

# DPN

# DESIGN PRODUCT NEWS



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## Biodiesel hose line

Eaton Corp. has introduced a line of flexible rubber hose designed for use with biodiesel B2 to B100 in diesel engines, trucks, buses, agricultural vehicles and off-highway applications. The GH100 ESP hose also performs with synthetic lubricants used in high-temperature truck transmission oil cooler applications.

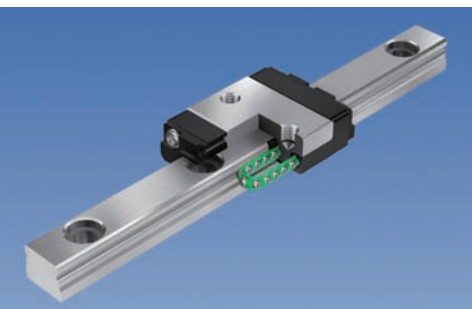
[www.hydraulics.eaton.com](http://www.hydraulics.eaton.com)



## Security keylock switches

NKK Switches has announced the CKM series of high security keylock switches. The ON-OFF-ON switch models with tubular keys feature a push-and-lock mechanism which indicates to the user when the switch position has been changed. A 16mm, double-flatted bushing is designed to ensure units fit in panel mounts.

[www.nkkswitches.com](http://www.nkkswitches.com)



## Caged ball linear guide

The SRS5M/WM miniature LM Guide from THK America includes the benefits of its Caged Technology, a synthetic resin cage with a patented curvature that cradles each ball and separates it from the next one. The linear motion guide height ranges from 6 to 6.5 mm, block widths from 12 to 17 mm and block lengths from 14.2 to 19.4 mm (16.9 – 22.1 mm with end seal).

[www.thk.com](http://www.thk.com)

Volume 36 Number 6

# Hearing aid remote removes stigma



For 40 years, Unitron Hearing has been committed to making life better for people with hearing loss by developing world-class high quality hearing instruments, while serving customers in more than 70 countries. A new “Smart Control” handheld remote for the company’s premium and advanced category hearing products now provides a subtle way for users to make adjustments without attracting attention.

The unit is Unitron’s ([unitronhearing.com](http://unitronhearing.com)) first remote control product entry into the hearing instrument market and was created with the assistance of industrial design and product development specialist Evolve Design Solutions of

Ottawa ([evolve-designsolutions.com](http://evolve-designsolutions.com)).

The main objective for the one hand – and ambidextrous – operated Smart Control remote was to create an innovative and distinctive design which would have global design appeal, be compact, ergonomic and technologically advanced, as well as easy to use by the 67- to 70-year-old average target end users. Since poor eyesight, loss of finger tip sensation and arthritis are common factors associated with the end users age group, the design had to meet other objectives, such as incorporating tactile elastomeric user interface touch areas, a large button keypad, color and graphics contrast, as

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Cover Story



Hearing aid remote improves user control

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well as an illuminated keypad. Unitron Hearing’s director of Product Management, André de Goeij, said his company chose Evolve Design Solutions over 145 North American industrial design firms “because of the knowledge it has to go through the whole design and manufacturing process.” Hearing instruments are worn full time by users, so this

remote control is an item that most users keep with them at all times. Hearing instrument wearers often prefer discretion and the target end users’ age group is somewhat overwhelmed and intimidated by new technology. The Smart Control had to be intuitive, friendly and not intimidating to use and operate, yet be easily carried in a pocket or purse. The design of the remote was whittled down to three unique prototype directions submitted by Evolve that could be put into the hands of a focus group comprised of users and audiologists.

“Evolve was given all the electronics and physical mechanical components to package in 3D CAD Pro/E and STEP file formats, which were easily and flawlessly imported into SolidWorks, our 3D CAD software platform,” according to Aldo Balatti, design engineering director and plastic applications specialist at Evolve Design Solutions. “Most of the ID (industrial design) conceptual and refinement work was done with digital hand sketching and digital rendering sketches produced with Wacom digital pen/tablets, as well as using solid modeling and screen rendering captures. The color study images were done with the help of 3D CAD screen capture images from PhotoWorks, and Adobe Illustrator and Photoshop,” stated Balatti. “Each one of the 3 proposed unique ID concepts were exported as fine resolution STL files and produced as high resolution MJM (multi-jet modeling) solid 3D rapid prototyping parts built with 0.0015 in. layers to retain a smooth surface and all the precision of the features and details as well as to eliminate the hand sanding and finishing post work. The standard SLA (stereolithography) process was not selected as it only creates parts with 0.006 and 0.004 in. layers.” The choice was a simple and ergonomic shape designed to comfortably fit in the hand and resemble a vehicle remote entry device. A finger recess detail was incorporated at the rear to give the user an identi-

THK

Elastomeric touch areas provide additional tactile grip

fiable feature to aid in holding while operating the keypad. This is further aided by the elastomeric user interface touch areas, which give additional tactile grip. “When Evolve was working on finalizing all the final ID detailing, colors, finishes and production specifications, Unitron Hearing mentioned (it) would like to have a nice cool metallic effect for the main housing body for the Smart Control remote to showcase this innovative, technologically advanced new product,” said Balatti. “Since the product has TPE elastomeric overmolding user interface touch areas on the top housing, and while using a metallic paint and lacquer was an option, it would have meant masking around the elastomeric surface areas which would have added complexity, time, and most likely a higher reject rate and extra cost to the part. “Evolve already had experience using Visual Effect decorative molded resins from Sabic Innovative Plastics (formerly GE Plastics), so we suggested a more eco-friendly approach with using a new Visual Effect EF technology system – which only had been used in Asia at the time,” Balatti added.” Released in 2007, the illuminated and tactile feedback keypad provides all the functionality at the user’s finger tip. The layout of the various shape keypad buttons was designed for the user to easily and discretely adjust settings without looking. The keypad selection covers volume up/down, program change, telephone and home button, as well as a “Learn Now” function that gives the end-user the ability to teach the hearing instrument their preferences. The Scroll wheel on the side controls Unitron’s unique Comfort-Clarity Balance that adjusts the HI noise cancellation and speech enhancement algorithms embedded in the electronics, explained de Goeij.