WHY SNUFF-BACK for Grease Dispense Nozzles

drool, drivel, drip, ooze, bleed, leak, slobber, & "doesn't shut off" can all be eliminated or minimized by adding SNUFF-BACK

Before purchasing a snuff-back device please read and understand why your grease nozzles slobber, drool, drivel, etc. Each reason has a corresponding solution. Implement as many solutions or corrections as possible. Corrections for trapped air, oversized tubing, and undersized nozzle orifices are often the easiest to accomplish. The snuff-back device should not be expected to be a "cure all" for design flaws or inept engineering and fabrication.

A snuff-back device with enough capacity to cure all drooling and oozing caused by multiple design and fabrication errors would probably be too large to be installed close to the nozzle needing it.

The phrase, "INSTALL A SNUFF-BACK DEVICE", acknowledges that complete execution of the listed solution will sometimes not be possible.

PROBLEM	SOLUTIONS (corrections)
TRAPPED AIR IN GREASE. Grease can contain air bubbles (voids or segments of air) that enter the grease when grease is manually stirred or transferred or during normal drum changes. When present in the lubricant delivery tubes or hoses, these air bubbles compress as grease is dispensing and begin to expand immediately after grease was dispensed. The type of drooling and driveling caused by this will be intermittent and you may occasionally see the bubbles exit the nozzles.	Remove air from grease and INSTALL A SNUFF-BACK DEVICE. G. P. Reeves uses our patented equipment (US patent #6,053,285) to automatically remove air from grease. Our equipment will remove air from grease prior to that grease being dispensed onto your product. For more details about our patent, see http://gpreeves.com/cat/cat-patentedairdetect1.pdf
TRAPPED AIR IN PLUMBING OR MANIFOLDS. Cross holes in manifolds may be drilled too deep causing blind cavities where air cannot be displaced by grease. Tube and pipe fittings may be trapping air in tapered pipe threads. "Tees" that trap air in their unnecessary outlets could have been substituted for elbows. Trapped air compresses during dispense and expands after dispense. As this air expands, it slowly forces grease to extrude from the nozzle tip.	Manifolds and plumbing can be designed to minimize or eliminate areas where air can be trapped. Air trapping areas of existing manifolds can often be filled with epoxy. Plumbing can be re-engineered. Tees can be replaced with elbows.
OVERSIZE TUBING. Grease delivery tubing (between grease dispenser and nozzle) may be oversized causing much more grease volume than necessary. All grease is compressible to some degree and five times more grease than necessary will compress five times more than necessary. Compression during dispense always results in expansion after dispense. That expansion causes grease to extrude from the nozzle tip.	Replace oversized tubing with smaller inside diameter tubing. A minor decrease in diameter can cause a major decrease in grease volume. Example: 1/4" ID tubing has a volume of .589 cubic inch (9.68 cc) per lineal foot. 3/16" ID tubing has a volume of .331 cubic inch (5.42 cc) per lineal foot.
COMPRESSIBILITY OF GREASE Grease (even without visible air) is often compressible by as much as 1% of its volume for every 500 p.s.i. of dispense pressure. Even low pressure grease dispensing causes some compression during dispense. Compression during dispense always results in expansion after dispense. That expansion causes grease to extrude from the nozzle tip.	Increase the inside diameter at the grease nozzle tip. Carefully select the grease delivery tubing to assure that its inside diameter is not causing grease flow resistance causing an unnecessarily high dispense pressure. INSTALL A SNUFF-BACK DEVICE.
HIGH DISPENSE PRESSURE is often caused by selection of dispensing components that were originally designed for maintenance greasing and require high pressure for operation. Dispensing at 2,500 p.s.i. can cause much more drooling and oozing than dispensing at 500 p.s.i.	Select components designed for operation at lower pressure. G. P. Reeves has grease dispensing equipment that will function at less than 500 p.s.i.

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PROBLEM	SOLUTIONS (corrections)
GREASE DISPENSER LOCATION Grease dispensers can rarely be mounted at the dispense point or nozzle. Grease contained in dispense tubing will compress during dispense and slowly expand to its original size after grease has been dispensed. That expansion causes grease to extrude from the nozzle tip.	Install the grease dispensers as close to the nozzles as practical and possible. INSTALL A SNUFF-BACK DEVICE.
BALLOONING OF HOSES Flexible tubing or hose may balloon (increase in diameter) as grease pressure in the hose or tubing increases while grease is being dispensed. After grease has been dispensed, pressure returns to normal allowing the hose or tubing to return to original size. The hose or tubing has more grease volume during dispense than after dispense. As the hose or tubing returns to original size, that extra volume of grease extrudes from the nozzle tip.	Select tubing that doesn't expand with the anticipated dispense pressure. Use hose rated for 3000 p.s.i. even when dispense pressure is expected to be less than 500 p.s.i. Even a small increase in hose or tube diameter will result in an increase in volume that must be snuffed back. Example: Two feet of 3/16" ID hose has a normal internal volume of .662 cubic inch. When under pressure its diameter could increase by .002" resulting in a volume increases to .667 cubic inch. That .005 cubic inch increase in volume is enough to extrude almost 1/2 inch of grease out of a 1/8" diameter nozzle orifice.
BENDING OF HOSES Flexible hose or tubing is often used because the grease nozzle must be moved to and from the part being greased. Often the hose has more of a bend after dispense than it did during dispense. As the hose bends, its internal volume decreases causing grease to extrude from the nozzle tip.	Carefully select grease delivery tubing with an inside diameter that is small enough to minimize internal hose volume, but not so small that higher than normal dispense pressure is necessary for normal grease flow. Keep bend radii as large as practical. Install "constant swivel" fittings to minimize hose bending. INSTALL A SNUFF-BACK DEVICE.

Nozzle without Snuff-back

Nozzle with Snuff-back

HOW THE SNUFF-BACK DEVICE FUNCTIONS

The snuff-back device quickly decreases the internal volume of the grease delivery plumbing during dispense and instantly increases it after dispense. The quick volume decrease during dispense counteracts the compression of the grease and air and the expansion of the delivery tubing during dispense and causes the dispense to start quickly. The instant volume increase after dispense counteracts the expansion of the grease and air and the return to size of the delivery tubing after dispense and causes the dispense to stop quickly and completely. This temporarily pulls or sucks some grease back into the nozzle tip to eliminate or reduce drooling or oozing.

INSTALLATION OF THE SNUFF-BACK DEVICE

Use "solutions" above prior to installing a snuff-back device. The snuff-back device should be located as close to the nozzle as possible. Most G. P. Reeves snuff-back devices are small enough to be located within 12 inches of the nozzle tip. The effectiveness of the snuff-back device is dependant on distance, grease viscosity, and inside diameter of nozzle, tubing, or hose. For best results, the snuff-back device should not be located more than three feet from the nozzle tip. The G. P. Reeves SB1007 snuff-back device has a needle valve incorporated into its air inlet fitting to control forward piston velocity to eliminate squirting of lower viscosity grease.

Contact us for detailed information about our many snuff-back devices

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