# CIP – Aseptic 2023

Steven Haferkamp

Jeff Merritt

Johnny Elliott

# Steven Haferkamp

**Work Experience / History:**

Danone North America - Fort Worth, TX - (1997-2002, 2004-Current)

Blue Bell Creameries - Brenham, TX - (1991-1997, 2002-2004)

**Education:** BS Food Science, Texas A&M University, College Station, TX 1997

**Hobbies:** Golf , Special Olympics, Type 1 Diabetes Network

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# Jeffrey Merritt

**Work Experience / History:**

**Gosner Foods (1980-2004)**

**Pacific Foods (2004-2010) - Director of Operations**

**Steuban Foods (2010-2013) - Director of Technology**

**California Natural Products (2014-2017) - SME Aspetics**

**Ecolab (2017-present)**

**Education: BS Computer Science, SHU**

**Hobbies: Hunting**

# Johnny Elliott

**Work Experience / History:**

Dean Foods (1988 – 2009)

Diversey (2009 – 2010)

Ecolab (2010- present)

**Education:** ETSU Bachelor of Business Administration

**Hobbies:** Restoring old cars , especially corvettes

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# WHY DUAL PRESENTATION?

## TWO COMPANIES.

## ONE MISSION.

## CLEAN.

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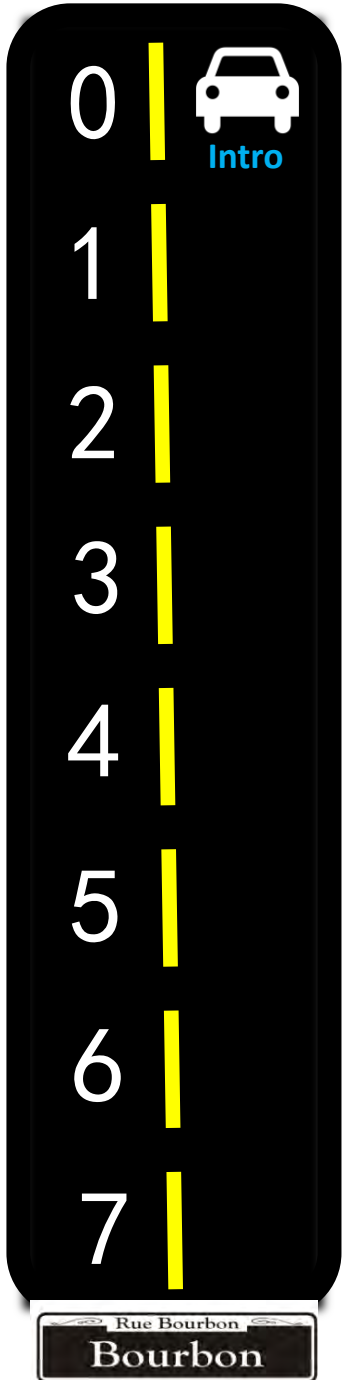
# GENERAL STUFF


- EVERY CHAPTER HAS A PARKING SPOT NUMBER
- AS WE COMPLETE A CHAPTER WORDING GOES TO WHITE (COMPLETED)
- WHERE WE ARE IN THE PRESENTATION IS MARKED WITH BLUE LETTERINGS (PRESENT)


We will do our absolute best not to PARK to long in any chapter.



# Agenda

0 • Introductions & Acknowledgement

1 • Aseptic Process Overview (Scope of Presentation)

2 • Effective Cleaning Program

3 • Effective PM Program

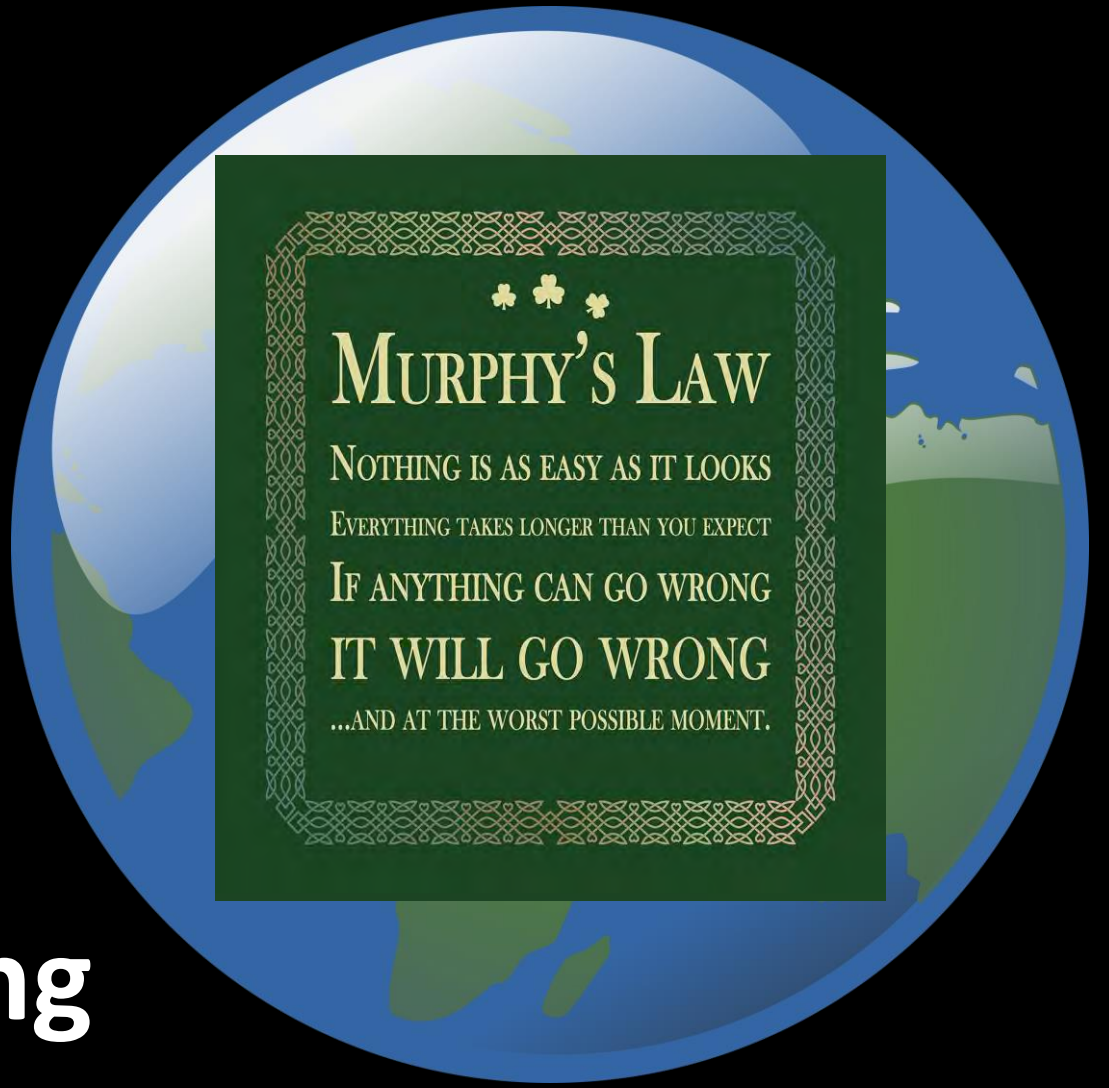
4 • Effective Monitoring Program

5 • Identification of Critical Points in Process

6 • Feedback Loop to an Effective Cleaning Program

7 • Examples of Program Failures

# CIP – Aseptic 2023




**World of Cleaning**


0
Intro
1
2
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4
5
6
7
The Fear of Being Wrong or Fear of Making a Mistake
WILL LEAD TO DOING NOTHING
Surf's up

# Agenda

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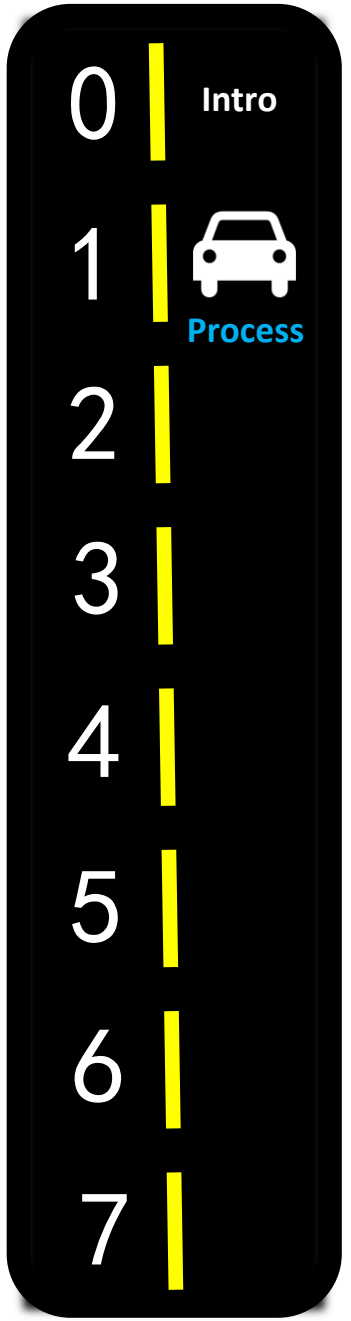
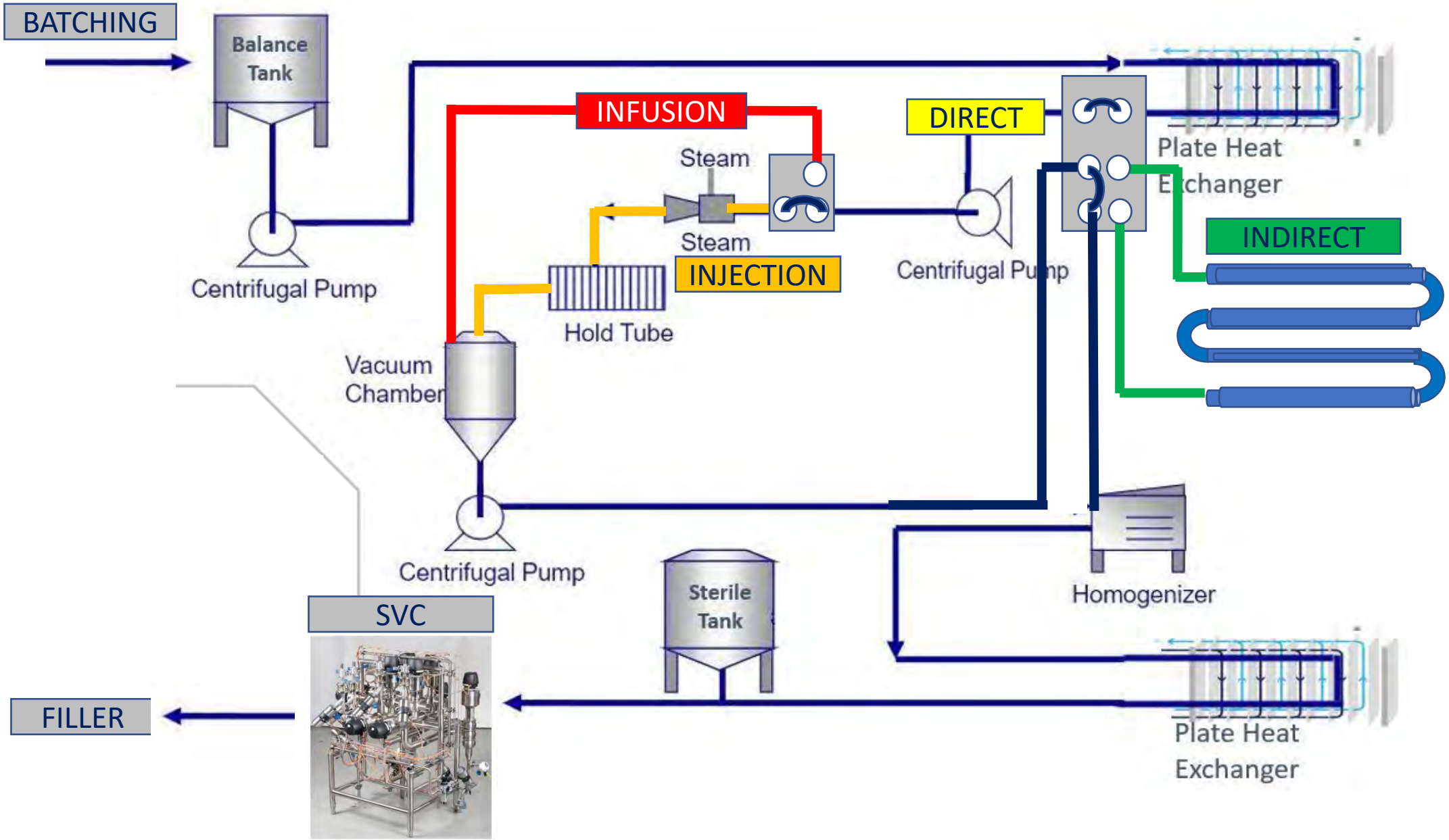
# Complete Cleaning Program

# SYSTEM OVERVIEW – DIRECT/INDIRECT HEAT



# Agenda

0 • Introductions & Acknowledgement

1 • Aseptic Process Overview (Scope of Presentation)

2 • Effective Cleaning Program Fundamentals

3 • Effective PM Program

4 • Effective Monitoring Program

5 • Identification of Critical Points in Process

6 • Feedback Loop to an Effective Cleaning Program

7 • Examples of Program Failures

# CIP-CLEAN IN PLACE

# COP-CLEAN OUT OF PLACE

# AIC-ASEPTIC INTERMEDIATE CLEAN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1 Process

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# FUNDAMENTAL #1

# CIP IS NOT A PLUG AND PRAY

CIP

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# FUNDAMENTAL #2

# YOU CANNOT CLEAN AROUND INADEQUATE MAINTENANCE/PM PROGRAM

CIP

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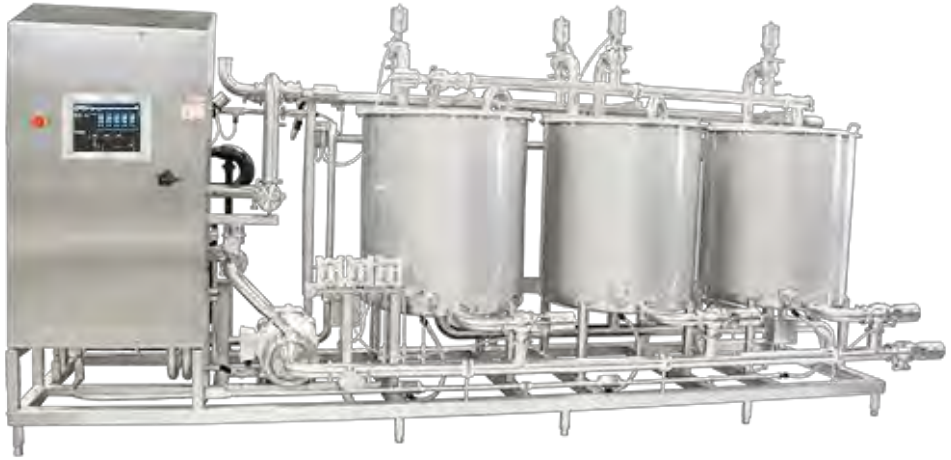

# BASICS OF CIP



- Cleaning in place (CIP) is a set of processes conducted to properly clean all or part of a system as it sits in place, without removing or disassembling piping or equipment to accommodate the cleaning.

CIP systems distribute

Cleaning solutions
Rinsing solutions
•Sanitizing solutions

These solutions are run through the same piping path as the product to eliminate product soil from all internal surfaces.

CIP

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# Monitoring TACT During CIP

## ACROSS ENTIRE PROCESS

**T** **Temperature** 

**A** **Action (FLOW)** 

**C** **Concentration** %

**T** **Time** 

The control **ANYWHERE & ANYTIME** of these 4 parameters guaranty the quality of the CIP

Surf's up

CIP

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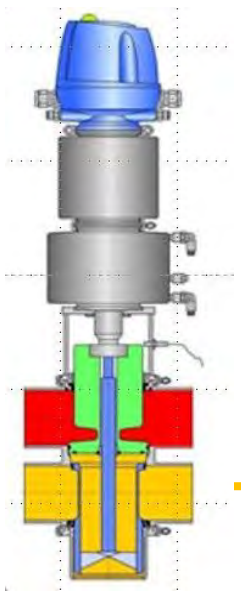

OUTSIDE INFLUENCES:

1. Barrier Temperatures
2. Run Times
3. Rinse Times

SUPPLY TEMPERATURE

# TEMPERATURE

RETURN TEMPERATURE

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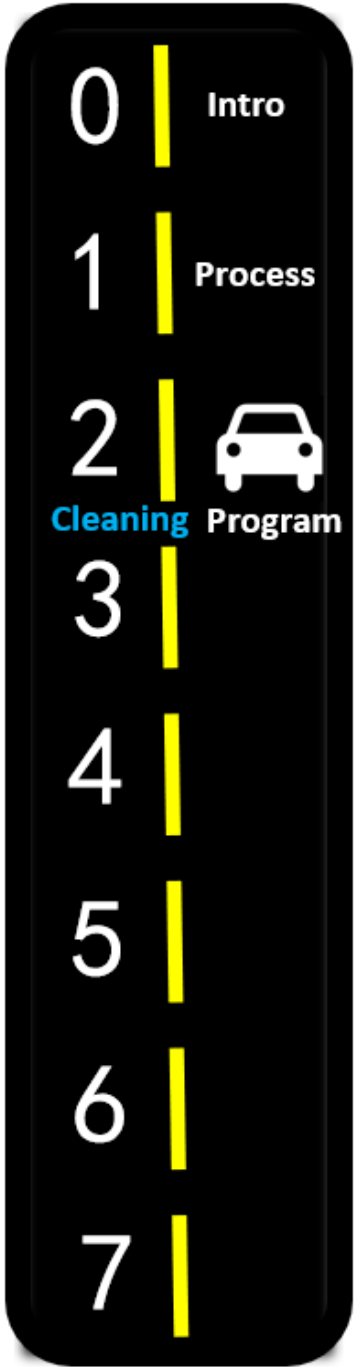
# AIC FREQUENCY

**Aseptic intermediate cleaning** (AIC) can be performed to prolong the production time between full CIPs. When AIC is selected, the product is displaced by sterile water before cleaning starts. During the AIC sequences, the holding tube is kept at the sterilization temperature, thus keeping the aseptic parts of the unit sterile.

- **Intermediate short CIP frequency is part of a cleaning program. The parameters of the AIC determines the effectiveness of the CIP.**

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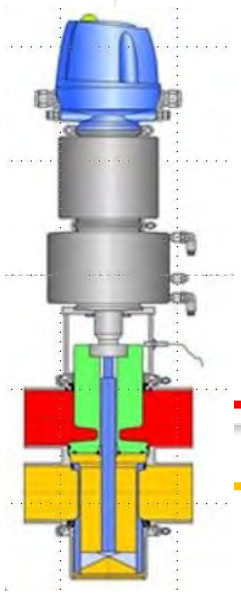
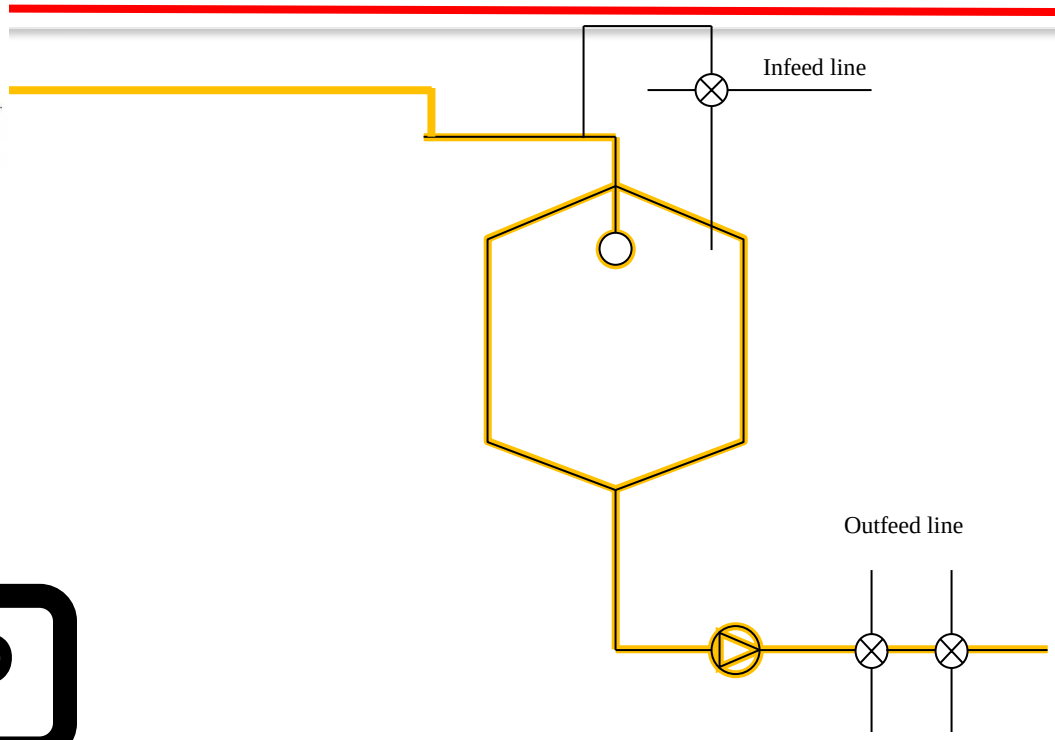
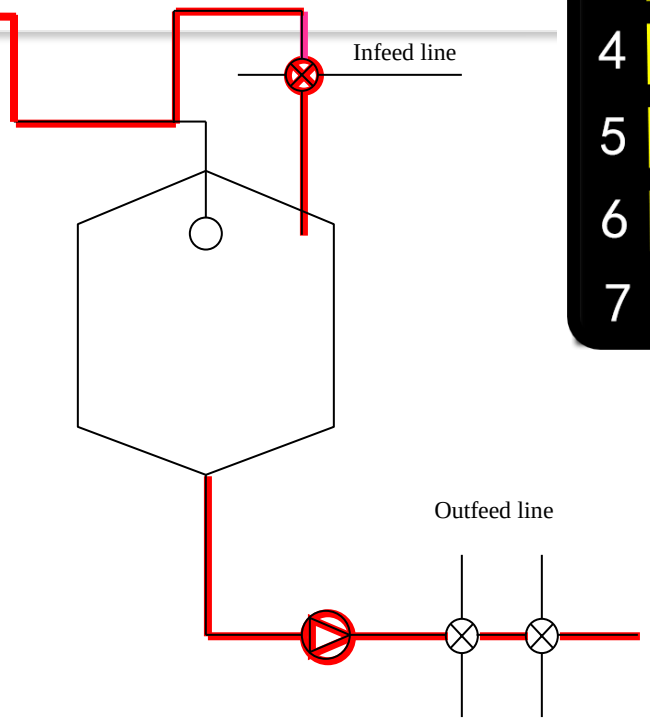
AIC



# FLOWPATHS





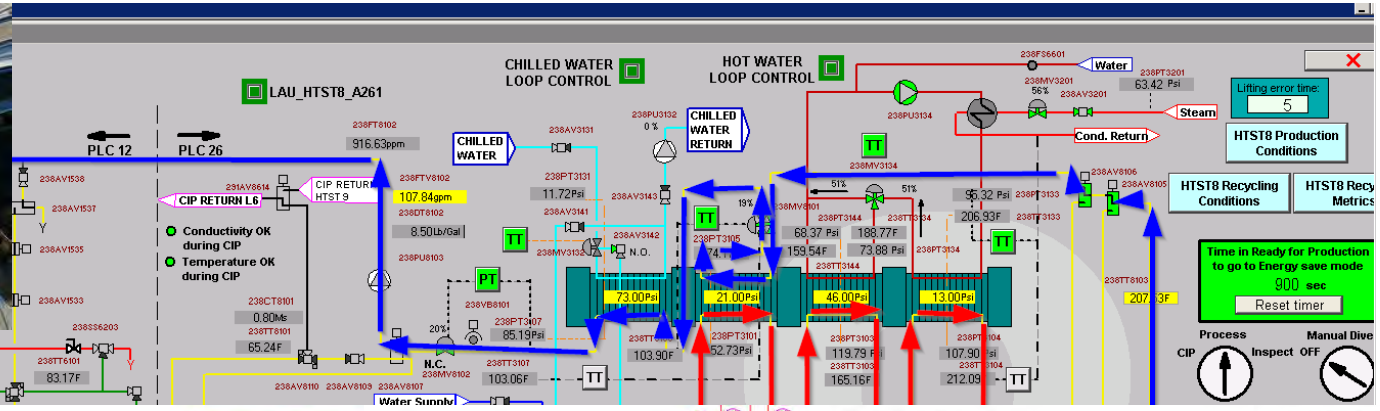



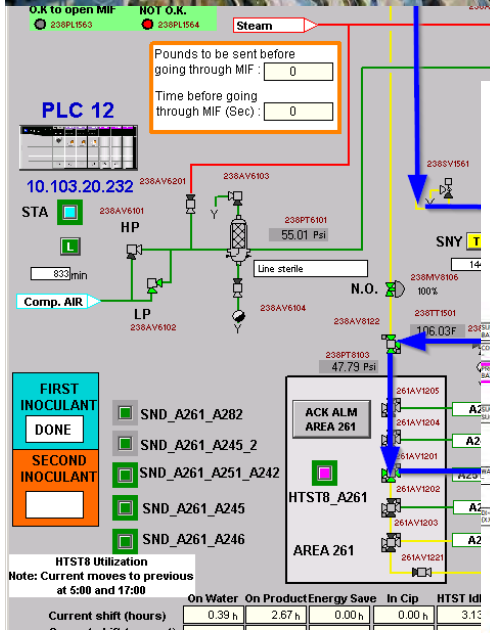

CIP

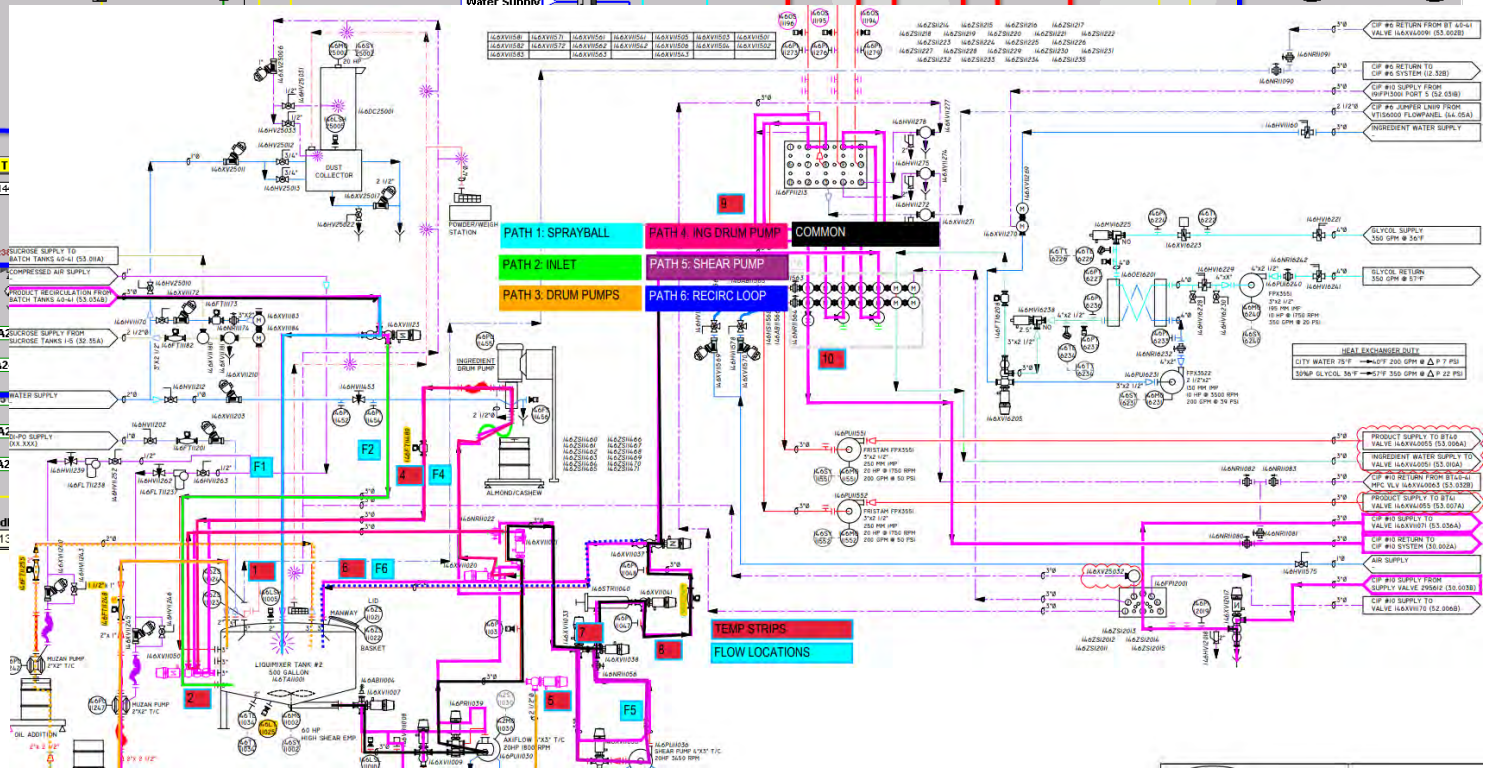
Example# 1 : CIP spray ball supply

Example #2 : CIP tank infeed line

# FLOW PATHS – KNOW THEM




CIP

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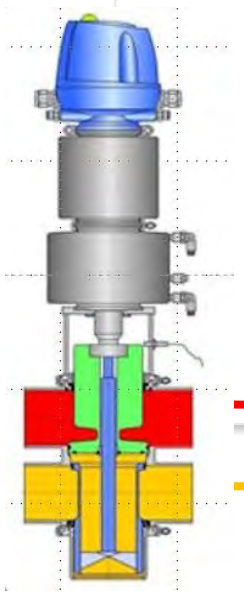
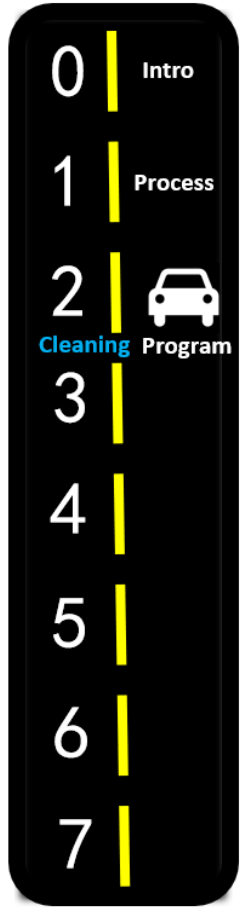
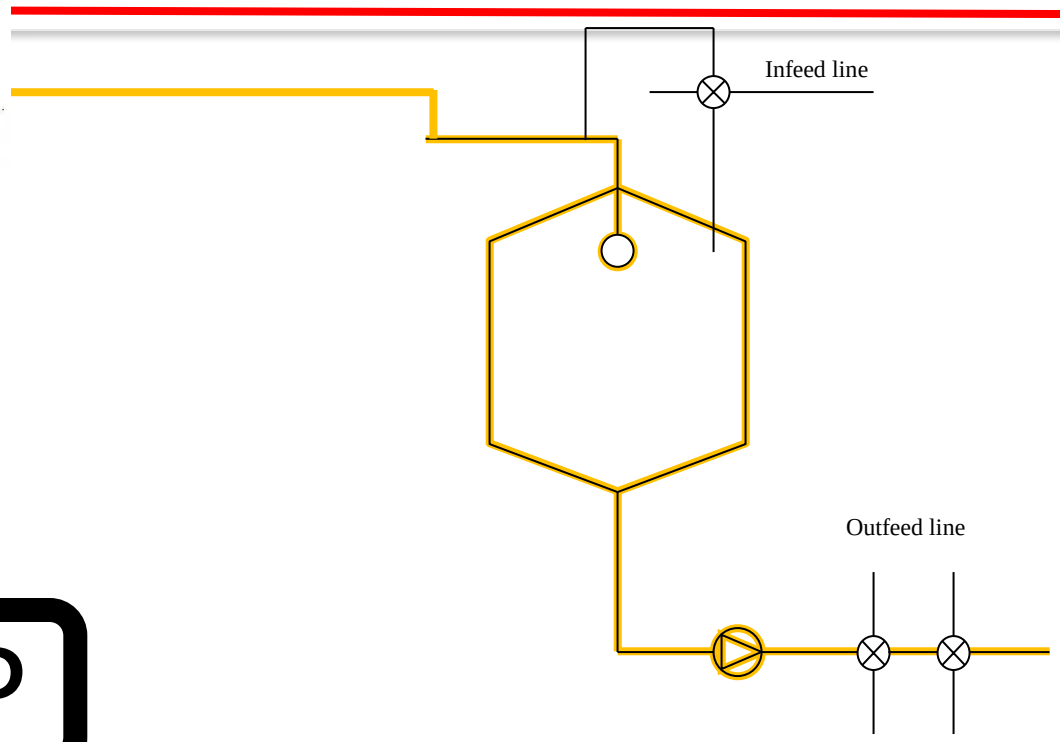
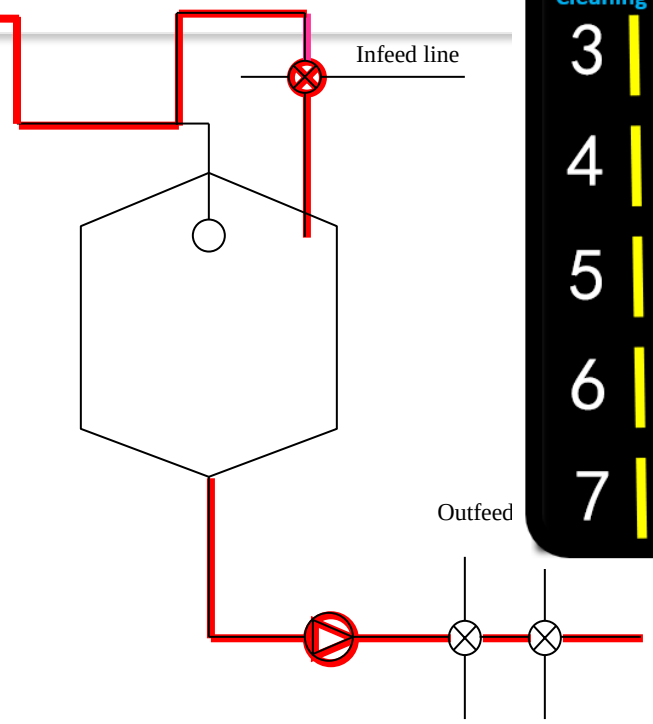


# EFFECTIVE CLEANING TIME



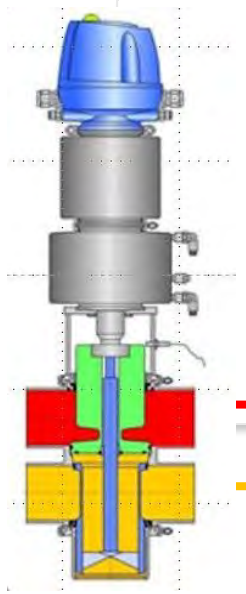




CIP

Example# 1 : CIP spray ball supply

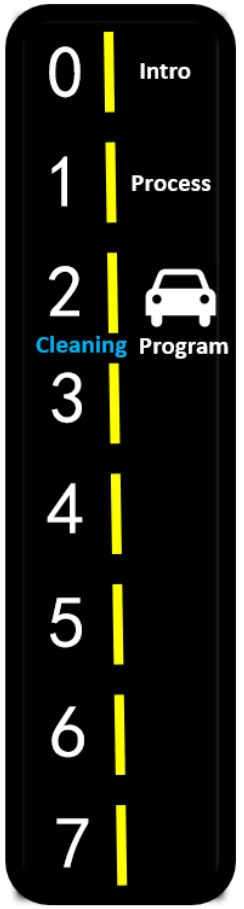
Example #2 : CIP tank infeed line

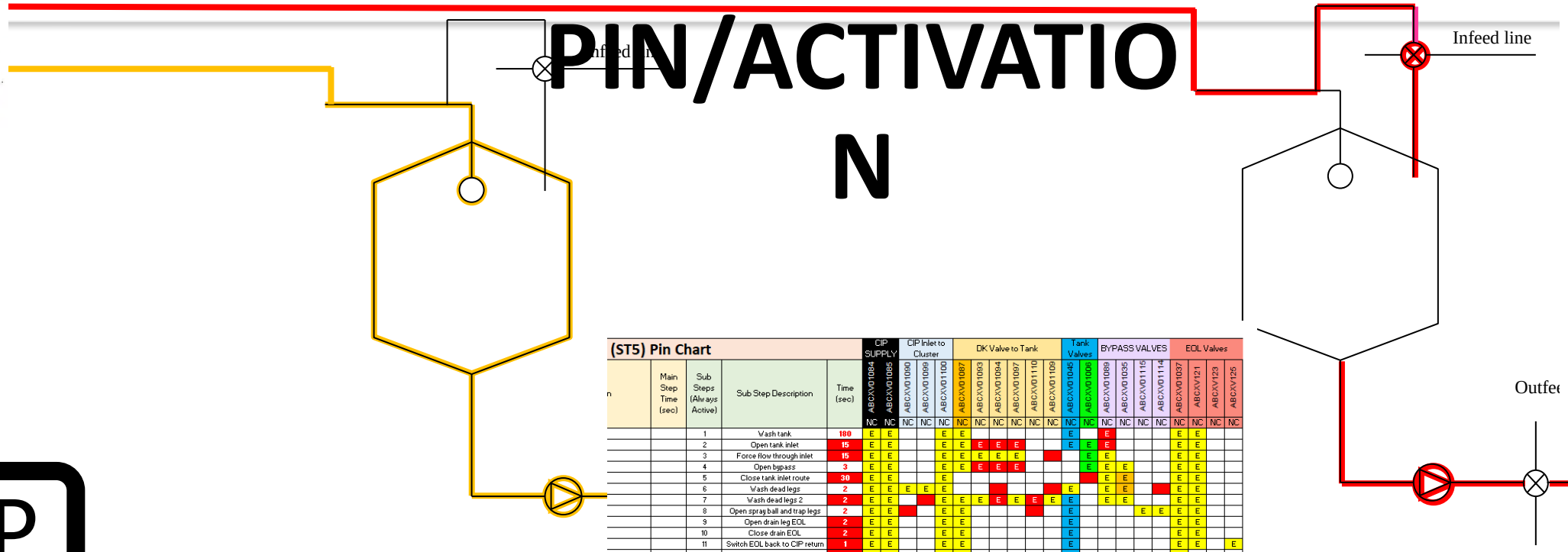


CONSIDERATIONS:

1. WHEN THEY PULSE
2. TIME THEY PULSE
3. SEQUENCE OF PULSES

# VALVE PULSING – PIN/ACTIVATION




(ST5) Pin Chart

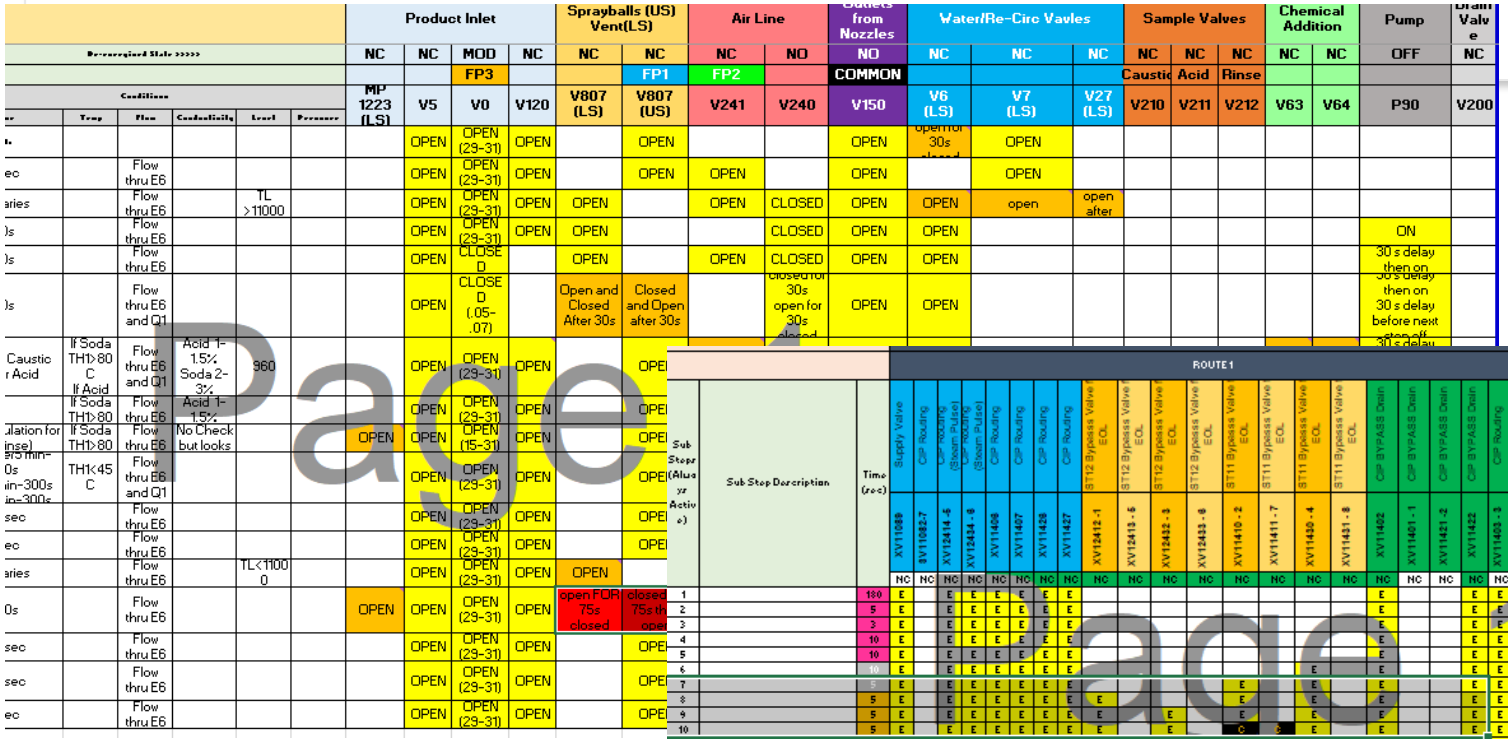
| | Main Step Time (sec) | Sub Steps (Always Active) | Sub Step Description | Time (sec) | CIP SUPPLY ABCXVD1084 NC | CIP SUPPLY ABCXVD1085 NC | CIP Inlet to Cluster ABCXVD1090 NC | CIP Inlet to Cluster ABCXVD1099 NC | CIP Inlet to Cluster ABCXVD1100 NC | DK Valve to Tank ABCXVD1087 NC | DK Valve to Tank ABCXVD1093 NC | DK Valve to Tank ABCXVD1094 NC | DK Valve to Tank ABCXVD1097 NC | DK Valve to Tank ABCXVD1110 NC | DK Valve to Tank ABCXVD1109 NC | Tank Valves ABCXVD1045 NC | Tank Valves ABCXVD1060 NC | BYPASS VALVES ABCXVD1089 NC | BYPASS VALVES ABCXVD1035 NC | BYPASS VALVES ABCXVD1115 NC | BYPASS VALVES ABCXVD1114 NC | EOL Valves ABCXVD1037 NC | EOL Valves ABCXV121 NC | EOL Valves ABCXV123 NC | EOL Valves ABCXV125 NC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | Wash tank | 180 | E | E | | | E | E | | | | | | E | | E | | | | E | E | | |
| | | 2 | Open tank inlet | 15 | E | E | | | E | E | E | E | E | | | E | E | E | | | | E | E | | |
| | | 3 | Force flow through inlet | 15 | E | E | | | E | E | E | E | E | | | | E | E | | | | E | E | | |
| | | 4 | Open bypass | 3 | E | E | | | E | E | E | E | E | | | | E | E | E | | | E | E | | |
| | | 5 | Close tank inlet route | 30 | E | E | | | E | | | | | | | | E | E | E | | | E | E | | |
| | | 6 | Wash dead legs | 2 | E | E | E | E | E | | | | | | | E | | E | E | | | E | E | | |
| | | 7 | Wash dead legs 2 | 2 | E | E | | | E | E | E | E | E | E | E | E | | E | E | | | E | E | | |
| | | 8 | Open spray ball and trap legs | 2 | E | E | | | E | E | | | | | | E | | | | E | E | E | E | | |
| | | 9 | Open drain leg EOL | 2 | E | E | | | E | E | | | | | | E | | | | | | E | E | | |
| | | 10 | Close drain EOL | 2 | E | E | | | E | E | | | | | | E | | | | | | E | E | | |
| | | 11 | Switch EOL back to CIP return | 1 | E | E | | | E | E | | | | | | E | | | | | | E | E | | E |
| | | 12 | Open trap leg EOL | 1 | E | E | | | E | E | | | | | | E | | | | | | E | | | |
| | | 13 | Back to washing tank | 1 | E | E | | | E | E | | | | | | E | | | | | | | E | E | |
| | | | Total SEC | 256 | | | | | | | | | | | | | | | | | | | | | |
| | | | Total Min | 4.27 | | | | | | | | | | | | | | | | | | | | | |

CIP

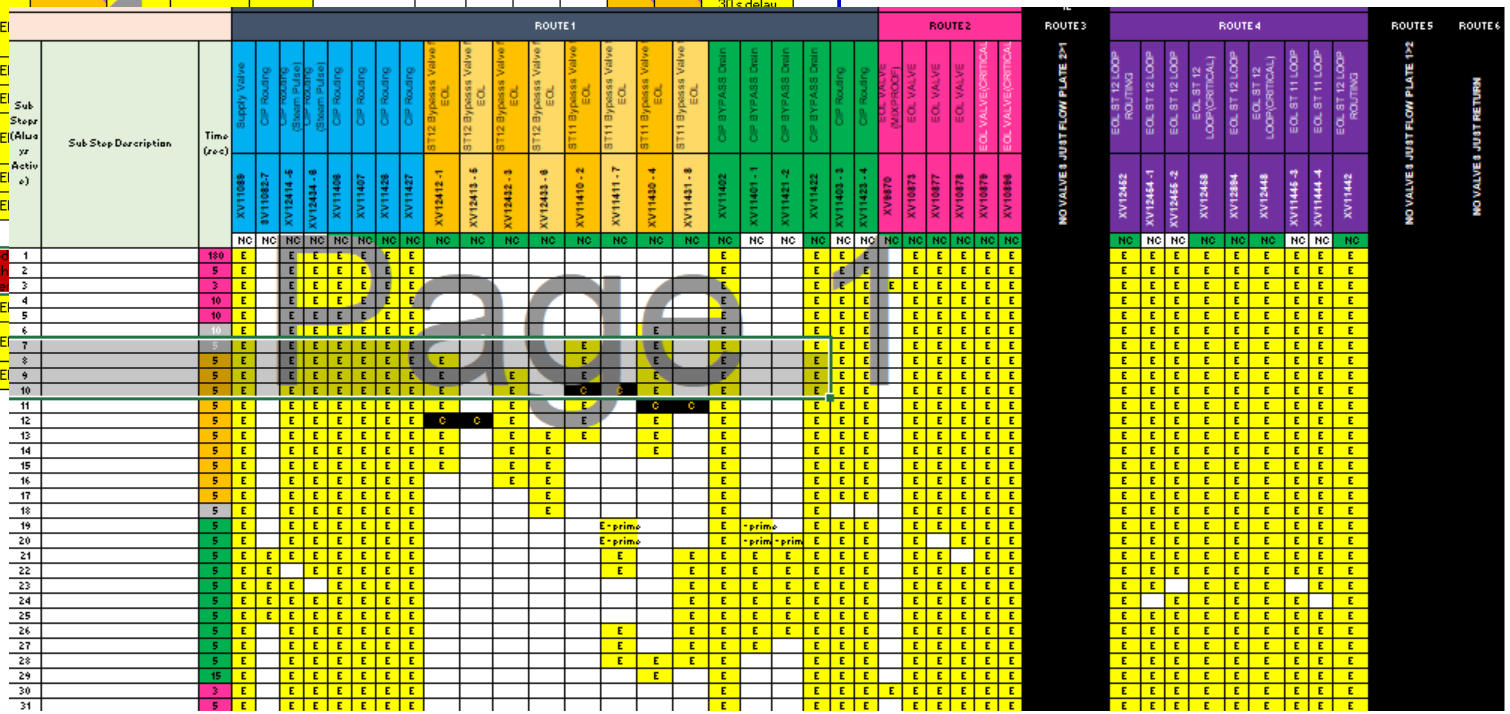
Example# 1 : CIP spray ball supply

Example #2 : CIP tank infeed line

# PIN/ACTIVATION CHARTS – KNOW



| | | | | | | Product Inlet | | | | Sprayballs (US) Vent(LS) | | Air Line | | Outlets from Nozzles | Water/Re-Circ Vavles | | | Sample Valves | | | Chemical Addition | | Pump | Drain Valve |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Prerequisite State >>>>> | | | | | | NC | NC | MOD | NC | NC | NC | NC | NO | NO | NC | NC | NC | NC | NC | NC | NC | NC | OFF | NC |
| | | | | | | | | FP3 | | | FP1 | FP2 | | COMMON | | | | Caustic | Acid | Rinse | | | | |
| Conditions | | | | | | MP 1223 (LS) | V5 | V0 | V120 | V807 (LS) | V807 (US) | V241 | V240 | V150 | V6 (LS) | V7 (LS) | V27 (LS) | V210 | V211 | V212 | V63 | V64 | P90 | V200 |
| | | | | | | | OPEN | OPEN (29-31) | OPEN | | OPEN | | | OPEN | open for 30s closed | OPEN | | | | | | | | |
| | | Flow thru E6 | | | | | OPEN | OPEN (29-31) | OPEN | | OPEN | OPEN | | OPEN | | OPEN | | | | | | | | |
| | | Flow thru E6 | | TL >11000 | | | OPEN | OPEN (29-31) | OPEN | OPEN | | OPEN | CLOSED | OPEN | OPEN | open | open after | | | | | | | |
| | | Flow thru E6 | | | | | OPEN | OPEN (29-31) | OPEN | OPEN | | | CLOSED | OPEN | OPEN | | | | | | | | ON | |
| | | Flow thru E6 | | | | | OPEN | CLOSED | | OPEN | | OPEN | CLOSED | OPEN | OPEN | | | | | | | | 30 s delay then on | |
| | | Flow thru E6 and Q1 | | | | | OPEN | CLOSED (.05-.07) | | Open and Closed After 30s | Closed and Open after 30s | | closed for 30s open for 30s closed | OPEN | OPEN | | | | | | | | 30 s delay then on 30 s delay before next step off | |
| Caustic r Acid | If Soda TH1>80 C If Acid | Flow thru E6 and Q1 | Acid 1-1.5% Soda 2-3% | 960 | | | OPEN | OPEN (29-31) | OPEN | | | | | | | | | | | | | | | |
| | If Soda TH1>80 | Flow thru E6 | Acid 1-1.5% | | | | OPEN | OPEN (29-31) | OPEN | | | | | | | | | | | | | | | |
| ulation for inse) | If Soda TH1>80 | Flow thru E6 | No Check but looks | | | OPEN | OPEN | OPEN (15-31) | OPEN | | | | | | | | | | | | | | | |
| 0s | TH1<45 C | Flow thru E6 and Q1 | | | | | OPEN | OPEN (29-31) | OPEN | | | | | | | | | | | | | | | |
| sec | | Flow thru E6 | | | | | OPEN | OPEN (29-31) | OPEN | | | | | | | | | | | | | | | |
| ec | | Flow thru E6 | | | | | OPEN | OPEN (29-31) | OPEN | | | | | | | | | | | | | | | |
| aries | | Flow thru E6 | | TL<11000 | | | OPEN | OPEN (29-31) | OPEN | OPEN | | | | | | | | | | | | | | |
| 0s | | Flow thru E6 | | | | OPEN | OPEN | OPEN (29-31) | OPEN | open FOR 75s closed | closed 75s th open | | | | | | | | | | | | | |
| sec | | Flow thru E6 | | | | | OPEN | OPEN (29-31) | OPEN | | | | | | | | | | | | | | | |
| sec | | Flow thru E6 | | | | | OPEN | OPEN (29-31) | OPEN | | | | | | | | | | | | | | | |
| ec | | Flow thru E6 | | | | | OPEN | OPEN (29-31) | OPEN | | | | | | | | | | | | | | | |



| | | | ROUTE 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ROUTE 2 | | | | | ROUTE 3 | ROUTE 4 | | | | | | | | | ROUTE 5 | ROUTE 6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub Steps (Always Active) | Sub Step Description | Time (sec) | Supply Valve | CIP Routing | CIP Routing | CIP Routing (Steam Pulse) | CIP Routing (Steam Pulse) | CIP Routing | CIP Routing | CIP Routing | CIP Routing | ST12 Bypass Valve EOL | ST12 Bypass Valve EOL | ST12 Bypass Valve EOL | ST12 Bypass Valve EOL | ST11 Bypass Valve EOL | ST11 Bypass Valve EOL | ST11 Bypass Valve EOL | ST11 Bypass Valve EOL | CIP BYPASS Drain | CIP BYPASS Drain | CIP BYPASS Drain | CIP BYPASS Drain | CIP Routing | CIP Routing | EOL VALVE (MIXPROOF) | EOL VALVE | EOL VALVE | EOL VALVE (CRITICAL) | EOL VALVE (CRITICAL) | NO VALVE & JUST FLOW PLATE 2>1 | EOL ST 12 LOOP ROUTING | EOL ST 12 LOOP ROUTING | EOL ST 12 LOOP (CRITICAL) | EOL ST 12 LOOP (CRITICAL) | EOL ST 12 LOOP ROUTING | EOL ST 11 LOOP ROUTING | EOL ST 11 LOOP ROUTING | EOL ST 12 LOOP ROUTING | NO VALVE & JUST FLOW PLATE 1>2 | NO VALVE & JUST RETURN |
| | | | XV11089 | XV11082-7 | XV12414-6 | XV12434 - 8 | XV11408 | XV11407 | XV11426 | XV11427 | XV12412-1 | XV12413 - 6 | XV12432 - 3 | XV12433 - 8 | XV11410 - 2 | XV11411 - 7 | XV11430 - 4 | XV11431 - 8 | XV11422 | XV11421 - 1 | XV11421 - 2 | XV11422 | XV11403 - 3 | XV11423 - 4 | XV9870 | XV10873 | XV10877 | XV10878 | XV10879 | XV10884 | | XV12452 | XV12464 -1 | XV12465 -2 | XV12458 | XV12894 | XV12448 | XV11444 -3 | XV11444 -4 | XV11442 | | |
| | | | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC | | NC | NC | NC | NC | NC | NC | NC | NC | NC | | |
| 1 | | 180 | E | | E | E | E | E | E | E | | | | | | | | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 2 | | 5 | E | | E | E | E | E | E | E | | | | | | | | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 3 | | 3 | E | | E | E | E | E | E | E | | | | | | | | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 4 | | 10 | E | | E | E | E | E | E | E | | | | | | | | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 5 | | 10 | E | | E | E | E | E | E | E | | | | | | | | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 6 | | 10 | E | | E | E | E | E | E | E | | | | | | | | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 7 | | 5 | E | | E | E | E | E | E | E | | | | | E | | E | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 8 | | 5 | E | | E | E | E | E | E | E | E | | | | E | | E | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 9 | | 5 | E | | E | E | E | E | E | E | E | | E | | E | | E | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 10 | | 5 | E | | E | E | E | E | E | E | E | | E | | C | E | E | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 11 | | 5 | E | | E | E | E | E | E | E | | E | | E | | C | C | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 12 | | 5 | E | | E | E | E | E | E | E | C | C | E | | E | | E | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 13 | | 5 | E | | E | E | E | E | E | E | E | | E | E | E | | E | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 14 | | 5 | E | | E | E | E | E | E | E | E | | E | E | | | E | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 15 | | 5 | E | | E | E | E | E | E | E | E | | E | E | | | | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 16 | | 5 | E | | E | E | E | E | E | E | | | E | E | | | | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 17 | | 5 | E | | E | E | E | E | E | E | | | | E | | | | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 18 | | 5 | E | | E | E | E | E | E | E | | | | E | | | | | | | | E | | | E | | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 19 | | 5 | E | | E | E | E | E | E | E | | | | | | E-prime | | | | | | E | -prime | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 20 | | 5 | E | | E | E | E | E | E | E | | | | | | E-prime | | | | | | E | -prim | -prim | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 21 | | 5 | E | E | E | E | E | E | E | E | | | | | | E | | E | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 22 | | 5 | E | E | | E | E | E | E | E | | | | | | E | | E | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 23 | | 5 | E | E | E | | E | E | E | E | | | | | | | | E | | | | E | | | E | E | E | E | E | | E | E | | E | E | E | E | E | E | | |
| 24 | | 5 | E | E | E | E | E | E | E | E | | | | | | | | E | | | | E | | | E | | E | E | E | | E | | E | E | E | E | E | E | E | | |
| 25 | | 5 | E | E | E | E | E | E | E | E | | | | | | | | E | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 26 | | 5 | E | | E | E | E | E | E | E | | | | | | E | | E | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 27 | | 5 | E | | E | E | E | E | E | E | | | | | | E | | E | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 28 | | 5 | E | | E | E | E | E | E | E | | | | | | E | E | E | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 29 | | 15 | E | | E | E | E | E | E | E | | | | | | | E | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 30 | | 3 | E | | E | E | E | E | E | E | | | | | | | | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |
| 31 | | 5 | E | | E | E | E | E | E | E | | | | | | | | | | | | E | | | E | E | E | E | E | | E | E | E | E | E | E | E | E | E | | |

Page Page

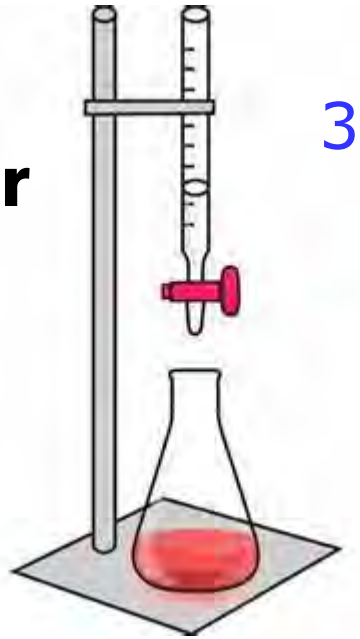
CIP

# CONCENTRATION OF SOLUTIONS

- **Use of Conductivity Meters and Titrations**
- **Built Caustic compared to Traditional Caustic**
- **Use of Correct Chemical for Appropriate Equipment**

OUTSIDE INFLUENCES:

1. Barrier Temperatures
2. Run Times
3. Rinse Times



Surf's up

CIP COP

0 Intro
1 Process
2 Cleaning Program
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# BASICS OF COP & MANUAL CLEANING

- Cleaning out of Place (COP) is a cleaning process used when the parts of equipment cannot be cleaned effectively in place, or are difficult to clean.

- This means the equipment must be disassembled before cleaning. It is then usually taken to a designated cleaning station or area for cleaning. The same cleaning solutions are often still used to sanitize when cleaning out of place.
- Once the cleaning has taken place, the equipment is then checked once reassembled to ensure no parts have been missed.

COP


# BASICS OF COP & MANUAL CLEANING

- COP is much like CIP. Still need all of the TACT parameters.
- COP differs greatly in the "Action" as it requires operators to manually scrub in most instances

Surf's up

COP

# BASICS OF COP & MANUAL CLEANING

## KEY WATCHOUTS

- Application of Foam on Hot Equipment
- Application of Foam/Chemical without any Action – “Break Time”

COP

Surf's up

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1 Process
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# Agenda

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1 • Aseptic Process Overview (Scope of Presentation)

2 • Effective Cleaning Program Fundamentals

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7 • Examples of Program Failures

# PMAINTENACE PROGRAM

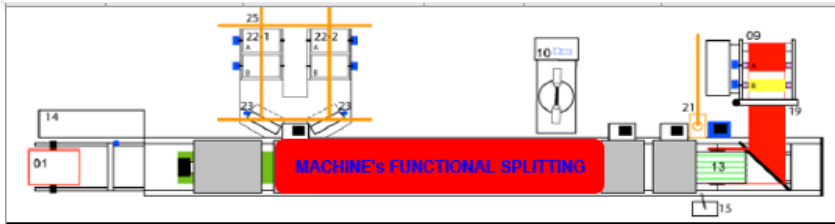
HAVE A PLAN

EXECUTE THE PLAN



Surf's up

# PMAINTENACE PROGRAM




| Module | Functions | Equipment |
|---|---|---|
| M010 | PS introduction | Trolley<br>Guide<br>Unwinder |
| M020 | PS Heating | Heating box<br>Press |
| M030 | Forming | Punches<br>Mould<br>Counter mould<br>Air<br>Thermostating unit<br>Press |
| M040 | Labelling | Crane<br>Unroller<br>Slitting<br>Label introduction<br>Moulds rotation<br>Electric cabinet |
| [illegible] | Filling | Hopper environment<br>Filler<br>Dynamic mixer<br>CIP<br>Air hopper<br>Air-vacuum membrane<br>Laminar flow |

| Module | Functions | Equipment |
|---|---|---|
| M060 | Lidding | Crane<br>Unroller<br>Lidding foil stretching<br>Dating system<br>Splicing system<br>Food safety device |
| M070 | Thermo-sealing | Sealing tool<br>Press |
| M080 | Trimming | Trimming tool<br>Press |
| M090 | Transfer | Pulling<br>Spiking<br>Guide/Scrap cutter<br>Food safety device |

- VALVE SEATS
- TANK GASKETS
- DAIRY PMS(GASKETS)
- PHE GASKETS
- SPRAYBALLS

| Module | Functions | Intervention Unit | Designation | Operation | Food Safety Risk (1-Low, 2-Medium, 3-High) | Type of operation | Duration | Unity H=hour M=minute | Periodicity (hour) | Periodicity (Week) hour/week | State | C/S | Contributor | Number of people | Workload |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 150 | | | | | |
| M010 | PS introduction | | | | | | | | | | | | | | |
| | | Reel axis | Check axis, guides & flasks | Check wearing and centring | | CK | 15 | M | 600 | 4 | MIP | S | P | 1 | 0.25 |
| | | Trolley | Check wheel & support | Check wearing, fixing, state of the wheel | | CK | 15 | M | 600 | 4 | MIP | S | P | 1 | 0.25 |
| | | Guide | Check Nofrix guide at the entrance | Check wearing and position, clean the guides | | CK | 15 | M | 3,600 | 24 | MOP | S | P | 1 | 0.25 |
| | | Unwinder | Replace reel supports | Replace the reel supports | | RE | 30 | M | | | MOP | C | P | 1 | 0.50 |
| | | Unwinder | Check driving system | Check intensity and noise of the engine | | CK | 15 | M | 3,600 | 24 | MIP | S | M | 1 | 0.25 |
| | | Unwinder | Replace gear-motor of the unroller | Replace the gear-motor | | RE | 1.0 | H | | | MOP | C | M | 1 | 1.00 |
| | | Unwinder | Check driving system | Check state and rolls positionning | | CK | 30 | M | 1,800 | 12 | MOP | S | M | 1 | 0.50 |
| | | Unwinder | Check reel support | Check wearing and position (reference in height) | | CK | 15 | M | 3,600 | 24 | MOP | S | M | 1 | 0.25 |

0 Intro
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2 Cleaning Program
3 PM Program
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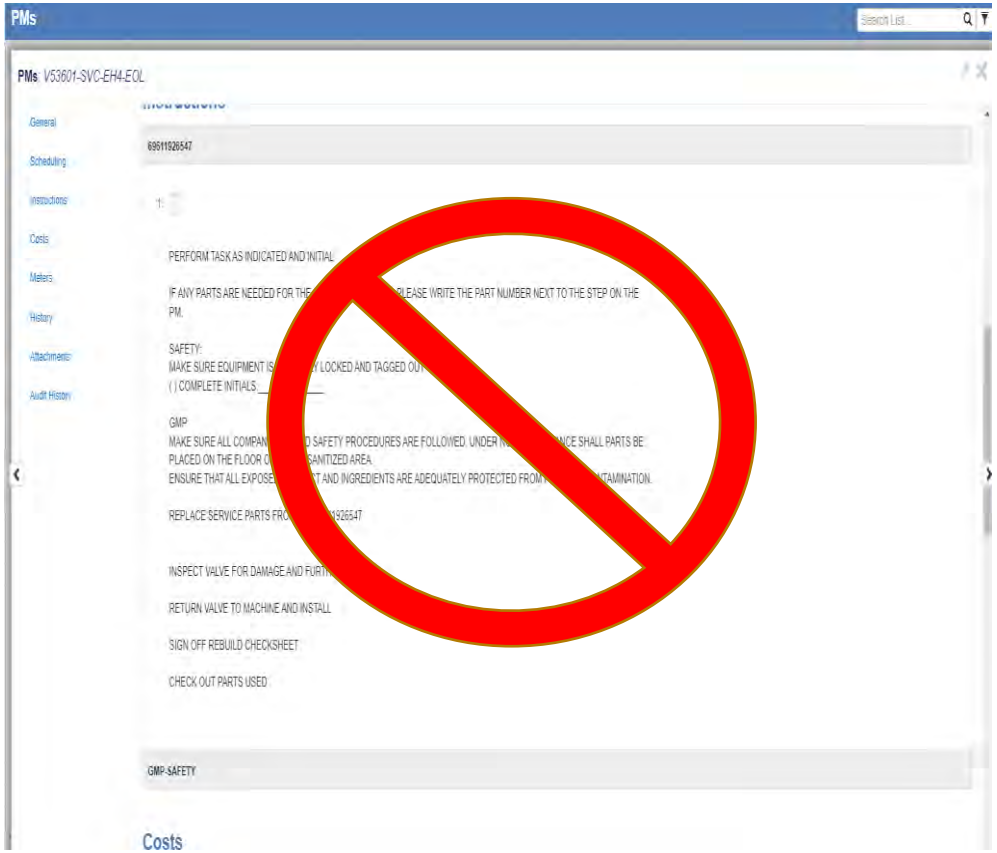
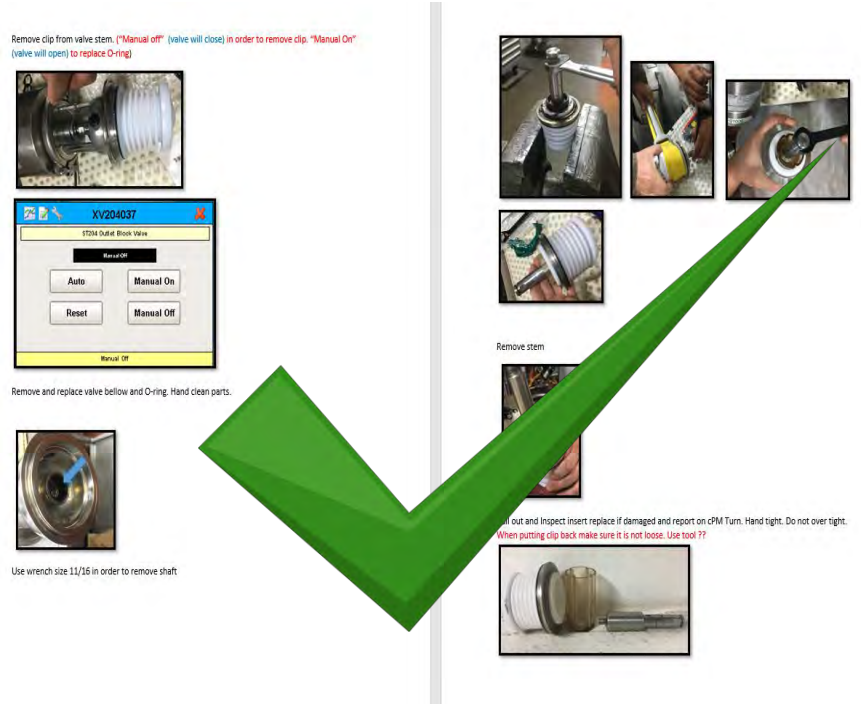
Surf's up

# PMAINTENACE PROGRAM



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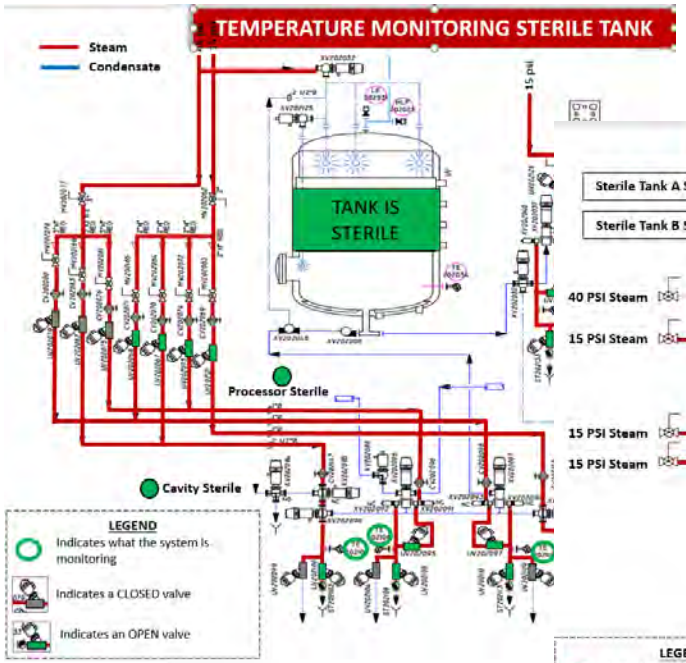
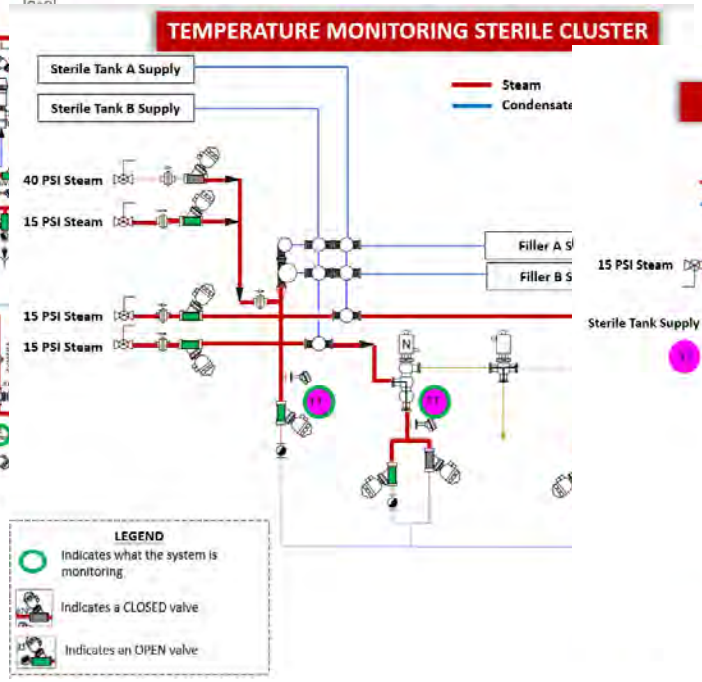
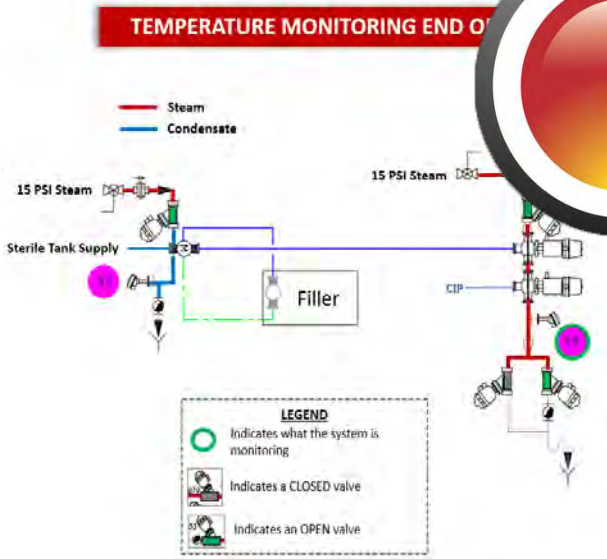
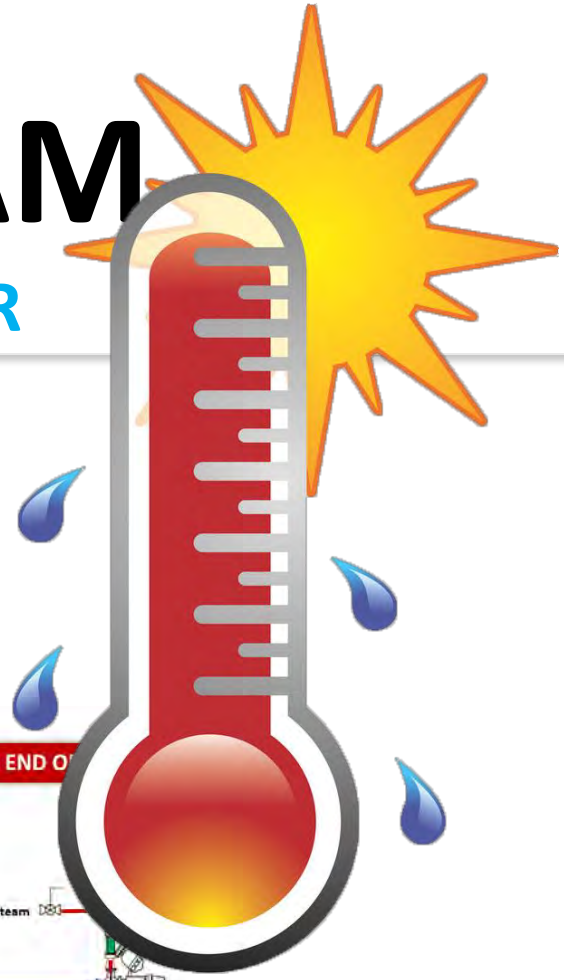
# MONITORING PROGRAM

## STEAM BARRIER VS CONDENSATE BARRIER



# MONITORING PROGRAM

## MANAGEMENT OF CHANGE – TEAM APPROACH

### CHANGE REQUEST

| Parameter | Description | Details | Reason for Change |
|---|---|---|---|
| Equipment Type | Batch Tank | 461 | |
| CIP # | | 18 | |
| TACT Parameter: Time | Old SP<br>New SP | | |
| TACT Parameter: Concentration | Old SP<br>New SP | | Tank mS is running too high on caustic. |
| TACT Parameter: Temperature | Old SP<br>New SP | | |
| REQUESTOR: | | | |
| APPROVER: | | | |
| DATE OF REQUEST: | | | |


## TACT PARAMETERS LOCKED DOWN



Surf's up

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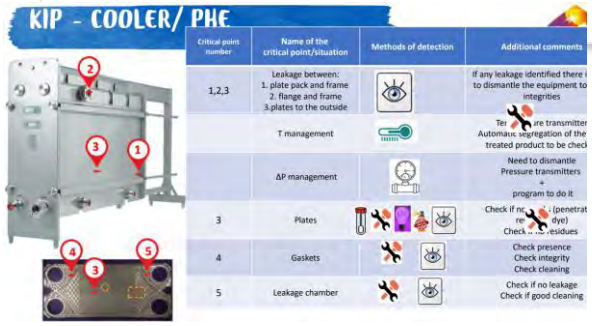
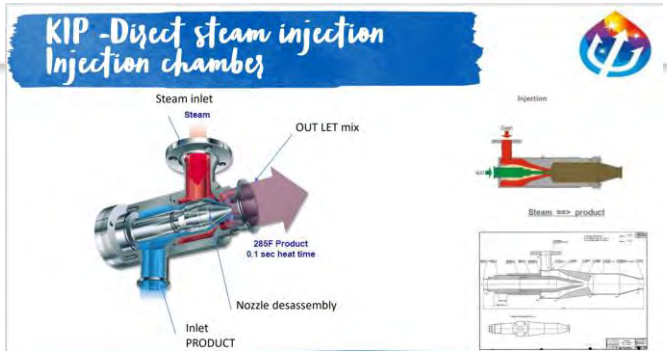
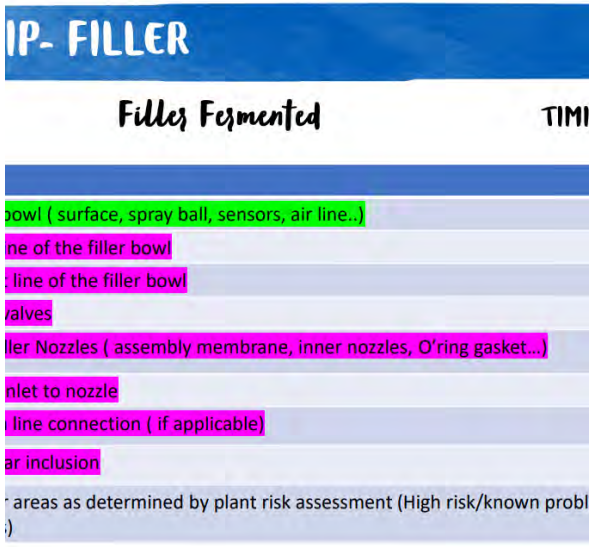
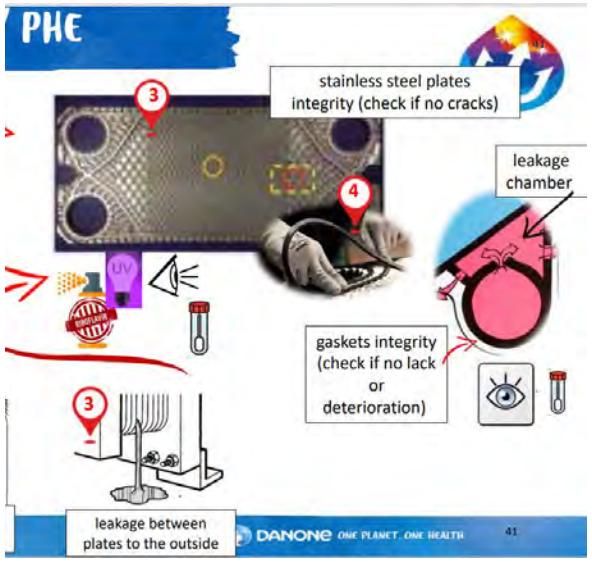
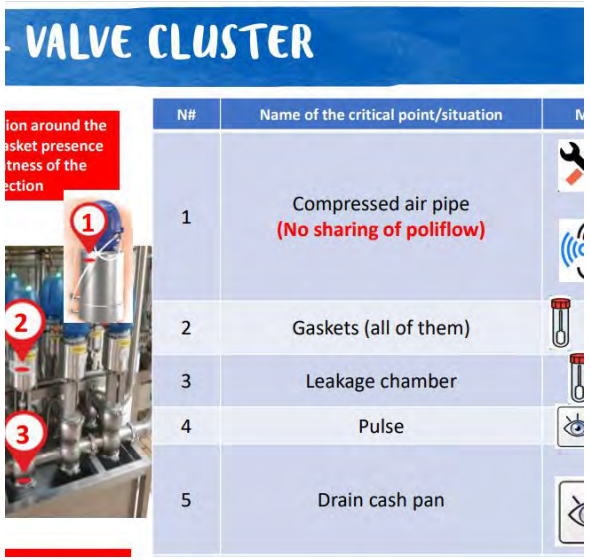
# CRITICAL SWAB POINTS




# RISK MANAGEMENT PROGRAM

# Agenda

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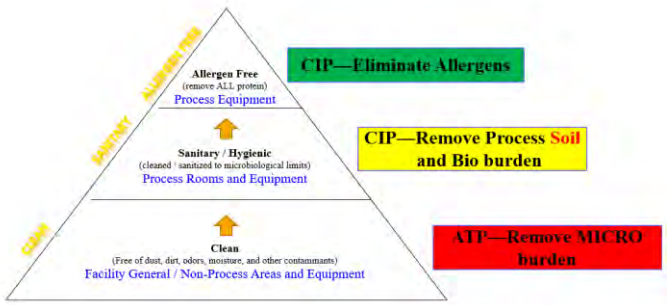
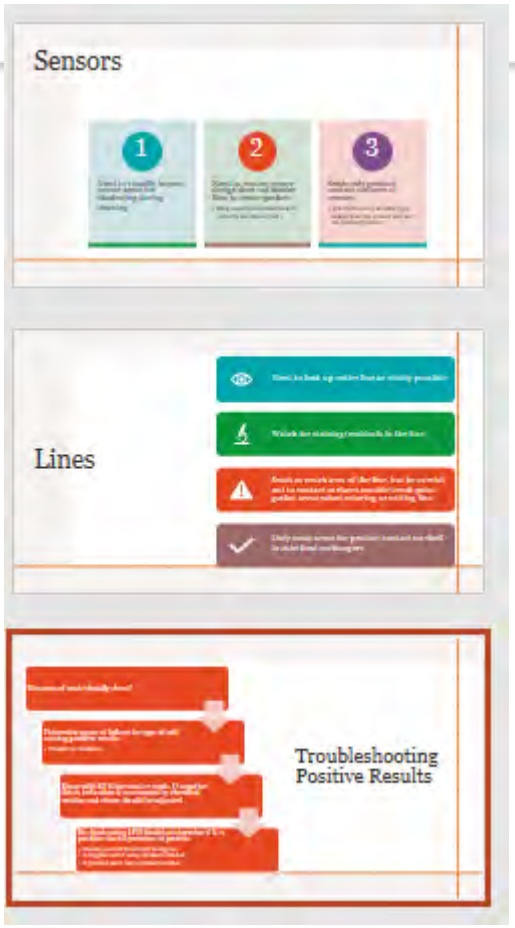
# VALIDATION FEEDBACK LOOP

SWABS

CLEANING





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1 Process

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# VERIFICATION FEEDBACK

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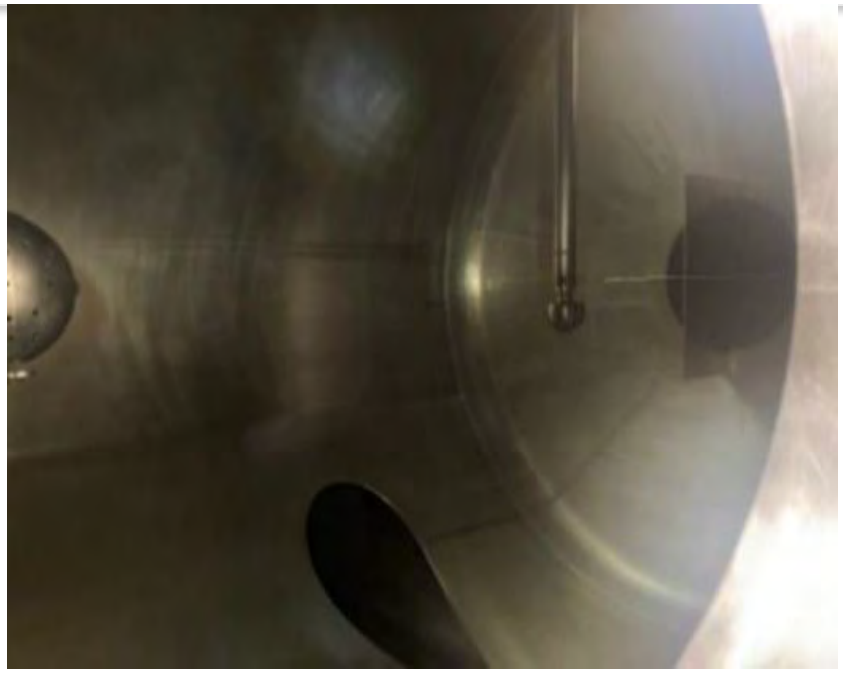
# LEARNINGS - PROGRAM



## FLASH VESSEL BALANCING

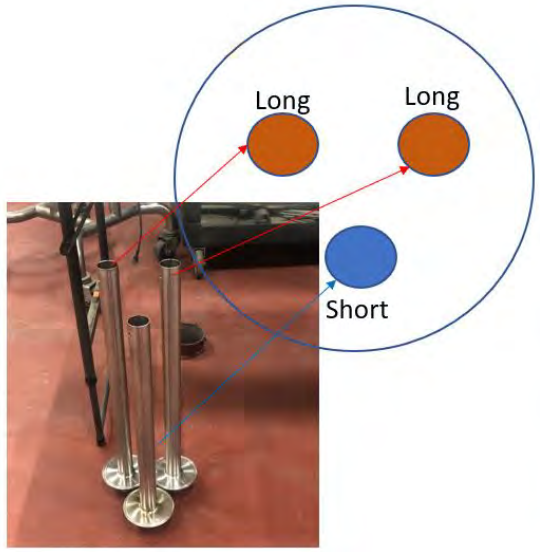
# GASKETS

- Deteriorated gaskets cause quality issues.

## LEARNINGS - PROGRAM

# LEARNINGS - PROGRAM

## Spray Ball Locations for Tanks R&S





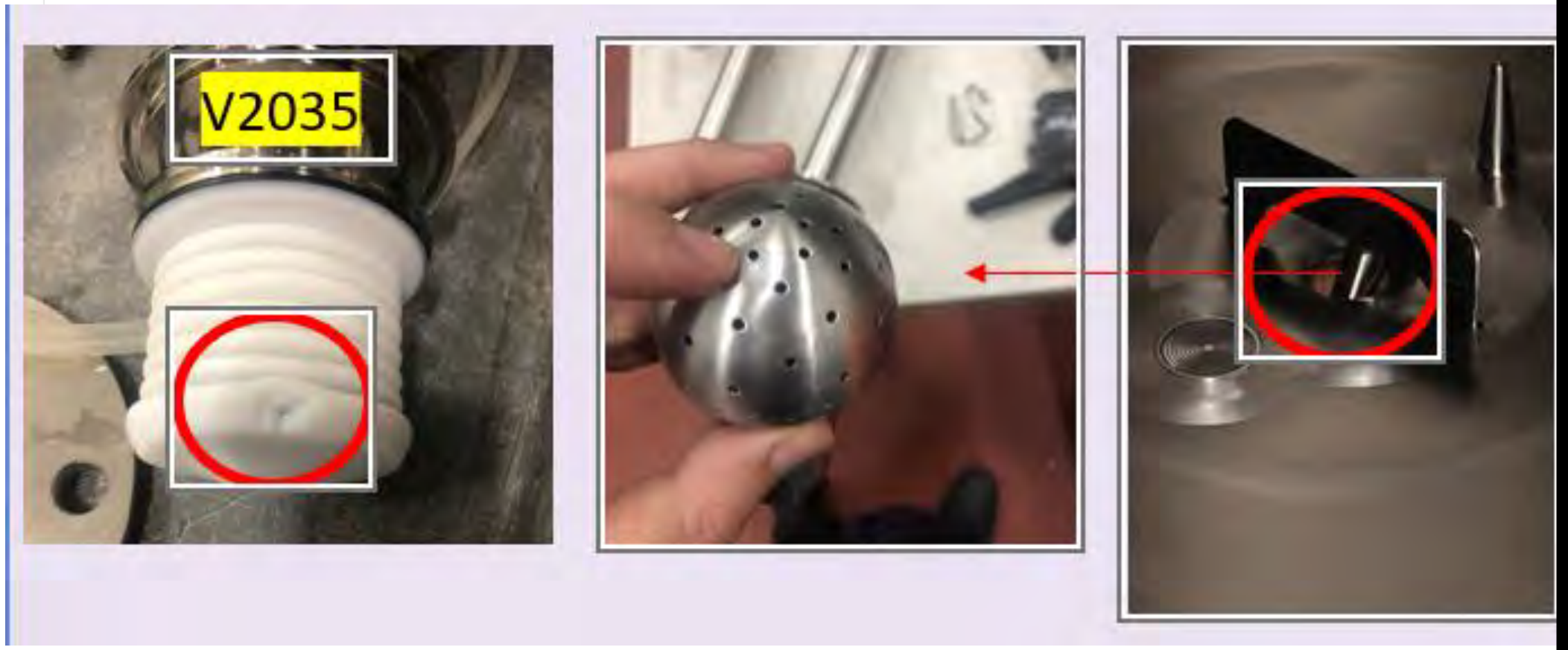

## TANK SPRAYBALL CONFIGURATIONS

# LEARNINGS - PROGRAM

## Holding Tube

Surf's up

# LEARNINGS - PROGRAM



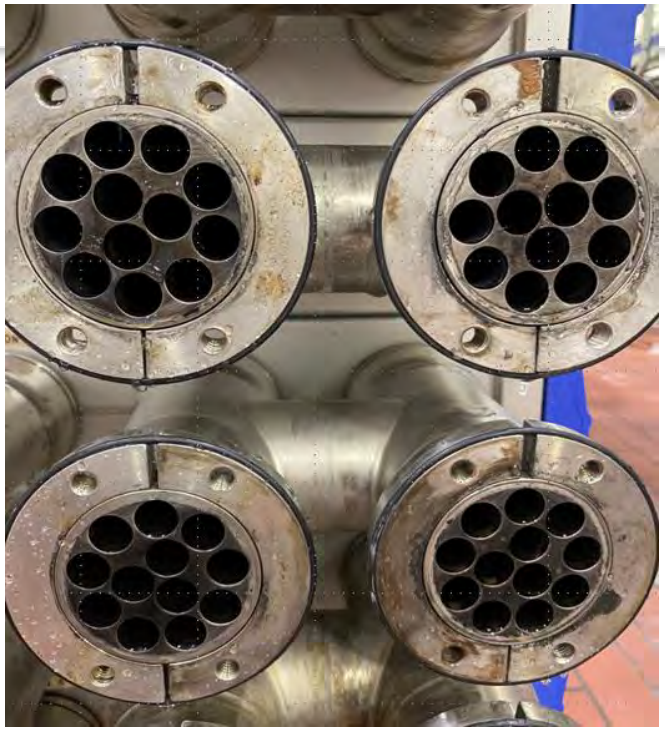

## LINE CIRCUIT INSPECTIONS

# LEARNINGS - PROGRAM

## VALVE PART BUSHING

AFTER 6 MONTHS ☺

# LEARNINGS - PROGRAM



## PROCESSOR : Checking outlet vs inlet because turbulent FLOW



Learnings

# LEARNINGS - PROGRAM

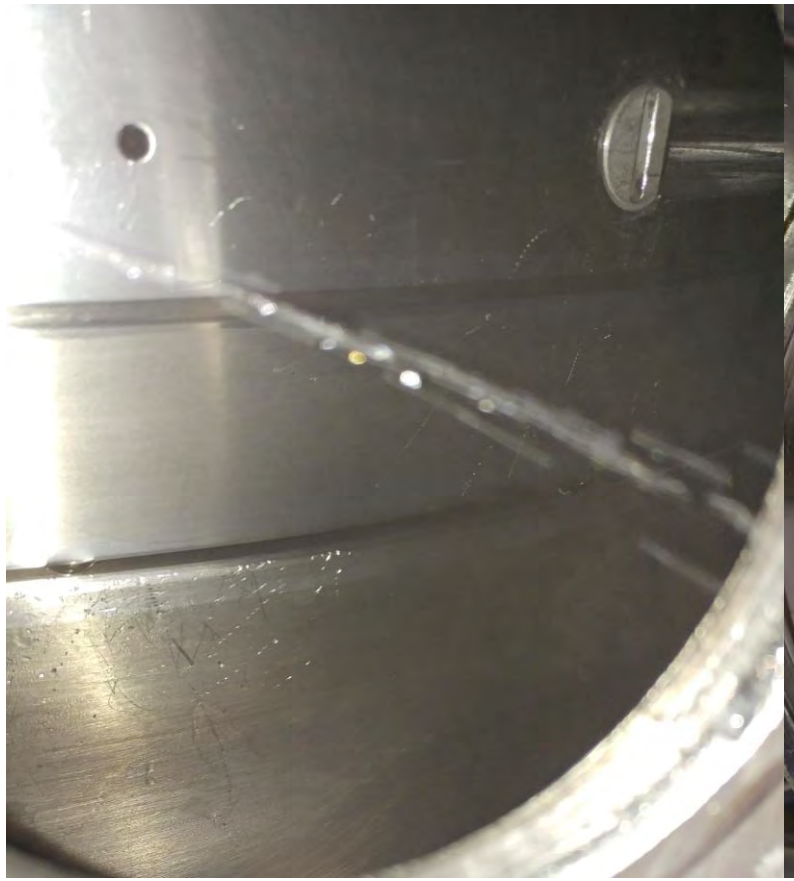
**Pre-Pasteurized Separator**
**WRONG**
**TEMP/CONCENTRATION/CHEMICAL**

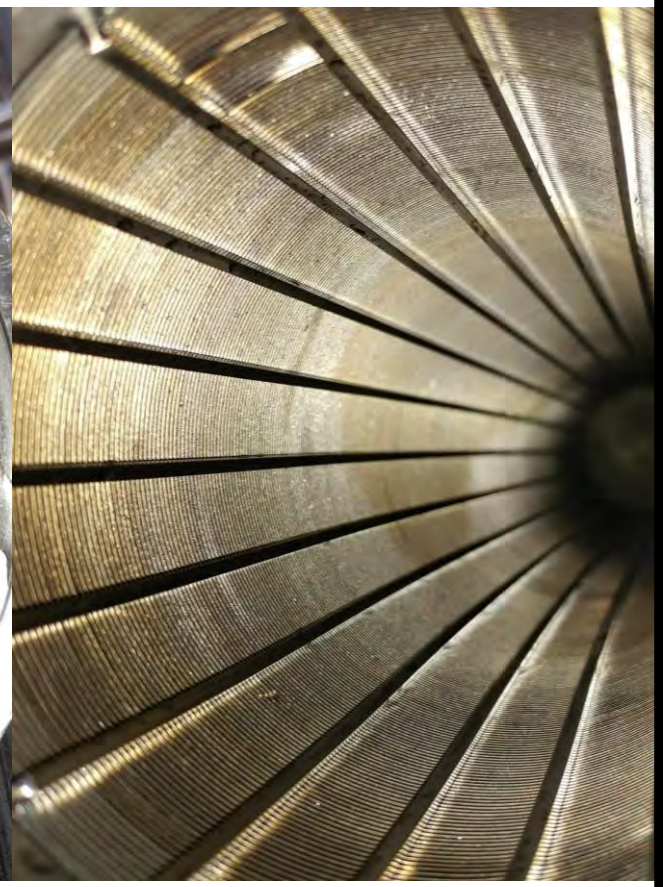


Learnings

# LEARNINGS - PROGRAM

## Post Pasteurized Separators





# LEARNINGS - PROGRAM

## DOING THINGS CORRECTLY WITH RIGHT CHEMISTRY. AIR INCORPORATION + CHEMICAL.

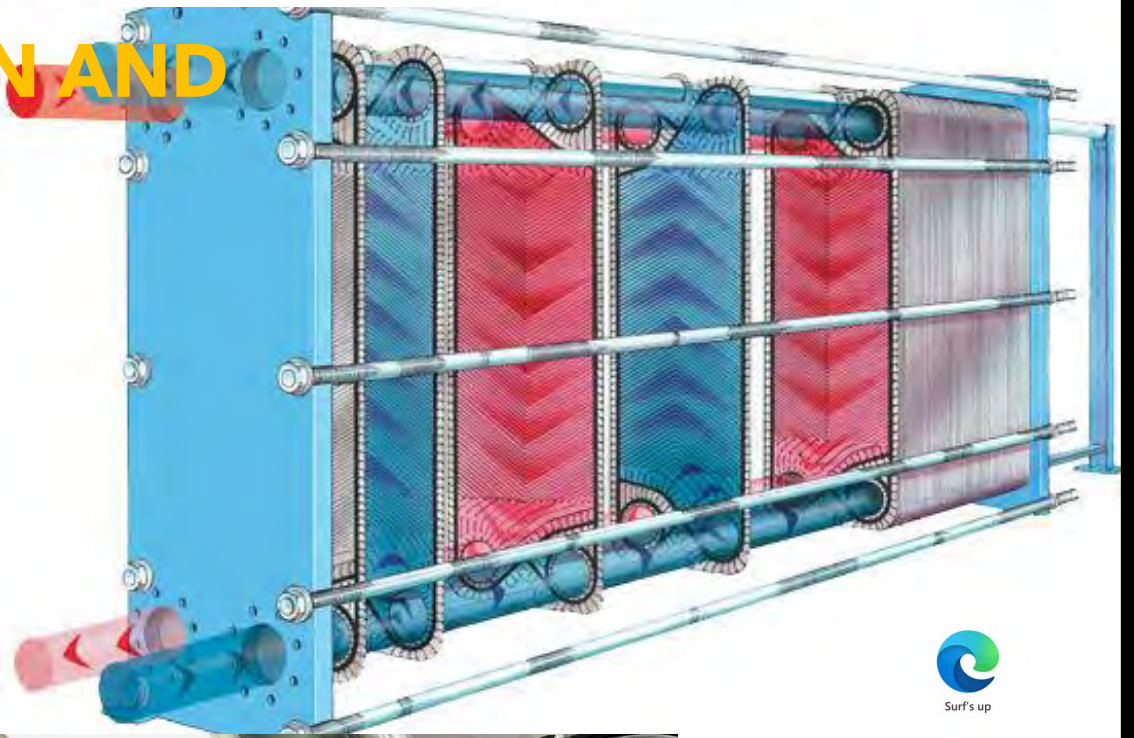


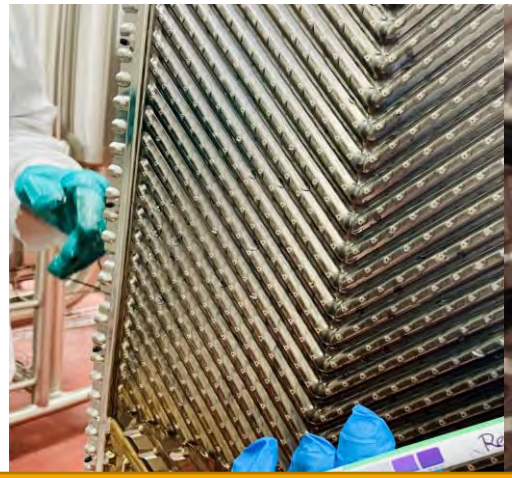


Surf's up

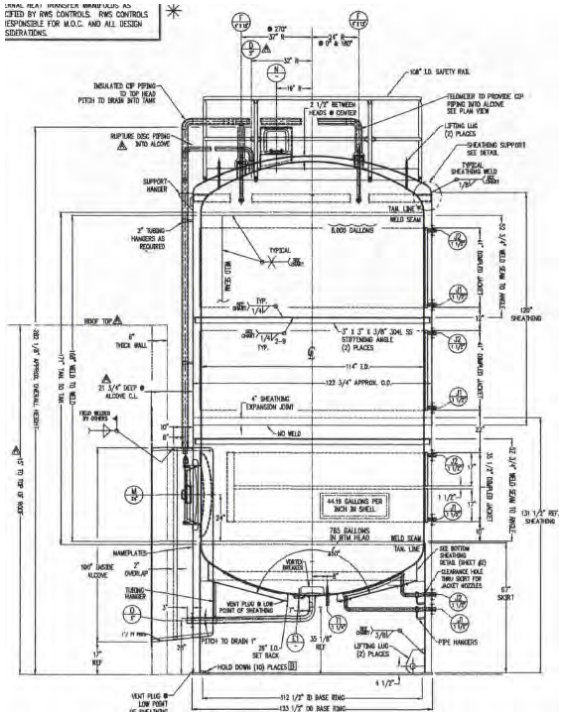
# LEARNINGS - PROGRAM

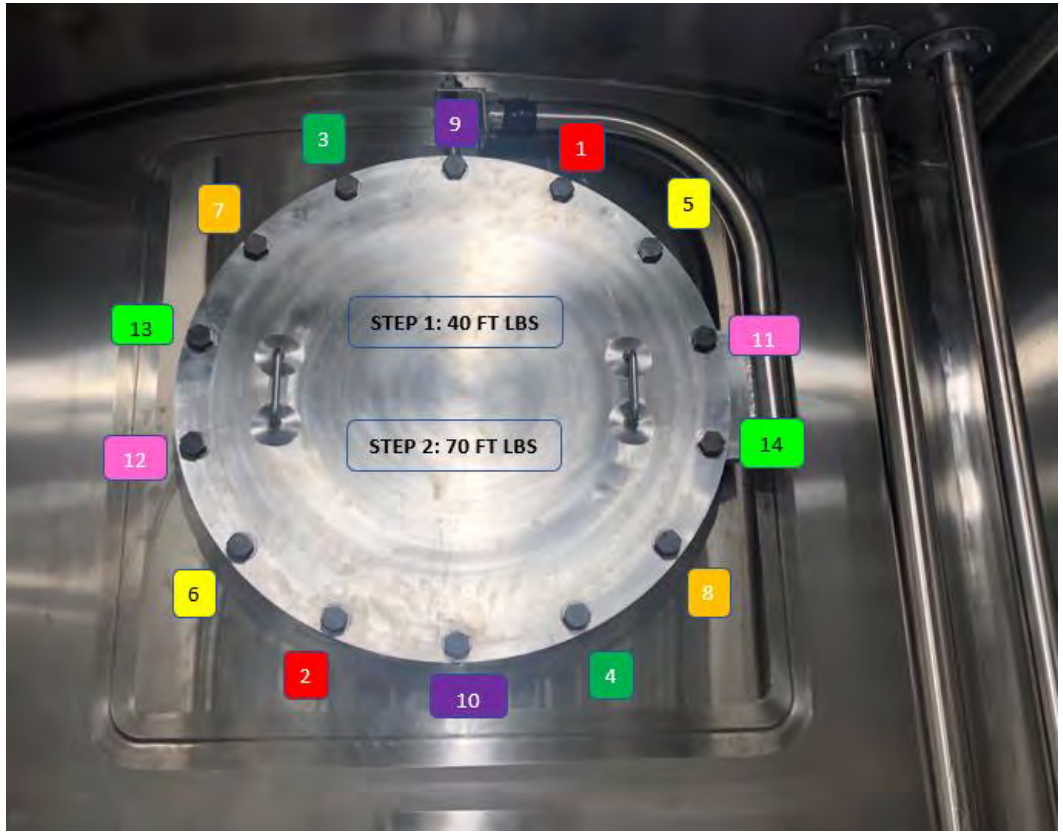
- PLATE PACKS INSPECTION AND MAINTENANCE: 1 YEAR INSPECTION AND 3 YEAR REPLACEMENT
- FLOW FLOW FLOW....
- ACID ACID ACID





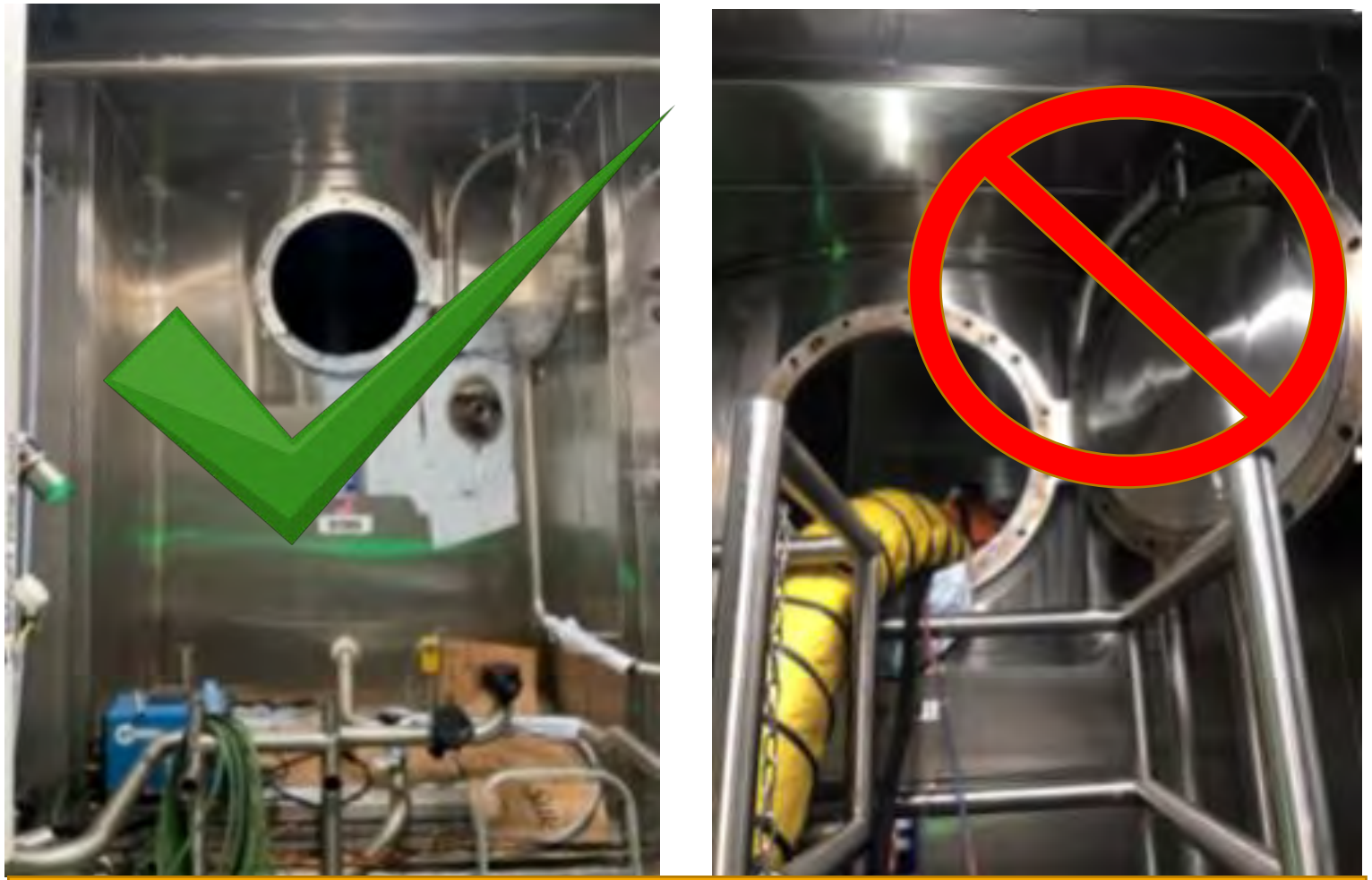
# LEARNINGS - PROGRAM






- TANKS: SPRAYBALLS And TORQUE PATTERNS

# LEARNINGS - PROGRAM



PROPERLY TORQUED GASKETS ON ASEPTIC TANK

# LEARNINGS - PROGRAM

## VALVE MAINTENANCE INADEQUATE

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4 Monitoring Program
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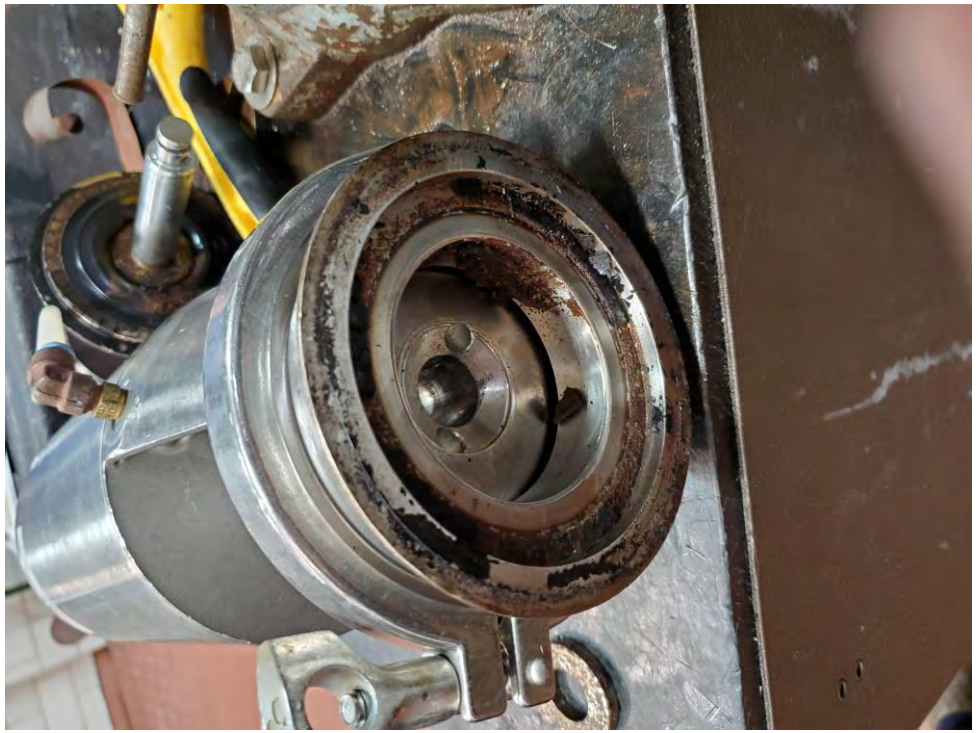
6 Feedback Loop
7

# LEARNINGS - PROGRAM



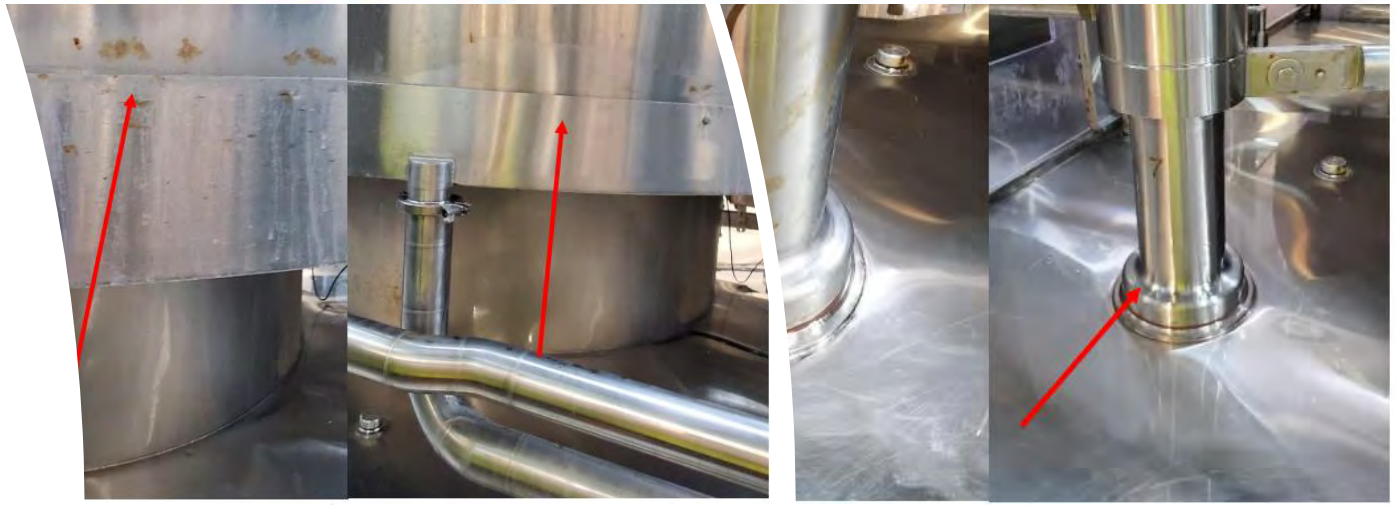


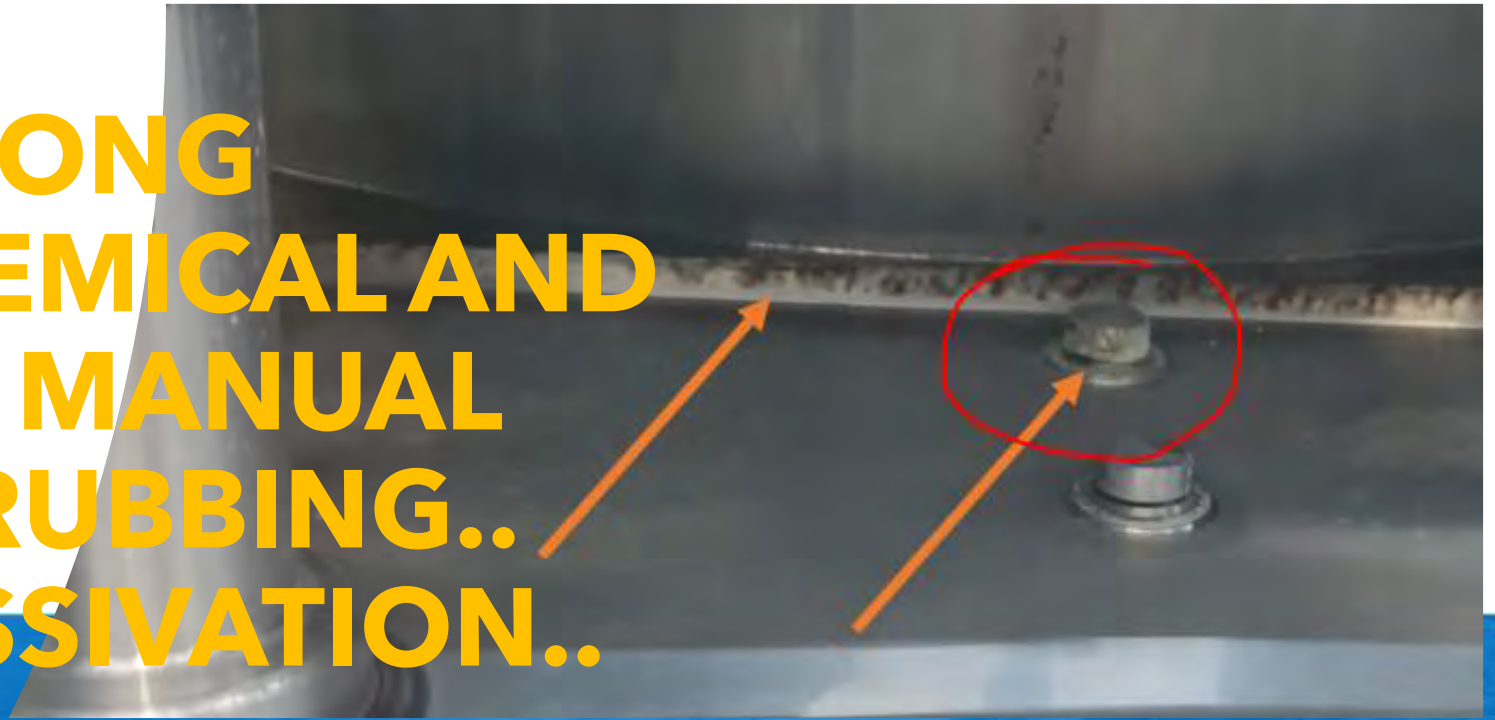

## STEAM BARRIER VALVE/ PRODUCT CONTACT



Surf's up

# LEARNINGS - PROGRAM





**WRONG CHEMICAL AND NO MANUAL SCRUBBING.. PASSIVATION..**

# Care Personally and Be Invested

**“IT DOESN’T MATTER WHAT YOU DO FOR A LIVING. YOU DO IT WITH EVERYTHING YOU HAVE.” NEPHEW**

Juan Antonio "Chi-Chi" Rodríguez (born October 23, 1935) is **a Puerto Rican professional golfer.** The winner of eight PGA Tour events, he was the first Puerto Rican to be inducted into the World Golf Hall of Fame.

Steven Haferkamp Jeff Merritt Johnny Elliott

# CIP – Aseptic 2023