CONTROVAL

TECHNICAL DATA SHEET

INJECTION AND CONDITIONING

Fuel gas conditioning

Clean, dry, regulated gas for engines, turbines, heaters, boilers and gas lift.

ENGINES · TURBINES · BOILERS · GAS LIFT



Fuel gas conditioning package, Jusepín

AT A GLANCE

Clean, dry gas for the equipment that burns it.

01

Scrubber vessel, coalescing filters, regulation run, instruments and control panel

02

For engines, turbines, heaters, boilers and gas lift

03

Skid-mounted and pre-assembled

04

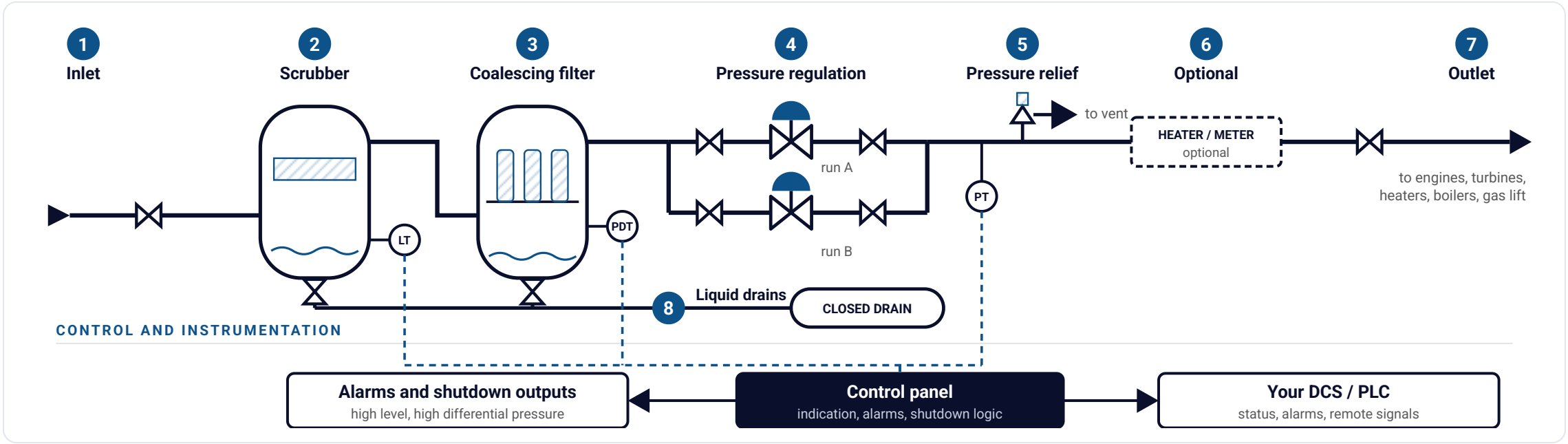
Designed to ASTM, ASME, ISO and API standards

How it works

Engines, turbines, heaters and boilers need gas free of liquids and particles. Our fuel gas skids separate, filter and regulate the gas before it reaches your equipment. The same approach serves produced gas used in gas lift.

Each package is sized per field from the gas composition, flow and pressure.

The package protects engines and turbines from liquid slugs, solids down to 0.1 micron (depending on the filter rating) and liquid aerosols, which extends equipment life.



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 Inlet and isolation

Gas from the field or header enters through an isolation valve. Inlet pressure and temperature set the design of everything downstream.

2 Scrubber vessel

Gravity and a mist extractor remove liquid slugs, condensate and free water. Level is monitored and liquids are drained.

3 Coalescing filter

Cartridges merge fine aerosol droplets into larger ones that drain out, and stop fine solids. Differential pressure shows when to change them.

4 Pressure regulation

Regulators or control valves reduce and hold the pressure your equipment needs. Parallel runs allow one to be serviced.

5 Pressure relief

A relief valve protects the downstream piping and equipment from overpressure and discharges to a safe location.

6 Optional heating and metering

A heater can keep the gas above its dew point after pressure reduction. A flow meter records the gas consumed.

7 Outlet to consumers

Conditioned gas leaves to engines, turbines, heaters and boilers, or to the gas lift system, through the outlet valve.

8 Liquid drains

Liquids from the scrubber and the filters go to a closed drain or collection vessel, by manual or automatic drain.

▶ CONTROL AND RECORDS

Instruments and control panel

Level, differential pressure and pressure signals feed the panel for indication and alarms. Signals can go to your DCS or PLC.



3D model of a fuel gas conditioning skid

Engineering model from our design office: scrubber vessel, filter housings and regulation runs laid out on the skid before fabrication, so piping, access and instrument positions are fixed early.

Typical configurations and options

Inlet separation	Vertical scrubber with mist extractor; horizontal where the liquid load requires it
Filtration	Coalescing filters, single or duty / standby; particulate filter as an option
Liquid handling	Level gauge, switches or transmitters; manual or automatic drain to a closed drain
Differential pressure	Local indication or transmitter across the filters, with alarm
Pressure regulation	Self-operated regulators or control valves; one or two runs
Overpressure protection	Relief valves sized per project, discharging to a safe vent or flare tie-in
Heating (optional)	Gas heater to stay above the dew point after pressure reduction
Gas measurement (optional)	Flow measurement of the gas delivered to the consumer
Gas analysis (optional)	H2S analyzer with alarm for sour gas service
Control panel	Local panel with alarms; serial or Ethernet signals to your DCS or PLC
Area classification	Instruments, panels and wiring selected for the classified area
Materials	Carbon steel or stainless steel; NACE materials for sour (H2S) service
Instrument brands	We integrate Yokogawa, Magnetrol, Farris, Samson, Kimray, RMG, KECO and Swagelok, and consider your preference

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 (scrubber, filter housings)
ASME B31.3	Process piping
ASME B31.8	Gas transmission and distribution piping, for tie-ins
API 520 / 521	Relief devices, and pressure-relieving and depressuring systems
MR0175 / ISO 15156	NACE materials for sour (H2S) service
ASME B16.5	Pipe flanges and flanged fittings
ASME IX	Welding and brazing qualifications

TYPICAL DOCUMENTATION PACKAGE

- ✓ P&ID
- ✓ General arrangement
- ✓ Instrument datasheets
- ✓ Calculations
- ✓ FAT procedure and report
- ✓ Operation and maintenance manual

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

Example: fuel gas conditioning package, Vepica, Jusepín 200 (NIF)

MAIN COMPONENTS

Gas scrubber vessel, a pair of coalescing filters, interconnecting piping, valves, instrumentation and control panel, safety valves, drains and structural skid.

MATERIALS

All new, tested to the relevant codes.

SCOPE

Engineering, mechanical calculations, detail and fabrication drawings, materials supply, manufacture, inspection, testing, transport and assistance for commissioning and startup.

DELIVERABLES

Mechanical, civil, electrical and instrumentation drawings, pressure vessel design, 3D model, FAT/SAT protocol and Data Book.

PERIOD AND SITE

. Manufactured in Houston, TX, and installed at Furrial, Jusepín, Venezuela, with field installation assistance.

Our work

Fuel gas and regulation packages, from model to delivery



Boiler gas regulator skid, PDVSA

Related package: parallel regulation runs with filters, regulators, relief valve and instruments feeding a boiler burner train.

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

DELIVERED

Fuel gas conditioning package, Gas Compression Plant Jusepín 200 (NIF)	**Vepica, Jusepín, Venezuela**
Boiler gas regulator skids	**PDVSA**

Need one built for your process?

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

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