubrication point and its sealing, weather conditions, dust, dirt etc.
- If the lubricant requirement is clear, the correct running time can be easily read from the table on page 5. See column **"Lubricant supply in g / day"**.
- The following **guide values**, based on the shaft diameters, support your selection:

Shaft Size	Runtime / Type
100 mm - 160 mm	1 month / 01W
60 mm - 100 mm	3 months / 03B
30 mm - 60 mm	6 months / 06R
bis zu 30 mm	12 months / 12G

For shaft sizes larger than 160 mm, we recommend coupling two lubricators together using a T-piece.

# If moisture, severe dirt or dust, wear, strong vibration or other aggravating factors are present, then you should choose the next fastest running time *GREASE MAX*<sup>®</sup>.

In addition, the following **"rule of thumb"** can be helpful - According to manual lubrication with the aid of a hand lever grease gun for cartridges with an output of about 4 g lubricant per stroke, the following dispenser running times can be derived:

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Hand lever grease gun	Runtime / Type
1 Hub pro Tag	1 month / 01W
1 Hub pro ½ Woche	3 months / 03B
1 Hub pro Woche	6 months / 06R
1 Hub pro 2 Wochen	12 months / 12G

For information regarding the selection of the right duration, you can always contact **Oberrecht GmbH** [] • or our sales partners.

### 14. Storage of GREASE MAX®

We recommend a maximum storage time of 2 years at room temperature, in dry and well ventilated rooms.

#### 15. Work safety, reports and certificates

*GREASE MAX*<sup>®</sup> significantly improves the safety of maintenance personnel, since automatic lubricant supply means that dangerous plant and machine areas are much less to be frequented. *GREASE MAX*<sup>®</sup> can be attached in a way that allows to change the lubricator during operation. Downtimes are minimized, thus productivity increased.

*GREASE MAX*<sup>®</sup> contains a small amount of potassium hydroxide (KOH) as a reliable propellant. The activation system was designed as a **"twin-screw system"** (see cross-sectional drawing, page 3) so that no pressurized propellant can escape from the lubricator even if handled improperly.

*GREASE MAX*<sup>®</sup> and its components are manufactured in Germany. The lubricator has been **analyzed**, **tested and approved by independent testing laboratories and institutes.** More details are available on request.

For your safety-related documentation, we will gladly send you the EC safety data sheet in the current version upon request.

### 16. Cost savings through GREASE MAX®

The use of *GREASE MAX*<sup>®</sup> is very economical. At a price of e.g. EUR 20, - \* per lubricator, automatic lubrication costs only 11 cents per day for a type 06R (6 months runtime). An overview of the daily costs can be found on the following page.

\*) The price depends on the type of lubricant and the purchase quantity, and may be higher or lower than the price in this example.



#### **Daily costs for** *GREASE MAX*<sup>®</sup>:

Runtime / Type	Daily cost
1 month / 01W	50 Cent
3 months / 03B	17 Cent
6 months / 06R	8 Cent
12 months / 12G	4 Cent

More specifically, *GREASE MAX*<sup>®</sup> offers the following business advantages:

- Increase of productivity the machine or plant does not have to be switched off for lubrication
- Labor cost savings over manual lubrication
- Further cost savings through less wear, less damage, repairs and downtime

#### 17. Accessories and Installation parts

An extensive range of accessories and fittings that meet all the requirements for the fast and flexible installation of *GREASE MAX*<sup>®</sup> is part of our product range. An overview will be sent to you on request.

### 18. Environment, Disposal and Recycling

The spent lubricator is disposed of as oil polluted industrial waste, e.g. together with used oil filters. As a rule, this waste is used thermally and the residual metal is **recycled**. The currently valid waste disposal codes can be found in the official directories.

#### **19. Quality**

*GREASE MAX*<sup>®</sup> is manufactured to the **highest quality standards**. We commit ourselves to providing an **excellent product with optimal service**. For our branded product we do not use any parts or assemblies that could contribute to unreliability, such as electrical or mechanical components and plastic housing. Only **high quality materials and lubricants** are used, goods receipt and departure are controlled and documented, and **the product and its production are certified**. Further details are available on request.



Technical Information *GREASE MAX*<sup>®</sup>



### 20. Twelve Questions and Answers about GREASE MAX®

# 1. How can you be sure that *GREASE MAX*<sup>®</sup> works, without the position of the piston being visible?

Remember that *GREASE MAX*<sup>®</sup> has only one moving part, the piston. There are no mechanical parts and no electronics that could be prone to failure. We use a drive system that has proven to be absolutely reliable for over 25 years. The simple but effective drive principle is very powerful, the robust construction of *GREASE MAX*<sup>®</sup> is almost indestructible.

## If *GREASE MAX*<sup>®</sup> is operated according to the operating instructions, you can expect a **faultless function.** If you still want to take a test just to be sure, the following two points can help you:

- In a well-lubricated bearing, you will usually see a small amount of fresh grease running along the bearing seal.
- A well-lubricated bearing is not hot without additional external heat. For checking, use a temperature measuring device as a precaution..

#### 2. Does *GREASE MAX*<sup>®</sup> discharge faster on a worn out bearing?

No, thanks to the self-regulating membrane, *GREASE MAX*<sup>®</sup> always has a compensation possibility. Due to the automatic regulation there is always a pressure equalization between bearing and lubricator. The correct discharge rate is guaranteed regardless of the type of bearing, tolerances or operating conditions.

#### 3. Is a 12 month version larger than a 1 month version?

No, the lubricators are all the same size and with the same lubricant content of 120 ccm. The only difference is the amount of gas production and thus the size of the daily lubricant supply (see table on page 5).

## 4. The system is switched off regularly, for example on weekends. Is this causing problems due to over-lubrication?

No, *GREASE MAX*<sup>®</sup> empties slowly. If no lubricant is used, the lubricant is stopped by the higher back pressure and the newly generated pressure is stored within the diaphragm. If the plant is restarted, the lubrication point is supplied with lubricant again according to the accumulated pressure. The membrane thus serves as a buffer, over lubrication cannot occur.

#### 5. Are 120 ccm of lubricant enough?

Yes. If you lubricate e.g. With a hand grease gun, a relatively large amount of lubricant is consumed – some of it is already lost when filling the grease gun lubricant, often a considerable amount is pressed past the grease nipple. In addition, lubricant is pressed through the bearing unused, thus polluting your installation. This does not happen with *GREASE MAX*<sup>®</sup>: The lubricant is used optimally right at the lubrication point.

Provided that the correct *GREASE MAX*<sup>®</sup> is chosen at the beginning, the quantity is sufficient. As an added benefit, your system stays cleaner!

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6. What can be done if the lubricant quantity of one unit of GREASE MAX<sup>®</sup> is insufficient? You can use a T-piece to couple two lubricators together. Thus, the lubricant delivery can be doubled. Please only do use lubricators with the same running time.

#### 7. Could one unit of *GREASE MAX*<sup>®</sup> supply several lubrication points?

No, the lubricant quantity cannot be evenly distributed to several lubrication points. The lubricant always chooses the path of lesser resistance, i.e. one lubrication point would inevitably be supplied with too little lubricant and thus take damage.

## 8. We unscrewed *GREASE MAX*<sup>®</sup> and no lubricant came out, although there was still a reserve. What is the reason?

It is only possible to see a strong lubricant output when *GREASE MAX*<sup>®</sup> is used at a lubrication point with high resistance. This builds up a larger operating pressure, which escapes when unscrewing. If *GREASE MAX*<sup>®</sup> is used at a low back pressure lubrication point (which is common), less pressure is accumulated in the lubricator. When unscrewing in this case, only a small amount of lubricant is squeezed out of the lubricator.

Our tip: Keep the lubricator aside - you can see that lubricant is about to be released shortly.

#### 9. Why should GREASE MAX<sup>®</sup> not be removed during operation from the lubrication point?

If *GREASE MAX*<sup>®</sup> works under high pressure in your application, this pressure would be lost when unscrewing. In such case, a lot of lubricant is squeezed out. The chemical reaction that creates the pressure may not be strong enough to produce the required pressure a second time. If this lubricator would be screwed on again, the result may be a shortage of lubricant supply.

#### 10. Why does not *GREASE MAX*<sup>®</sup> have a transparent housing?

For a good reason, *GREASE MAX*<sup>®</sup> has a metal housing instead of a transparent plastic housing. The metal case is solid and stable, it does not deform under heat and pressure – both conditions that often occur in practice. Plastic deforms much easier, the lubricator could fail.

The only disadvantage is that the constant shifting of the piston is not visible. However, the benefits in terms of performance and reliability of *GREASE MAX*<sup>®</sup> outweigh by far.

## 11. Isn't it better that the bearings can be checked for damage during the conventional lubrication process?

It is obvious that the time required for conventional lubrication can be more efficiently invested by using *GREASE MAX*<sup>®</sup>. The saved time can be used for a better maintenance result. The condition of the bearings and lubrication points can be checked as part of the inspections according to a lubrication and maintenance schedule. If bearings are lubricated correctly with the help of *GREASE MAX*<sup>®</sup>, the service life is considerably increased. When replacing the lubricator, the bearing can be checked correctly, as a test is required only in relatively long time intervals.





The time saved can be used more reasonably for other work. By this approach, the maintenance and repair costs per unit are significantly reduced.

#### 12. Why can one not turn off *GREASE MAX*<sup>®</sup> and set the run times variably?

*GREASE MAX*<sup>®</sup> has been designed so that the lubricator works completely independently and reliably in all applications. We prefer not to compromise on any design aspect that could lead to unreliability. Complexity and the use of electronic components considerably increase the risk of failure and the risk of misuse. *GREASE MAX*<sup>®</sup> withstands every comparison.

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