



Beijing Olympic Competition Depends on Parker Technology

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CLEVELAND, Feb. 19 /PRNewswire-FirstCall/ -- A patented starting gate design that uses Parker technology is winning recognition throughout the world of BMX bicycle racing, including the 2008 Olympics in Beijing. The ProStuff(R) straight eight starting gate has been selected as the official start gate for Olympic BMX contests. The 2008 Olympics will be the first ever held in China and mark the debut of BMX bicycle racing as an Olympic event. Parker distributor, Barker Rockford, Inc., integrated Parker automation components to develop the patented system.

"Using Parker automation technology, we set out to find a new application in an untapped market niche," said Pierce Barker, III, principal of the Rockford, Illinois distributorship and president of ProStuff LLC. "Today, we're confident that the design features and performance of our starting gate are unique and allow them to outperform any other in the world. This equipment is in use at racing facilities in 24 countries on every continent except Antarctica - and that includes many Olympic training facilities." With Parker's support and cooperation, Barker has been instrumental in establishing a worldwide standard based on ProStuff designs.

The ProStuff starting gate systems are built using Parker components including a pneumatic ram, FRLs, exhaust valves, a custom accumulator constructed using Parker's rigid aluminum IPS profiled shapes, hoses and connectors and industrial grade shock absorbers. Barker also developed proprietary electronic controls and safety hinge devices for use with the gates. Gate doors and ramps on single gate systems for individual training are framed by Parker's Industrial Profile Systems - extruded aluminum sections designed to support automated equipment in factories. Several world champions attribute their success, in part, to training with the ProStuff ProGate.

"Our design addresses the concerns of riders and race operators for consistent performance, safety, durability and low noise operation," said Barker. Consistent performance and safety go hand-in-hand in a race where riders anticipate the start signal and actually begin moving milliseconds before the gate falls. In many BMX races, early anticipation results in riders going "over the top" -- stuck on the upraised edge of the start gate -- or worse, falling under the gate as it drops to start the race. At the 2005 BMX World Championship in Paris, 40 percent of the race starts had riders going over the top using a competitive system. In the 2006 event, in Sao Paulo, Brazil, using ProStuff starting gates, only two riders in 3,970 starts got ahead of the gate drop. The automated start cycle of ProStuff gates, from "ready" to "drop" positions varies by 10 milliseconds or less. Other systems typically vary 60 to 120 milliseconds - enough time to throw off top world class competitors.

"Besides the improved safety, we had no breakdowns or malfunctions in all 3,970 drops of the gate at the Sao Paulo Worlds," Barker noted. "In many contests where heavier steel gates are used, the repair welder is on the starting line nearly as often as the riders to fix gates and ramps that literally beat themselves to pieces." Several elements, from basic design geometry to light weight materials and an adjustable "cushion" stop for the cylinder rod combine to make this high performance reliability possible.

The last 5/8 inches of rod travel on the Parker air cylinder, or ram, can be cushioned by exhaust air compressed in the cylinder rod end by Parker cushion valves. The rod extends rapidly, using pressurized air from its attached accumulator, to push the gate forward on each race start. Unlike self-destructing "bang-into-the-ground" systems, ProStuff gates can be modulated with software and a single adjustment screw on the side of the air ram to provide a pneumatic cushion that stops the free-fall of the gate. The cushion kicks in as the industrial grade Parker shock absorbers contact the gate at the end of its travel.

"How much cushioning is required will vary with the terrain of the start line," said Barker, "so our software ensures sufficient air volume and pressure are applied to suit the conditions." Before ProStuff, start gates hit the ground hard enough to be felt in the stands. The noise, over 100 decibels, was comparable to a shotgun blast. BMX racing organizations find the quiet operation of the system is actually helping recruit young riders to the sport.

"Parker offers more motion and control systems worldwide than anybody else," said Roger Sherrard, President of Automation at Parker. "More than 12,000 Parker distributor locations provide an unequaled global market channel, and like Barker Rockford, partner with customers to identify needs and create productive, profitable motion and control applications. We look forward to watching, along with the rest of the world, the result of this collaborative approach in action at the athletic competitions in Beijing."

With annual sales exceeding \$9 billion, Parker Hannifin (NYSE: PH) is the world's leading diversified manufacturer of motion and control technologies and systems, providing precision-engineered solutions for a wide variety of commercial, mobile, industrial and aerospace markets. The company employs more than 57,000 people in 43 countries around the world. Parker has increased its

annual dividends paid to shareholders for 50 consecutive years, among the top five longest-running dividend-increase records in the S&P 500 index. For more information, visit the company's web site at www.parker.com, or its investor information site at www.phstock.com.

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