

## Pharma: CIP-Unit and Loop P-225

Design of CIP Units with Mixing and Heating of Cleaning Fluids as well as Distribution Loop. Standard Configuration is with 3 off Vessel with washing Sequence

- Water Rinsing with Water from Last Wash
- Acid Cleaning
- Lye Cleaning
- Acid Cleaning
- Waster Cleaning

All mixed batchwise with MES/SCADA control after the recipes specified for the Equipment to be washed. The design work covers:

- Unit – with Storage and Heating
- Loop – Sectioned with Supply to all Users/Equipment's.
- Monitoring – Temperature, Pressure, pH etc.

P-Engineering deliveries will be

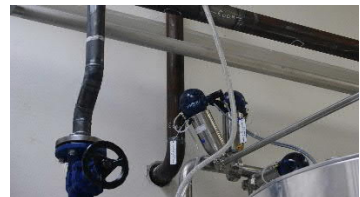
- BoQ – Piping Items
- BoQ – Welding per Diameter
- BoQ – Insulation
- Fabrication Pipe Isometrics
- Support Drawings

P-Engineering has automated Design Validation of Pipe Design direct in the 3D model – Checking Drain-ability, Dead Leg, Bending Radiuses etc.

P-Engineering uses e.g., [AVEVA PDMS](#) Software for 3D design, [DXT](#) EN13480 Software for Detail Calculations, and PipFlo® for Flow and Pressure Loss Calculations.

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*Pictures from CIP Unit at API factory. Pharma Grade Tube & Shell Heaters with Steam were used for Loop Heating.*