

PRODUCT BROCHURE | ISO 5167-6

Wedge Flow Meters

Open-passage differential-pressure solutions for demanding single-phase service



Engineered, not guessed

Standard-coefficient and individually calibrated configurations are selected against the actual Reynolds-number, fluid and installation envelope.

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Why a Wedge Meter?

The wedge restriction leaves a segment-shaped open passage through the meter body. This geometry can reduce accumulation risk where conventional small openings are undesirable, while producing a differential-pressure signal compatible with established transmitters, manifolds and compensation systems.

Capability	Shizhong engineering approach
Standard basis	ISO 5167-1:2022 and ISO 5167-6:2022
Standard range	D 50–600 mm; h/D 0.2–0.6; β 0.377–0.791
Reynolds range	1×10^4 to 9×10^6 for the uncalibrated ISO coefficient
Discharge coefficient	$C = 0.77 - 0.09\beta$
Uncalibrated C uncertainty	4% relative expanded uncertainty, $k = 2$
Rangeability	10:1 typical; up to 30:1 with dual-range review
Calibrated designs	Project-specific performance per individual certificate

Suitable application profile

- Viscous single-phase liquids with a defined ReD range.
- Contaminated or solids-bearing service requiring an open passage.
- Corrosive, abrasive or heat-traced duties with project-specific materials.
- Retrofit or packaged systems requiring integrated or remote DP measurement.

Application boundary

Two-phase flow, ReD below 10,000, non-standard geometry, or a lower uncertainty target requires project-specific validation and usually individual calibration.

Three Product Configurations



Integrated wedge flow meter — compact transmitter and valve assembly.

Integrated

A compact assembly combining the primary element, pressure connections, valve manifold and DP transmitter. Best for installations where process temperature, vibration and access permit direct mounting.

Remote-Mounted and Multi-Connection Options



Remote-mounted



Multiple pressure connections

Remote-mounted

Separates the transmitter from high process temperature, vibration or inaccessible piping. Impulse lines or remote seals are engineered for phase, static head and environmental exposure.

Multiple pressure connections

Isolation, flushing, redundant or multi-range arrangements are available when specified by the P&ID. Final valve and pressure-tap quantity follows the approved project drawing.

Image note

Product images show configuration concepts. Final flange, material, valve, transmitter and connection details follow the approved data sheet and drawing.

Mechanical and Instrument Options

Option group	Available engineering choices
Body and connection	Welded or flanged body; project piping code, rating and facing
Pressure taps	Wall taps, large-bore connections or diaphragm seals
Mounting	Integrated manifold/transmitter or remote transmitter
Thermal	Insulation or jacketed/heat-traced design for viscosity or solidification control
Materials	Carbon steel, stainless steel or project-approved corrosion-resistant alloys
Wear protection	Hard-facing or replaceable element subject to geometry and calibration review
Transmitter	4–20 mA, HART or project protocol; hazardous-area and IP requirements
Calibration	Individual wet calibration over the intended ReD range; witness optional
Documentation	MTR, dimensional report, NDE, pressure/leak test, calibration and IOM

Pressure-loss estimate

ISO 5167-6 provides $\Delta\omega = (1.09 - 0.79\beta)\Delta p$ as an estimate of permanent primary-element pressure loss. The complete piping pressure-drop budget should include all valves, fittings and elevation effects.

Rangeability

The DP square-root relationship means 10:1 flow range uses roughly 100:1 DP range. Wider ranges require careful review of zero stability, process noise, static-pressure effects and calibration; a dual-range arrangement can be considered up to 30:1.

Installation and Calibration Assurance

ISO straight-run basis

Upstream disturbance	Minimum upstream
Single 90° bend	7D
Two 90° bends in the same plane	21D
Three 90° bends under the listed orientation	22D
Partially closed valve	15D
Concentric reducer / expander	7D
Tee	7D or 8D, depending on flow path

Downstream fittings should be at least 6D away under the standard table basis. Installation drawings are reviewed against the exact disturbance orientation.

Individual calibration

- Covers the entire intended ReD range; no unsupported extrapolation.
- Applies only to the calibrated meter and pressure-tap pair.
- Bidirectional use is calibrated in each direction.
- Certificate reports differential pressure, ReD, C, uncertainty and fitted relationship.

Accuracy language

Uncalibrated ISO 5167-6 discharge-coefficient uncertainty: 4% ($k = 2$). Calibrated performance is project-specific and governed by the individual certificate.

Start Your Selection

Send us these project data

Process	Mechanical	Instrumentation
Fluid and phase	Pipe ID and material	DP range and static pressure
Min/normal/max flow	Connection and rating	Output/protocol
Operating/design P/T	Installation orientation	Hazardous area / IP
Density and viscosity	Available straight runs	Calibration/uncertainty target
Solids/corrosion	Allowable pressure loss	Inspection and documents

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Jinan Shizhong Automation Instruments Co., Ltd.*Final supply is governed by the approved quotation, data sheet, drawings and certificates.*