

Line Audit Report

Huihe : do list

1. Share all programs and line diagrams of ele/mech etc.
2. Service kit for filling valves
3. Need stand by filling valves 5 or 6 to reduce break down time.
4. Snifting valve screw sizes should be uniform either 1.5mm or 1.8mm all 90 valves.
5. Intermix software and line diagrams for correcting programs
6. Filling temp 12 deg as per contract need now maintaining at 4 deg causing overload on chiller and after one- or two-years operation need replacement or efficiency will come down.
Also, because filled bottles are sweating reverse labeling happening
Solution : warmer
7. Clutch for filler and transfer wheels
8. Cap transfer issues and capper service kit required.

Huihe standards

Line efficiency: 85% to 90%

Individual machine efficiency :95%

% of rejects : less than 1%

Co2 -14 gr/ltr

GV- 4.5

Quality issues

1. 0.15+/_ means 0.3 range of bricks variation which is not acceptable
2. While starting, restarting prod after break down rectification very difficult to get constant brix
Vary difficult to get set parameters. We have to consider this as manufacturing defect
Example: set brix volume 12 when we check in lab 11.8
3. Net content variation +/_ 5 ml which is not acceptable
4. Valve no 216 issue: while running the line always this valve has to be in open position otherwise
low/ HI fill problems we have to face GV variation also
Net loss of co2 is more than 20 grams/ltrs of beverage that we are producing.
5. Product is ok up to intermix from intermix to filler not ok in terms of GV.
6. After fixing guides also unable to run high GV product of 4 + when we try filler valve parts are
getting damaged and centering effect observed

Capping issues :

1. Some times observed torque variation on particular capper the diff is too high 6
2. Tilt cap there is no control mechanism no ejector system the tilt cap travel through cap conveyor
and create break down/ stoppage, capper conveyor too long and two people employed per shift
to push caps other wise filled bottles without caps will come out continuously
3. After capper conveyor modifications also same issues cap jamming, tilt cap, failure of ejection
system.
4. Elevator unable to segregate 100% caps, caps entering in chute tilted manner. Which is not
acceptable even small filler suppliers also given provision to eject this kind of caps.

Filler issues

Valves :

1. except flow control valve other are made by huihe as per contract khrones
2. bottle centering problem due to this filling valve mouth will not sit on bottle mouth and uneven
sealing while transferring the product from valve to bottles, results low fill, high fill and forming
which is more than 3% as per contract 99% should be accurate considering blowing-filling-
capping all three sections.
3. They have not changed full set of valves few parts they changed and those are from ss to Teflon
and are not sanitizing properly which a rise quality issues

4. Engineers are set diff parameters for diff valves by fixing diff screws some are 1.8mm and some are 1.5 mm so we can not control fill volume through monitoring system. Any time individual valve can malfunction and need to readjust if we observe volumetric issues.
5. Fill level inconsistency occurs more frequently and line need to stop for rectification.
6. Co2 loss observed in valve mechanism after filled bottle discharge to engaging fresh bottle till this time co2 should not release from the valve but it is not happening in huihe filler.

Filler mechanism

1. No torque limiter found
2. Clutch welded permanently and huihe promised to change so far not happen more than 2 months.
3. Any time main timing belt can break and machine can stop no spare belt available and once belt broken sent by huihe
4. While doing CIP bottle discharge and infeed guides need to remove and re-fix with proper timings, take more time than usual no filler has this problem.
5. Bottle holders: this holder not seating properly, the fixing mechanism causing many issues need to tight Frequently and filling mechanism get disturbed resulting low fill/ hi fill/ forming issues. Increasing no of stoppages. Causing darning the product due to product high temp not suitable for filling.

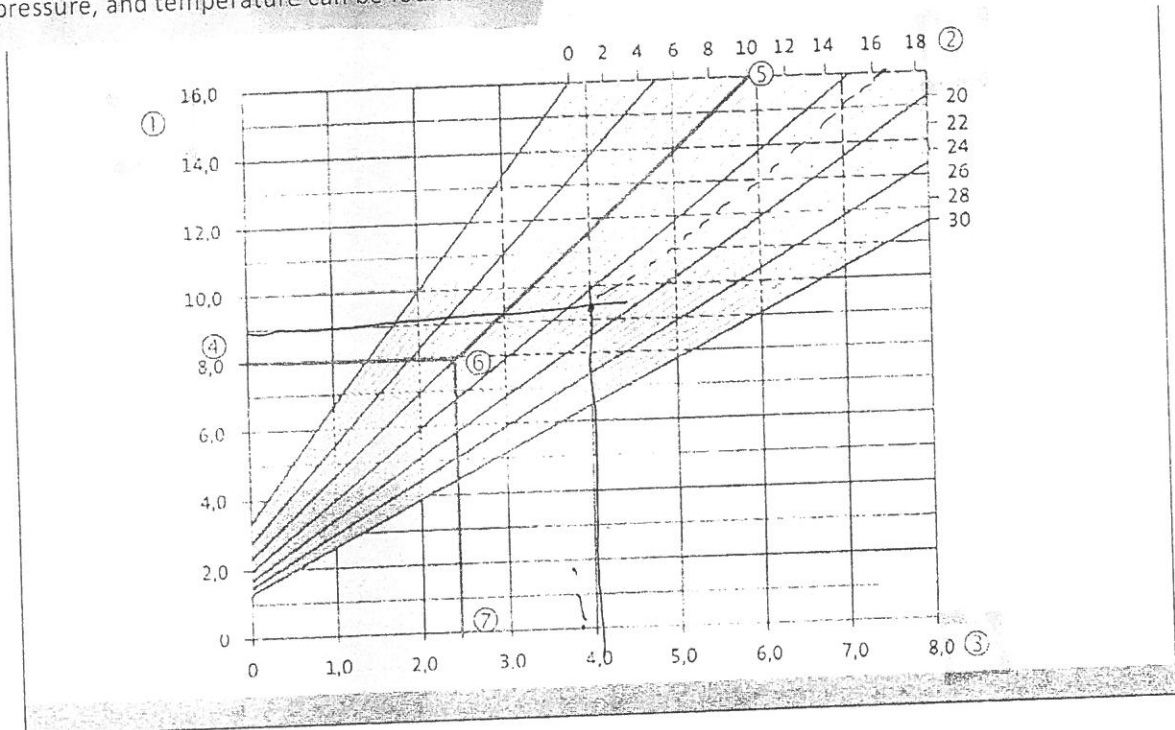
Blowing section

1. Conveyor issues
2. No AC in the main panel
3. Preforms frequently struck from hopper to elevator we have fixed one vibrator to overcome this problem.in rails
4. Elevator belt replacement required
5. Blower to filler synchronization need to conduct manual mode. Which is not acceptable
6. No safety found in star wheels resulting bottle jams and frequent timing change more than 40% break downs observed in this section because we have 4 star wheels and once time out need to rest all four will take more time this arrangement need to do trail and error method no clutch system provided by huihe. Min 2 hrs required.

Huihe PET Line Audit Report

Filler

The filling process requires that all filling valves should not have any form of leakage as a result of damaged parts. Effective product filling is dependent on product temperature, product viscosity, CO₂ saturation and product temperature. Carbonated soft drinks are prone to foaming at increased temperatures and hence should be filled at lower temperatures. A table with relationships between CO₂ content, saturation pressure, and temperature can be found below:



Solubility of gases

The CO₂ saturation pressure depends on the medium. It similarly depends on CO₂ content and temperature.

1. CO₂ content in g/l
2. Temperature in °C
3. Saturation pressure in bar (g)

A CO₂ content of 8 g/l (4) and a temperature of 10 C (5) results in a saturation pressure of approx. 2.4 bar (g) (7).



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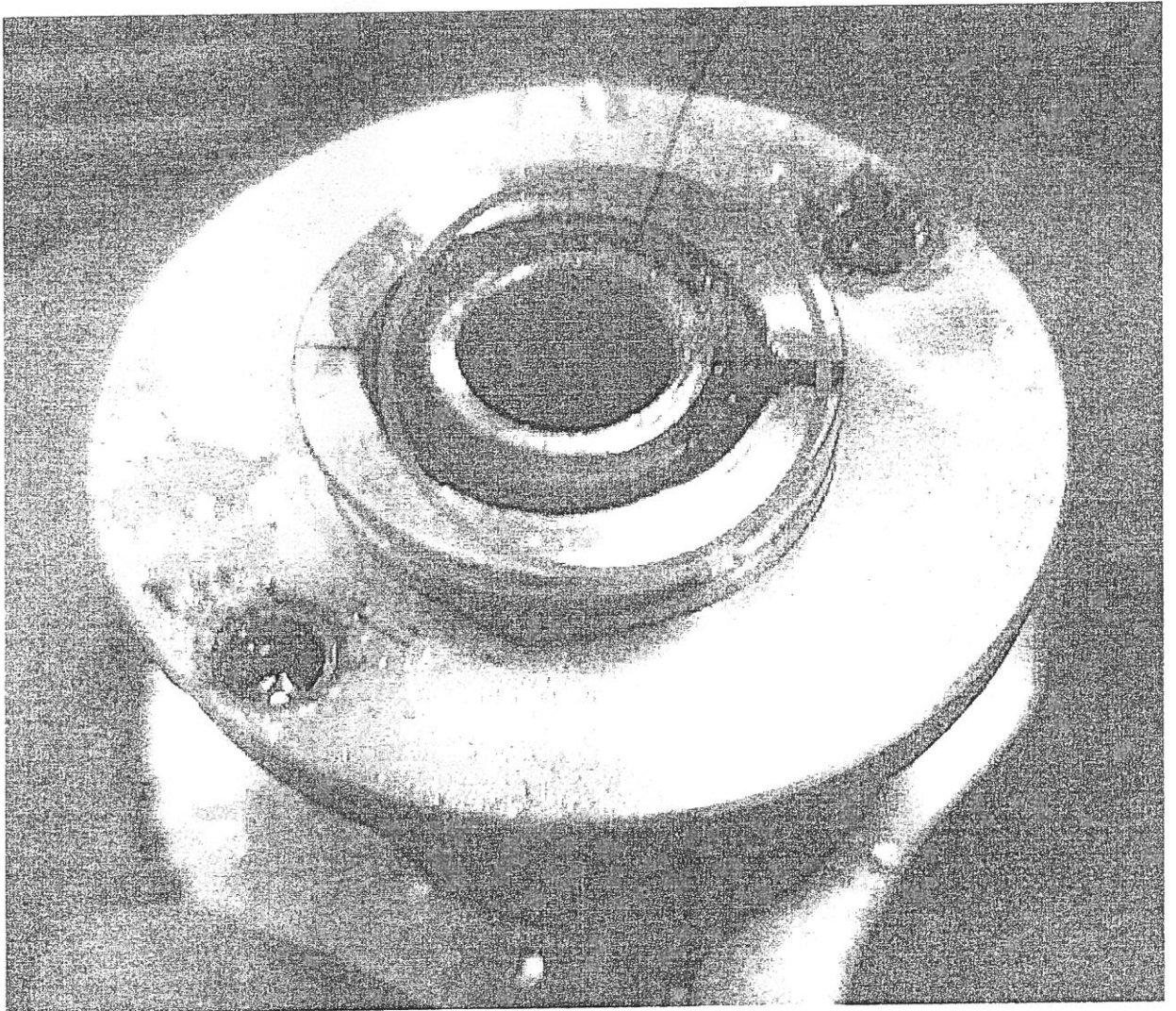


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Observations on Filler:

Fill height Variations.

Causes:



Damaged rubber seals, resulting in product leakages.

The damaged rubber seals need to be replaced with new ones to eradicate product leakages and losses.



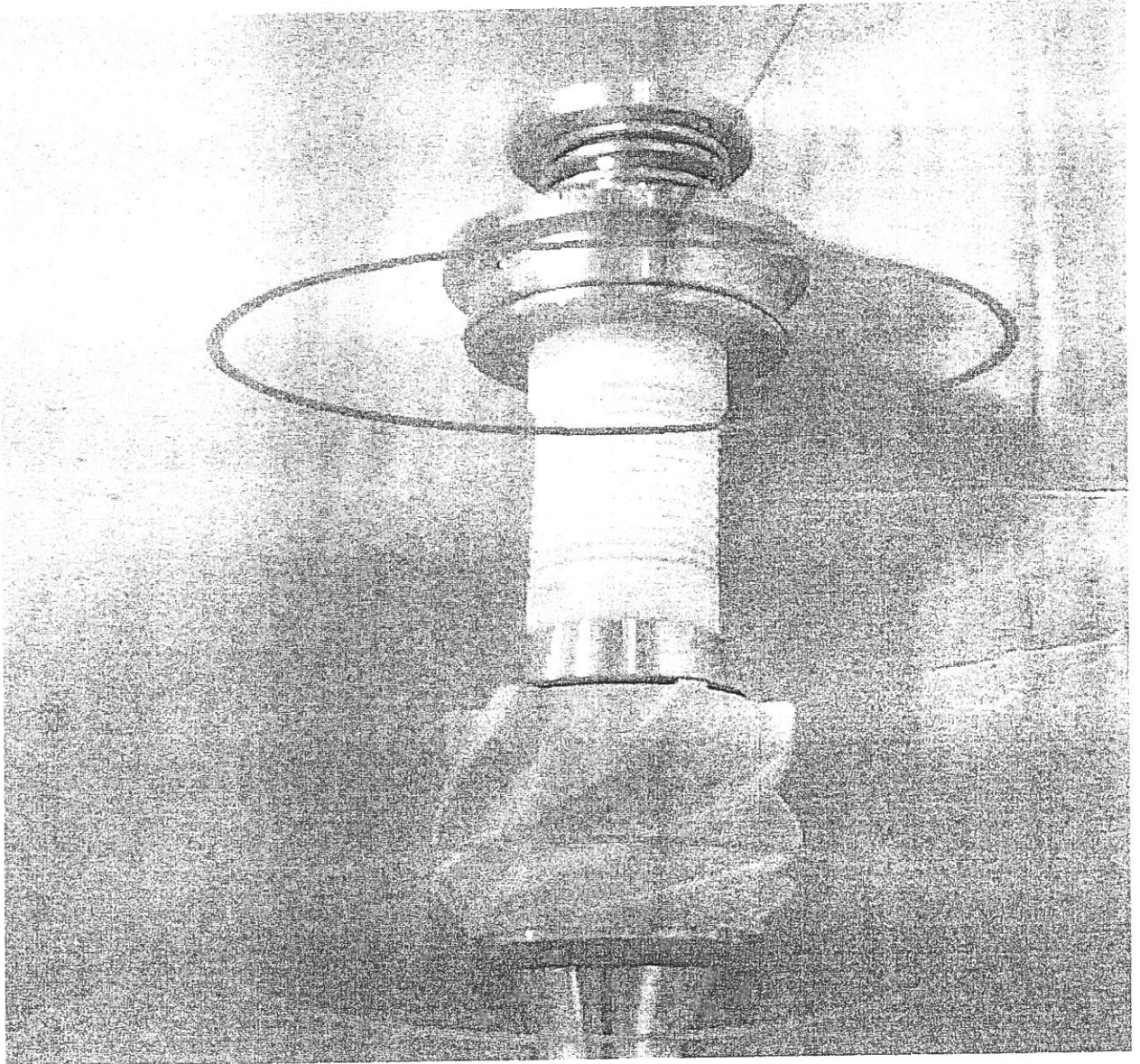
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Damaged rubber seals on the filling valves.

These need replacements in correct positions to eliminate product and CO2 leakages.

Required> overhaul of all filling valves and filling heads



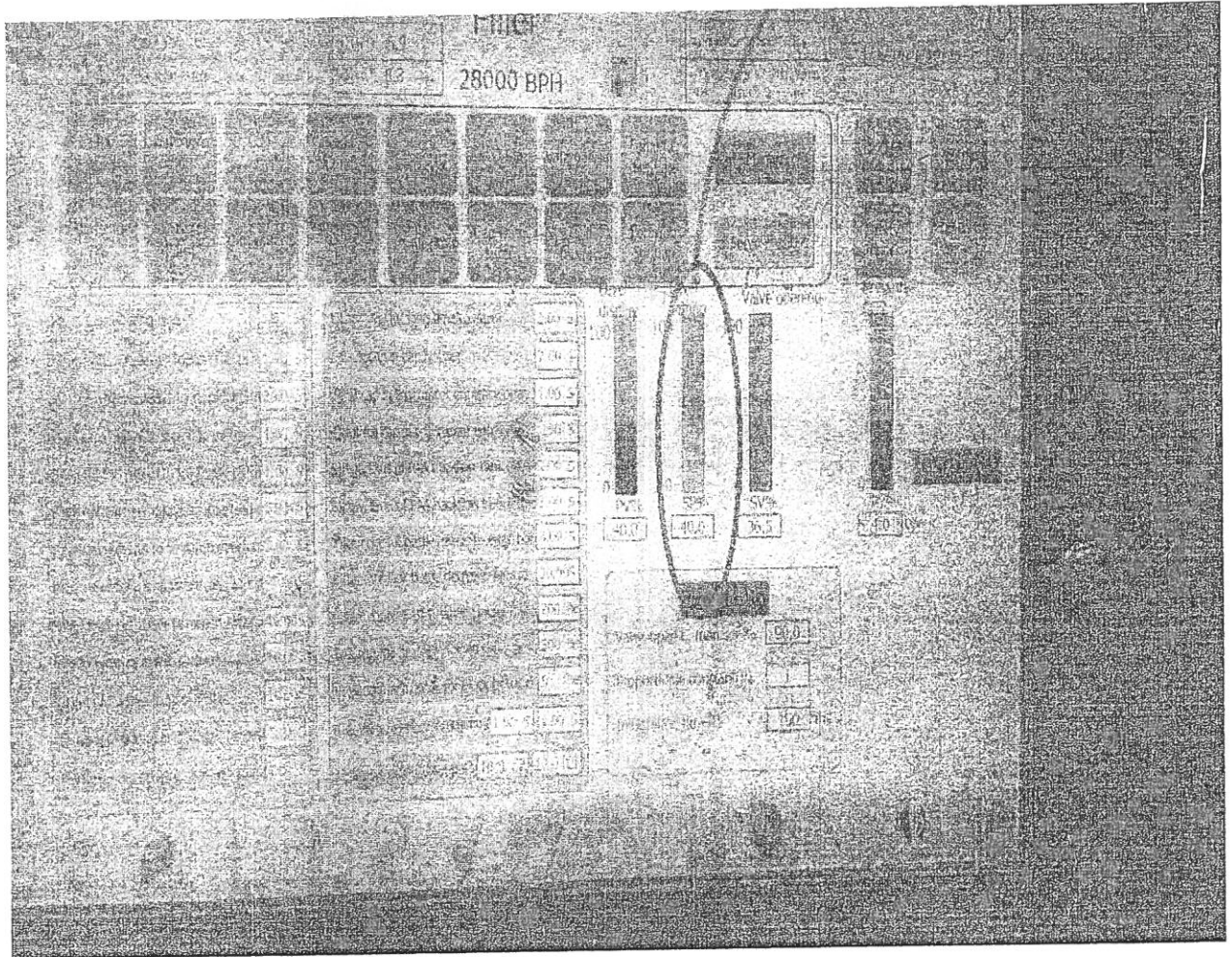
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Ring bowl levels currently adjusted to 20%. The calibration of the PID level control loop was observed to be inconsistent, with the percentage visualization not corresponding to the actual levels of the ring bowl.

The calibration should be corrected and the PID loop adjusted to correspond to the actual readings in the ring bowl.

The slow filling valve holes were seen to be of different sizes in diameter- 1.5mm and 1.8mm, there is need to have a standard and tested diameter.

Action> calibration needed



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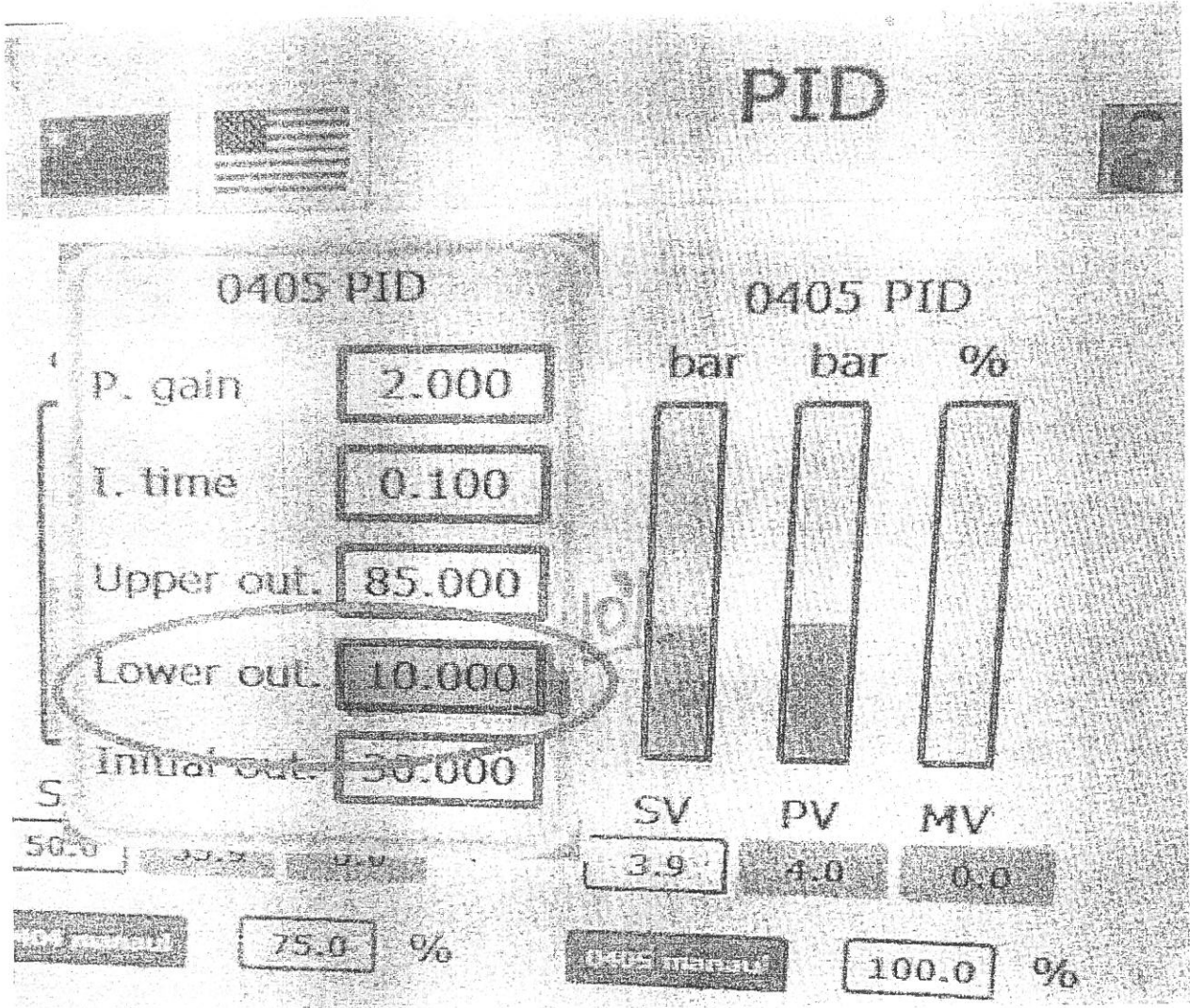
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Engineering Solutions



The lower limit of the PID loop was observed to be fixed at 10% at all times, resulting in continuous injection of CO₂ into the buffer tank and hence over/carbonation. This should be reprogrammed to allow for effective closing and elimination of CO₂ losses.

we cannot reduce too to 0
Not acceptable



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