

Dynaflex® LCR Series Couplings

Typical Applications:

Dynaflex LCR couplings are useful for a wide range of rotary drive applications, from lawn and garden tractors to large construction equipment, including U-joint replacement. Typical applications include:

Typical End Product	Application
Farm Tractor	Trouble-Free Hydraulic Pump Devices
Lawn & Garden Tractors	Maintenance-Free Main Drive Couplings
Dynamometer	Protects Driveline from Failure
Snowmobile	Reliable Main Drive Coupling
Vibratory Rollers	Absorbs High Torsional Shock Loads in Eccentric Drive Units
On- & Off-Highway Vehicles	Isolates and Protects Auxiliary Driveline Systems
Industrial Machinery	Provides Inexpensive Coupling for Maximum Angular Misalignment and Vibration Control
Agriculture Equipment	Replaces Conventional Universal Joints and Provides Torsional Flexibility.

Dynaflex LCR couplings were designed and developed by Lord and have been in service since the early 1960's. The basic concept was intended for specific applications requiring low-cost, flexible couplings to accommodate all forms of misalignment and provide torsional resilience.

The coupling design incorporates metal inserts bonded in an elastomeric ring, which loads the flexing element in compression to transmit torque. Misalignment motion is accommodated by deflecting the elastomer in shear, which allows extreme misalignment without high reaction forces.

They are ideally suited for light-duty elastomeric universal joints, particularly where noise reduction or shock attenuation is required.

Absence of metal-to-metal contact through the coupling eliminates the need for lubrication and maintenance, while also reducing noise transmissions. Installation is accomplished by insertion between simple parallel flanges. This lightweight coupling element can be arranged in a single or double series configuration to match specific torsional stiffness and misalignment requirements.

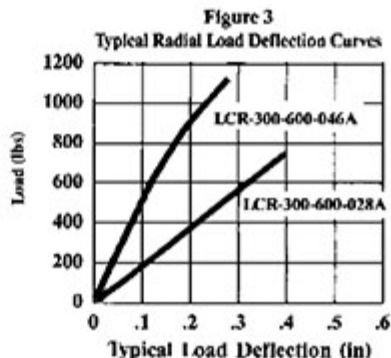
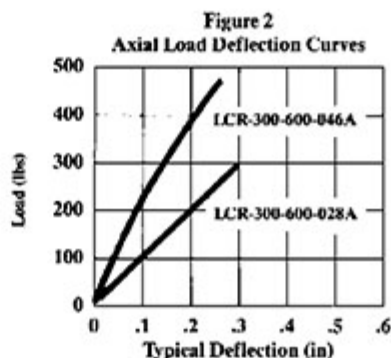
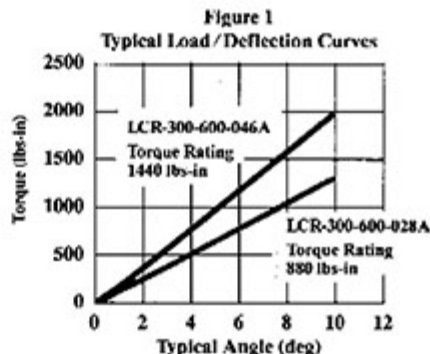
Static Load Deflection Characteristics of

LCR-300-600-028A & -046A reference curves.

Ring-type couplings isolate torsional vibration and reduce the harmful effects of torsion shock. Torsional resilience is one important characteristic. Figure 1 shows the torsional spring rate of two sizes.

Accommodating axial misalignment along the axis of shafts without high reaction forces is a unique feature of ring couplings. Figure 2 shows this load deflection relationship.

Ring-type couplings accommodate parallel misalignment with relatively low radial reaction forces imposed on driving and driven equipment. Figure 3 shows typical radial load deflection curves. Load deflection characteristics for other LCR couplings are available upon request.



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Specifications

Materials

The elastomer used in Dynaflex LCR couplings is high-quality natural rubber, which meets Lord specifications (available upon request) and exceeds SAE standards. Natural rubber is used because of its excellent physical properties such as tensile strength, tear and abrasion resistance, fatigue resistance and low temperature characteristics. Other elastomers are available to meet special applications needs. The elastomer-to-metal bonds are even stronger than the elastomers.

LCR couplings listed on the following pages have aluminum alloy inserts. Many other insert configurations are possible to meet attachment requirements.

Environmental

Ring-type couplings will perform satisfactorily when exposed to the normal fluid, temperature and other environmental conditions found in driveline systems. Special oil-resistant elastomers can be provided where total or partial oil immersion is necessary. For operation in ambient temperatures exceeding 170°F (77°C), consult Lord Engineering.

Misalignment

Misalignment capability applies for speeds up to 3500 rpm. Operation up to 7000 rpm is permitted with reduced misalignment (consult Lord Engineering). NOTE: For speeds above 4000 rpm, shielding is required and/or balancing of assembly may be required.

Installations

Normal installation involves simple through bolt attachment to flanges. For flywheel attachment applications, metal inserts can be tapped/counter-bored to permit easy installation.

Remote Driven Units

Multiple U-joint shafts (especially longer shafts) and the speed at which the shaft rotates (especially higher rpm's) can create complex stability problems. To assure satisfactory coupling performance, all design layouts for remote mounted driven units should be reviewed by Lord Engineering. Lord analytical capability is only one part of the engineering service available on all coupling applications.

LCR ring-type couplings can be selected based on horsepower or maximum torque requirements. The data listed on the next page provides the necessary information to select a coupling and design it into your system.

New equipment designs and retrofits involving reciprocating engine drives and unusual driveline arrangements should be analyzed to avoid potential vibration and misalignment problems. Contact Lord Engineering for assistance.