CONTROVAL

TECHNICAL DATA SHEET

INJECTION AND CONDITIONING

Water treatment

Filtration and treatment packages and ASME vessels for process and utility water.

FILTRATION · ASME VIII VESSELS · CHLORINE DOSING · WATER INJECTION



Demineralized water filtration vessel, Monagas

AT A GLANCE

Water treatment, built in our own workshops.

01
Filtration modules and vessels

02
Pressure vessels to ASME VIII Div. 1

03
Vessels fabricated in our workshops

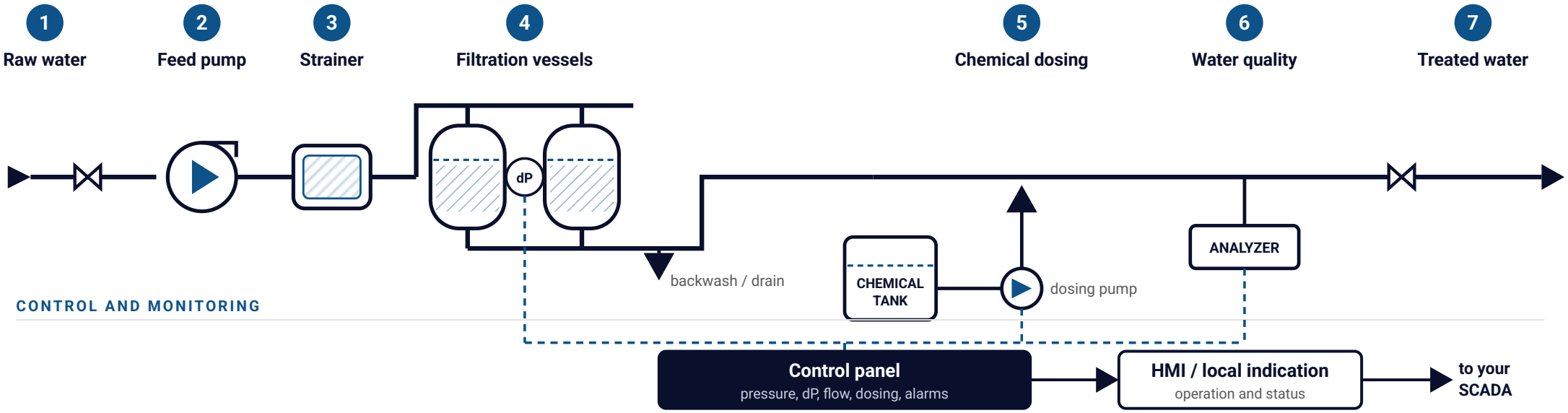
04
Sized to your water quality and flow

How it works

Our water treatment packages prepare process and utility water, with the filtration and treatment your process requires.

The vessels are built in our own workshops under ASME VIII Div. 1, so we control the fabrication from the first weld.

Carito Flow Station expansion (separation and purification capacity), Ezequiel Zamora Municipality, Monagas, Venezuela. Controval designed, selected materials for, manufactured, tested, inspected, sand-blasted and painted, assembled and transported ten pressure vessels: five for amine filtration and five for raw and demineralized water filtration. Engineering to ASME Section VIII Div. 1: calculation memory, COMPRESS, CAD drawings, bill of materials and equipment data sheets. Fabrication was planned with hold points for the mandatory ASME inspector visits together with customer inspection.



Typical schematic configuration, shown for reference only. The final design, equipment, instrumentation and applicable codes depend on the client's process conditions, specification and project requirements, and are defined during engineering.

Step by step

In the order the fluid passes through it.

1 Raw water inlet
Water from the source (well, river, network or process stream) enters through an isolation valve.

2 Feed pump
A skid-mounted pump gives the pressure and flow the filters need, when the supply pressure is not enough.

3 Strainer
Holds back coarse solids and debris to protect the pump, the filters and the instruments downstream.

4 Filtration vessels
Vessels in parallel remove suspended solids. Differential pressure shows when to clean or backwash.

5 Chemical dosing
A dosing skid injects the treatment chemical, for example chlorine, from a tank with a dosing pump, in the amount the process calls for.

6 Water quality
Analyzers and instruments check the treated water, as the process requires, and send the signal to the control panel.

7 Treated water outlet
Treated water leaves through the outlet isolation valve to storage, to the process or to the users.

8 Backwash and drain
Drain connections let the filters be cleaned or backwashed and the rejected water sent to the disposal point.

▶ CONTROL AND RECORDS

Control panel and SCADA
The panel shows pressures, differential pressure, flow and dosing, raises alarms and sends data to your SCADA.



Water injection skid in our workshop, Sinovensa
Pump, valve and instrument skid during assembly before factory acceptance testing.

Typical configurations and options

Filtration vessels	Horizontal or vertical pressure vessels to ASME VIII Div. 1, fabricated in our workshops
Number of vessels	One or several in parallel; duty / standby or alternate cleaning
Filtration technology	Strainer, media, cartridge or bag filters, or membrane modules, per water quality
Building water	Activated carbon and UV water treatment skids for condominium buildings: design, selection of tanks, filters, equipment and instruments, automation, testing, installation and commissioning; modular enclosure with integrated control panel optional
Feed pumps	Skid-mounted pumps when the supply pressure is not enough
Chemical dosing	Chlorine or other chemical: tank, dosing pump and injection point
Instrumentation	Pressure, differential pressure and flow; analyzers as the process requires
Backwash and drain	Valves and connections for backwash and drain, manual or automatic
Controls	Local panel and indication; signals to your SCADA
Piping and valves	Material suited to the water: carbon steel, stainless steel or plastic
Vessel materials	Carbon steel with protective coating, or stainless steel
Area classification	Instruments, panels and wiring selected for the classified area
Mounting	Skid-mounted modules, or stand-alone vessels with supports
Instrument brands	We integrate Yokogawa, Flowserve, Magnetrol, Milton Roy, Pulsafeeder and Swagelok, and consider your preference



Chlorine dosing skid
Chemical tank, dosing pump and control panel for water treatment on one skid.

Standards and documentation

Designed to ASTM, ASME, ISO and API standards. The applicable codes are agreed per project.

TYPICAL REFERENCES

ASME VIII-1	Pressure vessels: design, fabrication, inspection
ASME II	Materials
ASME IX	Welding and brazing qualifications
ASME B31.3	Process piping
ASME B16.5	Pipe flanges and flanged fittings
ASTM A516 / A240	Carbon steel and stainless steel plate
NSF/ANSI 61	Drinking water system components, for potable water only

TYPICAL DOCUMENTATION PACKAGE

- ✓ P&ID
- ✓ General arrangement
- ✓ Vessel design calculations and drawings
- ✓ Instrument datasheets
- ✓ FAT procedure and report
- ✓ Operation and maintenance manual

> Factory acceptance test (FAT) in our workshops and site acceptance test (SAT) at the installation site.

Our work

Water packages we have built



Water injection skid installed at site, Sinovensa

Skid-mounted injection package with pumps, valves and instruments under a sun canopy, piped into the field network.

Real projects, photographed in our workshops and at site. Ask us for references in your application.

DELIVERED

Ten ASME VIII Div. 1 pressure vessels: five amine filtration, five water	**Carito Flow Station, Monagas, Venezuela**
Water injection skid	**Sinovensa**
Chlorine dosing skid	**Water treatment**

Need one built for your process?

controval.com

Send us fluid, flow, pressure and temperature, or just your idea. An engineer returns a proposed configuration.

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