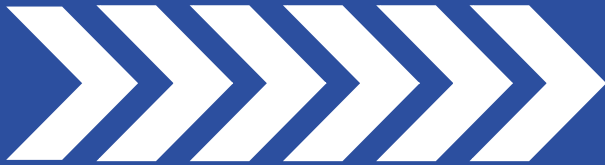


# E-Z RIDER®

Heavy Duty Clutches  
Made in the U.S.A.



## Technical Hot Sheet

### CLUTCH BRAKE 101



- The Basics •*
- Types •*
- Operation •*
- Failures and Causes •*
- Thicknesses •*
- Settings •*

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# CLUTCH BRAKES

## The Basics

- Designed to slow or stop the input shaft when the clutch pedal is depressed.
- Used on non-synchronized transmissions.
- Installed on input shaft against the input shaft bearing retainer. The tabs on the clutch brake fit into two grooves of the input shaft (*not the clutch disc splines*).
- Designed to work at engine idle with the truck stopped (only used when shifting into 1st or Reverse).
- Friction material is made from wet paper friction.



## Clutch Brake Types

- The two most popular styles are Torque Limiting and Hinged style.
- Other styles include Rigid one piece and two piece styles.

*Torque Limiting*



*Hinged*



## How It Works

- Clutch must be fully released.
- Because the brake is connected to the input shaft (via the tabs) when pressure is applied to the clutch brake, the friction material on the brake causes it to slow.

**Note:** Torque limiting clutch brakes are designed to slip internally when under too much load to keep from breaking the tabs off or damaging the transmission.



*Torque Limiting Clutch Brake  
Exploded View*

## Clutch Brake Thicknesses

Clutch brakes come in different thicknesses to compensate for the wear that takes place in the clutch system. Standard size is between 3/8" and 7/16". Oversized brakes are also available.



# CLUTCH BRAKES

## Clutch Brake Settings

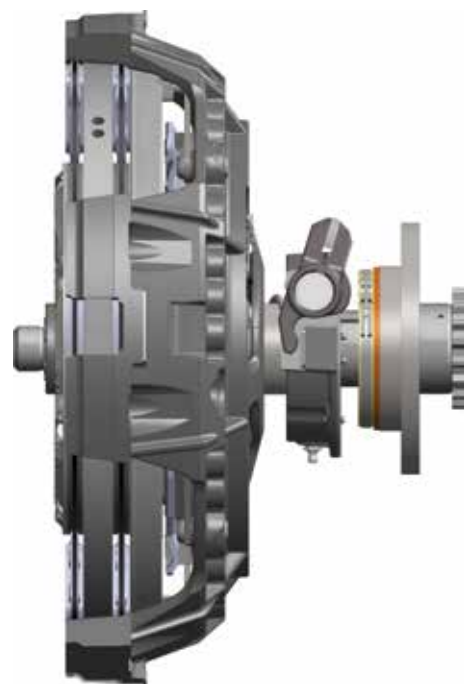
Verify the clutch brake squeeze by inserting .010" feeler gauge between bearing and clutch brake, then depressing the pedal to end of stroke. The feeler gauge must be tightly clamped between the bearing and the clutch brake. This confirms the contact of the bearing to the clutch brake.

The clutch brake will be squeezed if the total pedal stroke slightly exceeds the movement required to move the yoke/fork 5/8" to 11/16" (the combined total of the 1/8" clearance between yoke tips and wear pads and the 1/2" - 9/16" brake squeeze gap).

**Note:** In the event the brake is not being squeezed, do not change the 1/2" - 9/16" gap for the clutch brake, or the 1/8" clearance for the bearing housing. Consult the vehicle manufacturer service manual.

In analyzing the reasons for the brake not being squeezed, other things to check for include:

- Worn linkage components or yoke and cross shaft bushings. If necessary, replace those components.
- Improper linkage assembly. Verify that linkage is assembled in the correct hole locations.
- Pedal stroke. To adjust, raise the upper and/or lower the lower the pedal stops.
- If the clutch is hydraulically assisted, make sure the slave and master cylinders are functioning properly.



**Note:** Maximum brake squeeze (in cab of truck) should not exceed 1" from the end of pedal stroke. If it does, it can be adjusted as follows:

1. Changing pedal stops in cab to reduce total pedal stroke.
2. Increasing 1/8" yoke-to-bearing setting to lower squeeze. (This will increase free-pedal travel.)

## Common Failures

- Tabs breaking off (rigid style)
- Slips and won't slow input shaft (torque limiting)
- Coming open or apart (hinged or two piece)

## Typical Causes

- Improper adjustment
- Worn input shaft bearing retainer
- Worn grooves on input shaft
- Driver abuse (i.e. pressing pedal to the floor while moving)

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