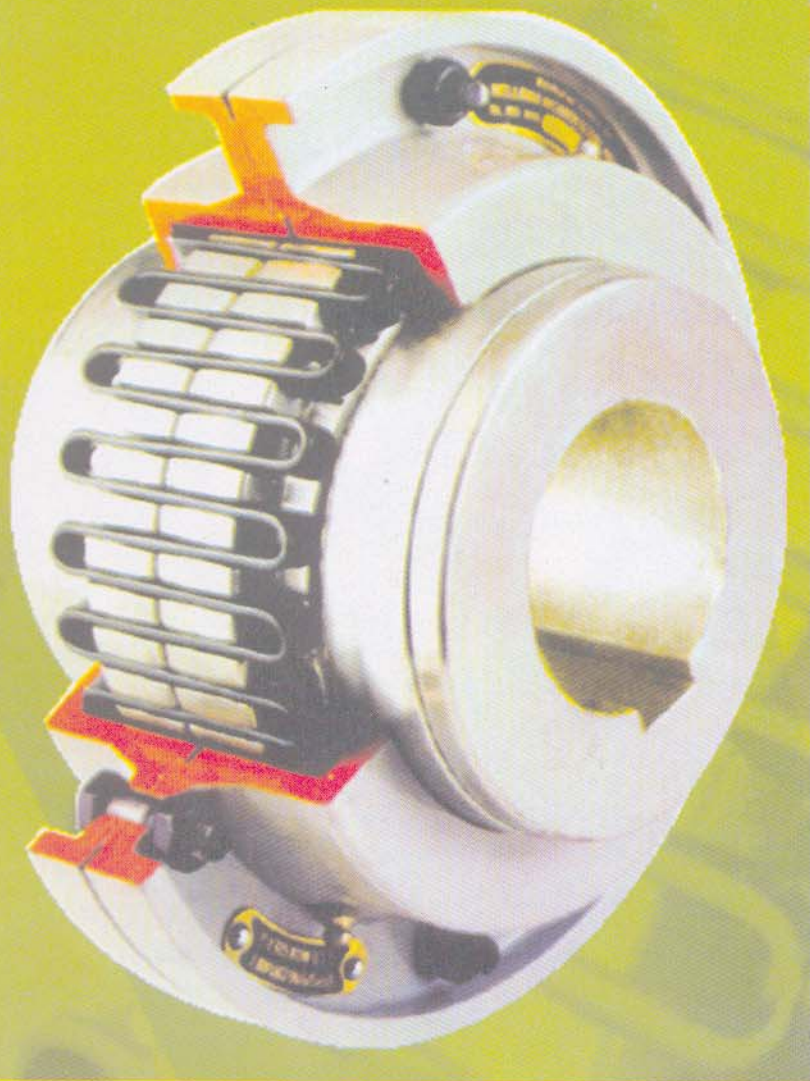


Technical Article

Globally accepted by all engineering sectors for its unique shock-absorbing and detuning properties, Resilient Couplings have earned the reputation of being ideal for drives where trouble-free operation is essential. The following article lists some of the types of Resilient Couplings in use today.

RESILIENT COUPLING

The most effective shock absorbing and detuning coupling in existence



Resilient coupling universally accepted as one of the most effective shock absorbing and detuning coupling in existence, is available in an extensive range of types and sizes. The coupling acts as Mechanical Fuse for the drive system. The coupling consists of two grooved hubs at driving and driven shaft connected by a grid spring. The spring helps in altering the torsional vibration frequency and prevents build up of resonance in system. Following is a brief outline of some of the various types of Resilient Coupling available.

TAPER GRID COUPLING

Taper Grid Resilient coupling is an improvised version of Resilient coupling. Unique design of hub teeth profile facilitates increase in life and ease in installation and maintenance. Modified design has reduced the overall diameter of the coupling thereby reducing the weight of the coupling in comparison with the same torque transmitting capacity of the conventional resilient couplings. These taper grid couplings with reduced OD & weight are usually referred to as low inertia coupling.

GEAR COUPLING

Gear coupling has already proved itself through many years of its use internationally in all kinds of industrial environments. This reliability has been achieved by the attention to detail in design and stringent quality control. It is known for accommodating misalignment, and the unique triple crowning of Hub tooth ensures maximum contact at the strongest part of the tooth and accommodates shaft misalignment. Compared to other designed Gear Coupling the running life is more.

TORQUE LIMITER

Torque limiter is a part of shaft coupling. The mechanism ensures disengagement of the drive on over load, leaving flange jaws free to rotate on bearing. The release torque settings are

made by adjusting the control ring.

The torque limiter can be installed in any drive system, safeguarding against sudden surges or gradual build up of torque.

CARDAN COUPLING

In drive systems where the drive & driven shafts are apart from each other, an intermittent connecting cardan shaft is used with a combination of either at the ends Resilient Coupling, or with both end single engagement Gear Coupling or with both end double engagement Gear coupling with hollow cylindrical torsion shaft. A unique combination of Resilient & Gear coupling with both end of cardan shaft is also designed, where the Gear side will accommodate the misalignment and the Resilient side will absorb the shock load of the drive system. These cardan couplings are essentially useful from the maintenance point of view since the foundations need not be disturbed in case of removal / replacement of the couplings.

TYRE COUPLING

The flexible tyre coupling is "Torsionally Elastic" coupling which minimizes misalignment and maximizes power transmission for optimum machine runtime. The Wellman Tyre Coupling is popular due to its maximum misalignment capacity of 6° & end float upto 12mm, through the elastic property of Vulcanized Rubber bonded together with alternating piles of Synthetic Chord tyre, which can be used up to 60° C temperature. For adverse operating condition like oil & grease contamination Nitrile Rubber compound tyre can be used, which can take care of up to 70° C temperatures.

The coupling hubs are linked with the Tyre, screwed up with Retainer Rings, does not create "Snatch" and it is free of Backlash.

As there are no moving parts and no lubricant, periodic visual inspection of tyre is all that is necessary for maintenance. To replace the tyre simply loosen the clamping Screws and replace with a new one. As it is not necessary to move the Drive or Driven Machine less down time maintenance
Salient Features: Backlash Free; Low Maintenance; Torsionally Flexible; Absorbs Misalignment; Dampens Vibrations and Torsional Oscillations; Easy Tyre Replacement

FLEX-DISC COUPLING

Flex-disc Coupling is the engineered standard- torsionally stiff with zero backlash in non-lubricated couplings for pumps, compressors, fans, Turbines, Blowers and other rotating equipments

Flexible Coupling transmits mechanical power to driven machines through shaft

mounted hubs connected by the coupling and flexible disk packs. Both angular and axial misalignments are accommodated by the flexible disc packs.

The general advantages of Flex - disc couplings are as follows.

Since the disc couplings have no wearing parts, they require no maintenance. Maintenance is reduced to a periodic visual inspection, during any convenient shut down. (The presence of oil in the environment will not, however, effect the operation of the unit).

When compared to gear couplings the end thrust and bending moments in Flex - disc Couplings are considerably lesser and more importantly they are smoothly applied.

The design of Flex-disc coupling is such that they will accept significant levels of angular, radial & axial misalignment without any loss of operating performance

All Flex-disc couplings offer excellent "power to weight" ratios.

By the nature of their design, disc couplings are torsionally stiff with zero backlash. Within certain limits, the coupling designs can be adapted to adjust the torsional stiffness to permit tuning of systems.

All standard couplings can be installed and the flexible elements (disc packs) can be changed without disturbing the adjacent machinery.

All ranges of couplings can be adapted to operate in explosive environments where they are required to be 'spark free'.

Flex-disc couplings conform to most international standards including API 671.

Residual unbalance of the Flex-disc couplings is kept to the minimum by ensuring concentricity of the coupling parts.
Salient Features: Low Maintenance; Minimal End Thrust and Bending Moments; Significant levels of Angular, Radial & Axial Misalignment Accepted; Excellent Power to Weight Ratio; Zero Backlash; Can Be Adapted to Operate in Explosive Environments to Cater to "Spark Free" Requirements; Minimum Residual Imbalance.

This article has been contributed by Wellman Wacoma Limited, a leading manufacturer of Resilient Coupling.

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