

REAL Torque

May 2020

Contact maintenance for any questions on 0800 80 80 69



Load Restraints

This month's topic is load restraints. There are a lot of items that fall into this category and all are crucial in ensuring that everything you load is transported safely. Securing a load is quite a complex matter. The type of load and its weight determines the load restraint needed and how it has to be used.

Vehicle loads must be sufficiently restrained to withstand forces exerted from braking and acceleration, along with forces exerted by road undulations and surfaces.

The most common restraints we use are webbing load binders, chain load binders, chains, twist locks, turnbuckles, Maxibinders, ropes, curtains, headboards, tail boards, and tarpaulins.

Webbing Load Binders



Also known as ratchet tie downs, this restraint is widely used. They are attached easily to the truck or trailer and can secure a wide range of freight, products, and equipment. They have an individual safe load rating that can range from 250kgs up to 5,000kgs and beyond – while the most commonly used load restraint in the

transport industry are rated between 2,000kgs and 2,500kgs. These are designed for lashing only and are not to be used for lifting. The individual safe lashing capacity is marked on the load binder.

Checking webbing for damages, cuts, frays, and stitching failures should be carried out regularly. The mechanical component (the winch and links) should be replaced if they're bent, worn, or faulty. Keep this clean and avoid contamination of the webbing from petroleum-based products. If in doubt, throw it out.



Chain Twitches • Chain Ratchets

Maxibinders



Lever Type
Load Binders



Ratchet
Load Binders



Recoilless
Load Binders



Maxibinders

All are used for tensioning lashing chain and like the chain itself, all must comply to AS/NZS 4344 and have their safe lashing rating marked on them. This must not be exceeded and should have a rating the same or greater than the chain they are attached to. Once again, these should be well maintained, kept clean, and discarded if it's damaged or worn out.

Ratchet and recoilless types both have the advantage over the lever type – by providing a safer alternative without potential dangerous handle kick back.

Maxibinders combine the action of a ratchet tiedown and a chain load binder, and are quick and easy to use.

There are various other types of load binders and improved designs available from multiple manufacturers.

Chains



Grade 70 transport chain is the best one to use and it also complies with AS/NZS 4344. Grade 70 is not suitable for lifting. This chain comes in various diameters ranging from 6mm up to 13mm with varying capacities, depending on the manufacturer. Refer to the manufacturer's chain strength table and purchase by using the identifying mark/s on the chain. The lashing capacity of the chain can be determined through the chain link diameter (thickness). Only use chains that are classified as suitable.

Chains should be discarded if there are any cracked links or welds, if there are bent, stretched, or twisted links, and if there had been any repairs or join using links that do not meet standard.

Curtains



Curtain Certification Plate

Load rated curtains and associated components come under compliance requirements for a COF inspection. Load rated curtains are designed to contain a load within the body of the truck or trailer without any lashings. If damage or deterioration of the curtain material exceeds the curtain manufacturer's limits, then it must be repaired or replaced to comply for a COF. Tensioning hardware must also be in good repair and securely attached. New curtains are certified for 5 years, after that, they are required to be re-certified annually. Certification labels are attached to the curtain.

Headboards • Sideboards Tailboards

If these are fitted to restrain a load, they must have their load limit displayed.

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Twist Locks

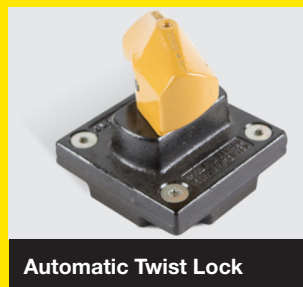


Common Twist Lock



Locking pin in place to stop twist lock unwinding.

Screw Type Twist Lock



Automatic Twist Lock

These were developed in the USA in 1950 and have been used worldwide ever since.

These are mainly used to secure freight (shipping) containers to truck and trailer decks and can also be used to secure removable truck bodies or various other attachments. Twist locks engage with the ISO castings fitted to shipping containers. There are various designs and manufacturers but the principle is the same. They are low maintenance and robust. An example of a different design is the automatic version which locks in automatically once the container is lowered onto the twist lock, therefore eliminating the need for the operator to manually engage. There are different handle configurations and lengths depending on deck design, double stack versions for joining or lifting containers, non-retractable and retractable, screw type, weld-on or bolt-on, etc.

Checking serviceability should be done regularly. Always check the top of the locking lug for wear, the centre shaft for straightness, check that the lock does not rotate from the locked position on its own, and that it locks into position in the ISO casting correctly with no excessive vertical movement. Mounting bolts and welds should be checked for security and welds for cracks.

Tips and Tricks

- ▶ Only use restraints that have the correct capacity and are in good condition.
- ▶ Check your restraints' serviceability and for damage regularly.
- ▶ Store your load binders and ratchets where they can be kept clean and dry wherever possible.
- ▶ Take extra care when using lever-type chain load binders and do not over tension them.
- ▶ The official NZ truck loading code put together by NZTA can be found on Google and is a helpful source of information.
- ▶ Call maintenance on 0800 80 80 69 for advice or help.

TR Tips

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