

## Automatic Lubrication System

Proper lubrication ensures optimum performance and long life of machinery.

Packaging machines and automatic packaging lines as a whole can guarantee long-term high performance standards if certain mechanical parts, in contact with one another as they move, are adequately lubricated. This applies – for example – to chains, bearings, gears, bushings and kinematics. However, simply lubricating is not sufficient; you need to use the right lubricant at key pivot points as and where required, accurately and specifically: neither too much, nor too little.

With the focus firmly on production, packaging line maintenance personnel often fail to effectively carry out the above-mentioned basic operation, especially when this would involve even just a temporary shutdown.

In line with its objective of providing enhanced customer service, Ilapak is the first market operator to adopt a compact automatic lubrication system for use inside the packaging machine: now, metered lubrication of the relevant moving parts can be programmed at regular intervals, carried out and monitored without the need for any manual operations or costly downtime.

This solution can be implemented both on each new Ilapak machine (as optional) and installed on existing machines (retro-fit option).

The fact that we can provide a simple, reliable automatic lubrication system built into an Ilapak machine allows us to ensure greater “added value”, setting Ilapak apart from all other market players and giving us that competitive edge.

Ilapak’s decision to introduce this innovation means that we’re not only offering an objective technical improvement in terms of our delivery but also leveraging a number of particularly sensitive commercial advantages: value for money, long-lasting investment, cost of ownership, line up-time, clean working environment.

More specifically:

### 1. Greater reliability of mechanical parts

Our user-friendly system lets you programme the time-amount-frequency of measured lubrication, with different settings for different components as required. The operation is performed automatically inside the machine, thus maintaining a consistent lubricant seal. This guarantees that the inner moving parts will never run the risk of inadequate lubrication and consequent severe mechanical wear due to lack of lubricant (even in the event of poor maintenance or pressing production demands). Automatic lubrication means optimal distribution of the amount of grease dispensed, with small amounts delivered at frequent intervals (as opposed to the large quantities occasionally applied typically associated with manual greasing). It



also helps reduce the packaging machine's noise levels and energy consumption (absence of detrimental friction on critical wear points), while economising on lubricant.

## 2. Far fewer after sales problems

The only "lubrication maintenance stop" needed is the short time it takes to replace the lubricant cartridge, which is only slightly larger than a drink can. When the cartridge needs changing, the system automatically sends a "refill required" message. This operation can be done effortlessly and at little cost, since each cartridge lasts for a long time (sometimes years). Also, the customer is guided in the choice of lubricant because the cartridge can be supplied already filled with the recommended type, without any risk of potentially harmful air bubbles and ready for use in the machine.

## 3. Massive reduction in downtime

Many traditional lubrication systems require the machine or plant to be shut down so the operator can inspect the mechanical parts and carry out maintenance safely (for example by greasing bushings or toothed elements such as gears, rack and pinion). In any event, point-by-point manual lubrication is imprecise in terms of the amount of lubricant used (and, as already stated, also due to the tendency to disregard planned maintenance intervals).

Conversely, automatic lubrication means just that, without the need to stop the machine and suspend operations; keeping your equipment up and running equates to a substantial increase in productivity. What's more, there's no risk of over-lubrication (impacting on operating costs) and consequent soiling.

### Lots of other additional advantages

Ilapak's built-in automatic lubrication system is an attractive solution with regard to costs and benefits. In addition to those mentioned above, it offers further advantages:

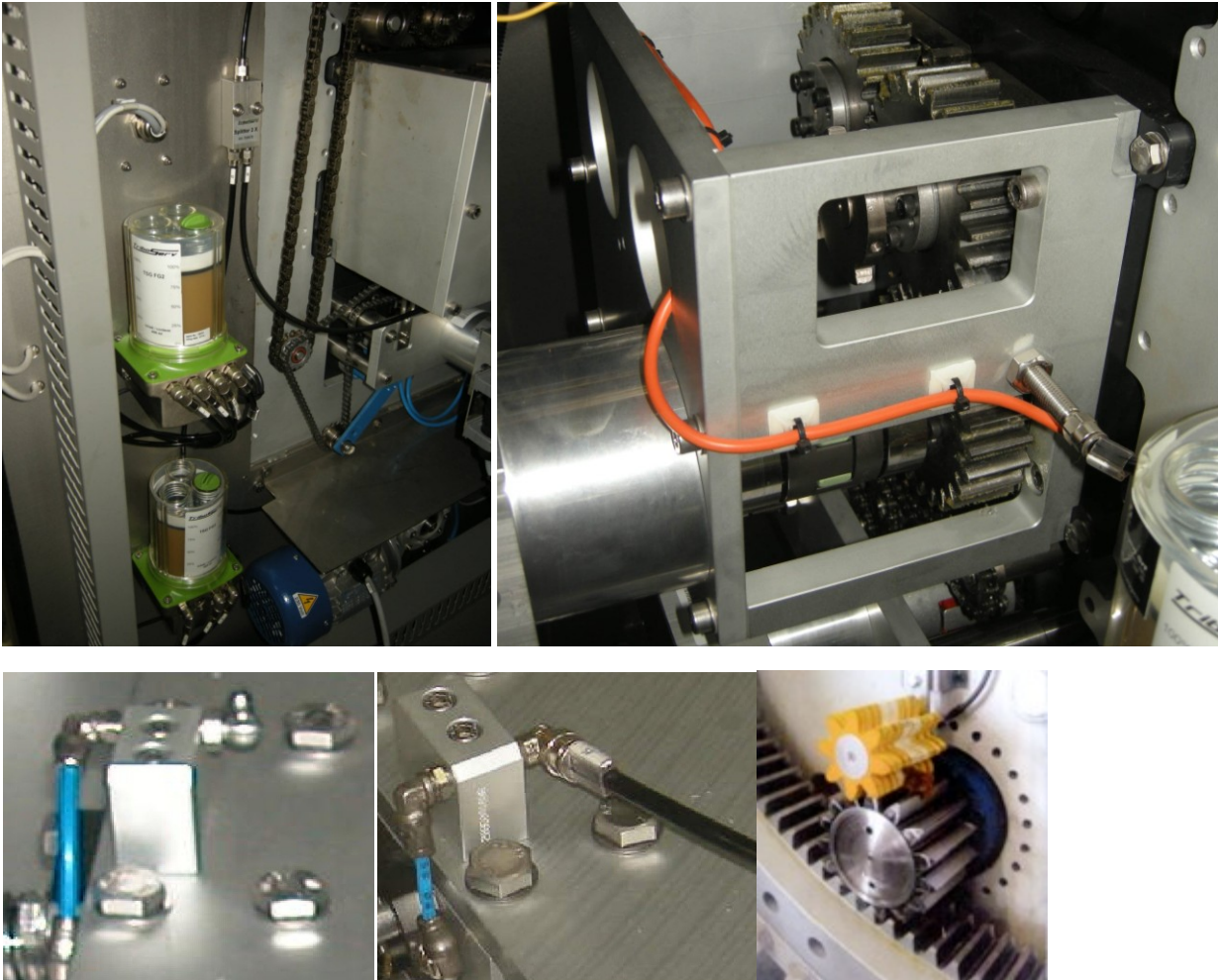
- easy use and rapid operation with consequent reduction in assembly time and machine testing
- possibility of optimising calibration of the system to meet your needs, directly at Ilapak's production sites
- neat solution allowing easy access for checks and inspections
- possibility of connection to the machine's control system
- system suitable for use in the food processing industry, where there needs to be zero risk of contamination; compatible with food-grade lubricants

### System details

The system consists of the following main components:

- *FlexxPump with metering pistons*
- *Replaceable cartridge*
- *Hoses and tube connectors (suitable for pressure up to 70 bar)*





The system is based on a very compact pump, with the lower casing made of aluminium housing the lubricant metering pistons. Their operation (time and stroke) is controlled by means of software. Depending on the pump model, there are from 1 to 10 outlets available. Precise lubrication from each outlet means the right amount of lubricant is delivered to each lubrication point by a custom-sized small tube. Each pair of outlets from the main FlexxPump can be programmed: this way two outlets will lubricate two points with a given (programmable) quantity of lubricant at a given frequency while another pair of outlets can be programmed to lubricate two different points with a different delivery rate and a different frequency.

In addition, for special needs, when each individual outlet needs to be connected to multiple greasing points, a splitter can be used. For example, one outlet can be adjusted to deliver to the gearing just a few cm<sup>3</sup> of grease each month, while another outlet is programmed to provide a different volume of lubricant at different intervals to a bearing or a bushing.

The pump cartridge is designed for easy replacement after use. The 400 ml cartridge is inserted in the pump casing from above and it can be filled with grease (for lubrication of gearwheels or bearings) or with oil (for lubrication of chain drives).



When the cartridge is almost empty, the system provides an alarm message on the operator's HMI. Replacement is simple and doesn't entail unplanned downtime; also, one cartridge lasts many months.

In mixed systems, where some points require lubrication with oil and others with grease, at least two separate pumps are needed: one for each type of lubricant.

A preliminary study was carried out on the ALFA1200 multi-lane sachet machine concentrating on the number of lubrication points and their characteristics. The type and amount of lubricant was defined for each point. Next, the automatic lubrication system was custom-sized for the plant and, together with the system supplier, the construction specifications were defined.

*For more info, please contact our GSM (Group Sales Manager) or PM (Product Managers).*