# Mechatronic Rear Steering

**Originator:** Mike Hargrave  
**Date:** 1/27/09  
**Analyst:** Mike Hargrave

## Concept Description:
Mechatronic Rear steer system -

Electronically controlled ball screw driven by an electric motor. Sensors in steering box and inside the box coordinate to make the ball screw move to position rear tires. Different modes based on inputs from driver.

## Strengths
- Connects where toe points are
- Acts as a controllable bumpsteer
- Doesn’t scrub during bumps like bumpsteer
- Decreases turning radius at low speeds
- Ball screw keeps efficiency high
- Electronic control allows for quick changes in speed or added features and per driving tuning
- Electric motor keeps the driver from turning two more tires with steering wheel

## Weaknesses
- Added weight
- Have to add alternator, robbing power from the briggs
- Need lots of testing time
- Requires programming and electrical circuits knowledge
- Needs to be fully sealed

## Opportunities
- Dead zone can be program for each driver.
- Follow mode allows crabbing and high speed “lane changing”
- Normal mode for low speed turns
- Huge design points
- Alternator power could be used for other electronics on the car (data aq, or lights for testing at dusk)

## Threats
- Water proofing the electronics
- Fatigue of solder joints
- If sensors get offset rear tires would need a fail safe
- Electronic malfunction

## Notes: