Grease Injection System (GIS)
Select the right lubrication system for conveyor and roller chain applications
Every link counts

What if you could

• Eliminate worker safety risks?
• Lubricate your chains as often as necessary without production stoppage?
• Increase chain life and eliminate production stoppage risks due to chain failure?
• Keep grease consumption under control?
• Avoid unplanned maintenance downtime?
Realize the true potential of automatic lubrication for your application

On a chain, every link counts: hundreds or thousands of lubrication points are moving constantly. Chains moving in harsh conditions require frequent relubrication to reduce the risk of chain failure. Unplanned production stoppages due to conveyor chain failure is not an option. Your bottom line is affected by any unplanned maintenance activity.

Manual lubrication can put workers at risk, is extremely time consuming, often is not performed frequently enough and can allow lubricant consumption to get out of control. Worker is your top priority. Also, you do not want your goods to become contaminated with lubricant.

Examples of how SKF lubrication solutions can help customers

A major agriculture machine manufacturer experienced a personal injury during routine manual lubrication of an overhead trolley wheel conveyor, which must be lubricated while the chain is moving. Installing an automatic grease injection system provides automatic lubrication, minimizes the risk of worker injuries and significantly improves lubrication frequency, which reduces wheel and conveyor wear.

A car assembly plant saves up to 80% of maintenance time by using an automatic grease injection system on its pre-treatment painting line conveyors. This is compared to a weekly manual lubrication that takes a minimum of three hours labor for a complete chain lap to lubricate the 1400 points (links and rollers).

Changing from manual lubrication with a standard grease gun to an automatic grease injection system can save up to 65% of grease consumption. This helps to reduce the negative environment impact, improves cleanliness, and reduces the risks of contamination with lubricant.
The right grease injection system

Conveyor trolley rollers

For monorail forged-chain conveyors, the GIS (Grease Injection System) injects grease inside the trolley rollers through the original greaser while the conveyor is running. GIS systems adapt to various conveyor configurations and applications: chain trolley roller greasing or carriage roller greasing (power and free conveyor). GIS systems for trolley rollers enable simultaneous lubrication of two rollers or several carriage rollers.

Applications:
- Automotive industry
  - Welding lines
  - Surface treatment lines
  - Paint lines
  - Assembly lines
- Food and beverage industry
  - Transport of carcasses
- General industry
  - Surface treatment lines
  - Paint line

For more information, see → PUB LS/P2 17499

Double external roller chains

For two-chain conveyors, GIS lubrication systems inject grease inside the external rollers on both sides of the chain through the original nipples while the conveyor is running. These systems adapt to various conveyor configurations and applications while considering sizes and components. GIS systems for double external rollers lubricate both chains simultaneously.

Applications:
- Automotive industry
  - Bodywork surface treatment lines
  - Tightness control lines
- Metal industry
  - Finished product transport lines
- Food and beverage industry
  - Diffusers/Conveyors in sugar industry

For more information, see → PUB LS/P2 17724
Single external roller chains

For two-chain conveyors, GIS lubrication systems inject grease inside the external rollers through the original greaser while the conveyor is running. These systems adapt to various conveyor configurations and applications while considering sizes and components. With GIS systems for external rollers, it is possible to lubricate both chains simultaneously.

Applications:
- Metal industry
  - Aluminum foundry lines
  - Manufactured product transport lines
- Food and beverage industry
  - Diffusers/Conveyors in sugar industry
- Automotive industry
  - Tightness control lines

For more information, see PUB LS/P2 17732

Internal roller chains

For two-chain conveyors, GIS lubrication systems inject grease inside the internal rollers through the original greaser while the conveyor is running. These systems adapt to various conveyor configurations and applications while considering sizes and components: grease lubrication of internal roller of “simple” chain (with only one lubrication point per link) or “complex” chain (with several lubrication points per link). With GIS systems for internal rollers, it is possible to lubricate both chains simultaneously.

Applications:
- Automotive industry
  - Car surface treatment lines
  - Paint lines
  - Assembly lines
  - Tightness control lines
- Food and beverage industry
  - Continuous sterilization systems
- Metal industry
  - Aluminium foundry lines
  - Manufactured product transport lines

For more information, see PUB LS/P2 17733

GIS system with COBRA unit for single external roller chains
Pneumatic system with manually controlled start/stop and no monitoring function

GIS system with GVP unit for single external roller chains
Fully automated, electro-pneumatic system with configurable control, operation check and failure notification

GIS system with COBRA unit for internal roller chains
Pneumatic system with manually controlled start/stop and no monitoring function

GIS system with GVP unit for internal roller chains
Fully automated, electro-pneumatic system with configurable control, operation check and failure notification
One system, two units

SKF offers two different units for lubrication of conveyor chains – both follow the same working principle.

Operation principle

The GIS lubrication system only works when the conveyor is running. During the lubrication phase, when the roller passes in front of the unit, the pick-up system is triggered to let the injection head couple mechanically with the roller. It follows the chain motion while injecting the correct quantity of grease.

At the end of the injection cycle, the head and pick-up system move backwards. The unit returns to its initial position and is ready for a new injection cycle on the next roller.

A special feature of the GIS lubrication unit is its ability to follow the chain movement in order to lubricate the lubrication points without interrupting the production process. Therefore, the GIS unit catches the chain. There are several ways to do this including pick-up fingers, sliding arm with fork and capstan.

COBRA unit

GIS system with COBRA unit is the simple and robust solution for lubrication of chain conveyors, in particular in heavy industry and harsh environment. The movements required for the injection cycle are mechanically and pneumatically driven. With the standard system version activation is manual. But some versions with electrically automated activation are available. It is also possible to add several monitoring functions.

- Sturdy design
- Manual activation
- System automation in option
- Possibility to add monitoring functions
- Easy installation
- Easy to use
- Pneumatic system

GVP unit

GIS system with GVP unit is the advanced solution for the lubrication of chain conveyors. This solution manages and controls lubrication cycles automatically.

GIS system adapts to a broad range of chain speeds as well as various conveyor configurations and roller positions.

- Fully automated system
- Configurable control of lubrication cycles
- Injection frequency adaptable to chain speed
- Operation check
- Failure notification
- Electro-pneumatic system
- Volumetric metering
System components

No matter which application, SKF offers a comprehensive range of Grease Injection (GIS) units, accessories and high-quality system components to accommodate each of the particular chain running conditions and environments.

Materials and components designs

GIS components are designed to suit the environment. In wet conditions, such as those found in food and beverage applications, the components are made of stainless steel or are coated to avoid corrosion. Heavy-duty designs are used for particularly harsh environments.

Greasing units

Criteria such as chain dimensions, position and running conditions determine which greasing unit type should be selected. Monitoring capability options are available depending on the application and, therefore, various greasing unit designs are available.

Pumps

An adequate grease supply to the greasing unit is essential for proper operation of the system. SKF offers various pneumatically driven pump units, either for standard grease drums or with an integrated reservoir. Electrically driven pumps are also available. These pumps are suitable for grease up to NLGI Grade 2.

Control and monitoring

Monitoring and control can be essential for proper lubrication. Advanced monitoring capabilities on GIS systems can facilitate economical and optimal lubrication. Depending on the chain and GIS system design, SKF can offer grease injection monitoring for each individual chain link with digital records and alerts in case of an anomaly.

Customized solutions

Each industrial conveyor chain is specific due to its design, field of application, conditions of use, etc. The SKF teams have thorough knowledge of the fields of application, combined with numerous years of experience. Many GIS systems are already in service in various industrial sectors throughout the world and have proven their worth.

As a result, SKF teams are capable of satisfying various requests, either by modifying an existing solution or by developing a completely new system. Therefore, the lubrication solution proposed is perfectly adapted to the customer’s needs and unique requirements.

This brochure provides a general description of the GIS lubrication system. Please contact SKF for more detailed information.