Portfolio for Kevin Small

Technical Writer

March 2023 rev 1.3

----- Contact Information -----

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Permission to use complete documents or portions and samples of documents that I have produced has been obtained in writing from all companies.

Revision History

Rev.	Date	Description
initial	2019-11-02	Initial release.
1.0	2019-11-21	Update contents, add additional example documents
1.1	2022-02-15	Address update
1.2	2022-04-01	Misc updates (added AutoCAD,
1.3	2023-03-11	Misc updates

Table of Contents

1. My Acquired Skills

General Highlights

- Represented (acceptance commissioning and warranty) a large U.S. based oilfield equipment manufacturer in India, Russia, Ukraine and Uzbekistan.
- Owned and operated a manufacturing business (custom control panel assembly and installation) in Alberta.
- Managed a $2 million dollar project to integrate a controls system onto four different types of high pressure pumping units.

Documentation Specific Highlights

- Set up and managed a document control system, complete with document review and approval process.
- Set up structure and built content (modules) for an employee training system.
- Set up structure and built content (SOPs, process flow charts) for a manufacturing operation.
- Oversaw the creation of part numbers and the validation, input & revision of BOMs for an MRP system.

Programs

- Microsoft Office (Word, Excel, Visio, Power Point), Libre Office (Write, Calc, Draw)
- Adobe Acrobat
- Libre Office (Writer, Calc, Draw)
- Corel X7 Suite, Gimp
- AutoCAD (basic level), DraftSight (basic level)
- OrCAD, Solidworks Composer (basic level)
- HTML (basic level)
- PLC programming (basic level)

Languages

- Conversant: Portuguese
- Basic: Spanish, Italian, Russian and Dutch

Attributes

- Reliable. Results driven.
- Quality and consistency oriented. Strict adherence to company and industry standards & accepted practices.
- Able to work independently or in a team environment.

2. Documents Created

- **Operations and Maintenance Manuals –** comprehensive documents containing safety, equipment description & operation, maintenance and troubleshooting sections.

- **Standard Operating Procedures (SOPs)**
  - **Infrastructure –** administration, safety, engineering, production, purchasing, inventory control, QA, documentation and shipping & receiving.
  - **Equipment Manufacturing –** work orders, work instructions for assembly, configuration, modification & repair, QC and packing & shipping instructions.
  - **Grow Operations** – security, employee and visitor vetting, growing, pest & disease control, harvesting, maintenance and equipment cleaning & sterilizing.

- **Summaries** – one page system operating reference sheets (common commands, GUI & connection “maps”, etc...) and equipment maintenance sheets.

- **Work Instructions –** electronic upgrade, programming, calibration and QC procedures complete with the system to validate, standardize, approve and organize these for easy access and distribution.

- **Tech Advises / Technical Bulletins** – advisories for alerting personnel of various "situations" complete with the system to validate, standardize, approve and organize these for easy access and distribution

- **Training Documentation** – tailored, modular based topics (general knowledge, specific equipment operation, field maintenance & troubleshooting, etc...) complete with knowledge quizzes.

- **Pocket Technical Reference –** company specific and general electronics info in a pocket size book (over 400 copies were printed of one version that I created).

- **Tally Books** – customized pocket sized notebooks with industry standard information and lined note pages.

- **Sales Brochures** – equipment specific complete with specifications.

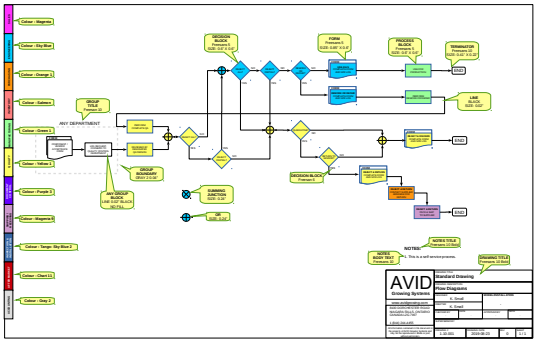
- **Labels** – pipe labels, equipment labels, room signs,

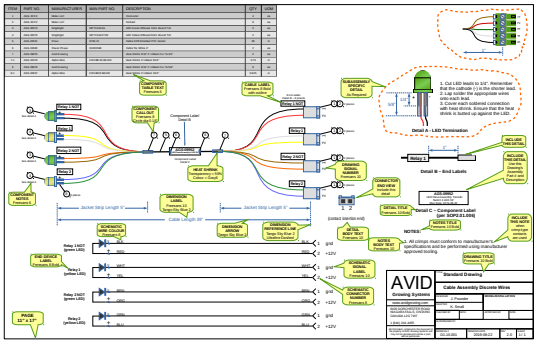
- **Schematics and P&IDs –** multi page electrical schematics, piping P&IDs.

- **Illustrations for the Above Products –** I've created and/or modified: photos, general assemblies, concept drawings, GUI "snips", flow charts, troubleshooting & repair charts and tables & block diagrams.

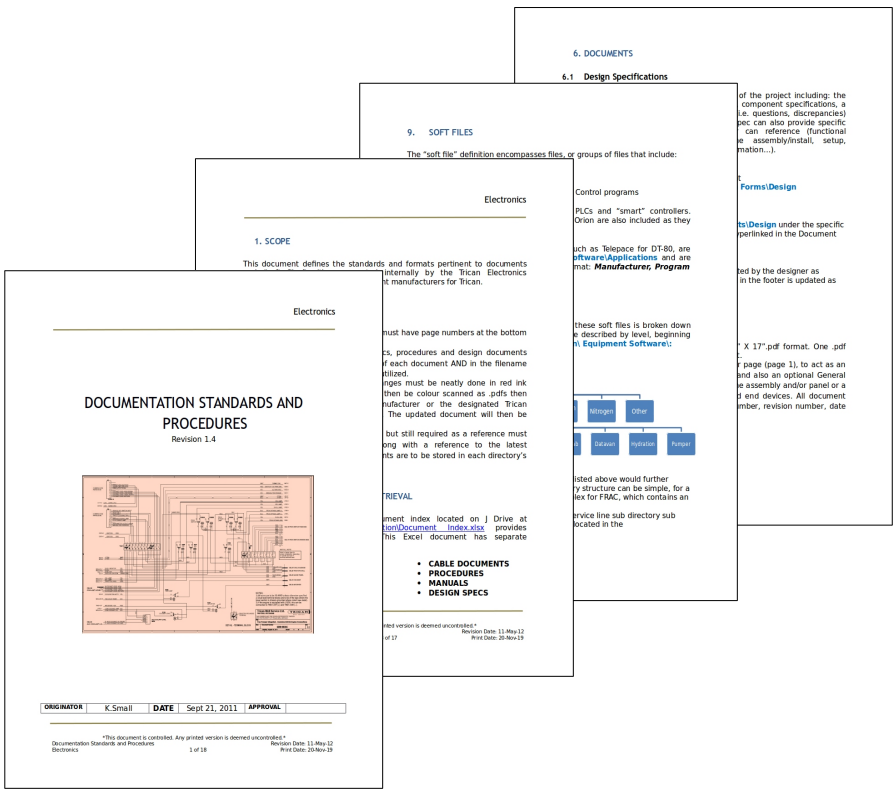
3. Samples

3.1 Document Standards





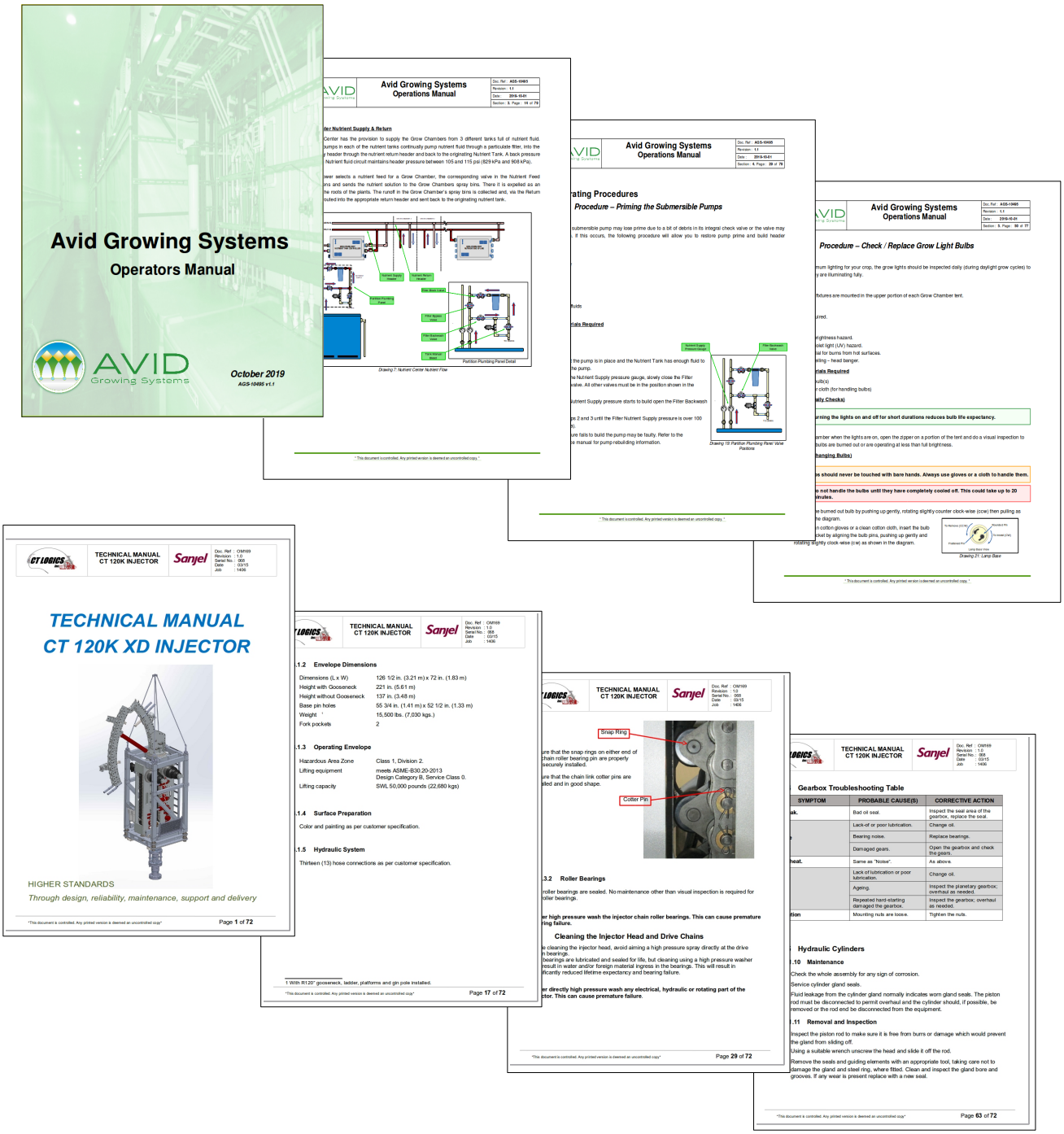
Standards detailing colours, fonts and sizes maintain consistency throughout all documentation.



Detailed information regarding all aspects of documentation

3.2 Manuals

This portfolio was created in a manual format to demonstrate my layout style. Samples of other manuals are below.



3.3 Standard Operating Practices (SOPs)

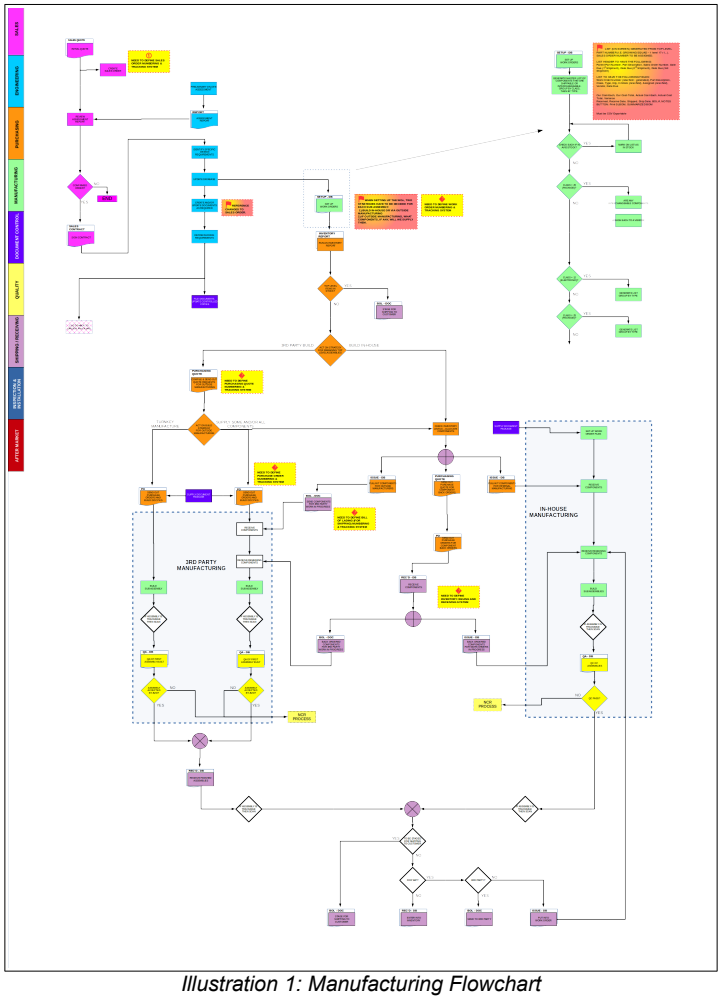
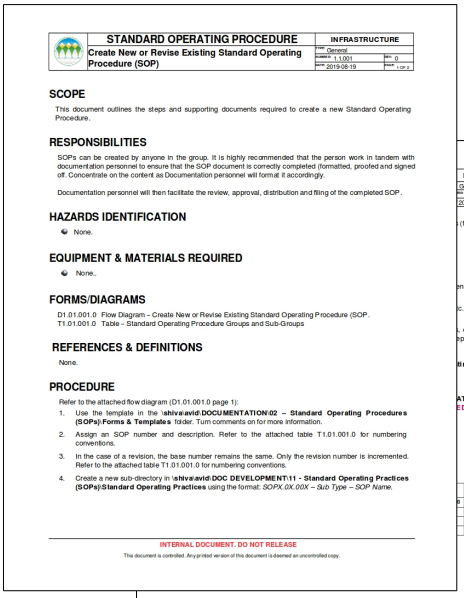


Illustration 1: Manufacturing Flowchart



STANDARD OPERATING PROCEDURE — INFRASTRUCTURE

Create New or Revise Existing Standard Operating Procedure (SOP)

SCOPE

This document outlines the steps and supporting documents required to create a new Standard Operating Procedure.

RESPONSIBILITIES

SOPs can be created by anyone in the group. It is highly recommended that the person work in tandem with documentation personnel to ensure that the SOP document is correctly completed (formatted, proofed and signed off. Concentrate on the content as Documentation personnel will format it accordingly.

Documentation personnel will then facilitate the review, approval, distribution and filing of the completed SOP.

HAZARDS IDENTIFICATION

- None.

EQUIPMENT & MATERIALS REQUIRED

- None..

FORMS/DIAGRAMS

D1.01.001.0 Flow Diagram - Create New or Revise Existing Standard Operating Procedure (SOP.
T1.01.001.0 Table - Standard Operating Procedure Groups and Sub-Groups

REFERENCES & DEFINITIONS

None.

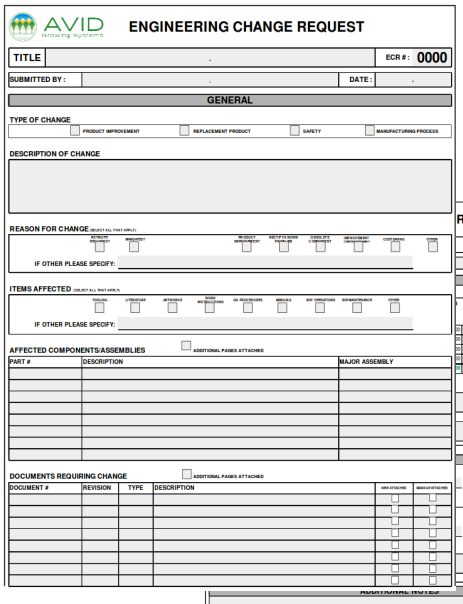
PROCEDURE

Refer to the attached flow diagram (D1.01.001.0 page 1):

1. Use the template in the **\shiva\avid\DOCUMENTATION\02 – Standard Operating Procedures (SOPs)\Forms & Templates** folder. Turn comments on for more information.
2. Assign an SOP number and description. Refer to the attached table T1.01.001.0 for numbering conventions.
3. In the case of a revision, the base number remains the same. Only the revision number is incremented. Refer to the attached table T1.01.001.0 for numbering conventions.
4. Create a new sub-directory in **\shiva\avid\DOC DEVELOPMENT\11 - Standard Operating Practices (SOPs)\Standard Operating Practices** using the format: *SOPX.0X.00X – Sub Type – SOP Name.*

INTERNAL DOCUMENT. DO NOT RELEASE

This document is controlled. Any printed version of this document is deemed an uncontrolled copy.



AVID Growing Systems — ENGINEERING CHANGE REQUEST

TITLE | ECR #: 0000 | SUBMITTED BY: | DATE:

GENERAL

TYPE OF CHANGE: PRODUCT IMPROVEMENT | REPLACEMENT PRODUCT | SAFETY | MANUFACTURING PROCESS

DESCRIPTION OF CHANGE

REASON FOR CHANGE (SELECT ALL THAT APPLY)

IF OTHER PLEASE SPECIFY:

ITEMS AFFECTED (SELECT ALL THAT APPLY)

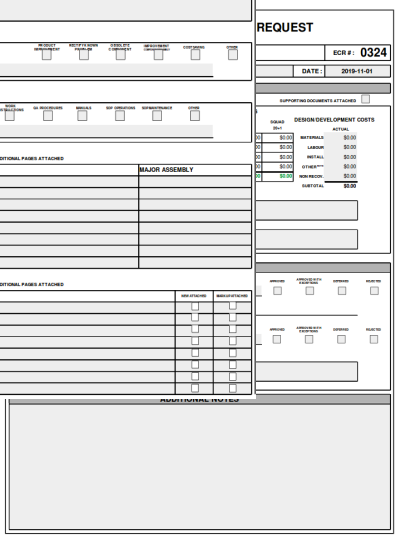
IF OTHER PLEASE SPECIFY:

AFFECTED COMPONENTS/ASSEMBLIES — ADDITIONAL PAGES ATTACHED

PART #	DESCRIPTION	MAJOR ASSEMBLY

DOCUMENTS REQUIRING CHANGE — ADDITIONAL PAGES ATTACHED

DOCUMENT #	REVISION	TYPE	DESCRIPTION	NEW ATTACHED	MARK UP ATTACHED



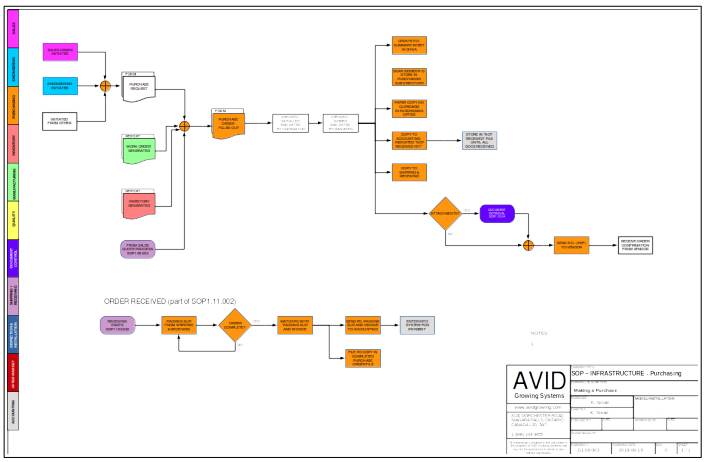
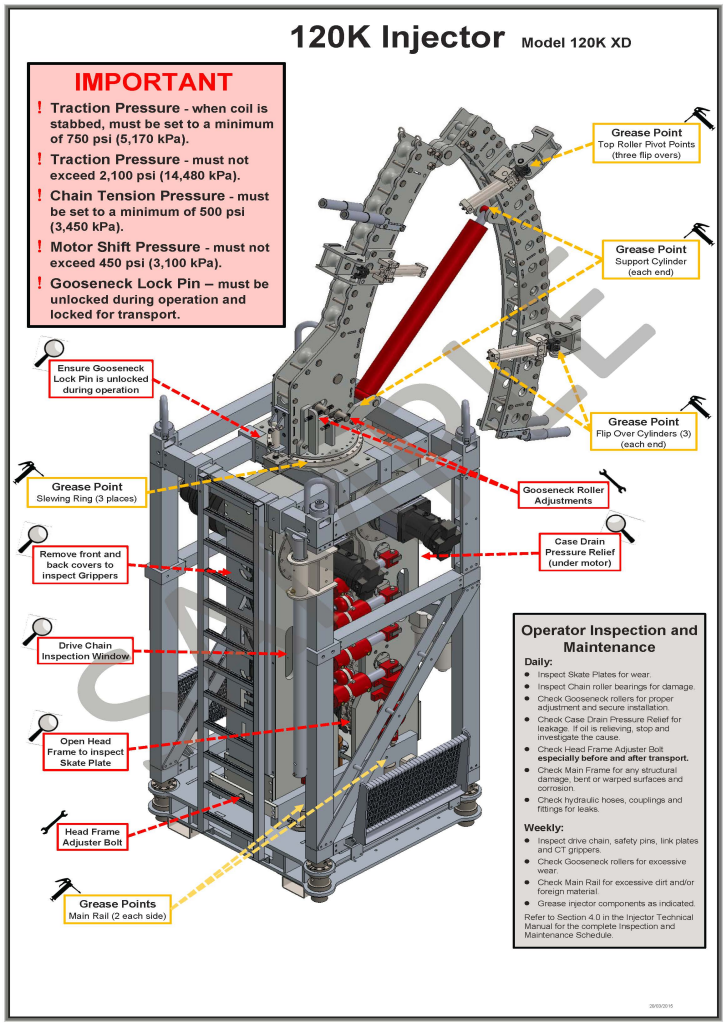
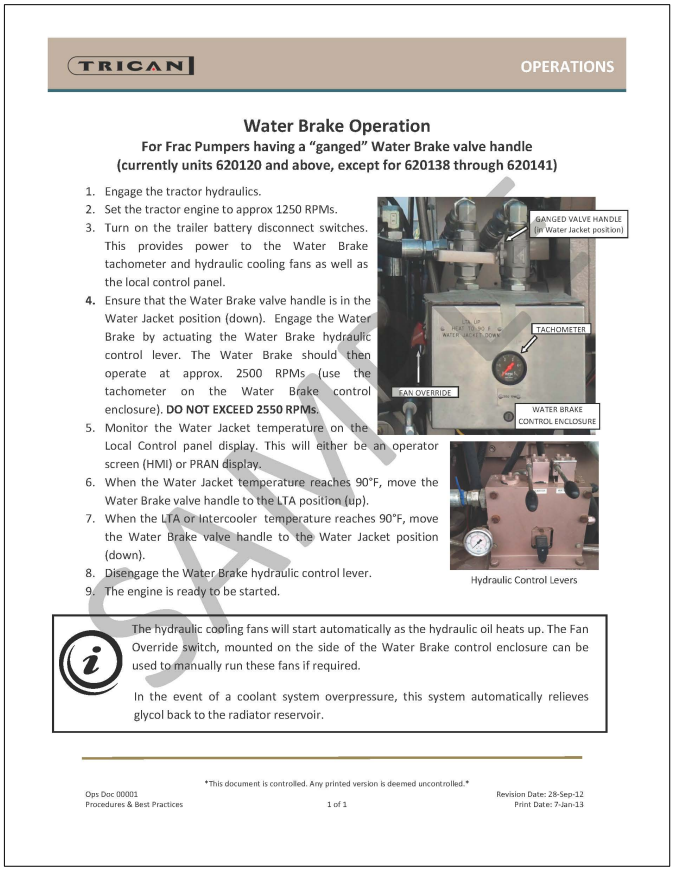


Illustration 2: SOP Flowchart

3.4 Summaries



Note: The injector graphic is "from others"


TRICAN OPERATIONS

Water Brake Operation

For Frac Pumpers having a "ganged" Water Brake valve handle (currently units 620120 and above, except for 620138 through 620141)

1. Engage the tractor hydraulics.
2. Set the tractor engine to approx 1250 RPMs.
3. Turn on the trailer battery disconnect switches. This provides power to the Water Brake tachometer and hydraulic cooling fans as well as the local control panel.
4. Ensure that the Water Brake valve handle is in the Water Jacket position (down). Engage the Water Brake by actuating the Water Brake hydraulic control lever. The Water Brake should then operate at approx. 2500 RPMs (use the tachometer on the Water Brake control enclosure). **DO NOT EXCEED 2550 RPMs.**
5. Monitor the Water Jacket temperature on the Local Control panel display. This will either be an operator screen (HMI) or PRAN display.
6. When the Water Jacket temperature reaches 90°F, move the Water Brake valve handle to the LTA position (up).
7. When the LTA or Intercooler temperature reaches 90°F, move the Water Brake valve handle to the Water Jacket position (down).
8. Disengage the Water Brake hydraulic control lever.
9. The engine is ready to be started.

Hydraulic Control Levers

The hydraulic cooling fans will start automatically as the hydraulic oil heats up. The Fan Override switch, mounted on the side of the Water Brake control enclosure can be used to manually run these fans if required.

In the event of a coolant system overpressure, this system automatically relieves glycol back to the radiator reservoir.

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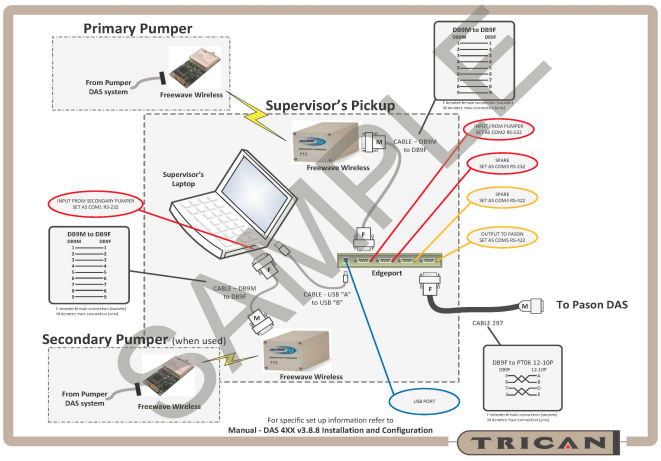
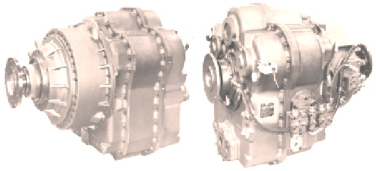
Ops Doc 00001 Procedures & Best Practices — 1 of 1 — Revision Date: 28-Sep-12 Print Date: 7-Jan-13



3.5 Work Instructions

Procedure 00028

Twin Disc Acc Pedal Calibration



SERVICE LINE	Fracturing	EQUIPMENT TYPE	Twin Disk Transmission
ORIGINATOR	K. Small	DATE	Aug 31, 2011	APPROVAL	K.Luty

SCOPE

This **only** applies to Twin Disc transmissions before 2005 with an "**AK**" suffix in their model number.
If the transmission loses the ACC Pedal parameters, the message "TRAN SYSTEM FAULT ACC Pedal "will be displayed on the transmission display. This procedure will assist the technician to restore the MIN and MAX ACC Pedal values.

Refer to Twin Disc dwg # 1019167 for further information.

DESCRIPTION

The local control enclosure, whether it is a new "Retrofit" type or the original control enclosure, ***should*** have a potentiometer connected across three wires from the Twin Disk (TDEC) harness as shown in the diagram below. If not, you will have to make this assembly and leave it installed on the unit.

PROCEDURE

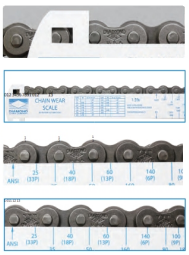
- Power off the transmission electronics and the display. While holding both the ▲ and ↵ keys on the Twin Display, turn power back on. "TROUBLESHOOTING" mode is now active.
- Scroll up, until **14 SENSOR CALIBRATION** is displayed. Press both ▲ ↵ keys simultaneously to accept. The display should now read **ACC PEDL CALIBRTN**. Press both ▲ ↵ keys simultaneously to accept.

- The display will read **CALIBRATE SENSOR**. Press both ▲ ↵ keys simultaneously to accept.
- The display will read **SET MIN X.XX (voltage value)**. Dial the pot until the display reads 1.00 volts and press both ▲ ↵ keys simultaneously to accept. The display will read **WORKING** for a few seconds.
- The display will then read **SET MAX X.XX (voltage value)**. Dial the pot until the display reads 4.00 volts and press both ▲ ↵ keys simultaneously to accept. The display will read **WORKING** for a few seconds.
- **CALIBRATE COMPLETE** will then be displayed for a few seconds. Wait until **CALIBRATE SENSOR** is displayed, then press the ▲ key.
- When **EXIT SUB MENU** is displayed, press both ▲ ↵ keys simultaneously to exit.
- When **ACC PEDL CALIBRTN** is displayed, press the ▲ key.
- **EXIT TEST** should then be displayed. Press both ▲ ↵ keys simultaneously to exit.
- **14 SENSR CALIBRATN** will now be displayed. Power off the transmission and display for 20 seconds, then restore power.
- Set the pot to a mid range value (2.5 volts). Apply a bit of RTV to the pot shaft to prevent it from turning.
- Calibration complete.

Roller Chain Wear Gauge Instructions
(excerpted from Diamond Chain Company)

As a safety precaution – shut off power and lock out gears and sprockets before attempting to measure chain wear.

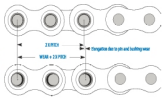
1. Determine the pitch of the chain. This is typically stamped on the outer link plates of the chain. It can also be determined by measuring the distance from the center of one pin to the center of the next pin. Refer to the Diamond Chain product catalog for a list of ANSI standard chain models and correlating pitch measurements or visit www.diamondchain.com.
2. For reliable linear measurement, a taut span of chain must be used. Using slack chain will result in inaccurate measurements.
3. Choose either a 1.5% or 3% wear elongation limit to check your span of chain. Each percentage correlates to a different side of the scale. The maximum allowable wear elongation is typically 3% for most industrial applications, depending upon sprocket design. In drives having fixed center distances, chains running in parallel, or where smoother operation is required, chain wear should be limited to approximately 1.5%. *Example: Using ASME/ANSI # 60 roller chain, 13 pitches would measure 9.75 inches for nominal length (13 pitches x .75 pitch). A maximum wear calculation of 3% would be 1.03 x 9.75 or 10.0425 inches. A maximum wear calculation of 1.5% would be 1.015 x 9.75 or 9.896 inches.*
4. Refer to the table on the wear gauge for the number of pitches to inspect. The more pitches (pins) included in the measurement provides a more true representation of the average amount of wear distributed throughout the chain.
   Example: For ASME/ANSI # 60 roller chain, 13 pitches will be measured.
5. Place the inside corner of the wear scale around one pin, using that pin as "0", your starting point.
6. Starting at "0" count the number of pins/pitches to be measured for your chain's length.
   Example: Count from zero to 13 for ASME/ANSI # 60 roller chain.
7. If the center of the indicated pin does not reach the wear line for the corresponding chain size, the chain has not reached the wear limit.
   Example: For ASME/ANSI # 60 roller chain, if the center of the 13th pin does not reach the # 60 wear mark, the chain remains usable.
8. If the center of the indicated pin is at or beyond the indicated line, the chain is worn to the wear limit (1.5% or 3%, depending on the scale used) and could be replaced.
   Example: For ASME/ANSI # 60 roller chain, if the center of the 13th pin reaches or exceeds the # 60 wear mark, the chain is ready to be replaced.



ROLLER CHAIN WEAR

Chain does not" stretch". Elongation is caused when material is removed from the pins and bushings.

The individual joints in a roller chain articulate as they enter and leave the sprockets. This articulation results in wear on the pins and bushings. As material is worn away from these surfaces the chain will gradually elongate.



ELONGATION CONTROL

Elongation is normal and may be minimized by proper lubrication and drive maintenance. The rate of wear is dependent upon the relationship between the load and the amount of bearing area between pin and bushing, the material and surface condition of the bearing surfaces, the adequacy of lubrication, and the frequency and degree of articulation between pins and bushings. The latter is determined by the quantity of sprockets in the drive, their speeds, the number of teeth, and the length of the chain in pitches.

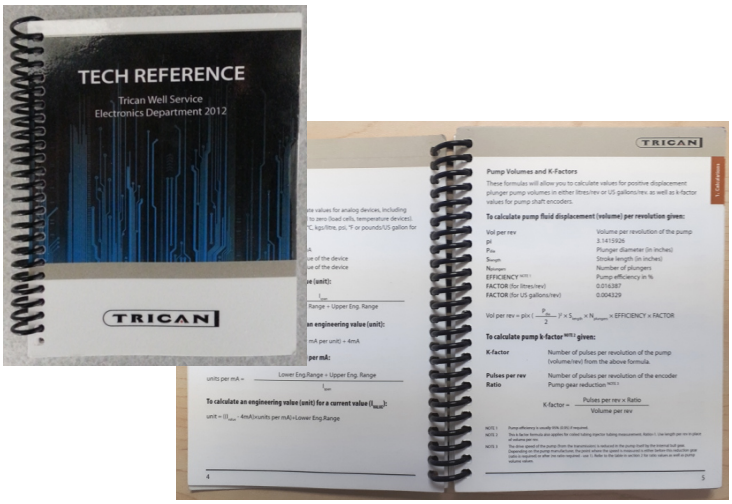
CHECK CHAIN WEAR

Roller chains should be replaced when worn (elongated beyond 3%) or when the chain rollers begin to "ride high" near the tips of the teeth on relatively large sprockets. Do not connect or splice a new section to a worn chain. Do not continue to run a chain worn in excess of3% (or less in some applications), the chain will notengage the sprockets properly and increased damage to the sprockets may occur.

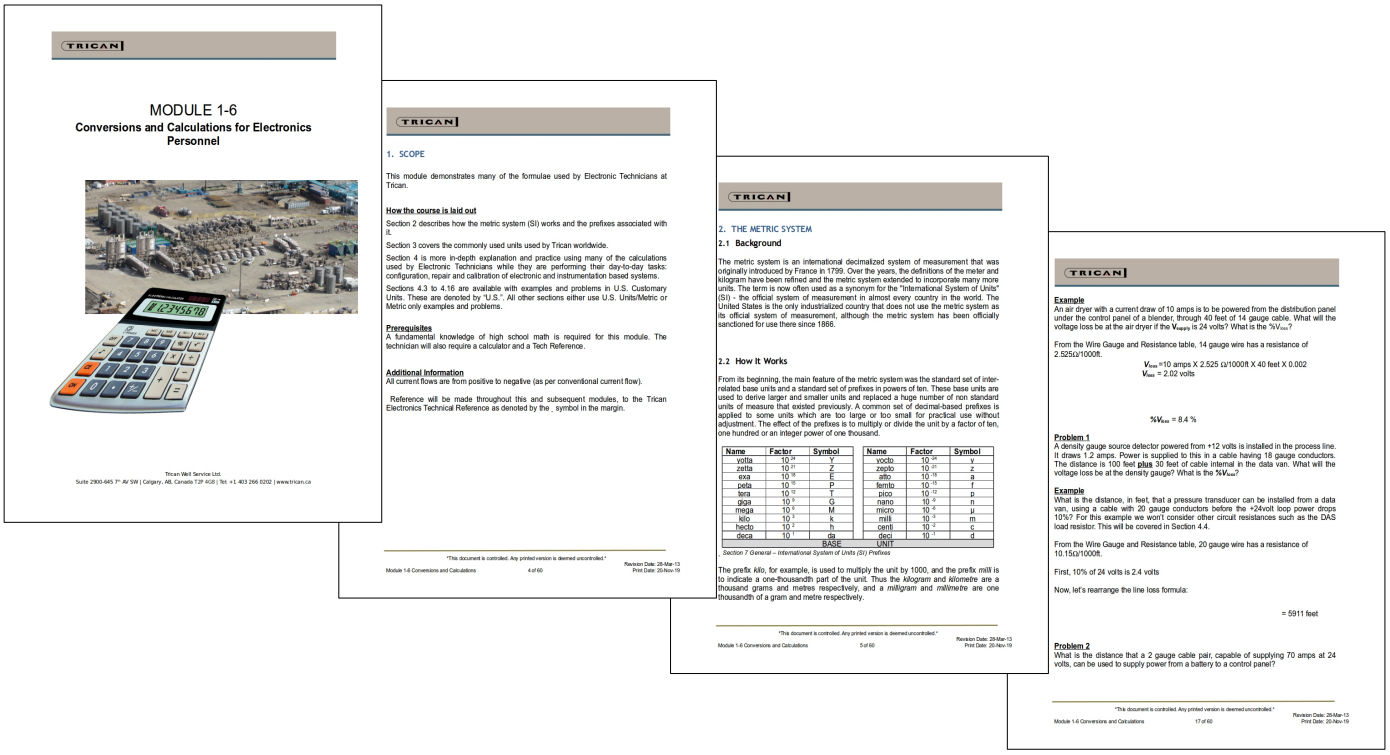
Chain Wear Elongation Limits

ANSI Chain	Chain Pitch		Measured Length				
			Pitches	Nominal		At 3% Wear	
	in.	mm.		in.	mm.	in.	mm.
25	.250	6.35	48	12.00	305	12.375	314
35	.375	9.52	32	12.00	305	12.375	314
41	.500	12.70	24	12.00	305	12.375	314
40	.500	12.70	24	12.00	305	12.375	314
50	.625	15.88	20	12.50	318	12.875	327
60	.750	19.05	16	12.00	305	12.375	314
80	1.000	25.40	12	12.00	305	12.375	314
100	1.250	31.75	20	25.00	635	25.750	654
120	1.500	38.10	16	24.00	610	24.719	628
140	1.750	44.45	14	24.50	622	25.250	641
160	2.000	50.80	12	24.00	610	24.719	628
180	2.250	57.15	12	27.00	686	27.812	706
200	2.500	63.50	10	25.00	635	25.750	654
240	3.000	76.20	8	24.00	610	24.719	628

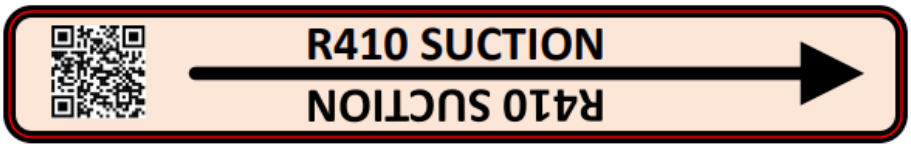
3.6 Tally and Reference Booklets

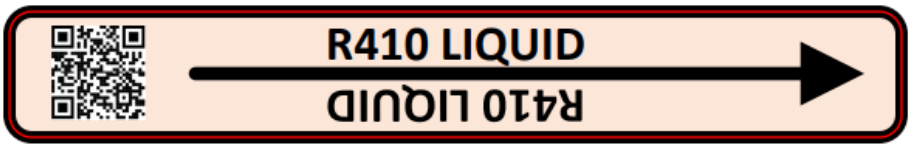


3.7 Training Documents

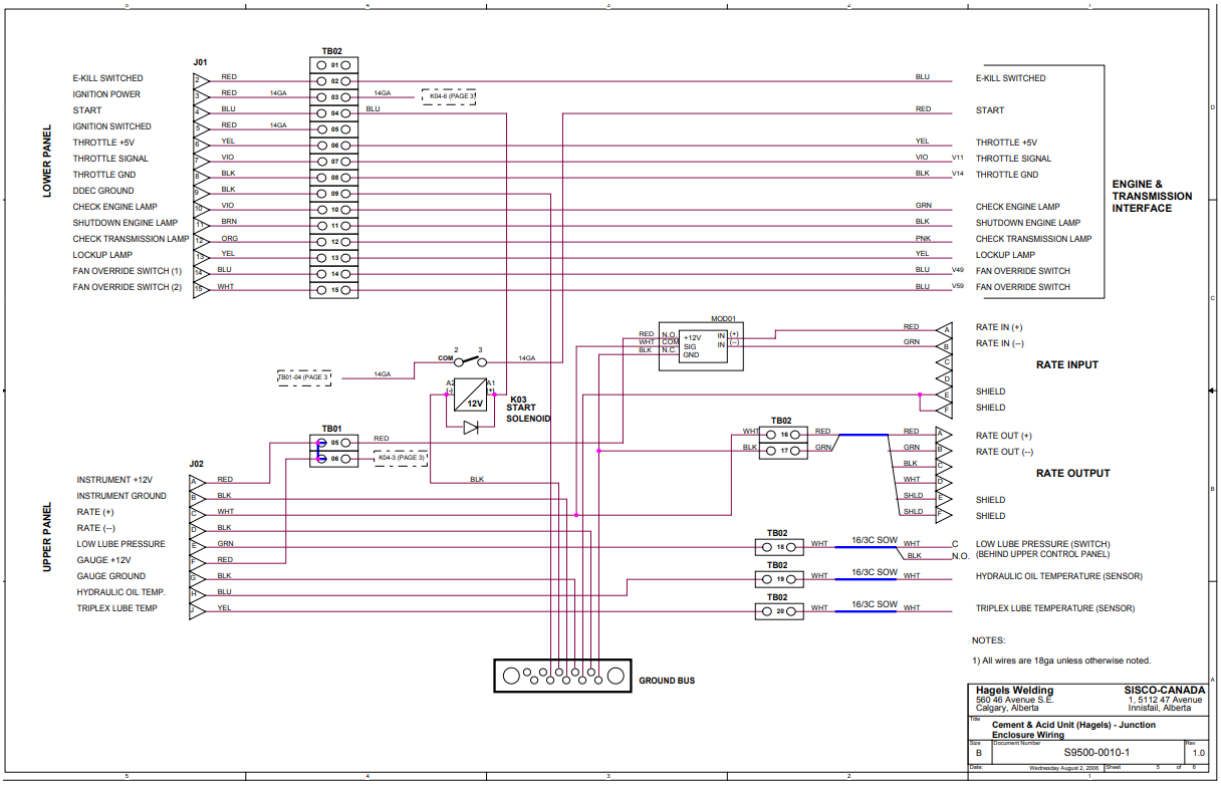


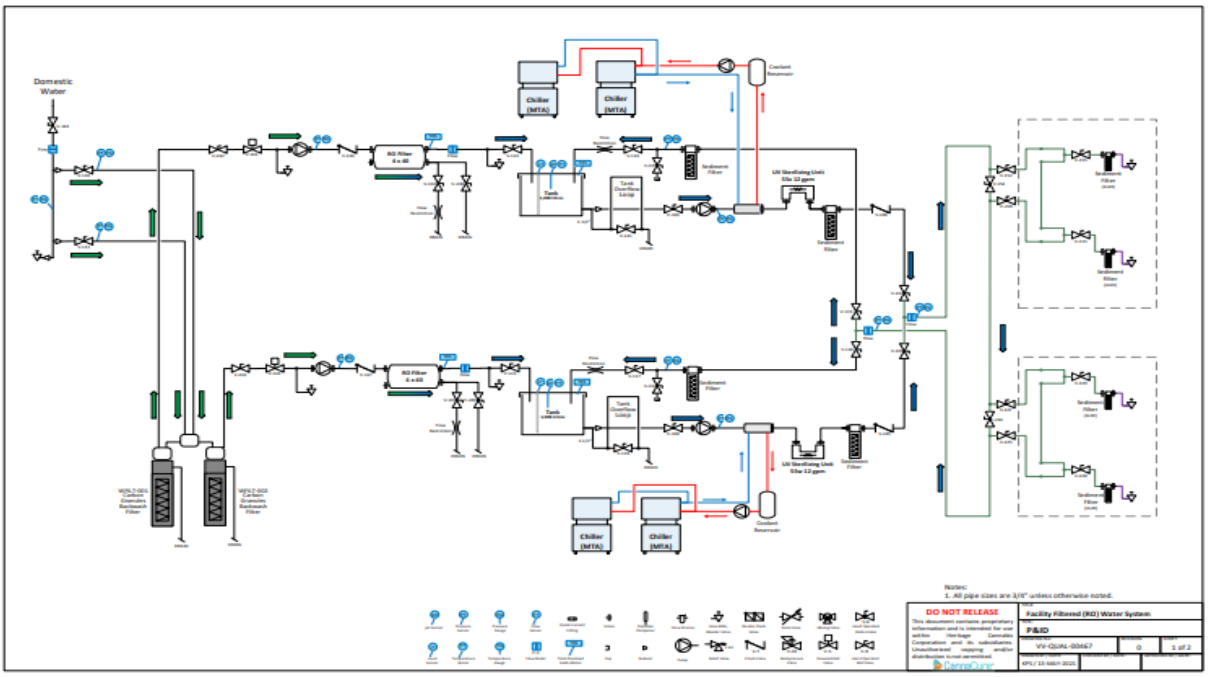
3.8 Signs and Labels





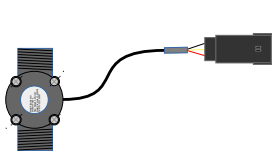
3.9 Schematics and P&IDs

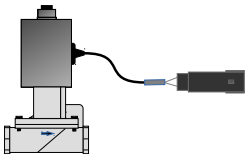


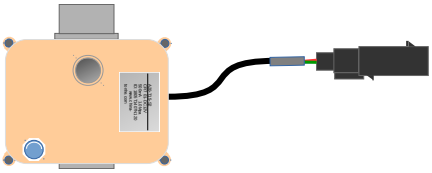


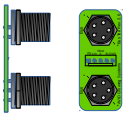
4. Illustrations

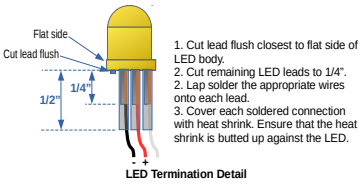
4.1 Component Illustrations





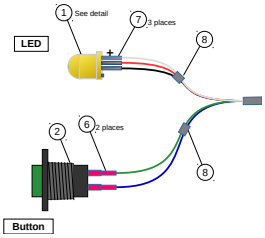


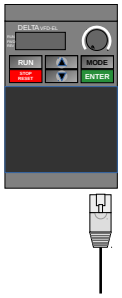


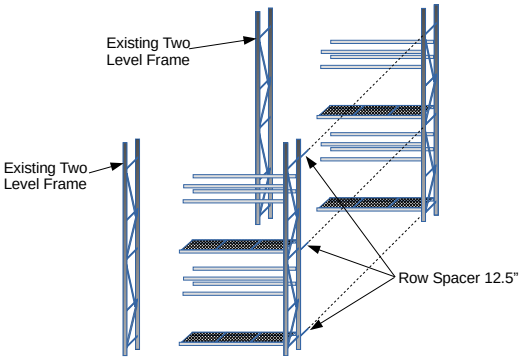


1. Cut lead flush closest to flat side of LED body.
2. Cut remaining LED leads to 1/4".
3. Cover each soldered connection with heat shrink. Ensure that the heat shrink is butted up against the LED.

LED Termination Detail





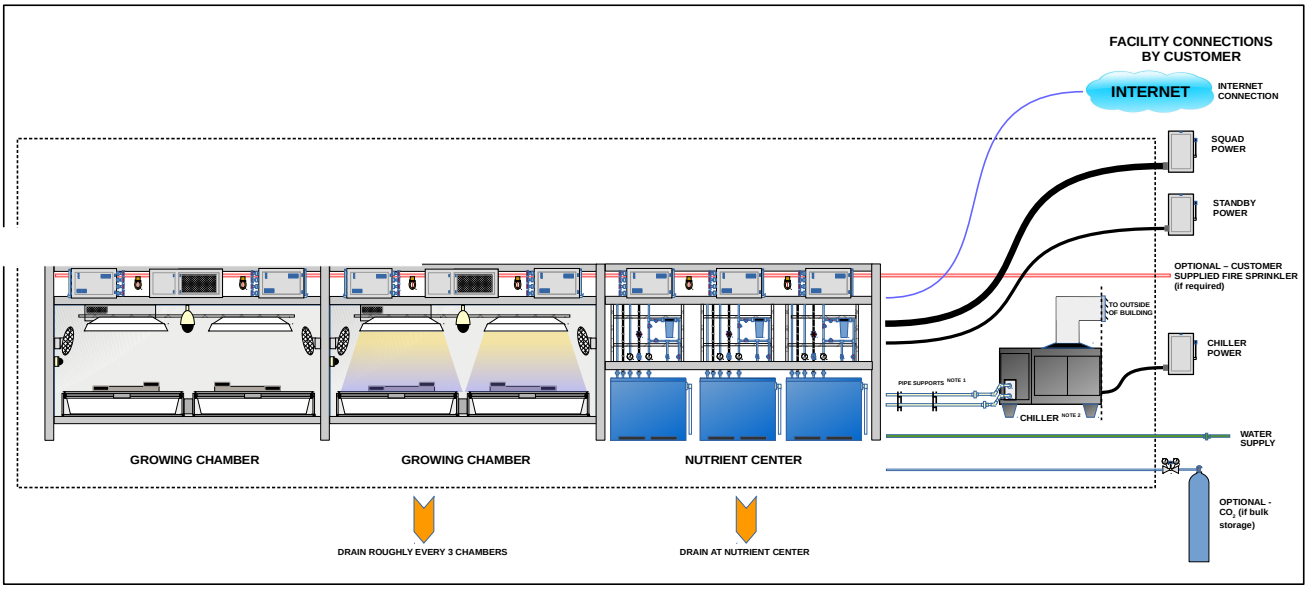


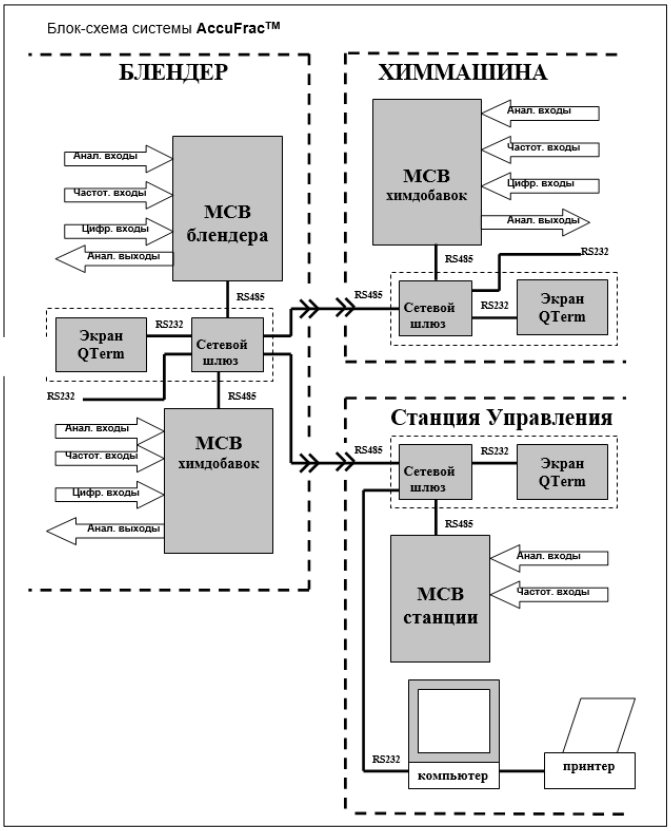
4.2 Modified Photos

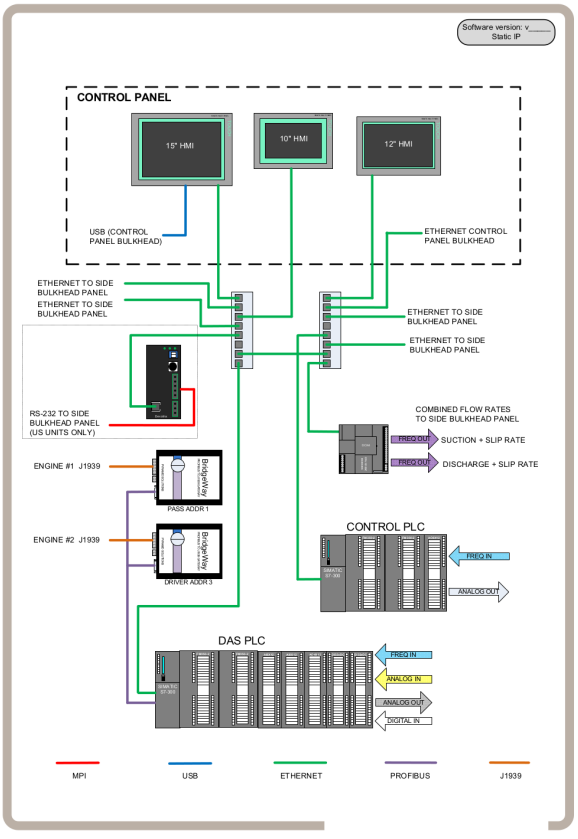
Illustration 3: Original Photo

Illustration 4: Modified Photo. Clutter is removed and gooseneck has been restored (left side)

4.3 System Diagrams







5. Appendix

5.1 Glossary

Accuracy - The closeness of an indication or reading of a measurement device to the actual value of the quantity being measured. This is usually expressed as ± percent of full-scale output or reading.
AC - Alternating current; An electric current that reverses its direction at regularly recurring intervals.
Ambient Conditions - The conditions around the transducer (pressure, temperature, etc.).
Ampere (amp) - A unit used to define the rate of flow of electricity (current) in a circuit.
Amplifier - A device which draws power from a source other than the input signal and which produces as an output an enlarged reproduction of the essential features of its input.
Analog - A quantity that can vary continuously through a potential infinite number of values, for example, the time swept out by the hands of a clock or the output of a thermocouple.
Baud - A unit of data transmission speed equal to the number of bits (or signal events) per second; 300 baud = 300 bits per second.
Binary - Refers to base 2 numbering system, in which the only allowable digits are 0 and 1.
Bit - Acronym for binary digit. The smallest unit of computer information, it is either a binary 0 or 1.
Byte - The representation of a character in binary. Eight bits.
Calibration - The process of adjusting an instrument or compiling a deviation chart so that its reading can be correlated to the actual value being measured.
CPS - Cycles per second; the rate or number of periodic events in one second, expressed in Hertz (Hz).
CSA - Canadian Standards Association.
Current - The flow of electrons in an electric circuit. The unit of measurement is the Ampere.
DC - Direct current; An electric current flowing in one direction only and substantially constant in value.
Decimal - Refers to a base ten number system using the characters 0 through 9 to represent values.
Density - Mass per unit of volume of a substance. i.e. - grams/cm^3 or pounds/ft^3.
DIN (Deutsche Industrial Norm) - A set of German standards recognized throughout the world.
Error - The difference between the value indicated by the transducer and the true value of the parameter being sensed. It is usually expressed in percent of full scale output.
Firmware - Programs stored in PROMs, EPROMs or flash memory.
Flow Rate - Actual speed or velocity of fluid movement.
FM Approved - An instrument that meets a specific set of specifications established by Factory Mutual Research Corporation.
Frequency - The number of cycles over a specified time period over which an event occurs. The reciprocal is called the period.
Ground - 1. The electrical neutral line having the same potential as the surrounding earth. 2. The negative side of DC power supply. 3. Reference point for an electrical system.
Hardware - The electrical, mechanical and electromechanical equipment and parts associated with a computing system, as opposed to its firmware or software.
Head Pressure - Pressure in terms of the height of fluid and the specific gravity of the fluid.

5.2 Abbreviations

‘	foot / feet
“	inch / inches
AC	Alternating Current
atm.	atmosphere
ccw	counter clock-wise
CO_2	Carbon Dioxide
CSA	Canadian Standards Association
CEC	Canadian Electric Code
CMH	Ceramic Metal Halide
cw	clock-wise
DC	Direct Current
deg.	degree
DI	de-ionizing
dwg.	drawing
EC	electrical conductivity
EOL	End of Line
ESA	Employment Standards Act
ft.	foot / feet
ft^2	square foot / square feet
ft^3	cubic foot / cubic feet
g	gram
GUI	Graphic User Interface
HPS	High Pressure Sodium
Hz	Hertz
in.	inch / inches
l, L	litre
LEC	Light Emitting Ceramic
LED	Light Emitting Diode
lb.	pound
kg.	kilogram
kPa	kilo Pascals
m	metre
m^2	square metre
m^3	cubic metre
Mbps	Mega bits per second
MERV	Minimum Efficiency Reporting Value
MSDS	Material Safety Data Sheet
OHSA	Occupational Health and Safety Act
pH	power of hydrogen
PPE	Personal Protective Equipment
ppm	parts per million
psi.	pounds per square inch
psia.	pounds per square inch (atmospheric)
psid.	pounds per square inch (differential)
psig.	pounds per square inch (gauge)
PTZ	Pan Tilt Zoom
RGB	red green blue
RO	reverse osmosis
TDS	total dissolved solids
uom	unit of measure
US	United States
USA	United States of America
US gal.	US gallon
UV	Ultra Violet
v	volts
VFD	Variable Frequency Drive
VPN	Virtual Private Network

5.3 Attachments

Dwg No.	Description	Pages
---	Brochure – 120K Injector (separate attachment)	4