Balcrank | Grease pumping from drums made easier!

Grease is the most difficult lubricant to pump – viscosity and resistance to flow are the reasons. Grease is also thixotropic and will change viscosity (up and down) as the temperature fluctuates.

What types of grease pumping systems are available?

There are three common types of grease pumping systems for drums. They are as follows:

1) Drum mounted system – most basic and economical system typically used for low volume grease usage. Basic pumping system consists of a follower plate, drum cover and installation accessories

2) Elevator mounted system – used to pneumatically lift pump assembly from drum allowing for quick drum change over. Typically used in high volume applications. Pump and inductor system complete with air operated elevator and permanently secured inductor plate.

3) Ram mounted system – used in high and low volume applications for very high viscosity materials. The ram provides pneumatically powered downward force to insure pump loading. Pump and ram system complete with an air operated ram and a permanently installed inductor plate that acts as an elevator and will also exert downward ram pressure on product. Driving factors are: grease usage, type and viscosity of grease, environmental operating extremes.

The information provided is a brief explanation of each system and the benefits each provide for the operator or business.

Drum mounted system – the basic system is comprised of a 50:1 ratio/high pressure pump, drum cover and drum follower plate for the appropriate size container. Typical refinery container sizes are 25-35 lb. (16 KG), 120 lb. (55 KG) and 400 lb. (180 KG).

The follower plate supplied moves the grease downward and rides freely on top of the grease. The weight of the follower plate combined with the vacuum of the pump lowers the follower plate down into the drum until it reaches the lowest level it can in the drum. In addition, the follower plate helps maintain prime. The follower plate type system is the entry-level basic system to dispense most automotive and industrial greases up to an NLGI #2 grease.

Elevator mounted system – the inductor system utilizes the same pump as in the basic system. This system, however, incorporates an air operated elevator lift and a follower plate (referred to as an inductor plate) which is permanently attached to the foot valve of the pump. The pump and inductor plate ride down into the drum together with additional benefits over the basic system.

These benefits are as follows:

- Removes virtually all grease from the drum. On average the inductor style system will remove 28 lb. More grease out of a 400lb. Drum. The problem of left over grease in the drum when using the basic system is that the free floating follower plate covers the intake slots of the grease pump 3-4" from the bottom. This is eliminated with the inductor style system, as the plate is concave shaped and fixed permanently to the foot

valve of the pump. The grease is forced up into the concave area of the plate as the plate travels downward. The system is equipped with a bleeder valve assembly that helps break the vacuum between the bottom of the drum and the inductor plate during drum changeover.

- Reduces the safety and injury liability issues during drum changeover. The elevator lifts the pump and inductor assembly out of the drum with no manual lifting.

- Reduces the chance of contaminants entering into the foot valve of the pump. At least 50% of grease pump repairs are attributed to foreign debris being picked up by the pump while being placed on the floor during drum changeover.
  Grease pumping from drums made easier!

Ram mounted System – the ram system utilizes the same basic pump as the other two systems. However, in difficult to pump application (tacky NLGI #3 and higher) the ram system allows ram cylinder pressure to be exerted on top of the grease in addition to the weight of the equipment. This allows for positive priming of the pump. In addition, the benefits of a fixed inductor plate over the standard follower plate are also gained by virtually cleaning the drum out completely.

If my pump is cycling but the system is not dispensing grease, what is the problem?

A situation that causes the pump to over-cycle with no grease being dispensed is called channeling. There are two conditions that can exist to cause over-cycling of the pump.

1) Channeling or tunneling – the follower or inductor plate is leaking air from the inner or outer seal allowing air to pass through a "tunnel" in the grease created by the pump suction.

2) Cavitation – this is a condition where the stiffness of the grease will not allow flow to back fill the pumped volume. A pocket of vapor is created at the pump suction and the pump will pump vapor and not fluid. Lighter grease grades or a ram mounted unit are typical solutions to this problem.

How much pressure can my pump develop?

Typical grease dispense pump ratios are 50:1 and 75:1. At 70-psi air using a 50:1 pump, a stall pressure of 3500-psi will develop. As a guide, maximum fluid pressure (at stall condition) can be calculated by multiplying the air pressure by the pump ratio when the pump is in the stalled position.

What system is recommended with plastic bag lined drums?

Any of the three systems will work. It is recommended that when the grease drum lid is removed that the excess plastic at the top of the bag be folded over the drum and fastened to the drum with tape or a clamp.
Please look for these systems at your local Balcrank Distributor.
Please contact me at www.dsmith@balcrank.com for further details.

Balcrank Corporation
115 Reems Creek Rd
Weaverville NC 28787

www.balcrank.com | p: 800 747 5300 | f: 800 763 0840