



CZ Engineering, Inc.

Craftsmanship and Innovation

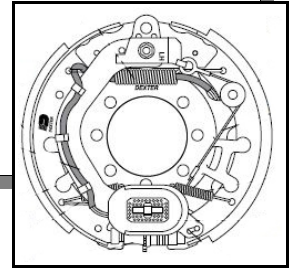
33863 Highway E
Dixon, MO 65459

Brake Options

From the builders of the World's Safest Pole Trailers.

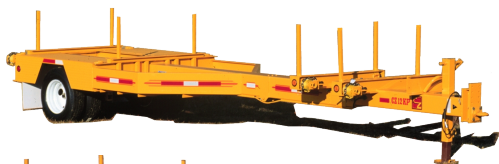
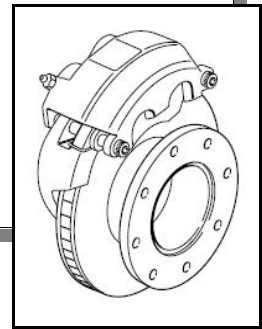
Pure Electric Brakes

- **How They Work:** An electrical signal from a *brake controller* mounted in the truck cab energizes *magnets* mounted on *levers* in brake drums at each wheel. The magnets are attracted to the *amature surface* inside the rotating brake drum, resulting in the rotation of a *cam* on the other end of the lever. The cam spreads two *brake shoes* against the drum to accomplish the desired braking action.
- Pure Electric Brakes are the easiest of all brake systems to install and maintain. Neither air nor hydraulic leaks are a factor. They are particularly well-suited for telescopic trailers where air or hydraulic lines are susceptible to the fluxuating position of the trailer frame. (e.g. Extending the tongue.)
- The Dexter electric brakes used on CZ trailers are self-adjusting both forward and in reverse.
- Any towing vehicle can be easily and economically set up to work with electric brakes.
- It is easy and economical to set up a towing vehicle with modern inertia based brake controllers which provide for smooth, proportional braking.



Electric Over Hydraulic Brakes

- Electric Over Hydraulic Brakes combine the advantages of pure electric brakes with those of hydraulic brakes and are just as well-suited for telescopic trailers, since the communication between the truck and trailer is all electrical until it gets to the axle(s).
- The same economical and easy to install inertia based brake controllers used with pure electric brakes are used to actuate a high-tech, fast acting pump mounted right above the axle(s). The pump performs the same function as a typical automotive master cylinder to actuate the wheel cylinders in each brake drum or the caliper in the case of the disc brakes on the 12,000 lb axle.
- There are fewer moving parts inside the brake drum to be subject to road grime. (Disc brakes are available on the 12,000 lb axle.)



CZ Pole Trailers feature tongues that are *TWICE* as strong as our competition!

Easy adjustment on bronze bushed steel rollers!



For the longest lasting, safest, and best investment in Pole Trailers, give us a call.

Manufactured by:
CZ Engineering, Inc.
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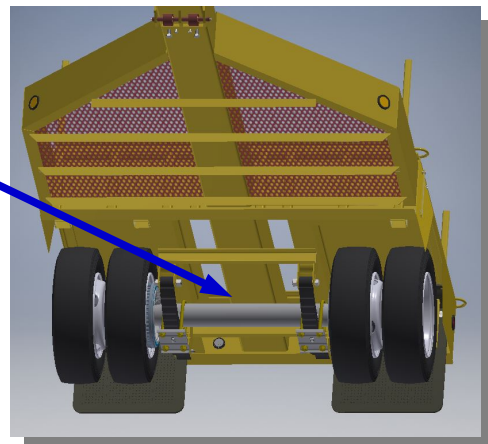
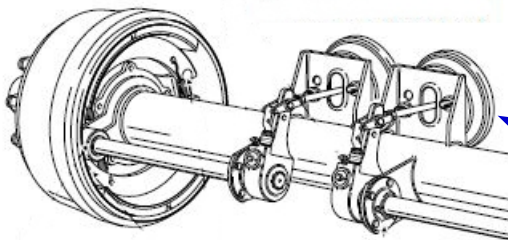
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About Air Brakes

- There's no doubt, air brakes are particularly well-suited to heavy haul applications. That is especially true when used on a trailer that may significantly out-weigh the towing vehicle, as is the case with a typical tractor-trailer.
- Air brakes, like pure hydraulic brakes, are required to incorporate a sophisticated **electronic anti-lock system**, which adds complexity and potential maintenance issues.
- Air brakes cost significantly more to set up on a trailer than do pure electric or electric over hydraulic brakes.
- Air brake trailers require trucks that have air brakes AND that are equipped with a control system ("tractor kit") that is difficult and expensive to install if not already present.
- Trailers equipped with air brakes can not be moved or transported with a pickup truck or other non-air brake truck without "caging" the emergency brake spring.

Why We Don't Offer Air Brakes

- In spite of the cost and limitations of air brakes, they still have some advantages over other brake system. Unfortunately, air brakes also preclude the implementation of some key features that make CZ pole trailers **safer, easier to use, longer lasting, and more flexible** than other pole trailers.
- **Safer & Narrower:** CZ pole trailers are only 81" wide because it is safer to transport long, narrow loads like poles on a long, narrow trailer. The width of our trailers makes it easier for operators to keep them in their own lane and makes it easier to maneuver in tight situations.
- **Stronger Tongue:** CZ pole trailers use the strongest tongue in the industry. The large square tongue requires a large receiver tube on the rear portion of the trailer. That receiver tube passes over the axle(s), taking up the space that would be required by air brake chambers.
- **Longer & Shorter (more flexible):** CZ pole trailers are designed with a greater range of adjustment than other pole trailers. We do it by passing the tongue through a receiver tube that runs the full length of the rear portion of the trailer. As mentioned above, that receiver tube passes over the axle(s), taking up the space that would be required by air brake chambers.



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Some of the design features that make CZ pole trailers safe, user-friendly, and flexible, don't allow room for air brakes.