Railway Association of Canada

TURNBUCKLES, CLEVISES, AND SHACKLES

Corresponding AAR Open Top Loading Rule 23

Turnbuckles must meet U.S. Federal Specification FF-T-791, latest revision, and must be an open-body-forged type.

Each turnbuckle must be permanently marked with a working load limit and the manufacturer's name or trademark. If items are not marked, shipper require to supply above pertinent information.

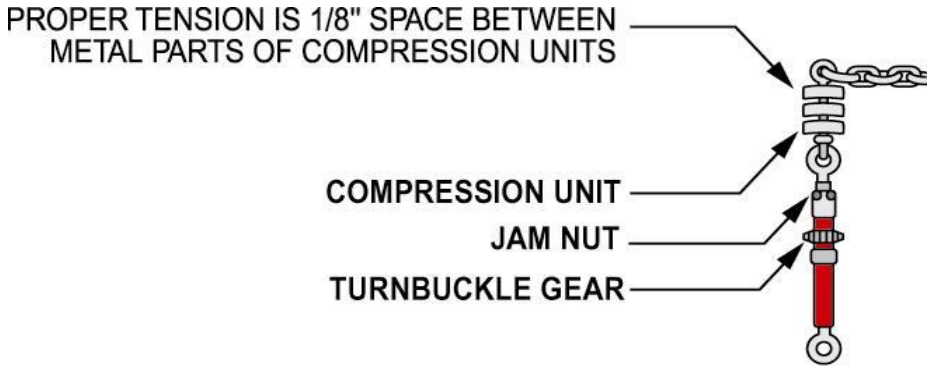
When tensioned, threaded ends must extend a minimum of 1 in. into the barrel and must be locked to prevent working loose. This can be accomplished by using jam nuts or securing the turnbuckle with wire.

Welding turnbuckles, threads, or nuts is prohibited.

Turnbuckles used in tie-down systems in conjunction with cables, chains, or rods must have a minimum breaking strength of not less than the component parts of the securement system.

Turnbuckles using open hooks must have hooks wired unless equipped with a functioning and engaged retaining feature.

Minimum breaking strength (MBS) for turnbuckles in combination with end attachments used are provided in Appendix D, Table D.19. of AAR Section 1 OTL Manual.



Clevises/shackles must have strength equal to or greater than the securement attached to it.

Clevis/shackle pins must be secured to prevent displacement. When cotter pins are used, the legs of the cotter pins must be fully open.

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Clevises/shackles equipped with screw pins must be wired to prevent displacement. Pin must protrude the threaded side of the shackle.

SCREW PIN

ROUND PIN

A safety appliance may be temporarily removed to facilitate loading or unloading a commodity when necessary, provided it is replaced immediately following loading or unloading operations and prior to releasing the car into service.

Ensure all winches are in proper direction so that the chain is taken up on the underside of the ratchet wheel.

Be sure proper tension of wire rope or chains exists.
After initially tensioning each chain, strike it sharply with a hammer or bar and retighten. This helps the links seat in their longest length and helps prevent loose chains in transit.

Secure excess wire rope or chain to the tension bearing part of the wire rope or chain.

Tie-down equipment should be affixed to designated attachment points on vehicles, not to axles, springs or bumpers.

On chain devices, secure open-faced hooks to the chain link with wire.

WIRE OR TIE WRAP