Turnbuckles — End Fittings, Ratings and Tensioning Wire the Right Way

cBallast Technical Sourcing · Rigging screws · issued 2026-10-18 · cballast.com/documents/turnbuckles-rigging-screws-guide

Jaw, eye and hook ends and when each is defensible, reading size and rating (thread size is not capacity), take-up length arithmetic, locking against vibration, and where turnbuckles sit in a tensioned wire assembly with clips and thimbles.

Ends decide legitimacy

End pair | Character | Stocked |

Jaw–jaw | Bolted clevis both ends — positive, side-stable connection to shackles, eye plates, chain: the rigging default | M12 galvanised |

Fork (jaw) heavy pattern | Rated forged bodies with stamped capacity | FZV 16 mm / 1200 kg, 20 mm / 1500 kg |

Eye–eye | Closed loops — clean with shackles, no bolts to lose | per size from the 28-row range |

Hook ends | Fast, and the first thing to shake free — static, supervised duty only, moused if kept | quoted where defensible |

Thread diameter is not a rating: an M12 body exists in decorative and in load-rated executions. For anything bearing load, buy the stamped-WLL pattern (the stocked FZV rows print kilograms) and treat unmarked bodies as balustrade hardware. Lifting applications draw from rated rigging screws with certificates — same logic as shackles.

Working the screw

Take-up arithmetic: a turnbuckle adjusts over roughly the free thread length both ends combined — order the open length so the working point sits mid-travel, with reserve both ways; fully closed means it was sized too long, fully open too short (and weakest).

Left and right threads meet in the body: hold both end fittings against rotation while tensioning so the wire does not unlay — then lock it: lock nuts against the body, or wire mousing through body and ends on vibrating structures; vibration walks unlocked barrels loose in weeks.

In a wire assembly the order is: eye plate !’ shackle !’ turnbuckle !’ thimble-eyed wire (clips torqued per the chart) — the turnbuckle at the accessible end, because re-tensioning is maintenance, not a one-off.

Angle discipline: a turnbuckle is an in-line device; bending moments from misaligned anchors bend barrels and are instantly visible as a banana — a bent body retires.

Quoted within 24 hours by end type, thread/size, stamped capacity requirement and finish (galvanised or stainless for washdown/marine atmospheres — grade logic per the 304/316 guide).

Frequently asked questions
How do I size a turnbuckle for guy wires?From the wire's tension requirement with the stamped WLL above it, and the open/closed lengths chosen so working tension lands mid-travel. Thread diameter alone says nothing — buy stamped-capacity bodies for anything structural.Why does my turnbuckle keep loosening?Vibration rotating the barrel — the left/right threads then unwind symmetrically. Lock nuts snugged against the body ends, or mousing wire through barrel and end fittings, is standard practice on anything that hums.Jaw, eye or hook ends?Jaw (clevis) bolts positively to fittings and is the default; eye pairs cleanly with shackles; hooks are for fast temporary work under supervision only — they disengage when a load momentarily slacks. Mixed jaw-eye bodies cover most rigging.Can turnbuckles be used for lifting?Only rated, certificated rigging screws marked with WLL — and in-line, locked, inspected like any lifting accessory. Architectural and fencing turnbuckles, however shiny, stay out of the load path.How tight should a guy wire be tensioned?To the structure designer's figure — typically a modest pre-tension (often ~10 % of the wire's breaking load for guys) measured by deflection or tension meter, not by feel. Over-tensioning loads anchors and masts far beyond appearances.

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