

# CARDONE ProTech

Supporting Today's Professional Technician



## CARDONE Solves GM Rack and Pinion Problem

### Application:

1996 Buick Regal, 1997 Oldsmobile Cutlass Supreme, 1997-98 Oldsmobile Cutlass, Chevrolet Lumina, Monte Carlo, Malibu, 1998 Oldsmobile Intrigue, some 1996 Pontiac Grand Prix, Oldsmobile Cutlass Supreme and 1997-98 Buick Regal cars.

### Problem:

A lower pinion bearing in the rack & pinion may separate, causing the driver to experience either an intermittent loss of power steering assist or unintended power assist. (Source: GM)

### Cause:

The Rack and Pinion lower pinion bearing can fail due to faulty original bearing.

### Solution:

CARDONE engineers identified this OE problem in January 2002. By identifying the problem and implementing a different bearing, we provided an improved design solution 2 years prior to GM's announcement.

### Note:

The following CARDONE part numbers are affected 22-142, 22-170, 22-172, 22-181, 22-182, 22-184 and 22-186.

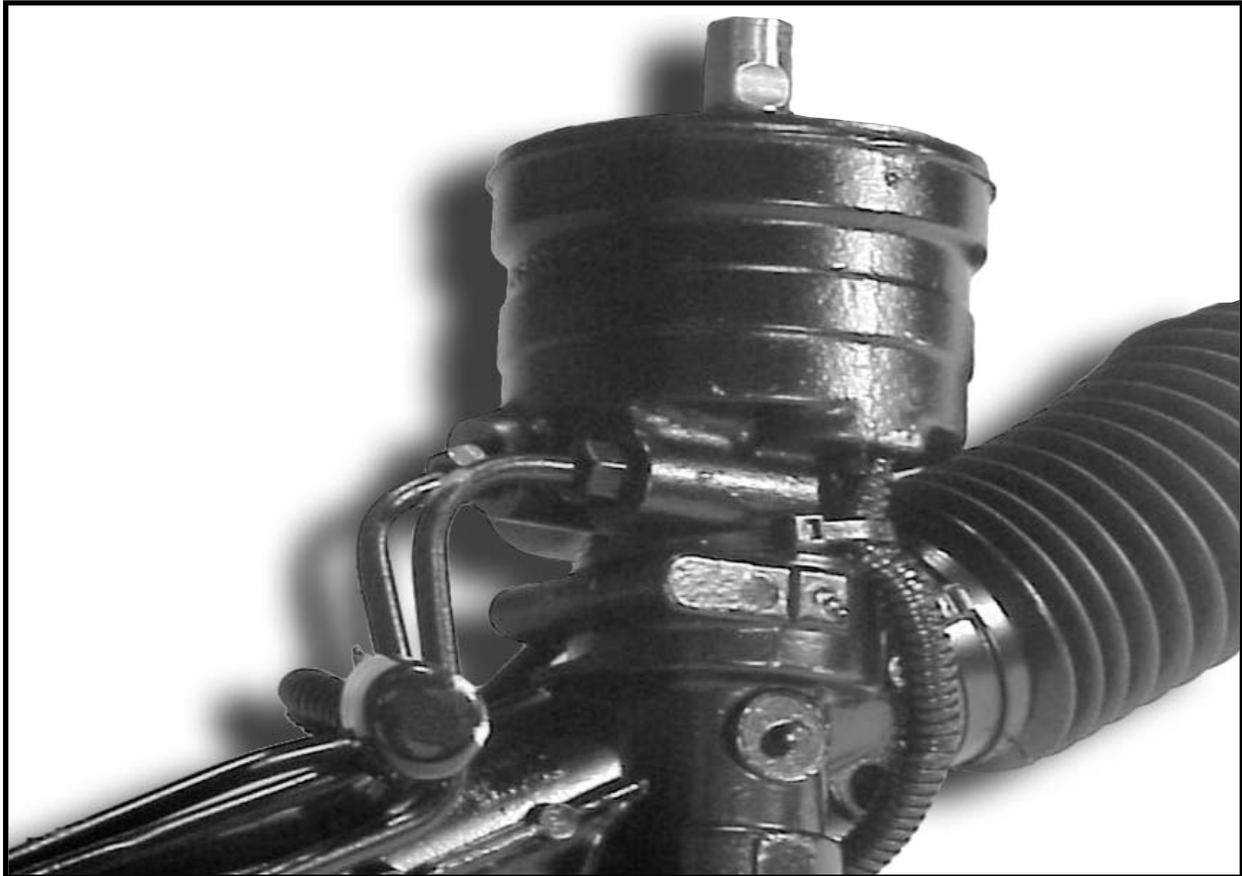


**CARDONE bearing -**  
balls and inner cage  
in proper alignment

**OE bearing -**  
balls and inner cage  
out of alignment

For other ProTech publications, visit [www.cardone.com](http://www.cardone.com)  
CARDONE Industries, Inc. • 5501 Whitaker Ave. • Philadelphia, PA 19124-1799

# As steering systems become more complicated, your choice of parts doesn't have to be.



As OEMs continue introducing technologically advanced parts, you can count on us to remanufacture them. You no longer have to call the new car dealer to capture technology sales because we remanufacture the units using the same quality systems as original equipment manufacturers. The result is units that perform and last just as long as their new counterparts and offer you high profit margins.

Consequently, you can rely on CARDONE's Rack & Pinion units with Magnasteer and EVO. In the future, OEMs will be introducing these variable-ratio racks on more vehicles, and we will be ready to offer them to you. We make it easy: one source for all makes and

all models. So, keep it simple. Keep it reman. **Magnasteer** — Magnasteer is a variable-effort system that uses vehicle speed input and magnets to modify steering assist.

**Electronic Variable Orifice** — EVO is a valve on the rack & pinion that uses a hydraulic circuit system and an electronic controller to create a variable effort steering.

**New O.E. technology,  
remanufactured today.**

**CARDONE**<sup>®</sup>