Tilt₂₀

Tilting Watering Can

Yellow A
**Tilt20**

**GOAL:** Watering can with no torque on wrist

2-part design:
- "Can" rotates within stationary handle upon pushing a button

Cutaway view
There is a need for $\text{Tilt}_{20}$

- No torque on wrist
- Portable
- Mechanically superior
- 70% of US households spend time and money on lawns and gardens
There is desire for Tilt₂₀

Which would you rather do when using a watering can?

- Rotate Wrist
- Press Button

Mechanism Preference

- Rotate Wrist: 5
- Press Button: 17
$30 Million Industry

Total Gardening: **33.5B**
Garden Care: **6.7B**
Projected Growth: **7%** per year (2016)
Watering Can Market: **30M**

70 million households spend
>$100 yearly on gardening
Design

1.6L capacity

Packaging & ergonomics

Continuous arc

Spout placement and angle

Center of mass

Tilt$ _2 $0
Mechanism

1. Gears & Rack

2. Motor-Powered

3. Scissor
Sketch Model Testing

• Attaching scissor mechanism with rivets and spacers did not work – difficult to engage
Sketch Model Testing

- Attaching scissor links with screws works
Sketch Model Testing

• Integration of mechanism into watering can
Price Benchmarking

ACE $6.59

Ames $69.99

Haws $360.00

Tilt\textsubscript{2}0 Competitor
Lessons Learned

- First answer isn’t always right
- Precise machining is critical
- Spatial constraints
Next Steps

- Get user feedback from sketch model
- Choose materials/components
- CAD details for manufacturing