MEMORANDUM

To: Jude Pearse

From: Hunter Smith, Reed Sheridan, Cameron Grass

Subject: Can Crusher Final Project Proposal

Date: November 3, 2017

Opening/Brief Overview

The can crusher will be able to safely crush aluminum cans. The device will use an inductive proximity sensor to sense when a can is present, which will allow the device to work and crush the can. Until a can is present, the device will not be able to crush cans. The crusher will be protected by plexiglass, giving the device a secure and stable cover. A capacitive proximity sensor will be implemented to ensure the device won't operate if the operator removes there hand from the sensor which acts a natural emergency stop. Additionally a IEC Limit Switch will act as the stop switch to stop the device once the can if fully crushed. Lastly several indicator lights will be used to indicate the mode of operation the crusher is currently preforming.

their

what is this?

Inputs/Outputs

Inputs:

- CLICK Basic (Automation Direct - Part Number: C0-00DD2-D),
- Inductive Proximity Sensor (Automation Direct - Part Number: PBK-AN-2H),
- Capacitive Proximity Sensor (Automation Direct - Part Number: CR1-00-2A)
- IEC Limit Switch (Automation Direct - Part Number: AAP2T14Z11)

research: best way to hook up to compressed air.

Jude - check if this common uses same air canister

need to include the pneumatics - that's what actually crushes the can

Outputs:

- Green indicator light to indicate idle state.
  (already provided with existing setup)
- Yellow indicator light to indicate caution operation in progress.
  (Automation Direct - Part Number: ECX2053-24L)
- Red indicator light to indicate incomplete operation.
  (Automation Direct - Part Number: E22HL2X4)

Approach

Please refer to attachment 1, page 3, for a sketch of the system. The can crusher will be built using the existing crushing actuator and additional sensors and outputs will be built around the crushing actuator to present the user with a safe and functional demo of a PLC's operating. The inputs and outputs refinance a lot of new parts so that this demo dose not need to be dismantled for future classes use of the automation lab.

All 3 must be responsible for some part of the coding

Hunter Smith will be responsible for coding and document preparation, in part.

Reed Sheridan will be responsible for drawings and fabrication of the demo, in part.

Cameron Grass will be responsible for coding and document preparation, in part

Contractual Signatures/Closing

Hunter Smith: _____ Date: _____

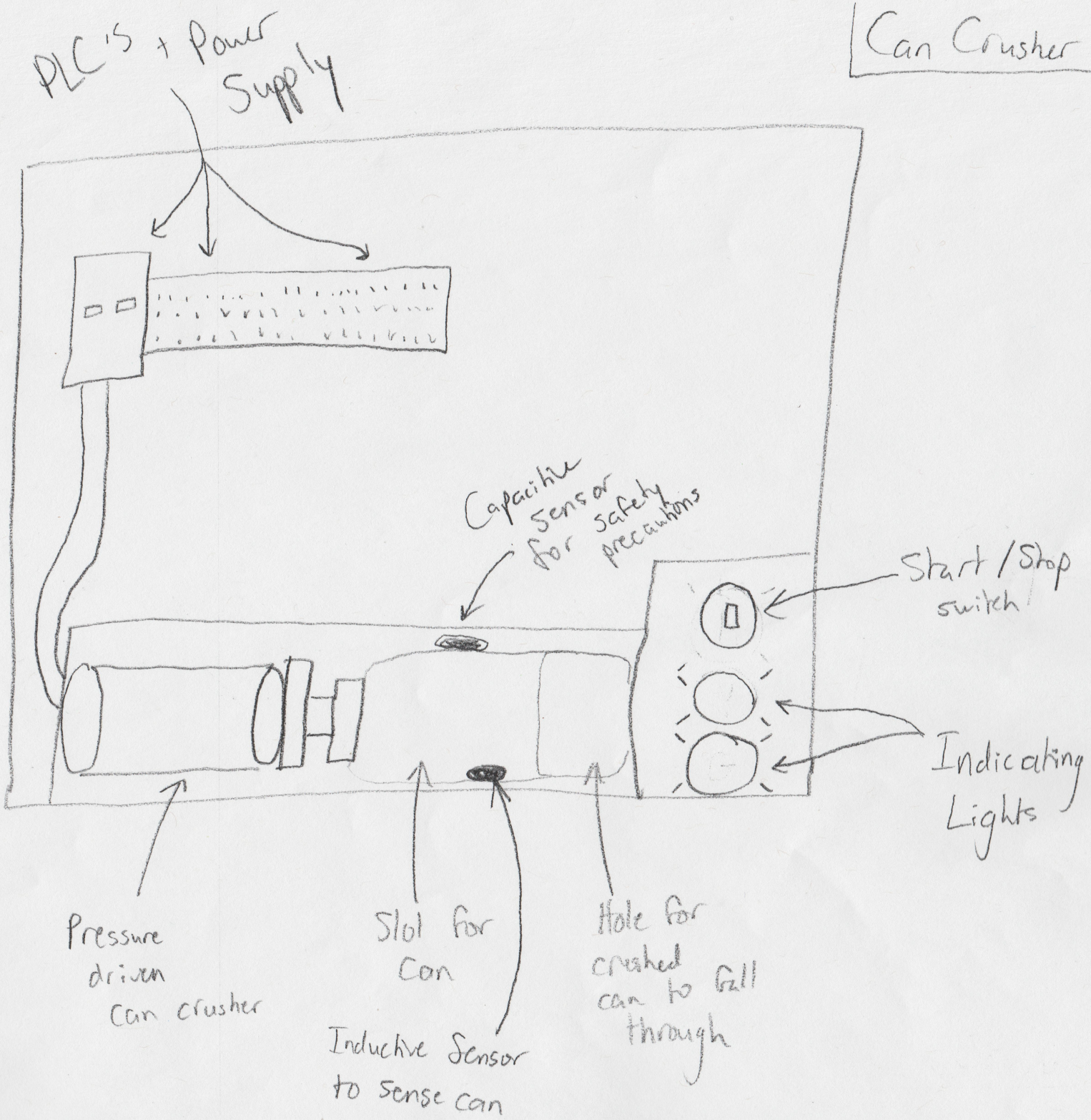
Reed Sheridan: _____ Date: _____

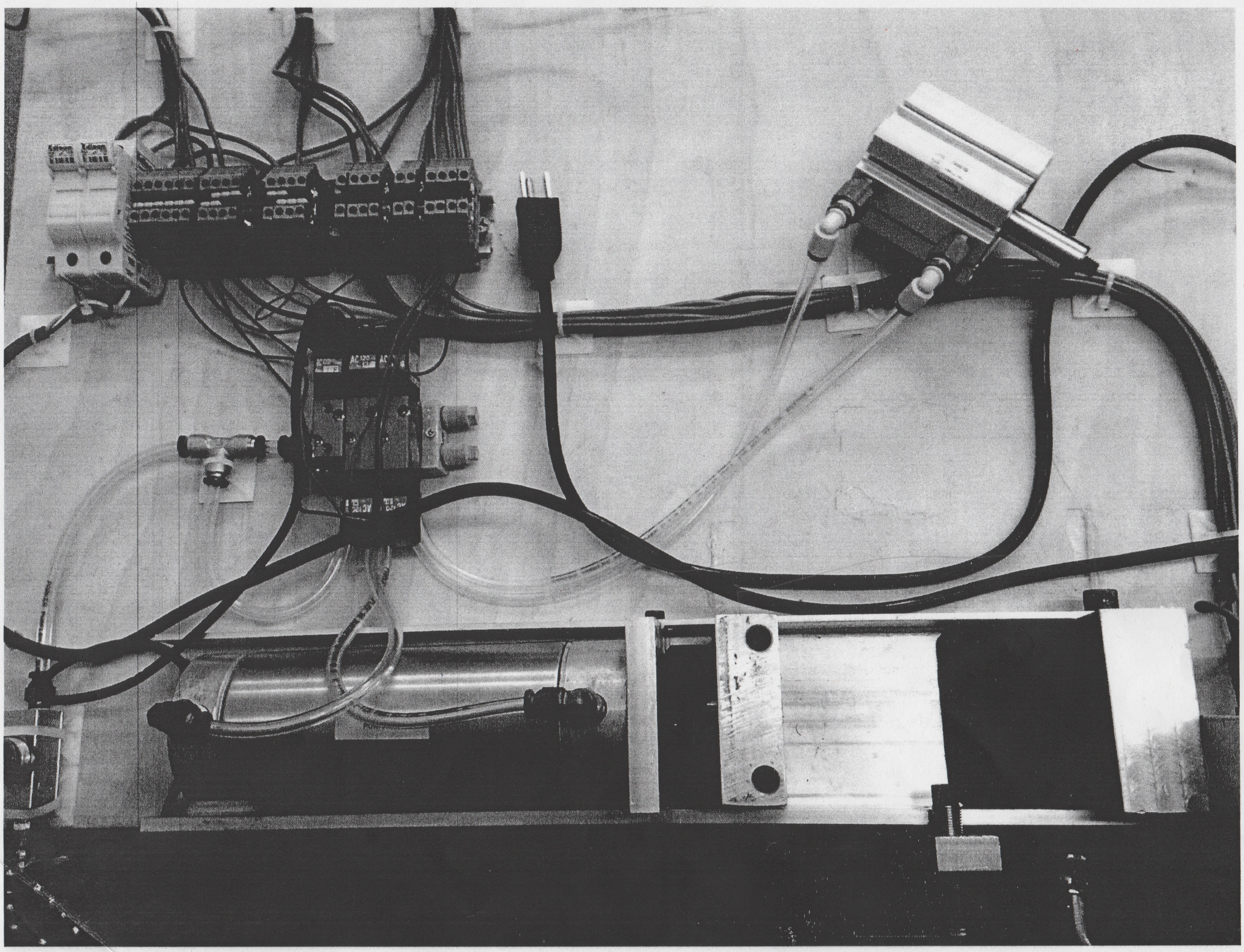
Cameron Grass: _____ Date: _____

Approval

Jude Pearse: _____ Data: _____

Can Crusher Project





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