Concept

- Design and manufacture a working transmission
- Must be able to reach speeds up to 40mph
- Manufacture in a $500 budget
Timeline

- Modify design for new clutch (3 weeks)
- Finalize parts list and order parts (1-2 weeks)
- Build sub-assembly and test fit components (4-6 weeks)
- Product testing (1-2 weeks)
Design

- Upgrade existing primary clutch on the motor
- Parameters of clutch are from 0-3100 rpm
- Need space for new components
Design

- Comet Torque Converter
- Continuously variable gearing from motor to jackshaft
- Sprocket and chain from jackshaft to driveshaft
Torque Converter

- Uses movable pulleys to change output RPM
- Unlimited gear ratios within clutch parameters
- Acts as both a clutch and a transmission
Torque Converter

- Pulleys move as RPM on engine increases/decreases
- Low gear primary pulley is small, secondary is large
- High gear primary is large, secondary is small
## Budget

### Parts list

<table>
<thead>
<tr>
<th>Item</th>
<th>Product #</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jackshaft</td>
<td>30F597</td>
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<tr>
<td>Sprocket</td>
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<td>Bearing (2)</td>
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<td>Keystock</td>
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<td>Torque Converter</td>
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<td>Chain</td>
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<tr>
<td>Clutch bolt</td>
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<td>6</td>
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</tbody>
</table>

**Total** 474.85
Reductions

- Engine RPM is approximately 3100
- Reduction from torque converter is 2.4:1 for low gear
- High gear ratio is 1:1
- Reduction from chain and sprocket is 3:1
- Reductions meet our needs for overall speed as well as torque
7/8” to 1” coupling
Special Thanks

- Cale Polkinghorne
- Mike Rudisil
- Robert Marlor
- Carl Peterson and Yvonne LeMire
- Classmates
Questions?