The Validation Centre (TVC) Limited

PURGING CASE STUDY

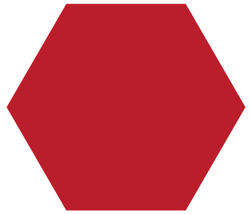
Duplex Container Manufacturing with Robot Interface

In some industry sectors it is commonplace to use welded duplex vessels for waste management. The vessels can be manufactured using robotic welding and need to be purged prior to commencing the welding process.

Ensuring maximum efficiency

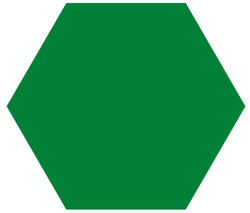
To ensure that the set up and robotic welding of the vessels works with maximum efficiency, TVC has included additional robot signalling on the Gas Purge Monitor (GPM) units together with a 3-Stage Purge Gas Flow Control System.

When the vessel has been set up on the welding jig in the robot cell, the GPM unit sample hose is connected to the vessel and the start button is pressed. The Stage 1 gas flow solenoid is opened by the GPM providing a high purge gas flow into the vessel.



The GPM has a pre-programmed high and low alarm limit so when **above the high limit**, the **high flow solenoid** is opened and the ***red*** warning light illuminates.

As the monitored O2 level drops **below the high limit**, the traffic light warning system will turn ***yellow***, and the **mid-flow solenoid will be opened, reducing the purge gas flow.**



Once the monitored O2 level drops **below the low limit**, the warning system will turn ***green***, and the l**ow flow solenoid is opened, reducing the purge gas flow** to a level suitable for the robotic welding of the vessel.

Dwell Time

A dwell time can be programmed on the GPM to allow the O2 level to stabilise.

The GPM gives a ready-to-weld signal to the robot controller and the robot will automatically start the welding process.

Continuous Monitoring

The GPM will continually monitor the O2 levels in the vessel during welding.

The mid-flow solenoid will be opened to increase the purge gas flow until the O2 level drops back below the low limit threshold.

If the O2 level should rise above the low limit threshold, the GPM will send a signal to the robot controller to stop the welding process.

The GPM will send the ready-to-weld signal to the robot controller and welding can re-start.

3-Stage Gas Flow Control System

with GPM and Alarm Beacon

The 3-Stage Gas Flow Control System, traffic light audio / visual warning beacon and robot / PLC output signalling interface are all options on the GPM unit.

The standard GPM unit can be interfaced with any robotic or PLC-controlled automated welding processes providing simple and efficient control of your welding purge process.

Contact Us

If you have an application that requires automated purge control, please contact us to discuss your requirements.

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