



Insurance for Your Process Equipment and Instruments



The tee strainer takes its name from the T-shaped profile of its body. It strains low-solids duties where space is constrained, and unlike most other patterns it can be mounted in vertical or horizontal pipe and configured for right-angled runs, offering both 90° and 180° flow paths.

The screen is convoluted rather than plain, which gives a greater effective straining area within the same envelope and leaves the flow path unrestricted. The result is very low pressure loss and longer intervals between cleanings.

In the larger sizes the tee strainer can be an economical and functionally better alternative to a Y strainer – particularly on condensate and boiler feed pump suction, where pressure drop is the governing constraint.



Fabricated tee strainer with bolted screen cover. The T-shaped body carries a convoluted screen and mounts vertically, horizontally or at a right angle.

CONSTRUCTION AND FLOW PATH

FABRICATED

Built to drawing from plate and pipe throughout the range. Welding to ASME Section IX, NDE to code.

FLOW PATH

Straight through at 180° or right-angled at 90°, in vertical, horizontal or right-angle orientation – so the strainer follows the pipe rather than the pipe following the strainer.

STANDARD FEATURES

- Compact body for constrained spaces
- Convoluted screen – large straining area, unrestricted flow
- Low pressure drop
- Vertical, horizontal or right-angle orientation
- 90° and 180° flow paths available
- End connections flanged, butt weld or threaded
- Perforations from 1/16" to 1/2"
- Welding carried out to ASME Section IX
- NDE carried out to code requirements

The tee strainer is fabricated throughout its range, so the size and rating band is continuous rather than split between a casting and a weldment.

FABRICATED TEE STRAINERS

END CONNECTION	FROM	TO	MAXIMUM PRESSURE RATING
Flanged, butt weld and threaded	0.5" (15 mm)	78"+ (1980 mm+)	Class 2500 lb+

END CONNECTION STANDARDS

END CONNECTION	GOVERNING STANDARDS
Flanged	ANSI B16.5 · ANSI B16.47 Series A (MSS SP 44) · Series B (API 605) · AWWA C207 Class D & E · BS 10 · BS 4504 · EN 1092 · DIN · NFE · JIS · ISO
Butt weld	ANSI B16.25 · Sch 40 to Sch 100 and special schedules

Sizes and ratings shown are the standard offering. Consult Hydrotherms for other end connections, standards and combinations.

Body material is selected against the process fluid, temperature, pressure and corrosion duty. The specification that governs depends on the product form – a cast body, a forged component and a fabricated body are each written to a different standard for the same alloy.

MATERIAL	CAST	FORGED	PLATE / PIPE
Carbon steel	A216 WCB	A105	A516 Gr 70 / A106 Gr B
Low-temperature CS	A352 LCB / LCC	A350 LF2	A516 Gr 70 (impact tested)
Stainless steel 304 / 304L	A351 CF8 / CF3	A182 F304 / F304L	A240 304 / 304L
Stainless steel 316 / 316L	A351 CF8M / CF3M	A182 F316 / F316L	A240 316 / 316L
Stainless steel 904L	—	A182 F904L	A240 904L
Duplex 2205	A890 Gr 4A	A182 F51	A240 S31803 / S32205
Super duplex 2507	A890 Gr 5A / 6A	A182 F53 / F55	A240 S32750 / S32760
Alloy 20	A351 CN7M	B462 N08020	B463 N08020
Monel 400	A494 M35-1	B564 N04400	B127 N04400
Inconel 625	A494 CW6MC	B564 N06625	B443 N06625
Hastelloy C276	A494 CW12MW	B564 N10276	B575 N10276
Cast iron	A126	—	—
Bronze	B62	—	—

Specifications shown are those governing each product form. Alloy steels, engineered PVC and other grades are supplied to customer specification. Screen and internal materials are selected independently of the body.

SCREENS AND INTERNALS

Screens are stainless steel as standard, convoluted for area, with perforations from 1/16" to 1/2". Magnetic inserts and special screens are supplied to the duty.

SOUR SERVICE

Where hydrogen sulphide is present, NACE MR0175 / ISO 15156 compliance is mandatory. Material selection, hardness limits, heat treatment and alloy composition are controlled across all wetted parts, and the strainer is certified to EN 10204 Type 3.1 or Type 3.2.

The strainer is configured to the line, not the other way round. Everything below is supplied to order.

COVER AND ACCESS

- Quick-opening hinged or davit cover assembly
- Bolted cover

SCREEN AND ELEMENT

- Convoluted screen, perforations 1/16" to 1/2"
- Special screens to duty
- Magnetic inserts
- Special gaskets

DIFFERENTIAL PRESSURE

- DP tappings with gauge
- Differential pressure gauges and switches

VALVES

- Pressure relief valves
- Blowdown valves

BODY AND CONFIGURATION

- Straight-through or right-angle configuration
- Steam jacket for highly viscous fluids
- Jacketed tee strainers
- ASME code construction

FINISH

- Special finishes or linings

WHAT TO STATE WITH THE ENQUIRY

- Line size, pressure class and the governing flange standard
- Fluid, operating temperature and design temperature
- Flow rate, and the pressure drop that can be allowed
- Particle size to be retained, and the expected solids loading
- End connections required
- Body and element materials, or the specification that governs them
- How the element will be cleaned, and how often
- Certification and third-party inspection required

A strainer is a pressure-containing part. What matters is not that it was made carefully but that it can be shown to have been — every claim below is evidenced on the documentation package that ships with the strainer.

CARRIED OUT ON EVERY STRAINER

Hydrostatic test	Every strainer is hydrostatically tested at 150% of design pressure, to ANSI B16.34 and ASME Section III.
Welding qualification	All welding procedures — WPS and PQR — and all welders are qualified to ASME Boiler and Pressure Vessel Code Section IX.
Non-destructive examination	NDE to code requirements, executed in house by ASNT Level II and Level III personnel. Radiography by X-ray and Iridium-192.
Material verification	100% verification against Mill Test Certificates, with individual heat-number tracking. Records retained on file for five years.
Quality plan	A QC plan written around strainer failure modes — the screen, the cover joint and the body weld — rather than a generic works procedure.

CONDUCTED WHEN REQUESTED

- Air / pneumatic testing
- Pressure drop testing
- Helium leak test
- Hydrostatic burst test
- Shock test
- Vibration test
- Surge test
- Ferroxyl test
- Radiographic examination
- Magnetic particle examination
- Dye penetrant examination
- Ultrasonic testing
- Strain-gauge testing
- Brittle (coating) lacquer testing
- Cryogenic testing
- Tensile tests
- Hardness tests
- Impact test
- Manipulating tests
- Sulfide stress cracking test (SSC)
- Hydrogen induced cracking test (HIC)

Material certification to EN 10204 Type 3.1 is supplied as standard on every Hydrotherms strainer. Nothing below is charged as an extra unless it is marked as available on request.

MATERIAL CERTIFICATION

EN 10204 Type 3.1 Supplied as standard on all Hydrotherms strainers. Certified by the manufacturer against the order, with test results from the material used.

EN 10204 Type 3.2 Available on request. Verified and countersigned by an independent third-party inspector as well as the manufacturer.

CODES AND STANDARDS APPLIED

STANDARD	APPLIED TO
ANSI B16.34	Pressure testing
ASME Section III	Pressure testing
ASME Section IX	Welding and welder qualification
ASME B16.5 / B16.47	Flanged end connections
EN 10204	Material certification
NACE MR0175 / ISO 15156	Sour service
ASNT	NDE personnel qualification

THIRD-PARTY INSPECTION

Extensive experience delivering equipment released by Lloyd's Register, Bureau Veritas, TÜV and Engineers India Limited. Nominate your inspection authority with the enquiry.

Visit **www.hydrotherms.in** to download the complete quality control manual.

Protection through reliable performance

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