

DUMP PUMPS

The most recognizable truck pump is the “Dump Pump”. The dump pump, as we know it today, was introduced almost 50 years ago and is little changed since, although the newest design offers larger ports and a more efficient gear design. This pump, common on dump trucks from tandem axle to dump trailers, is essentially a gear pump of slightly more than 6 cu.in. displacement with an integral three position, three way directional control valve, and pressure relief assembly. The most important thing to keep in mind about these pumps is that they were designed specifically for one application—dump trucks (hence the name!)—and are **not** suitable for other common trailer applications like live floor and ejector trailers. Narrow internal paths make them unsuitable for continuous duty applications due to the likelihood of excessive heat generation. Dump pumps also have maximum pressure ratings that may fall below the requirements of some live floor applications. For applications involving both dump and live floor trailers use the Muncie Combo Kit II System which utilizes a high pressure, continuous duty pump and separate high volume control valve with a two-stage relief assembly.

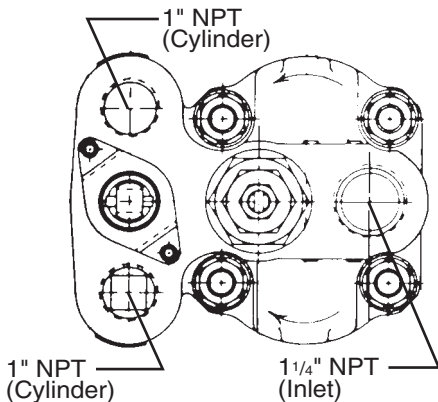


E Series Dump Pumps



Dump pumps are commonly direct-coupled to the power take-off. Weighing 70 lbs. it is vital that direct-coupled pumps be rigidly supported, via an installer-supplied bracket, to the transmission case. This bracket should be a four-point (two pump/two transmission) type. Dump pumps typically provide extended body studs to use as attachment points. Refer to the PTO installation manual for additional information and design suggestions.

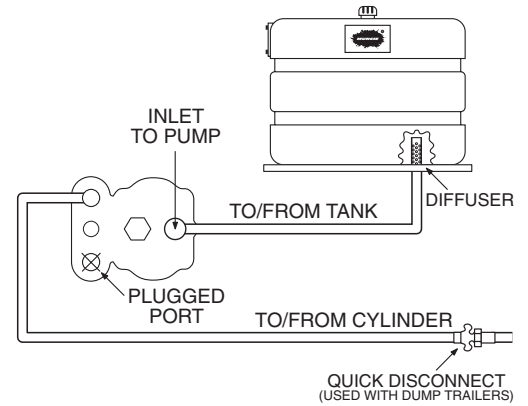
Another important consideration in dump pump selection is “two-line” vs. “three-line” systems. This refers to the number of hoses used to plumb the pump. Two-line systems utilize a common inlet and return hose and are common on trucks that simply dump, rather than spread, materials. Three-line systems are equipped with a dedicated return hose and are preferred if the truck will be used for spreading—applying gravel to a roadbed for example. A dump pump can easily be converted from two to three-line by inserting an inexpensive sleeve into its inlet port and un-capping the return port. The sleeve blocks an internal path and neutral/return oil is directed back to tank via the return port. There is one special concern; the third (return) line must be positioned below the tank’s oil level to prevent loss of prime and subsequent pump aeration damage.



E Series Pump (for dump bodies)
DO NOT USE FOR LIVE FLOOR APPLICATIONS

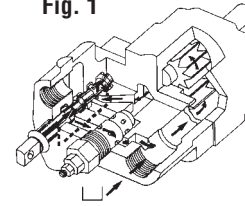
There are at least three benefits of a three-line installation over a two-line. The primary benefit is one of efficiency. The third line allows an unobstructed return path to reservoir resulting in faster cycle times. The second benefit is system protection should an operator inadvertently leave the PTO in gear—and the pump turning—while traveling down the road. The third is that the dedicated return line allows for the installation of a return line filter to remove contaminants; an important consideration, especially if trailers are frequently switched between tractors.

TWO-LINE INSTALLATION



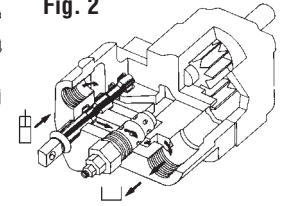
INTERNAL FLOW PATHS

Fig. 1



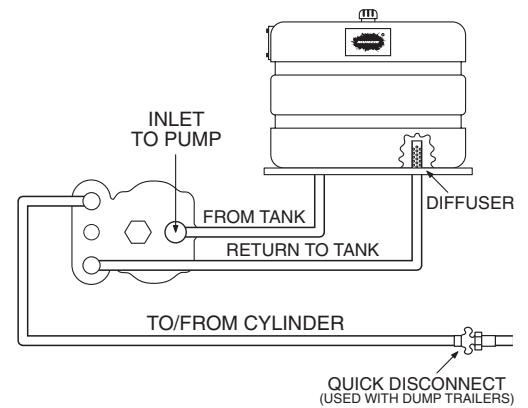
Spool in Neutral:
Oil recirculating within pump

Fig. 2



Body Lowering:
Return oil flows around relief valve and returns via inlet (tank) port

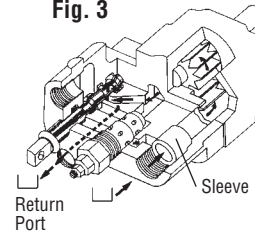
THREE-LINE INSTALLATION



IF OIL SPRAY FORMS AROUND THE BREATHER CAP ON A 3-LINE SYSTEM, THE TANK LINES MAY BE REVERSED.

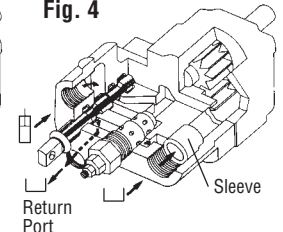
INTERNAL FLOW PATHS

Fig. 3



Spool in Neutral:
Oil circulates through pump and returns through 3rd port in pump

Fig. 4



Body Lowering:
Return oil flows through 3rd (return) port

