

# Test Plan

P14473

# Design Analysis

Engineering  
Requirement Tested:  
S9

- Completed
  - Finite Element Analysis using Inventor and/or Solidworks, with a designated safety factor of 1.5 for all calculations

Members: ALL

# Size Test

Engineering  
Requirement Tested:  
S12, S13, S14

## Plan

- Use measuring tape to measure fixture height
- Use measuring tape to measure fixture length
- Use measuring tape to measure fixture width

## Check List

- Fixture height is less than or equal to 8 feet
- Fixture length is less than or equal to 5 feet
- Fixture width is less than or equal to 5 feet

Members: IE

# Function and Failure Test

Engineering  
Requirement Tested:  
S5, S6, S7

## Plan

- Setup mounting fixture and check all functions
- Set mounting fixture in motion and unplug power cord
- Plug in power cord
- Set mounting fixture in motion and unplug compressed air
- Plug in compressed air
- Emergency shut-off

## Check List

- No damage to the mounting fixture
- No damage to electrical components
- No damage to pneumatic components
- All functions work properly
- Fixture returns to resting position

Members: ALL

# Training Test

Engineering  
Requirement Tested:  
S11

## Plan

- Instruct new user in fixture operation including setup, safety, rotation control, and tilt control

## Check List

- User learned to safely operate hose test fixture in less than 30 minutes

Members: ALL

# Maximum RPM Test

Engineering  
Requirement Tested:  
S10

## Plan

- Place a piece of tape on the frame of mounting fixture.
- Set mounting fixture in motion
- Use stopwatch to measure the rotational speed

## Check List

- Mounting fixture does not exceed 1 RPM

Members: ALL

# Weight Limit Test

Engineering  
Requirement Tested:  
S1, S5, S6

## Plan

- Setup mounting fixture and check all functions unloaded
- Add weight in increments of 100lbs starting from 200 to 1500lbs and hold for 10 minutes
- Remove weight
- Add weight again in increments of 100lbs starting from 200 to 1500lbs while checking tilt and rotational functions with each addition of weight

## Check List

- No damage to the mounting fixture
- No damage to electrical components
- No damage to pneumatic components
- All functions work properly

Members: ALL

# Waterproof Test

Engineering  
Requirement Tested:  
S5, S6

## Plan

- Setup mounting fixture outside
- Spray entire fixture with garden hose for 5 mins while mounting fixture is in motion
- Check for proper functionality of electrical and pneumatic components.
- Wait at least 10 mins
- Repeat plan at least 4 more times

## Check List

- No rust
- All functions work properly
- No damage to the mounting fixture
- No damage to electrical components
- No damage to pneumatic components

Members: ALL



# Water w/ Weight Test

Engineering  
Requirement Tested:  
S1, S5, S6, S7

## Plan

- Setup mounting fixture outside
- Check for proper functionality of electrical and pneumatic components.
- Add weight again in increments of 100lbs starting from 200 to 1500lbs while spraying with water and checking tilt and rotational functions with each addition of weight

## Check List

- No rust
- All functions work properly
- No damage to the mounting fixture
- No damage to electrical components
- No damage to pneumatic components

Members: ALL

# Cooper Crouse-Hinds Test

Engineering  
Requirement Tested:  
S1, S2, S3, S4, S5,  
S6, S7,

## Plan

- Deliver mounting fixture to Cooper Crouse-Hinds
- Assemble and install fixture (electrical and pneumatic components)
- Test all functions w/o weight
- Test all functions w/o weight while water hose testing
- Test attachment mechanism w/largest CCH fixture
- Test all functions w/fixture attached
- Test all functions w/fixture attached while water hose testing

## Check List

- Correctly installed
- No rust
- All functions work properly
- No damage to mounting fixture
- No damage to Cooper fixture
- Fixture functions properly with largest CCH product

Members: ALL and  
CCH