



Flexinol® actuator wires are small diameter wires that contract like muscles when electrically driven. Smaller than motors or solenoids, less expensive and generally easier to use, these wires perform physical movement for an extremely wide variety of applications.

Just Wired In

Flexinol®+

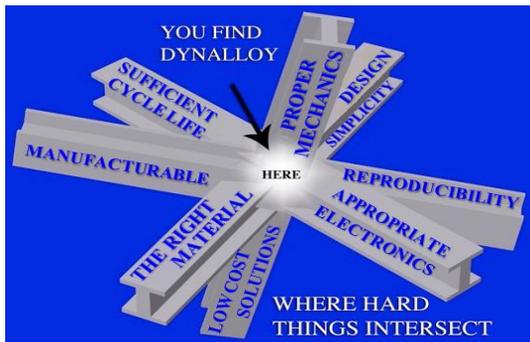


New and refined Flexinol®+ actuator wires

Introducing new Flexinol®, a higher grade SMA actuator wire available with a 90°C austenite start temperature*. Flexinol®+ can be used in products with higher life cycles requirements, tighter

bend radius constrains, less electrical control sophistication, and other wider design tolerance parameters. Each application and its related conditions are unique and may or may not benefit from Flexinol®+. Not all sizes are immediately available please contact us to learn more.

* Measured using 170MPa during heating.



Actuator Wire Mechanism Engineering & Design Services

In the correct application, using shape memory alloy actuator wires can lead to elegant and low-cost products. However, shape memory alloys can also be counterintuitive and time consuming. This is especially true if you are new to the technology. Dynalloy has engineering and mechanism design services which can help you meet important timelines, prepare for management presentations and perhaps most importantly, help verify and validate designs for mass production. Frequent design challenges like ambient temperature variation, actuator wire attaching, correct electrical power and force profiles can be derived much sooner using experts in the field solving these problems every day. Instead of “feeling close” let us help you arrive!

Product Highlights

With our customer’s permission, we would like to highlight a few creative new applications that have been announced. Interested in submitting your product? Email: contact@dynalloy.com

Small Lightweight Latches



Air Hogs® Robo shooting missiles

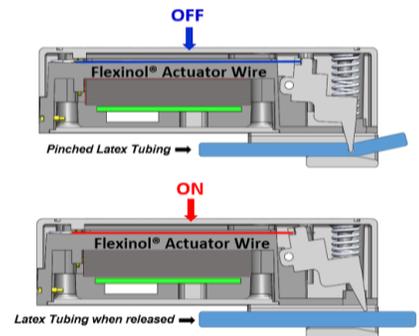
Spin Master® enjoys another successful product Air Hogs® Robo Trax™ All-Terrain Tank. Dynalloy’s Lightweight Muscle Wires® actuates the release mechanism on the plastic missiles, allowing them to deploy on command, with simple mechatronics. The small

and lightweight Muscle Wires® replaces other traditional actuators that would introduce more cost, packaging, and weight concerns, making Muscle Wires® an ideal match. This innovative Air Hog® Robot can rip over all terrains, giving it the fun and entertaining factors everyone is looking for. In addition to Dynalloy’s Muscle Wires® the Air Hog® Robo is design for rough wear and tear giving it the lasting quality a robot needs.

Freedom Flow™

The latest version of the Freedom Flow™ leg bag emptier for quadriplegics will be available this September 18, 2017. Dynalloy’s Flexinol® actuator wires are used to actuate the valve that releases the leg bag fluid in a quick and inaudible

manner. Using the Flexinol® actuator wire technology provides solutions that significantly reduces the cost, size, and weight compared to other traditional solutions. The Freedom Flow™ was originally conceived by innovative USC professor, Dr. Behrokh Khoshnevis to improve the quality of life for one of his students. Dr. Khoshnevis is currently developing large scale 3D Printing technology, for building low cost housing and other large-scale structures. For those who are interested, Dynalloy Inc. is willing to take customer projects like the Freedom Flow™, to help improve then produce them.



Freedom Flow™ valve operating function



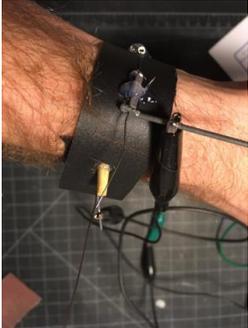
Wireless remote control

SMArt® Steps Student Projects

Dynalloy, Inc.'s SMArt Steps Program is designed to assist students and universities with research endeavors through technical support and product discounts. For more information or to join our exclusive SMArt® Steps Program, Email: contact@dynalloy.com.

Feature Student: Julian Goldman

University: Pratt Institute Brooklyn of NY



Wrist band containing the silicone encase

Julian Goldman, a recent graduate of Pratt Institute Brooklyn of NY is investigating a new type of small medicine pump using Flexinol® actuator wires to deliver a variety of medicines. The basic idea is a silicone encased one-way valve system with small chambers containing the medicine which are compressed with Flexinol® actuator wires to deliver on command pumping out micro-fluid dosages. By pressing down on one of the larger voids and then resetting from either the natural modulus of the silicone or by an alternative reverse pressure the cycle can repeat as needed. A whole new family of ultra-small pumps are now possible with Flexinol® actuator wires.

Julian Goldman, a recent graduate of Pratt Institute Brooklyn of NY is investigating a new type of small medicine pump using Flexinol® actuator wires to deliver a variety of medicines. The basic idea is a silicone encased one-way valve system with small chambers containing the medicine which are compressed with Flexinol® actuator wires to deliver on command pumping out micro-fluid dosages. By pressing down on one of the larger voids and then resetting from either the natural modulus of the silicone or by an alternative reverse pressure the cycle can repeat as needed. A whole new family of ultra-small pumps are now possible with Flexinol® actuator wires.



Test piece of microfluidic in soft silicone filled with paint

Feature Student: Ryker Chute

University: University of Central Florida

Ryker Chute, a student from UCF and Limbitless Solutions are teaming up to research using Flexinol® actuator wire as a solution to simplify and enhance the functions of 3D printed prosthetic arms and other prosthesis. The current single servo hand actuates all fingers at once. The new objective Chute hopes to achieve is the ability to utilize Flexinol® actuator wires, to significantly reduce the weight and volume while allowing the prosthetic arm to actuate and have control of each individual finger. To learn more about this non-profit work visit www.limbitless-solutions.org



3D printed prosthetic arm

Vital Statistics

3 New Strategic Alliances

The implementation of Flexinol® Actuator wire requires expertise in a variety of areas. DYNALLOY, Inc. has formed strategic alliances in certain areas to create a fuller and more effective umbrella of service to those interested in taking advantage of these technologies now. Recent partners have chosen to remain anonymous.

5 New Commercial Applications Were Initiated in the 3rd Quarter of 2017

Dynalloy, Inc. and its Customers use a coordinated approach to new product development in which Dynalloy is in close supervision of the actuator development. This approach has proved to be the most effective method of arriving at reliable and cost effective new commercial developments.

12 New University Research Projects Were Launched

Dynalloy, Inc. has long supported scholastic research regarding its product, the uses of it, its comparability to similar materials, and its theoretical capabilities. Dynalloy contributes materials, as well as advice, towards the successful conclusion of such projects. (Please see SMArt® Steps Section on the left for more Information)

Announcements

Due to the confidential nature of most of Dynalloy, Inc.'s joint development efforts with its customers, we cannot disclose project details publicly in this newsletter. With a few of our customers permission, we have highlighted some of the many creative products Dynalloy, Inc. wire and expertise has helped develop. Dynalloy, Inc. is here to help you bring your products imagination into reality using our unique technology. Interested in submitting your product or working with us? Email: Contact@dynalloy.com

ISO Certified

Here at Dynalloy, Inc we make sure our materials, products, processes and services meet the standards of the International Organization for Standardization. Please visit www.iso.org for more details on ISO certifications.

Courtesy of:

Dynalloy, Inc.
1562 Reynolds Ave
Irvine, California
92614



Phone: (714) 436-1206
Fax: (714) 436-0511
contact@dynalloy.com
www.dynalloy.com