

RECP Best Practice Catalogue

*Automation of the stop and switch system of
syrup transfer pumps*

Developed within the framework of MED TEST II



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



The SwitchMed Programme is
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Best Practice - Automation of the stop and switch system of syrup transfer pumps

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| SECTOR: | Food & Beverage |
| SUBSECTOR: | Manufacture of beverages |
| PRODUCTS | Still drinks, carbonated drinks and fruity drinks in PET packaging and cans |
| CATEGORY | Process control or modification |
| APPLICABILITY | Process |

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| COMPANY SIZE | 330 |
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Best Practice - Automation of the stop and switch system of syrup transfer pumps

Description of the problem (Base scenario):

Syrup transfer from the syrup room to the blender is done manually. The operator, in certain situations, is not able to connect a new tank of syrup within a given amount of time after the previous tank has been emptied which causes air to be taken into the system. This air must be eliminated, which results in a loss of a few litres of syrup each time this is done. In addition, during the purge operation, the syrup is spilled on the ground which is rinsed with water, which increases the pollution flow into the wastewater.

Description of the Solution

The improvement measure consists in automating the stop and switch system of the syrup transfer pumps by the installation of 8 motorised valves connected to the level detection probes and to a PLC. This system makes non manual intervention possible when switching from one tank to another when a step level is reached.

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Economic Benefits 47,057 litres of syrup are lost each year, which corresponds to a financial loss of 21,233 €/year
There is a savings in working hours, which was dedicated to system purging and floor cleaning

Environmental Benefits Savings in raw materials: 47,057 litres of syrup/year
Pollution load to the sewer is reduced: 47,057 litres of syrup, having a Brix of 44°, or: 20,705 kg of sugar x 1.12 kg COD/kg of sugar = 23,189 kg COD
Reduction in cleaning water and the volume of wastewater to be treated

Not relevant

Health and safety impact

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| Capital investments & financial indicators | Cost: 23,236 € Return on investment: 1.09 year |
| Suppliers | Suppliers to be selected after consultation |
| Other aspects | No technical barriers and no negative impact on quality |
| Implementation | |