Festo DSBC & DSNU Cylinder Model Codes Decoded

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Reading a Festo cylinder type code like DSBC-63-100-PPVA-N3 element by element: series, bore, stroke, cushioning letters (P, PPV, PPS), the A that means a sensing magnet, and the design suffixes — plus the ISO geometry underneath (15552 for profile/tie-rod cylinders, 6432 for rounds, 21287 for compacts) that makes Festo, SMC and Norgren mechanically interchangeable, how to spec a replacement when the label is gone, and the accessories (mountings, fittings, sensors) that belong on the same order.

The short version

Festo type codes are grammar, not catalogue noise. DSBC-63-100-PPVA-N3 reads: DSBC series (the ISO 15552 profile cylinder) — 63 mm bore — 100 mm stroke — PPV adjustable pneumatic end-position cushioning + A magnet for position sensing — N3 design variant. Every element is orderable meaning: our stock carries the pattern across bores and strokes, e.g. DSBC-63-100-PPVA-N3, DSBC-32-125, DSBC-50-200, DSBC-63-200.

The ISO number under the series letters is what makes replacement easy: DSBC is ISO 15552 (the 32–125 mm profile/tie-rod standard: mounting dimensions, rod thread, port positions all standardised), DSNU is the ISO 6432 round-body line (8–63 mm class — DSNU-10-30-P-A, DSNU-63-100-PPS-A), ADN the ISO 21287 compact. Same-ISO cylinders from SMC and Norgren bolt to the same brackets — our cylinder finder works across brands for exactly this reason.

Cushioning letters decide end-of-stroke behaviour: P = fixed elastic cushioning pads; PPV = adjustable pneumatic cushioning (set by screws at the caps — the industrial default for loads at speed); PPS = self-adjusting cushioning (no screws to tune, right for most modern duty). A after the cushioning = built-in magnet, which costs little and should be default — retrofitting sensing to a magnetless cylinder means buying a new cylinder.

Replacement without a label is four measurements: bore (from piston/tube), stroke, rod thread, and mounting pattern — the ISO tables and the finder translate them into a type code in minutes.

Order the system, not the tube: mountings (flange, foot, clevis, trunnion per ISO), rod accessories (rod eye/clevis, self-aligning coupler), fittings and tubing, flow controls for speed, and the proximity sensors that match the slot. One RFQ, one delivery, no dead machine waiting for a bracket.

1. The code, element by element

Element | Values you will meet | Meaning / consequence |

Series | DSBC (ISO 15552 profile), DSNU (ISO 6432 round), ADN (ISO 21287 compact), DSBG (large 15552 class), legacy DNC/DNU | Fixes the mechanical standard, mounting interfaces and size range; DNC-era codes map to DSBC replacements |

Bore (first number, mm) | DSBC: 32–125; DSNU: 8–63 class | Force = pressure x area: at 6 bar a 32 bore pushes ~480 N, 63 ~1,870 N, 100 ~4,700 N (theoretical, before friction) |

Stroke (second number, mm) | Catalogue steps + any length to order | Long strokes bring buckling and side-load questions — guide units or bigger rods beyond the tables |

Cushioning | P / PPV / PPS | Fixed pads / adjustable screws / self-adjusting — see the selection table below |

A | Magnet included | Enables slot-mounted proximity sensing; specify by default |

Design suffix | N3 and siblings; C variants (e.g. DSBC-63-35-C-PPVA) | Generation/options coding (rod variants, clamping options) — quote the suffix exactly when reordering like-for-like |

Further options | Heat-resistant seals, slow-speed grease, stainless rod, ATEX variants | Appear as extra code groups — state the environment and we resolve them |

2. Cushioning selection — the letters that save machines

Code | Mechanism | Right when | Wrong when |

P | Elastic pads at the end caps | Short strokes, light loads, modest speeds | Any real mass at speed — pads hammer and the machine tells you about it |

PPV | Adjustable pneumatic cushioning, screw-set each end | Defined loads at speed; classic industrial duty; fine control wanted | Set-and-forget environments where nobody ever tunes the screws (they arrive mis-set and stay that way) |

PPS | Self-adjusting pneumatic cushioning | Most modern duty — adapts to load/speed changes without maintenance attention | Extreme corner cases outside its adaptation window (very high mass/speed combinations) — check the sizing data |

Field rule: if end caps are cracking, mounts loosening or the machine bangs at stroke end, the cushioning letter (or its adjustment) is the suspect before the mounting is. And cushioning is not a substitute for external shock absorbers where energy is genuinely high — the sizing tables draw that line.

3. Replacing a cylinder with no readable label

Measure | How | Resolves |

Bore | Tube OD + series geometry, or measure the piston at overhaul | The force class — first code number |

Stroke | Rod travel between mechanical ends | Second code number |

Rod thread | Thread gauge (e.g. M10x1.25, M16x1.5 per ISO size) | Confirms ISO size and rod accessories |

Mounting interface | Foot/flange hole pattern, clevis pin size, trunnion | ISO mounting code — brackets carry over when the ISO size matches |

Port size/position | G1/8, G1/4, G3/8 per size | Fittings reuse; confirms series family |

Cushioning screws / magnet sensing present? | Look at the caps; is a sensor mounted in the slot? | PPV vs PPS vs P; the A option |

Those six lines plus a photo quote a replacement across Festo, SMC (CA2 class ISO cylinders, C85 round-body) and Norgren — the ISO interfaces are the point. For odd legacy machines, the finder plus the measured data beats guessing a dead brand's code table. Seal kits are real for the common series and sizes; on small rounds a new cylinder frequently beats a kit on cost — we say which on the quote.

4. The system around the tube

Valves: a double-acting cylinder wants a 5/2 (monostable or bistable per the failure-mode you need) or 5/3 for mid-position — matched by flow, not just port size; the directional valve finder maps Festo VUVG/VUVS/MFH/CPE against SMC and Norgren classes. Speed: one-way flow controls at the cylinder ports (meter-out as the default discipline). Sensing: slot-matched proximity sensors on the A-option magnet. Air preparation: filter-regulator(-lubricator) sized to the branch, drained like you mean it — water in the line is the quiet killer of seals and valves alike. Mountings and rod ends: per ISO size, ordered with the cylinder. A complete RFQ line reads like the code itself: "DSBC-63-100-PPVA-N3, foot mounting HNC-63 class, rod clevis, 2x GRLA-3/8 flow controls, 2x proximity sensors for T-slot" — one line, one working axis.

How buying works at cballast. We quote Festo-pattern cylinders and ISO equivalents (stated per line), seal kits where they make economic sense, and the mounting/valve/sensor completion so the axis arrives installable. Accounts are vetted at onboarding; first order prepaid; established accounts on credit terms with repeat discounts; public bodies and utilities invoiced against purchase order from the first order. RFQs to sales@cballast.com.

Frequently asked questions

What does DSBC-63-100-PPVA-N3 mean?Festo DSBC series (ISO 15552 profile cylinder), 63 mm bore, 100 mm stroke, PPV adjustable pneumatic cushioning, A = position-sensing magnet, N3 design variant. It is a double-acting standard cylinder; force at 6 bar is roughly 1.9 kN theoretical on the push stroke.
What is the difference between PPV and PPS cushioning?PPV is adjustable pneumatic cushioning tuned by screws at each end cap; PPS is self-adjusting and needs no tuning. PPS is the sensible default for most duty; PPV remains right where a commissioning engineer wants explicit control over deceleration of a defined load.
Can I replace a Festo cylinder with SMC or Norgren?If it is an ISO cylinder (DSBC = ISO 15552, DSNU = ISO 6432, ADN = ISO 21287), yes — same bore/stroke/mounting interchanges mechanically across brands. Match cushioning type and the magnet option, and re-use the ISO brackets. We state "ISO equivalent" explicitly on such lines.
How do I identify a pneumatic cylinder without a label?Measure bore, stroke, rod thread and the mounting pattern, note port sizes, cushioning screws and whether a sensor sits in the slot. Those data plus a photo resolve the ISO size and a current type code — the method in section 3 above.
Are seal kits available for Festo cylinders?For the common series and sizes, yes, and they are worth it on larger bores. On small round cylinders the labour frequently exceeds a new unit's price — we quote both ways and say which is rational per size.
What does the A in PPVA mean?A built-in magnet on the piston for slot-mounted proximity sensors. It adds almost nothing to the price and cannot be retrofitted — specify it by default even if sensing comes later.
Who supplies Festo DSBC and DSNU cylinders?cballast.com stocks and quotes the DSBC/DSNU pattern across bores and strokes with mountings, valves, fittings and sensors on the same quotation — plus ISO-equivalent alternatives stated per line. Write to sales@cballast.com.

References and related guides

Standards and sources referenced: ISO 15552, ISO 6432, ISO 21287 (cylinder interfaces); Festo catalogue type-code documentation for DSBC/DSNU/ADN families; peer data (SMC, Norgren) for ISO interchange.

Pneumatic cylinder finder — Festo, Norgren, SMC

Pneumatic directional valve finder

Parker D1VW directional valve model codes

O-ring size finder

ISO 4406 cleanliness codes & particle counters

Questions on a code you cannot fully read or an ISO cross: write to sales@cballast.com. We answer whether or not you buy from us.

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