BALDOR • MASKA

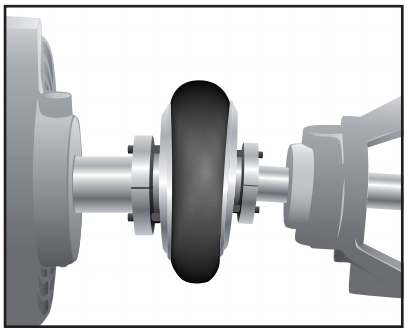
Advances in technology and design innovation have resulted in numerous benefits of Elastomeric Couplings in a vast array of applications.

# Elastomeric Couplings Selection & Maintenance Tips

**Flexible Coupling:** *A mechanical fastening device used to connect two rotating shafts for power transmission that accommodates equipment misalignment.*

**Elastomer:** *Resilient material having elastic properties. (rubber, synthetic rubber or plastics)*

**Elastomeric Element:** *An assembly of components designed to connect axially oriented shafts in order to provide power transmission and accommodate shaft misalignment through elastomeric materials.*



## Why Elastomeric Element Couplings (versus Gear-type)?

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|---|---|
| • **ENVIRONMENTAL IMPACT** - No lubrication required. For every dollar spent on grease, 5 times more is spent on environmental cleanup. | • **COST SAVINGS** - There is no metal-to-metal contact as power is transmitted through non-metallic elements; this reduces the replacement component to just the element. |
| • **PERFORMANCE** -Elastomer elements are resilient and reduce the amount of vibration and shock being transmitted. In rare events when the element does fail (extreme torque or excessive misalignment), a new insert is installed in minutes. | • **OPERATIONS** – Coupling advantages result in reliable, clean operations & improved preventive maintenance which contribute to reduced failures and equipment downtime. |
| • **OUTPUT** – Handle equal or higher torque requirements compared to gear couplings without increasing the size of the part. | • **MAINTENANCE** – Multiple cover options allow for easy inspection and as it is not necessary to move the parts, changeout takes only minutes. |

## Importance of Proper Selection

Coupling two shafts together can require detailed calculations. The best suited coupling type will depend on the application, drive and driven equipment, shaft diameter, space available, power, torque and speed to be transmitted, life expectancy required, electrical insulation, operating temperature range and the nature of the misalignment – which could be angular, parallel or a combination. Different coupling types are also differentiated by torsional, angular, radial and axial stiffness.

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## What you should know about coupling selection, and why!

1. Horsepower – Almost all couplings are sized based on the horsepower to be transmitted.
2. Type of Drive – If the power source is a reciprocating engine, there will usually be a "Driver Service Factor Adder". Torsional vibration is produced in a continuous steady form that can be transmitted directly into the driven machine; an elastomeric coupling is designed to help dampen this vibration.
3. Type of Driven Equipment – Driven machines are classified based on their load characteristics and a service factor is assigned accordingly. Multiplication of the service factor by the input horsepower gives the design horsepower upon which most couplings are sized.
4. Speed at which Couplings Operate – Most selections are based on the HP at a certain RPM. As the speed is reduced, the torque increases. Verify that you don't exceed the maximum speed of the coupling.
5. Shaft Sizes – Make sure the selected coupling fits with the required bore. You may have to choose a larger coupling than your design calls for in order to obtain the correct bore size.
6. Space Limitations – Will the coupling's length and diameter fit within the allotted space?
7. Environment – Several factors that occur in the surroundings can affect the service life of a coupling. For example, the operating characteristics of an elastomeric coupling can change if the temperature exceeds 170° F (77° C) or is -30° F (-34° C). And if the environment is wet or oily, some types of couplings are inappropriate.

## Data Required

- Power in HP, CV or KW
- Shaft Diameters (driven & drive shafts)
- RPM
- Service Factor

**For a COMPLETE Selection Process example based on both Torque Design and HP Design, with all Design and Service Factor Charts, refer to your Baldor • Maska® Catalog.**

### Pro-Active Maintenance

Keeping machinery operating successfully requires careful design selection, proper installation, periodical inspection, observing changes in performance and investigating thoroughly the cause of a failure.

## Tips

- Does the coupling shows signs of distress. Such as running hot, loose bolts, cracked rubber or powder on the baseplate?
- Is there excessive backlash across the part?
- Does the shaft rotate easily and consistently through a 360° rotation? Or, does it bind at some point?
- As you disassemble, are any parts missing? Is there excessive wear? Compare the appearance with a new coupling.
- Is the element worn or cracked? Are the set screws still in place or were they loose? If the element is excessively worn, was the total time it was in operation compatible with its service life?
- When replacing an element, use an appropriate puller to remove the flanges. Do not force them off with a hammer.

**NOTE: Before installing Baldor • Maska® elastomeric couplings, read carefully the assembly instructions included with each flange or consult the Installation sheets in the "Technical" tab @ www.maskapulleys.com.**

For detailed information on Elastomeric Coupling Alignment, see www.mpta.org

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