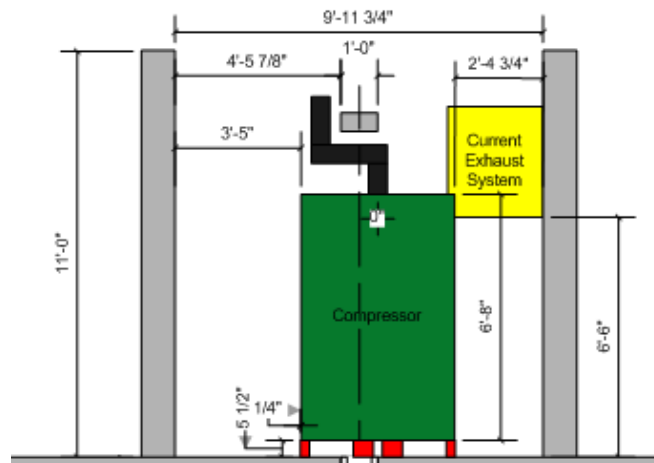


Installation Status:

- Delayed indefinitely until legal concerns are resolved
 - ITAR designation of machine
 - Non-US Citizens may be involved in future teams
 - Supervised room access through logbook
 - Restrict movement of proprietary information
- Boulter Rigging Corporation
 - Has confirmed ability to install machine
 - Requires three days to become familiar with unit.
- Room has been prepared for arrival of machine
 - Cleaned, painted, and provided ample space
 - Floor will be cleaned
 - Outline of compressor has been drawn
 - Mounting holes will be created after
 - PE analysis of load scenario
 - Resolution of legal concerns
 - Formula Team will complete use of room around mid April
 - Space will be used for hydraulic pump unit
 - 41" is available on side of compressor (need 29.5")
- Electrician is working on quote for the service to the machine
 - Wiring and conduits will be selected per code and electrician
 - Nature of wiring is non explosion proof
 - Two emergency stops have been chosen for safety purposes
 - Power for computer has been requested
 - Overhead light can be moved if needed
 - Elbow will still be needed due to exhaust
- Exhaust capabilities have been checked and verified.
 - 900 CFM with all systems on
 - Gravity inlet, existing exhaust fan, and recently installed line
 - System had to be modified due to recent construction
 - Elbow will need to go opposite direction than indicated before



Structural Analysis:

- Jensen Engineering are in the process of calculating structural calculations
 - Giving an update on status of schedule on Friday, March 28th, 2008
 - Early indications on structural load have been made
 - Should be fine on static load
 - Dynamic will be tolerable
- Original Engineer that performed calculations has been located
 - Agreed to perform calculations under new load
 - Let his PE lapse due to age

Compressor Revamp

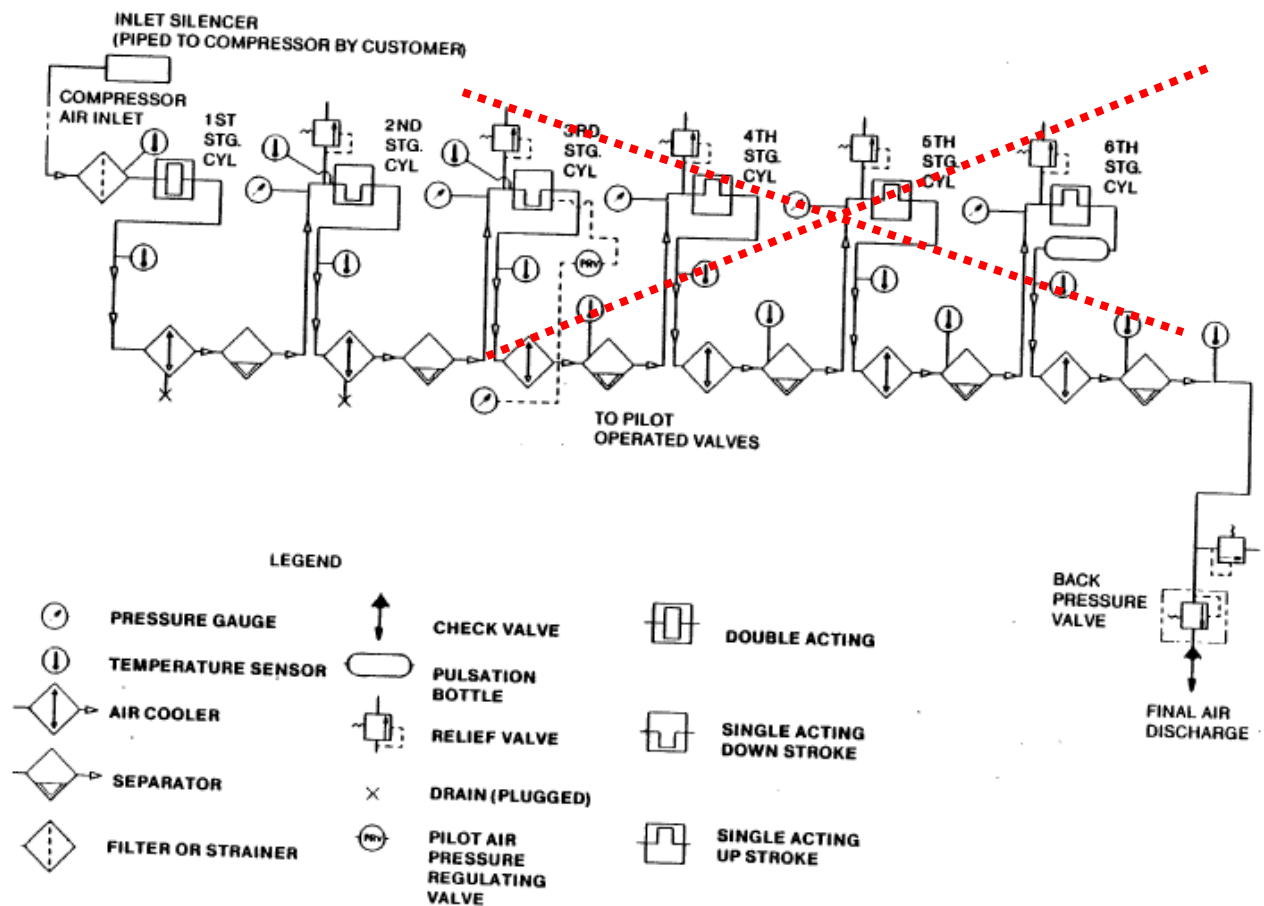
Water piping:

The open-loop piping runs through the interstage coolers and fresh water heat exchanger in parallel. Because of this, the pipes to the unneeded stage coolers can be replaced with plugs at the inlet and outlet manifolds.

The fresh water closed loop system does not need to be modified

Air piping:

All the air piping after the 2nd stage relief valve can be removed and redirect 2nd stage relief valve to final air discharge. The pulsation bottle more than likely will not be used.



General balance:

The second stage uses only the downwards stroke for compressing the air. Therefore the 5th and 4th stage cylinder assemblies can be removed. A block off plate would be bolted in place of them.

Balance concept #1:

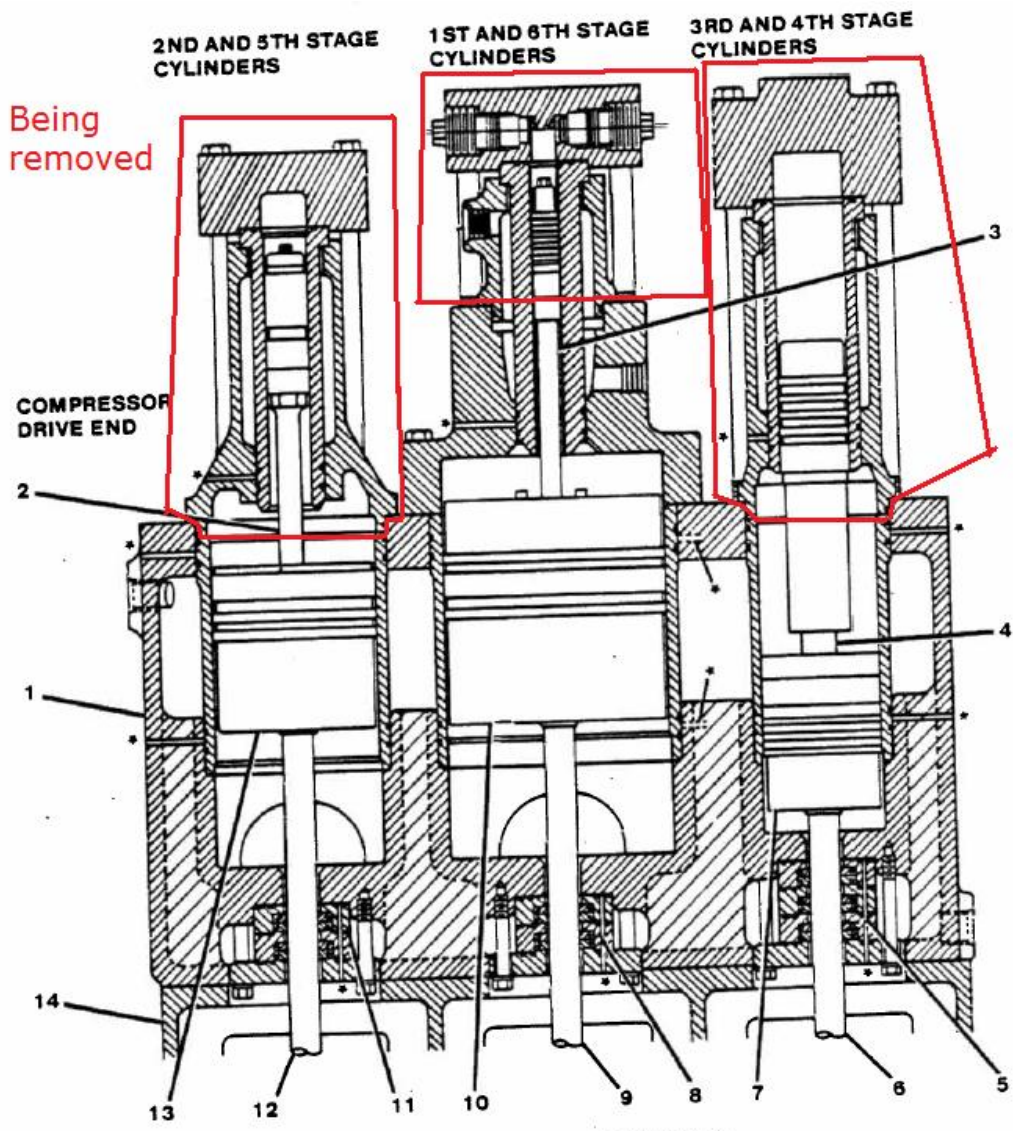
Donut shaped weights consisting of two half shells bolted together could be installed the on lower piston rods. There appears to be easy access to this area. There may or may not be enough room to do this. I believe this is what Scotts was hinting at. If the 3rd stage piston rod is removed completely, a weight can be bolted to the crosshead where the rod originally was bolted. A block off plate can cover where the 6th cylinder assemblies was.

More information on the stroke length and clearances is needed. From the looks of fig 3-2, the donuts could replace the oil flingers or be placed as close as possible to the crossheads.

Balance concept #2:

Like mentioned before, the second stage uses only the downwards stroke for compressing the air. Therefore a weight can be bolted to the top of the 2nd stage cylinder utilizing the existing holes that were originally used for the 5th stage piston rod. A cover that would accommodate the size of the weight would be bolted in place of the 5th cylinder assembly.

For balancing the 6th stage removal, this method is poses some difficulties. The first stage compresses on both the upwards stroke and downwards stroke. This means it utilizes both the upper and lower chambers. The 6th stage piston acts as the seal for the upstroke on the 1st stage. So if the 6th stage piston is removed, a new method of sealing the cylinder is required. In order to keep the compression ratio the same, the counter weight would have to not take up room beyond what the 5th piston rod did. This means it would have to extend upwards past the 1st stage cylinder head and into its own compartment. This compartment would have to be sealed from the 1st stage somehow. This would require extensive designing and could lead to inducing a new seal that could fail.

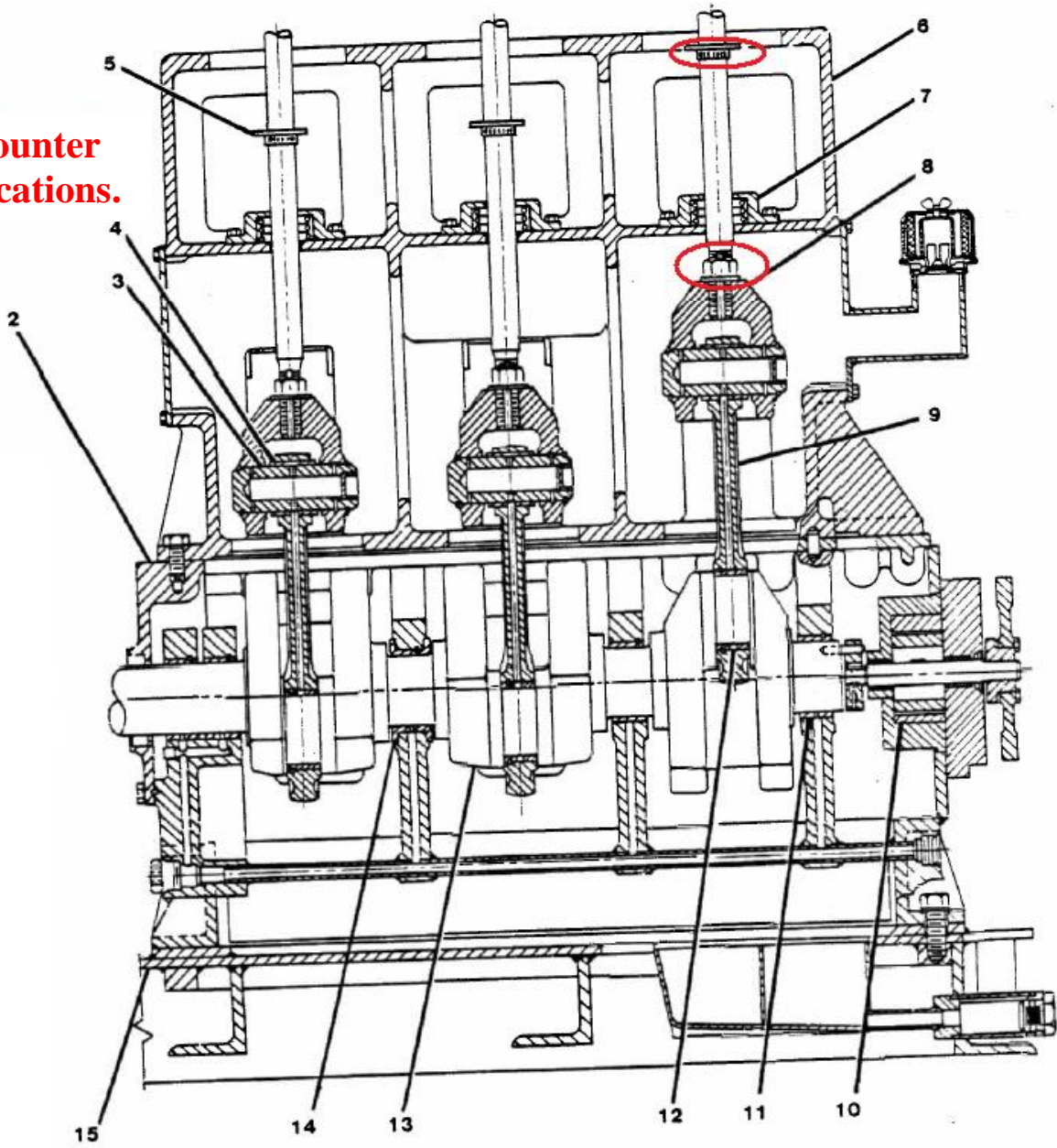


NOTE*-LEAKAGE TELL TALE VENTS

- | | |
|----------------------------|------------------------------|
| 1. CYLINDER BLOCK | 8. FIRST STAGE AIR PACKING |
| 2. FIFTH STAGE PISTON ROD | 9. FIRST STAGE PISTON ROD |
| 3. SIXTH STAGE PISTON ROD | 10. FIRST STAGE PISTON |
| 4. FOURTH STAGE PISTON ROD | 11. SECOND STAGE AIR PACKING |
| 5. THIRD STAGE AIR PACKING | 12. SECOND STAGE PISTON ROD |
| 6. THIRD STAGE PISTON ROD | 13. SECOND STAGE PISTON |
| 7. THIRD STAGE PISTON | 14. FRAME EXTENSION |

Figure 3-1. Compressor Cylinders, Cross-Sectional View

Possible Counter Weight Locations.



LEGEND

- | | |
|--------------------------|----------------------------|
| 2. FRAME | 8. CROSSHEAD |
| 3. CROSSHEAD PIN | 9. CONNECTING ROD |
| 4. CROSSHEAD PIN BUSHING | 10. OIL PUMP |
| 5. OIL FLINGER | 11. MAIN BEARING |
| 6. FRAME EXTENSION | 12. CONNECTING ROD BEARING |
| 7. OIL WIPER | 13. CRANKSHAFT |
| | 14. THRUST BEARING |
| | 15. SUBBASE |

Figure 3-2. Compressor Running Gear Cross-Sectional View

Section 1) Overview

Contact Sheet Added

Section 2) Safety Considerations

Mark Jones added as Safety Training contact

In Room Safety – Warning Signs to be created and posted

Section 4) Test Plans

Prior to First Run

- E-Stop
- Lock-Out Tag-Out for Control Panel
- Measure and Adjust Machine Level
- Spring Mount Rating
- Vibe Trip-Switch
- Air Flow Results
- Water Flow (Post-Dyno Removal)
- Gravity Inlet
- Miscellaneous Room Preparations
- Water Disposal (Drain Rate)

During First Run

- E-Stop
- Visual Safety and Maintenance Checks
- Lock-Out Tag-Out for Compressor
- Room Sound Levels
- Room Temperature

Removal and Re-install of Parts & Weights

- Lock-Out Tag-Out for Compressor
- Lifting Capabilities

Section 7) Oil Changing Procedure

Based on oil sampling recommendation

Section 11) Log Sheets

Addition of Zinc Anode level checks to the weekly log sheet

Interface Updates:

- Upgrades for the computer are in the process of being purchased
 - o Hard Drive
 - o RAM
 - o USB 2.0 Drive
- Current programming tasks
 - o Having each status LED respond to the correct values they monitor
 - o Storing data to a text or excel file
 - o Displaying graphs for each set of data

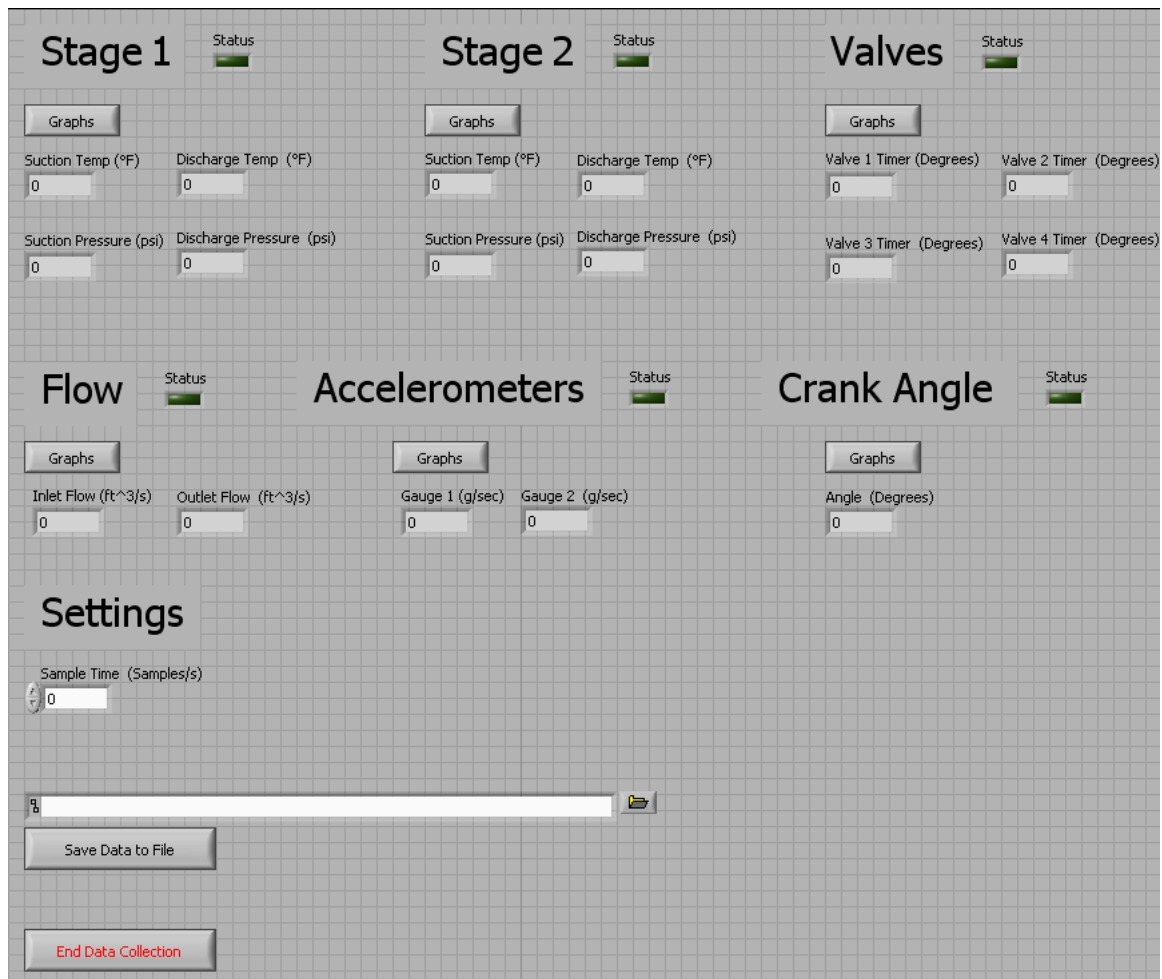


Figure 1: Initial design

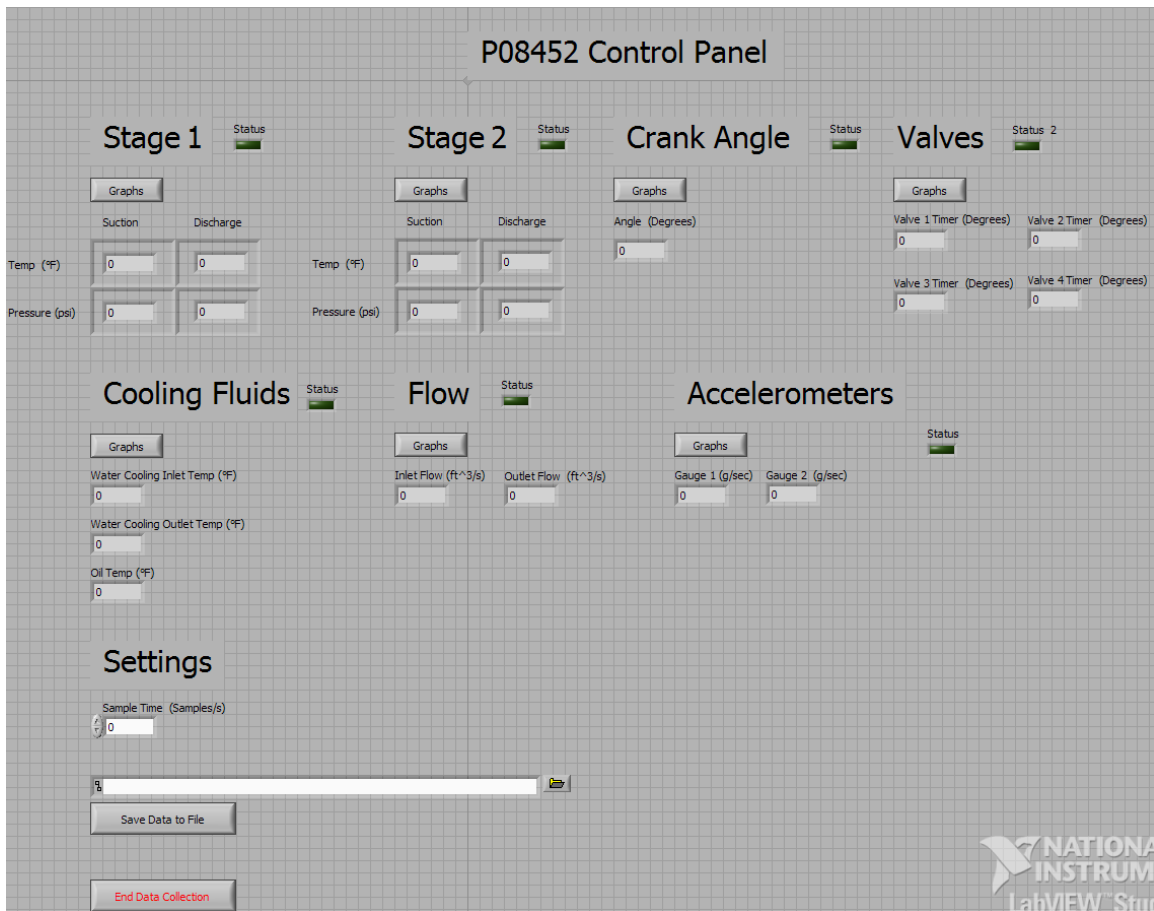


Figure 2: Design with added organization

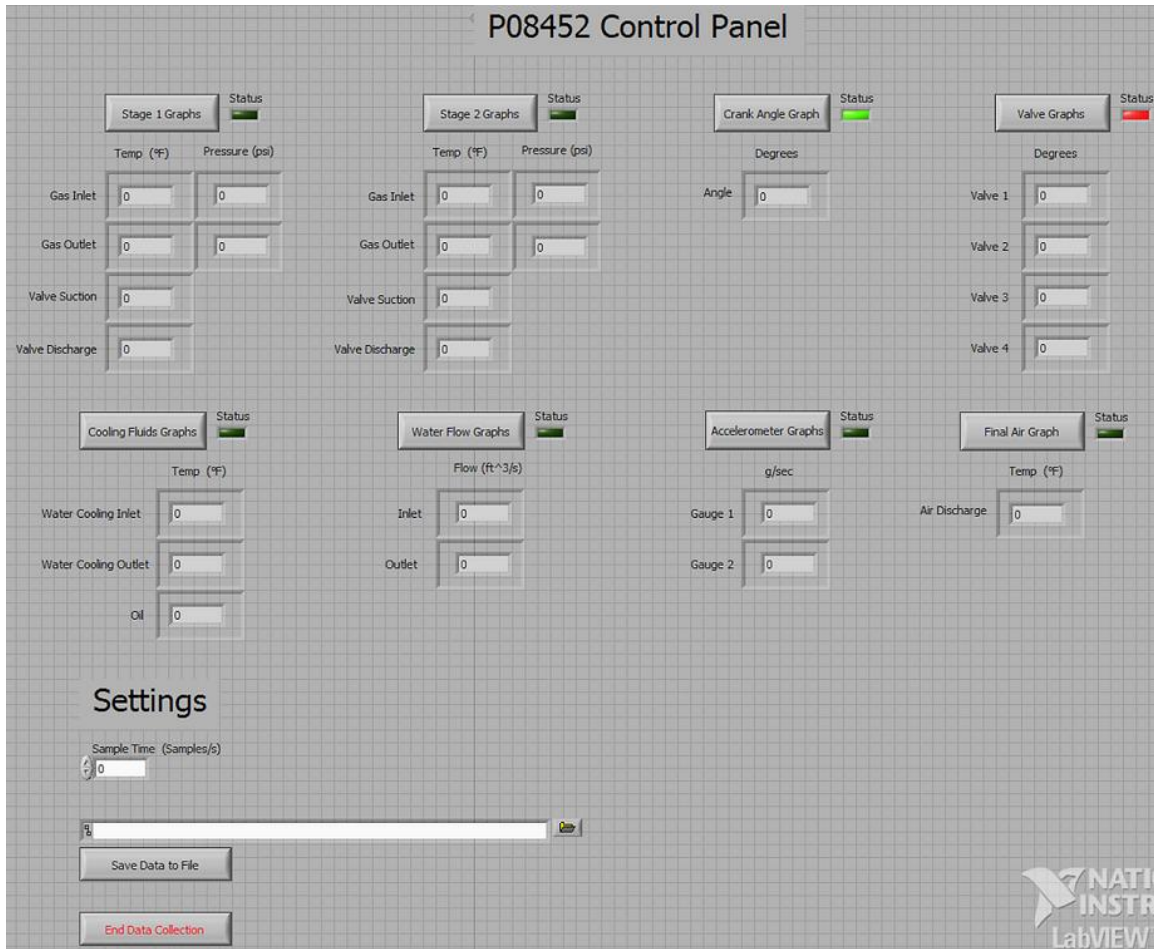


Figure 3: Current design

Date	Area Concerned	Description	Cost
14-Dec	Project Management	Olean Visit	\$ 150.00
11-Jan	Project Management	Lunch with Scott	\$ 40.00
18-Jan	Project Management	Van to Painted Post	\$ 60.00
18-Jan	Project Management	Van Fuel	\$ 23.51
18-Jan	Project Management	Meals	\$ 38.88
28-Mar	Material	BOM Expenditures	\$ 127.31
28-Mar	Project Management	Van to Painted Post	\$ 60.00
		Total Spent	\$ 499.70