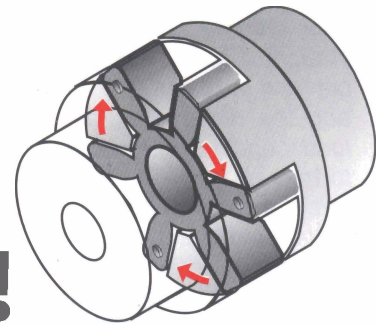


The new NENFLEX[®] Spider & Drive Insert lets your Coupling live a full life !



The elastomeric spider or the drive insert in a flexible coupling is the flexible medium principally employed to dampen harmful torsional vibrations and accommodate for the misalignment forces - angular, parallel and axial, which invariably exist between two on-line rotating shafts. The spider or the drive insert is therefore subjected to a number of forces which are fluctuating in nature. The spider is continuously therefore in a dynamic state and gets deformed in proportion to the torque that is being transmitted. In addition to the simple function of torque transmission, the spider has to accept several fluctuating and unpredictable forces due to a combination of different kinds of

misalignments, temperature, environmental conditions, etc., which causes fatigue failure of the material either by way of development of a crack or compression set which results into its premature failure.

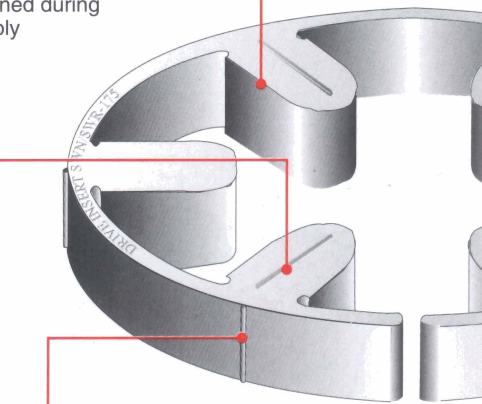
In a cyclic or dynamic situation, the fact that rubbers and elastomers are visco-elastic materials and therefore contain both elastic and viscous elements is very important to understand. The energy required to deform a perfectly elastic spider is completely recovered when the force is removed, but the viscous element which is caused by internal molecular friction, retards elastic deformation and energy is lost. This lost energy is dissipated in the form of heat and the consequent temperature rise in the spider causes "hysteresis" failure of the spider and the subsequent failure of the coupling.

The new generation of NENFLEX Spiders-the Star shaped, the Wrap Around and the individual free floating Drive Inserts are the subject matter of a patent and a result of thorough CAD analysis and practical dynamic tests.

Our R&D has now developed the polyurethane technology to offer a variety of high performance insert materials, which are tested on our unique dynamic test bed "DynaTest" which simulates real life like conditions that prevail on a spider while the coupling is rotating.

Special shape profile which does not result into a 100% contact at no load condition & thereby prevents heat build-up & hysteresis failure

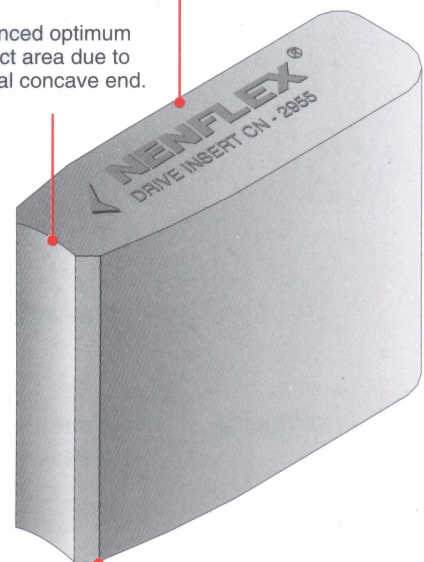
Spacer ribs no longer require gaps to be maintained during assembly



Vertical Ribs grip the wrap around element firmly within the steel retaining ring

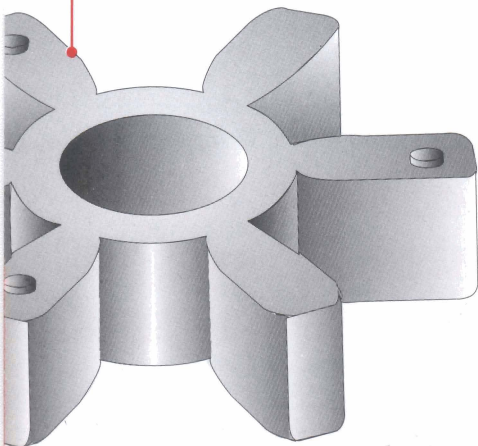
Special shape profile allows partial contact at no load and 100% contact at nominal torque.

Enhanced optimum contact area due to special concave end.

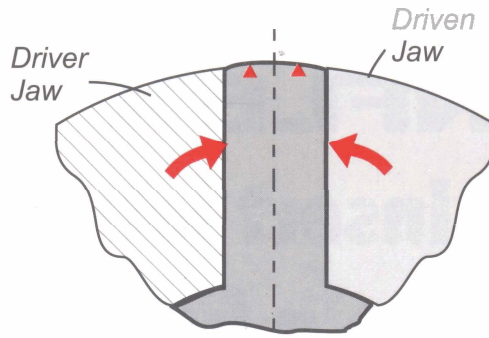


The tapered profile facilitates easy entry & removal of the drive insert.

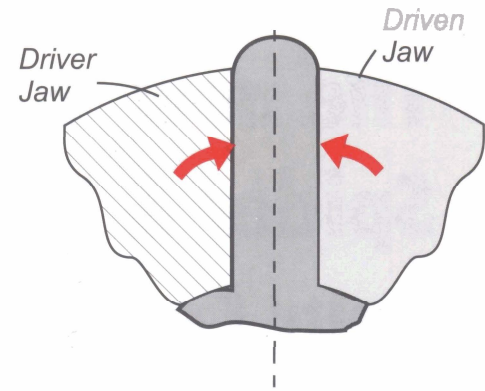
Special shape profile allows partial contact at no load and 100% contact at nominal torque.



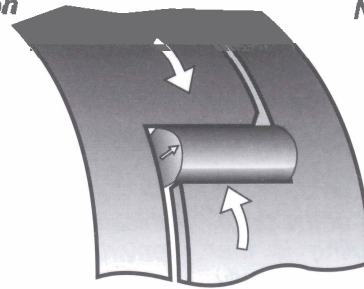
As illustrated in fig.1, the conventional spider has a straight edge which is in 100% contact between the driver jaw and the driven jaw, even at no load condition. Obviously, when torque is applied the resultant force extrudes the elastomeric material of the spider only in the outward direction as illustrated in fig. 2 & 3. Depending upon the torque fluctuations and the misalignment forces, there is a continuous abraded movement of the spider arm against the entire surface of the jaws which causes substantial heat build-up due to friction and results into fracture of the molecular links in the spider which causes its failure.



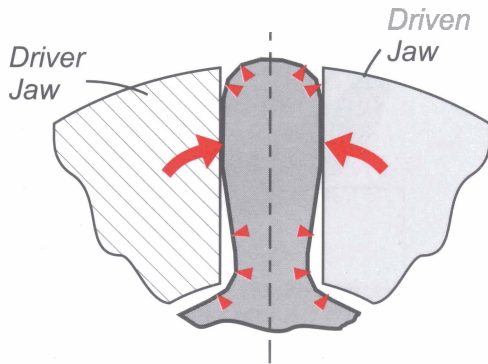
No Load Condition
Fig. 1



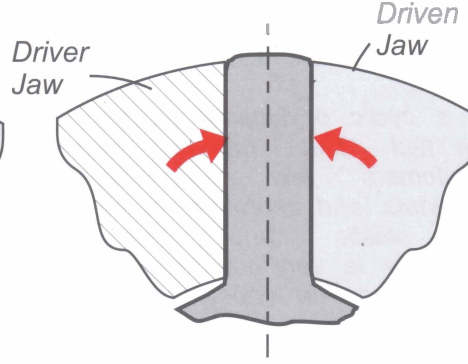
Nominal Torque
Fig. 2



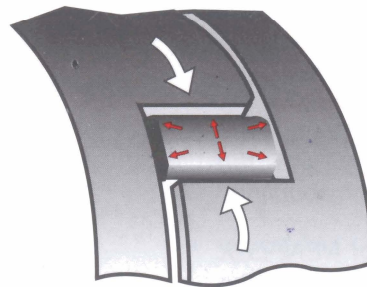
Conventional Spider Under Load
Fig. 3



No Load Condition
Fig. 4



Nominal Torque
Fig. 5



New NENFLEX Improved Spider Under Load
Fig. 6

As illustrated in fig. 4 the new NENFLEX spider has a special profile which allows only a partial contact of the spider arm with the driver and the driven jaws of the coupling at no load. When torque is applied, the entire surface of the spider arm comes into contact with the driver and the driven jaws as illustrated in fig. 5 & 6. There is less abrasion and heat build up because of the easier deformation of the spider arm by virtue of the space available as marked by the small arrows. This enhances the service life of the spider and also allows a larger load carrying capacity.

Insert Material	Hardness Shore A	Colour	Torque	Oil Resistance	Shock Resistance	Chemical Resistance	Operating Temperature
Standard	80	Black	○	○	●	○	-40 to 100°C
Grade HS	90	Black	◎	○	◎	○	-40 to 100°C
Polyurethane	80	Yellow	◎	●	◎	●	-34 to 70°C
Polyurethane	92	Red	●	○	○	●	-34 to 70°C
Polyurethane	95	Blue	◎	●	○	●	-34 to 70°C

● Excellent ◎ Good ○ Average

We reserve the right to make alterations due to technical developments and change in designs