



automatic lubricator  
*simply superior!*

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### Disclaimer

The information in this document is for general use by *GREASE MAX*® users. It is not intended to be exhaustive in content but will cover most of the points that should be known. Please contact **TECSIA ENGINEERING** for specialist advice.

Every effort has been made to provide accurate and complete information. However **TECSIA ENGINEERING** assumes no responsibility for any direct, indirect, incidental, or consequential damages arising from the use of information in this document. The manufacturer and importer reserve the right to make changes to the design and specifications of *GREASE MAX*® without notice.

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## **1. GREASE MAX<sup>®</sup> - DESCRIPTION**

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

It is designed to be screwed into the bearing grease nipple seating, or onto an extension line, and to feed lubricant at a **CONSTANT RATE** for a **SET PERIOD** of time.

**GREASE MAX<sup>®</sup>** is designed to operate for a set period of time. There are 4 operating periods; 1, 3, 6, and 12 months. After the service time has elapsed, the unit is replaced with a new unit.

Because it is self regulating it should be used in conjunction with the plant maintenance scheduling. Therefore changeovers of the **GREASE MAX<sup>®</sup>** can be planned and carried out at set periods.

**GREASE MAX<sup>®</sup>** operation is simple and trouble free. Quite frequently its capabilities are not at first appreciated because of its simplicity.

**GREASE MAX<sup>®</sup>** can be used anywhere; on most applications, both large and small, even underwater.

Importantly, **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. ADVANTAGES**

- **Direct cost savings over manual greasing.**
- **Direct cost savings by reducing the necessity to stop machinery and production for lubrication.**
- **Indirect cost saving with reduced maintenance** and down time from bearing failures caused by incorrect or missed lubrication.
- **Lubrication occurs when the plant is in operation**, when it is of the most benefit.
- Constant replenishment of new grease, which **minimises bearing wear**.
- The **bearing is sealed** while **GREASE MAX<sup>®</sup>** is in use.
- **Dust and moisture are prevented from entering the bearing.**
- The **lubrication is fully automated** and changeovers can be programmed into the plant maintenance schedule.

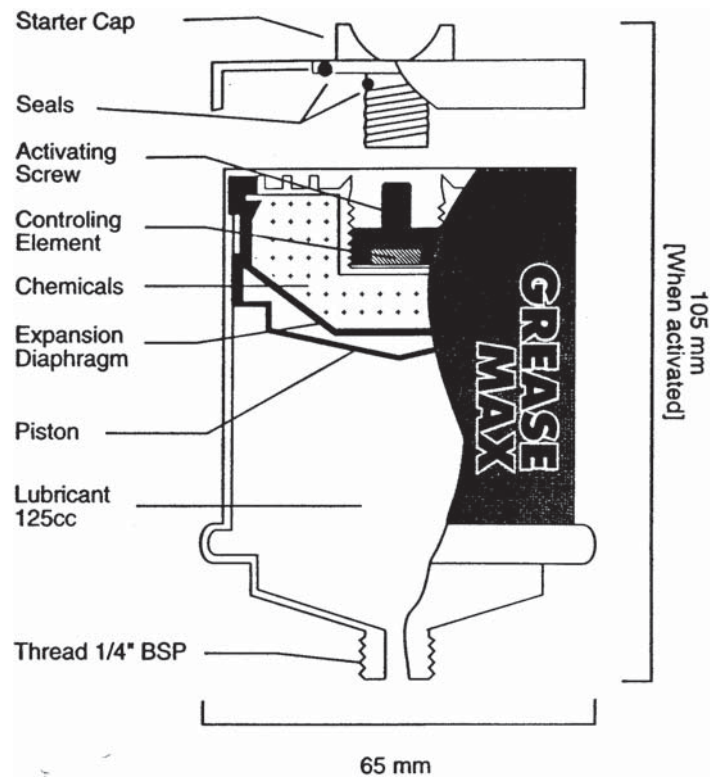
- **Lubrication is cleaner and environmentally responsible;** there is no excess lubricant affecting either plant cleanliness or the environment.
- **Safety is improved** as operators are not required to lubricate hazardous areas so frequently.
- **GREASE MAX<sup>®</sup>** ensures that as a warm or hot bearing cools, the slight vacuum normally created **does not draw in foreign material.**
- A continuous supply of fresh lubricant **flushes out any foreign matter, moisture or harmful chemical substances** which may otherwise accumulate in the bearing if it is unused for some time.
- A constant grease supply ensures that **seals are lubricated and more effective in preventing contamination.** This is particularly the case with labyrinth seals.
- **GREASE MAX<sup>®</sup>** has no electrical or mechanical components (which can contribute to unreliability).
- **GREASE MAX<sup>®</sup>** has a steel body ensuring that it efficiently handles high output pressures and heat with total reliability.
- **GREASE MAX<sup>®</sup>** has the highest output pressure of any product of this type.

### 3. OPERATION OF **GREASE MAX<sup>®</sup>**

**GREASE MAX<sup>®</sup>** is activated by screwing in the colour coded plastic starter cap. The colour coding of this cap should match the colour coding of the plastic activating screw in the base of **GREASE MAX<sup>®</sup>**, (into which this cap is screwed).

When the starter cap is screwed in, a controlling element located internally in **GREASE MAX<sup>®</sup>** is forced into a reagent, contained in a neoprene expansion diaphragm. When this occurs a galvanic reaction commences, and gas is produced. The gas expands the diaphragm and as it does so a steel piston (located between the diaphragm and the lubricant) is pushed down and the lubricant is forced out.

See diagram of **GREASE MAX<sup>®</sup>** on next page.



**GREASE MAX®** requires a minimum of approximately 8 hours for a type 1 unit to approximately 40 hours for a type 12 unit to develop sufficient internal pressure to commence discharging lubricant. This period is normally not a problem for well maintained bearings however if lubrication is required in less than the start up period then activate **GREASE MAX®** in advance.

**GREASE MAX®** has NO INTERNAL PRESSURE prior to activation. Pressure is developed, and the lubricant discharge pressure is virtually in equilibrium with bearing or grease line resistance.

The chemical reaction is so designed as to give a **CONSTANT** rate of reaction, over the whole life of the unit. **This results in a CONSTANT lubricant output. The GREASE MAX® discharge rate is not affected by bearing or seal condition, movement, vibration, etc.**

It is often assumed that **GREASE MAX®** has some sort of pre-loaded internal pressure. This is NOT the case. If it were, **GREASE MAX®** could not operate as a truly self regulating automatic lubricator as it would then rely on bearing and line resistance to control its operation.

## **4. INSTALLATION**

The starter caps are color coded. **Ensure that the color of the starter cap matches the color of the activator screw in the base of the GREASE MAX<sup>®</sup>**, into which the starter cap will be screwed.

1. Screw the starter cap in hand tight. (While the starter cap is being turned down, the seals will be heard to break. Continue to turn the starter cap in until it is **tight**).
2. **Then use a screw driver or similar with a shank size of 8mm - 10mm to tighten the cap FIRMLY (approximately 1/4 of a turn more). This is essential to ensure a gas and liquid tight seal.**

**Do not loosen the starter cap or attempt to remove it.**

When this has occurred **GREASE MAX<sup>®</sup>** is operational. Allow the following minimum starting times: 1 month units - 8 hours, 3 month units - 24 hours, 6 month units - 30 hours, 12 month units - 40 hours, for lubricant discharge to commence. (see "Operation of **GREASE MAX<sup>®</sup>**" section 3.).

**Pre grease with a grease gun before the first installation.** The short time delay will not adversely affect bearings which have been properly pre greased before the installation of **GREASE MAX<sup>®</sup>**. For subsequent installations, pre greasing is not necessary as prior use of **GREASE MAX<sup>®</sup>** will have ensured that there is adequate grease in the bearings.

**Pre-greasing before the first installation of GREASE MAX<sup>®</sup> is also important to ensure that all grease ways are free of old hard grease which can block completely the grease ways.**

**GREASE MAX<sup>®</sup>** is designed to operate in most conditions. It will operate satisfactorily in:

- **Areas of severe vibration.** (If this includes high shock loading, to prevent long term failure of the plastic mounting points, use mounting brackets and flexible feed lines, supplied by **TECSIA ENGINEERING**).
- **Underwater or wet installations.**
- **GREASE MAX<sup>®</sup>** is not affected by large daily temperature cycles which can cause condensation problems with some types of equipment.
- **Heat and cold** (see discharge table below for discharge rate variations)
- **GREASE MAX<sup>®</sup>** units with grease may be mounted in any position. Movement is OK but brackets may be required to support the unit. For oil filled units see section 4.5.

**4.1. Affect of heat on the discharge rate of GREASE MAX<sup>®</sup>**

**GREASE MAX<sup>®</sup>** is designed to operate at an average environmental temperature of 25<sup>0</sup>C. The discharge rates and operating period of **GREASE MAX<sup>®</sup>** will be different if the average temperature is different. The table below gives details.

Ambient environmental temp.	Type 01 White (1 mth)		Type 03 Blue (3 mth)		Type 06 Red (6 mth)		Type 12 Grey (12 mth)	
	Life in months	Grease supply / day grams	Life in months	Grease supply / day grams	Life in months	Grease supply / day grams	Life in months	Grease supply / day grams
65 <sup>0</sup> C	0.15	24.0	0.5	8.0	1	3.6	2	1.8
55 <sup>0</sup> C	0.3	12.0	1	3.6	2	1.8	4	0.9
45 <sup>0</sup> C	0.5	7.3	1.5	2.3	3	1.2	6	0.6
35 <sup>0</sup> C	0.7	5.2	2.5	1.5	4.5	0.8	9	0.4
<b>25<sup>0</sup>C</b>	<b>1</b>	<b>3.6</b>	<b>3</b>	<b>1.2</b>	<b>6.0</b>	<b>0.6</b>	<b>12</b>	<b>0.3</b>
15 <sup>0</sup> C	1.5	2.3	4.5	0.8	9.0	0.4	18	0.2
5 <sup>0</sup> C	2	1.8	6	0.6	14	0.26	28	0.13
-5 <sup>0</sup> C	4	0.9	12	0.3	24	0.15	48	0.08
-15 <sup>0</sup> C	6	0.6	18	0.2	36	0.1		
-25 <sup>0</sup> C	9	0.4	27	0.13				

**Note: The average environmental temperature is the average temperature that occurs over the whole life of the unit.**

Temperature variations above or below 25<sup>0</sup>C over a short period of time will have little or no affect on the overall life of **GREASE MAX<sup>®</sup>**. For example, periods of exceptionally hot or cold days.

**4.2. Output pressure of GREASE MAX<sup>®</sup>**

**GREASE MAX<sup>®</sup>** can develop a maximum discharge pressure of approximately 150 psi. In practice, the operating pressure is much lower than this as the pressure required to move grease into a rotating bearing, with the grease nipple removed, is not great. **GREASE MAX<sup>®</sup>** holds the output pressure virtually in equilibrium with grease way resistance.

A grease gun needs high pressure, principally to overcome the resistance of the grease nipple. It also has to get grease into a stationary bearing, which can require a lot of pressure in some instances.

**GREASE MAX<sup>®</sup>** has enough pressure to move grease through 2 metres of extension line. See below for details.

#### **4.3. Affect of bearing and grease way pressure**

**GREASE MAX<sup>®</sup>** builds up discharge pressure to the point where fundamentally a balance exists between the resistance of the grease way and the output pressure of the **GREASE MAX<sup>®</sup>**. For example, if **GREASE MAX<sup>®</sup>** is activated and allowed to discharge without being placed on a bearing, the full operating period will be taken before the unit is empty. If **GREASE MAX<sup>®</sup>** is activated and placed on a grease-way requiring pressure **GREASE MAX<sup>®</sup>** will build up to this pressure and then discharge according to its' normal operating period. **GREASE MAX<sup>®</sup> adjusts to grease way resistance, but does not rely on this resistance to control its' operation.**

**GREASE MAX<sup>®</sup>** will maintain the pressure balance. If something occurs to change the grease way resistance then **GREASE MAX<sup>®</sup>** will automatically adjust its' discharge pressure to accommodate this change.

#### **4.4. Installation with extension lines**

**GREASE MAX<sup>®</sup>** may be used with extension lines supplied by **TECSIA ENGINEERING** for remote positioning. Extension lines are also useful for installations where extreme movement or shock loadings may be applied to the **GREASE MAX<sup>®</sup>**. In this case, mount the **GREASE MAX<sup>®</sup>** firmly in a bracket (which **TECSIA ENGINEERING** can supply) and feed the lubricant into the bearing via tubing.

<b>Lubricant</b>	<b>Maximum line length</b>	<b>Min. INSIDE diameter</b>
Grease	2 metres	8 mm
Oil	10 metres	3 mm

**Note: It is possible to install **GREASE MAX<sup>®</sup>** on longer feed lines than the above. For proposed installations outside these limits consult **TECSIA ENGINEERING** for specialist advice.**

**All extension lines MUST be pre-filled with lubricant.** We recommend only nylon extension lines, so that the condition of the lubricant can always be observed.



#### 4.5. Oil units

**GREASE MAX<sup>®</sup>** can be used with a variety of oils for lubrication of bushes, slides, chains, conveyors, -for example to lubricate the undersides of steel slat type conveyors used in applications such as bottle manufacturing and so on.

**GREASE MAX<sup>®</sup>** oil units should be mounted with the outlet upwards or preferably used with a **control valve** (Part Number GF16000) to prevent the oil draining out if the outlet is downwards or if the **GREASE MAX<sup>®</sup>** oil unit is feeding an extension line, particularly if the extension line feeds vertically upwards. Control valves are also needed if **GREASE MAX<sup>®</sup>** oil units are being used to lubricate pneumatic systems.

**Chain lubrication:** **GREASE MAX<sup>®</sup>** can efficiently and economically lubricate chains of all types. You will need to use 115 oil which has special tacky additives for use on chains, slides etc. and some fittings: a control valve, a bracket, a brush and possibly a flexible extension line. A full list of **GREASE MAX<sup>®</sup>** product codes and fittings is on the Fittings page.

### 5. CHANGING **GREASE MAX<sup>®</sup>**

Ideally **GREASE MAX<sup>®</sup>** should be used in conjunction with the plant maintenance schedule. This minimises the time taken for lubrication and ensures that an orderly change over of expired units takes place.

**GREASE MAX<sup>®</sup>** are designed to have a small service life overrun to prevent damage to bearings if the changeover date is not accurately kept. For example, a type 3 unit, at normal temperature, will operate for 100 days, which is of course 9 days more than the 91 day average for 3 consecutive months.

We recommend that time is not spent checking for the piston to appear in the cone of the unit after expiry of the scheduled time. It is far more economical to change the units on a fixed schedule, even if a small amount of grease remains. In any event the costs and savings are calculated on set time periods, and the cost in time of attempting to exceed these periods with the resulting requirement for very regular checking is more than the value of the small amount of lubricant remaining.

**GREASE MAX<sup>®</sup>** is designed so that the piston will first become visible as a silver ring in the plastic end cone when there is approximately 10 % of lubricant remaining. This is to give a visual forward warning of expiry. **GREASE MAX<sup>®</sup>** will continue to operate until all lubricant is expelled. At this point all of the piston is visible.

**Caution: When using Moly grease in **GREASE MAX<sup>®</sup>** the piston may not be visible at expiry. (This is due to the opacity of the grease).**

## 6. LUBRICANTS

**GREASE MAX<sup>®</sup>** uses only very high grade lubricants. Most lubricants are not suitable for use under constant pressure, and suffer from separation under these conditions.

A range of greases and oils is available to cover most applications. **TECSIA ENGINEERING** are able to advise customers with special lubrication requirements as to the possibility of using alternative greases.

### **GREASE MAX<sup>®</sup> standard lubricants:**

Product Code	Description	Applications
GMLC200	Multi-purpose Premium Grease	Universal
GMPU700	Multi-purpose Polyurea Grease	High Temperature
GMMS200	Multi-purpose Molybdenum Disulfide Grease	High Load
GMMFG2WT	Food Grade Grease (White)	Food Processing
GMLCHT200	Multi-purpose, high temperature	High Temperature

Full lubricant specification sheets are available on request

## 7. IDENTIFICATION OF **GREASE MAX<sup>®</sup>**

1. **Lubricant type:** **GREASE MAX<sup>®</sup>** has a 4 digit alphanumeric code on the label, which corresponds with the lubricant code (see table above).
2. **The other 4 digit numeric group** on **GREASE MAX<sup>®</sup>** label is the production code (MM.YY).
3. **Operating Period:** **GREASE MAX<sup>®</sup>** are color coded according to the operating period. Look for the activator screw in the base of the unit, which will be one of the following colors, with corresponding discharge times:

Color	Type	Discharge Period @ 25° C
White	01	1 month
Blue	03	3 months
Red	06	6 months
Grey	12	12 months

**The color of the activating screw in the base of the unit must match the color of the starter cap.**

## 8. WHICH **GREASE MAX<sup>®</sup>** SHOULD BE USED?

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.

However the following can be taken as a guide:

Shaft Size	<i>GREASE MAX<sup>®</sup></i> type
100 mm-160 mm	1 mth
60 mm-100 mm	3 mth
30 mm-60 mm	6 mth
up to 30 mm	12 mth

- For shaft sizes greater than 160mm, use one or more **GREASE MAX<sup>®</sup>** coupled together.
- **If moisture, severe dirt or dust, wear, heavy vibration or other factors are present, consideration should be given to using a quicker acting *GREASE MAX<sup>®</sup>*.**

Additionally, the following "rule of thumb" may prove helpful:

In terms of strokes per day from a small hand grease gun, output approx. 0.6 cc per stroke, the *GREASE MAX<sup>®</sup>* discharge is roughly equivalent to:

<i>GREASE MAX<sup>®</sup></i> type	Strokes per day
1 mth	4 - 6
3 mth	2 - 3
6 mth	1
12 mth	0.5

Please contact **TECSIA ENGINEERING** for specialist advice. We offer advice free of charge, including site visits where installations are being planned or advice is needed.

## 9. SHELF LIFE

**GREASE MAX<sup>®</sup>** and the lubricants used in it have a shelf life of 2 years.

## **10. SAFETY**

**GREASE MAX<sup>®</sup>** will improve plant personnel safety by reducing the need to visit hazardous plant and equipment to lubricate. When properly installed, it is possible to change **GREASE MAX<sup>®</sup>** without stopping moving machinery, saving on down time.

**GREASE MAX<sup>®</sup>** uses a small quantity of 28 % solution of potassium hydroxide as part of its operation. For this reason it is important that the activating cap is not removed after the **GREASE MAX<sup>®</sup>** is placed in service. The screw cap is designed to prevent liquid under pressure exiting the unit. If this does occur wash any affected skin areas with water and refer to the MSDS. Note that it is not possible for the liquid to escape unless the unit is deliberately cut open or opened as above. Internally the steel piston has rubber seals so that in the unlikely event that the neoprene diaphragm is damaged the liquid cannot escape into the lubricant and gas pressure is maintained.

**GREASE MAX<sup>®</sup>** is designed to partially release the plastic cone from the metal body when discharge pressure exceeds 150 psi. This is to prevent continued pressure build up to dangerous levels.

Should a **GREASE MAX<sup>®</sup>** be observed in this state immediate maintenance is required as this situation is generally caused by blockages of the grease ways by old grease.

**GREASE MAX<sup>®</sup>**, made in Germany, has been tested as required by all the relevant German Safety Authorities and approved for both manufacturing and mining use without restriction. Further details are available on request.

## **11. COST ADVANTAGES OF GREASE MAX<sup>®</sup>**

**GREASE MAX<sup>®</sup>** is economical. More specifically, **GREASE MAX<sup>®</sup>** offers savings in the following areas:

- 1. Direct cost savings over manual greasing**
- 2. Direct cost savings attained by increasing production time by allowing machinery to continue operating when it would otherwise need to be stopped for greasing.**
- 3. Indirect cost savings with a reduction in break downs and associated down time**

## **12. ON SITE ADVICE AND TRAINING**

As part of our commitment to total customer support and service **TECSIA ENGINEERING** will make site visits for customer personnel training, general advice and technical support for engineering staff.

## **13. FITTINGS**

A full range of fittings, to suit all requirements for mounting **GREASE MAX<sup>®</sup>** are available. Please refer to the list on page 18. **SOHM Schmierstofftechnik** are also able to manufacture fittings to suit special requirements.

## **14. THE ENVIRONMENT & DISPOSAL**

Expired **GREASE MAX<sup>®</sup>** should be placed in the industrial waste. They retain pressure for a period after the service life is completed and this, combined with good housekeeping, means they should not be left lying around. **GREASE MAX<sup>®</sup>** does not contain any item which precludes burial in land fill or similar either according to law or according to good environmental practice. They may be recycled but the method should be chosen with care as **GREASE MAX<sup>®</sup>** should not be opened because of the residual pressure that remains for a period after expiry and as they contain a small quantity of caustic solution.

## **15. QUALITY**

**GREASE MAX<sup>®</sup>** is manufactured to the highest quality standards. **SOHM Schmierstofftechnik** is committed to providing the best product of this type together with the best technical support and training of personnel. As part of this commitment we will not introduce any element into the design of **GREASE MAX<sup>®</sup>** which can contribute to unreliability, such as electrical or mechanical components, plastic bodies, or by reducing components or using cheaper material including lubricants, to save on production costs.

## **16. COMMON QUESTIONS ASKED ABOUT GREASE MAX<sup>®</sup>**

### **1. How do I know GREASE MAX<sup>®</sup> is working, when the position of the piston can't be seen?**

Firstly, remember that **GREASE MAX<sup>®</sup>** has only one moving part, (the piston), no mechanical parts, and no electrics. It uses an operating system proven to be absolutely reliable over 25 years. The manufacturer has stringent quality control to ISO 9001 standard. It is very unlikely that non performance will be encountered.

The **GREASE MAX<sup>®</sup>** design is fail safe; the starter cap cannot be screwed in without turning the activator screw down, which in turn can only break the seals and release the controlling element into the chemicals. The only possible result then is the production of gas which must push the piston forward and the lubricant out. The gas is retained in a gas tight neoprene bag and also as part of the fail safe design by the gas tight seals on the piston and the double O-rings on the starter cap.

However, to be assured, check the following:

- Simply feel the bearing temperature if safe to do so, or use a thermometer.
- A fresh discharge of grease around the seals will be visible when **GREASE MAX<sup>®</sup>** is operating.

### **2. If I have a worn bearing will GREASE MAX<sup>®</sup> discharge faster?**

No, definitely not. **GREASE MAX<sup>®</sup>** is self regulating and is a true automatic lubricator. It will maintain it's correct discharge rate regardless of the bearing type, tolerance or operating conditions.

### **3. Does the orifice size affect the discharge rate?**

No. See section 3., Operation of **GREASE MAX<sup>®</sup>**.

### **4. Is a 12 month GREASE MAX<sup>®</sup> larger than a 1 month?**

No, they are all the same size. The only difference is the discharge rates. (see the diagram and notes on section 4.1.).

**5. The plant is regularly stopped, for example at the week end. Will this create a problem with over greasing?**

No. **GREASE MAX<sup>®</sup>** discharges at a very slow controlled rate and the amount of grease it can push into a bearing while the bearing is stopped for a few days will not cause a problem.

**GREASE MAX<sup>®</sup>** is able to maintain a fine balance of pressure and if the plant is stopped for short periods, for instance at the week end, the resistance of the grease way is increased. This will temporarily stop **GREASE MAX<sup>®</sup>**. When the plant starts again, the grease will be released into the moving bearing. (Eventually **GREASE MAX<sup>®</sup>** would build enough pressure to move grease into the stopped bearing).

**6. Will the 120 grams of grease in the GREASE MAX<sup>®</sup> be enough?**

When greasing is done with a grease gun, excess grease is used. Only a very small amount of grease is actually used by a bearing, the rest is wasted. Because **GREASE MAX<sup>®</sup>** introduces grease into the bearing at a slow controlled rate while the bearing is moving only a small output quantity is required.

Providing the correct **GREASE MAX<sup>®</sup>** is chosen to begin with, the output will be sufficient. An additional benefit is that the plant will remain much cleaner!

**7. For our application, GREASE MAX<sup>®</sup> output is not sufficient, even with a 1 month unit.**

Several **GREASE MAX<sup>®</sup>** can be grouped together into one line to provide a higher feed rate.

**8. Can we use one GREASE MAX<sup>®</sup> to feed two or more lines?**

No, never. The discharge cannot be evenly split, as every bearing has a different grease resistance. Inevitably one bearing will be starved of grease.

**9. We took the unit off and nothing came out!**

This is the most common "complaint" or misunderstanding with this product.

**GREASE MAX<sup>®</sup>** will only show a large and obvious discharge if it has been used on a bearing with a reasonable amount of grease way resistance.

If **GREASE MAX<sup>®</sup>** is applied to a bearing with little or no grease way resistance (which is common) and **GREASE MAX<sup>®</sup>** is unscrewed, nothing

should come out, except at **A VERY SLOW RATE**. Remember, **GREASE MAX<sup>®</sup>** operates in equilibrium with resistance.

This situation has confused many people so far, especially if they have removed the product from one bearing which has some resistance, seen the resulting discharge, and then removed another **GREASE MAX<sup>®</sup>** from a similar neighbouring bearing, which has no resistance and which therefore will not show an immediate discharge.

**10. Why shouldn't GREASE MAX<sup>®</sup> be removed from the bearing during operation?**

If **GREASE MAX<sup>®</sup>** is operating under a lot of pressure, when removed this pressure will be lost. The unit may have been at say, half life, so the piston will be halfway down the cylinder. The chemical reaction which produces the pressure is very slow **and to re-pressurise up to the required pressure the second time may take a considerable period**. Under-lubrication during this period may result.

(Note: when first installed there is no problem with the time taken to accumulate pressure as the internal volume in the expansion diaphragm is fully taken up with liquid so pressure develops quickly).

**11. Why doesn't GREASE MAX<sup>®</sup> have a transparent body?**

**GREASE MAX<sup>®</sup>** has a steel body for a very good reason. Steel does not deform under the heat and pressure likely to be encountered when using **GREASE MAX<sup>®</sup>** in some applications. Plastic does. If this were to occur, **GREASE MAX<sup>®</sup>** would suffer failure.

The disadvantage of course is that the progress of the piston can't be seen but **the advantages in terms of the performance and reliability of the unit far outweigh the disadvantages**.

**12. We think it is better to manually inspect the bearings while greasing**

As will be apparent, the time spent on manual greasing can be used more efficiently and the expense applied to a better maintenance outcome. If inspections are required they are better done by qualified personnel as part of a Condition Monitoring program. If the bearings are correctly lubricated and then correctly inspected, (which need only be at relatively extended intervals), bearing life will be considerably improved. Maintenance costs will be greatly reduced and the costs of unscheduled production stoppages in terms of lost production and unscheduled maintenance will be lowered.



**13. Why isn't GREASE MAX<sup>®</sup> adjustable?**

**GREASE MAX<sup>®</sup>** is made to be completely reliable in all conditions. We prefer not to compromise with any design aspect but particularly this one. To make it adjustable would mean added complexity and the addition of electrical components. This would inevitably degrade the reliability factor.

**14. How should GREASE MAX<sup>®</sup> be disposed of?**

In the industrial waste. DO NOT leave the expired units lying around for the curious to tamper with. Remember, **GREASE MAX<sup>®</sup>** contains a small amount of potassium hydroxide and a small amount of pressure for some weeks after expiry. The amount of lubricant remaining in an expired **GREASE MAX<sup>®</sup>** is very small and does not give rise to environmental concerns for disposal.