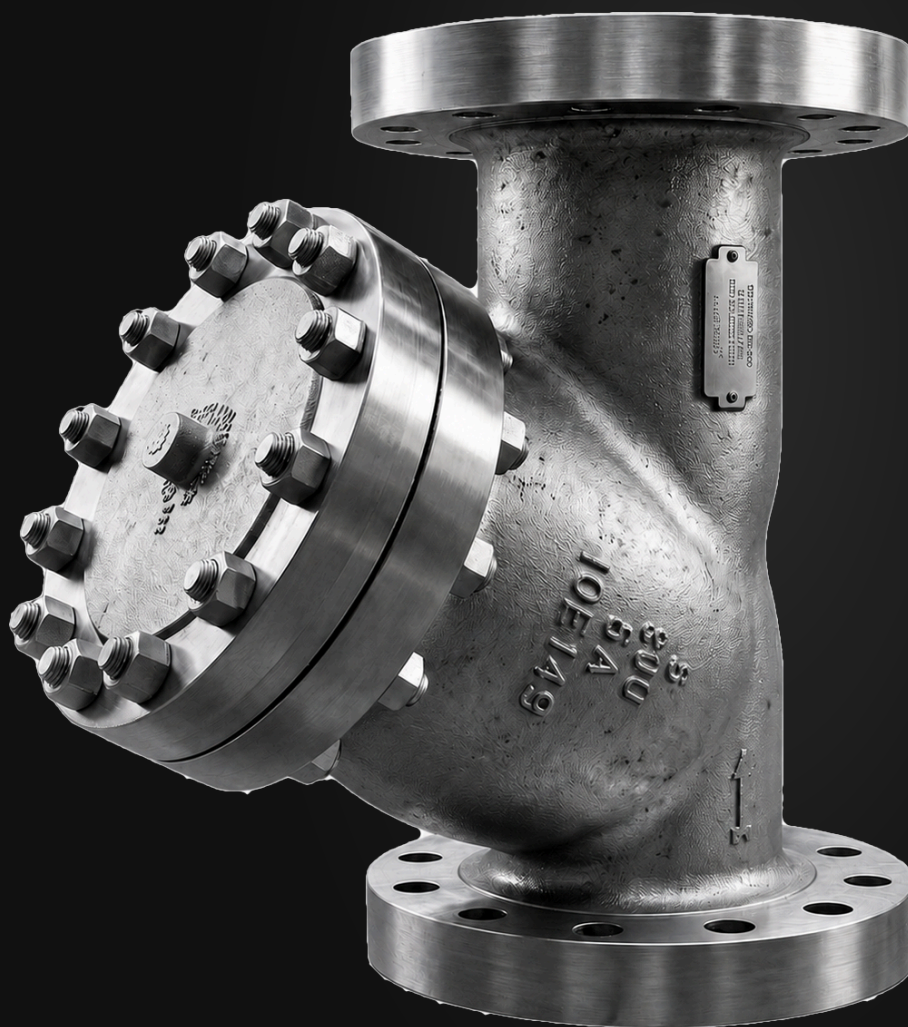




Insurance for Your Process Equipment and Instruments



Y strainers are a cost-effective solution for the mechanical removal of unwanted solids from liquid, gas or steam lines by means of a perforated or wire mesh straining element, where the amount of solids to be removed is small and where frequent clean-out is not required.

They are installed in either horizontal or vertical pipelines to protect downstream mechanical equipment – condensers, heat exchangers, pumps, compressors, control valves, flow meters, spray nozzles, turbines and steam traps – from the detrimental effect of sediment, rust, pipe scale and other extraneous debris.

Y strainers are most often installed in gaseous services such as steam, air, nitrogen and natural gas, and are also used for liquids. For applications with heavier dirt loading a Y strainer can be fitted with a blow-off connection, which permits the screen to be cleaned without removing it from the strainer body – useful where shutdown is not practical.



Cast flanged Y strainer with bolted screen cover and drain plug. Cast and fabricated construction are both covered by this catalogue.

CONSTRUCTION

CAST

An integrally cast housing. The economical choice wherever a pattern exists for the size, rating and material. Compact, with the lowest cost per unit at repeat quantities.

FABRICATED

Built to drawing from plate and pipe where no casting exists for the size, the rating or the material – large bore, exotic alloy, or a one-off geometry. Welding to ASME Section IX, NDE to code.

STANDARD FEATURES

- Integrally cast housing and fabricated heavy-duty construction
- End connections – flanged, butt weld, socket weld and screwed
- Welding carried out to ASME Section IX
- NDE carried out to code requirements
- Bolted or threaded covers, with drain plug
- Standard stainless steel screens, 20 to 400 mesh
- Suitable for liquid, gas or steam service

Y strainers are supplied in cast and fabricated construction. The two overlap deliberately: where a casting exists for the size, rating and material it is normally the economical route; beyond that, the same duty is met by a fabricated body built to drawing.

CAST Y STRAINERS

END CONNECTION	FROM	TO	MAXIMUM PRESSURE RATING
Flanged	0.5" (15 mm)	20"+ (500 mm+)	API 10,000 lb
Butt weld	0.5" (15 mm)	14"+ (350 mm+)	API 10,000 lb
Socket weld	0.5" (15 mm)	2"+ (50 mm+)	API 10,000 lb
Screwed	0.5" (15 mm)	2"+ (50 mm+)	ANSI Class 1500 lb

FABRICATED Y STRAINERS

END CONNECTION	FROM	TO	MAXIMUM PRESSURE RATING
All end types	0.5" (15 mm)	30"+ (750 mm+)	Class 2500 lb+ (172 BarG+)

END CONNECTION STANDARDS

END CONNECTION	GOVERNING STANDARDS
Flanged	ANSI B16.5 · ANSI B16.47 Series A & B · BS 10 · BS 4504 (DIN, PN) · JIS
Butt weld	ANSI B16.25 · Sch 40 to Sch 100 and special schedules
Socket weld	ANSI B16.11
Screwed	ANSI B1.20.1 · BS 21 · DIN 259 · DIN 2999

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

CHOOSING BETWEEN THE TWO

A casting is normally the economical route wherever a pattern exists for the size, rating and material — it is compact and the cost per unit falls with quantity. Beyond that point the same duty is met by a fabricated body built to drawing: large bore, high rating, exotic alloy, or a geometry no pattern covers.

Neither is the lesser option. Both are welded to ASME Section IX, examined to code, hydrostatically tested at 150% of design pressure and certified to EN 10204 Type 3.1. Send the line size, rating, material and service and Hydrotherms will state which route applies.

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. Monel, Hastelloy C and other alloys are available, as are magnetic inserts and heavy-duty wedge wire.

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.

BLOWDOWN AND DRAIN

- Tapped and plugged blow-off connection on the screen cover
- Blow-down valve fitted, to clean the element in line without breaking the joint
- Blow-off connection screwed, socket weld or flanged
- Drain plug or drain valve

DIFFERENTIAL PRESSURE

- Gauge taps, plugged, on the inlet and the outlet
- Differential pressure gauges, switches and transmitters
- Instrument manifolds and capillary tubing

STRAINING ELEMENT

- Perforations 1/32" (0.033) to 1/2"
- Mesh 20 to 400
- Reinforced element – perforated sheet lined with wire mesh, giving fine straining with the strength of perforate
- Wedge wire elements for heavy solids loading and high differential
- Heavier gauge and double-reinforced elements
- Magnetic inserts, to trap fine ferrous particles the screen passes
- Element materials – 316, Monel, Hastelloy C276, Alloy 20, duplex, titanium

COVER AND CLOSURE

- Bolted cover, standard
- Screwed cap on small bore
- Swing-bolt, clamp or hinged cover where cleaning is frequent
- Cover gasket to service – non-asbestos, PTFE, graphite or spiral wound

END CONNECTIONS

- Flange facing – raised face, flat face or ring-type joint
- Flange position – inline, offset, rotated or angled
- Butt weld, socket weld and screwed ends
- Additional ancillary connections – flanged, butt weld, valved or plugged

COATINGS AND LININGS

- Epoxy paint, standard on carbon steel bodies
- NSF/ANSI and FDA-approved epoxy for potable water
- Galvanizing
- Internal linings and special external finishes

SERVICE SPECIFIC

- Steam jacketing for viscous or crystallising media
- NACE MR0175 / ISO 15156 sour service
- Cryogenic service
- Lifting lugs on large fabricated bodies
- Tag plates and nameplates to project specification

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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