

RUGGED DS SERIES SOLVES TOUGH MOTION CONTROL APPLICATIONS



DS Series -- Designed for today's high performance motion control systems. Note two separate beams in each of two separate flexures.

Helical's newest aluminum coupling is specifically designed to meet the demand of today's high performance motion control applications.

The DS Series works exceedingly well in applications requiring a flexible coupling that combines superior torque capacity and high torsional stiffness, without the weight and inertia of a stainless steel coupling. Since acceleration rates are higher in today's motion control systems, lower inertia of individual components means a more responsive system. The DS Series meets these requirements for outstanding performance with minimum coupling inertia. Motion control applications that require connecting motor and leadscrews and/or leadscrew and encoders are the focus of the DS Series.

The product affords the designer with substantial .010-inch parallel offset capability, reducing the need for high precision alignment during assembly operations. It also accommodates three degrees of angular shaft misalignment

and permits axial motion of $\pm .008$ ". Outside diameters are provided in 3/4", 1", 1 1/4", 1 1/2" and 2" sizes.

- * High Torsional Stiffness
- * Low Radial Loads
- * Parallel Misalignment Capability

The DS Series is different from any other coupling in the Helical coupling lineup; it is the only series to use a multi-start flexure design. In this case, the DS Series has a "Double Start" flexure, which is where the designation "DS" is derived. In this configuration each flexure consists of two coils that start 180 degrees from each other so as to maximize parallel misalignment capability without sacrificing performance. Combining these flexures in this manner enables the coupling to operate at a high performance standard.

The DS Series is a full featured coupling that includes the popular Integral Clamp attachment and a Relief bore configuration. The Integral Clamp is a great method to attach the coupling to a shaft. Tightening down the socket head capscrew of the clamp draws it down onto the shaft for a positive friction connection. By simply loosening the capscrew the coupling can be conveniently removed or repositioned, as needed, to satisfy any application. The relief configuration allows the shafts to enter into the flexure area making installation easier because the distance between shafts is not critical.

When looking for the best value in a coupling to meet demands of the newest designs of motion control applications, the DS Series is well worth your consideration.



"G-MARK" AWARD

Of the many awards Helical has received for product excellence, it is the prestigious "G-Mark" Award for product design excellence from Japan's Ministry of International Trade and Industry (MITI) in 1992 that we value most highly. This award is presented exclusively to companies whose products demonstrate "legitimate originality, high quality, outstanding appearance, superior functionality and great regard for safety."



FANTASTIC "FLEXURE FACTS"

The versatility of the HELI-CAL Flexure is the "secret ingredient" in each design engineering application. You'll see how the flexibility of the HELI-CAL Flexure means unprecedented design opportunities for you.

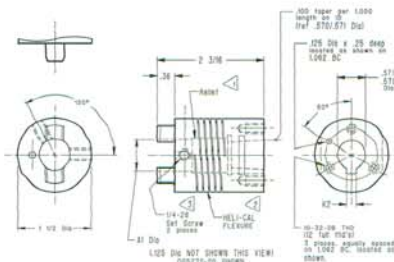


SOLVED APPLICATION STORY 11

CHALLENGE: In 1985 a manufacturer of sheet metal fabrication equipment was up-dating and redesigning their product. Previously they had been using our standard MC7 150 flexible coupling; however, they needed a torsionally stiffer coupling connection with the servo motor. In this redesign they also wished to increase the functions of their system.

SOLUTION: By introducing a set of tangs at one end and a tapered bore at the opposite end, it was possible to shorten the overall coupling length by almost a half inch. In the third revision, a keyway was added plus three tapped holes and a .125" x .250" deep hole. It is not always known why certain additions are made to a unit by a customer. The purpose is to enhance the HELI-CAL Flexure to the best advantage to meet the customer's requirements. This unit improved their product and has been manufactured continually since 1986.

ANSWER: HELI-CAL Flexure Flexible Coupling # DS5232.

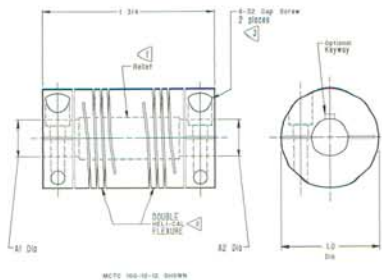


SOLVED APPLICATION STORY 39

CHALLENGE: The customer required a zero backlash shaft coupling for a robot that will be used to perform human hip replacement surgery. They were using a high torsional stiff coupling, but found that at high RPM the unit could shear, particularly when being subjected to higher than normal parallel shaft misalignment. The set screw attachment also proved unreliable for the torque being transmitted.

SOLUTION: A standard double flexure Helical coupling was used providing more reliable compensation of parallel offset between the shafts. The integral clamp attachment was used, and the torsional stiffness of the stainless steel was adequate for the application. This standard catalog coupling was more cost effective than the competitor's coupling.

ANSWER: HELI-CAL Flexure Flexible Shaft Coupling # MC7C 100.



For Over 35 Years...

The HELI-CAL Flexible Shaft Coupling was invented in 1958 when George Sabadash developed the concept and method of producing the HELI-CAL Flexure as a single piece flexible coupling. After receiving a strong response from a news release, he realized he had created a useful and needed product. Charlie Romero designed and built the machine to generate the flexure. Shortly thereafter, Charles Merrell joined with George to build a company to produce and market this new and unique item. Because of the basic HELI-CAL Flexure concept, the Company has grown and been accepted in the world wide marketplace.

In 1973 Helical Products Company, Inc. moved from Los Angeles to its present location in Santa Maria, CA. To keep pace with the continued growth, in 1983 the manufacturing area was tripled in size. In the beginning Helical concentrated on applications in the military field. Because of its compactness and reliability, the HELI-CAL coupling became an accepted standard. Advertising, sales promotion programs, and satisfied customers have enabled the Company to branch out into the commercial fields.

Our unique strength is the ability to take a piece of bar stock and make it flexible, utilizing the HELI-CAL Flexure. Since its beginning, the HELI-CAL Flexure has been refined and developed to accommodate a wide range of applications. Our ability, combined with our engineering expertise and high workmanship quality, will continue to be the backbone of HELI-CAL products.

Helical has designed and manufactured over three thousand different types of couplings. The basic coupling series have been incorporated into the Helical catalog. Most of the couplings produced are special order designed to the customer's particular application. In addition to couplings, the Company has diversified into the production of U-joints and machined springs, both of which utilize the HELI-CAL Flexure.

Our reputation has been established by excellent service in supplying test samples, working directly with the customer's engineers, keeping delivery on time, and last but not least, producing a quality product. In essence, WHAT WE SAY, WE DO.

"More Than A
Means To
Connect
Two Shafts"

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