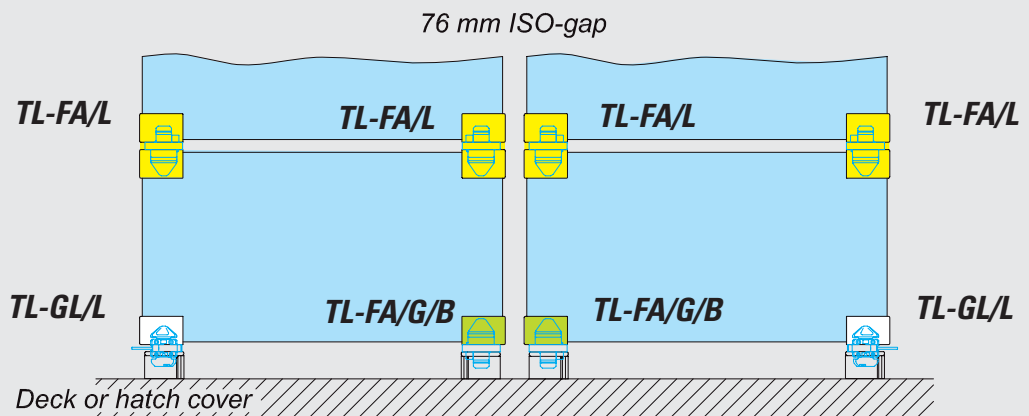
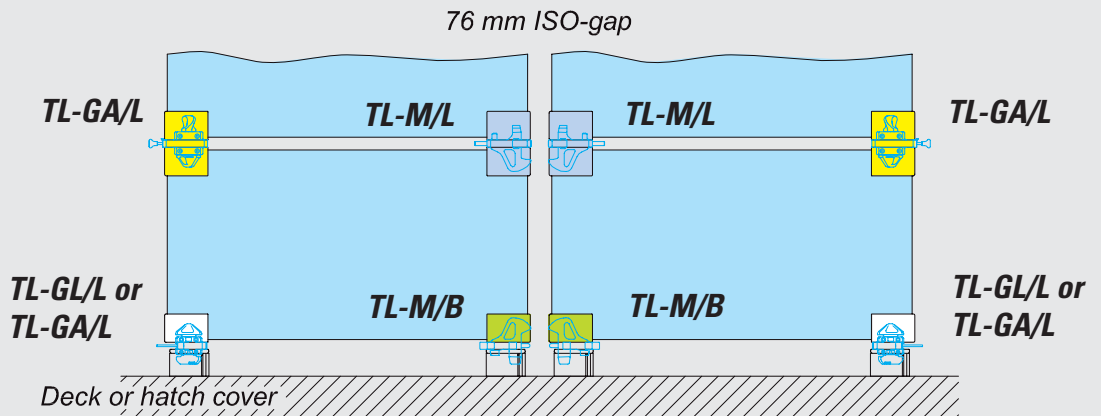
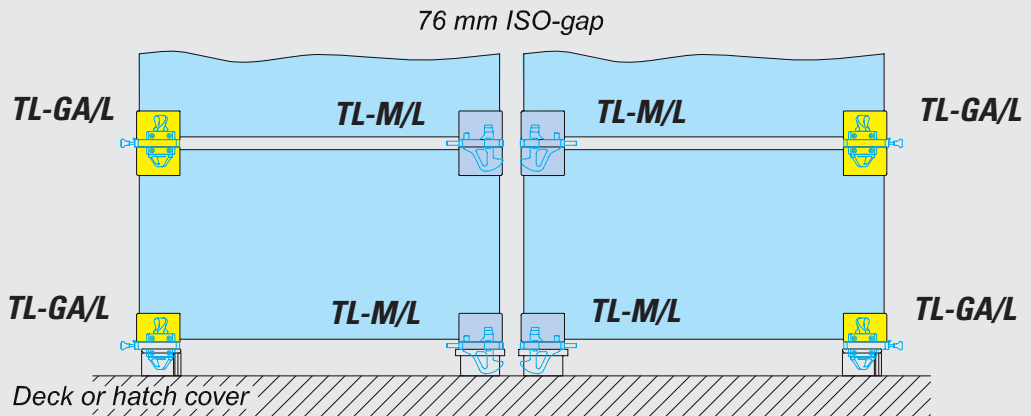
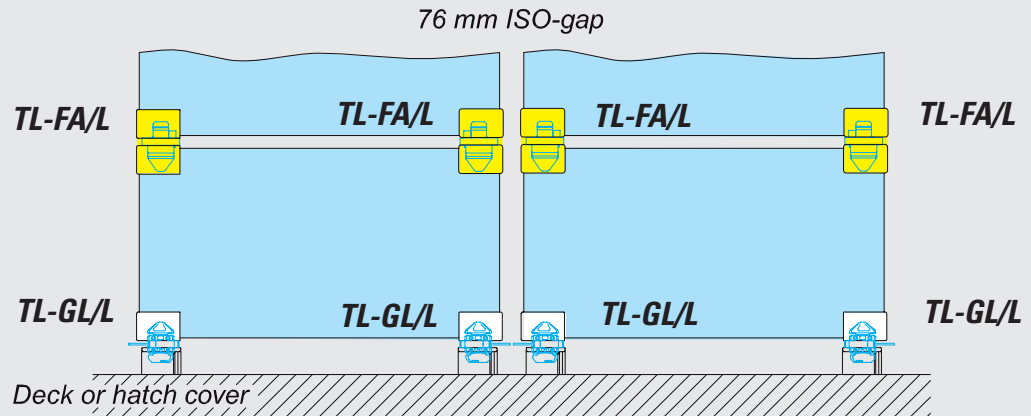


# SEMI-AUTOMATIC SOLUTION FOR BOTTOM TIER ON DECK



## SEMI-AUTOMATIC SOLUTION FOR BOTTOM TIER ON DECK

Locking and unlocking of bottom twistlocks for 20' containers which are stowed with 76 mm ISO-gap is a permanent problem. OSHA regulations specify that a fall risk begins at 8' height but on the other side all containers are stowed close together so there is no space where to fall down. It is our understanding of the OSHA regulations that stevedores are still allowed to climb on top of the first tier on deck for locking/unlocking of bottom twistlocks at 76 mm ISO-gap. Nevertheless we have fully automatic solutions for the bottom tier as well.

For example our standard midlock type TL-M/L can be used in the bottom tier when specially shaped foundations are installed in way of 76 mm ISO-gap. In this case a minimum of different fittings is needed for container securing on deck. The midlock in the bottom tier will be unloaded together with the container.

Alternatively especially shaped bottom midlocks type TL-M/B can be used. This type of midlock remains in the foundation when lifting up the containers and it can be used in combination with standard foundations.

Special care has to be taken when midlocks or bottom midlocks shall be used in combination with longitudinal sliding foundations. In no case foundations with elongated ISO-holes can be used.

Fully automatic twistlock TL-FA may also be used at bottom tier when specially strengthened foundations are installed. For the reason that flexibility of shipside stanchions is unknown we recommend an application as shown on the left side. TL-FA at 20' gap position to be inserted up-side down so that they remain on board when unloading containers.

The TL-FA in the bottom tier works perfect in combination with foundations with elongated ISO-holes, but in no case they can be combined with sliding foundations in transversal direction.