

The Automatic Lubrication System for Conveyors



LUBCON TLB® 2000

Chains are made up of links supported by plain bearings which run at varying speeds and oscillations. Full fluid film formation, thus hydrodynamic lubrication does not generally occur under such conditions.

Conveyor chains operate under mixed friction conditions with heavy metal to metal contact. Chain service life relies on the regular availability of a correctly specified chain lubricant.

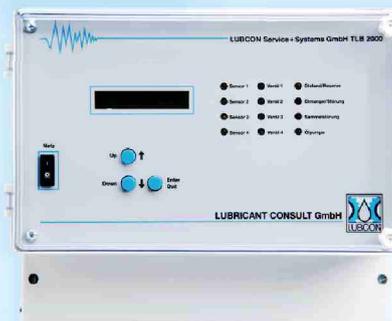
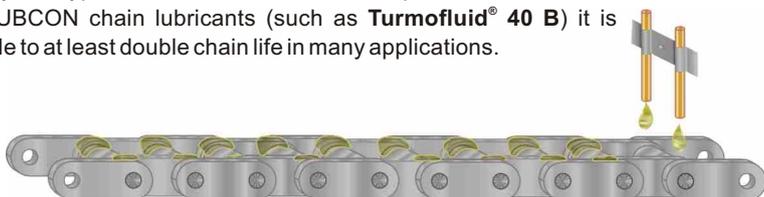
Friction and wear can be minimized by using special lubricants which form a reaction layer in the contact areas and which generate a protective chemical boundary. This process is referred to as "Chemical Lubrication". However, over time these protective layers are worn away and need to be refreshed with a regular lubricant supply.

Therefore the chain service life is particularly influenced by the quality of chain oil, the additive package as well as the accuracy of oil supply. As manufacturing cycles become shorter it is vital that conveyor technology adopts efficient and economical maintenance regimes. Increasing conveyor speeds and higher temperatures coupled with reduced maintenance requires advanced solutions for conveyor chains in order to minimize oil consumption and maximize chain service life.

Accurate Lubrication of Pins, Bushings, Links and Conveyors

The automatic lubrication system TLB® 2000 has been designed to meet the requirements of modern manufacturing environments. Accurate control of chain oil quantities avoids over lubrication and thus prevents the potential contamination of the finished product such as cans, bottles and food packaging.

Optimum wear protection can be achieved by applying the correct quantity and type of oil to the exact lubrication point. In combination with LUBCON chain lubricants (such as **Turmofluid® 40 B**) it is possible to at least double chain life in many applications.



Technical Description

The main elements of the TLB® 2000 automatic lubrication system are an electronic control unit, an integrated gear pump and a lubricant reservoir which is available in sizes of 20 L, 45 L or 200 L. To prevent oxidation of the lubricating oil and in order to generate a constant oil delivery pressure a gear pump is used instead of a pressurized air/oil system. Each lubrication point is fed with oil at constant pressure via individually positioned delivery jets which are made from either plastic, copper or stainless steel. The oil delivery is controlled by the selected opening time of high speed solenoid valves, the selected operating oil pressure of the gear pump and the selected diameter of the oil delivery jets.

Advantages

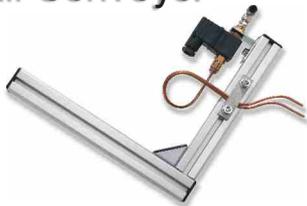
- ✓ Automatic, reliable and accurate lubrication
- ✓ Increased chain service life due to optimum lubrication
- ✓ Significant reduction of chain oil consumption
- ✓ User friendly
- ✓ Reduction of maintenance costs
- ✓ Expansion capabilities due to modular design
- ✓ Electronic control unit
- ✓ Gear drive instead of air/oil mixture
- ✓ Timed or sensor controlled

LUBCON TLB[®] 2000

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Single Rail Conveyor



The pins, bushings and links of the conveyor chains are independently lubricated. An optimum lubricant supply and a long service life of the chain and the roller bearings are guaranteed.

Double Rail Conveyor



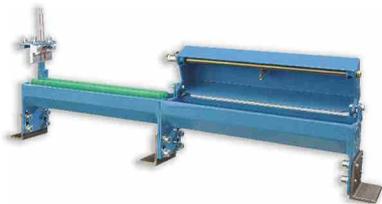
The pins, bushings and links of the plain rollers are lubricated. Depending on the size, up to four lubricating points per chain link are supplied with oil. Both chains can be lubricated independently.

Universally Jointed Chain Conveyor



In the universally jointed chain, the horizontal and vertical pins as well as the support rollers and lateral guiding rollers are lubricated. All points of lubrication are controlled independently.

Continuous Lubrication with Blow-off Function and Air Curtain



Special lubricating unit for the production of beverage cans. Due to the extremely high conveyor speeds, the lubricant has to be applied continuously for one complete chain cycle. Excess lubricant is removed by compressed air to prevent the finished product from being contaminated. An air curtain provides a separation between lubricating area and finished products.

Application and Dosage

The precise application and dosage of the lubricant is controlled by the electronic control unit which has four independent channels. A different programme can be selected per channel:

Impulse Programme

On slow to medium speed conveyors the lubrication points are registered via proximity switches which in turn activate the oil solenoid valves via the electronic control unit.

Time Programme

On high speed conveyors the electronic control unit records the conveyor chain cycle time and then the solenoid valve is kept open according to the stored time for one complete conveyor chain cycle (+10%).

Modular System

The system can be extended with the use of additional control units. Therefore multiple conveyors can be connected to the system with an operating distance of 200 metres. The pump will shut down during lubrication off cycles or during breaks in production.

LUBCON Lubrication Systems



EasyMatic

Automatic lubricator for oils and greases up to 22 lubricating points (44 points with two pump elements). EasyMatic has been developed for automatic long term lubrication of machines in industrial environment.



MicroMax 120

Single point lubricator for automatic lubrication up to a maximum of 3 years. Can be used for any individual bearing, ball screws, gears, etc. with a large variety of long life greases.



DuoMax 160

Double point lubricator for maintenance-free operation of e.g. electric motors up to a maximum of 3 years. Can also be used for fan shaft bearings and many others with a large variety of long life greases.



QuattroMax 30

Minimal quantity lubricator for high speed spindle lubrication. Only unit that can supply grease to grease lubricated spindles during operation. Lubrication of linear guides, high precision ball screws etc.

LUBCON Service + Systems GmbH Lubrication Systems

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