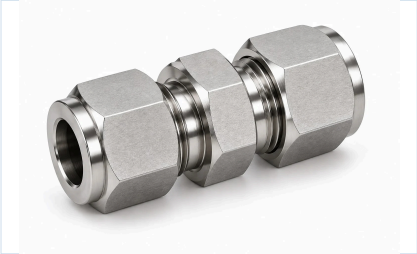
High & Medium Pressure Fittings

Medium-Pressure Gaugeable & Cone-and-Thread Fittings Technical Catalogue

Technical data, product configurations, materials and standards



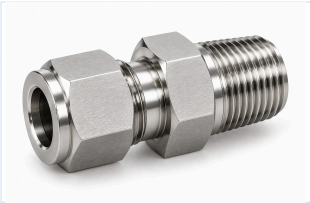
TSI-03-001



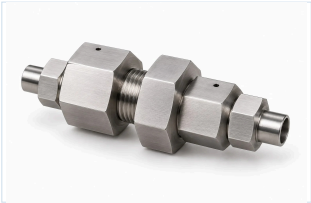
TSI-03-017



TSI-03-021



TSI-03-004



TSI-03-025



TSI-03-032



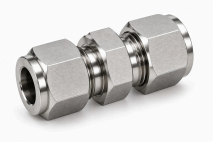
TSI-03-029

HIGH PERFORMANCE | WIDE MATERIAL RANGE | SEVERE SERVICE APPLICATIONS | GLOBAL SOURCING NETWORK | ENGINEERING SUPPORT

sales@tsipetroengineering.co.uk info@tsipetroengineering.co.uk www.tsipetroengineering.com

Medium-pressure gaugeable fittings and cone & thread fittings, organized by TSI reference code for specification and quotation.

TSI-03 PRODUCT CODE MATRIX	HIGH & MEDIUM PRESSURE FITTINGS



001 - 008

Core gaugeable straight / adapter fittings



009 - 016

Closures, adapters and elbows



017 - 020

Tees, crosses and tube adapters



021 - 024

Cone & thread core fittings



025 - 028

Bulkhead, cap, plug and collar



029 - 032

Gland, anti-vibration, safety head and line filter

TECHNICAL BASIS - TSI-03	GENERAL SPECIFICATION BASIS
FAMILY SCOPE	Gaugeable medium-pressure fittings plus cone & thread fittings and accessories.
STANDARD MATERIAL	316 stainless steel baseline.
SPECIAL MATERIALS	Selected UNS S32750 and UNS N06625 configurations; exact availability is product-specific.
PRESSURE BASIS	316 SS FK: up to 20,000 psig. Cone & thread: MP up to 20,000 psig / HP up to 60,000 psig. Special-alloy ratings differ.
SIZE BASIS	FK family: 1/4 to 3/4 in, product-specific. C&T MP: 1/4 to 1 1/2 in; HP: 1/4 to 9/16 in.
CERTIFICATION	EN 10204 3.1 where available; NACE MR0175 / ISO 15156 options on selected products.

Core Medium-Pressure Gaugeable Fittings

Codes TSI-03-001 to TSI-03-008



TSI-03-001

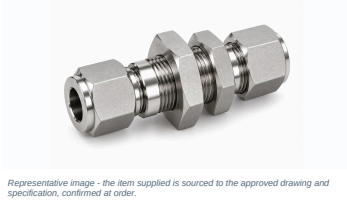
Union



Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

TSI-03-002

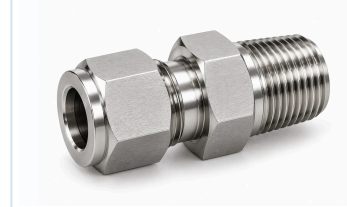
Reducing Union



Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

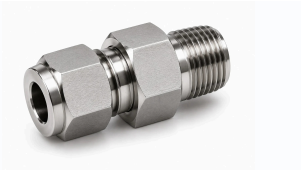
TSI-03-003

Bulkhead Union



TSI-03-004

Male Connector - NPT



Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

TSI-03-005

Male Connector - SAE/MS Heavy-Duty (STH)



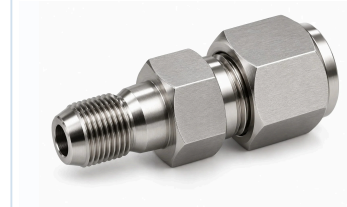
TSI-03-006

Female Connector - NPT



TSI-03-007

Cone & Thread Tube Nipple (Collar-Style)



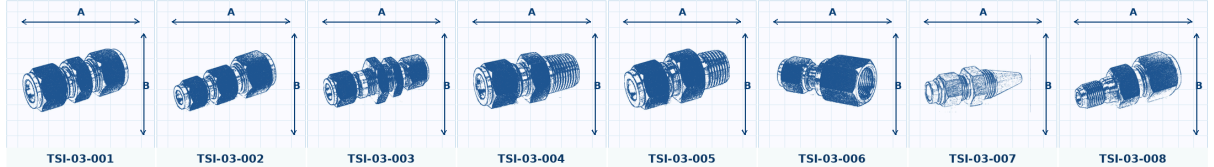
TSI-03-008

Cone & Thread Adapter - Male, One-Piece

TECHNICAL DATA - CORE MEDIUM-PRESSURE GAUGEABLE FITTINGS

Code	Product	Connection / Configuration	Size / Range	Pressure Basis	Material / Notes
001	Union	FK tube x FK tube	1/4, 3/8, 1/2, 9/16, 3/4 in	20,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation.
002	Reducing Union	Reducing FK tube x FK tube	3/8x1/4; 1/2x1/4; 1/2x3/8; 9/16x1/2; 3/4x1/2 in	20,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation.
003	Bulkhead Union	FK tube x FK tube through panel	1/4, 3/8, 1/2, 9/16, 3/4 in	20,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation.
004	Male Connector - NPT	FK tube x male NPT	1/4, 3/8, 1/2, 9/16, 3/4 in	15,000 psig; 10,000 psig at 3/4 in	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. Rating governed by NPT thread, not tube OD.
005	Male Connector - SAE/MS Heavy-Duty (STH)	FK tube x SAE/MS straight-thread boss	1/4, 3/8, 1/2 in	9,137 psig for 1/4 and 3/8; 1/2 confirmed at order	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. 1/2 in size is available; its working pressure is confirmed at order.
006	Female Connector - NPT	FK tube x female NPT	1/4, 3/8, 1/2, 3/4 in	15,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. NPT 1/4 or 1/2 in thread; no 9/16 in or 1 in tube OD.
007	Cone & Thread Tube Nipple (Collar-Style)	FK tube x collar-style cone-and-thread	1/4, 3/8, 1/2, 3/4 in	20,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. Left-hand thread collar; no 9/16 in size offered.
008	Cone & Thread Adapter - Male, One-Piece	FK tube x male cone-and-thread adapter	1/4, 3/8, 1/2, 9/16, 3/4 in	20,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation.

REPRESENTATIVE DIMENSIONAL REFERENCES



Note: Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

Adapters, Closures & Elbows

Codes TSI-03-009 to TSI-03-016



TSI-03-009
Cone & Thread Adapter - Female



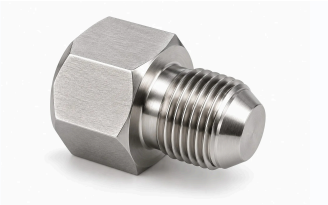
TSI-03-010
Port Connector



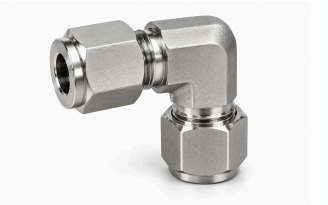
TSI-03-011
Reducer



TSI-03-012
Cap



TSI-03-013
Plug

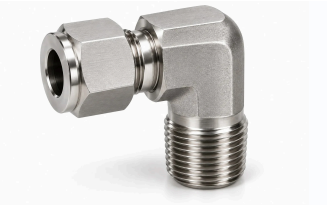


TSI-03-014
90° Elbow - Union



Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

TSI-03-015
90° Elbow - Reducing Union

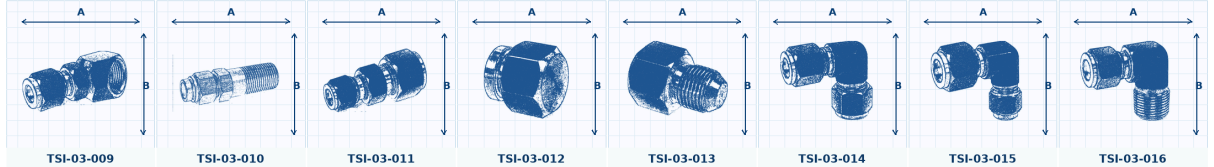


TSI-03-016
90° Elbow - Male NPT

TECHNICAL DATA - ADAPTERS, CLOSURES & ELBOWS

Code	Product	Connection / Configuration	Size / Range	Pressure Basis	Material / Notes
009	Cone & Thread Adapter - Female	FK tube x female cone-and-thread adapter	1/4, 3/8, 1/2, 9/16, 3/4 in	20,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. Glands/collars ordered separately.
010	Port Connector	FK tube x port-connector stem	1/4, 3/8, 1/2, 9/16, 3/4 in	20,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. Furnished with nut and preswaged ferrules.
011	Reducer	FK reducer / stem configuration	1/4x3/8; 1/4x1/2; 3/8x1/2; 1/2x3/8; 1/2x3/4; 9/16x3/4; 3/4x9/16	20,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. Furnished with nut and preswaged ferrules.
012	Cap	FK fitting cap	1/4, 3/8, 1/2, 9/16, 3/4 in	20,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation.
013	Plug	FK fitting plug	1/4, 3/8, 1/2, 9/16, 3/4 in	20,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation.
014	90° Elbow - Union	FK tube x FK tube, 90°	1/4, 3/8, 1/2, 9/16, 3/4 in	20,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation.
015	90° Elbow - Reducing Union	Reducing FK tube x FK tube, 90°	1/4x3/8; 1/4x1/2; 3/8x1/2; 1/2x9/16; 1/2x3/4	20,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation.
016	90° Elbow - Male NPT	FK tube x male NPT, 90°	1/4, 3/8, 1/2, 9/16, 3/4 in	15,000 psig; 10,000 psig at 3/4 in	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. Rating governed by NPT thread, not tube OD.

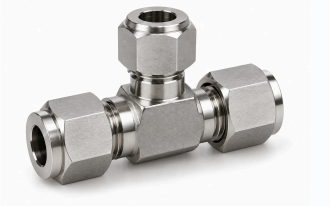
REPRESENTATIVE DIMENSIONAL REFERENCES



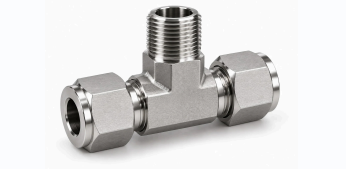
Note: Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

Tees, Crosses & Tube Adapters

Codes TSI-03-017 to TSI-03-020



TSI-03-017
Tee - Union

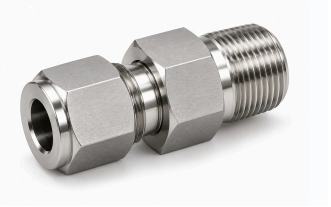


Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

TSI-03-018
Tee - Male Branch NPT (TTM)



TSI-03-019
Cross - Union

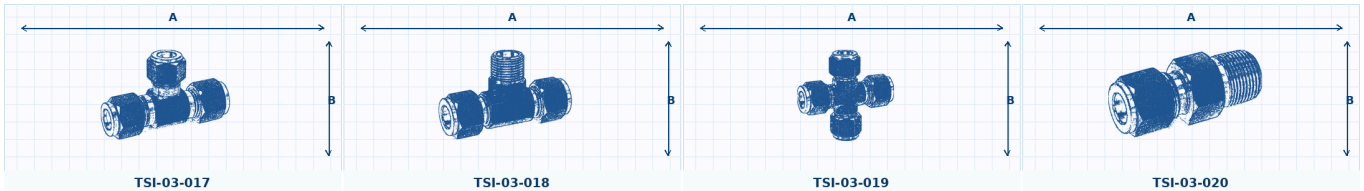


TSI-03-020
Tube Adapter - Male NPT

TECHNICAL DATA - TEES, CROSSES & TUBE ADAPTERS

Code	Product	Connection / Configuration	Size / Range	Pressure Basis	Material / Notes
017	Tee - Union	Three FK tube ends	1/4, 3/8, 1/2, 9/16, 3/4 in	20,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation.
018	Tee - Male Branch NPT (TTM)	Two FK tube ends + male NPT branch	1/4, 3/8, 1/2, 3/4 in	15,000 psig; 10,000 psig at 3/4 in	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. No 9/16 in or 1 in tube OD offered.
019	Cross - Union	Four FK tube ends	1/4, 3/8, 1/2 in	20,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. 9/16 in, 3/4 in and 1 in not offered.
020	Tube Adapter - Male NPT	Tube-adapter end x male NPT	1/4, 3/8, 1/2, 9/16, 3/4 in	15,000 psig; 10,000 psig at 3/4 in	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. Furnished with nut and preswaged ferrules; rating governed by NPT thread.

REPRESENTATIVE DIMENSIONAL REFERENCES



Note: Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

Cone & Thread Core Fittings

Codes TSI-03-021 to TSI-03-024



Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

TSI-03-021

Elbow (Cone & Thread)



Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

TSI-03-022

Coupling / Union (Cone & Thread)



Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

TSI-03-023

Tee (Cone & Thread)



Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

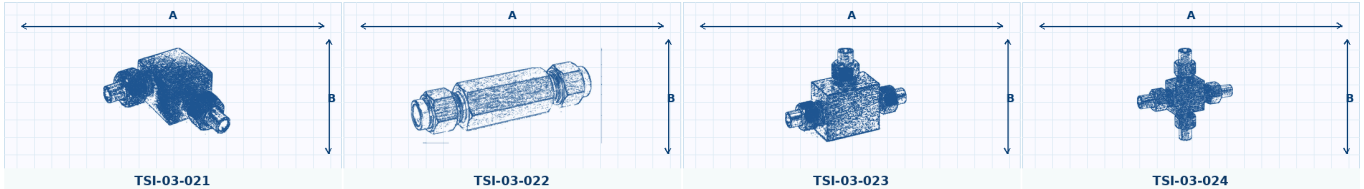
TSI-03-024

Cross (Cone & Thread)

TECHNICAL DATA - CONE & THREAD CORE FITTINGS

Code	Product	Connection / Configuration	Size / Range	Pressure Basis	Material / Notes
021	Elbow (Cone & Thread)	Two female cone-and-thread ports, 90°	MP: 1/4, 3/8, 9/16, 3/4, 1, 1 1/2 in; HP: 1/4-9/16 in	MP up to 20,000; HP up to 60,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. HP tier available 1/4-9/16 in only.
022	Coupling / Union (Cone & Thread)	Two female cone-and-thread ports, in-line	MP: 1/4, 3/8, 9/16, 3/4, 1, 1 1/2 in; HP: 1/4-9/16 in	MP up to 20,000; HP up to 60,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation.
023	Tee (Cone & Thread)	Three female cone-and-thread ports	MP: 1/4, 3/8, 9/16, 3/4, 1, 1 1/2 in; HP: 1/4-9/16 in	MP up to 20,000; HP up to 60,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation.
024	Cross (Cone & Thread)	Four female cone-and-thread ports	MP: 1/4, 3/8, 9/16, 3/4, 1 in; HP: 1/4-9/16 in	MP up to 20,000; HP up to 60,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation.

REPRESENTATIVE DIMENSIONAL REFERENCES



Note: Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

Cone & Thread Accessories

Codes TSI-03-025 to TSI-03-032



Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

TSI-03-025

Bulkhead Union (Cone & Thread)



Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

TSI-03-026

Cap (Cone & Thread)



Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

TSI-03-027

Plug (Cone & Thread)



Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

TSI-03-028

Collar (spare/component)



Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

TSI-03-029

Gland (spare/component)



Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

TSI-03-030

Anti-Vibration Gland



Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

TSI-03-031

Safety Head (rupture disc holder)



Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

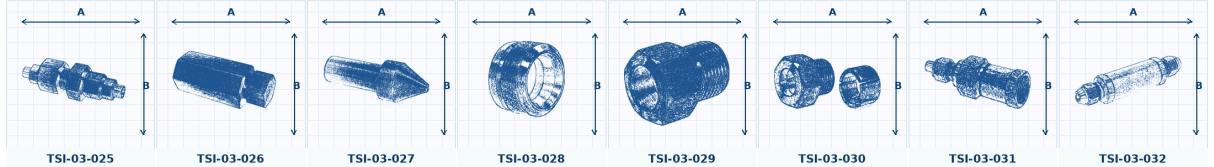
TSI-03-032

Line Filter

TECHNICAL DATA - CONE & THREAD ACCESSORIES

Code	Product	Connection / Configuration	Size / Range	Pressure Basis	Material / Notes
025	Bulkhead Union (Cone & Thread)	Two cone-and-thread ports + panel mount	MP: 1/4, 3/8, 9/16, 3/4, 1 in; HP: 1/4-9/16 in	MP up to 20,000; HP up to 60,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. Panel hole and maximum thickness specified per size; HP tier 1/4-9/16 in only.
026	Cap (Cone & Thread)	Cone-and-thread cap	MP: 1/4, 3/8, 9/16, 3/4, 1 in; HP: 1/4-9/16 in	MP up to 20,000; HP up to 60,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation.
027	Plug (Cone & Thread)	Cone-and-thread plug	MP: 1/4, 3/8, 9/16, 3/4, 1, 1 1/2 in; HP: 1/4-9/16 in	MP up to 20,000; HP up to 60,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. 1 1/2 in size is MP only, 15,000 psig.
028	Collar (spare/component)	Collar component	1/4, 3/8, 9/16, 3/4, 1, 1 1/2 in	No standalone pressure rating	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. Left-hand thread; prevents accidental disassembly.
029	Gland (spare/component)	Gland component	1/4, 3/8, 9/16, 3/4, 1, 1 1/2 in	No standalone pressure rating	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. Loads collar to seal tubing/body angle.
030	Anti-Vibration Gland	Anti-vibration gland assembly	1/4, 3/8, 9/16, 3/4, 1, 1 1/2 in	No standalone pressure rating	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. For shock/vibration service; MP and HP versions differ in construction.
031	Safety Head (rupture disc holder)	Safety head / rupture-disc holder	1/4, 3/8, 9/16 in	No standalone pressure rating	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. Angled or flat style; 3/8 in FNPT outlet; rupture disc ordered separately.
032	Line Filter	In-line cone-and-thread filter	MP: 1/4, 3/8, 9/16, 3/4, 1 in; HP: 1/4-9/16 in	MP up to 20,000; HP up to 60,000 psig	316 SS standard; selected UNS S32750 / UNS N06625 matched configurations subject to source confirmation. Dual-element; 0.5-100 micron pore sizes.

REPRESENTATIVE DIMENSIONAL REFERENCES



Note: Representative image - the item supplied is sourced to the approved drawing and specification, confirmed at order.

Technical Overview - TSI-03

Medium-pressure gaugeable fittings and cone & thread fitting families

01 Application

Instrumentation, sampling, hydraulic, test, chemical-injection and selected process-control duties requiring secure small-bore connections.

02 Product Scope

Gaugeable tube fittings, adapters, elbows, tees, crosses and cone & thread fittings, plus glands, collars, safety heads and line filters.

03 Engineering Basis

Catalogue values are family and configuration dependent. Final data must match exact size, end connection, tubing, material, temperature and selected source product.

316 SS configurations are rated up to 20,000 psig. Selected UNS S32750 matched configurations may be rated up to 22,500 psig where source-supported.

05 Cone & Thread Basis

Medium-pressure cone & thread products are available up to 20,000 psig; high-pressure versions up to 60,000 psig. Exact product, size and material govern.

06 Documentation

EN 10204 3.1 may be requested where available. NACE MR0175 / ISO 15156 options are available for selected configurations and material conditions.

Typical MP Family

316 SS FK gaugeable fittings up to 20,000 psig; selected UNS S32750 matched configurations may be higher where verified.

Connection Range

Tube, threaded, bulkhead, elbow, tee, cross and cone & thread configurations.

Material Route

316 SS standard; selected UNS S32750 and UNS N06625 matched configurations.

Publication Rule

Exact source product governs final dimensions, material availability and rating.

Materials, Standards & Pressure Basis

General specification basis for TSI-03 fitting families

1 MATERIALS

- 316 stainless steel is the standard baseline. Selected UNS S32750 and UNS N06625 matched configurations are available subject to exact source/product confirmation.

2 DESIGN / SYSTEM BASIS

- Working-pressure selection follows the exact source product and applicable ASME B31.3 design basis. Tube OD, wall thickness, temperature, end connection, material and service condition can reduce allowable pressure.

3 THREAD BASIS

- NPT ends: ASME B1.20.1 where specified. SAE/MS straight-thread ends: exact boss/thread standard and O-ring configuration must be confirmed from the selected source product.

4 PRESSURE BASIS

- 316 SS FK family: up to 20,000 psig. Selected UNS S32750 matched FK configurations: up to 22,500 psig where source-supported. Cone & thread: MP up to 20,000 psig; HP up to 60,000 psig.

5 CERTIFICATION

- EN 10204 3.1 may be requested where available from the selected source. NACE MR0175 / ISO 15156 options are available for selected configurations and material conditions.

REFERENCE PRESSURE / MATERIAL BASIS

316 SS - FK	MP	Up to 20,000 psig; exact product/size/end rating governs.
UNS S32750 - FK	MP	Selected matched configurations up to 22,500 psig where source-supported.
316 SS - C&T	MP	Up to 20,000 psig; exact product/size governs.
316 SS - C&T	HP	Up to 60,000 psig; exact product/size governs.
UNS N06625	Selected	Availability and working pressure are source- and configuration-specific.
NACE / sour service	Selected	Material condition and rating must be confirmed against selected source.

SIZE / CONFIGURATION BASIS

FK gaugeable	1/4 to 3/4 in; product-specific.
C&T Medium Pressure	1/4 to 1 1/2 in; product-specific.
C&T High Pressure	1/4 to 9/16 in; product-specific.
Accessories	Must match selected tube size and pressure family.

IMPORTANT PUBLICATION RULE

Do not apply a family maximum to every code. Exact pressure, size, material, temperature and end-connection data must be confirmed against the selected source product.

Selection & Ordering Guide

How to specify TSI-03 fitting configurations for quotation and procurement

1 ORDERING STRUCTURE - TSI-03

SIMPLIFIED CODE LOGIC

FAMILY	BODY STYLE	END CONNECTION	SIZE	MATERIAL
TSI-03	XXX	XXX	XX	UNS

2 SELECTION CHECKLIST

1	**Product code**	Use the exact TSI-03 code and product family.	☐
2	**Connection type**	Confirm tube OD, NPT / straight thread or cone & thread configuration.	☐
3	**Tube OD / thread size**	Confirm exact tube OD and/or thread size.	☐
4	**Material grade**	Confirm 316 SS or a verified UNS S32750 / UNS N06625 matched configuration.	☐
5	**Service pressure**	Confirm required working pressure and pressure family.	☐
6	**Service temperature**	Confirm minimum and maximum temperature.	☐
7	**Documentation**	Specify EN 10204 3.1, NACE / ISO 15156 or project requirements.	☐
8	**Special remarks**	Panel thickness, vibration, filtration, cleanliness or testing requirements.	☐

3 APPLICATION NOTES

1 Use the correct pressure family for the selected fitting and tube size.

2 Do not mix/interchange non-standardized fitting components from different manufacturers.

3 For cone & thread service, confirm gland/collar compatibility and installation method.

4 Final pressure rating must be confirmed against the selected source product.

TYPICAL RFQ INFORMATION

- TSI reference code
- Quantity
- Size / combination
- Material grade
- Connection / thread form
- Required pressure / temperature
- Documentation / project tag

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