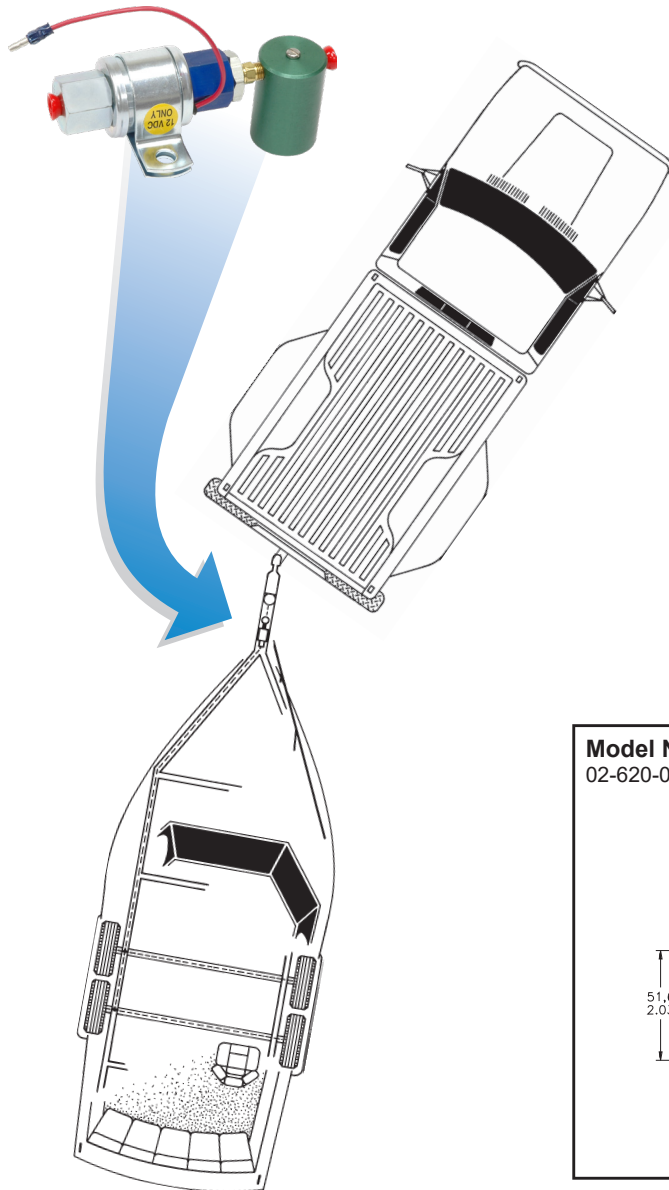




PRODUCT BULLETIN

Surge Brake Lockout (for trailer backing)



DESCRIPTION

The ZF Hydraulic Trailer Backing Lockout is designed to allow trailers with surge brakes to back-up without the trailer brakes being applied. The system is installed between the surge actuator and the trailer's brakes. It works by blocking, or locking out, the pressure from the surge brake to the trailer's brakes and can be controlled semi-automatically or manually.

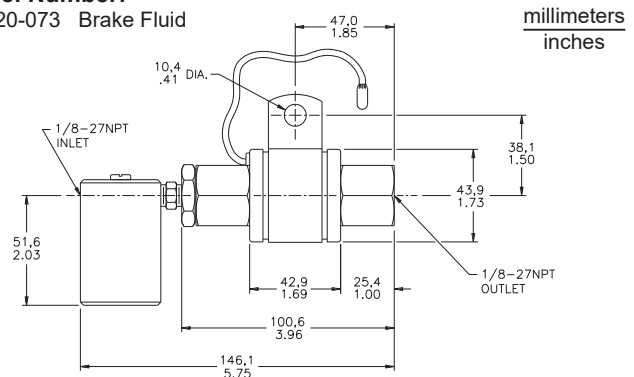
With the semi-automatic control, the Hydraulic Trailer Backing Lockout is activated by the back-up light circuit of the vehicle. Using the manual control, the operator of the backing vehicle turns the system on with a switch, typically mounted near the operator.

FEATURES

- Locks out surge brakes on the trailer so they won't apply while backing-up
- Can be installed with no additional plumbing
- Heavy duty construction for years of reliable performance

Model Number:

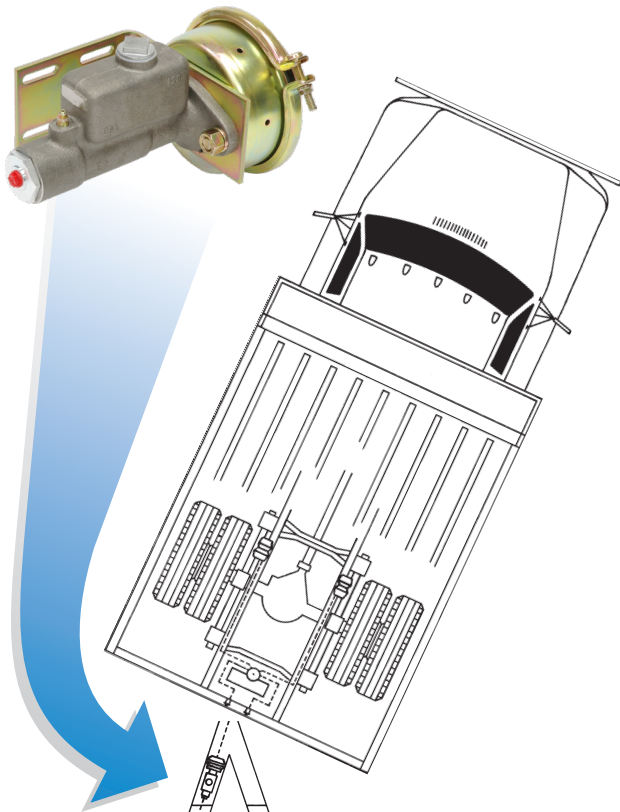
02-620-073 Brake Fluid



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Air/Hydraulic Actuators (for towing)



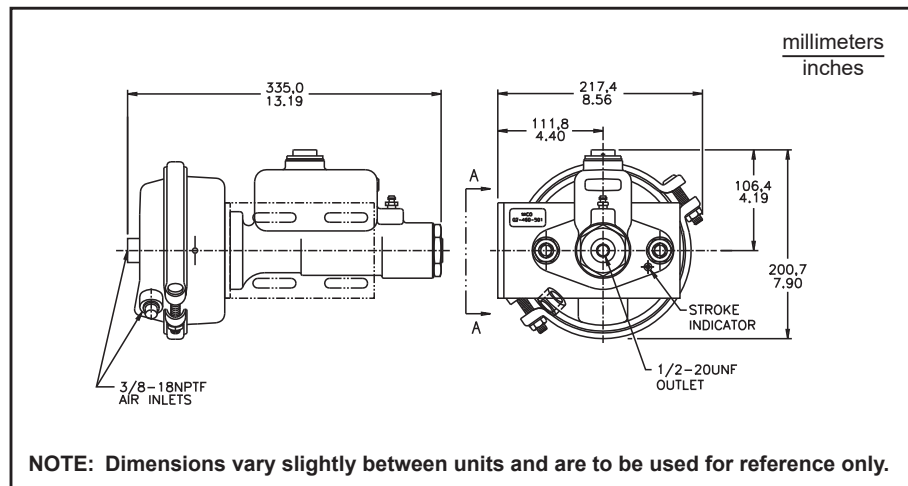
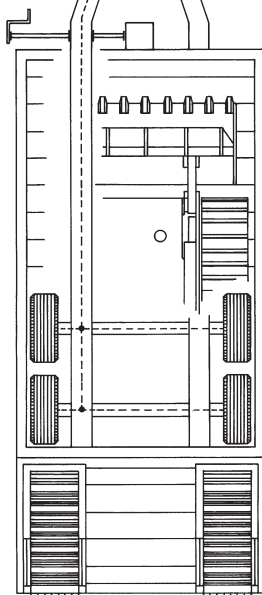
DESCRIPTION

ZF Air/Hydraulic Actuators are designed to take advantage of available pressurized air sources to produce high hydraulic pressures. This design feature is especially important for towing hydraulically braked vehicles when the towing vehicle is equipped with air. The towed vehicle's brakes can be applied in a "break away" situation when used with a remote air reservoir and relay emergency valve.

Air chamber sizes are available in 24, 30 or 36 square inches and hydraulic displacements of 3.5 or 5.9 cubic inches.

FEATURES

- Provides brake actuation for trailers equipped with hydraulic axle brakes from towing vehicle with air brakes
- Converts low pressure air to high pressure hydraulic fluid
- Integral fluid reservoir



When using disc brakes on trailer, contact ZF Off-Highway Solutions Minnesota Inc. for Air/Hydraulic Actuator model numbers without a residual check valve.

Model Number	Effective Displacement	Hydraulic Pressure @ 100 PSI Air Pressure	Bore (inch)	Residual Check Valve	Fluid Type
02-460-501	3.5 in ³	1350 PSI	1.50	Yes	BF or SF
02-460-505	3.5 in ³	1700 PSI	1.50	Yes	BF or SF
02-460-580	5.9 in ³	1500 PSI	1.75	Yes	BF

BF = Brake Fluid SF = Silicone Fluid