



*Flexinol® Actuator Wires are small diameter wires which contract like muscles when electrically driven. Smaller than motors or solenoids, cheaper and generally easier to use, these wires perform physical movement for an extremely wide variety of applications.*

## JUST WIRED IN

### WIRE WORDS: Crimping/Attaching

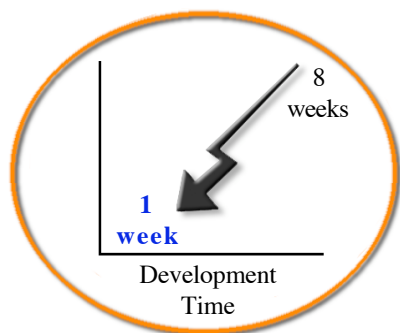
#### **Reducing lead times with custom attachment methods**

Crimping/attaching goes hand in hand with using Flexinol® actuator wire and is an integral part in having an easy to assemble product. For many products, the off-the-shelf Ring Terminal and Barrel Crimp Dynalloy offers as a standard are sufficient. However in some cases, a uniquely shaped custom crimp can be beneficial.

Dynalloy works with crimping industry leaders to provide custom crimps for its Flexinol® users. In the past, lead times have often plagued this process. It was not uncommon to wait eight weeks or more to evaluate a potential crimp design.

Knowing these long lead times were slowing the development of Flexinol® based products, Dynalloy set out to reduce this delay.

Using advanced internal methods Dynalloy reduced this lead time down to one week. It is now possible to design a specific crimp and have samples ready for testing within one week of drawing approval.



This reduction is a result of Dynalloy's ongoing effort to further the Shape Memory Actuator Industry as a whole, in addition to the alloy development itself.

**Contact your Dynalloy Sales Representative for more information or call (714) 436-1206**

## APPLICATION HIGHLIGHTS

*Due to the confidential nature of most customer products we regret that we cannot include their details in this newsletter. When customers deem such announcements to be appropriate we select one or two to feature in our newsletter.*

*Interested in submitting your product?*

*Contact: [newsletter@dynalloy.com](mailto:newsletter@dynalloy.com)*

### MOBILE PHONE: XLINEA™ Autofocus Module

1 Ltd's 1AF-S85M65 sets a new standard in miniaturization and simplicity for mass-market cameraphone autofocus (AF) modules. Designed around 1 Ltd's proprietary Xlinea™ Shape Memory Alloy (SMA) Flexinol® actuator, the module is the first in a new generation of AF modules that provides an industry leading roadmap for size reduction and cost saving. The SMA Flexinol® actuator is essential for the required motion in such a small space.

The 1AF-S85M65 has a footprint of 8.5 mm square, a height of 3.5 mm, and accommodates a standard M6.5 threaded lens barrel. It is compatible with a range of 1/4 and 1/3 inch image sensors. The module meets industry standard drop-test and reliability specifications, and the Xlinea™ motor consumes approximately 70% less power than a conventional voice coil motor.



Camera module integrators simply add their selected image sensor assembly and lens barrel to the AF Module to form a completed camera. The new module is compatible with standard assembly processes and therefore provides a quick and easy way for camera module integrators to assemble the autofocus camera module. AF Modules based on Xlinea™ actuators are currently being manufactured by Seiko Instruments and

## Application Highlights Continued

the design is also available for manufacture under license from I Ltd.

### Module Benefits:

- Small footprint – 8.5 mm square
- Compatible with M6.5 threaded lenses and range of 1/4 & 1/3 inch image sensors
- Low profile – camera height determined by lens track length rather than height of module
- Rugged – passes industry standard environmental and reliability tests
- Low power – 50 mW typical
- Non-magnetic & low EMI
- Silent operation

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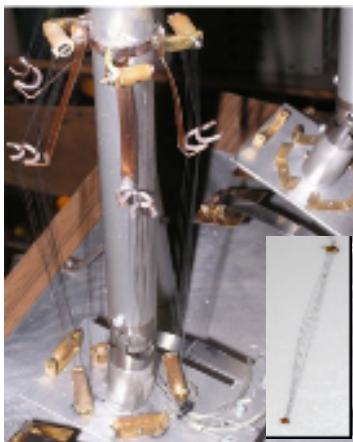
## ROBOTICS: The Humanoid Robot Lara



At the **Darmstadt Univ. of Technology** in Germany, they have developed a humanoid robot named Lara. The purpose of Lara is to help provide a solution to the aging of societies as care of elderly people becomes more important. Robot Lara is a potential solution that enables older people to take care of themselves as long as possible.

For this technology to be accepted by the elderly, several requirements have to be fulfilled by the design of the robot. Most important is to ease communication and make it as natural as possible. The newly developed bio-inspired robot has a more human-like look and is lighter.

This is made possible by using a new leading actuator technology based on artificial shape memory alloy Flexinol® actuators. The actuator/sensor design combines many single SMA wires into one muscle-like actuator. A wide field of possible applications is also one of the primary



object targets. By keeping a minimum distance between each single wire, a short cool down time of the thin wires can be ensured for the entire actuator.

Robot Lara is 130 cm tall and has a weight of only 6.5 kg, including batteries, electronics, etc. Conventional robots at this size have a weight of 40 to 50 kg. The lighter design reduces the safety risks caused by malfunctions and increases trust in the Robot.

The actuators can work without producing any sound, which makes the use of the robot more comfortable. Another big advantage is that the appearance of the robot can be more human-like and friendlier than the traditional "astronauts" look. Lastly, the new actuators are much cheaper than servomotors and they can also be used as position and force sensors. This leads to further reductions in costs.

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## MILITARY/HOBBY: Paintball/Airsoft Mine

Created by **Supercell Development, Inc.** this Paintball Airsoft Mine device is safer than traditional devices. Supercell's mine uses Flexinol® as the firing method eliminating the use of pyrotechnics or high pressure gas systems. Because of the limited usable space of the ASC7 Claymore, they had to come up with something that could fit the shell without compromising the looks. Hooking the Flexinol® assembly to the latching system worked perfectly. Supercell sells to customers all over the world, including Military and Law Enforcement.



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