Test cases:

1. Idle:
   1. Estop
      1. Pass – LCD output doesn’t change, state changes locked
   2. Arming Chain High
      1. Pass
   3. Everything else should do nothing
      1. Pass
2. Ready:
   1. Go to Drawing if:
      1. AC = HIGH
      2. FOPTIC = LOW
      3. ROPTIC=HIGH
      4. DRAWIN=HIGH
      5. FBUMP=HIGH
      6. RBUMP=LOW
         1. Pass
   2. E-stop
      1. Pass – LCD output doesn’t change, state changes locked
   3. Go to Idle if:
      1. AC=LOW
         1. Pass
3. Drawing:
   1. Go to Drawn if
      1. FBUMP=LOW
      2. RBUMP=HIGH
         1. Pass
   2. E-stop
      1. Pass – LCD output doesn’t change, state changes locked
4. Drawn:
   1. Go to Firing if:
      1. AC=HIGH
      2. FIREIN=HIGH
      3. FBUMP=LOW
      4. RBUMP=HIGH
      5. FOPTIC=LOW
      6. ROPTIC=LOW
         1. Pass
   2. Go to Retracting if:
      1. AC=HIGH
      2. RESETIN=HIGH
         1. Pass
   3. E-stop
      1. Pass – LCD screen flooded with junk characters, state changes locked
5. Firing:
   1. Go to Fired if:
      1. FBUMP=LOW
      2. RBUMP=HIGH
      3. FOPTIC=HIGH
      4. ROPTIC=HIGH
         1. Pass
6. Fired:
   1. Go to Idle if:
      1. FBUMP=HIGH
      2. RBUMP=LOW
         1. Pass
7. Retracting:
   1. Go to Ready if:
      1. FBUMP=HIGH
      2. RBUMP=LOW
         1. Pass
8. E-Stop:
   1. Don’t ever transition to another state.
      1. Pass