

THE GREASOMATIC'96

SELF CONTAINED AUTOMATIC LUBRICATOR

A GREASOMATIC '96

is a self-ejecting canister of lubricant designed to screw into a grease nipple socket or other lubrication point, and discharge its content of 120 ml of lubricant in a controlled continuous flow, for a preselected period of between one month and twelve months. It is driven by gas that is generated by slow galvanic chemical reaction. It is completely self contained and needs no fallible pumps, motors, springs, batteries or electronic circuitry.

HOW IT WORKS

Built into the top of each GREASOMATIC are a zinc/molybdenum galvanic element and a flexible rubber expansion chamber containing a mildly acidic liquid electrolyte. The unit is activated by injecting the galvanic element into the electrolyte. The gas generated gradually expands against a piston, to extrude the lubricant slowly but surely into the bearing to which the GREASOMATIC is fitted. The electrolyte and gas remain hermetically sealed within the expansion chamber to prevent contamination of the lubricant.

HOW THE DISCHARGE RATE IS CONTROLLED

The discharge duration of a GREASOMATIC '96 is dependant on the rate of gas generation. This is governed by the configuration of the galvanic element. The GREASOMATIC '96 has a unique adjustable galvanic element. Before activation, this is held in the underside of the cap and is connected to the control knob on the exterior of the unit. Rotating the control knob adjusts the protrusion of a rod shaped electrode to provide the appropriate rate of gas generation for the discharge duration set on the dial. Settings of 1, 2, 3, 4, 6, 8 or 12 months duration are available. (These periods apply at an ambient temperature of about +20°C and will be varied by abnormally high or low temperatures - see overleaf).

ACTIVATING A GREASOMATIC '96

After the discharge duration has been set, the red locking button is depressed to secure the setting and disconnect the control knob from the dial. Five further clockwise rotations of the control knob then cause the element to be injected into the electrolyte to start the GREASOMATIC working.

MONITORING THE LUBRICANT DISCHARGE LEVEL

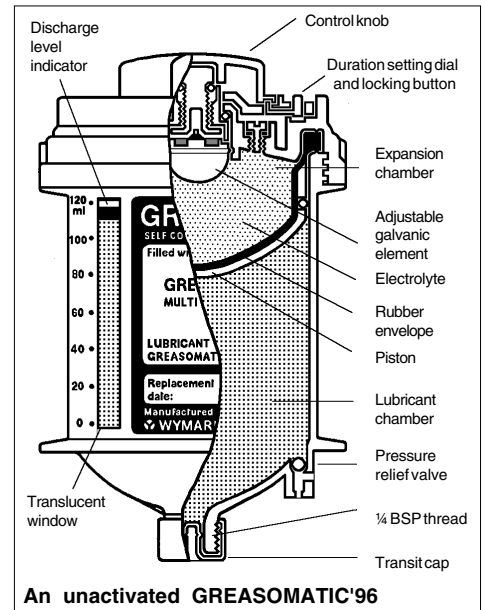
Throughout the working life of a GREASOMATIC'96 an indicating ring on the ejection piston shows through translucent windows in the body to enable its lubricant level to be monitored.

HOW A GREASOMATIC IS INSTALLED

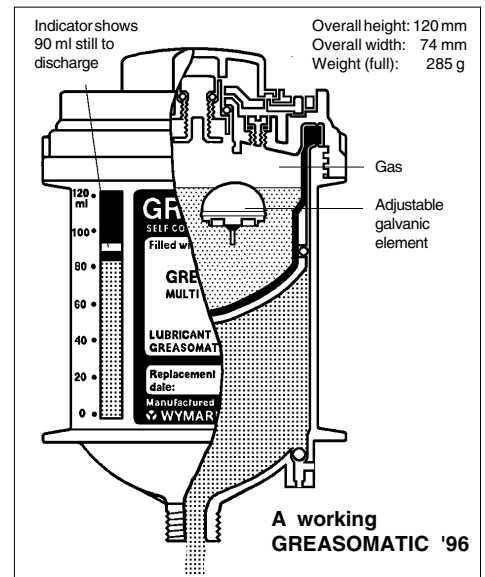
The lubricant outlet in the base of a GREASOMATIC '96 has a ¼ BSP male thread to enable it to be screwed by hand to fit tightly into a standard grease nipple socket. Adaptors are available to enable GREASOMATICS to be fitted into sockets of other sizes. With the aid of extension tubes (of at least 5 mm internal bore and up to 2 metres in length), they can easily be installed at a distance from the lubrication point. This is particularly useful when it is desired to group a number of GREASOMATICS together on a panel for ease of access, or when it is necessary to isolate them from extremes of temperature or from excessive vibration. Two or more units may be coupled together in order to increase the supply of lubricant to a bearing. A GREASOMATIC will work in any position and need not be mounted upright. It can be mounted on its side or upside down. It can be fitted to rotating or moving machine parts, providing the movement is not violent enough to cause the plastic base to break. A GREASOMATIC will work indoors or out of doors - it will even work under water or encased in ice !

USE IN PRESSURISED SYSTEMS

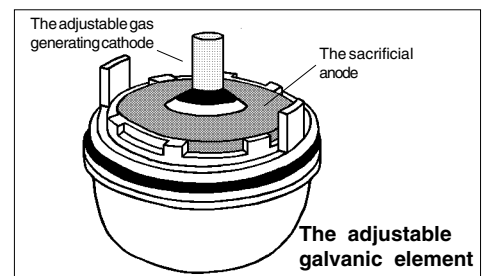
If a GREASOMATIC is to discharge into a pressurised system (such as a high pressure pump bearing or a compressed air line), it is essential to isolate the GREASOMATIC from the back-pressure by fitting a non-return valve (Accessory GA 17), and the pressure in the system must be relieved periodically to permit the GREASOMATIC to inject lubricant. This can normally be done at the end of the days work. In such circumstances a GREASOMATIC injects lubricant intermittently rather than continuously.



An unactivated GREASOMATIC'96



A working GREASOMATIC '96



The adjustable galvanic element

ACCESSORIES & FITTINGS

A wide range of fittings is available to facilitate the installation of GREASOMATICS. These are normally semi-permanent fixtures that are left in situ when spent GREASOMATICS are replaced. Full details of the current range may be found in the separate information sheet entitled **GREASOMATIC '96 Accessories and Fittings** in which some typical mounting assemblies are also illustrated

DAILY LUBRICANT INPUTS AND DISCHARGE DURATIONS AT VARIOUS TEMPERATURES

The nominal discharge durations of 1, 2, 3, 4, 6, 8 or 12 months apply at an ambient temperature of +20°C and will vary if the unit operates at abnormally high or low temperatures. Guidance on the approximate discharge durations (and the interrelated daily lubricant inputs) that can be expected at various temperatures is given in the chart below. Values for intermediate temperatures may be obtained by interpolation.

Dial setting	Average ambient temperature at the location of the GREASOMATIC (not that of the bearing)					
	-10°C	0°C	+10°C	+20°C	+30°C	+40°C
1	0.5 ml daily for 8 months	1 ml daily for 4 months	2 ml daily for 2 months	4 ml daily for 1 month	8 ml daily for 0.5 months	
2	0.25 ml daily for 16 months	0.5 ml daily for 8 months	1 ml daily for 4 months	2 ml daily for 2 months	4 ml daily for 1 month	6 ml daily for 0.7 months
3	0.2 ml daily for 24 months	0.3 ml daily for 12 months	0.7 ml daily for 6 months	1.3 ml daily for 3 months	2.7 ml daily for 1.5 months	4 ml daily for 1 month
4		0.25 ml daily for 16 months	0.5 ml daily for 8 months	1 ml daily for 4 months	2 ml daily for 2 months	3 ml daily for 1.3 months
6		0.2 ml daily for 24 months	0.3 ml daily for 12 months	0.7 ml daily for 6 months	1.3 ml daily for 3 months	2 ml daily for 2 months
8			0.25 ml daily for 16 months	0.5 ml daily for 8 months	1 ml daily for 4 months	1.5 ml daily for 2.7 months
12			0.2 ml daily for 24 months	0.3 ml daily for 12 months	0.7 ml daily for 6 months	1 ml daily for 4 months
	+14°F	+32°F	+50°F	+68°F	+86°F	+104°F

WORKING PRESSURES

Under normal conditions a GREASOMATIC'96 operates at a low pressure of less than 1 bar. The exact pressure is determined by the resistance to flow of the lubrication channels and the bearing. (The main reason a grease gun is designed to exert very high pressure is to overcome the high resistance of the grease nipple itself - with the nipple removed, the lubricant should flow freely). If old lubricant has stiffened in a neglected bearing, the GREASOMATIC's pressure will build up until the obstruction is cleared and lubrication can begin.

THE PRESSURE RELIEF VALVE

In the event of a complete blockage of the lubrication channels, the GREASOMATIC's internal pressure will build up to about 6 bars at which level the pressure relief valve will operate as a safety measure and release lubricant from the base. This prevents overpressurisation and serves as a warning that no lubrication is taking place.

USE AT EXTREME TEMPERATURES

A GREASOMATIC'96 can be installed at any ambient temperature between -20°C and +60°C. If a GREASOMATIC is required to lubricate a bearing operating at a temperature outside this range, or if it is desired to adjust the discharge rate and lubricant dosage for a bearing operating within that temperature range, the GREASOMATIC should be installed elsewhere in a more moderate temperature and should be connected to the bearing by extension tubing. The lubricant selected must always be suitable for use at the temperature of the relevant bearing of course. If a GREASOMATIC'96 is required to work in widely fluctuating temperatures, this will present no problem but the lubricant input rate will fluctuate accordingly.

LUBRICANT FILLINGS

A GREASOMATIC'96 can be filled with almost any type of lubricant. However many widely used greases are prone to oil-soap separation when subjected to sustained light pressure in a GREASOMATIC. This can lead to a serious curtailment of the GREASOMATIC's working life. It is therefore essential to use only greases or gels that have been tested and approved for use in GREASOMATICS if the discharge rates and working lives quoted above are to be realised in practice. Such considerations do not apply to oils, and GREASOMATICS filled with virtually any type of oil or fluid lubricant will function satisfactorily. For details of approved high performance lubricant fillings, see the separate publications entitled **GREASOMATIC'96 Standard Grease Fillings** and **GREASOMATIC'96 Standard Oil Fillings**.

SPECIAL FACTORS WHEN USING OIL FILLINGS

The handling of GREASOMATICS with oil fillings is not quite as straightforward as in the case of those with grease fillings because liquid will run out of the GREASOMATIC during installation unless simple precautions are taken. One method is to install the GREASOMATIC upside down with the discharge outlet uppermost, using if necessary an **inverted mounting assembly**. Alternatively, an oil filled GREASOMATIC'96 can be installed with its discharge outlet downwards if a **non-return valve** (Accessory GA17B) is fitted. This will only permit the oil to discharge drop by drop as the internal pressure rises above 0.3 bars. If the oil is to be injected into a long rising lubrication channel, the fitting of a non-return valve is essential or the oil will run out of the system whenever a spent GREASOMATIC is replaced. It should be borne in mind when handling an oil filled GREASOMATIC that once the transit cap has been removed, the GREASOMATIC must be held upside down. If it is to be installed with the discharge outlet downwards, the non-return valve must be fitted to it (rather than to the bearing) before inverting the combined GREASOMATIC and valve assembly and fitting it to the bearing. Full details of the non-return valve and an inverted mounting assembly are given in the publication: **GREASOMATIC'96 Accessories & Fittings**.

CAUTIONARY NOTE

GREASOMATICS are made to the highest standards of accuracy and consistency, and the information in this and other GREASOMATIC'96 publications is provided in good faith. However the conditions in which GREASOMATICS are used and the lubrication needs of different bearings can vary so widely, that no responsibility can be accepted for any loss or damage to machinery or equipment as a result of inadequate lubrication provided by a GREASOMATIC. Where continuous lubrication of a bearing is a critical requirement, it is essential for the user to inspect and ensure that lubrication is adequate. This is made easy by the discharge level indicator that shows through the translucent windows in the GREASOMATIC'96.