



TOOLS & SYSTEMS

# FASTEST®



**SAFE.  
RELIABLE.  
FAST.**

SEALING CONNECTION TOOLS

 **FASTEST**





# FASTEST<sup>®</sup>

## SAFE, RELIABLE, FAST SEALING CONNECTIONS

Enhance Test Safety | Drive Continuous Improvement | Ensure Product Quality

Standard and Custom Sealing Connection Tools for Leak Test and Fluid Transfer Applications.

FasTest is a dedicated manufacturer of advanced engineered Sealing Connection Tools for product testing, fluid transfer, and other processing applications. Our mission is to make your production safe, easy, and more efficient. FasTest tools significantly increase operational throughput to reduce manufacturing costs.

As your sealing and connection solution leader for over 35 years, FasTest is ready to assist you in specifying the optimal sealing connection tools for your application.

### OUR CUSTOMERS

AUTOMOTIVE /  
VEHICLE SYSTEMS

HVAC/  
REFRIGERATION

COMPRESSED GAS

FLUID POWER

APPLIANCES

AEROSPACE

MEDICAL LIFE  
SCIENCES

...AND MORE



#### APPLICATION EXPERTS

We work with you to provide the best solution for your application.



#### QUALITY

ISO 9001 Certified;  
Robust tools improve the  
quality of your product.



#### BREADTH OF OFFERING

Extensive standard  
and Custom Engineered  
Solutions.



#### INTELLIGENT TOOLS

Industry 4.0 sensing &  
data generating tools

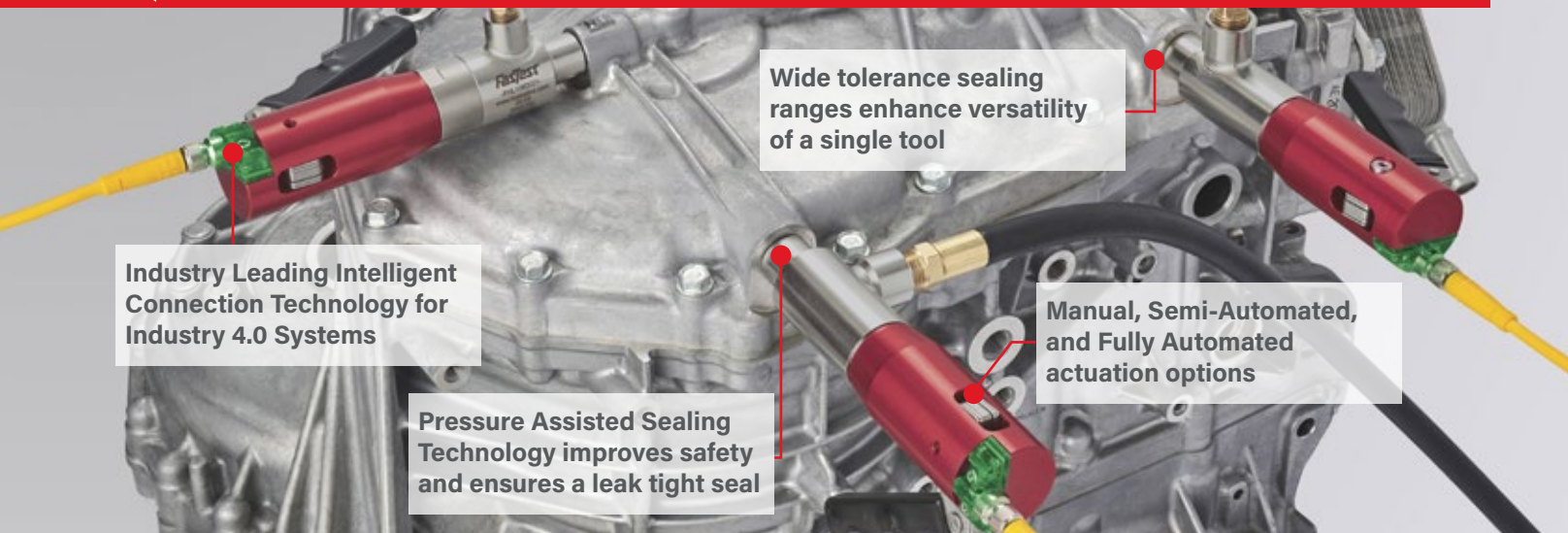


#### GLOBAL SUPPORT

Global distribution  
coverage for local and  
responsive distribution  
support.



# INTELLIGENCE AT THE POINT OF CONNECTION



## FASTEST EXPERTISE

We are the Intelligence at the Point of Connection. We've seen it, we've done it, we live it.

FasTest® Sealing Connection Tool: A high performance device that provides a repeatable, ergonomic, and fast way to attach and seal applications for leak testing and fluid transfer processes.

### Leak Testing

Sealing Connection integrity is imperative to get good leak testing results.

### Fluid Transfer Testing

High flow, high pressure, and safe connections.

### HVAC/R Processing

Extreme leakage requirements for pressure and vacuum.

### Compressed Gas Filling

Robust, secure, and leak free connections.

### CoreMax® Access Valve

CoreMax® access valve provides a leak free valve designed for refrigerant.

### Complete Sealing Connection Tool Provider

Single source provider of all Sealing Connection Tools for an entire application. FasTest® Sealing Connection Tools provide consistent connection and sealing for testing variation reduction.

### Customer Intimacy

We work with you to improve your product and manufacturing process.

### Largest Selection of Sealing Connection Tools

Hundreds of standard designs available along with Custom Engineering Solutions.

### Faster and Better Real Time Decisions

FasTest® sealing connection integrity eliminates wasted time diagnosing leaks, allowing for focus on key process improvements.

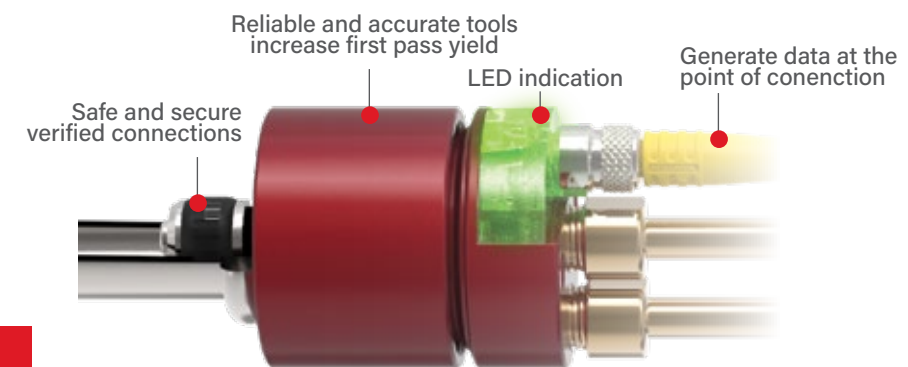
### Quick ROI

Improved safety, better ergonomics, and increased throughput.

## ICON™

INTELLIGENT CONNECTION TECHNOLOGY

FasTest's ICON™ adds sensing capabilities to our mechanical Sealing Connection Tools. ICON™ Tools include instant LED visual feedback and data output to improve sealing connection accuracy, maximize production efficiency, and optimize maintenance.



### ICON™ features:



#### SURE SEAL™

Instant LED feedback verifies a good connection prior to starting a test.



#### SEAL LIFE™

Alert when the main seal is at end of life and must be replaced.

### » Improve safety during functional tests.

SURE SEAL™ provides an instant LED indication of a safe and secure connection. Identify short-connects before media is introduced to prevent spills.

### » Eliminate leak test false failures to improve first pass yield.

With ICON™, if the product fails a test, the connections should not be a source of leaks.

### » Increase throughput and reduce downtime.

Safe, reliable, and consistent connections every cycle - test more, quicker. Reduce rework and the need to retest.

### » Collect tool data.

Gather data on historical use, actuations, and cycle count to get better testing results.

### » Optimize seal maintenance.

SEAL LIFE™ indicates when the main seal needs to be replaced.

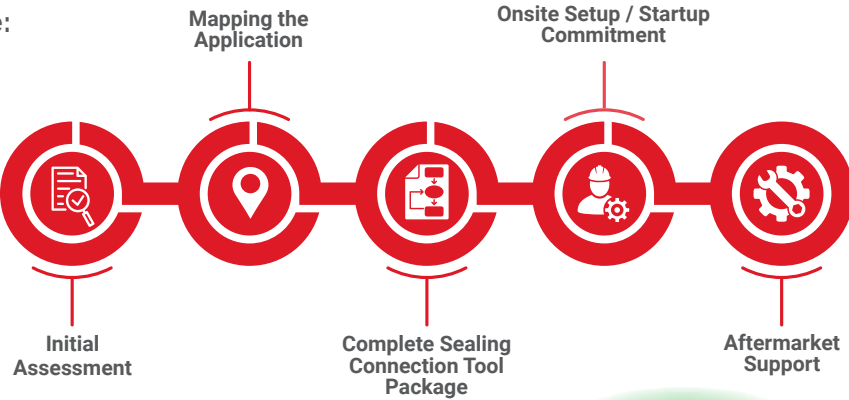


# COMPLETE SYSTEM PROVIDER

ALL THE SEALING CONNECTION TOOLS FOR YOUR APPLICATION - ACHIEVE CONSISTENT SEALING AND REDUCE TESTING VARIATION

» Work with our experienced engineers to solve your problems.  
Let your engineers work on your products and leave sealing tools to us.

What we provide:

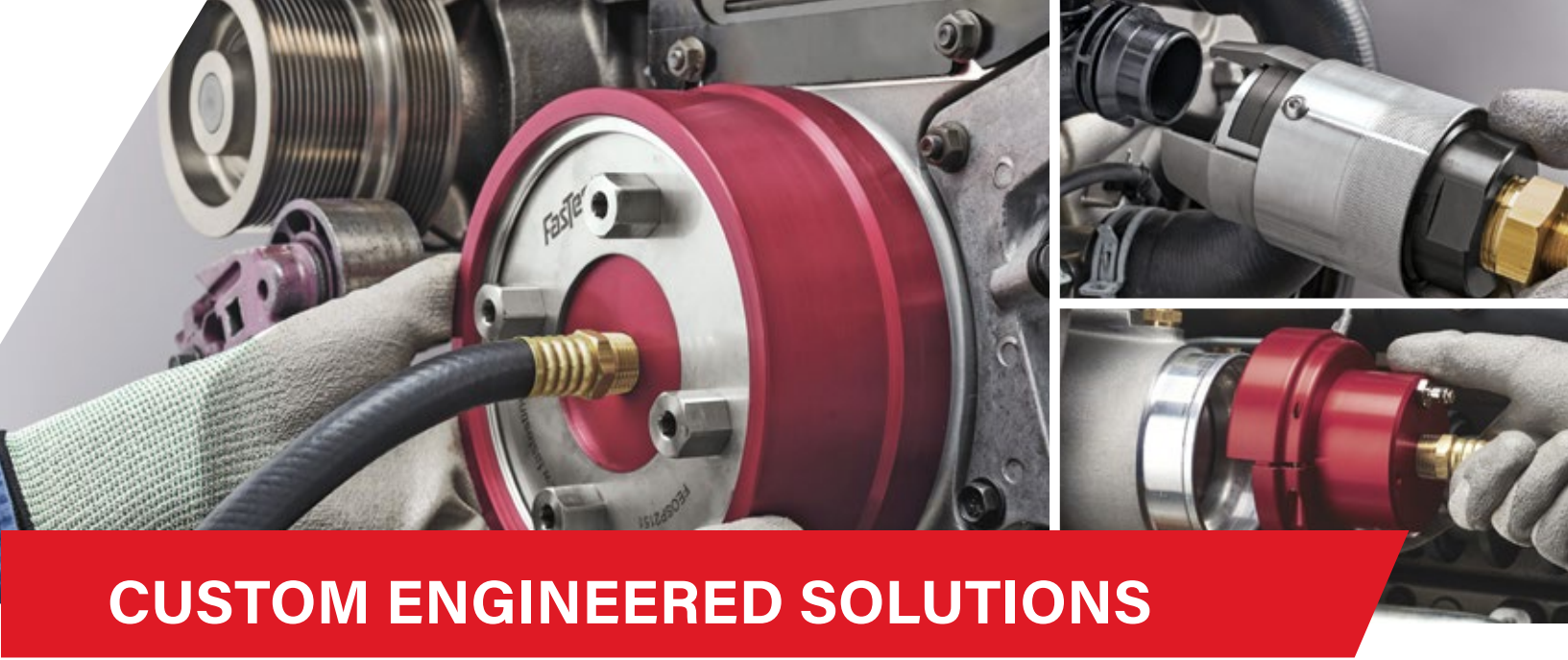
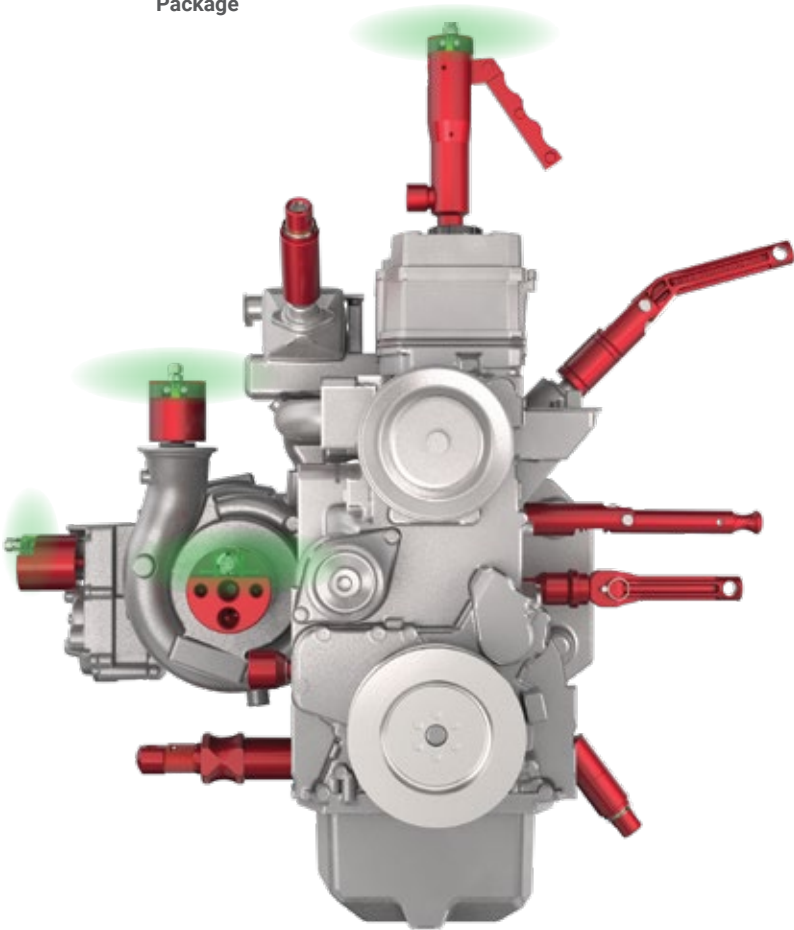


» **Reduce testing variation** with a complete package of Fastest Sealing Connection Tools

» **Ergonomic Sealing Connection Tools** with SURE SEAL™ eliminates false failures, improving takt time

» **Multiple data points** provides insight for your testing process

» **Leak-tight seals** prevents contamination of media and reduces scrap and test damage



## CUSTOM ENGINEERED SOLUTIONS

WE TRANSFORM STANDARDIZED TOOLS INTO TAILOR-MADE SOLUTIONS TO FIT YOUR EXACT REQUIREMENTS.

» We have a dedicated team of Custom Experts - we have done thousands of custom applications and have likely seen yours.

Custom Sealing Connection Tools for:

### Automotive / Vehicle Systems

- Unique port shapes/sizes
- Turbocharger
- Fuel systems

### Fluid Power

- Hydraulic hose ends
- Hydrostatic drive components
- Cylinder testing

### HVAC/R

- Distribution manifolds
- Compressor run testing
- Coil leak testing

### Compressed Gas

- Pressure vessel proof testing
- Specialty gasses
- Fill plant ergonomics

### Aerospace

- Specialty pressures/materials
- Hydraulic tubing
- Casting porosity

### Appliance

- Washing machine mixing valves
- Coil/compressors
- Water dispensers and filtration

### Medical / Life Science

- Drug delivery systems (insulin pumps/tube sets)
- Medical filtration (kidney dialysis)
- Medical devices (chest drains, angioplasty instruments)

### Telecommunications

- Fiber optic cables
- Cloud server liquid cooling
- Casings



NEED A SOLUTION FOR YOUR APPLICATION? Submit a custom application form and drawing to [fastsales@fastestinc.com](mailto:fastsales@fastestinc.com) or to your local distributor.

» We know our customers - Our breadth of product, innovative technologies, and over 35 years of sealing experience makes us sealing connection tool experts for these industries... and more.

## AUTOMOTIVE / VEHICLE SYSTEMS

**Industry Needs:** safety, Industry 4.0, broad offering, repeatable, and durable.

**Common Applications:** Engine testing (leak & hot run test), cooling/braking/fuel systems leak testing, and fluid transfer. Electric vehicle component testing, drive system, and battery cooling.

**Suggested Products:** FE/FI, JN/JX, FN/FX, ZF, ZN, ZGN, FR70, MET/MIT, 60/70, and customized solutions.



## FLUID POWER

**Industry Needs:** safety, Industry 4.0, high pressure, and high flow.

**Common Applications:** Pneumatic/hydraulic hose assembly, cylinders, pumps, motors, hydrostatics, pneumatic components, and valves.

**Suggested Products:** FN/FX, HPB, MET/MIT, ZGN, 60/70, and customized solutions.



## HVAC/R

**Industry Needs:** safety, Industry 4.0, extreme vacuum, current/next-gen refrigerants, safe, stringent leak test, system access valve.

**Common Applications:** Coil test, compressor test, burst test, manifold assembly test, evacuation/charging, furnace burner test, and system run test.

**Suggested Products:** ST, XT, GasMate, SnapMate, JNL/JXL, MBE/MRE, RQD, and customized solutions

**CoreMax® Access Valve System:** High flow OEM refrigerant valves for HVAC-R manufacturers and connectors for testing applications with refrigerant tubing, and process tips.



**DON'T SEE A SOLUTION FOR YOUR INDUSTRY?** Look on p. 6 to see our Custom Engineered Solutions capabilities.

## COMPRESSED GAS

**Industry Needs:** safety, Industry 4.0, high pressure, vacuum capable, robust, and specific for compressed gas / oxygen systems.

**Common Applications:** Cylinder evacuation and fill.

**Suggested Products:** G540, G580, G346, G590, MediMate, High Purity, and Cryovent.



## AEROSPACE

**Industry Needs:** safety, Industry 4.0, high pressure, non-marring, and stringent leak test.

**Common Applications:** Tube assemblies, castings, fuel flow, calibration, and pitot tubes.

**Suggested Products:** HPB, FN/FX, MET/MIT, FE/FI, 60/70, and customized solutions.



## APPLIANCE

**Industry Needs:** safety, Industry 4.0, broad offering, vacuum capable, stringent leak test, high cycle, and easy to maintain.

**Common Applications:** Refrigerant leak test, manifold assembly test, evacuation/charging, furnace burner test, mixing valve tests, plumbing testing, and system run test.

**Suggested Products:** JN/JX, FN/FX, MET/MIT, GasMate, SnapMate, 60/70, ST, XT, and customized solutions.



## MEDICAL / LIFE SCIENCES

**Industry Needs:** safety, Industry 4.0, vacuum capable, certified cleanliness, FDA compliant seals, stringent leak test, high cycle.

**Common Applications:** Angioplasty catheter, battery packs, needle, syringe, Luer testing, dialysis filters and specialty tools.

**Suggested Products:** ME, ML, LuerMate, 60/70, and customized solutions.





# Table of Contents



## Product Selection Guide

Internal Connection Guide -----	12
External Connection Guide -----	14
Industry-Specific Connections -----	16

## Internal Connection Tools

EZ Connect™ ZN -----	20
FI -----	22
EZ Connect™ ZGN -----	28
JNL -----	32
FasMate® FN -----	36
TwistMate® MIT -----	46

## External Connection Tools

EZ Connect™ ZF -----	56
FE -----	58
60 -----	66
70 -----	70
JXL -----	72
FasMate® FX -----	74
HPB -----	78
TwistMate® MET -----	80

## Industry-Specific Tools

FIG -----	88
FEG -----	90
70 FR -----	92
GasMate™ GZNV -----	94
GasMate™ G60V -----	96
ME -----	98
ML -----	102
60M -----	104

## Accessories

Product Accessories -----	106
ICON™ Accessories -----	107

- 1 Identify Cavity/Tube/Thread type for application
- 2 Select tool(s) that fit size requirements
- 3 Verify operating/test pressure meets requirements
- 4 Select actuation method - lever/sleeve for manual, pneumatic for automation
- 5 Identify desired ICON™ features

Connect and seal  
on the inside of the  
cavity, tube, or thread

Industry Specific Selection  
Guide on p. 15



PRODUCT SERIES		EZ Connect™ ZN	FI	EZ Connect™ ZGN
Page		p. 19	p. 21	p. 27
3	Pressure Rating	Vacuum to 50 psi (3.5 bar)	Vacuum to 120 psi (8.3 bar)	Vacuum to 120-300 psi (8.3-20.7 bar)
	Application Type	Manual	Semi-Automated or Fully Automated	Manual / Semi-Automated / Fully Automated
4	Actuation Method	Lever	Pneumatic	Lever / Pneumatic
	Grip Method	Seal Friction	Fixturing / Seal friction	Grip Collets
5	ICON™ Technology		SURE SEAL™ SEAL LIFE™	SURE SEAL™ SEAL LIFE™
CAVITIES	HOLES / BORES	2 0.375" to 1.339" 9.53 mm to 34.01 mm	0.310" to 3.005" 7.87 mm to 76.33 mm	N/A
	STRAIGHT	0.375" to 1.339" 9.53 mm to 34.01 mm	0.310" to 3.005" 7.87 mm to 76.33 mm	N/A
	SWAGED			
TUBES	EXPANDED			
	FLARED	0.375" to 1.339" 9.53 mm to 34.01 mm	0.310" to 3.005" 7.87 mm to 76.33 mm	N/A
	BEADED			
	BARBED			
	FORMED			
THREADS	NPT	N/A	1⁄8 to 2½	1⁄8 to 2½
	BSPT/BSPP (G)	N/A	1⁄8 to 2½	1⁄8 to 2½
	O-RING BOSS / FLARE PORTS	N/A	7⁄16-20 to 2½-12 M10 to M60	¾-24 to ¾-16 M10 to M20
	JIC 37° FLARE SWIVEL NUT	N/A	N/A	N/A
	ORFS SWIVEL NUT	N/A	N/A	N/A

JNL	FasMate® FN	TwistMate® MIT
p. 31	p. 35	p. 45
Vacuum 10 mtorr (micron) to 1,000 psi (68.9 bar)	Vacuum to 5,000 psi (344.7 bar)	Vacuum to 10,000 psi (689.5 bar)
Manual	Manual	Manual
Lever	Lever / Pneumatic / Thumb Valve	Manual Twist
Grip Collets	Thread Collets	Continuous Thread
	SURE SEAL™	
0.375" to 1.625" 9.53 mm to 41.275 mm	N/A	N/A
0.375" to 1.625" 9.53mm to 41.275mm	N/A	N/A
N/A	N/A	N/A
N/A	1⁄8 to ¾	1⁄8 to 4
N/A	1⁄8 to ¾	1⁄8 to 1
N/A	7⁄16-20 to 1½-16 M10 to M22	1⁄8-24 to 1½-12 M10 to M22
N/A	N/A	7⁄16-20 to 3-12 (-4 to -40)
N/A	N/A	9⁄16-18 to 2½-12 (-4 to -32)

- 1 Identify Cavity/Tube/Thread type for application
- 2 Select tool(s) that fit size requirements
- 3 Verify operating/test pressure meets requirements
- 4 Select actuation method - lever/sleeve for manual, pneumatic for automation
- 5 Identify desired ICON™ features

Connect and seal on the outside of the cavity, tube, or thread

Industry Specific Selection Guide on p. 15



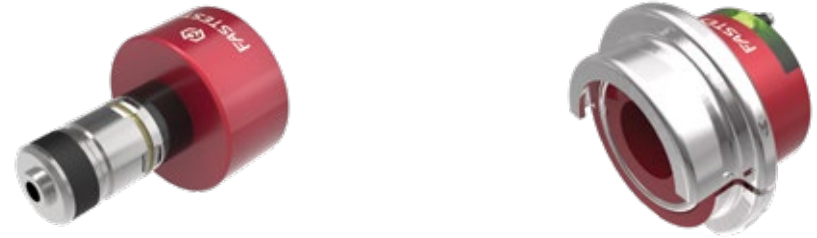
PRODUCT SERIES		EZ Connect™ ZF	FE	60	70
Page		p. 55	p. 57	p. 65	p. 69
3	Pressure Rating	Vacuum to 300 psi (20.7 bar)	Vacuum to 500 psi (34.5 bar)	Vacuum to 750 psi (51.7 bar)	Vacuum to 750 psi (51.7 bar)
	Application Type	Manual	Semi-Automated or Fully Automated	Manual	Manual
	4 Actuation Method	Lever	Pneumatic	Sleeve	Sleeve
	Grip Method	Grip Collets	Fixturing / Seal Friction	Grip Collets	Grip Collets
	5 ICON™ Technology		SURE SEAL™ SEAL LIFE™	SURE SEAL™	Consult Factory
1	TUBES	2 N/A	0.030" to 5.040" 0.76 mm to 128.02 mm	N/A	0.236" to 2.040" 6 mm to 51.8 mm
	STRAIGHT 				
	SWAGED 				
	EXPANDED 				
	FLARED 				
	BEADED 	Beaded & Formed ONLY 0.310" to 0.760" 7.87 mm to 19.30 mm	0.030" to 5.040" 0.76 mm to 128.02 mm	N/A	0.236" to 2.040" 6 mm to 51.8 mm
THREADS	BARBED 				
	FORMED 				
	NPTF 	N/A	1⁄8 to 2 1⁄2	1⁄8 to 1	N/A
	JIC 37° FLARE 	N/A	7⁄16-20 to 1 7⁄8-12	7⁄16 to 1 5⁄16-12 (-4 to -16)	N/A
	METRIC 	N/A	M10 to M60	M10 to M33	N/A
	45° FLARE 	N/A	7⁄16-20 to 1 1⁄16-14	7⁄16-20 to 1 3⁄8-12 (-4 to -16)	N/A
	BSPT/BSPP (G) 	N/A	1⁄8 to 2 1⁄2	Consult Factory	N/A

JXL	FasMate® FX	HPB	TwistMate® MET
p. 71	p. 73	p. 77	p. 79
Vacuum 10 mtorr (micron) to 1,000 psi (68.9 bar)	Vacuum to 5,000 psi (344.7 bar)	Vacuum to 6,000 psi (413.7 bar)	Vacuum to 10,000 psi (689.5 bar)
Manual	Manual	Manual	Manual
Lever	Lever / Pneumatic/ Thumb Valve	Sleeve	Twist
Grip Collets	Threaded / Grip Collets	Threaded / Grip Collets	Continuous Thread
	SURE SEAL™		
0.25" to 0.875" 6.3 mm to 22.2 mm	N/A	N/A	N/A
N/A	0.38" to 0.75" 9.7 mm to 19.2 mm	N/A	N/A
N/A	1⁄8 to 1⁄2	1⁄4 to 3⁄4	1⁄8 to 3
N/A	3⁄8-24 to 3⁄4-16	7⁄16 to 3⁄4-16	7⁄16-20 to 2 1⁄2-12 (-4 to -32)
N/A	M10 to M20	N/A	Consult Factory
N/A	3⁄8-24 to 3⁄4-16	N/A	7⁄16-20 to 1 1⁄16-14 (-4 to -12)
N/A	1⁄8 to 1⁄2	1⁄4 to 3⁄4	1⁄8 to 1



- 1 Identify Cavity/Tube/Thread type for application
- 2 Select tool(s) that fit size requirements
- 3 Verify operating/test pressure meets requirements
- 4 Select actuation method - lever/sleeve for manual, pneumatic for automation
- 5 Identify desired ICON™ features

Connect and seal specific tubes or threads



DESIGNED FOR	Straight Cast or Rough Surface	Turbos or Flanged Ports
PRODUCT SERIES	FIG	FEG
Page	p. 87	p. 89
Pressure Rating	Vacuum to 120 psi (8.3 bar)	Determined by Application
Connects To	Straight Cast or Rough Surface	Turbos or Flanged Ports
Sealing Range	1.102" to 3.005"	Determined by Application
Application Type	Manual / Semi-Automated	Manual
Actuation Method	Pneumatic	Pneumatic
Grip Method	Grip Collets	Grip Cradle
ICON™ Technology	SURE SEAL™ and SEAL LIFE™	SURE SEAL™



DESIGNED FOR	FUEL RAILS	GAS BURNER TESTING	
PRODUCT SERIES	70 FR	GZNV	G60V
Page	p. 91	p. 93	p. 95
Pressure Rating	Vacuum to 750 psi (51.7 bar)	Vacuum to 5 psi (0.4 bar)	Vacuum to 30 psi (2.1 bar)
Connects To	SAE J2044 fuel lines	Natural gas and propane regulators	Natural gas and propane regulator extension pipes
Sealing Range	¼", 5/16", ¾", ½"	¾", ½", ¾" Female NPT/BSPP (G)	¾", ½", ¾" Male NPT/BSPP (G)
Application Type	Manual	Manual	Manual
Actuation Method	Sleeve	Lever	Sleeve
Grip Method	Jaws	Seal Friction	Thread Collets



DESIGNED FOR	MEDICAL-LIFE SCIENCES		
PRODUCT SERIES	ME	ML	60M
Page	p.97	p.101	p.103
Pressure Rating	Vacuum 10 mtorr (micron) to 500 psi (34.5 bar)	Vacuum 10 mtorr (micron) to 500 psi (34.5 bar)	Vacuum 10 mtorr (micron) to 750 psi (51.7 bar)
Connects To	Tubing and Luers (full or partial thread)	Luers (full thread)	Luers (full or partial thread)
Sealing Range	0.015" to 0.510" (0.38 mm to 13 mm)	Luer	Luer
Application Type	Semi-Automated or Fully Automated	Semi-Automated or Fully Automated	Manual
Actuation Method	Pneumatic	Pneumatic	Manual Sleeve
Grip Method	Fixturing / Seal Friction	Fixturing / Collar	Collets
ICON™ Technology	SURE SEAL™ and SEAL LIFE™		

» INDUSTRY LEADING RESPONSIVENESS

MAJORITY OF PRODUCTS SHIP WITHIN 2 DAYS.

CUSTOMER ENGINEERED SOLUTIONS INCLUDING DESIGN, SHIP IN WEEKS VS. MONTHS.

AT FASTEST, WE TAKE PRIDE IN BEING RESPONSIVE TO ALL OUR CUSTOMER'S NEEDS, INCLUDING PRODUCT AVAILABILITY.





# INTERNAL CONNECTIONS



**ZN™** / INTERNAL SEALING CONNECTION TOOL

Manual sealing connection tool for tubes and bores with broad tolerance and low pressures (<50 psi/3.4 bar).

Straight Expanded   Flared   Beaded   Barbed   Formed   Swaged



**SPECIFICATIONS**

Pressure Rating	Operating Temperatures	Materials of Construction
Vacuum to 50 psi (3.5 bar)	0°F to +200°F (-17°C to +93°C)	Annodized Aluminum, Stainless Steel, Acetal (POM)
Termination Port		Seal Material*
1/8 NPT to 3/8 NPT		Main seal: Neoprene® Internal seal: Buna-N

\* Additional seal material types available, consult factory.

**ACTUATION METHOD**

**Lever Handle:** Two way actuation handle is simple and ergonomic for production applications

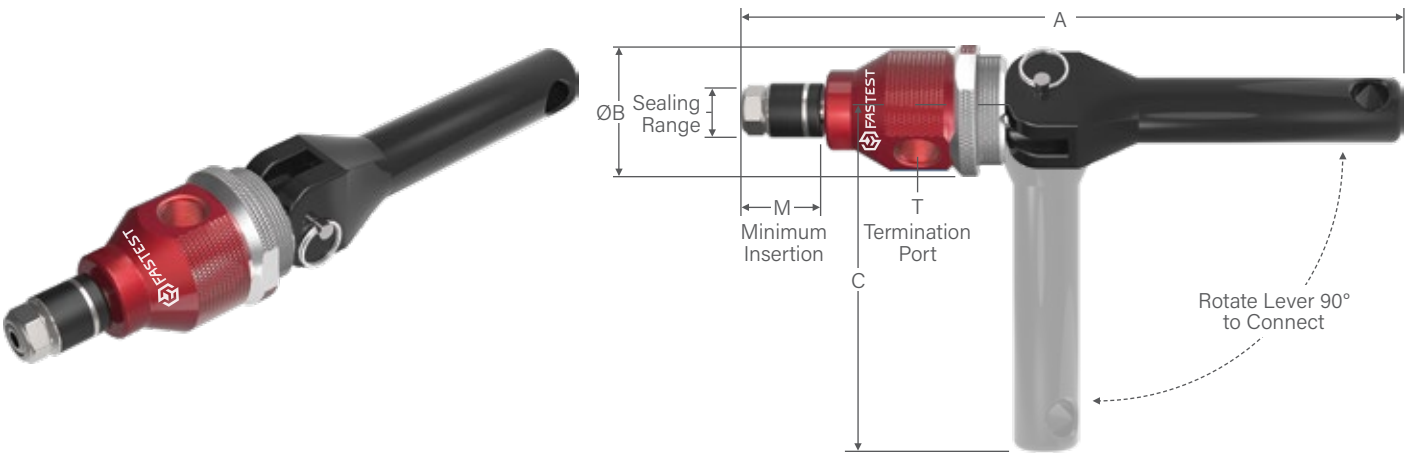
**ICON™ TECHNOLOGY**

Consult Factory



- 1** Lockable collar to keep sealing pressure consistant, handle hole for safety cable as needed
- 2** Adjustment ring to accommodate the widest sealing range in the industry; set preload and maximize seal life
- 3** High flow design can be quickly adapted for plug style applications
- 4** Quick change seal sets to accommodate multiple sizes of tubing and easy field maintenance

**ZN** / INTERNAL SEALING CONNECTION TOOL



Ordering Information			Dimensions				
Sealing Range	Part Number	Replacement Seals Bulk Pack (5)	A	B	C	M	T
0.38 to 0.39 (9.5 to 10.0)	ZN101	ZNB10360	7.30 (185.4)	1.20 (30.5)	4.09 (103.9)	0.57 (14.5)	1/8 NPT
0.39 to 0.47 (10.0 to 12.0)	ZN111	ZNB111					
0.47 to 0.55 (12.0 to 14.0)	ZN112	ZNB112					
0.55 to 0.63 (14.0 to 16.0)	ZN113	ZNB113					
0.63 to 0.71 (16.0 to 18.0)	ZN221	ZNB221	7.50 (190.5)	1.50 (38.1)	4.09 (103.9)	0.78 (19.8)	1/4 NPT
0.71 to 0.79 (18.0 to 20.0)	ZN222	ZNB222					
0.79 to 0.87 (20.0 to 22.0)	ZN223	ZNB223					
0.87 to 0.95 (22.0 to 24.0)	ZN331	ZNB331	8.13 (206.6)	1.50 (38.1)	4.09 (103.9)	1.20 (30.5)	1/4 NPT
0.95 to 1.02 (24.0 to 26.0)	ZN332	ZNB332					
1.02 to 1.10 (26.0 to 28.0)	ZN333	ZNB333					
1.10 to 1.18 (28.0 to 30.0)	ZN441	ZNB441	8.18 (207.8)	1.63 (41.4)	4.09 (103.9)	1.25 (31.8)	3/8 NPT
1.18 to 1.26 (30.0 to 32.0)	ZN442	ZNB442					
1.26 to 1.34 (32.0 to 34.0)	ZN443	ZNB443					

Dimensions: inch (mm)

# FI / INTERNAL SEALING CONNECTION TOOL

Pneumatic sealing connection tool for internal sealing in automated and semi-automated processes.

### CONNECTS TO:

Straight Expanded Flared Beaded Barbed Form End Swaged



### SPECIFICATIONS

Pressure Rating	Pilot Pressure	Operating Temperatures
Vacuum to 120 psi (8.3 bar)	60 to 120 psi (4.1 to 8.3 bar)	0°F to +200°F (-17°C to +93°C)
Termination Port	Materials of Construction	Seal Material*
Female 10-32 UNF, M5 x 0.8, NPT/BSPP (G): 1/8 to 3/4	Anodized Aluminum, Stainless Steel, Potted PCA	Standard: Neoprene®, Urethane Optional: FKM, Buna-N, EPDM, FDA White Neoprene®

\* Additional seal material types available, consult factory.  
\*\* Operating Temp: 32°F-100°F (0°C-38°C) for ICON™.

**i** Sealing connection tool and test part should be rigidly fixtured to prevent separation when under pressure (fixture not required for vacuum applications).

### ACTUATION METHOD

**Pneumatic:** Pilot pressure applied to seals with no metal contact and uniform seal movement seals inside tubes and pipes with no marring.

### ICON™ TECHNOLOGY

SURE SEAL™

SEAL LIFE™

### ACCESSORIES



**Shaft Extension**  
Consult factory.



**Seal Retainer Nut**  
Consult factory.



- 1 Automated processes and high-volume production testing including pick and place and delicate robotic handling applications
- 2 Capable of sealing conventional and unique sealing surfaces including smooth, porous, out of round, and threaded
- 3 Quick change seal sets to accommodate multiple sizes of tubing and easy field maintenance
- 4 Available with Shaft Extensions for accessibility to seal remote ports or multiple ports with close center to center distances - consult factory for further information



## ICON™ INTELLIGENT CONNECTION TECHNOLOGY

FasTest's ICON™ adds sensing capabilities to our mechanical Sealing Connection Tools. ICON™ Tools include instant LED visual feedback and data output to improve sealing connection accuracy, maximize production efficiency, and optimize maintenance.

### ICON™ features:



#### SURE SEAL™

Instant LED feedback verifies a good connection prior to starting a test.



#### SEAL LIFE™

Alert when the main seal is at end of life and must be replaced.

### System Overview:

CONNECTED

Green indication of a good connection.

RECONNECT

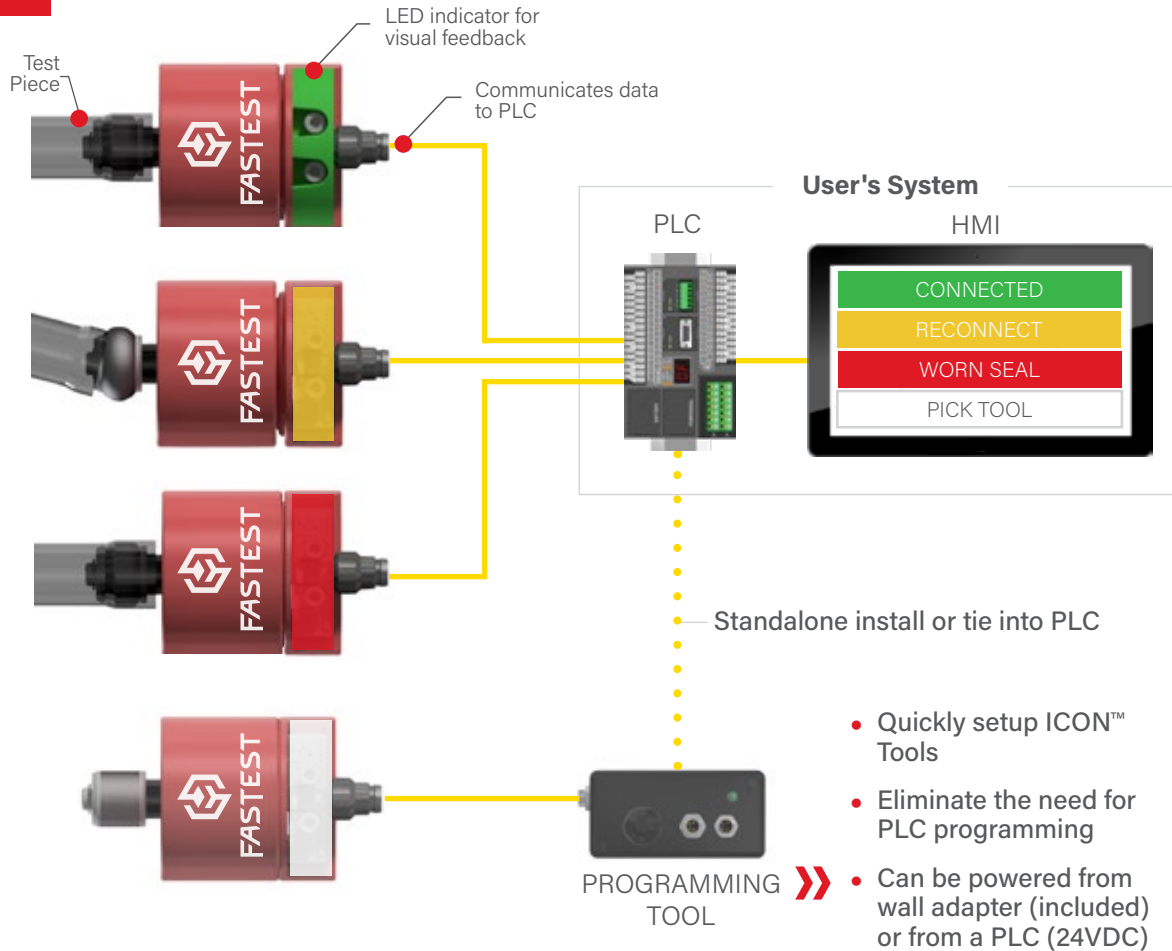
Recognize a connection issue before causing a false failure.

WORN SEAL

Alert when main seals should be replaced.

PICK TOOL

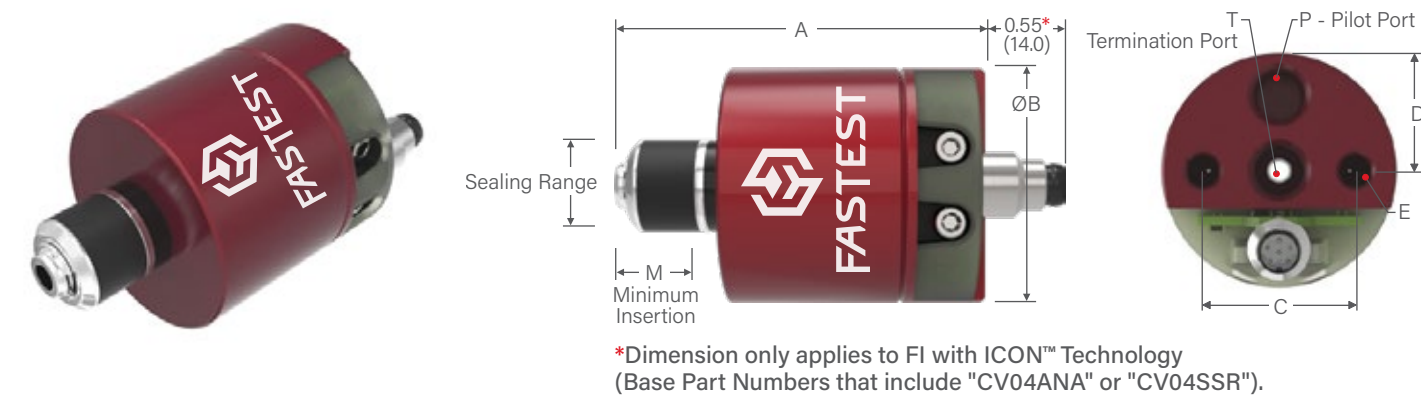
Controllable LED signals operator to use specific tool.



**NOTE:** Solid State Relay and Analog output options available.



FI / INTERNAL SEALING CONNECTION TOOL / STRAIGHT TUBES & BORES

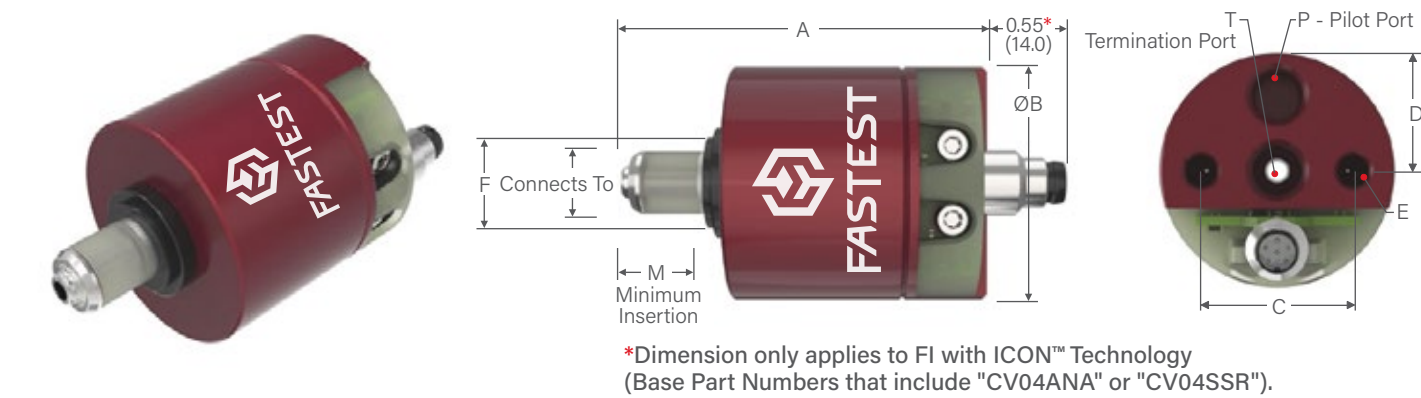


Ordering Information (Complete Connector = Main Seal Set + Base Part Number)					Dimensions							
Sealing Range	Main Seal Set*	Base Part Number	Replacement Seals Pack (5)	Rebuild Kit	A	B	C	D	E	M	P	T
0.310 to 0.330	FIS010300	FI01	FIB010300	FIR01	1.98	1.25	0.80	0.40	10-32	0.48	10-32 UNF	
0.330 to 0.394	FIS0101	FI01CV04ANA FI01CV04SSR	FIB0101	FIR01CV04ANA FIR01CV04SSR	(50.3)	(31.7)	(20.3)	(10.2)	UNF	(12.2)		
0.394 to 0.472	FIS111	FI1 FI1CV04ANA FI1CV04SSR	FIB111	FIR1 FIR1CV04ANA FIR1CV04SSR	2.44	1.57	1.02	0.51	1/4-28	0.57	1/8 NPT	
0.472 to 0.551	FIS112		FIB112		(62.0)	(39.9)	(25.9)	(12.9)	UNF	(14.5)		
0.551 to 0.630	FIS113		FIB113									
0.630 to 0.709	FIS221	FI2 FI2CV04ANA FI2CV04SSR	FIB221	FIR1 FIR1CV04ANA FIR1CV04SSR	2.44	1.57	1.02	0.51	1/4-28	0.57	1/8 NPT	
0.709 to 0.787	FIS222		FIB222		(62.0)	(39.9)	(25.9)	(12.9)	UNF	(14.5)		
0.787 to 0.866	FIS223		FIB223									
0.866 to 0.945	FIS331	FI3 FI3CV04ANA FI3CV04SSR	FIB331	FIR3 FIR3CV04ANA FIR3CV04SSR	2.61	2.36	1.60	0.80	1/4-28	1.07	1/8 NPT	
0.945 to 1.024	FIS332		FIB332		(66.3)	(59.9)	(40.6)	(20.3)	UNF	(27.2)		
1.024 to 1.102	FIS333		FIB333									
1.102 to 1.181	FIS441	FI4 FI4CV04ANA FI4CV04SSR	FIB441	FIR3 FIR3CV04ANA FIR3CV04SSR	2.61	2.36	1.60	0.80	1/4-28	1.07	1/8 NPT	
1.181 to 1.260	FIS442		FIB442		(66.3)	(59.9)	(40.6)	(20.3)	UNF	(27.2)		
1.260 to 1.339	FIS443		FIB443									
1.339 to 1.457	FIS551	FI5 FI5CV04ANA FI5CV04SSR	FIB551	FIR6 FIR6CV04ANA FIR6CV04SSR	3.68	3.49	2.31	1.16	1/4-28	1.60	1/8	1/2
1.457 to 1.575	FIS552		FIB552		(93.5)	(88.6)	(58.7)	(29.5)	UNF	(40.6)	NPT	NPT
1.575 to 1.693	FIS553		FIB553									
1.693 to 1.850	FIS661	FI6 FI6CV04ANA FI6CV04SSR	FIB661	FIR6 FIR6CV04ANA FIR6CV04SSR	3.68	3.49	2.31	1.16	1/4-28	1.60	1/8	1/2
1.850 to 2.008	FIS662		FIB662		(93.5)	(88.6)	(58.7)	(29.5)	UNF	(40.6)	NPT	NPT
2.008 to 2.165	FIS663		FIB663									
2.165 to 2.305	FIS771	FI7 FI7CV04ANA FI7CV04SSR	FIB771	FIR7 FIR7CV04ANA FIR7CV04SSR	3.36	4.20	3.00	1.50	1/4-28	1.62	1/8	3/4
2.305 to 2.445	FIS772		FIB772		(85.3)	(106.7)	(76.2)	(38.1)	UNF	(41.1)	NPT	NPT
2.445 to 2.585	FIS773		FIB773									
2.585 to 2.725	FIS881	FI8 FI8CV04ANA FI8CV04SSR	FIB881	FIR7 FIR7CV04ANA FIR7CV04SSR	3.36	4.20	3.00	1.50	1/4-28	1.62	1/8	3/4
2.725 to 2.865	FIS882		FIB882		(85.3)	(106.7)	(76.2)	(38.1)	UNF	(41.1)	NPT	NPT
2.865 to 3.005	FIS883		FIB883									

Dimensions: inch (mm).

\*Includes seals(s) and metal parts for one complete seal set. Neoprene® seals are standard. For Urethane seals, add "UR" suffix to Main Seal Set Part Number. Example: FIS010300UR

FI / INTERNAL SEALING CONNECTION TOOL / NPT, BSPP (G), & BSPT THREADS



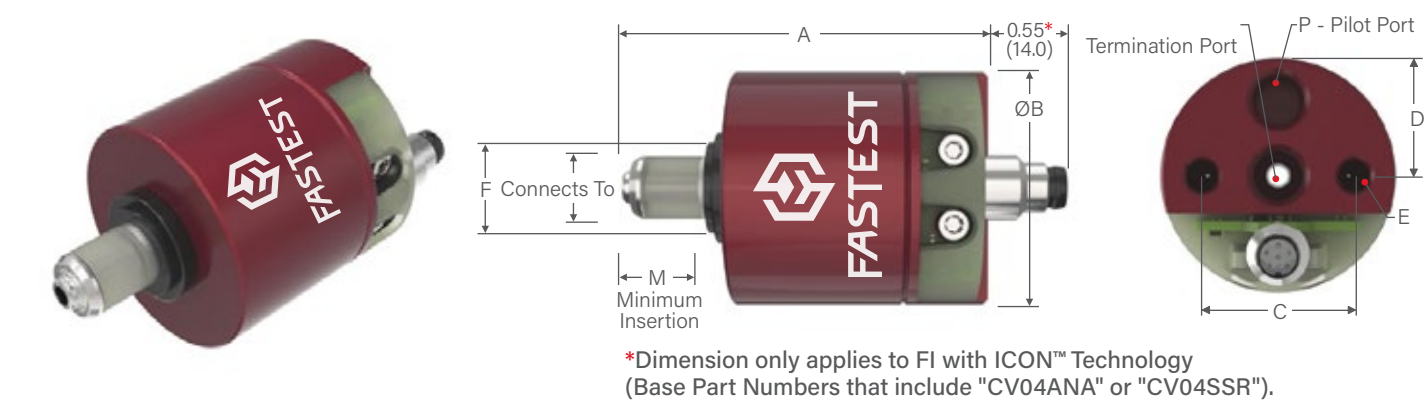
Ordering Information (Complete Connector = Main Seal Set + Base Part Number)					Dimensions								
Connects To	Main Seal Set*	Base Part Number	Replacement Seals Pack (5)	Rebuild Kit	A	B	C	D	E	F	M	P	T
FI   Connectors for NPT, BSPP (G), and BSPT Threads													
1/8	FIS011/8NPT	FI01 FI01CV04ANA FI01CV04SSR	FIB011/8NPT	FIR01 FIR01CV04ANA FIR01CV04SSR	1.98 (50.3)	1.25 (31.7)	0.80 (20.3)	0.40 (10.2)	10-32 UNF	0.62 (15.7)	0.48 (12.2)	10-32 UNF	
1/4	FIS11/4NPT	FI1 FI1CV04ANA FI1CV04SSR	FIB11/4NPT	FIR1 FIR1CV04ANA FIR1CV04SSR	2.44 (62.0)	1.57 (39.9)	1.02 (25.9)	0.51 (12.9)	1/4-28 UNF	0.76 (19.3)	0.57 (14.5)	1/8 NPT	
3/8	FIS23/8NPT	FI2 FI2CV04ANA FI2CV04SSR	FIB23/8NPT	FIR1 FIR1CV04ANA FIR1CV04SSR	2.44 (62.0)	1.57 (39.9)	1.02 (25.9)	0.51 (12.9)	1/4-28 UNF	0.88 (22.3)	0.57 (14.5)	1/8 NPT	
1/2	FIS21/2NPT		FIB21/2NPT							1.07 (27.2)			
3/4	FIS33/4NPT	FI3 FI3CV04ANA FI3CV04SSR	FIB33/4NPT	FIR3 FIR3CV04ANA FIR3CV04SSR	2.61 (66.3)	2.36 (59.9)	1.60 (40.6)	0.80 (20.3)	1/4-28 UNF	1.26 (32.0)	.71 (18.0)	1/8 NPT	
1	FIS41NPT	FI4 FI4CV04ANA FI4CV04SSR	FIB41NPT	FIR3 FIR3CV04ANA FIR3CV04SSR	2.61 (66.3)	2.36 (59.9)	1.60 (40.6)	0.80 (20.3)	1/4-28 UNF	1.57 (39.9)	.71 (18.0)	1/8 NPT	
1-1/4	FIS511/4NPT	FI5 FI5CV04ANA FI5CV04SSR	FIB511/4NPT	FIR6 FIR6CV04ANA FIR6CV04SSR	3.68 (93.5)	3.49 (88.6)	2.31 (58.7)	1.16 (29.5)	1/4-28 UNF	1.88 (47.8)	1.24 (31.5)	1/8 NPT	1/2 NPT
1-1/2	FIS611/2NPT	FI6 FI6CV04ANA FI6CV04SSR	FIB611/2NPT	FIR6 FIR6CV04ANA FIR6CV04SSR	3.68 (93.5)	3.49 (88.6)	2.31 (58.7)	1.16 (29.5)	1/4-28 UNF	2.13 (54.1)	1.24 (31.5)	1/8 NPT	1/2 NPT
2	FIS72NPT	FI7 FI7CV04ANA FI7CV04SSR	FIB72NPT	FIR7 FIR7CV04ANA FIR7CV04SSR	3.36 (85.3)	4.20 (106.7)	3.00 (76.2)	1.50 (38.1)	1/4-28 UNF	2.75 (69.9)	1.33 (33.8)	1/8 NPT	3/4 NPT
2-1/2	FIS721/2NPT		FIB721/2NPT										

Dimensions: inch (mm)

\*Includes seals(s) and metal parts for one complete seal set. Urethane seals are standard.

Port Specifications: NPT per SAE J476a; BSPP (G) per ISO 228; BSPT per ISO 7, JIS B8363 and B2351

FI / INTERNAL SEALING CONNECTION TOOL / SAE O-RING BOSS PORT THREADS



Ordering Information (Complete Connector = Main Seal Set + Base Part Number)					Dimensions								
Connects To	Main Seal Set*	Base Part Number	Replacement Seals Pack (5)	Repair Kit	A	B	C	D	E	F	M	P	T

FI | Connectors for SAE O-Ring Boss Port (ORB) Threads

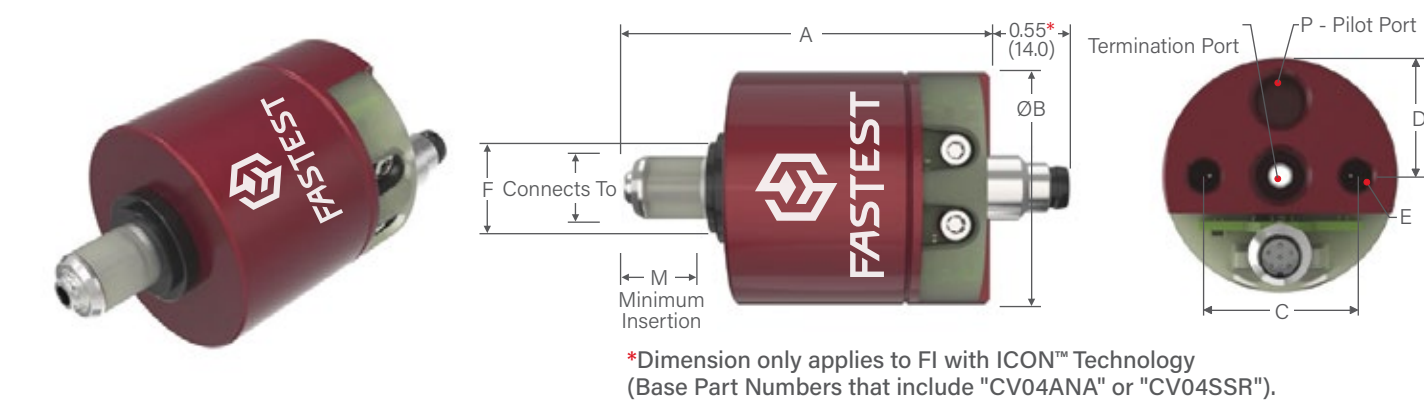
-4 [7/16-20]	FIS014SAE	FI01 FI01CV04ANA FI01CV04SSR	FIB014SAE	FIR01 FIR01CV04ANA FIR01CV04SSR	1.98 (50.3)	1.25 (31.7)	0.80 (20.3)	0.40 (10.2)	10-32 UNF	0.62 (15.7)	0.48 (12.2)	10-32 UNF	
-5 [1/2-20]	FIS15SAE	FI1 FI1CV04ANA FI1CV04SSR	FIB15SAE	FIR1 FIR1CV04ANA FIR1CV04SSR	2.44 (62.0)	1.57 (39.9)	1.02 (25.9)	0.51 (12.9)	1/4-28 UNF	0.76 (19.3)	0.57 (14.5)	1/8 NPT	
-6 [9/16-18]	FIS16SAE		FIB16SAE	FIR1 FIR1CV04ANA FIR1CV04SSR	2.44 (62.0)	1.57 (39.9)	1.02 (25.9)	0.51 (12.9)	1/4-28 UNF	0.88 (22.3)	0.57 (14.5)	1/8 NPT	
-8 [3/4-16]	FIS28SAE	FI2 FI2CV04ANA FI2CV04SSR	FIB28SAE	FIR1 FIR1CV04ANA FIR1CV04SSR	2.44 (62.0)	1.57 (39.9)	1.02 (25.9)	0.51 (12.9)	1/4-28 UNF	0.88 (22.3)	0.57 (14.5)	1/8 NPT	
-10 [7/8-14]	FIS310SAE	FI3 FI3CV04ANA FI3CV04SSR	FIB310SAE	FIR3 FIR3CV04ANA FIR3CV04SSR	2.61 (66.3)	2.36 (59.9)	1.60 (40.6)	0.80 (20.3)	1/4-28 UNF	1.26 (32.0)	1.07 (27.2)	1/8 NPT	
-12 [1 1/16-12]	FIS312SAE		FIB312SAE	FIR3 FIR3CV04ANA FIR3CV04SSR	2.61 (66.3)	2.36 (59.9)	1.60 (40.6)	0.80 (20.3)	1/4-28 UNF	1.57 (39.9)	1.07 (27.2)	1/8 NPT	
-14 [1 3/16-12]	FIS414SAE	FI4 FI4CV04ANA FI4CV04SSR	FIB414SAE	FIR3 FIR3CV04ANA FIR3CV04SSR	2.61 (66.3)	2.36 (59.9)	1.60 (40.6)	0.80 (20.3)	1/4-28 UNF	1.57 (39.9)	1.07 (27.2)	1/8 NPT	
-16 [1 5/16-12]	FIS416SAE		FIB416SAE	FIR3 FIR3CV04ANA FIR3CV04SSR	2.61 (66.3)	2.36 (59.9)	1.60 (40.6)	0.80 (20.3)	1/4-28 UNF	1.57 (39.9)	1.07 (27.2)	1/8 NPT	
-20 [1 5/8-12]	FIS520SAE	FI5 FI5CV04ANA FI5CV04SSR	FIB520SAE	FIR6 FIR6CV04ANA FIR6CV04SSR	3.68 (93.5)	3.49 (88.6)	2.31 (58.7)	1.16 (29.5)	1/4-28 UNF	1.88 (47.8)	1.60 (40.6)	1/8 NPT	1/2 NPT
-24 [1 7/8-12]	FIS624SAE	FI6 FI6CV04ANA FI6CV04SSR	FIS624SAE	FIR6 FIR6CV04ANA FIR6CV04SSR	3.68 (93.5)	3.49 (88.6)	2.31 (58.7)	1.16 (29.5)	1/4-28 UNF	2.13 (54.1)	1.60 (40.6)	1/8 NPT	1/2 NPT
-32 [2 1/2-12]	FIS732SAE	FI7 FI7CV04ANA FI7CV04SSR	FIB732SAE	FIR7 FIR7CV04ANA FIR7CV04SSR	3.36 (85.3)	4.20 (106.7)	3.00 (76.2)	1.50 (38.1)	1/4-28 UNF	2.75 (69.9)	1.62 (41.1)	1/8 NPT	3/4 NPT

Dimensions: inch (mm)

\*Includes seals(s) and metal parts for one complete seal set. Urethane seals are standard.

Port Specifications: SAE J1926 or ISO 11926

FI / INTERNAL SEALING CONNECTION TOOL / METRIC ISO O-RING PORT THREADS



Ordering Information (Complete Connector = Main Seal Set + Base Part Number)					Dimensions								
Connects To	Main Seal Set*	Base Part Number	Replacement Seals Pack (5)	Repair Kit	A	B	C	D	E	F	M	P	T

FI | Connectors for Metric ISO O-Ring Port Threads

M10 x 1.0	FIS01M10	FI01 FI01CV04ANA FI01CV04SSR	FIB01M10	FIR01 FIR01CV04ANA FIR01CV04SSR	1.98 (50.3)	1.25 (31.7)	0.80 (20.3)	0.40 (10.2)	10-32 UNF	0.62 (15.7)	0.48 (12.2)	10-32 UNF	
M12 x 1.5	FIS1M12	FI1 FI1CV04ANA FI1CV04SSR	FIB1M12	FIR1 FIR1CV04ANA FIR1CV04SSR	2.44 (62.0)	1.57 (39.9)	1.02 (25.9)	0.51 (12.9)	1/4-28 UNF	0.76 (19.3)	0.57 (14.5)	1/8 NPT	
M14 x 1.5	FIS1M14		FIBM14	FIR1 FIR1CV04ANA FIR1CV04SSR	2.44 (62.0)	1.57 (39.9)	1.02 (25.9)	0.51 (12.9)	1/4-28 UNF	0.88 (22.3)	0.57 (14.5)	1/8 NPT	
M16 x 1.5	FIS2M16	FI2 FI2CV04ANA FI2CV04SSR	FIB2M16	FIR1 FIR1CV04ANA FIR1CV04SSR	2.44 (62.0)	1.57 (39.9)	1.02 (25.9)	0.51 (12.9)	1/4-28 UNF	0.88 (22.3)	0.57 (14.5)	1/8 NPT	
M18 x 1.5	FIS2M18		FIB2M18		2.44 (62.0)	1.57 (39.9)	1.02 (25.9)	0.51 (12.9)	1/4-28 UNF	0.88 (22.3)	0.57 (14.5)	1/8 NPT	
M20 x 1.5	FIS2M20		FIB2M20		2.44 (62.0)	1.57 (39.9)	1.02 (25.9)	0.51 (12.9)	1/4-28 UNF	0.88 (22.3)	0.57 (14.5)	1/8 NPT	
M22 x 1.5	FIS2M22		FIB2M22		2.44 (62.0)	1.57 (39.9)	1.02 (25.9)	0.51 (12.9)	1/4-28 UNF	0.88 (22.3)	0.57 (14.5)	1/8 NPT	
M24 x 1.5	FIS3M24	FI3 FI3CV04ANA FI3CV04SSR	FIB3M24	FIR3 FIR3CV04ANA FIR3CV04SSR	2.61 (66.3)	2.36 (59.9)	1.60 (40.6)	0.80 (20.3)	1/4-28 UNF	1.26 (32.0)	1.07 (27.2)	1/8 NPT	
M26 x 1.5	FIS3M26		FIB3M26		2.61 (66.3)	2.36 (59.9)	1.60 (40.6)	0.80 (20.3)	1/4-28 UNF	1.26 (32.0)	1.07 (27.2)	1/8 NPT	
M27 x 2	FIS3M27		FIB3M27		2.61 (66.3)	2.36 (59.9)	1.60 (40.6)	0.80 (20.3)	1/4-28 UNF	1.26 (32.0)	1.07 (27.2)	1/8 NPT	
M28 x 1.5	FIS3M28		FIB3M28		2.61 (66.3)	2.36 (59.9)	1.60 (40.6)	0.80 (20.3)	1/4-28 UNF	1.26 (32.0)	1.07 (27.2)	1/8 NPT	
M30 x 1.5	FIS4M30	FI4 FI4CV04ANA FI4CV04SSR	FIB4M30	FIR3 FIR3CV04ANA FIR3CV04SSR	2.61 (66.3)	2.36 (59.9)	1.60 (40.6)	0.80 (20.3)	1/4-28 UNF	1.57 (39.9)	1.07 (27.2)	1/8 NPT	
M33 x 2	FIS4M33		FIB4M33		2.61 (66.3)	2.36 (59.9)	1.60 (40.6)	0.80 (20.3)	1/4-28 UNF	1.57 (39.9)	1.07 (27.2)	1/8 NPT	
M36 x 2	FIS4M36		FIB4M36		2.61 (66.3)	2.36 (59.9)	1.60 (40.6)	0.80 (20.3)	1/4-28 UNF	1.57 (39.9)	1.07 (27.2)	1/8 NPT	
M42 x 2	FIS5M42	FI5 FI5CV04ANA FI5CV04SSR	FIB5M42	FIR6 FIR6CV04ANA FIR6CV04SSR	3.68 (93.5)	3.49 (88.6)	2.31 (58.7)	1.16 (29.5)	1/4-28 UNF	1.88 (47.8)	1.60 (40.6)	1/8 NPT	1/2 NPT
M48 x 2	FIS6M48	FI6 FI6CV04ANA FI6CV04SSR	FIB6M48	FIR6 FIR6CV04ANA FIR6CV04SSR	3.68 (93.5)	3.49 (88.6)	2.31 (58.7)	1.16 (29.5)	1/4-28 UNF	2.13 (54.1)	1.60 (40.6)	1/8 NPT	1/2 NPT
M60 x 2	FIS7M60	FI7 FI7CV04ANA FI7CV04SSR	FIB7M60	FIR7 FIR7CV04ANA FIR7CV04SSR	3.36 (85.3)	4.20 (106.7)	3.00 (76.2)	1.50 (38.1)	1/4-28 UNF	2.75 (69.9)	1.62 (41.1)	1/8 NPT	3/4 NPT

Dimensions: inch (mm)

\*Includes seals(s) and metal parts for one complete seal set. Urethane seals are standard.

Port Specifications: ISO 6149, DIN 3852 Part 1 (ISO 9974)



ZGN / INTERNAL SEALING CONNECTION TOOL

Wide tolerance grip and seal connection tool for multiple sizes / types - fits any internal thread.

CONNECTS TO:



- 1 Pressure assisted sealing and gripping of threaded port to safely grip under pressure
- 2 Patented design allows for each tool to connect to multiple thread sizes / styles
- 3 Self aligning sleeve for repeatable / reliable connections, even with miss-alignment
- 4 Compact size fits into tight spaces and tightly spaced bores
- 5 Pneumatic operation can be used for automated testing or end of arm grip and hold - lever operation for manual applications



SPECIFICATIONS

Pressure Rating	Pilot Pressure	Operating Temperatures
<b>ZGNL:</b> Vacuum to 120 psi (8.3 bar)	N/A	-40°F to +250°F (-40°C to +121°C)
<b>ZGNP:</b> Vacuum to 300 psi (20.7 bar)	60 psi (4.1 bar) minimum	
Termination Port	Materials of Construction	Seal Material*
1/8 NPT, 1/4 NPT	Anodized Aluminum, Stainless Steel, Handles PVC Dipped	Standard: Buna-N

\*Additional seal material types available, consult factory.

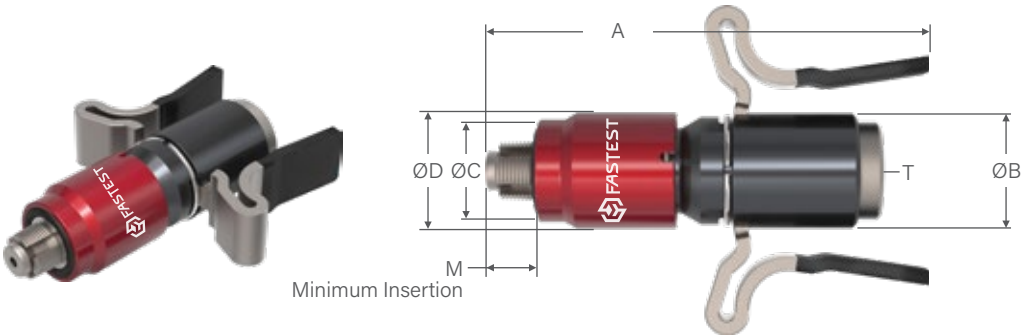
ACTUATION METHOD

**ZGNL Lever Handles:** Lever operation for manual applications.  
**ZGNP Pneumatic:** Pneumatic operation can be used for automated testing or end of arm grip and hold.

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ZGNL / MANUAL INTERNAL SEALING CONNECTION TOOL



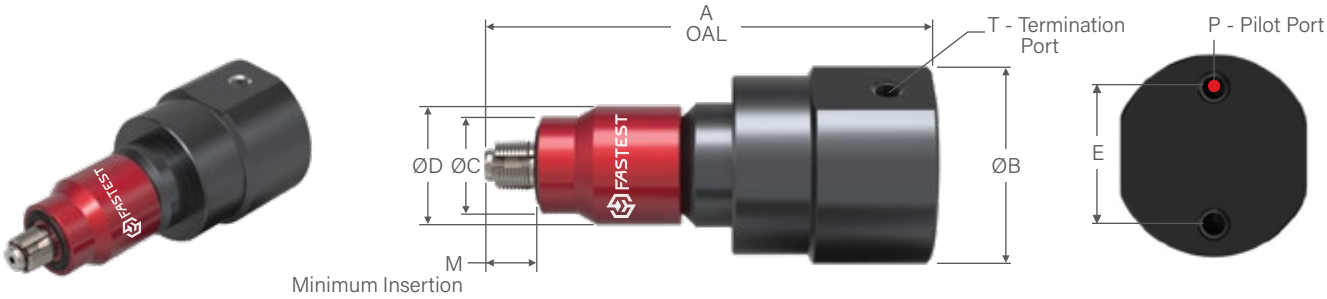
Ordering Information				Dimensions						
Connects To	Part Number	Main Seal Set	Rebuild Kit	A	B	C	D	Thread Minor Ø Range	M	T

**ZGNL** | Wide Tolerance Manual Sealing Connection Tool for Internal Threads

1/8 NPT 3/8-24 SAE 1/8 BSPP (G) 1/8 BSPT M10x1.0 M10x1.25 M10x1.5	ZGNL1	S1110B60	RZGNL1	3.25 (82.6)	0.88 (22.4)	0.64 (16.3)	0.78 (19.8)	0.34 to 0.36 (8.5 to 9.1)	0.32 (8.1)	1/8 NPT
7/16-20 UNF	ZGNL1A	S21030391B70	RZGNL1			0.67 (17.0)		0.38 to 0.40 (9.7 to 10.2)		
1/4 NPT 1/4 BSPP (G) 1/4 BSPT M14x1.5 1/2-20 SAE 9/16-18 SAE	ZGNL2	S1112B60	RZGNL2	3.34 (82.8)	0.87 (22.1)	0.77 (19.6)	0.87 (22.1)	0.45 to 0.50 (11.4 to 12.7)	0.40 (10.2)	1/8 NPT
M12x1.0 M12x1.5	ZGNL2A	S21030456B70	RZGNL2			0.74 (18.8)		0.42 to 0.44 (10.7 to 11.2)		
3/8 NPT 3/8 BSPP (G) 3/8 BSPT	ZGNL3	S1114B60	RZGNL3	3.61 (91.7)	1.12 (22.4)	0.90 (22.9)	0.99 (25.1)	0.59 to 0.61 (15.0 to 15.5)	0.45 (11.4)	1/4 NPT
M16x1.5 5/8-24 SAE	ZGNL3A	S1114B60	RZGNL3					0.56 to .58 (14.2 to 14.7)		
1/2 NPT 1/2 BSPP (G) 1/2 BSPT M20x1.5	ZGNL4	S1116B60	RZGNL4	3.62 (91.9)	1.32 (33.5)	1.06 (26.9)	1.22 (31.0)	0.71 to 0.74 (18.0 to 18.8)	0.50 (12.7)	1/4 NPT
M18x1.5	ZGNL4A	S1115B60	RZGNL4			1.03 (26.2)		0.65 to 0.67 (16.5 to 17.0)		
3/4-16 SAE	ZGNL4B	S1116B60	RZGNL4			1.06 (26.9)		0.68 to 0.71 (17.3 to 18.0)		

Dimensions: inch (mm)

ZGNP / PNEUMATIC INTERNAL SEALING CONNECTION TOOL



Ordering Information				Dimensions								
Connects To	Part Number	Main Seal Set	Rebuild Kit	A	B	C	D	E	Thread Minor Ø Range	M	P	T

ZGNP | Wide Tolerance Pneumatic Sealing Connection Tool for Automated Testing of Internal Threads

1/8 NPT 3/8-24 SAE 1/8 BSPP (G) 1/8 BSPT M10x1.0 M10x1.25 M10x1.5	ZGNP1	S1110B60	RZGNP1	2.92 (74.2)	1.30 (33.0)	0.64 (16.3)	0.78 (19.8)	0.88 (22.4)	0.34 to 0.36 (8.5 to 9.1)	0.32 (8.1)	10-32 UNF	1/8 NPT
7/16-20 SAE	ZGNP1A	S21030391B70	RZGNP1			0.67 (17.0)			0.38 to 0.40 (9.7 to 10.2)			
1/4 NPT 1/4 BSPP (G) 1/4 BSPT M14x1.5 1/2-20 SAE 9/16-18 SAE	ZGNP2	S1112B60	RZGNP2	3.08 (78.2)	1.30 (33.0)	0.77 (19.6)	0.87 (22.1)	0.88 (22.4)	0.45 to 0.50 (11.4 to 12.7)	0.40 (10.2)	10-32 UNF	1/8 NPT
M12x1.0 M12x1.5	ZGNP2A	S21030456B70	RZGNP2			0.74 (18.8)			0.42 to 0.44 (10.7 to 11.2)			
3/8 NPT 3/8 BSPP (G) 3/8 BSPT	ZGNP3	S1114B60	RZGNP3	3.52 (89.4)	1.75 (44.5)	0.90 (22.9)	0.99 (25.1)	1.13 (28.7)	0.59 to 0.61 (15.0 to 15.5)	0.45 (11.4)	1/8 NPT	1/4 NPT
M16x1.5 5/8-24 SAE	ZGNP3A	S1114B60	RZGNP3			0.90 (22.9)			0.56 to .58 (14.2 to 14.7)			
1/2 NPT 1/2 BSPP (G) 1/2 BSPT M20x1.5	ZGNP4	S1116B60	RZGNP4	3.60 (91.4)	1.75 (44.5)	1.06 (26.9)	1.22 (31.0)	1.13 (28.7)	0.71 to 0.74 (18.0 to 18.8)	0.50 (12.7)	1/8 NPT	1/4 NPT
M18x1.5	ZGNP4A	S1115B60	RZGNP4			1.03 (26.2)			Contact Factory			
3/4-16 SAE	ZGNP4B	S1116B60	RZGNP4			1.06 (26.9)			Contact Factory			

Dimensions: inch (mm)

Product Comparison Guide



Product Comparison Guide	TwistMate® (MIT)	ZGN™ (ZGNL / ZGNP)	FasMate® (FNL / FNP / FNV)
Low Pressure < 300 psi (20.7 bar)		✓	✓
Low Volume Production < 100 units/day	✓		✓
Difficult Interference		✓	✓
High Pressure and High Volume > 500 units/day			✓
Prevent False Failures or High First Pass Yield			✓



JNL / INTERNAL SEALING CONNECTION TOOL

Manual lever actuated internal grip and seal connection tool for straight tubes / bores.

CONNECTS TO:

Straight



SPECIFICATIONS

Pressure Rating*	Operating Temperatures	Materials of Construction
JNL0 / JNL1: 10 mtorr (micron) to 1000 psi (68.9 bar)	-40°F to +250°F (-40°C to +121°C)	Aluminum Stainless Steel Acetal (POM) Urethane Collet Retainer
JNL2: 10 mtorr (micron) to 750 psi (51.7 bar)		
Termination Port		Seal Material**
1/8 NPT		Neoprene®

\* 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.

\*\*Additional seal material types available, consult factory.

ACTUATION METHOD

**Lever Actuated:** Simply flip the ergonomic handle for ease of use

ICON™ TECHNOLOGY

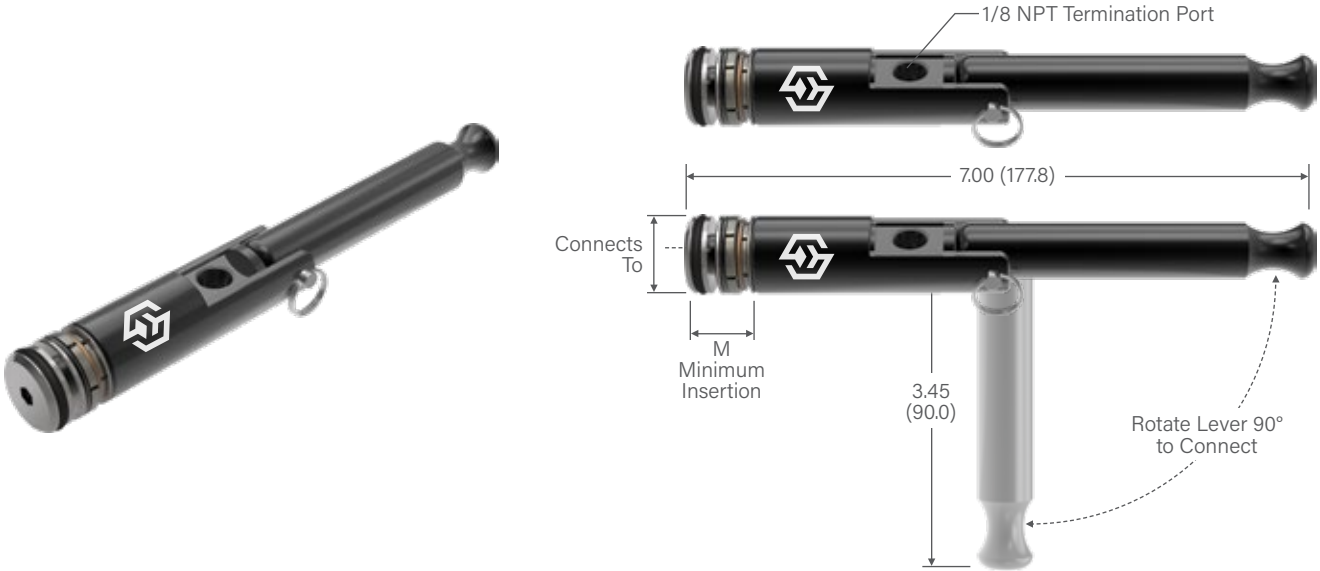
Consult Factory

ACCESSORIES

Visit [fastestinc.com](https://fastestinc.com)

- 1 Pressure assisted sealing and gripping with internal safety lock feature prevents accidental disconnection under pressure if handle is released
- 2 Instant connection for copper, steel, and aluminum tubes commonly used in refrigeration and other industrial applications
- 3 Stainless steel collets provide maximum grip with minimum distortion of the test piece
- 4 Quick and easy seal replacement to minimize down time, maintenance and tool inventory
- 5 Self aligning connector requires no operator adjustment

JNL / INTERNAL SEALING CONNECTION TOOL



Ordering Information			Dimensions
Connects To +0.010/-0.010 (+0.25/-0.25)	Part Number	Replacement Seals Bulk Pack (5)	M

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

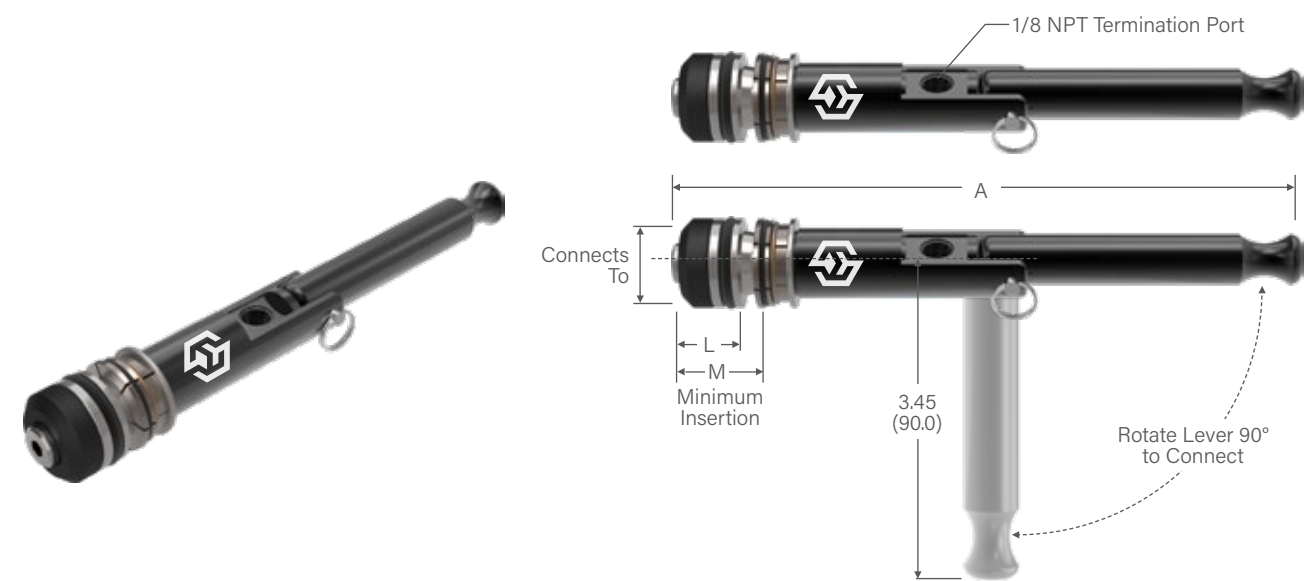
0.375 (9.5)	JNL00375H	SN00375H	0.53 (13.5)
0.500 (12.7)	JNL00500H	SN00500H	
0.590 (15.0)	JNL10590	SN10590	
0.625 (15.9)	JNL10625	SN10625	0.63 (16.0)
0.750 (19.1)	JNL10750	SN10750	
0.785 (19.9)	JNL10785	SN10785	
0.875 (22.2)	JNL10875	SN10875	

JNL0 and JNL1 | Lever Actuated Connectors for Metric Internal Tubes / Bores

10mm ± 0.25mm	JNL0M10H	SN00395H	13.5 (0.53)
11mm ± 0.25mm	JNL0M11H	SN00435H	
12mm ± 0.25mm	JNL0M12H	SN00470	
13mm ± 0.25mm	JNL0M13H	SN00515H	16.0 (0.63)
14mm ± 0.25mm	JNL0M14H	SN00550H	
15mm ± 0.25mm	JNL1M15	SN10590	
16mm ± 0.25mm	JNL1M16	SN10630	
18mm ± 0.25mm	JNL1M18	SN10710	
20mm ± 0.25mm	JNL1M20	SN10785	

Dimensions: inch (mm)

**NOTE:** JNL sizes available in .005" (.13 mm) increments per customer request. Consult factory.



Ordering Information			Dimensions		
Connects To +0.030/-0.010 (+0.76/-0.25)	Part Number	Replacement Seals Bulk Pack (5)	A	L	M
<b>JNL2</b>   Lever Actuated Connectors for Internal Tubes / Bores					
1.000 (25.4)	JNL21000	SN21000	7.71 (195.8)	1.31 (33.3)	1.39 (35.4)
1.125 (28.6)	JNL21125	SN21125			
1.250 (31.8)	JNL21250	SN21250	7.71 (195.8)	1.44 (36.6)	1.51 (38.4)
1.375 (34.9)	JNL21375	SN21375	7.84 (199.1)	1.56 (39.7)	2.05 (52.1)
1.500 (38.1)	JNL21500	SN21500	7.96 (202.2)	1.69 (43.0)	2.12 (53.9)
1.625 (41.3)	JNL21625	SN21625	8.09 (205.5)	1.81 (46.0)	2.30 (58.5)

Dimensions: inch (mm)

**NOTE:** Additional JNL2 sizes available per customer request. Consult factory.

CUSTOM ENGINEERED SOLUTIONS

WE TRANSFORM  
STANDARDIZED  
TOOLS INTO  
TAILOR-MADE  
SOLUTIONS TO  
FIT YOUR EXACT  
REQUIREMENTS.





# FN / INTERNAL SEALING CONNECTION TOOL

Internal thread grip and seal tool that uses threaded collets to grip threaded bores for high pressures.



- 1 Pressure assisted grip and proprietary design locks the connector securely in the port, even when used in dynamic hydraulic applications
- 2 Instant threaded sealing connection up to 5,000 psig without tape, sealant, or wrenches - significantly reduces process time
- 3 Split collet design locks securely and will not damage threaded ports
- 4 Self aligning connector requires no operator adjustment
- 5 Quick and easy seal replacement to minimize down time, maintenance and tool inventory



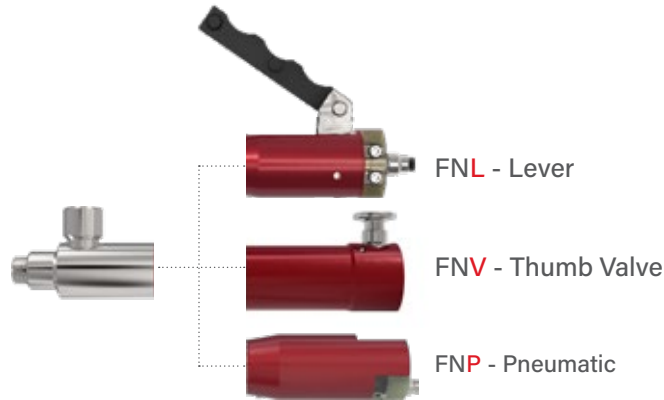
SPECIFICATIONS

Pressure Rating	Operating Temperatures	Materials of Construction
Per Body Size, see charts	-40°F to +250°F (-40°C to +121°C)	Annodized Aluminum, Stainless Steel, Potted PCA
Termination Port		Seal Material*
BSPP (G) or FNPT		Buna-N

\*Additional seal material types available, consult factory.  
\*\* Operating Temp: 32°F-100°F (0°C-38°C) for ICON™.

i Side load rating varies depending on size and insertion.

ACTUATION OPTIONS



ICON™ TECHNOLOGY



CLAMP KIT (OPTIONAL)

Optional Clamp Kit available for use with Tool Balancers. Available for body sizes 6 & 7 only.

Body Size	Part Number
6	FNX6CK
7	FNX7CK



# ICON™ INTELLIGENT CONNECTION TECHNOLOGY

FasTest's ICON™ adds sensing capabilities to our mechanical Sealing Connection Tools. ICON™ Tools include instant LED visual feedback and data output to improve sealing connection accuracy, maximize production efficiency, and optimize maintenance.

ICON™ features:



SURE SEAL™

Instant LED feedback verifies a good connection prior to starting a test.

System Overview:

CONNECTED

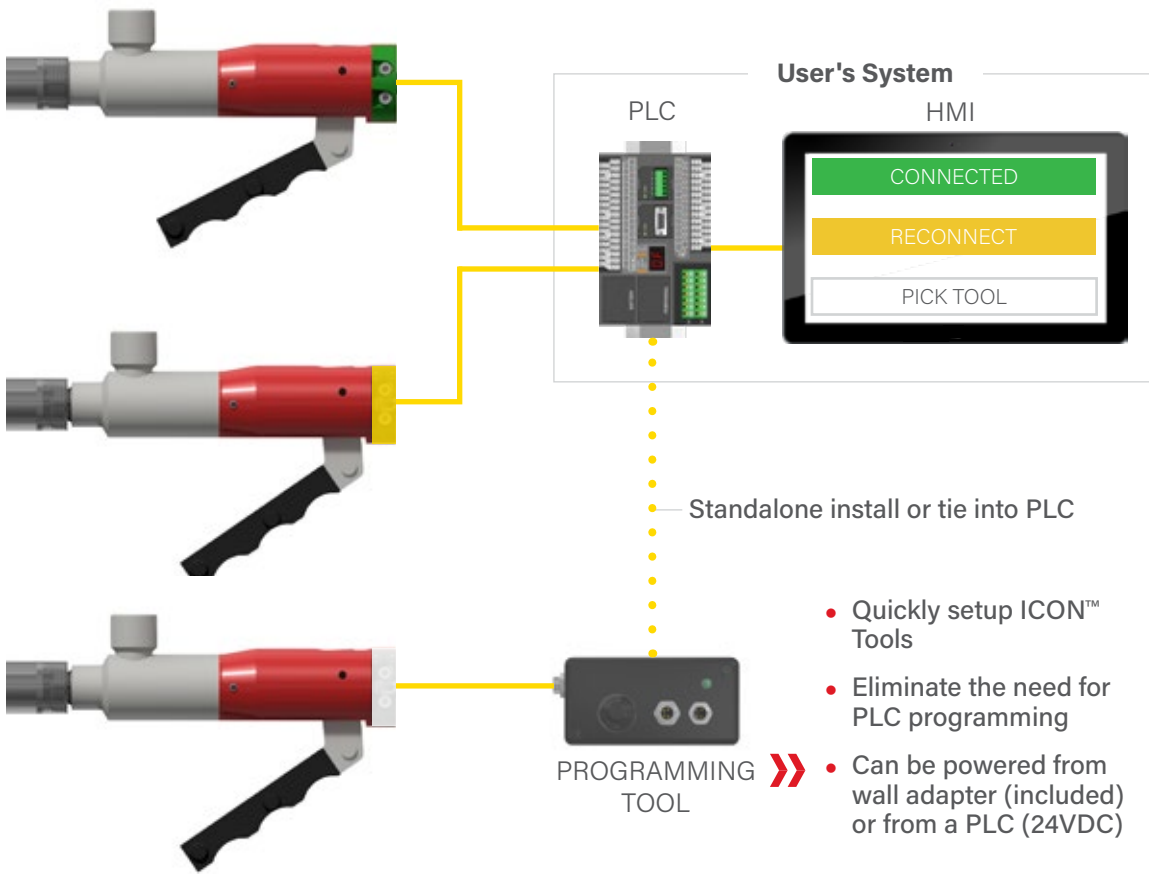
Verify connections are good prior to starting a leak test and provide operators instant positive feedback to simplify training.

RECONNECT

Recognize short connects before hazardous spills occur in functional testing, or prevent wasteful False Positive results in leak testing.

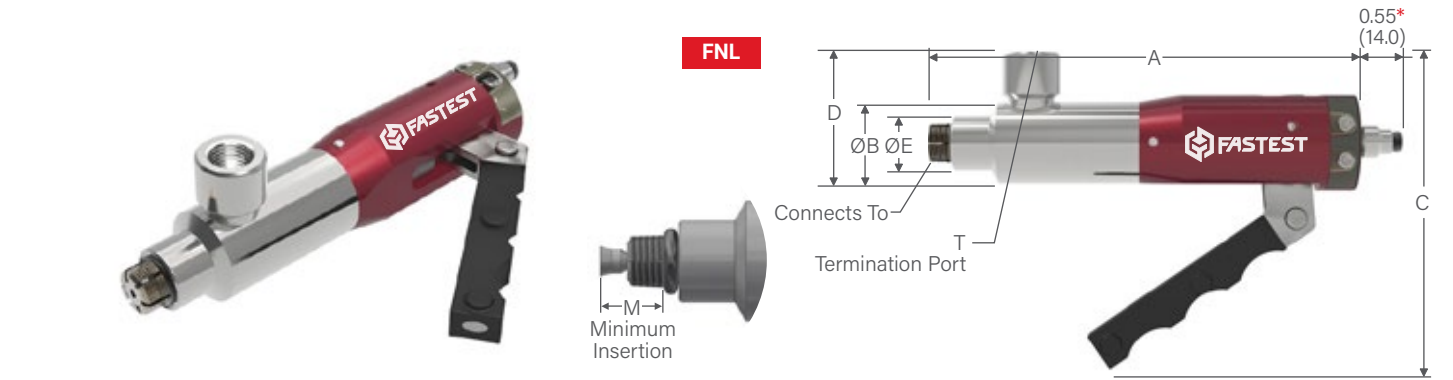
PICK TOOL

Controllable LED signals operator to use specific tool.



- Quickly setup ICON™ Tools
- Eliminate the need for PLC programming
- Can be powered from wall adapter (included) or from a PLC (24VDC)

FN / INTERNAL CONNECTIONS / NPT

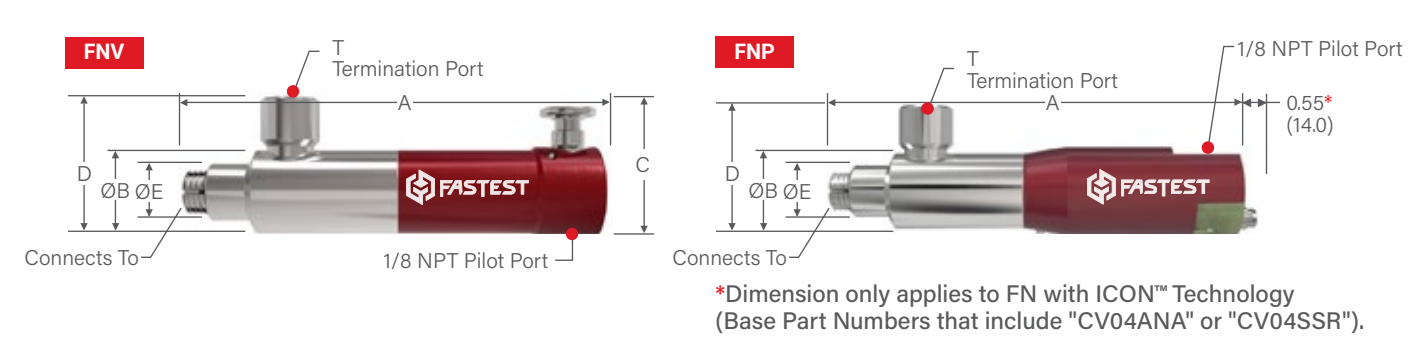


Ordering Information								
Connects To	Pressure Rating	Body Size	FNL Part Number (with Lever)	FNV Part Number (with Thumb Valve)	FNP Part Number (w/ Pneumatic Pilot)	Replacement Seals Pack (5)	Rebuild Kit	ICON™ Repair Kit (FNL / FNP)
FasMate® FN   NPT								
1/8 NPT	5000 (345)	1	FNL022021[*]	FNV022021	FNP022021[*]	S1108B70	RFN022021	RFNLBG1CV04ANA RFNLBG1CV04SSR
	2500 (172)		FNLR022021[*]	FNVR022021	FNPR022021[*]			
	5000 (345)		FNL022025[*]	FNV022025	FNP022025[*]			
1/4 NPT	5000 (345)	2	FNL042041[*]	FNV042041	FNP042041[*]	S21250327B60	RFN042041	
	2500 (172)		FNLR042041[*]	FNVR042041	FNPR042041[*]			
	5000 (345)		FNL042045[*]	FNV042045	FNP042045[*]			
3/8 NPT	5000 (345)	3	FNL062061[*]	FNV062061	FNP062061[*]	S1112B70	RFN062061	
	2500 (172)		FNLR062061[*]	FNVR062061	FNPR062061[*]			
	5000 (345)		FNL062065[*]	FNV062065	FNP062065[*]			
1/2 NPT	5000 (345)	4	FNL082081[*]	FNV082081	FNP082081[*]	S1208B70	RFN082081	
			FNL082085[*]	FNV082085	FNP082085[*]			
3/4 NPT	3500 (241)	5	FNL122121[*]	FNV122121	FNP122121[*]	S1315B50	RFNBG5	
			FNL122125[*]	FNV122125	FNP122125[*]			
1 NPT	2000 (137.9)	6	N/A	FNV162161	FNP162161	S1318B70	RFNBG6	N/A
1 1/4 NPT		7		FNV202161	FNP202161	S1323B70	RFNBG71	
1 1/2 NPT				FNV242161	FNP242161	S1325B70	RFNBG7	

Reduced Thead Connectors [FNxRxxxxxx]; The "R" in the part number indicates a shorter collet length for shallow ports.

Port specifications: NPT per SAE J476 or ANSI B1.20

*How To Add ICON™ to FN		
Signal Output	Part Number Suffix	Example
FNL Connector without ICON™	None	FNL022021
FNL with ICON™: Analog Output Signal	CV04ANA	FNL022021 <b>CV04ANA</b>
FNL with ICON™: Solid State Relay	CV04SSR	FNL022021 <b>CV04SSR</b>

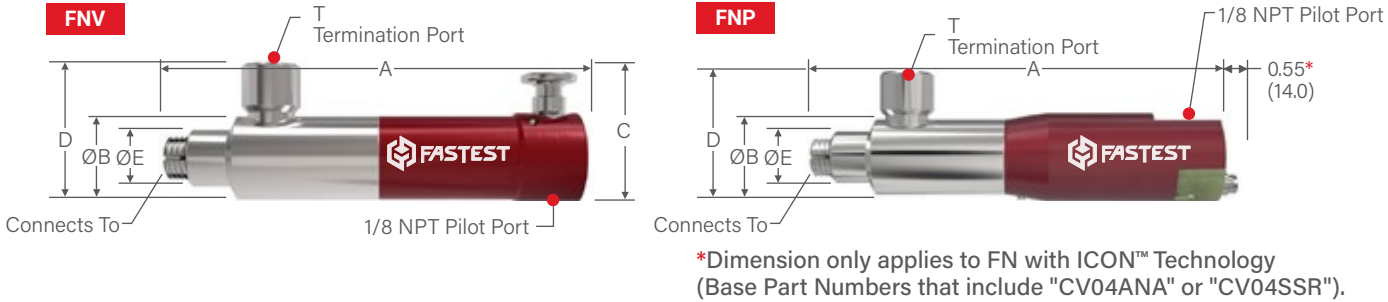
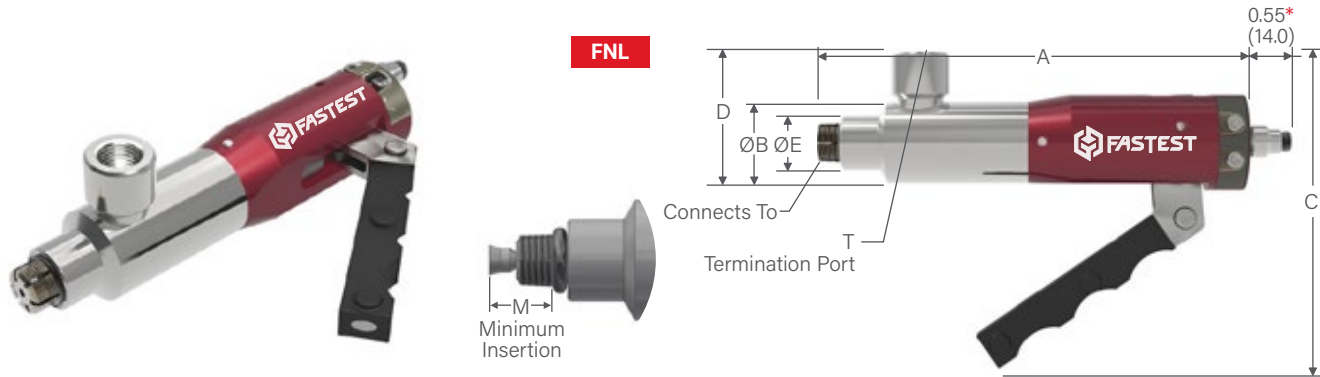


Body Size	Dimensions									
	A (FNL)	A (FNV)	A (FNP)	B	C (FNL)	C (FNV)	D	E	M	T
1	4.80 (121.9)	5.13 (130.3)	4.90 (124.5)	1.06 (26.9)	3.70 (94.0)	1.58 (40.1)	1.50 (38.1)	0.65 (16.5)	0.55 (14.0)	1/8 NPT
									0.30 (7.6)	
									0.55 (14.0)	1/8 BSPP (G)
2	5.00 (127.0)	5.21 (132.3)	5.00 (127.0)	1.06 (26.9)	4.00 (101.6)	1.58 (40.1)	1.70 (43.2)	0.72 (18.3)	0.67 (17.0)	1/4 NPT
									0.39 (9.9)	
									0.67 (17.0)	1/4 BSPP (G)
3	5.00 (127.0)	5.05 (128.3)	4.80 (121.9)	1.25 (31.8)	3.90 (99.1)	1.58 (40.1)	1.86 (47.2)	0.86 (21.8)	0.67 (17.0)	3/8 NPT
									0.47 (11.9)	
									0.67 (17.0)	3/8 BSPP (G)
4	5.27 (133.9)	5.27 (133.9)	5.34 (135.6)	1.43 (36.3)	4.40 (111.8)	1.85 (47.0)	2.33 (59.2)	1.09 (27.7)	0.76 (19.3)	1/2 NPT
										1/2 BSPP (G)
5	8.17 (207.5)	8.75 (222.2)	8.75 (222.2)	1.78 (45.2)	5.10 (129.5)	2.11 (53.6)	2.93 (74.4)	1.49 (37.8)	0.63 (16.0)	3/4 NPT
6	N/A	8.48 (215.4)	8.17 (207.5)	2.23 (56.6)	N/A	2.46 (62.5)	3.63 (92.2)	1.71 (43.4)	N/A	1 NPT
7		8.53 (216.7)	8.21 (208.5)	2.75 (69.9)			4.07 (103.4)	2.07 (52.6)		
								2.27 (57.7)		

Dimensions inch (mm)  
Pressure Rating: psi (bar)



FN / INTERNAL CONNECTIONS / BSPP (G)/T



Ordering Information										
Connects To	Pressure Rating	Body Size	FNL Part Number (with Lever)	FNV Part Number (w/ Thumb Valve)	FNP Part Number (w/ Pneumatic)	Replacement Seals Pack (5)	Rebuild Kit	ICON™ Repair Kit (FNL / FNP)		
FasMate® FN   BSPP (G)										
1/8 BSPP (G)	5000 (345)	1	FNL026021[*]	FNV026021	FNP026021[*]	S1108B70	RFN026021	RFNLBG1CV04ANA RFNLBG1CV04SSR		
	2500 (172)		FNLR026021[*]	FNVR026021	FNPR026021[*]					
	5000 (345)		FNL026025[*]	FNV026025	FNP026025[*]					
	2500 (172)		FNLR026025[*]	FNVR026025	FNPR026025[*]					
1/8 BSPT	5000 (345)		FNL026T025[*]	FNV026T025	FNP026T025[*]					
1/4 BSPP (G)	5000 (345)	2	FNL046041[*]	FNV046041	FNP046041[*]	S21250327B60	RFN046041			
	2500 (172)		FNLR046041[*]	FNVR046041	FNPR046041[*]					
	5000 (345)		FNL046045[*]	FNV046045	FNP046045[*]					
	2500 (172)		FNLR046045[*]	FNVR046045	FNPR046045[*]					
1/4 BSPT	5000 (345)		FNL046T045[*]	FNV046T045	FNP046T045[*]					
3/8 BSPP (G)	5000 (345)	3	FNL066061[*]	FNV066061	FNP066061[*]	S1112B70	RFN066061			
3/8 BSPT			FNL066065[*]	FNV066065	FNP066065[*]					
				FNL066T065[*]	FNV066T065				FNP066T065[*]	
1/2 BSPP (G)	5000 (345)	4	FNL086081[*]	FNV086081	FNP086081[*]	S1208B70	RFN086081	RFNLBG4CV04ANA RFNLBG4CV04SSR		
1/2 BSPT			FNL086085[*]	FNV086085	FNP086085[*]					
			FNL086T085[*]	FNV086T085	FNP086T085[*]					
3/4 BSPP (G)	3500 (241)	5	FNL126121[*]	FNV126121	FNP126121[*]	S1315B50	RFN BG5	RFNLBG5CV04ANA RFNLBG5CV04SSR		
3/4 BSPT			FNL126125[*]	FNV126125	FNP126125[*]					
			FNL126T125[*]	FNV126T125	FNP126T125[*]					
1 BSPP (G)	2000 (137.9)	6	N/A	FNV166161	FNP166161	S1318B70	RFN BG6	N/A		
1 BSPT (G)				FNV166T161	FNP166T161					
1 1/4 BSPP (G)		7		FNV206161	FNP206161	S1323B70	RFN BG71			
1 1/4 BSPT (G)				FNV206T161	FNP206T161					
1 1/2 BSPP				FNV246161	FNP246161	S1325B70	RFN BG7			
1 1/2 BSPT				FNV246T161	FNP246T161					

Reduced Thead Connectors [FNxRxxxxxx]; The "R" in the part number indicates a shorter collet length for shallow ports.  
Port Specifications: BSPP (G) per ISO 228, BS 2779, DIN 3852 Part 2 Type A and B; BSPT per ISO 7 or BS 21

Body Size	Dimensions									
	A (FNL)	A (FNV)	A (FNP)	B	C (FNL)	C (FNV)	D	E	M	T
1	4.80 (121.9)	5.13 (130.3)	4.90 (124.5)	1.06 (26.9)	3.70 (94)	1.58 (40.1)	1.50 (38.1)	0.65 (16.5)	0.55 (14.0)	1/8 NPT
									0.27 (6.9)	1/8 NPT
									0.55 (14.0)	1/8 BSPP (G)
									0.27 (6.9)	1/8 BSPP (G)
									0.55 (14.0)	1/8 BSPP (G)
2	5.00 (127)	5.21 (132.3)	5.00 (127.0)	1.06 (26.9)	4.00 (101.6)	1.58 (40.1)	1.70 (43.2)	0.72 (18.3)	0.67 (17.0)	1/4 NPT
									0.39 (9.9)	1/4 NPT
									0.67 (17.0)	1/4 BSPP (G)
									0.39 (9.9)	1/4 BSPP (G)
									0.67 (17.0)	1/4 BSPP (G)
3	5.00 (127)	5.05 (128.3)	4.80 (121.9)	1.25 (31.8)	3.90 (99.1)	1.58 (40.1)	1.86 (47.2)	0.86 (21.8)	0.67 (17.0)	3/8 NPT
										3/8 BSPP (G)
										3/8 BSPP (G)
4	5.27 (133.9)	5.27 (133.9)	5.34 (135.6)	1.43 (36.3)	4.40 (111.8)	1.85 (47.0)	2.33 (59.2)	1.09 (27.7)	0.76 (19.3)	1/2 NPT
										1/2 BSPP (G)
										1/2 BSPP (G)
5	8.17 (207.5)	8.75 (222.2)	8.75 (222.2)	1.78 (45.2)	5.10 (129.5)	2.11 (53.6)	2.93 (74.4)	1.49 (37.8)	0.63 (16.0)	3/4 NPT
										3/4 BSPP (G)
										3/4 BSPP (G)
6	N/A	8.48 (215.4)	8.17 (207.5)	2.23 (56.6)	N/A	2.46 (62.5)	3.63 (92.2)	1.71 (43.4)	2.07 (52.6)	1 NPT
7		8.53 (216.7)	8.21 (208.5)	2.75 (69.9)		2.46 (62.48)	4.07 (103.4)	2.27 (57.7)		

Dimensions inch (mm)  
Pressure Rating: psi (bar)

FN / INTERNAL CONNECTIONS / SAE O-RING



**FNL**

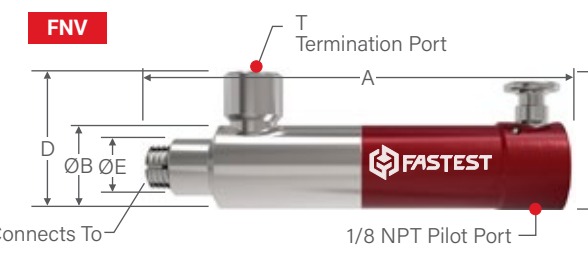
Connects To

Termination Port

Minimum Insertion

0.55\* (14.0)

Ordering Information									
Connects To	Pressure Rating	Body Size	FNL Part Number (with Lever)	FNV Part Number (w/ Thumb Valve)	FNP Part Number (w/ Pneumatic Pilot)	Replacement Seals Pack (5)	Rebuild Kit	ICON™ Repair Kit (FNL / FNP)	
FasMate® FN   SAE O-Ring									
-3 [3/8-24]	2500 (172)	1	FNLR034021[*]	FNVR034021	FNPR034021[*]	S1108B70	RFN022021	RFNLBG1CV04ANA RFNLBG1CV04SSR	
			FNLR034025[*]	FNVR034025	FNPR034025[*]				
-4 [7/16-20]	5000 (345)		FNL044021[*]	FNVR044021	FNPR044021[*]	S1109B70	RFN044021		
	2500 (172)		FNLR044021[*]	FNVR044021	FNPR044021[*]				
	5000 (345)		FNL044025[*]	FNVR044025	FNPR044025[*]				
-4 [7/16-24]	2500 (172)		FNLR044025[*]	FNVR044025	FNPR044025[*]				
	2500 (172)		FNLR044K021[*]	FNVR044K021	FNPR044K021[*]				
		FNLR044K025[*]	FNVR044K025	FNPR044K025[*]					
-5 [1/2-20]	5000 (345)	2	FNL054041[*]	FNVR054041	FNPR054041[*]	S21250327B60	RFN054041		
	2500 (172)		FNLR054041[*]	FNVR054041	FNPR054041[*]				
	5000 (345)		FNL054045[*]	FNVR054045	FNPR054045[*]				
	2500 (172)		FNLR054045[*]	FNVR054045	FNPR054045[*]				
-6 [9/16-18]	5000 (345)		FNL064041[*]	FNVR064041	FNPR064041[*]	S1111B70	RFN064041		
	2500 (172)		FNLR064041[*]	FNVR064041	FNPR064041[*]				
	5000 (345)		FNL064045[*]	FNVR064045	FNPR064045[*]				
	2500 (172)		FNLR064045[*]	FNVR064045	FNPR064045[*]				
-8 [3/4-16]	5000 (345)	4	FNL084061[*]	FNVR084061	FNPR084061[*]	S1207B70	RFN084061		
			FNL084065[*]	FNVR084065	FNPR084065[*]				
-10 [7/8-14]	5000 (345)	4	FNL104081[*]	FNVR104081	FNPR104081[*]	S2M0401600B70	RFN104081	RFNLBG4CV04ANA RFNLBG4CV04SSR	
			FNL104085[*]	FNVR104085	FNPR104085[*]				
-12 [1 1/16-12]	3500 (241)	5	FNL124121[*]	FNVR124121	FNPR124121[*]	S1315B50	RFN054041	RFNLBG5CV04ANA RFNLBG5CV04SSR	
-14 [1 3/16-12]	2000 (137.9)	6	N/A	FNVR144161	FNPR144161	S1316B70	RFN054041	N/A	
-16 [1 5/16-12]				FNVR164161	FNPR164161	S1318B70	RFN054041		

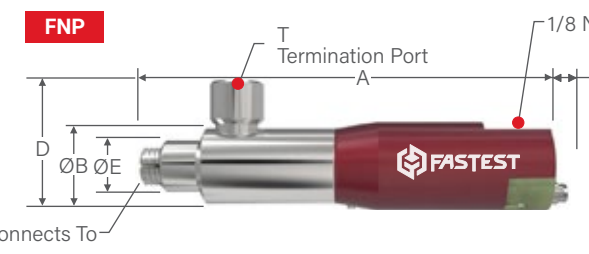


**FNV**

Connects To

Termination Port

1/8 NPT Pilot Port



**FNP**

Connects To

Termination Port

1/8 NPT Pilot Port

0.55\* (14.0)

\*Dimension only applies to FN with ICON™ Technology (Base Part Numbers that include "CV04ANA" or "CV04SSR").

Dimensions										
Body Size	A (FNL)	A (FNV)	A (FNP)	B	C (FNL)	C (FNV)	D	E	M	T
	4.80 (121.9)	5.13 (130.3)	4.90 (124.5)	1.06 (26.9)	3.70 (94.0)	1.58 (40.1)	1.50 (38.1)	0.65 (16.5)	0.30 (7.6)	1/8 NPT
										1/8 BSPP (G)
1	4.80 (121.9)	5.13 (130.3)	4.90 (124.5)	1.06 (26.9)	3.70 (94.0)	1.58 (40.1)	1.50 (38.1)	0.65 (16.5)	0.55 (14.0)	1/8 NPT
									0.34 (8.6)	1/8 NPT
									0.55 (14.0)	1/8 BSPP (G)
									0.34 (8.6)	1/8 BSPP (G)
									0.37 (9.4)	1/8 NPT
										1/8 BSPP (G)
2					4.00 (101.6)		1.70 (43.2)	0.72 (18.3)	0.67 (17.0)	1/4 NPT
									0.39 (9.9)	
									0.67 (17.0)	1/4 BSPP (G)
									0.39 (9.9)	
2	5.00 (127.0)	5.21 (132.3)	5.00 (127.0)	1.06 (26.9)	3.90 (99.1)	1.58 (40.1)	1.86 (47.2)	0.79 (20.1)	0.67 (17.0)	1/4 NPT
									0.41 (10.4)	
									0.67 (17.0)	1/4 BSPP (G)
									0.41 (10.4)	
4	5.27 (133.9)	5.27 (133.9)	5.34 (135.6)	1.43 (36.3)	4.40 (111.8)	1.85 (47.0)	2.33 (59.2)	1.09 (27.7)	0.76 (19.3)	3/8 NPT
								3/8 BSPP (G)		
4								1.25 (31.8)		1/2 NPT
										1/2 BSPP (G)
5	8.17 (207.5)	8.75 (222.2)	8.75 (222.2)	1.78 (45.2)	5.10 (129.5)	2.11 (53.6)	2.93 (74.4)	1.49 (37.8)	0.63 (16.0)	3/4 NPT
6	N/A	8.48 (215.4))	8.17 (207.5)	2.23 (56.6)	N/A	2.46 (62.5)	3.63 (92.2)	1.58 (40.1)	N/A	1 NPT
6								1.71 (43.4)		

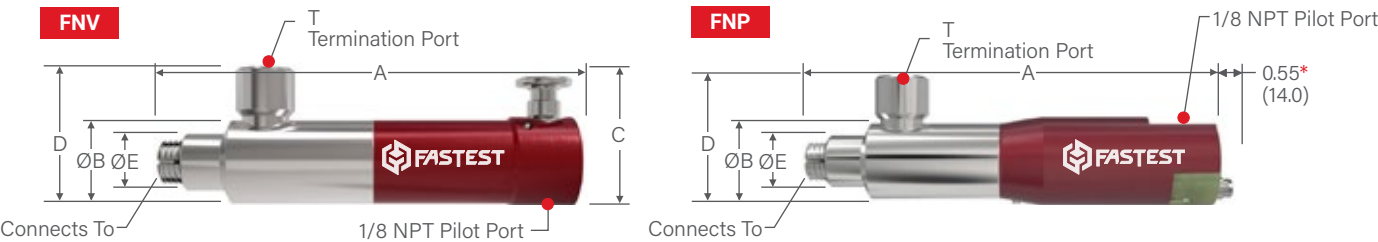
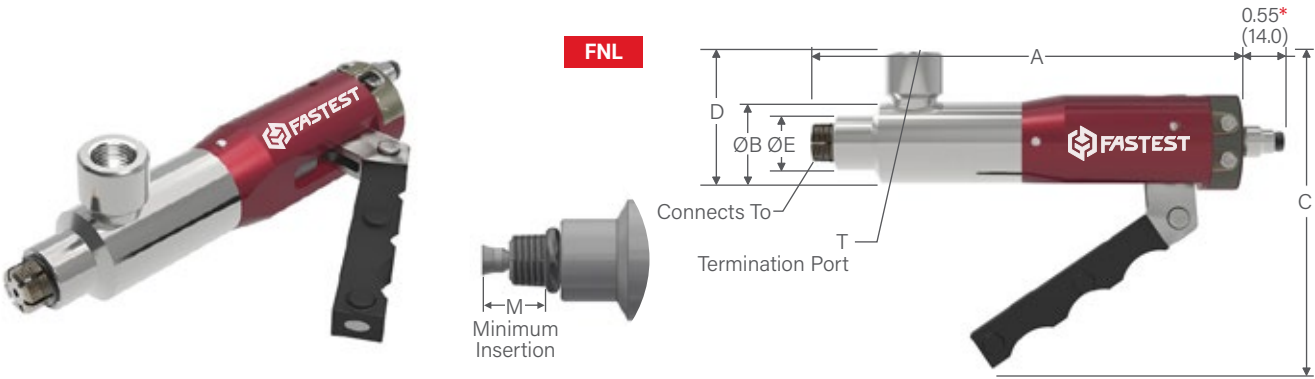
Dimensions: inch (mm)  
Pressure Rating: psi (bar)

Reduced Thread Connectors [FNxRxxxxxx]; The "R" in the part number indicates a shorter collet length for shallow ports.

Port Specifications: SAE O-Ring per SAE J1926 or ISO 11926



FN / INTERNAL CONNECTIONS / METRIC



\*Dimension only applies to FN with ICON™ Technology (Base Part Numbers that include "CV04ANA" or "CV04SSR").

Ordering Information								
Connects To	Pressure Rating	Body Size	FNL Part Number (w/ Lever)	FNV Part Number (w/ Thumb Valve)	FNP Part Number (w/ Pneumatic Pilot)	Replacement Seals Pack (5)	Rebuild Kit	ICON™ Repair Kit (FNL / FNP)
FasMate® FN   ISO O-Ring Metric								
M10 × 1.0	5000 (345)	1	FNL108021[*]	FNV108021	FNP108021[*]	S1108B70	RFN108021	
	2500 (172)		FNLR108021[*]	FNVR108021	FNPR108021[*]			
	5000 (345)		FNL108025[*]	FNV108025	FNP108025[*]			
	2500 (172)		FNLR108025[*]	FNVR108025	FNPR108025[*]			
M10 × 1.25	2500 (172)		FNLR108D021[*]	FNVR108D021	FNPR108D021[*]			
			FNLR108D025[*]	FNVR108D025	FNPR108D025[*]			
M10 × 1.5	2500 (172)		FNLR108E021[*]	FNVR108E021	FNPR108E021[*]			
			FNLR108E025[*]	FNVR108E025	FNPR108E025[*]			
M12 × 1.0	5000 (345)	2	FNL128C041[*]	FNV128C041	FNP128C041[*]	S1203B60	RFN128041	RFNLBG1CV04ANA RFNLBG1CV04SSR
	2500 (172)		FNLR128C041[*]	FNVR128C041	FNPR128C041[*]	S21250327B60		
	5000 (345)		FNL128C045[*]	FNV128C045	FNP128C045[*]	S1203B60		
	2500 (172)		FNLR128C045[*]	FNVR128C045	FNPR128C045[*]	S21250327B60		
M12 × 1.25	2500 (172)		FNLR128D041[*]	FNVR128D041	FNPR128D041[*]	S1203B60		
			FNLR128D045[*]	FNVR128D045	FNPR128D045[*]			
M12 × 1.5	2500 (172)		FNLR128041[*]	FNVR128041	FNPR128041[*]			
			FNLR128045[*]	FNVR128045	FNPR128045[*]			
M14 x 1.5	5000 (345)	2	FNL148045[*]	FNV148045	FNP148045[*]	S21250327B60	RFN148041	
	2500 (172)		FNLR148041[*]	FNVR148041	FNPR148041[*]	S1203B60		
	2500 (172)		FNLR148045[*]	FNVR148045	FNPR148045[*]			
M16 x 1.5	5000 (345)	3	FNL168065[*]	FNV168065	FNP168065[*]	S21200445B70	RFN168061	
	2500 (172)		FNLR168061[*]	FNVR168061	FNPR168061[*]			
	2500 (172)		FNLR168065[*]	FNVR168065	FNPR168065[*]			
M18 x 1.5	5000 (345)	4	FNL188065[*]	FNV188065	FNP188065[*]	S1206B70	RFN188061	RFNLBG4CV04ANA RFNLBG4CV04SSR
M20 x 1.5			FNL208065[*]	FNV208065	FNP208065[*]	S21390576B70	RFN208061	
M22 x 1.5			FNL228X085[*]	FNV228X085	FNP228X085[*]	S1208B70	RHN228081	
M30 x 2.0	2000 (137.9)	6	N/A	FNV308161	FNP308161	S1316B70	RFN BG61	N/A
M33 x 2.0			N/A	FNV338161	FNP338161	S1318B70	RFN BG6	
M42 x 2.0		7	N/A	FNV428161	FNP428161	S1323B70	RFN BG71	
M48 x 2.0			N/A	FNV488161	FNP488161	S1325B70	RFN BG7	

Reduced Thread Connectors Available up to M16 [FNxRxxxxxx]; The "R" in the part number indicates a shorter collet length for shallow ports.

Dimensions										
Body Size	A (FNL)	A (FNV)	A (FNP)	B	C (FNL)	C (FNV)	D	E	M	T
1	4.80 (121.9)	5.13 (130.3)	4.90 (124.5)		3.70 (94.0)		1.50 (38.1)	0.65 (16.5)	0.55 (14.0)	1/8 NPT
									0.30 (7.6)	
									0.55 (14.0)	1/8 BSPP (G)
									0.30 (7.6)	
									0.32 (8.1)	1/8 NPT
										1/8 BSPP (G)
									0.34 (8.6)	1/8 NPT
										1/8 BSPP (G)
2				1.06 (26.9)		1.58 (40.1)			0.67 (17.0)	1/4 NPT
									0.38 (9.7)	
									0.67 (17.0)	1/4 BSPP (G)
									0.38 (9.7)	
	5.00 (127.0)	5.21 (132.3)	5.00 (127.0)		4.00 (101.6)		1.70 (43.2)	0.72 (18.3)	0.38 (9.7)	1/4 NPT
										1/4 BSPP (G)
									0.40 (10.2)	1/4 NPT
										1/4 BSPP (G)
2									0.67 (17.0)	1/4 BSPP (G)
									0.43 (10.9)	1/4 NPT
										1/4 BSPP (G)
									0.43 (10.9)	1/4 NPT
3	5.00 (127.0)	5.05 (128.3)	4.80 (121.9)	1.25 (31.8)	3.90 (99.1)	1.58 (40.1)	1.86 (47.2)	0.86 (21.8)	0.67 (17.0)	3/8 BSPP (G)
									0.43 (10.9)	3/8 NPT
									0.43 (10.9)	3/8 BSPP (G)
4	5.27 (133.9)	5.27 (133.9)	5.34 (135.6)	1.43 (36.3)	4.40 (111.8)	1.85 (47.0)	2.33 (59.2)	1.00 (25.4)		3/8 BSPP (G)
								1.09 (27.7)	0.55 (14.0)	3/8 BSPP (G)
										1/2 BSPP (G)
6		8.48 (215.4)	8.17 (207.5)	2.23 (56.6)		2.46 (62.5)	3.63 (92.2)	1.58 (40.1)	N/A	1 NPT
								1.71 (43.4)		
7		8.53 (216.7)	8.21 (208.5)	2.75 (69.9)		2.46 (62.48)	4.07 (103.4)	2.07 (52.6)		
								2.27 (50.8)		

Dimensions: inch (mm)      Pressure Rating: psi (bar)

# MIT / INTERNAL CONNECTIONS

Manual twist sealing connection tool for internal threaded ports.

CONNECTS TO:



SPECIFICATIONS

Pressure Rating	Operating Temperatures	Materials of Construction
Vacuum to 10,000 psi (689 bar)	-40°F to +200°F (-40°C to +93°C)	Stainless Steel
Termination Port		Seal Material*
NPT, SAE 37° Flare		Urethane, Neoprene, or Buna-N

\*Additional seal material types available, consult factory.

ACTUATION METHOD

**Manual Twist:** Finger-tight connection eliminates tape and sealants

ICON™ TECHNOLOGY

Consult Factory

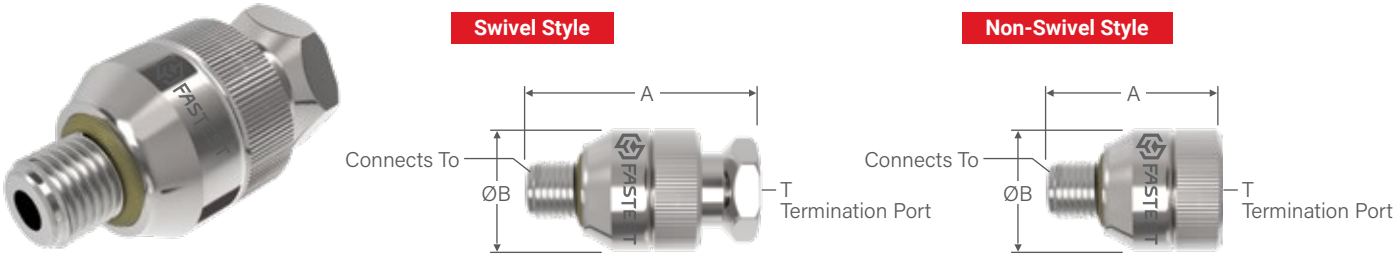
ACCESSORIES

Visit [fastestinc.com](https://fastestinc.com)

- 1 Pressure assisted sealing eliminates leaks and resists movement under pressure
- 2 Leak-tight seal prevents contamination of media and reduces scrap and test damage
- 3 Available in flow or plug versions
- 4 Quick and easy seal replacement to minimize down time, maintenance, and tool inventory

# MIT / INTERNAL CONNECTIONS / NPT

Swivel Style  
Non-Swivel Style



Ordering Information					Dimensions		
Connects To	Part Number*	Replacement Seals Bulk Pack (5)	Rebuild Kit	Pressure Rating	A	B	T**

NPT | Swivel Style

1/8 NPT	MIT022021	S1109U70	MITR020	5000 (345)	1.68 (42.7)	0.82 (20.8)	1/8 NPT
1/4 NPT	MIT042041	S1111U70	MITR040		1.88 (42.8)	1.00 (25.4)	1/4 NPT
3/8 NPT	MIT062061	S1113U70	MITR060		2.09 (53.1)	1.18 (30.0)	3/8 NPT
1/2 NPT	MIT082081	S1209U70	MITR080	4000 (276)	2.57 (65.3)	1.36 (34.5)	1/2 NPT
3/4 NPT	MIT122121	S1213U70	MITR120		2.73 (69.3)	1.68 (42.7)	3/4 NPT
1 NPT	MIT162161	S1216U70	MITR160		3.27 (83.1)	2.00 (50.8)	1 NPT
1 ¼ NPT	MIT202201	S1222U70	MITR200		3.29 (83.6)	2.38 (60.5)	1 ¼ NPT
1 ½ NPT	MIT242241	S1327U70	MITR240	3000 (207)	3.73 (94.7)	3.73 (94.7)	1 ½ NPT

NPT | Non-Swivel Style

1/8 NPT	MIT022021X	S1109U70	MITR02	5000 (345)	1.18 (30.0)	0.82 (20.8)	1/8 NPT
1/4 NPT	MIT042041X	S1111U70	MITR04		1.41 (35.8)	1.00 (25.4)	1/4 NPT
3/8 NPT	MIT062061X	S1113U70	MITR06		1.48 (37.6)	1.18 (30.0)	3/8 NPT
1/2 NPT	MIT082081X	S1209U70	MITR08	4000 (276)	1.85 (47.0)	1.36 (34.5)	1/2 NPT
3/4 NPT	MIT122121X	S1213U70	MITR12		1.94 (49.3)	1.68 (42.7)	3/4 NPT
1 NPT	MIT162161X	S1216U70	MITR16	4000 (276)	2.07 (52.6)	2.00 (50.8)	1 NPT
1-1/4 NPT	MIT202201X	S1222U70	MITR20	4000 (276)	2.13 (54.1)	2.38 (60.5)	1 ¼ NPT
1-1/2 NPT	MIT242241X	S1327U70	MITR24	3000 (207)	2.40 (61.0)	2.74 (69.6)	1 ½ NPT
2 NPT	MIT322161X	S1331U70	MITR32	2500 (172)	2.68 (68.1)	3.47 (88.1)	1 NPT
2-1/2 NPT	MIT402161X	S1335U70	MITR40	1500 (103)	3.42 (88.9)	3.97 (100.8)	1 NPT
3 NPT	MIT482161X	S1340U70	MITR48	1500 (103)	3.68 (93.5)	4.73 (120.1)	1 NPT
4 NPT	MIT642161X	S1348U70	MITR64	1000 (69)	3.68 (93.5)	5.73 (145.5)	1 NPT

Dimensions: inch (mm)  
Pressure Rating: psi (bar)

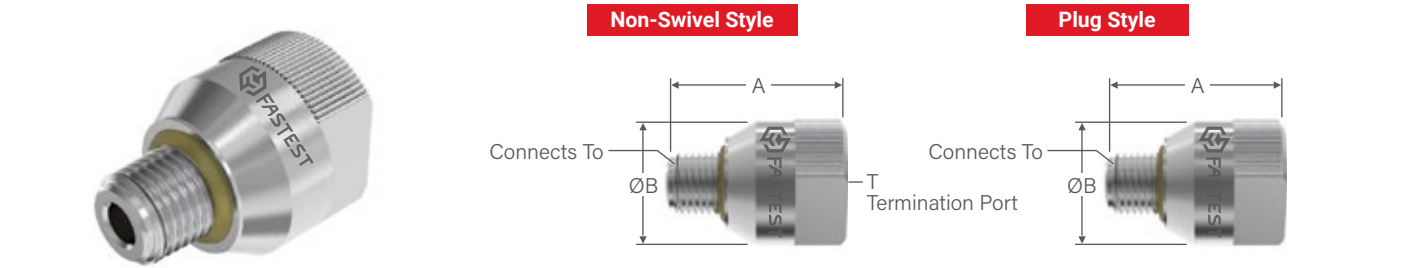
\*Optional seal materials include V = FKM, E = EPDM, and B = Buna-N - Example: MIT022021X**V** = FKM  
\*\*Other terminations in metric / BSPP may be available. Contact factory.

Port Specifications: NPT per SAE J476 or ANSI B1.20



Non-Swivel Style for High Pressure  
Plug Style

MIT / INTERNAL CONNECTIONS / NPT (HIGH PRESSURE <10,000 PSI)



Ordering Information					Dimensions		
Connects To	Part Number*	Replacement Seals Bulk Pack (5)	Rebuild Kit	Pressure Rating	A	B	T**

**NPT** | Non-Swivel Style for High Pressure

1/8 NPT	MITH022021X	S1109U70	MITR02	10000 (689)	1.24 (31.5)	0.82 (20.8)	1/8 NPT
1/4 NPT	MITH042041X	S1111U70	MITR04		1.41 (35.8)	1.00 (25.4)	1/4 NPT
3/8 NPT	MITH062061X	S1113U70	MITR06	10000 (689)	1.48 (37.6)	1.18 (30.0)	3/8 NPT
1/2 NPT	MITH082081X	S1209U70	MITR08	8000 (552)	1.85 (47.0)	1.36 (34.5)	1/2 NPT
3/4 NPT	MITH122121X	S1213U70	MITR12	7500 (517)	1.94 (49.3)	1.68 (42.7)	3/4 NPT
1 NPT	MITH162161X	S1216U70	MITR16	6500 (448)	2.07 (52.6)	2.00 (50.8)	1 NPT

**NPT** | Plug Style

1/8 NPT	MIT022P	S1109U70	MITR02	5000 (345)	1.24 (31.5)	0.82 (21.8)	N/A (Plug Style No Termination Port)
1/4 NPT	MIT042P	S1111U70	MITR04		1.41 (35.8)	1.00 (25.4)	
3/8 NPT	MIT062P	S1113U70	MITR06	4000 (276)	1.48 (37.6)	1.18 (30.0)	
1/2 NPT	MIT082P	S1209U70	MITR08		1.85 (47.0)	1.36 (34.5)	
3/4 NPT	MIT122P	S1213U70	MITR12		1.94 (49.3)	1.68 (42.7)	
1 NPT	MIT162P	S1216U70	MITR16		2.07 (52.6)	2.00 (50.8)	
1 ¼ NPT	MIT202P	S1222U70	MITR20		2.13 (54.1)	2.38 (60.5)	
1 ½ NPT	MIT242P	S1327U70	MITR24	3000 (207)	2.40 (61.0)	2.74 (69.6)	
2 NPT	MIT322P	S1331U70	MITR32	2500 (172)	2.68 (68.1)	3.47 (88.1)	
2 ½" NPT	MIT402P	S1335U70	MITR40	1500 (103)	3.42 (88.9)	3.97 (100.8)	
3 NPT	MIT482P	S1340U70	MITR48		3.68 (93.5)	4.73 (120.1)	
4 NPT	MIT642P	S1348U70	MITR64	1000 (69)	3.68 (93.5)	5.73 (145.5)	

Dimensions: inch (mm)  
Pressure Rating: psi (bar)

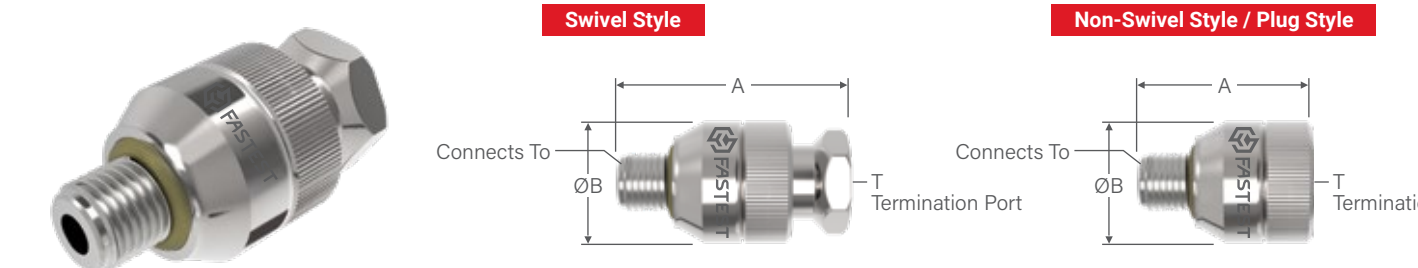
\*Optional seal materials include V = FKM, E = EPDM, and B = Buna-N - Example: MITH022021X**V** = FKM

\*\*Other terminations in metric / BSPP may be availble. Contact factory.

**Port Specifications:** NPT per SAE J476 or ANSI B1.20

Swivel Style  
Non-Swivel Style  
Plug Style

MIT / INTERNAL CONNECTIONS / BSPP (G)



Ordering Information					Dimensions		
Connects To	Part Number*	Replacement Seals Bulk Pack (5)	Rebuild Kit	Pressure Rating	A	B	T**

**BSPP (G)** | Swivel Style

1/8 BSPP (G)	MIT026021	S1109U70	MITR020	5000 (345)	1.66 (42.2)	0.82 (20.8)	1/8 FNPT
1/4 BSPP (G)	MIT046041	S1111U70	MITR040		1.83 (46.5)	1.00 (25.4)	1/4 FNPT
3/8 BSPP (G)	MIT066061	S1113U70	MITR060	4000 (276)	2.10 (53.4)	1.18 (30.0)	3/8 FNPT
1/2 BSPP (G)	MIT086081	S1209U70	MITR080		2.55 (64.8)	1.36 (34.5)	1/2 FNPT

**BSPP (G)** | Non-Swivel Style

1/8 BSPP (G)	MIT026021X	S1109U70	MITR02	5000 (345)	1.20 (30.5)	0.82 (20.8)	1/8 FNPT
1/4 BSPP (G)	MIT046041X	S1111U70	MITR04		1.36 (34.5)	1.00 (25.4)	1/4 FNPT
3/8 BSPP (G)	MIT066061X	S1113U70	MITR06	4000 (276)	1.50 (38.1)	1.18 (30.0)	3/8 FNPT
1/2 BSPP (G)	MIT086081X	S1209U70	MITR08		1.83 (46.5)	1.36 (34.5)	1/2 FNPT
3/4 BSPP (G)	MIT126121X	S1213U70	MITR12		1.94 (49.3)	1.68 (42.7)	3/4 FNPT
1 BSPP (G)	MIT166161X	S1216U70	MITR16		2.07 (52.6)	2.07 (52.6)	1 FNPT

**BSPP (G)** | Plug Style

1/8 BSPP (G)	MIT026P	S1109U70	MITR02	5000 (345)	1.24 (31.5)	0.82 (20.8)	N/A (Plug Style No Termination Port)
1/4 BSPP (G)	MIT046P	S1111U70	MITR04		1.41 (35.8)	1.00 (25.4)	
3/8 BSPP (G)	MIT066P	S1113U70	MITR06	4000 (276)	1.48 (37.6)	1.18 (30.0)	
1/2 BSPP (G)	MIT086P	S1209U70	MITR08		1.85 (47.0)	1.36 (34.5)	
3/4 BSPP (G)	MIT126P	S1213U70	MITR12		1.90 (48.3)	1.68 (42.7)	
1 BSPP (G)	MIT166P	S1216U70	MITR16		2.36 (59.9)	2.07 (52.6)	

Dimensions: inch (mm)  
Pressure Rating: psi (bar)

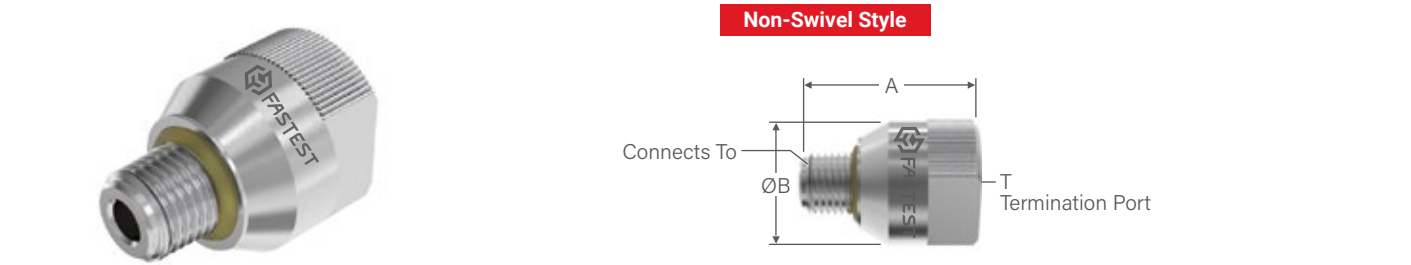
\*Optional seal materials include V = FKM, E = EPDM, and B = Buna-N - Example: MIT026021**V** = FKM

\*\*Other terminations in metric / BSPP may be availble. Contact factory.

**Port Specifications:** BSPP (G) per ISO 228 or BS2779

MIT / INTERNAL CONNECTIONS / SAE ORB

Non-Swivel Style  
Non-Swivel Style for High Pressure



Ordering Information					Dimensions		
Connects To	Part Number*	Replacement Seals Bulk Pack (5)	Rebuild Kit	Pressure Rating	A	B	T**

SAE ORB | Non-Swivel Style

-3 [3/8-24]	MIT034021X	S1109U70	MITR02	5000 (345)	1.29 (32.8)	0.82 (21.8)	1/8 FNPT
-4 [7/16-20]	MIT044021X				1.29 (32.8)	0.82 (21.8)	1/8 FNPT
-5 [1/2-20]	MIT054041X	S1111U70	MITR04		1.41 (35.8)	1.00 (25.4)	1/4 FNPT
-6 [9/16-18]	MIT064041X				1.41 (35.8)	1.00 (25.4)	1/4 FNPT
-8 [3/4-16]	MIT084081X	S1209U70	MITR08	4000 (276)	1.85 (47.0)	1.36 (34.5)	1/2 FNPT
-10 [7/8-14]	MIT104081X				1.85 (47.0)	1.36 (34.5)	1/2 FNPT
-12 [1 1/16-12]	MIT124121X	S1213U70	MITR12		1.94 (49.3)	1.68 (42.7)	3/4 FNPT
-14 [1 3/16-12]	MIT144161X	S1216U70	MITR16		2.13 (54.1)	2.00 (50.8)	1 FNPT
-16 [1 5/16-12]	MIT164161X	S1217U70	MITR16		2.13 (54.1)	2.00 (50.8)	1 FNPT
-20 [1 5/8-12]	MIT204201X	S1222U70	MITR20		2.13 (54.1)	2.38 (60.5)	1 1/4 FNPT

SAE ORB | Non-Swivel Style for High Pressure

-4 [7/16-20]	MITH044021X	S1109U70	MITR02	10000 (689)	1.29 (32.8)	0.82 (21.8)	1/8 FNPT
-6 [9/16-18]	MITH064041X	S1111U70	MITR04		1.41 (35.8)	1.00 (25.4)	1/4 FNPT
-8 [3/4-16]	MITH084081X	S1209U70	MITR08	8000 (552)	1.85 (47.0)	1.36 (34.5)	1/2 FNPT
-10 [7/8-14]	MITH104081X			7500 (517)	1.85 (47.0)	1.36 (34.5)	1/2 FNPT
-12 [1 1/16-12]	MITH124121X	S1213U70	MITR12		1.94 (49.3)	1.68 (42.7)	3/4 FNPT
-14 [1 3/16-12]	MITH144161X	S1216U70	MITR16	7000 (483)	2.13 (54.1)	2.00 (50.8)	1 FNPT
-16 [1 5/16-12]	MITH164161X	S1217U70	MITR16		2.13 (54.1)	2.00 (50.8)	1 FNPT

Dimensions: inch (mm)  
Pressure Rating: psi (bar)

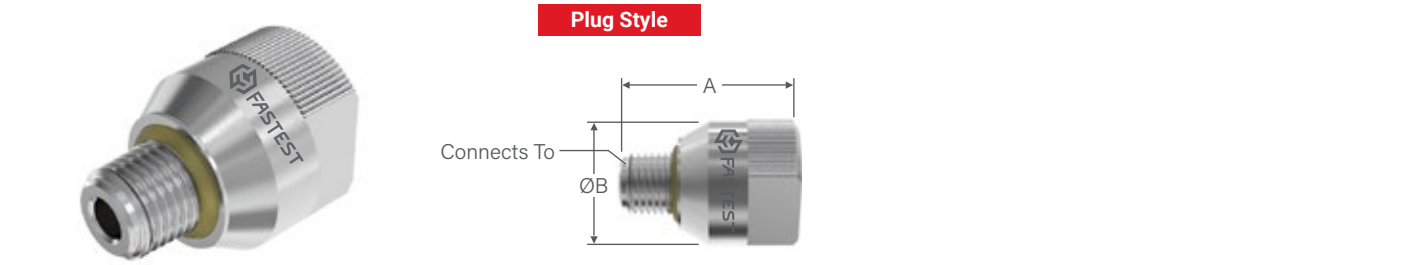
\*Optional seal materials include V = FKM, E = EPDM, and B = Buna-N - Example: MIT034021X**V** = FKM

\*\*Other terminations in metric / BSPP may be avaiable. Contact factory.

Port Specifications: SAE ORB per SAE J1926 or ISO 11926

MIT / INTERNAL CONNECTIONS / SAE ORB

Plug Style



Ordering Information					Dimensions		
Connects To	Part Number*	Replacement Seals Bulk Pack (5)	Rebuild Kit	Pressure Rating	A	B	T

SAE ORB | Plug Style

-4 [7/16-20]	MIT044P	S1109U70	MITR02	5000 (345)	1.29 (32.8)	0.82 (21.8)	N/A (Plug Style No Termination Port)
-5 [1/2-20]	MIT054P	S1111U70	MITR04		1.41 (35.8)	1.00 (25.4)	
-6 [9/16-18]	MIT064P	S1111U70	MITR04	4000 (276)	1.41 (35.8)	1.00 (25.4)	
-8 [3/4-16]	MIT084P	S1209U70	MITR08		1.85 (47.0)	1.36 (34.5)	
-10 [7/8-14]	MIT104P	S1209U70	MITR08		1.94 (49.3)	1.68 (42.7)	
-12 [1 1/16-20]	MIT124P	S1213U70	MITR12		1.29 (32.8)	0.82 (21.8)	
-14 [1 3/16-12]	MIT144P	S1216U70	MITR16		2.13 (54.1)	2.00 (50.8)	
-16 [1 5/16-12]	MIT164P	S1217U70	MITR16		2.13 (54.1)	2.00 (50.8)	
-20 [1 5/8-12]	MIT204P	S1222U70	MITR20		2.13 (54.1)	2.38 (60.5)	

Dimensions: inch (mm)  
Pressure Rating: psi (bar)

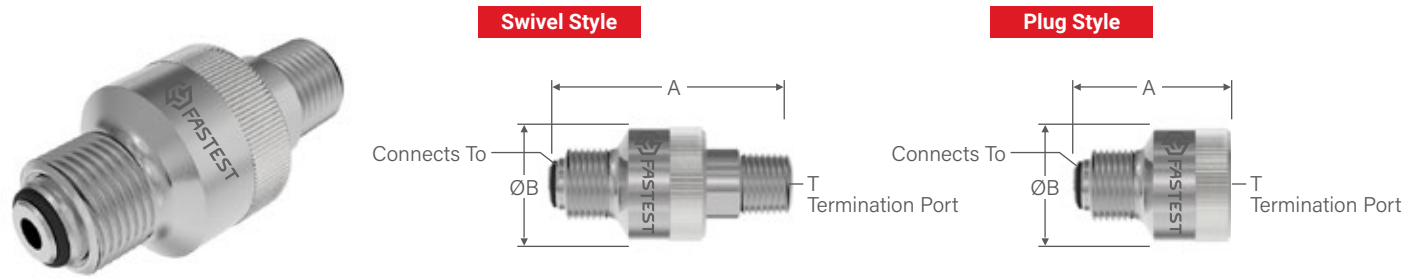
\*Optional seal materials include V = FKM, E = EPDM, and B = Buna-N - Example: MIT044P**V** = FKM

Port Specifications: SAE ORB per SAE J1926 or ISO 11926



MIT / INTERNAL CONNECTIONS / SAE 37° FLARE

Swivel Style  
Plug Style



Ordering Information					Dimensions		
Connects To	Part Number*	Replacement Seals Bulk Pack (5)	Rebuild Kit	Pressure Rating	A	B	T**

SAE 37° FLARE | Swivel Style

-4 [7/16-20]	MITH040022	S20540158B70	METR02	10000 (689)	2.11 (53.6)	0.80 (20.3)	1/8 NPTF
-6 [9/16-18]	MITH060042	S20640239B70	METR04		2.36 (59.9)	0.97 (24.6)	1/4 NPTF
-8 [3/4-16]	MITH080062	S1012B70	METR06	8000 (552)	2.54 (64.5)	1.18 (30.0)	3/8 NPTF
-10 [7/8-14]	MITH100082	S1013B70	METR08	7500 (517)	2.94 (76.7)	1.38 (35.1)	1/2 NPTF
-12 [1 1/16-12]	MITH120122	S20700583B70	METR12	7500 (517)	3.30 (83.8)	1.72 (43.7)	3/4 NPTF
-16 [1 5/16-12]	MITH160162	S20800796B70	METR16	7000 (483)	3.77 (95.8)	2.13 (54.1)	1 NPTF

SAE 37° FLARE | Plug Style

-4 [7/16-20]	MITH040P	S20540158B70	METR02	10000 (689)	1.42 (36.1)	0.80 (20.3)	N/A (Plug Style No Termination Port)
-6 [9/16-18]	MITH060P	S20640239B70	METR04		1.51 (38.4)	0.97 (24.6)	
-8 [3/4-16]	MITH080P	S1012B70	METR06	8000 (552)	1.65 (41.9)	1.18 (30.0)	
-10 [7/8-14]	MITH100P	S1013B70	METR08	7500 (517)	1.86 (47.2)	1.38 (35.1)	
-12 [1 1/16-12]	MITH120P	S20700583B70	METR12	7500 (517)	2.03 (51.6)	1.72 (43.7)	
-16 [1 5/16-12]	MITH160P	S20800796B70	METR16	7000 (483)	2.29 (58.2)	2.13 (54.1)	

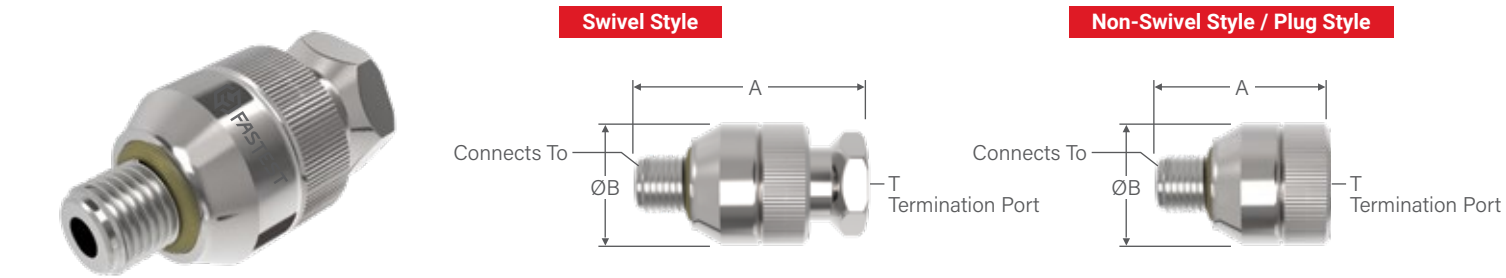
Dimensions: inch (mm)  
Pressure Rating: psi (bar)

\*Optional seal materials include V = FKM, E = EPDM, and B = Buna-N - Example: MITH040022V = FKM  
\*\*Other terminations in metric / BSPP may be avaiable. Contact factory.

Port Specifications: SAE 37° FLARE per SAE J514

MIT / INTERNAL CONNECTIONS / ISO O-RING METRIC

Swivel Style  
Non-Swivel Style  
Plug Style



Ordering Information					Dimensions		
Connects To	Part Number	Replacement Seals Bulk Pack (5)	Rebuild Kit	Pressure Rating	A	B	T**

ISO O-Ring Metric | Swivel Style

M10 x 1.0	MIT108021	S1109U70	MITR020	4000 (276)	1.76 (44.7)	0.82 (21.8)	1/8 FNPT
M12 x 1.5	MIT128041	S1110U70	MITR040		1.95 (49.5)	1.00 (25.4)	1/8 FNPT
M14 x 1.5	MIT148041	S1111U70	MITR040		1.84 (46.7)	1.00 (25.4)	1/4 FNPT
M16 x 1.5	MIT168061	S1113U70	MITR060		2.11 (53.6)	1.18 (30.0)	3/8 FNPT
M18 x 1.5	MIT188061	S1114U70	MITR060		2.16 (54.9)	1.18 (30.0)	3/8 FNPT
M20 x 1.5	MIT208081	S1209U70	MITR080		2.57 (65.3)	1.36 (34.5)	1/2 FNPT
M22 x 1.5	MIT228081	S1116U70	MITR080		2.55 (64.8)	1.37 (34.8)	1/2 FNPT

ISO O-Ring Metric | Non-Swivel Syle

M10 x 1.0	MIT108021X	S1109U70	MITR02	5000 (345)	1.30 (33.0)	0.82 (21.8)	1/8 FNPT
M12 x 1.5	MIT128041X	S1110U70	MITR04		1.37 (34.8)	1.00 (25.4)	1/4 FNPT
M14 x 1.5	MIT148041X	S1111U70	MITR04		1.37 (34.8)	1.00 (25.4)	1/4 FNPT
M16 x 1.5	MIT168061X	S1113U70	MITR06	4000 (276)	1.50 (38.1)	1.18 (30.0)	3/8 FNPT
M18 x 1.5	MIT188061X	S1114U70	MITR06		1.56 (39.6)	1.18 (30.0)	3/8 FNPT
M20 x 1.5	MIT208081X	S1209U70	MITR08		1.85 (47.0)	1.36 (34.5)	1/2 FNPT
M22 x 1.5	MIT228081X	S1116U70	MITR08		1.85 (47.0)	1.36 (34.5)	1/2 FNPT

ISO O-Ring Metric | Plug Style

M10 x 1.0	MIT108P	S1109U70	MITR02	5000 (345)	1.29 (32.8)	0.82 (21.8)	N/A (Plug Style No Termination Port)
M12 x 1.5	MIT128P	S1111U70	MITR04		1.37 (34.8)	1.00 (25.4)	
M14 x 1.5	MIT148P	S1113U70	MITR06	4000 (276)	1.37 (34.8)	1.00 (25.4)	
M16 x 1.5	MIT168P	S1209U70	MITR08		1.50 (38.1)	1.18 (30.0)	
M18 x 1.5	MIT188P	S1213U70	MITR12		1.56 (39.6)	1.31 (33.3)	
M20 x 1.5	MIT208P	S1209U70	MITR08		1.85 (47.0)	1.36 (34.5)	
M22 x 1.5	MIT228P	S1216U70	MITR16		1.82 (46.2)	1.37 (34.8)	

Dimensions: inch (mm)  
Pressure Rating: psi (bar)

\*Optional seal materials include V = FKM, E = EPDM, and B = Buna-N - Example: MIT108021V = FKM  
\*\*Other terminations in metric / BSPP may be avaiable. Contact factory.

Port Specifications: ISO O-RING METRIC per ISO 6149 or SAE J2244





# EXTERNAL CONNECTIONS



ZF / EXTERNAL SEALING CONNECTION TOOL

Wide tolerance sealing connection tool for formed tubes.

CONNECTS TO:

Beaded    Formed



SPECIFICATIONS

Pressure Rating	Operating Temperatures	Materials of Construction
Vacuum to 300 psi (21 bar)	0°F to +200°F (-17°C to +93°C)	Anodized Aluminum
Termination Port		Seal Material*
1/8 NPT to 3/8 NPT		Main seal: Neoprene Internal seal: Buna-N

\* Additional seal material types available, consult factory.

ACTUATION METHOD

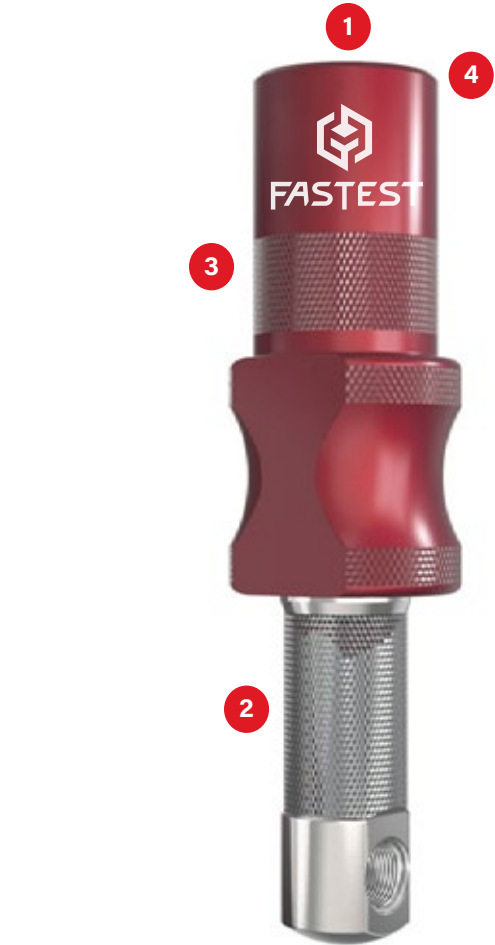
**Manual Sleeve:** Easy, ergonomic sleeve action eliminates repetitive twisting and turning - push to connect, pull to release

INTELLIGENT CONNECTION TECHNOLOGY

Consult Factory

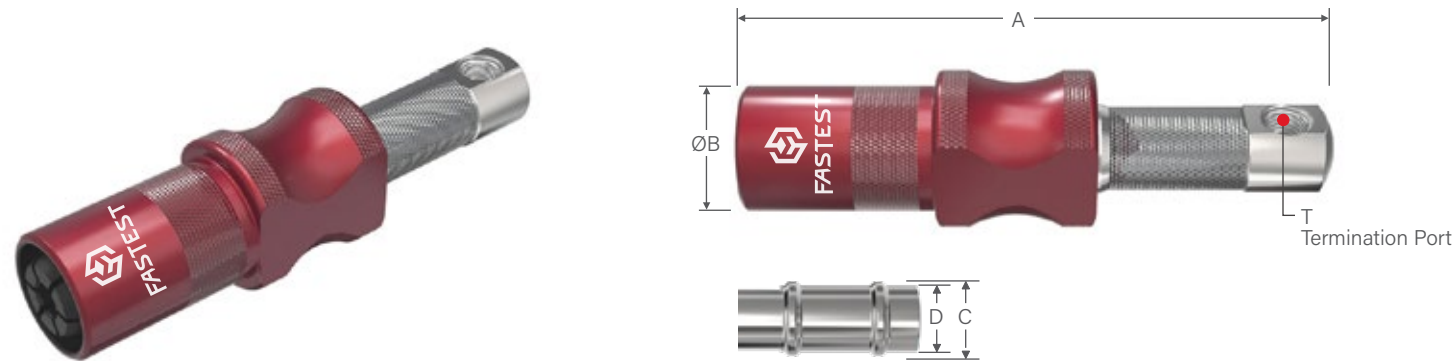
ACCESSORIES

Visit [fastestinc.com](http://fastestinc.com)



- 1 Wide tolerance seal design provides fit to a range of tube diameters
- 2 Color coded handles to assist operator in proper tool identification
- 3 Self aligning connector requires no operator adjustment
- 4 Quick and easy seal replacement to minimize down time, maintenance, and tool inventory

ZF / EXTERNAL SEALING CONNECTION TOOL



Ordering Information						Dimensions		
Connects To:		Part Number	Seal Kit	Rebuild Kit	Pressure Rating	A	B	T
Bead Dia. Range (C)	Tube Dia. Range (D)							
0.310 to 0.400 (7.9 to 10.2)	0.25 to 0.34 (6.5 to 8.7)	ZF1	SZF1	RZF1	300 (21)	4.60 (116.8)	0.98 (24.8)	1/8 NPT
0.400 to 0.490 (10.2 to 12.4)	0.34 to 0.44 (8.7 to 11.0)	ZF2	SZF2	RZF2		4.90 (124.5)	1.14 (28.9)	1/8 NPT
0.490 to 0.580 (12.4 to 14.7)	0.44 to 0.52 (11.0 to 13.2)	ZF3	SZF3	RZF3		4.96 (126.0)	1.23 (31.2)	1/4 NPT
0.580 to 0.670 (14.7 to 17.0)	0.52 to 0.61 (13.2 to 15.5)	ZF4	SZF4	RZF4		5.18 (131.6)	1.38 (35.0)	1/4 NPT
0.670 to 0.760 (17.0 to 19.3)	0.61 to 0.70 (15.5 to 17.8)	ZF5	SZF5	RZF5	250 (17)	5.25 (133.0)	1.55 (39.4)	3/8 NPT

Dimensions: inch (mm)  
Pressure Rating: psi (bar)



# FE / EXTERNAL SEALING CONNECTION TOOL

Pneumatic sealing connection tool for external sealing in automated and semi-automated processes.



### SPECIFICATIONS

Pressure Rating	Pilot Pressure	Operating Temperatures**
Vacuum to 500 psi (34 bar)	60 psi (4.1 bar)	0°F to +200°F (-17°C to +93°C)
Termination Port	Materials of Construction	Seal Material*
Female 10-32 UNF, M5X8, NPT/BSPP (G): 1/8 to 2 1/2	Anodized Aluminum, Stainless Steel, Potted PCA	Standard: Neoprene, Urethane Optional: FKM, Buna-N, EPDM, FDA White Neoprene

\* Additional seal material types available, consult factory.  
\*\* Operating Temp: 32°F-100°F (0°C-38°C) for ICON™.  
❗ Sealing Connection Tool and test part should be rigidly fixtured to prevent separation when under pressure (fixture not required for vacuum applications).

### ACTUATION METHOD

**Pneumatic:** Pilot pressure applied to seals with no metal contact and uniform seal movement seals inside tubes and pipes with no marring.

### ICON™ TECHNOLOGY

- ✔ SURE SEAL™
- 📊 SEAL LIFE™

ACCESSORIES FOR DETAILS, SEE P. 64



- 1 Automated processes and high volume production testing including pick-and-place and delicate robotic handling applications
- 2 Capable of sealing conventional and unique sealing surfaces including threads with the addition of a pilot booster (see page p. 64)
- 3 Quick change seal sets to accommodate multiple sizes of tubing and easy field maintenance - use neoprene for standard sealing, use urethane for maximum abrasion resistance / high pressure and duty cycle applications



## ICON™ INTELLIGENT CONNECTION TECHNOLOGY

FasTest's ICON™ adds sensing capabilities to our mechanical Sealing Connection Tools. ICON™ Tools include instant LED visual feedback and data output to improve sealing connection accuracy, maximize production efficiency, and optimize maintenance.

### ICON™ features:



**SURE SEAL™**  
Instant LED feedback verifies a good connection prior to starting a test.



**SEAL LIFE™**  
Alert when the main seal is at end of life and must be replaced.

### System Overview:

CONNECTED

Green indication of a good connection.

RECONNECT

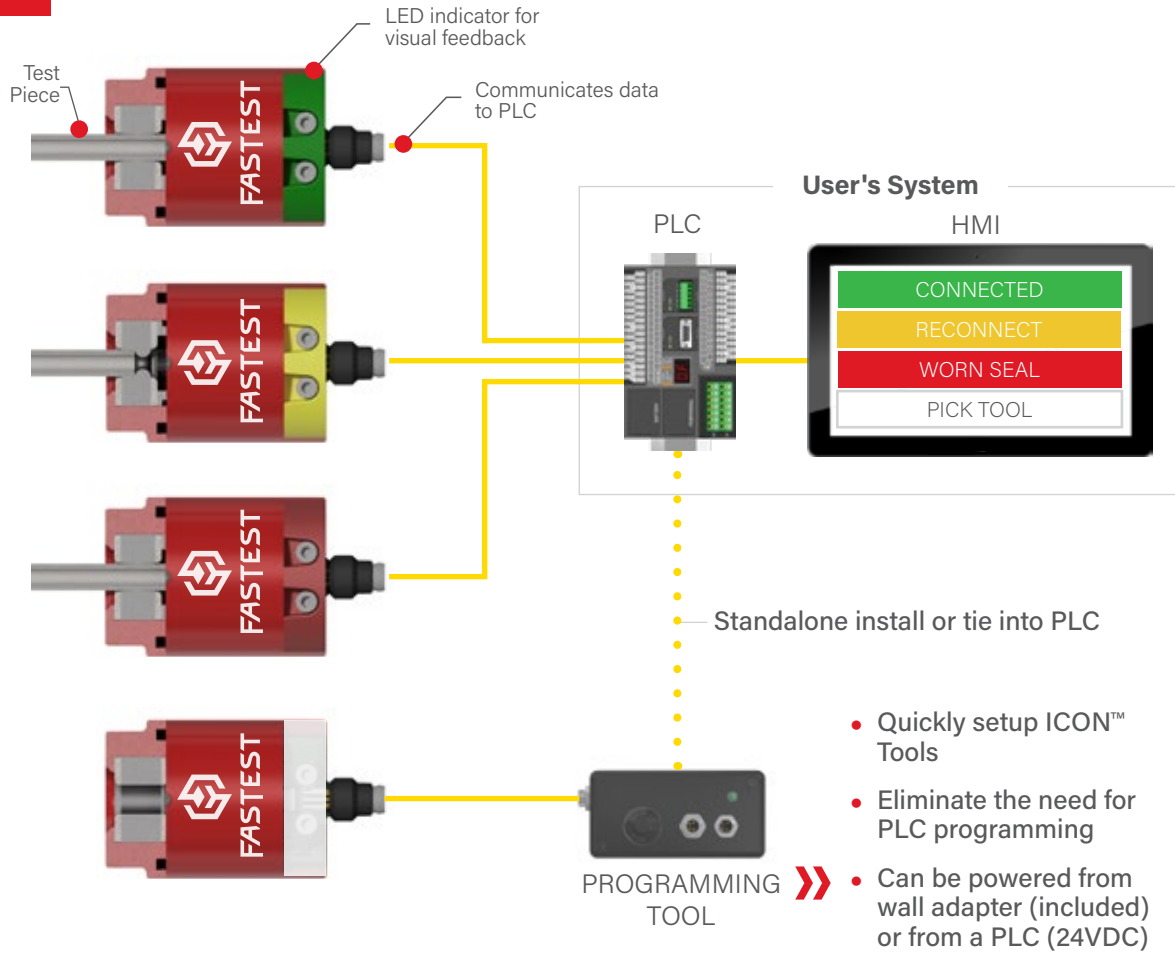
Recognize a connection issue before causing a false failure.

WORN SEAL

Alert when main seals should be replaced.

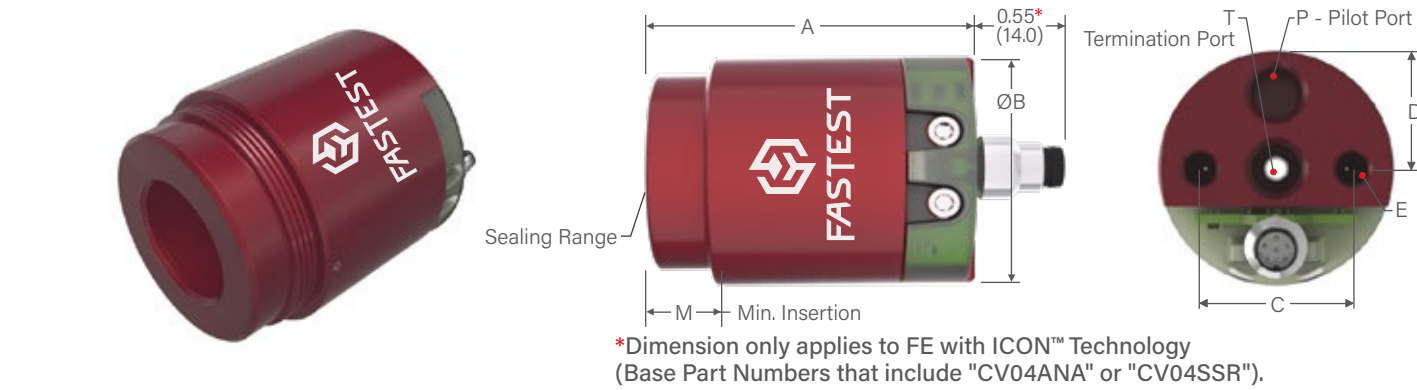
PICK TOOL

Controllable LED signals operator to use specific tool.



- Quickly setup ICON™ Tools
- Eliminate the need for PLC programming
- Can be powered from wall adapter (included) or from a PLC (24VDC)





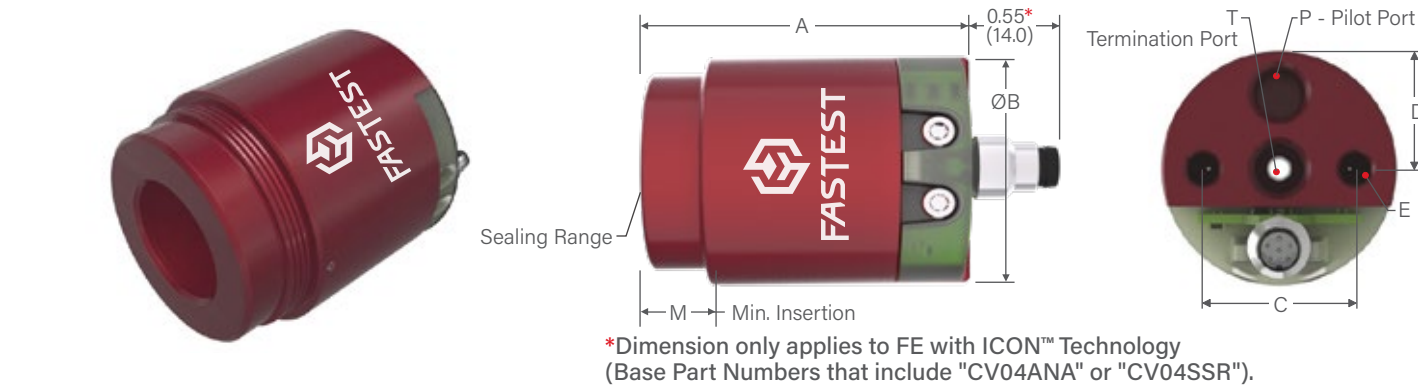
Ordering Information (Complete Connector = Main Seal Set + Base Part Number)					Dimensions							
Sealing Range	Main Seal Set*	Base Part Number	Replacement Seals Pack (5)**	Rebuild Kit	A	B	C	D	E	M	P	T

FE | Connectors for Straight Tubes

0.030 to 0.050	FE0010050		FEB0010050	FER001	1.72 (43.7)	0.84 (21.3)	0.63 (16.0)	N/A	4-40 UNC	0.16 (4.1)	10-32 UNF	1/8 NPT
0.050 to 0.080	FE001001		FEB001001									
0.080 to 0.130	FE001002		FEB001002									
0.100 to 0.180	FES0101	FE01 FE01CV04ANA FE01CV04SSR	FEB0101	FER01 FER01CV04ANA FER01CV04SSR	2.05 (52.1)	1.49 (37.8)	1.10 (27.9)	0.55 (14.0)	10-32 UNF	0.58 (14.7)	10-32 UNF	1/8 NPT
0.180 to 0.260	FES0102		FEB0102									
0.260 to 0.340	FES0103		FEB0103									
0.340 to 0.420	FES0104		FEB0104									
0.420 to 0.510	FES0105	FE1 FE1CV04ANA FE1CV04SSR	FEB0105	FER1 FER1CV04ANA FER1CV04SSR	2.72 (69.1)	2.22 (56.4)	1.62 (41.1)	0.81 (20.6)	1/4-28 UNF	0.61 (15.5)	1/8 NPT	1/4 NPT
0.276-0.354	FES113		FEB113									
0.354-0.433	FES114		FEB114									
0.433 to 0.512	FES115		FEB115									
0.512 to 0.591	FES116		FEB116									
0.591 to 0.669	FES117		FEB117									
0.669 to 0.750	FES118	FE2 FE2CV04ANA FE2CV04SSR	FEB118	FER2 FER2CV04ANA FER2CV04SSR	3.50 (88.9)	3.11 (79.0)	2.50 (63.5)	1.25 (31.8)	1/4-28 UNF	1.06 (26.9)	1/8 NPT	1/2 NPT
0.750 to 0.827	FES119		FEB119									
0.787 to 0.866	FES221		FEB221									
0.866 to 0.945	FES222		FEB222									
0.945 to 1.024	FES223		FEB223									
1.024 to 1.102	FES224		FEB224									
1.102 to 1.181	FES225		FEB225									
1.181 to 1.260	FES226		FEB226									
1.260 to 1.339	FES227		FEB227									
1.339 to 1.417	FES228		FEB228									
1.417 to 1.510	FES229		FEB229									
1.496 to 1.614	FES331	FE3 FE3CV04ANA FE3CV04SSR	FEB331	FER3 FER3CV04ANA FER3CV04SSR	4.48 (113.8)	4.23 (107.4)	3.25 (82.6)	1.63 (41.4)	1/4-28 UNF	1.64 (41.7)	1/8 NPT	1 NPT
1.614 to 1.732	FES332		FEB332									
1.732 to 1.850	FES333		FEB333									
1.850 to 1.969	FES334		FEB334									

Dimensions: inch (mm). Sealing Range listed in inches (1 in = 25.4 mm).

\*Includes seals(s) and metal parts for one complete seal set. Neoprene® seals are standard.  
For Urethane seals, add "UR" suffix to Main Seal Set Part Number. Example: FES0101**UR**  
\*\*Neoprene® seals are standard.  
For Urethane seals, add "UR" suffix to Main Seal Set Part Number. Example: FEB0101**UR**



Ordering Information (Complete Connector = Main Seal Set + Base Part Number)					Dimensions							
Sealing Range	Main Seal Set*	Base Part Number	Replacement Seals Pack (5)**	Repair Kit	A	B	C	D	E	M	P	T

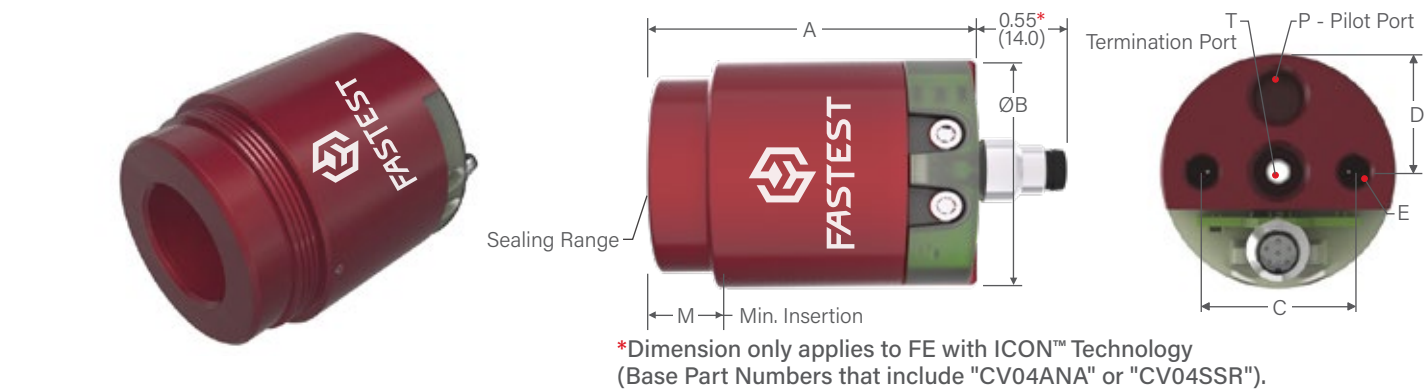
FE | Connectors for Straight Tubes

1.969 to 2.087	FES441	FE4 FE4CV04ANA FE4CV04SSR	FEB441	FER4 FER4CV04ANA FER4CV04SSR	4.60 (116.8)	5.48 (139.2)	4.25 (108.0)	2.13 (54.1)	1/4-28 UNF	1.64 (41.7)	1/8 NPT	1 1/2 NPT
2.087 to 2.205	FES442		FEB442									
2.205 to 2.323	FES443		FEB443									
2.323 to 2.441	FES444		FEB444									
2.441 to 2.559	FES445		FEB445									
2.559 to 2.677	FES446		FEB446									
2.677 to 2.795	FES447	FE5 FE5CV04ANA FE5CV04SSR	FEB447	FER5 FER5CV04ANA FER5CV04SSR	4.60 (116.8)	6.98 (177.3)	5.50 (139.7)	2.25 (57.15)	3/8-24 UNF	1.64 (41.7)	1/8 NPT	2 NPT
2.795 to 2.913	FES448		FEB448									
2.913 to 3.032	FES449		FEB449									
2.970 to 3.100	FES551		FEB551									
3.100 to 3.230	FES552		FEB552									
3.230 to 3.360	FES553		FEB553									
3.360 to 3.490	FES554		FEB554									
3.490 to 3.620	FES555		FEB555									
3.620 to 3.750	FES556		FEB556									
3.750 to 3.880	FES557		FEB557									
3.880 to 4.010	FES558	FE6 FE6CV04ANA FE6CV04SSR	FEB558	FER6 FER6CV04ANA FER6CV04SSR	4.97 (126.2)	7.48 (190.0)	6.12 (155.4)	3.06 (77.7)	3/8-24 UNF	1.64 (41.7)	1/8 NPT	2 1/2 NPT
4.010 to 4.130	FES559		FEB559									
4.130 to 4.260	FES661		FEB661									
4.260 to 4.390	FES662		FEB662									
4.390 to 4.520	FES663		FEB663									
4.520 to 4.650	FES664		FEB664									
4.650 to 4.780	FES665		FEB665									
4.780 to 4.910	FES666		FEB666									
4.910 to 5.040	FES667		FEB667									

Dimensions: inch (mm). Sealing Range listed in inches (1 in = 25.4 mm).

\*Includes seals(s) and metal parts for one complete seal set. Neoprene seals are standard. For Urethane seals, add "UR" suffix to Main Seal Set Part Number. Example: FES441**UR**  
\*\*Neoprene® seals are standard.  
For Urethane seals, add "UR" suffix to Main Seal Set Part Number. Example: FEB441**UR**

FE / EXTERNAL SEALING CONNECTION TOOL / NPT, BSPP (G), & BSPT THREADS



Ordering Information (Complete Connector = Main Seal Set + Base Part Number)					Dimensions							
Connects To	Main Seal Set*	Base Part Number	Replacement Seals Pack (5)	Rebuild Kit	A	B	C	D	E	M	P	T

FE | Connectors for NPT, BSPP (G) and BSPT Threads

1/8	FES011/8NPT	FE01 FE01CV04ANA FE01CV04SSR	FEB011/8 NPT	FER01 FER01CV04ANA FER01CV04SSR	2.05 (52.1)	1.49 (37.8)	1.10 (27.9)	0.55 (14.0)	10-32 UNF	0.58 (14.7)	10-32 UNF	1/8 NPT
1/4	FES11/4NPT	FE1 FE1CV04ANA FE1CV04SSR	FEB11/4NPT	FER1 FER1CV04ANA FER1CV04SSR	2.72 (69.1)	2.22 (56.4)	1.62 (41.1)	0.81 (20.6)	1/4-28 UNF	0.61 (15.5)	1/8 NPT	1/4 NPT
3/8	FES13/8NPT	FE1 FE1CV04ANA FE1CV04SSR	FEB13/8NPT									
1/2	FES21/2NPT	FE2 FE2CV04ANA FE2CV04SSR	FEB21/2NPT	FER2 FER2CV04ANA FER2CV04SSR	3.50 (88.9)	3.11 (79.0)	2.50 (63.5)	1.25 (31.8)	1/4-28 UNF	0.89 (22.6)	1/8 NPT	1/2 NPT
3/4	FES23/4NPT	FE2 FE2CV04ANA FE2CV04SSR	FEB23/4NPT									
1	FES21NPT	FE2 FE2CV04ANA FE2CV04SSR	FEB21NPT									
1-1/4	FES311/4NPT	FE3 FE3CV04ANA FE3CV04SSR	FEB311/4NPT	FER3 FER3CV04ANA FER3CV04SSR	4.48 (113.8)	4.23 (107.4)	3.25 (82.6)	1.63 (41.4)	1/4-28 UNF	0.89 (22.6)	1/8 NPT	1 NPT
1-1/2	FES311/2NPT	FE3 FE3CV04ANA FE3CV04SSR	FEB311/2NPT									
2	FES42NPT	FE4 FE4CV04ANA FE4CV04SSR	FEB42NPT	FER4 FER4CV04ANA FER4CV04SSR	4.60 (116.8)	5.48 (139.2)	4.25 (108.0)	2.13 (54.1)	1/4-28 UNF	0.89 (22.6)	1/8 NPT	1 1/2 NPT
2-1/2	FES421/2NPT	FE4 FE4CV04ANA FE4CV04SSR	FEB421/2NPT									

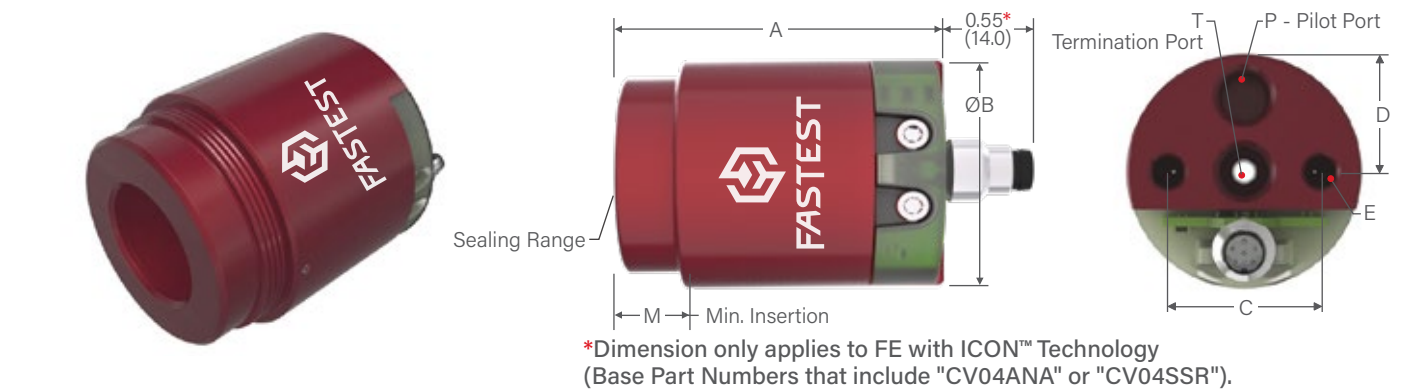
Dimensions: inch (mm)

\*Includes seals(s) and metal parts for one complete seal set. Urethane seals are standard.

Port Specifications: NPT per SAE J476; BSPP (G) per ISO 228; BSPT per ISO 7

**NOTE:** For sealing external threads or irregular shapes with the FE connectors, typically 400 to 600 psi (27.6-41.4 bar) pilot pressure is required to seal deep rooted external threads (see p. 62 Pilot Booster). DO NOT use a pilot booster with FI connectors.

FE / EXTERNAL SEALING CONNECTION TOOL / SAE O-RING BOSS PORT THREADS



Ordering Information (Complete Connector = Main Seal Set + Base Part Number)					Dimensions							
Connects To	Main Seal Set*	Base Connector Part Number	Replacement Seals Package	Rebuild Kit	A	B	C	D	E	M	P	T

FE | Connectors for Male Inch Straight Threads

7/16	FES010450UR	FE01 FE01CV04ANA FE01CV04SSR	FEB010450UR	FER01 FER01CV04ANA FER01CV04SSR	2.05 (52.1)	1.49 (37.8)	1.10 (27.9)	0.55 (14.0)	10-32 UNF	0.58 (14.7)	10-32 UNF	1/8 NPT
1/2	FES10510UR	FE1 FE1CV04ANA FE1CV04SSR	FEB10510UR	FER1 FER1CV04ANA FER1CV04SSR	2.72 (69.1)	2.22 (56.4)	1.62 (41.1)	0.81 (20.6)	1/4-28 UNF	0.61 (15.5)	1/8 NPT	1/4 NPT
9/16	FES10570UR		FEB10570UR									
5/8	FES10640UR		FEB10640UR									
11/16	FES10700UR	FE2 FE2CV04ANA FE2CV04SSR	FEB10700UR	FER2 FER2CV04ANA FER2CV04SSR	3.50 (88.9)	3.11 (79.0)	2.50 (63.5)	1.25 (31.7)	1/4-28 UNF	0.69 (17.5)	1/8 NPT	1/2 NPT
3/4	FES2T0760UR		FEB2T0760UR									
13/16	FES2T0800UR		FEB2T0800UR									
7/8	FES2T0885UR		FEB2T0885UR									
1	FES2T1010UR		FEB2T1010UR									
1-1/16	FES23/4NPT		FEB23/4NPT									
1-3/16	FES2T1200UR		FEB2T1200UR									
1-1/4	FES2T1260UR		FEB2T1260UR									
1-5/16	FES21NPT	FE3 FE3CV04ANA FE3CV04SSR	FEB21NPT	FER3 FER3CV04ANA FER3CV04SSR	4.48 (113.8)	4.23 (107.4)	3.25 (82.6)	1.63 (41.4)	1/4-28 UNF	0.89 (22.6)	1/8 NPT	1 NPT
1-3/8	FES2T1385UR		FEB2T1385UR									
1-7/16	FES3T1460UR		FEB3T1460UR									
1-5/8	FES3T1640UR		FEB3T1640UR									
1-11/16	FES3T1710UR		FEB3T1710UR									
1-7/8	FES3T1890UR	FE4 FE4CV04ANA FE4CV04SSR	FEB3T1890UR	FER4 FER4CV04ANA FER4CV04SSR	4.60 (116.8)	5.48 (139.2)	4.25 (108.0)	2.13 (54.1)	1/4-28 UNF	0.89 (22.6)	1/8 NPT	1 1/2 NPT
2	FES4T2020UR		FEB4T2020UR									
2-1/2	FES4T2520UR		FEB4T2520UR									

Dimensions: inch (mm)

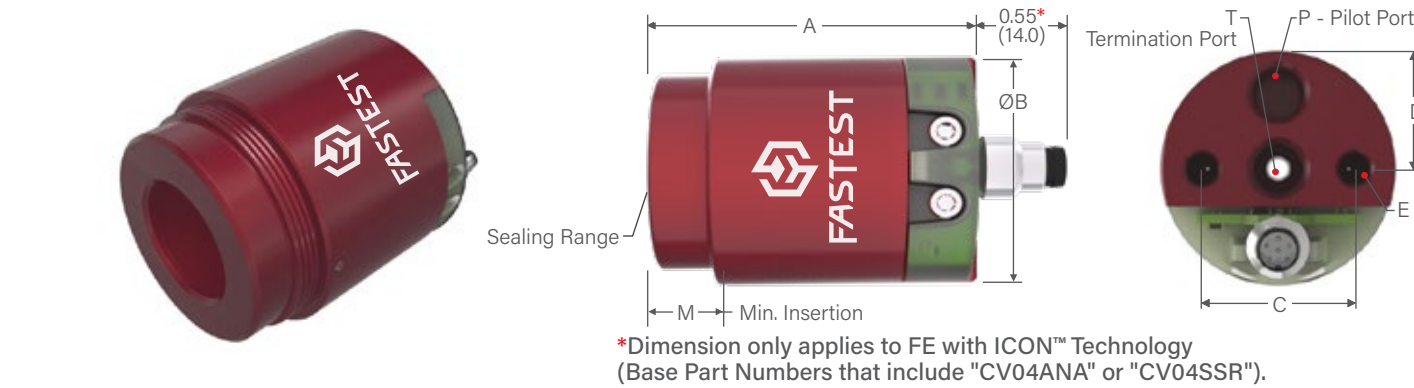
\*Includes seals(s) and metal parts for one complete seal set. Urethane seals are standard.

Port Specifications: O-Ring Port per SAE J1453; JIC 37° Flare per SAE J514; 45° Flare per SAE J512/513; 24° Cone per SAE J514

**NOTE:** For sealing external threads or irregular shapes with the FE connectors, typically 400 to 600 psi (27.6-41.4 bar) pilot pressure is required to seal deep rooted external threads (see p. 62 Pilot Booster). DO NOT use a pilot booster with FI connectors.



FE / EXTERNAL SEALING CONNECTION TOOL / METRIC STRAIGHT THREADS



Ordering Information (Complete Connector = Main Seal Set + Base Part Number)					Dimensions							
Connects To	Main Seal Set*	Base Connector Part Number	Replacement Seals Package	Rebuild Kit	A	B	C	D	E	M	P	T

FE | Connectors for Metric Straight Threads

M10	FES011/8NPT	FEM01 FEM01CV04ANA FEM01CV04SSR	FEB011/8NPT	FER01 FER01CV04ANA FER01CV04SSR	2.05 (52.1)	1.49 (37.8)	1.10 (27.9)	0.55 (14.0)	M5 x 1.0	0.58 (14.7)	M5 x 1.0	1/8 BSPP (G)
M12	FES10480UR	FEM1 FEM1CV04ANA FEM1CV04SSR	FEB10480UR	FER1 FER1CV04ANA FER1CV04SSR	2.72 (69.1)	2.22 (56.4)	1.62 (41.1)	0.81 (20.6)	M6 x 1.0	0.61 (15.5)	1/8 BSPP (G)	1/4 BSPP (G)
M14	FES10570UR		FEB10570UR									
M16	FES10640UR		FEB10640UR									
M18	FES10720UR		FEB10720UR									
M20	FES2T0800UR	FEM2 FEM2CV04ANA FEM2CV04SSR	FEB2T0800UR	FER2 FER2CV04ANA FER2CV04SSR	3.50 (88.9)	3.11 (79.0)	2.50 (63.5)	1.25 (31.8)	M6 x 1.0	0.69 (17.5)	1/8 BSPP (G)	1/2 BSPP (G)
M22	FES2T21UR		FEB2T21UR									
M24	FES2T22UR		FEB2T22UR									
M26	FES2T23UR		FEB2T23UR									
M27	FES2T1075UR		FEB2T1075UR									
M28	FES2T24UR		FEB2T24UR									
M30	FES2T25UR		FEB2T25UR									
M33	FES2T1320UR		FEB2T1320UR									
M35	FES2T1400UR		FEB2T1400UR									
M36	FES3T1440UR	FEM3 FEM3CV04ANA FEM3CV04SSR	FEB3T1440UR	FER3 FER3CV04ANA FER3CV04SSR	4.48 (113.8)	4.23 (107.4)	3.25 (82.6)	1.63 (41.4)	M6 x 1.0	0.89 (22.6)	1/8 BSPP (G)	1 BSPP (G)
M40	FES3T1595UR		FEB3T1595UR									
M42	FES3T1675UR		FEB3T1675UR									
M45	FES3T1790UR		FEB3T1790UR									
M48	FES4T1910UR	FEM4 FEM4CV04ANA FEM4CV04SSR	FEB4T1910UR	FER4 FER4CV04ANA FER4CV04SSR	4.60 (116.8)	5.48 (139.2)	4.25 (108.0)	2.13 (54.1)	M6 x 1.0	0.89 (22.6)	1/8 BSPP (G)	1 1/2 BSPP (G)
M52	FES4T2070UR		FEB4T2070UR									
M60	FES4T2380UR		FEB4T2380UR									

Dimensions: inch (mm)

\*Includes seals(s) and metal parts for one complete seal set. Urethane seals are standard.

Port Specifications: 24° Cone Flareless per ISO 8434-1 and -4, JIS B2353, DIN3902/3853/3861. 60° Cone per DIN 7831/7647.

**NOTE:** For sealing external threads or irregular shapes with the FE connectors, typically 400 to 600 psi (27.6-41.4 bar) pilot pressure is required to seal deep rooted external threads (see p. 62 Pilot Booster). DO NOT use a pilot booster with FI connectors.

FE / ACCESSORIES

Pilot Booster

The Pilot Pressure Booster is an air over oil pressure intensifier. It uses 30-65psi (2.1-4.5bar) air pressure to generate 400-600psi (27.6-41.4bar) hydraulic pressure for sealing external threads and irregular surfaces with the FE Sealing Connection Tool. A sealing system consisting of an FE with a urethane main seal and the PB1015 Pressure Booster can produce the seal movment and long life performance needed in production testing applications.

Urethane sealing material is superior to Neoprene® material in high pressure, high abrasion, and high cycle applications. The increased elastomer movement required for sealing irregular shapes or into threads requires urethane seal material. Up to 600 psi pilot pressure is needed to seal deep root external threads. Production testing of threads and hard to seal surfaces can now be automated using the Pilot Pressure Booster and a proper sized urethane seal set in an FE.

**DO NOT USE WITH FI.**



SPECIFICATIONS

Seals	Material	Inlet Port	
Buna-N	Aluminum	1/4 NPT	
Inlet Pressure	Outlet Pressure	Pressure Ratio	Displacement
65 psi max.	600 psi (41.4 bar)	9.2 to 1	1.5 in. <sup>3</sup>

Booster Guidelines
FE01 - 8 Connectors
FE1 - 4 Connectors
FE2 - 2 Connectors
FE3 - 1 Connector
FE4 - 1 Connector

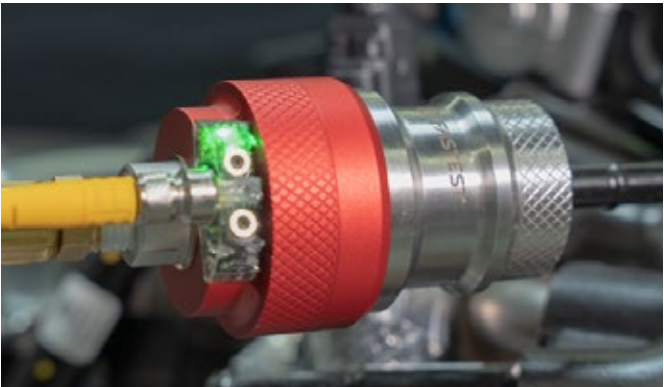
# 60 / EXTERNAL SEALING CONNECTION TOOL

Sleeve actuated external grip and seal connection tool for threaded applications.

CONNECTS TO:



- 1 SURE SEAL™ - Instant LED feedback verifies a good connection onto the threaded port
- 2 Instant external threaded connection with floating piston to ensure proper face / ID sealing position
- 3 Collet design locks securely into external threads or behind the threads
- 4 Connect and seal to compression fittings, NPT, SAE 37° "AN" and 45° flare male threads - custom sizes also available
- 5 Optional internal shut-off valve stops flow upon disconnection (Not available on shortened connectors)
- 6 Standard Shortened length available for space constrained applications



SPECIFICATIONS

Pressure Rating	Operating Temperatures	Materials of Construction
Vacuum to 750 psi (51 bar)	-40°F to +250°F (-40°C to +121°C)	Stainless Steel, Anodized Aluminum
Termination Port		Seal Material*
NPT, BSPP (G)		Buna-N

\* Additional seal material types available, consult factory.

ACTUATION METHOD

**Manual Sleeve:** Easy, ergonomic sleeve action eliminates repetitive twisting and turning - push to connect, pull to release

ICON™ TECHNOLOGY



ACCESSORIES

Visit [fastestinc.com](https://fastestinc.com)



Available without ICON™

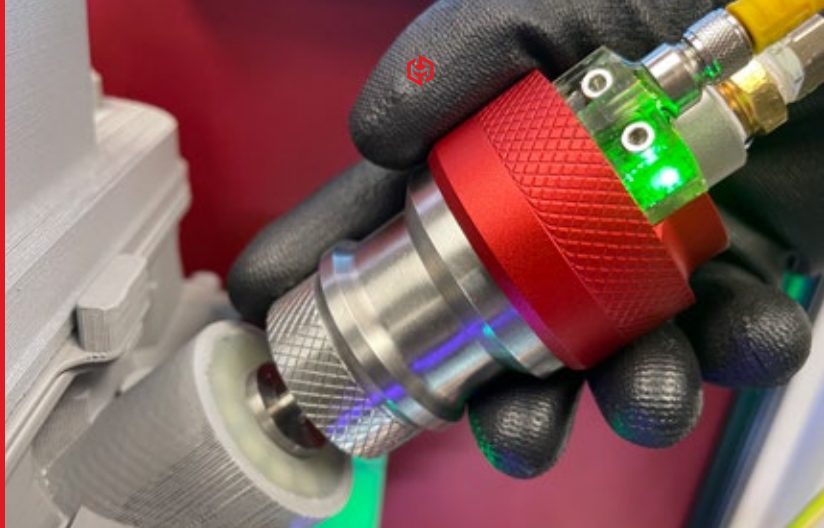
- 7 SurConnect™ - Green to go visible indicator to ensure complete connection



ICON™

INTELLIGENT CONNECTION TECHNOLOGY

FasTest's ICON™ adds sensing capabilities to our mechanical Sealing Connection Tools. ICON™ Tools include instant LED visual feedback and data output to improve sealing connection accuracy, maximize production efficiency, and optimize maintenance.



ICON™ features:



SURE SEAL™

Instant LED feedback verifies a good connection prior to starting a test.

System Overview:

CONNECTED

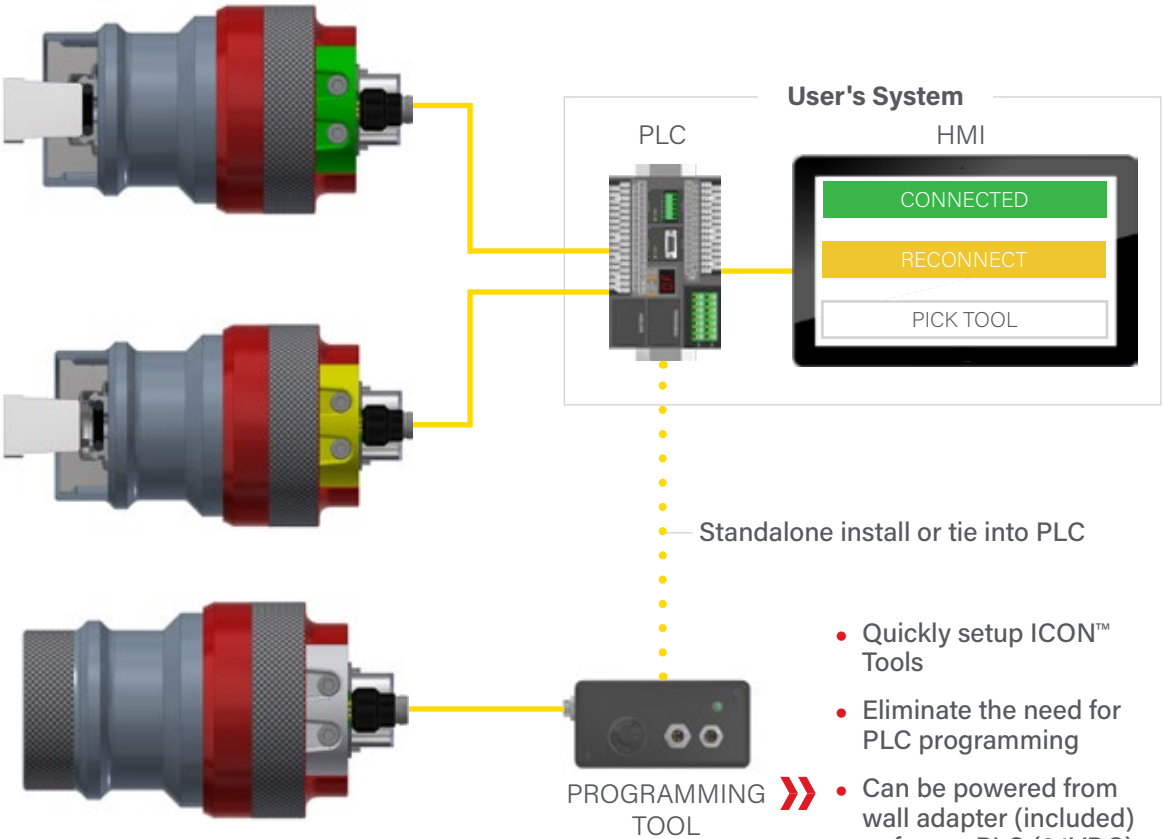
Verify connections are good prior to starting a leak test and provide operators instant positive feedback to simplify training.

RECONNECT

Recognize short connects before hazardous spills occur in functional testing, or prevent wasteful False Positive results in leak testing.

PICK TOOL

Controllable LED signals operator to use specific tool.



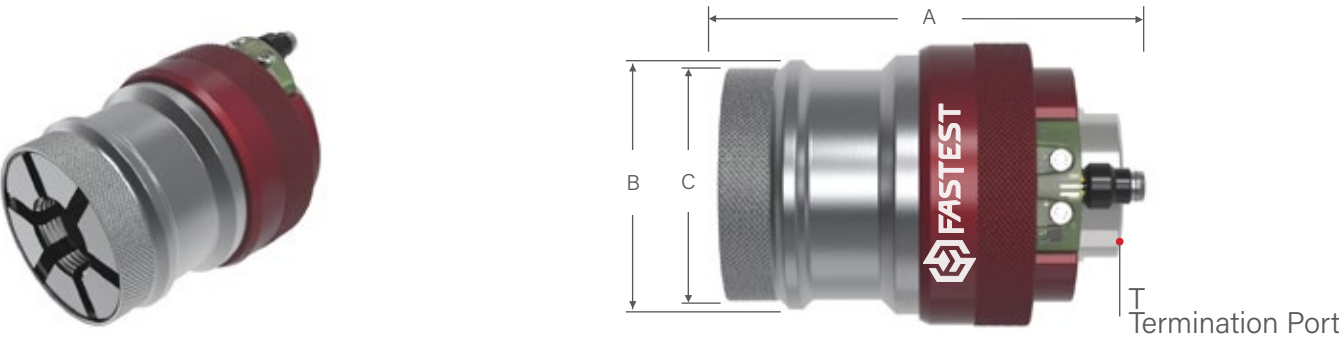
NOTE: Solid State Relay and Analog output options available.



DON'T SEE A SOLUTION FOR YOUR APPLICATION? Submit a custom application form and drawing to [fastsales@fastestinc.com](mailto:fastsales@fastestinc.com) or to your local distributor.



60 ICON™ / EXTERNAL SEALING CONNECTION TOOL



Ordering Information				Dimensions			
Connects To	Part Number*	Replacement Seals Bulk Pack (5)	Rebuild Kits	A	BØ	CØ	T
60 Series   NPT Threads							
1/8 NPT	60G1T02CV04*	S1105B70	R60CVBG1	3.49 (88.6)	1.65 (41.9)	1.47 (37.3)	1/4 NPT/BSPP (G)
1/4 NPT	60G1T04CV04*	S1109B70	R60CVBG1				
3/8 NPT	60G1T06CV04*	S1110B70	R60CV06	3.72 (94.5)	1.92 (48.8)	1.74 (44.2)	3/8 NPT/BSPP (G)
1/2 NPT	60G1T08CV04*	S1112B70	R60CVBG2				
3/4 NPT	60G085CV04*	S1115B70	R60CVBG3	3.72 (94.5)	2.31 (58.7)	2.13 (54.1)	3/4 NPT/BSPP (G)
1 NPT	60G1T16CV04*	S1212B70	R60CV16				

60 Series   SAE 37° Flare for JIC and AN Male Fittings							
-4 [7/16-20]	60G049CV04*	S1010B70	R60CVBG1	3.49 (88.6)	1.65 (41.9)	1.47 (37.3)	1/4 NPT/BSPP (G)
-6 [9/16-18]	60G069CV04*	S1012B70	R60CVBG1				
-8 [3/4-16]	60G089CV04*	S1014B70	R60CVBG2	3.72 (94.5)	1.92 (48.8)	1.74 (44.2)	3/8 NPT/BSPP (G)
-10 [7/8-14]	60G109CV04*	S1016B70	R60CVBG2				
-12 [1-1/16-12]	60G129CV04*	S1116B70	R60CV16	3.72 (94.5)	2.31 (58.7)	2.13 (54.1)	3/4 NPT/BSPP (G)

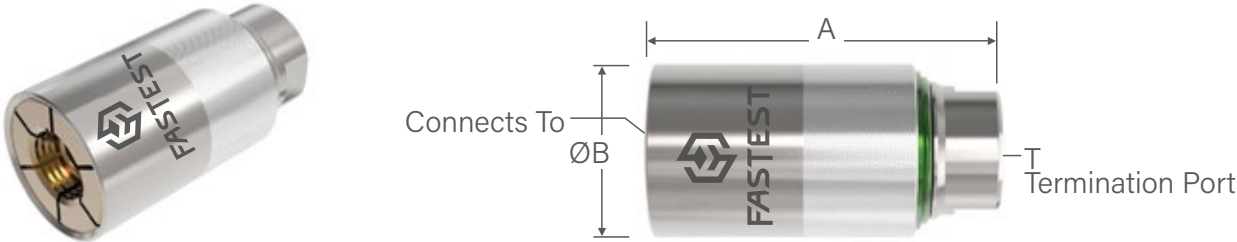
60 Series   SAE 45° Flare Threads							
-4 [7/16-20]	60GA04CV04*	S1010B70	R60CVBG2	3.49 (88.6)	1.65 (41.9)	1.47 (37.3)	1/4 NPT/BSPP (G)
-6 [5/8-18]	60GA06CV04*	S1012B70	R60CVBG2				
-8 [3/4-16]	60GA08CV04*	S1014B70	R60CVBG2	3.72 (94.5)	1.92 (48.8)	1.74 (44.2)	3/8 NPT/BSPP (G)
-10 [7/8-14]	60GA10CV04*	S1016B70	R60CVBG2				
-12 [1-1/16-14]	60GA12CV04*	S1117B70	R60CV16	3.72 (94.5)	2.31 (58.7)	2.13 (54.1)	3/4 NPT/BSPP (G)

Dimensions: inch (mm)

**NOTE:** \*For Analog Output Signal, add “ANA” to Part Number. For Solid State Relay, add “SSR” to Part Number. Table above shows common connections. Additional sizes available for 60 Series connectors.

Port Specifications: NPT per SAE J476; SAE 37° Flare per SAE J514; SAE 45° Flare per SAE J512/513

60 / EXTERNAL SEALING CONNECTION TOOL



Ordering Information				Dimensions		
Connects To	Part Number	Replacement Seals Bulk Pack (5)	Rebuild Kits	A	B	T
60 Series   NPT Threads						
1/8 NPT	60G1T02	S1105B70	R60G03	2.95 (74.9)	1.19 (30.2)	1/8 NPT/BSPP (G)
1/4 NPT	60G1T04	S1109B70	R60GBG3			1/4 NPT/BSPP (G)
3/8 NPT	60G1T06	S1110B70	R60GBG4	3.15 (80.0)	1.38 (35.0)	3/8 NPT/BSPP (G)
1/2 NPT	60G1T08	S1112B70	R60GBG5		1.58 (40.1)	1/2 NPT/BSPP (G)
3/4 NPT	60G1T12	S1115B70	R60GBG6	3.54 (89.9)	1.78 (45.2)	3/4 NPT/BSPP (G)
1 NPT	60G1T16	S1212B70	R60GBG7		1.97 (50.0)	

60 Series   SAE 37° Flare for JIC and AN Male Fittings						
-4 [7/16-20]	60G049	S1010B70	R60GBG2	2.95 (74.9)	0.99 (25.2)	1/8 NPT/BSPP (G)
-6 [9/16-18]	60G069	S1012B70	R60GBG3		1.19 (30.2)	1/4 NPT/BSPP (G)
-8 [3/4-16]	60G089	S1014B70	R60GBG4	3.15 (80.0)	1.38 (35.0)	3/8 NPT/BSPP (G)
-10 [7/8-14]	60G109	S1016B70	R60G05		1.58 (40.1)	1/2 NPT/BSPP (G)
-12 [1-1/16-12]	60G129	S1116B70	R60GBG6	3.54 (89.9)	1.78 (45.2)	3/4 NPT/BSPP (G)
-16 [1-5/16-12]	60G169	S1120B70	R60GBG7		1.97 (50.0)	3/4 NPT/BSPP (G)

60 Series   SAE 45° Flare Threads						
-4 [7/16-20]	60GA04	S1010B70	R60GBG2	2.95 (74.9)	0.99 (25.2)	1/8 NPT/BSPP (G)
-6 [5/8-18]	60GA06	S1012B70	R60GBG4	3.15 (80.0)	1.38 (35.0)	3/8 NPT/BSPP (G)
-8 [3/4-16]	60GA08	S1014B70	R60GBG4			
-10 [7/8-14]	60GA10	S1016B70	R60GBG5	3.15 (80.0)	1.58 (40.1)	1/2 NPT/BSPP (G)
-12 [1-1/16-14]	60GA12	S1117B70	R60GBG6	3.54 (89.9)	1.78 (45.2)	3/4 NPT/BSPP (G)
-14 [1-1/4-12]	60GA14	Consult Factory				
-16 [1-3/8-12]	60GA16					

Dimensions: inch (mm)

**NOTE:** Table above shows common connections. Additional sizes available for 60 Series connectors.

Port Specifications: NPT per SAE J476; SAE 37° Flare per SAE J514; SAE 45° Flare per SAE J512/513

70 / EXTERNAL SEALING CONNECTION TOOL

Custom sleeve actuated external grip and seal connection tool for formed tube applications.

CONNECTS TO:



- 1 SurConnect™ - Green to go visible indicator to ensure complete connection
- 2 Instant external formed tube connection with floating piston to ensure proper OD / face / ID sealing position
- 3 Collet design locks securely over formed tube feature
- 4 Connect and seal to expanded, flared, beaded, barbed and formed end tubing - custom built per application
- 5 Internal shut-off valve option stops flow upon disconnection (Not available on shortened connectors)
- 6 Shortened body available for space constraint applications

SPECIFICATIONS

Pressure Rating	Operating Temperatures	Materials of Construction
Vacuum to 750 psi (51 bar)	-40°F to +250°F (-40°C to +121°C)	Stainless Steel, Anodized Aluminum
Termination Port		Seal Material*
NPT, BSPP (G)		Buna-N

\* Additional seal material types available, consult factory.

ACTUATION METHOD

**Manual Sleeve:** Easy, ergonomic sleeve action eliminates repetative twisting and turning - push to connect, pull to release

ICON™ TECHNOLOGY

Consult Factory

ACCESSORIES

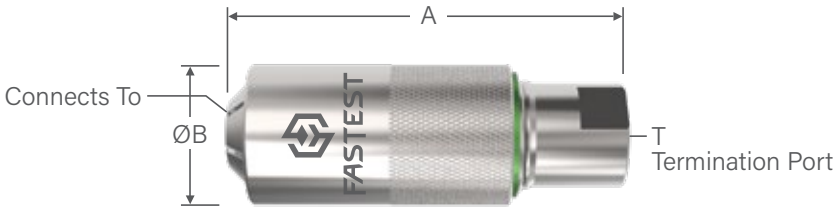
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ICON™ TECHNOLOGY

✓ SURE SEAL™



70 / EXTERNAL SEALING CONNECTION TOOL



Ordering Information		Dimensions		
Sealing Range	Body Size Determined by Application - Consult Factory	A	B	T
Up to 0.32 (8.0)	1	2.91 (74.0)	0.87 (22.0)	1/8 NPT/BSPP (G)
0.32 to 0.43 (8.0 to 11.0)	2		0.99 (25.0)	1/8 NPT/BSPP (G)
0.43 to 0.59 (11.0 to 15.0)	3		1.19 (30.0)	1/4 NPT/BSPP (G)
0.59 to 0.79 (15.0 to 20.0)	4	3.15 (80.0)	1.38 (35.0)	3/8 NPT/BSPP (G)
0.79 to 0.98 (20.0 to 25.0)	5		1.58 (40.0)	1/2 NPT/BSPP (G)
0.98 to 1.18 (25.0 to 30.0)	6	3.54 (90.0)	1.78 (45.0)	3/4 NPT/BSPP (G)
1.18 to 1.42 (30.0 to 36.0)	7		1.97 (50.0)	3/4 NPT/BSPP (G)
1.42 to 1.65 (36.0 to 42.0)	8		2.17 (55.0)	3/4 NPT/BSPP (G)
1.65 to 1.85 (42.0 to 47.0)	9	4.28 (109.0)	2.36 (60.0)	1 NPT/BSPP (G)
1.85 to 2.04 (47.0 to 52.0)	10	3.92 (100.0)	2.93 (74.3)	1 1/4 NPT/BSPP (G)

Dimensions: inch (mm)

**NOTE:** Dimensions for reference.

How to Order

The 70 Series connectors are designed, engineered and manufactured to your specific application requirements.

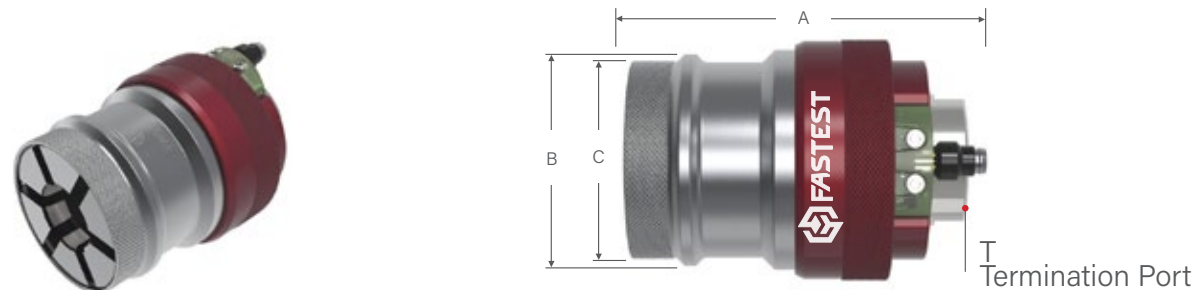
For part number and a price quotation:

- 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) One sample part will be required at the time of order for final design and testing purposes.





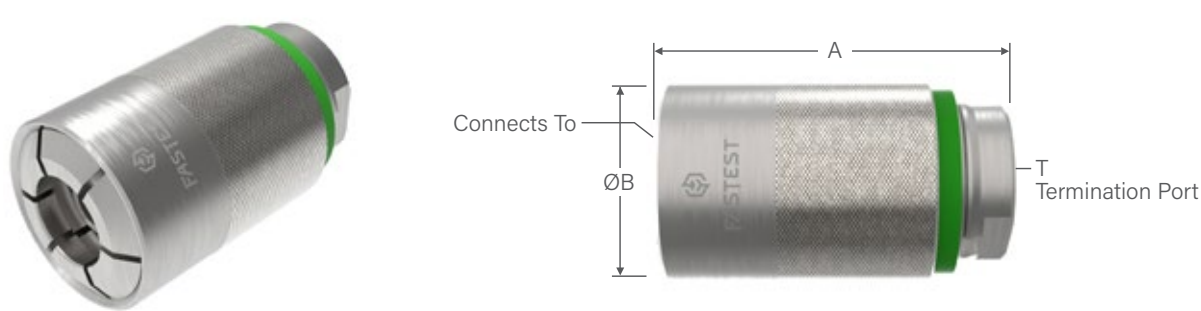
70 ICON / EXTERNAL SEALING CONNECTION TOOL



Ordering Information		Dimensions			
Sealing Range	Body Size	A	BØ	CØ	T
Up to 0.67 (17.02)	1	1.47 (37.3)	3.49 (88.6)	2.00 (50.8)	1.65 (41.9)
0.67 to 1.00 (17.02 to 25.40)	2	1.74 (44.2)	3.72 (94.5)	2.205 (56.0)	1.92 (48.8)
1.01 to 1.37 (25.65 to 34.80)	3	2.13 (54.1)	3.72 (94.5)	2.595 (65.9)	2.31 (58.7)

Dimensions: inch (mm)

70 - SHORT / EXTERNAL SEALING CONNECTION TOOL



Ordering Information		Dimensions		
Sealing Range	Body Size	A	B	T - Termination Port
Up to 0.43 (10.92)	2	2.14 (54.5)	0.98 (24.9)	1/8 NPT/BSPP
0.43 to 0.55 (10.92 to 13.97)	3	2.27 (57.6)	1.18 (30.0)	1/4 NPT/BSPP
0.55 to 0.75 (13.97 to 19.05)	4	2.26 (57.5)	1.38 (35.1)	3/8 NPT/BSPP
0.75 to 0.86 (19.05 to 21.84)	5	2.4 (61.1)	1.57 (39.9)	1/2 NPT/BSPP
0.86 to 1.15 (21.84 to 29.21)	6	2.5 (63.5)	1.77 (45.0)	1/2 NPT/BSPP
1.15 to 1.35 (29.21 to 34.29)	7	2.57 (65.2)	1.97 (50.0)	3/4 NPT/BSPP
1.35 to 1.5 (34.29 to 38.1)	8	2.92 (74.1)	2.17 (55.1)	3/4 NPT/BSPP

Dimensions: inch (mm)

**NOTE:** Table above shows common connections. Additional sizes available for 70 Series connectors. Dimension A can be application dependant for other sizes. Consult factory for details.

JXL / EXTERNAL SEALING CONNECTION TOOL

Manual lever actuated external grip and seal connection tool for straight tube.

CONNECTS TO:

Straight Swaged



SPECIFICATIONS

Pressure Rating*	Operating Temperatures	Materials of Construction
10 mtorr (micron) to 1,000 psi (69 bar)	0°F to +200°F (-17°C to +93°C)	Anodized Aluminum, Stainless Steel, and Acetal (POM)
Termination Port		Seal Material**
1/8 to 1/4 NPT/BSPP (G)		Neoprene®

**i** \*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.

\*\*Additional seal material types available, consult factory.

ACTUATION METHOD

**Lever Actuated:** Simply flip the ergonomic handle in either direction for ease of use

ICON™ TECHNOLOGY

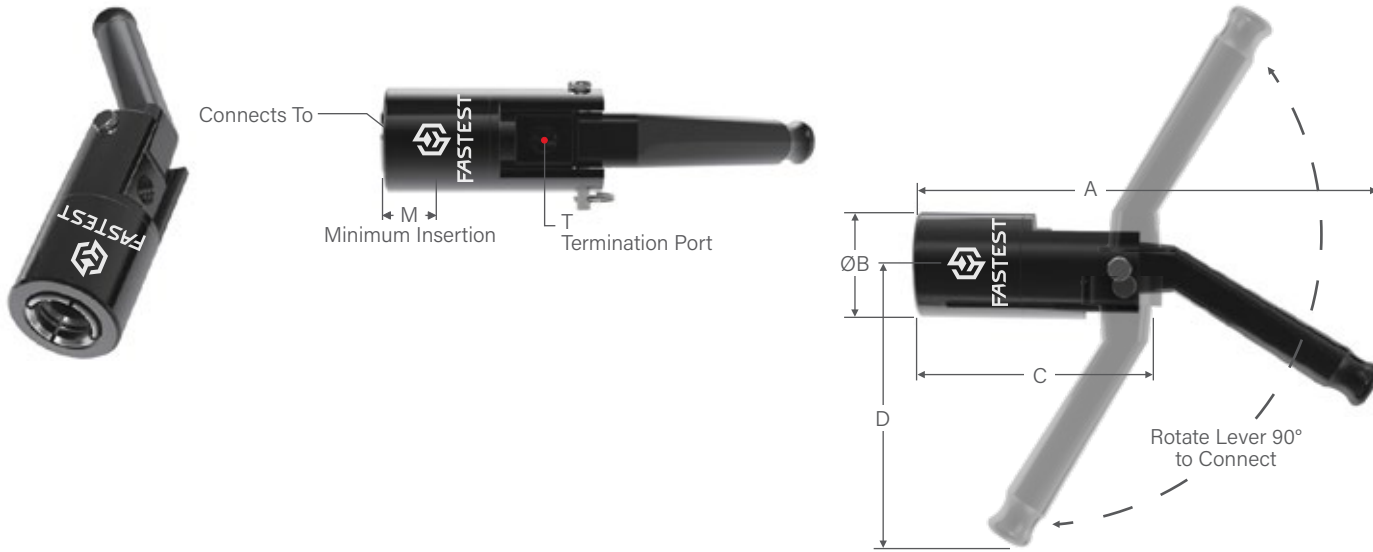
Consult Factory

ACCESSORIES

Visit [fastestinc.com](https://fastestinc.com)

- 1** Pressure assisted sealing and gripping with internal safety lock feature resists accidental disconnection under high pressure if handle is released
- 2** Instant connection for copper, steel, and aluminum tubes commonly used in refrigeration and other industrial applications
- 3** Stainless steel collets provide maximum grip with minimum distortion of the test piece
- 4** Quick and easy seal replacement to minimize down time, maintenance, and tool inventory
- 5** Self aligning connector requires no operator adjustment

JXL / EXTERNAL CONNECTION TOOL / IMPERIAL / METRIC EXTERNAL TUBES



Ordering Information			Dimensions						
Sealing Range	Part Number	Main Seal Set	A	B	C	D	M	T	Flow Diameter

JXL0 and JXL1 | Lever Actuated Connectors for Imperial External Tubes

0.25 ± .010	JXL00250	SXL00250	7.27 (184.7)	1.13 (28.8)	3.65 (92.7)	4.22 (107.2)	0.79 (20.1)	1/8 NPT	0.24 (6.1)
0.312 ± .010	JXL00312	SXL00312							
0.375 ± .010	JXL00375	SXL00375							
0.500 ± .010	JXL00500	SXL00500							
0.625 ± .010	JXL10625	SXL10625							
0.750 ± .010	JXL10750	SXL10750	7.27 (184.7)	1.62 (41.2)	3.58 (90.9)	4.22 (107.2)	0.85 (21.6)	1/4 NPT	0.27 (6.9)
0.875 ± .010	JXL10875	SXL10875							

JXL0 and JXL1 | Lever Actuated Connectors for Metric External Tubes

6mm ± 0.25mm	JXL0M6	SXL00236	7.27 (184.7)	1.13 (28.8)	3.65 (92.7)	4.22 (107.2)	0.79 (20.1)	1/8 BSPP (G)	0.24 (6.1)
8mm ± 0.25mm	JXL0M8	SXL00312							
10mm ± 0.25mm	JXL0M10	SXL00394							
12mm ± 0.25mm	JXL0M12	SXL00472							
16mm ± 0.25mm	JXL1M16	SXL10630							
18mm ± 0.25mm	JXL1M18	SXL10710	7.27 (184.7)	1.62 (41.2)	3.58 (90.9)	4.22 (107.2)	0.85 (21.6)	1/4 BSPP (G)	0.27 (6.9)
20mm ± 0.25mm	JXL1M20	SXL10787							
22mm ± 0.25mm	JXL1M22	SXL10865							

Dimensions: inch (mm)

**i** **NOTE:** Table above shows common connections. Additional sizes available for JXL Series connectors. Consult factory or details.



# FX / EXTERNAL SEALING CONNECTION TOOL

External grip and seal connection tool that uses collets to grip threads or part feature for high pressures.

CONNECTS TO:

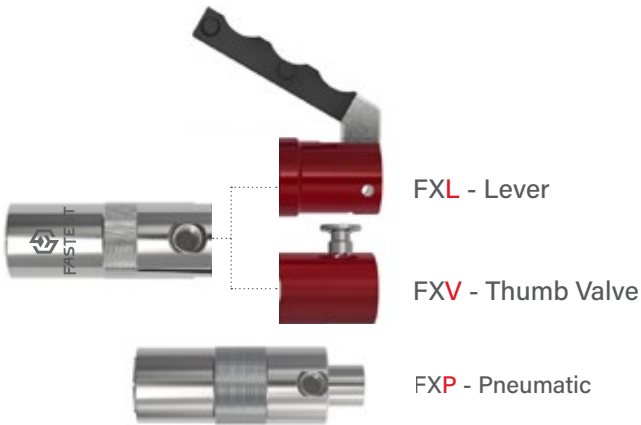


SPECIFICATIONS

Pressure Rating	Operating Temperatures	Materials of Construction
Vacuum to 5,000 psi (345 bar)	-40°F to +250°F (-40°C to +121°C)	Anodized Aluminum, Stainless Steel
Termination Port		Seal Material*
BSPP (G) or FNPT		Buna-N

\* Additional seal material types available, consult factory..

ACTUATION OPTIONS



ICON™ TECHNOLOGY

Consult Factory

ACCESSORIES

Visit [fastestinc.com](http://fastestinc.com)

- 1 Pressure assisted grip and proprietary design locks the connector securely to the test part under pressure
- 2 Instant threaded sealing connection up to 5000 psig without tape sealant or wrenches - significantly reduces process time
- 3 Stainless steel collets provide maximum grip with minimum distortion of the test piece
- 4 Self aligning connector requires no operator adjustment
- 5 Three ergonomic modular operating methods - lever, thumb valve, and pneumatic (straight through port for remote operation ie. foot valve)

# FX / MODULAR DESIGN

## FASMATE FX MODULAR DESIGN

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.



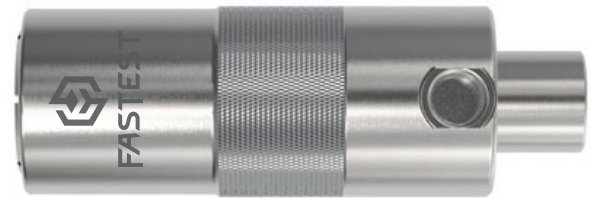
## LEVER

Simple, straight forward mechanical operation.



## THUMB VALVE

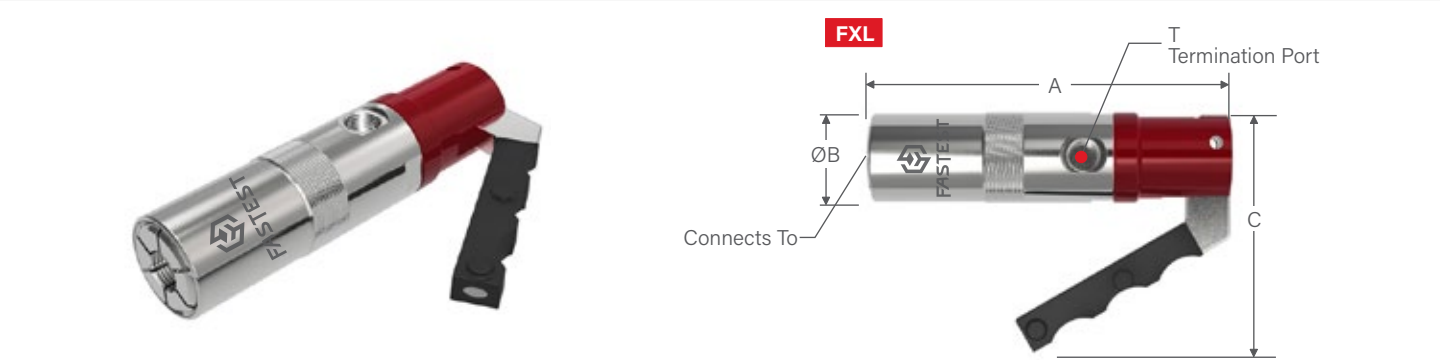
Easy, ergonomic thumb button. When depressed, allows insertion / removal of connector from port.



## PNEUMATIC

Requires a separate air valve. Desired for applications that require freedom of movement of technician's hands.

FX / EXTERNAL SEALING CONNECTION TOOL / NPT / BSPP (G) / SAE



Ordering Information							
Connects To	FXL Part Number (with Lever)	FXV Part Number (with Thumb Valve)	FXP Part Number (with Pneumatic Pilot)	Replacement Seals Bulk Pack (5)	Rebuild Kit (FXL)	Rebuild Kit (FXV and FXP)	Pressure Rating

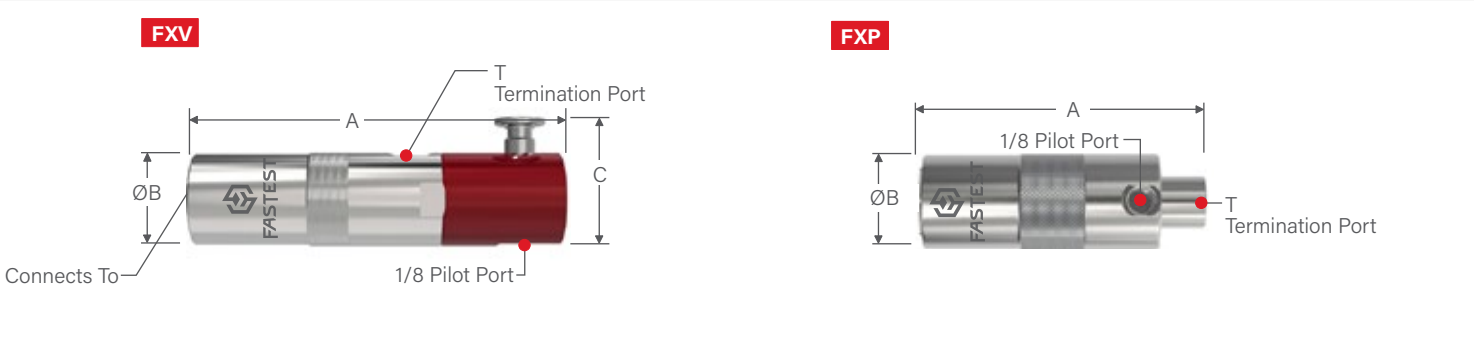
FasMate® FX   NPT							
1/8 NPT	FXL021041	FXV021041	FXP021041	S1105B70	RFXL021	RFX021	5,000 psi (345 bar)
1/4 NPT	FXL041041	FXV041041	FXP041041	S1108B70	RFXL041	RFX041	
3/8 NPT	FXL061061	FXV061061	FXP061061	S1110B70	RFXL061	RFX061	
1/2 NPT	FXL081061	FXV081061	FXP081061	S1112B70	RFXL081	RFX081	

FasMate® FX   NPT Thin Walled Pipe							
3/8 NPT	FXL061061PT	FXV061061PT	FXP061061PT	METB06PT	RFXL061PT	RFX061PT	750 psi (51 bar)
1/2 NPT	FXL081061PT	FXV081061PT	FXP081061PT	SFX081PT	RFXL081PT	RFX081PT	

FasMate® FX   BSPP (G)							
1/8 BSPP (G)	FXL025041	FXV025041	FXP025041	S1105B70	RFXL021	RFX021	5,000 psi (345 bar)
1/4 BSPP	FXL045041	FXV045041	FXP045041	S1108B70	RFXL041	RFX041	
3/8 BSPP	FXL065061	FXV065061	FXP065061	S1110B70	RFXL061	RFX061	
1/2 BSPP (G)	FXL085061	FXV085061	FXP085061	S1112B70	RFXL081	RFX081	

F. FasMate® FX   SAE 37° Flare							
-4 [7/16-20]	FXL049041	FXV049041	FXP049041	S20700270B70	RFXL049	RFX049	5,000 psi (345 bar)
-5 [1/2-20]	FXL059041	FXV059041	FXP059041	S20700334B70	RFXL059	RFX059	
-6 [9/16-18]	FXL069041	FXV069041	FXP069041	S1012B70	RFXL069	RFX069	
-8 [3/4-16]	FXL089061	FXV089061	FXP089061	S1015B70	RFXL089	RFX089	

Port Specifications: NPT per SAE J476 or ANSI B1.20  
BSPP (G) per ISO 228 or BS 2279  
SAE 37° Flare per SAE J514 or ISO 12151-5



Dimensions						
A (FXL)	A (FXV)	A (FXP)	B	C (FXL)	C (FXV)	T

5.25 (133.4)	5.04 (128.0)	3.78 (96.0)	1.26 (32.0)	3.45 (87.6)	1.77 (45.0)	1/4 NPT
5.27 (133.9)	5.04 (128.0)	3.80 (96.5)	1.26 (32.0)	3.45 (87.6)	1.77 (45.0)	
5.44 (138.2)	5.22 (132.6)	3.87 (98.3)	1.48 (37.6)	3.57 (90.7)	1.87 (47.5)	3/8 NPT
5.45 (138.4)	5.22 (132.6)	3.87 (98.3)	1.48 (37.6)	3.57 (90.7)	1.87 (47.5)	

5.44 (138.2)	5.22 (132.6)	3.87 (98.3)	1.48 (37.6)	3.57 (90.7)	1.87 (47.5)	3/8 NPT
5.45 (138.4)	5.22 (132.6)	3.87 (98.3)	1.48 (37.6)	3.57 (90.7)	1.87 (47.5)	3/8 NPT

5.25 (133.4)	5.04 (128.0)	3.78 (96.0)	1.26 (32.0)	3.45 (87.6)	1.77 (45.0)	1/4 NPT
5.27 (133.9)	5.04 (128.0)	3.80 (96.5)	1.26 (32.0)	3.45 (87.6)	1.77 (45.0)	
5.44 (138.2)	5.22 (132.6)	3.87 (98.3)	1.26 (32.0)	3.57 (90.7)	1.87 (47.5)	3/8 NPT
5.45 (138.4)	5.22 (132.6)	3.87 (98.3)	1.48 (37.6)	3.57 (90.7)	1.87 (47.5)	

5.25 (133.4)	5.04 (128.0)	3.77 (95.6)	1.26 (32.0)	3.45 (87.6)	1.77 (45.0)	1/4 NPT
5.25 (133.4)	5.04 (128.0)	3.77 (95.6)	1.26 (32.0)	3.45 (87.6)	1.77 (45.0)	
5.25 (133.4)	5.04 (128.0)	3.77 (95.6)	1.26 (32.0)	3.45 (87.6)	1.77 (45.0)	
5.45 (138.4)	5.22 (132.6)	3.87 (98.3)	1.48 (37.6)	3.57 (90.7)	1.87 (47.5)	3/8 NPT

Dimensions: inch (mm)  
Pressure Rating: psi (bar)



# HPB / EXTERNAL SEALING CONNECTION TOOL

Sleeve actuated tool that uses collets to grip threads or part feature for high pressures.

CONNECTS TO:  
NPT    SAE 37°    Compression Fitting    JIC or ORFS Swivel Nut



SPECIFICATIONS

Pressure Rating	Operating Temperatures	Materials of Construction
Vacuum to 6,000 psi (414 bar)	-40°F to +250°F (-40°C to +121°C)	Stainless Steel
Termination Port		Seal Material*
1/8 Female NPT		Standard: Buna-N Optional: FKM, EPDM, Neoprene®

\* Additional seal material types available, consult factory.

ACTUATION METHOD

**Manual Sleeve:** Easy, ergonomic sleeve action eliminates repetative twisting and turning - push to connect, pull to release

ICON™ TECHNOLOGY

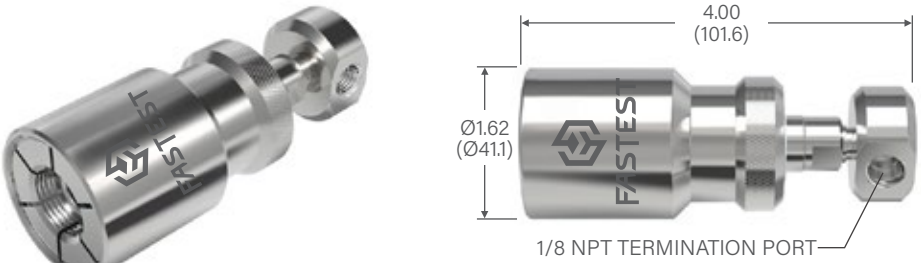
Consult Factory

ACCESSORIES

Visit [fastestinc.com](https://fastestinc.com)

- 1 Internal ball latch locking mechanism prevents accidental disconnection under pressure
- 2 Instant threaded sealing connection up to 6000 psi without tape sealant or wrenches - significantly reduces process time
- 3 Collet design locks securely into external threads or behind tube features
- 4 Customizable to external threaded ports or any tube feature
- 5 Self aligning connector requires no operator adjustment

# HPB / EXTERNAL SEALING CONNECTION TOOL



Ordering Information			
Connects To	Part Number*	Replacement Seals Bulk Pack (5)	Rebuild Kits

HPB   NPT Thread			
1/4 NPT	HPB041021	S1108B70	HPB0406R
3/8 NPT	HPB061021	S1110B70	HPB0406R
1/2 NPT	HPB081021	S1112B70	HPB08R

HPB   BSPP (G) Thread			
1/4 BSPP (G)	HPB045021	S1108B70	HPB0406R
3/8 BSPP (G)	HPB065021	S1110B70	HPB0406R
1/2 BSPP (G)	HPB085021	S1112B70	HPB08R

HPB   SAE 37° Flare for JIC and AN Male Fittings			
-4 [7/16-20]	HPB049021	S20700270B70	HPB04HR
-6 [9/16-18]	HPB069021	S1012B70	
-8 [3/4-16]	HPB089021	S1015B70	

HPB   SAE 37° Flare for JIC Swivel Nut Fitting			
-4 [7/16-20]	HPB049H021	S20560176B70	HPB04R
-6 [9/16-18]	HPB069H021	S20760266B70	
-8 [3/4-16]	HPB089H021	S20800406B70	

HPB   SAE ORFS Swivel Nut Fitting			
-4 [9/16-18]	HPB009H021	S1107B70	HPB04R
-6 [11/16-16]	HPB011H021	S1109B70	
-8 [[13/16-16]	HPB013H021	S1110B70	

HPB   Compression Fitting (Swagelok® or Equivalent)			
1/4 [7/16-20]	HPBCF04021	S1008B70	HPB04HR
3/8 [9/16-20]	HPBCF06021	S1011B70	
1/2 [3/4-20]	HPBCF08021	S1013B70	

\*Buna-N seals are standard. Optional seal materials include V = FKM, E = EPDM. Example: HPB041021**V**. For HPB Ferulok Style Compression Fittings, add suffix of "F" to HPB Compression Fitting Part Number. Example: HPBCF04021**F**

**Port Specifications:** NPT per SAE J476; BSPP (G) per ISO 228; SAE 37° Flare per SAE J514; SAE ORFS per SAE J1453

# MET / EXTERNAL SEALING CONNECTION TOOL

Manual twist sealing connection tool for external threads.

CONNECTS TO:  
NPT   SAE 37°   SAE 45°   BSPP(G)   BSPT



### SPECIFICATIONS

Pressure Rating	Operating Temperatures	Materials of Construction
Vacuum to 10,000 psi (689 bar)	-40°F to +200°F (-40°C to +93°C)	Stainless Steel
Termination Port		Seal Material*
NPT, SAE 37° Flare		Urethane

\* Additional seal material types available, consult factory.

### ACTUATION METHOD

**Manual Twist:** Finger-tight connection eliminates tape and sealants

### ICON™ TECHNOLOGY

Consult Factory

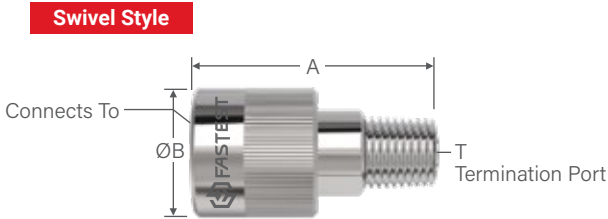
### ACCESSORIES

Visit [fastestinc.com](https://fastestinc.com)

- Pressure assisted sealing eliminates leaks and resists movement under pressure
- Leak-tight seal prevents contamination of media and reduces scrap and test damage
- Available in flow or cap versions
- Quick and easy seal replacement to minimize down time, maintenance, and tool inventory

# MET / EXTERNAL CONNECTIONS / NPT THREADS

Swivel Style  
Swivel Style for High Pressure



Ordering Information					Dimensions		
Connects To	Part Number*	Main Seal Package (5)	Rebuild Kit	Pressure Rating	A	B	T**

NPT | Swivel Style

1/8 NPT	MET021022	S1105U70	METR02	5000 (345)	1.51 (38.4)	0.80 (20.3)	1/8 MNPT
1/4 NPT	MET041042	S1108U70	METR04		1.74 (44.2)	0.93 (23.6)	1/4 MNPT
3/8 NPT	MET061062	S1110U70	METR06		1.78 (45.2)	1.20 (30.5)	3/8 MNPT
1/2 NPT	MET081082	S1112U70	METR08	4000 (276)	2.05 (52.1)	1.36 (34.5)	1/2 MNPT
3/4 NPT	MET121122	S1115U70	METR12		2.34 (59.4)	1.68 (42.7)	3/4 MNPT
1 NPT	MET161162	S1212U70	METR16		2.74 (69.6)	1.99 (50.5)	1 MNPT
1-1/4 NPT	MET201202	S1217U70	METR20	2500 (172)	3.27 (83.1)	2.37 (60.2)	1-1/4 MNPT
1-1/2 NPT	MET241161	METB24	METR24	1000 (67)	3.27 (83.1)	2.50 (63.5)	1 FNPT
2 NPT	MET321161	METB32	METR32	750 (52)	2.53 (64.3)	3.00 (76.2)	
2-1/2 NPT	MET401161	METB40	METR40	500 (34)	2.54 (64.5)	3.40 (86.4)	
3 NPT	MET481161	METB48	METR48		2.61 (66.3)	4.25 (108.0)	

NPT | Swivel Style for High Pressure

1/8 NPT	METH021022	S1105U70	METR02	10,000 (689)	1.51 (38.4)	0.80 (20.3)	1/8 MNPT
1/4 NPT	METH041042	S1108U70	METR04	8000 (522)	1.74 (44.2)	0.93 (23.6)	1/4 MNPT
3/8 NPT	METH061062	S1110U70	METR06		1.78 (45.2)	1.20 (30.5)	3/8 MNPT
1/2 NPT	METH081082	S1112U70	METR08	6000 (414)	2.05 (52.1)	1.36 (34.5)	1/2 MNPT
3/4 NPT	METH121122	S1115U70	METR12	5500 (379)	2.34 (59.4)	1.68 (42.7)	3/4 MNPT
1 NPT	METH161162	S1212U70	METR16	5000 (345)	2.74 (69.6)	1.99 (50.5)	1 MNPT

Dimensions: inch (mm)

Pressure Rating: psi (bar)

\*Optional seal materials include V = FKM, E = EPDM, and B = Buna-N - Example: MET021022V = FKM

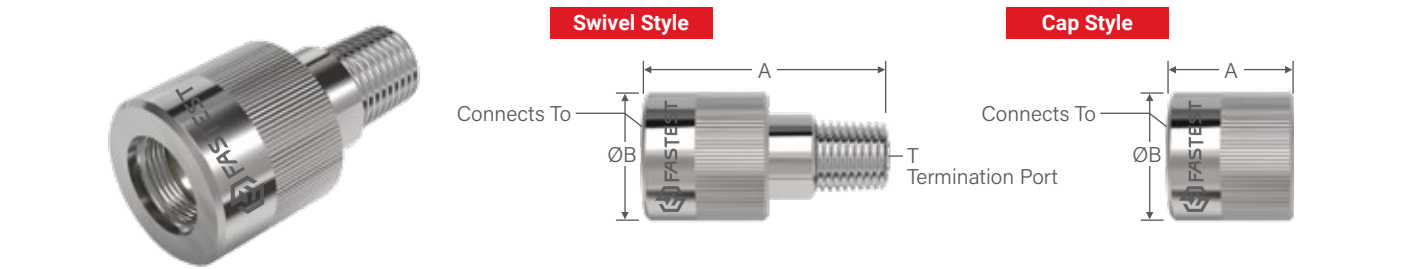
\*\*Other terminations in metric / BSPP may be availble. Contact factory.

**Port Specifications:** NPT per ISO J476 or ANSI B1.20



Swivel Style for Thin Walled Threaded Pipe  
Cap Style

MET / EXTERNAL CONNECTIONS / NPT THREADS (continued)



Ordering Information					Dimensions		
Connects To	Part Number	Main Seal Package(5)	Rebuild Kit	Pressure Rating	A	B	T**
NPT   Swivel Style for Thin Walled Threaded Pipe							
1/4 NPT	MET041042PT	METB04PT	METR04	750 (52)	1.74 (44.2)	0.93 (23.6)	1/4 NPTM
3/8 NPT	MET061062PT	METB06PT	METR06		1.78 (45.2)	1.20 (30.5)	3/8 NPTM
1/2 NPT	MET081082PT	METB08PT	METR08PT		2.05 (52.1)	1.36 (34.5)	1/2 NPTM
3/4 NPT	MET121122PT	METB12PT	METR12PT		2.34 (59.4)	1.68 (42.7)	3/4 NPTM
1 NPT	MET161162PT	METB16PT	METR16PT		2.74 (69.6)	1.99 (50.5)	1 NPTM
1-1/4 NPT	MET201202PT	METB20PT	METR20		3.27 (80.1)	2.37 (60.2)	1 1/4 NPTM

NPT   Cap Style							
1/8 NPT	MET021C	S1105U70	METR02	5000 (345)	0.83 (21.1)	0.80 (20.3)	N/A (Cap Style No Termination Port)
1/4 NPT	MET041C	S1108U70	METR04		0.88 (22.4)	0.93 (23.6)	
3/8 NPT	MET061C	S1110U70	METR06	4000 (276)	0.90 (22.9)	1.20 (30.5)	
1/2 NPT	MET081C	S1112U70	METR08		0.97 (24.6)	1.36 (34.5)	
3/4 NPT	MET121C	S1115U70	METR12		1.08 (27.4)	1.68 (42.7)	
1 NPT	MET161C	S1212U70	METR16		1.26 (32.0)	1.99 (50.5)	

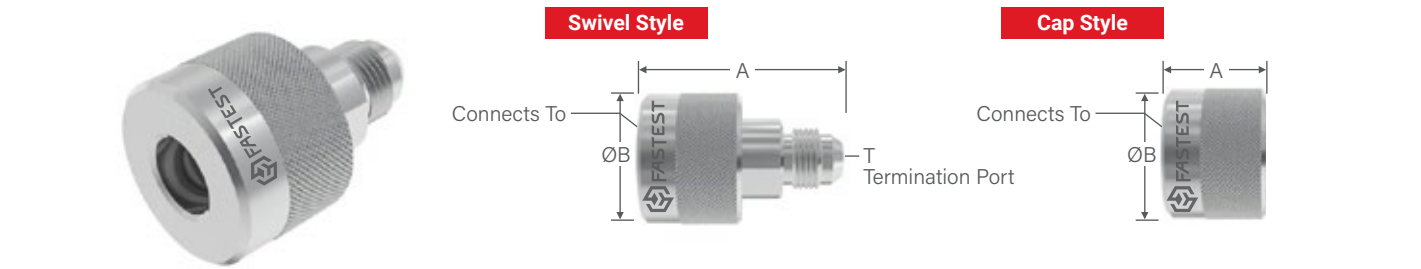
Dimensions: inch (mm)  
Pressure Rating: psi (bar)

\*Optional seal materials include V = FKM, E = EPDM, and B = Buna-N - Example: MET041042PT**V** = FKM  
\*\*Other terminations in metric / BSPP may be availble. Contact factory.

Port Specifications: NPT per ISO J476 or ANSI B1.20

Swivel Style  
Swivel Style for High Pressure  
Cap Style

MET / EXTERNAL CONNECTIONS / SAE 37° & 45° FLARE THREADS



Ordering Information					Dimensions		
Connects To	Part Number*	Main Seal Package (5)	Rebuild Kit	Pressure Rating	A	B	T**
SAE 37° FLARE   Swivel Style							
-6 [9/16-18]	MET069040	S1012B70	METR06	5000 (345)	1.82 (46.2)	1.20 (30.5)	-4 [7/16-20] (male)
-8 [3/4-16]	MET089060	S1015B70	METR08	4000 (276)	1.90 (48.3)	1.38 (35.1)	-6 [9/16-18] (male)
-10 [7/8-14]	MET109080	S1016B70	METR08		2.25 (57.2)	1.51 (38.4)	-8 [3/4-16] (male)
-12 [1-1/16-12]	MET129100	S1018B70	METR12		2.52 (64.0)	1.70 (43.2)	-10 [7/8-14] (male)
-16 [1-5/16-12]	MET169120	S1120B70	METR16	1000 (69)	2.70 (68.6)	1.99 (50.6)	-12 [1-1/16-12] (male)
-20 [1-5/8-12]	MET209160	S1124U70	METR20		3.21 (81.5)	2.37 (60.2)	-16 [15/16-12] (male)
-24 [1-7/8-12]	MET249200	S1129B70	METR24		3.38 (85.9)	2.50 (63.5)	-20 [1-5/8-12] (male)
-32 [2-1/2-12]	MET329240	S1227B70	METR32AN	750 (52)	3.49 (88.6)	3.25 (82.6)	-24 [1-7/8-12] (male)

SAE 37° FLARE   Swivel Style for High Pressure							
-4 [7/16-20]	METH049040	S20700270B70	METR049	10,000 (689)	1.76 (44.7)	0.95 (24.1)	-4 [7/16-20] (male)
-6 [9/16-18]	METH069060	S1012B70	METR06		1.82 (46.2)	1.20 (30.5)	-6 [9/16-18] (male)
-8 [3/4-16]	METH089080	S1015B70	METR08		2.00 (50.8)	1.38 (35.1)	-8 [3/4-16] (male)
-10 [7/8-14]	METH109100	S1016B70	METR08		2.35 (59.7)	1.51 (38.4)	-10 [7/8-14] (male)
-12 [1-1/16-12]	METH129120	S1018B70	METR12	6500 (433)	2.52 (64.0)	1.70 (43.2)	-12 [1-1/16-12] (male)
-16 [1-5/16-12]	METH169160	S1120B70	METR16		2.74 (69.6)	1.99 (50.6)	-16 [1-5/16-12] (male)

SAE 37° FLARE   Cap Style							
-4 [7/16-20]	MET049C	S120700270B70	METR049	5000 (345)	0.88 (22.4)	0.95 (24.1)	N/A
-6 [9/16-18]	MET069C	S1012B70	METR06		0.90 (22.9)	1.20 (30.5)	(Cap Style No Termination Port)
-8 [3/4-16]	MET089C	S1015B70	METR08	4000 (276)	0.97 (24.6)	1.38 (35.1)	(Cap Style No Termination Port)

SAE 45° FLARE   Swivel Style (per SAE J512 or J513)							
-4 [7/16-20]	MET04A042B	S20600246B70	METR049	5000 (345)	1.76 (44.7)	0.95 (24.1)	1/4 MNPT
-6 [5/8-18]	MET06A062N	S1012N70	METR06A		1.80 (45.7)	1.18 (30.0)	3/8 MNPT
-8 [3/4-16]	MET08A082N	S1014N70	METR08A	4000 (276)	2.10 (53.3)	1.31 (33.3)	1/2 MNPT
-10 [7/8-14]	MET10A082N	S1015N70	METR10A		2.26 (57.4)	1.51 (38.4)	
-12 [1-16-14]	MET12A122N	S1018N70	METR12A		2.54 (64.5)	1.70 (43.2)	3/4 MNPT

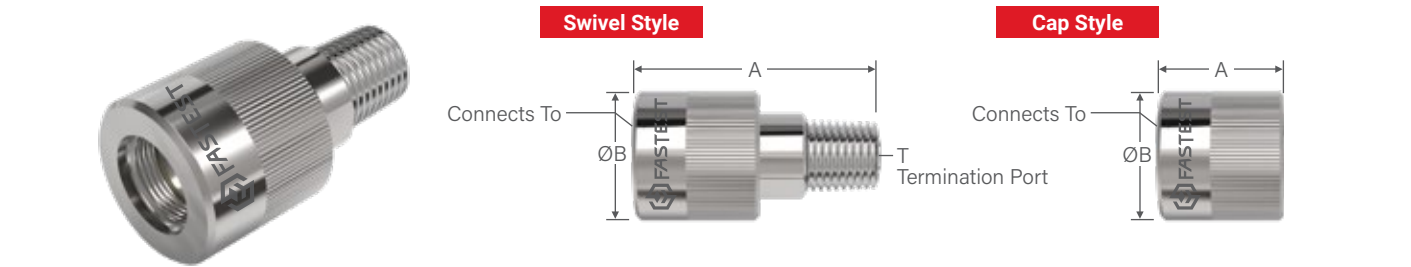
Dimensions: inch (mm)  
Pressure Rating: psi (bar)

\*Optional seal materials include V = FKM, E = EPDM, and B = Buna-N - Example: MET069040**V** = FKM  
\*\*Other terminations in metric / BSPP may be availble. Contact factory.

Port Specifications: SAE 37° & 45° FLARE THREADS per SAE J514 or ISO 12151-5

MET / EXTERNAL CONNECTIONS / BSPP (G) THREADS

Swivel Style (per ISO 228 or BS 2779)  
Cap Style (per ISO 228 or BS 2779)



Ordering Information					Dimensions		
Connects To	Part Number	Main Seal Package (5)	Rebuild Kit	Pressure Rating	A	B	T**
BSPP (G)   Swivel Style							
1/8 BSPP (G)	MET025022	S1105U70	METR02	5000 (345)	1.62 (41.1)	0.80 (20.3)	1/8 NPT
1/4 BSPP (G)	MET045042	S1108U70	METR04		1.63 (41.4)	0.93 (23.6)	1/4 NPT
3/8 BSPP (G)	MET065062	S1110U70	METR06	4000 (276)	1.31 (33.3)	1.20 (30.5)	3/8 NPT
1/2 BSPP (G)	MET085082	S1112U70	METR08		1.46 (37.1)	1.36 (34.5)	1/2 NPT
3/4 BSPP (G)	MET125122	S1115U70	METR12		2.35 (59.7)	1.70 (43.2)	3/4 NPT
1 BSPP (G)	MET165162	S1212U70	METR16		2.74 (69.6)	1.99 (50.6)	1 NPT

BSPP (G)   Cap Style							
1/8 BSPP (G)	MET025C	S1105U70	METR02	5000 (345)	0.83 (21.1)	0.80 (20.3)	N/A (Cap Style No Termination Port)
1/4 BSPP (G)	MET045C	S1108U70	METR04		0.88 (22.4)	0.93 (23.6)	
3/8 BSPP (G)	MET065C	S1110U70	METR06	4000 (276)	0.90 (22.9)	1.20 (30.5)	
1/2 BSPP (G)	MET085C	S1112U70	METR08		0.97 (24.6)	1.36 (34.5)	
3/4 BSPP (G)	MET125C	S1116U70	METR12	4000 (276)	1.08 (27.3)	1.68 (42.7)	

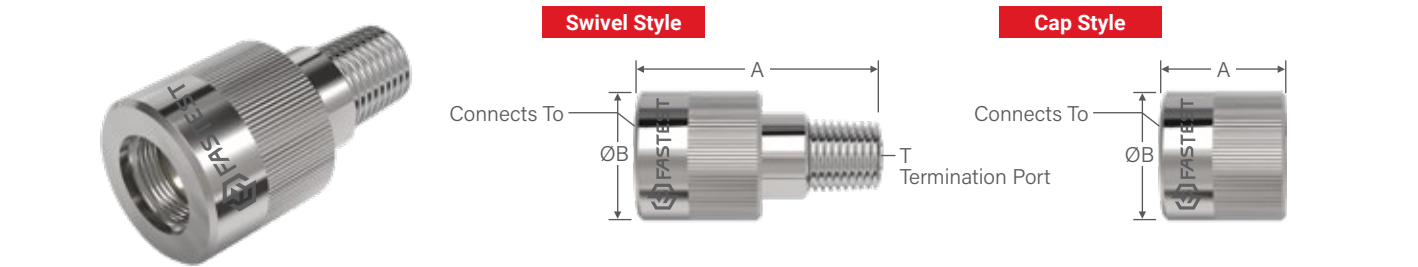
Dimensions: inch (mm)  
Pressure Rating: psi (bar)

\*Optional seal materials include V = FKM, E = EPDM, and B = Buna-N - Example: MET025022**V** = FKM  
\*\*Other terminations in metric / BSPP may be availble. Contact factory.

Port Specifications: BSPP (G) per ISO 228 or BS 2779

MET / EXTERNAL CONNECTIONS / BSPT THREADS

Swivel Style  
Cap Style



Ordering Information					Dimensions		
Connects To	Part Number	Main Seal Package (5)	Rebuild Kit	Pressure Rating	A	B	T**
BSPT   Swivel Style							
1/8 BSPT	MET025T022	S1105U70	METR02	5000 (345)	1.62 (41.1)	0.80 (20.3)	1/8 NPT
1/4 BSPT	MET045T042	S1108U70	METR04		1.63 (41.4)	0.93 (23.6)	1/4 NPT
3/8 BSPT	MET065T062	S1110U70	METR06	4000 (276)	1.31 (33.3)	1.20 (30.5)	3/8 NPT
1/2 BSPT	MET085T082	S1112U70	METR08		1.46 (37.1)	1.36 (34.5)	1/2 NPT
3/4 BSPT	MET125T122	S1115U70	METR12		2.35 (59.7)	1.70 (43.2)	3/4 NPT
1 BSPT	MET165T162	S1212U70	METR16		2.74 (69.6)	1.99 (50.6)	1 NPT

BSPT   Cap Style							
1/8 BSPT	MET025TC	S1105U70	METR02	5000 (345)	0.83 (21.1)	0.80 (20.3)	N/A (Cap Style No Termination Port)
1/4 BSPT	MET045TC	S1108U70	METR04		0.88 (22.4)	0.93 (23.6)	
3/8 BSPT	MET065TC	S1110U70	METR06	4000 (276)	0.90 (22.9)	1.20 (30.5)	
1/2 BSPT	MET085TC	S1112U70	METR08		0.97 (24.6)	1.36 (34.5)	

Dimensions: inch (mm)  
Pressure Rating: psi (bar)

\*Optional seal materials include V = FKM, E = EPDM, and B = Buna-N - Example: MET025T022**V** = FKM  
\*\*Other terminations in metric / BSPP may be availble. Contact factory.

Port Specifications: BSPT per ISO 228 or BS 2779; per ISO 7 or BS 21



# INDUSTRY-SPECIFIC CONNECTIONS



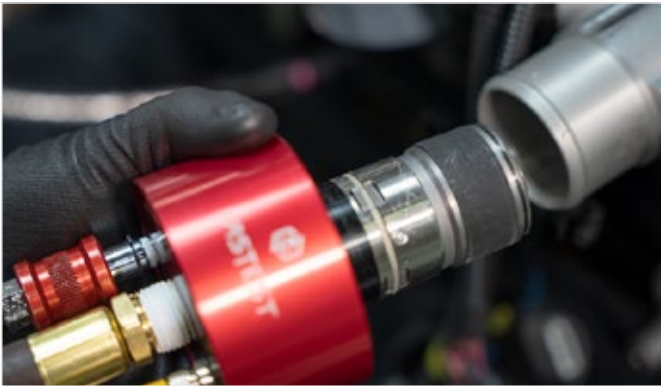


FIG / INTERNAL SEALING CONNECTION TOOL

Pneumatic sealing connection tool with gripping collets for manual operated processes.

CONNECTS TO:

Straight cast or rough surfaces



SPECIFICATIONS

Pressure Rating	Pilot Pressure	Operating Temperatures
Vacuum to 120 psi (8.3 bar)	60 to 120 psi (4.1 to 8.3 bar)	-40°F to +250°F (-40°C to +121°C)
Termination Port	Materials of Construction	Seal Material*
1/8 NPT, 1/2 NPT, 3/4 NPT	Anodized Aluminum, Stainless Steel, Potted PCA	Standard: FasTest Neoprene*, FasTest Urethane Optional: FKM, Buna-N, EPDM, FDA White Neoprene*

\* Additional seal material types available, consult factory.  
\*\* Operating Temp: 32°F-100°F (0°C-38°C) for Intelligent Connection Technology.

**i** Pressure rating based on test piece having a surface finish greater than 80rms and a material hardness of no more than 97Rb to grip and seal at the rated pressure. If your parameters are outside the specifications, please contact factory

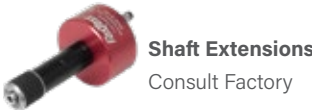
ICON™ - INTELLIGENT CONNECTION TECHNOLOGY

SURE SEAL™  
 SEAL LIFE™

ACTUATION METHOD

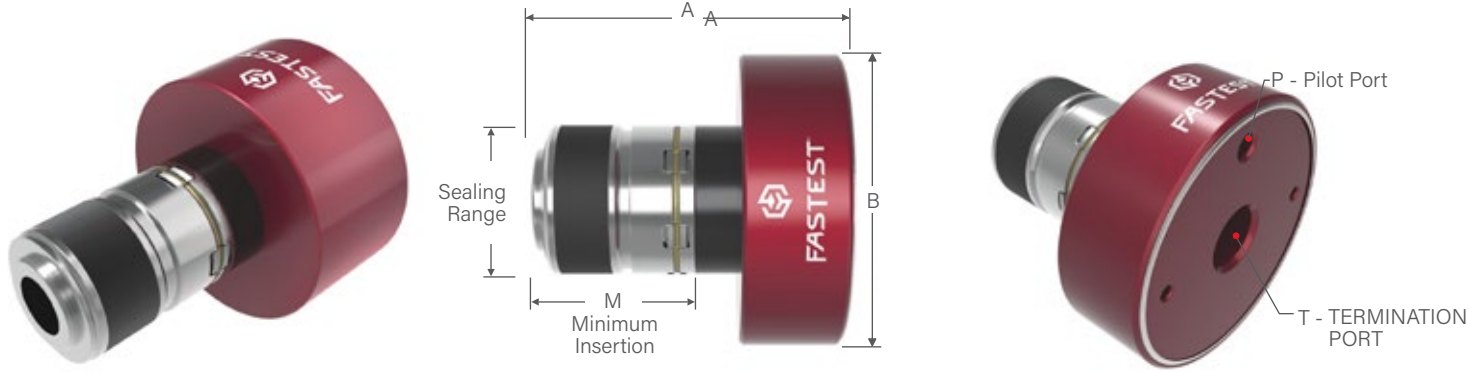
**Pneumatic:** Pilot pressure creates uniform seal movement and consistent sealing force.

ACCESSORIES VISIT FASTESTINC.COM



- 1 Gripping collets minimize the need for fixturing
- 2 Improve safety for non-fixtured tools due to positive gripping ability
- 3 Consistent sealing force with pneumatic actuation
- 4 Optimized for operator-applied applications on cast or rough surfaces
- 5 ICON™ capable - additional sensing capabilities and visual feedback

FIG / INTERNAL GRIP SEALING CONNECTION TOOL



Ordering Information					Dimensions				
Sealing Range	Part Number <sup>1</sup>	Main Seal Set	Grip Cartridge Kit	Rebuild Kit	A	B	M	P	T
1.102-1.181	FIG441	FIS441*	441GC	FIR3	3.610	2.360	1.70	1/8 NPT	1/8 NPT
1.181-1.260	FIG442	FIS442*	442GC	FIR3					
1.260-1.339	FIG443	FIS443*	443GC	FIR3					
1.339-1.457	FIG551	FIS551**	551GC	FIR6	4.680	3.485	2.24	1/8 NPT	1/2 NPT
1.457-1.575	FIG552	FIS552**	552GC	FIR6					
1.575-1.693	FIG553	FIS553**	553GC	FIR6					
1.693-1.85	FIG661	FIS661**	661GC	FIR6	4.680	3.485	2.31	1/8 NPT	1/2 NPT
1.850-2.008	FIG662	FIS662**	662GC	FIR6					
2.008-2.165	FIG663	FIS663**	663GC	FIR6					
2.165-2.305	FIG771	FIS771**	771GC	FIR7	4.360	4.200	2.29	1/8 NPT	3/4 NPT
2.305-2.445	FIG772	FIS772**	772GC	FIR7					
2.445-2.585	FIG773	FIS773**	773GC	FIR7					
2.585-2.725	FIG881	FIS881**	881GC	FIR7	4.360	4.200	2.29	1/8 NPT	3/4 NPT
2.725-2.865	FIG882	FIS882**	882GC	FIR7					
2.865-3.005	FIG883	FIS883**	883GC	FIR7					

Dimensions: inch

<sup>1</sup> Includes seals(s) and metal parts for one complete seal change and one extra seal.  
\* Includes enough seals for five seal changes.  
\*\* Includes enough seals for 2.5 seal changes.

**i** Secondary safety measures are advisable when tools are under pressure to protect the operator.

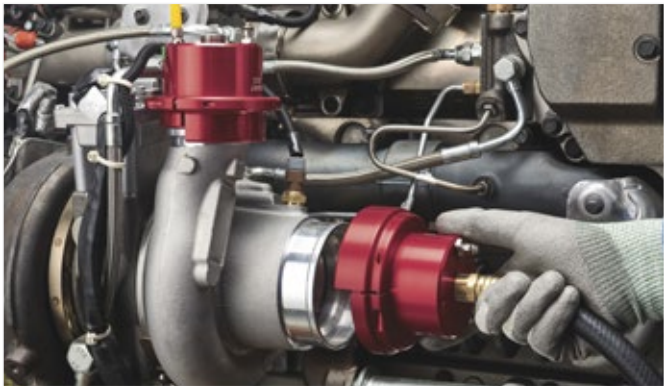
**To Order FIG with ICON™, add "CV04ANA" or "CV04SSR" to Part Number.**  
**To Order FIG with ICON™ Rebuild Kit, add "CV04ANA" or "CV04SSR" to Rebuild Kit Part Number.**



FEG / EXTERNAL SEALING CONNECTION TOOL

Pneumatic sealing connection tool with gripping cradle for manual operated processes.

CONNECTS TO:



SPECIFICATIONS

Pressure Rating	Pilot Pressure	Operating Temperatures
Determined by Application Consult Factory	80psig min.	-40°F to +250°F (-40°C to +121°C)
Termination Port	Materials of Construction	Seal Material*
NPT (Determined by Application Consult Factory)	Anodized Aluminum, Stainless Steel, Potted PCA	Standard: FasTest Buna-N, FasTest Urethane Optional: FKM, Neoprene®, EPDM, FDA White Neoprene®

\* Additional seal material types available, consult factory.  
\*\* Operating Temp: 32°F-100°F (0°C-38°C) for Intelligent Connection Technology.

ICON™ - INTELLIGENT CONNECTION TECHNOLOGY

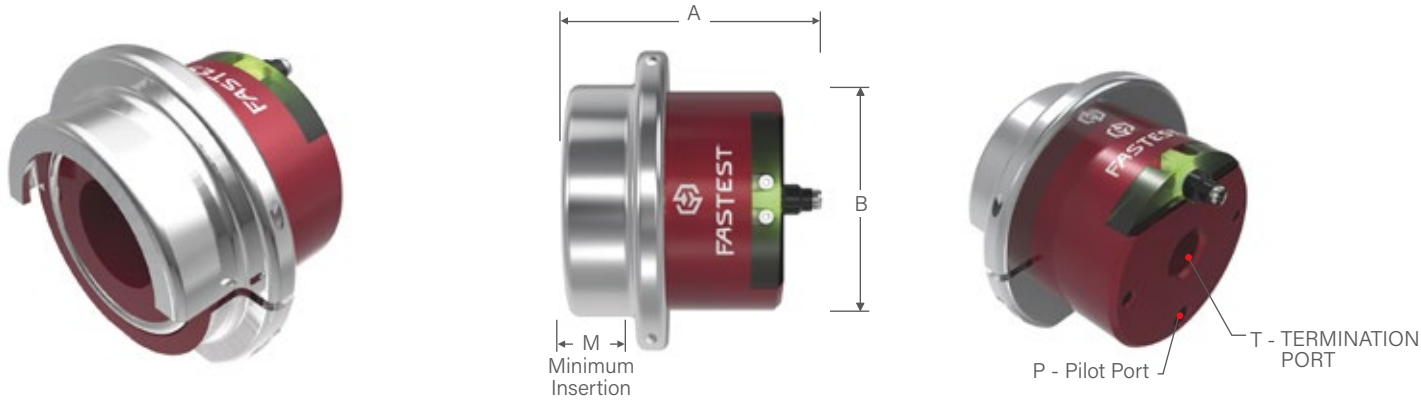


ACTUATION METHOD

**Pneumatic:** Pilot pressure creates uniform seal movement and consistent sealing force.

**ACCESSORIES** VISIT [FASTESTINC.COM](https://www.fastestinc.com)

FEG / EXTERNAL SEALING CONNECTION TOOL



Ordering Information		Dimensions				
Sealing Range	Part Number	A	B	M	P	T
Determined by Application Consult Factory	Determined by Application Consult Factory	Determined by Application Consult Factory				

ⓘ Secondary safety measures are advisable when tools are under pressure to protect the operator.

- 1 Gripping cradle minimizes the need for fixturing
- 2 Improved safety by preventing the tool from accidental release under pressure
- 3 Consistent sealing force with pneumatic actuation
- 4 Optimized for operator-applied applications such as turbos and flanged ports
- 5 ICON™ capable - addtional sensing capabilities and visual feedback

70FR / EXTERNAL CONNECTIONS TO FUEL RAILS

Custom sleeve actuated external grip and seal connection tool for J2044 fuel rail applications.

CONNECTS TO:

Fuel Rail



SPECIFICATIONS

Pressure Rating	Operating Temperatures	Materials of Construction
Vacuum to 750 psi (51 bar)	-40°F to +250°F (-40°C to +121°C)	Stainless Steel, Anodized Aluminum
Termination Port		Seal Material*
Inline NPT termination port		Buna-N/Nitrile

\* Additional seal material types available, consult factory.

ACTUATION METHOD

**Manual Sleeve:** Easy, ergonomic sleeve action eliminates repetative twisting and turning - push to connect, pull to release

ICON™ TECHNOLOGY

Consult Factory

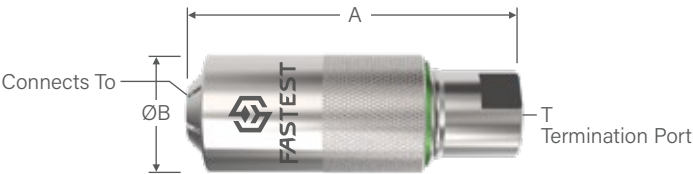
ACCESSORIES

Visit [fastestinc.com](http://fastestinc.com)



- 1 SurConnect™ - Green to go visible indicator to ensure complete connection and internally valved to prevent gas flow once disconnected
- 2 Instant external formed tube connection with floating piston to ensure proper OD / face / ID sealing position
- 3 Collet design locks securely over formed tube feature
- 4 Connect and seal to standard fuel rail bead /SAE J2044

70FR / EXTERNAL CONNECTIONS TO FUEL RAILS



Ordering Information					Dimensions		
Connects To	Part Number	Replacement Seals Bulk Pack (5)	Rebuild Kit	Pressure Rating	A	B	T

70FR | Non-Valved

1/4	FR7004X041	S1108B60	RFR04X	750 (51)	3.02 (76.7)	0.99 (25.1)	1/4 NPT
5/16	FR7005X041	S1109B60	RFR05X		3.30 (83.8)	1.19 (30.2)	3/8 NPT
3/8	FR7006X061	S1110B60	RFR06X		3.50 (89.9)	1.38 (35.1)	
1/2	FR7008X061	S1112B60	RFR08X				

70FR | Valved

1/4	FRV7004X041	S1108B60	RFR04X	200 (13.8)	3.02 (76.7)	0.99 (25.1)	1/4 NPT
5/16	FRV7005X041	S1109B60	RFR05X		3.30 (83.8)	1.19 (30.2)	3/8 NPT
3/8	FRV7006X061	S1110B60	RFR06X		3.50 (89.9)	1.38 (35.1)	
1/2	FRV7008X061	S1112B60	RFR08X				

Dimensions: inch (mm)  
Pressure Rating: psi (bar)

Port Specifications: SAE J2044



# GZNV / INTERNAL GAS BURNER TESTING

Internally valved manual sealing connection tool for Natural Gas or Propane Burner Testing.

CONNECTS TO:



SPECIFICATIONS

Pressure Rating	Operating Temperatures	Materials of Construction
Vacuum to 5 psi (0.345 bar)	0°F to +200°F (-17°C to +93°C)	Anodized Aluminum, Brass, Molded Nylon Handle
Termination Port		Seal Material*
1/4, 1/2 NPT		Gripper: Urethane Face Seal: Buna-N Internal: Buna-N

\* Additional seal material types available, consult factory.

ACTUATION METHOD

**Lever Handle:** Two way actuation handle is simple and ergonomic for production applications.

Insert the connector into the gas valve and then actuate the handle. The gripper seal expands and pulls the face seal against the gas valve body, creating a seal between them and simultaneously opening the internal shutoff valve. This allows the flow of gas into the gas valve.

ICON™ TECHNOLOGY

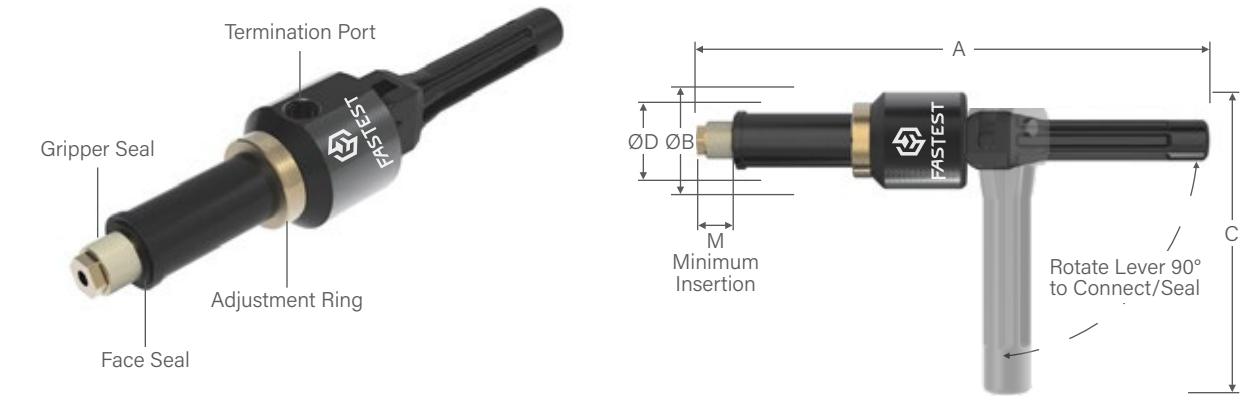
Consult Factory

ACCESSORIES

Visit [fastestinc.com](http://fastestinc.com)

- 1 Lockable collar to keep sealing pressure consistent and internally valved to prevent gas flow once disconnected
- 2 Adjustable ring to accommodate the widest sealing range in the industry
- 3 Internal shut-off valve to stop the flow of gas when handle is in the disconnected position
- 4 Non-sparking aluminum and brass components

# GZNV / INTERNAL GAS BURNER TESTING



Ordering Information					Dimensions					
Connects To	Part Number	Replacement Seals Bulk Pack	Rebuild Kit	Replacement Shaft	A	B	C	D	M	T

GZNV | With 2 in. (51 mm) Extended Shaft

3/8 NPT	GZNV0620410200	GZNVB062	GZNVR062	5ZNV27F380200	9.30 (236.2)	1.88 (47.8)	4.96 (119.1)	1.06 (26.9)	0.63 (16.0)	1/4 NPT
1/2 NPT	GZNV0820410200	GZNVB082	GZNVR082	5ZNV275BR0200						
3/4 NPT	GZNV1220810200	GZNVB122	GZNVR122	5ZNV375BR0200	9.65 (245.1)	2.44 (61.9)	5.21 (132.3)	1.38 (35.1)		1/2 NPT

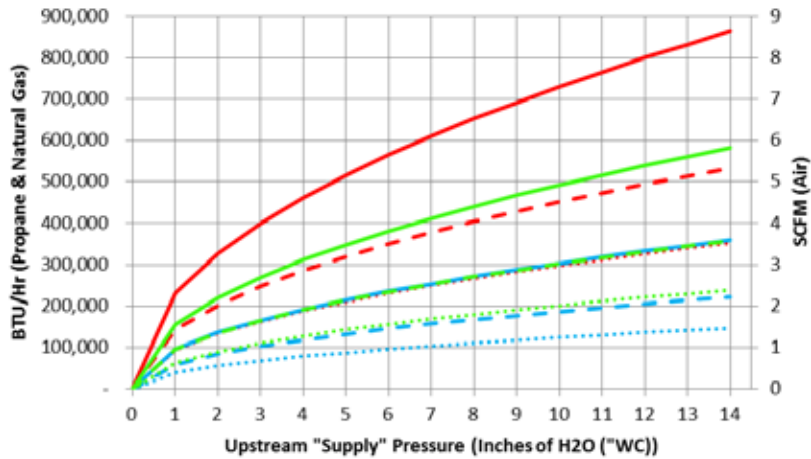
GZNV | Reduced Length Shaft

3/8 NPT	GZNV062041*	GZNVB062	GZNVR062	5ZNV27F38BR	7.30 (185.4)	1.88 (47.8)	4.96 (119.1)	1.06 (26.9)	0.63 (16.0)	1/4 NPT
1/2 NPT	GZNV082041*	GZNVB082	GZNVR082	5ZNV275BR						
3/4 NPT	GZNV122081*	GZNVB122	GZNVR122	5ZNV275BR	7.65 (194.3)	2.44 (61.9)	5.21 (132.3)	1.38 (35.1)		1/2 NPT

Dimensions: inch (mm)

\*Consult Factory for availability.

GasMate™ GZNV Family Flow Capacity



# G60V / EXTERNAL GAS BURNER TESTING

Internally valved sleeve actuated external grip and seal connection tool for Natural Gas or Propane Burner Testing.

CONNECTS TO:

MNPT



SPECIFICATIONS

Pressure Rating	Operating Temperatures	Materials of Construction
Vacuum to 30 psi (2.1 bar)	0°F to +200°F (-17°C to +93°C)	Stainless Steel, Brass, Anodized Aluminum
Termination Port		Seal Material*
3/8, 1/2, 3/4 NPT		Main: Neoprene® Internal: Buna-N

\* Additional seal material types available, consult factory.

ACTUATION METHOD

**Manual Sleeve:** Easy, ergonomic sleeve action eliminates repetative twisting and turning - push to connect, pull to release

INTELLIGENT CONNECTION TECHNOLOGY

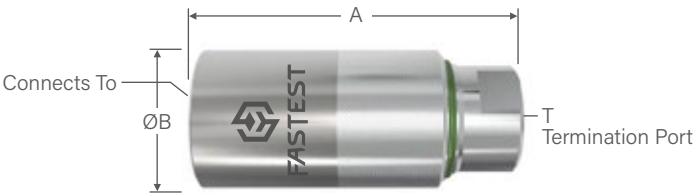
Consult Factory

ACCESSORIES

Visit [fastestinc.com](http://fastestinc.com)

- 1
- 2
- 3
- 4
- 5
- SurConnect™ - Green to go visible indicator to ensure complete connection and internally valved to prevent gas flow once disconnected
- Instant external threaded connection with floating piston to ensure proper face / ID sealing position
- Collet design locks securely into external threads or behind the threads
- Connect and seal to NPT male threads
- Stainless steel components for demanding production environments - brass collets for non-sparking

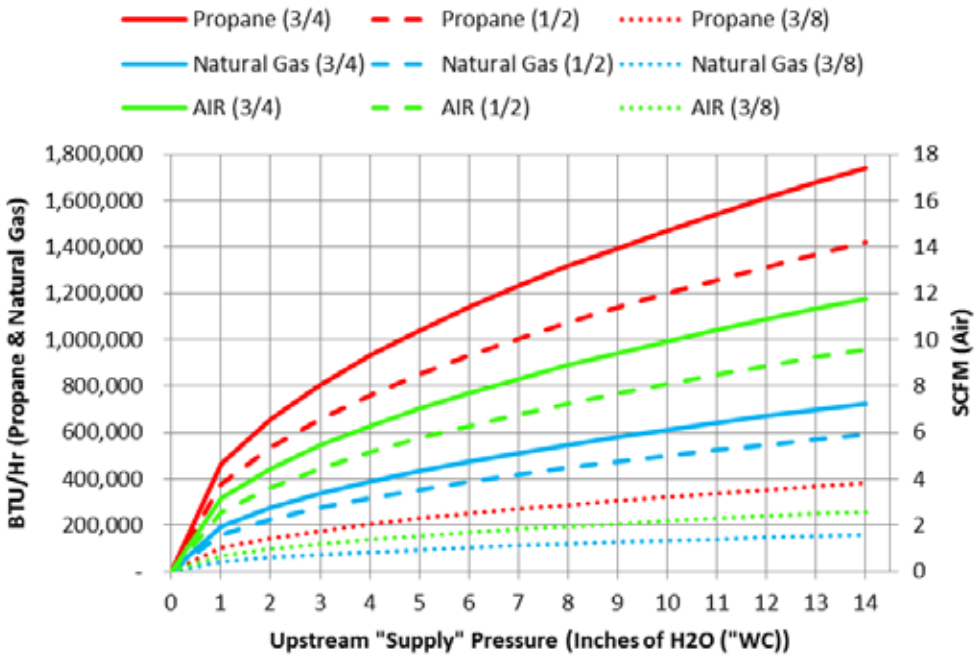
# G60V / EXTERNAL GAS BURNER TESTING



Ordering Information				Dimensions		
Connects To	Part Number	Replacement Seals Bulk Pack (5)	Rebuild Kit	A	B	T
3/8 NPT	G60VIT06	SZF4	G60VR06	3.11 (79.0)	1.38 (35.0)	3/8 NPT
1/2 NPT	G60VIT08	SZF5	G60VR08	3.31 (84.1)	1.58 (40.1)	1/2 NPT
3/4 NPT	G60VIT12	SZF7	G60VR12	3.54 (90.0)	1.78 (45.2)	3/4 NPT

Dimensions: inch (mm)

GasMate G60V Family Flow Capacity





# ME / MEDICAL-LIFE SCIENCES SEALING CONNECTION TOOL

Pneumatic external sealing of medical devices in automated and semi-automated processes.

CONNECTS TO:



SPECIFICATIONS

Pressure Rating	Pilot Pressure	Operating Temperatures**
Vacuum to 500 psi (34 bar)	60-90 psi (4.1-6.2 bar)	0°F to +200°F (-17°C to +93°C)
Termination Port	Materials of	Seal Material*
1/8 FNPT	Anodized Aluminum	ME001: FDA approved FKM ME01: FDA White Neoprene™

\* Additional seal material types available, consult factory.  
\*\* Operating Temp: 32°F-100°F (0°C-38°C) for ICON™



Pilot pressure required.

All parts are washed in an aqueous solution utilizing ultrasonic agitation at a temperature of 140°F. Components are then rinsed in a cascading rinse tank and dried using 99.999% pure nitrogen and assembled in a 100,000ppm level controlled environment.

Krytox is the standard lubricant.

White FDA Neoprene seal material is compliant to 21CFR177.2600. Optional material is a FDA listed fluorocarbon..

ACTUATION METHOD

**Pneumatic:** pilot pressure applied to seals with no metal contact and uniform seal movement seals inside luer

ICON™ TECHNOLOGY

✔ SURE SEAL™

📊 SEAL LIFE™

ACCESSORIES

See p. 106

- 1 Connector and test part should be rigidly fixtured to prevent seperation when under pressure
- 2 Ideally designed for automated processes and high volume production testing
- 3 Seals against standard luers, catheter, tubes and other cylindrical components
- 4 Cleaned and lubricated for oxygen safe environment with FDA approved seals
- 5 Quick and easy seal replacement to minimize down time, maintenance and tool inventory



## ICON™ INTELLIGENT CONNECTION TECHNOLOGY

FasTest's ICON™ adds sensing capabilities to our mechanical Sealing Connection Tools. ICON™ Tools include instant LED visual feedback and data output to improve sealing connection accuracy, maximize production efficiency, and optimize maintenance.

ICON™ features:



SURE SEAL™

Instant LED feedback verifies a good connection prior to starting a test.



SEAL LIFE™

Alert when the main seal is at end of life and must be replaced.

System Overview:

CONNECTED

Green indication of a good connection.

RECONNECT

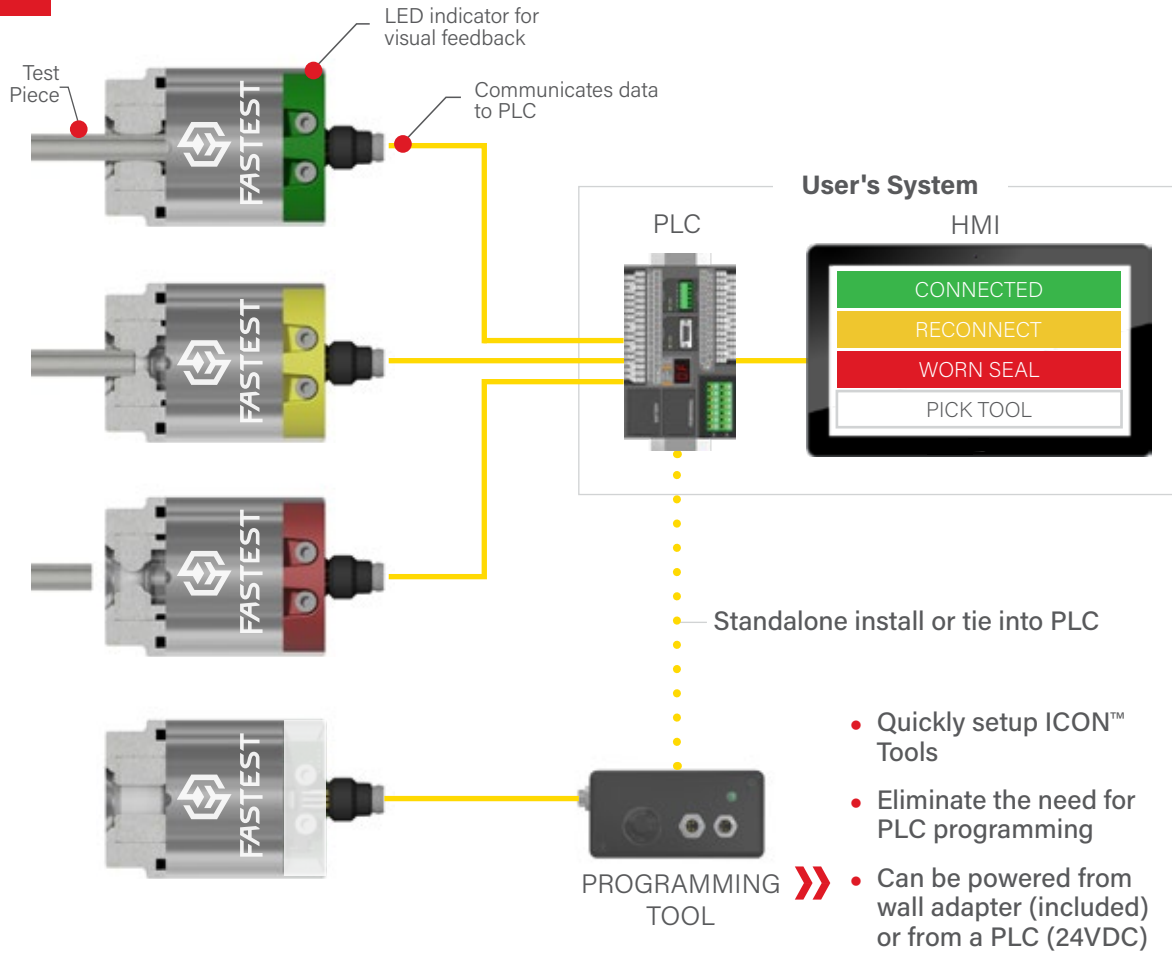
Recognize a connection issue before causing a false failure.

WORN SEAL

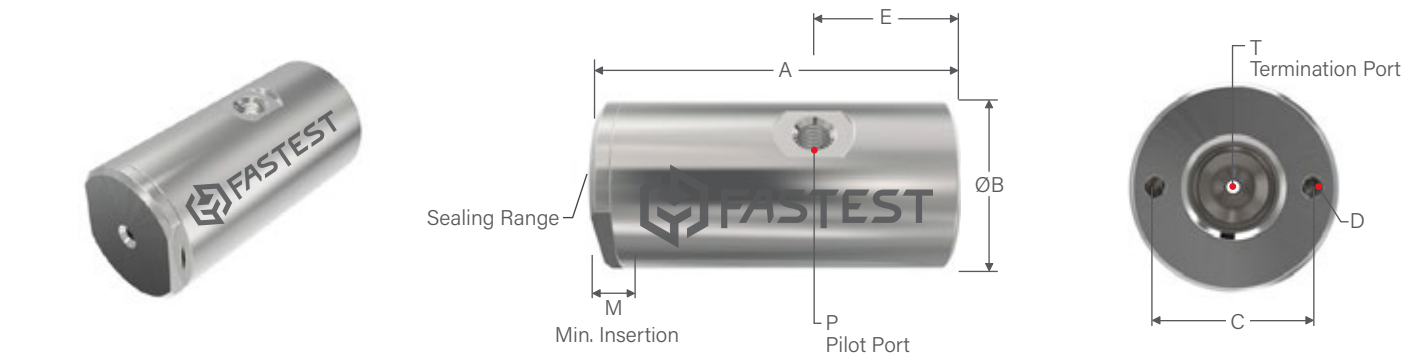
Alert when main seals should be replaced.

PICK TOOL

Controllable LED signals operator to use specific tool.



ME / MEDICAL-LIFE SCIENCES SEALING CONNECTION TOOL



Ordering Information				Dimensions							
Sealing Range	Part Number	Replacement Seals Pack (5)	Rebuild Kit	A	B	C	D	E	M	P	T

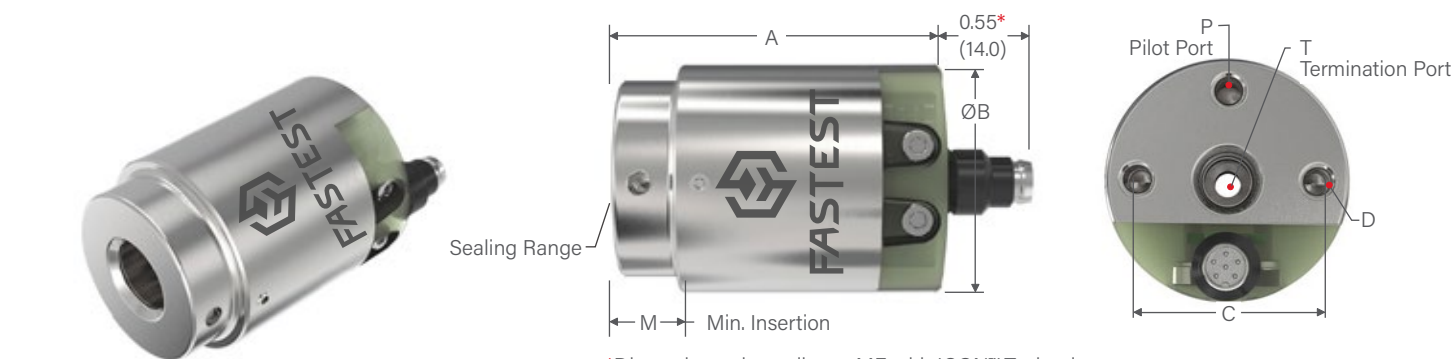
ME | Imperial Mounting Holes and Pilot Ports

0.015 to 0.030 (0.38 to 0.80)	ME0010030	MEB0010030	MER001	1.72 (43.7)	0.84 (21.3)	0.63 (16.0)	4-40 UNC	0.72 (18.3)	0.16 (4.1)	10-32 UNF	1/8 NPT
0.030 to 0.050 (0.80 to 1.30)	ME0010050	MEB0010050									
0.050 to 0.080 (1.30 to 2.00)	ME001001	MEB001001									
0.080 to 0.130 (2.00 to 3.30)	ME001002	MEB001002									

ME | Metric Mounting Holes and Pilot Ports

0.015 to 0.030 (0.38 to 0.80)	MEM0010030	MEB0010030	MER001	1.72 (43.7)	0.84 (21.3)	0.63 (16.0)	M2.5	0.72 (18.3)	0.16 (4.1)	M5	1/8 BSPP (G)
0.030 to 0.050 (0.80 to 1.30)	MEM0010050	MEB0000050									
0.050 to 0.080 (1.30 to 2.00)	MEM001001	MEB001001									
0.080 to 0.130 (2.00 to 3.30)	MEM001002	MEB001002									

Dimensions: inch (mm)



\*Dimension only applies to ME with ICON™ Technology (Base Part Numbers that include “CV04ANA” or “CV04SSR”).

Ordering Information (Complete Connector = Main Seal Set + Base Part Number)					Dimensions						
Sealing Range	Main Seal Set*	Base Connector Part Number	Replacement Seals Package (5)	Rebuild Kit	A	B	C	D	M	P	T

ME | Imperial Mounting Holes and Pilot Ports

0.100 to 0.180 (2.5 to 4.6)	MES0101	ME01 ME01CV04ANA ME01CV04SSR	MEB0101	MER01	2.05 (52.1)	1.49 (37.9)	1.10 (27.9)	10-32 UNF	0.58 (14.7)	10-32 UNF	1/8 NPT
0.180 to 0.260 (4.6 to 6.6)	MES0102		MEB0102								
0.260 to 0.340 (6.6 to 8.6)	MES0103		MEB0103								
0.340 to 0.420 (8.6 to 10.7)	MES0104		MEB0104								
0.420 to 0.510 (10.7 to 13.0)	MES0105		MEB0105								

ME | Metric Mounting Holes and Pilot Ports

0.100 to 0.180 (2.5 to 4.6)	MES0101	MEM01 MEM01CV04ANA MEM01CV04SSR	MEB0101	MER01	2.05 (52.1)	1.49 (37.9)	1.10 (27.9)	M5	0.58 (14.7)	M5	1/8 BSPP (G)
0.180 to 0.260 (4.6 to 6.6)	MES0102		MEB0102								
0.260 to 0.340 (6.6 to 8.6)	MES0103		MEB0103								
0.340 to 0.420 (8.6 to 10.7)	MES0104		MEB0104								
0.420 to 0.510 (10.7 to 13.0)	MES0105		MEB0105								

Dimensions: inch (mm)

\*Includes seals(s) and metal parts for one complete seal change.

*How To Add ICON™ to ME		
Signal Output	Part Number Suffix	Example
ME without ICON™	None	ME0101
ME with ICON™: Analog Output Signal	CV04ANA	ME0101CV04ANA
ME with ICON™: Solid State Relay	CV04SSR	ME0101CV04SSR



ML / MEDICAL-LIFE SCIENCES SEALING CONNECTION TOOL

Pneumatic nested sealing connection tool for full thread luers in automated and semi-automated processes.

CONNECTS TO:

Luers



SPECIFICATIONS

Pressure Rating	Operating Temperatures	Materials of Construction
Vacuum to 500 psi (34.4 bar)	0°F to +200°F (-17°C to +93°C)	Anodized Aluminum
Termination Port		Seal Material*
1/8 FNPT		FDA approved FKM

\* Additional seal material types available, consult factory.

ICON™ TECHNOLOGY

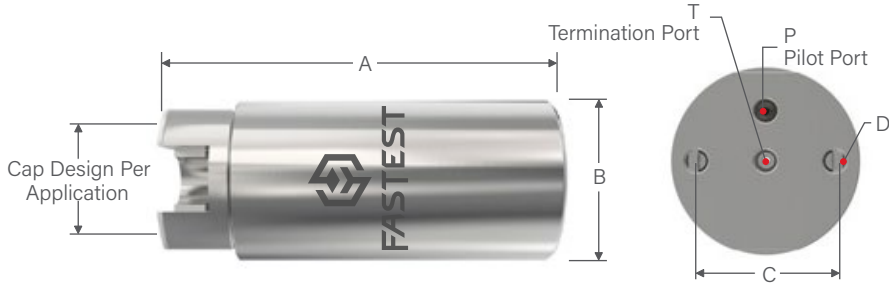
Consult Factory

ACCESSORIES

Visit [fastestinc.com](https://fastestinc.com)

- 1 Specially designed leur nest to contain test part under pressure
- 2 Ideally designed for automated processes and high volume production testing
- 3 Seals against any full thread standard luers
- 4 Cleaned and lubricated for oxygen safe environment with FDA approved seals

ML / MEDICAL-LIFE SCIENCES SEALING CONNECTION TOOL



Ordering Information				Dimensions					
Sealing Range	Part Number	Main Seal Set	Rebuild Kit	A	B	C	D	P	T

Medical Luer (ML) Connectors | Imperial Mounting Holes and Pilot Ports

Sized to Part	ML00101	Consult Factory	MER001	1.96 (49.8)	0.84 (21.3)	0.63 (16.0)	4-40 UNC	10-32 UNF	1/8 NPT
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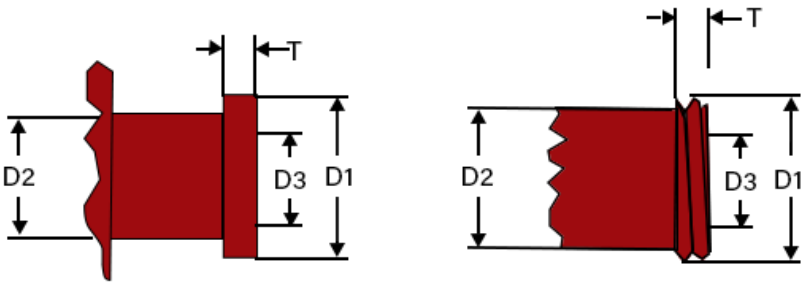
Medical Luer (ML) Connectors | Metric Mounting Holes and Pilot Ports

Sized to Part	ML001M01	Consult Factory	MER001	1.96 (49.8)	0.84 (21.3)	0.63 (16.0)	M2.5	M5	1/8 BSPP (G)
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Dimensions: inch (mm)

Luer Specifications: ISO 594 and ISO 80369

- NOTE:** The Medical Luer “ML Series” connectors are designed to your specific application requirements.
- All parts are washed in an aqueous solution utilizing ultrasonic agitation at a temperature of 140°F. Components are then rinsed in a cascading rinse tank and dried using 99.999% pure nitrogen and assembled in a 100,000ppm level controlled environment.  
Krytox is the standard lubricant.



Luer Tolerances		
DIM	MIN	MAX
T	0.058 (1.47)	0.08 (2.03)
D1	0.29 (7.37)	0.316 (8.03)
D2	0.225 (5.72)	0.247 (6.27)
D3	0.165 (4.19)	0.175 (4.45)

Dimensions: inch (mm)

- NOTE:** If your application falls outside these limits, contact factory for custom product.

MLL / MEDICAL-LIFE SCIENCES SEALING CONNECTION TOOL

Pneumatic sealing connection tool for external sealing of luers in automated and semi-automated processes.

CONNECTS TO:



- 1 Pilot operated low pressure expanding seal against luer OD's
  - 2 Compact design with low particulate generation
  - 3 Cleaned and lubricated for oxygen safe environment with FDA approved seals
  - 4 Self aligning connector requires no operator adjustment
- i* All parts are washed in an aqueous solution utilizing ultrasonic agitation at a temperature of 140°F. Components are then rinsed in a cascading rinse tank and dried using 99.999% pure nitrogen and assembled in a 100,000ppm level controlled environment.
- Krytox is the standard lubricant.  
Optional material is a FDA listed fluorocarbon.  
Components are double bagged for shipping integrity.

Ordering Information	
Part Number	Replacement Seals Pack (5)
MLL   Luers	
MLL2001	S6LT18120

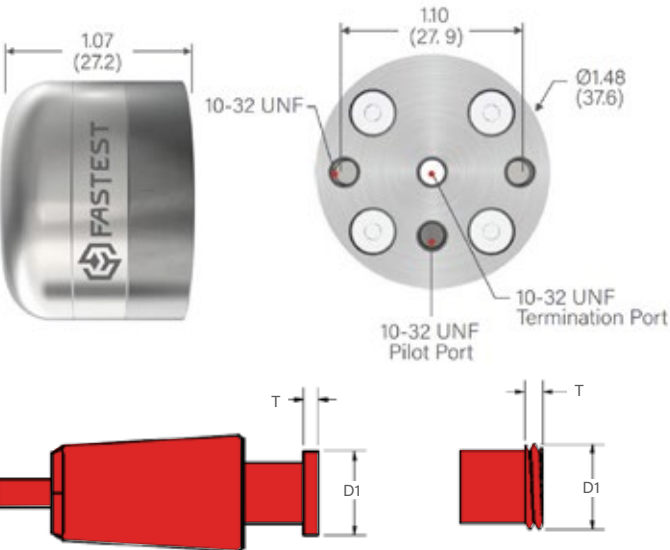


SPECIFICATIONS

Pressure Rating	Pilot Pressure	Operating Temperatures**
Vacuum to 100 psi (6.9 bar)	60-90 psi (4.1-6.2 bar)	0°F to +200°F (-17°C to +93°C)
Termination Port	Materials of Construction	Seal Material*
1/8 FNPT	Stainless Steel, Anodized Aluminum	Masterflex C-Flex R70

ACTUATION METHOD

**Pneumatic:** seals to external surface of luer when pilot pressure is applied



Luer Tolerances		
DIM	MIN	MAX
T	0.050 (1.27)	0.080 (2.03)
D1	N/A	0.307 (7.80)

Dimensions: inch (mm)

MLH / MEDICAL-LIFE SCIENCES SEALING CONNECTION TOOL

Pneumatic sealing connection tool for sealing luers with full threads.

CONNECTS TO:



- 1 Nest designed for full thread luers
  - 2 Cleaned and lubricated for oxygen safe environment with FDA approved seals\*
  - 3 Self aligning connector requires no operator adjustment
  - 4 Quick and easy seal replacement to minimize down time, maintenance and tool inventory
- i* All parts are washed in an aqueous solution utilizing ultrasonic agitation at a temperature of 140°F. Components are then rinsed in a cascading rinse tank and dried using 99.999% pure nitrogen and assembled in a 100,000ppm level controlled environment.
- Krytox is the standard lubricant.
- FDA listed fluorocarbon seal material is compliant to 21CFR177.2600.  
Optional material is White FDA Neoprene®
- Components are double bagged for shipping integrity.

Ordering Information		
Part Number	Replacement Seals Pack (5)	Rebuild Kit
MLL   Luers with Full Threads		
MLH2001	S1001050B70FDA	MLHR2001

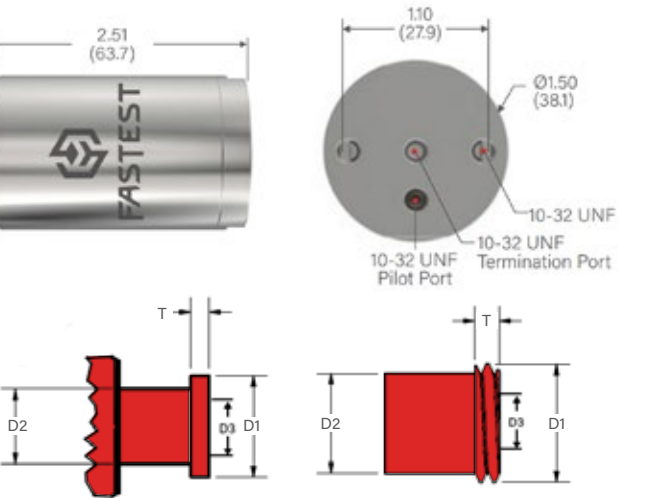


SPECIFICATIONS

Pressure Rating	Operating Temperatures**	
Vacuum to 500 psi (34.5 bar)	0°F to +200°F (-17°C to +93°C)	
Termination Port	Materials of Construction	Seal Material*
10-32 (M5)	Stainless Steel, Anodized Aluminum	FDA approved FKM seals

ACTUATION METHOD

**Pneumatic:** seals to external surface of luer when pilot pressure is applied



Luer Tolerances		
DIM	MIN	MAX
T	0.058 (1.47)	0.080 (2.03)
D1	0.29 (7.37)	0.312 (7.92)
D2	N/A	0.242 (6.15)
D3	0.165 (4.19)	0.175 (4.45)

Dimensions: inch (mm)



60M / MEDICAL-LIFE SCIENCES SEALING CONNECTION TOOL

Sleeve actuated external grip and seal connection tool for medical leurs

CONNECTS TO:



SPECIFICATIONS

Pressure Rating	Operating Temperatures	Materials of Construction
Vacuum to 750 psi (51.7 bar)	0°F to +200°F (0°C to +93°C)	Stainless Steel, Anodized Aluminum
Termination Port		Seal Material*
1/8 FNPT		FDA approved FKM seals

\* Additional seal material types available, consult factory.

ACTUATION METHOD

**Sleeve Actuated:** Easy, ergonomic sleeve action eliminates repetative twisting and turning - push to connect, pull to release

ICON™ TECHNOLOGY

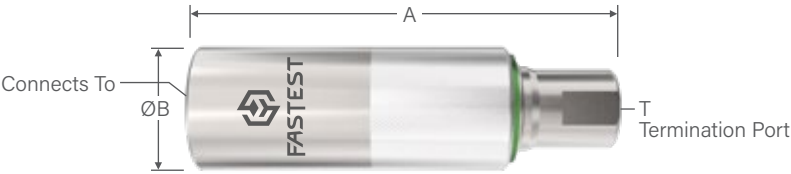
Consult Factory

ACCESSORIES

Visit [fastestinc.com](http://fastestinc.com)

- 1 SurConnect™ - Green to go visible indicator to ensure complete connection
- 2 Instant external threaded connection with floating piston to ensure proper ID sealing position
- 3 Seals against any full and partial threaded standard luers
- 4 Cleaned and lubricated for oxygen safe environment with FDA approved seals

60M / MEDICAL-LIFE SCIENCES SEALING CONNECTION TOOL



Ordering Information				Dimensions		
Connects To	Part Number	Replacement Seals Bulk Pack (5)	Rebuild Kit	A	B	T
60M   Luers						
Luer	60MP0340	S60MP0340	R60MP0340	2.92 (74.2)	0.88 (22.5)	1/8 NPT

Dimensions: inch (mm)

Luer Specifications: ISO 594

- i All parts are washed in an aqueous solution utilizing ultrasonic agitation at a temperature of 140°F. Components are then rinsed in a cascading rinse tank and dried using 99.999% pure nitrogen and assembled in a 100,000 ppm level controlled environment.  
Krytox is the standard lubricant.  
Components are double bagged for shipping integrity.

Product Accessories

Charge Valve



- Use with Charge Coupler to pressure up and hold pilot charge when an affixed airline is not useable
- Manually actuate pneumatic sealing connection tools

Part Number	Termination	Length	Diameter Ø
ADM06102	1/8 NPT (standard)	0.96in (24.38mm)	0.50in (12.7mm)
ADM06502	1/8 BSPP	0.96in (24.38mm)	0.50in (12.7mm)
ADM06M5	M5	1.03in (26.16mm)	0.40in (10.16mm)
ADM061032	10-32	1.03in (26.16mm)	0.40in (10.16mm)

Charge Coupler PN: ADF05102



- Used with Charge Valve to introduce pressure without latching
- Internally valved
- Thread type: 1/8 NPT
- Dimensions: 1.36in x Ø0.68in (34.54mm x Ø17.27mm)

Slide Valve PN: AV1021022



- Used to pressurize and exhaust pilot pressure for manual operation
- Thread type: 1/8 NPT
- Dimensions: 2.13in x Ø 0.77in (54.1mm x Ø19.56)

Sophia Picray

ICON™ Accessories

Programming Tool

- Quickly program / calibrate ICON™ Sealing Connection Tools
- Eliminate the need for PLC programming
- LED connection status visual feedback
- Powered from wall adapter (included) or from a PLC (24VDC)

Part Number	Input Signal	Output Signal	Current Limit
SPCT0204	SSR	SSR	max 100 mA load
SPCT0204A	SSR	N/A	N/A



M8 Cable PN: SPCAFS0602AMS06



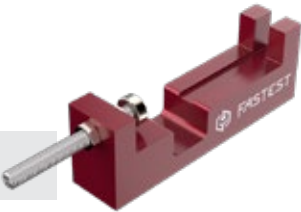
- Straight Female M8 threaded Connector to straight Male M8 connector (6-wire 2m cable)

M8 Cable PN: SPCAFS0602C



- Straight Female M8 to Flying Leads (6-wire 2m cable)

ICON™ SSR Calibration Cradle PN: SPCTFNFSSR



- Cradle tool used to assist calibration of Pneumatic FasMates with discrete (SSR) programming.
- Calibration Cradle for use with ICON (SSR) FNP's, body sizes 1-4
- Calibration Cradle for use with ICON (SSR) FXP's, all body sizes
- Dimensions: 12.19in L x 2.99in H x 1.99in D (309.63mm L x 75.95mm H x 50.55mm D)





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