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A Display of Fitness

One way Life Fitness achieved a leading role in the residential and health club exercise equipment area was by listening to dealers and end-use customers regarding product development.

► In October 2004, Life Fitness (Franklin Park, Illinois, U.S.) presented customers with ideas for innovations in its residential treadmill line. Feedback was enthusiastic, and customers wanted to see quick results. With this in mind, the company immediately began development work.

Structurally and mechanically, the treadmills were to be completely new. Equally important, the company aimed for an Environmentally Specific Design approach that would look more appealing in the retail consumer's home. This new look was to include changes to the control user interface and displays.

The consumer

research that the company conducted suggested that, while its current consumer treadmills were easy to use in comparison to those of other fitness product manufacturers, its controls and consoles were difficult to use when compared to manufacturers in other related industries.

"Specific to treadmills, we learned that our controls needed to be more easily

accessible and easier to actuate," notes Matt Brennan, product manager, Consumer Cardiovascular Products. "This is because when a user is running on a treadmill it is very difficult to hone in on a specific membrane key with the pressure needed to actuate that key."

Given the desire to enhance the control user interface and displays, and the need for speedy development, the company decided to look outside its design group for a proven touch technology and display integration provider. Among the companies it investigated was nearby TouchSensor Technologies, LLC (Wheaton, Illinois, U.S.). The company had considerable appliance industry experi-



Life Fitness teamed up with TouchSensor Technologies to completely redesign controls on a new line of treadmills. Controls are touch activated, so only a finger swipe actuates a key. On the main control panel, keys are backlit and only illuminate when active. A lower console area places the most used keys closer to the user and at an easily reached angle.

ence with touch user interface and display development, as well as numerous designs with in-mold-decorated plastic parts and integrated lighting. These technologies could converge to achieve a distinctive look that would meet Life Fitness' design intent and improve the user's experience with the treadmill.

The company debated for a time whether it should develop its own interface. However, recalls Brennand, "We decided to work with TouchSensor because of their dedication to staying on the leading edge of user interface technology. In addition, we wanted to work with a company that was willing to experiment with new materials and other innovative industrial design elements."

The companies began cooperating in mid-February, with a tight October 2005 production target. Life Fitness created the aesthetic design direction and TouchSensor exploited its patented technologies to make the designs a reality. There were two elements to the development activity—an upper and lower user interface and display. For the upper console, TouchSensor focused upon the touch and lighting elements of the user interface, while Life Fitness designed the plastic chassis itself. In parallel, TouchSensor led the development of the enhanced lower console keypad, or Activity Zone. Already a successful Life Fitness feature, the Go System Activity Zone places the most-used keys closer to the user and at a more desirable ergonomic angle. This Life Fitness original feature has been well accepted in the fitness equipment industry, with 85 percent to 90 percent of consumers using the Activity Zone.

"A key element was the development of the in-mold decorated Activity Zone console," says David Muisenga, manager, new business development, at TouchSensor. "The part was curved and had three-dimensional surfaces, presenting considerable challenges in molding techniques and decoration. We had to find a unique way of getting a metallic look."

The main console and Activity Zone user interfaces employ TouchSensor's patented TS100 TouchCells, which the supplier reports have been used reliably in some 2 million units globally. The electronics are sealed within the consoles, so they are protected from sweat, spilled drinks or other potential damage.

"The beauty of using TouchSensor's technology is that, while the user is active, only the swipe of a finger is needed to actuate the key," says Brennand. "The user no longer has to locate the key with a finger and then apply pressure."

To make end user adjustments more intuitive, the touch-sensitive keys are backlit with blue LEDs, making software navigation more user-friendly.

"On most fitness equipment, users get on the machine and stare at the console with a confused look on their faces," suggests Brennand. "Either the end user has to carefully read through the instructions scrolled across the console LED window or guess what key to press for setting up their workout. In order to reduce end-user confusion, Life Fitness and TouchSensor

worked together to develop key backlighting or keys that only illuminate when active. This means that only the illuminated keys can be used to make adjustments. All keys that are not illuminated are not functional at that time." Life Fitness reports that this approach is a first of its kind in the fitness equipment industry.

Life Fitness feels it has been beneficial working with TouchSensor to leverage its technologies and experience from developing products in related industries. 

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