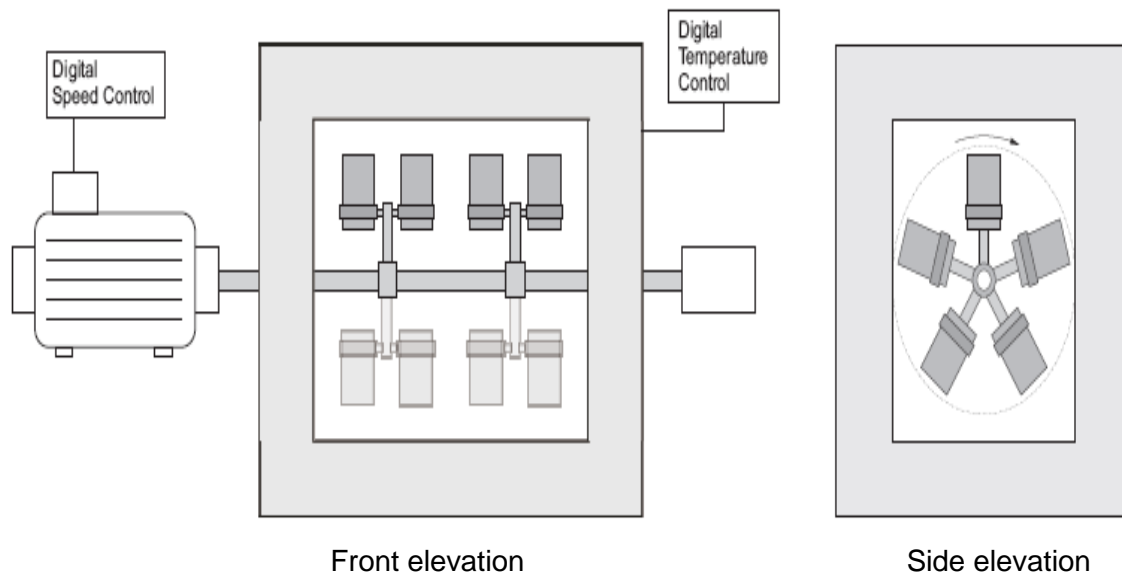


Rotating Corrosion Cells HP/HT

PMAC Systems latest apparatus for corrosion monitoring and control is the Rotation Corrosion Cells High Temperature High Pressure:

Overview



- Heating oven, digital control, maximum temperature 300 °C (higher possible)
- 4 or 8 sample cells, volume 100 cc each, pressure up to 10,000 psi (alternative volumes available on request)
- Sample cells with internal holder for coupon and optional mixing balls
- Rotational speed adjustable, 60 rpm max (alternatives available)
- PLC control for automation optional (oven temperature profile, heating and rotation timers etc.

The System is bench mountable, built to the highest safety standards and comes with a number of options:

Specification

**100 cc High pressure, Medium Temperature
multi rotating vessel assembly.
For corrosion testing**

PMAC Systems are specialist manufacture of a custom made pressure vessel systems; the HP HT Rotating Vessel is one of a series built within a custom oven to accommodate a horizontally aligned rotating framework. At the end of each radial extension within the oven are a number 4, 8 or possibly 12) 50ml high pressure autoclaves, attached to allow rotary agitation of the chemistry / coupon within each vessel.

Low cost solid 316/316L stainless steel vessel assemblies are available, but standard Duplex or inconel or hastelloy are recommended.

Please find our preliminary specification as detailed below: -

One reactor.

Total internal volume	50 cc (Ø80mm bore x 100mm). or to suit
Maximum working pressure	689 barg (10,000psig)
Design pressure	758 barg (11,000psig)
Maximum working temperature	300°C
Vessel Construction	Machined from solid bar
Closure type	Flanged and bolted or screwed TBA
Design Code	ASME VIII. Div 1 (NCS) Pressure Vessel Code
Design Code	European Harmonised Standard BS EN 13445-1:2002
Legal Requirement	Pressure Equipment Directive 97/23/EC (PED) May 2002
PED classification	Conformity assessment module A1, D1 or E1 table 3,
Category	II
Certification	Unit to be CE marked.
Mounting style	Rotating vessel – affixed to radial extensions (or to suit).
Heater	Insulated, clamp on, (about oven) ceramic band heater fitted with stainless steel cladding. (Without outer cladding when used in conjunction with heating mantel)
Lifting / lowering.	N/A

Note: The inside surface of the autoclave including the vessel cover is polished to improve corrosion resistance and to prevent chemical adhesion to the autoclave wall.

The autoclave will have the following fittings.

Internal:

Customer own coupon (can be supplied)

External:

Port 1 - 1/4" Teed port accommodating gas inlet / outlet valve connected to vessel cover via 1/4"HP metal seat male connector and possible connection with Safety, pressure relief valve (PED compliant) conforming to the requirements of BS 6759-1/2 1984 set at 700barg c/w engraved brass identification disc. Supplied complete with individual calibration certificate.

Note other ports available on request

Optional Extras

Glandless rotary agitation.

The rotary system consists of a suitably encapsulated assembly of rare earth magnets housed in a light aluminium alloy casing capable of operating to 300bar, mounted centrally on the oven cover.

Rotary Mounting Frame work.

The vessel framework and associated equipment is floor and or bench mountable to a static or mobile purpose built, light gauge frame constructed in mild steel. The framework supports the motor magnetic drive system external to the oven (see below). The frame also accommodates and supports bespoke cylindrical oven assembly

Atmospheric oven assembly

This custom made cylindrical oven is especially designed to house the vessel and rotating wheel assemblies. The oven accommodates fixed cover assembly and detachable retractable body to allow easy access to the assemblies within.

Please note the oven is not designed as a pressure vessel and is assumed atmospheric

Motor speed control and digital indication: -

Positive visual indication of stirrer rotation within the vessel is obtained via a secondary system consisting of a panel mounted speed controller complete with panel mounted digital speed indicator complete with on/off switch and graduated speed adjusting potentiometer, allowing variable speeds of between 0 to 1,500. RPM.

This unit is also fitted with comms module for digital retransmission via RS232

Our policy of providing specialist bespoke designs coupled with our willingness to collaborate with the customer allows us to respond very quickly to any design changes or modifications of the autoclave.

For further information please as us: sales@pmacsystems.com