



PRODUCT BULLETIN

Brake Actuators for OEM Drive Axles

DESCRIPTION

The ZF Hydraulic Brake Actuators are designed for direct installation on CNH off-highway, heavy-duty drive axles. CNH drive axles contain internal brakes that are operated by means of integral mechanical pull-rods. The ZF Hydraulic Brake Actuators install directly onto the pull-rods to provide hydraulic control to apply and release the axle brakes.

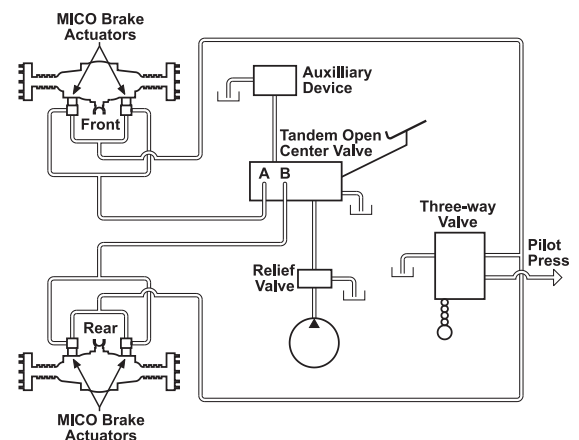
ZF Spring Apply and Spring Apply/Hydraulic Apply Actuators are designed for use with CNH D-45, D-60 and D-62 series drive axles. For other CNH series drive axles contact ZF Off-Highway Solutions Minnesota Inc. The spring apply actuators are a spring apply, hydraulic release actuator to be used for parking brakes. The spring apply/hydraulic apply actuators can be used for parking brakes and service braking. All ZF Brake Actuators are designed for use with mineral base hydraulic oil.

FEATURES

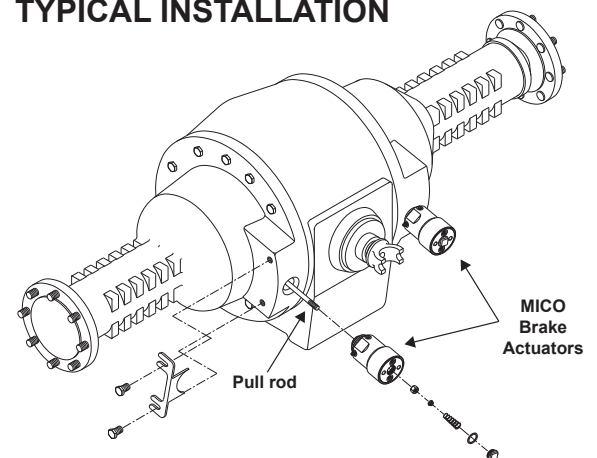
- Designed for use with CNH D-45, D-60, D-62 series axles
- Can be installed with little or no modification to the original axle
- Totally enclosed units make them ideal for use in adverse environmental conditions
- Provide service and parking brakes or parking brakes only depending on the model selected

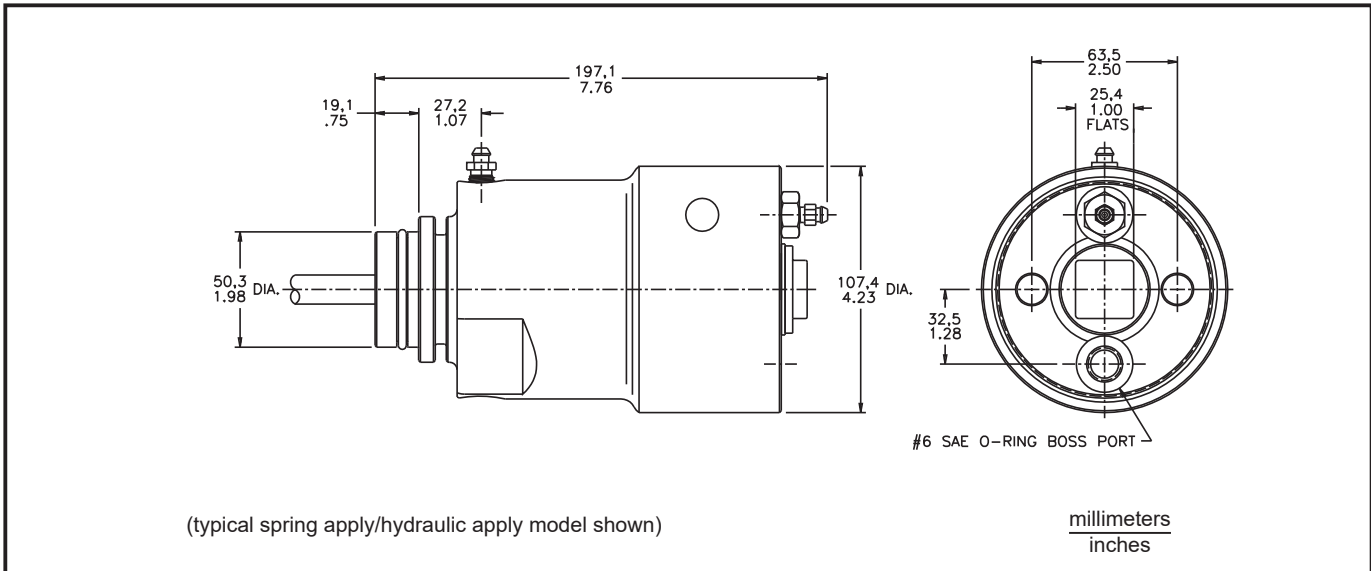


TYPICAL SYSTEM



TYPICAL INSTALLATION





Spring Apply/Hydraulic Apply Brake Actuators

Model Number	Axle Model Number	Pull Rod Thread	Minimum Spring Apply Force	Minimum Spring Release Pressure	Hydraulic Apply Effective Area	Maximum Pressure Hydraulic Apply	Maximum volume Hydraulic Apply
03-460-220	D-60 & D-62	1/2-20	940 lb	160 PSI	0.590 in ²	2600 PSI	0.295 in ³
03-460-222	D-45	7/16-20	940 lb	160 PSI	0.590 in ²	2600 PSI	0.295 in ³
03-460-256	D-45	7/16-20	940 lb	160 PSI	0.920 in ²	1700 PSI	0.460 in ³
03-460-258	D-45	M12x1.75	1300 lb	260 PSI	0.920 in ²	2600 PSI	0.460 in ³
03-460-260	D-45	7/16-20	1300 lb	260 PSI	0.920 in ²	2600 PSI	0.460 in ³

NOTES:

- Stroke for all models is 0.5 inch
- Maximum spring release pressure for all models is 3000 PSI.
- Maximum volume spring release for all models is 3.93 in³.
- Hydraulic apply pull rod force is calculated by multiplying the hydraulic apply pressure by hydraulic apply effective area listed above.
- Minimum spring apply spring force is calculated at 0.14 inch of slack compensation.
- Confirm pull rod thread prior to selecting actuators.

Spring Apply Brake Actuators

Model Number	Axle Model Number	Pull Rod Thread	Minimum Spring Apply Force	Minimum Spring Release Pressure	Maximum Spring Release Pressure
*03-460-206	D-60 & D-62	M12x1.75	940 lb	160 PSI	3000 PSI
03-460-210	D-60 & D-62	M12x1.75	1300 lb	260 PSI	3000 PSI

* Uses the dust boot provided with the drive axle.

NOTES:

- Stroke for all models is 0.5 inch.
- Maximum volume spring release for all models is 3.93 in³.
- Minimum spring force is calculated at 0.14 inch of slack compensation.
- Confirm pull rod thread prior to selecting actuators.

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