Service Bulletin [1991-2]

How the Trabon Air Operated Grease Pump Works

In order for the air driven Trabon grease pumps to automatically pump grease to Besser block machines the panel has to be turned on, the main drive motor energized and the clutch must be turned on. At this time, the Lube-on and Lube-off timers alternately time out back and forth which allows the pump to operate.

Besser slump mixers also have Trabon grease pumps which work in the same way.

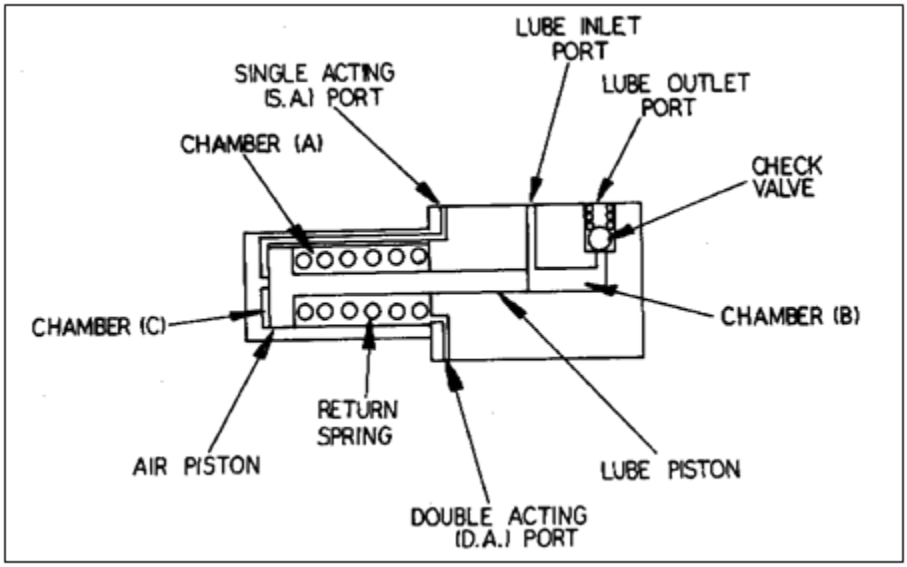

Figure 1

Single Acting Trabon Pump

In single acting pumps, the lubrication solenoid is energized when the Lube-off timer times out and stays on until the Lube-on timer times out. When the air solenoid is energized by the Lube-off timer a controlled amount of air is metered into the SA port of the Trabon Pump by the flow control adjustment on the air solenoid. From the SA port the air enters the chamber (C) forcing the air and lube piston to the right. How fast these pistons move to the right depends upon the flow adjustment of the air solenoid and is very important. We want a slow gentle but positive shift of the piston, not a hard slamming action. When the lube and air pistons shift to the right the lube inlet port closes and the grease already in the chamber (B) is forced past the check valve through the outlet port and into the system we are lubricating. Air in chamber (A) must vent out port DA. The port has a vented plastic pipe plug with a vent or sintered bronze element.

When the Lube-on timer times out, the solenoid valve shuts off the air supply and vents chamber (C) through port SA. The return spring shifts the air and lube pistons to the home position opening chamber (B) to the lube reservoir via the lube inlet port. The spring loaded follower cup in the plastic lube reservoir applies downward pressure which forces grease

through the lube inlet port and into the pump chamber (B) priming it for the next forward piston stroke or cycle. For single acting lube pumps the Lube-off timer, while it is timing, holds the air piston in the home position, where the return spring is relaxed. To increase spring life more time should be set on the off-timer than the on-timer.

Double Acting Pumps

The double acting air return pump models ALJ-5M and ALJ-25M have an additional air supply line connected to port DA to shift the piston forward and reverse with air instead of relying on a return spring. The air lines connected to ports SA and DA come from an air solenoid with flow control adjustments on the exhaust air for controlling the speed of piston shift both forward to pump grease and return to shift the piston back to the home position. When the Lube-on timer times out the air solenoid feeding air into the pump is electrically de-energized shifting air into the SA port. The air in chamber (C) shifts the air and lube pistons to the right. The speed the pistons shift to the right depends upon how fast air from chamber (A) is vented out the DA port through the tube and out the exhaust flow control on the DA side of the air solenoid. The grease in chamber (B) is expelled from the pump through the lube outlet port to the system being lubricated. The piston is held in the forward position compressing the spring while the Lube-off timer is timing.

When the Lube-off timer times out the air solenoid is electrically energized and air is switched to the DA port. From the DA port, chamber (A) receives air to shift the air piston back to the home position. The speed of piston shift depends upon how fast air leaves chamber (C) out the SA port, through the tube and out the adjustable exhaust flow control on the SA side of the air solenoid. With the piston in the home position, the lube inlet port is opened up again to the grease reservoir where the spring and follower cup force more grease into the chamber making it ready for another pumping stroke. On the double acting pumps, more time should be set on the Lube-on timer than the off-timer to increase spring life.

SAFETY BULLETIN

This notice is issued to advise you that some previously accepted shop practices may not be keeping up with changing Federal and State Safety and Health Standards. Your current shop practices may not emphasize the need for proper precautions to insure safe operation and use of machines, tools, automatic loaders and allied equipment and/or warn against the use of certain solvents or other cleaning substances that are now considered unsafe or prohibited by law. Since many shop practices may not reflect current safety practice and procedures, particularly with regard to the safe operation of equipment, it is important that you review your practices to ensure compliance with Federal and State Safety and Health Standards.

IMPORTANT

The operation of any machine or power-operated device can be extremely hazardous unless proper safety precautions are strictly observed. Observe the following safety precautions:

ALWAYS:

- ✓ Be sure proper guarding is in place for all pinch, catch, shear, crush, and nip points.
- ✓ Be sure that all personnel are clear of the equipment before starting it.
- ✓ Be sure the equipment is properly grounded.
- ✓ Turn the main electrical panel off and lock it out in accordance with published lockout/tagout procedures prior to making adjustments, repairs, and maintenance.
- ✓ Wear appropriate protective equipment such as safety glasses, safety shoes, hearing protection, and hard hats.
- ✓ Keep chemical and flammable material away from electrical or operating equipment.
- ✓ Maintain a safe work area that is free from slipping and tripping hazards.
- ✓ Be sure appropriate safety devices are used when providing maintenance and repairs to all equipment.

NEVER:

- ✓ Exceed the rated capacity of a machine or tool.
- ✓ Modify machinery in any way without prior written approval of the Besser Engineering Department.
- ✓ Operate equipment unless proper maintenance has been regularly performed.
- ✓ Operate any equipment if unusual or excessive noise or vibration occurs.
- ✓ Operate any equipment while any part of the body is in the proximity of potentially hazardous areas.
- ✓ Use any toxic flammable substance as a solvent cleaner.
- ✓ Allow the operation or repair of equipment by untrained personnel.
- ✓ Climb or stand on equipment when it is in operation.

It is important that you review Federal and State Safety and Health Standards on a continual basis. All shop supervisors, maintenance personnel, machine operators, tool operators, and any other person involved in the setup, operation, maintenance, repair or adjustment of Besser-built equipment should read and understand this bulletin and Federal and State Safety and Health Standards on which this bulletin is based.