

# Eco-Marathon Vehicle

## CSK OVERRUNNING CLUTCH

### PROBLEM

A team of engineering students from the University of Offenburg in Germany needed an overrunning clutch solution for use in their diesel-powered, peri-urban vehicle. The team was one of many from around the world competing in the annual Shell Eco-marathon which challenges students to design, build and test ultra energy-efficient vehicles.

The team contacted Stieber Clutch to request a CSK30 PP overrunning clutch which allowed the vehicle to coast when the engine was not running. "The CSK clutch was selected due to it's relative small size and low drag torque," said team leader Professor Claus Fleig. The clutch was positioned on the drive chain sprocket near the wheel/tire assembly.

### SOLUTION

CSK units feature ultra-hard Formchrome® sprags which provide extra-long life, maximum wear resistance and lower maintenance costs. Formchrome sprags – exclusive with Stieber/Formsprag – are made by diffusing chromium into the surface of hardened high carbon alloy steel to form a chromium-carbide alloy.



### HIGHLIGHTS

- Sprag type overrunning clutch integrated into a 62 Series ball bearing
- Keyway on both the inner and outer race
- Formchrome® sprags for long life
- 133 lb.in. (180 Nm) torque capacity
- 4,200 RPM maximum overrunning speed

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