

PRESSURE TESTING
AND PROCESSING IN
Refrigeration

**Applications** 



Fess/est



# INTRODUCTION

# FasTest Refrigeration ...

FasTest is a dedicated and innovative developer of advanced connection tools that are easier, safer and more reliable while dramatically lowering your operating costs. Since 1985 FasTest is recognized for having proven, dependable refrigeration process connectors with industry leading designs for superior performance for industry leading manufacturers.

Used by major manufactures of air conditioners, heat pumps, ice machines and coolers, FasTest process connectors have become the standard for safe and reliable connection requirements. Ergonomic designs and easy maintenance makes FasTest the industry preferred connector source.



# The CoreMax Advantage ...



Imagine a system with no process tubes or Schrader Valves, no online pinching and brazing operation and no leaky valves. FasTest, the innovator of the highest quality and safest connectors in the industry has done it again. The CoreMax System has been designed to reduce evacuation times, improve quality, provide greater throughput, with less maintenance costs makes it all possible. Currently being used throughout the industry. CoreMax has proven to improve vacuum to maximize SEER rating, improved sealing to maximize first-pass yield and reduce manufacturing costs.

Learn more about that *CoreMax* System by visiting www.fastestinc.com or call 800-444-2373 for a free process evaluation.

### Learn More at www.fastestinc.com ...

- Choose a connector that's right for your application
- Find a distributor near you
- Purchase replacement seals and repair kits
- Watch demonstrational videos
- · Access our ReConnect connector refurbishment/replacement program
- Follow us in real time













# **CONNECTOR SELECTION GUIDE**

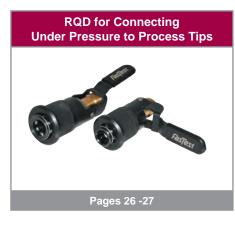














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Warranty Page 35



# **CoreMax**®

**FasTest's CoreMax** is revolutionizing the manufacturing of refrigeration systems with reduced evacuation times, improved quality, greater throughput and less maintenance costs. The **CoreMax** system eliminates process tubes and Schrader valves and provides a variety of benefits depending on how you implement.



# **Lowest Tool Cost and Easy to Implement**

Processing though 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 manufacturing station.

Processing refrigerant through the seat with the *CoreMax* valve removed is the *FasTest* way to evacuate and charge refrigeration systems. Processing though 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.

### **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.

### **Features and Benefits**

- Elimination of costs and leaks associated with process tubes and Schrader valves
- Increased flow rate for greater 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
- Compatibility with industry standard field service tools
- Faster processing and fewer evacuation stations

## **Applications**

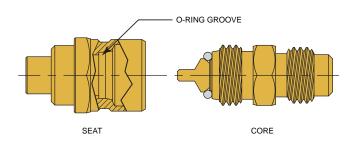
- Refrigerators
- Ice Machines
- Freezers
- Commercial Air Conditioners
- Residential Air Conditioners
- Mobile Air Conditioners
- Refrigeration Cases
- Water Coolers



## THE COREMAX SYSTEM



SCCA07H



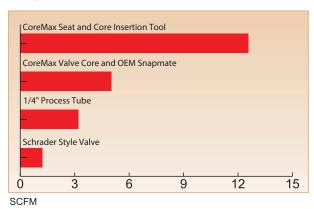
Schrader style access valves have two leak paths and poor tolerance control making them prone to leaks. They have a sleeve seal between the valve core and the seat and an additional elastomer seal on the valve.

The *CoreMax* valve core uses one elastomer to seal both the valve and the seat and also has a metal to metal seal

## SCCA07H - CoreMax Valve Core

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

### Comparison of Relative Flow Rates



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 aps, 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 Styles**

The *CoreMax* seat is critical to the integration 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.





## THE COREMAX TOOLS

### SCP062H - SnapMate OEM

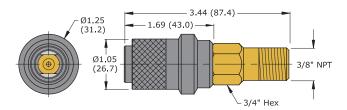


# A versatile, high flow, internally valved connector used at every station for easiest implementation

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.

### **Application**

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



### SCFT10 - Core Valve Insertion Tool

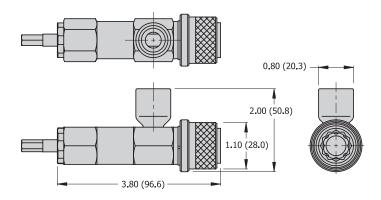


#### This tool is the highest flow for evacuation

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.

#### **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.





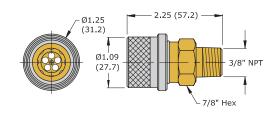
# THE COREMAX TOOLS

#### SCM062W - MBE Connector



### Use 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.



### **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.

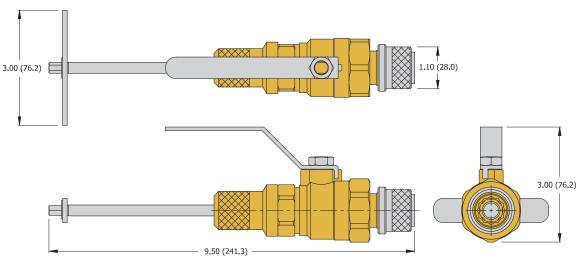
#### **SCFT20A - Valve Removal Tool**



Sleeve actuated tool allows removal and replacement of CoreMax valve core without loss of refrigerant

### **Application**

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



### SCTA07H - SnapMate Service High Flow Service Connector

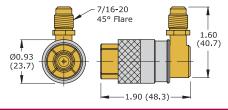


SnapMate connectors are designed to provide quick connections to CoreMax valve cores as well as standard access valves

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.

#### **Application**

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





## THE COREMAX TOOLS

### 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.

# **SCFTP02 - Torque Gun**



### Inserts valve core directly to seat or works with insertion tool

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

#### **Application**

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

## **SCFTM01 - Torque Wrench**



Presets 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.



# **Technology Overview**

**FasTest's** patented squeeze lever actuation and split collet design of the **FasMate FN Series** connectors provide an instant connection that can significantly decrease the time needed for pressure and vacuum testing, filling, flushing and performance testing.

The squeeze lever / split collet operation uses no thread sealant, no wrench tightening and will not damage the port threads. Its rugged design is ideal for production use and offers the following actuations methods: squeeze lever, pneumatic pilot or pneumatic thumb valve.

## **Features and Benefits**

# FasMate "FN" Series

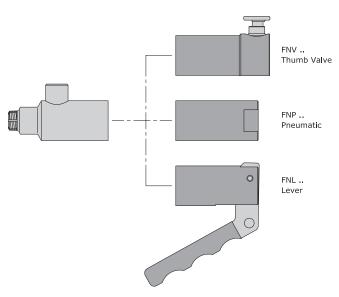


- Instant connection to internal threaded ports
- Seals to 5000 psi for pneumatic / hydraulic testing
- · Safe, reliable, leak tight connections
- Eliminate thread or product damage, sealants and wrench tightening
- Durable stainless steel construction
- · Available in multiple thread profiles
- · Designed and made in the USA

#### **Modular Design for Multiple Applications**



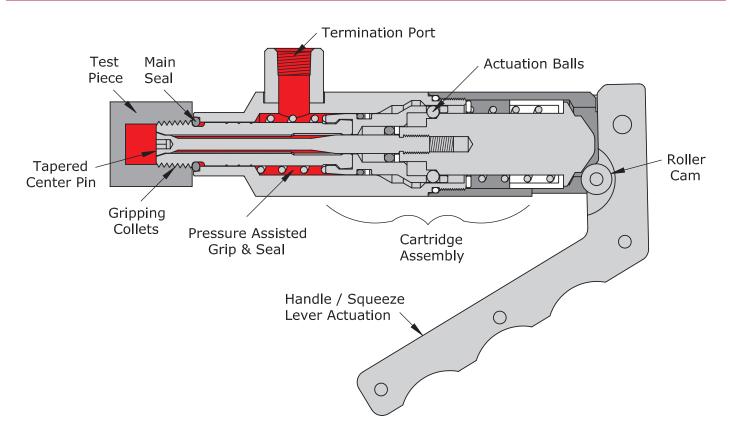
The innovative modular design of the connectors allows the technician to change the method of actuation by simply unscrewing the rear portion of the connector and replacing it with the desired form of actuation.



This feature provides flexibility to accommodate changes in the manufacturing processes, production increases and operator use preference. An additional advantage is the ease of field service for these components should they become damaged or require maintenance.



# FasMate Technology



### A Look Inside the Technology

The Lever actuator uses a rugged roller cam mechanism, that when squeezed, moves the Cartridge Assembly forward. As the Cartridge Assembly moves, so does the Gripping Collets and Tapered Center Pin. The Gripping Collets and Tapered Center Pin move independently due to an innovative Actuation Ball method unique to *FasTest*. This innovative actuation ball technology significantly reduces the effort needed to squeeze the lever. When the lever is released, the gripping collets expand into the port.

As media pressure increases, the sealing and connection force increases. This Pressure Assisted Grip & Seal feature ensures a leak free connection.

### **Grip and Seal Technology**

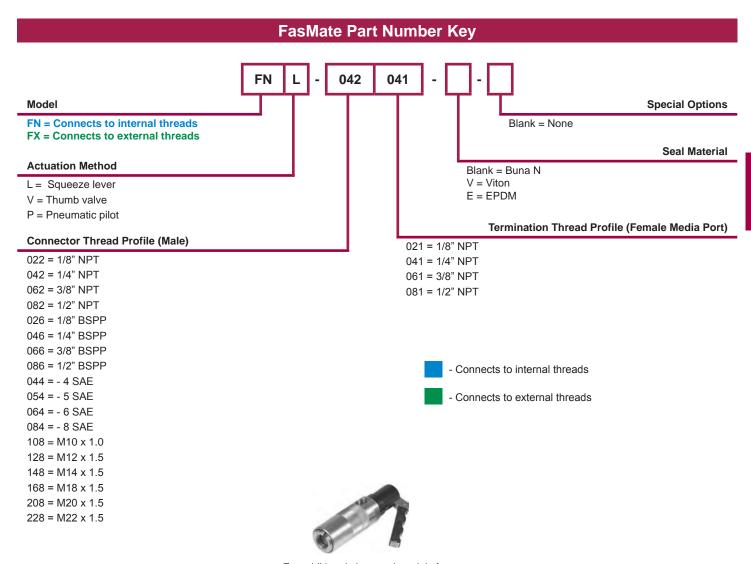
The **FasMate** family of products use an innovative collapsing collet with tapered center pin that together locks the connector to the port. As pressure increases, it becomes difficult to impossible to accidentally or inadvertently disconnect from the port\*. The expanding collets and pressure assisted sealing concept makes a leak free connection with no thread sealants, no wrench tightening and no product damage.

\* For more information about the Pressure Assisted Grip & Seal feature, and how it may apply to your specific application, please contact FasTest. Inc.

### **Proven Design**

FasTest has years of designing and manufacturing innovative connection technology. The FN Series has been extensively field tested for durability, safety, ease of use and operator comfort. Service parts are readily available for fast maintenance or repairs in the field. Regular maintenance of seals and parts will result in the FN Series providing years of reliable service.





For additional sizes and models for external threads (FX), consult factory.

#### Notes:

Part Number Keys are to assist in IDENTIFICATION ONLY.

Verify new part numbers with factory; some configurations are not possible.



# **CONNECTORS FOR INTERNAL (FEMALE) THREADS**



- Instant connections from vacuum to 5000 psi eliminate tape, sealants and wrenches
- Compatible to NPT, SAE O-Ring, BSPP and ISO O-Ring threads
- No damage to threaded parts
- Durable stainless steel construction



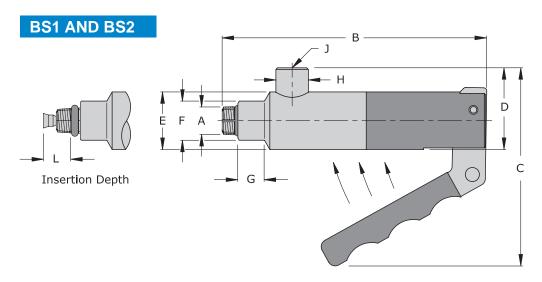
For additional sizes and models for external threads (FXL), consult factory.

### **Lever Actuated - NPT Threads**

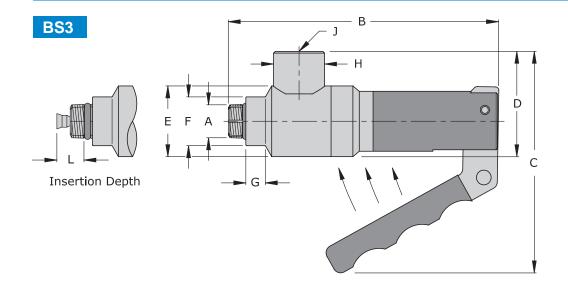
Part Number	Connects to	Rated PSI	Term Thread	Term Diameter	Body Size	Housing Material	Seal Material	Repair Kit	Main Seals Package (5)
FNL-022021	1/8" NPT	Vacuum to 5000	1/8" NPT	0.60 (15.3)	BS1			RFN022021	S1108-B70
FNL-042041	1/4" NPT		1/4" NPT	0.75 (19.1)	BS2	Aluminum &	Duna N	RFN042041	S21250327-B60
FNL-062061	3/8" NPT		3/8" NPT	0.90 (22.9)	BS3	Stainless Steel	Buna N	RFN062061	S1112-B70
FNL-082081	1/2" NPT		1/2" NPT	1.10 (28.0)	BS4			RFN082081	S1208-B70

- Connects to Internal Threads

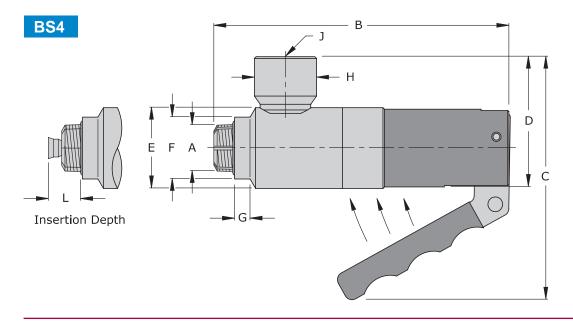




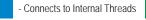
Dim	BS1	BS2
Α	See Cor	nnects to
В	4.80 (122.0)	5.00 (127.0)
С	3.70 (94.0)	4.00 (101.6)
D	1.50 (38.1)	1.70 (43.2)
Е	1.06 (27.0)	1.06 (27.0)
F	0.65 (16.6)	0.72 (18.3)
G	0.50 (12.7)	0.50 (12.7)
Н	0.60 (15.3)	0.75 (19.1)
J	1/8" NPT	1/4" NPT
L	0.55 (14.0)	0.67 (17.1)



Dim	BS3
Α	See Connects to
В	5.00 (127.0)
С	3.90 (99.1)
D	1.86 (47.3)
E	1.25 (31.8)
F	0.86 (21.9)
G	0.35 (8.9)
Н	See Term Diameter
J	See Term Thread
L	0.67 (17.1)



Dim	BS4
Α	See Connects to
В	5.27 (133.9)
С	4.40 (111.8)
D	2.33 (59.2)
E	1.43 (36.4)
F	1.09 (27.7)
G	0.27 (6.9)
Н	See Term Diameter
J	See Term Thread
L	0.76 (19.4)





# **CONNECTORS FOR INTERNAL (FEMALE) THREADS**



- Instant connections from vacuum to 5000 psi eliminate tape, sealants and wrenches
- Compatible to NPT, SAE O-Ring, BSPP and ISO O-Ring threads
- No damage to threaded parts
- Durable stainless steel construction



For additional sizes and models for external threads (FXV), consult factory.

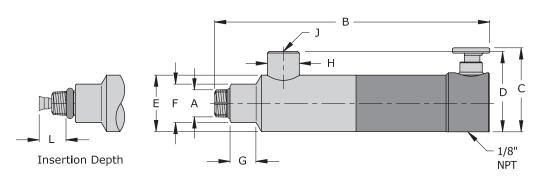
### **Thumb Valve Actuated - NPT Threads**

Part Number	Connects to	Rated PSI	Term Thread	Term Diameter	Body Size	Housing Material	Seal Material	Repair Kit	Main Seals Package (5)
FNV-022021	1/8" NPT	Vacuum to 5000	1/8" NPT	0.60 (15.3)	BS1			RFN022021	S1108-B70
FNV-042041	1/4" NPT		1/4" NPT	0.75 (19.1)	BS2	Aluminum &	Buna N	RFN042041	S21250327-B60
FNV-062061	3/8" NPT		3/8" NPT	0.90 (22.9)	BS3	Stainless Steel	buria in	RFN062061	S1112-B70
FNV-082081	1/2" NPT		1/2" NPT	1.10 (28.0)	BS4			RFN082081	S1208-B70

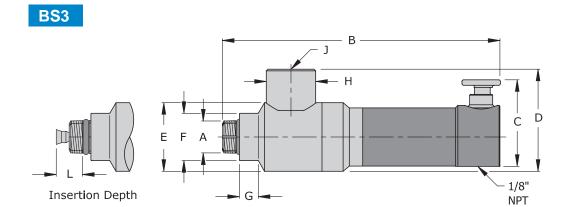
- Connects to Internal Threads



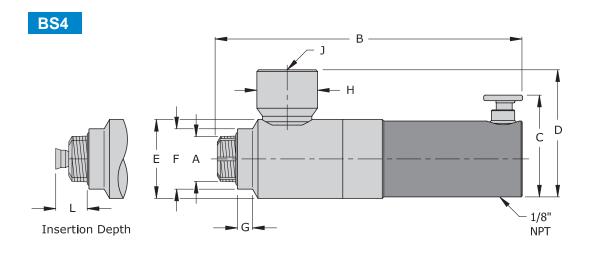
# BS1 AND BS2



Dim	BS1	BS2
Α	See Con	nects to
В	5.13 (130.4)	5.21 (132.4)
С	1.58 (40.2)	1.58 (40.2)
D	1.50 (38.1)	1.70 (43.2)
Е	1.06 (27.0)	1.06 (27.0)
F	0.65 (16.6)	0.72 (18.3)
G	0.50 (12.7)	0.50 (12.7)
Н	0.60 (15.3)	0.75 (19.1)
J	1/8" NPT	1/4" NPT
L	0.55 (14.0)	0.67 (17.1)



Dim	BS3
Α	See Connects to
В	5.05 (128.3)
С	1.58 (40.2)
D	1.86 (47.3)
E	1.25 (31.8)
F	0.86 (21.9)
G	0.35 (8.9)
Н	See Term Diameter
J	See Term Thread
L	0.67 (17.1)



Dim	BS4
Α	See Connects to
В	5.27 (133.9)
С	1.85 (47.0)
D	2.33 (59.2)
Е	1.43 (36.4)
F	1.09 (27.7)
G	0.27 (6.9)
Н	See Term Diameter
J	See Term Thread
L	0.76 (19.4)



# **CONNECTORS FOR INTERNAL (FEMALE) THREADS**



- Instant connections from vacuum to 5000 psi eliminate tape, sealants and wrenches
- Compatible to NPT, SAE O-Ring, BSPP and ISO O-Ring threads
- No damage to threaded parts
- Durable stainless steel construction



For additional sizes and models for external threads (FXP), consult factory.

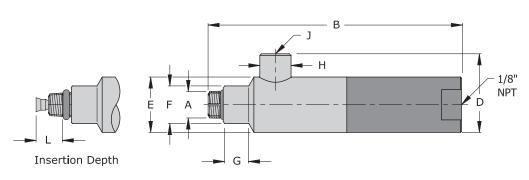
# **Pneumatic Actuated - NPT Threads**

Part Number	Connects to	Rated PSI	Term Thread	Term Diameter	Body Size	Housing Material	Seal Material	Repair Kit	Main Seals Package (5)
FNP-022021	1/8" NPT	Vacuum to 5000	1/8" NPT	0.60 (15.3)	BS1			RFN022021	S1108-B70
FNP-042041	1/4" NPT		1/4" NPT	0.75 (19.1)	BS2	Aluminum &	Buna N	RFN042041	S21250327-B60
FNP-062061	3/8" NPT		3/8" NPT	0.90 (22.9)	BS3	Stainless Steel	buria iv	RFN062061	S1112-B70
FNP-082081	1/2" NPT		1/2" NPT	1.10 (28.0)	BS4			RFN082081	S1208-B70

- Connects to Internal Threads

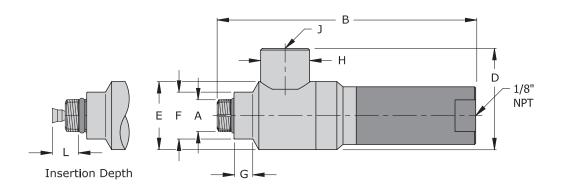


# BS1 AND BS2

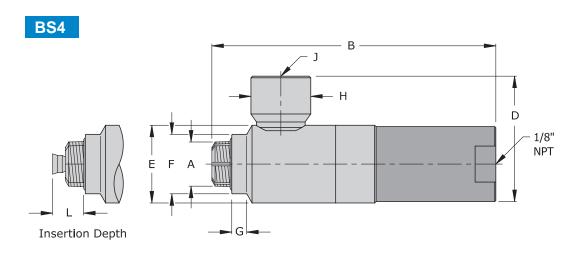


Dim	BS1	BS2
Α	See Cor	nects to
В	4.90 (124.5)	5.00 (127.0)
С	N/A	N/A
D	1.50 (38.1)	1.70 (43.2)
E	1.06 (27.0)	1.06 (27.0)
F	0.65 (16.6)	0.72 (18.3)
G	0.50 (12.7)	0.50 (12.7)
Н	0.60 (15.3)	0.75 (19.1)
J	1/8" NPT	1/4" NPT
L	0.55 (14.0)	0.67 (17.1)

# BS3



Dim	BS3					
Α	See Connects to					
В	4.80 (122.0)					
С	N/A					
D	1.86 (47.3)					
E	1.25 (31.8)					
F	0.86 (21.9)					
G	0.35 (8.9)					
Н	See Term Diameter					
J	See Term Thread					
L	0.67 (17.1)					



Dim	BS4				
Α	See Connects to				
В	5.34 (135.7)				
С	N/A				
D	2.33 (59.2)				
Е	1.43 (36.4)				
F	1.09 (27.7)				
G	0.27 (6.9)				
Н	See Term Diameter				
J	See Term Thread				
L	0.76 (19.4)				



# **Technology Overview**

The **NuJaws Series** provides quick and effortless connections for tubing especially copper, steel and aluminum tubes that are used with refrigerant based products. The unique collet gripping and sealing design provides unmatched sealing reliability and resists removal under pressure.

Both connector series utilize a singular seal which can be quickly replaced at your work center to minimize downtime, maintenance and tool inventory. Neoprene seals are standard for refrigerant based applications, but are available with any elastomer required for your application.



**JXL0 and JXL1 Series** 



JNL0 and JNL1 Series





"JNL" Connectors for Internal Tubes and Bores



"JXL" Connectors for External Tubes

# "JNL" and "JXL" - Smooth Tube Connectors

# **Features and Benefits**

- Pressures to 1000 psi for manual connections\*
- · Resists removal under pressure
- · Reliable, pressure enhanced sealing
- · Quick and easy seal replacement
- Vacuum to 10 millitorr (micron)

- Temperature range from -40°F to 250°F
- Body Anodized aluminum with Delrin handle
- · Gripping Collets Stainless steel snap rings, collets and springs
- Main Seal Neoprene (others available on request)

# **JNL Series**





\*JNL pressure rating based on 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.

# **JXL Series**

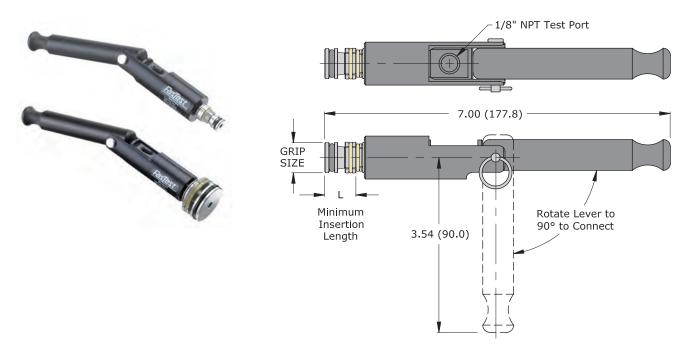




\*JXL pressure rating based on metal test piece not exceeding 30 Rockwell C hardness. As a general guideline, surface must be 5 micro inches or greater. Surfaces less than 5 micro inches not recommended.



# **FASTEST "JNL" SERIES - CONNECTORS FOR INTERNAL TUBE GRIP & SEAL APPLICATIONS**



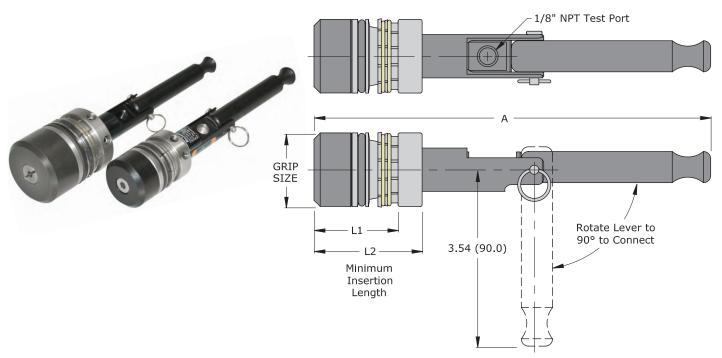
JNL0 and JNL1 - Lever Actuated Connectors for Internal Tubes / Bores

Part Number	Grip Size (+0.010"/-0.010")	Rated PSI*	Flow Diameter	Dim L	Housing Materials	Seal Material	Main Seals Package (5)
JNL0-0375H	0.375"		0.11	0.53			SN0-0375H
JNL0-0500H	0.500"		(2.8)	(13.5)			SN0-0500H
JNL1-0590	0.590"	Vacuum			Aluminum,		SN1-0590
JNL1-0625	0.625"	to		0.63 (16.1)	Stainless Steel	Neoprene	SN1-0625
JNL1-0750	0.750"	1000	0.17 (4.3)		and Delrin		SN1-0750
JNL1-0785	0.785"		(1.0)	(1311)			SN1-0785
JNL1-0875	0.875"						SN1-0875

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



# **FASTEST "JNL" SERIES - CONNECTORS FOR INTERNAL TUBE GRIP & SEAL APPLICATIONS**



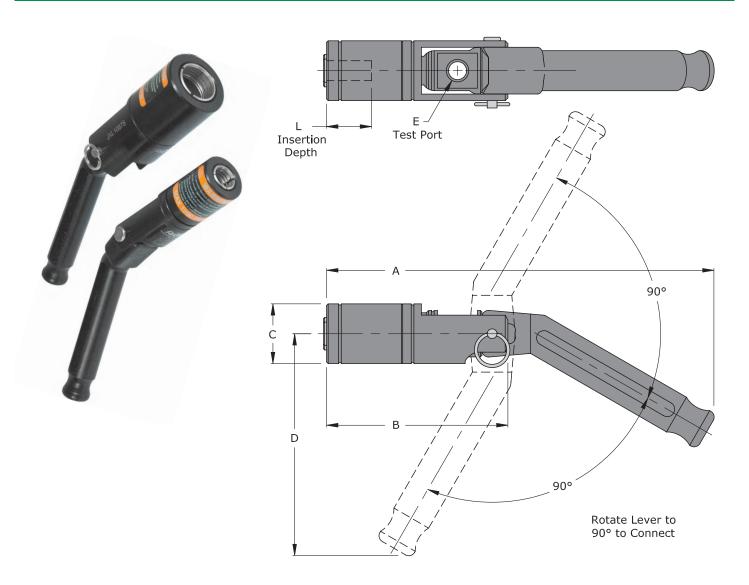
JNL2 - Lever Actuated Connectors for Internal Tubes / Bores

Part Number	Grip Size (+0.030"/-0.010")	Rated PSI*	Flow Diameter	Dim A	Dim L1	Dim L2	Housing Materials	Seal Material	Main Seals Package (5)
JNL2-1000	1.000"		0.17	7.18	1.31	1.39			
JNL2-1125	1.125"		(4.3)	(182.4)	(33.3)	(35.4)			
JNL2-1250	1.250"		0.17	7.30 (185.5)	1.44 (36.6)	1.51 (38.4)	Aluminum.		
JNL2-1375	1.375"	to 750	(4.3)	7.84 (199.2)	1.56 (39.7)	2.05 (52.1)	Stainless Steel and Delrin	Neoprene	Consult Factory
JNL2-1500	1.500"		0.17		1.69 (43.0)	2.12 (53.9)			
JNL2-1625	1.625"		(4.3)	8.09 (205.5)	1.81 (46.0)	2.30 (58.5)			

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



# FASTEST "JXL" SERIES - CONNECTORS FOR EXTERNAL TUBE GRIP & SEAL APPLICATIONS



JXL0 and JXL1 - Lever Actuated Connectors for External Tubes

Part Number	Grip Size (±0.010")	Rated PSI*	Dim A	Dim B	Dim C	Dim D	Dim E	Dim L	Max. Flow Ø	Housing Materials	Seal Material	Main Seals Package (5)					
JXL0-0250	0.250"											SXL0-0250					
JXL0-0312	0.312"		7.27	3.42	1.13	4.22	1/8"	0.85	0.24			SXL0-0312					
JXL0-0375	0.375"	Vacuum	(184.7)	(86.9)	(28.8)	(107.2)	NPT	(21.6)	(6.0)	Aluminum,		SXL0-0375					
JXL0-0500	0.500"	to								Stainless Steel	Neoprene	SXL0-0500					
JXL1-0625	0.625"	1000									$\neg$				and Delrin		SXL0-0625
JXL1-0750	0.750"		7.27 (184.7)	3.42 (86.9)	1.62 (41.2)	4.22 (107.2)	1/4" NPT	0.85 (21.6)				SXL0-0750					
JXL1-0875	0.875"		(12)	(23.0)	( /	(13712)		(=)	(5.0)			SXL0-0875					

<sup>\*</sup> 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.

# **Technology Overview**

The ST Series connectors make reliable, leak tight connections with straight tubes for evacuation or pressure applications such as leak testing, proof testing and processing. The ergonomic sliding sleeve operation makes an instant connection that is further enhanced by pressure and without operator adjustments.

Rugged, heat treated steel components provide excellent resistance to mechanical handling damage but are not recommended for water dunk applications. The mating seal is radially squeezed around the tube upon connection and it is easily replaced without disassembly. The unique collet locking mechanism resists removal under pressure for added safety.

The XT Series connectors provide quick and effortless connections for expanded tubing especially copper, steel, and aluminum tubes that are used with refrigerant based products. These connectors utilize redundant seals on the inside of the tube, which is enhanced by pressure, and a sleeve lock which resists removal under pressure and requires no operator adjustments.

The XT's are manufactured from hardened steel material with seals that can be quickly replaced, without disassembly. at your work center minimizing down-time, maintenance and tool inventory. Neoprene seals are standard for refrigerant based applications but they are available with any elastomer required for your application.

# **Features and Benefits**

# "ST Series"

- Fits straight tubing sizes 1/4", 5/16", 3/8"
- Seals vacuum to 1000 psi, -40°F to +250°F
- Reliable leak tight sealing to 10-7 cc/sec
- Durable, replaceable seals with no connector disassembly
- Heat treated steel body assures long life and protection against mechanical damage
- Positive gripping No operator adjustments!



For Smooth / Swaged Tubes

# "XT Series"

- Fits expanded tubing sizes 3/8", 1/2", 5/8", 3/4", 7/8"
- Seals vacuum to 625 psi, -40°F to +250°F
- Reliable leak tight sealing to 10-7 cc/sec
- · Works well with tube size variation or rough cut ends
- Durable, replaceable seals with no connector disassembly
- Heat treated steel body assures long life and protection against mechanical damage
- Positive gripping No operator adjustments!

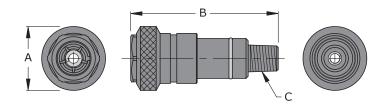


For Formed / Expanded Tubes



# FASTEST "ST SERIES" - CONNECTORS FOR EXTERNAL SMOOTH / SWAGED TUBES



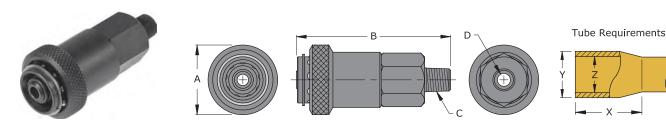


"ST Series" - Sleeve Actuated Connectors for Straight / Swaged Tubes

Part Number	Grip Size (+0.015"/-0.010")	Rated PSI	Dim A	Dim B	Dim C	Insertion Depth	Seal Material	Replacement Collet Sets	Main Seals Package (5)
ST-04042	0.250"		1.14 (29.0)	2.75		0.62		STC04	STB04
ST-05042	0.312"	Vacuum to 1000	1.19 (30.3)	1.19 (69.9)		(15.8)	Neoprene	STC05	STB05
ST-06042	0.375"		1.50 (38.1)	3.23 (82.1)		0.75 (19.1)		STC06	STB06

Note: Not recommended for water dunk applications. Dimensions in inches (mm).

# FASTEST "XT SERIES" - CONNECTORS FOR EXTERNAL FORMED / EXPANDED TUBES



"XT Series" - Sleeve Actuated Connectors for Formed / Expanded Tubes

Part Number	Grip Size (±0.010")	Rated PSI	Dim A	Dim B	Dim C	Flow Ø Dim D	Dim X	Dim Y	Dim Z	Seal Material	Repair Kit	Main Seals Package (5)
XT-06042	0.375"		1.25 (31.8)	3.31		0.12 (3.0)		0.500 (12.7)	0.368 (9.4)		XTR06	XTB06
XT-08042	0.500"		1.37 (34.8)	(84.1)		0.22 (5.5)	0.30"-1.00" (7.7 - 25.4)	0.625 (15.9)	0.491 (12.5)		XTR08	XTB08
XT-10042	0.625"	Vacuum to 625	1.50 (38.1)		1/4" NPT	0.25 (6.3)		0.730 (18.6)	0.616 (15.7)	Neoprene	XTR10	XTB10
XT-12042	0.750"		1.62 (41.2)	3.33 (84.6)		0.27 (6.8)	0.37"-1.00"	0.858 (21.8)	0.741 (18.9)		XTR12	XTB12
XT-14042	0.875"		1.72 (43.7)			0.28 (7.1)	(9.4 - 25.4)	0.996 (25.3)	0.867 (22.1)		XTR14	XTB14

Note: Not recommended for water dunk applications. Dimensions in inches (mm).

# "MBE" & "MRE" Series Connectors for Expanded Tubes

# \_\_\_\_\_

# FASTEST "MBE AND MRE SERIES" CONNECTORS FOR EXPANDED TUBES

Connects to External Tubes

# **Technology Overview**



# Custom, made to application samples and drawings required with application request.

The *MBE Series* (Ball Grip) and *MRE Series* (Ring Grip) connectors make 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.

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

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

## **Features and Benefits**



- High flow non-valved with pressure activated safety lock
- 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
- -40°F to +250°F operating temperature

## "MBE and MRE Series" - Sleeve Actuated for Expanded Tubes - Sizing Guidelines

Body Size	Tube Ø	Expanded Tube Ø	Expansion Length Min.	Flow Ø	Termination (male)	Rated PSI	Housing Material	Seal Material	Main Seals Package (5)
04	1/4"	0.316 (8.03)		0.190 (4.82)	1/4" NPT				
05	5/16"	0.382 (9.71)		0.248 (6.29)	1/4 INF1				
06	3/8"	0.444 (11.28)		0.311 (7.89)					
08	1/2"	0.570 (14.48)		0.436 (11.07)	3/8" NPT				
10	5/8"	0.700 (17.78)	0.300 (7.62)	0.555 (14.09)		Vacuum	Stainless	Noopropo	Consult
12	3/4"	0.840 (21.34)	0.300 (7.62)	0.666 (16.91)	3/4" NPT	to 625	Steel	Neoprene	Factory
14	7/8"	0.970 (24.64)		0.785 (19.93)	3/4 INF1				
16	1"	1.120 (28.45)		0.940 (23.87)	1" NPT				
18	1-1/8"	1.230 (31.25)		1.025 (26.03)	1-1/4" NPT				
22	1-3/8"	1.490 (37.85)		1.265 (32.13)	1-1/4 NP1				

#### **How to Order**

The MBE and MRE Series connectors are designed for mechanical gripping on expanded tubing. Connectors are designed, engineered and manufactured to your specific application requirements.

For part number and a price quotation:

- 1) Identify the gripping and sealing areas of your test piece.
- 2) Contact FasTest with information on test pressure, media and provide detailed drawing, including tolerances of test piece.
- 3) Two sample parts will be required at the time of order for final design and testing purposes.



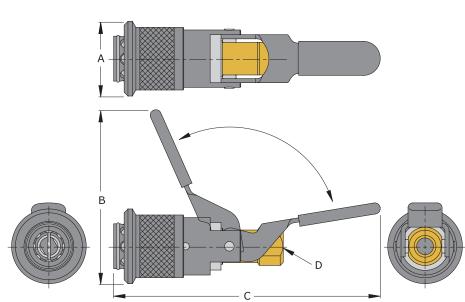
# FASTEST "RQD" CONNECTORS FOR HIGH PRESSURE REFRIGERATION FILLING

### **Technology Overview**



FasTest's new Refrigeration Quick Disconnect (RQD) takes the pressure out of connecting to refrigerant lines for charging or evacuating cooling appliances and applications. The RQD's unique lever action minimizes the effort necessary for connecting to refrigerant lines under high pressure while adding the lever mechanical advantage to the valve opening. This simple two step connection process reduces worker fatigue and increases manufacturing productivity.

## **Features and Benefits**



- Specifically designed for new higher pressure refrigerants
- Easy to operate connectors with unrestricted flow rate for male PCU, Hansen or equivalent style tips
- Disconnect vents trapped residual \ refrigerant with minimal media loss
- Pressure lock feature prevents accidental disconnect under pressure
- Heavy duty steel construction and easy maintenance for extended connector service life

### **RQD Lever Action Style for PCU Tips**

Part Number	Connects to	Diameter Dim A	Height Dim B	Length Dim C	Term. Dim D	Rating PSI	Housing Material	Seal Material	Repair Kit	Main Seals Package (5)
KA04PB	1/4" PCU	1.75 (44.5)	4.39 (111.6)	7.00	1/4" NPT	750	Black	Maanrana	KR04PB	KSM04
KA06PB	3/8" PCU	1.95 (49.6)	4.54 (115.4)	(177.8)	3/8" NPT	750	Oxide Steel	Neoprene	KR06PB	KSM06PB

Notes:

1/4" PCU mates to PCU Model 61/62 and 71/72 or equivalent. 3/8" PCU mates to PCU Model 66/67 or equivalent. Dimensions in inches (mm).

## **RQD Lever Action Style for Hanson Tips**

Part Number	Connects to	Diameter Dim A	Height Dim B	Length Dim C		Rating PSI	Housing Material	Seal Material	Repair Kit	Main Seals Package (5)
KA04HB	1/4" Hanson	1.75 (44.5)	4.39 (111.6)	7.00	1/4" NPT	750	Black	Maanrana	KR04HB	KSM04
KA06HB	3/8" Hanson	1.95 (49.6)	4.54 (115.4)	(177.8)	3/8" NPT	750	Oxide Steel	Neoprene	KR06HB	KSM06HB

Notes:

1/4" PCU mates to ISO standard 7241-1 Series B tips (Hanson 2-K series tips, Parker 60 series tips) or equivalent.

3/8" PCU mates to ISO standard 7241-1 Series B tips (Hanson 3-K series tips, Parker 60 series tips) or equivalent.

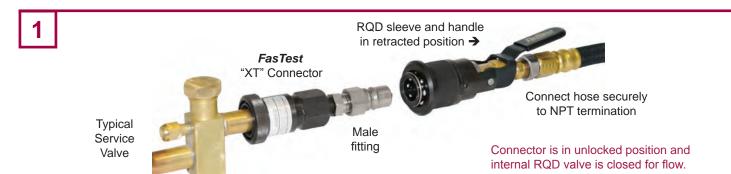
Dimensions in inches (mm).

# "RQD" - Refrigeration Quick Disconnect



# **Operating Instructions**

Connecting the *RQD* is a simple process that delivers a fast, safe and repeatable high pressure connection to 1/4" and 3/8" PCU and Hanson style tips with a minimal amount of physical effort.









To disconnect, simply reverse the RQD connection process. Rotating handle will close the internal RQD valve and vent the trapped media away from the handle.



# TwistMate®

FasTest's complete product family of TwistMate connectors, plugs and caps provide fast leak tight threaded connections for testing, filling, flushing, plugging, calibrating or venting applications. Simply spin our connectors fingertight onto thread until face seal contacts test piece.

**TwistMates** seal automatically when the system is pressurized. Air, gas or hydraulic pressure in the system provides a sealing force that presses the main seal against the face of the threads. This automatic internal piston action maintains the seal with minimum pressure.



### **Features and Benefits**

- · Pressure assisted grip and seal technology
- Available in NPT, BSPP, BSPT, SAE, Metric and special thread profiles
- · Repair kits available for extended connector service life
- Finger-tight pneumatic or hydraulic connections from vacuum to 10,000 psi
- Stainless steel construction for corrosion resistance
- Reduce production losses, retest time, scrap and test damage repair costs

# **Applications**

- · Water dunk leak testing
- · Leak, flow, flushing or washing
- Cylinders, manifolds, valves, pumps filters and assemblies
- Bubble, pressure decay and mass spectrometer testing
- Heat exchangers, brake and steering system assemblies
- Capping and plugging pipes, fittings or hose ends



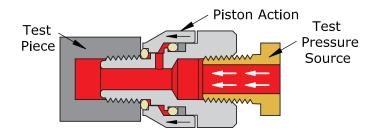
# The TwistMate Technology

The **TwistMate** family of products use an innovative "twist to connect" and pressure assisted grip and seal technology to deliver a fast, safe and repeatable high pressure or vacuum testing connection in threaded ports or tubing.

This sealing technique creates an improved seal as pressures increase and eliminates the traditional sealing methods using tape and wrenches that can damage internal or external threads.

## "MIT Series" Connectors for Internal / Female Threads

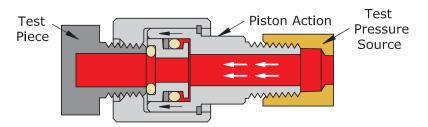




- Spin *TwistMate* into the threaded port until the seal makes contact.
- Introduce the media and pressure. The external sleeve automatically moves toward the test piece enhancing the seal squeeze. Vacuum applications will require finger tightening.

## "MET Series" Connectors for External / Male Threads

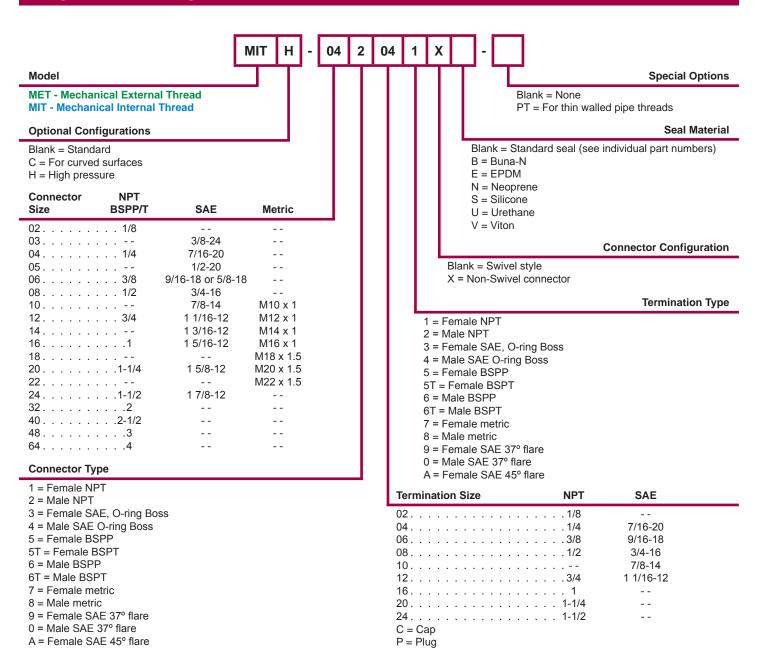




- Spin *TwistMate* on to the threaded port until the seal makes contact.
- 2. Introduce the media and pressure. The internal piston automatically moves toward the test piece enhancing the seal squeeze. Vacuum applications will require finger tightening.



## TWISTMATE PART NUMBER KEY



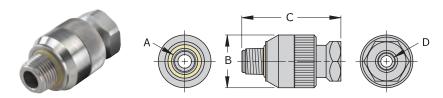
# Notes:

Part Number Keys are to assist in IDENTIFICATION ONLY.

Verify new part numbers with factory; some configurations are not possible.



# **CONNECTORS FOR INTERNAL (FEMALE) NPT THREADS**

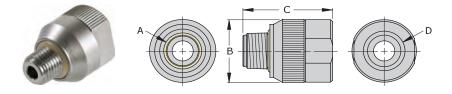


NPT - Swivel Style (per SAE J476 or ANSI B1.20)

Part Number	Dim A	Dim B	Dim C	Dim D	Rating PSI	Housing Style	Seal Material	Repair Kit	Main Seals Package (5)
MIT-022021	1/8" NPT	0.82 (20.9)	1.68 (42.7)	1/8" NPT	5000			MITR-020	S1109-U70
MIT-042041	1/4" NPT	1.00 (25.4)	1.88 (47.8)	1/4" NPT	5000			MITR-040	S1111-U70
MIT-062061	3/8" NPT	1.18 (30.0)	2.09 (53.1)	3/8" NPT		Swivel	Lirothono*	MITR-060	S1113-U70
MIT-082081	1/2" NPT	1.36 (34.6)	2.57 (65.3)	1/2" NPT	4000	Swivei	Urethane*	MITR-080	S1209-U70
MIT-122121	3/4" NPT	1.68 (42.7)	2.73 (69.4)	3/4" NPT	4000			MITR-12	S1109-U70
MIT-162161	1" NPT	2.00 (50.8)	3.27 (83.1)	1" NPT				MITR-16	S1010-U70

\*Optional seal materials are FKM (Viton), EPDM and Buna N - Example: MIT-022021 = EPDM

Note: Dimensions in inches (mm).



NPT - Non-Swivel Style (per SAE J476 or ANSI B1.20)

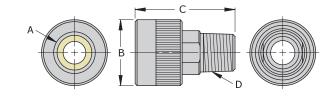
Part Number	Dim A	Dim B	Dim C	Dim D	Rating PSI	Housing Style	Seal Material	Repair Kit	Main Seals Package (5)
MIT-022021X	1/8" NPT	0.82 (20.9)	1.24 (31.5)	1/8" NPT	5000			MITR-02	S1109-U70
MIT-042041X	1/4" NPT	1.00 (25.4)	1.41 (35.9)	1/4" NPT	5000			MITR-04	S1111-U70
MIT-062061X	3/8" NPT	1.18 (30.0)	1.48 (37.6)	3/8" NPT				MITR-06	S1113-U70
MIT-082081X	1/2" NPT	1.36 (34.6)	1.85 (47.0)	1/2" NPT				MITR-08	S1209-U70
MIT-122121X	3/4" NPT	1.68 (42.7)	1.94 (49.3)	3/4" NPT	4000			MITR-12	S1213-U70
MIT-162161X	1" NPT	2.00 (50.8)	2.07 (52.6)	1" NPT		Non	Urethane*	MITR-16	S1216-U70
MIT-202201X	1-1/4" NPT	2.38 (60.5)	2.13 (54.2)	1-1/4" NPT		Swivel		MITR-20	S1222-U70
MIT-242241X	1-1/2" NPT	2.74 (69.6)	2.40 (61.0)	1-1/2" NPT	3000			MITR-24	S1327-U70
MIT-322161X	2" NPT	3.47 (88.2)	2.68 (68.1)	1" NPT	2500			MITR-32	S1331-U70
MIT-402161X	2-1/2" NPT	3.97 (100.9)	3.42 (86.9)	1" NPT	1500			MITR-40	S1335-U70
MIT-482161X	3" NPT	4.73 (120.2)	3.68 (93.5)	1" NPT	1500			MITR-48	S1340-U70
MIT-642161X	4" NPT	5.73 (145.6)	3.68 (93.5)	1" NPT	1000			MITR-64	S1348-U70

\*Optional seal materials are FKM (Viton), EPDM and Buna N - Example: MIT-022021XV = FKM (Viton)



# **CONNECTORS FOR EXTERNAL (MALE) NPT THREADS**

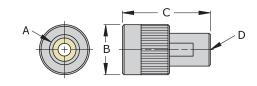




## NPT Threads (per SAE J476 or ANSI B1.20)

Part Number	Dim A	Dim B	Dim C	Dim D	Rating PSI	Housing Style	Seal Material	Repair Kit	Main Seals Package (5)
MET-021022	1/8" NPT	0.82 (20.9)	1.51 (38.4)	1/8" NPT	5000			METR-02	S1105-U70
MET-041042	1/4" NPT	0.94 (23.9)	1.74 (44.2)	1/4" NPT	5000			METR-04	S1108-U70
MET-061062	3/8" NPT	1.18 (30.0)	1.78 (45.3)	3/8" NPT				METR-06	S1110-U70
MET-081082	1/2" NPT	1.60 (40.7)	2.05 (52.1)	1/2" NPT	4000	Swivel	Urethane*	METR-08	S1112-U70
MET-121122	3/4" NPT	1.68 (42.7)	2.34 (59.5)	3/4" NPT	4000			METR-12	S1115-U70
MET-161162	1" NPT	2.00 (69.6)	2.74 (60.2)	1" NPT				METR-16	S1212-U70
MET-201202	1-1/4" NPT	2.37 (60.2)	3.27 (83.1)	1-1/4" NPT	2500			METR-20	S1217-U70





## NPT Threads (per SAE J476 or ANSI B1.20)

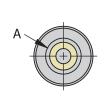
Part Number	Dim A	Dim B	Dim C	Dim D	Rating PSI	Housing Style	Seal Material	Repair Kit	Main Seals Package (5)
MET-241161	1-1/2" NPT	2.37 (60.2)	3.27 (83.1)	1" NPT	1000			METR-24	METB24
MET-321161	2" NPT	3.00 (76.2)	2.53 (64.3)	1" NPT	750	Swivel	Urethane*	METR-32	METB32
MET-401161	2-1/2" NPT	3.40 (86.4)	2.54 (64.6)	1" NPT	500	Swivei	Orethane	METR-40	METB40
MET-481161	3" NPT	4.25 (108.0)	2.61 (66.3)	1" NPT	300			METR-48	METB48

\*Optional seal materials are FKM (Viton), EPDM and Buna N - Example: MET-041042 = EPDM **Note**: Dimensions in inches (mm).



# CAPS FOR EXTERNAL (MALE) NPT, BSPP AND BSPT THREADS







# Cap Style for NPT Threads (per SAE J476 or ANSI B1.20)

Part Number	Dim A	Dim B	Dim C	Rating PSI	Housing Style	Seal Material	Repair Kit	Main Seals Package (5)
MET-021C	1/8" NPT	0.80 (20.4)	0.83 (21.1)	5000	Сар	Urethane*	METR-02	S1105-U70
MET-041C	1/4" NPT	0.93 (23.7)	0.88 (22.4)				METR-04	S1108-U70
MET-061C	3/8" NPT	1.20 (30.5)	0.90 (22.9)				METR-06	S1110-U70
MET-081C	1/2" NPT	1.36 (34.6)	0.97 (24.7)				METR-08	S1112-U70

\*Optional seal materials are FKM (Viton), EPDM and Buna N - Example: MET-041C 

✓ = FKM (Viton) Note: Dimensions in inches (mm).

# TwistMate Internal Repair Kits

Swivel style repair kits contains 2 internal Buna N O-rings, 2 backup rings and 1 snap ring. Non-Swivel style repair kits contain 1 internal Buna N O-ring and 1 backup ring.

Repair kits do not include main seal replacement.

For additional kits consult factory.



Date:	<b>Application</b>	<b>Evaluation</b>	<b>Sheet</b>

Evaluation and design will be based on information provided.
Please provide as much detail as possible.

*Company:		*Phone:				
*Contact:		*Fax:				
*Address:		*E-mail:				
*City:	*State:	*Zip Code:				
Product Manufactured:						
1. Testing Specifications						
Test Pressure						
Test Temperatures	Acceptable L	Leak Rate	_			
Test Medium	Available Pile					
Number of Connectors Required	<del></del>					
Type of Test: Bubble Leak Water Dunk F  Mass Spectrometer - Helium Concentrate	Pressure Deca	ay Proof Test Tracer Gas				
2. Type of Application						
	perated - Fixtu imatically Opei	erated Lever Action / Sleeve Locking				
3. Part Specifications		*Required Field				
2 prints detailing all dimensions, tolerances, featu	res.					
2 actual production parts that are quality assurance	ce approved.					
Identify Surface to be Sealed:						
Machined Cast Threaded	Other	er				
Diameter to Seal Inte	ernal E	External				
Identify Gripping Surface: (Grip and Seal Connectors Only)						
Smooth Tube Beaded Tube Flared Tub	pe Thi	nreaded Tube				
Other						
Diameter to Grip Inte	ernal E	External				
Hardness		*Date:				



# **Connector Refurbishment Program**



**Extend the service life and warranty of your investment** - Our connector refurbishment and competitor replacement program delivers the latest product improvements and ensures proper connector operation and performance in your application. Connectors routinely maintained can be refurbished or replaced economically relative to the cost of a new connector replacement.

# Visit www.fastestinc.com or contact *FasTest* for details.

### Warranty

#### **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 distributors. 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.

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#### **Calibration Connectors**

The *FasCal* complete line of plug and play connectors for lab and field instrument calibration without the use of tapes, sealants and wrenches.



#### **Medical Connectors**

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



### Leak Test Connector Selection Guide

Features a wide variety of patented connector technologies that are typically used for leak and pressure testing manufacturing applications.



### **Compressed Gas Connectors**

Innovative gas connectors for common CGA standards used in conventional and residual pressure valve filling applications.



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