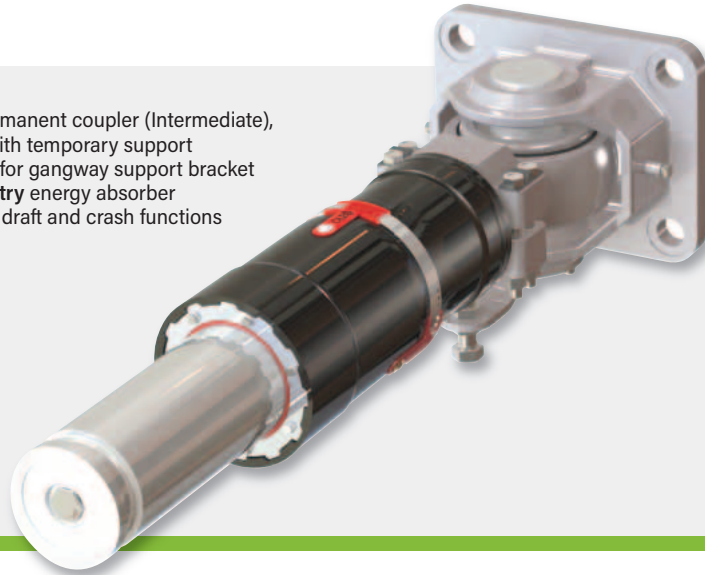


## Semi-Permanent Coupler

Semi-permanent coupler (Intermediate), anchor with temporary support  
Interface for gangway support bracket  
**Oleo Sentry** energy absorber with buff, draft and crash functions



Oleo has developed a modular range of Gas Hydraulic Couplers for the Metro market with standard head types including Type 330 and Type 10.

The couplers are fitted with the Oleo Sentry energy absorption system with strokes and load ratings to suit the requirements of Metro applications.

All Oleo couplers have been extensively tested to reduce Non-recurring costs and lead times – detailed test reports to be available with product supply.

The Semi-Permanent (Intermediate) coupler is designed to work together with the Automatic/Semi-Automatic couplers and Anti-climbers (if fitted) to provide the optimum passenger safety in the event of an accident, and all Oleo products are fully configurable with Oleo's 1D Rail simulation software.

Integration of the Sentry Energy Absorber into the coupler system removes the need for heavy draft springs and draft housings.

By reducing the variety and complexity, this can allow for lower project costs per train coupling system whilst also offering higher coupling speeds, significant weight savings and reduced life cycle costs.

### Product details

Standard range of Oleo couplers:

- Standard Pneumatic connections for MRP (Main Reservoir Pipe).
- Modularised Buff, Crash and Draft energy capacity.
- Standardised car body interfaces.
- Maximum Force range up to 1200kN.
- Fully customisable force/stroke characteristics at no extra cost.
- All couplers and energy absorption devices have been tested by Oleo with validated mathematical models in accordance with EN15227. Representative elements are available for Radioss and LS-Dyna finite element software.
- The system used by OLEO for the mathematical modelling of crash scenarios is approved by a European Rail Authority as being accurate, appropriate and properly controlled.
- Standardised design for reduced manufacturing lead-time and lower cost.

### Product advantages

Oleo's Coupler Devices enable:

- Lower price per Train Set.
- Lower Life Cycle Costs.
- Weight saving.
- Faster Coupling Speeds.
- Reduced Potential Impact Damage.
- Increased Passenger Protection.

Performance optimisation at no cost with pre loads ranging from 40kN to 450kN.

Low mass design with higher recoverable energy absorption than any alternative solution.

Maintenance free between major train overhaul periods.

Standardised modular design with clamp connections for ease of service.

### Applications

Metro



Light Rail



Locomotive & Freight



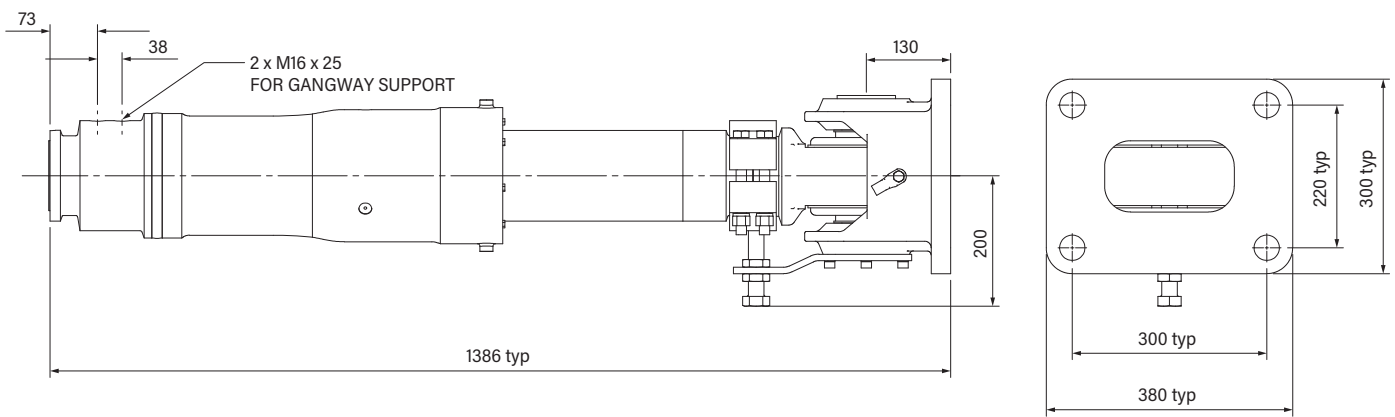
High Speed



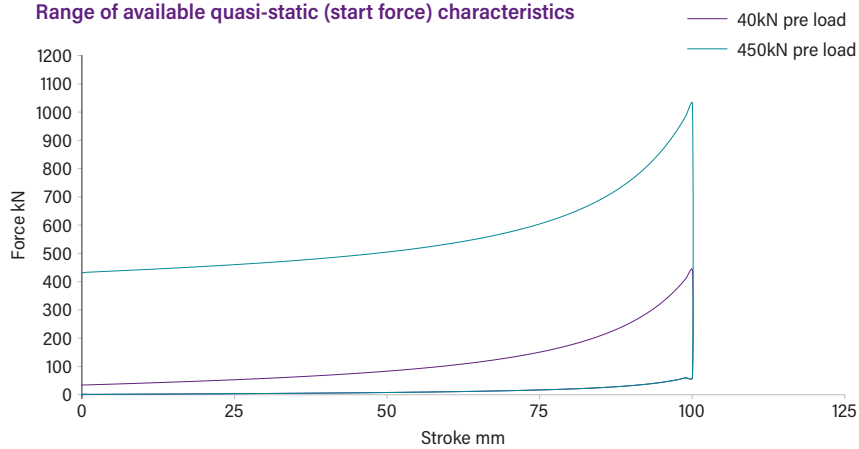
Mainline



# Semi-permanent coupler specification

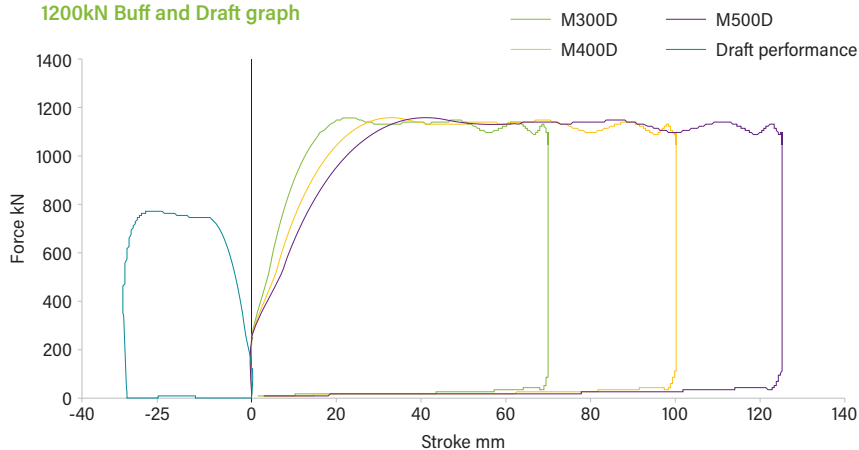


Range of available quasi-static (start force) characteristics



Example shown is for L400D Sentry™ Coupler Energy Absorber

1200kN Buff and Draft graph



Idealised Recoverable Force v Stroke curve for Sentry 'M' devices



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