Camlock Couplings — The Type Letters A to DP, Materials and Safe Use

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The cam-and-groove letter system decoded (which half is male, which carries the cam arms, which thread goes where), the two halves every connection needs, material choice from aluminium to 316 stainless, gasket compounds, safety pins — and the duties camlocks must never be given.

Six working letters, two dust letters

Cam-and-groove couplings pair a grooved adapter (male spigot) with a cam-armed coupler (female). The letter tells you which half you hold and what sits on its other end:

Type | Half | Other end |

A | Adapter | Female thread |

B | Coupler | Male thread — stocked: Type B SS316 1 3 |

C | Coupler | Hose shank — stocked: Type C SS316 1 3 |

D | Coupler | Female thread |

E | Adapter | Hose shank |

F | Adapter | Male thread |

DC / DP | Dust cap / dust plug | Seals open couplers/adapters — stocked: Type DP 316L 4 3 |

A working connection is always one adapter letter + one coupler letter of the same size: hose-to-hose is C+E, hose-to-tank-thread C+F or B+E, and so on. Sizes interchange across brands within the common pattern (EN 14420-7 / MIL-C-27487 lineage), but mixed sizes never mate — a 2 3 coupler will not close on a 3 3 adapter, and half-closed cam arms are the classic spill.

Material, gasket, pins

Aluminium for fuels and general transfer; 316 stainless (the stocked line) for chemicals, seawater and washdown; polypropylene for cheap aqueous chemistry; brass where sparks matter less than cost.

The gasket is the chemical decision: NBR for oils, EPDM for aqueous and hot wash, FKM for aggressive media, PTFE-encapsulated for the rest — same compound logic as the gasket guide, renewed as a consumable.

Safety pins through the cam arms (316L pin sets stocked) stop arms creeping open under vibration — cheap insurance that some sites mandate.

Where camlocks do not belong

Cam-and-groove is a gravity/low-pressure transfer fitting: not for compressed air or steam (arms that open under line pressure turn the hose into a flail — steam goes to boss-type fittings, air to claw or safety couplings), not for permanently pressurised process lines, and never valved shut against them to "hold" pressure. Within its lane — tankers, IBCs, pump-out, wash lines — nothing beats it for speed. Hose-end selection pairs with the hose references; around 50 camlock line items are stocked, quoted within 24 hours by type letter, size and material.

Frequently asked questions
Which two camlock types connect hose to hose?Type C (coupler with hose shank) on one end and Type E (adapter with hose shank) on the other — the C's cam arms close over the E's groove. Two C's or two E's cannot mate.Are camlock couplings from different brands compatible?Within the same size and the common dimensional pattern, yes — the cam-and-groove envelope is standardised enough that brands interchange. The exceptions are odd sizes (1/2 3 and some 8 3 patterns) where dimensions drift; test-mate before committing a fleet.Can I use camlocks on compressed air?No — line pressure plus a knocked cam arm equals a disconnection with the hose whipping. Air service belongs to claw or dedicated safety couplings; steam to bolted boss fittings. Camlocks are liquid-transfer fittings.What does a Type DP camlock do?It is the dust plug that seals an open coupler between uses (DC is the cap for adapters) — keeping grit off the gasket face and the cams. On cargo and chemical hoses they double as drip containment.Why does my camlock leak at the arms?Almost always the gasket — aged, swollen by the wrong medium, or missing its seat. Renew with the compound matched to the liquid; if arms no longer snap firmly over the groove, the coupling halves themselves are worn out.

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