Parker's Gold Medal Olympic Performance

Parker's ACR9000 adds motion control to the 2010 Winter Games.

Automated motion control may not seem to have much in common with such sports as ice hockey, ski jumping and bobsledding, but they all came together in Vancouver for the 2010 Winter Olympics. Thanks to Parker, the games were celebrated with spectacular torch-lighting ceremonies.

The ACR9000 multi-axis motion controller played a key role in both the opening and closing ceremonies, providing motion control to raise and lower the support pillars and "crystal" torch cauldron that made up the Olympic flame. The ACR9000 performed flawlessly, lifting and lowering the pillars and cauldron on cue, despite a malfunctioning element from another vendor that prevented one pillar from rising.

The control system for the Winter Olympics consisted of four automation racks, each controlling its respective cauldron arm and its actions: retractable floor, arm lift, arm rotation, hydraulic power unit (HPU) and interlocks. A fifth automation rack controlled the cauldron crystal in the center. "In the case of Vancouver 2010, each arm had three axes," explains Denis Chollet of Microtrol Inc., which engineered the application. "The floor and the rotation of the arm were driven by servo motors, and the lift of the arm was done by using a 60HP HPU mated to a proportional valve and cylinder. The mix of electric and hydraulic axes made the ACR9000 the perfect choice."

All the automation racks were connected to the show control computer using the ACR's Ethernet capability. In fact, says Chollet, thanks to the ACR9000's flexible programmability and PC connectivity, the controller has been integrated as part of their standard show control software. "The ACR9000 has been used in many Cirque du Soleil tours such as Corteo, Quidam and the new 2010 tour. We also have used the ACR9000 in some industrial applications to replace CNC controllers."

ACR9000 features include:

- Up to 16 axes of servo or stepper control
- Ethernet Powerlink real-time motion control
- Advanced multitasking of up to 24 simultaneous programs
- Interpolation of 16 axes in any combination
- 10/100 Base-T Ethernet
- USB2.0

- Absolute Encoder support via SSI
- Up to 48 optically isolated onboard inputs/outputs
- 1MB of application memory
- 120/240 VAC power input
- CE (EMC & LVD), UL, cUL approval

For more information on Parker's ACR controllers – the gold standard in motion control – please click here.

www.parkermotion.com