

Tolerance Rings in the Automotive Industry

Ideas You Can Use

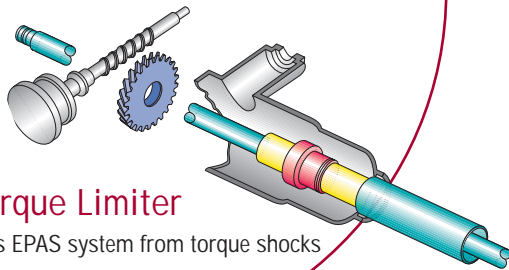
Imagine The Possibilities . . .



- Power Transmission
- Torque or Axial Force Control
- Differential Thermal Expansion
- Simplifying Assemblies
- Relaxing Component Tolerances

And On and On . . .

Applications

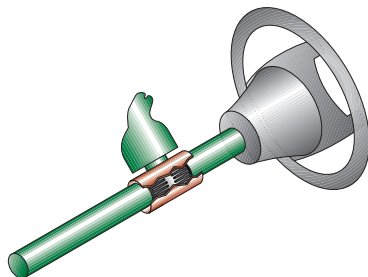
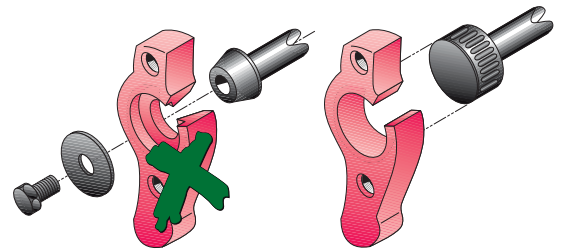


EPAS Torque Limiter

- Protects EPAS system from torque shocks
- Consistent performance
- Economic solution
- Simple assembly
- Improved packaging

Cams to Shaft

- Eliminates more costly solutions
- Reduced stresses, component weight and cost
- Enhanced assembly
- Improved positioning accuracy



Anti-Theft Steering Column Lock

- Proven solution
- Improves vehicle security
- Reduces cost/weight of column
- Unique duplex tolerance ring further improves and simplifies design

More Automotive Applications



Steering Column Collapse Mechanism

- Controllable energy absorption
- Consistent performance
- Economic solution
- Simple assembly
- Improved packaging



Light Alloy Pulley

- Compensates for differential thermal expansion
- Relaxes tolerances
- Eliminates Keyway/Spline/Tapered Bore, etc.
- Reduces weight/cost



Bearing Mounts into Stamped Steel Parts

- Relaxes tolerances to "as stamped"
- Low assembly force
- Constant retention force
- Increased life for stamping tool



Plastic Impeller to Shaft

- Eliminates need for insert molding
- Relaxes tolerances and compensates for differential expansion
- Simplifies assembly
- Reduces costs



Powder Metal Components

- Eliminates Keyway
- Reduces stresses, component weight and cost
- Enhanced assembly
- Improved positioning accuracy

