Hose Clamps — Worm-Drive, Heavy-Duty Bolt and T-Bolt Patterns, Sized and Torqued

cBallast Technical Sourcing · Hose clamps · issued 2026-10-18 · cballast.com/documents/hose-clamps-worm-drive-and-heavy-duty

Reading clamp ranges like the stocked 12–22 and 20–32 mm bands, where worm-drive stops being enough and heavy-duty bolt clamps begin, band width and material choices, the two-clamp rule on suction and fuel, and torque discipline including the re-torque nobody does.

Three patterns, honestly ranked

Pattern | Build | Right for |

Worm-drive | Perforated or embossed band, screw housing — the stocked ranges read straight: 12–22 mm, 20–32 mm, 25–40 mm | General water, air, drain duty on soft hose at modest pressure |

Heavy-duty bolt (GBS pattern) | Solid band, trunnion bolt — no perforations to bite the hose, far higher clamping force | Reinforced hose, charge-air, agricultural and suction duty |

T-bolt | Rolled-edge solid band, T-bolt and nut | Silicone hose, turbo/charge-air, anywhere even radial pressure and real torque both matter |

Band width scales with hose wall: 9 mm bands for light hose, 12+ mm where the wall is thick — a narrow band at high torque cheese-wires soft hose. Material marks matter in damp plant: W1 (zinc-plated steel) rusts indoors, W2/W3 mixed builds survive splashing, W4 (AISI 304 throughout) is the washdown default and W5 (316) the coastal/chemical one — same logic as the steel-grade guide.

Fitting discipline

Pick the range so the closed clamp sits mid-range on the installed hose — a clamp at its minimum has run out of band bite; at maximum, out of adjustment.

Position behind the fitting's barb/bead, square to the hose, housing accessible — a clamp seated on the smooth shank seals nothing.

Torque to the clamp maker's figure (single-digit Nm for small worm drives — a cordless driver on full is how housings strip), then re-torque after first thermal cycles: rubber cold-flows under the band, and the 24-hour re-torque is the cheapest leak prevention in the plant.

Two clamps, housings opposed, on suction lines, fuel and anything whose failure drains a tank — and never any worm-drive on steam assemblies, which take bolted steam fittings by rule.

Around 290 clamp line items are stocked across ranges, widths and W-grades, heavy-bolt and T-bolt patterns included — quoted within 24 hours by installed hose outside diameter (measure it clamped loose, not the nominal bore), width and material grade.

Frequently asked questions
What size hose clamp do I need for a 25 mm hose?Measure the hose's outside diameter over the fitting — a 25 mm bore hose with a thick wall can land near 35 mm OD — then choose the range whose midpoint hits it, like the stocked 25–40 mm band.When is a worm-drive clamp not enough?On reinforced or silicone hose, charge-air and suction duty, and anywhere the perforated band's bite or limited force shows — that is heavy-duty bolt and T-bolt territory, with solid bands and real clamping force.Why did a tight clamp start weeping a week later?Rubber relaxed under the band — cold flow after the first heat cycles. The fix is the scheduled re-torque a day into service, not a bigger clamp; chronic weepers also hint the clamp sits on the shank instead of behind the barb.What do W1 to W5 mean on hose clamps?Corrosion grades: W1 zinc-plated carbon steel, W2/W3 part-stainless builds, W4 all-304 stainless, W5 all-316. Indoors-dry tolerates W1; washdown plant standardises W4; coastal, chemical and marine atmospheres justify W5.Should fuel lines really have two clamps?Where the consequence of one letting go is a drained tank or a fire risk, doubled clamps with housings 180° apart are cheap redundancy — marine practice made it a rule, industrial practice does well to copy it on suction and fuel.

Part numbers and designations are those of the original manufacturers and are given for identification. cBallast is an independent supplier. © cBallast 2026 · cballast.com