



SPF2000

Super Plastic Forming Control System

Instrumentation

- *Automates the SPF process with minimal operator intervention*
- *Flexible PC based system accepts new tools or components*
- *Precise control of both hydraulic and pneumatic pressures*
- *Data logging of all process parameters*
- *Rugged industrial enclosure*

The Chell SPF Control System is a standing workstation comprised of the APC2000 pressure control tray, a ruggedised industrial computer, full deflection IP65 keyboard, monitor and ancillary power distribution and interface/communications links.

The APC2000 pressure control tray contains the instrumentation that measures and controls the applied pressure, and monitors leak rate. Interface connections on the back of this tray allow input of tool temperatures and hydraulic pressure, output of a hydraulic pressure command signal, hydraulicpress/APC2000 safety interlocks, remote vent valve and remote pressure transducer connections. These signals are then distributed as required to the instrumentation and computer.



With minimal operator intervention this system automates the application of the applied controlled pressure ramp and then venting of gas pressure during a SPF production cycle. During the pressure ramp cycle the computer also takes control of the hydraulic press, applying a force slightly greater than that of the opposing gas pressure.

The system controls and/or monitors system parameters in accordance with the "supervisor" defined Process Program, and displays the process progress in graphic form. Should an interlock status change, or out of tolerance condition arise, the program will hold the process at its current state, and the operator will be notified by an amber flashing beacon that human intervention is required. All data is logged and converted into a text format and is thus easily imported into software packages such as Microsoft Excel®.

Mechanical	
Package	38U high 19" Rack
Mounting	Free standing work station on castors (two lockable)
Weight	65Kg
Power Supply	
Line voltage	220-240 VAC
Line frequency	50Hz
Consumption	Less than 300 VA
Protection	8A anti-surge fuse
Operating Conditions	
Operating temperature range	+5°C to +50°C
Storage temperature range	-20 to +70°C
Maximum relative humidity	95% at 50°C (non condensing)
Warm up time to full accuracy	15 minutes (assumes unit already stabilised at ambient)
Measurement	
Leak rate	0-30 slpm*
Gas pressure	0-35bar (0-500psi)*
Hydraulic pressure	0-250 bar (0-3600psi)*
Temperature	0-1000°C*
* Other ranges can be accommodated	
Gas Supply	
Gas	Argon
Maximum Pressure	36bar (0-530psi)



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