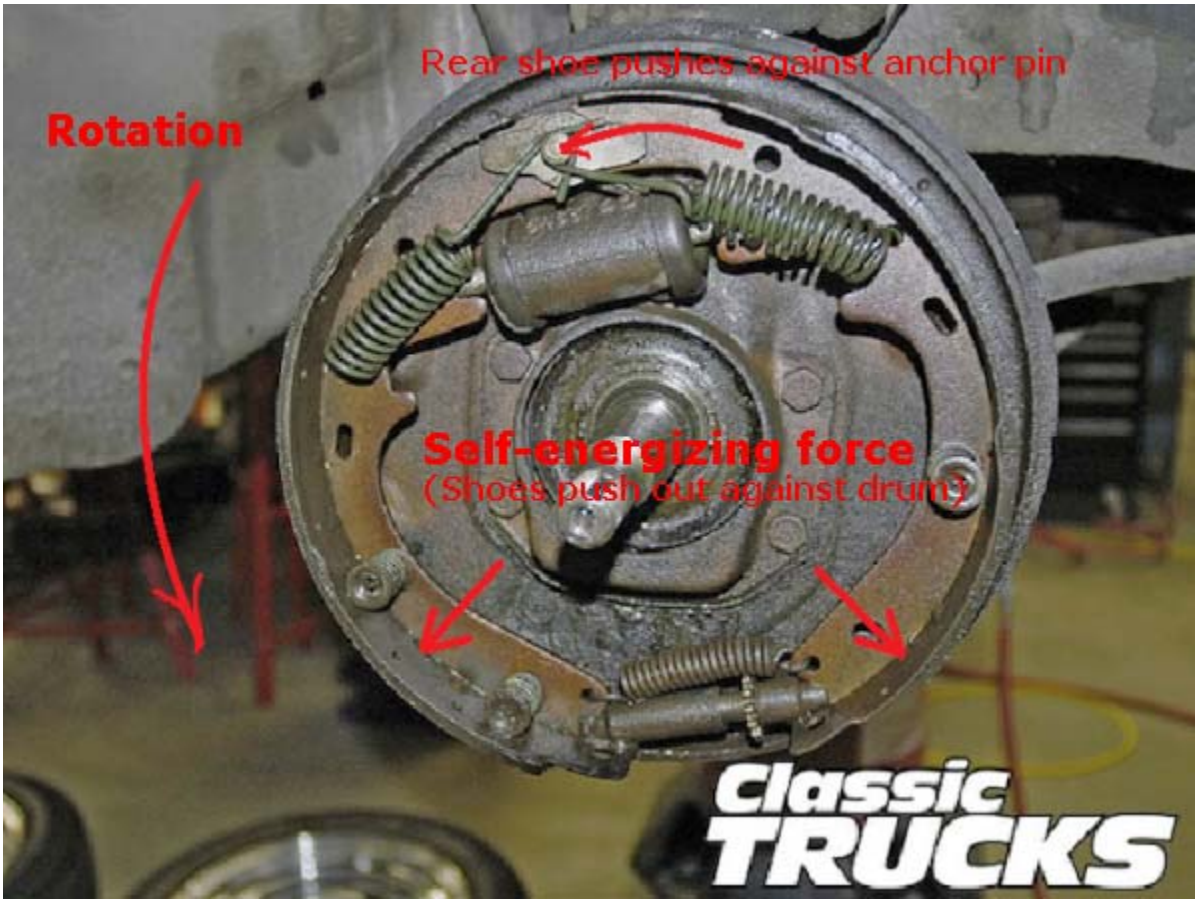
Self-Energizing Mechanical Explanation

http://www.hotrod.com/articles/0911clt-drum-brake-system-basics/

When the driver applies brake pedal pressure at the master cylinder, fluid disperses to each wheel cylinder. The curved top ends of each shoe fit against the round anchor pin. As the pistons move outward in the wheel cylinder, the shoe lining contacts the drum. The linked shoes attempt to rotate with the drum. With the vehicle traveling forward, the rear shoe stops against the anchor pin. Backing up, the front shoe stops against the anchor pin.

The obstructed rotational force now redirects, pressing the shoes outward against the drum. This additional force, referred to as “self-energizing”, is beyond driver input and hydraulic pressure. When self-energizing force can apply in either direction of rotation, the system is called duo-servo.



As the vehicle moves forward, the self-energizing force is greater at the rear shoe. To keep lining wear even, the rear shoe’s lining is longer and sometimes of different composition than the forward shoe. With a shorter lining on the primary or forward-facing shoe, self-energizing force is slightly less when the vehicle moves backward. Since the vehicle does not back up at high speeds, braking is sufficient in either direction.

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