

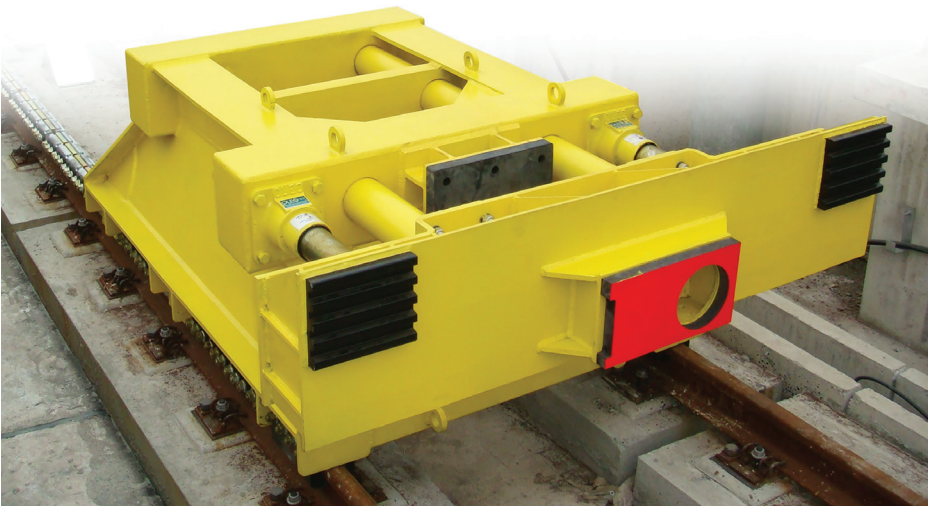


HYDRAULIC FRICTION BUFFER STOPS

Oleo's hydraulic friction buffer stop range is designed for high velocity mainline scenarios and minimises the need to reset the device after each minor impact.

Once impacted, the buffer stop dissipates the energy in a controlled manner, reducing initial force and deceleration levels through a combination of both gas-hydraulic buffers and the sliding action of the friction shoes which grip onto the rail profile.

Site supervision and training provided by Oleo professional engineers for the installation of buffer stops.



PRODUCT DETAILS

- Fitted with Oleo gas-hydraulic buffer suitable for the application.
- Multiple buffers fitted in parallel for side buffer impacts.
- Frame size and shape dependent on specification and coupling interface.
- Friction shoes installed directly to the rail profile and also detached from the main end stop frame.
- 50kN of braking force per pair of friction shoes.
- Number of friction shoes dependent on the train mass, impacting speed and required deceleration.

PRODUCT ADVANTAGES

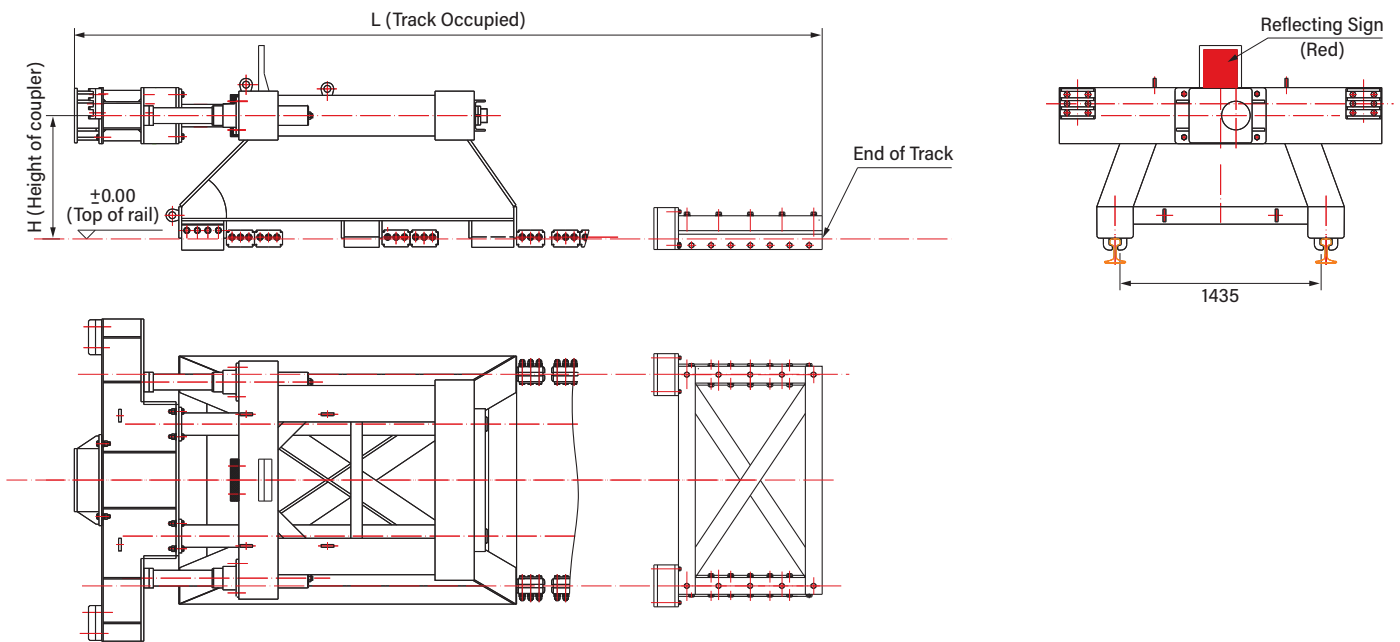
- Each gas-hydraulic buffer is optimised based on the specification to offer maximum protection to passengers, rolling stock and infrastructure.
- Gas-hydraulic buffers designed to absorb low energy impacts without sliding - reduces need to reset device.
- Minimal maintenance required.
- Controlled and reduced sliding distances for high velocity impacts.
- Purely mechanical device - no power or manual control required.
- Suitable for a wide range of rail profiles.
- Simple resetting procedure.
- Long service life.
- Additional configuration options available including electrical insulation, paint finish and galvanisation.
- DigitalTrains' sophisticated simulation capability can be used to understand how the train interfaces with rail infrastructures, such as buffer stops.

HYDRAULIC FRICTION BUFFER STOP DESIGNS

EXAMPLE APPLICATION - LARGE FRAME FOR HIGH SPEED

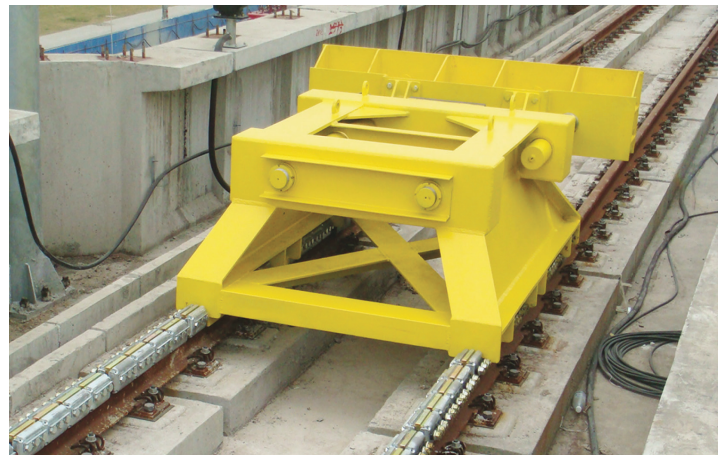


Rail



SPECIFICATION

- Contains one pair of anti-climber shoes, two Oleo Type 9 hydraulic buffers and one set of XCD fixed stop friction shoes.
- Impacting point from the top of rail (coupler height) mm (720 - 660 - 824).



Examples for conditions and installation length:

Configuration	With passengers	Train mass	Impacting speed	Installation length	Impact capacity	Recoverable stroke
8 Cars	✓	510t	25km/h	25m	448kJ	400mm
8 Cars	-	300t*	25km/h	18m	448kJ	400mm
8 Cars	✓	510t	15km/h	15m	448kJ	400mm
6 Cars	✓	380t	25km/h	15m	448kJ	400mm
6 Cars	-	220t*	25km/h	15m	448kJ	400mm
6 Cars	✓	380t	15km/h	15m	448kJ	400mm

* Testing line train mass.