

# INNOVATION

**SPOTLIGHT** from the brands of Altra Industrial Motion Corp.



## ADVANCED COUPLING TECHNOLOGY FROM TWIFLEX PROVIDES ENHANCED FLEXIBILITY IN COMMUTER RAIL TRACTION APPLICATIONS

Rail traction systems have undergone a change from the traditional use of DC motors to the use of more compact AC systems. These motors are lighter, require less maintenance, operate at higher speeds and provide braking to stopping conditions; however they also carry the penalty of greater torque “ripples” and generate higher shock torques.

These conditions require that the couplings between the AC motor and gearbox or between the drive shaft and track wheel be designed with higher excitation torques, speeds and shock loadings, and fit in a reduced space with the ability to absorb greater movements and misalignments.

Each train car typically has two wheel trucks (bogies in Europe), which are modular chassis sub-assemblies that house the wheels, axles, drives and suspension systems.

### MEETING THE NEED FOR TORSIONAL FLEXIBILITY

For more than 45 years, Twiflex has been recognized by rail traction OEMs worldwide for their superior coupling technologies. Twiflex Layrub couplings are specifically designed to meet the requirements of modern traction systems. The Layrub coupling is based on a standard rubber component which can be configured and adapted into housings for varying light rail, metro, commuter and regional train bogie applications.



# INNOVATION

**SPOTLIGHT** from the brands of Altra Industrial Motion Corp.

Layrub couplings feature enhanced torsional flexibility and damping. The coupling's sophisticated sub-assembly is capable of handling relatively large angular and axial misalignments. The Layrub profile produces uniform stress and deflection throughout the cross section of the rubber block.

The standard block material is natural rubber available in 4 duro hardnesses. Neoprene material is also available for high temperature applications, where additional damping is required, or where the presence of mineral oil creates a hazard.

The low torsional stiffness of Layrub couplings limits high transmitted torque peaks while improving damping properties. The couplings are immune to water contamination and require no maintenance. Reversing loads is not a problem since Layrub couplings have zero backlash.



Every bogie design is unique as traction engineers continually strive to develop solutions that are more lightweight and compact.

Layrub couplings are available in a range of configurations including close-coupled, telescopic or fixed shafts, and combined with CV joints to meet the wide range of individual bogie design specifications.

## PROVEN PERFORMANCE WORLDWIDE

Layrub couplings have a proven record of toughness, reliability and long service in climates and track conditions ranging from the Arctic wastes of Northern Scandinavia to the arid conditions of the Australian outback.

Twiflex has successfully supplied couplings for various rail car programs including British Railways, Swedish State Railways, Stockholm Metro, Helsinki Metro, Rotterdam Metro and Trams, Queensland Railways, Melbourne Trams, Gothenburg, Waggonfabrik and Istanbul Trams, Toronto Subway, Indian Railways, and Baltimore Mass Transit.