

Engineering Guide for Pressure Testing and Processing in Refrigerant Applications

Evolution



Revolution

FastTest[®]
Your Productivity Connection

Evolution

Evolutionary Process Connections That Work Better

FasTest created a family of advanced engineering connectors that are easier, safer and more reliable while dramatically lowering your operating costs.

We are recognized for having proven, dependable refrigeration process connectors with industry leading design for superior performance:

- **Unique and Proprietary Pressure-assisted Gripping and Sealing Technologies**
 - Safe. Connectors resist accidental removal under pressure
 - Gripping increases as pressure increases
- **Patented Floating Collet Design**
 - Eliminates operator adjustment
- **Dynamic Seals**
 - Minimize seal stress to increase seal life and reliability
 - Increased sealing capability with increased pressure
- **Proprietary Seal Design**
 - Wide range of seal options engineered to the needs of the application
- **Long Lasting, Easy to Maintain**
 - Ergonomic designs
 - Easy seal replacement



ST, XT, JNL & JXL Series Connectors

See page 6 for traditional process connection guide.

Learn more at www.fastestinc.com

- How to choose a connector
- Why **FasTest** connectors are superior
- Technical data and specifications
- Application information
- Free downloads



Revolution

Recognizing the need for a better way, **FasTest** has not only evolved testing and processing, we're now revolutionizing it. **CoreMax®** is a fully integrated system of manufacturing and service tools that eliminate process tubes and substantially increase flow for greater process efficiency.

The Versatile CoreMax System Allows You to Design Your Process to Address Your Most Pressing Concerns

Reduced evacuation times, improved quality, greater throughput, and less maintenance costs are all possible with **FasTest's CoreMax** family of manufacturing and service tools. With millions of valves in the field already, and a million units integrated in the last year alone, **CoreMax** is revolutionizing the manufacturing of refrigeration systems.

The **CoreMax** system eliminates process tubes and Schrader valves and provides a variety of benefits depending on how you choose to implement the system. The **CoreMax** system offers:

- Elimination of costs and leaks associated with process tubes and Schrader valves
- Increased flow rate for greater line throughput
- Dramatically improved sealing for increased first-pass yield
- Improved vacuum quality to maximize SEER rating
- Designed for CFC and non-CFC refrigerants
- Ergonomic production-ready tooling
- Reduced manufacturing cost
- Compatibility with industry standard field service tools
- Reduced product cost in units using both process tubes and Schrader valves

CoreMax is the **FasTest Way** to Evacuate and Charge Refrigerated Systems. To understand how you can implement the **CoreMax** system please turn to page 3.

For a free process evaluation call 800.444.2373

Learn more at www.fastestinc.com



Think Differently

Imagine a System with No Process Tubes or Schrader Valves

With no process tubes you have no online pinching and brazing improving quality and line throughput. The **CoreMax** system eliminates process tubes and Schrader valves replacing them with a removable high flow valve. For units with process tubes and Schrader valves you may be able to reduce the cost of your refrigeration unit by replacing them with **CoreMax**. As a side benefit to eliminating process tubes, you may eliminate one or more brazed joints which are a potential leak path.

This revolutionary method gives you the choice of how you want to test, fill and evacuate your systems. Based on your need **CoreMax** can be implemented into your manufacturing process in one of the following ways:

Easiest to Implement, Lowest Tool Cost

Processing through the high flow **CoreMax** valve is as fast as most 1/4" process tubes and connectors. Therefore with the additional flow, and dramatically better sealing, it is possible to process directly through the valve. The valve is installed at the beginning of the refrigeration unit's assembly and a **SnapMate** connector is used at every station.

- Benefits:**
- Easy to use connector at every process station
 - Automatic valve shutoff on both sides of connection
 - Lowest tool cost

Shortest Processing Time

Processing through the seat with the **CoreMax** valve removed is the **FasTest** way to evacuate and charge refrigeration systems. Processing through the seat allows for the greatest flow and therefore the shortest processing time. At the evacuation stations the Core Insertion tool is used to first evacuate the unit and then insert the **CoreMax** valve when evacuation is complete. A **SnapMate** connector or a charge gun connector is then used at the charging station.

- Benefits:**
- Higher flow improves vacuum quality to maximize SEER rating
 - Shortest evacuation time for
 - **FasTest** line throughput
 - Fewer evacuation stations freeing up floor space

Improved Field Service

The **CoreMax** System is compatible with commonly used service connectors and caps. The **CoreMax** valve uses the same thread, taper and sealing surface as standard refrigeration access valves. Service technicians do not need to buy special tools, but with evacuation rates as fast as most 1/4" process tubes and connectors they will want to. Using the **SnapMate** Service connector with the **CoreMax** high-flow access valve allows field evacuation rates to be as fast as production rates, dramatically reducing service times.

CoreMax® Production



PN: SCP062H

SnapMate® - OEM. A versatile, high flow, internally valved connector. Used at every station for easiest implementation

The **SnapMate** OEM is a sleeve operated connector designed to connect to the **CoreMax** valve in a production environment. It grips at the base of the **CoreMax** valve (not on the threads) to prevent damage to the threads. The grips are made of stainless steel for wear resistance and long life. The **SnapMate** is internally valved and automatically opens flow on connection and closes when disconnected. 3/8" NPT male termination. 1.25" dia x 3.50" length approximate size.

Application:

Used at any station where the CoreMax valve is installed. Pressures up to 700 psi.



PN: SCM062W

MBE Connector to Fine Tune Your Process

The MBE connector is a sleeve actuated non-valved connector that can be used with or without the **CoreMax** valve installed. The MBE grips onto the seat and has a 3/8" NPT termination. Test pressure interlocks prevent sleeve actuation under pressure. 1.25" dia x 2.125" length approximate size.

Application:

With the CoreMax valve core installed the MBE is used primarily at the evacuation station for shorter evacuation times. When the CoreMax valve core is not installed the MBE is used for burst and pressure testing. Pressures up to 700 psi.



PN: SCFT10

Valve Core Insertion Tool - Highest Flow for Evacuation

The Valve Core Insertion Tool is a sleeve actuated connector that is used to first evacuate the system and then insert the **CoreMax** valve core without loss of vacuum. It connects and seals to the seat and has a 3/8" termination. Flow rates are greater than process tubes of the same size. 1.375" dia x 6.25" length approximate size.

Application:

Used for evacuation stations to achieve the maximum flow and therefore the shortest processing time. The final step with this tool is the insertion of the CoreMax valve prior to the unit moving to the charging station. Pressures up to 700 psi.



PN: SCL321

CoreMax Seal Oiler

The **CoreMax** seal oiler and reservoir for proper seal lubrication.

Application:

Used during manufacturing to ensure proper lubrication to the **CoreMax** core prior to torquing into the **CoreMax** seat.

CoreMax® Service Tools

SnapMate Service High Flow Service Connector

The **SnapMate** connectors are designed to provide quick connections to **CoreMax** Valve Cores as well as standard access valves. The Collets grip on the threads and are made of Brass. The sleeve is hardened steel. The **SnapMate** Connector is specifically designed for the Service Industry. It provides quick and easy connections to all 7/16-20, 45° flare access valves. Pressures up to 625 psi. 1" diameter x 2" length, approximate size.

Application:

Used by HVAC service technicians to evacuate and charge refrigerant during field servicing.

Valve Core Removal Tool

Sleeve actuated tool that allows removal and replacement of the **CoreMax** valve core without loss of refrigerant. 1.625" diameter x 6.125" length approximate size.

Application:

Used to remove and replace CoreMax valve core in charged units. Pressures up to 600 psi.



PN: SCTA07H



PN: SCFT20A

Torque Tools - Inserts Valve Core Directly to Seat or Works with Insertion Tool

The Torque gun is a pneumatic tool used to install and properly torque the **CoreMax** valve core into the seat. The "hold and drive" design prevents stress on the brazed joint of the seat.

PN: SCFTP01 used with valve core insertion tool
SCFTP02 inserts valve core into seat
SCFTP03 right angle style inserts valve core into seat

Application:

Used to pneumatically torque the **CoreMax** valve core into the seat.

The Torque wrench is preset to 8 ft/lbs. to install and properly torque the **CoreMax** valve core into the seat.

Application:

Used to manually torque the **CoreMax** valve core into the seat.



PN: SCFTP01



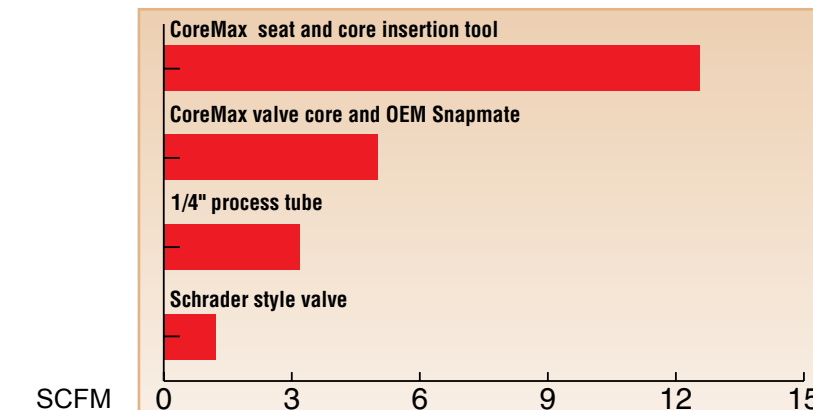
PN: SCFTM01

The CoreMax® System



CoreMax Valve Core - Centerpiece of the System

The **CoreMax** valve core provides over 5 times greater flow than common refrigeration access valves along with dramatically better sealing (see comparison of relative flow rates below).



Schrader style access valves have two leak paths and poor tolerance control making them prone to leaks. They have a sleeve seal between the valve core and the seat and an additional elastomer seal on the valve.

CoreMax valve core uses one elastomer to seal both the valve and the seat and also has a metal to metal seal for redundancy on the seat. The valve core pin positioning is manufactured to exacting tolerances for consistent sealing and valve opening. For use with existing service tools and caps, it has the same (7/16-20) thread, taper and sealing surface as commonly used on refrigeration valves. (ANSI/ARI standard 720-2002)

CoreMax Seat Designed to Work with CoreMax Tools

The **CoreMax** seat is critical to the integrated system design. The seat is designed with gripping and sealing surfaces that work with the variety of **CoreMax** tools. The seat comes in a variety of styles shown below with others available on request.

Stub Tube	Saddle Mount	Panel Mount	NPT Mount
SCH0730A01 1/4" Tube	SCH0730B03 for 0.225" hole	SCH0730C02 5/16" Tube, Threaded Version	SCH0730E01 1/4" Threaded
SCH0730A02 5/16" Tube	SCH0730B04 for 0.250" hole	SCH0730C03 1/4" Tube, Threaded Version	SCH0730E02 1/8" Threaded
SCH0730A03 3/8" Tube	SCH0730B01 for 0.313" hole	SCH0730C04 3/8" Tube, Threaded Version	
	SCH0730B02 for 0.375" hole		

To schedule your free process evaluation or to discuss your application give us a call:
Phone: 800.444.2373 (651.645.6266) or visit: www.fastestinc.com

Product Selector Guide

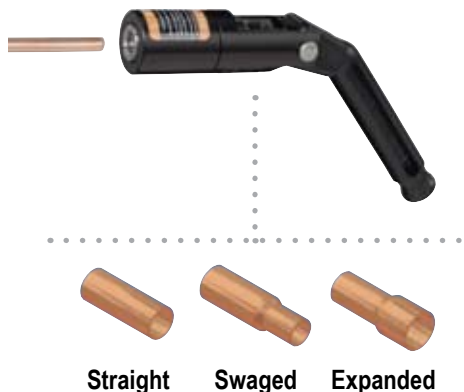
	Description	Pressure Range	Operation Style
	NuJaws® JXL (external) lever action connector provides an instant leak tight connection for vacuum or pressure applications up to 1000 psi. Designed for helium leak testing, run testing, proof testing, pressure decay, water dunk and other related processes. The easy cam lever action with the patented pressure assisted gripping and sealing, locks the connector when pressurized to make safe secure instant connections with no operator adjustment. See page 8	Vacuum to 1000 psi	Manual Clamping Lever
	NuJaws® JNL (internal) lever action connector provides an instant leak tight connection for vacuum or pressure applications up to 1000 psi. Designed for helium leak testing, proof testing, pressure decay, water dunk and other related processes. The easy cam lever action with the patented pressure assisted gripping and sealing, locks the connector when pressurized to make safe secure instant connections with no operator adjustment. See page 9	Vacuum to 1000 psi	Manual Clamping Lever
	ST (external) connector makes reliable, leak tight connections for vacuum or pressure applications up to 1000 psi. Designed for helium leak testing, run testing, proof testing, pressure decay and other related processes. A self locking feature holds the part securely while the patented sealing system makes an instant connection. No operator adjustment necessary. See page 10	Vacuum to 1000 psi	Manual Sleeve
	XT® (external) connector makes reliable, leak tight connections for vacuum or pressure applications up to 625 psi. Designed for high flow run testing, the XT is also ideal for helium leak testing, proof testing, pressure decay and related procedures. The sliding sleeve locks when pressurized, and patented sealing makes safe secure instant connections with no operator adjustment. See page 11	Vacuum to 625 psi	Manual Sleeve
	IGES (internal) lever action connector provides an instant leak tight connection for rifle tube applications. Vacuum or pressure applications up to 450 psi. Designed for helium leak testing, proof testing, pressure decay and other related processes. The easy cam lever action with the patented pressure assisted gripping and sealing, locks the connector when pressurized to make safe secure instant connections with no operator adjustment. See page 12	Vacuum to 450 psi	Manual Clamping Lever
	MBE (external) connector makes reliable, leak tight connections for vacuum or pressure applications up to 625 psi. Designed for high flow applications such as run testing. Also ideal for helium leak testing, proof testing, pressure decay and other related processes. The sliding sleeve locks when pressurized to make safe secure instant connections with no operator adjustment. See page 13	Vacuum to 625 psi	Manual Sleeve
	WEH 141 (external) squeeze lever action connector provides an instant leak tight connection for vacuum or pressure applications up to 1500 psi. Designed for helium leak testing, run testing, proof testing, pressure decay, water dunk and other related processes. The easy squeeze lever action with the patented gripping collets make safe secure instant connections with no operator adjustment. See page 13	Vacuum to 1500 psi	Manual Squeeze Lever
	Description	Pressure Range	Operation Style
	TwistMate® MET (external) connector quickly seals male threads. The patented pressure assisted sealing eliminates wrench tightening and thread sealants for safe secure connections up to 10,000 psi. With sizes up to 3" NPTF, and high flow design, the MET is ideal for large unit run testing. See page 14	Vacuum to 10,000 psi	Manual Quick Threading
	Description	Pressure Range	Operation Style
	TwistMate® MIT (internal) connector quickly seals female threads. The patented pressure assisted sealing eliminates wrench tightening and thread sealants for safe secure connections up to 10,000 psi. With sizes up to 4" NPTF, and high flow design, the MIT is ideal for large unit run testing. See page 16	Vacuum to 10,000 psi	Manual Quick Threading

Bores and Various Tube ID's				Straight	Expanded	Swaged
				 0.125" to 0.875" OD	 0.250" to 0.875" OD	 0.125" to 0.875" OD
 0.375" to 3.000" ID				 0.375" to 3.000" ID	 0.375" to 3.000" ID	 0.375" to 3.000" ID
				 0.250" OD 0.312" OD 0.375" OD		 0.250" OD 0.312" OD 0.375" OD
					 0.375" to 0.875" OD	
					Rifled  0.312" to 0.375" ID	
					 0.187" to 1.375" OD	
				 0.188" to 0.875" OD		 0.188" to 0.875" OD
			NPTF	BSP External	37° Flare	45° Flare
			 1/8" to 3" Sizes	 1/8" to 1" Sizes	 7/16"-20 to 1 5/16-12" Sizes	 7/16"-20 to 1 5/16-14" Sizes
NPTF	SAE O-Ring	ISO O-Ring	BSP Internal			
 1/8" to 4" Sizes	 3/8"-24 to 1 5/8"-12 Sizes	 M10 to M22 Sizes	 1/8" to 1" Sizes			



Reliable results
yet easy to use
and maintain

- Unique collet design resists accidental removal under pressure for added safety
- Accepts 0.020" part variation with no operator adjustment
- Durable neoprene mating seal minimizes maintenance and work stoppages



Operation

To Connect: Insert the tube into the connector and rotate the lever 90° in either direction to activate the collet and seal.

To Disconnect: Return the clamping lever to the free position. Move the connector body toward the mating part to release the clamping collet and withdraw the connector.



Applications

Uses: Leak testing, burst testing, evacuation and charging, lab and manufacturing processes.

Components: Tubing, coils, compressors, meters, fittings, engines, pressure vessels, etc.

Systems: HVAC, appliances, refrigeration, ice machines, plumbing, automotive, etc.

Technical Data

Seals: Neoprene

Materials: Aluminum and Stainless Steel

Temperature: -40° to +250°F

Pressure: Vacuum to 1000 psi.
Pressure rating based on metal test piece not exceeding 30 Rockwell C hardness. As a general guideline, surface must be 5 micro inches or greater. Surfaces less than 5 micro inches not recommended.

JXL Series Straight Tube Connectors

Connects to Straight Tube OD (+0.010"/-0.010")	Part Number	Insertion Depth (inches)	Termination Thread (Male)	Major Diameter (inches)	Body Length (inches)
1/4"	JXL0-0250	0.79	1/8" NPTF	1.12	3.65
5/16"	JXL0-0312	0.79	1/8" NPTF	1.12	3.65
3/8"	JXL0-0375	0.79	1/8" NPTF	1.12	3.65
1/2"	JXL0-0500	0.79	1/8" NPTF	1.12	3.65
5/8"	JXL1-0625	0.85	1/4" NPTF	1.62	3.58
3/4"	JXL1-0750	0.85	1/4" NPTF	1.62	3.58
7/8"	JXL1-0875	0.85	1/4" NPTF	1.62	3.58

Note: Please contact your Sales Representative for pricing, delivery, replacement seals, accessories and your custom requirements.

Refer to www.fastestinc.com
for additional important safety
recommendations and other
valuable information.

U.S. Patent No. 4,884,830 and 5,507,537

For In depth Technical, Engineering and Application Content Visit:
www.fastestinc.com Phone: 651.645.6266 or 800.444.2373



Reliable results yet easy to use and maintain

- Unique design grips until pressure is dissipated – eliminates operator adjustments and resists removal under pressure for added safety
- Mating seal is easily replaced without disassembly or tools
- Ideal for sophisticated testing techniques such as mass spectrometer and vacuum applications



Male Connector



Bores



Straight



External



Expanded



Flared



Barbed



Beaded

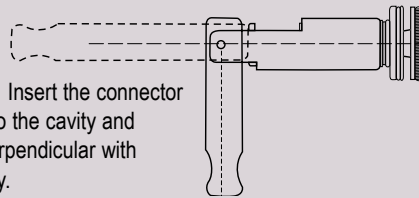


Form end



Swaged

Operation



To Connect: Insert the connector clamping collet into the cavity and rotate the lever perpendicular with the connector body.

To Disconnect: Return the clamping lever to the in-line position. Move the connector toward the mating part to release the clamping collet and withdraw the connector.



Applications

Uses: Leak testing, burst testing, evacuation and charging, lab and manufacturing processes.

Components: Tubing, coils, compressors, meters, fittings, engines, pressure vessels, etc.

Systems: HVAC, appliances, plumbing, refrigeration, automotive, etc.

Technical Data

Seals: Neoprene

Materials: Aluminum and stainless steel

Temperature: -40° to +250°F

Pressure: Vacuum to 1000 psi.

Pressure rating based on the test piece having a surface finish greater than 16rms and a hardness of no more than 95 Rb to grip and seal at the rated pressure. A surface finish of 8rms may be acceptable if the test piece has a hardness no greater than 40 Rb.

JNL Series Straight Tube Connectors

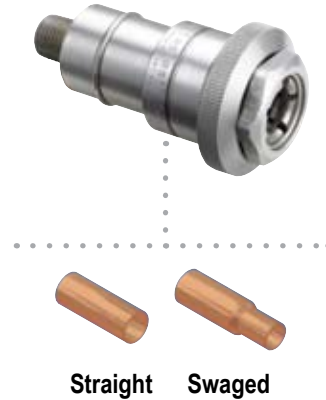
Connects with Internal Dia. (+0.010"/-0.010")	Part Number	Min. Insertion Depth (inches)	Termination Thread (Male)	Body Diameter (inches)	Body Length (inches)	Flow Diameter (inches)
0.375"	JNL0-0375H	0.53	1/8" NPTF	0.87	3.72	0.11
0.500"	JNL0-0500H	0.53	1/8" NPTF	0.87	3.72	0.11
0.590"	JNL1-0590	0.63	1/8" NPTF	0.87	3.72	0.17
0.625"	JNL1-0625	0.63	1/8" NPTF	0.87	3.72	0.17
0.750"	JNL1-0750	0.63	1/8" NPTF	0.87	3.72	0.17
0.785"	JNL1-0785	0.63	1/8" NPTF	0.87	3.72	0.17
0.875"	JNL1-0875	0.63	1/8" NPTF	0.87	3.72	0.17

Note: Please contact your Sales Representative for pricing, delivery, replacement seals, accessories and your custom requirements.
Custom sizes are available to 3.000"

Refer to www.fastestinc.com for additional important safety recommendations and other valuable information.

U.S. Patent No. 5,343,798

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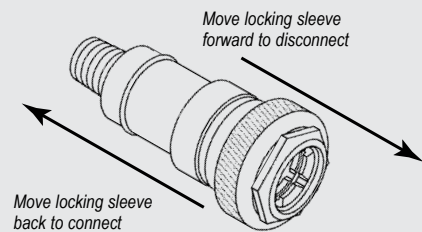
Ergonomic,
compact and
delivers results

- Unique design grips until pressure is dissipated – eliminates operator adjustments for added safety
- Mating seal is replaceable without disassembly – eliminates costly repair programs
- Reliable sealing reduces test errors – minimizes production losses

Operation

To Connect: Insert the tube into the connector and retract the external sleeve to automatically activate the clamping collet and seal.

Disconnect: Push the external sleeve until it latches and deactivates the internal gripping collet and seal. Withdraw the connector from the tube.



Applications

Uses: Leak testing, burst testing, evacuation and charging, lab and manufacturing processes.

Components: Tubing, coils, compressors, dryers, meters, fittings, pressure vessels, etc.

Systems: HVAC, appliances, ice machines, plumbing, refrigeration, automotive, etc.

Technical Data

Seals: Neoprene

Materials: Steel with QPQ

Temperature: -40° to +250°F

Pressure: Vacuum to 1000 psi.

ST Series Straight Tube Connectors

Connects to Straight Tube OD (+0.015"/-0.010")	Part Number	Insertion Depth (inches)	Termination Thread (Male)	Major Diameter (inches)	OAL (inches)	Body Length (inches)
1/4"	ST-04042	0.62	1/4" NPTF	1.13	2.19	3.65
5/16"	ST-05042	0.62	1/4" NPTF	1.19	2.19	3.65
3/8"	ST-06042	0.75	1/4" NPTF	1.50	2.67	3.58

Note: Please contact your Sales Representative for pricing, delivery, replacement seals, accessories and your custom requirements.
Not recommended for waterdunk applications.

Refer to www.fastestinc.com for additional important safety recommendations and other valuable information.

U.S. Patent No. 4,884,830

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Pressure-activated safety lock and redundant mating seal set the standard

- Positive gripping—No operator adjustments!
- Unique design provides pressure enhanced sealing and safety lock
- Mating seals are easily replaced without tools or disassembly
- Ideal for sophisticated testing techniques such as mass spectrometer and vacuum applications

Refer to www.fastestinc.com for additional important safety recommendations and other valuable information.

U.S. Patent No. 4,921,282

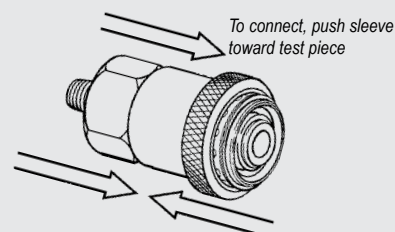


Sealing of expanded tubing for testing and filling applications.

Operation

To Connect: Insert the tube into the connector and push the external sleeve until it clicks into the locked position.

Disconnect: Push the connector toward the tube to release the safety lock and retract the external sleeve to withdraw the connector.



To disconnect, push connector forward to release safety locking action, then pull sleeve back

Applications

Uses: Leak testing, burst testing, evacuation and charging, lab and manufacturing processes.

Components: Tubing, coils, compressors, meters, fittings, engines, pressure vessels, etc.

Systems: HVAC, appliances, plumbing, heating, automotive, etc.

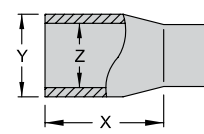
Technical Data

Seals: Neoprene

Materials: Steel with QPQ.

Temperature: -40° to +250°F

Pressure: Vacuum to 625 psi.



Tube Requirements

XT Series Expanded Tube Connectors

Tube Size	Part Number	Connector Termination-A	Connector Diameter (inches)	Connector Length (inches)	Max. X (inches)	Min. X (inches)	Max. Y (inches)	Min. Z (inches)	Flow Diameter (inches)
3/8"	XT-06042	1/4"-18NPTF male	1.25	3.31	1.0	0.30	0.500	0.368	0.12
1/2"	XT-08042	1/4"-18NPTF male	1.37	3.31	1.0	0.30	0.625	0.491	0.22
5/8"	XT-10042	1/4"-18NPTF male	1.50	3.33	1.0	0.30	0.730	0.616	0.25
3/4"	XT-12042	1/4"-18NPTF male	1.62	3.33	1.0	0.37	0.858	0.741	0.27
7/8"	XT-14042	1/4"-18NPTF male	1.72	3.33	1.0	0.37	0.996	0.867	0.28

Note: Please contact your Sales Representative for pricing, delivery, replacement seals, accessories and your custom requirements.
Not recommended for waterdunk applications.

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Connector for reliable, leak-tight sealing of thin-wall copper rifled tubing

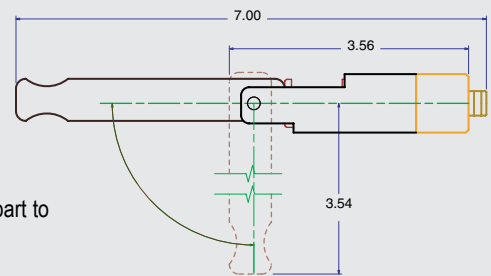
- Internal gripping and external sealing to protect thin wall tubes
- Quick lever action has no operator adjustment
- Thin profile allows sealing of multiple tubes with close center to center distance
- Safety lock prevents accidental disconnection while under pressure
- Easily replaceable main seal



Operation

To Connect: Insert the connector clamping collet into the cavity and rotate the lever perpendicular with the connector body.

To Disconnect: Return the clamping lever to the in-line position. Move the connector toward the mating part to release the clamping collet and withdraw the connector.



Easy operation, no operator adjustment

Applications

Uses: Leak testing, burst testing, water dunk testing, helium testing.

Components: Coils with rifled tubing.

Systems: Refrigeration units

Technical Data

Seals: Neoprene or urethane. Other upon request.

Materials: Aluminum and Stainless Steel

Temperature: -40° to 200°F

Pressure: Vacuum to 450 psi.
Higher pressure upon request.

IGES Lever Actuated Thin Wall Rifled Tubing Connectors

Connects to Rifled Tube ID (+/- 0.008")	Part Number	Minimum Insertion Depth (inches)	Termination Thread (Male)	Major Diameter (inches)	OAL (inches)	Flow Diameter (inches)
5/16"	Contact Factory	0.53	1/8" NPTF	0.87	3.75	0.05
3/8"	Contact Factory	0.53	1/8" NPTF	0.87	3.75	0.11

Note: Please contact your Sales Representative for part number, pricing, delivery and accessories for your specific requirements.

Refer to www.fastestinc.com for additional important safety recommendations and other valuable information.

U.S. Patent No. 5,343,798

For In depth Technical, Engineering and Application Content Visit:
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High flow non-valved with pressure activated safety lock

- Double seals for increased reliability
- Unique design grips until pressure is dissipated, no operator adjustments for added safety
- Mating seal is easily replaced without disassembly cutting maintenance costs
- Ideal for high flow testing

U.S. Patent No. 4,921,282

Ergonomic squeeze grip

- Compact squeeze grip for access in tight spaces.
- No operator adjustments.
- Pressure assisted sealing and gripping.
- Mating seal is easily replaced without using special tools.
- Ideal for high flow testing.

Refer to www.fastestinc.com for additional important safety recommendations and other valuable information.

Operation

To Connect: Insert the tube into the connector and push the external sleeve until it clicks into the locked position.

Disconnect: Relieve pressure, push the connector toward the tube to release the safety lock and retract the external sleeve to withdraw the connector.



Expanded

Applications

Uses: Leak testing, burst testing, run testing, lab and manufacturing processes.

Components: Compressors, coils, heat exchangers, plumbing.

Systems: HVAC, refrigeration, ice machines.

Technical Data

Seals: Neoprene

Materials: Stainless steel

Pressure: Vacuum to 625 psi.

Temperature: -40° to 250°F

High Flow Connections for Expanded Tubing

Part Number	Tube Diameter	Expanded Diameter (inches)	Expansion Length (inches)	Flow Diameter (inches)	Termination Size
MBE-03042	3/16"	0.254	0.200	0.128	1/4" NPT
MBE-04042	1/4"	0.316	0.270	0.190	1/4" NPT
MBE-05042	5/16"	0.382	0.350	0.248	3/8" NPT
MBE-06042	3/8"	0.444	0.450	0.311	3/8" NPT
MBE-08042	1/2"	0.570	0.530	0.436	1/2" NPT
MBE-10042	5/8"	0.700	0.680	0.555	3/4" NPT
MBE-12042	3/4"	0.840	0.790	0.666	3/4" NPT
MBE-14042	7/8"	0.970	0.830	0.785	1" NPT
MBE-18042	1-1/8"	1.230	1.130	1.025	1-1/4" NPT
MBE-22042	1-3/8"	1.490	1.400	1.265	1-1/4" NPT

WEH 141 Series

Squeeze Grip Tubing Connector

Operation

To Connect:

1. Squeeze the hand lever.
2. Slide the connector onto the tube until it stops.
3. Release the hand lever.

Disconnect:

1. Remove pressure.
2. Squeeze hand lever and pull off.



Straight



Applications

Uses: Leak testing, burst testing, run testing, lab and manufacturing processes.

Components: Tubing, coils, compressors, fittings, etc.

Systems: HVAC, Refrigeration, Ice Machines

Technical Data

Seals: Neoprene

Materials: Aluminum body, stainless steel grips.

Pressure: Vacuum to 1500 psi.

Temperature: -40° to 250°F

WEH 141 Straight Tubing Connectors

Connects to Straight Tube ID (+/- 0.004")	Part Number	Min. Insertion Depth (inches)	Termination Thread (Male)	Major Diameter (inches)	OAL (inches)
3/16"	141-03042	0.827	1/4" NPT	1.10	3.94
1/4"	141-04042	0.827	1/4" NPT	1.10	3.94
5/16"	141-05042	0.827	1/4" NPT	1.10	5.26
3/8"	141-06042	0.827	1/4" NPT	1.30	5.26
1/2"	141-08042	0.591	1/4" NPT	1.30	5.26
5/8"	141-10042	0.591	1/4" NPT	2.00	5.26
3/4"	141-12042	0.591	1/4" NPT	2.00	5.26
7/8"	141-14042	0.591	1/4" NPT	2.00	5.26

For In depth Technical, Engineering and Application Content Visit:
www.fastestinc.com Phone: 651.645.6266 or 800.444.2373



Finger tighten seals to 10,000 psi

- Fast and reliable sealing reduces cycle time and production losses from scrap, rework and re-testing
- Full flow design for shortest filling and test times
- Seal threaded parts without wrenches or sealants and eliminate product or thread damage

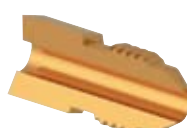
Refer to www.fastestinc.com for additional important safety recommendations and other valuable information.



Female Connector



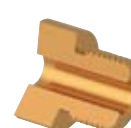
NPTF



37° Flare



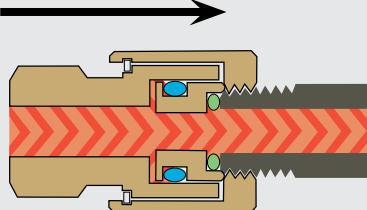
45° Flare



BSPP

Operation

Piston Action



Step 1. Spin **TwistMate** on to the threaded part until the seal makes contact.

Step 2. Introduce the media and pressure. The internal piston automatically moves toward the test part enhancing the seal squeeze. Vacuum applications will require finger-tightening.

Applications

Leak Testing: Water dunk, pressure decay, helium mass spectrometer, etc.

Other Uses: Calibration, filling, pressure and proof testing, performance and lab testing, manufacturing processing, etc.

Components: Hose assemblies, tube assemblies, gauges, transducers, valves, cylinders, manifolds, plumbing fixtures, tanks, meters, fittings, etc.

Systems: Piping, cooling, heating, fluid, hydraulic, pneumatic, refrigerant, appliances, plumbing, calibration, vacuum, instrumentation, mobile equipment, etc.

Technical Data

Seals: Urethane and Nitrile

Material: Steel with QPQ or Stainless Steel

Temperature: -40° to +200°F

Pressure: Vacuum to 10,000 psi

Rated Pressure: Based on test results using threaded parts manufactured to the referenced specifications and steel material. Other materials or deviations from those specifications may reduce the safe working pressure and should be verified by test.

Media: Do not use for hot water or steam. Other seal and body materials are available to meet your specific needs.



MET Series

TwistMate® Sizes and Styles for All Your Applications

NPTF Pipe Thread



Gauge calibration and testing is fast and easy.

Connects to Male Thread	Rated Pressure	Part Numbers	Termination Thread (Male/Female)	Major Diameter (inches)	OAL Diameter (inches)	Flow Diameter (inches)
1/8" NPTF	5000	MET-021022	1/8" NPTF (M)	0.82	1.51	0.19
1/8" NPTF	10,000	METH-021022	1/8" NPTF (M)	0.82	1.51	0.19
1/4" NPTF	5000	MET-041042	1/4" NPTF (M)	0.94	1.74	0.28
1/4" NPTF	8000	METH-041042	1/4" NPTF (M)	0.94	1.74	0.28
3/8" NPTF	4000	MET-061062	3/8" NPTF (M)	1.18	1.78	0.38
3/8" NPTF	8000	METH-061062	3/8" NPTF (M)	1.18	1.78	0.38
1/2" NPTF	4000	MET-081082	1/2" NPTF (M)	1.60	2.05	0.50
1/2" NPTF	6000	METH-081082	1/2" NPTF (M)	1.60	2.05	0.50
3/4" NPTF	4000	MET-121122	3/4" NPTF (M)	1.68	2.34	0.66
3/4" NPTF	5000	METH-121122	3/4" NPTF (M)	1.68	2.34	0.66
1" NPTF	4000	MET-161162	1" NPTF (M)	2.00	2.74	0.87
1" NPTF	5000	METH-161162	1" NPTF (M)	2.00	2.74	0.87
1-1/4" NPTF	2500	MET-201202	1-1/4" NPTF (M)	2.37	3.27	1.12
1-1/2" NPTF	1000	MET-241161	1" NPTF (F)	2.37	3.27	0.94*
2" NPTF	750	MET-321161	1" NPTF (F)	3.00	2.53	0.94*
2-1/2" NPTF	500	MET-401161	1" NPTF (F)	3.40	2.54	0.94*
3" NPTF	500	MET-481161	1" NPTF (F)	4.25	2.61	0.94*

*Flow diameter based on a threaded fitting.

37° FLARE



SAE J514

-4 (7/16-20)	10,000	METH-049040	-4 (7/16-20) (M)	0.95	1.76	0.17
-6 (9/16-18)	10,000	METH-069060	-6 (9/16-8) (M)	1.20	1.83	0.29
-8 (3/4-16)	10,000	METH-089080	-8 (3/4-16) (M)	1.38	2.00	0.39
-10 (7/8-14)	10,000	METH-109100	-10 (7/8-14) (M)	1.51	2.35	0.50
-12 (1 1/16-12)	10,000	METH-129120	-12 (1 1/16-12) (M)	1.70	2.52	0.62

45° FLARE



SAE J512 or SAE J513

-4 (7/16-20)	5000	MET-04A042B	1/4" NPTF (M)	0.95	1.76	0.19
-6 (5/8-18)	5000	MET-06A062N	3/8" NPTF (M)	1.20	1.83	0.28
-8 (3/4-16)	4000	MET-08A082N	1/2" NPTF (M)	1.38	2.00	0.40
-10 (7/8-14)	4000	MET-10A082N	1/2" NPTF (M)	1.51	2.35	0.50
-12 (1 1/16-14)	4000	MET-12A122N	3/4" NPTF (M)	1.70	2.52	0.66

BSPP



per ISO 228 or DIN 259

1/8" BSPP	5000	MET-025026	1/8" BSPP (F)	0.82	1.24	0.12
1/4" BSPP	5000	MET-045046	1/4" BSPP (F)	1.00	1.41	0.22
3/8" BSPP	4000	MET-065066	3/8" BSPP (F)	1.18	1.48	0.34
1/2" BSPP	4000	MET-085086	1/2" BSPP (F)	1.36	1.85	0.43
3/4" BSPP	4000	MET-125126	3/4" BSPP (F)	1.68	1.94	0.65
1" BSPP	4000	MET-165166	1" BSPP (F)	2.00	2.07	0.83

Note: Please contact your Sales Representative for pricing, delivery, replacement seals, accessories and your custom requirements.

Rough Cut Threaded Steel Pipe



1/4" NPT	750	MET-041042-PT	1/4" NPTF	0.82	1.51	0.19
3/8" NPT	750	MET-061062-PT	3/8" NPTF	1.18	1.78	0.38
1/2" NPT	750	MET-081082-PT	1/2" NPTF	1.60	2.05	0.50
3/4" NPT	750	MET-121122-PT	3/4" NPTF	1.68	2.34	0.66
1" NPT	750	MET-161162-PT	1" NPTF	2.00	2.74	0.87
1-1/4" NPT	750	MET-201202-PT	1-1/4" NPTF	2.37	3.27	1.12
1-1/2" NPT	750	MET-241161	1-1/2" NPTF	2.37	3.27	0.94
2" NPT	750	MET-321161	2" NPTF	3.00	2.53	0.94
2-1/2" NPT	500	MET-401161	2-1/2" NPTF	3.40	2.54	0.94
3" NPT	500	MET-481161	3" NPTF	4.25	2.61	0.94

For In depth Technical, Engineering and Application Content Visit:
www.fastestinc.com Phone: 651.645.6266 or 800.444.2373



TwistMates seal threaded ports without wrenches or tape

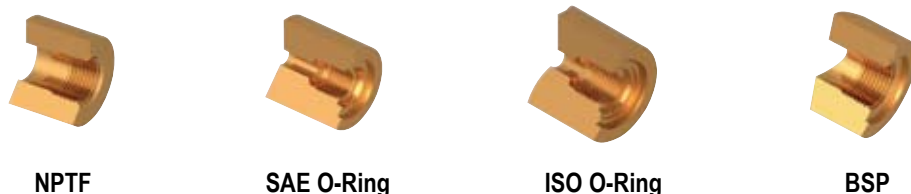
- Fast and reliable sealing reduces test time and production losses from scrap, rework and re-testing

- Full flow design for shortest filling and test times

- Seal threaded ports without wrenches or sealants and eliminate associated product damage

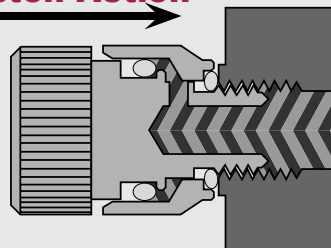
Refer to www.fastestinc.com for additional important safety recommendations and other valuable information.

U.S. Patent No. 4,688,830
Canada Patent No. 1,262,748



Operation

Piston Action



- Step 1. Spin **TwistMate** into the threaded port until the seal makes contact.
- Step 2. Introduce the media and pressure. The external sleeve automatically moves toward the test port enhancing the seal squeeze. Vacuum applications will require finger-tightening.

Applications

Leak Testing: Water dunk, pressure decay, helium mass spectrometer, etc.

Other Uses: Filling, pressure and proof testing, performance and lab testing, manufacturing processing, etc.

Components: Valves, pumps, manifolds, filters, exchangers, cylinders, castings, regulators, engines, etc.

Systems: Brakes, steering, cooling, heating, hydraulics, pneumatics, refrigerant, instrumentation, appliances, plumbing, irrigation, spraying, mobile equipment, etc.

Technical Data

Seals: Urethane and Nitrile

Materials: Steel with QPQ or Stainless Steel

Temperature: -40° to +200°F

Pressure: Vacuum to 10,000 psi

Rated Pressure: Based on test results using threaded ports manufactured to the referenced specifications and steel material. Other materials or deviations from those specifications may reduce the safe working pressure and should be verified by test.



MIT Series

TwistMate® Sizes and Styles for All Your Applications

NPTF Pipe Thread



per SAE J476

Connects to Female Thread	Rated Pressure	Connector Type	Part Numbers	Termination Port (Female)	Major Diameter (inches)	OAL Diameter (inches)	Flow Diameter (inches)
1/8" NPTF	5000	Plug	MIT-022P	1/8" NPTF	0.82	1.24	0.11
1/8" NPTF	5000	Connector	MIT-022021X	1/8" NPTF	0.82	1.24	0.11
1/8" NPTF	5000	Swivel	MIT-022021	1/8" NPTF	0.82	1.68	0.11
1/8" NPTF	10,000	Connector	MITH-022021X	1/8" NPTF	0.82	1.24	0.11
1/4" NPTF	5000	Plug	MIT-042P	1/4" NPTF	1.00	1.41	0.22
1/4" NPTF	5000	Connector	MIT-042041X	1/4" NPTF	1.00	1.41	0.22
1/4" NPTF	5000	Swivel	MIT-042041	1/4" NPTF	1.00	1.87	0.22
1/4" NPTF	10,000	Connector	MITH-042041X	1/4" NPTF	1.00	1.41	0.22
3/8" NPTF	4000	Plug	MIT-062P	3/8" NPTF	1.18	1.48	0.34
3/8" NPTF	4000	Connector	MIT-062061X	3/8" NPTF	1.18	1.48	0.34
3/8" NPTF	4000	Swivel	MIT-062061	3/8" NPTF	1.18	2.08	0.34
3/8" NPTF	10,000	Connector	MITH-062061X	3/8" NPTF	1.18	1.48	0.34
1/2" NPTF	4000	Plug	MIT-082P	1/2" NPTF	1.36	1.85	0.43
1/2" NPTF	4000	Connector	MIT-082081X	1/2" NPTF	1.36	1.85	0.43
1/2" NPTF	4000	Swivel	MIT-082081	1/2" NPTF	1.36	2.56	0.43
1/2" NPTF	8000	Connector	MITH-082081X	1/2" NPTF	1.36	1.85	0.43
3/4" NPTF	4000	Connector	MIT-122121X	3/4" NPTF	1.68	1.94	0.70
3/4" NPTF	7500	Connector	MITH-122121X	3/4" NPTF	1.68	1.94	0.70
1" NPTF	4000	Connector	MIT-162161X	1" NPTF	2.00	2.07	0.87
1" NPTF	6500	Connector	MITH-162161X	1" NPTF	2.00	2.07	0.87
1-1/4" NPTF	4000	Connector	MIT-202201X	1-1/4" NPTF	2.38	2.13	1.19
1-1/2" NPTF	3000	Connector	MIT-242241X	1-1/2" NPTF	2.74	2.40	1.44
2" NPTF	2500	Connector	MIT-322161X	1" NPTF	3.47	2.68	0.94*
2-1/2" NPTF	1500	Connector	MIT-402161X	1" NPTF	3.97	3.42	0.94*
3" NPTF	1500	Connector	MIT-482161X	1" NPTF	4.73	3.68	0.94*
4" NPTF	1000	Connector	MIT-642161X	1" NPTF	5.73	3.68	0.94*

*Flow diameter based on a threaded fitting.

SAE O-Ring



per SAE J1926
or SAE 11926

-03 (3/8-24)	5000	Connector	MIT-034021X	1/8" NPTF	0.82	1.29	0.09
-04 (7/16-20)	5000	Connector	MIT-044021X	1/8" NPTF	0.82	1.29	0.17
-04 (7/16-20)	10,000	Connector	MITH-044021X	1/8" NPTF	0.82	1.29	0.17
-05 (1/2-20)	5000	Connector	MIT-054041X	1/4" NPTF	1.00	1.41	0.22
-06 (9/16-18)	5000	Connector	MIT-064041X	1/4" NPTF	1.00	1.41	0.28
-06 (9/16-18)	10,000	Connector	MITH-064041X	1/4" NPTF	1.00	1.41	0.28
-08 (3/4-16)	4000	Connector	MIT-084081X	1/2" NPTF	1.36	1.85	0.39
-08 (3/4-16)	8000	Connector	MITH-084081X	1/2" NPTF	1.36	1.85	0.39
-10 (7/8-14)	4000	Connector	MIT-104081X	1/2" NPTF	1.36	1.85	0.49
-10 (7/8-14)	7500	Connector	MITH-104081X	1/2" NPTF	1.36	1.85	0.49
-12 (1 1/16-12)	4000	Connector	MIT-124121X	3/4" NPTF	1.68	1.94	0.69
-12 (1 1/16-12)	7500	Connector	MITH-124121X	3/4" NPTF	1.68	1.94	0.69
-14 (1 3/16-12)	4000	Connector	MIT-144161X	1" NPTF	2.00	2.13	0.72
-14 (1 3/16-12)	7000	Connector	MITH-144161X	1" NPTF	2.00	2.13	0.72
-16 (1 5/16-12)	4000	Connector	MIT-164161X	1" NPTF	2.00	2.13	0.87
-16 (1 5/16-12)	7000	Connector	MITH-164161X	1" NPTF	2.00	2.13	0.87
-20 (1 5/8-12)	4000	Connector	MIT-204201X	1 1/4" NPTF	2.38	2.13	1.19
-20 (1 5/8-12)	5500	Connector	MITH-204201X	1 1/4" NPTF	2.38	2.13	1.19

ISO O-Ring



per ISO 6149 or
SAE J2244

M10 x 1	5000	Connector	MIT-108025X	1/8" BSPP	0.82	1.30	0.09
M12 x 1.5	5000	Connector	MIT-128045X	1/4" BSPP	1.00	1.42	0.20
M14 x 1.5	5000	Connector	MIT-148045X	1/4" BSPP	1.00	1.42	0.28
M16 x 1.5	4000	Connector	MIT-168065X	3/8" BSPP	1.18	1.56	0.34
M18 x 1.5	4000	Connector	MIT-188065X	3/8" BSPP	1.18	1.56	0.36
M22 x 1.5	4000	Connector	MIT-228085X	1/2" BSPP	1.36	1.87	0.48

BSPP/BSPT



per ISO 228 or
ISO 7 or DIN 259

1/8" BSPP/T	5000	Connector	MIT-026025X	1/8" BSPP	0.82	1.24	0.11
1/4" BSPP/T	5000	Connector	MIT-046045X	1/4" BSPP	1.00	1.41	0.22
3/8" BSPP/T	4000	Connector	MIT-066065X	3/8" BSPP	1.18	1.48	0.34
1/2" BSPP/T	4000	Connector	MIT-086085X	1/2" BSPP	1.36	1.85	0.43
3/4" BSPP/T	4000	Connector	MIT-126125X	3/4" BSPP	1.68	1.94	0.70
1" BSPP/T	4000	Connector	MIT-166165X	1" BSPP	2.00	2.07	0.87

Note: Please contact your Sales Representative for pricing, delivery, replacement seals, accessories and your custom requirements.



Engineering & Application Guide

This Engineering and Application Guide to Connectors for Pressure Testing & Processing details our complete offering for all applications.



Medical Connectors

Our versatile product line of connectors for sealing and testing a wide variety of medical products and drug delivery devices.



FasTest Web Site

Includes detailed information on the leading innovator in tools for leak testing, filling and evacuation of liquids and gases. Complete product information on fast, leak-tight connectors.



Calibration Tools

A complete line of fast connection tools used for calibration of instruments while eliminating thread damage and the use of tape and wrenches.



Tech Articles

Information about how to improve productivity and insure quality just a few clicks away!

Articles featuring:

- Finding the leak
- Cylinder filling made quick



Application Notes

- Automated connectors for leak testing medical components
- Instant connections for Schrader style HVAC fittings
- High flow connections for expanded tubing

Patents:

JXL	5507537
JN	5343798
ST / XT	4884830
MIT	4688830
CoreMax System	6901947
SnapMate	6039303

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Toll Free: 800.444.2373
www.fastestinc.com

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www.fastestinc.com Phone: 651.645.6266 or 800.444.2373

Why Choose FasTest?



- Our deep application and engineering experience allows us to help you specify the right connector for your application. Small differences can make a large difference in the suitability of the connector for your application.
- We can modify products for your specific needs.
- To schedule your free process evaluation or to discuss your application call 1.800.444.2373 (651.645.6266) or visit www.fastestinc.com

ReConnect Connector Refurbishment Program

FasTest offers a connector refurbishment program to ensure proper connector operation, performance as well as extending the service life and warranty of your connector investment. Connectors routinely maintained can be refurbished economically relative the cost of a new connector replacement.

Our **ST** and **XT Series** connectors for refrigeration are some of the most frequently refurbished connection styles, but all **FasTest** standard and custom connectors can be refurbished.

Please contact **FasTest** or one of our representatives for connector refurbishment details.

Warranty

FasTest, Inc. Limited Express Warranty

FasTest, Inc. warrants its products against defects in workmanship and materials for 12 months from the date of sale by FasTest, Inc. or its authorized distributor. This warranty is void if the product is misused, tampered with or used in a manner that is contrary to FasTest, Inc.'s written recommendations and/or instructions. FasTest, Inc. does not warrant the suitability of the product for any particular application. Determining product application suitability is solely the customer's responsibility. FasTest, Inc. is not liable for consequential or other damages including, but not limited to, loss, damage, personal injury, or any other expense directly or indirectly arising from the use of or inability to use its products either separately or in combination with other products.

ALL OTHER WARRANTIES EXPRESS OR IMPLIED, WHETHER ORAL, WRITTEN OR IN ANY OTHER FORM, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY EXCLUDED.

The sole and exclusive remedy under this warranty is limited to replacement of the product or an account credit in the amount of the original selling price, at the option of FasTest, Inc. All allegedly defective products must be returned prepaid transportation to FasTest, Inc., together with information describing the product's performance, unless disposition in the field is authorized in writing by FasTest, Inc.

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